

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

EMPIRE TECHNOLOGY
DEVELOPMENT LLC

Plaintiff,

V.

SAMSUNG ELECTRONICS CO., LTD.,

and

SAMSUNG ELECTRONICS AMERICA,
INC.

§ § § § § § § § § §

Case No.

JURY TRIAL DEMANDED

Defendants.

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Empire Technology Development LLC (“Empire” or “Plaintiff”) files this Complaint for patent infringement against Defendant Samsung Electronics Co., Ltd. (“SEC”) and Defendant Samsung Electronics America, Inc. (“SEA”, and collectively with SEC, “Samsung” or “Defendants”). Plaintiff alleges infringement of United States Patent Number 9,058,165 (“’165 Patent” or the “Asserted Patent”).

NATURE OF SUIT AND BACKGROUND

1. This is a claim for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

2. In 2011, Dr. Ezekiel Kruglick, a prolific United States inventor recognized a problem with mobile device power management—devices were simultaneously supplying power to unused subsystems and not efficiently powering up subsystems for imminent use. Dr. Kruglick observed that device subsystems were, in some cases, maintained in an on, ready, or standby state,

rather than a powered down state, leading to unnecessary and accelerated battery drain. To solve this problem and reduce device power consumption, he proposed a novel method of device power management, which allowed subsystems to persist in a powered off state up until the device needed to call up that subsystem. Only then would the device utilize an instruction to notify the specific subsystem of the pending call and bring the subsystem out of its powered down state, while other, unused systems would remain in their reduced power state. This novel method of device power management markedly reduces device energy consumption, thereby prolonging battery life and extending device functionality on a single charge.

3. As discussed further below, Samsung products utilize the same power savings mechanisms captured in the claims of the '165 Patent. For example, Samsung's SmartThings Find utilizes the patented power saving capabilities on their devices¹ by only providing power to certain subsystems (such as the GPS subsystem to identify the phone's location, or the audio subsystem to play a sound to locate the phone), while keeping other subsystems in a lower-power state. But Samsung does not have a license to practice the '165 Patent. Accordingly, Empire brings this action to enforce the exclusive rights provided by the '165 Patent and to recover damages appropriate to compensate for Samsung's unlicensed use of the claimed invention.

THE PARTIES

Empire Technology Development LLC

4. Empire is a limited liability company duly organized and existing under the laws of Delaware. Empire is the current assignee of and has all substantial rights in and to the '165 Patent, including the right to sue for past, present, and future damages.

¹ <https://news.samsung.com/in/find-your-missing-galaxy-devices-with-smartthings-find> (highlighting that "SmartThings Find uses minimal battery for operations").

SEC

5. Defendant SEC is a foreign corporation organized and existing under the laws of the Republic of Korea with its principal place of business at 129 Samsung-Ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 443-742, Republic of Korea.

SEA

6. SEA is a wholly owned subsidiary corporation of SEC and is incorporated and existing under the laws of New York, with its principal place of business at 700 Sylvan Ave., Englewood Cliffs, New Jersey 07632. SEA is in the process of “relocating [its] U.S. headquarters from New Jersey to [its] existing campus in Plano, Texas.”² On information and belief, SEA may be served through its registered agent for service of process, CT Corporation System, 1999 Bryant Street, Suite 900, Dallas, Texas. *See, Whirlpool Corp. v. Samsung Elecs. Co.*, No. 2:25-cv-01042-JRG-RSP, Dkt. 68 at ¶ 3 (E.D. Tex. May 14, 2026) (confirming service is proper through this registered agent).

7. SEA oversees domestic sales and distribution of Samsung’s consumer electronics products, including the products accused of infringement in this case.

8. SEA conducts business operations within this District through its office located at 6625 Excellence Way, Plano, Texas 75023 and a retail store located at 2601 Preston Road, Frisco, Texas 75034.

9. Defendants SEC and SEA make, use, offer for sale, sell, and/or import into the United States products that practice the claimed inventions of the ’165 Patent (“Accused Products”), including, without limitation, “Galaxy devices (Galaxy smartphones and tablets with Android 8 or higher, Galaxy Watch with Tizen OS 5.5 or higher or Wear OS, Galaxy Buds+ or

² <https://dallasinnovates.com/samsung-is-relocating-its-u-s-hq-from-new-jersey-to-plano/>

later, all types of Galaxy SmartTag series, Galaxy Book models, S Pen Pro) and compatible SmartTags that can be onboarded to SmartThings”³ as well as “Galaxy Watch3, Galaxy Watch4, Galaxy Watch5, and Galaxy Buds Live, Galaxy Buds Pro, Galaxy Buds2 and Galaxy Buds2 Pro, and all types of Galaxy SmartTag series.”⁴ Empire reserves the right to identify and add additional infringing Samsung products as discovery proceeds. Samsung’s Accused Products have power management functionality built into them, including, for example, SmartThings Find.

JURISDICTION AND VENUE

10. This Court has subject matter jurisdiction over patent infringement claims pursuant to 28 U.S.C. §§ 1331 and 1338(a), as those claims arise under the patent laws of the United States (35 U.S.C. §§ 1 *et seq.*).

11. This Court has personal jurisdiction over Defendants in this action because Defendants have committed acts within this District giving rise to this action and have established minimum contacts within this District such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice. Defendants have purposefully directed activities at the United States, in particular, directing the Accused Products for sale to customers and distributors within the United States (including within this District) and engaging in sales and marketing efforts to generate and support such sales. Defendants have committed acts of infringement, such as by supplying to distributors and consumer device retailers the Accused Products in this District. Defendants, directly and through subsidiaries, intermediaries, and third parties, have committed and continue to commit acts of infringement in this District by, among other things, making, using, offering to sell, selling, and importing products that infringe the ’165

³ <https://www.samsung.com/ca/apps/samsung-find/>

⁴ <https://www.samsung.com/levant/apps/smartthings-find/>

Patent.

12. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). Defendant SEC is a foreign corporation. Venue is proper as to a foreign defendant in any district. 28 U.S.C. § 1391(c)(3).

13. Defendant SEA has regular and established places of business in this District, including locations at 6625 Excellence Way, Plano, Texas 75023 and 2601 Preston Road, Frisco, Texas 75034. On information and belief, SEA deems its Plano location a “flagship” campus and announced SEA’s move to the Plano location by explaining, among other things:⁵

Long committed to the North Texas community, Samsung’s move to Plano further demonstrates the company’s dedication to Texas and being an invested corporate citizen. North Texas is home to Samsung Electronics America’s second biggest employee population in the U.S. across multiple divisions – Customer Care, Mobile, Mobile R&D and Engineering. In all, more than 1,000 regional employees from two current locations in Richardson and Plano will be relocated to the new location. Over time, the space will accommodate growth and foster greater innovation for the brand.

14. Defendant SEA employs full-time personnel such as sales personnel and engineers in this District.

15. Defendant SEA has committed acts of infringement in this District by commercializing, marketing, selling, distributing, testing, and servicing the Accused Products.

16. Having purposefully availed itself of the privilege of conducting business within this District, Samsung should reasonably and fairly anticipate being brought into court here.

17. Samsung has repeatedly not disputed that this Court has personal jurisdiction over it, or that venue is proper in cases filed against it in this District. *See, e.g., Whirlpool Corp. v. Samsung Elecs. Co.*, No. 2:25-cv-01042-JRG-RSP, Dkt. 68 at ¶¶ 5, 7-8, 13-14 (E.D. Tex. May 14,

⁵ <https://news.samsung.com/us/samsung-electronics-america-open-flagship-north-texas-campus/>

2026) (not disputing personal jurisdiction and venue is proper); *Telecom Ventures LLC, v. Samsung Elecs. Co.*, No. 2-24-cv-00691, Dkt. 71 at ¶¶ 18-19, 21-25 (E.D. Tex. Sep. 24, 2025) (same); *Empire Tech. Dev. LLC, v. Samsung Elecs. Co.*, No. 2:23-cv-00427-JRG, Dkt. 16 at ¶¶ 7-8 (E.D. Tex. Jan. 10, 2024) (same).

FACTUAL ALLEGATIONS

A. The Asserted Patent

18. On June 16, 2015, the United States Patent and Trademark Office duly issued U.S. Patent 9,058,165, entitled “DEVICE POWER MANAGEMENT USING COMPILER INSERTED DEVICE ALERTS.” A true and correct copy of the ’165 Patent is attached hereto as **Exhibit A**.

19. The ’165 Patent claims priority to PCT Application Number PCT/US2011/035399, which was filed on May 5, 2011. The inventor, Dr. Kruglick, assigned all right, title and interest in PCT/US2011/035399 to Ardent Research Corporation on the same day, May 5, 2011. *See* Reel 026233, Frame 0386. Ardent Research Corporation assigned all its right, title and interest in PCT/US2011/035399 to Empire on May 5, 2011. *See* Reel 026233, Frame 0391. U.S. Patent Application Number 13/264,702, claiming priority to PCT/US2011/035399, was filed on October 14, 2011, and issued as U.S. Patent Number 9,058,165 on June 16, 2015.

20. To the extent applicable, Plaintiff has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the ’165 Patent. Empire has satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for the infringement of the ’165 Patent.

B. Development and History of Device Power Management

21. Improvements in power management have been instrumental to the ubiquitous

adoption and commercial success of wireless devices. Consumers continue to expect mobile devices to provide greater functionality, faster performance, richer displays, persistent connectivity, and increasingly sophisticated applications. To meet those expectations, manufacturers have made significant advancements in device architecture, processing capability, communications hardware, memory, displays, sensors, and other components. Those advances, however, generally increase power demand. At the same time, the portable nature of wireless devices imposes practical limits on battery size, weight, heat generation, and form factor. As a result, meaningful improvements in battery life and device usability have depended not only on larger or improved batteries, but also on increasingly sophisticated techniques for managing how and when power is consumed within the device.

22. Modern wireless devices typically include multiple subsystems that may operate concurrently, including processors, wireless communication components, displays, audio, memory, sensors, and peripheral interfaces. These subsystems enable the performance and functionality consumers expect, but they also create substantial and variable power demands. Accordingly, power management has become a central design consideration for mobile devices. By controlling power usage across device subsystems—such as reducing power to components when they are idle, preparing components for use when needed, and coordinating power states with software execution—mobile devices can provide advanced functionality while preserving battery life and maintaining responsive performance.

C. The Inventor

23. The engineer and inventor of the '165 Patent, Dr. Kruglick, anticipated the pivotal role that power management strategies would play in the future of mobile devices.

24. Dr. Kruglick earned his Ph.D. in electrical engineering and computer science from

the University of California, Berkeley, in 1999. Since then, Dr. Kruglick has worked at the Jet Propulsion Laboratory, various universities, the Defense Advanced Research Projects Agency (DARPA), and numerous companies. Dr. Kruglick has founded or co-founded multiple public and private companies. Notably, Dr. Kruglick served as CEO and Director of Ardent Research, a full-service research and development boutique firm specializing in technology development, from November 2009 to April 2021. Dr. Kruglick has also served on the board of directors of multiple public and private companies. He currently is on the board of directors for a public company and serves as a technical advisor to the board of another public company.⁶

25. Dr. Kruglick is a prolific innovator and inventor who has contributed substantially to the electrical engineering and computer science fields. Dr. Kruglick is an author on 172 publications, which combined have received over 4000 citations.⁷ His publications have received national recognition, being featured in influential publications including The Economist, OE Reports, Scientific Computing World, and EE Times.⁸ Dr. Kruglick is also listed as an inventor on over 300 issued U.S. Patents. Samsung has cited to Dr. Kruglick's various patents in at least 70 of their own patents and patent applications.

D. Development of the Patented Technology

26. Prior to the development of the '165 Patent's claimed invention, power management in mobile devices mainly entailed retaining subsystems in either a powered off state or a powered on state. While this worked in those less sophisticated mobile devices, it wasted power by consuming large portions of the battery maintaining mostly unused subsystems in the

⁶ <https://www.autoscope.com/corporate-governance/board-of-directors.html>

⁷ <https://research.com/u/ezekiel-kruglick>

⁸ <https://www.hertzfoundation.org/people/ezekiel-kruglick/>

“on” state. These inefficiencies compounded with the advancement of more complex mobile devices with a greater number of power-hungry active subsystems.

27. In contrast, the invention claimed in the '165 Patent identifies and solves the design challenge: unused subsystems can be powered down to reduce energy consumption, prolong battery life, and reduce operating costs. Furthermore, those same subsystems can be “warmed up” before they are ready for use. The '165 Patent’s invention therefore seeks to maximize the time that subsystems remain in a powered-down or standby state while avoiding perceptible delay when the subsystem is needed.

28. The technology disclosed in the '165 Patent develops this concept by moving power-management awareness into the software execution path. The disclosed operations identify calls or likely calls to device subsystems and compile an instruction stream that includes a device power-management alert before the relevant subsystem call. The advanced notice to wake from a powered-down state allows the subsystem to reach a ready state before the device actually needs it.

29. The claims of the '165 Patent improve computer functionality at the mobile device by placing power-management intelligence in the compilation path, allowing the devices to keep subsystems powered down longer while still waking them early enough to be ready when the compiled instruction stream reaches the subsystem. This specifically includes receiving a thin binary, compiling it into an instruction stream, inserting a device power-management alert before a call to a device subsystem, and then powering that subsystem up from a shutdown state in response to the alert. This is a technical solution to the technical problem of efficient power usage in devices to reduce energy consumption and prolong battery life.

COUNT I: INFRINGEMENT OF THE '165 PATENT

30. Plaintiff incorporates by reference the preceding paragraphs as though fully set forth herein.

Direct Infringement

31. Plaintiff has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '165 Patent.

32. In violation of 35 U.S.C. § 271, Defendants have, and continue to, directly infringe the Asserted Patent either literally or under the doctrine of equivalents by making, using, selling, offering for sale, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the Asserted Patent.

33. By facilitating these sales and deliveries in the United States, including in this District, Defendants engage in infringing acts within the meaning of 35 U.S.C. § 271(a).

34. As an example, Defendants have, and continue to, directly infringe at least Claim 1 of the '165 Patent, literally and/or pursuant to the doctrine of equivalents, by making, using, selling, offering for sale, and/or importing into the United States the Accused Products.

35. Claim 1 of the '165 Patent is reproduced below with the additions of labels, [a], [b], [c], and [d], corresponding to portions of the claim.

1. A method for providing power management at a device comprising:

[a] receiving a thin binary at the device via a communication link configured to receive communications from a remote source, wherein the thin binary includes a call to a device subsystem;

[b] storing the thin binary;

[c] compiling the thin binary at the device to produce an instruction stream including a device power management alert for the device subsystem inserted in the instruction stream before the call to the device subsystem, wherein the device power management alert comprises a probability of use indication for the device subsystem; and

[d] executing the instruction stream at the device, wherein the device subsystem is powered up from a shut down state in response to the power management alert in the instruction stream being executed.

36. The Accused Products meet each and every limitation of at least Claim 1 of the '165 Patent, literally or under the doctrine of equivalents, as described in the non-limiting examples set forth below concerning Samsung's Accused Products. These non-limiting examples are preliminary and are not intended to limit Plaintiff's right to modify or allege that other aspects of the Defendants' Accused Products, or other as of yet unidentified products of Defendants, infringe at least claim 1 of the '165 Patent. The identification of claim 1 is only preliminary and Plaintiff reserves the right to conduct discovery and then allege that additional claims of the '165 Patent are infringed by Defendant.

1. A method for providing power management at a device comprising:

37. The Accused Products each perform a method for providing power management at a device.

38. For example, on information and belief, Samsung's Accused Products, utilizing SmartThings Find/Find My Mobile, provide power management of, for example, Bluetooth Low-Energy ("BLE"), ultra-wideband ("UWB"), network, location/GPS, audio/speaker, display, processor, memory, power-management circuitry and system, and related subsystems on the Accused Products.^{9,10} For purposes of clarity, a representative Accused Product, Samsung's Galaxy S26 Smartphone, is referred to below with screenshots from the SmartThings Find/Find

⁹ The images used herein come from publicly available materials, including marketing materials, and may not fully represent the nuances of the architectures of the Accused Products. Images used in this Complaint is meant to be demonstrative, not limiting.

¹⁰ <https://www.youtube.com/watch?v=gFv1qwE2OmY&t=28s>

My Mobile functionality.¹¹ Other functionalities may also infringe the '165 Patent and Plaintiff reserves the right to identify additional functionality as discovery proceeds. Furthermore, additional Accused Products (e.g., products operating with Android 8 or later) also practice the same or materially similar functionality through device-specific subsystems and communications.

3. Supported Samsung Galaxy Devices

Find My Mobile (SmartThings Find) is compatible with most Samsung Galaxy devices, including:

- Galaxy S24, S25, and S26 series
- Galaxy Z Fold and Z Flip series
- Galaxy A series
- Galaxy Tab and Galaxy Watch devices

1. How to Use Find My Mobile to Track a Lost Phone

Open the SmartThings Find app on another Samsung Galaxy device or visit the [Find My Mobile website](#).

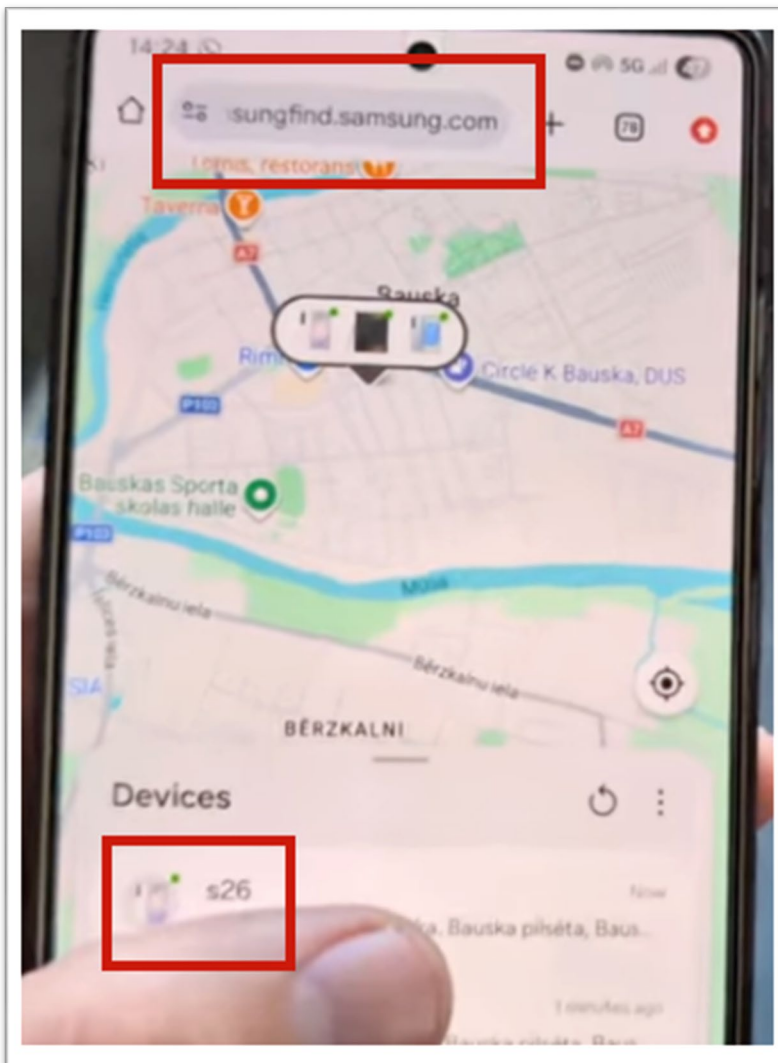
Sign in with the same Samsung account used on the lost device.

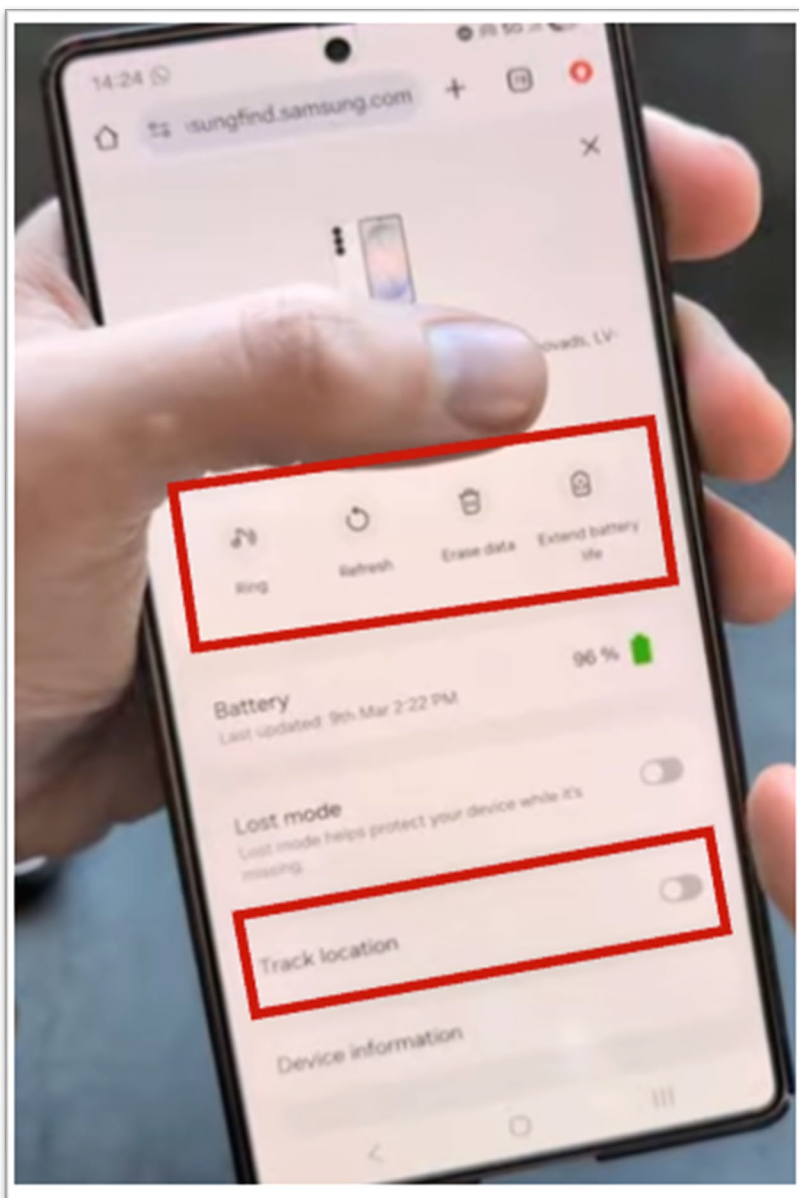
Select the lost device from the list of registered devices.

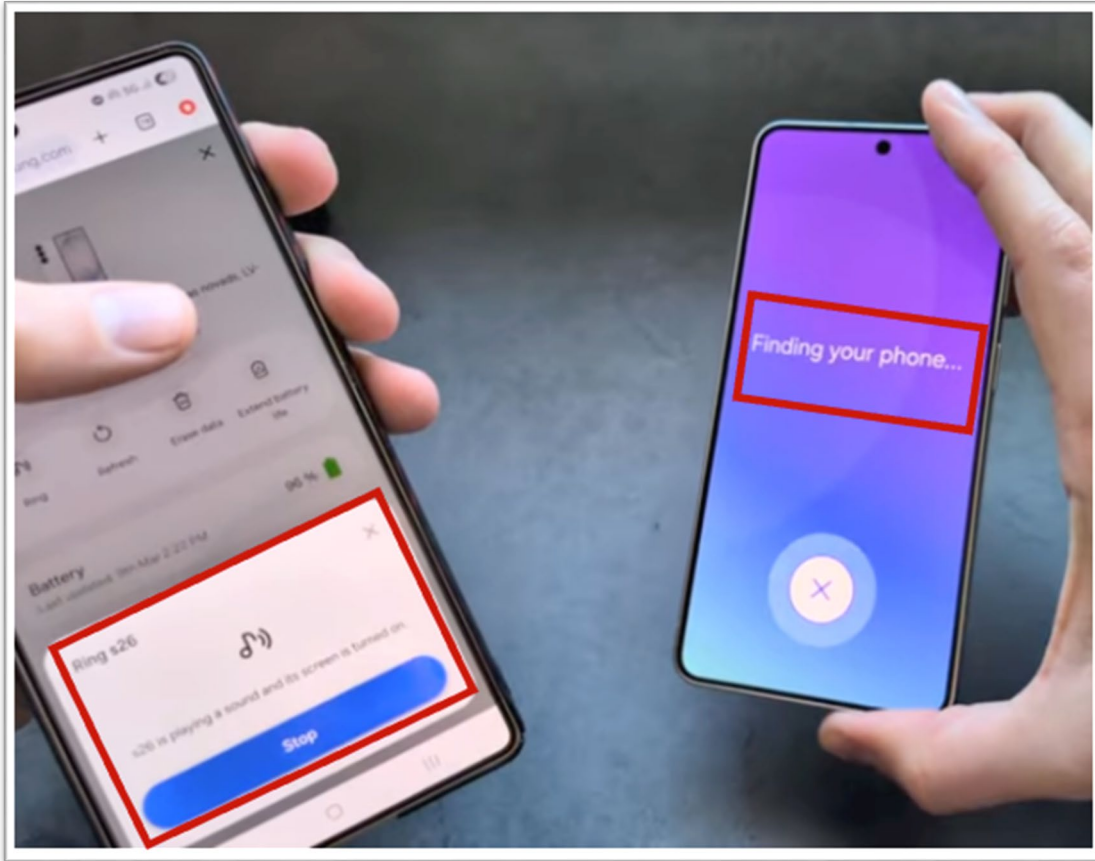
Choose one of the following actions:

- **Track Location:** View the device's current location on a map.
- **Lock:** Remotely lock the device to prevent unauthorized access.
- **Ring:** Make the device ring at maximum volume for one minute, even if it's on silent mode.

¹¹ <https://www.samsung.com/ae/support/mobile-devices/using-find-my-mobile-service-to-track-a-lost-phone/> (Confirming Find My Mobile “now a part of SmartThings Find,” and that this service is compatible with “Galaxy S24, S25, and S26 series.”) ; *see also*, https://www.youtube.com/watch?v=z1pNGW_7e90 (annotated).







39. On information and belief, each of Samsung’s Accused Products provide power management methods of the same or similar subsystems on the Accused Products.

40. In another example, Samsung provides adaptive battery functionality that manages power usage at the Accused Products. In this example, Samsung’s Accused Products “learn[] [the user’s] daily usage habits and adjusts settings on its own to balance battery life and performance.”¹² On information and belief, these systems perform, use, or otherwise cause the Accused Products to perform the claimed steps, as described below.

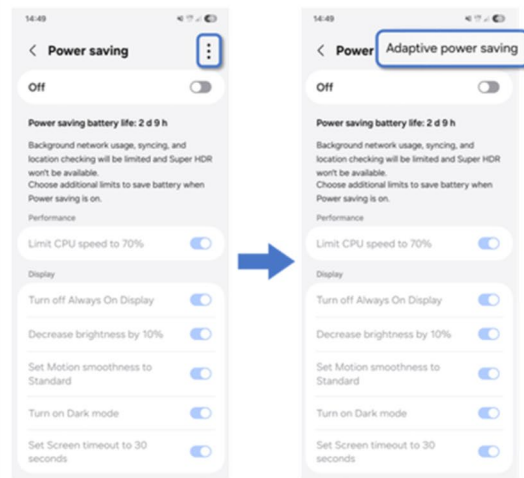
¹² <https://eu.community.samsung.com/t5/tips-how-to/did-you-know-power-saving-on-galaxy-smartphones/ba-p/14197661>; *see also*, <https://www.gizchina.com/how-to/you-should-enable-these-2-hidden-battery-settings-on-your-samsung-galaxy>

2. Adaptive power saving

The **adaptive power saving** turns power saving on and off automatically based on your usage patterns. It simply learns your daily usage habits and adjusts settings on its own to balance battery life and performance.

If you often switch between heavy usage (gaming, video) and quieter moments (reading, scrolling), this feature ensures you get the best performance and better battery time without doing anything manually. It's perfect for users who spend long days away from a charger.

Step 1. Open **Power saving** settings and tap the **3 dots** in the top right corner to access **Adaptive power saving**.



[a] receiving a thin binary at the device via a communication link configured to receive communications from a remote source, wherein the thin binary includes a call to a device subsystem;

41. The Accused Products receive a thin binary at the device via a communication link configured to receive communications from a remote source, wherein the thin binary includes a call to a device subsystem.

42. Samsung's Accused Products receive a thin binary via a communication link from a remote source, and the received thin binary includes one or more calls to one or more device subsystems. On information and belief, the thin binaries received and stored by the Accused Products include, without limitation, downloaded or updated application code, plugin code, add-on code, service code, split-APK or dynamic feature code, DEX bytecode, scripts, rules, handlers,

drivers, firmware, configuration code, and/or other code-like materials. These thin binaries are received from, for example, Samsung, Galaxy Store, Samsung servers, or other remote sources.

43. As described below, the thin binary includes, identifies, or embodies one or more calls, code paths, API calls, commands, instructions, interrupt requests, library calls, metadata, or other instruction-bearing material directed to device subsystems. During compilation, interpretation, optimization, JIT compilation, AOT compilation, firmware loading or other runtime translation, the Accused Products identify, evaluate, or process those subsystem calls and produce executable instructions that call the corresponding subsystem as shown in the preamble mapping immediately above.

[b] storing the thin binary;

44. The Accused Products store the thin binary.

45. On information and belief, the Accused Products contain memory to store the received thin binary at least for the purpose of compiling the materials to produce an instruction stream for executing the command and/or to recall the instruction(s). An exemplary Accused Product, a Samsung Galaxy S26, has technical specifications showing its memory that stores the thin binary.¹³

¹³ https://www.ifixit.com/Device/Samsung_Galaxy_S26

Technical specifications
Display: • 6.3-inch 1080 x 2340 LTPO AMOLED 2X • 120Hz refresh rate • 2600 nits peak brightness, HDR10+ • Gorilla Glass Victus 2
Processor: • Qualcomm SM8850-AC Snapdragon 8 Elite Gen 5 (US/CA) • Exynos 2600 (Global)
Memory: • 12 GB RAM
Storage: • 256 GB or 512 GB UFS 4.0

46. In one example, the thin binary is stored at the Accused Products so that the thin binary may be compiled at install time and/or during runtime of the thin binary.^{14,15}

[c] compiling the thin binary at the device to produce an instruction stream including a device power management alert for the device subsystem inserted in the instruction stream before the call to the device subsystem, wherein the device power management alert comprises a probability of use indication for the device subsystem; and

47. The Accused Products compile the thin binary at the device to produce an instruction stream including a device power management alert for the device subsystem inserted in the instruction stream before the call to the device subsystem, wherein the device power management alert comprises a probability of use indication for the device subsystem.

48. On information and belief, the Accused Products compile, optimize, interpret, just-in-time (“JIT”) compile, and/or ahead-of-time (“AOT”) compile the received and stored thin

¹⁴ <https://source.android.com/docs/core/runtime/jit-compiler>

¹⁵ <https://source.android.com/docs/core/runtime>

binary at the device. For example, Android Runtime (“ART”) on the Accused Products executes DEX bytecode, and Android’s on-device dex2oat tool accepts DEX files as input and generates compiled application executables for the target device.¹⁶

Implement ART just-in-time compiler

Android runtime (ART) includes a just-in-time (JIT) compiler with code profiling that continually improves the performance of Android applications as they run. The JIT compiler complements ART's current ahead-of-time (AOT) compiler and improves runtime performance, saves storage space, and speeds application and system updates. It also improves upon the AOT compiler by avoiding system slowdown during automatic application updates or recompilation of applications during over-the-air (OTA) updates.

Although JIT and AOT use the same compiler with a similar set of optimizations, the generated code might not be identical. JIT makes use of runtime type information, can do better inlining, and makes on stack replacement (OSR) compilation possible, all of which generates slightly different code.

49. ART executes DEX bytecode. At install time, ART compiles apps using the on-device dex2oat tool, which accepts DEX files as input and generates compiled executables for the target device.¹⁷ ART also includes JIT functionality, and when an app runs, ART loads the DEX file and may execute it using available AOT code or through JIT/interpreter paths.¹⁸ On information and belief, the Accused Products use these mechanisms, or functionally equivalent Samsung/Android runtime mechanisms, to compile or otherwise translate thin binary into executable instructions.

50. Thus, stored apps, plugins, add-ons, services, DEX, rules, handlers, drivers, and/or firmware code include and/or constitute thin binaries that the Accused Products compile into

¹⁶ See, <https://source.android.com/docs/core/runtime/jit-compiler>; see also, <https://source.android.com/docs/core/runtime>

¹⁷ *Id.*

¹⁸ *Id.*

executable instructions.¹⁹ The received thin binary and corresponding compiler or runtime functionality may vary by Accused Product type, though they are still compiling required by the claims. For example, in Android-based Galaxy smartphones and tablets, the thin binary at least includes Android application, service, plugin, add-on, split-APK, dynamic-feature, DEX bytecode, or equivalent code compiled, optimized, interpreted, JIT-compiled, or AOT-compiled through Android Runtime, dex2oat, or equivalent Samsung/Android runtime mechanisms. By way of further example, and in other Accused Products, the thin binary at least includes downloaded or updated application code, service code, firmware, drivers, handlers, configuration code, bytecode, scripts, rules, or other code-like materials that are compiled, interpreted, optimized, loaded, linked, or otherwise translated by device-specific runtime, firmware, operating-system, or compiler components. Empire reserves the right to conduct discovery to identify other compilers that may be used by Samsung that would still meet the identified claim limitation.

51. On information and belief, the Accused Products' device power management alert for the device subsystem is inserted in the instruction stream before the call to the device subsystem.

52. On information and belief, during the processing and compiling of the received information, Samsung's device-side software and/or operating system power-management components identify upcoming use of device subsystems and insert, generate, and/or cause power-management alerts before the corresponding subsystem calls so that the relevant subsystem is powered from a shut down, standby, sleep, idle, doze, disabled, restricted, throttled, or low-power state to a ready, active, partially active, or higher-power state before or when the subsystem is needed.

¹⁹ *Id.*

53. In one example, the device-side software may call Android APIs to alert subsystems regarding a change in power status. Namely, Android's PowerManager defines APIs, constants, intents, wake locks, power-save-mode signals, low-power-standby state changes, and related mechanisms for querying and requesting control of a device's power state. On information and belief, the Accused Products' power-management components use these mechanisms, or functionally equivalent mechanisms, to generate or cause power-management alerts before or in connection with subsystem calls.²⁰

String	ACTION_DEVICE_IDLE_MODE_CHANGED Intent that is broadcast when the state of <code>isDeviceIdleMode()</code> changes.
String	ACTION_DEVICE_LIGHT_IDLE_MODE_CHANGED Intent that is broadcast when the state of <code>isDeviceLightIdleMode()</code> changes.
String	ACTION_LOW_POWER_STANDBY_ENABLED_CHANGED Intent that is broadcast when Low Power Standby is enabled or disabled.
String	ACTION_LOW_POWER_STANDBY_POLICY_CHANGED Intent that is broadcast when Low Power Standby policy is changed.
String	ACTION_POWER_SAVE_MODE_CHANGED Intent that is broadcast when the state of <code>isPowerSaveMode()</code> changes.
String	FEATURE_WAKE_ON_LAN_IN_LOW_POWER_STANDBY Signals that wake-on-lan/wake-on-wlan is allowed in Low Power Standby.

int	LOCATION_MODE_GPS_DISABLED_WHEN_SCREEN_OFF In this mode, the GPS based location provider should be disabled when battery saver is on and the device is non-interactive.
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²⁰ <https://developer.android.com/reference/android/os/PowerManager>

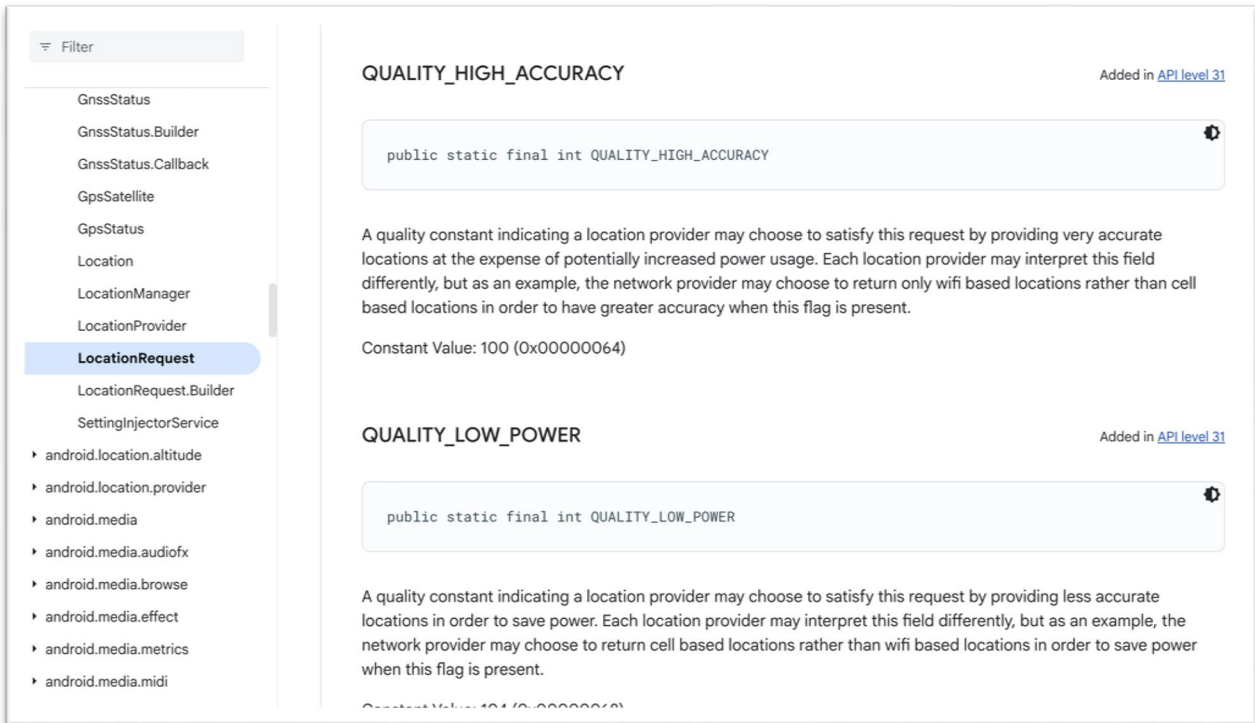
int	LOCATION_MODE_THROTTLE_REQUESTS_WHEN_SCREEN_OFF	In this mode, location will not be turned off, but LocationManager will throttle all requests to providers when the device is non-interactive.
int	LOW_POWER_STANDBY_ALLOWED_REASON_ONGOING_CALL	Exempts apps with ongoing calls.
int	LOW_POWER_STANDBY_ALLOWED_REASON_TEMP_POWER_SAVE_ALLOWLIST	Exempts apps on the temporary powersave allowlist.
int	LOW_POWER_STANDBY_ALLOWED_REASON_VOICE_INTERACTION	Exempts active Voice Interaction Sessions in Low Power Standby.

54. On information and belief, when the Accused Product determines that a subsystem will be needed for a requested operation, Samsung's device-side software and/or Android/Samsung runtime and power-management components generate, insert, or cause wake signals, intents, wake locks, register settings, policy settings, or equivalent power-management notices before or in connection with the subsystem call.

55. On information and belief, the Accused Products' device power management alert comprises a probability of use indication for the device subsystem.

56. The Accused Products produce a power management alert that determines power versus performance based on the device power state. For example, on information and belief, when an Accused Product is going to determine its location, the Accused Product generates or causes a LocationRequest, which provides quality, timing, and power/accuracy parameters that indicate the expected use of location resources and inform how aggressively the location subsystem(s) should operate.²¹

²¹ <https://developer.android.com/reference/android/location/LocationRequest>



57. In another example, on information and belief, the Accused Products include commands that indicate likely or imminent BLE/UWB use, and BLE scan settings such as low-power, balanced, or low-latency modes reflect the power and/or performance level selected for that likely use.²²

²²

https://developer.android.com/reference/android/bluetooth/le/ScanSettings#SCAN_MODE_LOW_LATENCY

```
public static final int SCAN_MODE_BALANCED
```

Perform Bluetooth LE scan in balanced power mode. Scan results are returned at a rate that provides a good trade-off between scan frequency and power consumption.

Constant Value: 1 (0x00000001)

SCAN_MODE_LOW_LATENCY

Added in [API level 21](#)

```
public static final int SCAN_MODE_LOW_LATENCY
```

Scan using highest duty cycle. It's recommended to only use this mode when the application is running in the foreground.

Constant Value: 2 (0x00000002)

SCAN_MODE_LOW_POWER

Added in [API level 21](#)

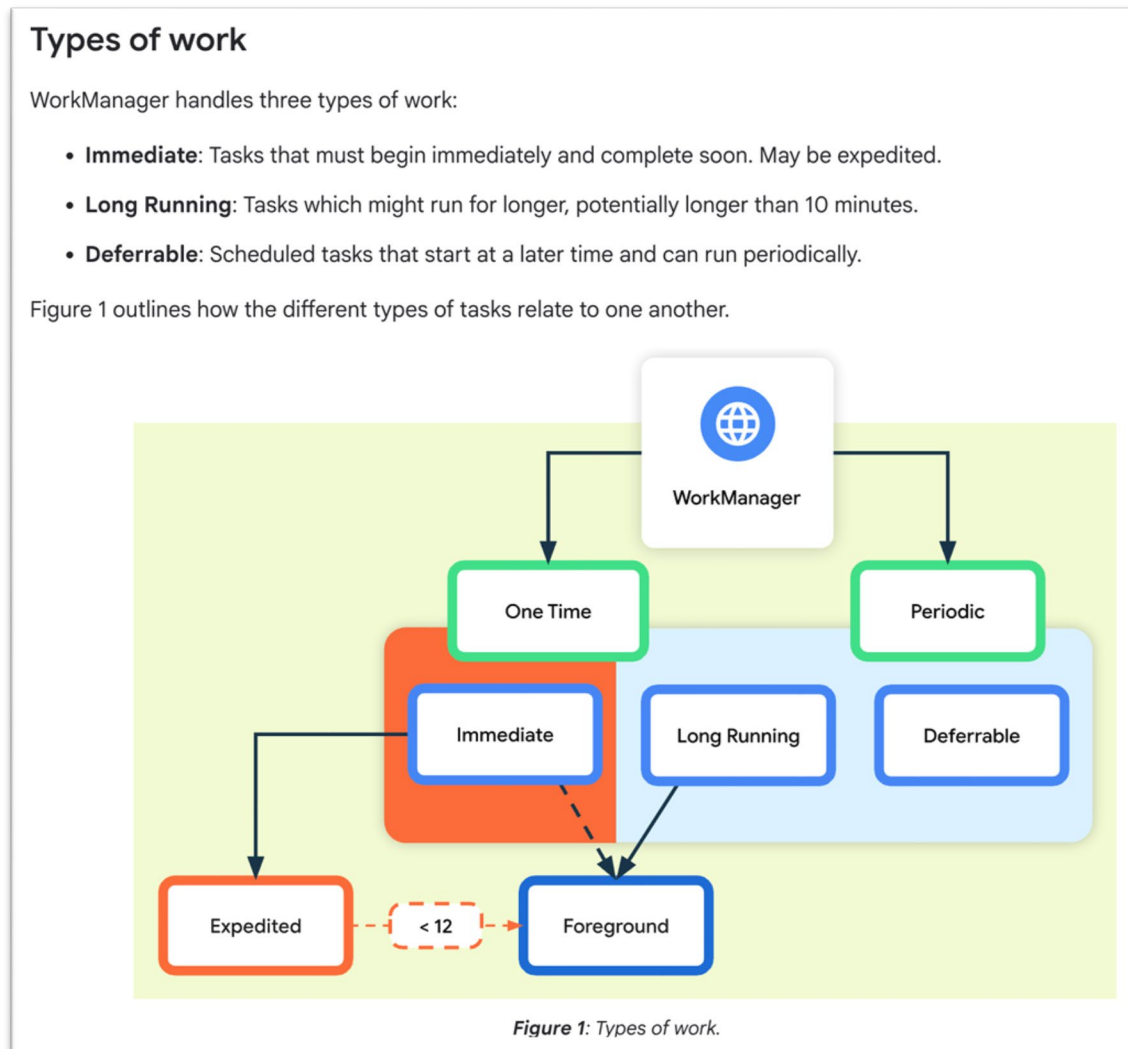
```
public static final int SCAN_MODE_LOW_POWER
```

Perform Bluetooth LE scan in low power mode. This is the default scan mode as it consumes the least power. This mode is enforced if the scanning application is not in foreground.

58. In another implementation, the Accused Products use WorkManager²³, JobScheduler, AlarmManager, PowerManager, or functionally equivalent Android/Samsung scheduling and power-management components to process compiled application, service, plugin, add-on, firmware, or driver code into tasks, work items, jobs, callbacks, or scheduled operations. On information and belief, the urgency, timing, constraints, battery state, network state, device-idle state, and input data associated with such tasks indicate whether a subsystem is likely, imminently, periodically, or conditionally needed and cause Samsung/Android power-

²³ <https://developer.android.com/develop/background-work/background-tasks/persistent>

management components to generate or cause a corresponding power-management alert before or in connection with the subsystem call, which is the claimed probability of use indication.



59. In another example, Samsung's Accused Products implement Android's App Standby Buckets, a power management feature that places each application into a priority bucket based on its predicted usage.²⁴ The buckets are chosen in anticipation of the user's next actions.²⁵ On information and belief, the Accused Products generate, insert, or otherwise cause a power

²⁴ <https://developer.android.com/about/versions/pie/power>.

²⁵ <https://developer.android.com/topic/performance/appstandby>.

management alert that indicates the probability a device subsystem will be used based at least in part on an application's standby bucket. Namely, the App Standby Buckets indicate predicted application or service use. When combined with the compiled thin binary's subsystem calls, those predicted-use classifications inform whether and when the device should permit, defer, throttle, or wake subsystem activity.

The priority buckets are the following:

- [Active](#): app is being used or was used very recently.
- [Working set](#): app is in regular use.
- [Frequent](#): app is often used but not daily.
- [Rare](#): app isn't frequently used.
- [Restricted](#): app consumes a lot of system resources or might exhibit undesirable behavior.

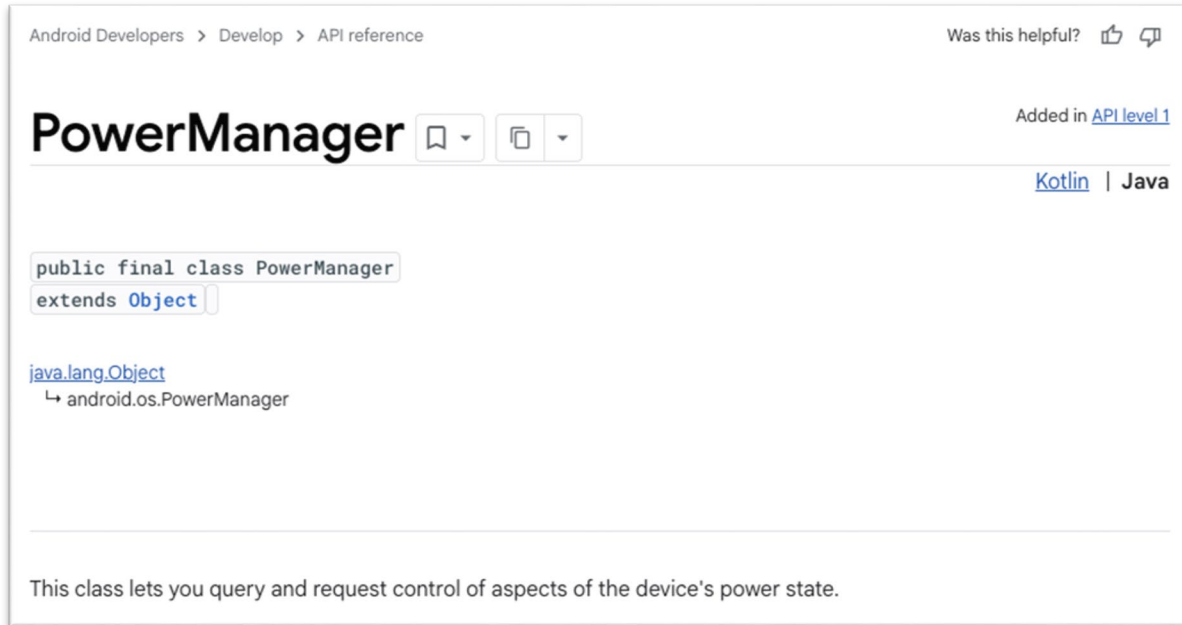
[d] executing the instruction stream at the device, wherein the device subsystem is powered up from a shut down state in response to the power management alert in the instruction stream being executed.

60. The Accused Products execute the instruction stream at the device, wherein the device subsystem is powered up from a shut down state in response to the power management alert in the instruction stream being executed.

61. As explained above, the Accused Products perform various functions via subsystem calls. *Supra*, ¶¶ 37-39. Before the subsystem calls, on information and belief, the one or more relevant subsystems are in a shut down, standby, sleep, idle, doze, disabled, restricted, throttled, or low-power state. In response to the power-management alert or equivalent wake notice, the Accused Products transition the relevant subsystem to a ready, active, partially active, or higher-power state before the subsystem call executes.

62. On information and belief, device-side Samsung software in conjunction with

Android APIs cause subsystems to power up from a lower-power state. One example, on information and belief, is the use of “PowerManager” and/or “LocationManager.”^{26,27} Other APIs may be used and Empire reserves the right to conduct discovery on such issues.



²⁶ <https://developer.android.com/reference/android/os/PowerManager>

²⁷ <https://developer.android.com/reference/android/location/LocationManager>

Android Developers > Develop > API reference

Was this helpful?  

LocationManager

Added in [API level 1](#)

[Kotlin](#) | [Java](#)

```
public class LocationManager
    extends Object
```

[java.lang.Object](#)
↳ [android.location.LocationManager](#)

This class provides access to the system location services. These services allow applications to obtain periodic updates of the device's geographical location, or to be notified when the device enters the proximity of a given geographical location.

63. In one example, and on information and belief, Android's LocationManager provides a "getCurrentLocation" functionality which "may activate sensors in order to compute a new location."²⁸

getCurrentLocation

Added in [API level 31](#)

```
public void getCurrentLocation (String provider,
    LocationRequest locationRequest,
    CancellationSignal cancellationSignal,
    Executor executor,
    Consumer<Location> consumer)
```

Asynchronously returns a single current location fix from the given provider based on the given [LocationRequest](#). This may activate sensors in order to compute a new location, unlike [getLastKnownLocation\(String\)](#), which will only return a cached fix if available. The given callback will be invoked once and only once, either with a valid location or with a null location if the provider was unable to generate a valid location.

64. On information and belief, when the Accused Products are set to determine a

²⁸ *Id.*

location, the Accused Products call Android location functionality that activates location-related subsystems such as GPS/GNSS, network, Wi-Fi/cellular, processor, memory, and power-management circuitry.

65. On information and belief, Samsung configures its applications to work with one or more other Android APIs to cause subsystems of the Accused Products to power up from a shut down state in response to the power management alert in the instruction stream being executed.

Indirect Infringement

66. Defendants have actual knowledge of the '165 Patent, and its infringement thereof described above, at least as of the date of filing of this Complaint.

67. In violation of 35 U.S.C. § 271(b), Defendants knowingly and intentionally induced Samsung's customers and end-users to directly infringe at least Claim 1 of the '165 Patent, either literally or under the doctrine of equivalents. For example, Samsung's customers and end-users directly infringe by operating the Accused Products in accordance with Samsung's instructions to download, install, update, activate, configure, and use the SmartThings Find, Samsung Find and related device-finding features during their ordinary and intended operation.

68. On information and belief, Defendants will take affirmative steps after the filing of this lawsuit to encourage customers and end-users to directly infringe. Among other things, Defendants provide and distribute user instructions, setup prompts, application interfaces, software notifications, technical documentation, demonstrations, videos, customer-support materials, and marketing materials that direct customers and end-users to: (a) download, install, and update the software used to provide the accused functionality; (b) activate and configure SmartThings Find, Samsung Find, Find My Mobile and related functionality; (c) enable the Accused Products to communicate with Samsung servers and other remote sources; (d) initiate device-finding, location

tracking, notification, audio, and related operations; and (e) continue using the Accused Products with the accused functionality enabled. Defendants' instructions are designed to cause customers and end-users to operate the Accused Products in a manner that directly infringes the '165 Patent.

69. The resulting infringement of the '165 Patent is not an incidental, unintended, or unusual consequence of Samsung's instructions. It is the ordinary and intended result of following those instructions, where Samsung designs and distributes the Accused Products so that the accused functionality occurs automatically when customers and end-users perform the actions Samsung directs and encourages. For example, Samsung expressly directs users to track a device's location, ring the device, lock the device, activate location services, and enable device-finding functionality.

70. At a minimum, Defendants have actual notice of the '165 Patent since the filing of this Complaint. Further, on information and belief, Defendants have had, or should have had, knowledge of the inventions claimed in the '165 Patent since at least July 11, 2019, when Empire's parent company, Allied Inventors, offered to sell a patent portfolio to Samsung, including its "Multicore Processing Patent[s]." Samsung ignored this outreach and never responded. On information and belief, this offer prompted, or should have prompted, Samsung to review Allied Inventors' broader patent portfolio. Indeed, a simple search for it and its subsidiaries' patents would have revealed the '165 Patent. On information and belief, Samsung was therefore aware of (or willfully blind to) its infringement of the '165 Patent at least as early as Q3 of 2019.

71. In violation of 35 U.S.C. § 271(c), Defendants are and have been infringing one or more of the '165 Patent's claims, including at least Claim 1, indirectly by contributing to the direct infringement committed by others, such as Samsung's customers and end-users, in this District and elsewhere in the United States. For example, Samsung's customers and/or end-users directly

infringe via their use of the Accused Products in the United States, and/or their manufacture, use, sales, and/or offers for sale in the United States and/or importation into the United States of other products that incorporate the Accused Products in manners that infringe the '165 Patent, including at least Claim 1.

72. On information and belief, Defendants make and sell hardware and software components especially made or especially adapted to practice the invention claimed in the '165 Patent, including at least Claim 1. For example, the Accused Products include software components, such as SmartThings Find, that is specifically designed to implement the accused functionality when used in combination with SmartTags, the SmartThings app, and the Galaxy Watch. These products are (i) a material part of the invention and (ii) not a staple article or commodity of commerce suitable for substantial non-infringing use at least because it is specifically designed to perform the claimed functionality. Any other use of such hardware and/or software would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.

73. On information and belief, Defendants supply hardware, firmware, and/or software, including software drivers, that are especially made or especially adapted to practice the inventions claimed in the '165 Patent, including at least Claim 1, to induce third parties, including for example Samsung's customers and/or end-users, to use the Accused Products in the United States, and/or to make, use, sell, and/or offer for sale in the United States and/or import into the United States other products incorporating the Accused Products in manners that would infringe one or more of the claims of the '165 Patent, including at least Claim 1.

Willful Infringement

74. Plaintiff incorporates by reference the allegations of Paragraph 70. On information

and belief, Plaintiff believes that Defendants had knowledge of their infringement of the '165 Patent and that further discovery will reveal evidence to this effect. Plaintiff reserves the right to amend its complaint to add a claim of willfulness after conducting discovery into Samsung's pre-suit knowledge of its infringement of the '165 Patent.

DAMAGES

75. Defendants' acts of infringement have caused damages to Empire, and Empire is entitled to recover from Defendants damages it has sustained as a result of Defendants' wrongful acts in an amount to be determined at trial.

76. Plaintiff is entitled to, and now seeks to, recover damages in an amount not less than the maximum amount permitted by law caused by Defendants' acts of infringement, including for damages arising before the filing of the Complaint and an ongoing royalty, and, in any case, no less than a reasonable royalty, pursuant to 35 U.S.C. § 284, together with interest and costs as fixed by the Court.

77. Plaintiff is also entitled to equitable and injunctive relief.

78. On information and belief, Plaintiff believes discovery will show that Defendants' infringement of the '165 Patent is willful and deliberate and, if so, that it will justify treble damages pursuant to 35 U.S.C. § 284. Plaintiff reserves the right to amend its complaint to add a claim for willful infringement and treble damages pursuant to § 284.

79. Empire further seeks any other damages to which it would be entitled to in law or in equity.

PRAYER FOR RELIEF

80. WHEREFORE, Empire prays for judgment and requests that the Court find in its favor and against Defendants. Plaintiff respectfully requests that the Court enter preliminary and

final orders, declarations, and judgments against Defendants as are necessary to provide Empire with the following relief:

- a. A judgment that Defendants have infringed and/or are infringing one or more claims of the Asserted Patent, literally or under the doctrine of equivalents, and directly or indirectly, as alleged above;
- b. An award for all damages and costs arising out of Defendant's infringement, to adequately compensate Empire for Defendants' infringement of the Asserted Patent, but in no event less than a reasonable royalty, including an accounting of damages up to any verdict as well as supplemental damages for any continuing post-verdict infringement up until entry of the final judgment, with an accounting, as needed;
- c. Pre-judgment and post-judgment interest, jointly and severally, in an amount according to proof;
- d. An accounting of damages and any future compensation due to Empire for Defendants' infringement (past, present, or future) not specifically accounted for in a damages award (or other relief), and/or permanent injunctive relief;
- e. A judgment pursuant to 35 U.S.C. § 283 permanently enjoining Defendants and any of their officers, directors, agents, servants, subsidiaries, affiliates, divisions, branches, parents, and/or those in association with them from further infringing the Asserted Patent during the duration of its patent term;
- f. A judgment that this case is exceptional and an award of reasonable attorneys' fees as provided by 35 U.S.C. § 285 and enhanced damages as provided by 35 U.S.C. § 284;
- g. An award of costs of suit;
- h. All further relief in law or in equity as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

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

Dated: July 31, 2026

Respectfully submitted,

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