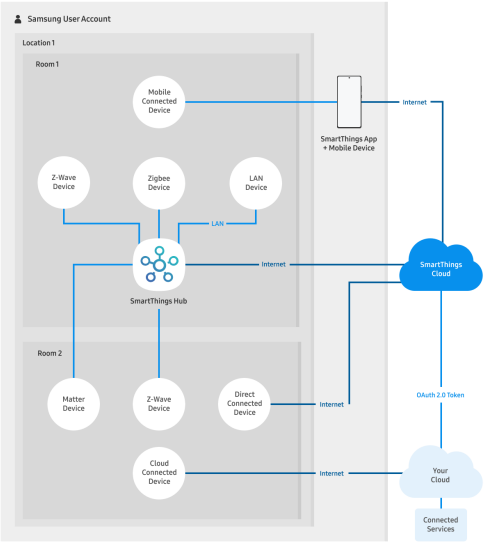
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

The Accused Samsung '650 Products include numerous smart devices sold by Samsung that are configured to work within Samsung's SmartThings cloud/platform. In fact, Samsung encourages its customers through numerous webpages to connect these devices to make a SmartThings network. As will be shown in more detail herein, these products include SmartThings cloud/platform, SmartThings Wi-Fi, smartphones, and refrigerators with a display. *See e.g.*, the following webpages and excerpts confirming that these Samsung devices all are configured to form an infringing system.

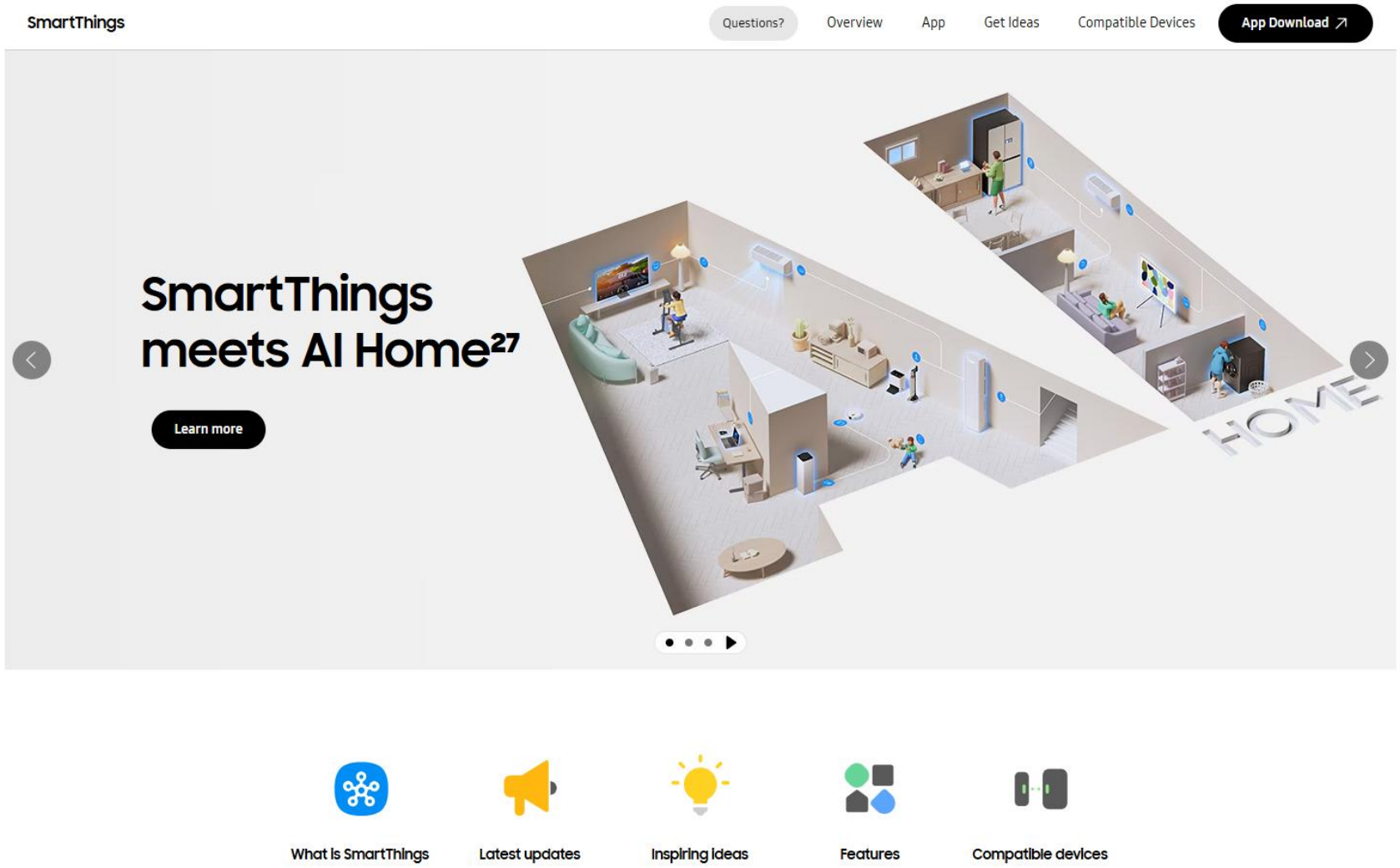
- https://www.samsung.com/us/smartthings/
- https://www.samsung.com/us/smart-home/smartthings-wifi/single/samsung-smartthings-wifi-1-pack-et-wv525bwegus/
- https://www.samsung.com/us/smart-home/smartthings-wifi/multi-packs/samsung-smartthings-wifi-3-pack-et-wv525kwegus/
- https://www.samsung.com/us/mobile/
- https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity

SmartThings cloud/platform:

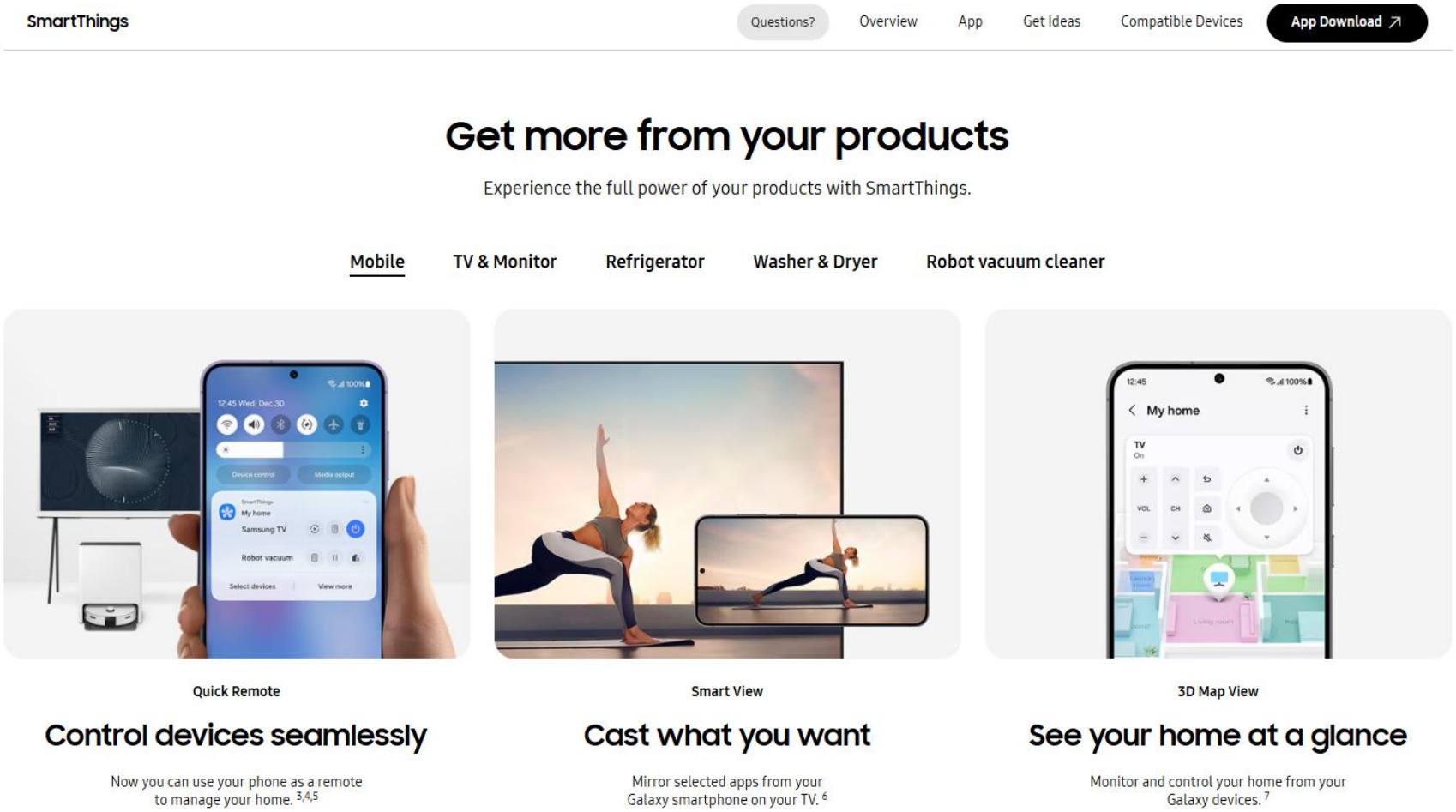


https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

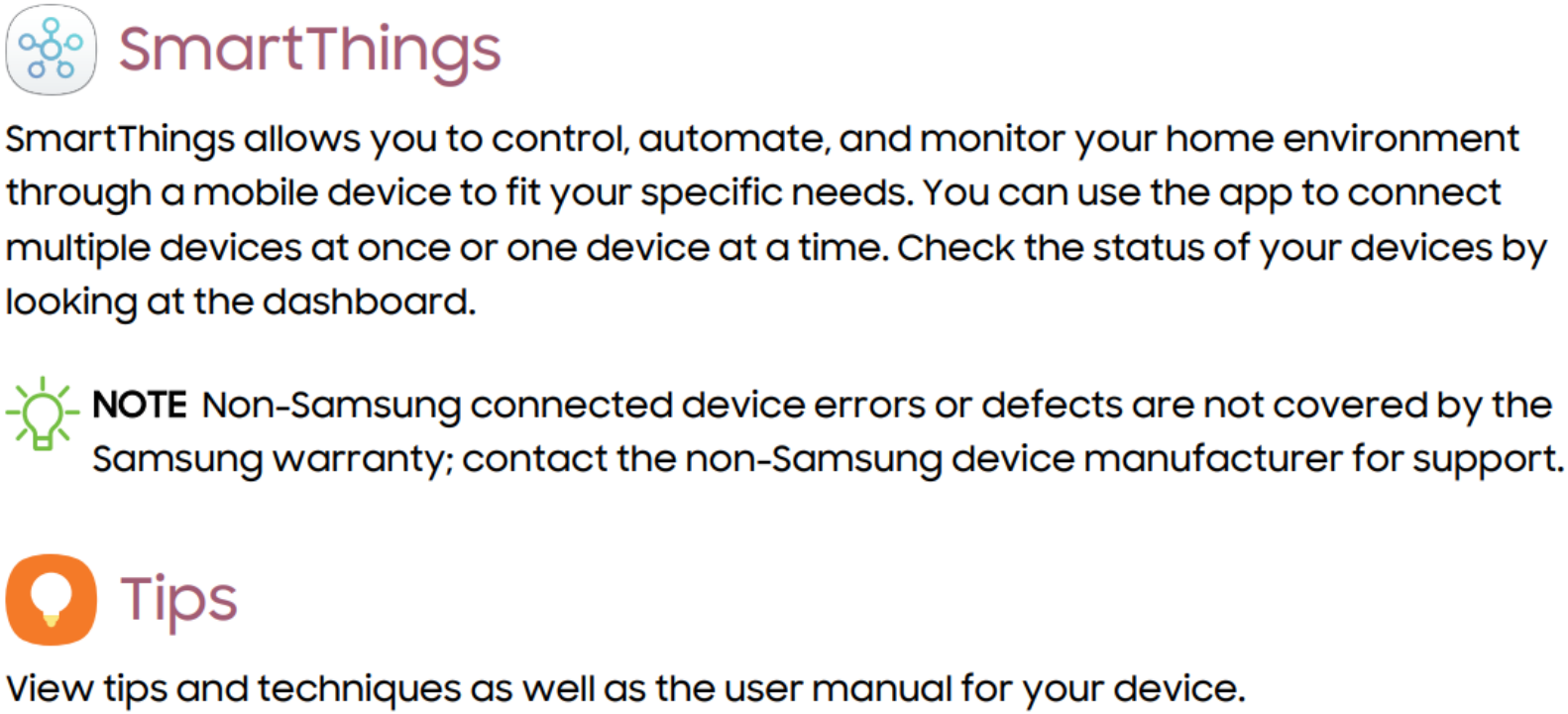


https://www.samsung.com/us/smartthings/#what-is-smartthings



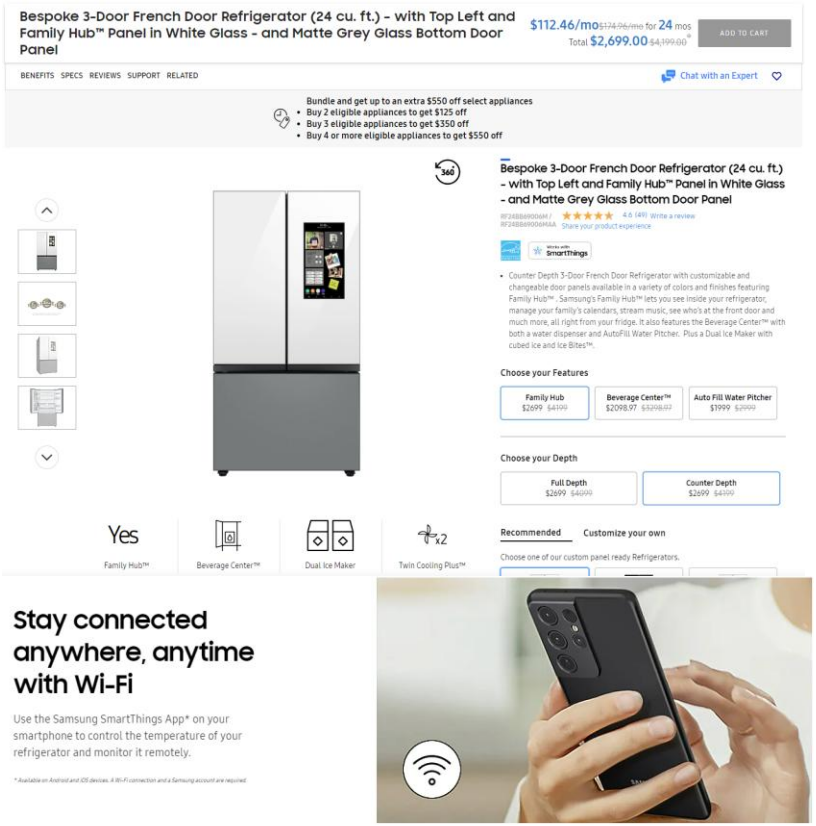
Id.

Smartphones:



Galaxy S23 Ultra technical specification; https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf at 76.

Refrigerators:



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

Maxell further discloses that the claims are infringed directly and/or indirectly, literally and/or under the doctrine of equivalents, infringed by inducement, and infringed by contributory infringement by Samsung and the SmartThings cloud/platform, through its manufacture, use, sale, offer for sale, and/or importation into the United States of the Accused Samsung '650 Products. Such infringement includes divided infringement. For example, to the extent Samsung argues that the Accused Samsung '650 Products do not literally include a particular component (e.g., storage, controller, or display) to perform the claimed function, Maxell contents that the Accused Samsung '650 Products in conjunction with the SmartThings cloud/platform infringe under the doctrine of equivalents because the Accused Samsung '650 Products in conjunction with the SmartThings cloud/platform controller include software and hardware that are at least an equivalent to a storage/controller, or display of the subsidiary or main terminal. This is because the

identified structures perform substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed element. The function of both is to store, process, and/or display information to manage the smart home ecosystem by processing user inputs and controlling communications between the main and subsidiary terminals. They accomplish this in the same way, by receiving commands from the user via the SmartThings app, executing logic, and transmitting control signals over a network. The result is identical: the main and subsidiary terminals are controlled according to the user's commands, and their status is managed across the system by using a distributed system. The '650 Patent supports this contention by disclosing that "it is also possible to acquire information by accessing the information providing server 610."

Each of these products infringe for the reasons and theories as set forth herein as they operate the same way by forming a SmartThings cloud/platform that uses one or more protocols (*e.g.*, Matter protocol) for communicating. All of the above are incorporated herein by reference in the following chart. For example, as shown in this Appendix and Appendix 11, technical specifications show that each of the Accused Samsung '650 Products include all necessary hardware, operating systems, and software required by each of claims 1 and 4 of the '650 Patent. For example, each of the Accused Samsung '650 Products include a main terminal (*e.g.*, a Galaxy smartphone or Family Hub refrigerator) with a storage, a display, and a first controller, and a plurality of subsidiary terminals (*e.g.*, a Galaxy watch or another smart appliance with a second display and a second controller (*e.g.*, family hub refrigerator), where the main terminal stores device specific ID information and association information to transmit specific content to a specific subsidiary terminal that has been connected and authenticated. *See, e.g.*, Appendices 2 and 11 (identifying the technical specifications of the Accused Samsung '650 Products confirming the same). Thus, each of the Accused Samsung '650 Products infringes based on the same theories as shown in Appendix 2 because they include the same components and implement the same functionalities when transmitting personalized content or device notifications from a main terminal to a subsidiary terminal within the SmartThings ecosystem as shown in Appendix 2.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
[1.pre] A contents reproducing system comprising:	Two or more of the Accused Samsung '650 Products is or acts as a contents reproducing system.[1] *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website showing that each of the devices is or acts as a contents reproducing system (*e.g.*,

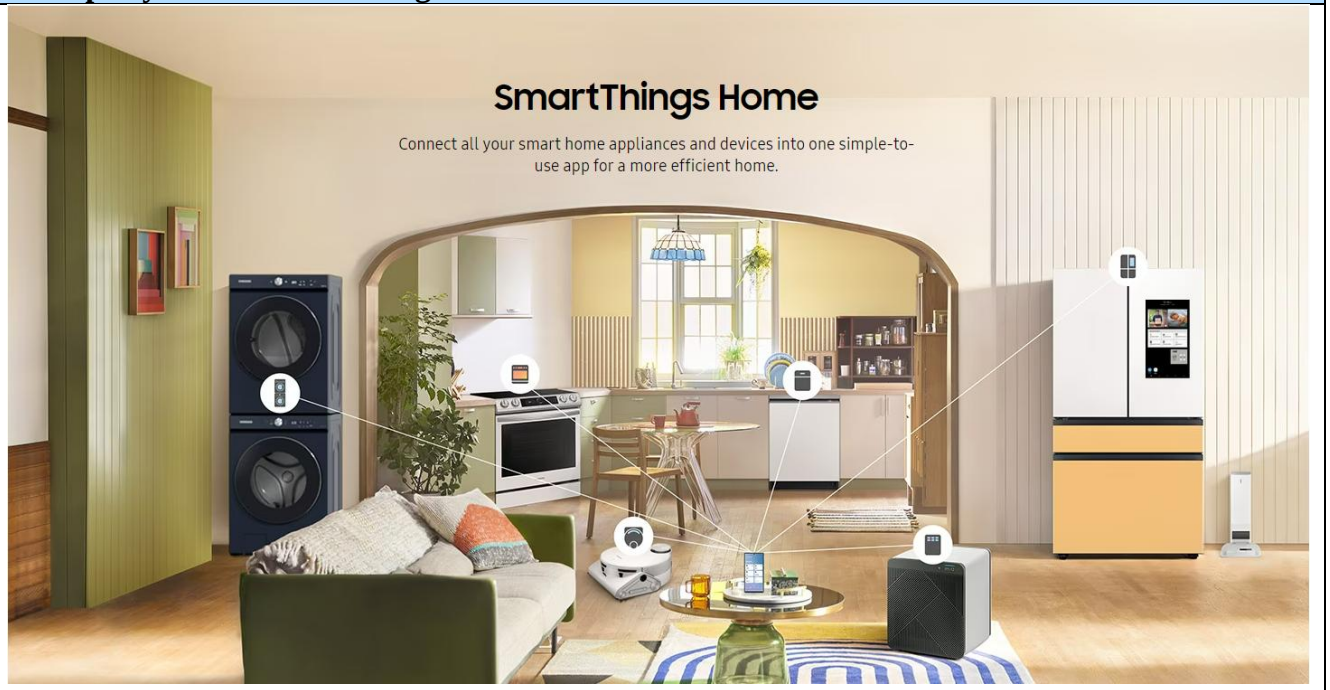
[1] The Accused Samsung '650 Products include Samsung's SmartThings cloud/platform, smartphones, and refrigerators. These include at least the following models and additional models that operate in a similar manner to communicate with each other: the SmartThings cloud/platform, the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G,

Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold7, Galaxy Z Flip7, Galaxy Z Flip7 FE, Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE, Bespoke Counter Depth 4-Door Flex™ Refrigerator (23 cu. ft.) with Family Hub™ + in Charcoal Glass Top and Stainless Steel Bottom Panels , Bespoke 4-Door French Door Refrigerator (29 cu. ft.) – with Top Left and Family Hub™ Panel in Charcoal Glass - and Matte Black Steel Middle and Bottom Door Panels , Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel , Bespoke 4-Door French Door Refrigerator (23 cu. ft.) – with Top Left and Family Hub™ Panel in Charcoal Glass - and Matte Black Steel Middle and Bottom Panels , Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel , 26.5 cu. ft. Large Capacity 3-Door French Door Refrigerator with Family Hub™ and External Water & Ice Dispenser in Black Stainless Steel , 29 cu. ft. Smart 4-Door Flex™ Refrigerator with Family Hub™ and Beverage Center in Stainless Steel , 23 cu. ft. Smart Counter Depth 4-Door Flex™ refrigerator with Family Hub™ and Beverage Center in Black Stainless Steel , 22 cu. ft. Counter Depth Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel , 26.7 cu. ft. Large Capacity Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel , Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Family Hub™ in Charcoal Glass , Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Family Hub™ in Charcoal Glass , Bespoke 3-Door French Door Refrigerator (30 cu. ft.) - with Family Hub™ in White Glass , 25 cu. ft. Mega Capacity Counter Depth 3-Door French Door Refrigerator with Family Hub™ in Stainless Steel , Bespoke 23 cu. ft. Counter Depth 4-Door Flex™ Refrigerator with AI Family Hub™+ & AI Vision Inside™ in Stainless Steel , 30 cu. ft. Mega Capacity 3-Door French Door Refrigerator with Family Hub™ in Stainless Steel , Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) with AI Family Hub™+ and AI Vision Inside™ in Stainless Steel , Bespoke 23 cu. ft. Counter Depth 4-Door French Door Refrigerator with AI Family Hub™+ AI Vision Inside™ in Charcoal Glass and Black/Charcoal , Bespoke 23 cu. ft. Counter Depth 4-Door French Door Refrigerator with AI Home & AI Vision Inside™ in Charcoal Glass and Stainless Steel, Bespoke 29 cu. ft. 4-Door French Door Refrigerator with AI Family Hub™+ & AI Vision Inside™ in Charcoal Glass and Black/Charcoal , Bespoke 29 cu. ft. 4-Door French Door Refrigerator with AI Home & AI Vision Inside™ in Charcoal Glass and Stainless Steel , and similar Samsung refrigerators with SmartThings functionalities.

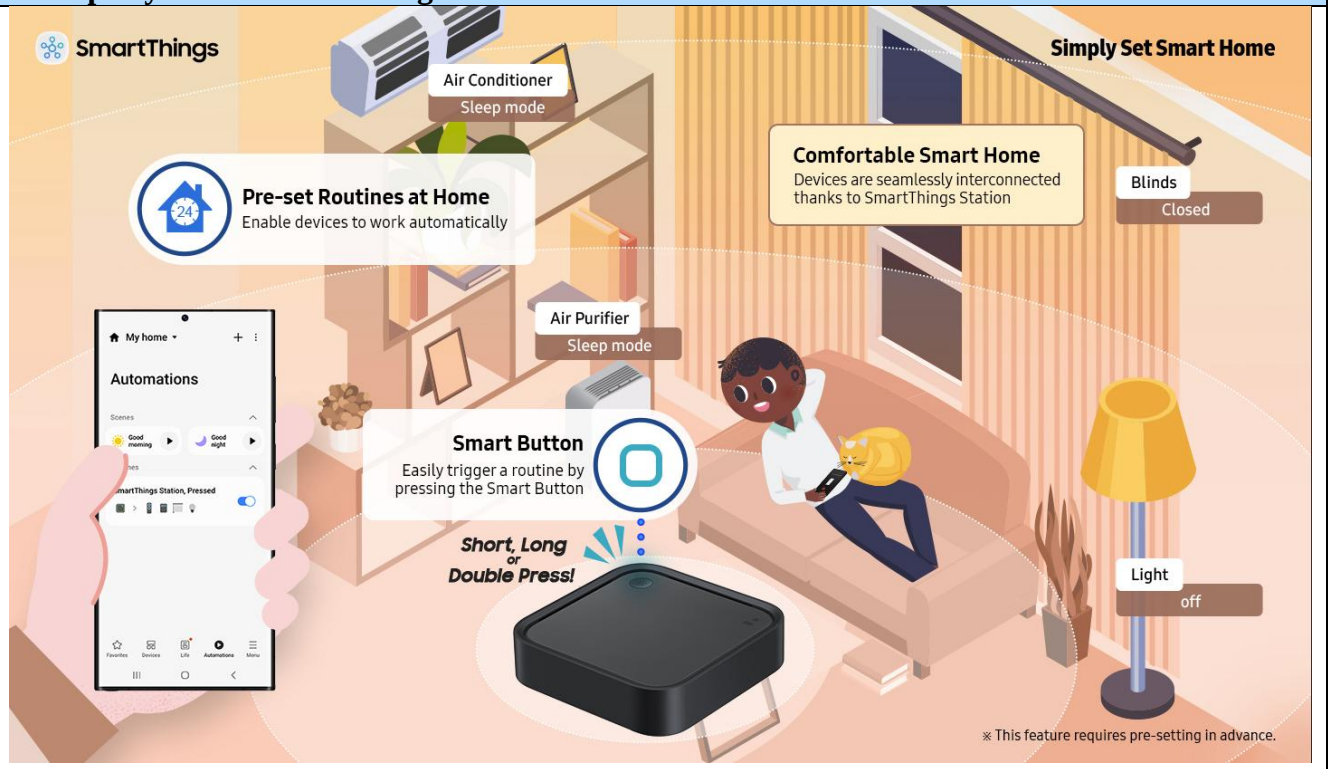
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings cloud/platform connects with Samsung devices using SmartThings App or Family Hub™ or equivalent using protocols (*e.g.*, Matter protocol)). (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, a contents reproducing system includes the SmartThings cloud/platform and one or more of the remaining Accused Samsung '650 Products that communicate (*e.g.*, via WiFi and/or Bluetooth) and exchange contents with each other using the SmartThings cloud/platform for display. The exchanged contents are, *e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations for reproduction on a display or storage in one or more databases/medium. For example, the following screenshots and evidences below are representative of the Accused Samsung '650 Products included in the SmartThings cloud/platform. *See e.g.*,

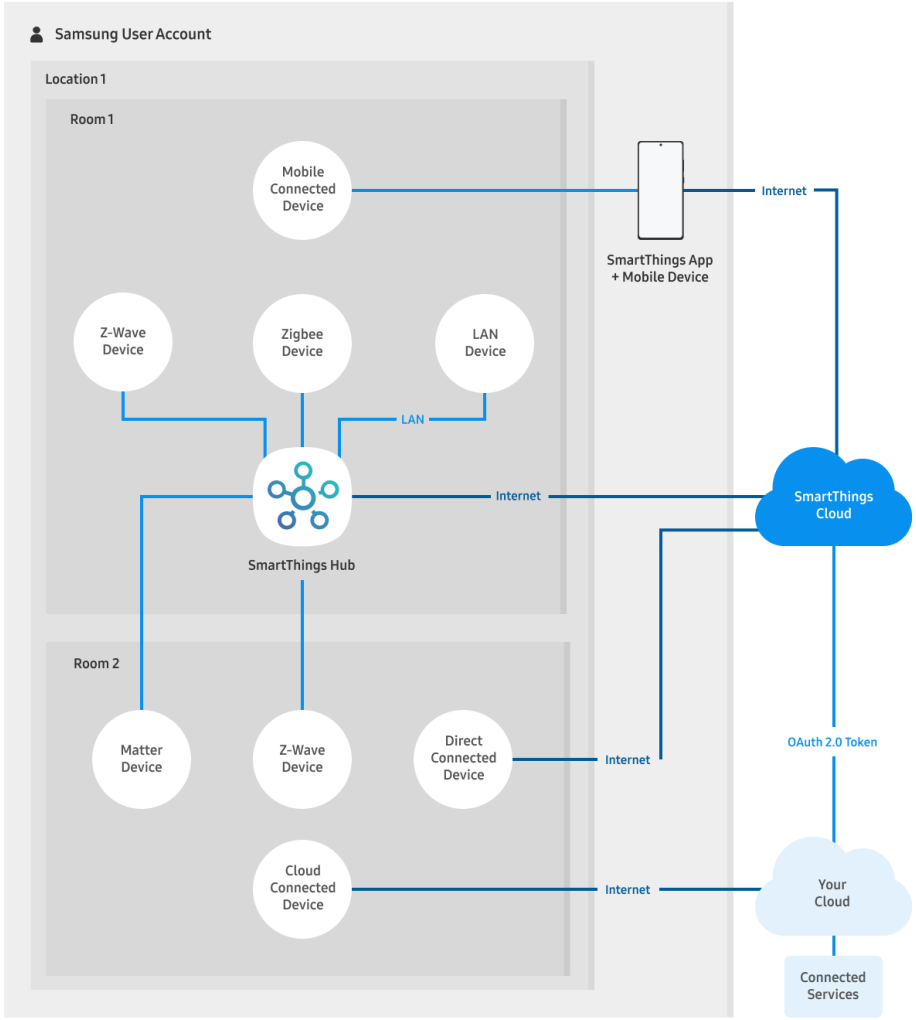
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://www.samsung.com/us/home-appliances/smartthings/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ Matter, a new industry protocol created by hundreds of leading and innovative companies (including Samsung), marks a new era for the smart home and its users. With a mission of simplifying the connected living experience, Matter makes it easy for users to buy, set up, and control smart devices. And while the new protocol is stirring a lot of buzz, many are wondering "how does it work?" SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi via different protocols and sharing information; https://blog.smartthings.com/stories/everything-you-need-to-know-about-matter/ **That's exciting! Is Matter a new kind of radio technology?** Nope. Matter is an "application layer", which means it can run over technologies already in your homes or devices — like Wi-Fi or Thread. Think of it like this: you and I can both have the same radio, but unless we speak the same language, we can't really do anything interesting together. Technologies like Wi-Fi and Thread let you connect your devices, and Matter is the language they speak to each other. *Id.*

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings Platform The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Device Profiles A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile. Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/device-profiles/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Below is a list of currently supported categories. The Platform provides a default icon based on the category specified for the device. • AirConditioner • AirPurifier • AirQualityDetector • Battery • Blind • BluRayPlayer • BluetoothCarSpeaker • BluetoothTracker • Bridges • Button • Camera • Car • Charger • ClothingCareMachine • CoffeeMaker • ContactSensor • Cooktop • Cooktop • CubeRefrigerator • CurbPowerMeter • Dehumidifier • Dishwasher • Door • DoorBell • Dryer • Earbuds • ElectricVehicleCharger • Elevator • Fan • Feeder • Flashlight • GarageDoor • GasValve • GasMeter • GenericSensor

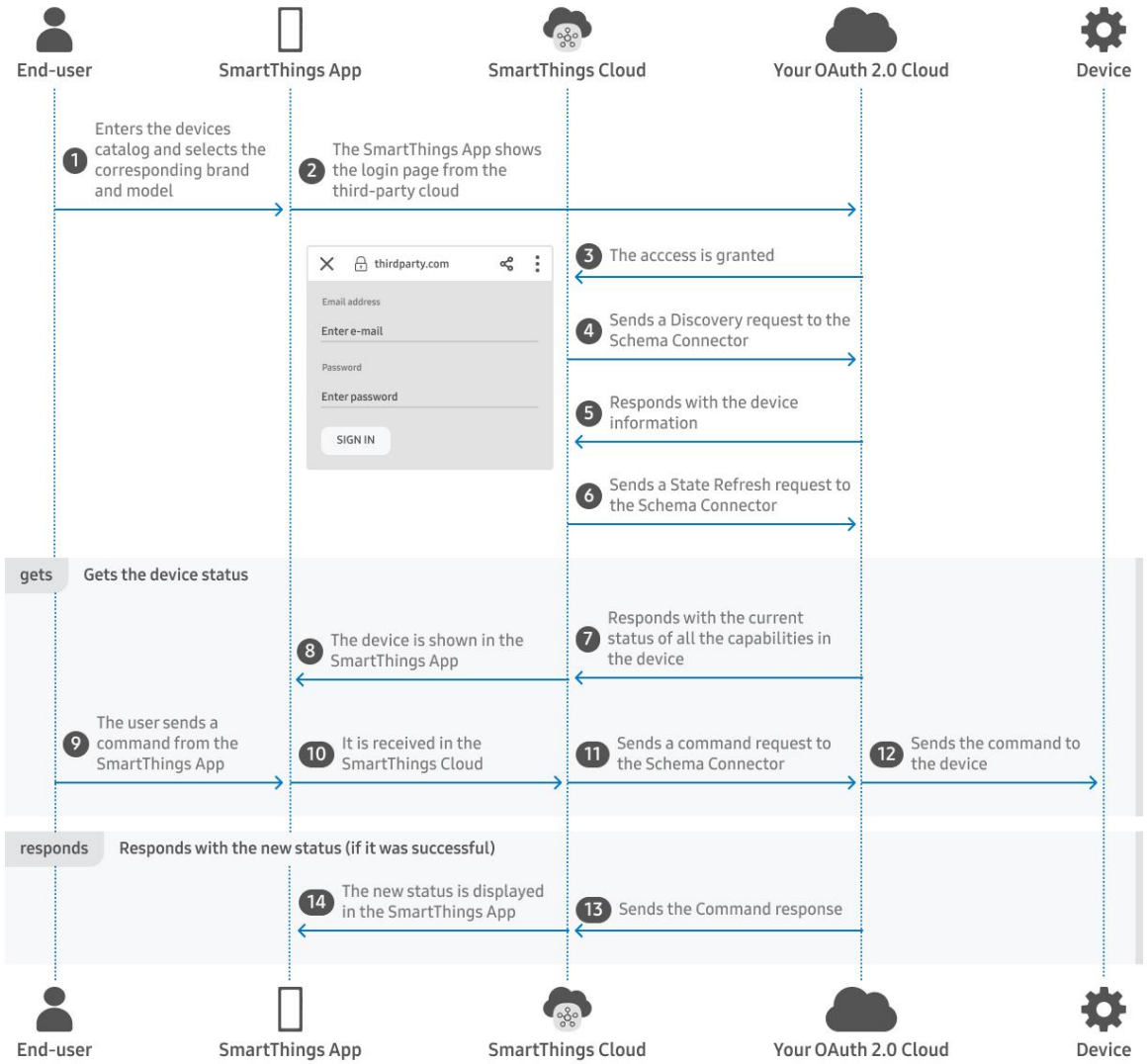
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• HealthTracker • Heatedmattresspad • HomeTheater • Hub • Humidifier • HumiditySensor • IrRemote • Irrigation • KimchiRefrigerator • KitchenHood • LeakSensor • Light • LightSensor • MicroFiberFilter • Microwave • MobilePresence • MotionSensor • MultiFunctionalSensor • NetworkAudio • NetworkAudio • Networking • Others • Oven • PresenceSensor • Printer • PrinterMultiFunction • Projector • Range • Receiver • Refrigerator • RemoteController • RiceCooker • RobotCleaner • ScaleToMeasureMassOfHumanBody • Scanner • SecurityPanel • SetTop • Shade • ShoesCareMachine • Siren • SmartLock

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• SmartPlug • SmokeDetector • SolarPanel • SoundSensor • SoundMachine • Speaker • StickVacuumCleaner • Stove • Switch • Television • TempSensor • Thermostat • Tracker • UPnPMediaRenderer • Vent • VisionSensor • VoiceAssistance • Washer • WaterHeater • WaterValve • WaterPurifier • WiFiRouter • Window • WineCellar *Id.* **Add a Device Profile** Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Get Started with Direct Connected Devices Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the **Capabilities** of your device. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/get-started/ **Get Started with Cloud Connected Devices** Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector. SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform: • SmartThings Schema • SmartApps Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/ The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

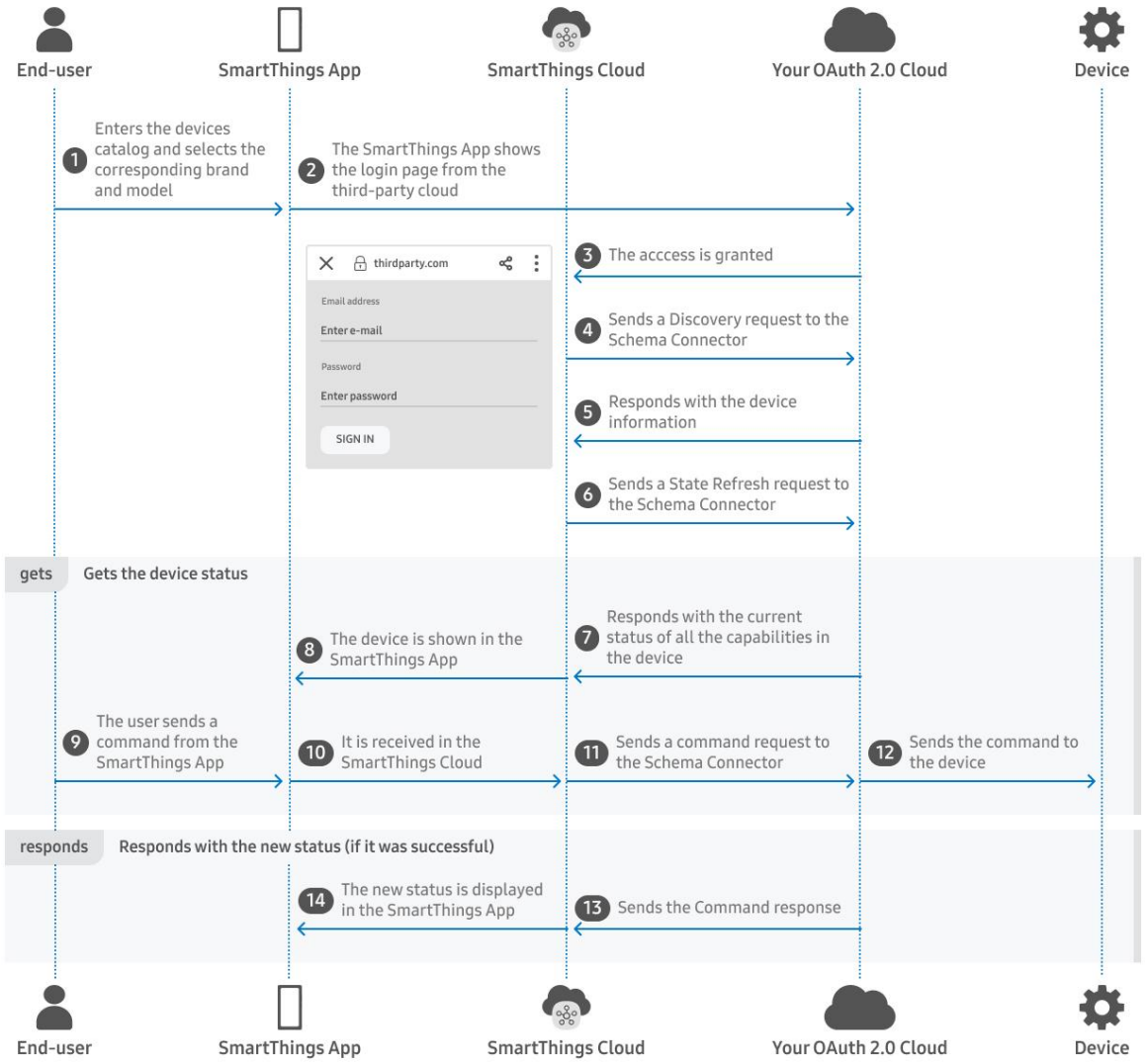


SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/connected-services/smartapp-basics **Using SmartApps to Connect Your Devices** Your Cloud does not need to support OAuth 2.0 when using SmartApps. SmartApps offer a more customizable method for integrating your products with the SmartThings Platform. They provide a method of building custom experiences, allowing you to create unique onboarding experiences, enhance Device functionality, and provide custom integrations with third-party services. Note that while a SmartApp can be used to integrate your Cloud Connected Device with the SmartThings Platform, that is not the only function a SmartApp can perform. This integration relies on a developer registering an HTTP Webhook URL or an AWS Lambda function in the Developer Workspace, which is then authorized to leverage the SmartThings Platform APIs. *Id.* The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started With Mobile Connected Devices

A Mobile Connected Device communicates with the SmartThings Platform via a mobile device, such as a Samsung Galaxy Smartphone. There are two types of Mobile Connected Devices:

- Bluetooth Devices
- SmartThings Find Devices

Bluetooth Devices

Bluetooth devices function differently than the other devices supported by SmartThings. Notably, they cannot be incorporated into Automations or Scenes.

Bluetooth devices paired to a Samsung Galaxy phone are automatically displayed in the SmartThings app. Tapping a Bluetooth device in the SmartThings app will show the available settings and controls for the device. You can also control media playing on a connected bluetooth device from the SmartThings app.

Bluetooth devices connected to a non-Samsung or iOS phone will not be displayed in the SmartThings clients.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange information; https://developer.smartthings.com/docs/devices/mobile-connected/get-started/

SmartThings Find Devices

A SmartThings Find Device is a BLE (Bluetooth Low Energy) device compatible with the SmartThings Find service.

SmartThings Find uses BLE and UWB (ultra-wideband) technologies to help you quickly locate your connected devices. By using AR in conjunction with maps and sounds, SmartThings Find offers a simple and visual solution to help guide you to your missing device.

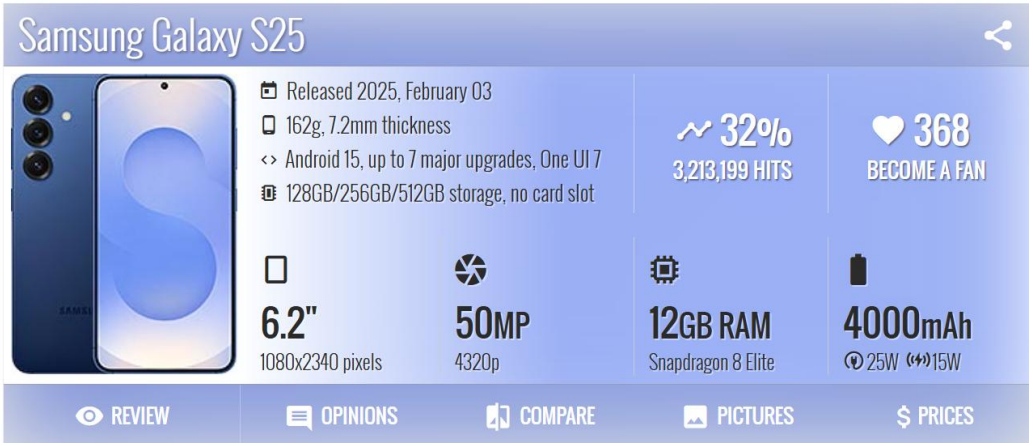
With SmartThings Find, you can locate your missing device, even if it is offline. SmartThings users can opt in to securely use their Galaxy smartphone or tablet to help others locate their lost devices. Once a device has been offline for 30 minutes, it produces a BLE signal that can be received by other devices. If you report your device as lost via SmartThings Find, any nearby Galaxy smartphone or tablet that has opted into helping find misplaced devices can alert the Samsung server about its location, which will in turn notify you.

All SmartThings Find user data is encrypted and securely protected, ensuring that the device's location is not revealed to anyone except its owner.

For information on how you can make your device compatible with SmartThings Find, **submit a request here**.

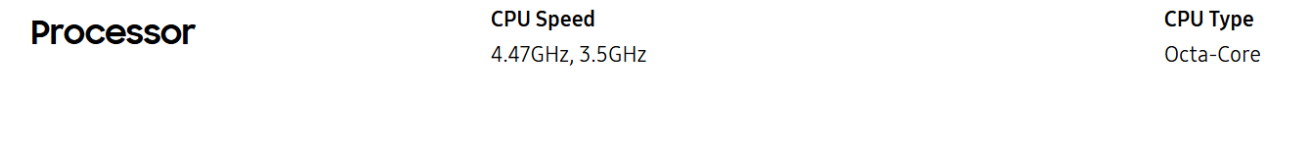
Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Samsung Galaxy S25  https://www.gsmarena.com/samsung_galaxy_s25-13610.php  Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



PLATFORM		
	OS	Android 15, up to 7 major Android upgrades, One UI 7
	Chipset	Qualcomm SM8750-AC Snapdragon 8 Elite (3 nm)
	CPU	Octa-core (2x4.47 GHz Oryon V2 Phoenix L + 6x3.53 GHz Oryon V2 Phoenix M)
	GPU	Adreno 830 (1200 MHz)

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e/7, tri-band, Wi-Fi Direct
	Bluetooth	5.4, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

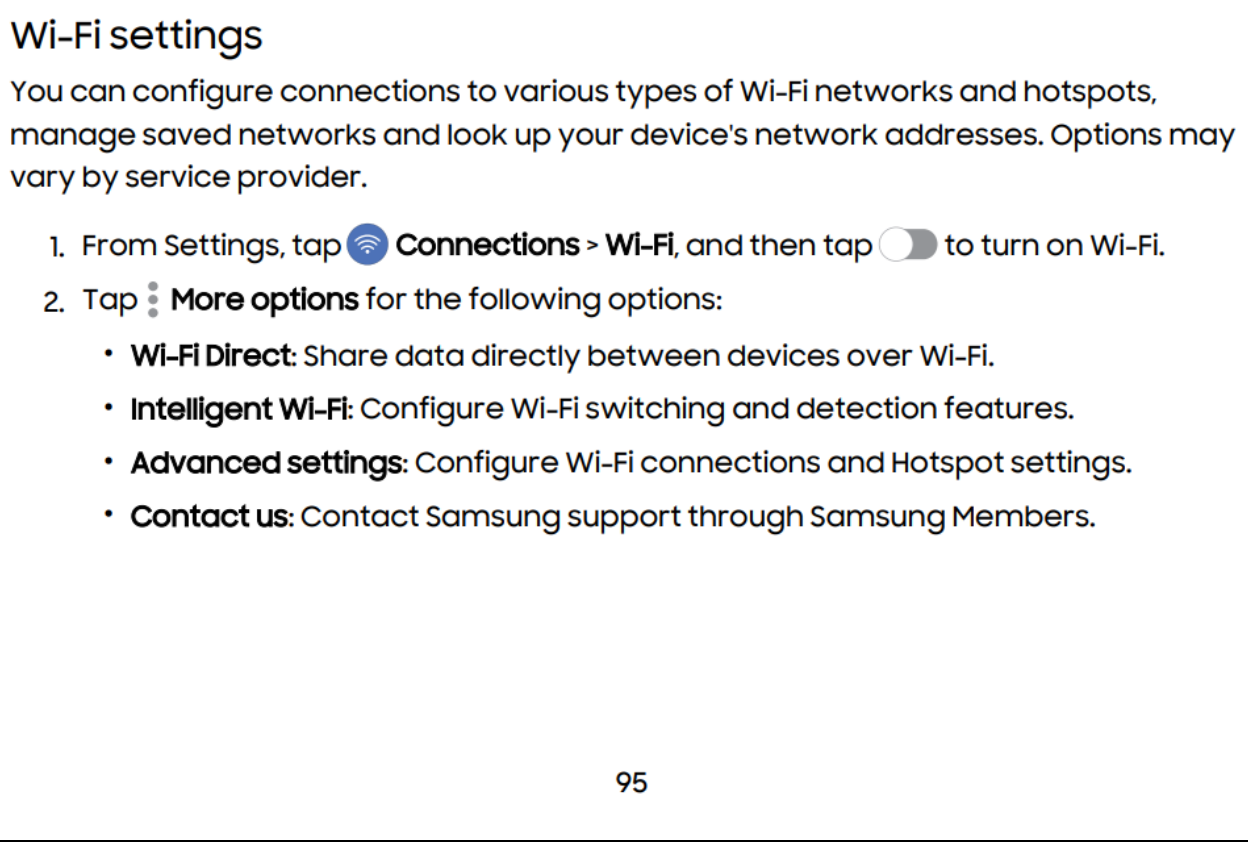
94

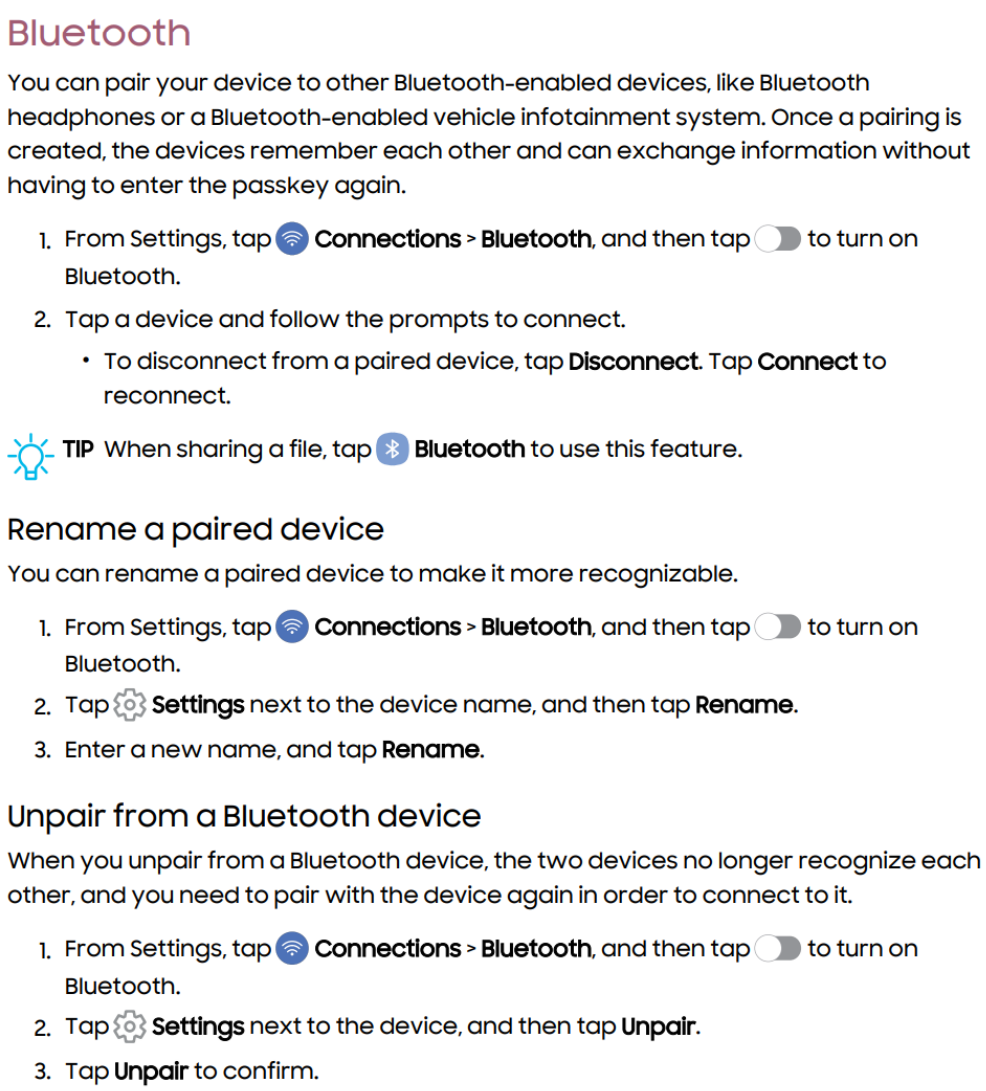
Settings

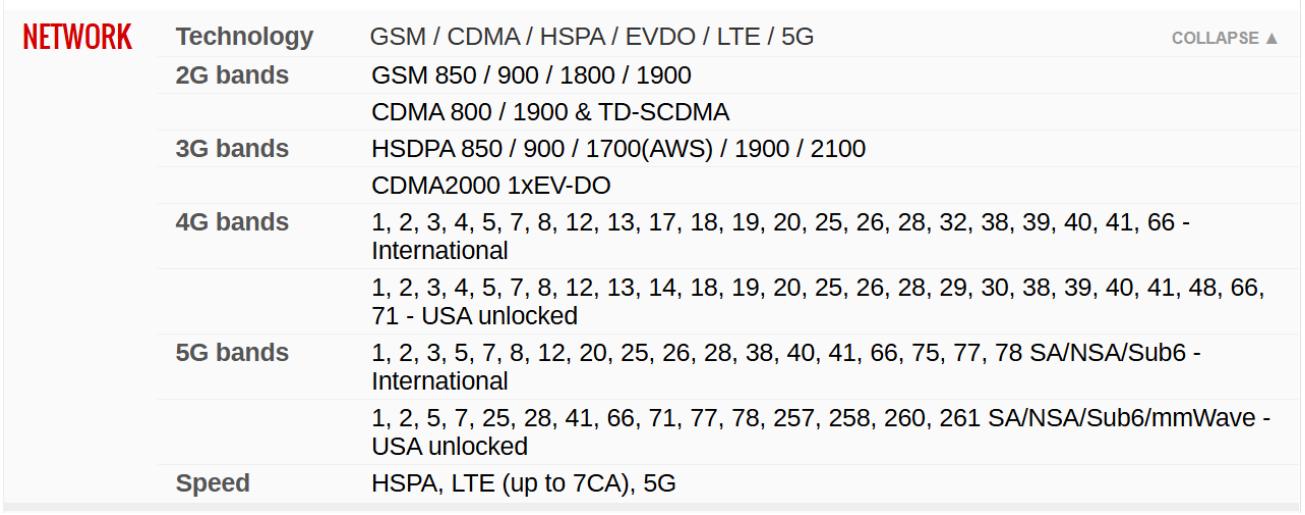
Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

IPR2025-01308; Samsung
Ex. 1043 - Page 31

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap Connections > Wi-Fi, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap **Connect**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap a device and follow the prompts to connect. • To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect. **TIP** When sharing a file, tap **Bluetooth** to use this feature. **Rename a paired device** You can rename a paired device to make it more recognizable. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device name, and then tap **Rename**. 3. Enter a new name, and tap **Rename**. **Unpair from a Bluetooth device** When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device, and then tap **Unpair**. 3. Tap **Unpair** to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

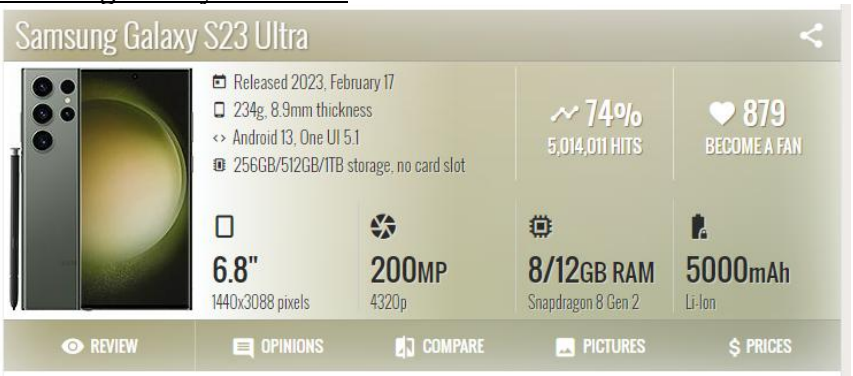
TIP Tap **Scan QR code** to connect to a Wi-Fi network by using your device's camera to scan a QR code.

Wi-Fi settings

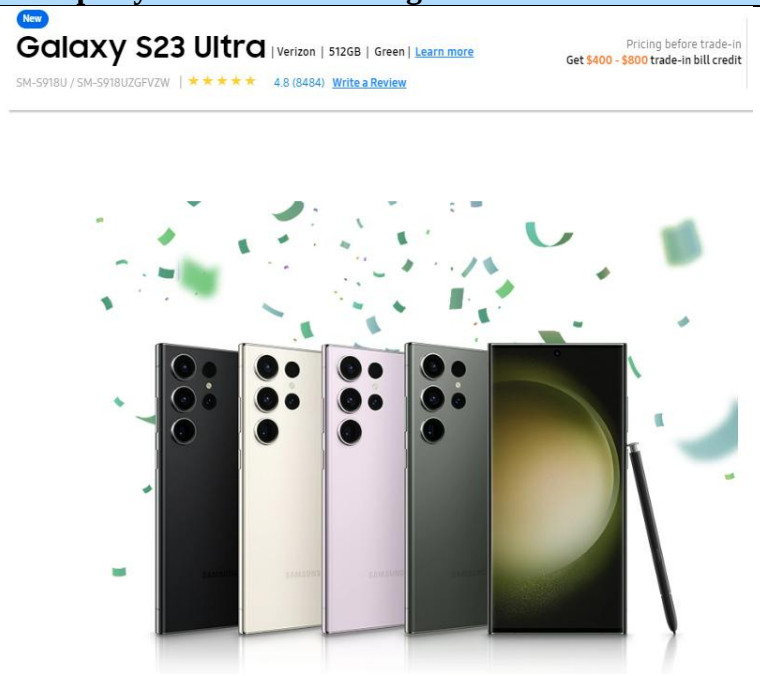
You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **More options** for the following options:
   - **Wi-Fi Direct**: Share data directly between devices over Wi-Fi.
   - **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features.
   - **Advanced settings**: Configure Wi-Fi connections and Hotspot settings.
   - **Contact us**: Contact Samsung support through Samsung Members.

Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 114-117.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf SmartThings SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard. NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support. Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

Processor

Qualcomm Snapdragon 8 Gen2 Mobile Platform for Galaxy

PLATFORM	OS	Android 13, One UI 5.1
	Chipset	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
	CPU	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
	GPU	Adreno 740

Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

COMMS	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, OTG

Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

Bluetooth

Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices.

Precautions for using Bluetooth

- Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth.
- Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced.
- Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device.
- Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Pairing with other Bluetooth devices 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

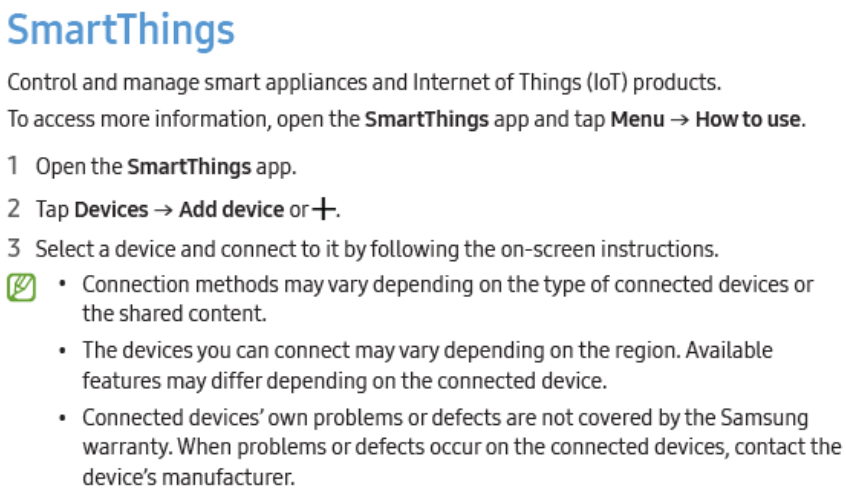
3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 123-124.

NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

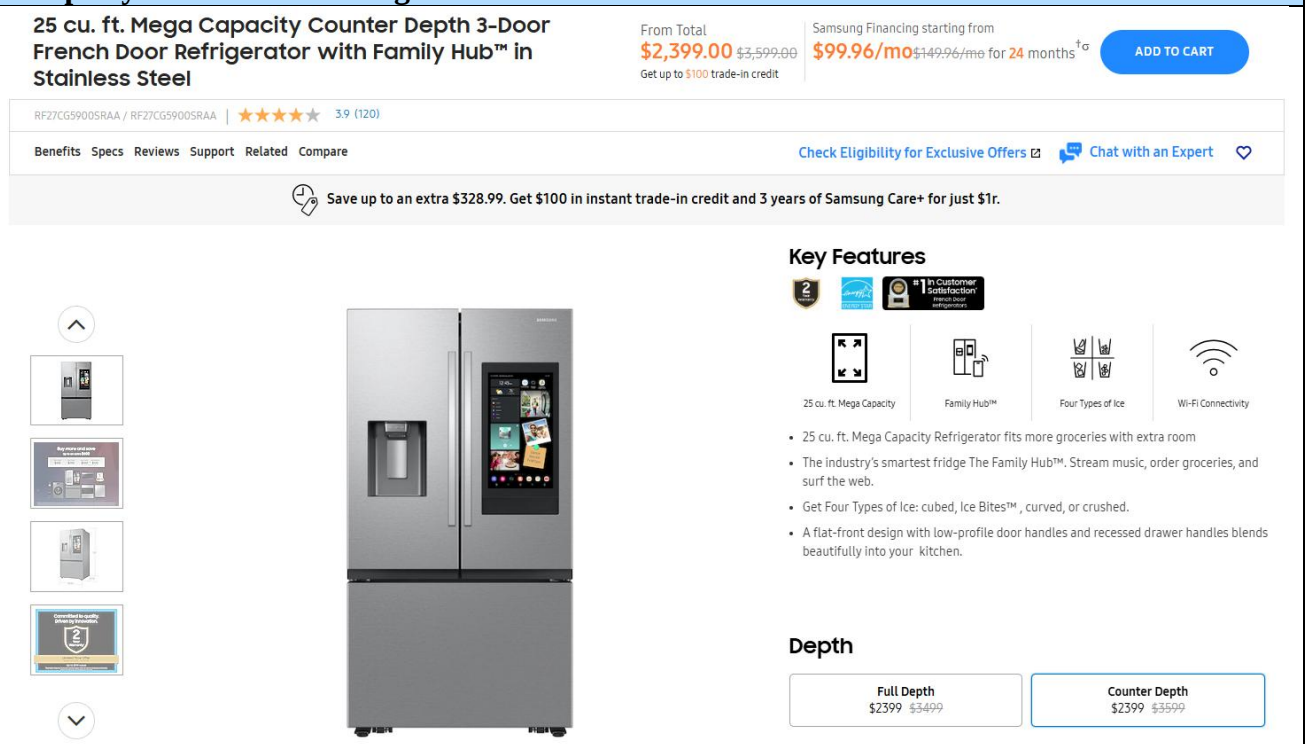
Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 111. <u>Refrigerators</u>

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") Technical specification showing Wi-Fi/Bluetooth functionality for communicating with other devices and/or the SmartThings cloud/platform using Family Hub™;

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

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Family Hub™, it's more than a fridge

Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.**

*Google and Google Photos are trademarks of Google LLC.
**A Wi-Fi connection and Samsung account required.

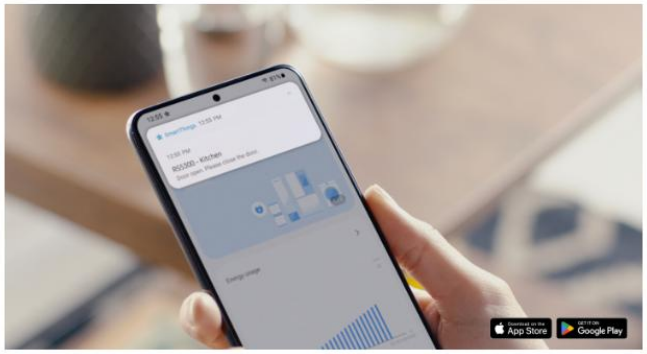
Get smart energy≠ savings of up to 10%†

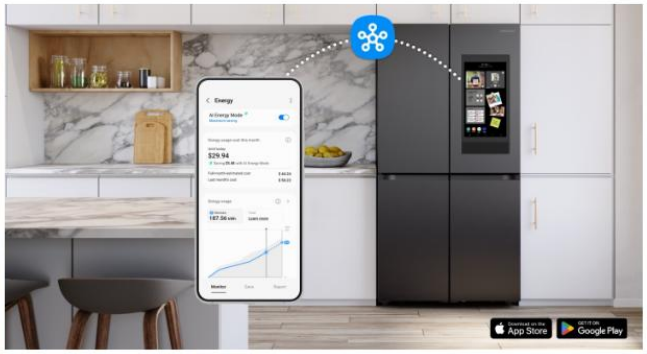
SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone.

†Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions.
≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.
§Product images shown may not reflect the model or color selected.

Id.

Life in sync with SmartThings





APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Family Hub™, it's more than a fridge

Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.**

*Google and Google Photos are trademarks of Google LLC.
**A Wi-Fi connection and Samsung account required.

Get smart energy≠ savings of up to 10%†

SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone.

†Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions.
≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.
§Product images shown may not reflect the model or color selected.

Id.



Family Hub™, it's more than a fridge

The Family Hub™ lets you share pictures, stream music and videos, access recipes and control your smart devices and Alexa all from the fridge.§

Id.

IPR2025-01308; Samsung
Ex. 1043 - Page 45

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

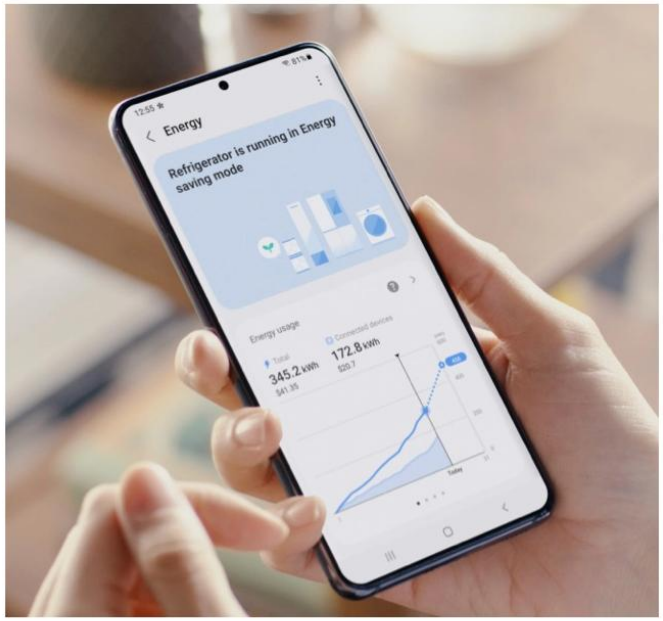
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Monitor and control energy usage
You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2]

Get useful notifications
With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter.

Keeps food fresher
Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator.

Even cooling from corner to corner
All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer.



Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

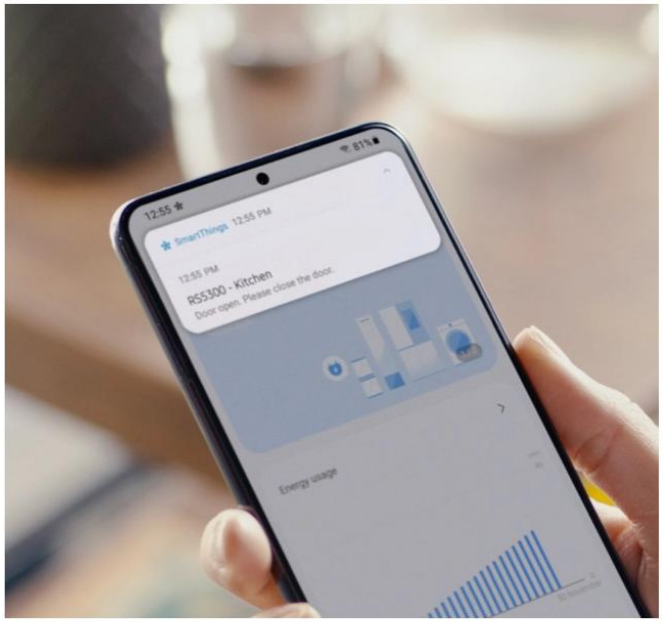
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

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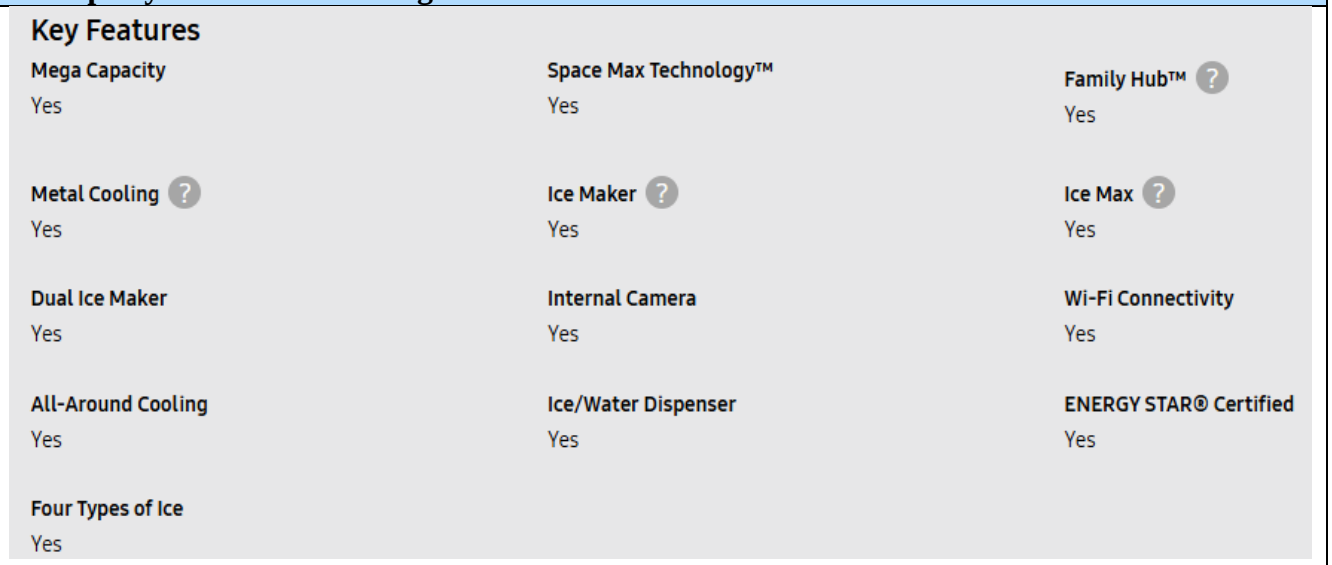
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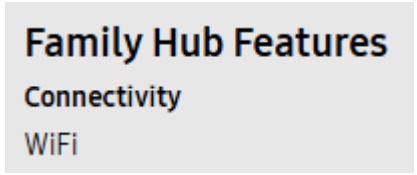


Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

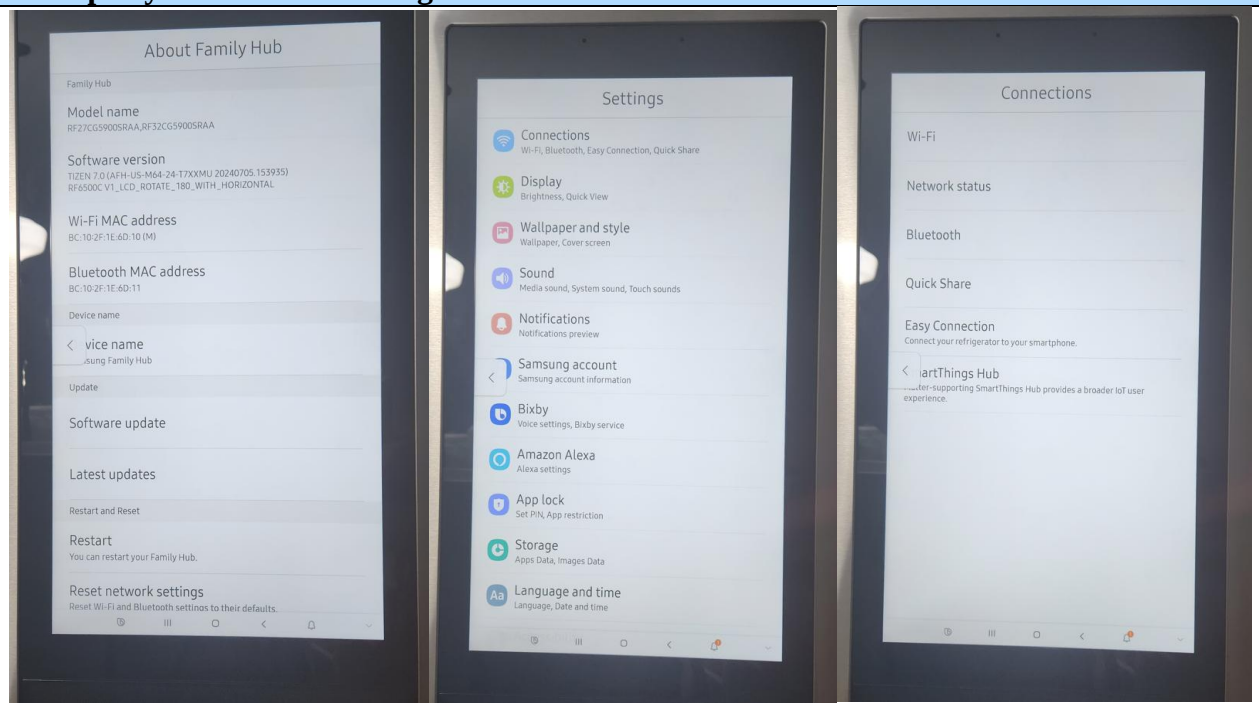


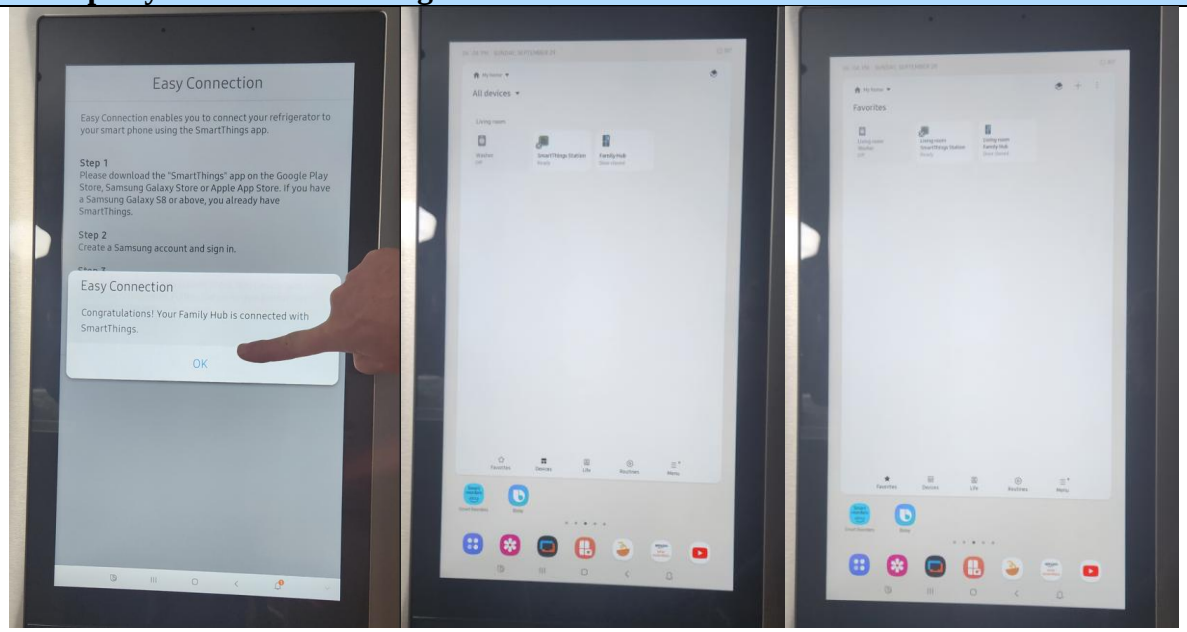
Id.



Id.

For example, testing of the 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") shows Wi-Fi/Bluetooth circuitry for communicating with other devices and/or the SmartThings cloud/platform using the Family Hub™, as shown in the screenshots below:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") showing evidence of Wi-Fi/Bluetooth circuitry.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") showing evidence of communicating with the SmartThings cloud/platform and other devices (*e.g.*, GUI of devices and Favorites list). On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
[1.a] a main terminal; and	Each smartphone in the Accused Samsung '650 Products is or acts as a main terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that each of the devices is or acts as a main terminal. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, each smartphone with SmartThings app. in the Accused Samsung '650 Products is or acts as a main terminal that onboards/adds devices for connection and communication with the SmartThings cloud/platform using Wi-Fi and/or Bluetooth chipsets to exchange contents (*e.g.*, one or more credentials, networks, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations for reproduction on a display or storage medium. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a nonlimiting example, each smartphone with SmartThings app. alone or in conjunction with the SmartThings cloud/platform in the Accused Samsung '650 Products is or acts as a main terminal that onboards/adds devices for connection and communication with the SmartThings cloud/platform using LAN, Wi-Fi and/or Bluetooth chipsets to exchange contents (*e.g.*, one or more credentials, networks, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations for reproduction on a display or storage medium. The SmartThings cloud/platform is an extension of devices because the SmartThings cloud/platform includes virtual instances having the same functionalities as devices connected to it. *See e.g.*,

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Device Profiles

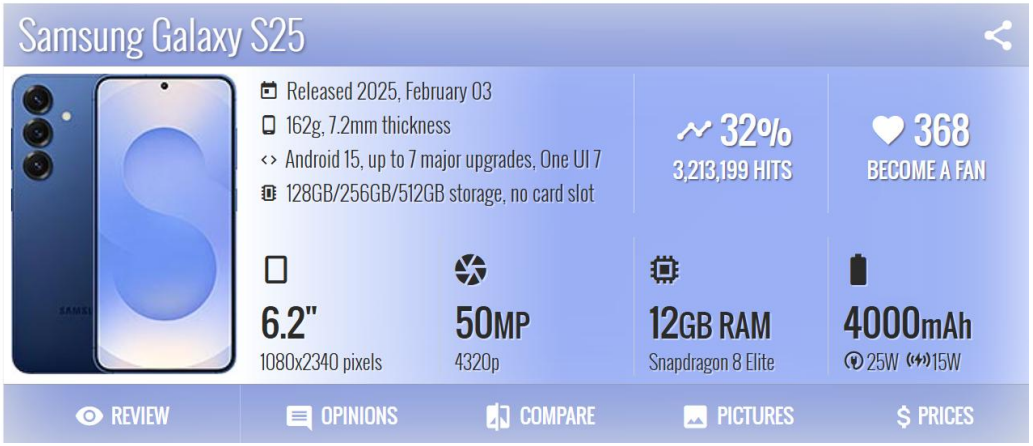
A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile.

Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

For example, the Samsung smartphones ("the phone") in conjunction with the SmartThings app alone or in conjunction with the SmartThings cloud/platform is or acts as a main terminal to connect and communicate with the SmartThings cloud/platform to exchange contents with other devices once the phone has onboarded/added the devices on the SmartThings cloud/platform *See e.g.*,

Samsung Galaxy S25



https://www.gsmarena.com/samsung_galaxy_s25-13610.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S25 | Galaxy S25+ | Galaxy S25 Ultra

Colours



* Colour availability may vary depending on country or carrier.
* Exclusively available on Samsung.com.

Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

Processor

CPU Speed	CPU Type
4.47GHz, 3.5GHz	Octa-Core

PLATFORM		
	OS	Android 15, up to 7 major Android upgrades, One UI 7
	Chipset	Qualcomm SM8750-AC Snapdragon 8 Elite (3 nm)
	CPU	Octa-core (2x4.47 GHz Oryon V2 Phoenix L + 6x3.53 GHz Oryon V2 Phoenix M)
	GPU	Adreno 830 (1200 MHz)

Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	COMMS WLAN: Wi-Fi 802.11 a/b/g/n/ac/6e/7, tri-band, Wi-Fi Direct Bluetooth: 5.4, A2DP, LE Positioning: GPS, GLONASS, BDS, GALILEO, QZSS NFC: Yes Radio: No USB: USB Type-C 3.2, DisplayPort 1.2, OTG Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

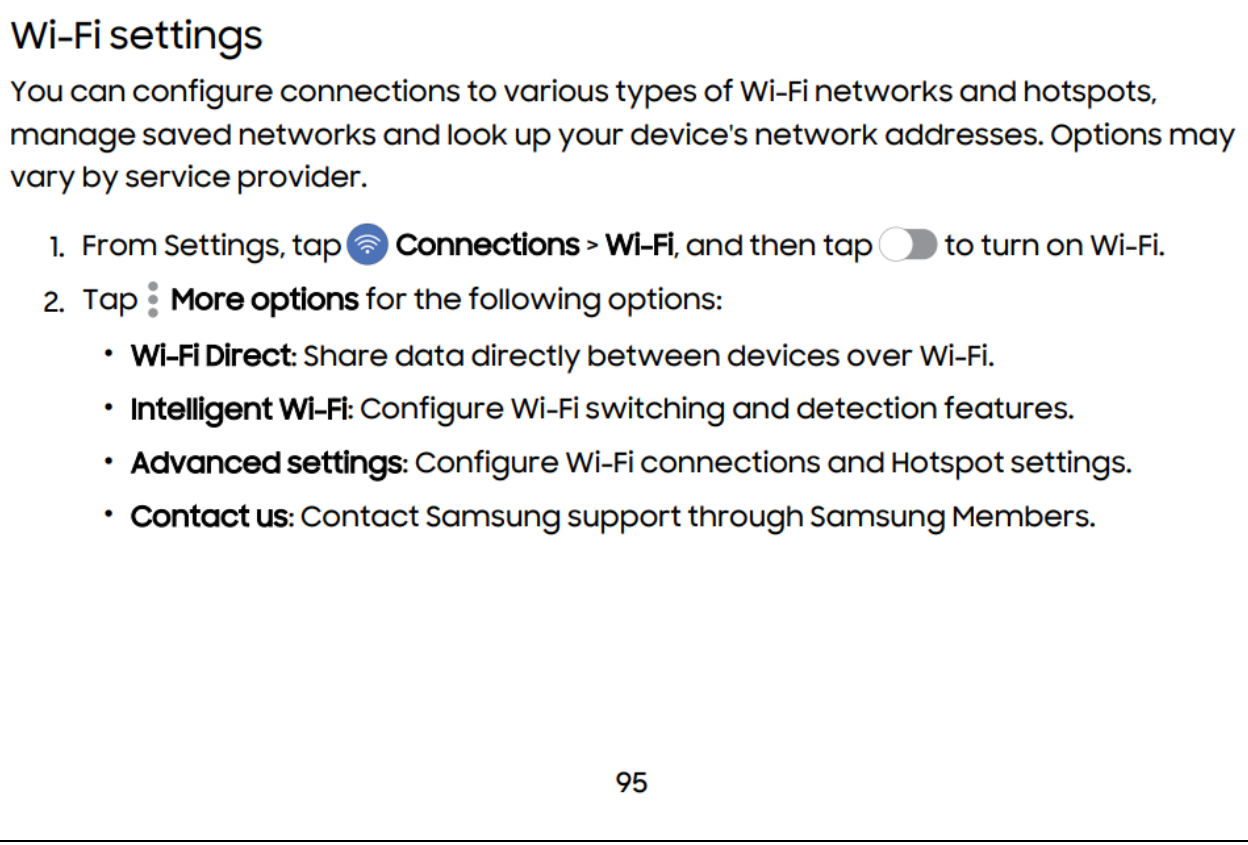
94

Settings

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

You can rename a paired device to make it more recognizable.

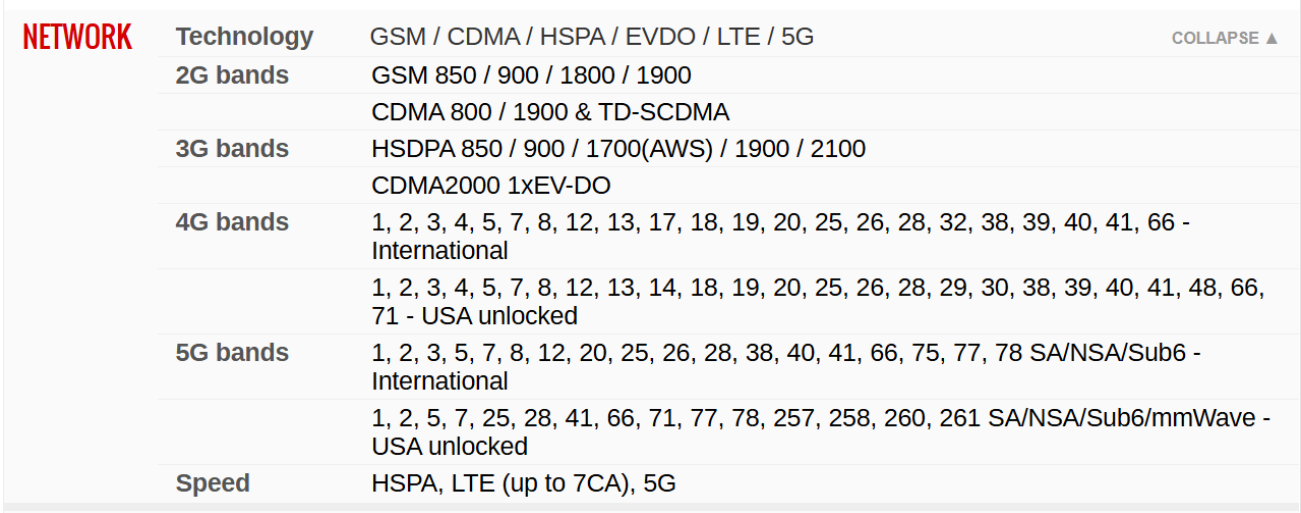
1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  NETWORK Technology: GSM / CDMA / HSPA / EVDO / LTE / 5G (COLLAPSE ▲) 2G bands: GSM 850 / 900 / 1800 / 1900 CDMA 800 / 1900 & TD-SCDMA 3G bands: HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100 CDMA2000 1xEV-DO 4G bands: 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 48, 66, 71 - USA unlocked 5G bands: 1, 2, 3, 5, 7, 8, 12, 20, 25, 26, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International 1, 2, 5, 7, 25, 28, 41, 66, 71, 77, 78, 257, 258, 260, 261 SA/NSA/Sub6/mmWave - USA unlocked Speed: HSPA, LTE (up to 7CA), 5G Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap Connections > Wi-Fi, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap Connect.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap a device and follow the prompts to connect. • To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect. **TIP** When sharing a file, tap **Bluetooth** to use this feature. **Rename a paired device** You can rename a paired device to make it more recognizable. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device name, and then tap **Rename**. 3. Enter a new name, and tap **Rename**. **Unpair from a Bluetooth device** When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device, and then tap **Unpair**. 3. Tap **Unpair** to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

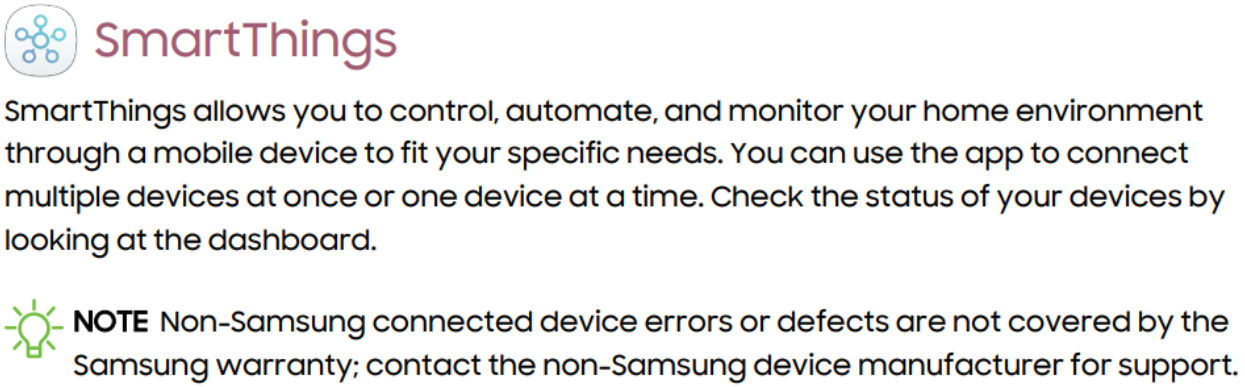
1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

TIP Tap **Scan QR code** to connect to a Wi-Fi network by using your device's camera to scan a QR code.

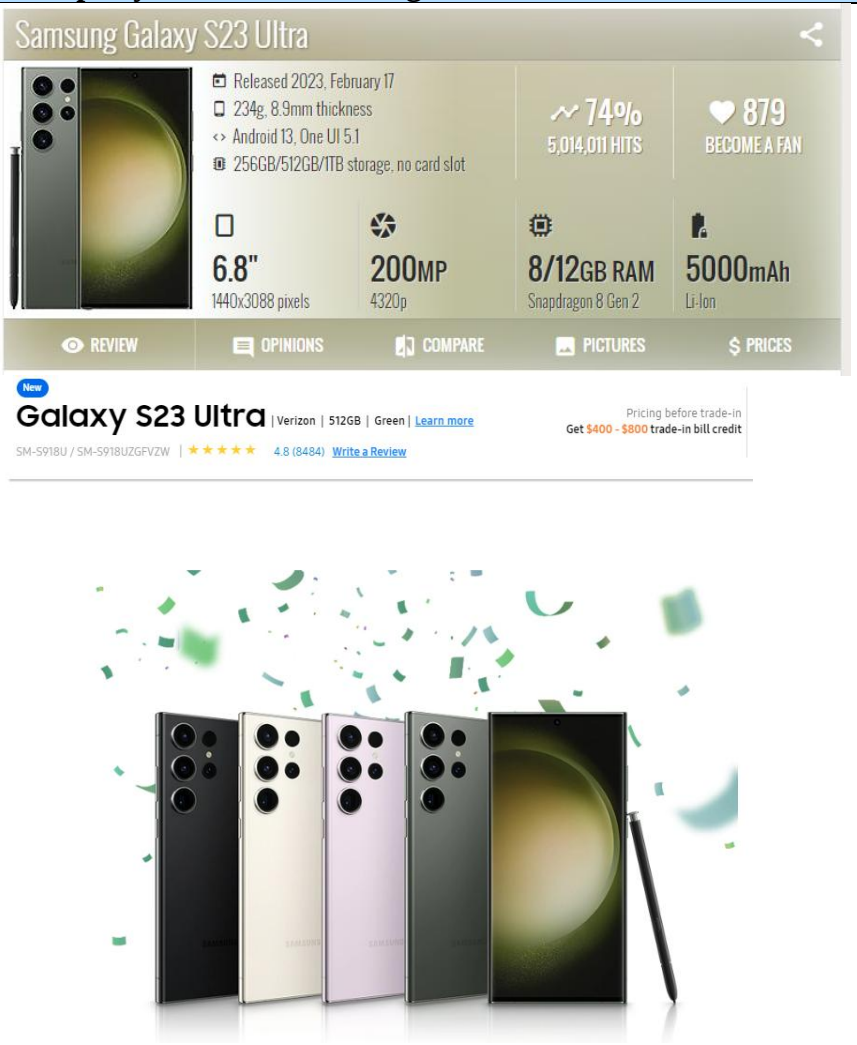
Wi-Fi settings

You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **More options** for the following options:
   - **Wi-Fi Direct**: Share data directly between devices over Wi-Fi.
   - **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features.
   - **Advanced settings**: Configure Wi-Fi connections and Hotspot settings.
   - **Contact us**: Contact Samsung support through Samsung Members.

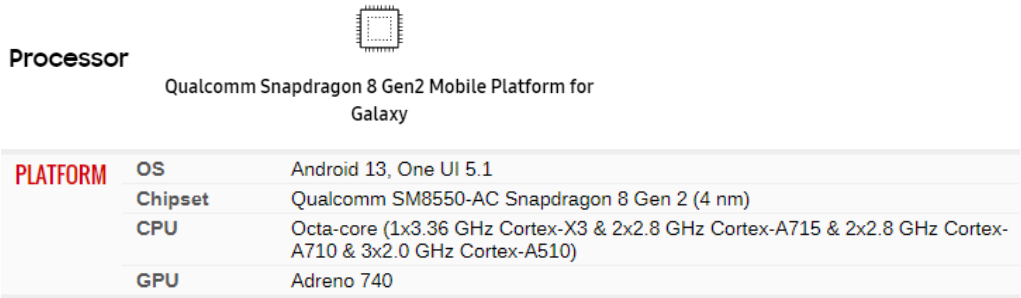
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 114-117. https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf  Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

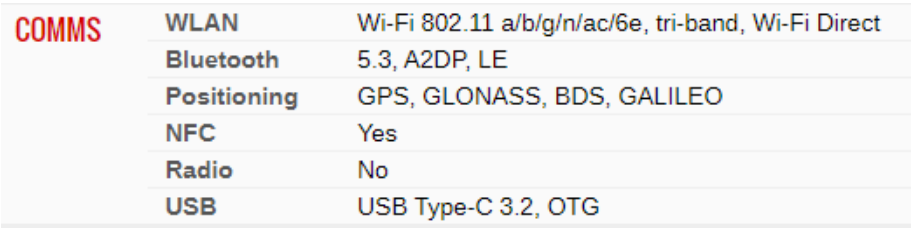
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



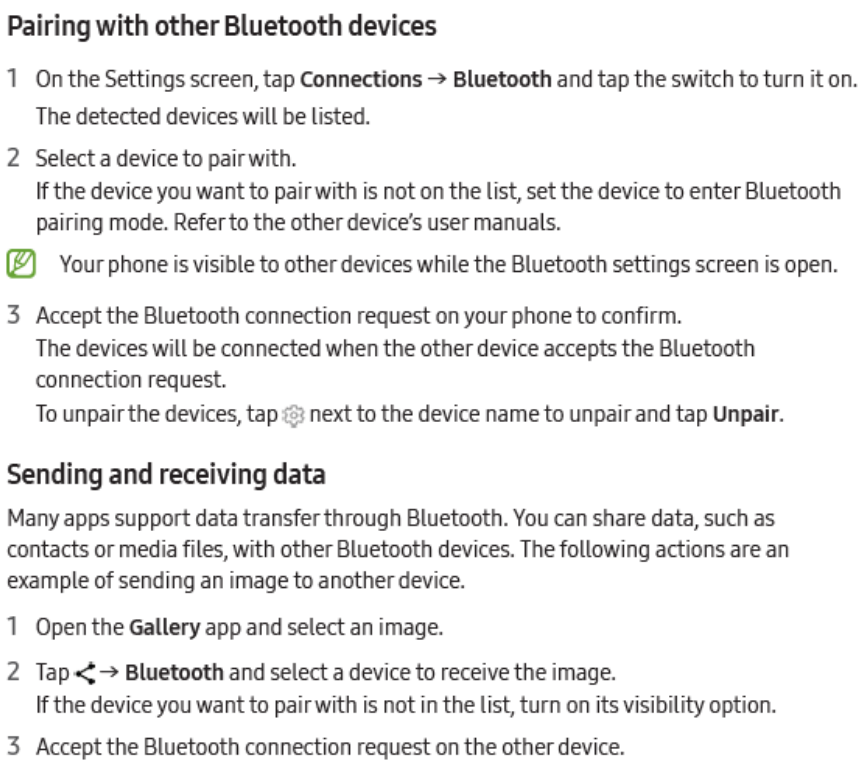
Id.



Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices. **Precautions for using Bluetooth** • Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth. • Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced. • Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device. • Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 **Pairing with other Bluetooth devices** 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

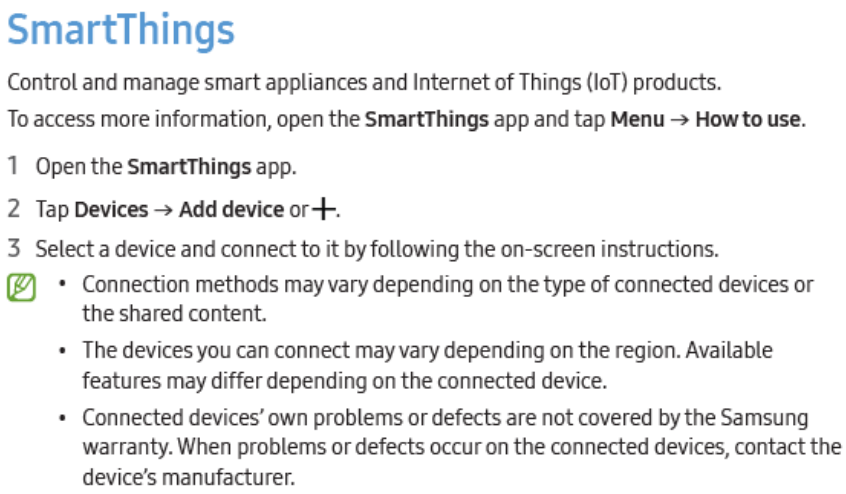
3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pgs. 123-124.

NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

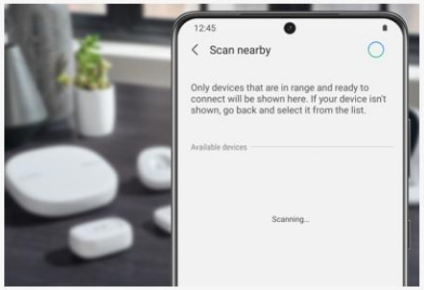
Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium by adding/onboarding a device at pg. 111.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Cannot connect or discover Bluetooth device in SmartThings

The SmartThings app can connect to a variety of Bluetooth devices without the need for a SmartThings Hub. If the app has trouble connecting or discovering Bluetooth devices, perform the steps in this guide, and try pairing the devices after each step.

Note: Available settings and menu options may vary depending on the device and software version.

1 **Check for software updates.**

Make sure that your phone and the SmartThings app on the phone are both updated to the most recent software version. If possible, it may be necessary to update the Bluetooth device.

Related Content



ZigBee device is not working with Samsung SmartThings hub

If your ZigBee device is not working with your hub, be sure to check the...

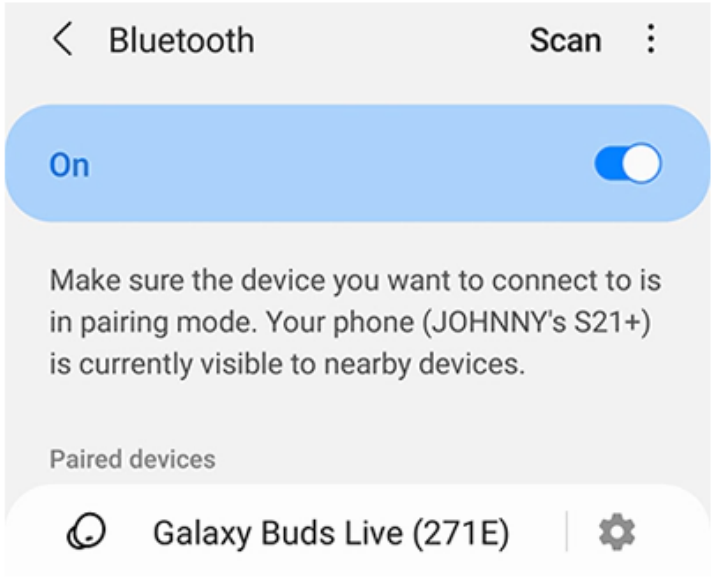


Check the hub's firmware version

SmartThings will occasionally push firmware updates to active hubs to...

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	2 Verify the Bluetooth device is powered on. Make sure the Bluetooth device is powered on and Bluetooth is activated on both devices. Some devices may enter Power saving mode when the battery is low, causing Bluetooth to shut off. You may need to charge the phone or check the power and battery on the Bluetooth device. **3** Check the Bluetooth connection range. The devices must be within the Bluetooth connection range (30 feet). The distance may vary depending on the environment and the device. Make sure that there are no obstacles, such as walls or electrical equipment, between the devices. **4** Restart both devices. Restart both devices, and close the app. Then, open the **SmartThings** app again on the phone.  SmartThings Hub Has No Power or Internet If the Hub loses power or internet connection, there may be limited or...  Report a problem or send a log file in SmartThings If SmartThings experiences problems, you should report the issue to...  Sign in or Log out of SmartThings The SmartThings app uses your Samsung account credentials. To...

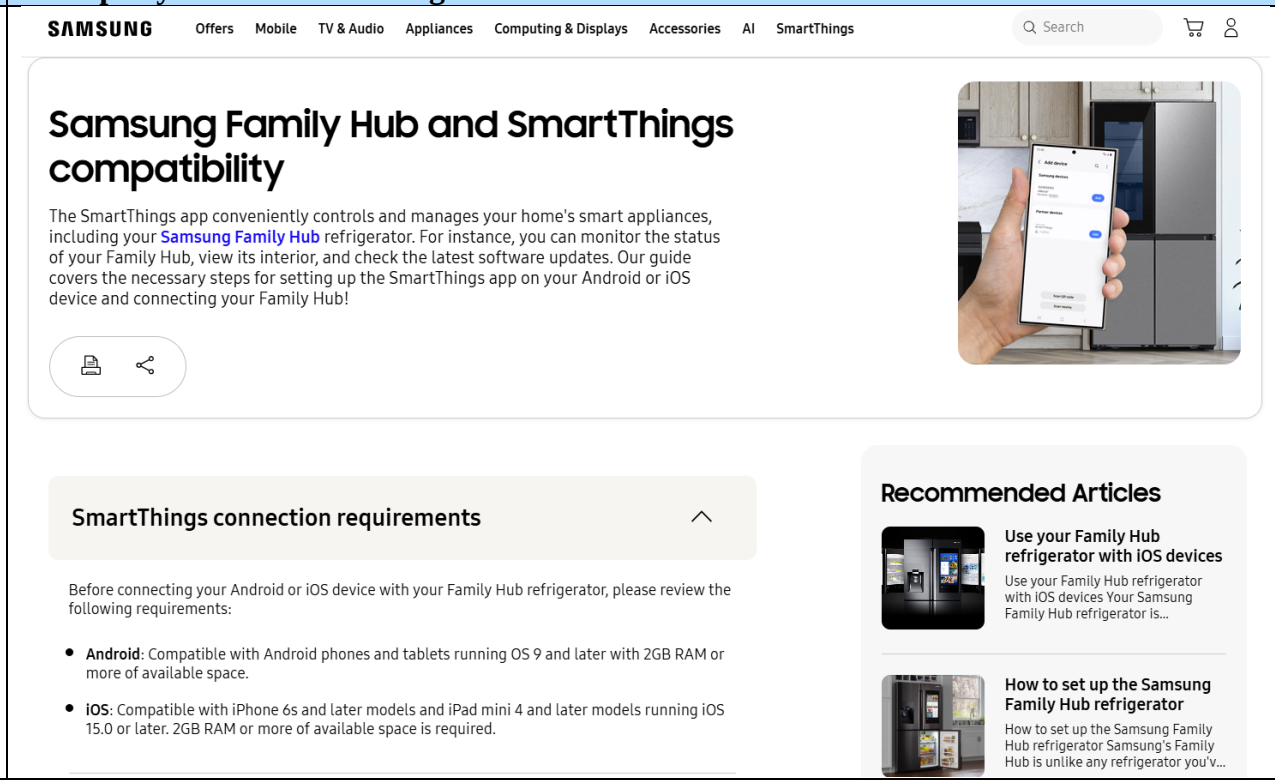
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	5 **Connect the Bluetooth device through the phone's settings.** Navigate to and open **Settings**. Tap **Connections**, and then tap **Bluetooth**. Make sure Bluetooth is enabled by tapping the **switch** at the top of the screen. Next, tap your desired Bluetooth device from the list, and then follow the on-screen prompts to complete the pairing. Not all Bluetooth devices appear with a logical name. Some use their MAC address to identify themselves. Once the devices are paired, the Bluetooth device will now appear in the SmartThings app, where it can be managed. 

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

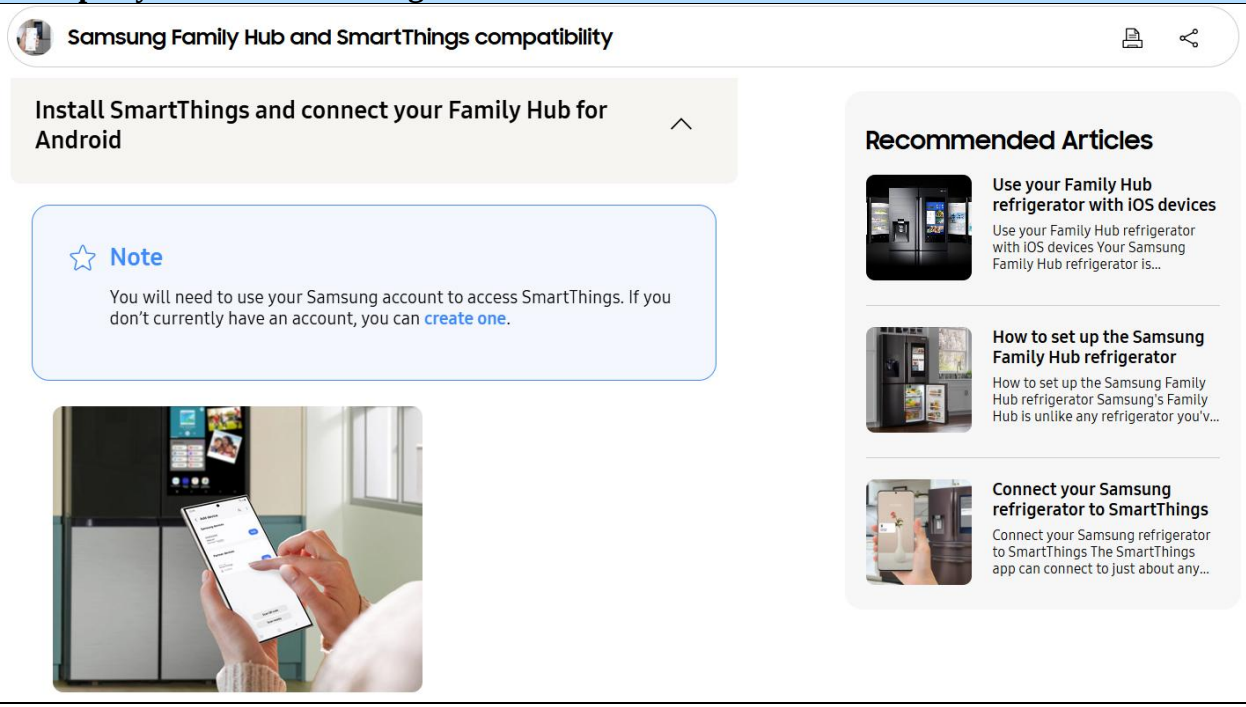
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Smartphone in the Accused Samsung '650 Products technical specification showing connecting with devices (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials for display and/or storage medium; https://www.samsung.com/us/support/troubleshooting/TSG01109750/

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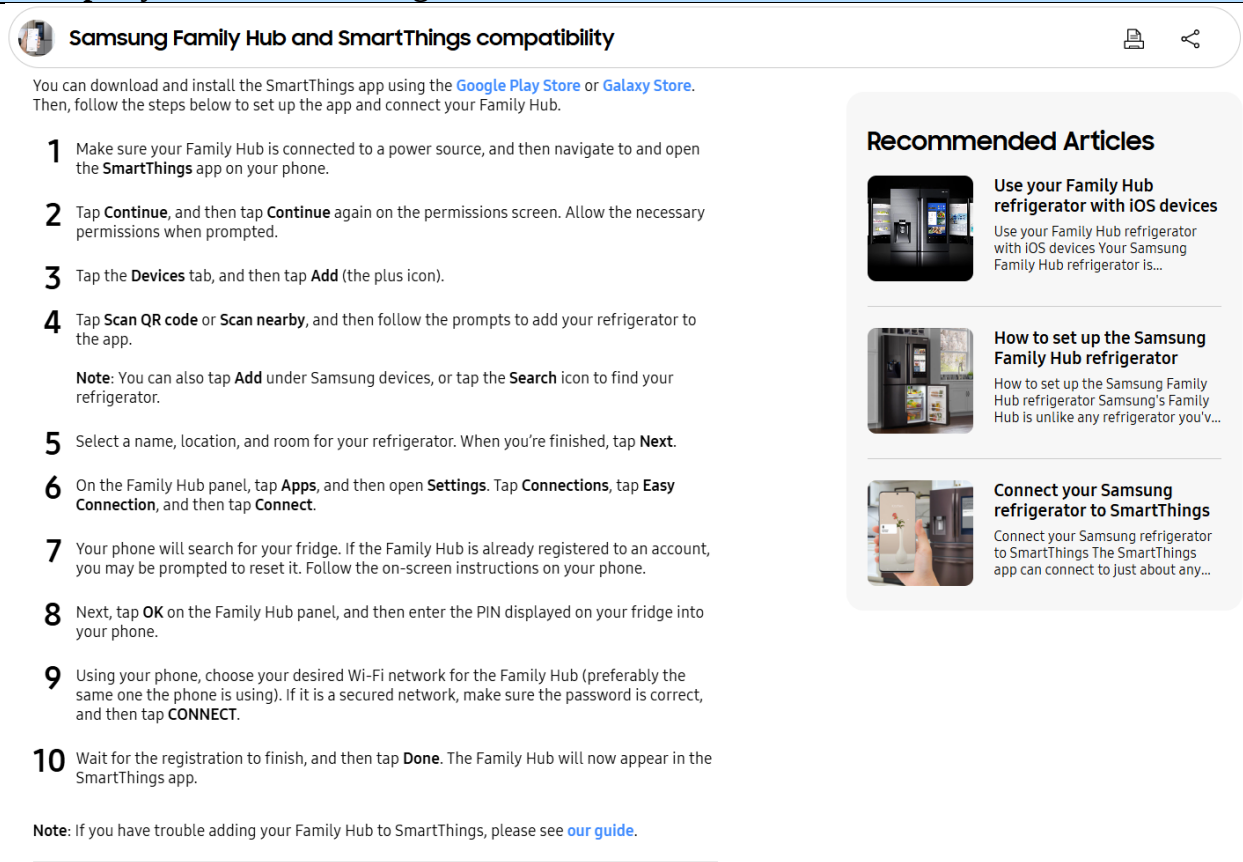
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Samsung Family Hub and SmartThings compatibility

You can download and install the SmartThings app using the Google Play Store or Galaxy Store. Then, follow the steps below to set up the app and connect your Family Hub.

1. Make sure your Family Hub is connected to a power source, and then navigate to and open the **SmartThings** app on your phone.
2. Tap **Continue**, and then tap **Continue** again on the permissions screen. Allow the necessary permissions when prompted.
3. Tap the **Devices** tab, and then tap **Add** (the plus icon).
4. Tap **Scan QR code** or **Scan nearby**, and then follow the prompts to add your refrigerator to the app.

   Note: You can also tap **Add** under Samsung devices, or tap the **Search** icon to find your refrigerator.
5. Select a name, location, and room for your refrigerator. When you're finished, tap **Next**.
6. On the Family Hub panel, tap **Apps**, and then open **Settings**. Tap **Connections**, tap **Easy Connection**, and then tap **Connect**.
7. Your phone will search for your fridge. If the Family Hub is already registered to an account, you may be prompted to reset it. Follow the on-screen instructions on your phone.
8. Next, tap **OK** on the Family Hub panel, and then enter the PIN displayed on your fridge into your phone.
9. Using your phone, choose your desired Wi-Fi network for the Family Hub (preferably the same one the phone is using). If it is a secured network, make sure the password is correct, and then tap **CONNECT**.
10. Wait for the registration to finish, and then tap **Done**. The Family Hub will now appear in the SmartThings app.

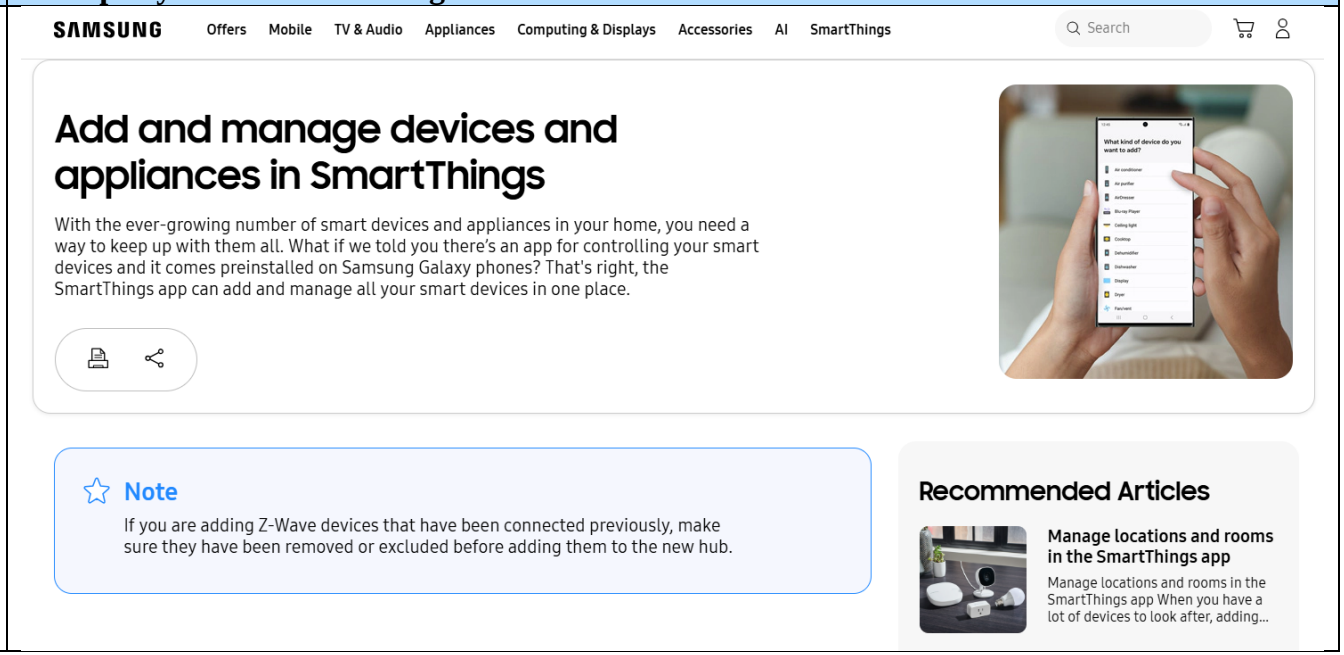
Note: If you have trouble adding your Family Hub to SmartThings, please see our guide.

Recommended Articles

Smartphone in the Accused Samsung '650 Products technical specification showing onboarding/adding of a fridge (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials and SmartThings cloud/platform credentials to connect with each other for display and/or storage on mediums; https://www.samsung.com/us/support/answer/ANS10001433/

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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Add and manage devices and appliances in SmartTh...

Add devices to SmartThings

On your Galaxy phone

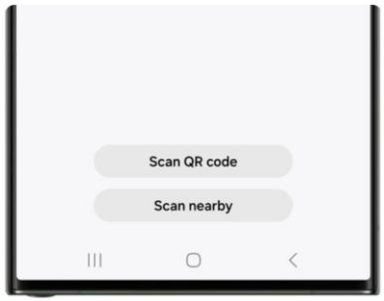
When you are ready to take control of all your smart devices, just use the following guidelines. But first, you should double check if your devices are compatible.

1. Navigate to and open the **SmartThings** app on your phone.

   Note: A Samsung account is required. Samsung devices that already have a Samsung account stored on them will use that account automatically. Otherwise, you can log into or create a Samsung account by following the on-screen instructions in the app.

2. Tap the **Devices** tab, and then tap **Add** (the plus sign).

3. If the device uses Bluetooth, tap **Scan nearby** at the bottom of the screen. Or, tap **Scan QR code** to scan a device's QR code.



4. If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5. From there, follow the instructions to connect your device to SmartThings.

6. When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

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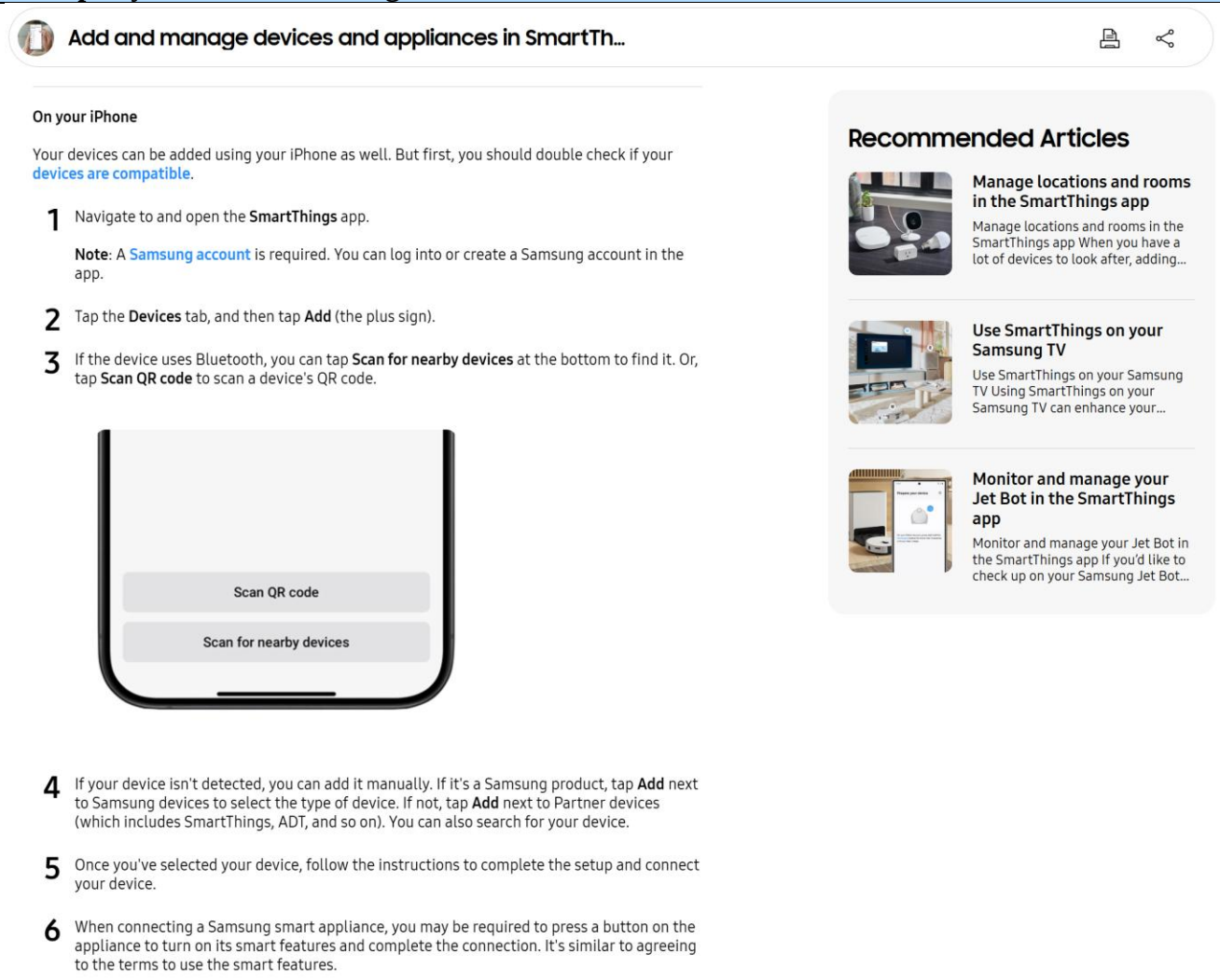


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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Add and manage devices and appliances in SmartTh...

On your iPhone

Your devices can be added using your iPhone as well. But first, you should double check if your devices are compatible.

1 Navigate to and open the **SmartThings** app.

Note: A Samsung account is required. You can log into or create a Samsung account in the app.

2 Tap the **Devices** tab, and then tap **Add** (the plus sign).

3 If the device uses Bluetooth, you can tap **Scan for nearby devices** at the bottom to find it. Or, tap **Scan QR code** to scan a device's QR code.

4 If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5 Once you've selected your device, follow the instructions to complete the setup and connect your device.

6 When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

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Control devices in SmartThings

Note

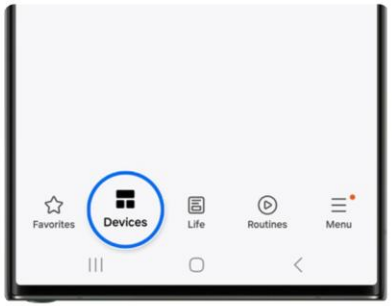
The available controls may vary depending on the device.

So, you've added a whole bunch of devices - now what? You can easily monitor and control them right from the app. You can also use your phone as a TV remote through SmartThings.

On your Galaxy phone

1 Navigate to and open the **SmartThings** app. Tap the **Devices** tab, and then tap the location **drop-down menu** at the top.

2 Select your desired location with the devices you'd like to manage, and then tap the **drop-down menu** with your location's name. Tap **All devices**. Here you can view, monitor, and control all your registered devices for the location you selected.



Note: To select a different location, tap the **drop-down menu** at the top again.

3 Select your desired device and use the available settings to perform your desired actions.

4 You may be prompted to tap **Download** so you can download the device's controller.

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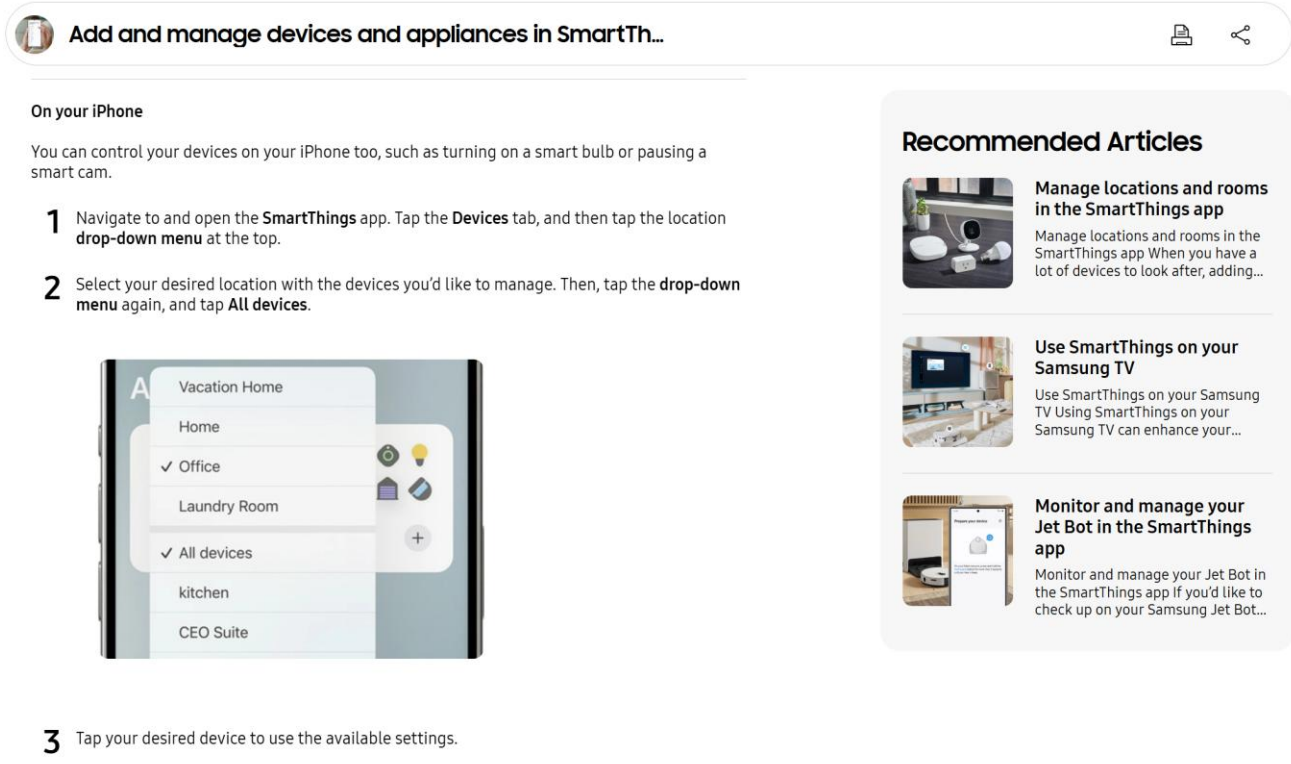


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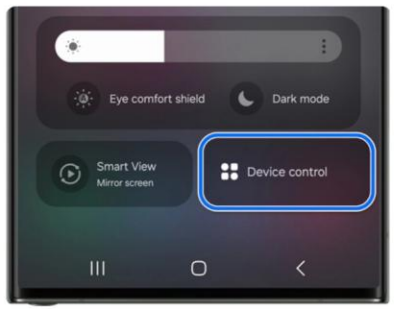
Use the Device panel

Note

The Device panel is not available on all phones.

With the Device panel on your Galaxy phone, you can view and access your SmartThings devices and scenes without navigating to the SmartThings app. It's a great shortcut if you want to save some time.

On your phone, swipe down from the top of the screen using two fingers to open the Quick settings panel, and then tap **Device control**. Your scenes and SmartThings devices will be displayed. If it's your first time using the panel, you will be asked to choose the devices and scenes that will appear.



- To access the device in SmartThings, tap the device's icon.
- To activate a scene, tap the scene's icon.
- To open the SmartThings app, tap **Open app** in the upper right corner.

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Edit a device's details

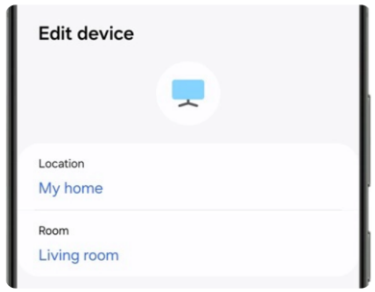
Note

You cannot edit the details for Bluetooth devices.

If needed, you can change the name or location of a connected device. For example, maybe you have multiple smart bulbs added and want to give them different names so you can tell them apart. Or, maybe you moved a device to a new room in your house and want to change it in the app as well.

On your Galaxy phone

1. To edit a device's details, open the **SmartThings** app, and then tap the **Devices** tab.
2. Select your desired location, and then select the device you'd like to edit.
3. Tap **More options** (the three vertical dots), and then tap **Edit device**. You can adjust the following:



- **Location**: Change the device's location.
- **Room**: Choose which room the device is in.
- **Device name**: Edit the name of the device.

4. When you are finished editing the device, tap **Save**.

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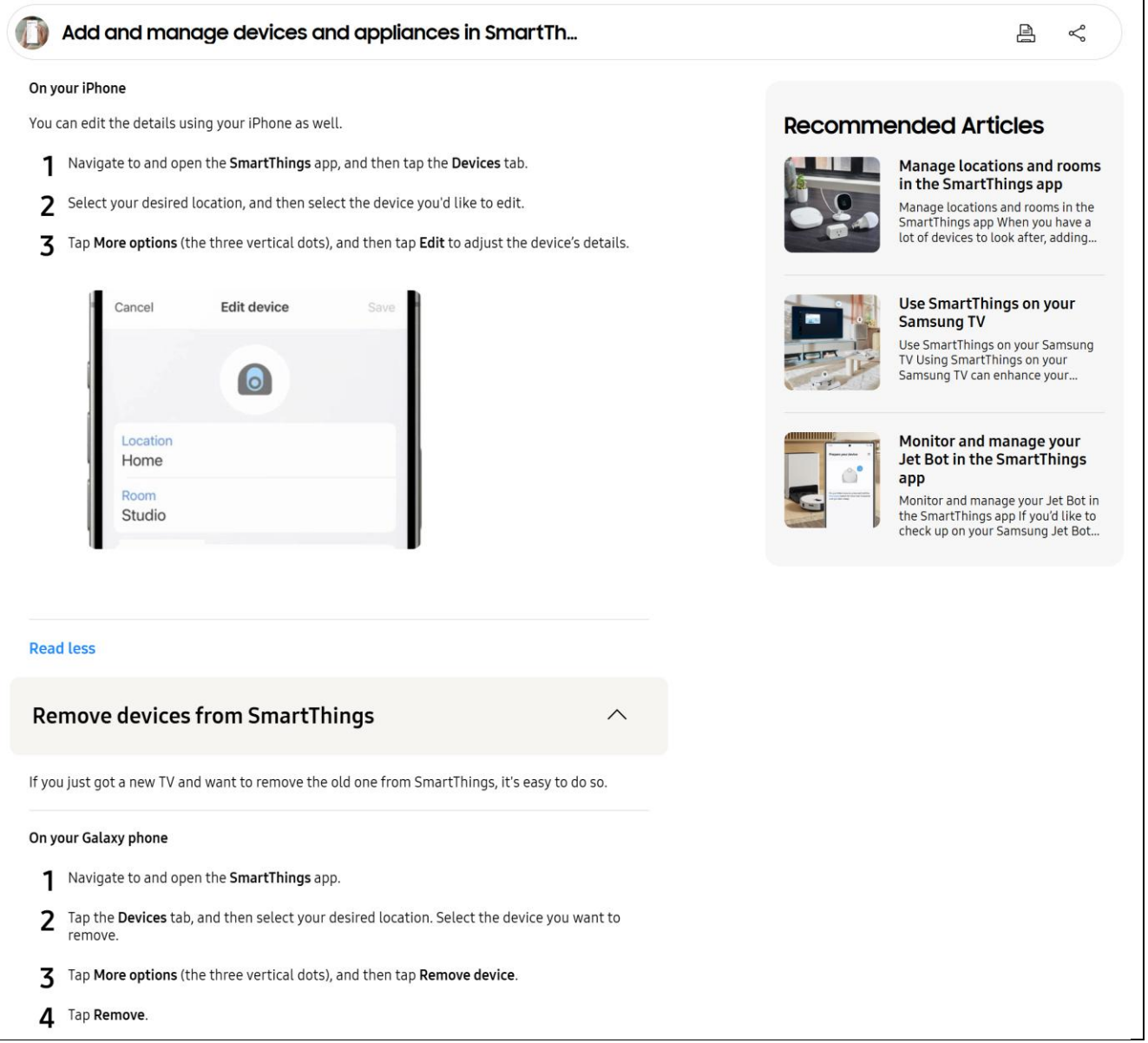
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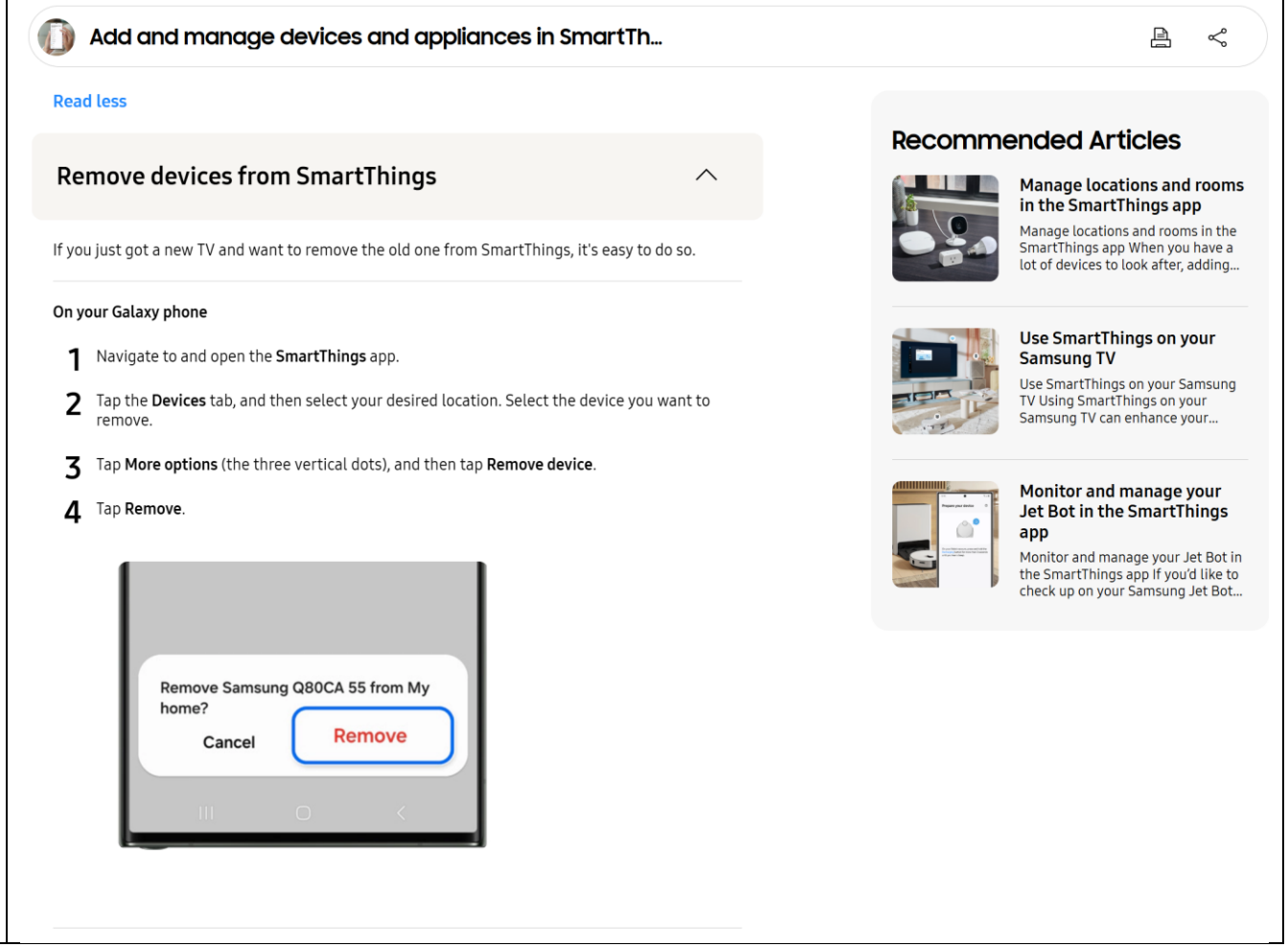
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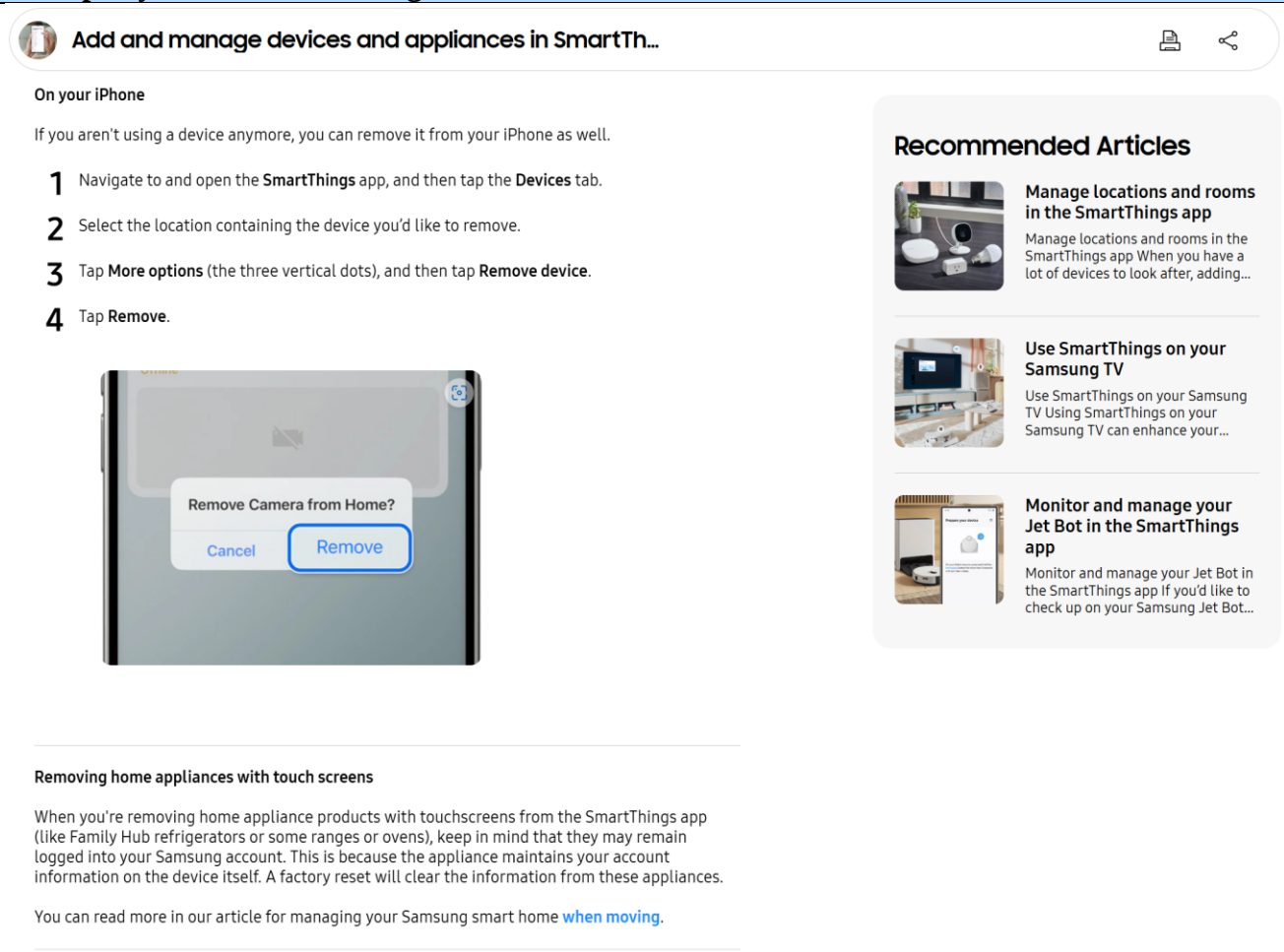


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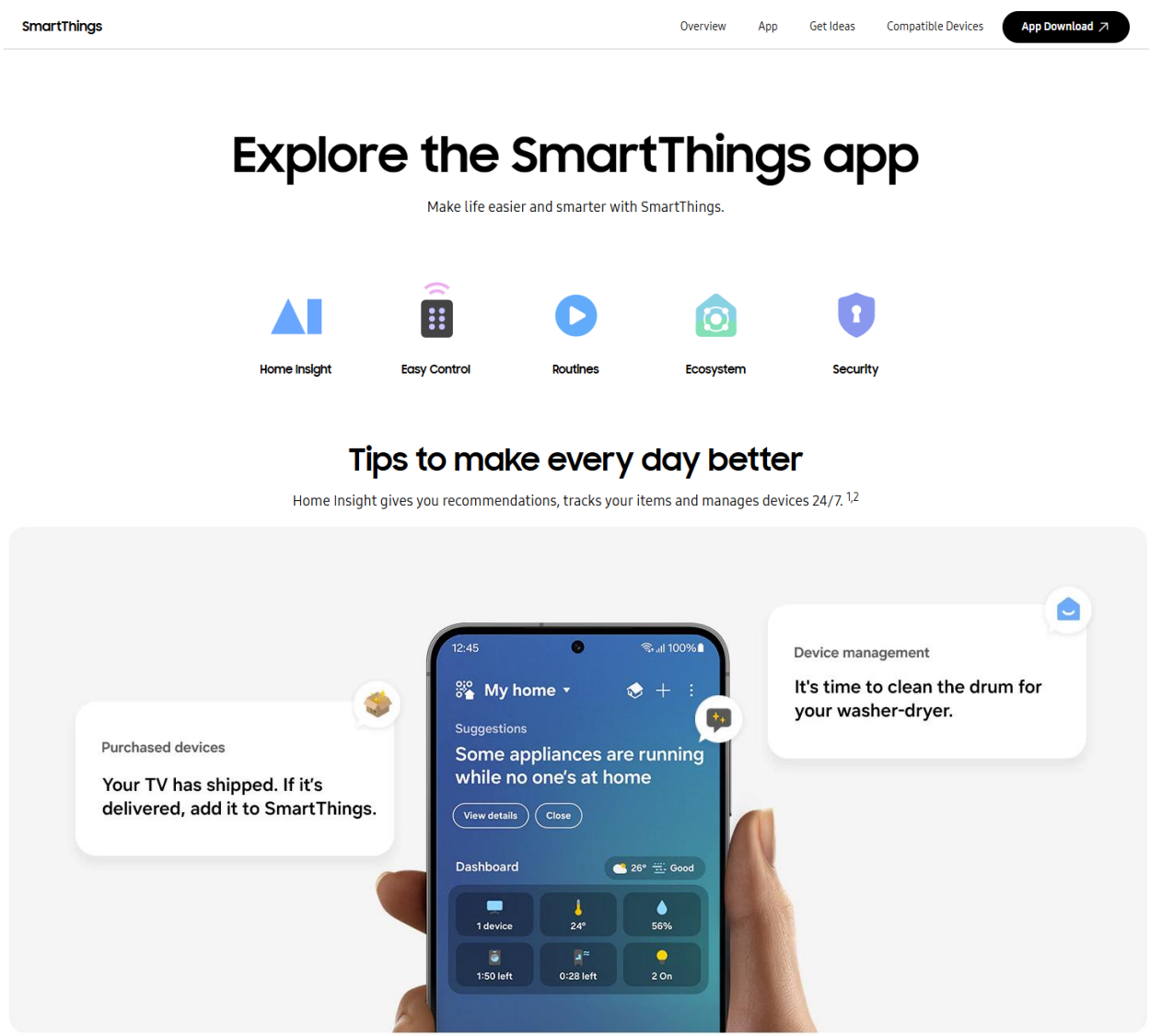
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Smartphone in the Accused Samsung '650 Products technical specification showing onboarding/adding of an appliance (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials and SmartThings cloud/platform credentials, updating a favorites and/or history list, controlling and/or changing the location, room, and/or name of one or more devices on displays and storage on mediums; https://www.samsung.com/us/support/answer/ANS10002639/.

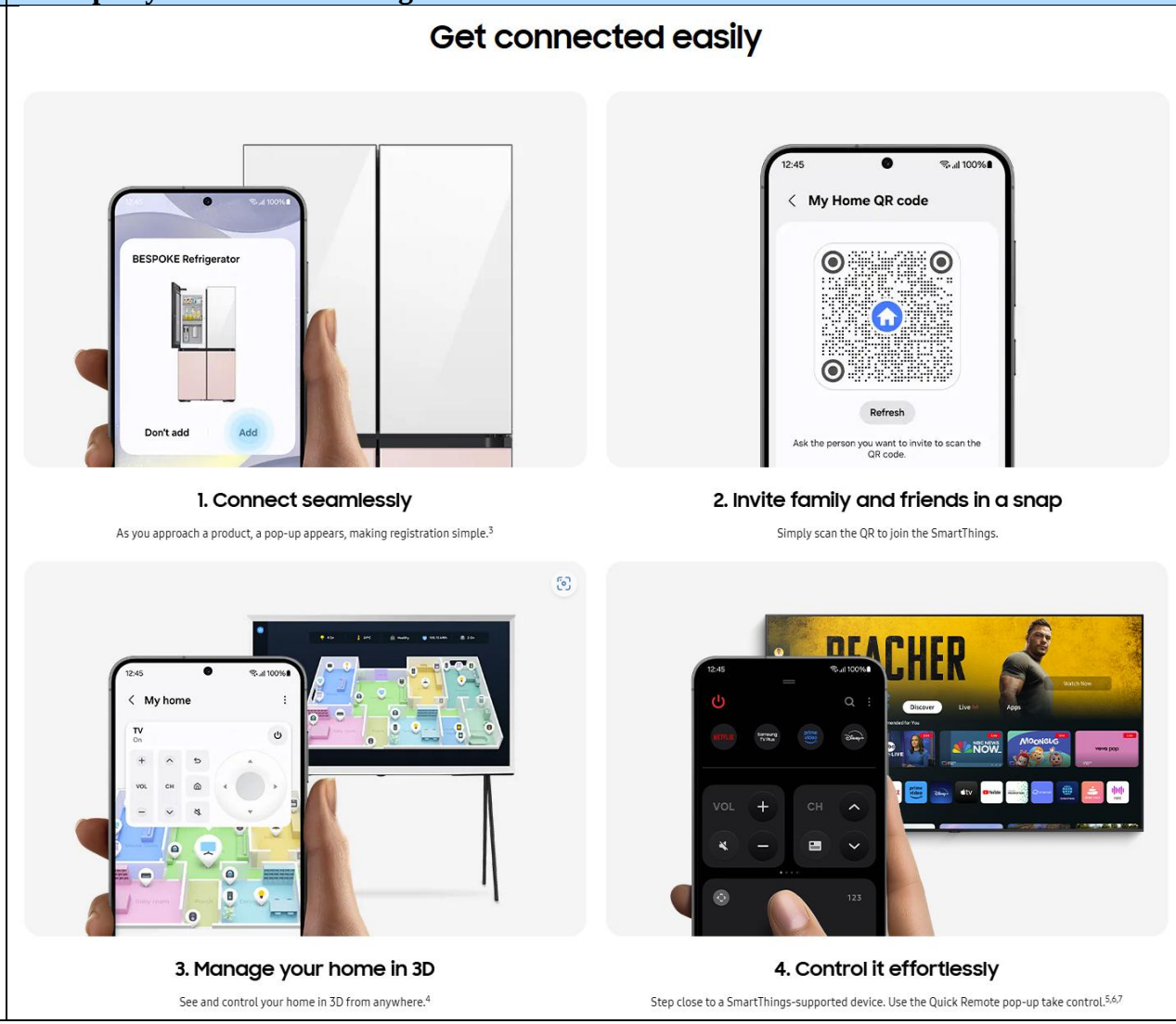
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



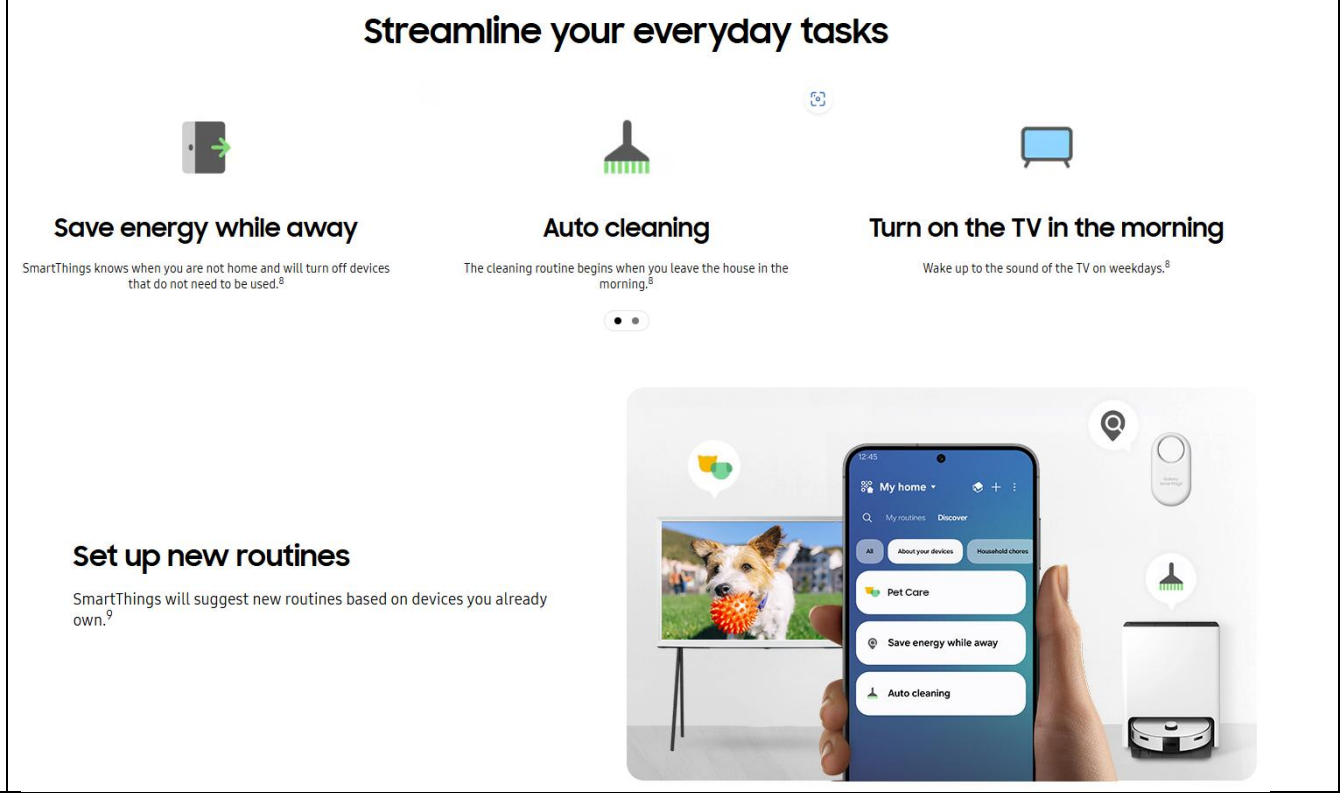
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

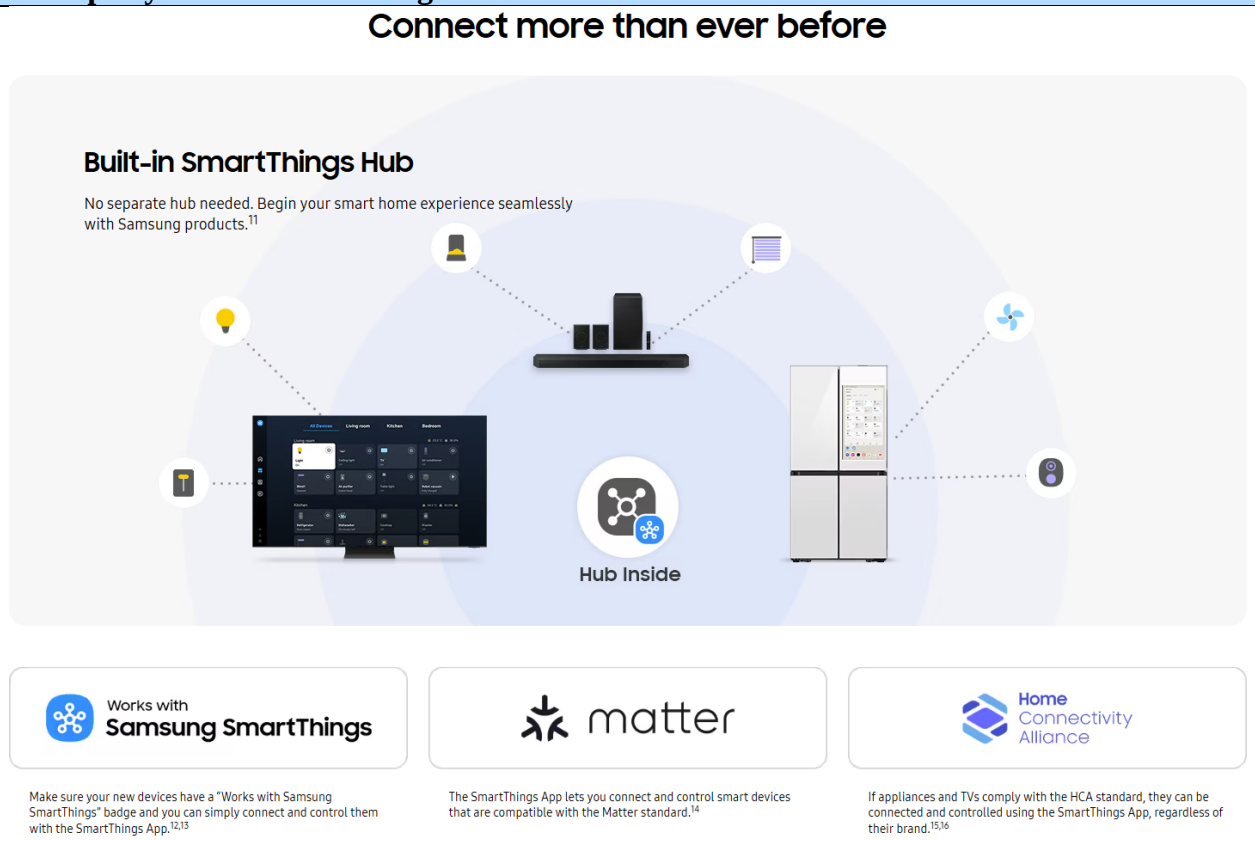
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Smartphone in the Accused Samsung '650 Products technical specification showing connecting with devices (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials and SmartThings cloud/platform credentials, updating a favorites and/or history list, controlling and/or changing the location, room, and/or name of one or more devices on the appliance display; https://www.samsung.com/us/apps/smartthings/ Samsung Galaxy S25

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



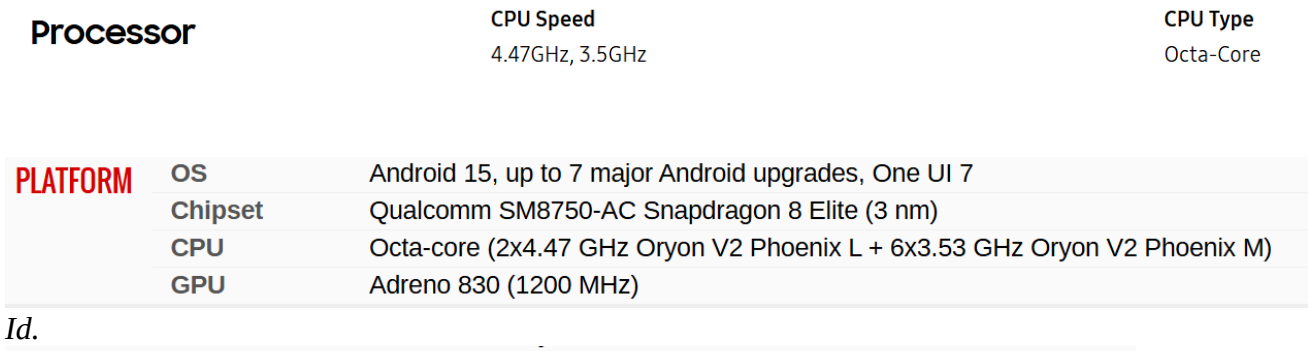
https://www.gsmarena.com/samsung_galaxy_s25-13610.php



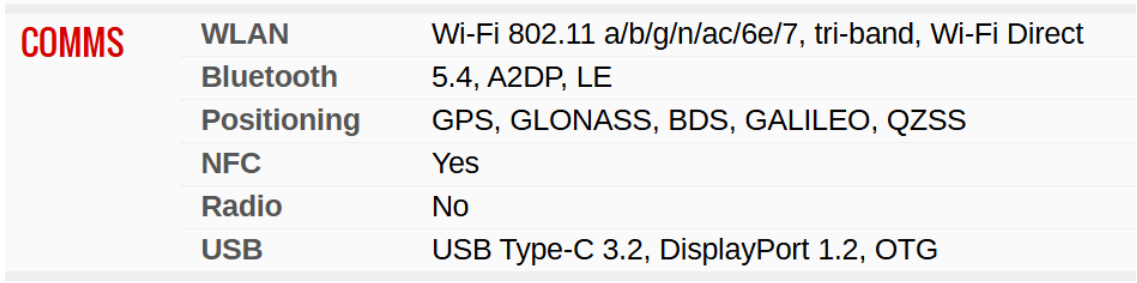
Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Id.



Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

94

Settings

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	## Wi-Fi settings You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider. 1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi. 2. Tap **More options** for the following options: • **Wi-Fi Direct**: Share data directly between devices over Wi-Fi. • **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features. • **Advanced settings**: Configure Wi-Fi connections and Hotspot settings. • **Contact us**: Contact Samsung support through Samsung Members. 95

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

You can rename a paired device to make it more recognizable.

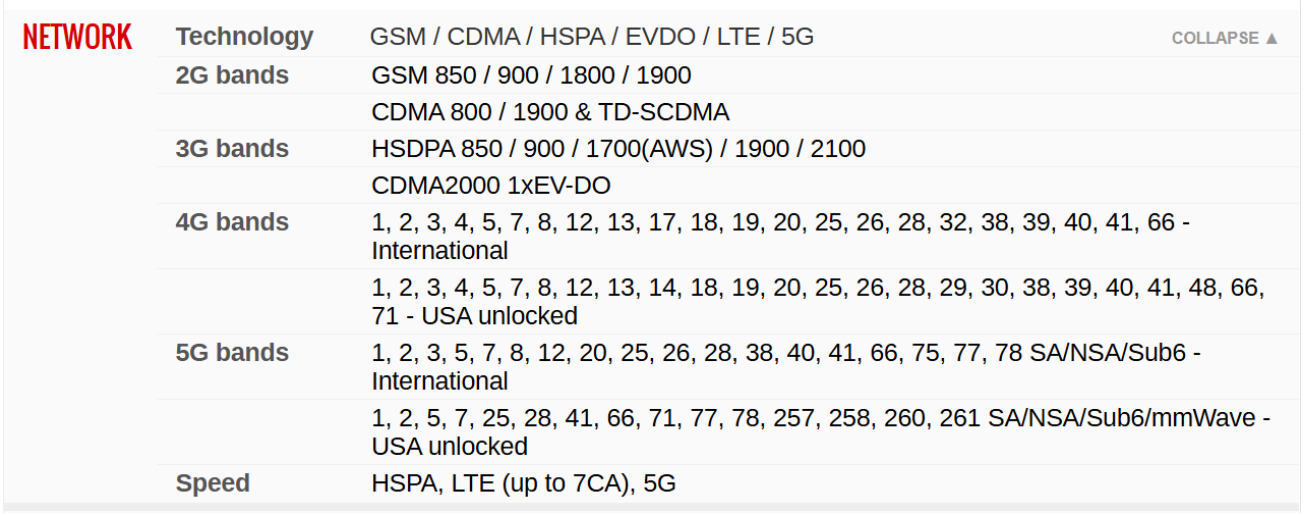
1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

IPR2025-01308; Samsung
Ex. 1043 - Page 101

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap **Connect**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

You can rename a paired device to make it more recognizable.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

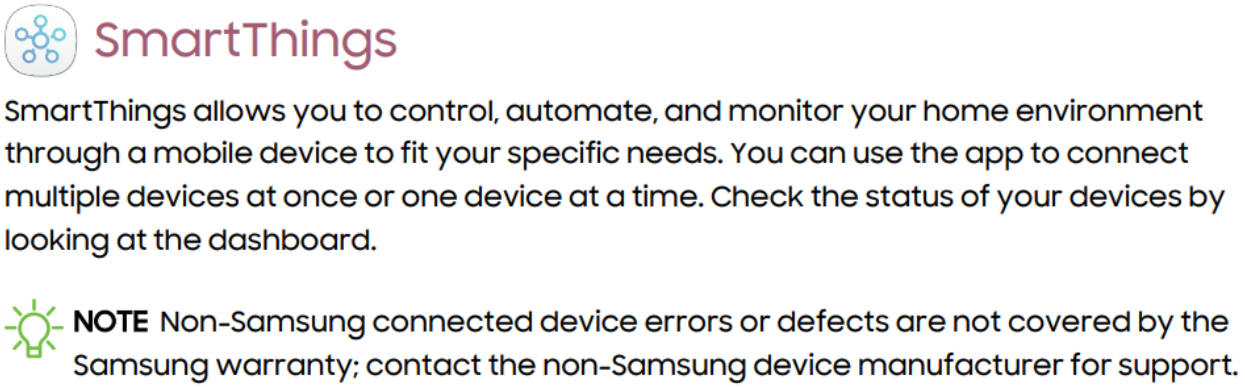
1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

TIP Tap **Scan QR code** to connect to a Wi-Fi network by using your device's camera to scan a QR code.

Wi-Fi settings

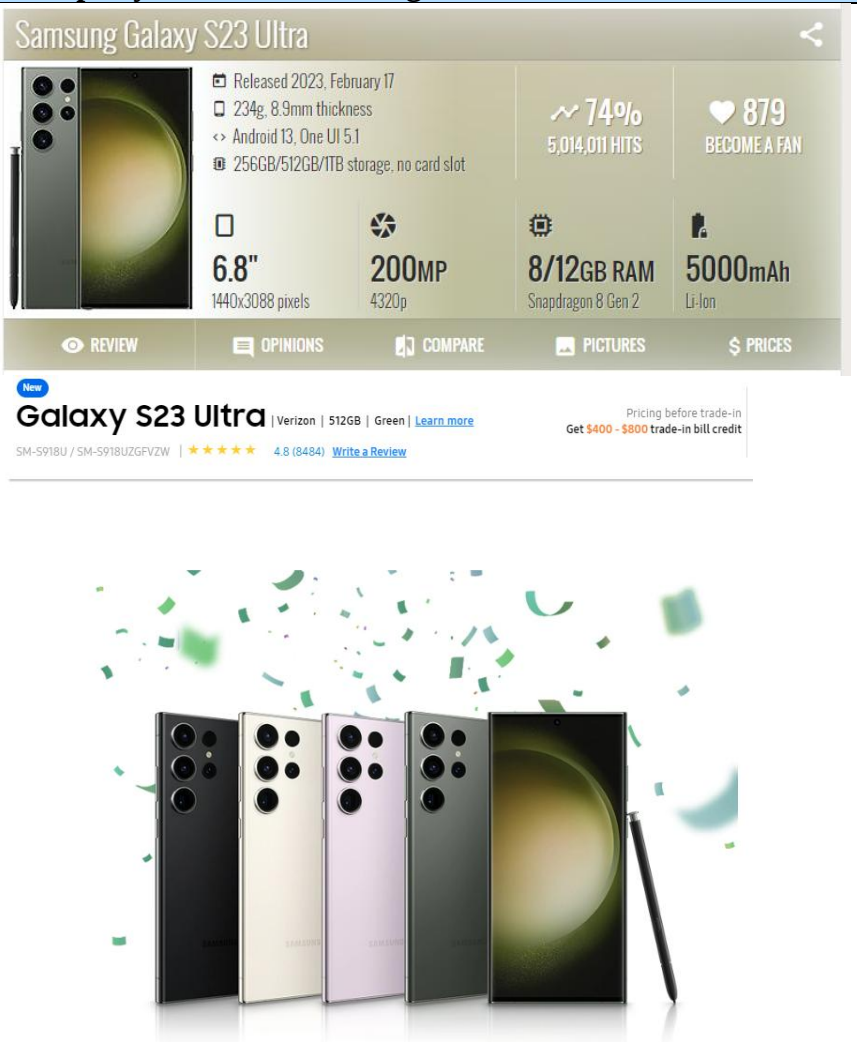
You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **More options** for the following options:
   - **Wi-Fi Direct**: Share data directly between devices over Wi-Fi.
   - **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features.
   - **Advanced settings**: Configure Wi-Fi connections and Hotspot settings.
   - **Contact us**: Contact Samsung support through Samsung Members.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 114-117. https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf  Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

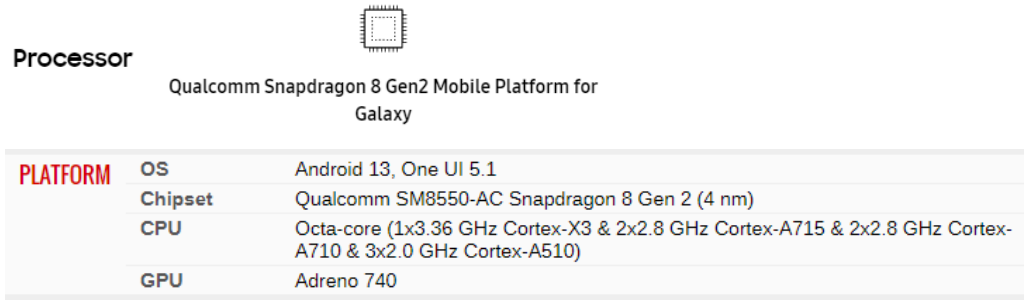
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Processor		Qualcomm Snapdragon 8 Gen2 Mobile Platform for Galaxy
PLATFORM	OS	Android 13, One UI 5.1
	Chipset	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
	CPU	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
	GPU	Adreno 740

Id.

COMMS	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, OTG

Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices. **Precautions for using Bluetooth** • Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth. • Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced. • Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device. • Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

IPR2025-01308; Samsung
Ex. 1043 - Page 109

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Pairing with other Bluetooth devices 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

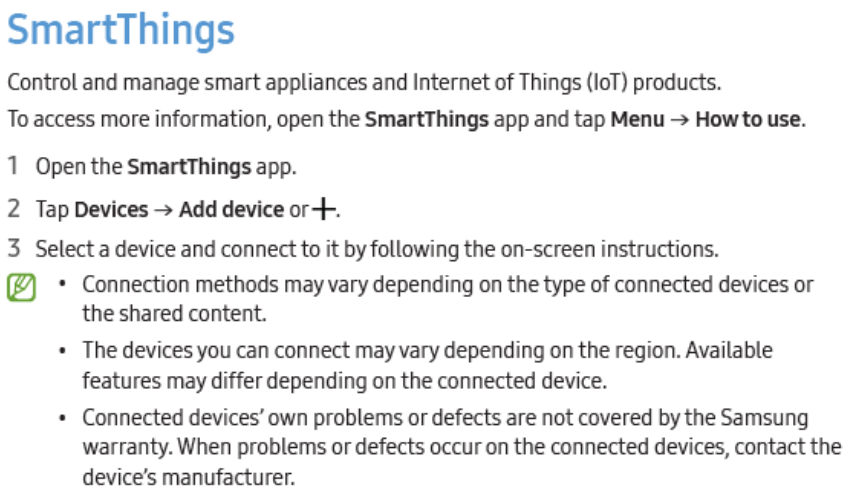
2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

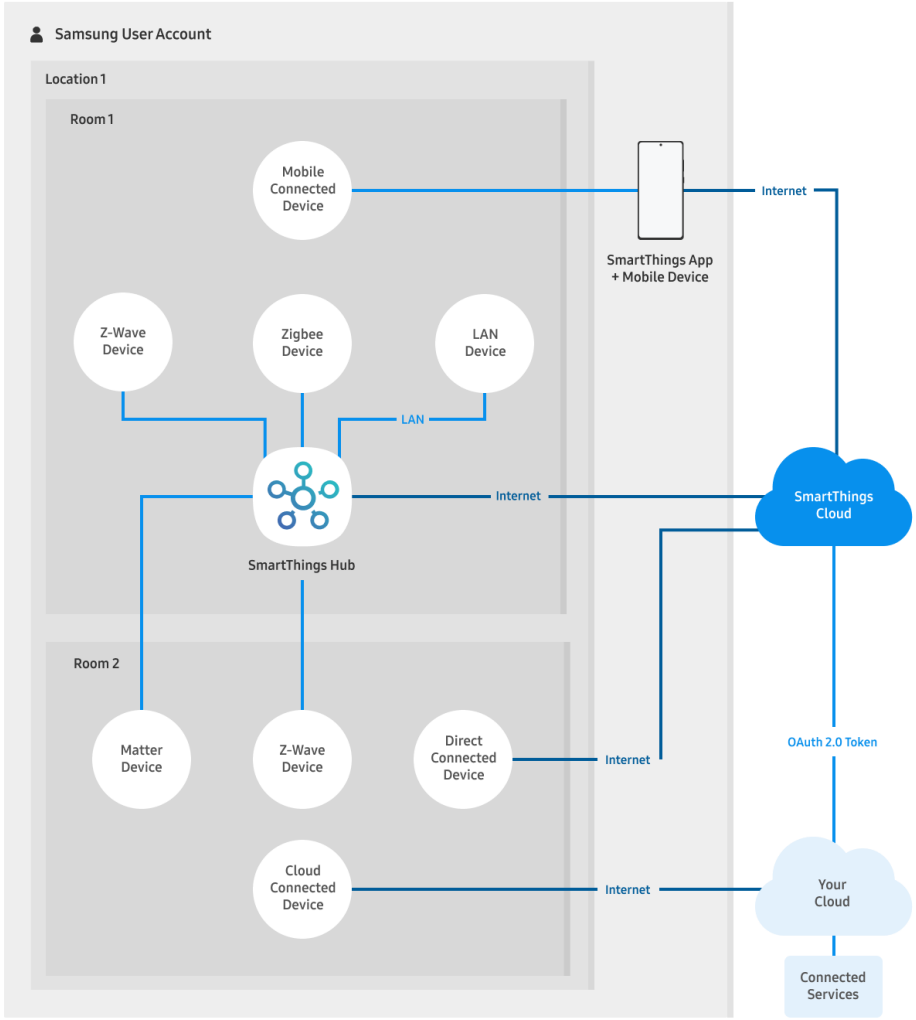
3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pgs. 123-124.

NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

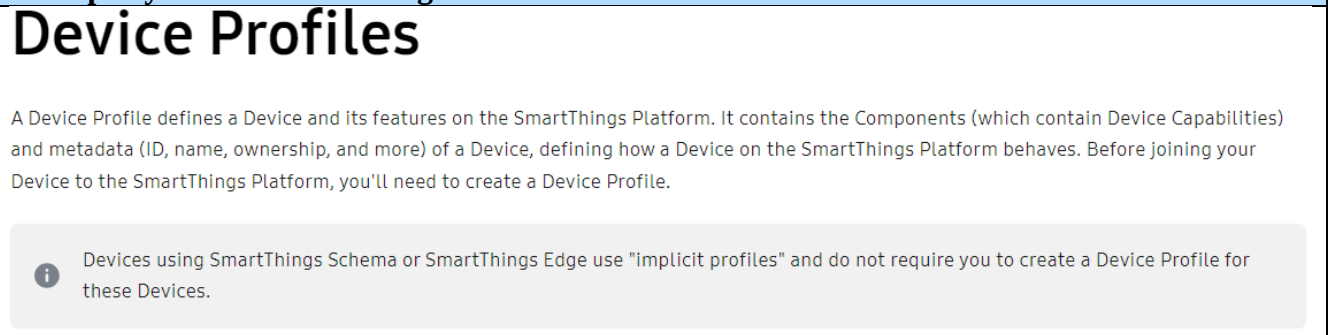
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium by adding/onboarding a device at pg. 111. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing the functionality to communicate with devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ Matter, a new industry protocol created by hundreds of leading and innovative companies (including Samsung), marks a new era for the smart home and its users. With a mission of simplifying the connected living experience, Matter makes it easy for users to buy, set up, and control smart devices. And while the new protocol is stirring a lot of buzz, many are wondering "how does it work?" SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi via different protocols and sharing information; https://blog.smartthings.com/stories/everything-you-need-to-know-about-matter/ **That's exciting! Is Matter a new kind of radio technology?** Nope. Matter is an "application layer", which means it can run over technologies already in your homes or devices — like Wi-Fi or Thread. Think of it like this: you and I can both have the same radio, but unless we speak the same language, we can't really do anything interesting together. Technologies like Wi-Fi and Thread let you connect your devices, and Matter is the language they speak to each other. *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings Platform The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

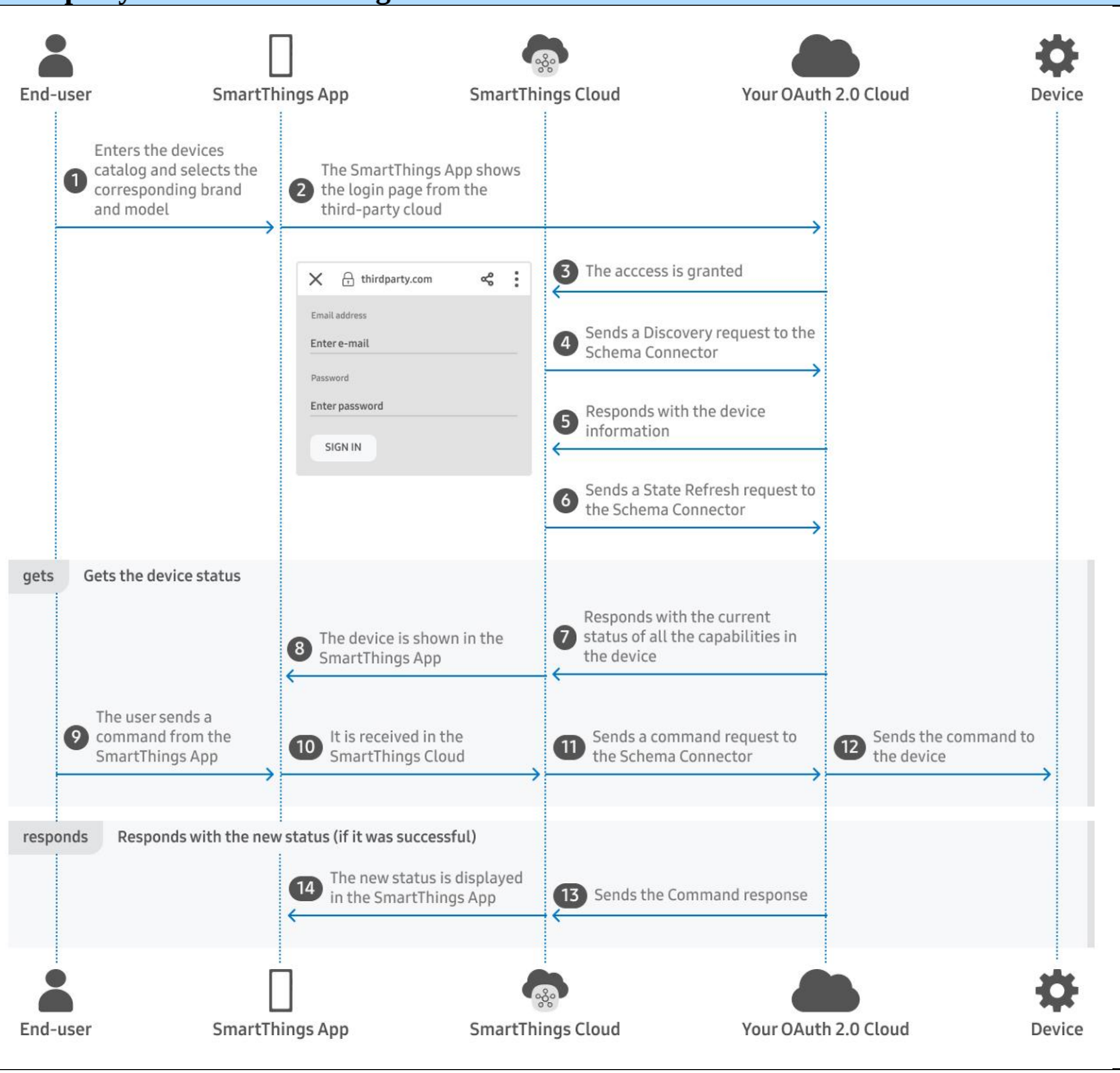
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Below is a list of currently supported categories. The Platform provides a default icon based on the category specified for the device. • AirConditioner • AirPurifier • AirQualityDetector • Battery • Blind • BluRayPlayer • BluetoothCarSpeaker • BluetoothTracker • Bridges • Button • Camera • Car • Charger • ClothingCareMachine • CoffeeMaker • ContactSensor • Cooktop • Cooktop • CubeRefrigerator • CurbPowerMeter • Dehumidifier • Dishwasher • Door • DoorBell • Dryer • Earbuds • ElectricVehicleCharger • Elevator • Fan • Feeder • Flashlight • GarageDoor • GasValve • GasMeter • GenericSensor

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• HealthTracker • Heatedmattresspad • HomeTheater • Hub • Humidifier • HumiditySensor • IrRemote • Irrigation • KimchiRefrigerator • KitchenHood • LeakSensor • Light • LightSensor • MicroFiberFilter • Microwave • MobilePresence • MotionSensor • MultiFunctionalSensor • NetworkAudio • NetworkAudio • Networking • Others • Oven • PresenceSensor • Printer • PrinterMultiFunction • Projector • Range • Receiver • Refrigerator • RemoteController • RiceCooker • RobotCleaner • ScaleToMeasureMassOfHumanBody • Scanner • SecurityPanel • SetTop • Shade • ShoesCareMachine • Siren • SmartLock

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• SmartPlug • SmokeDetector • SolarPanel • SoundSensor • SoundMachine • Speaker • StickVacuumCleaner • Stove • Switch • Television • TempSensor • Thermostat • Tracker • UPnPMediaRenderer • Vent • VisionSensor • VoiceAssistance • Washer • WaterHeater • WaterValve • WaterPurifier • WiFiRouter • Window • WineCellar *Id.* **Add a Device Profile** Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

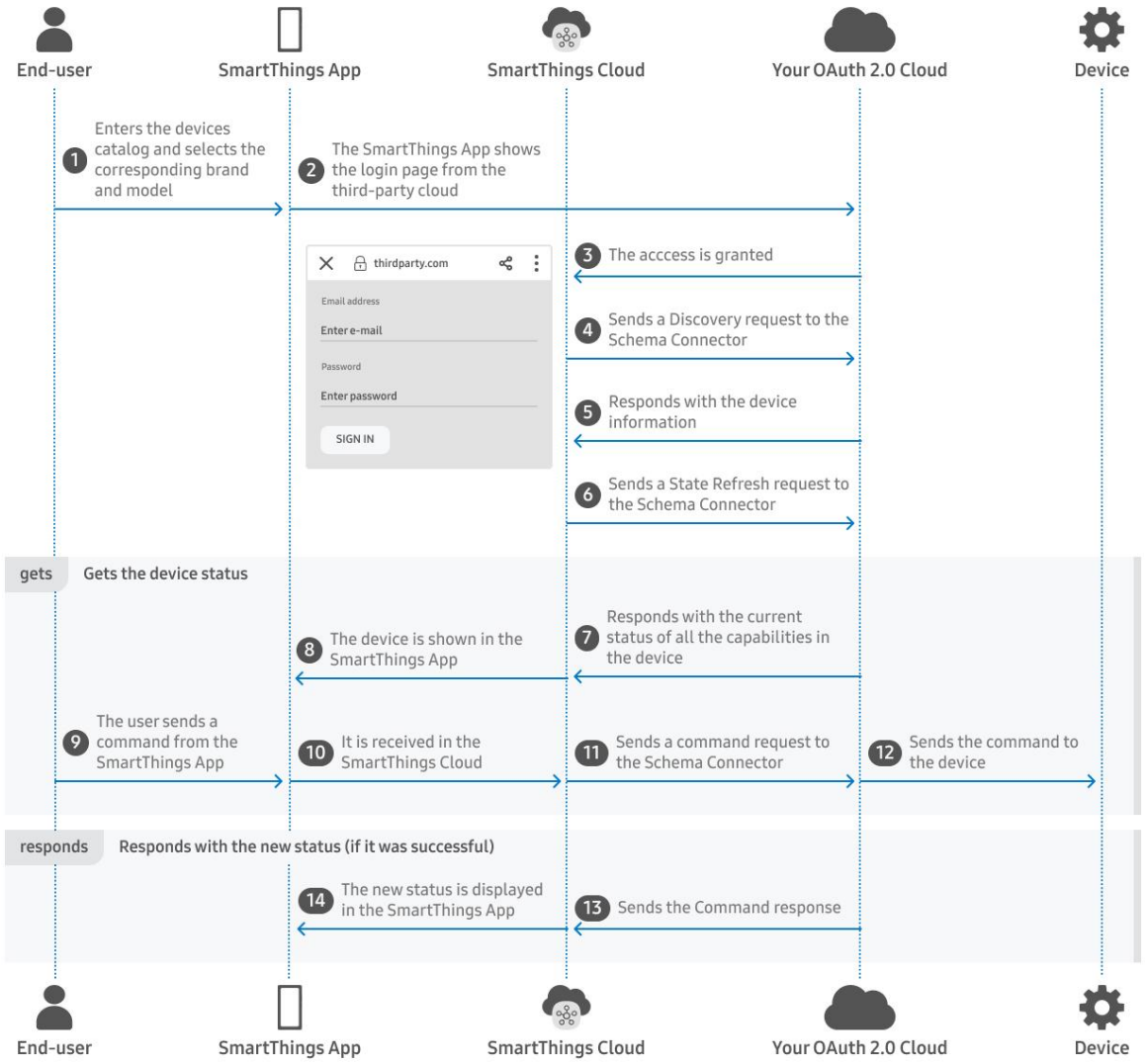
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Get Started with Direct Connected Devices Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the Capabilities of your device. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/get-started/ **Get Started with Cloud Connected Devices** Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector. SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform: • SmartThings Schema • SmartApps Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/ The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/connected-services/smartapp-basics **Using SmartApps to Connect Your Devices** Your Cloud does not need to support OAuth 2.0 when using SmartApps. SmartApps offer a more customizable method for integrating your products with the SmartThings Platform. They provide a method of building custom experiences, allowing you to create unique onboarding experiences, enhance Device functionality, and provide custom integrations with third-party services. Note that while a SmartApp can be used to integrate your Cloud Connected Device with the SmartThings Platform, that is not the only function a SmartApp can perform. This integration relies on a developer registering an HTTP Webhook URL or an AWS Lambda function in the Developer Workspace, which is then authorized to leverage the SmartThings Platform APIs. *Id.* The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started With Mobile Connected Devices

A Mobile Connected Device communicates with the SmartThings Platform via a mobile device, such as a Samsung Galaxy Smartphone. There are two types of Mobile Connected Devices:

- Bluetooth Devices
- SmartThings Find Devices

Bluetooth Devices

Bluetooth devices function differently than the other devices supported by SmartThings. Notably, they cannot be incorporated into Automations or Scenes.

Bluetooth devices paired to a Samsung Galaxy phone are automatically displayed in the SmartThings app. Tapping a Bluetooth device in the SmartThings app will show the available settings and controls for the device. You can also control media playing on a connected bluetooth device from the SmartThings app.

Bluetooth devices connected to a non-Samsung or iOS phone will not be displayed in the SmartThings clients.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/mobile-connected/get-started/

SmartThings Find Devices

A SmartThings Find Device is a BLE (Bluetooth Low Energy) device compatible with the SmartThings Find service.

SmartThings Find uses BLE and UWB (ultra-wideband) technologies to help you quickly locate your connected devices. By using AR in conjunction with maps and sounds, SmartThings Find offers a simple and visual solution to help guide you to your missing device.

With SmartThings Find, you can locate your missing device, even if it is offline. SmartThings users can opt in to securely use their Galaxy smartphone or tablet to help others locate their lost devices. Once a device has been offline for 30 minutes, it produces a BLE signal that can be received by other devices. If you report your device as lost via SmartThings Find, any nearby Galaxy smartphone or tablet that has opted into helping find misplaced devices can alert the Samsung server about its location, which will in turn notify you.

All SmartThings Find user data is encrypted and securely protected, ensuring that the device's location is not revealed to anyone except its owner.

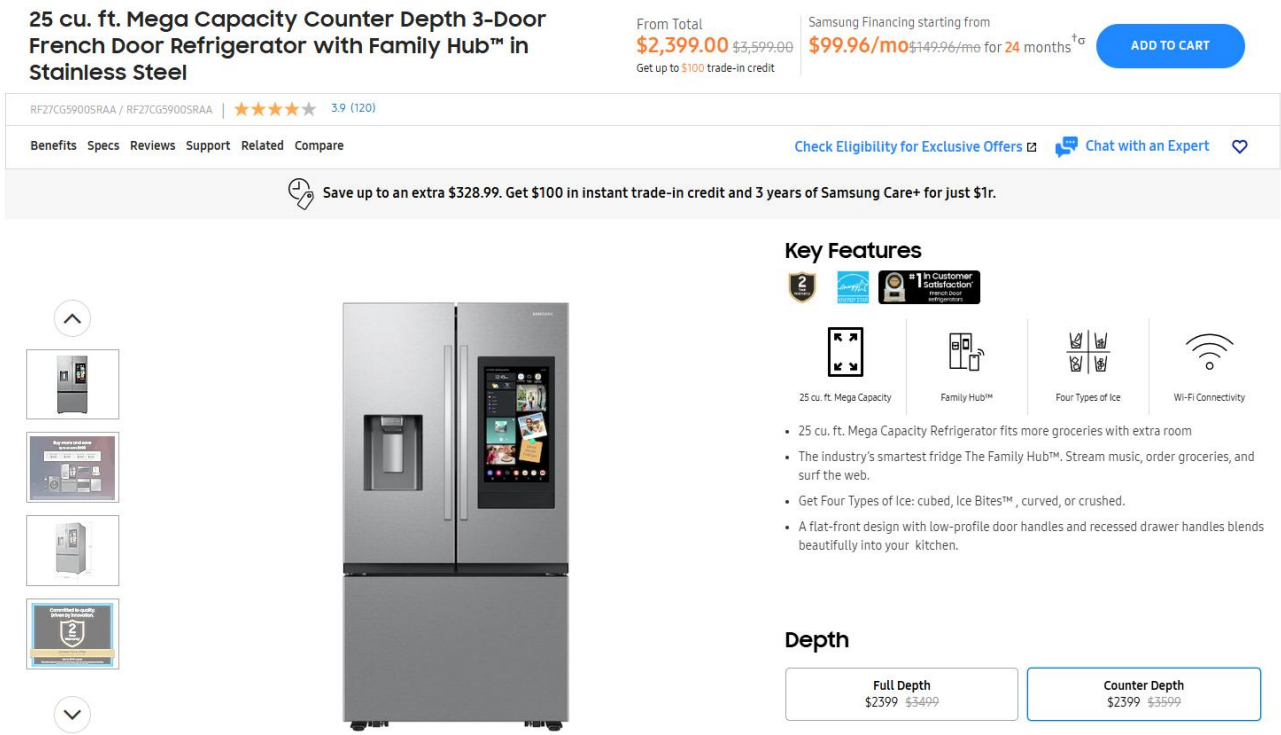
For information on how you can make your device compatible with SmartThings Find, submit a request here.

Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.
[1.b] a plurality of subsidiary terminals,	The Accused Samsung '650 Products with Family Hub™ include a plurality of subsidiary terminals. *See e.g.*, Technical Specifications of each of the Accused Samsung '0650 Products available at Samsung's website provide evidence that the devices include a plurality of subsidiary terminals. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, two or more fridge with Family Hub™ (*e.g.*, fridge with Hub type functionality) in the Accused Samsung '650 Products is a plurality of subsidiary terminals that are capable of communicating (*e.g.*, using Wi-Fi/Bluetooth chipset) with the phone and other devices by being onboarded/added to the SmartThings cloud/platform for exchanging contents (*e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations). To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a nonlimiting example, two or more fridge with Family Hub™ (*e.g.*, fridge with Hub type functionality) in the Accused Samsung '650 Products alone or each in conjunction with the SmartThings cloud/platform is a plurality of subsidiary terminals that are capable of communicating (*e.g.*, using Wi-Fi/Bluetooth chipset) with the phone and other devices by being onboarded/added to the SmartThings cloud/platform for exchanging contents

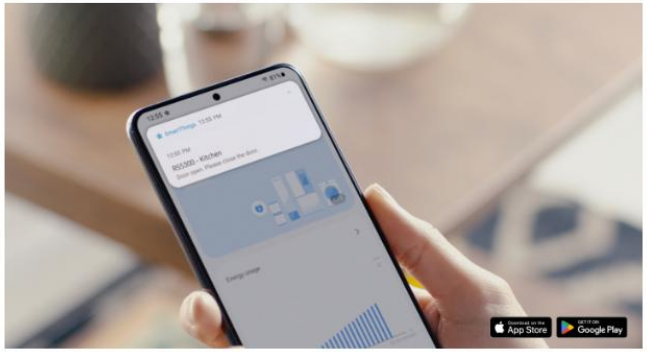
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	(*e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations). The SmartThings cloud/platform is an extension of the fridge with Family Hub™ because the SmartThings cloud/platform includes virtual instances having the same functionalities as the fridge with Family Hub™. *See e.g.*, **Device Profiles** A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile. Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/ For example, two 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") alone or each in conjunction with the SmartThings cloud/platform are each one of the plurality of subsidiary terminals for communicating with the phone, other devices, each other, and the SmartThings cloud/platform using Wi-Fi/Bluetooth chipsets during and after the onboarding process for exchanging contents. For example, two 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") are each one of the plurality of subsidiary terminals for communicating with the phone, other devices, each other, and the SmartThings cloud/platform using Wi-Fi/Bluetooth chipsets during and after the onboarding process for exchanging contents.

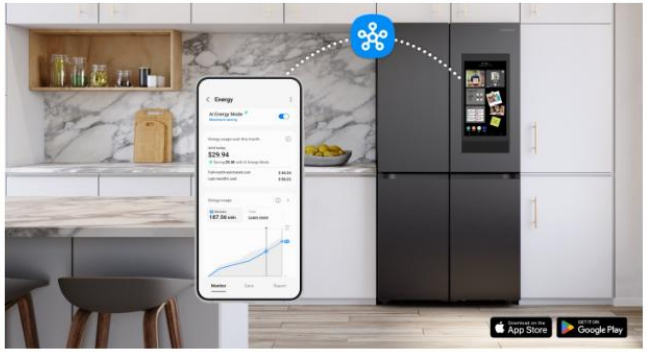
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the fridge") Technical specification showing Wi-Fi/Bluetooth functionality for communicating with other devices and/or the SmartThings cloud/platform using Family Hub™ after being onboarded/added to the SmartThings cloud/platform for exchanging contents via display and/or storage medium; https://www.samsung.com/us/home-appliances/refrigerators/3-door-french-door/25-cu-ft--mega-capacity-counter-depth-3-door-french-door-refrigerator-with-family-hub--in-stainless-steel-rf27cg5900sraa/.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Life in sync with SmartThings





Family Hub™, it's more than a fridge

Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.**

*Google and Google Photos are trademarks of Google LLC.
**A Wi-Fi connection and Samsung account required.

Get smart energy≠ savings of up to 10%†

SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone.

†Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions.
≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.
§Product images shown may not reflect the model or color selected.

Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Family Hub™, it's more than a fridge

The Family Hub™ lets you share pictures, stream music and videos, access recipes and control your smart devices and Alexa all from the fridge.[1]

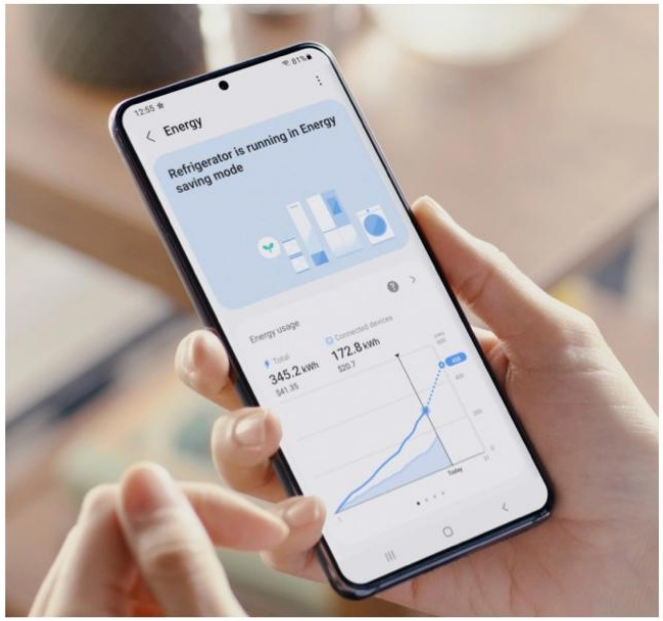
Id.

Monitor and control energy usage
You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2]

Get useful notifications
With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter.

Keeps food fresher
Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator.

Even cooling from corner to corner
All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer.



Id.

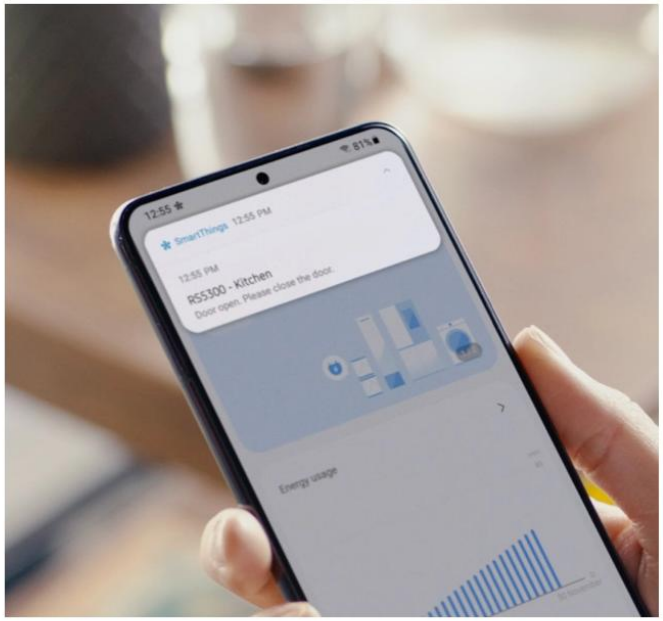
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

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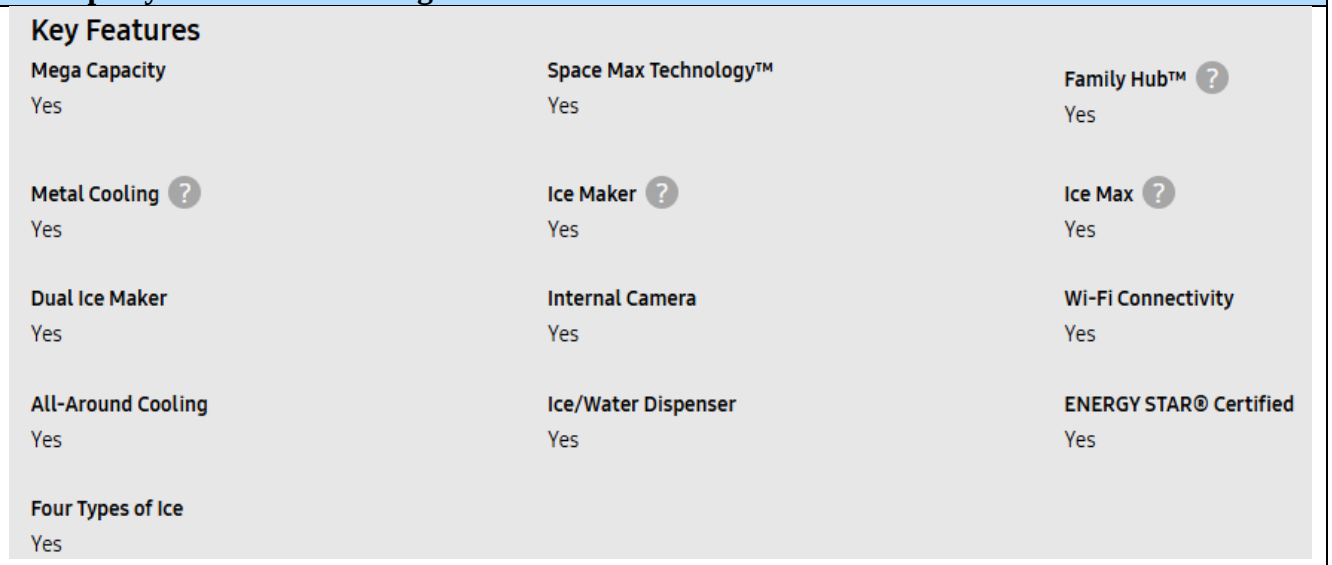
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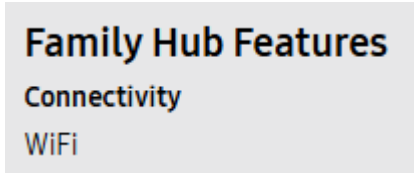


Id.

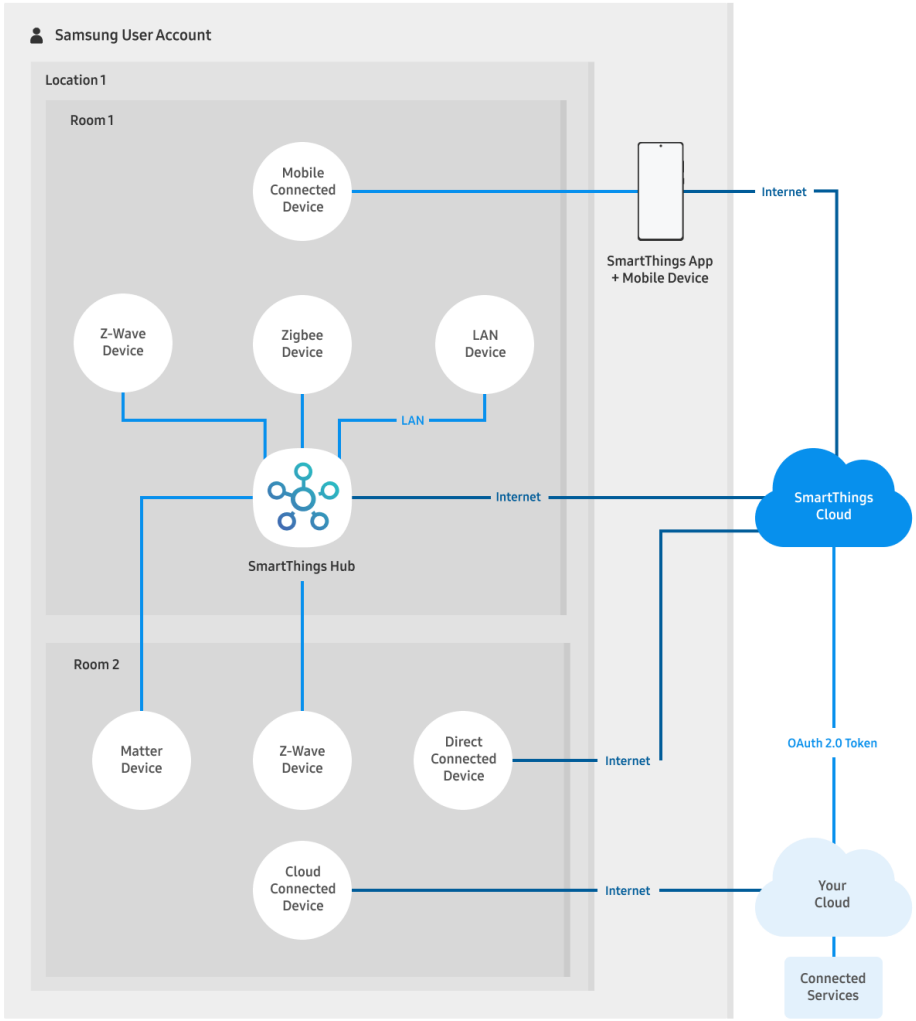
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Id.



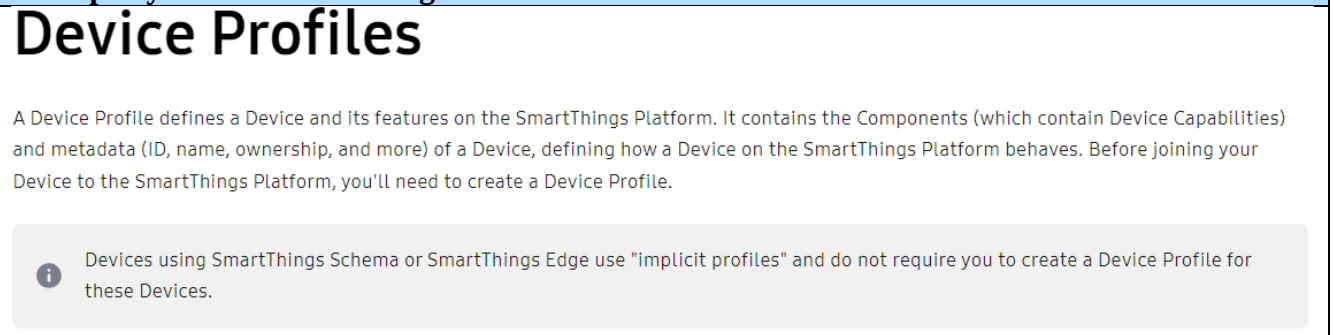
Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing the functionality to communicate with devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ Matter, a new industry protocol created by hundreds of leading and innovative companies (including Samsung), marks a new era for the smart home and its users. With a mission of simplifying the connected living experience, Matter makes it easy for users to buy, set up, and control smart devices. And while the new protocol is stirring a lot of buzz, many are wondering "how does it work?" SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi via different protocols and sharing information; https://blog.smartthings.com/stories/everything-you-need-to-know-about-matter/ **That's exciting! Is Matter a new kind of radio technology?** Nope. Matter is an "application layer", which means it can run over technologies already in your homes or devices — like Wi-Fi or Thread. Think of it like this: you and I can both have the same radio, but unless we speak the same language, we can't really do anything interesting together. Technologies like Wi-Fi and Thread let you connect your devices, and Matter is the language they speak to each other. *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings Platform The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Below is a list of currently supported categories. The Platform provides a default icon based on the category specified for the device. • AirConditioner • AirPurifier • AirQualityDetector • Battery • Blind • BluRayPlayer • BluetoothCarSpeaker • BluetoothTracker • Bridges • Button • Camera • Car • Charger • ClothingCareMachine • CoffeeMaker • ContactSensor • Cooktop • Cooktop • CubeRefrigerator • CurbPowerMeter • Dehumidifier • Dishwasher • Door • DoorBell • Dryer • Earbuds • ElectricVehicleCharger • Elevator • Fan • Feeder • Flashlight • GarageDoor • GasValve • GasMeter • GenericSensor

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• HealthTracker • Heatedmattresspad • HomeTheater • Hub • Humidifier • HumiditySensor • IrRemote • Irrigation • KimchiRefrigerator • KitchenHood • LeakSensor • Light • LightSensor • MicroFiberFilter • Microwave • MobilePresence • MotionSensor • MultiFunctionalSensor • NetworkAudio • NetworkAudio • Networking • Others • Oven • PresenceSensor • Printer • PrinterMultiFunction • Projector • Range • Receiver • Refrigerator • RemoteController • RiceCooker • RobotCleaner • ScaleToMeasureMassOfHumanBody • Scanner • SecurityPanel • SetTop • Shade • ShoesCareMachine • Siren • SmartLock

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• SmartPlug • SmokeDetector • SolarPanel • SoundSensor • SoundMachine • Speaker • StickVacuumCleaner • Stove • Switch • Television • TempSensor • Thermostat • Tracker • UPnPMediaRenderer • Vent • VisionSensor • VoiceAssistance • Washer • WaterHeater • WaterValve • WaterPurifier • WiFiRouter • Window • WineCellar *Id.* **Add a Device Profile** Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started with Direct Connected Devices

Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the Capabilities of your device.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/get-started/

Get Started with Cloud Connected Devices

Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector.

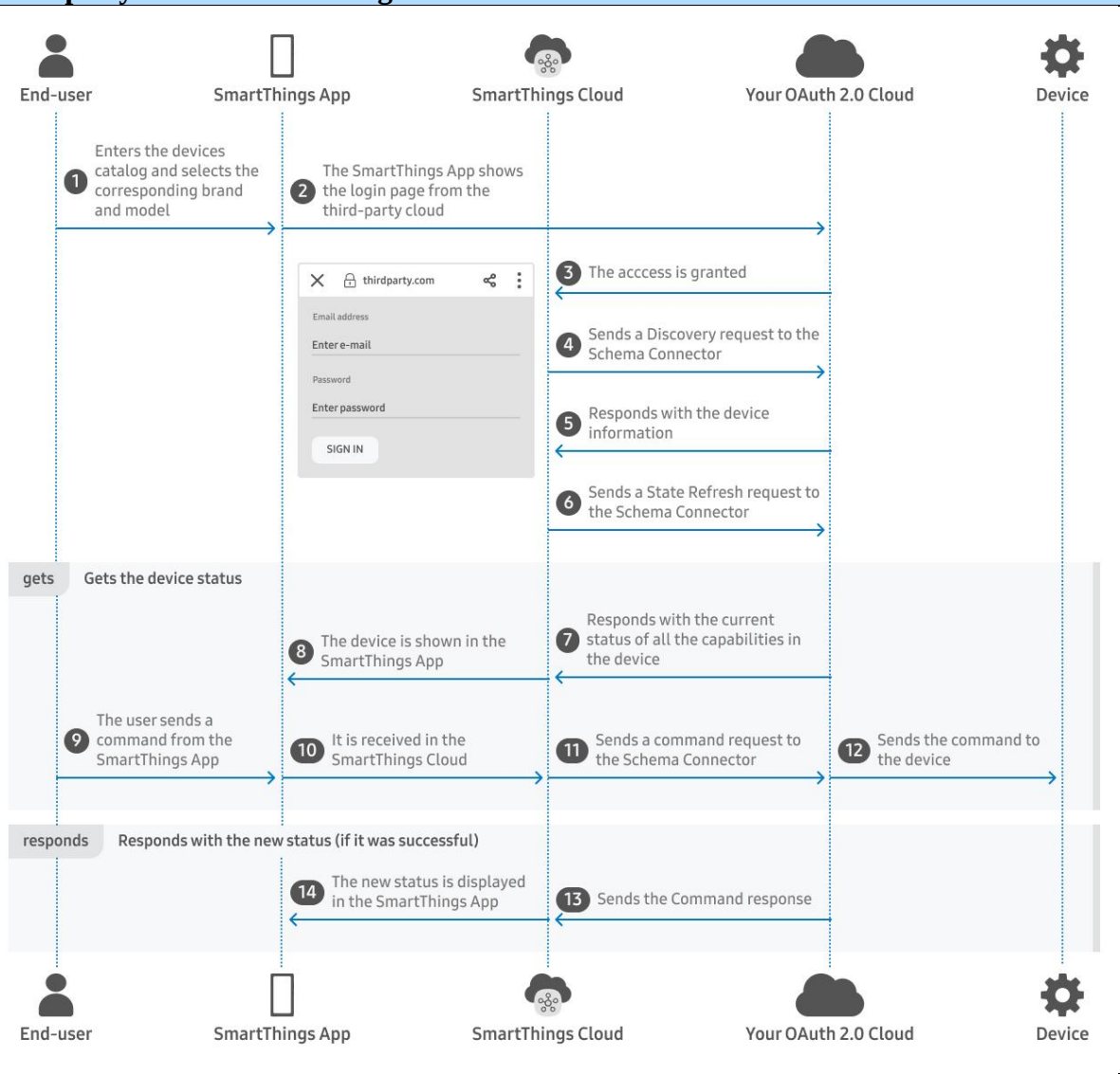
SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform:

- SmartThings Schema
- SmartApps

Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/

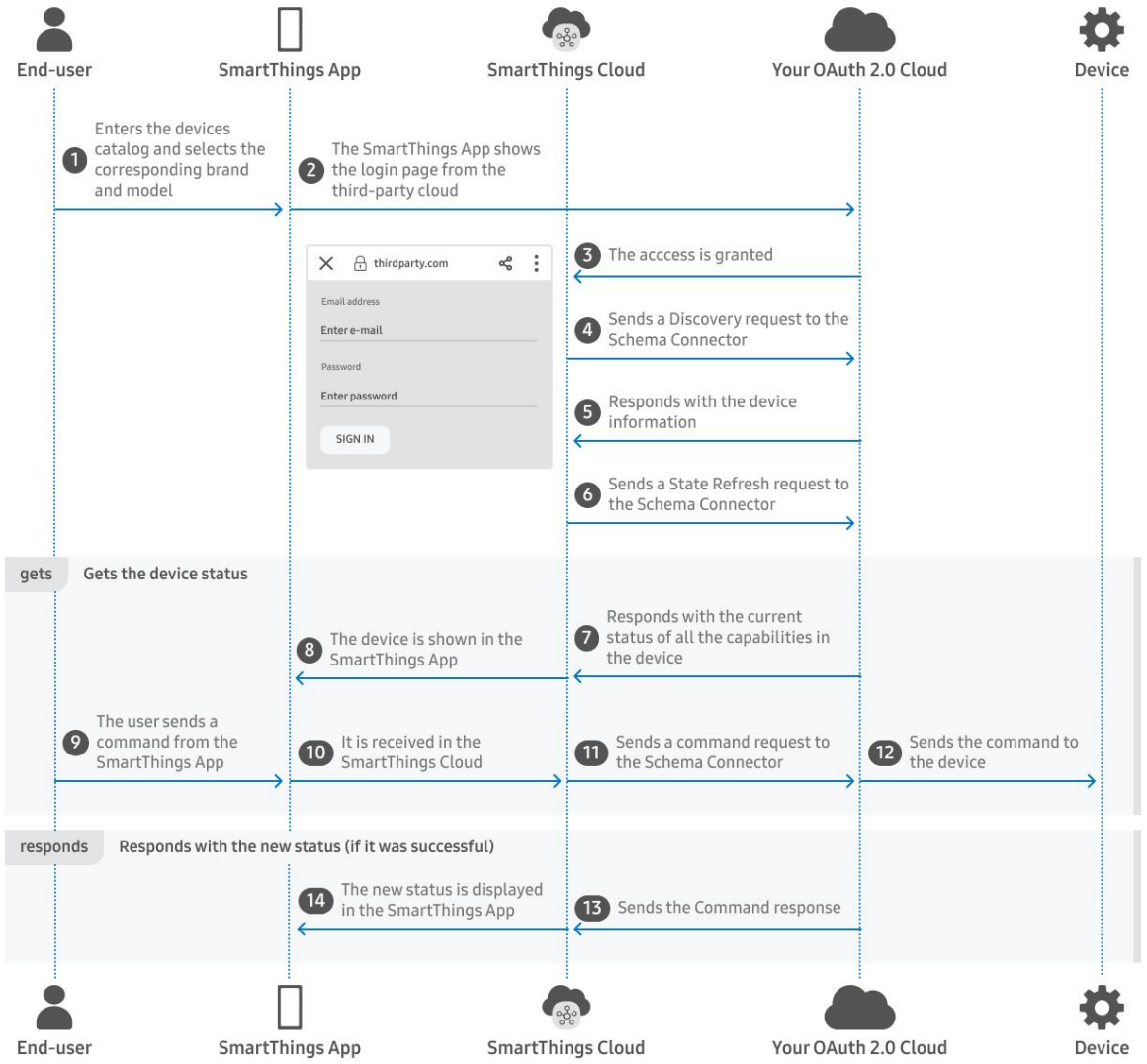
The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/connected-services/smartapp-basics **Using SmartApps to Connect Your Devices** Your Cloud does not need to support OAuth 2.0 when using SmartApps. SmartApps offer a more customizable method for integrating your products with the SmartThings Platform. They provide a method of building custom experiences, allowing you to create unique onboarding experiences, enhance Device functionality, and provide custom integrations with third-party services. Note that while a SmartApp can be used to integrate your Cloud Connected Device with the SmartThings Platform, that is not the only function a SmartApp can perform. This integration relies on a developer registering an HTTP Webhook URL or an AWS Lambda function in the Developer Workspace, which is then authorized to leverage the SmartThings Platform APIs. *Id.* The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started With Mobile Connected Devices

A Mobile Connected Device communicates with the SmartThings Platform via a mobile device, such as a Samsung Galaxy Smartphone. There are two types of Mobile Connected Devices:

- Bluetooth Devices
- SmartThings Find Devices

Bluetooth Devices

Bluetooth devices function differently than the other devices supported by SmartThings. Notably, they cannot be incorporated into Automations or Scenes.

Bluetooth devices paired to a Samsung Galaxy phone are automatically displayed in the SmartThings app. Tapping a Bluetooth device in the SmartThings app will show the available settings and controls for the device. You can also control media playing on a connected bluetooth device from the SmartThings app.

Bluetooth devices connected to a non-Samsung or iOS phone will not be displayed in the SmartThings clients.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/mobile-connected/get-started/

SmartThings Find Devices

A SmartThings Find Device is a BLE (Bluetooth Low Energy) device compatible with the SmartThings Find service.

SmartThings Find uses BLE and UWB (ultra-wideband) technologies to help you quickly locate your connected devices. By using AR in conjunction with maps and sounds, SmartThings Find offers a simple and visual solution to help guide you to your missing device.

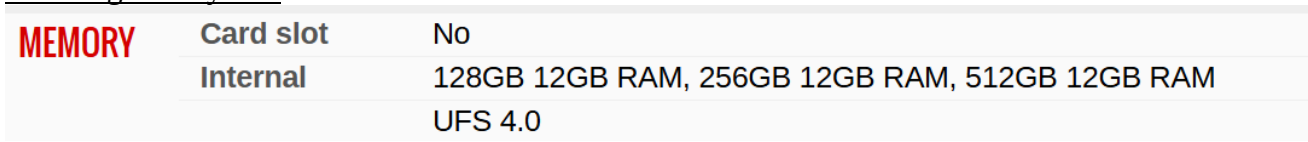
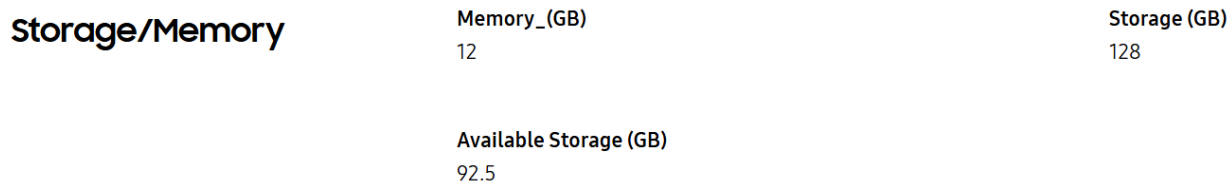
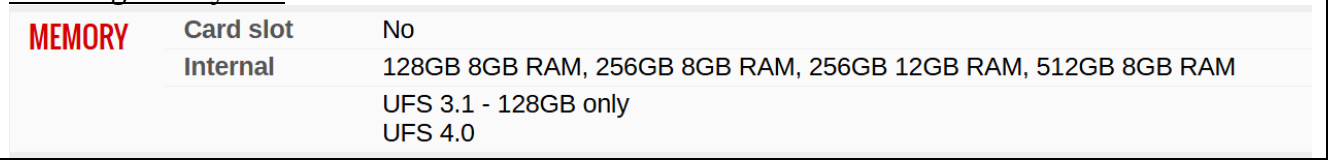
With SmartThings Find, you can locate your missing device, even if it is offline. SmartThings users can opt in to securely use their Galaxy smartphone or tablet to help others locate their lost devices. Once a device has been offline for 30 minutes, it produces a BLE signal that can be received by other devices. If you report your device as lost via SmartThings Find, any nearby Galaxy smartphone or tablet that has opted into helping find misplaced devices can alert the Samsung server about its location, which will in turn notify you.

All SmartThings Find user data is encrypted and securely protected, ensuring that the device's location is not revealed to anyone except its owner.

For information on how you can make your device compatible with SmartThings Find, submit a request here.

Id.

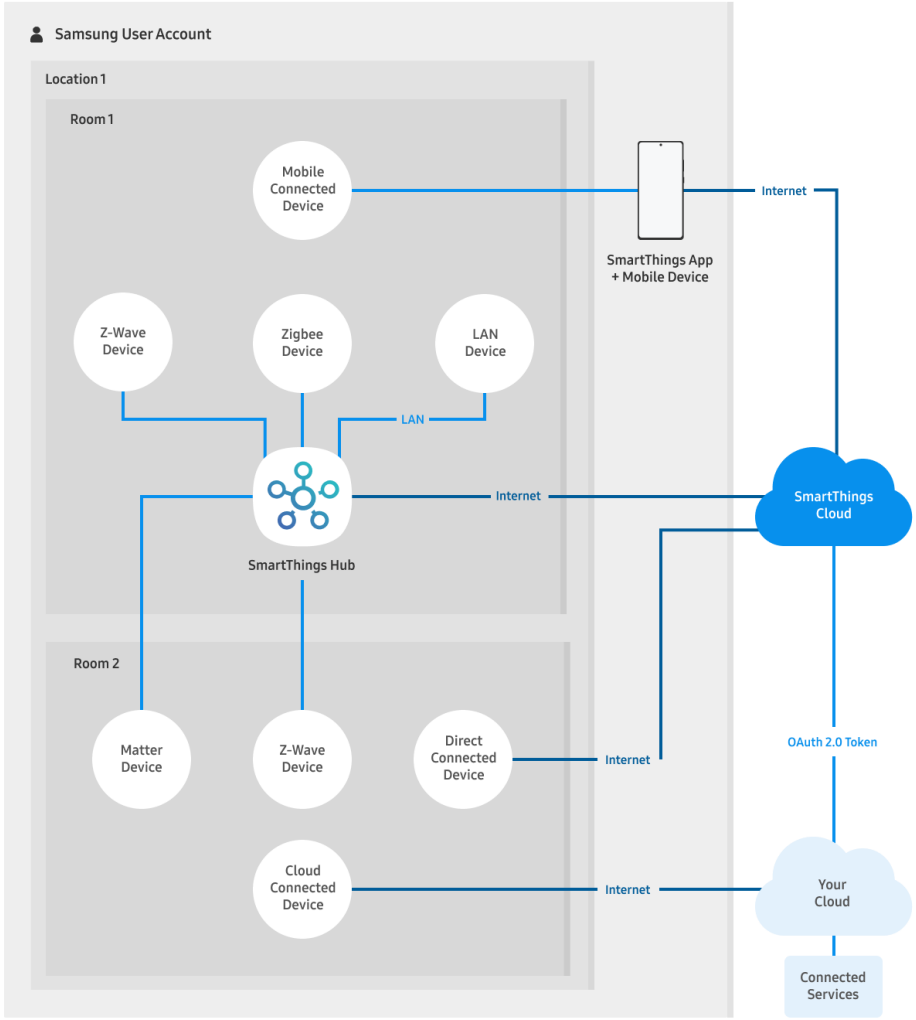
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.
[1.c] wherein the main terminal comprises: a storage storing the contents;	Phones in the Accused Samsung '650 Products include wherein the main terminal comprises a storage storing the contents. *See e.g.*, Technical Specifications of each of the Accused Samsung '0650 Products available at Samsung's website provide evidence that the devices include wherein the main terminal comprises a storage storing the contents. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, each of the phone in the Accused Samsung '650 Products include a storage medium for storing the contents (*e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI)). For example, the phones in conjunction with the SmartThings app. include a storage medium (*e.g.*, on the phones and on the SmartThings cloud/platform being an extension of each device onboarded/added to it). To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a nonlimiting example, each of the phone in the Accused Samsung '650 Products alone or in conjunction with the SmartThings cloud/platform (*e.g.*, upon information and belief backend services or servers) include a storage medium for storing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	the contents (*e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI)). For example, the phones with the SmartThings app. alone or in conjunction with the SmartThings cloud/platform include a storage medium (*e.g.*, on the phones and on the SmartThings cloud/platform being an extension of each device onboarded/added to it). *See e.g.*, <u>Samsung Galaxy S25</u>   <u>Samsung Galaxy S24</u> 

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Storage/Memory Memory_(GB) 8 Storage (GB) 128 Available Storage (GB) 103.9 Samsung Galaxy S23 Ultra MEMORY Card slot: No Internal: 256GB 8GB RAM, 256GB 12GB RAM, 512GB 12GB RAM, 1TB 12GB RAM UFS 4.0

IPR2025-01308; Samsung
Ex. 1043 - Page 149

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ **The SmartThings Platform** The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Device Profiles

A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile.

Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/device-profiles/

Add a Device Profile

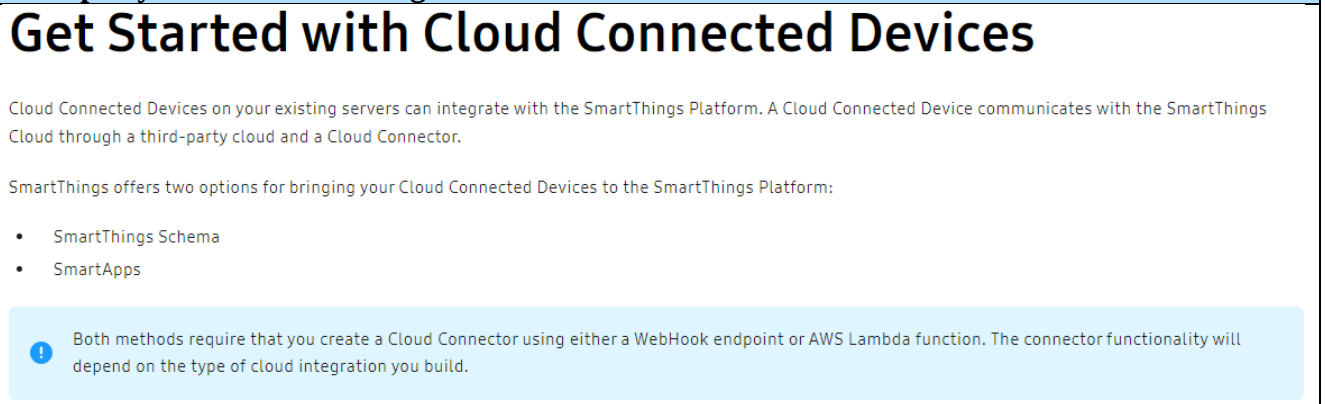
Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves.

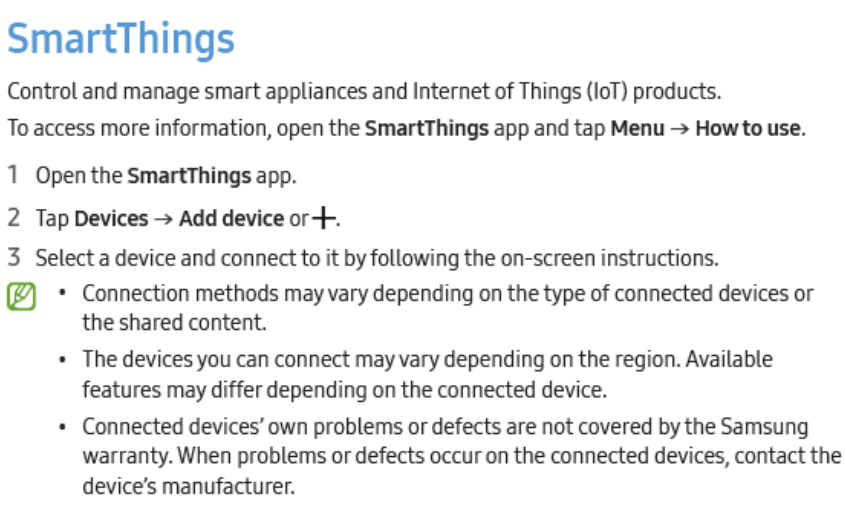
SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

Get Started with Direct Connected Devices

Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the **Capabilities** of your device.

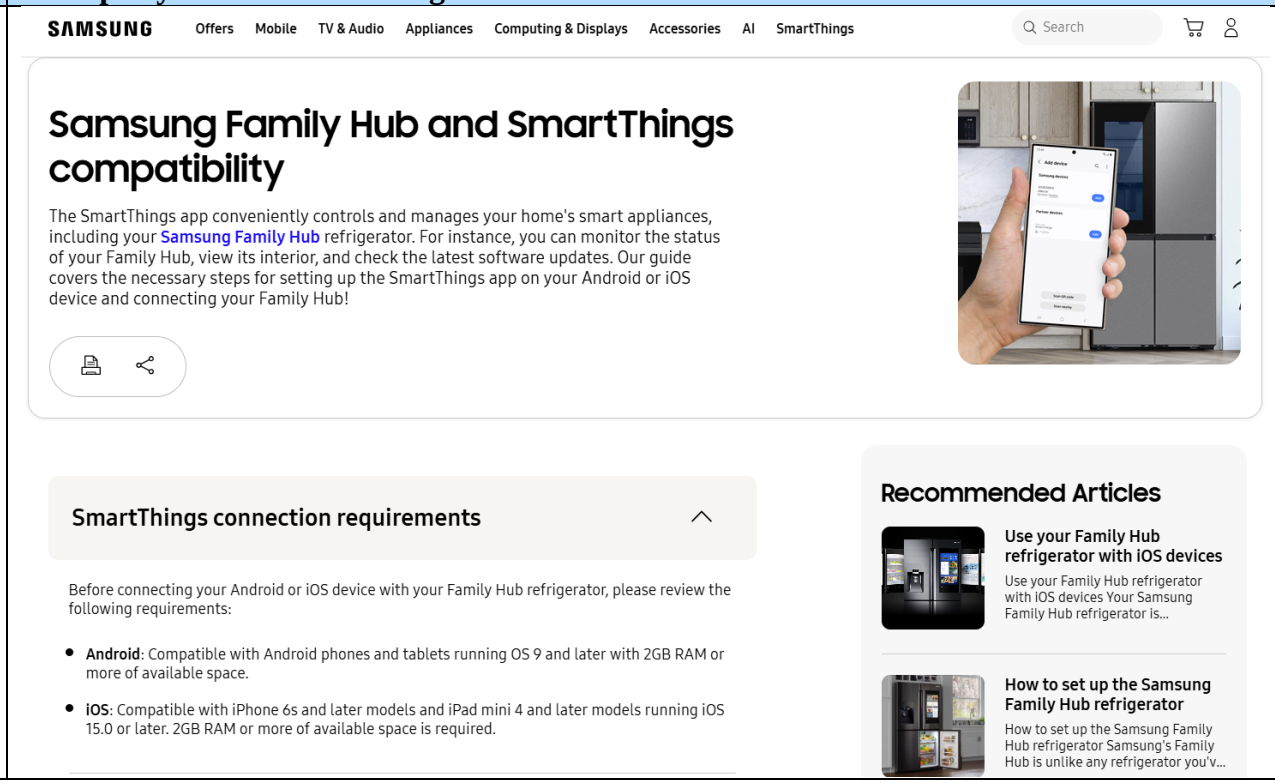
SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/get-started/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices in its using its one or more databases when onboarded/added for connection and communication using the SmartThings app and/or Family Hub™; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/ On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes one or more storage medium including in the SmartThings cloud/platform for storing. Specifically, additional Accused Samsung '650 Products contain storage medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.
[1.d] a first display displaying the contents; and	The phones in the Accused Samsung '650 Products include a first display displaying the contents. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include a first display displaying the contents. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, each smartphone or phone with SmartThings app. in the Accused Samsung '650 Products includes a first display that displays the credentials and network information

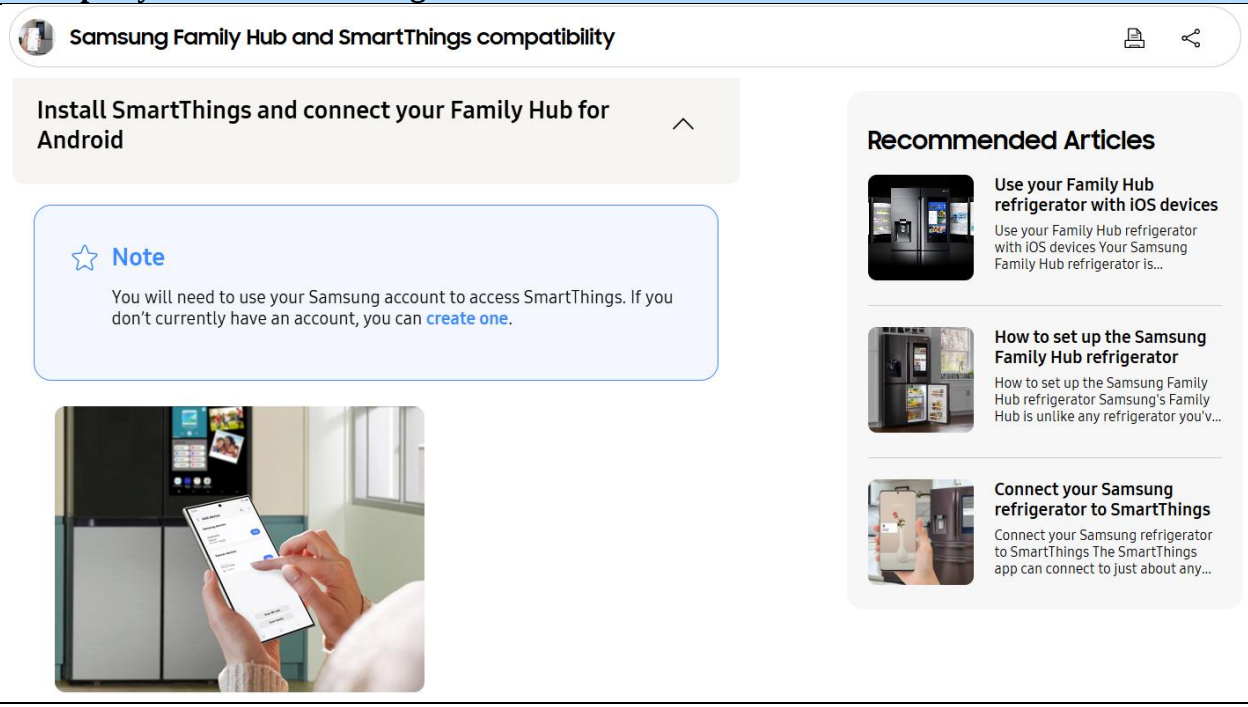
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	exchanged during the onboarding/adding process of each fridge on the SmartThings cloud/platform. In addition, each of the smartphone with SmartThings app. In the Accused Samsung '650 Patent includes a first display of the onboarded fridge's device name, device ID, and/or device state in the form of metadata, a Favorites list, History list, and/or device GUI on the SmartThings app. *See e.g.*,  SmartThings Control and manage smart appliances and Internet of Things (IoT) products. To access more information, open the **SmartThings** app and tap **Menu** → **How to use**. 1 Open the **SmartThings** app. 2 Tap **Devices** → **Add device** or +. 3 Select a device and connect to it by following the on-screen instructions. • Connection methods may vary depending on the type of connected devices or the shared content. • The devices you can connect may vary depending on the region. Available features may differ depending on the connected device. • Connected devices' own problems or defects are not covered by the Samsung warranty. When problems or defects occur on the connected devices, contact the device's manufacturer. Galaxy S23 Series User Guide at pg. 111. showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

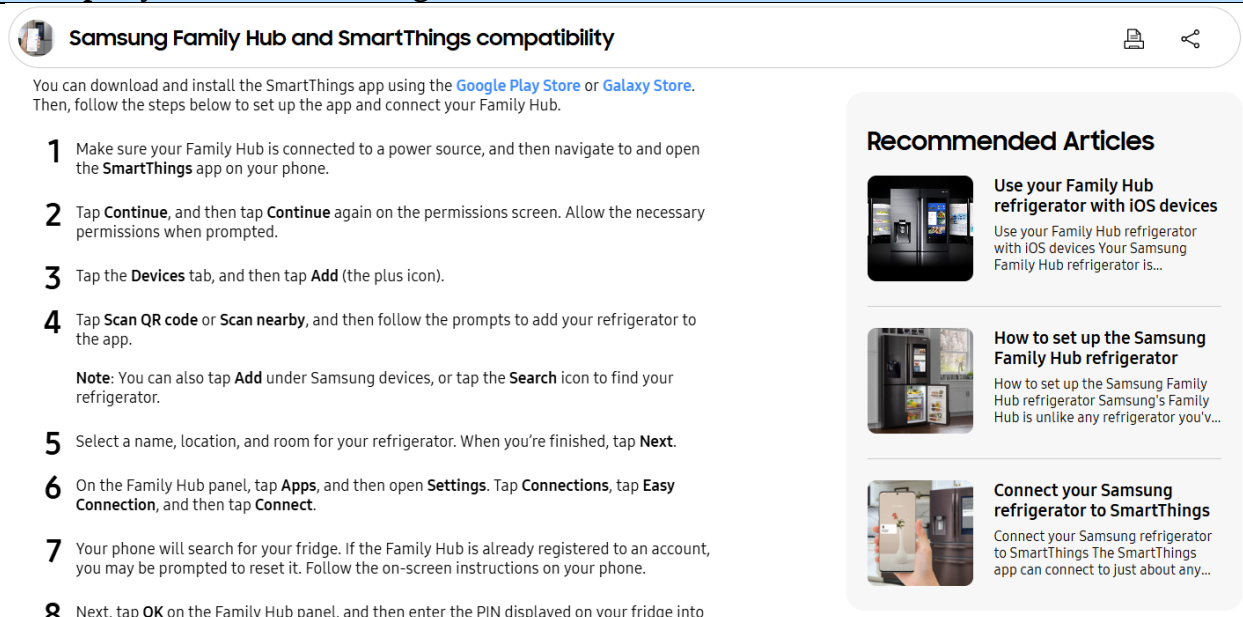
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Samsung Family Hub and SmartThings compatibility

You can download and install the SmartThings app using the Google Play Store or Galaxy Store. Then, follow the steps below to set up the app and connect your Family Hub.

1. Make sure your Family Hub is connected to a power source, and then navigate to and open the **SmartThings** app on your phone.
2. Tap **Continue**, and then tap **Continue** again on the permissions screen. Allow the necessary permissions when prompted.
3. Tap the **Devices** tab, and then tap **Add** (the plus icon).
4. Tap **Scan QR code** or **Scan nearby**, and then follow the prompts to add your refrigerator to the app.

   Note: You can also tap **Add** under Samsung devices, or tap the **Search** icon to find your refrigerator.
5. Select a name, location, and room for your refrigerator. When you're finished, tap **Next**.
6. On the Family Hub panel, tap **Apps**, and then open **Settings**. Tap **Connections**, tap **Easy Connection**, and then tap **Connect**.
7. Your phone will search for your fridge. If the Family Hub is already registered to an account, you may be prompted to reset it. Follow the on-screen instructions on your phone.
8. Next, tap **OK** on the Family Hub panel, and then enter the PIN displayed on your fridge into your phone.
9. Using your phone, choose your desired Wi-Fi network for the Family Hub (preferably the same one the phone is using). If it is a secured network, make sure the password is correct, and then tap **CONNECT**.
10. Wait for the registration to finish, and then tap **Done**. The Family Hub will now appear in the SmartThings app.

Note: If you have trouble adding your Family Hub to SmartThings, please see our guide.

Recommended Articles

Use your Family Hub refrigerator with iOS devices

Use your Family Hub refrigerator with iOS devices Your Samsung Family Hub refrigerator is...

How to set up the Samsung Family Hub refrigerator

How to set up the Samsung Family Hub refrigerator Samsung's Family Hub is unlike any refrigerator you've...

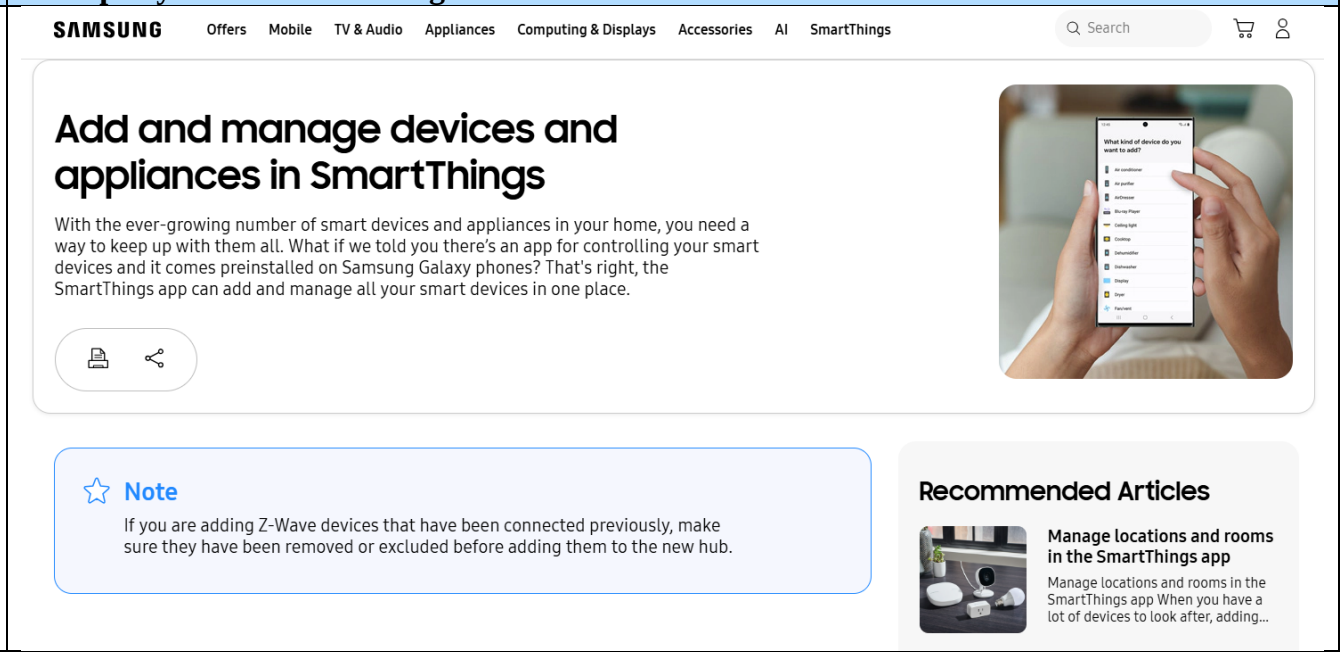
Connect your Samsung refrigerator to SmartThings

Connect your Samsung refrigerator to SmartThings The SmartThings app can connect to just about any...

Smartphone in the Accused Samsung '650 Products technical specification showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform; https://www.samsung.com/us/support/answer/ANS10001433/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

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APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Add and manage devices and appliances in SmartTh...

Add devices to SmartThings

On your Galaxy phone

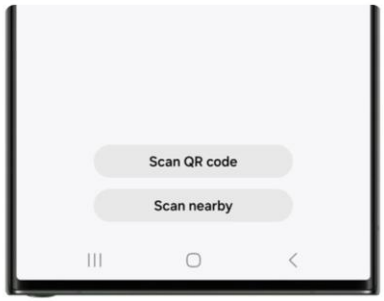
When you are ready to take control of all your smart devices, just use the following guidelines. But first, you should double check if your devices are compatible.

1 Navigate to and open the **SmartThings** app on your phone.

Note: A Samsung account is required. Samsung devices that already have a Samsung account stored on them will use that account automatically. Otherwise, you can log into or create a Samsung account by following the on-screen instructions in the app.

2 Tap the **Devices** tab, and then tap **Add** (the plus sign).

3 If the device uses Bluetooth, tap **Scan nearby** at the bottom of the screen. Or, tap **Scan QR code** to scan a device's QR code.



4 If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5 From there, follow the instructions to connect your device to SmartThings.

6 When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

Recommended Articles



Manage locations and rooms in the SmartThings app

Manage locations and rooms in the SmartThings app When you have a lot of devices to look after, adding...



Use SmartThings on your Samsung TV

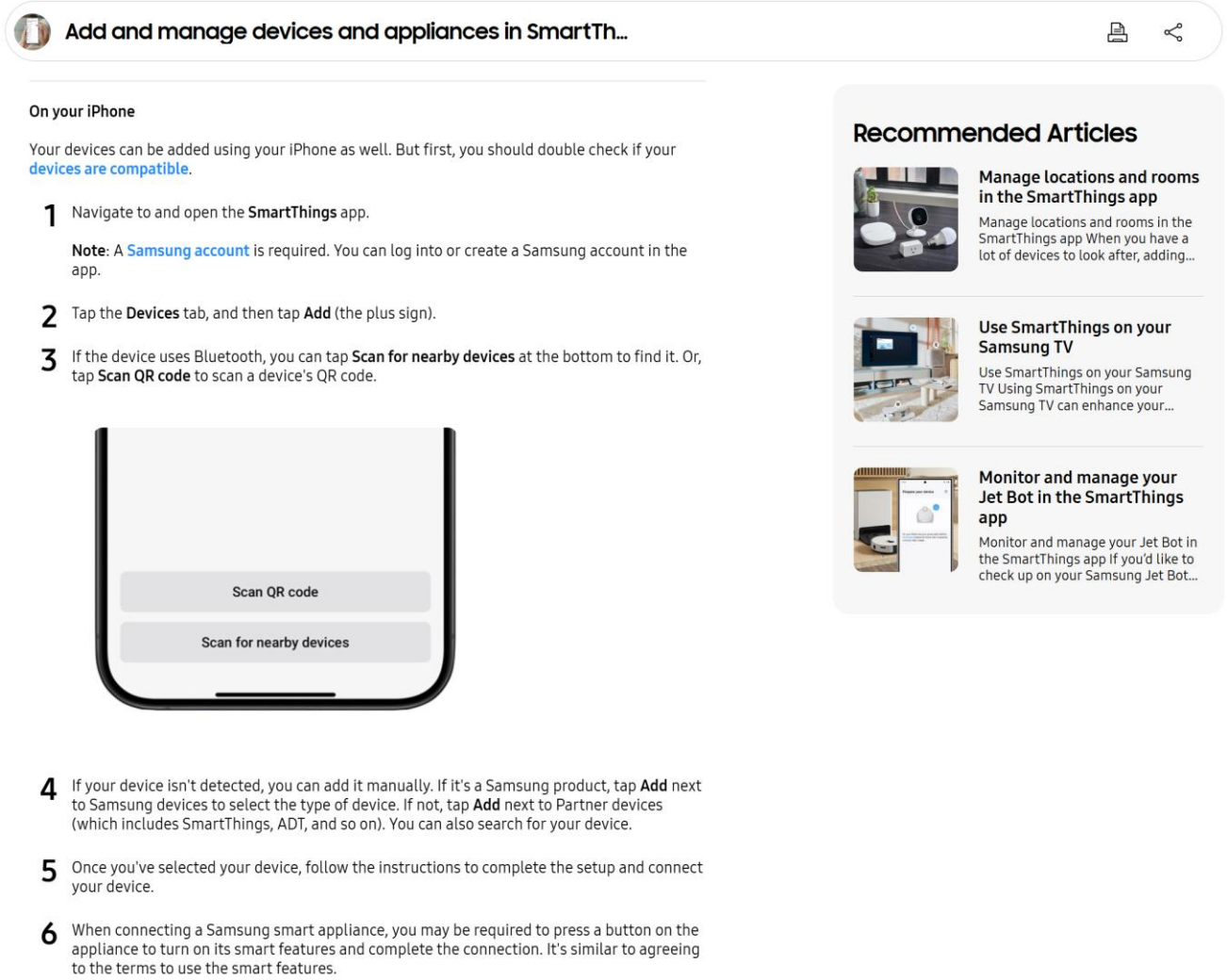
Use SmartThings on your Samsung TV Using SmartThings on your Samsung TV can enhance your...



Monitor and manage your Jet Bot in the SmartThings app

Monitor and manage your Jet Bot in the SmartThings app If you'd like to check up on your Samsung Jet Bot...

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Smartphone in the Accused Samsung '650 Products technical specification showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform; https://www.samsung.com/us/support/answer/ANS10002639/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Add and manage devices and appliances in SmartTh...

Read less

Control devices in SmartThings

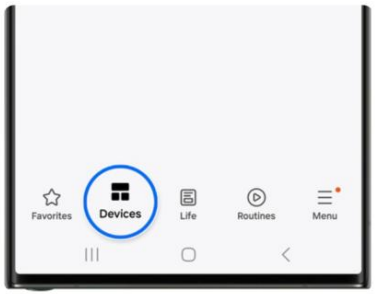
Note

The available controls may vary depending on the device.

So, you've added a whole bunch of devices - now what? You can easily monitor and control them right from the app. You can also use your phone as a TV remote through SmartThings.

On your Galaxy phone

1. Navigate to and open the **SmartThings** app. Tap the **Devices** tab, and then tap the location **drop-down menu** at the top.
2. Select your desired location with the devices you'd like to manage, and then tap the **drop-down menu** with your location's name. Tap **All devices**. Here you can view, monitor, and control all your registered devices for the location you selected.



Note: To select a different location, tap the **drop-down menu** at the top again.

3. Select your desired device and use the available settings to perform your desired actions.
4. You may be prompted to tap **Download** so you can download the device's controller.

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Manage locations and rooms in the SmartThings app

Manage locations and rooms in the SmartThings app When you have a lot of devices to look after, adding...



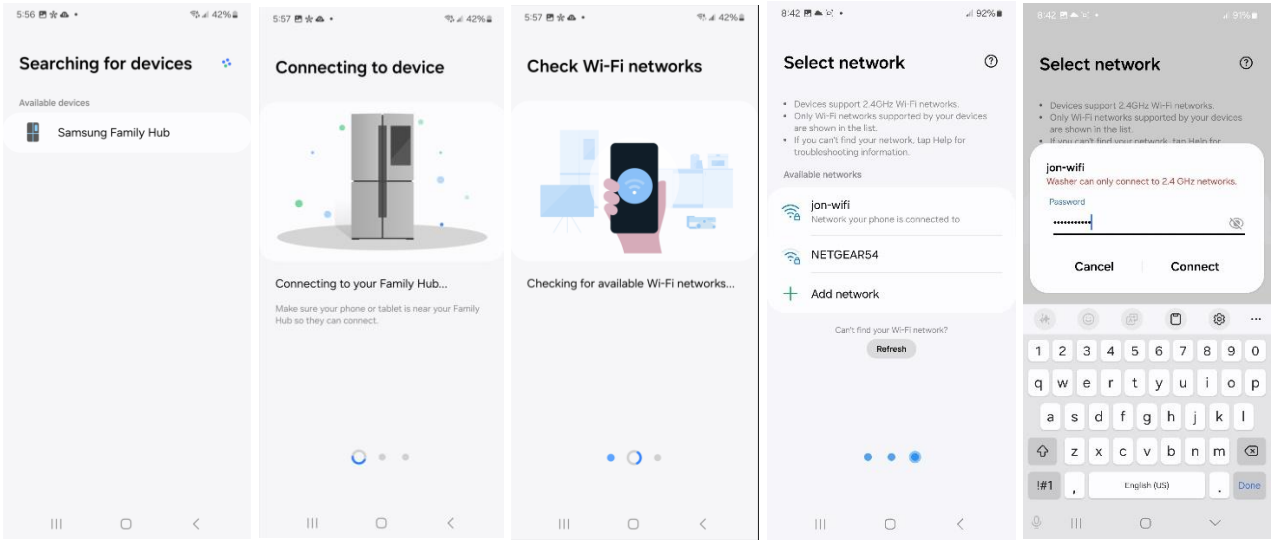
Use SmartThings on your Samsung TV

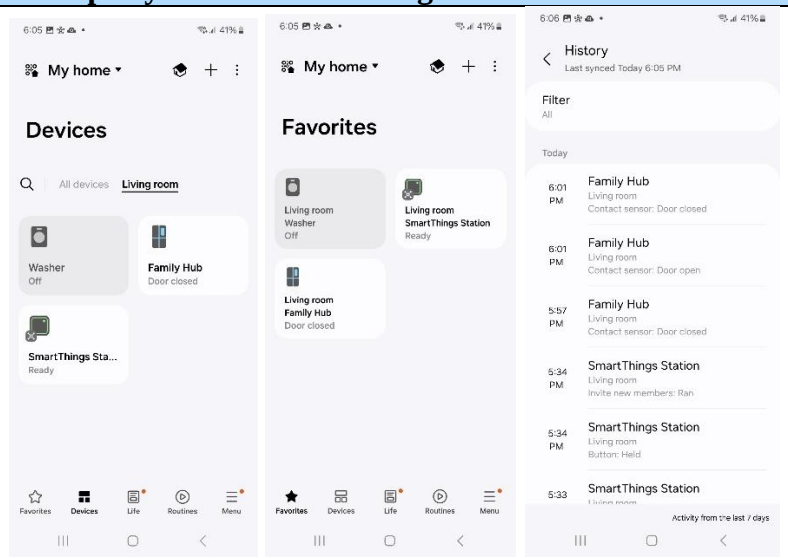
Use SmartThings on your Samsung TV Using SmartThings on your Samsung TV can enhance your...



Monitor and manage your Jet Bot in the SmartThings app

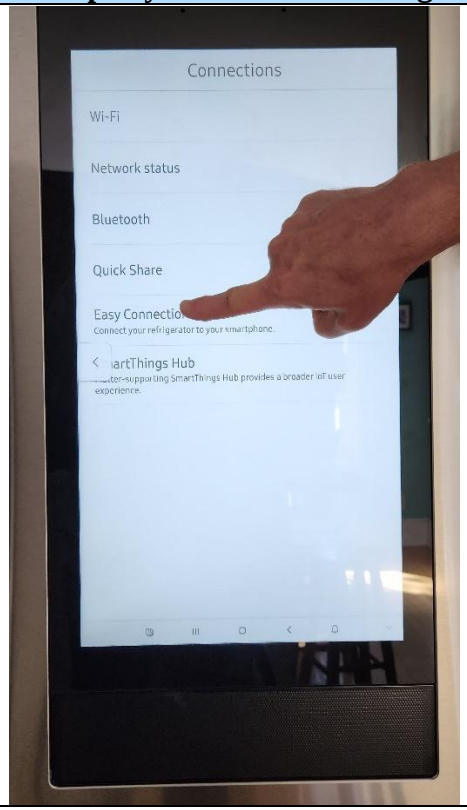
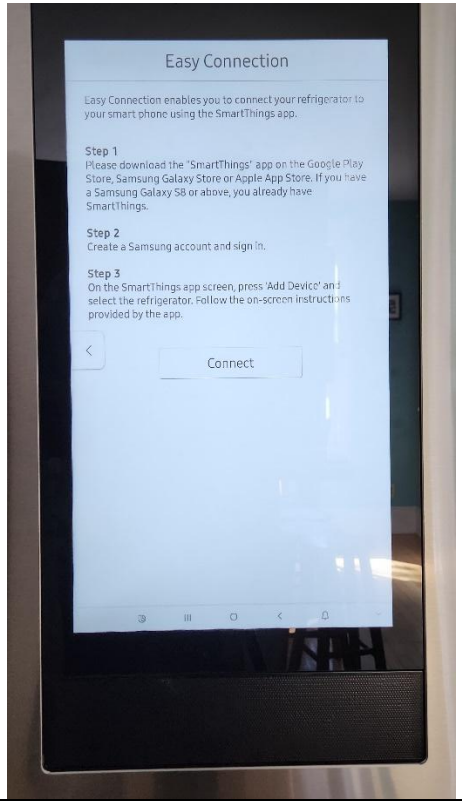
Monitor and manage your Jet Bot in the SmartThings app If you'd like to check up on your Samsung Jet Bot...

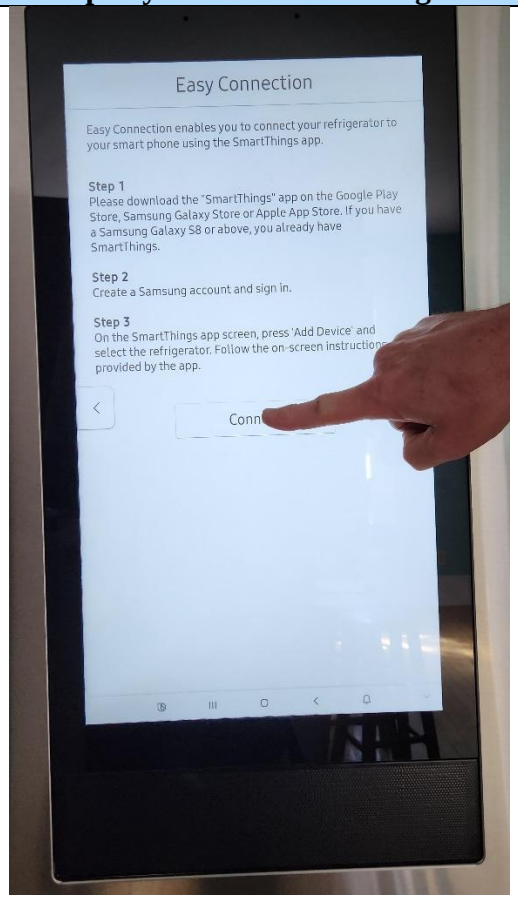
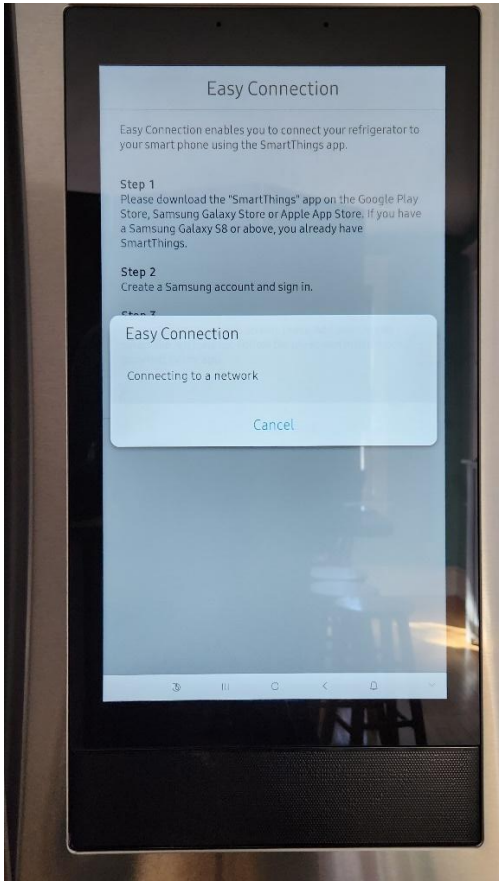
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The phone using SmartThings app in the Accused Samsung '650 Products technical specification showing displaying controls of an onboarded device's state (*e.g.*, using device's controller add-on for turning "on"/"off") or display a device's status on a favorites list or GUI ("All devices"); https://www.samsung.com/us/support/answer/ANS10002639/ For example, testing of a Galaxy S23 using the SmartThings app. provides evidence of the onboarding process of a fridge on the SmartThings cloud/platform where the Galaxy S23 displays the credentials for Bluetooth/Wi-Fi and the SmartThings cloud, and names of networks during the onboarding process of a fridge.  Galaxy S23's display of the SmartThings app. onboarding/adding a fridge and showing credentials and Wi-Fi networks. In another example, testing of the Galaxy S23 using the SmartThings app. provide evidence of the Galaxy S23 displaying a Favorites list, History list, and/or GUI with device states.

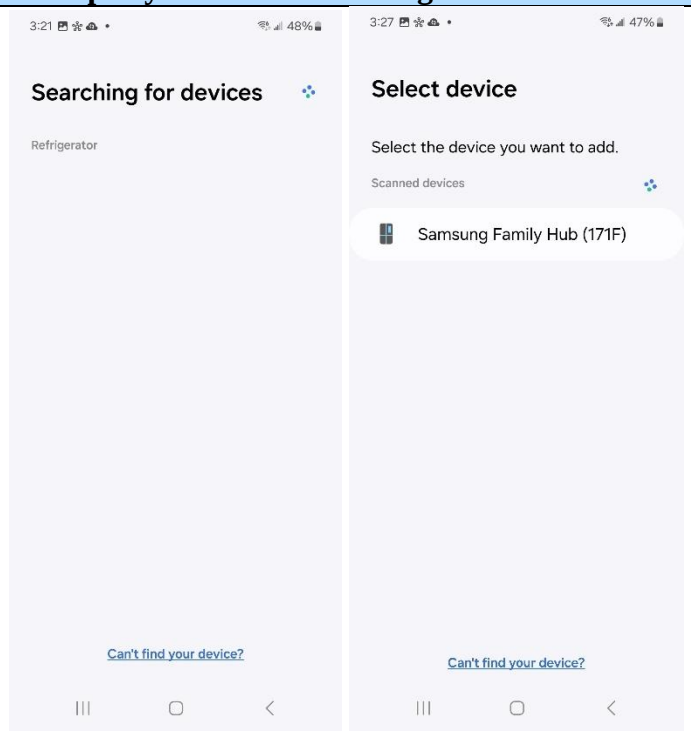
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23's display of the SmartThings app. showing the devices GUI, Favorites list, and History list including device states. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes displays for displaying contents. Specifically, additional Accused Samsung '650 Products contain displays for displaying information as contents. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.
[1.e] a first controller controlling transmission/reception with the subsidiary terminals,	The phones Accused Samsung '650 Products include a first controller that controls transmission and reception with the subsidiary terminals. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature.

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	(https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the first controller is the System on a Chip (SoC) within the main terminal (e.g., the Galaxy S25) and/or processing components within the SmartThings cloud as an extension, one or more of which either alone or operating in conjunction with the SmartThings Cloud/platform correspond to the first controller. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: a non-limiting example, the first controller is the System on a Chip (SoC) within the main terminal (e.g., the Galaxy S25) and/or within the SmartThings cloud as an extension, one or more of which either alone or operating in conjunction with the SmartThings Cloud/platform correspond to the first controller. This combined controller manages the communication pathways and proves its control over both transmission and reception throughout the user experience. Control over transmission is demonstrated during the "Easy Connection" Onboarding Process, where the first controller sends configuration commands from the main terminal that are received and confirmed by the subsidiary terminal. Simultaneously, control over reception is demonstrated by the extensive "History" logs, which show the first controller continuously receiving updates from the subsidiary terminals. The final result of this control is a unified and perfectly synchronized system where the GUI on the subsidiary terminal mirrors the GUI on the main terminal.

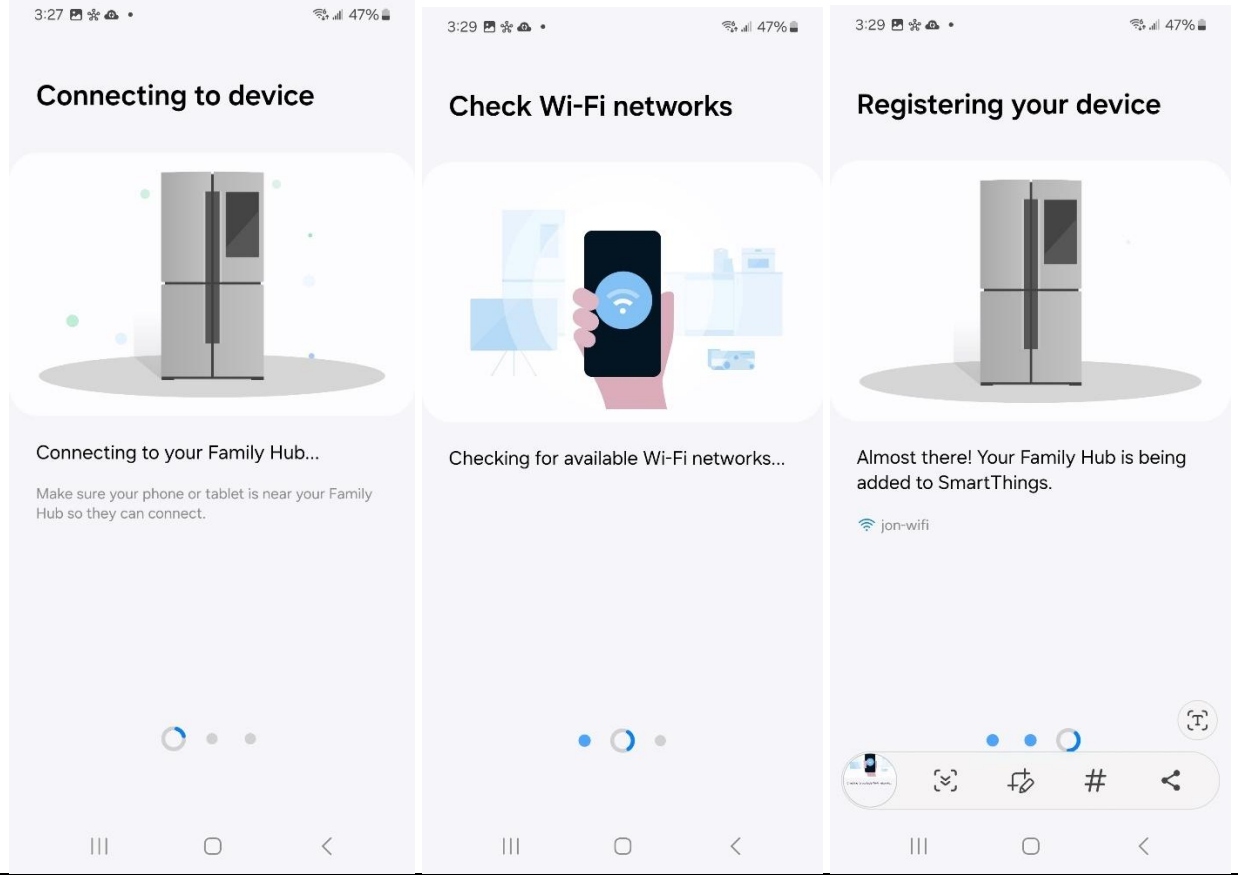
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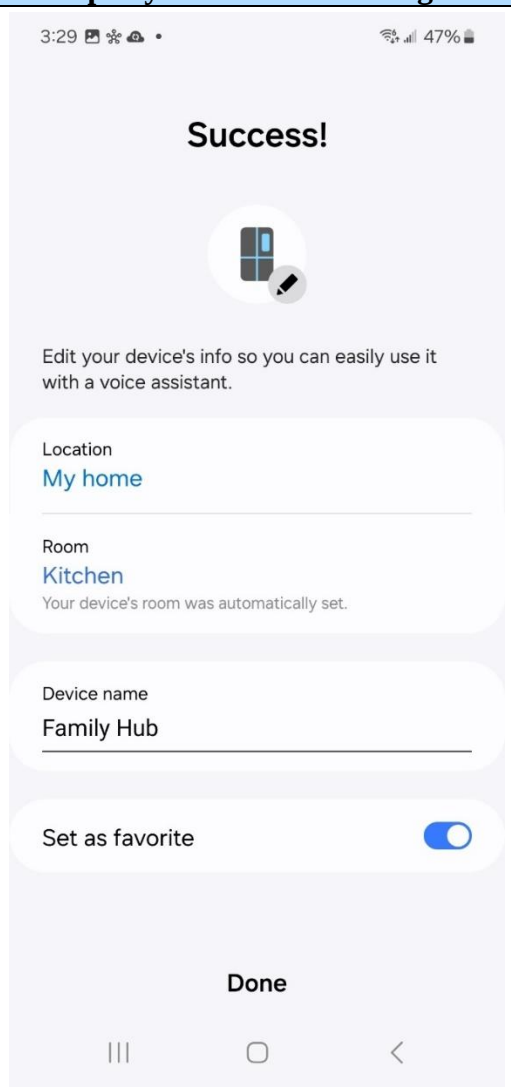
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	  A sequence showing a user initiating the "Easy Connection" process directly on the Family Hub refrigerator's touchscreen. The user selects the option from the Connections menu and presses "Connect," prompting the device to begin connecting to a network.

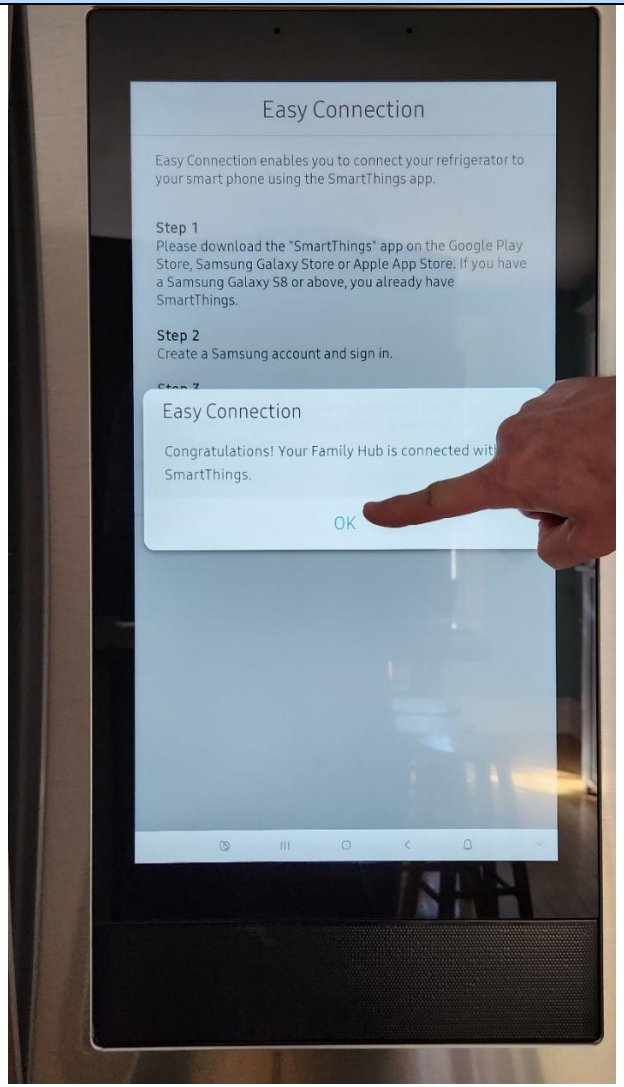
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Screenshots from the SmartThings smartphone app showing the device discovery phase. The app is depicted first searching for a nearby refrigerator and then successfully locating and displaying the "Samsung Family Hub" for the user to select.

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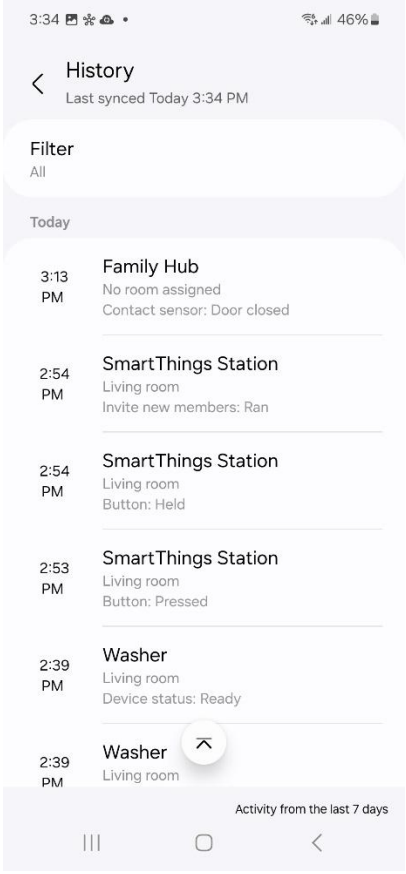
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

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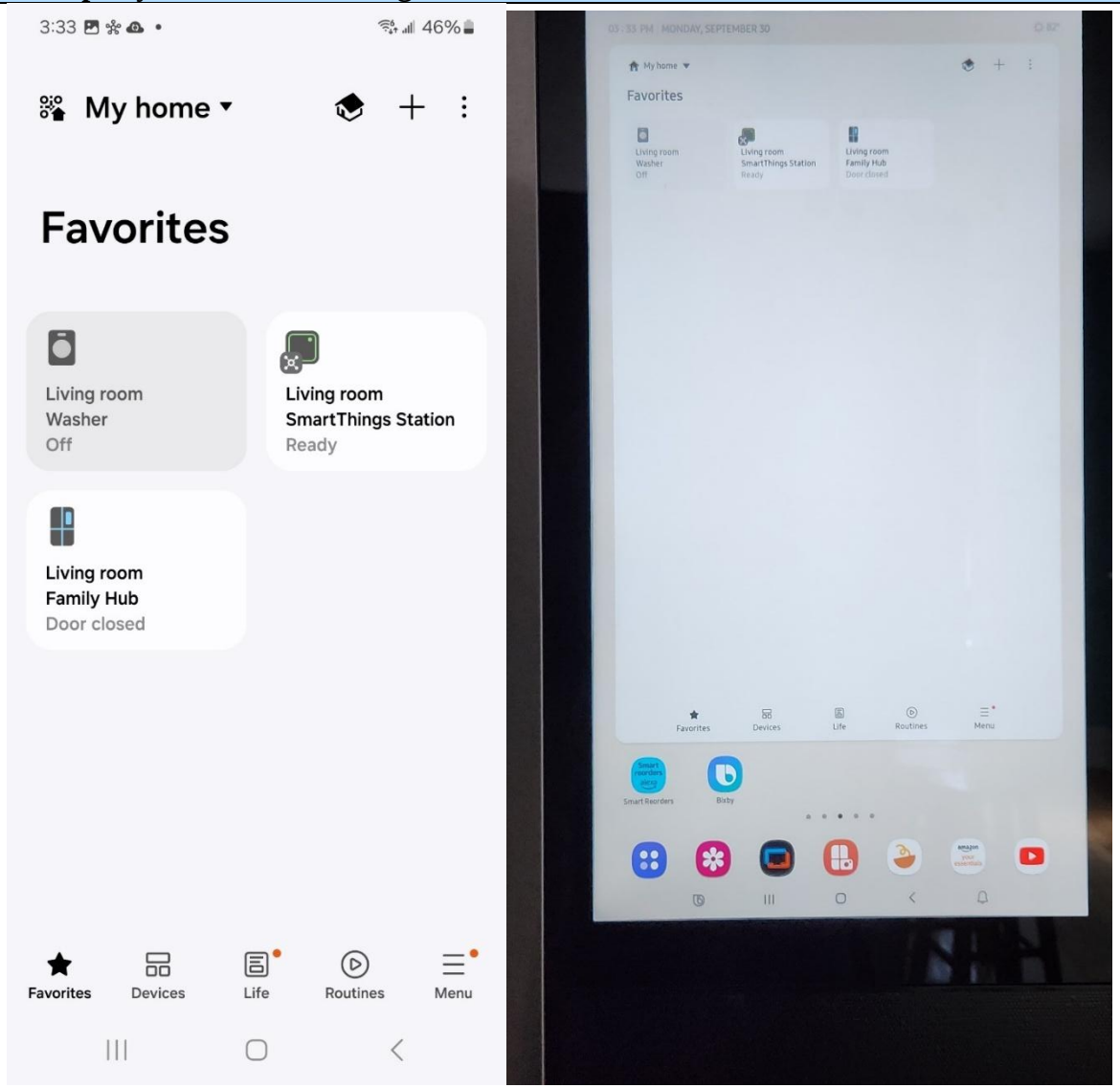




Screenshots from the smartphone app showing the automated finalization of the "Onboarding Process." The sequence depicts the app connecting to the Family Hub, checking for Wi-Fi, and registering the device to the SmartThings platform, culminating in a "Success!" confirmation screen.

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	This evidence directly corresponds to the claim language describing the first controller (the phone's SoC and the SmartThings Cloud) performing the "automated Wi-Fi network configuration and device registration" that is required to fully integrate the subsidiary terminal (the refrigerator).  The logs provide a detailed, time-stamped record of events from multiple subsidiary terminals, including the Family Hub ("Door closed"), and the SmartThings Station ("Button: Held"). This shows the first controller updating a "plurality of content information" (time, source, status) for each piece of content generated by the system.

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A side-by-side comparison of the "Favorites" screen on the Family Hub's display (right) and the smartphone application (left). This demonstrating the full and bidirectional integration that results

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	from the Onboarding Process. This identical state is the direct result of the first controller successfully communicating user preferences between the devices, thereby demonstrating its control over the unified ecosystem as described. Doctrine of equivalents To the extent Samsung argues that the SmartThings cloud/platform does not literally meet the definition of the "first controller," it is Maxell's contention that the Accused Samsung '650 Products either alone or in conjunction with SmartThings cloud/platform is at least an equivalent of the main terminal's onboard processor (SoC). This is because the identified structures perform substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed element. The function of both is to manage the smart home ecosystem by processing user inputs and controlling subsidiary terminals. They accomplish this in the same way, by receiving commands from the user via the SmartThings app, executing logic, and transmitting control signals over a network. The result is identical: the subsidiary terminals are controlled according to the user's commands, and their status is managed across the system. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, additional Accused Samsung '650 Products contain processors and communication hardware (e.g., Wi-Fi/Bluetooth circuitry) that operate in a similar manner to control transmission and reception between the main terminal, the cloud, and other subsidiary terminals. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.f] wherein the first controller is configured to: store a plurality of device specific identification (ID)	The phones in the Accused Samsung '650 Products include the first controller that is configured to store a plurality of device specific identification (ID) information of the subsidiary terminals,. See e.g., Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature.

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information of the subsidiary terminals,	(https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the first controller, comprising the smartphone's SoC and the SmartThings Cloud/platform, stores multiple unique identifiers for each subsidiary terminal to distinguish them on the network. The SmartThings platform requires that all devices be provisioned in advance with the cloud, and this process involves storing the device's identity and authentication data before it can connect. This stored device specific ID information includes identifiers found in the device's "deviceUniqueId," "onboarding_config.json," and/or "device_info.json" files, such as the "deviceOnboardingId"," mnId"(a unique manufacturer ID), "serialNumber", and/or "publicKey." By storing these unique identifiers for each of the Family Hub refrigerators, the first controller can uniquely identify and manage each subsidiary terminal in the system.

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`deviceUniqueId`

If you have an Alexa Skill, ensure you use the same value for `deviceUniqueId` that is used for your Alexa Skill `customIdentifier`

Categories

The Categories response (mentioned above) is an optional parameter that helps define the kind of device that is being interacted with. SmartThings has an expanding list of device categories that work with our platform.

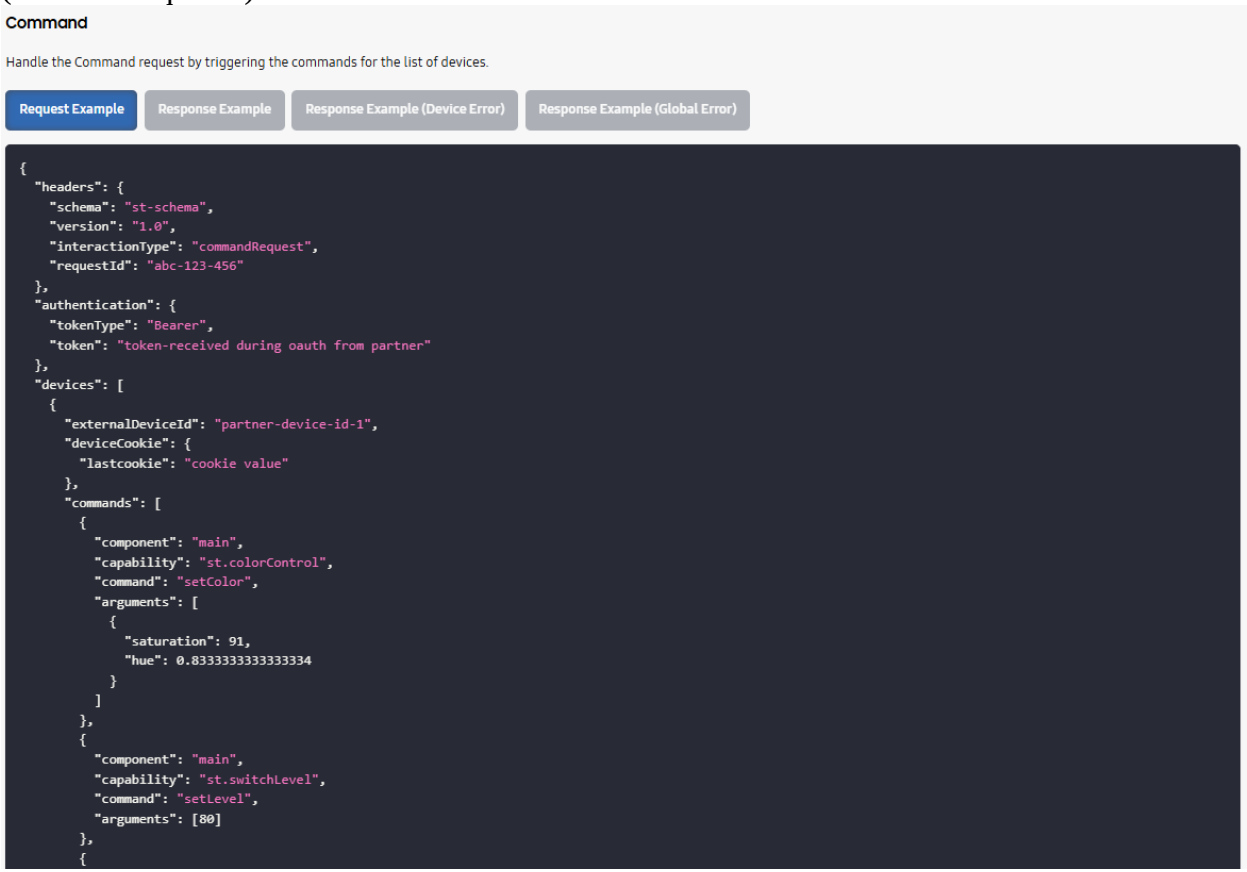
You can find the list of supported categories here.

State Refresh

Handle the State Refresh request by retrieving the device states for the indicated list of devices.

Request Example | Response Example

```
{
  "headers": {
    "schema": "st-schema",
    "version": "1.0",
    "interactionType": "stateRefreshRequest",
    "requestId": "abc-123-456"
  },
  "authentication": {
    "tokenType": "Bearer",
    "token": "token received during oauth from partner"
  },
  "devices": [
    {
      "externalDeviceId": "partner-device-id-1",
    },
    {
      "externalDeviceId": "partner-device-id-2"
    }
  ]
}
```

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	https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#deviceuniqueid ("deviceUniqueId")  https://developer.smartthings.com/docs/devices/direct-connected/device-app (device_info.json & onboarding_config.json)

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Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

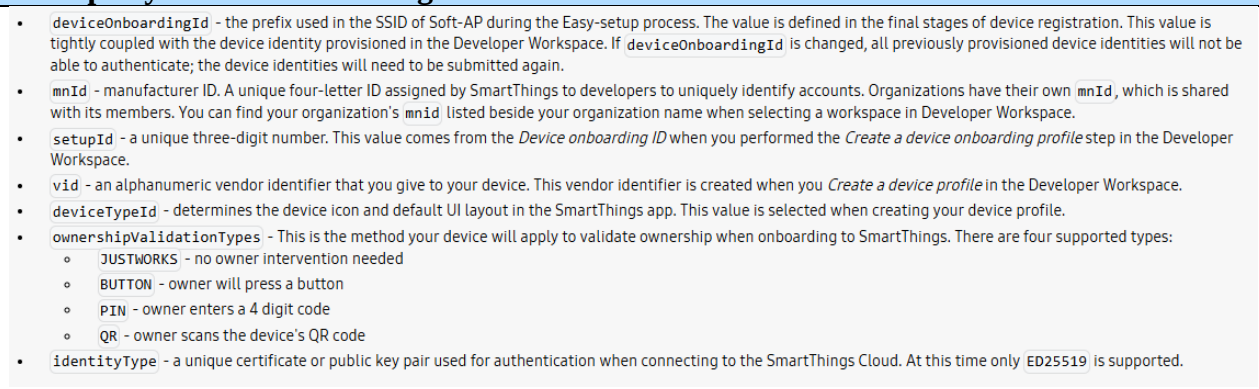
```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

You can see an example `onboarding_config.json` file below:

```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

Here's a breakdown of the data contained in `onboarding_config.json`:

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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	 • `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app A collection of excerpts from the Samsung SmartThings developer documentation that outlines the technical framework for device identification and control. The documents define a plurality of device-specific IDs (such as "mnId", "vid", and "deviceOnboardingId"), show how these identifiers are structured within device configuration files ("onboarding_config.json" and "device_info.json"), and provide API examples of how a stored "externalDeviceId" is used to send commands and request status updates. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and memory that operate in a similar manner to store unique device identifiers for management within the SmartThings ecosystem. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.g] store a plurality of content information for identifying each of the contents, and	The phones in the Accused Samsung '650 Products include the first controller that is configured to store a plurality of content information for identifying each of the contents,. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature.

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	(https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the first controller stores a plurality of content information within the SmartThings Cloud/platform to identify different types of contents, including user credentials, device names, and device states. The system first stores content information related to user authentication, as evidenced by the requirement for the user to sign into a "Samsung Account" with an email and password to gain access. Additionally, the controller stores content information such as the device's friendlyName (*e.g.,* "Family Hub"), established during the Onboarding Process, and its real-time deviceState data, such as the "Washer" being "Off" or the "Family Hub" being "Door closed." This entire collection of stored content information—credentials, names, and states—is then used by the first controller to generate the graphical user interface, which authenticates the user and visually represents the other contents by displaying each device's name alongside its current state. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as non-limiting example, the first controller stores a plurality of content information within the phones and/or the SmartThings Cloud/platform to identify different types of contents, including user credentials, device names, and device states. https://developer.smartthings.com/docs/devices/health#get-device-health

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Connectivity Definitions

A device's connection `state` can have one of three values:

- `ONLINE` means a device can be expected to respond to a command (actuator devices) or report an event (sensor devices).
- `UNHEALTHY` means a device has been inactive longer than its designated health check interval. This is an intermediate state indicating that a device is possibly offline. This state can be caused by high network latency, low battery, or tamper events on security devices.
- `OFFLINE` means a device with `UNHEALTHY` status cannot be contacted by the platform. The check interval is defined here.

A hub's `connectivity` can have the following values:

- `CONNECTED` means that a "hub connected" event has been received by SmartThings Cloud, and no "hub disconnected" event has been received.
- `DISCONNECTED` means that a "hub disconnected" event has been received by SmartThings Cloud, and no "hub connected" event has been received in the last 60 seconds.

When a hub goes offline, all devices connected to this hub will also be marked `OFFLINE`.

Use the Devices API to Check Device and Hub Health

You must pass an OAuth token in the request header when calling each of the below API methods.

```
Authorization: Bearer <token>
```

For information on using tokens, see Authorization and Permissions.

Get Device Health

```
GET /devices/<deviceId>/health
```

This call returns the health of a device by its ID. You must include `deviceID` in the path to specify a device.

OAuth scope: `r:devices`

Example response

```
{
  "deviceId": "string",
  "state": "ONLINE",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

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The JSON response lists the connection `state` of the device and its `lastUpdatedDate`. The latter value is the timestamp of the last known state change of the device.

> NOTE
>
> Regular "online" events sent by a device are *not* considered state changes. `lastUpdatedDate` will record when an "offline" event is sent.

Get a Hub's Health

```
GET /installed-hubs/<hubDeviceId>/health
```

This call returns the health of a hub by its ID. You must include `hubDeviceID` in the path to specify a hub.

OAuth scope: `r:hubs`

Example response

```
{
  "hubId": "string",
  "connectivity": "CONNECTED",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

The JSON response lists the `connectivity` status of the hub, its `lastUpdatedDate`, and the `hubRadioState`, which indicates the state of the Bluetooth, Zigbee, and ZWave radios on the hub.

https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#device-state-callback

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Device State Callback

JSON will be sent by you to the SmartThings Cloud without any request from SmartThings. This is used to update the state of a device that may have changed as a result of an interaction that did not originate from SmartThings, such as a command originating from your cloud or from manually controlling the device.

Request Example | Response Example


```
{
    "headers": {
        "schema": "st-schema",
        "version": "1.0",
        "interactionType": "stateCallback",
        "requestId": "abc-123-456"
    },
    "authentication": {
        "tokenType": "Bearer",
        "token": "token-received from SmartThings for callbacks"
    },
    "deviceState": [
        {
            "externalDeviceId": "partner-device-id-1",
            "states": [
                {
                    "component": "main",
                    "capability": "st.button",
                    "attribute": "button",
                    "value": "pushed",
                    "timestamp": 1568248946010,
                    "stateChange": "Y"
                }
            ]
        },
        {
            "externalDeviceId": "partner-device-id-2",
            "states": [
                {
                    "component": "main",
                    "capability": "st.switch",
                    "attribute": "switch",
                    "value": "off",
                    "timestamp": 1568254946010
                },
                {
```

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```
                "component": "main",
                "capability": "st.switchLevel",
                "attribute": "level",
                "value": 80,
                "timestamp": 1568255946020
            },
            {
                "component": "main",
                "capability": "st.healthCheck",
                "attribute": "healthStatus",
                "value": "offline",
                "timestamp": 1568257946030
            }
        ]
    }
  ]
}
```

- `headers`: See Discovery.
- `authentication`
  - `tokenType`: Token type.
  - `token`: Token received from SmartThings.
- `deviceState`: (Optional) Array of device states.
  - `externalDeviceID`: Third-party device ID.
  - `states`
    - `component`: Component of device. In most cases, the value will be "main".
    - `capability`: Capability of the device. Use the syntax `st.<capabilityName>`.
    - `attribute`: Attribute of Capability.
    - `value`: The resource value.
    - `unit`: Unit of measurement, if applicable (e.g. "F" or "C" for temperature.) Should not be present for attributes without units.
    - `visibility`: Optional fields controlling the display and storage of events
      - `displayed`: Show device events in the device history tab of the mobile app. Valid values are `true` or `false`. Generally defaults to `true` if unspecified, though some standard Capabilities may default to `false`.
      - `nonArchiveable`: Do not put in long-term storage. Should only be set if legally or contractually required.
    - `stateChange`: Optional; a value of `Y` forces the event to be considered a change, which will trigger automations and be displayed in the event history. If `stateChange` is not specified, the SmartThings platform generally determines whether a change has occurred by comparing the new `deviceState` `value` to the previous `value`.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

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Discovery Callback #

A discovery callback interaction allows you to perform on-demand discovery of devices.

- `headers`
  - `schema`: Schema type.
  - `version`: Schema version.
  - `interactionType`: Interaction type of payload.
  - `requestId`: A unique ID assigned to the request.
- `authentication`
  - `tokenType`: Token type.
  - `token`: Token issued by your cloud; the context for the request.

Request Example | Response Example

```
{
  "headers": {
      "schema": "st-schema",
      "version": "1.0",
      "interactionType": "discoveryCallback",
      "requestId": "abc-123-456"
  },
  "authentication": {
      "tokenType": "Bearer",
      "token": "token-recevied from SmartThings for callbacks"
  },
  "devices": [
    {
      "externalDeviceId": "partner-device-id-1",
      "deviceCookie": {"updatedcookie": "old or new value"},
      "friendlyName": "Kitchen Bulb",
      "manufacturerInfo": {
        "manufacturerName": "LIFX",
        "modelName": "A19 Color Bulb",
        "hwVersion": "v1 US bulb",
        "swVersion": "23.123.231"
      },
      "deviceContext" : {
        "roomName": "Kitchen",
        "groups": ["Kitchen Lights", "House Bulbs"]
      },
      "deviceHandlerType": "c2c-rgbw-color-bulb"
  },
```


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```
      "externalDeviceId": "partner-device-id-2",
      "deviceCookie": {"updatedcookie": "old or new value"},
      "friendlyName": "Toaster",
      "manufacturerInfo": {
        "manufacturerName": "LIFX",
        "modelName": "Outlet",
        "hwVersion": "v1 US outlet",
        "swVersion": "3.03.11"
      },
      "deviceContext" : {
        "roomName": "Living Room",
        "groups": ["Hall Lights"]
      },
      "deviceHandlerType": "<DEVICE-PROFILE-ID>"
    }
  ]
}
```

Below, we break down the response:

- `headers`
  - `schema`: Schema type.
  - `version`: Schema version.
  - `interactionType`: Interaction type of payload.
  - `requestId`: A unique ID assigned to the request.
- `devices`: Array of devices for user account.
  - `externalDeviceId`: Device ID on your cloud.
  - `deviceCookie`: Pass-through cookie for setting custom key/value pairs. Must not contain personally identifiable information and cannot be greater than 5 KB.
  - `friendlyName`: (Optional) Label of the device shown to the user.
  - `manufacturerInfo`: Manufacturer info for the device.
    - `manufacturerName`: Name of the manufacturer, preferably partner name.
    - `modelName`: Unique model number that identifies the device model.
    - `hwVersion`: (Optional) Hardware version.
    - `swVersion`: (Optional) Software/firmware version.
  - `deviceContext`: (Optional) Device context info.
    - `roomName`: Location name associated with the device.
    - `groups`: Groups that include the device.
    - `categories`: (Optional) Categories associated with the device.
  - `deviceHandlerType`: Device handler type name. When using a custom device profile, the value should be the device profile ID.

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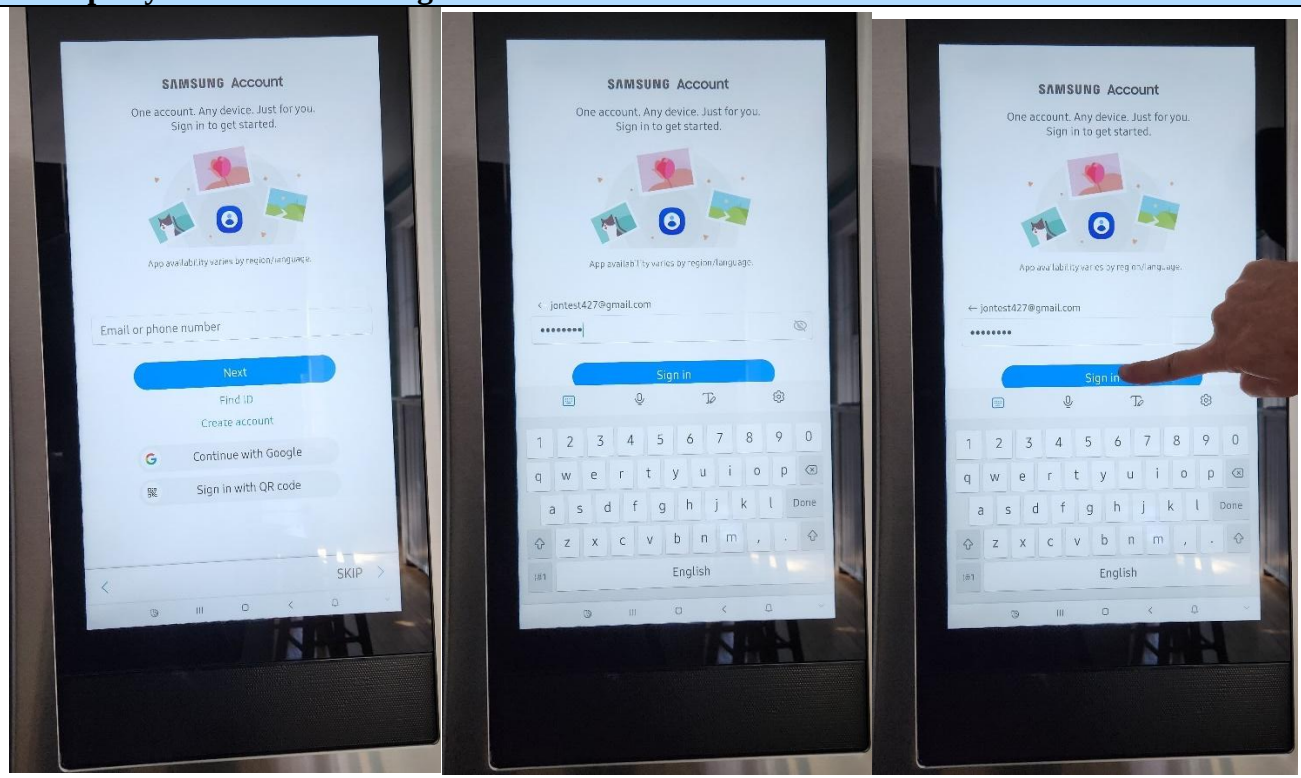
Interaction Result

An interaction result is a notification sent to your cloud notifying you that issues were found in the response on a request from SmartThings Schema.

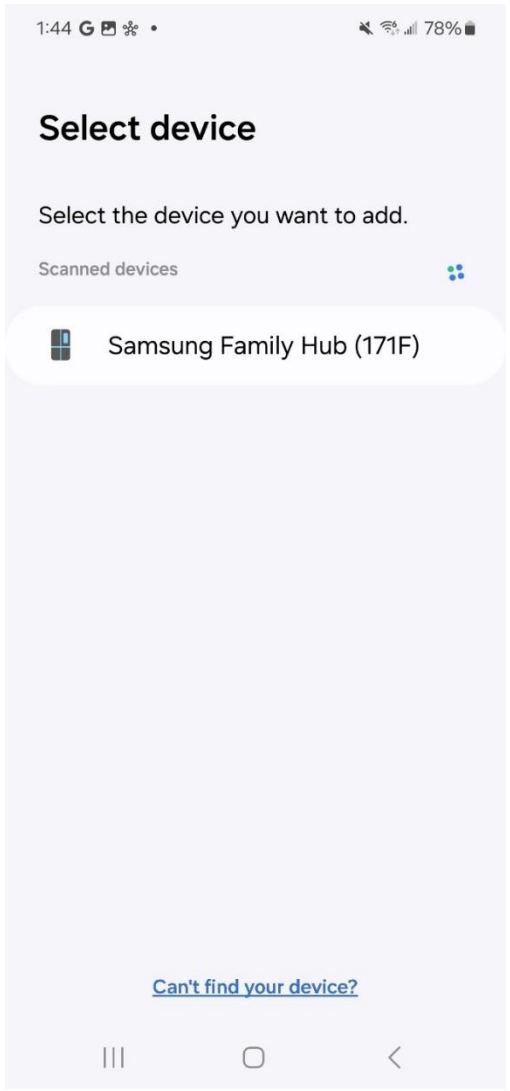
1. **authentication**: is not provided for users/interactions that SmartThings Schema has not been able to obtain valid access tokens from the partner.
2. **originatingInteractionType**: the interaction type causing the *interactionResult* to be sent.
3. **globalError**: only sent if there was a major issue with the *originatingInteractionType* message.
4. **deviceState**: only sent for and when there are issues with individual devices (devices with no issues will not be included).

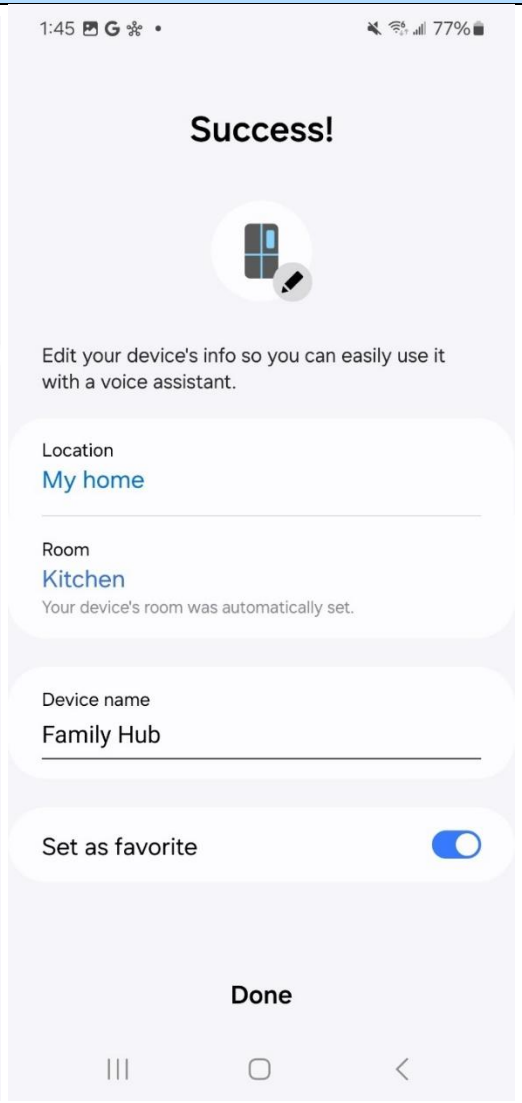
```
{
    "headers": {
        "schema": "st-schema",
        "version": "1.0",
        "interactionType": "interactionResult",
        "requestId": "abc-123-456"
    },
    "authentication": {
        "tokenType": "Bearer",
        "token": "token-recevied during oauth from partner"
    },
    "originatingInteractionType" : <interactionResponse>,
    "globalError": {
        "errorEnum": "<enum>",
        "detail": "messageDetail"
    },
    "deviceState": [
        {
            "externalDeviceId": "pdevice-1",
            "deviceError": [
                {
                    "errorEnum": "<enum>",
                    "detail": "messageDetail"
                }
            ]
        }
    ]
}
```

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

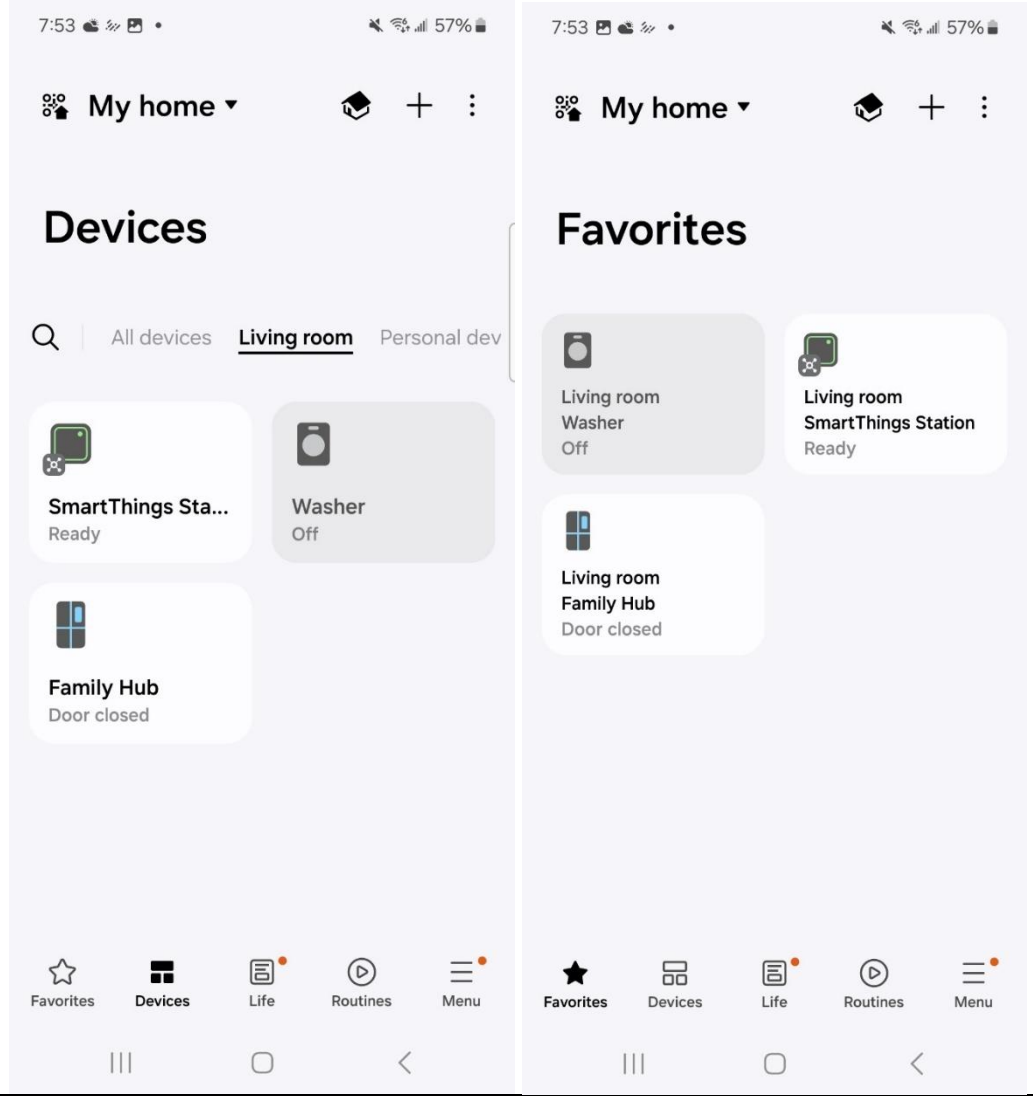
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 The interface first prompts for account login, after which the user enters their email and password credentials, and finally submits them by pressing "Sign in." This sequence demonstrates the system's requirement to process user credentials to authenticate the user and grant access to the system.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement





Screenshots from the smartphone application showing the discovery and successful configuration of the Family Hub. The first controller discovers the subsidiary terminal and registers its unique identifier, "Samsung Family Hub (171F)" (left image). After successful registration, the controller

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	displays the plurality of stored, user-configurable ID information, including its "Device name" ("Family Hub"), "Room" ("Kitchen"), and "Location" ("My home"). 

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	Screenshots of the graphical user interface (GUI) from the main terminal's (smartphone) application. The "Favorites" screen (left) and the "Devices" screen (right) both visually represent the "contents" of the smart home system. The GUI is generated by the first controller using the stored content information: it displays each device's stored name (e.g., "Family Hub") alongside its current state *(e.g.,* "Door closed"), which are two of the types of content stored by the controller. Doctrine of equivalents To the extent Samsung argues that the use of the SmartThings cloud/platform for data storage does not literally meet the definition of the main terminal's "storage" or "memory," the SmartThings cloud is at least an equivalent of the main terminal's local, onboard storage and memory. This is because the identified structures perform substantially the same function, in substantially the same way, to achieve substantially the same result. The function of both is to persistently store and retrieve information, such as device IDs and event history logs. They accomplish this in the same way, by receiving data and writing it to a persistent, retrievable location (either local flash memory or a cloud database). The result is identical: critical system information is saved, allowing the controller to manage the system. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and memory that operate in a similar manner to store content information, such as device states and user data, for use within the SmartThings ecosystem. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.h] store association information for transmitting one of the contents to one of the subsidiary terminals,	The phones in the Accused Samsung '650 Products include the first controller that is configured to store association information for transmitting one of the contents to one of the subsidiary terminals,. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-

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	appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). The first SoC stores association information (i.e., device ID) for transmitting one of the contents (i.e., device name or deviceState in the Favorites and History list) to one of the fridges. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: the first SoC alone or in conjunction with the SmartThings cloud/platform stores association information (i.e., device ID or upon and belief a Samsung account ID) for transmitting one of the contents (i.e., device name or deviceState in the Favorites and History list) to one of the fridges.

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	Device Basics Devices are physical products that connect to and operate with the SmartThings platform. A Device Profile defines the features and functionality of a Device. These features are broken down into individual components called Capabilities. Capability Presentations then describe how a Capability is displayed in a SmartThings client, such as in the SmartThings app. SmartThings provides a list of standard Capabilities to quickly get you started with your Device integration. Custom Capabilities allow you to create your own Capability and define the unique features of your Device. A Device Preference is a configuration that enables users to customize the behavior of their Device. You may wish to implement Device Preferences when integrating your Device with SmartThings to provide users with a way to customize their Device's behavior. **Development Workflow** To integrate a device with the SmartThings platform: 1. Pick a device type that best suits your needs. 2. Build your device integration. The SmartThings SDKs on our GitHub page contain example device integrations and tools to help you get started. For Hub Connected Devices, we recommend getting started with the Edge Device Builder. 3. Test your device. 4. Publish your device. **Device Types** The SmartThings platform supports the following device integration types: • Hub Connected Devices - Connect Matter (including Matter over Thread, Wi-Fi, and Ethernet), Zigbee, Z-Wave, and LAN devices to SmartThings-compatible Hubs. • Cloud Connected Devices - Connect devices on your existing cloud to the SmartThings platform. • Direct Connected Devices - Connect your Device directly to the SmartThings platform via WiFi. • Mobile Connected Devices - Bluetooth devices connected to a Samsung Galaxy device can be controlled in the SmartThings app. SmartThings Find enables compatible Devices to quickly and easily be located using the SmartThings app.

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Device Events

Device events are structured, lightweight messages that communicate the state of device capabilities to the SmartThings platform and SmartThings clients.

When you develop a custom device integration, ensure that your device driver emits a device event when the state of a capability changes (e.g. when a switch turns `on`), so that clients such as the SmartThings mobile app can refresh the state of the device. Device events should be small and must not be used to track the complete state of a device domain. Device events must not contain extraneous data. Devices should generally not emit more than one event per minute, unless their state has changed as a result of user interaction (such as turning a switch `on`). SmartThings may adjust device events as necessary to support the SmartThings platform.

Namespaces

A namespace is an identifier used to group a developer's Capabilities or Preferences together. When you create a custom Capability or a Device Preference, it is created under your namespace. A unique namespace is created for you when you create your first custom Capability or Preference for your developer account; only one namespace per account is generated. A namespace may look something like `perfectlife6617`.

Manage Devices With the Devices API

Interact with the Devices API to access devices integrated with the SmartThings platform. The Devices API allows you to control devices connected to the SmartThings platform, access device metadata, and access device states.

> NOTE
>
> You will need a Personal Access Token (PAT) with the appropriate scopes to interact with the Devices API.

Example Payload Using Postman

This example uses the Postman app to send a `GET` request to `https://api.smartthings.com/v1/devices/<deviceID>` for a Z-Wave door lock.

1. Begin by creating a new `GET` request in Postman.
2. Enter the request URL: `https://api.smartthings.com/v1/devices/<deviceID>` where `<deviceID>` is the device ID of the device you want to retrieve info for.
3. In the *Authorization* tab of your `GET` request in Postman, select *Bearer Token* as your authorization type. Enter your PAT in the *Token* field.

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TIP

Use variables in Postman to keep your PAT secure and to easily authorize future API requests made from Postman.

1. Click *Send* in Postman. Below is the payload from the `GET` request:


```
{
  "deviceId": "3e04c330-d046-446c-b3e9-3edc22bf78ed",
  "name": "Door Lock",
  "label": "Front Door Lock",
  "deviceManufacturerCode": "003B-6341-5044",
  "manufacturerName": "SmartThingsCommunity",
  "deviceModel": "6341-5044",
  "presentationId": "7a15b375-294d-37fc-9ebe-000aea7436c8",
  "locationId": "8a2fa0bd-9e5a-4798-970b-c2ad73671ec9",
  "roomId": "95b1b353-d9e9-4ed0-8c83-a25fd44b93f8",
  "sharedLocations": [],
  "components": [
    {
      "id": "main",
      "label": "Door Lock",
      "capabilities": [
        {
          "id": "lock",
          "version": 1
        },
        {
          "id": "lockCodes",
          "version": 1
        },
        {
          "id": "battery",
          "version": 1
        },
        {
          "id": "refresh",
          "version": 1
        }
      ],
      "categories": [
        {
          "name": "SmartLock",
          "categoryType": "manufacturer"
```

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```
        }
      ]
    }
  ],
  "createTime": "2022-03-07T22:22:17.726Z",
  "parentDeviceId": "e061df47-ec9b-42f2-beef-81606b87d268",
  "profile": {
    "id": "8d99f687-b7d8-3650-b3be-57e13e17883b"
  },
  "zwave": {
    "networkId": "4D",
    "driverId": "0f206d13-508e-4342-9cbb-937e02489141",
    "executingLocally": true,
    "hubId": "e061df47-ec9b-42f2-beef-81606b87d268",
    "networkSecurityLevel": "ZWAVE_S0_LEGACY",
    "provisioningState": "PROVISIONED"
  },
  "type": "ZWAVE",
  "vid": "7a15b375-294d-37fc-9ebe-000aea7436c8",
  "mnmn": "SmartThingsCommunity",
  "ocfDeviceType": "oic.d.smartlock",
  "restrictionTier": 0,
  "allowed": null
}
```


Since this door lock operates on the Z-Wave network, the `parentDeviceId` field tells us what device this door lock is associated with (a `GET` request to this parent device ID tells us this parent device is a SmartThings v3 Hub).

https://developer.smartthings.com/docs/devices/device-basics

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Device Profiles

A Device Profile defines a Device and its features on the SmartThings platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings platform behaves. Before joining your Device to the SmartThings platform, you'll need to create a Device Profile.

> NOTE
> Devices using SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

Components

Components are used to include and group Capabilities in a Device Profile. A Device Profile must have at least one Component. This Component is named `main` by convention for all profiles with a single Component. Each Component must include at least one Capability:

```
{
  "id": "<Device-Profile-ID-Here>",
  "name": "sample",
  "components": [
      {
          "label": "main",
          "id": "main",
          "capabilities": [
              {
                  "id": "accelerationSensor",
                  "version": 1
              }
          ],
          "categories": []
      }
  ],
  "metadata": {
      "vid": "sample",
      "deviceType": "AirConditioner",
      "ocfDeviceType": "oic.d.airconditioner",
      "mnmn": "fNTD",
      "deviceTypeId": "AirConditioner",
      "ocfSpecVer": "core 1.1.0",
      "mnid": "fNTD",
      "mnId": "fNTD"
```

https://developer.smartthings.com/docs/devices/device-profiles

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Connectivity Definitions

A device's connection `state` can have one of three values:

- `ONLINE` means a device can be expected to respond to a command (actuator devices) or report an event (sensor devices).
- `UNHEALTHY` means a device has been inactive longer than its designated health check interval. This is an intermediate state indicating that a device is possibly offline. This state can be caused by high network latency, low battery, or tamper events on security devices.
- `OFFLINE` means a device with `UNHEALTHY` status cannot be contacted by the platform. The check interval is defined here.

A hub's `connectivity` can have the following values:

- `CONNECTED` means that a "hub connected" event has been received by SmartThings Cloud, and no "hub disconnected" event has been received.
- `DISCONNECTED` means that a "hub disconnected" event has been received by SmartThings Cloud, and no "hub connected" event has been received in the last 60 seconds.

When a hub goes offline, all devices connected to this hub will also be marked `OFFLINE`.

Use the Devices API to Check Device and Hub Health

You must pass an OAuth token in the request header when calling each of the below API methods.

```
Authorization: Bearer <token>
```

For information on using tokens, see Authorization and Permissions.

Get Device Health

```
GET /devices/<deviceId>/health
```

This call returns the health of a device by its ID. You must include `deviceID` in the path to specify a device.

OAuth scope: `r:devices`

Example response

```
{
  "deviceId": "string",
  "state": "ONLINE",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

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The JSON response lists the connection `state` of the device and its `lastUpdatedDate`. The latter value is the timestamp of the last known state change of the device.

> NOTE
> Regular "online" events sent by a device are *not* considered state changes. `lastUpdatedDate` will record when an "offline" event is sent.

Get a Hub's Health

```
GET /installed-hubs/<hubDeviceId>/health
```

This call returns the health of a hub by its ID. You must include `hubDeviceID` in the path to specify a hub.

OAuth scope: `r:hubs`

Example response

```
{
  "hubId": "string",
  "connectivity": "CONNECTED",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

The JSON response lists the `connectivity` status of the hub, its `lastUpdatedDate`, and the `hubRadioState`, which indicates the state of the Bluetooth, Zigbee, and ZWave radios on the hub.

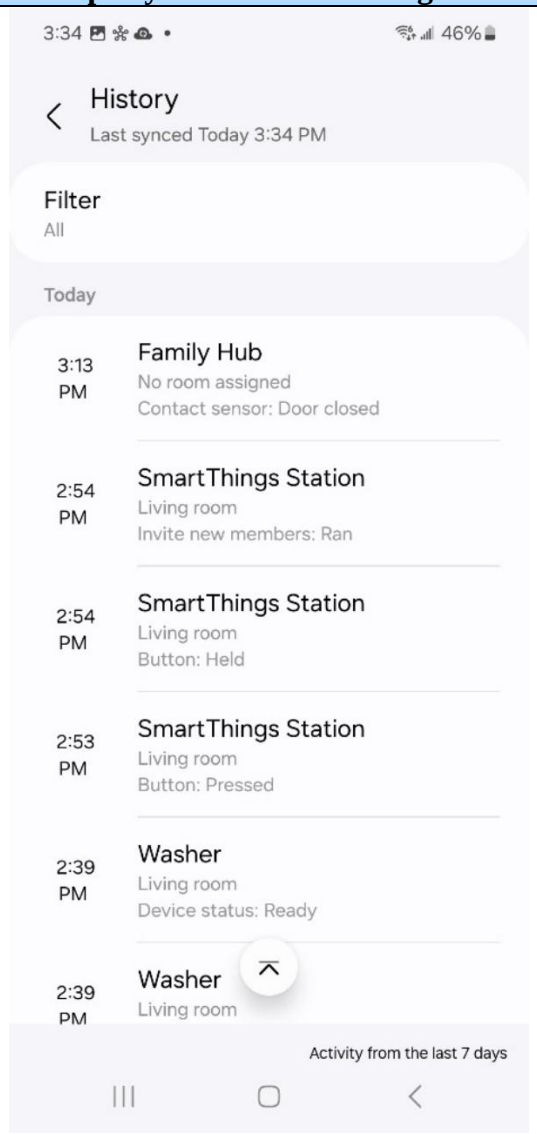
https://developer.smartthings.com/docs/devices/health#get-device-health

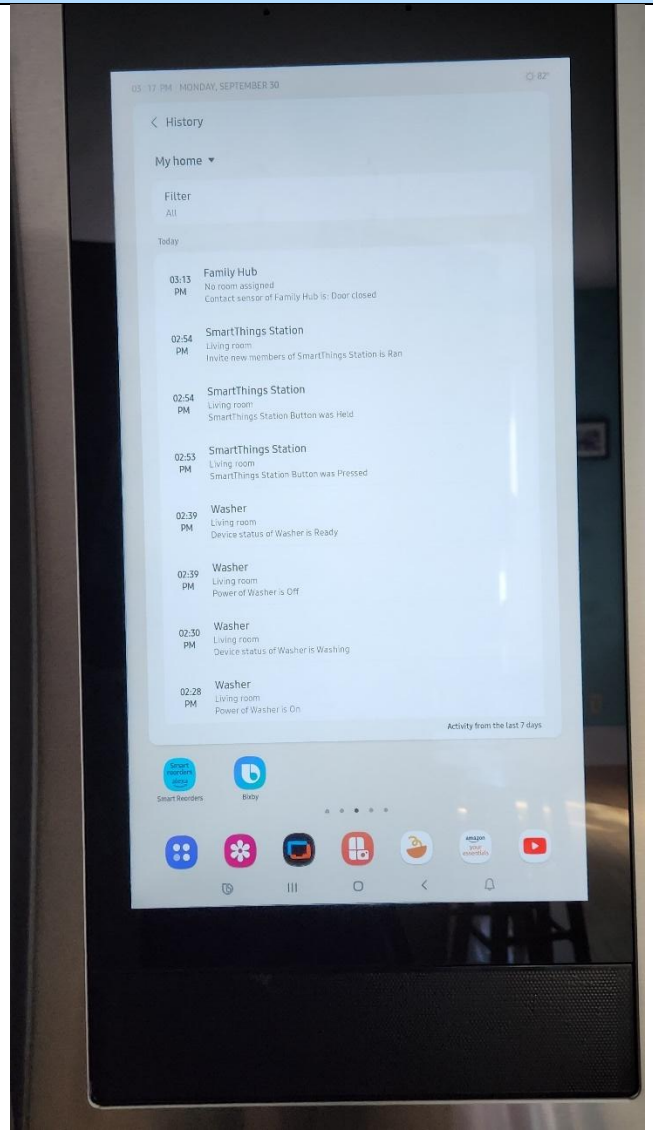
As a non-limiting example, the evidence from both the main terminal (smartphone) and the subsidiary terminal (refrigerator) explicitly demonstrates this capability. The "History" screens present the stored content information as a time-sequenced list. The events are arranged with the most recent item at the top, sorted by their stored timestamp. For instance, below screenshots show the "Family Hub" event at "3:13 PM" appearing above the "SmartThings Station" events from "2:54 PM" and "2:53 PM," which in turn appear above the "Washer" event from "2:39 PM." This consistent presentation of events in a reverse chronological order across multiple terminals proves that the first controller is configured to organize and display the stored content information in this specific manner.

To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the evidence from both the main terminal (smartphone) and the subsidiary terminal (refrigerator) explicitly

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	demonstrates this capability. The "History" screens present the stored content information as a time-sequenced list (*e.g.*, History list, Favorites list) or as device GUI. The events are arranged with the most recent item at the top, sorted by their stored timestamp. For instance, below screenshots show the "Family Hub" event at "3:13 PM" appearing above the "SmartThings Station" events from "2:54 PM" and "2:53 PM," which in turn appear above the "Washer" event from "2:39 PM." This consistent presentation of events in a reverse chronological order across multiple terminals proves that the first controller is configured to organize and display the stored content information in this specific manner.

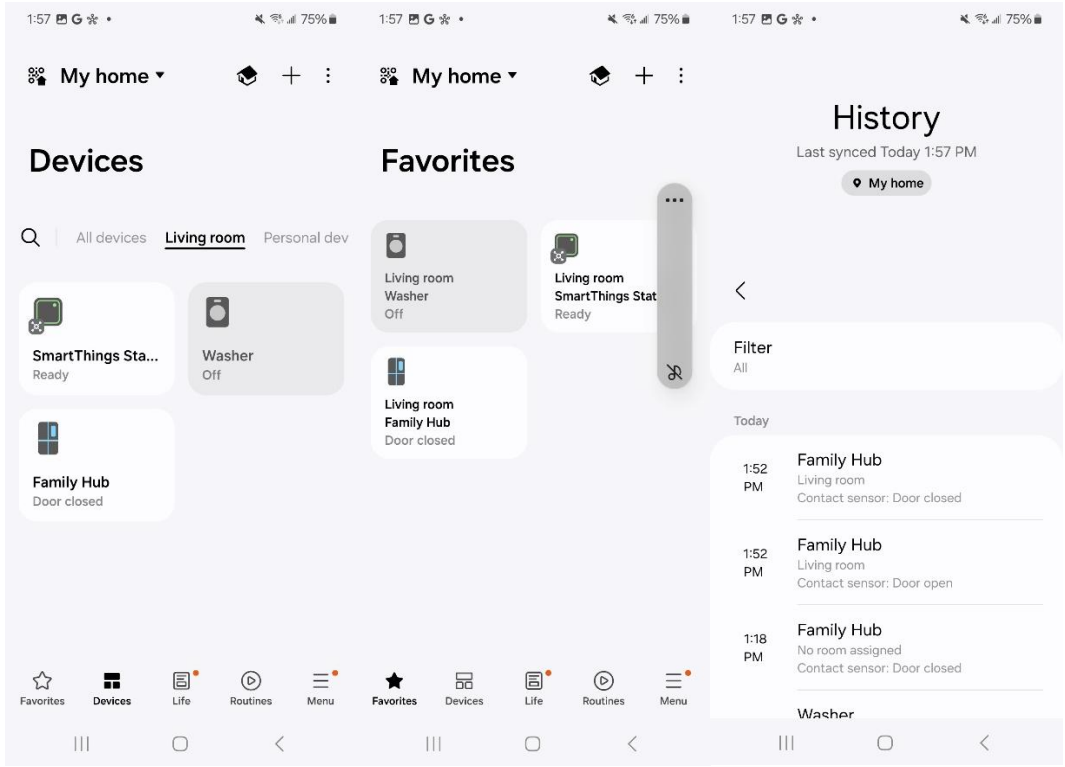
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement





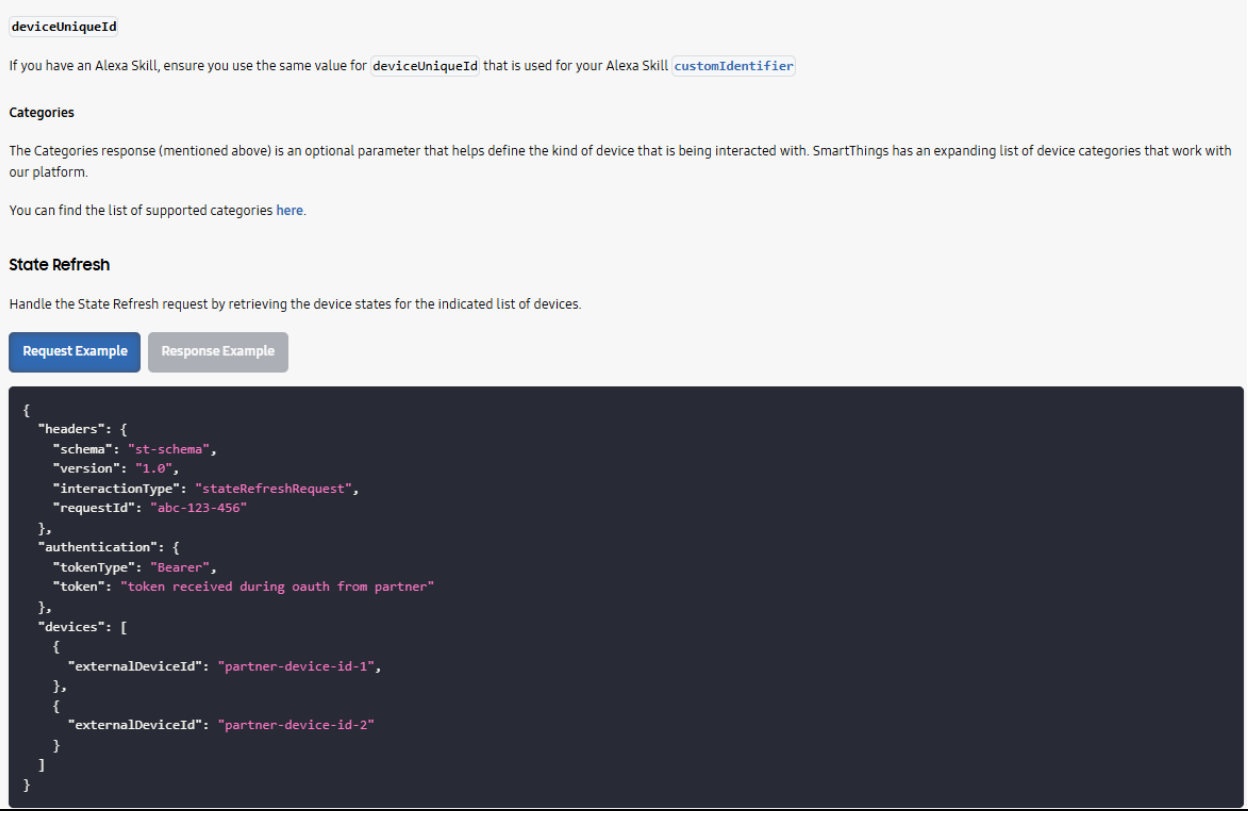
A direct, one-to-one comparison of the "History" log, proving a synchronized, chronologically sorted display across the system. The screenshot on the left shows the log as displayed on the main

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	terminal's (smartphone) application. The photo on the right shows the identical log as displayed on the subsidiary terminal's (refrigerator) screen. Both display the exact same content, sorted in the exact same reverse chronological order—with the "Family Hub" event at 3:13 PM at the top, followed by events from earlier times. This demonstrates that the first controller displays the stored content information in a consistent, chronological order on all terminals.

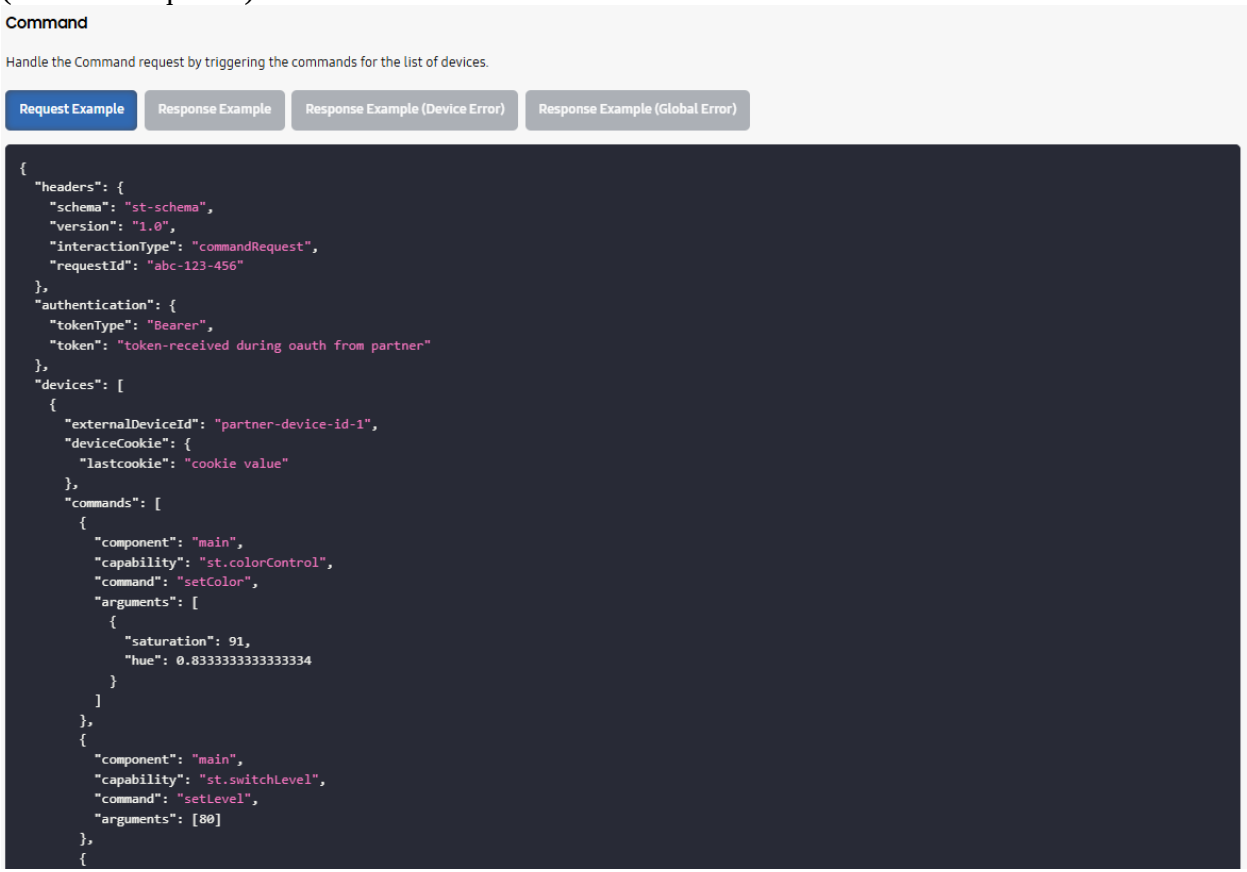


The "History" screen (right image) presents the stored content information (events from the "Family Hub") as a list sorted in reverse chronological order, with the events from 1:52 PM displayed above the event from 1:18 PM. The accompanying "Favorites" and "Devices" (*i.e.*, device GUI) screens show other views where the controller displays current content.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products operate within an ecosystem where the main controller stores association information to ensure content is transmitted to the correct subsidiary terminal. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.i] wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information,	The Accused Samsung '650 Products operate wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information,. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the evidence from the GUI and the Onboarding Process demonstrates this association. Each entry in the "History" log links a piece of content (*e.g.*, "Contact sensor: Door closed") with a user-facing device name (*e.g.*, "Family Hub"). This association is defined by the underlying device specific ID information, which includes not only the user-friendly name but also the fundamental "UniqueDeviceId," "device_info.json," "onboarding_config.json," and/or other technical identifiers (at least the following identifiers: "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," publicKey," and/or "serialNumber"). The controller uses this fundamental, unique ID to associate the event with the correct device, and then displays the user-friendly name in the log, thereby defining the link between the technical ID and the content presented to the user. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the evidence from the GUI and the Onboarding Process demonstrates this association information (*e.g.*, device ID or upon and belief a Samsung account ID). Each entry in the "History" log links a piece of content (*e.g.*, "Contact sensor: Door closed") with a user-facing device name (*e.g.*, "Family Hub") via the device

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	ID or Samsung account ID. This association information is defined by the underlying device specific ID information, which includes not only the user-friendly name but also the "UniqueDeviceId," "device_info.json," "onboarding_config.json," and/or other identifiers (at least the following identifiers: "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," publicKey," and/or "serialNumber"). The controller uses this device Specific ID information to associate the event with the correct device, and then displays the user-friendly name in the log, thereby defining the link via device ID or Samsung account ID between the device specific ID information and the content presented to the user.  `deviceUniqueId` If you have an Alexa Skill, ensure you use the same value for `deviceUniqueId` that is used for your Alexa Skill `customIdentifier` **Categories** The Categories response (mentioned above) is an optional parameter that helps define the kind of device that is being interacted with. SmartThings has an expanding list of device categories that work with our platform. You can find the list of supported categories here. **State Refresh** Handle the State Refresh request by retrieving the device states for the indicated list of devices. Request Example Response Example { "headers": { "schema": "st-schema", "version": "1.0", "interactionType": "stateRefreshRequest", "requestId": "abc-123-456" }, "authentication": { "tokenType": "Bearer", "token": "token received during oauth from partner" }, "devices": [{ "externalDeviceId": "partner-device-id-1", }, { "externalDeviceId": "partner-device-id-2" }] }

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	https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#deviceuniqueid ("deviceUniqueId")
	 
	Command
	Handle the Command request by triggering the commands for the list of devices.
	Request Example Response Example Response Example (Device Error) Response Example (Global Error)
	{
	"headers": {
	"schema": "st-schema",
	"version": "1.0",
	"interactionType": "commandRequest",
	"requestId": "abc-123-456"
	},
	"authentication": {
	"tokenType": "Bearer",
	"token": "token-received during oauth from partner"
	},
	"devices": [
	{
	"externalDeviceId": "partner-device-id-1",
	"deviceCookie": {
	"lastcookie": "cookie value"
	},
	"commands": [
	{
	"component": "main",
	"capability": "st.colorControl",
	"command": "setColor",
	"arguments": [
	{
	"saturation": 91,
	"hue": 0.8333333333333334
	}
	]
	},
	{
	"component": "main",
	"capability": "st.switchLevel",
	"command": "setLevel",
	"arguments": [80]
	},
	{
	https://developer.smartthings.com/docs/devices/direct-connected/device-app (device_info.json & onboarding_config.json)

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Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

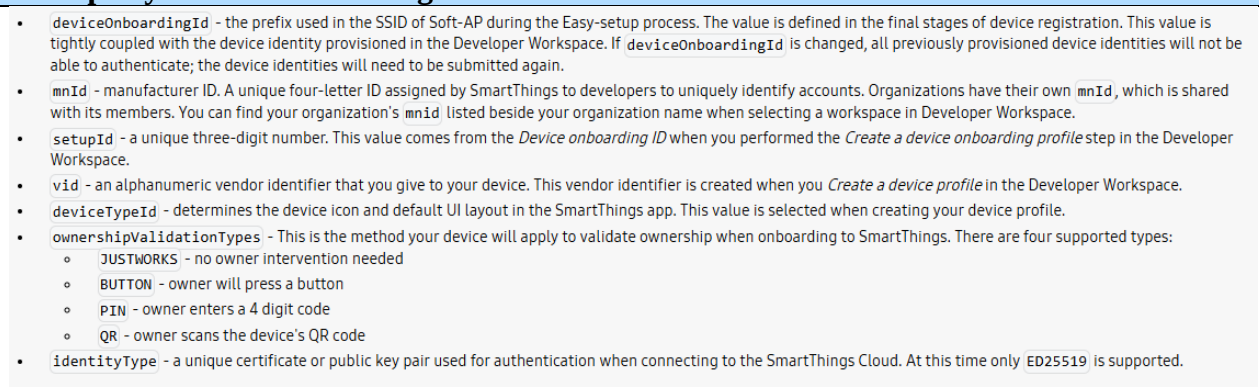
```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

You can see an example `onboarding_config.json` file below:

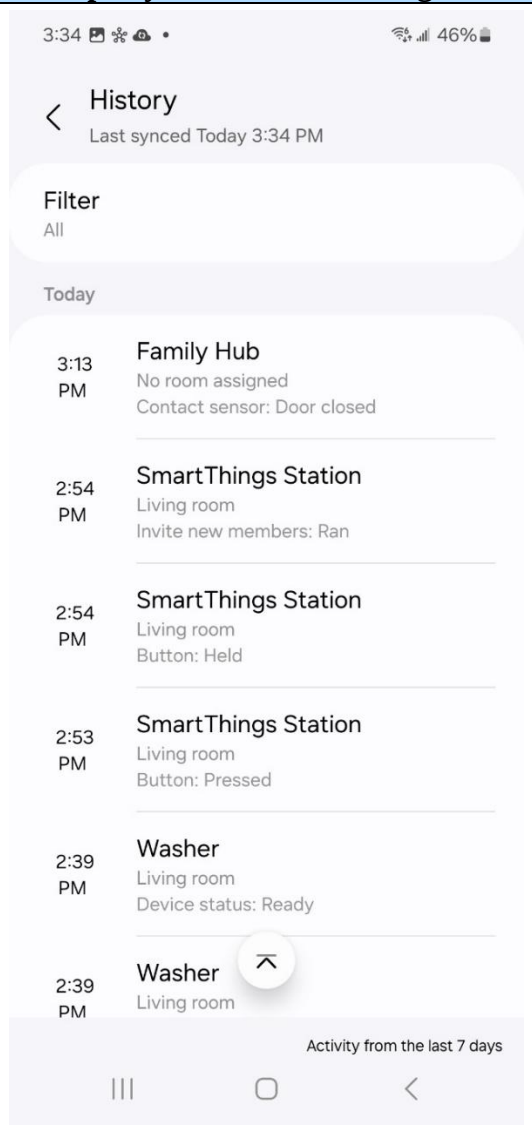
```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

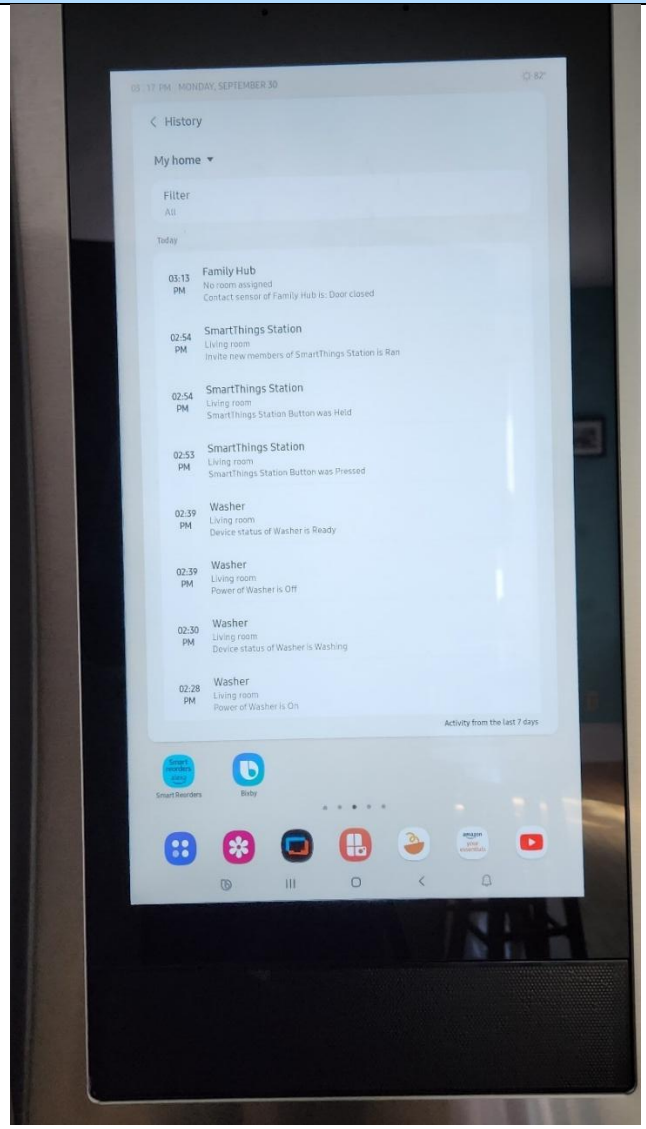
Here's a breakdown of the data contained in `onboarding_config.json`:

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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	 • `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app A collection of excerpts from the Samsung SmartThings developer documentation that outlines the technical framework for device identification and control. The documents define a plurality of device-specific IDs (such as "mnId", "vid", and "deviceOnboardingId"), show how these identifiers are structured within device configuration files ("onboarding_config.json" and "device_info.json"), and provide API examples of how a stored "externalDeviceId" is used to send commands and request status updates. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: a collection of excerpts from the Samsung SmartThings developer documentation that outlines the technical framework for device identification and control. The documents define a plurality of device specific ID information (*e.g.*, such as "mnId", "vid", and "deviceOnboardingId"), show how these identifiers are structured within device configuration files ("onboarding_config.json" and "device_info.json"), and provide API examples of how a stored "externalDeviceId" is used to send commands and request status updates.

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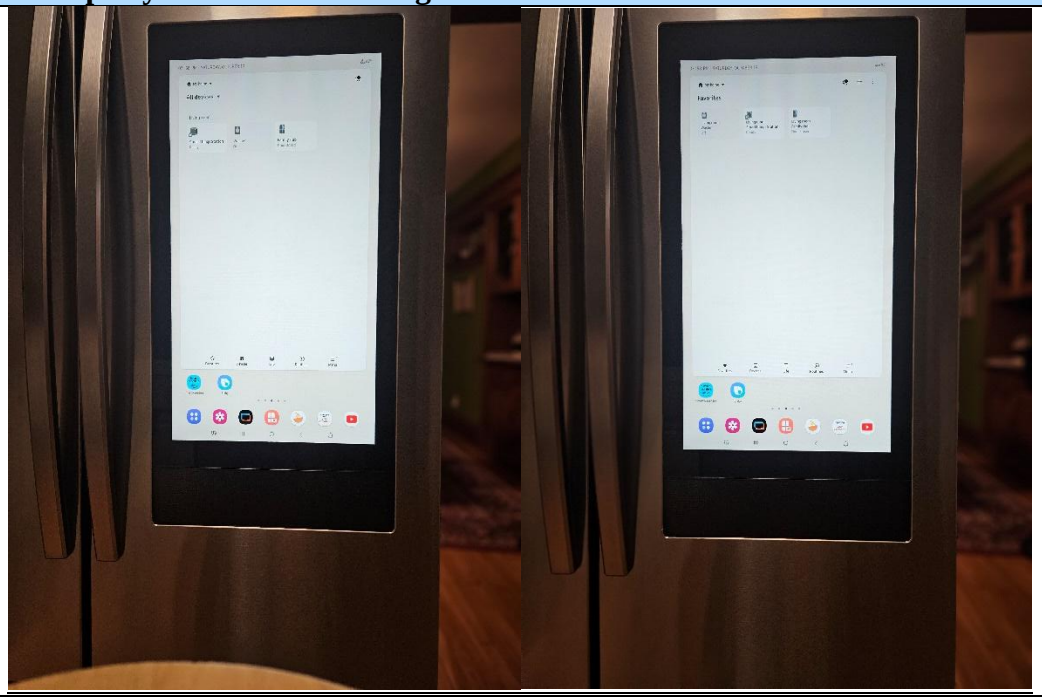


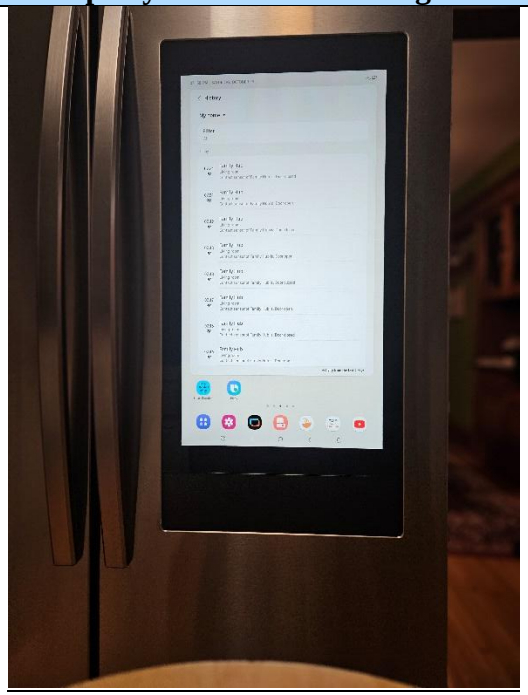


A direct, one-to-one comparison of the "History" log as displayed on the subsidiary terminal (right) and the main terminal (left). Both terminals display an identical, time-stamped list of events from

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	multiple devices in the ecosystem, sorted in the same reverse chronological order. This parallel view shows the stored content information being displayed, proving that the information is presented in a consistent chronological order, and visually demonstrates the association between a piece of content and its source device. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. See also Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and software that operate in a similar manner to associate stored content with the specific device that generated it. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.j] wherein the plurality of subsidiary terminals comprise: a second display displaying the content; and	The Accused Samsung '650 Products with Family Hub™ include a plurality of subsidiary terminals that comprise: a second display displaying the content;. See e.g., Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the photo evidence provides direct proof of this feature. Numerous screenshots show the Family Hub refrigerator's integrated screen—the "second display"—actively "displaying the content" from the SmartThings system. For instance, below screenshots show the second display displaying the "All devices" list, and the "History" log.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A set of photos showing various SmartThings content being displayed on the Family Hub refrigerator's screen, including the "History" log, the "Favorites" screen, and the "All devices" list. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, additional Accused Samsung '650 Products contain displays for displaying information as contents. See https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.

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[1.k] a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal, and	The Accused Samsung '650 Products with Family Hub™ include subsidiary terminals that have a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal,. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first controller is the System on a Chip (SoC) within the main terminal (e.g., the Galaxy S25) and/or within the SmartThings cloud as an extension, one or more of which either alone or operating in conjunction with the SmartThings Cloud/platform correspond to the second controller. The SmartThings cloud/platform is an extension of the fridge with Family Hub™ because the SmartThings cloud/platform includes virtual instances having the same functionalities as the fridge with Family Hub™. *See e.g.*, **Device Profiles** A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile. Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

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	As a non-limiting example, each Family Hub fridge has a second controller (its own internal processor) alone or in conjunction with the SmartThings cloud/platform that controls its communications with the main terminal via the SmartThings Cloud/platform. This second controller stores the refrigerator's own unique device specific ID information (*e.g.*, "deviceUniqueId," "device_info.json" and/or "onboarding_config.json"). According to SmartThings documentation, a device must possess a "Device Identity (device_info.json)" and "Device Onboarding (onboarding_config.json)" file to connect to the platform. These files, containing IDs like serialNumber and deviceOnboardingId, are stored on the device and used by its second controller. During the initial connection process, the second controller transmits this device specific ID information to the main terminal (via Wi-Fi/Bluetooth and/or the SmartThings cloud/platform) to be authenticated and registered on the network. As a non-limiting example, each Family Hub fridge has a second controller (its own internal processor) that controls its communications with the main terminal via the SmartThings Cloud. This second controller stores the refrigerator's own unique device specific ID information (*e.g.*, "deviceUniqueId," "device_info.json" and/or "onboarding_config.json"). According to SmartThings documentation, a device must possess a "Device Identity (device_info.json)" and "Device Onboarding (onboarding_config.json)" file to connect to the platform. These files, containing IDs like serialNumber and deviceOnboardingId, are stored on the device and used by its second controller. During the initial connection process, the second controller transmits this device specific ID information to the main terminal (via the cloud) to be authenticated and registered on the network.

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1203-004967	Samsung Ic-vol. Detector;kia7042at,tsm,3p,2.9x1.
1203-009218	Samsung Ic-pwm Controller;sc1551c-h26-tl,sop 24D
1203-005773	Samsung Ic-posi.fixed Reg.;kia78d05pi,3p,to-220,
1203-007526	Samsung Ic-posi.fixed Reg.;7815,d-pak/to252,3p,6
1003-002900	Samsung Ic-motor Driver;drv8848pwpr,16p,htssop,t
1003-002899	Samsung Ic-motor Driver;drv8848l,16p,htssop,tp,5
0903-002203	Samsung Ic-microcontroller;hart-m320,mqfp,100p,2
0903-002197	Samsung Ic-microcontroller;hart-i910z,lqfp,64p,1

https://encompass.com/model/SMGRF27CG5900SRAA/0000/

The RF27CG5900SRAA Samsung 36-Inch 3-Door French Door Spacemax Refrigerator contains a microcontroller that serves as its onboard controller.

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`deviceUniqueId`

If you have an Alexa Skill, ensure you use the same value for `deviceUniqueId` that is used for your Alexa Skill `customIdentifier`

Categories

The Categories response (mentioned above) is an optional parameter that helps define the kind of device that is being interacted with. SmartThings has an expanding list of device categories that work with our platform.

You can find the list of supported categories here.

State Refresh

Handle the State Refresh request by retrieving the device states for the indicated list of devices.

Request Example | Response Example

```
{
  "headers": {
    "schema": "st-schema",
    "version": "1.0",
    "interactionType": "stateRefreshRequest",
    "requestId": "abc-123-456"
  },
  "authentication": {
    "tokenType": "Bearer",
    "token": "token received during oauth from partner"
  },
  "devices": [
    {
      "externalDeviceId": "partner-device-id-1",
    },
    {
      "externalDeviceId": "partner-device-id-2"
    }
  ]
}
```

- `headers`
  - `schema`: Schema type.
  - `version`: Schema version.
  - `interactionType`: Interaction type of payload.
  - `requestId`: A unique ID assigned to the request.
- `authentication`: See Discovery section.
- `deviceState`: Array of device states. See Callback section.

https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#deviceuniqueid

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Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

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Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

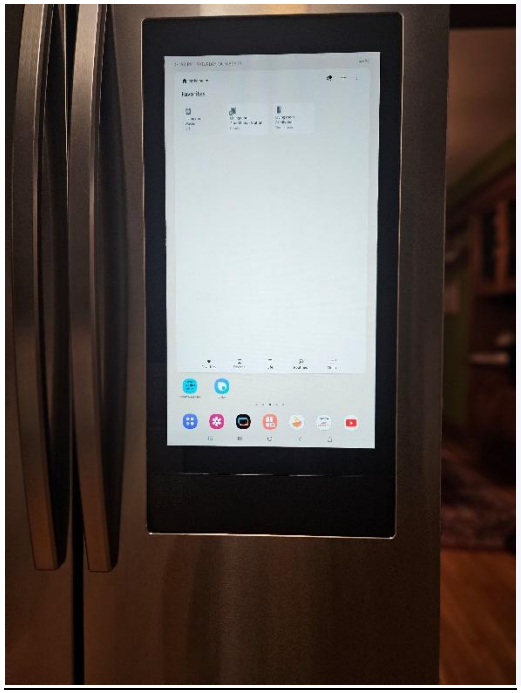
You can see an example `onboarding_config.json` file below:

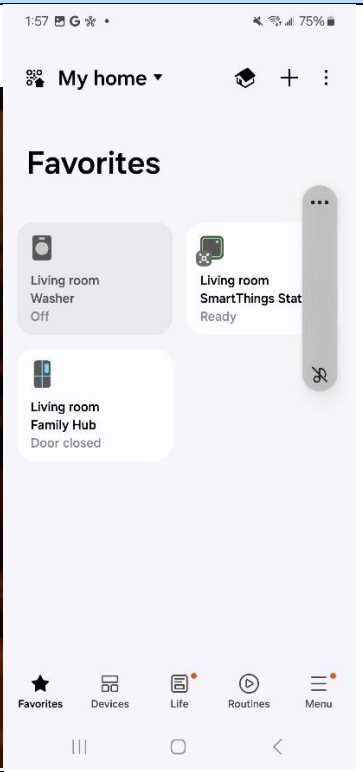
```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

Here's a breakdown of the data contained in `onboarding_config.json`:

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	• `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app

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The image of the refrigerator shows the "second controller" in operation, running the SmartThings interface in the Family Hub™. The screenshot from the smartphone is the direct proof of the claim: the "Family Hub" appears in the main terminal's device list only because the second controller (on the refrigerator) successfully transmitted its stored "device specific ID information" to the main terminal during the onboarding/connection process.

On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner.

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	See also Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain onboard controllers and communication hardware that operate in a similar manner to store and transmit their own device identifiers during a connection process. *See* https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.l] wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be connected, based on the association information	The phones in the Accused Samsung '650 Products operate wherein the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be connected, based on the association information. See e.g., Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the phone alone or in conjunction with the SmartThings cloud/platform determines whether it is possible to connect to one of the fridges storing any one of the information contained in "device_info.json" or "onboarding_config.json" (*e.g.*, device specific ID information) during or after the onboarding process and transmits the device name or deviceState (*e.g.*, contents) in the Favorites list, History list, or device GUI stored in the memory of one of the fridges and/or SmartThings cloud/platform based on the device ID or Samsung account ID (*e.g.*, association information) for one of the fridges to also display. As another non-limiting example, after the first controller receives the unique ID (171F) from the second controller, it then stores this device specific ID information locally and/or in the SmartThings cloud/platform—the main terminal device connects using Wi-Fi/Bluetooth with the subsidiary terminal or via the SmartThings cloud/platform. This is evidenced by the successful registration screen, where the controller saves the device's configuration, and by the fact that the "Family Hub" persists in the device lists long after the initial connection is complete. The device would not appear in these lists if its ID had not been stored by the first controller. Finally, the evidence shows this

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	stored device specific ID information being associated with the content information. In the "History" log, Favorites list, or device GUI, the content (*e.g.*, "Contact sensor: Door closed") is explicitly linked to the stored device ID ("Family Hub") or Samsung account ID, proving the association as claimed. As a non-limiting example, after the first controller receives the unique ID (171F) from the second controller, it then stores this device specific ID information. This is evidenced by the successful registration screen, where the controller saves the device's configuration, and by the fact that the "Family Hub" persists in the device lists long after the initial connection is complete. The device would not appear in these lists if its ID had not been stored by the first controller. Finally, the evidence shows this stored device specific ID information being associated with the content information. In the "History" log, the content (*e.g.*, "Contact sensor: Door closed") is explicitly linked to the stored device ID ("Family Hub"), proving the association as claimed. https://developer.smartthings.com/docs/devices/direct-connected/device-app

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

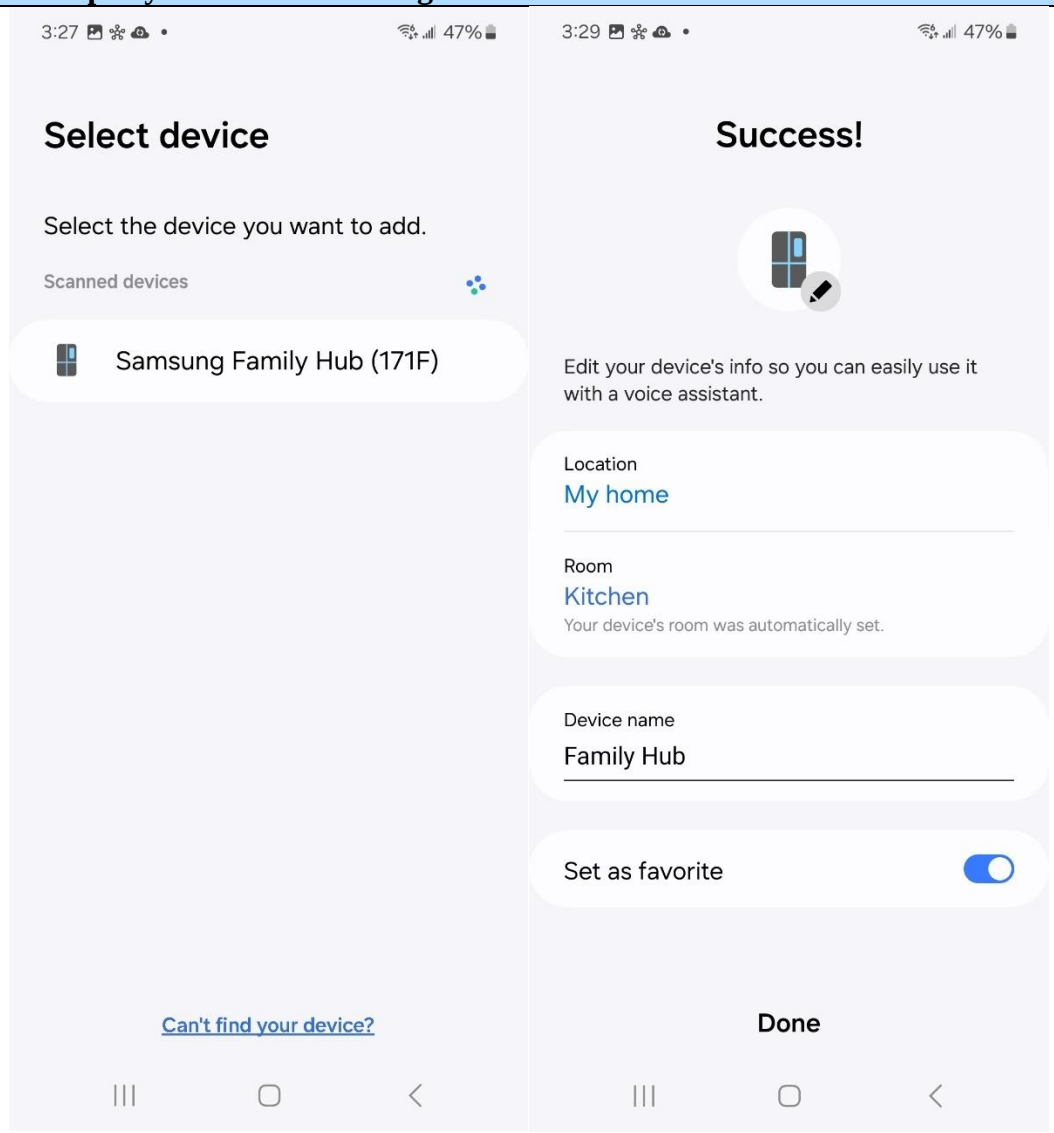
You can see an example `onboarding_config.json` file below:

```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

Here's a breakdown of the data contained in `onboarding_config.json`:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported.

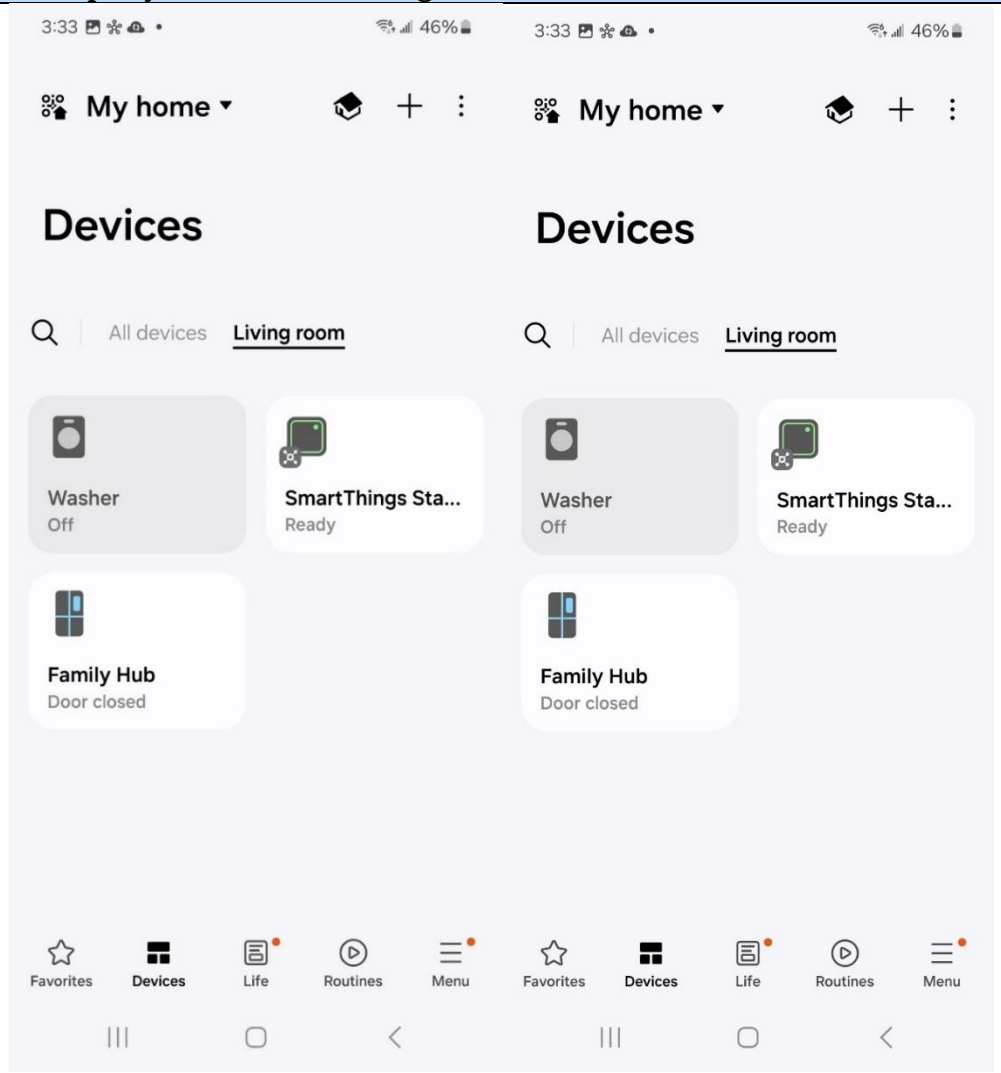
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



The first screen (left image) shows the main terminal receiving the "device specific ID information" (including the unique ID "(171F)") that was transmitted from the second controller. The second

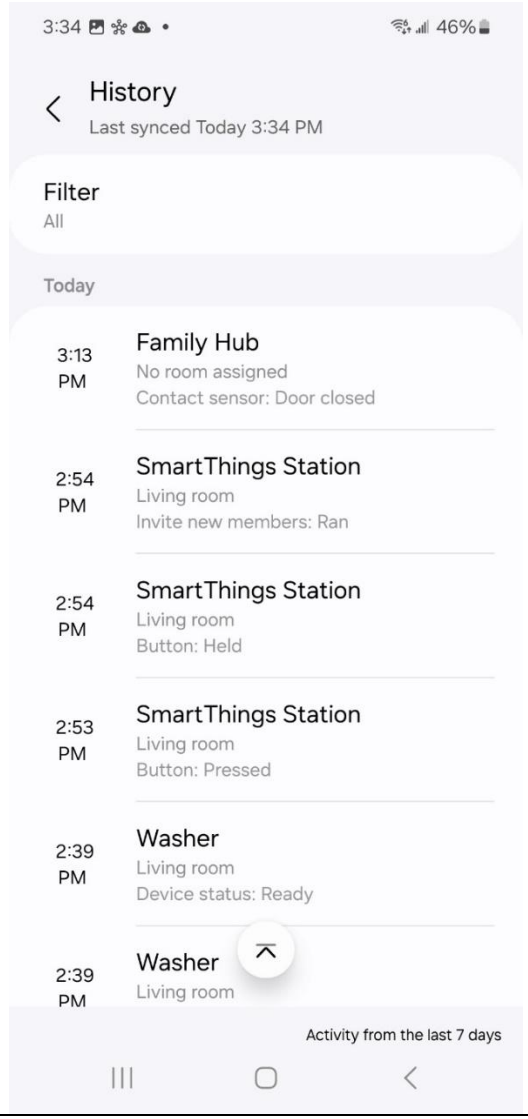
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	"Success!" screen (right image) demonstrates the first controller storing this ID information by presenting the final, saved configuration for the device, including its name ("Family Hub") and location ("Kitchen"). This sequence visually documents the claim that the first controller receives and then stores the ID information provided by the subsidiary terminal.

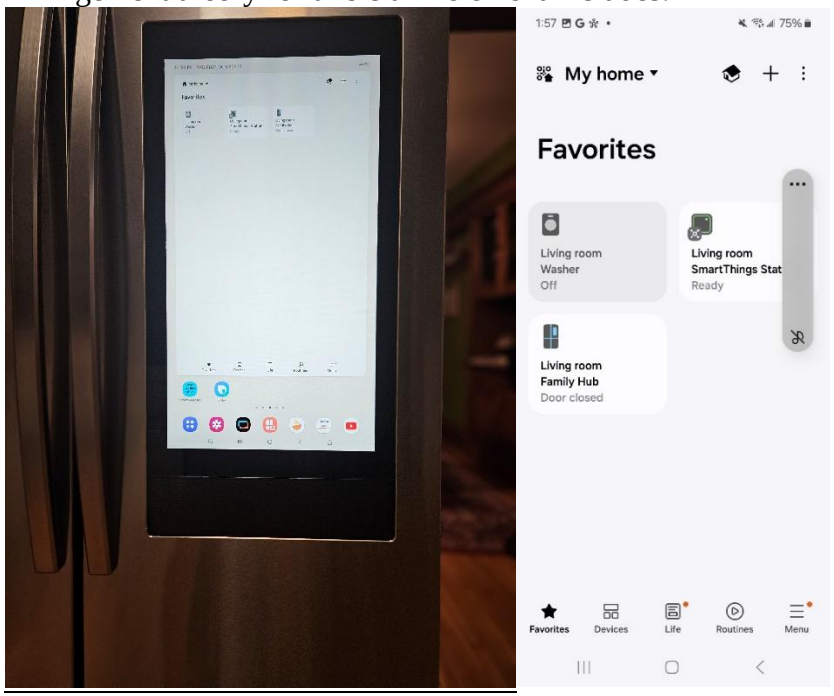
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



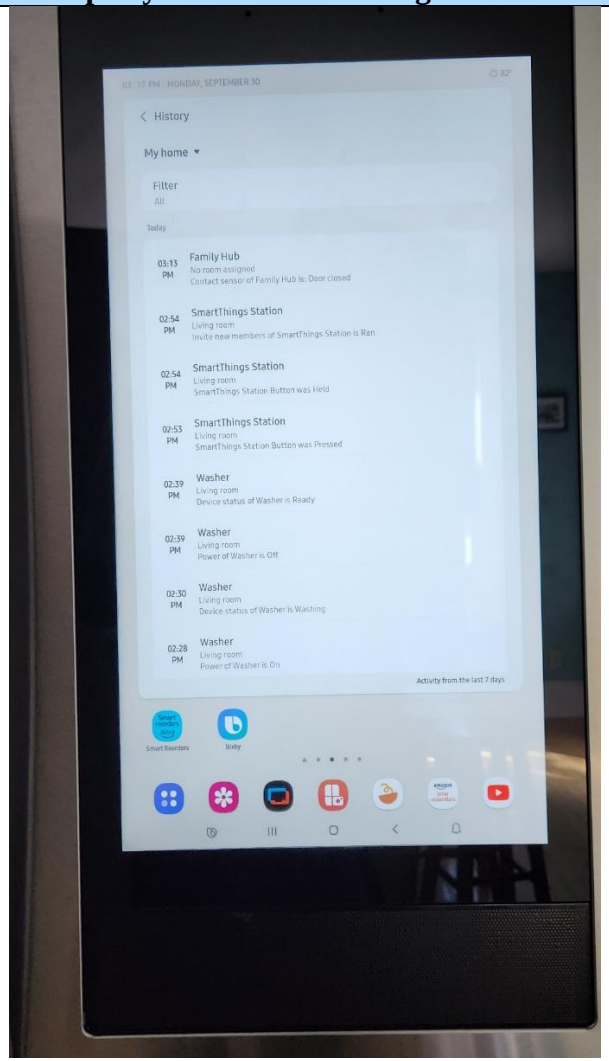
The screen displays a list of the subsidiary terminals—the Washer, SmartThings Station, and Family Hub—grouped in the "Living room" and shows the real-time status of each device ("Off," "Ready," and "Door closed"). This screenshot serves as comprehensive evidence for multiple contentions, as it

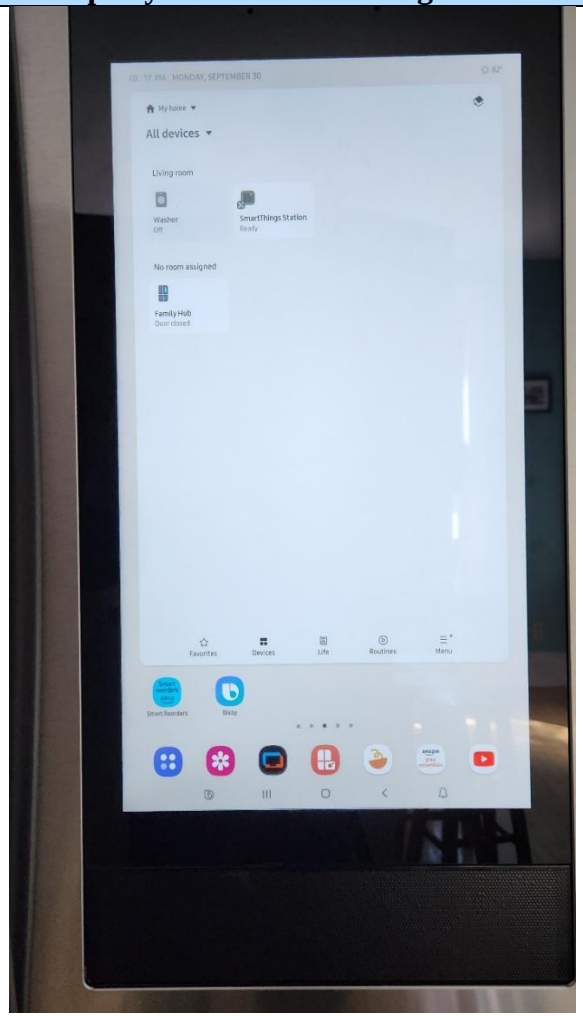
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	shows the final, synchronized state of the managed ecosystem, proving the first controller's ability to store and use device IDs, determine and display device states, and organize terminals into groups.

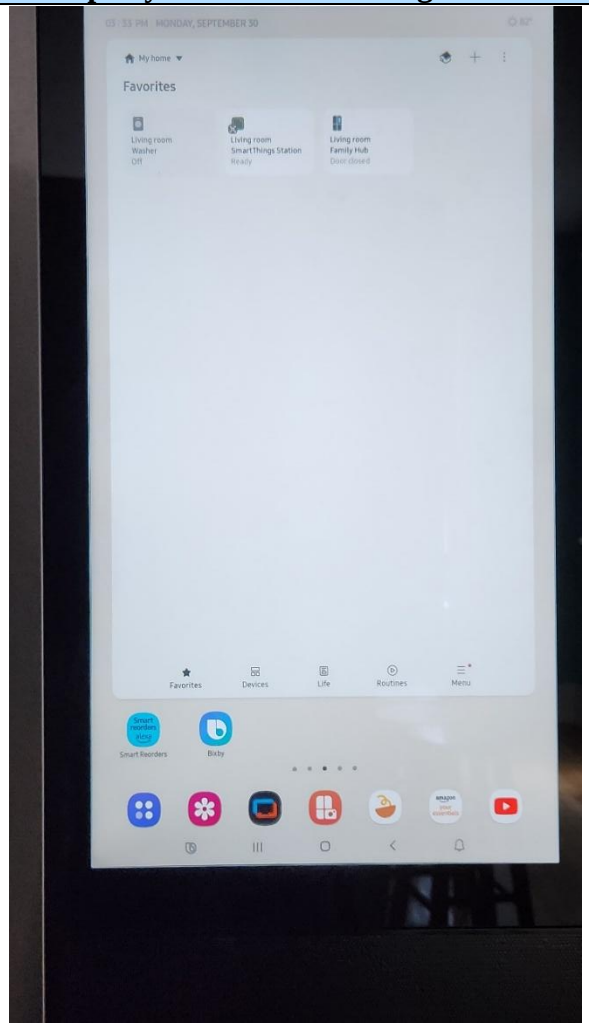


U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	This screenshot demonstrates the controller's ability to display stored content information, present that information in chronological order, and visually show the association between each event and its specific source device. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes:  Screenshots of one of the fridge and the phone showing the same Favorites list using the device ID or Samsung account ID to associated the device specific ID information with the contents. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner.

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	See also Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products operate within an ecosystem where the main terminal is configured to determine the connectivity status of subsidiary terminals and transmit stored content to them. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[1.m] then the subsidiary terminal reproduces the received content on the second display.	In the Accused Samsung '650 Products with Family Hub™, then the subsidiary terminal reproduces the received content on the second display. See e.g., Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the screenshots below demonstrate this capability directly. The subsidiary terminal (the Family Hub refrigerator) is shown to receive content from the first controller and reproduce it on its integrated second display. For instance, the screenshots show the subsidiary terminal reproducing the system-wide History log, the "All devices" list, and the "Favorites" list, all of which are content managed by the first controller. In each case, the subsidiary terminal is receiving content and displaying, or "reproducing," it for the user on its own screen. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the screenshots below demonstrate this capability directly. The subsidiary terminal (*e.g.*, the Family Hub refrigerator) is shown to receive content via Wi-Fi/Bluetooth from the first controller and reproduce it by displaying on its integrated second display. For instance, the screenshots show the subsidiary terminal reproducing the system-wide History log, the "All devices" list (*e.g.*, device GUI), and the "Favorites" list, all of which are containing contents (*e.g.*, device name and/or device state) managed by the first controller. In each case, the subsidiary terminal is receiving content and displaying, or "reproducing," it for the user on its own screen.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A photo of the Family Hub refrigerator's screen displaying the History log. It shows the subsidiary terminal (the refrigerator) reproducing the received content.

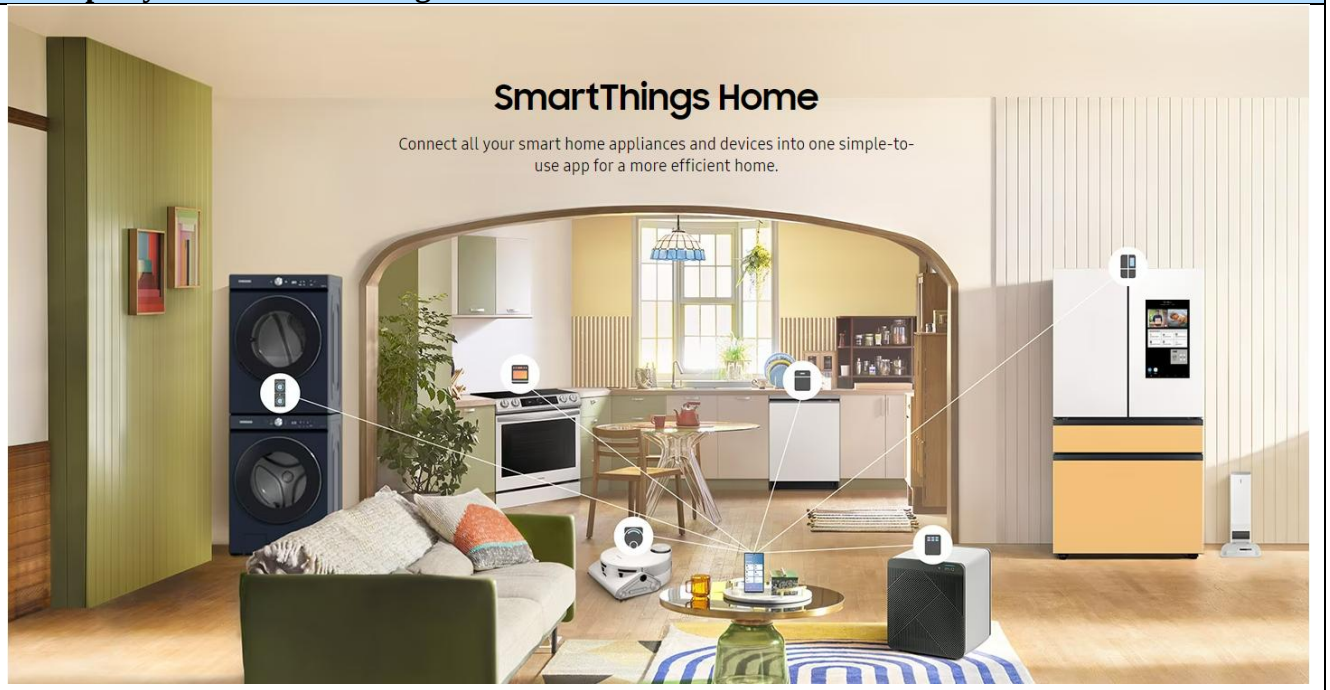
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A photo of the Family Hub refrigerator's screen displaying the "All devices" user interface. This shows the subsidiary terminal (the refrigerator) reproducing the received content (the list of all connected devices, which is managed by the first controller) on its second display.

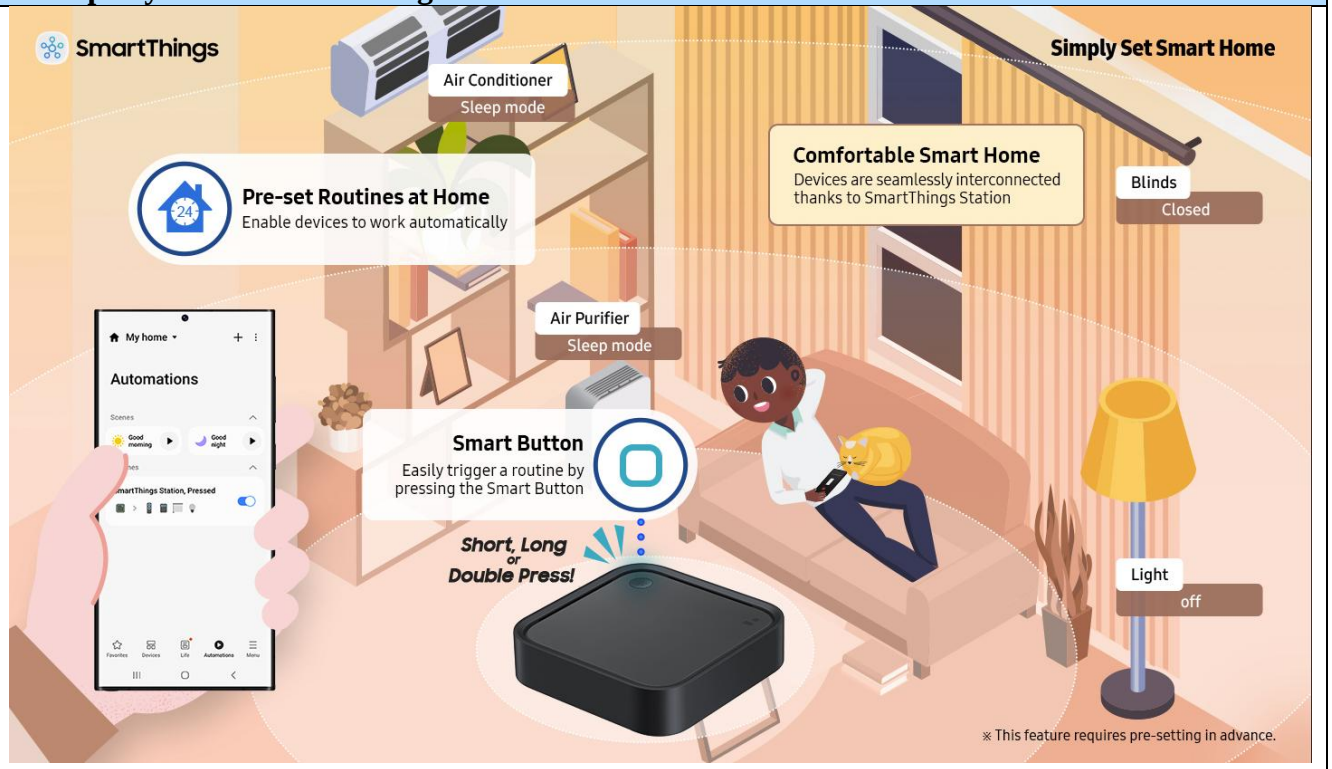
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A photo of the Family Hub refrigerator's screen displaying the "Favorites" user interface. This shows the subsidiary terminal (the refrigerator) reproducing the received content (the user-designated "Favorites" list, which is managed by the first controller) on its second display.

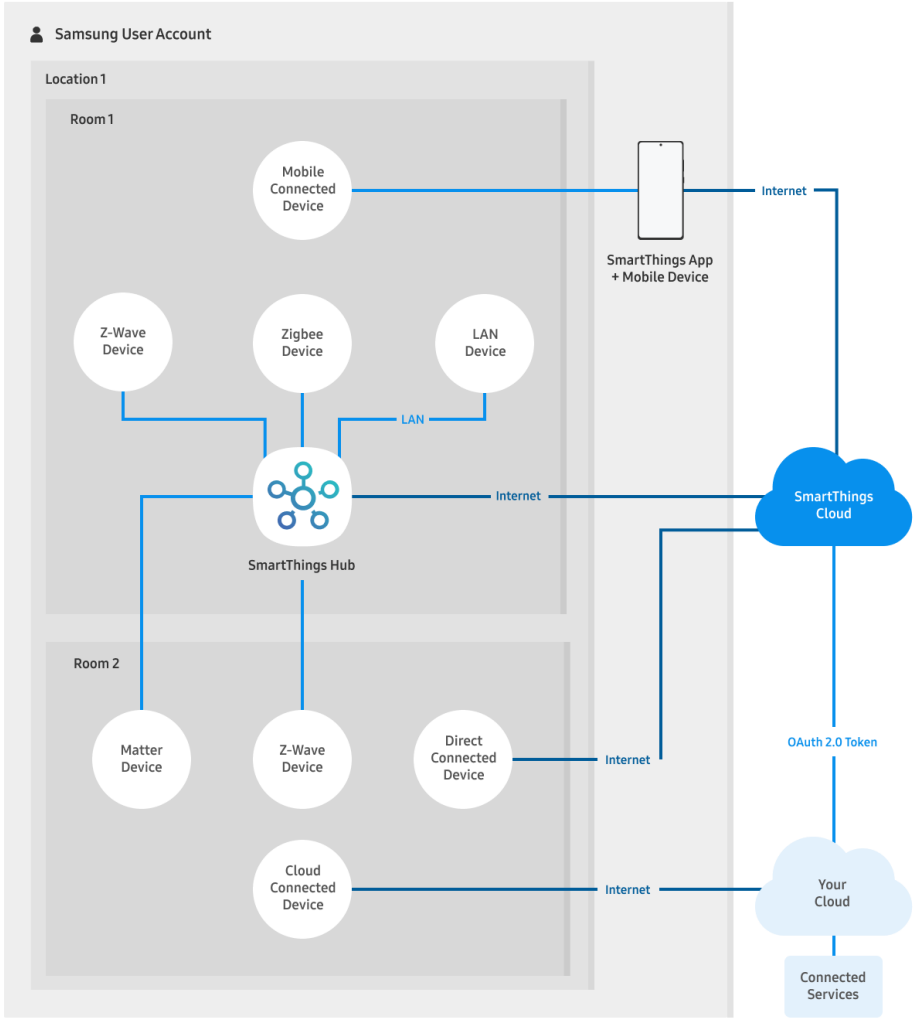
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products, particularly the Family Hub models, contain a second display and operate within an ecosystem where they receive and reproduce content managed by the first controller. *See* https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.pre] A contents reproducing system comprising:	Two or more of the Accused Samsung '650 Products is or acts as a contents reproducing system. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website showing that each of the devices is or acts as a contents reproducing system (*e.g.*, The SmartThings cloud/platform connects with Samsung devices using SmartThings App or Family Hub™ or equivalent using protocols (*e.g.*, Matter protocol)). (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, a contents reproducing system includes the SmartThings cloud/platform and one or more of the remaining Accused Samsung '650 Products that communicate (*e.g.*, via WiFi and/or Bluetooth) and exchange contents with each other using the SmartThings cloud/platform for display. The exchanged contents are, *e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI) representations for reproduction on a display or storage in one or more databases/medium. For example, the following screenshots and evidences below are representative of the Accused Samsung '650 Products included in the SmartThings cloud/platform. *See e.g.*,

IPR2025-01308; Samsung
Ex. 1043 - Page 235

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://www.samsung.com/us/home-appliances/smartthings/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ Matter, a new industry protocol created by hundreds of leading and innovative companies (including Samsung), marks a new era for the smart home and its users. With a mission of simplifying the connected living experience, Matter makes it easy for users to buy, set up, and control smart devices. And while the new protocol is stirring a lot of buzz, many are wondering "how does it work?" SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi via different protocols and sharing information; https://blog.smartthings.com/stories/everything-you-need-to-know-about-matter/ **That's exciting! Is Matter a new kind of radio technology?** Nope. Matter is an "application layer", which means it can run over technologies already in your homes or devices — like Wi-Fi or Thread. Think of it like this: you and I can both have the same radio, but unless we speak the same language, we can't really do anything interesting together. Technologies like Wi-Fi and Thread let you connect your devices, and Matter is the language they speak to each other. *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

The SmartThings Platform

The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more.

The SmartThings Cloud

The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app.

The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more.

With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers.

Users and Accounts

A Samsung account is required to access the SmartThings Platform.

Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes).

SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Device Profiles A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile. Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/device-profiles/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Below is a list of currently supported categories. The Platform provides a default icon based on the category specified for the device. • AirConditioner • AirPurifier • AirQualityDetector • Battery • Blind • BluRayPlayer • BluetoothCarSpeaker • BluetoothTracker • Bridges • Button • Camera • Car • Charger • ClothingCareMachine • CoffeeMaker • ContactSensor • Cooktop • Cooktop • CubeRefrigerator • CurbPowerMeter • Dehumidifier • Dishwasher • Door • DoorBell • Dryer • Earbuds • ElectricVehicleCharger • Elevator • Fan • Feeder • Flashlight • GarageDoor • GasValve • GasMeter • GenericSensor

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• HealthTracker • Heatedmattresspad • HomeTheater • Hub • Humidifier • HumiditySensor • IrRemote • Irrigation • KimchiRefrigerator • KitchenHood • LeakSensor • Light • LightSensor • MicroFiberFilter • Microwave • MobilePresence • MotionSensor • MultiFunctionalSensor • NetworkAudio • NetworkAudio • Networking • Others • Oven • PresenceSensor • Printer • PrinterMultiFunction • Projector • Range • Receiver • Refrigerator • RemoteController • RiceCooker • RobotCleaner • ScaleToMeasureMassOfHumanBody • Scanner • SecurityPanel • SetTop • Shade • ShoesCareMachine • Siren • SmartLock

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• SmartPlug • SmokeDetector • SolarPanel • SoundSensor • SoundMachine • Speaker • StickVacuumCleaner • Stove • Switch • Television • TempSensor • Thermostat • Tracker • UPnPMediaRenderer • Vent • VisionSensor • VoiceAssistance • Washer • WaterHeater • WaterValve • WaterPurifier • WiFiRouter • Window • WineCellar *Id.* **Add a Device Profile** Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started with Direct Connected Devices

Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the **Capabilities** of your device.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/get-started/

Get Started with Cloud Connected Devices

Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector.

SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform:

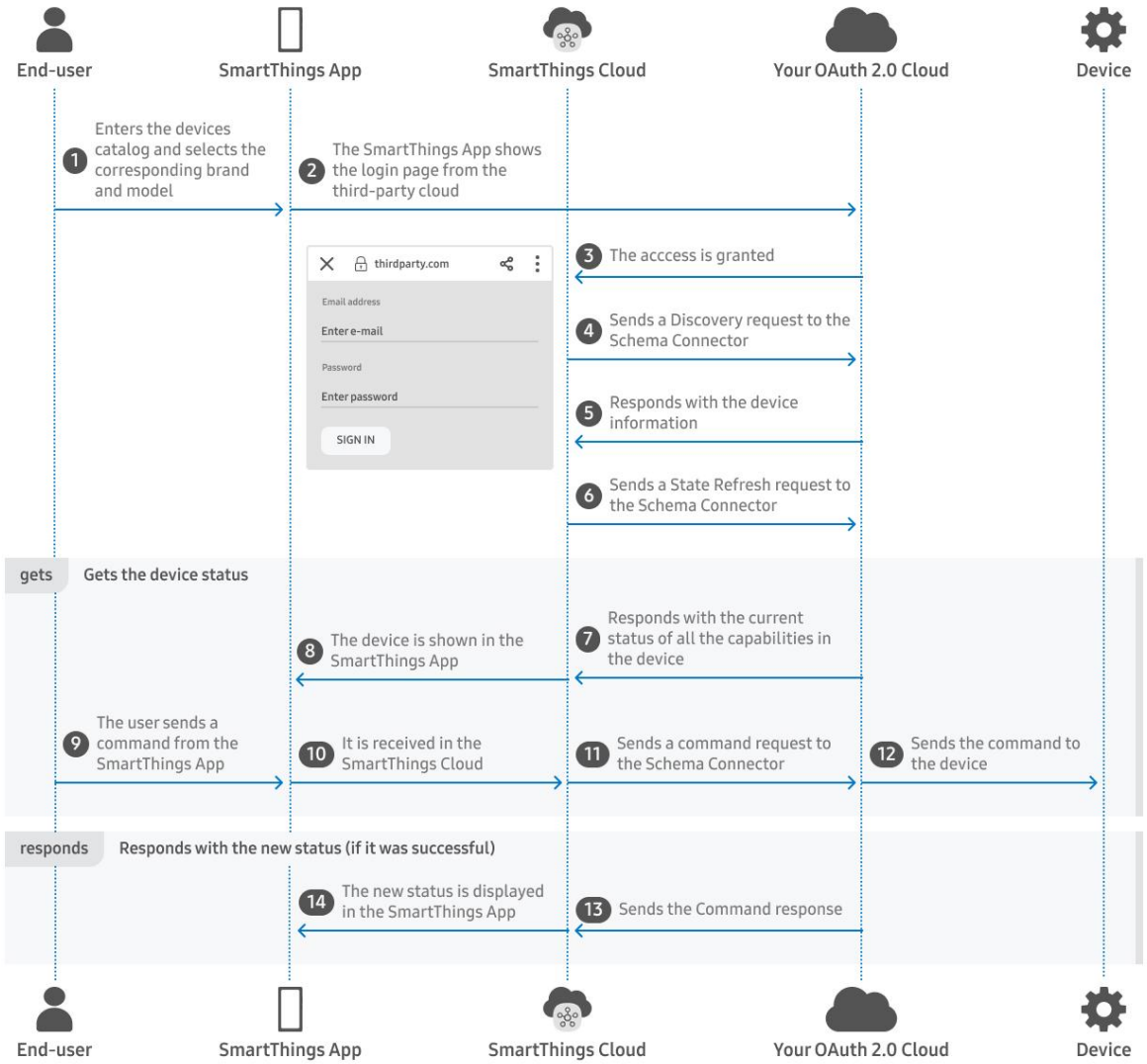
- SmartThings Schema
- SmartApps

Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/

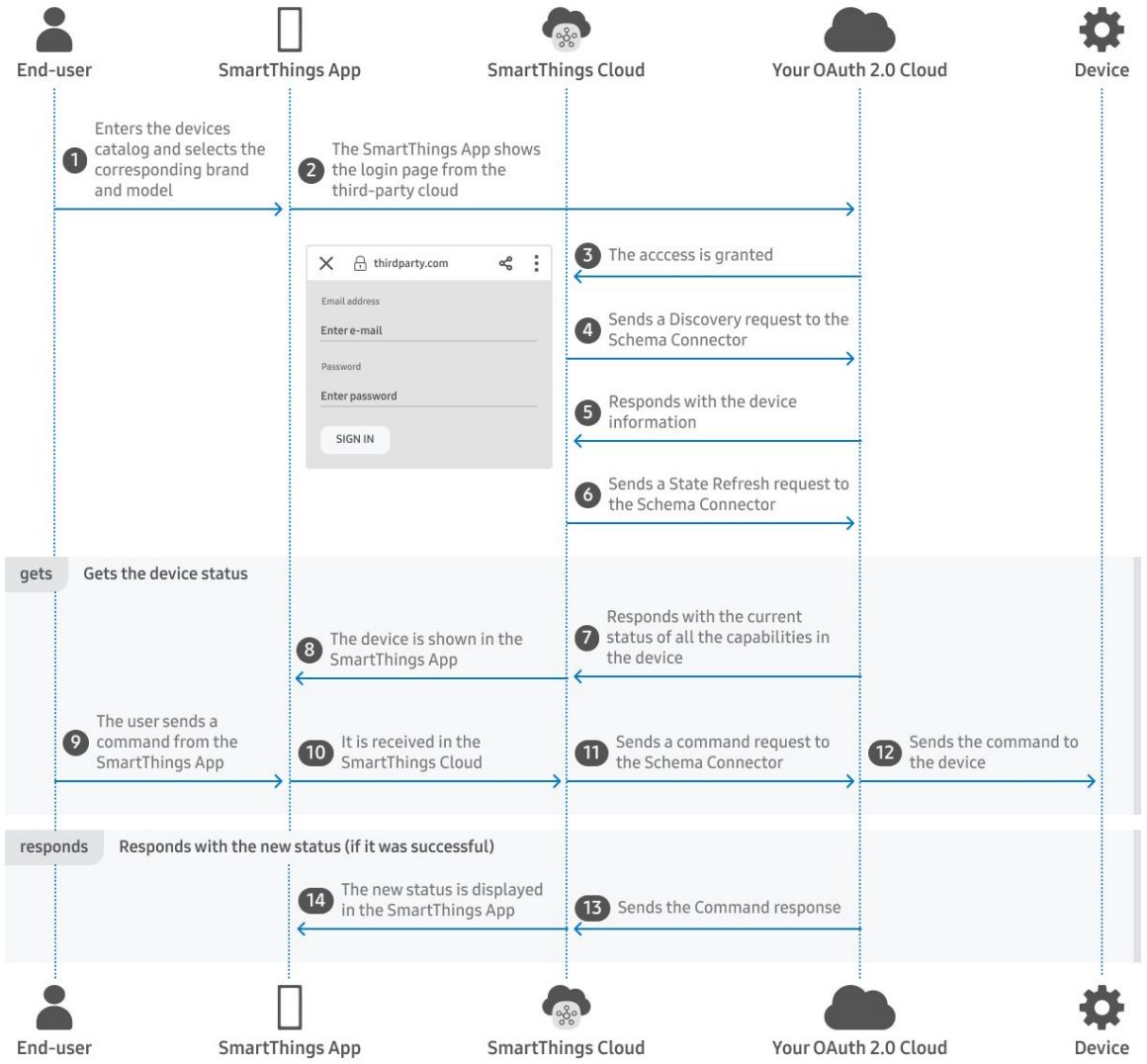
The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/connected-services/smartapp-basics **Using SmartApps to Connect Your Devices** Your Cloud does not need to support OAuth 2.0 when using SmartApps. SmartApps offer a more customizable method for integrating your products with the SmartThings Platform. They provide a method of building custom experiences, allowing you to create unique onboarding experiences, enhance Device functionality, and provide custom integrations with third-party services. Note that while a SmartApp can be used to integrate your Cloud Connected Device with the SmartThings Platform, that is not the only function a SmartApp can perform. This integration relies on a developer registering an HTTP Webhook URL or an AWS Lambda function in the Developer Workspace, which is then authorized to leverage the SmartThings Platform APIs. *Id.* The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started With Mobile Connected Devices

A Mobile Connected Device communicates with the SmartThings Platform via a mobile device, such as a Samsung Galaxy Smartphone. There are two types of Mobile Connected Devices:

- Bluetooth Devices
- SmartThings Find Devices

Bluetooth Devices

Bluetooth devices function differently than the other devices supported by SmartThings. Notably, they cannot be incorporated into Automations or Scenes.

Bluetooth devices paired to a Samsung Galaxy phone are automatically displayed in the SmartThings app. Tapping a Bluetooth device in the SmartThings app will show the available settings and controls for the device. You can also control media playing on a connected bluetooth device from the SmartThings app.

Bluetooth devices connected to a non-Samsung or iOS phone will not be displayed in the SmartThings clients.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange information; https://developer.smartthings.com/docs/devices/mobile-connected/get-started/

SmartThings Find Devices

A SmartThings Find Device is a BLE (Bluetooth Low Energy) device compatible with the SmartThings Find service.

SmartThings Find uses BLE and UWB (ultra-wideband) technologies to help you quickly locate your connected devices. By using AR in conjunction with maps and sounds, SmartThings Find offers a simple and visual solution to help guide you to your missing device.

With SmartThings Find, you can locate your missing device, even if it is offline. SmartThings users can opt in to securely use their Galaxy smartphone or tablet to help others locate their lost devices. Once a device has been offline for 30 minutes, it produces a BLE signal that can be received by other devices. If you report your device as lost via SmartThings Find, any nearby Galaxy smartphone or tablet that has opted into helping find misplaced devices can alert the Samsung server about its location, which will in turn notify you.

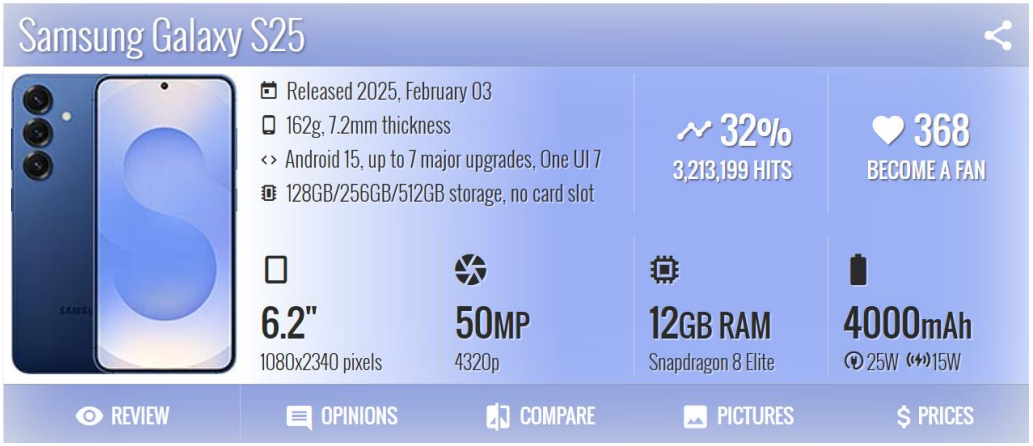
All SmartThings Find user data is encrypted and securely protected, ensuring that the device's location is not revealed to anyone except its owner.

For information on how you can make your device compatible with SmartThings Find, **submit a request here**.

Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Samsung Galaxy S25



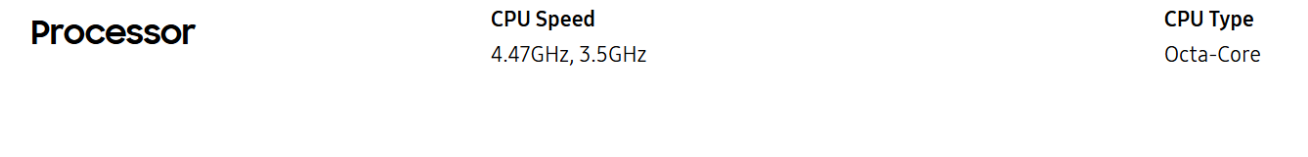
https://www.gsmarena.com/samsung_galaxy_s25-13610.php



Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



PLATFORM		
	OS	Android 15, up to 7 major Android upgrades, One UI 7
	Chipset	Qualcomm SM8750-AC Snapdragon 8 Elite (3 nm)
	CPU	Octa-core (2x4.47 GHz Oryon V2 Phoenix L + 6x3.53 GHz Oryon V2 Phoenix M)
	GPU	Adreno 830 (1200 MHz)

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e/7, tri-band, Wi-Fi Direct
	Bluetooth	5.4, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

94

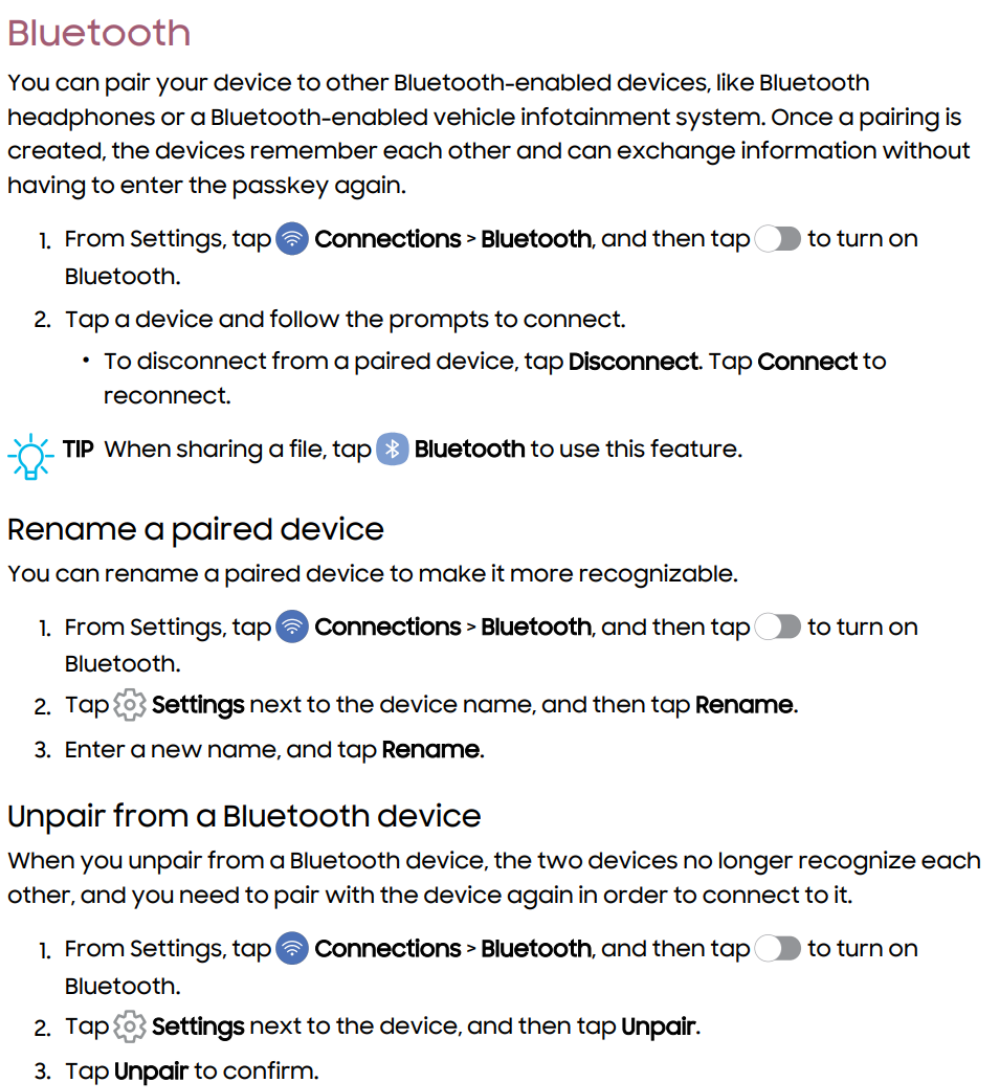
Settings

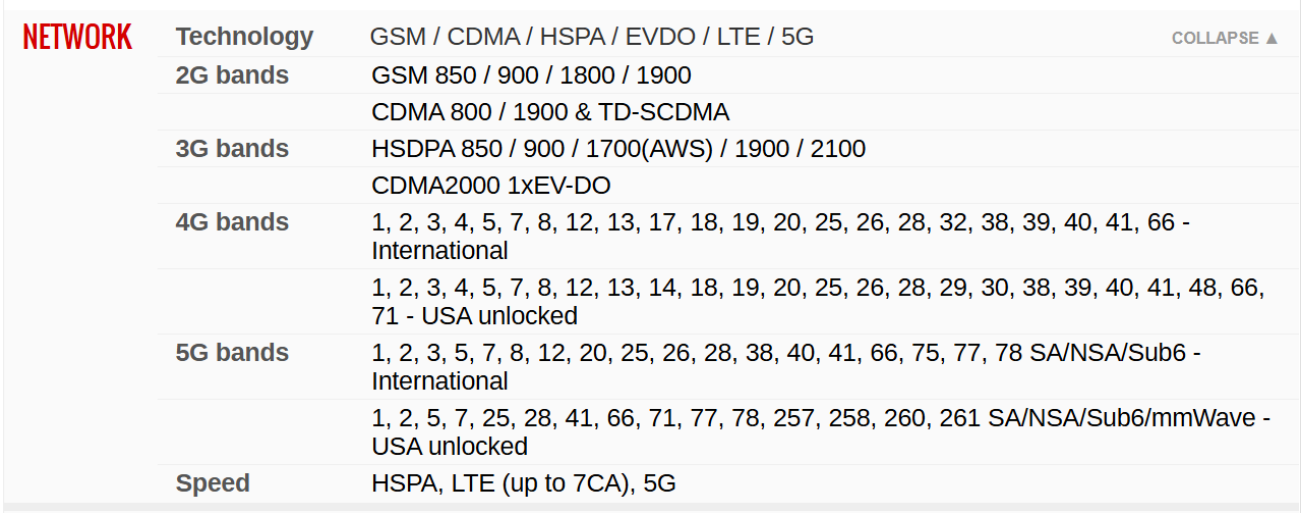
Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi settings You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider. 1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi. 2. Tap **More options** for the following options: • **Wi-Fi Direct**: Share data directly between devices over Wi-Fi. • **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features. • **Advanced settings**: Configure Wi-Fi connections and Hotspot settings. • **Contact us**: Contact Samsung support through Samsung Members. 95

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  NETWORK Technology: GSM / CDMA / HSPA / EVDO / LTE / 5G (COLLAPSE ▲) 2G bands: GSM 850 / 900 / 1800 / 1900 CDMA 800 / 1900 & TD-SCDMA 3G bands: HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100 CDMA2000 1xEV-DO 4G bands: 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 48, 66, 71 - USA unlocked 5G bands: 1, 2, 3, 5, 7, 8, 12, 20, 25, 26, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International 1, 2, 5, 7, 25, 28, 41, 66, 71, 77, 78, 257, 258, 260, 261 SA/NSA/Sub6/mmWave - USA unlocked Speed: HSPA, LTE (up to 7CA), 5G Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

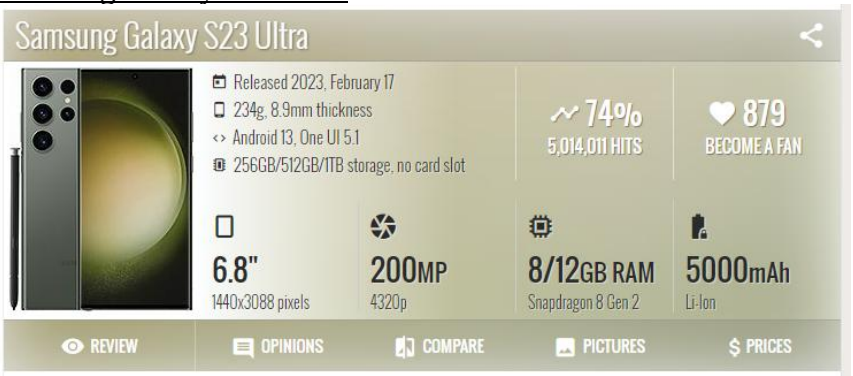
COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

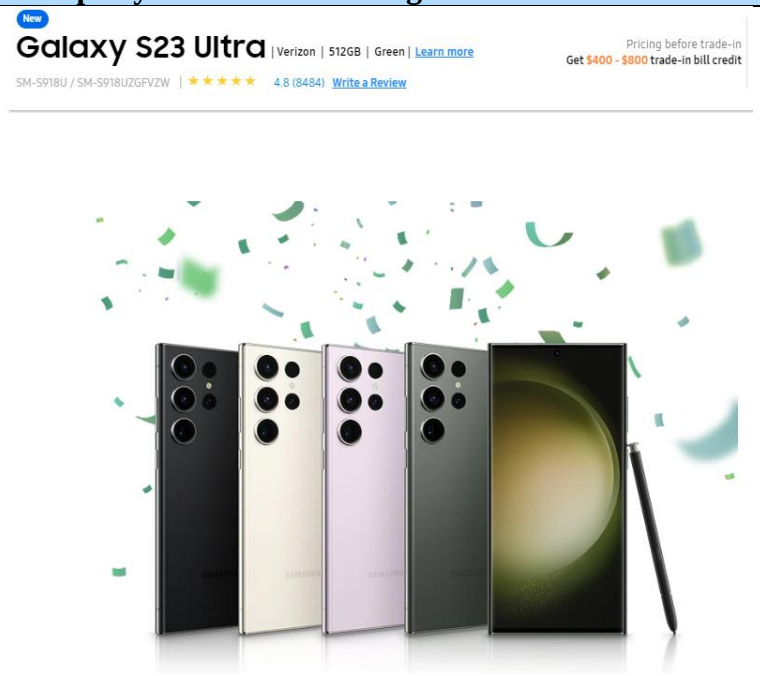
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap Connections > Wi-Fi, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap **Connect**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap a device and follow the prompts to connect. • To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect. **TIP** When sharing a file, tap **Bluetooth** to use this feature. Rename a paired device You can rename a paired device to make it more recognizable. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device name, and then tap **Rename**. 3. Enter a new name, and tap **Rename**. Unpair from a Bluetooth device When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it. 1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth. 2. Tap **Settings** next to the device, and then tap **Unpair**. 3. Tap **Unpair** to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Connect to a hidden Wi-Fi network If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin. 1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi. 2. Tap **Add network** at the bottom of the list. 3. Enter information about the Wi-Fi network: • **Network name**: Type the exact name of the network. • **Security**: Select a security option from the list, and enter the password if required. • **Password**: Enter the network password. • **Hidden network**: Add a hidden network. • **View more**: Define other advanced options, such as IP and Proxy settings. 4. Tap **Save**. **TIP** Tap **Scan QR code** to connect to a Wi-Fi network by using your device's camera to scan a QR code. **Wi-Fi settings** You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider. 1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi. 2. Tap **More options** for the following options: • **Wi-Fi Direct**: Share data directly between devices over Wi-Fi. • **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features. • **Advanced settings**: Configure Wi-Fi connections and Hotspot settings. • **Contact us**: Contact Samsung support through Samsung Members. Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 114-117.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf SmartThings SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard. NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support. Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

Processor

Qualcomm Snapdragon 8 Gen2 Mobile Platform for Galaxy

PLATFORM	OS	Android 13, One UI 5.1
	Chipset	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
	CPU	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
	GPU	Adreno 740

Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

COMMS	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, OTG

Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

Bluetooth

Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices.

Precautions for using Bluetooth

- Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth.
- Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced.
- Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device.
- Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Pairing with other Bluetooth devices 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

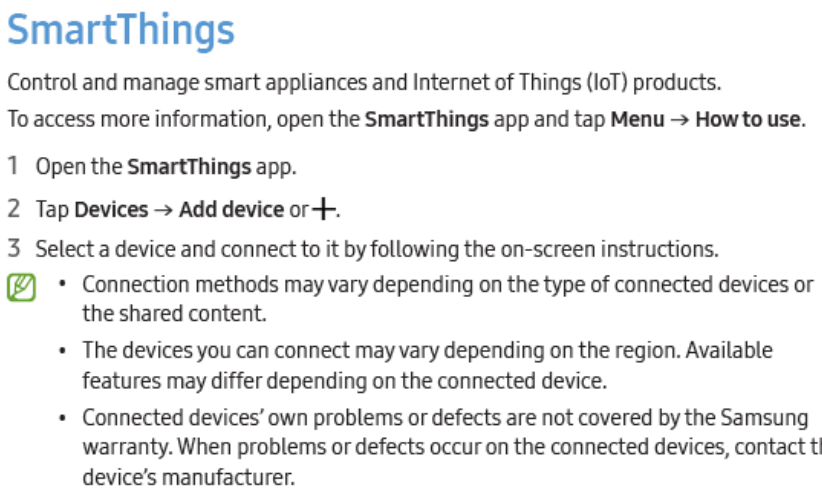
2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

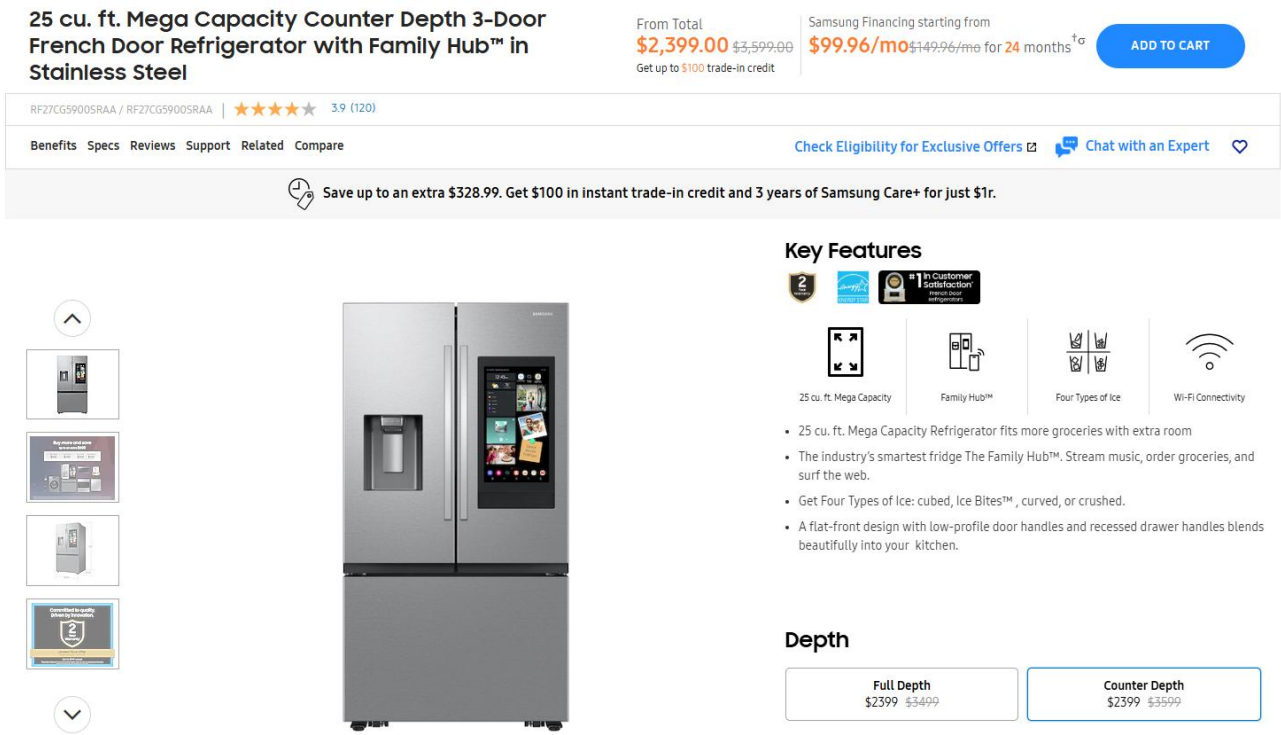
Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 123-124.

NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 111. <u>Refrigerators</u>

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") Technical specification showing Wi-Fi/Bluetooth functionality for communicating with other devices and/or the SmartThings cloud/platform using Family Hub™;

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

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Family Hub™, it's more than a fridge

Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.**

*Google and Google Photos are trademarks of Google LLC.
**A Wi-Fi connection and Samsung account required.

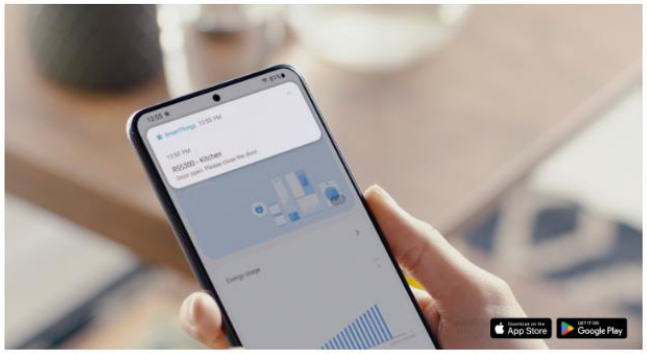
Get smart energy≠ savings of up to 10%†

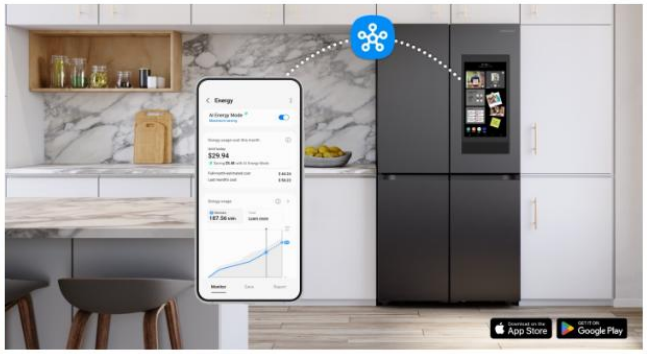
SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone.

†Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions.
≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.
§Product images shown may not reflect the model or color selected.

Id.

Life in sync with SmartThings





U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Family Hub™, it's more than a fridge

Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.**

*Google and Google Photos are trademarks of Google LLC.
**A Wi-Fi connection and Samsung account required.

Get smart energy≠ savings of up to 10%†

SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone.

†Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions.
≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.
§Product images shown may not reflect the model or color selected.

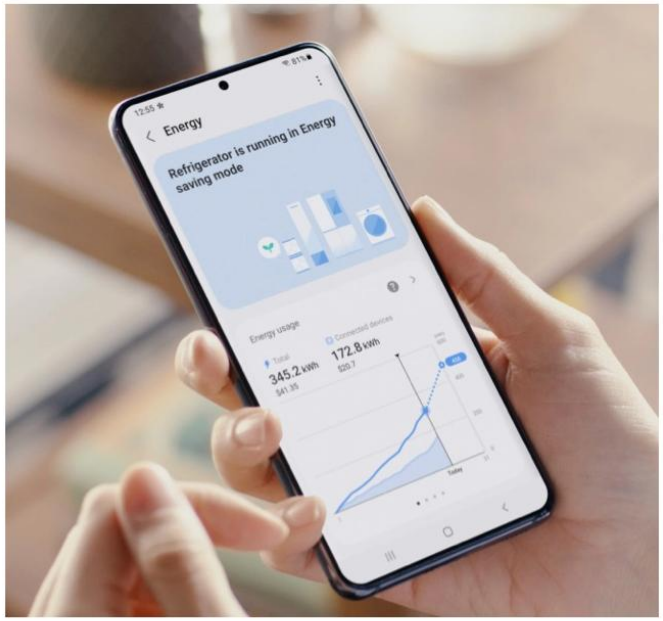
Id.

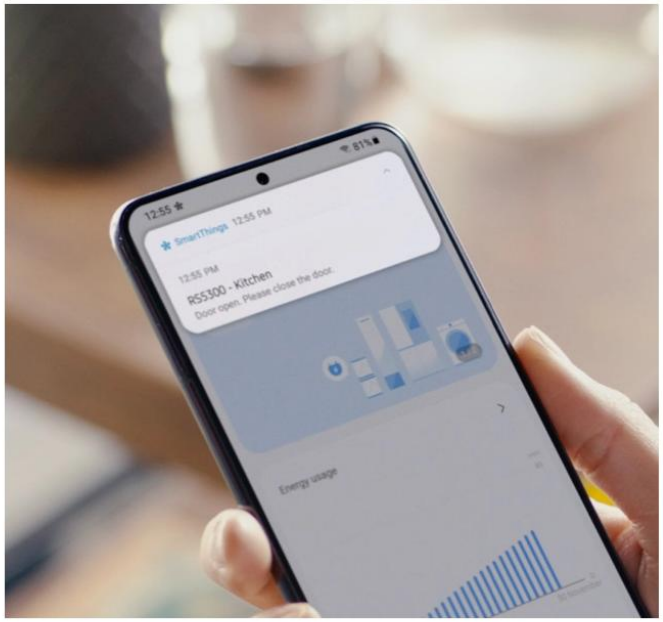


Family Hub™, it's more than a fridge

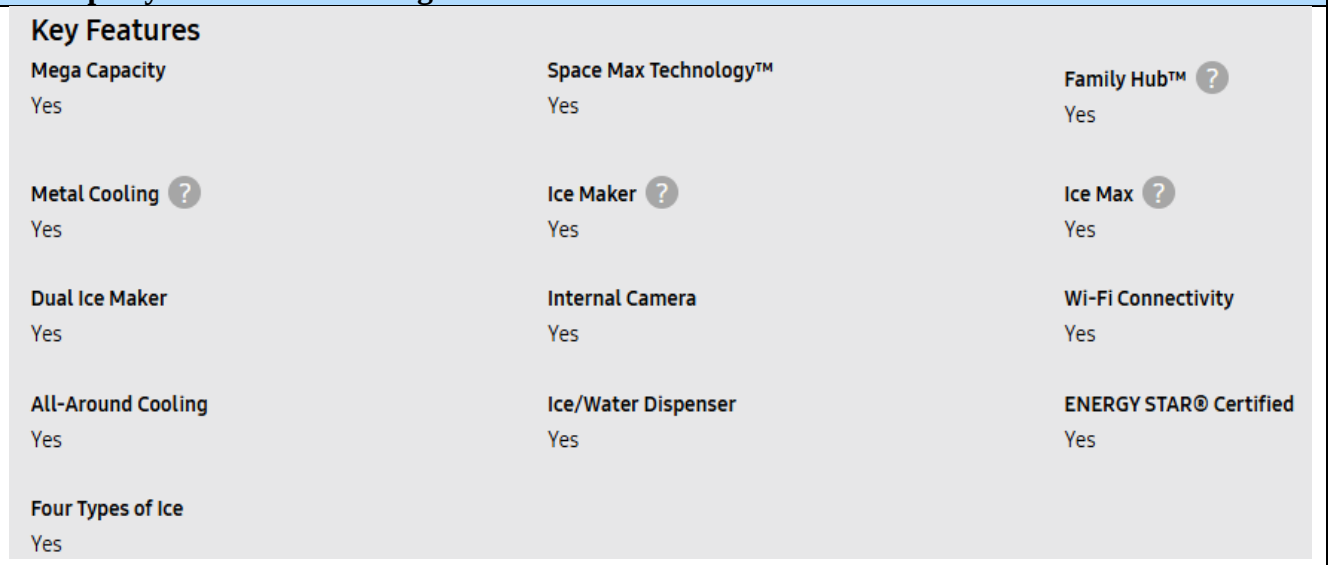
The Family Hub™ lets you share pictures, stream music and videos, access recipes and control your smart devices and Alexa all from the fridge.¹

Id.

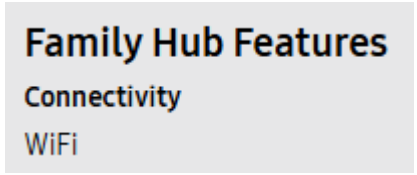
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Monitor and control energy usage You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2] **Get useful notifications** With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter. **Keeps food fresher** Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator. **Even cooling from corner to corner** All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer. *Id.* 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Monitor and control energy usage You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2] **Get useful notifications** With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter. **Keeps food fresher** Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator. **Even cooling from corner to corner** All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer.  *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

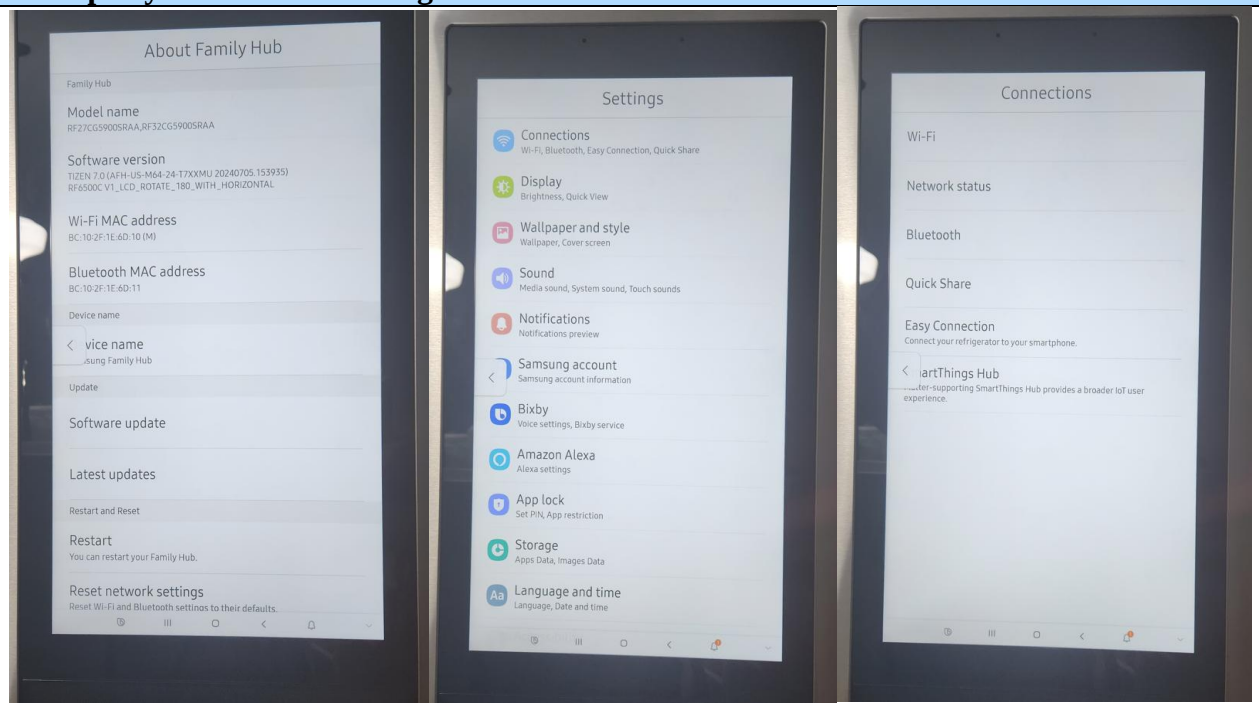


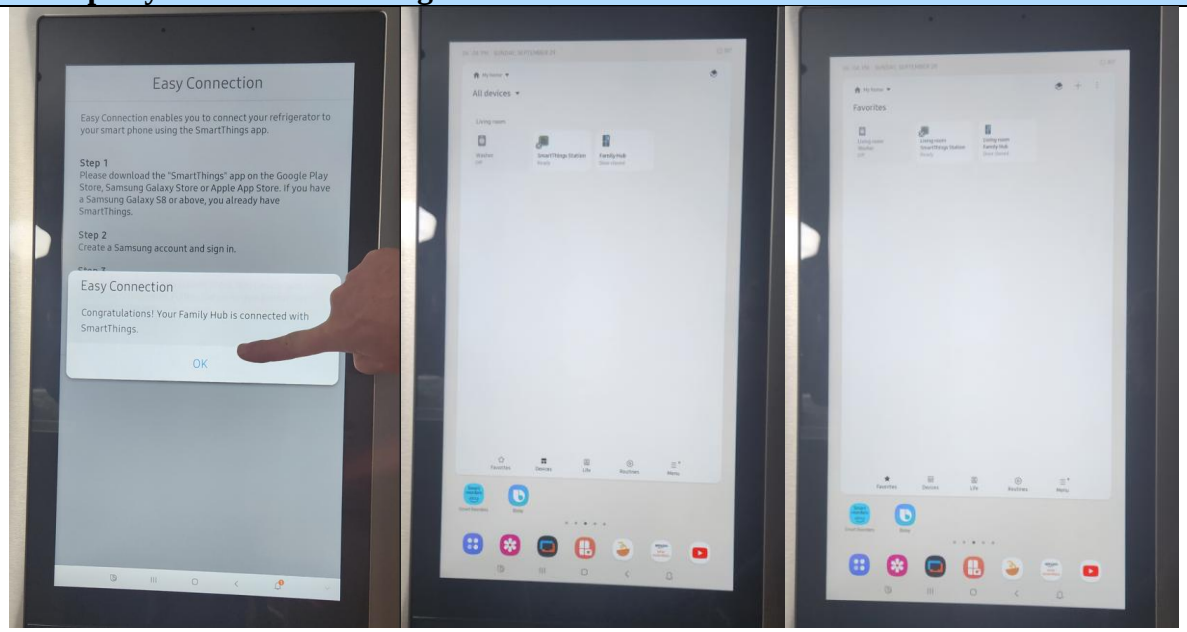
Id.



Id.

For example, testing of the 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") shows Wi-Fi/Bluetooth circuitry for communicating with other devices and/or the SmartThings cloud/platform using the Family Hub™, as shown in the screenshots below:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") showing evidence of Wi-Fi/Bluetooth circuitry.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") showing evidence of communicating with the SmartThings cloud/platform and other devices (*e.g.*, GUI of devices or devices GUI and Favorites list). On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
[4.a] a main terminal; first subsidiary terminal; and second subsidiary terminal,	The Accused Samsung '650 Products comprise a main terminal; first subsidiary terminal; and second subsidiary terminal. See e.g., Samsung's marketing materials and the SmartThings website, which describe an ecosystem where a smartphone (the main terminal) is used to control a variety of smart home appliances (the subsidiary terminals) such as refrigerators, washers, and hubs (https://www.samsung.com/us/smartthings/). As a non-limiting example, the Accused Samsung '650 Products comprise a main terminal and at least two subsidiary terminals. The smartphone (e.g., Galaxy S25) operating the SmartThings app is or acts as the main terminal that connects with and manages the SmartThings cloud/platform. A first subsidiary terminal includes, for example, the Samsung Family Hub refrigerator, and a second subsidiary terminal includes another Samsung Family Hub refrigerator. Each device is onboarded/added to the SmartThings cloud/platform by the main terminal using Wi-Fi and/or Bluetooth chipsets. Once added, the devices exchange contents such as device states and identifiers, and display such contents through graphical user interfaces. For example, the screenshot below shows the SmartThings app GUI on a main terminal listing the "Family Hub," "SmartThings Station," and "Washer" as actively connected devices, each with a reported state (*e.g.*, "Door closed," "Ready," "Off"). Upon information and belief, the second subsidiary terminal has the same SmartThings application and user interface as the first subsidiary terminal. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the Accused Samsung '650 Products comprise a main terminal (*i.e.*, the smartphones ("the phones") and at least two subsidiary terminals (*i.e.*, two refrigerators each with Family Hub™ ("the fridges"). The smartphone (e.g., Galaxy S25) operating the SmartThings app alone or in conjunction with the SmartThings cloud/platform is or acts as the main terminal that connects with and manages the SmartThings cloud/platform. A first subsidiary terminal includes, for example, the first fridge, and a second subsidiary terminal includes another fridge or second fridge. Each device is onboarded/added to the SmartThings cloud/platform by the main terminal using Wi-Fi and/or Bluetooth chipsets. Once added, the devices exchange contents such as device names and device states, and display such contents through graphical user interfaces. For example, the screenshot below shows the SmartThings app GUI on a main terminal listing the "Family Hub," "SmartThings Station," and "Washer" as actively connected devices, each with a reported state (*e.g.*, "Door closed," "Ready,"

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	"Off"). Upon information and belief, the second subsidiary terminal has the same SmartThings application and user interface as the first subsidiary terminal. The SmartThings cloud/Platform is an extension of each the main terminal, the first subsidiary terminal, and the second subsidiary terminal because the SmartThings cloud/platform includes virtual instances with the same capabilities and functions as the main terminal, the first subsidiary terminal, and the second subsidiary terminal. *See e.g.*, **Device Profiles** A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile. Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/ The phone in conjunction with the SmartThings app alone or in conjunction with the SmartThings cloud/platform is or acts as a main terminal to connect and communicate with the SmartThings cloud/platform to exchange contents with other devices once the phone has onboarded/added the devices on the SmartThings cloud/platform The Samsung phones ("the phone") in conjunction with the SmartThings app is or acts as a main terminal to connect and communicate with the SmartThings cloud/platform to exchange contents with other devices once the phone has onboarded/added the devices on the SmartThings cloud/platform *See e.g.*, Samsung Galaxy S25

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



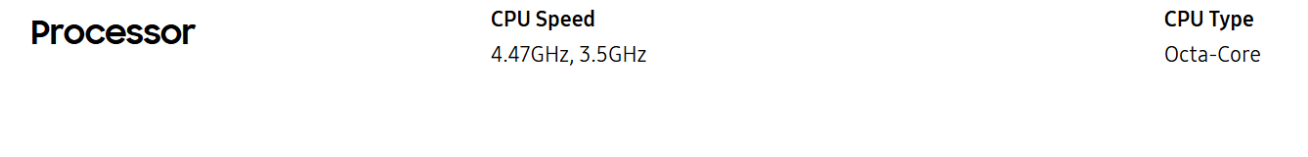
https://www.gsmarena.com/samsung_galaxy_s25-13610.php



Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



PLATFORM		
	OS	Android 15, up to 7 major Android upgrades, One UI 7
	Chipset	Qualcomm SM8750-AC Snapdragon 8 Elite (3 nm)
	CPU	Octa-core (2x4.47 GHz Oryon V2 Phoenix L + 6x3.53 GHz Oryon V2 Phoenix M)
	GPU	Adreno 830 (1200 MHz)

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e/7, tri-band, Wi-Fi Direct
	Bluetooth	5.4, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

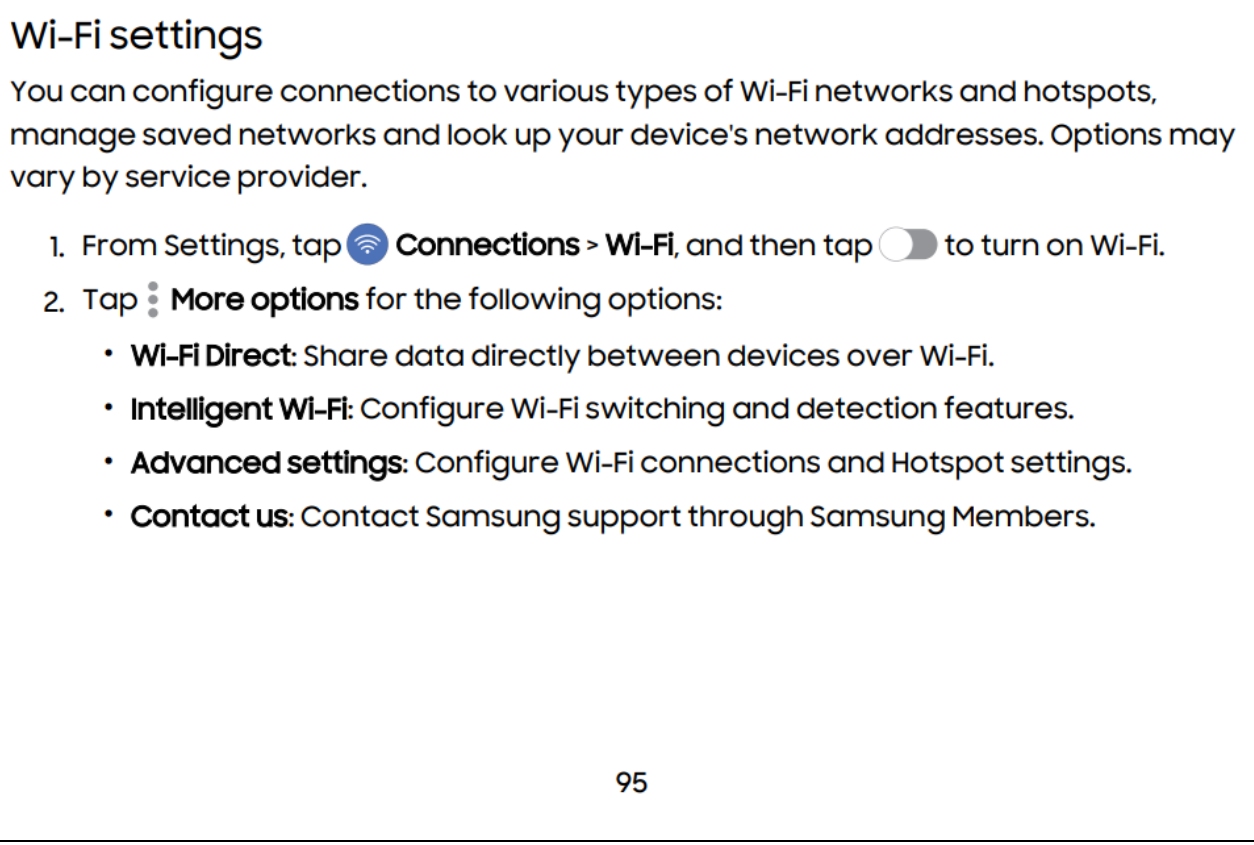
94

Settings

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

You can rename a paired device to make it more recognizable.

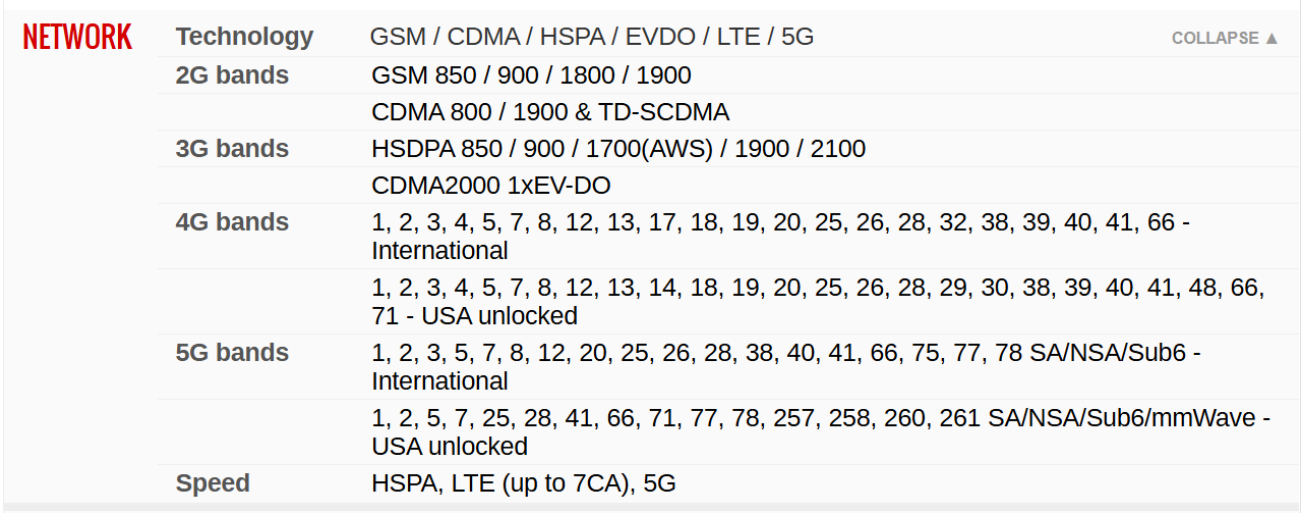
1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

IPR2025-01308; Samsung
Ex. 1043 - Page 287

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap Connections > Wi-Fi, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap **Connect**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Bluetooth You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again. 1. From Settings, tap Connections > Bluetooth, and then tap to turn on Bluetooth. 2. Tap a device and follow the prompts to connect. • To disconnect from a paired device, tap Disconnect. Tap Connect to reconnect. TIP When sharing a file, tap Bluetooth to use this feature. Rename a paired device You can rename a paired device to make it more recognizable. 1. From Settings, tap Connections > Bluetooth, and then tap to turn on Bluetooth. 2. Tap Settings next to the device name, and then tap Rename. 3. Enter a new name, and tap Rename. Unpair from a Bluetooth device When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it. 1. From Settings, tap Connections > Bluetooth, and then tap to turn on Bluetooth. 2. Tap Settings next to the device, and then tap Unpair. 3. Tap Unpair to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

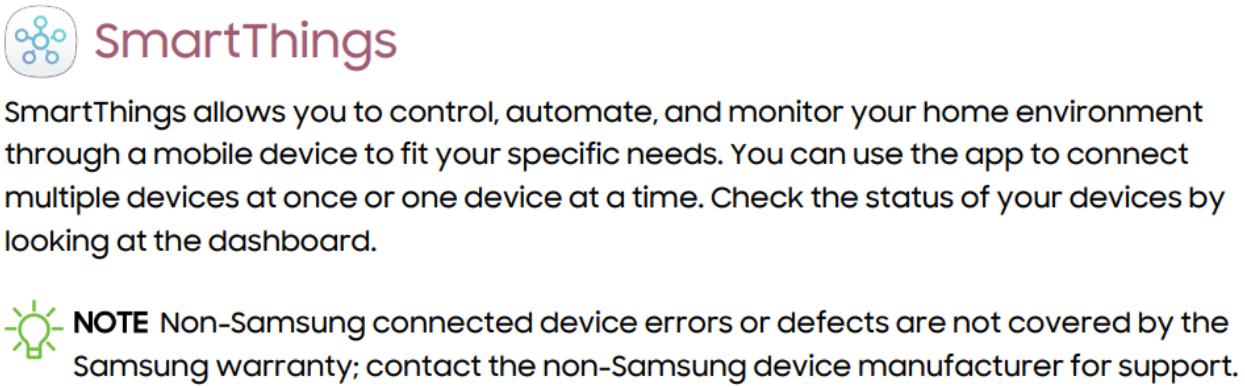
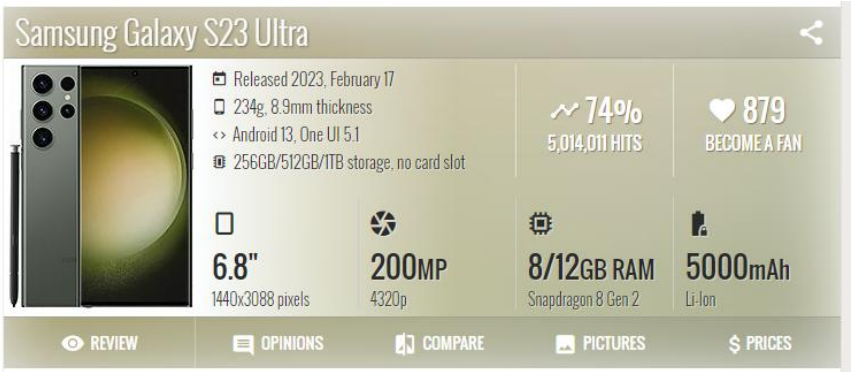
TIP Tap **Scan QR code** to connect to a Wi-Fi network by using your device's camera to scan a QR code.

Wi-Fi settings

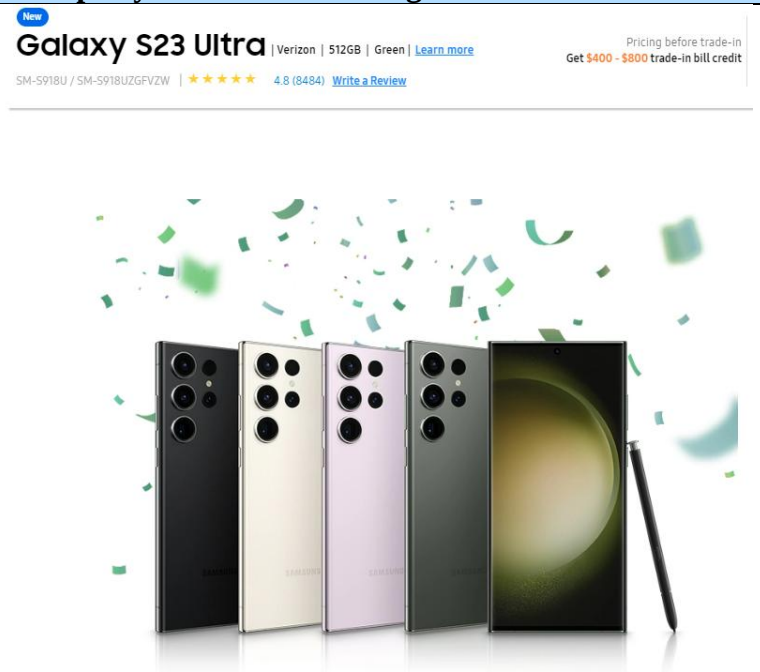
You can configure connections to various types of Wi-Fi networks and hotspots, manage saved networks and look up your device's network addresses. Options may vary by service provider.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **More options** for the following options:
   - **Wi-Fi Direct**: Share data directly between devices over Wi-Fi.
   - **Intelligent Wi-Fi**: Configure Wi-Fi switching and detection features.
   - **Advanced settings**: Configure Wi-Fi connections and Hotspot settings.
   - **Contact us**: Contact Samsung support through Samsung Members.

Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	devices and sharing information at pgs. 114-117. https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf  Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

Processor

Qualcomm Snapdragon 8 Gen2 Mobile Platform for Galaxy

PLATFORM	OS	Android 13, One UI 5.1
	Chipset	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
	CPU	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
	GPU	Adreno 740

Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, OTG

Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

Bluetooth

Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices.

Precautions for using Bluetooth

- Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth.
- Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced.
- Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device.
- Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Pairing with other Bluetooth devices 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

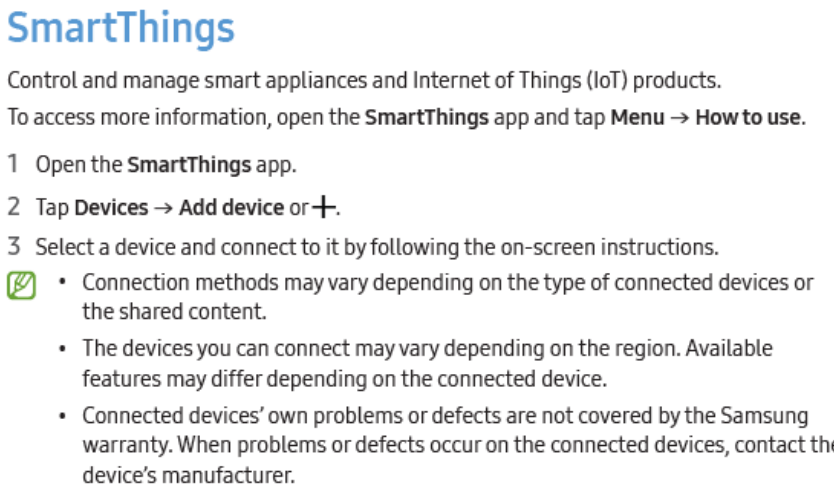
2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pgs. 123-124.

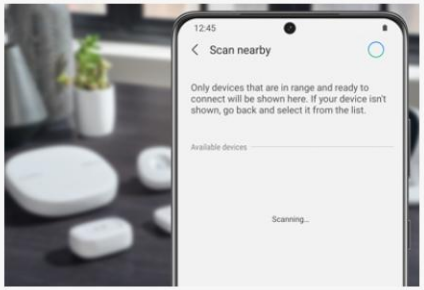
NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium by adding/onboarding a device at pg. 111.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

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Cannot connect or discover Bluetooth device in SmartThings

The SmartThings app can connect to a variety of Bluetooth devices without the need for a SmartThings Hub. If the app has trouble connecting or discovering Bluetooth devices, perform the steps in this guide, and try pairing the devices after each step.

Note: Available settings and menu options may vary depending on the device and software version.

1 **Check for software updates.**

Make sure that your phone and the SmartThings app on the phone are both updated to the most recent software version. If possible, it may be necessary to update the Bluetooth device.

Related Content



ZigBee device is not working with Samsung SmartThings hub

If your ZigBee device is not working with your hub, be sure to check the...



Check the hub's firmware version

SmartThings will occasionally push firmware updates to active hubs to...

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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

2 **Verify the Bluetooth device is powered on.**

Make sure the Bluetooth device is powered on and Bluetooth is activated on both devices. Some devices may enter Power saving mode when the battery is low, causing Bluetooth to shut off. You may need to charge the phone or check the power and battery on the Bluetooth device.

3 **Check the Bluetooth connection range.**

The devices must be within the Bluetooth connection range (30 feet). The distance may vary depending on the environment and the device. Make sure that there are no obstacles, such as walls or electrical equipment, between the devices.

4 **Restart both devices.**

Restart both devices, and close the app. Then, open the **SmartThings** app again on the phone.



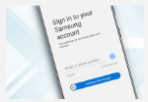
SmartThings Hub Has No Power or Internet

If the Hub loses power or internet connection, there may be limited or...



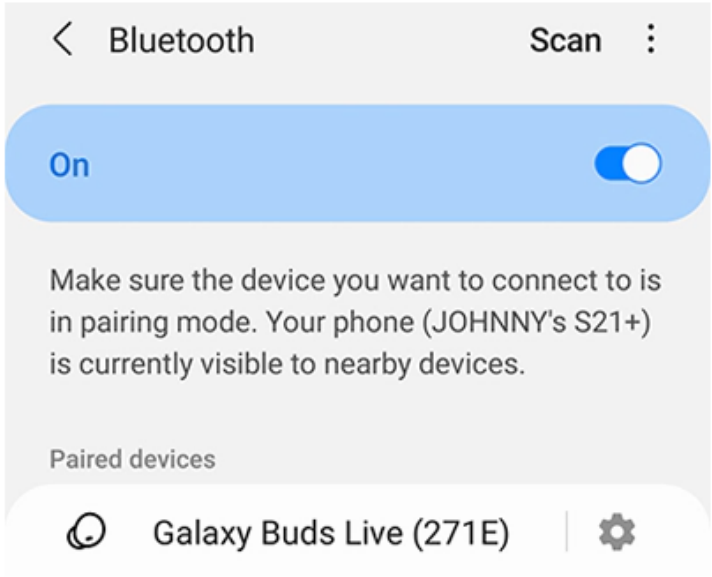
Report a problem or send a log file in SmartThings

If SmartThings experiences problems, you should report the issue to...



Sign in or Log out of SmartThings

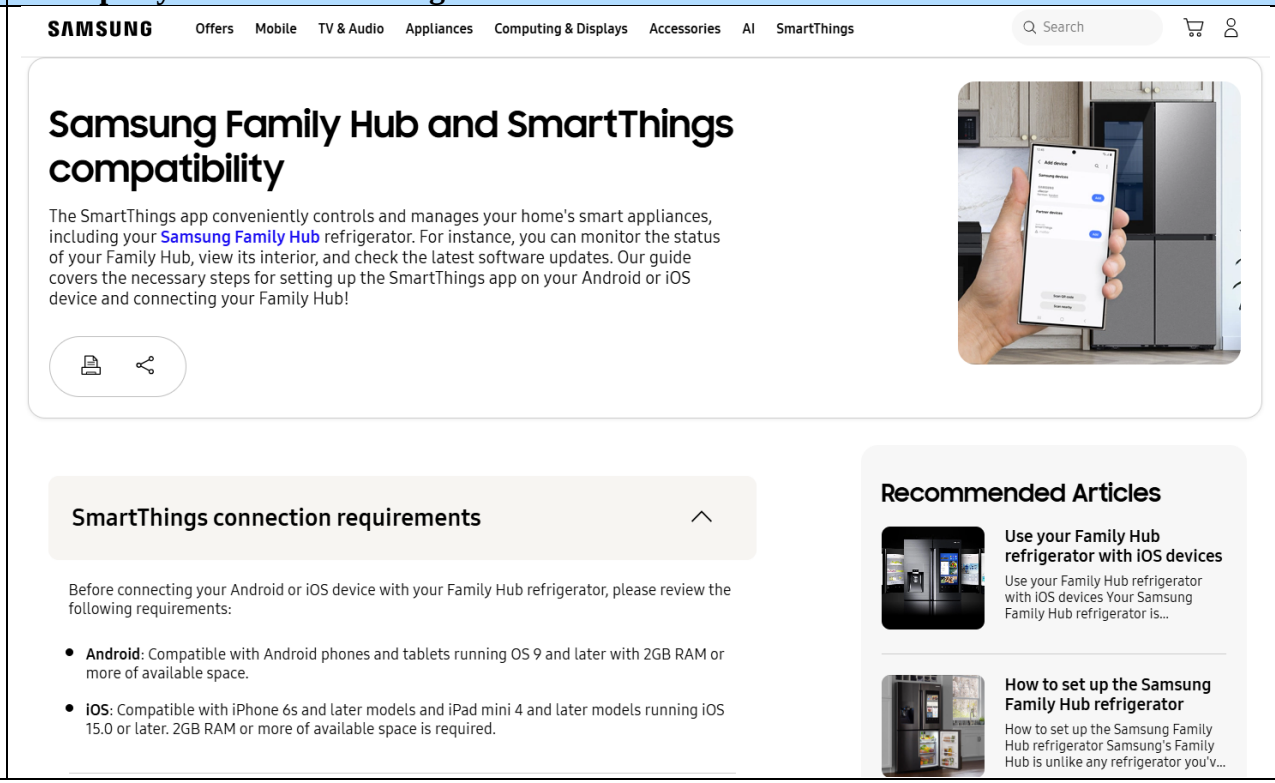
The SmartThings app uses your Samsung account credentials. To...

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	5 **Connect the Bluetooth device through the phone's settings.** Navigate to and open **Settings**. Tap **Connections**, and then tap **Bluetooth**. Make sure Bluetooth is enabled by tapping the **switch** at the top of the screen. Next, tap your desired Bluetooth device from the list, and then follow the on-screen prompts to complete the pairing. Not all Bluetooth devices appear with a logical name. Some use their MAC address to identify themselves. Once the devices are paired, the Bluetooth device will now appear in the SmartThings app, where it can be managed. 

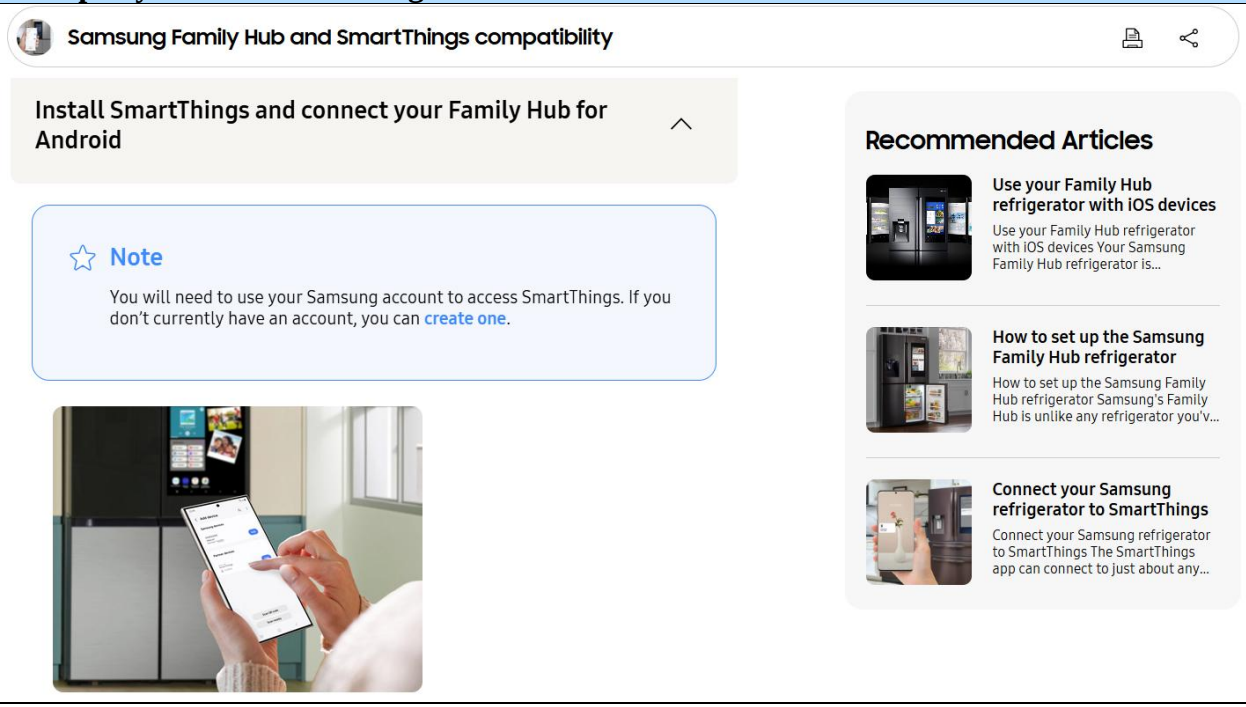
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Smartphone in the Accused Samsung '650 Products technical specification showing connecting with devices (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials for display and/or storage medium; https://www.samsung.com/us/support/troubleshooting/TSG01109750/

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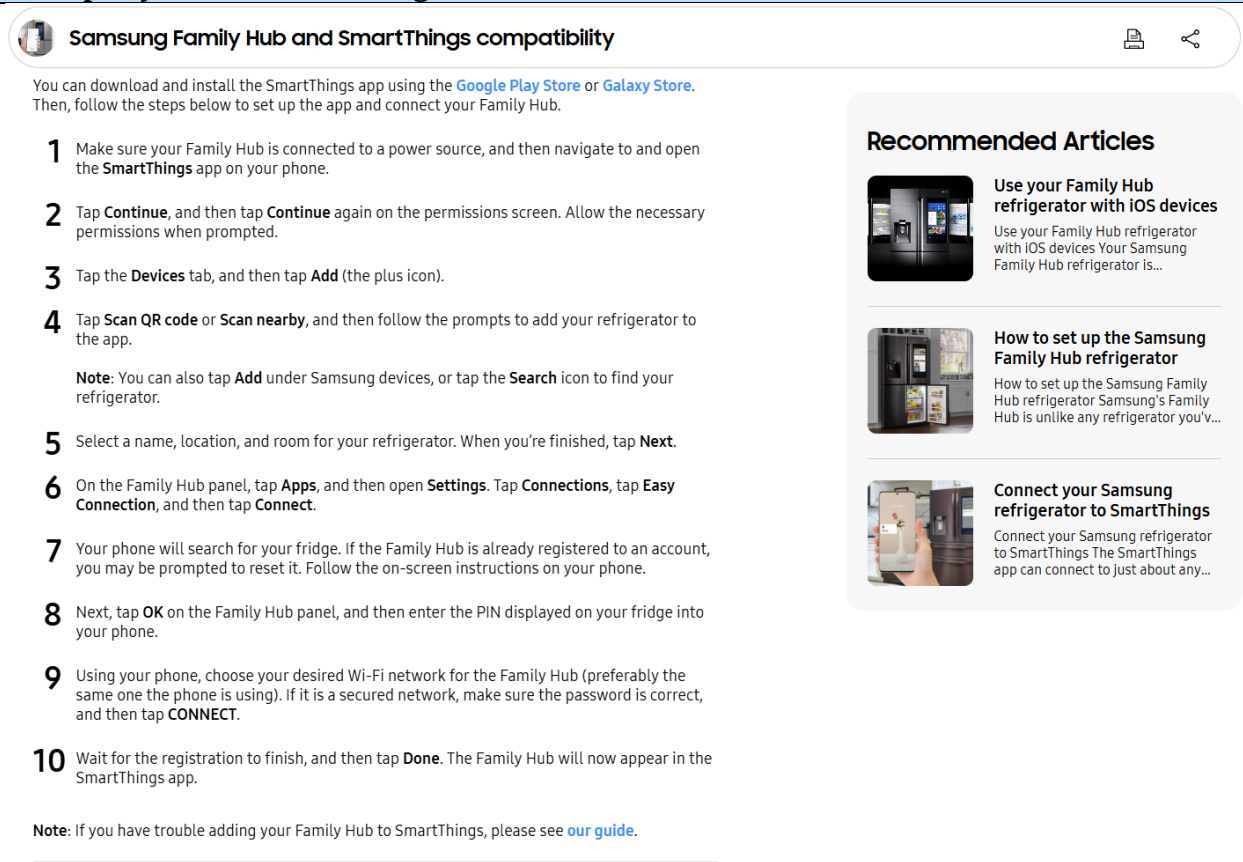
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Samsung Family Hub and SmartThings compatibility

You can download and install the SmartThings app using the Google Play Store or Galaxy Store. Then, follow the steps below to set up the app and connect your Family Hub.

1. Make sure your Family Hub is connected to a power source, and then navigate to and open the **SmartThings** app on your phone.
2. Tap **Continue**, and then tap **Continue** again on the permissions screen. Allow the necessary permissions when prompted.
3. Tap the **Devices** tab, and then tap **Add** (the plus icon).
4. Tap **Scan QR code** or **Scan nearby**, and then follow the prompts to add your refrigerator to the app.

   Note: You can also tap **Add** under Samsung devices, or tap the **Search** icon to find your refrigerator.
5. Select a name, location, and room for your refrigerator. When you're finished, tap **Next**.
6. On the Family Hub panel, tap **Apps**, and then open **Settings**. Tap **Connections**, tap **Easy Connection**, and then tap **Connect**.
7. Your phone will search for your fridge. If the Family Hub is already registered to an account, you may be prompted to reset it. Follow the on-screen instructions on your phone.
8. Next, tap **OK** on the Family Hub panel, and then enter the PIN displayed on your fridge into your phone.
9. Using your phone, choose your desired Wi-Fi network for the Family Hub (preferably the same one the phone is using). If it is a secured network, make sure the password is correct, and then tap **CONNECT**.
10. Wait for the registration to finish, and then tap **Done**. The Family Hub will now appear in the SmartThings app.

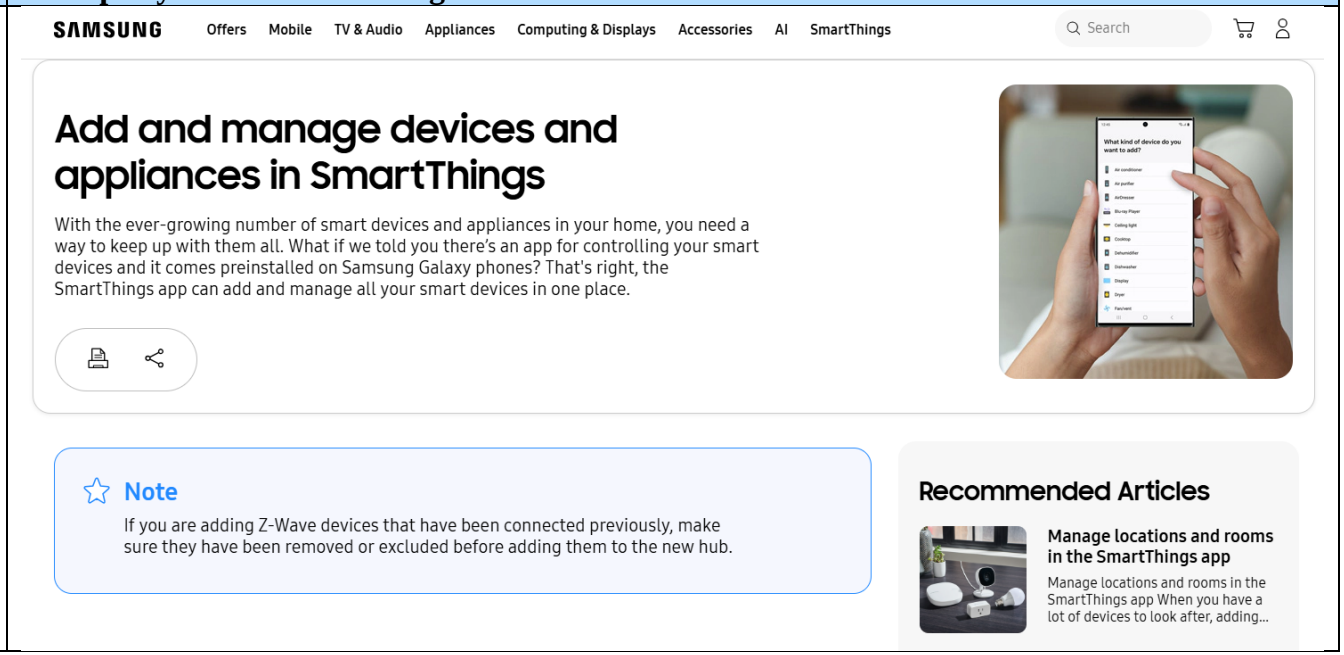
Note: If you have trouble adding your Family Hub to SmartThings, please see our guide.

Recommended Articles

Smartphone in the Accused Samsung '650 Products technical specification showing onboarding/adding of a fridge (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials and SmartThings cloud/platform credentials to connect with each other for display and/or storage on mediums; https://www.samsung.com/us/support/answer/ANS10001433/

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Add and manage devices and appliances in SmartTh...

Add devices to SmartThings

On your Galaxy phone

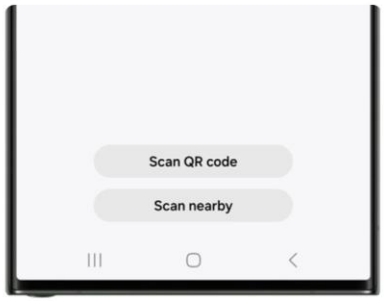
When you are ready to take control of all your smart devices, just use the following guidelines. But first, you should double check if your devices are compatible.

1 Navigate to and open the **SmartThings** app on your phone.

Note: A Samsung account is required. Samsung devices that already have a Samsung account stored on them will use that account automatically. Otherwise, you can log into or create a Samsung account by following the on-screen instructions in the app.

2 Tap the **Devices** tab, and then tap **Add** (the plus sign).

3 If the device uses Bluetooth, tap **Scan nearby** at the bottom of the screen. Or, tap **Scan QR code** to scan a device's QR code.



4 If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5 From there, follow the instructions to connect your device to SmartThings.

6 When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

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Use SmartThings on your Samsung TV

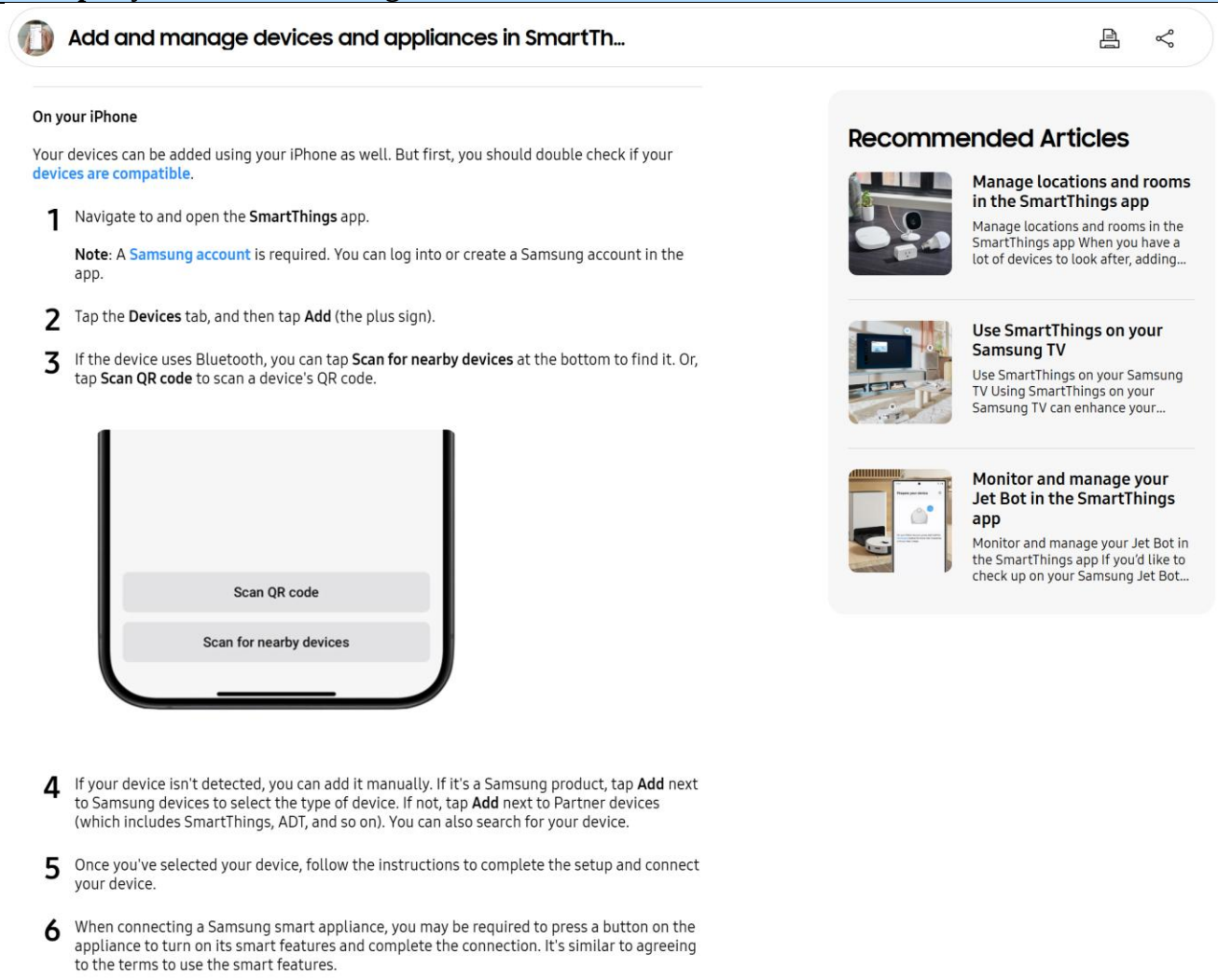
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Add and manage devices and appliances in SmartTh...

On your iPhone

Your devices can be added using your iPhone as well. But first, you should double check if your devices are compatible.

1 Navigate to and open the **SmartThings** app.

Note: A Samsung account is required. You can log into or create a Samsung account in the app.

2 Tap the **Devices** tab, and then tap **Add** (the plus sign).

3 If the device uses Bluetooth, you can tap **Scan for nearby devices** at the bottom to find it. Or, tap **Scan QR code** to scan a device's QR code.

4 If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5 Once you've selected your device, follow the instructions to complete the setup and connect your device.

6 When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

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Control devices in SmartThings

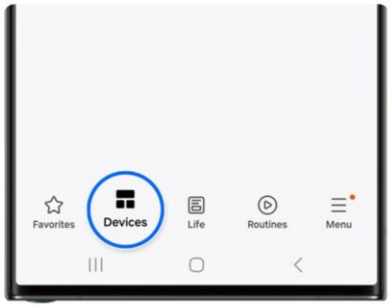
Note

The available controls may vary depending on the device.

So, you've added a whole bunch of devices - now what? You can easily monitor and control them right from the app. You can also use your phone as a TV remote through SmartThings.

On your Galaxy phone

1. Navigate to and open the **SmartThings** app. Tap the **Devices** tab, and then tap the location **drop-down menu** at the top.
2. Select your desired location with the devices you'd like to manage, and then tap the **drop-down menu** with your location's name. Tap **All devices**. Here you can view, monitor, and control all your registered devices for the location you selected.



Note: To select a different location, tap the **drop-down menu** at the top again.

3. Select your desired device and use the available settings to perform your desired actions.
4. You may be prompted to tap **Download** so you can download the device's controller.

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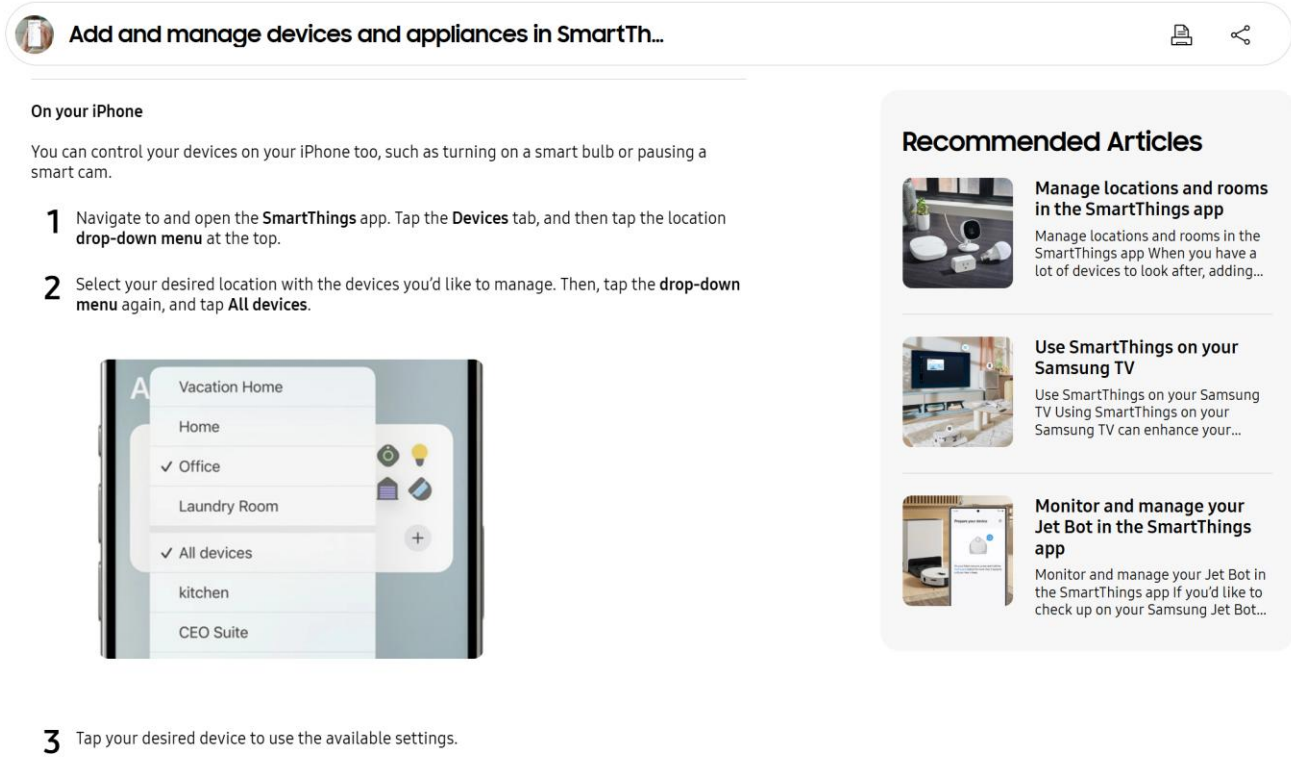


Monitor and manage your Jet Bot in the SmartThings app

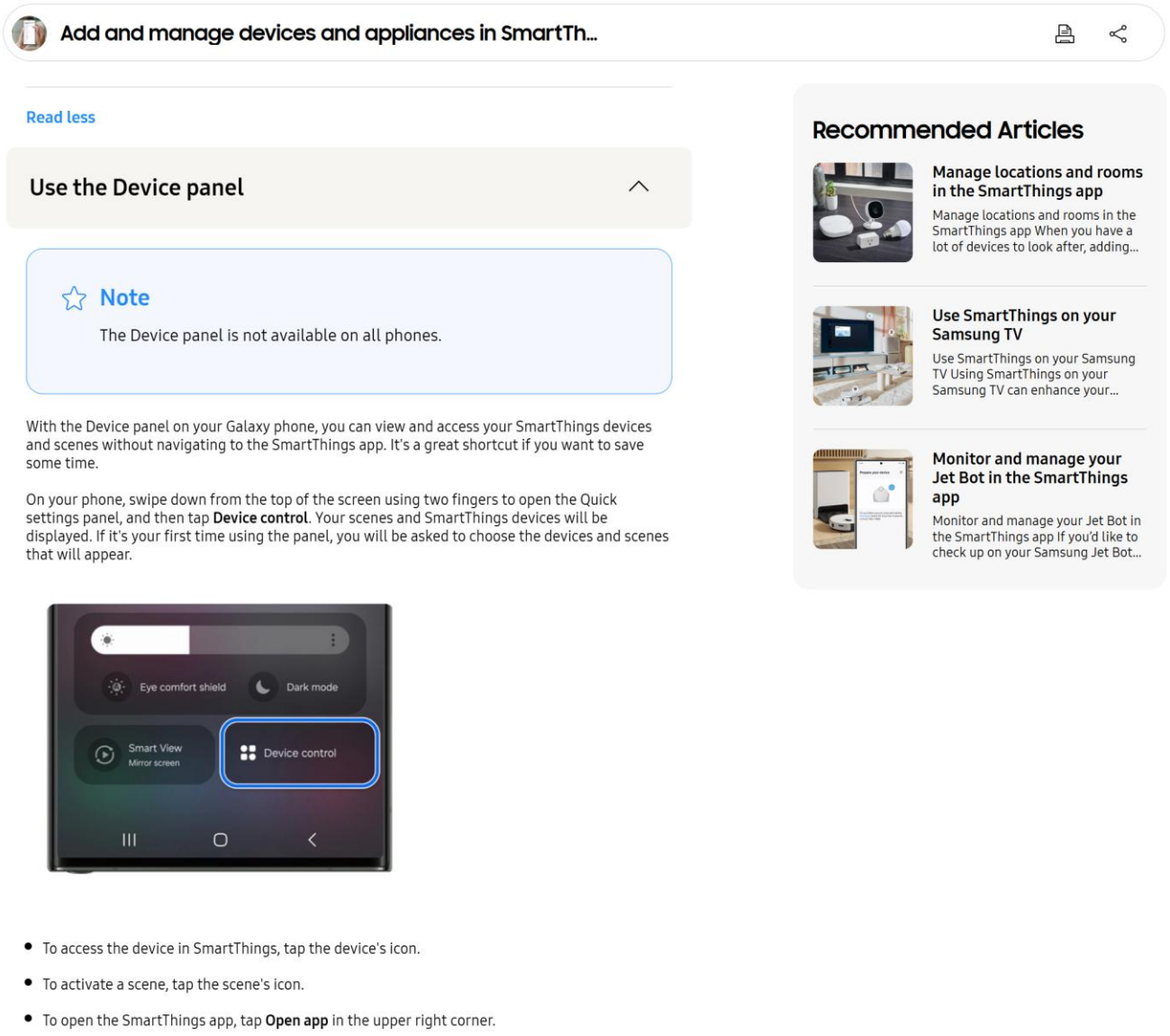
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Use the Device panel

Note

The Device panel is not available on all phones.

With the Device panel on your Galaxy phone, you can view and access your SmartThings devices and scenes without navigating to the SmartThings app. It's a great shortcut if you want to save some time.

On your phone, swipe down from the top of the screen using two fingers to open the Quick settings panel, and then tap **Device control**. Your scenes and SmartThings devices will be displayed. If it's your first time using the panel, you will be asked to choose the devices and scenes that will appear.

- To access the device in SmartThings, tap the device's icon.
- To activate a scene, tap the scene's icon.
- To open the SmartThings app, tap **Open app** in the upper right corner.

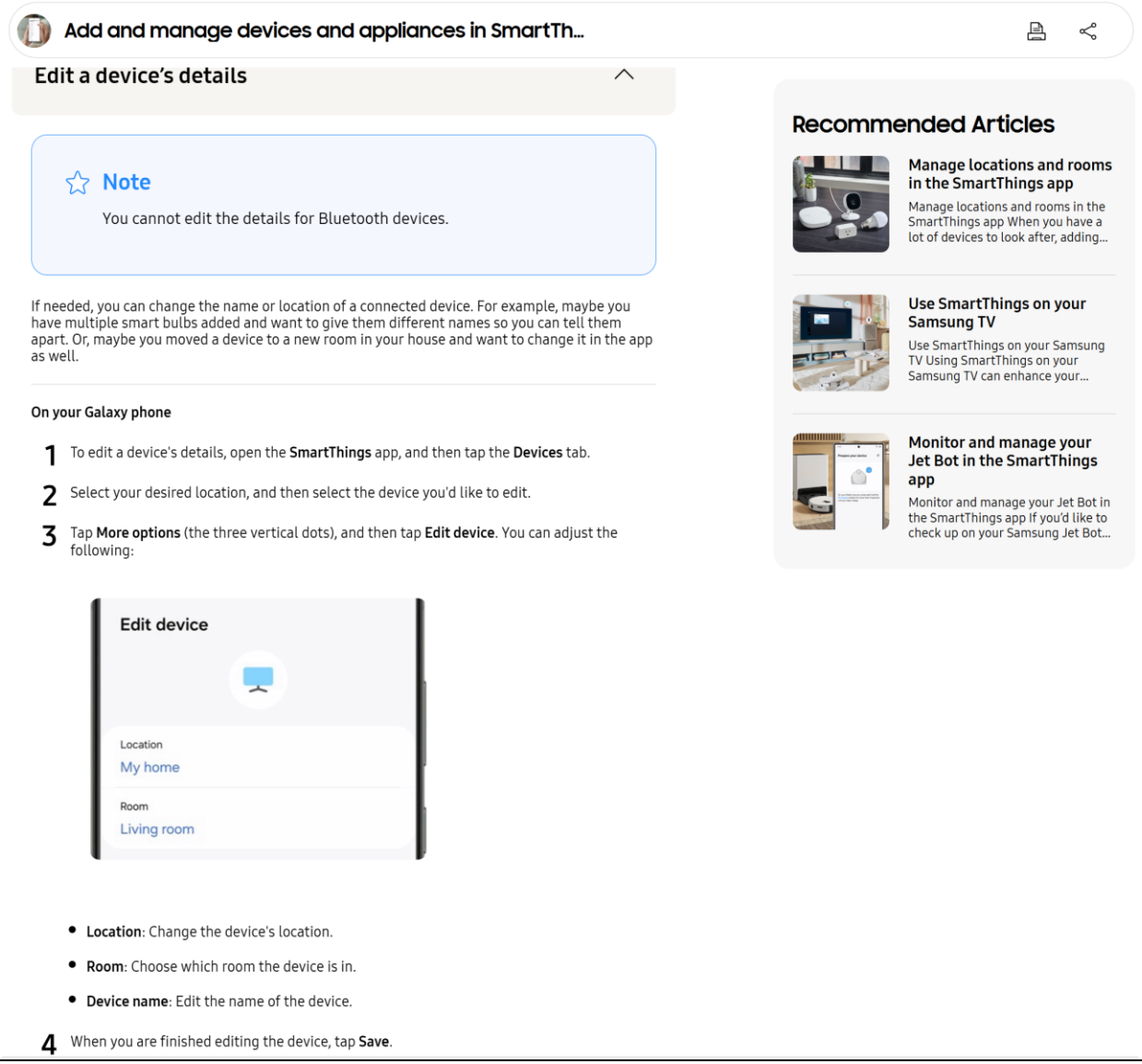
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Edit a device's details

Note

You cannot edit the details for Bluetooth devices.

If needed, you can change the name or location of a connected device. For example, maybe you have multiple smart bulbs added and want to give them different names so you can tell them apart. Or, maybe you moved a device to a new room in your house and want to change it in the app as well.

On your Galaxy phone

1 To edit a device's details, open the **SmartThings** app, and then tap the **Devices** tab.

2 Select your desired location, and then select the device you'd like to edit.

3 Tap **More options** (the three vertical dots), and then tap **Edit device**. You can adjust the following:

- **Location**: Change the device's location.
- **Room**: Choose which room the device is in.
- **Device name**: Edit the name of the device.

4 When you are finished editing the device, tap **Save**.

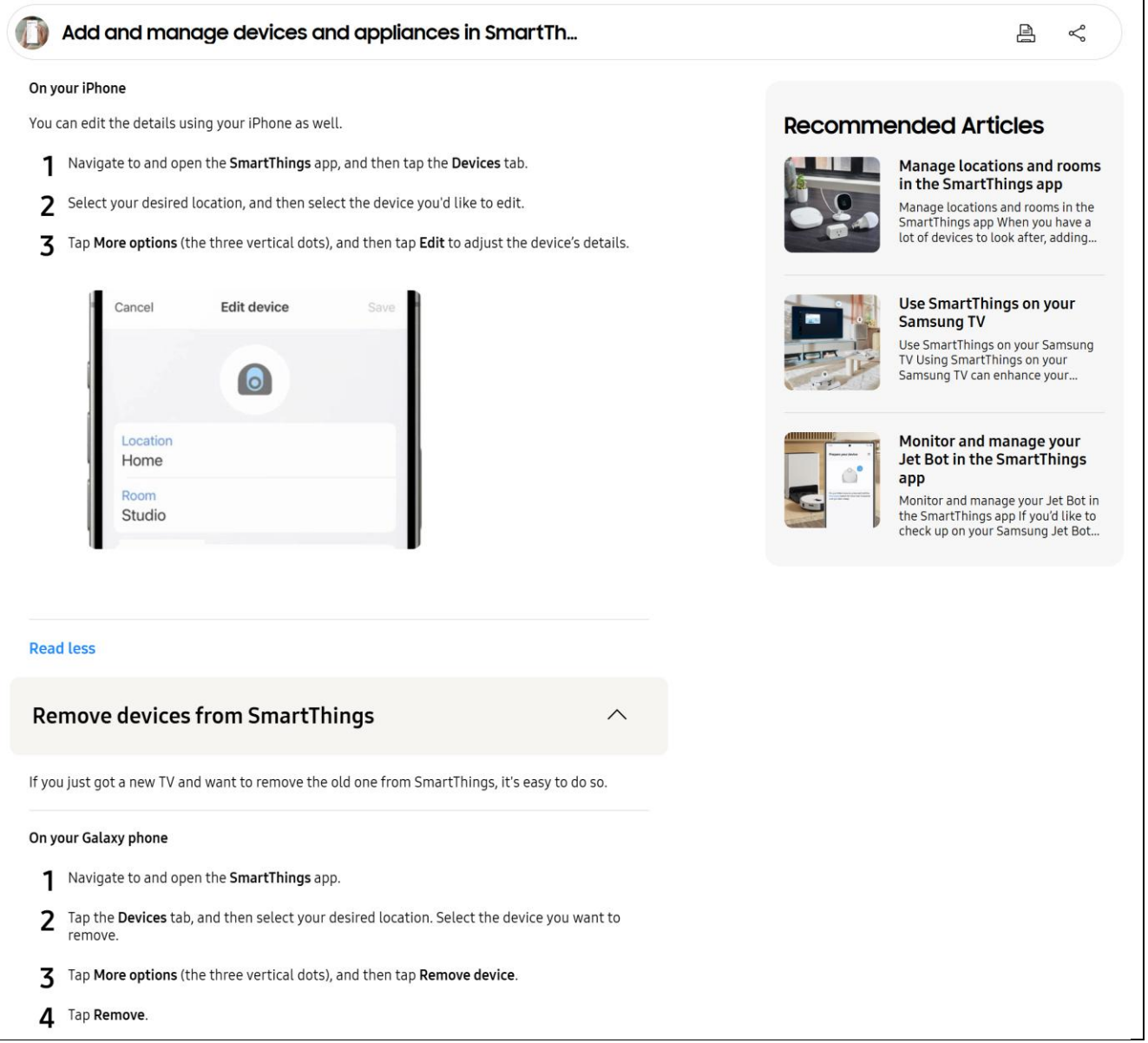
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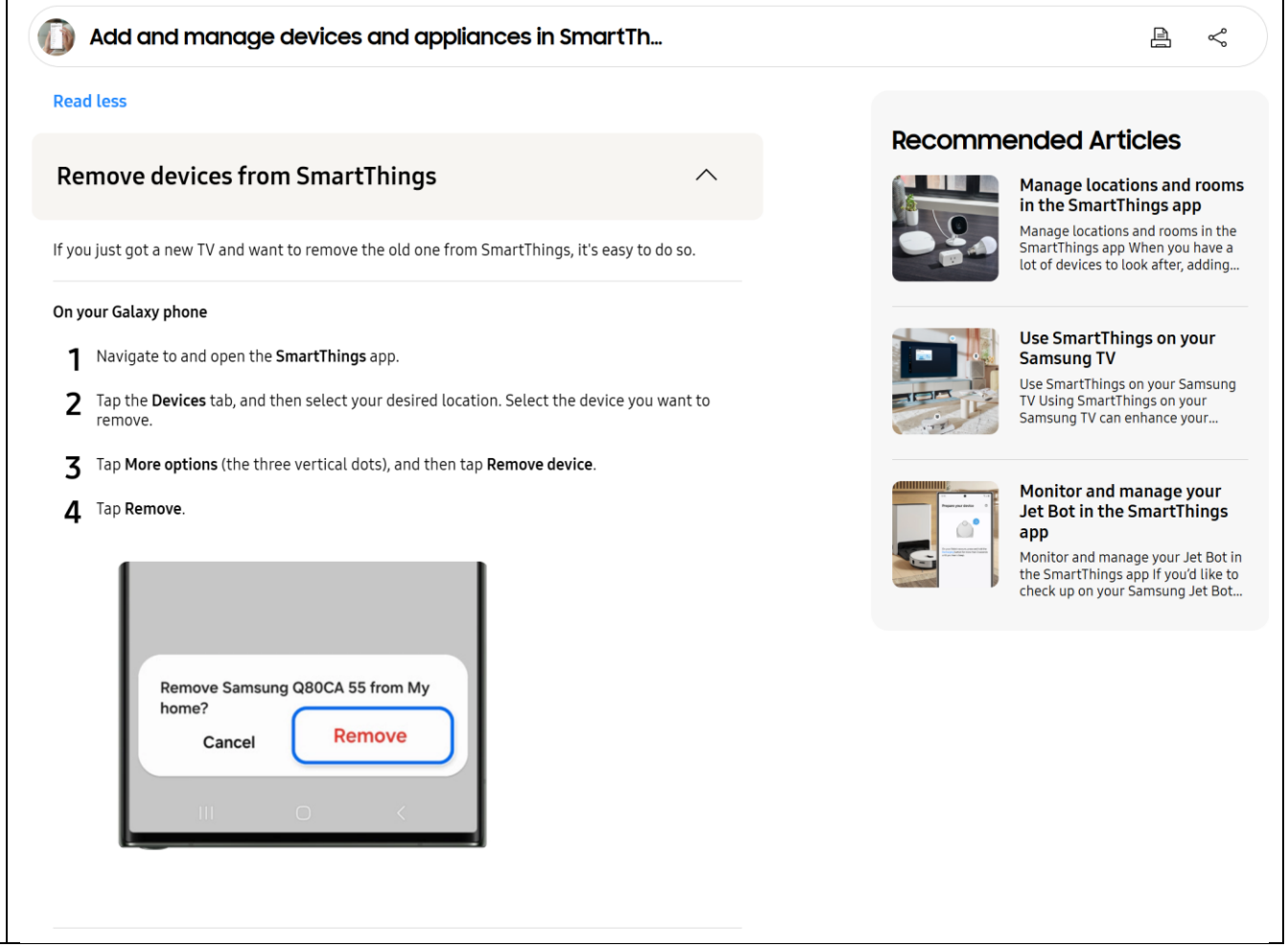
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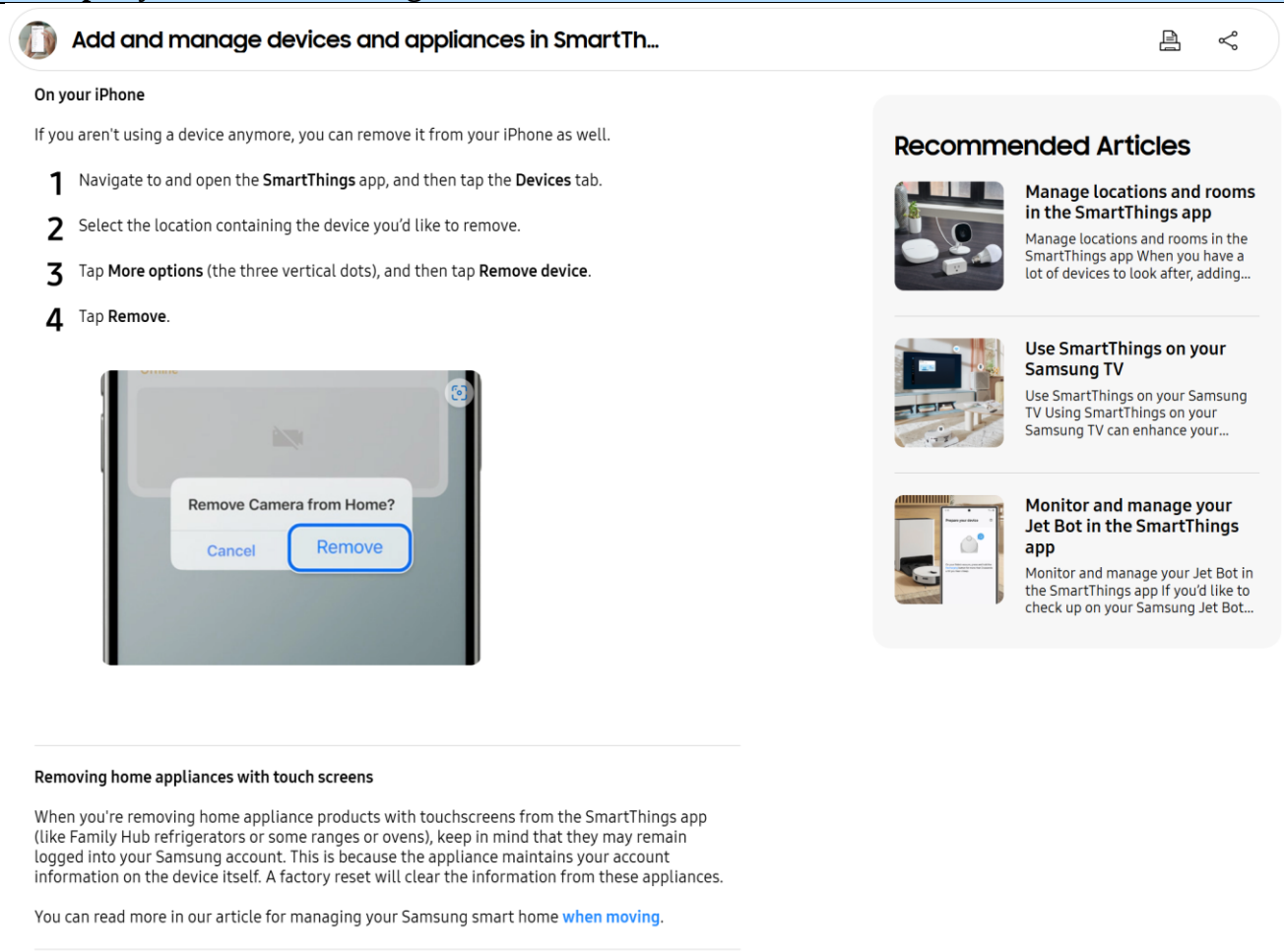


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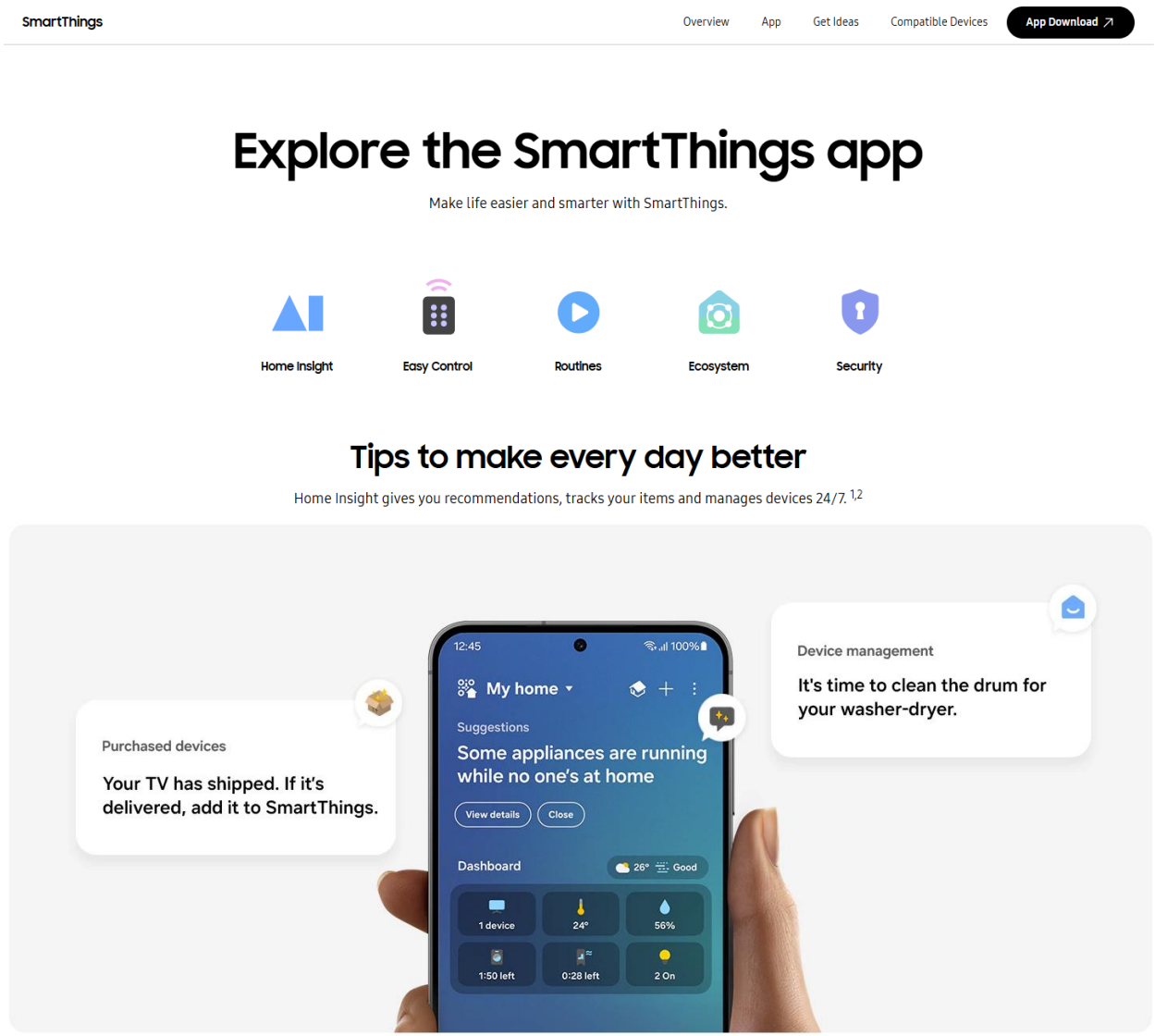


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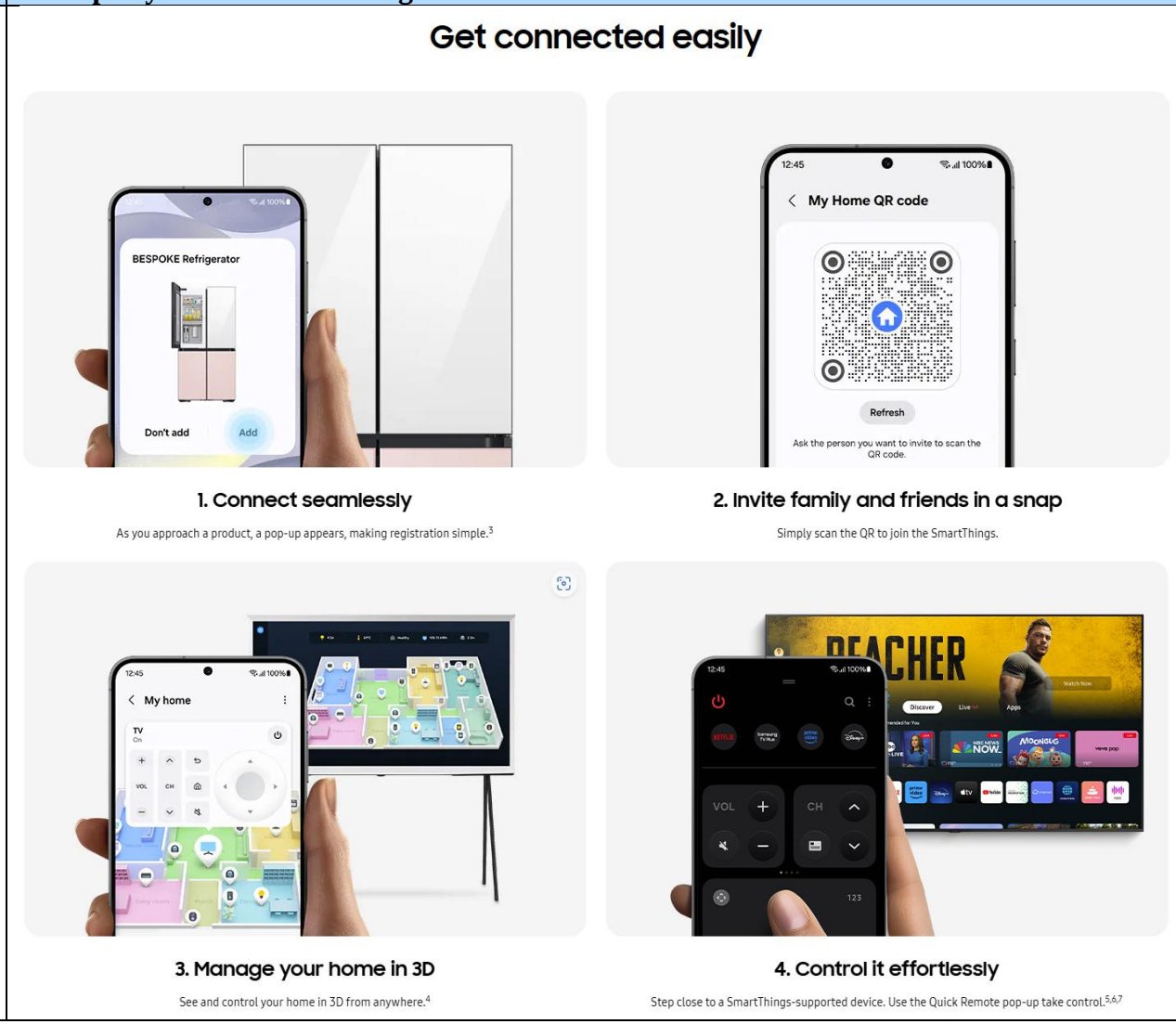


Smartphone in the Accused Samsung '650 Products technical specification showing onboarding/adding of an appliance (*e.g.*, fridge with Hub type functionality) using SmartThings app, which includes transmitting Wi-Fi/Bluetooth credentials and SmartThings cloud/platform credentials, updating a favorites and/or history list, controlling and/or changing the location, room, and/or name of one or more devices on displays and storage on mediums; https://www.samsung.com/us/support/answer/ANS10002639/.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

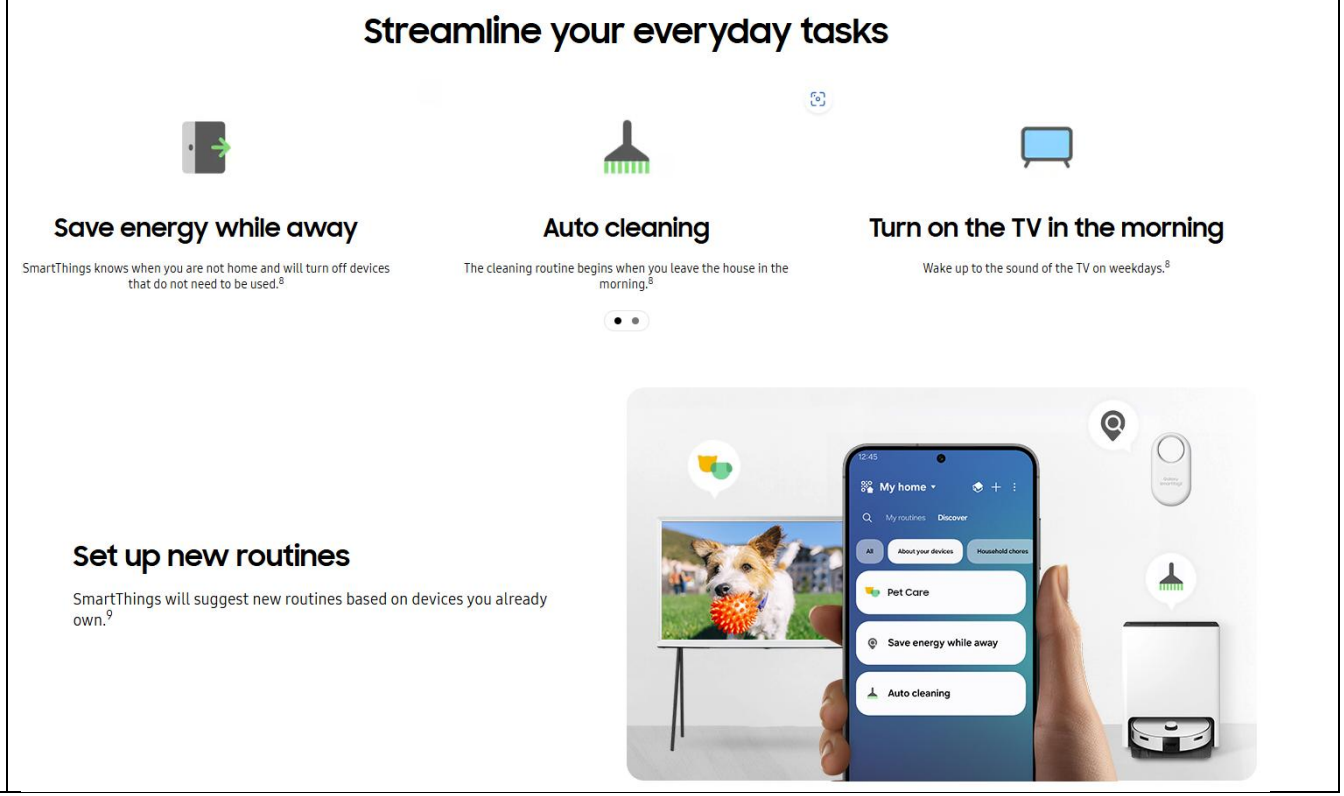


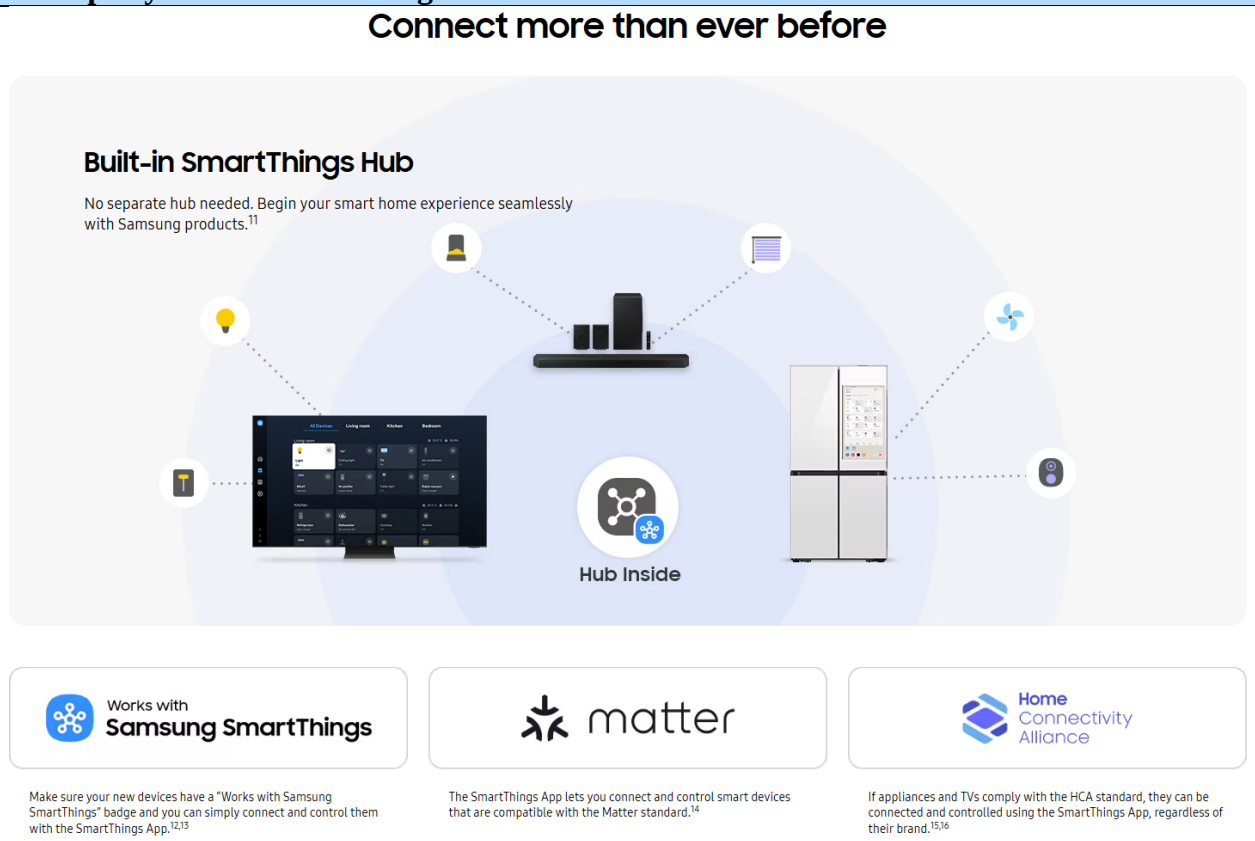
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



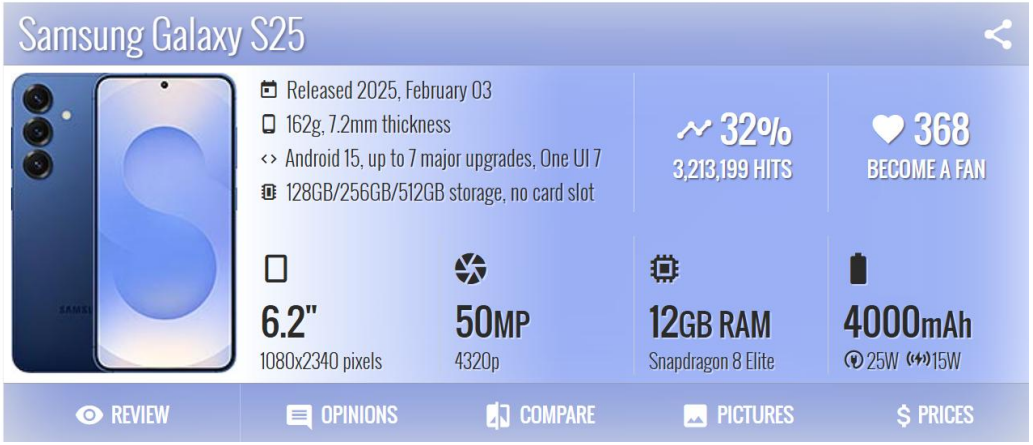
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U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



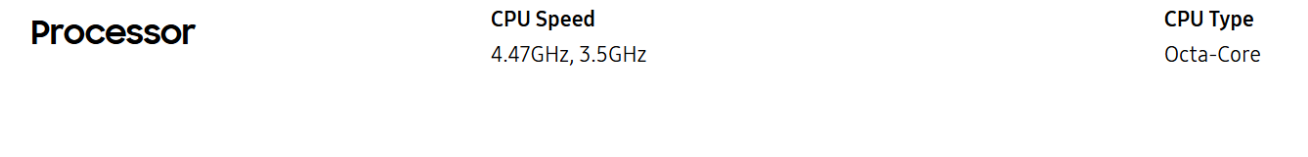
https://www.gsmarena.com/samsung_galaxy_s25-13610.php



Samsung Galaxy S25 Technical Specifications; https://www.samsung.com/uk/smartphones/galaxy-s25/specs/

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



PLATFORM		
	OS	Android 15, up to 7 major Android upgrades, One UI 7
	Chipset	Qualcomm SM8750-AC Snapdragon 8 Elite (3 nm)
	CPU	Octa-core (2x4.47 GHz Oryon V2 Phoenix L + 6x3.53 GHz Oryon V2 Phoenix M)
	GPU	Adreno 830 (1200 MHz)

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e/7, tri-band, Wi-Fi Direct
	Bluetooth	5.4, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S25 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

You can connect your device to a Wi-Fi network to access the Internet without using your mobile data.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi and scan for available networks.
2. Tap a network, and enter a password if required.
3. Tap **Connect**.

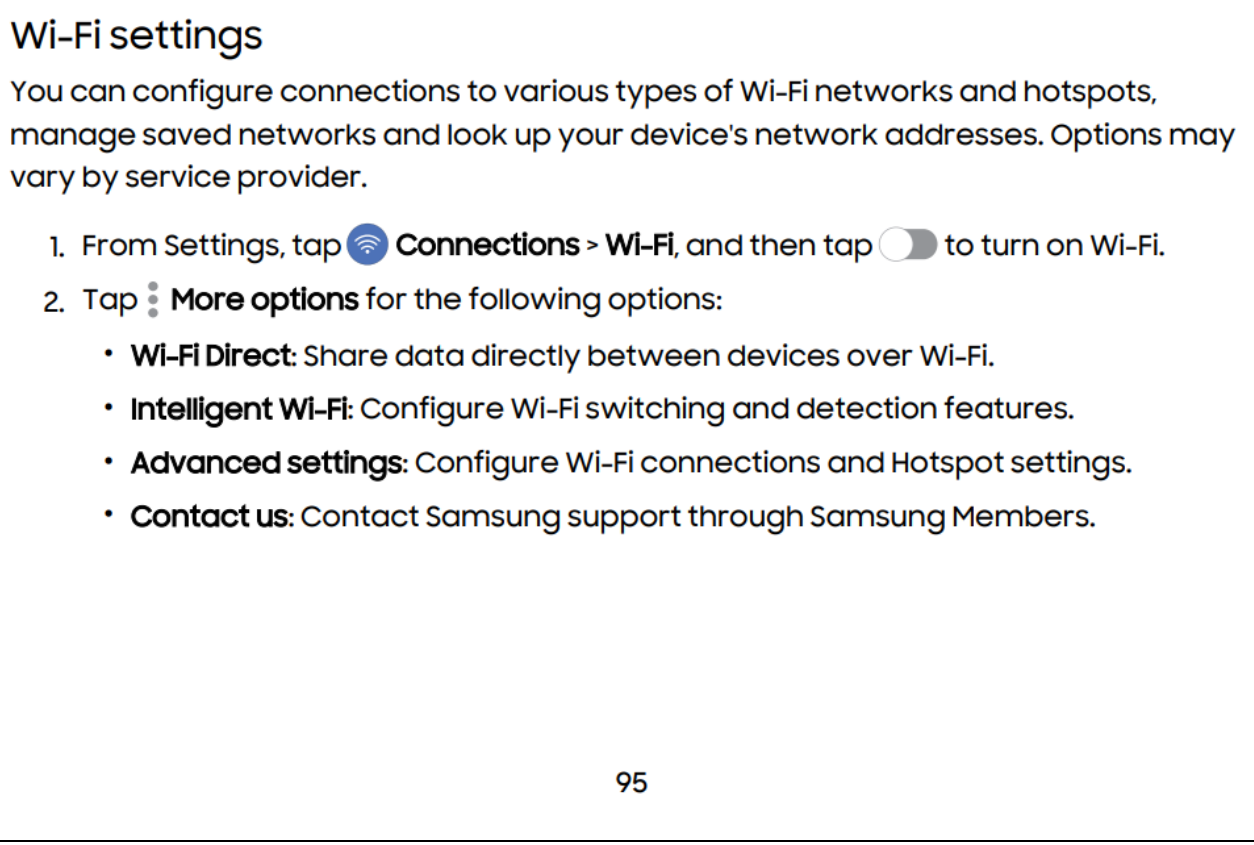
94

Settings

Connect to a hidden Wi-Fi network

If the Wi-Fi network you want is not listed after a scan, you can still connect to it by entering the information manually. Ask the Wi-Fi network administrator for the name and password before you begin.

1. From Settings, tap **Connections** > **Wi-Fi**, and then tap to turn on Wi-Fi.
2. Tap **Add network** at the bottom of the list.
3. Enter information about the Wi-Fi network:
   - **Network name**: Type the exact name of the network.
   - **Security**: Select a security option from the list, and enter the password if required.
   - **Password**: Enter the network password.
   - **Hidden network**: Add a hidden network.
   - **View more**: Define other advanced options, such as IP and Proxy settings.
4. Tap **Save**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

You can rename a paired device to make it more recognizable.

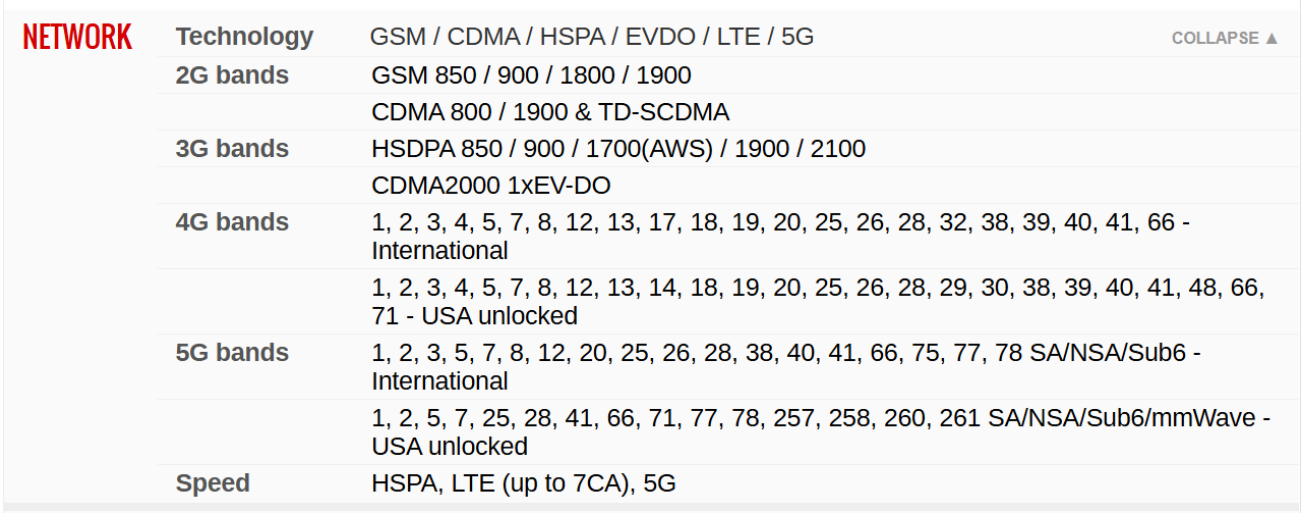
1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

Galaxy S25 User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information at pg. 94-97; https://downloadcenter.samsung.com/content/UM/202502/20250203151654735/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL.pdf  Galaxy S25 technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s25-13610.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SmartThings

SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard.

NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support.

Galaxy S25 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 57.

Samsung Galaxy S24



https://www.gsmarena.com/samsung_galaxy_s24-12773.php

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Galaxy S24 | Galaxy S24+ | Galaxy S24 Ultra

Colours



Cobalt Violet | Amber Yellow | Onyx Black | Marble Grey | Jade Green | Sapphire Blue | Sandstone Orange

* Colour availability may vary depending on country, region or carrier.
* Exclusive colour availability may vary depending on country or carrier.

Galaxy S24 Ultra technical specifications; https://www.samsung.com/uk/smartphones/galaxy-s24/specs/

Processor

CPU Speed	CPU Type
3.2GHz, 2.9GHz, 2.6GHz, 1.95GHz	Deca-Core

IPR2025-01308; Samsung
Ex. 1043 - Page 327

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

PLATFORM		
	OS	Android 14, up to 7 major Android upgrades, One UI 6.1.1
	Chipset	Qualcomm SM8650-AC Snapdragon 8 Gen 3 (4 nm) - USA/Canada/China Exynos 2400 (4 nm) - International
	CPU	8-core (1x3.39GHz Cortex-X4 & 3x3.1GHz Cortex-A720 & 2x2.9GHz Cortex-A720 & 2x2.2GHz Cortex-A520) 10-core (1x3.2GHz Cortex-X4 & 2x2.9GHz Cortex-A720 & 3x2.6GHz Cortex-A720 & 4x1.95GHz Cortex-A520)
	GPU	Adreno 750 (1 GHz) - USA/Canada/China Xclipse 940 - International

Id.

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO, QZSS
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, DisplayPort 1.2, OTG

Galaxy S24 technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information; https://www.gsmarena.com/samsung_galaxy_s24-12773.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Wi-Fi You can connect your device to a Wi-Fi network to access the Internet without using your mobile data. 1. From Settings, tap Connections > Wi-Fi, and then tap to turn on Wi-Fi and scan for available networks. 2. Tap a network, and enter a password if required. 3. Tap **Connect**.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Bluetooth

You can pair your device to other Bluetooth-enabled devices, like Bluetooth headphones or a Bluetooth-enabled vehicle infotainment system. Once a pairing is created, the devices remember each other and can exchange information without having to enter the passkey again.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap a device and follow the prompts to connect.
   - To disconnect from a paired device, tap **Disconnect**. Tap **Connect** to reconnect.

TIP When sharing a file, tap **Bluetooth** to use this feature.

Rename a paired device

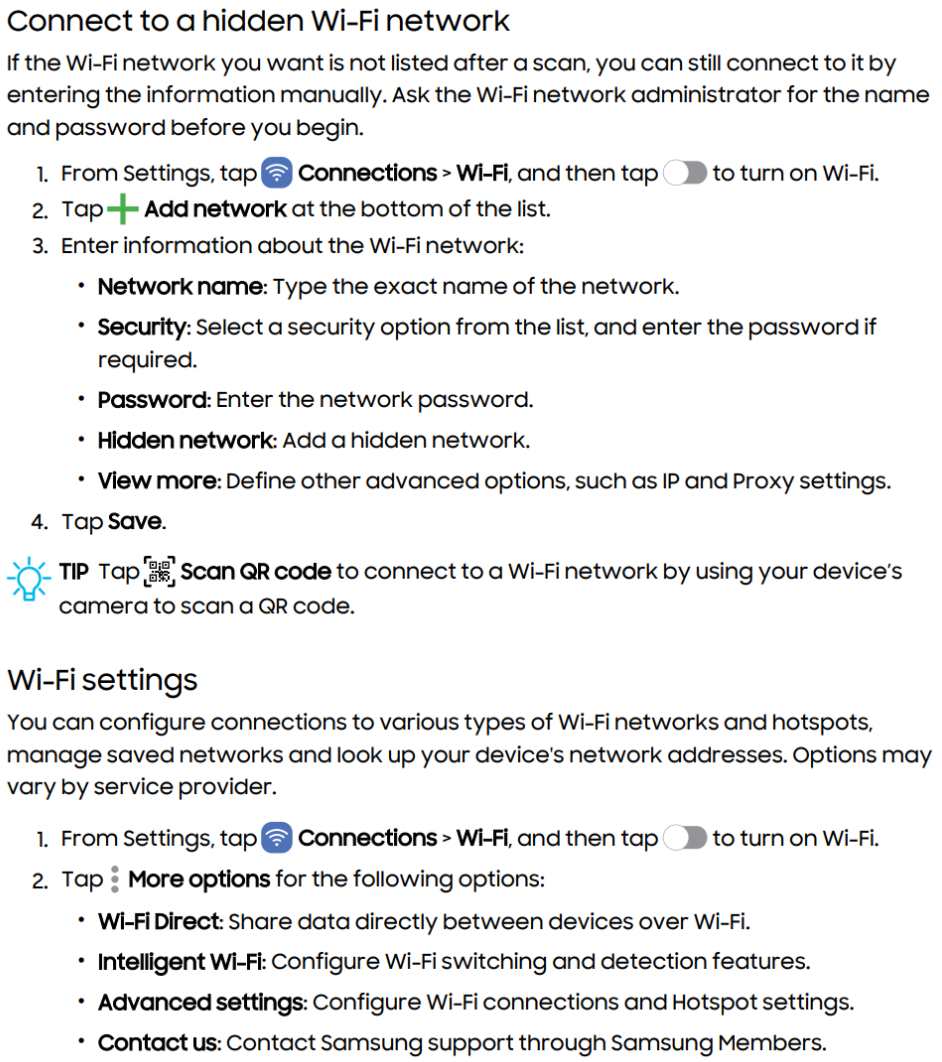
You can rename a paired device to make it more recognizable.

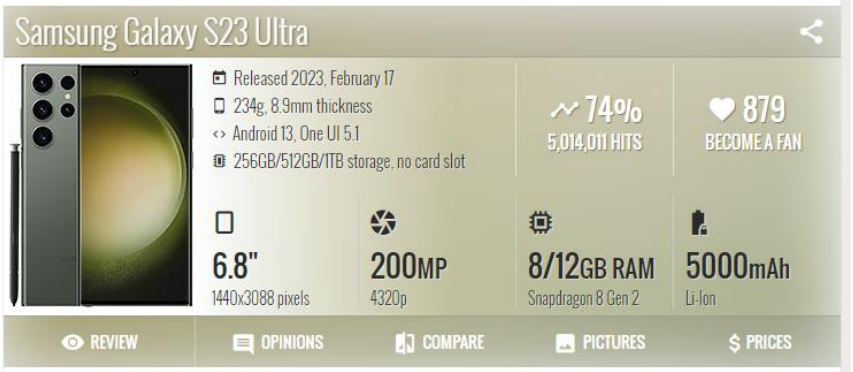
1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device name, and then tap **Rename**.
3. Enter a new name, and tap **Rename**.

Unpair from a Bluetooth device

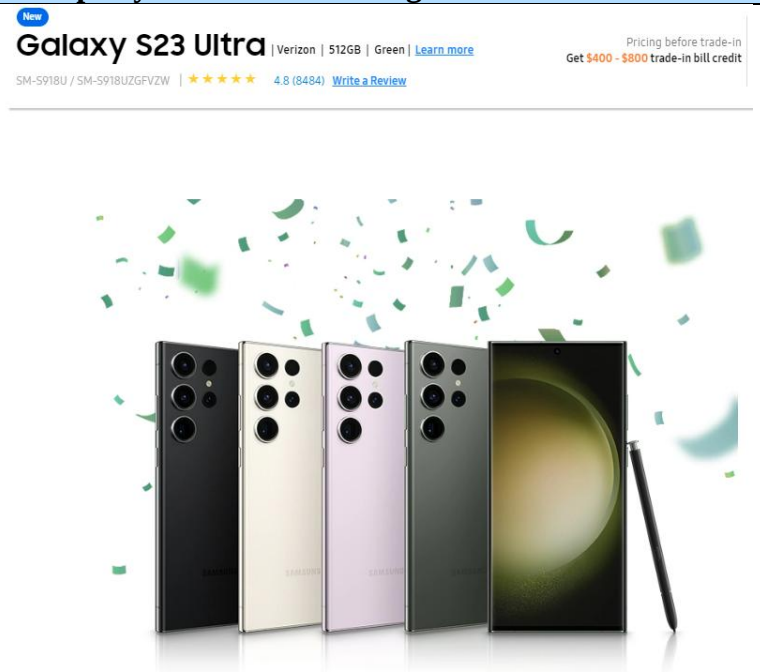
When you unpair from a Bluetooth device, the two devices no longer recognize each other, and you need to pair with the device again in order to connect to it.

1. From Settings, tap **Connections** > **Bluetooth**, and then tap to turn on Bluetooth.
2. Tap **Settings** next to the device, and then tap **Unpair**.
3. Tap **Unpair** to confirm.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S24 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information at pgs. 114-117.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	https://downloadcenter.samsung.com/content/UM/202401/20240123032208038/SAM_S921_S926_S928_EN_UG_OS14_011824_FINAL.pdf SmartThings SmartThings allows you to control, automate, and monitor your home environment through a mobile device to fit your specific needs. You can use the app to connect multiple devices at once or one device at a time. Check the status of your devices by looking at the dashboard. NOTE Non-Samsung connected device errors or defects are not covered by the Samsung warranty; contact the non-Samsung device manufacturer for support. Galaxy S24 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing information by adding a device at pg. 70. Samsung Galaxy S23 Ultra 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Galaxy S23 Ultra technical specifications; https://www.samsung.com/us/smartphones/galaxy-s23-ultra/buy/galaxy-s23-ultra-512gb-verizon-sm-s918uzgfvzw/?modelCode=SM-S918UZGFXAU; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php

Processor

Qualcomm Snapdragon 8 Gen2 Mobile Platform for Galaxy

PLATFORM	OS	Android 13, One UI 5.1
	Chipset	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
	CPU	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
	GPU	Adreno 740

Id.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

COMMS		
	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	Yes
	Radio	No
	USB	USB Type-C 3.2, OTG

Galaxy S23 Ultra technical specifications showing a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

Bluetooth

Use Bluetooth to exchange data or media files with other Bluetooth-enabled devices.

Precautions for using Bluetooth

- Samsung is not responsible for the loss, interception, or misuse of data sent or received through Bluetooth.
- Always ensure that you share and receive data with devices that are trusted and properly secured. If there are obstacles between the devices, the operating distance may be reduced.
- Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with your device.
- Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes). Samsung is not responsible for the repercussion of illegal use of the Bluetooth feature.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Pairing with other Bluetooth devices 1 On the Settings screen, tap **Connections** → **Bluetooth** and tap the switch to turn it on. The detected devices will be listed. 2 Select a device to pair with. If the device you want to pair with is not on the list, set the device to enter Bluetooth pairing mode. Refer to the other device's user manuals. Your phone is visible to other devices while the Bluetooth settings screen is open. 3 Accept the Bluetooth connection request on your phone to confirm. The devices will be connected when the other device accepts the Bluetooth connection request. To unpair the devices, tap next to the device name to unpair and tap **Unpair**. **Sending and receiving data** Many apps support data transfer through Bluetooth. You can share data, such as contacts or media files, with other Bluetooth devices. The following actions are an example of sending an image to another device. 1 Open the **Gallery** app and select an image. 2 Tap → **Bluetooth** and select a device to receive the image. If the device you want to pair with is not in the list, turn on its visibility option. 3 Accept the Bluetooth connection request on the other device. Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pg. 124-125.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi

Turn on the Wi-Fi feature to connect to a Wi-Fi network and access the internet or other network devices.

Connecting to a Wi-Fi network

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.
Networks with a lock icon require a password.

- Once the device connects to a Wi-Fi network, the device will reconnect to that network each time it is available without requiring a password. To prevent the device from connecting to the network automatically, tap ⚙ next to the network and tap the **Auto reconnect** switch to turn it off. To delete the saved connection information for a network, tap ⚙ next to the network and tap **Forget**.
- If you cannot connect to a Wi-Fi network properly, restart your device's Wi-Fi feature or the wireless router.

Checking out the Wi-Fi network quality information

Check out the Wi-Fi network quality information, such as the speed and stability.

On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on. The network quality information will appear under the Wi-Fi networks. If it does not appear, tap ⋮ → **Intelligent Wi-Fi** and tap the **Show network quality info** switch to turn it on.

The quality information may not appear depending on the Wi-Fi network.

Sharing Wi-Fi network passwords

If you make a request to a person who is connected to a secured Wi-Fi network to share its password, you can connect to the network without entering the password. This feature is available between devices that have each other's contacts and the screen of the other device must be turned on.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Select a network from the Wi-Fi networks list.

3 Tap **Request password**.

4 Accept the share request on the other device.
The Wi-Fi password is entered on your device and it is connected to the network.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Wi-Fi Direct

Wi-Fi Direct connects devices directly through a Wi-Fi network without requiring an access point.

1 On the Settings screen, tap **Connections** → **Wi-Fi** and tap the switch to turn it on.

2 Tap ⋮ → **Wi-Fi Direct**.
The detected devices are listed.
If the device you want to connect to is not in the list, turn on its Wi-Fi Direct feature.

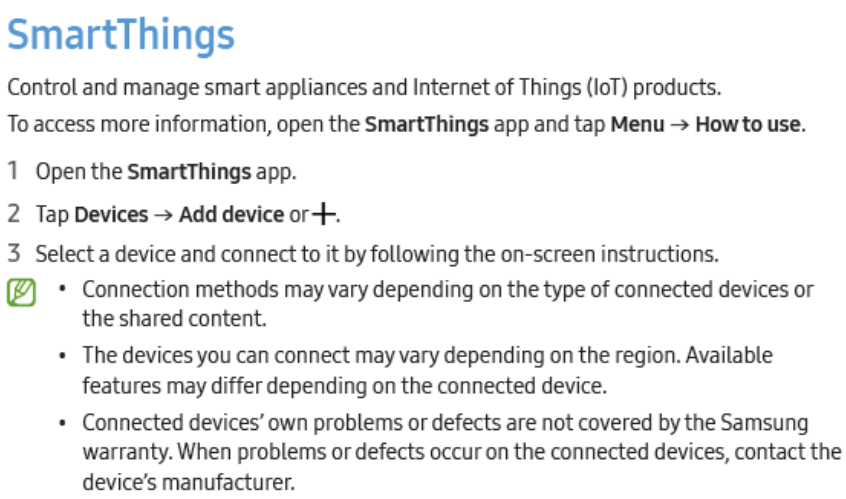
3 Select a device to connect to.
The devices will be connected when the other device accepts the Wi-Fi Direct connection request.
To end the device connection, select the device to disconnect from the list.

Galaxy S23 Series User Guide showing the functionalities for a Wi-Fi/Bluetooth chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium at pgs. 123-124.

NETWORK		COLLAPSE ▲
	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G
	2G bands	GSM 850 / 900 / 1800 / 1900 - SIM 1 & SIM 2 (Dual SIM model only)
		CDMA 800 / 1900 & TD-SCDMA
	3G bands	HSDPA 850 / 900 / 1700(AWS) / 1900 / 2100
		CDMA2000 1xEV-DO
	4G bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 32, 38, 39, 40, 41, 66 - International
		1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 46, 48, 66, 71 - USA
	5G bands	1, 2, 3, 5, 7, 8, 12, 20, 25, 28, 38, 40, 41, 66, 75, 77, 78 SA/NSA/Sub6 - International
		1, 7, 28, 41, 66, 71, 78, 258, 260, 261 SA/NSA/Sub6/mmWave - USA
	Speed	HSPA, LTE-A (up to 7CA), 5G

Galaxy S23 Ultra technical specifications showing the functionalities for a communication chipset to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium; https://www.gsmarena.com/samsung_galaxy_s23_ultra-12024.php.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



SmartThings

Control and manage smart appliances and Internet of Things (IoT) products.

To access more information, open the **SmartThings** app and tap **Menu** → **How to use**.

1 Open the **SmartThings** app.

2 Tap **Devices** → **Add device** or +.

3 Select a device and connect to it by following the on-screen instructions.

- Connection methods may vary depending on the type of connected devices or the shared content.
- The devices you can connect may vary depending on the region. Available features may differ depending on the connected device.
- Connected devices' own problems or defects are not covered by the Samsung warranty. When problems or defects occur on the connected devices, contact the device's manufacturer.

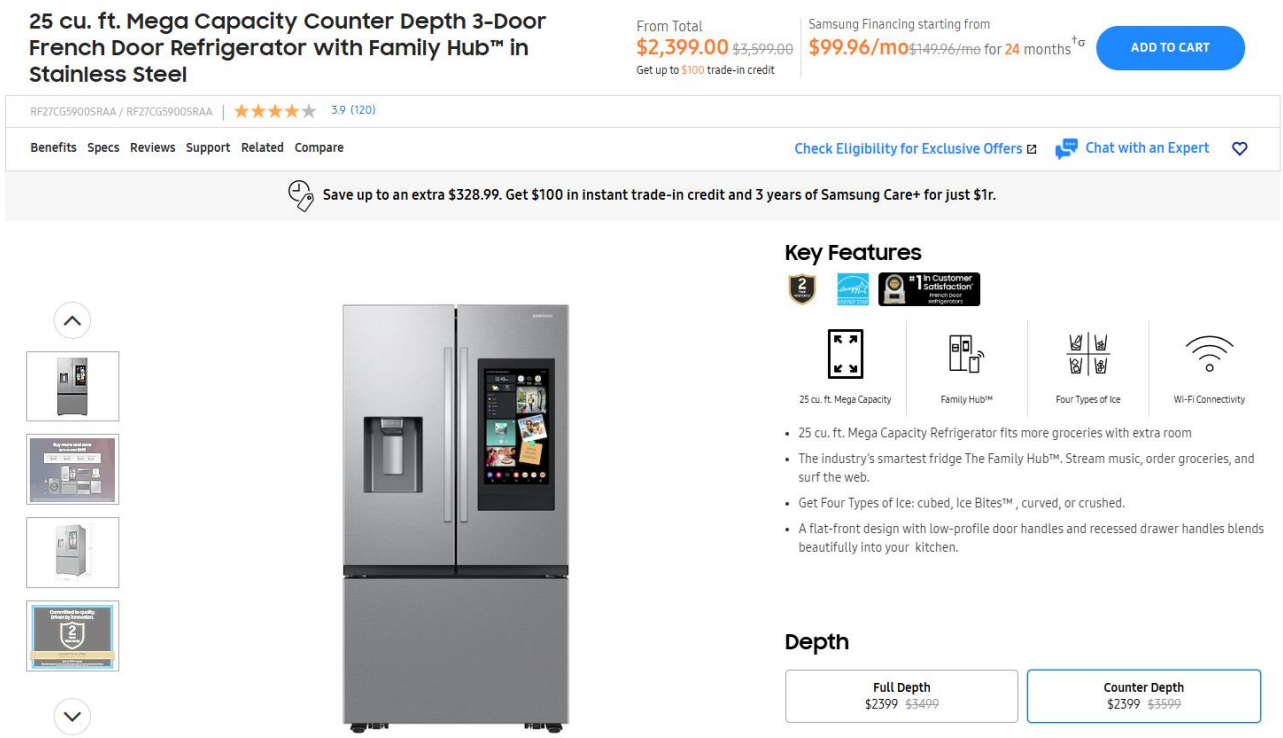
Galaxy S23 Series User Guide showing the functionality to communicate with the SmartThings cloud/platform using the SmartThings app including other devices and sharing contents for reproduction on a display or storage medium by adding/onboarding a device at pg. 111.

On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner.

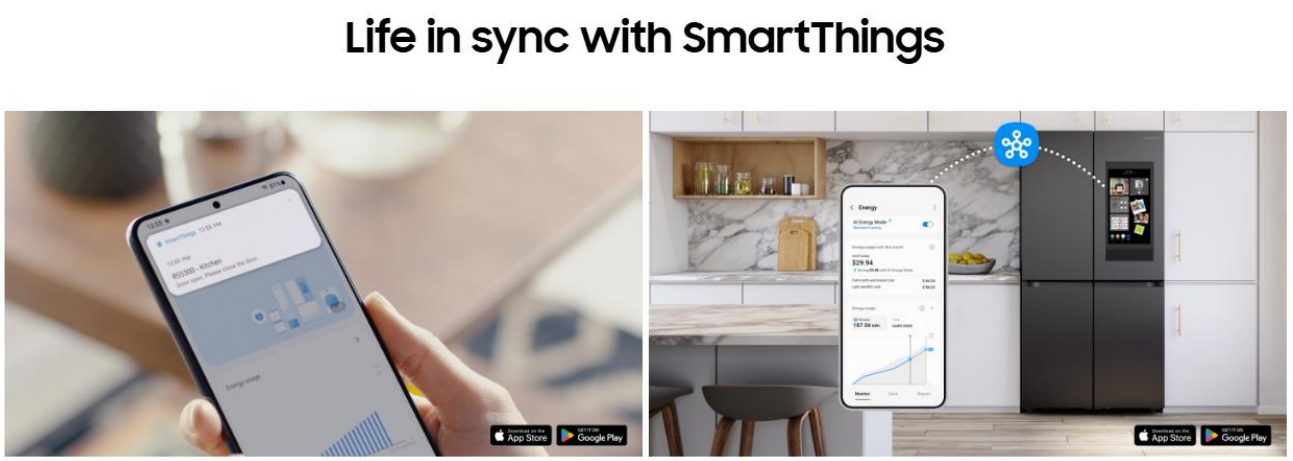
See also Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.

For example, two 25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the first fridge") are each one of the plurality of subsidiary terminals for

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	communicating with the phone, other devices, each other, and the SmartThings cloud/platform using Wi-Fi/Bluetooth chipsets during and after the onboarding process for exchanging contents.



25 cu. ft. 3-Door French Door Counter Depth Smart Refrigerator with Family Hub – Stainless Steel ("the fridge") Technical specification showing Wi-Fi/Bluetooth functionality for communicating with other devices and/or the SmartThings cloud/platform using Family Hub™ after being onboarded/added to the SmartThings cloud/platform for exchanging contents via display and/or storage medium; https://www.samsung.com/us/home-appliances/refrigerators/3-door-french-door/25-cu-ft--mega-capacity-counter-depth-3-door-french-door-refrigerator-with-family-hub--in-stainless-steel-rf27cg5900sraa/.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Family Hub™, it's more than a fridge Samsung's Family Hub™ keeps your family connected anytime, anywhere. You can share pictures, videos and drawings with Google photos,* control your smart appliances and devices, get all the benefits of Alexa built-in and quickly buy items with Amazon Your Essentials right from your fridge.** *Google and Google Photos are trademarks of Google LLC. **A Wi-Fi connection and Samsung account required. Get smart energy≠ savings of up to 10%† SmartThings Energy lets you monitor and manage your refrigerator's power usage. Reduce your energy use by up to 10%† with AI Energy mode≠, all from your phone. †Comparing factory setting temperature without AI Energy mode and with AI Energy, which optimizes the compressor speed and defrost cycle based on usage pattern and conditions. Results may vary depending on the usage pattern and conditions. ≠Available on compatible models from June 2023 through a Wi-Fi update through the SmartThings app on Android and iOS devices. A Wi-Fi connection and a Samsung account are required. §Product images shown may not reflect the model or color selected. *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Family Hub™, it's more than a fridge

The Family Hub™ lets you share pictures, stream music and videos, access recipes and control your smart devices and Alexa all from the fridge.[1]

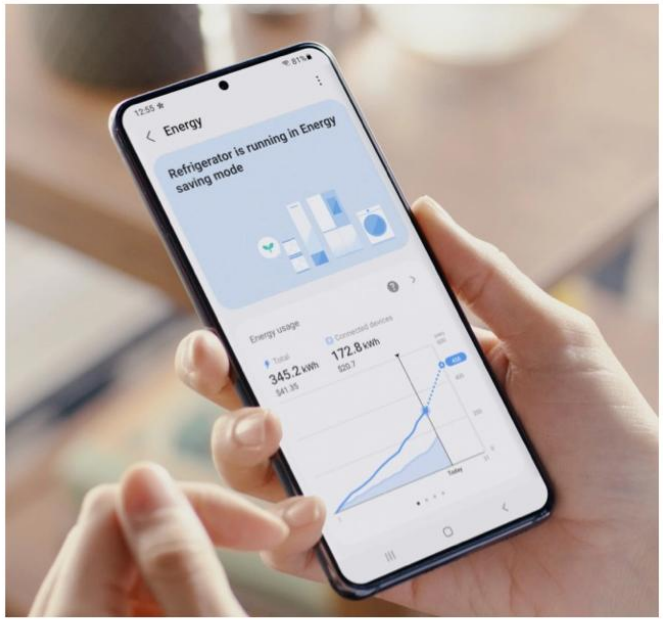
Id.

Monitor and control energy usage
You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2]

Get useful notifications
With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter.

Keeps food fresher
Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator.

Even cooling from corner to corner
All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer.



Id.

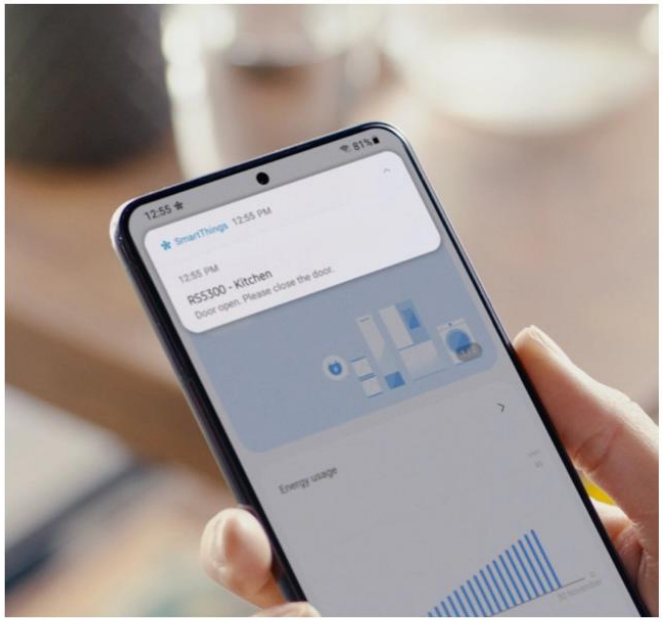
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Monitor and control energy usage
You can monitor and manage your refrigerator's power usage with the SmartThings app. Get energy savings tips and alerts to help lower your electric bill all from your phone.[2]

Get useful notifications
With WIFI-enabled capabilities, SmartThings will alert you when the door is left open, if there is an unexpected change in temperature, or when it's time to change the water filter.

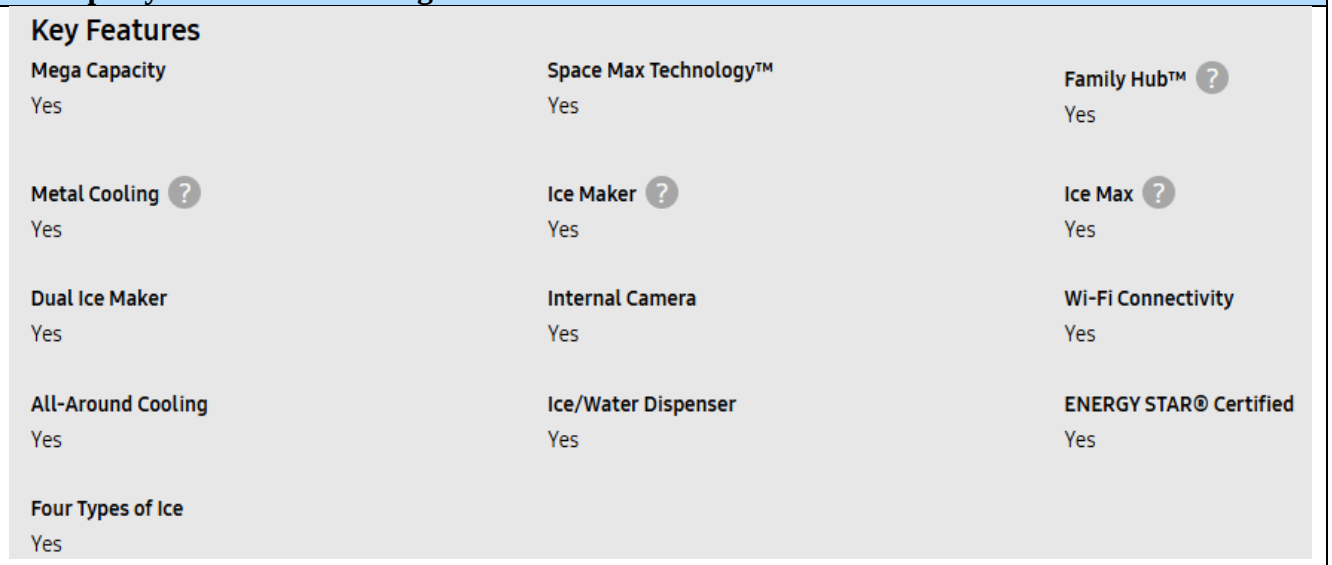
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Metal Cooling locks in cold and seals in freshness. The stainless steel paneling helps maintain consistent temperature throughout the refrigerator.

Even cooling from corner to corner
All-Around Cooling uses evenly spaced vents and monitors temperature continuously to ensure consistent cooling from corner to corner. This keeps the interior temperature the same throughout the fridge, so everything stays fresher, longer.

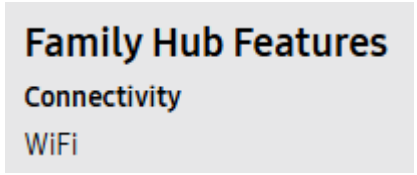


Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

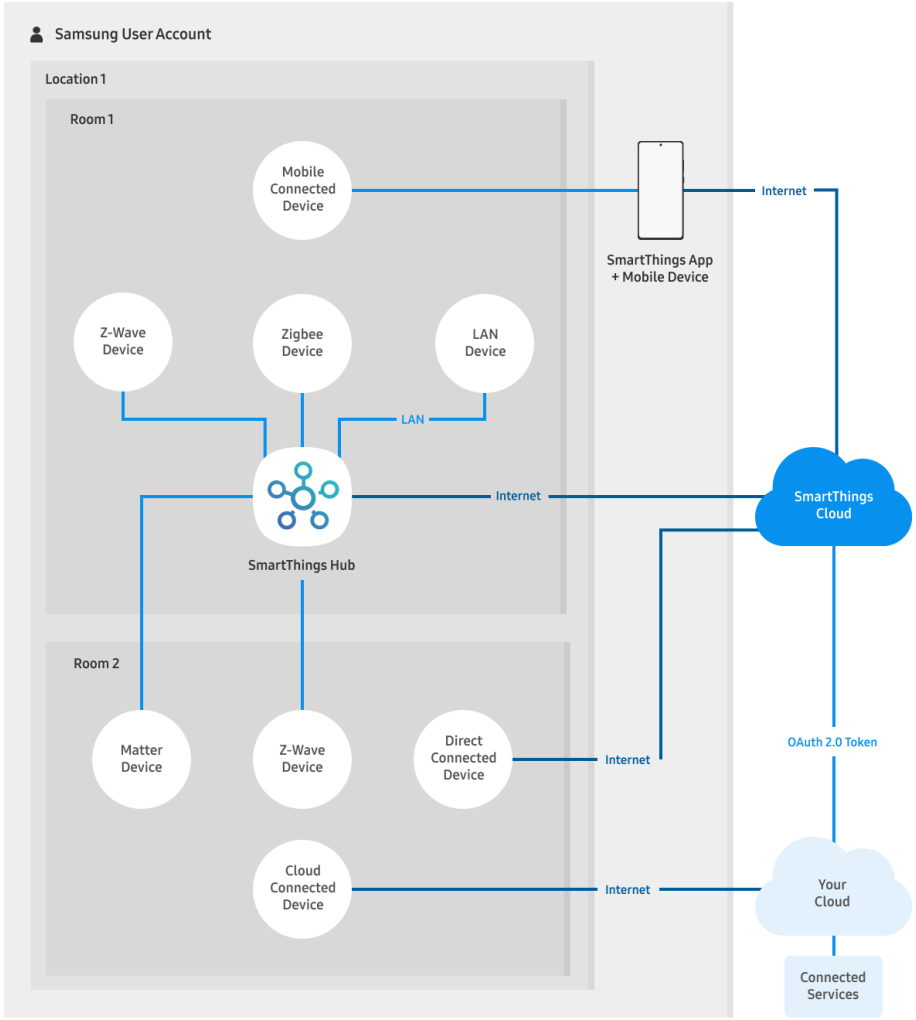


Id.



Id.

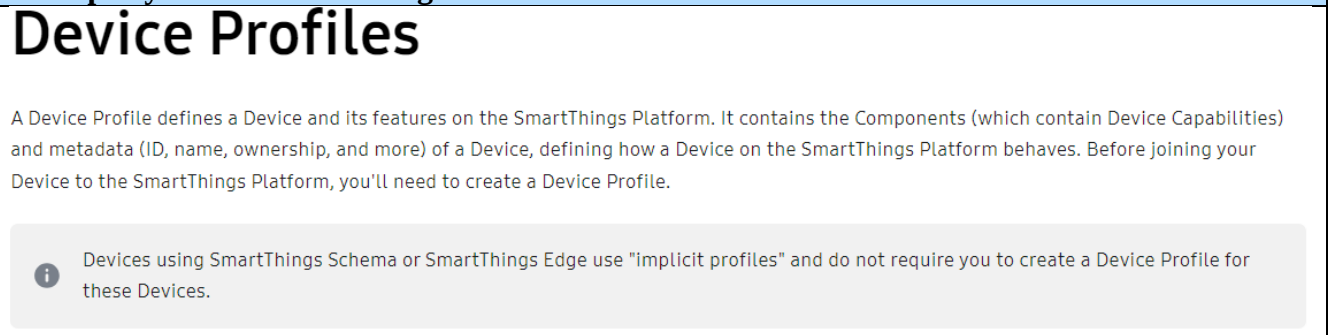
To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing the functionality to communicate with devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ Matter, a new industry protocol created by hundreds of leading and innovative companies (including Samsung), marks a new era for the smart home and its users. With a mission of simplifying the connected living experience, Matter makes it easy for users to buy, set up, and control smart devices. And while the new protocol is stirring a lot of buzz, many are wondering "how does it work?" SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi via different protocols and sharing information; https://blog.smartthings.com/stories/everything-you-need-to-know-about-matter/ **That's exciting! Is Matter a new kind of radio technology?** Nope. Matter is an "application layer", which means it can run over technologies already in your homes or devices — like Wi-Fi or Thread. Think of it like this: you and I can both have the same radio, but unless we speak the same language, we can't really do anything interesting together. Technologies like Wi-Fi and Thread let you connect your devices, and Matter is the language they speak to each other. *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings Platform The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). SmartThings cloud/platform technical specification showing the functionality to connect to devices using Wi-Fi and sharing information; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

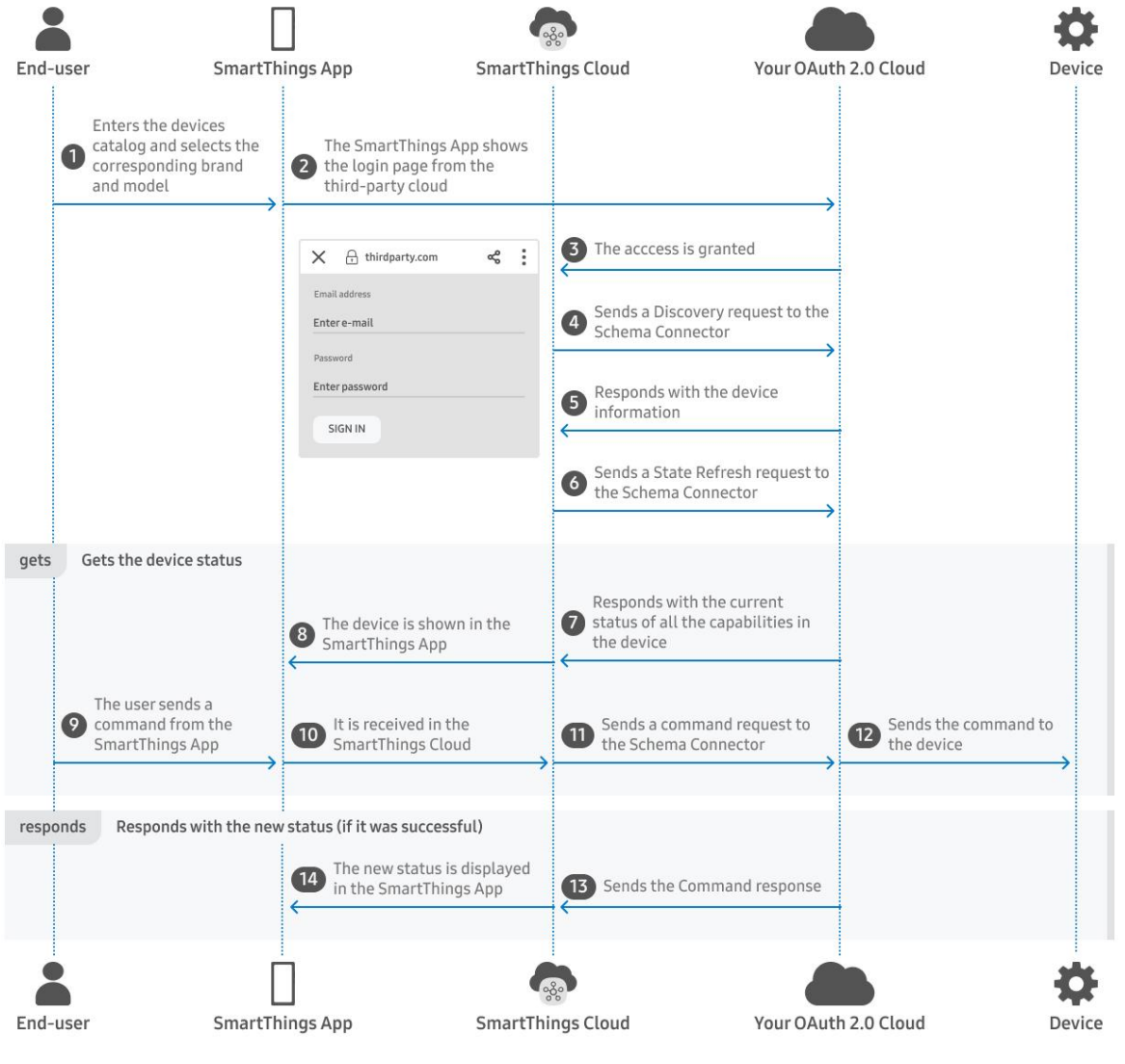
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Below is a list of currently supported categories. The Platform provides a default icon based on the category specified for the device. • AirConditioner • AirPurifier • AirQualityDetector • Battery • Blind • BluRayPlayer • BluetoothCarSpeaker • BluetoothTracker • Bridges • Button • Camera • Car • Charger • ClothingCareMachine • CoffeeMaker • ContactSensor • Cooktop • Cooktop • CubeRefrigerator • CurbPowerMeter • Dehumidifier • Dishwasher • Door • DoorBell • Dryer • Earbuds • ElectricVehicleCharger • Elevator • Fan • Feeder • Flashlight • GarageDoor • GasValve • GasMeter • GenericSensor

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• HealthTracker • Heatedmattresspad • HomeTheater • Hub • Humidifier • HumiditySensor • IrRemote • Irrigation • KimchiRefrigerator • KitchenHood • LeakSensor • Light • LightSensor • MicroFiberFilter • Microwave • MobilePresence • MotionSensor • MultiFunctionalSensor • NetworkAudio • NetworkAudio • Networking • Others • Oven • PresenceSensor • Printer • PrinterMultiFunction • Projector • Range • Receiver • Refrigerator • RemoteController • RiceCooker • RobotCleaner • ScaleToMeasureMassOfHumanBody • Scanner • SecurityPanel • SetTop • Shade • ShoesCareMachine • Siren • SmartLock

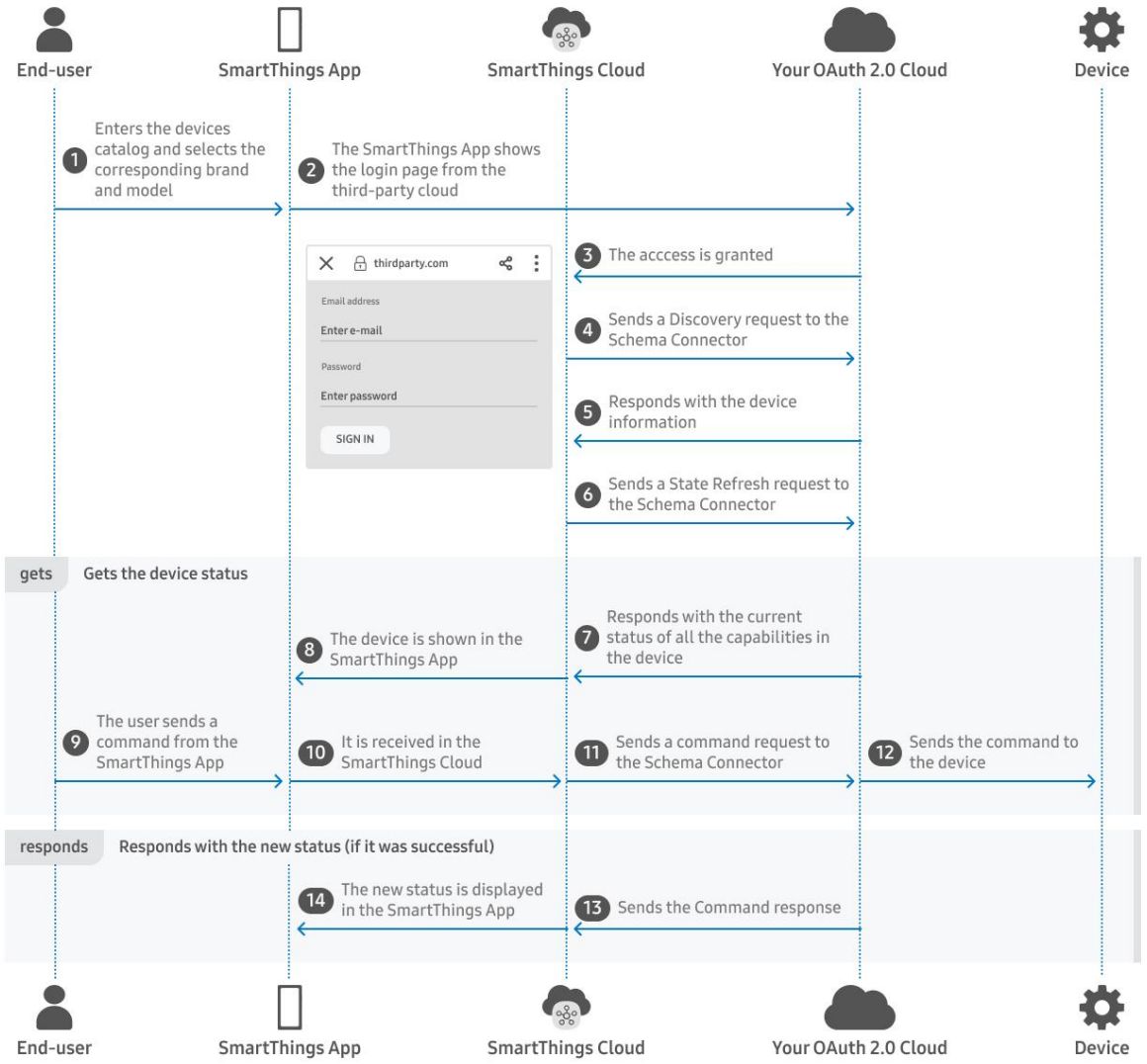
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• SmartPlug • SmokeDetector • SolarPanel • SoundSensor • SoundMachine • Speaker • StickVacuumCleaner • Stove • Switch • Television • TempSensor • Thermostat • Tracker • UPnPMediaRenderer • Vent • VisionSensor • VoiceAssistance • Washer • WaterHeater • WaterValve • WaterPurifier • WiFiRouter • Window • WineCellar *Id.* **Add a Device Profile** Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Get Started with Direct Connected Devices Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the Capabilities of your device. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/direct-connected/get-started/ **Get Started with Cloud Connected Devices** Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector. SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform: • SmartThings Schema • SmartApps Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build. SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/ The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/connected-services/smartapp-basics **Using SmartApps to Connect Your Devices** Your Cloud does not need to support OAuth 2.0 when using SmartApps. SmartApps offer a more customizable method for integrating your products with the SmartThings Platform. They provide a method of building custom experiences, allowing you to create unique onboarding experiences, enhance Device functionality, and provide custom integrations with third-party services. Note that while a SmartApp can be used to integrate your Cloud Connected Device with the SmartThings Platform, that is not the only function a SmartApp can perform. This integration relies on a developer registering an HTTP Webhook URL or an AWS Lambda function in the Developer Workspace, which is then authorized to leverage the SmartThings Platform APIs. *Id.* The diagram below helps visualize SmartThings Platform interaction when using SmartThings Schema:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Get Started With Mobile Connected Devices

A Mobile Connected Device communicates with the SmartThings Platform via a mobile device, such as a Samsung Galaxy Smartphone. There are two types of Mobile Connected Devices:

- Bluetooth Devices
- SmartThings Find Devices

Bluetooth Devices

Bluetooth devices function differently than the other devices supported by SmartThings. Notably, they cannot be incorporated into Automations or Scenes.

Bluetooth devices paired to a Samsung Galaxy phone are automatically displayed in the SmartThings app. Tapping a Bluetooth device in the SmartThings app will show the available settings and controls for the device. You can also control media playing on a connected bluetooth device from the SmartThings app.

Bluetooth devices connected to a non-Samsung or iOS phone will not be displayed in the SmartThings clients.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/mobile-connected/get-started/

SmartThings Find Devices

A SmartThings Find Device is a BLE (Bluetooth Low Energy) device compatible with the SmartThings Find service.

SmartThings Find uses BLE and UWB (ultra-wideband) technologies to help you quickly locate your connected devices. By using AR in conjunction with maps and sounds, SmartThings Find offers a simple and visual solution to help guide you to your missing device.

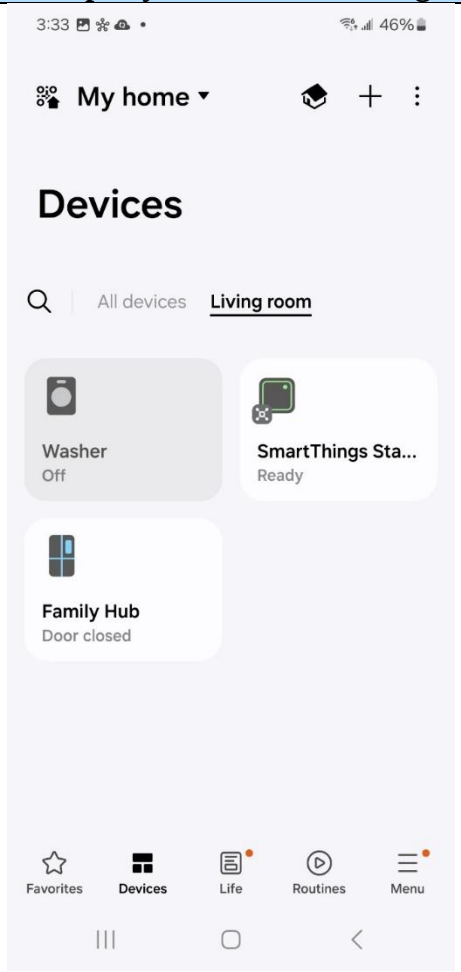
With SmartThings Find, you can locate your missing device, even if it is offline. SmartThings users can opt in to securely use their Galaxy smartphone or tablet to help others locate their lost devices. Once a device has been offline for 30 minutes, it produces a BLE signal that can be received by other devices. If you report your device as lost via SmartThings Find, any nearby Galaxy smartphone or tablet that has opted into helping find misplaced devices can alert the Samsung server about its location, which will in turn notify you.

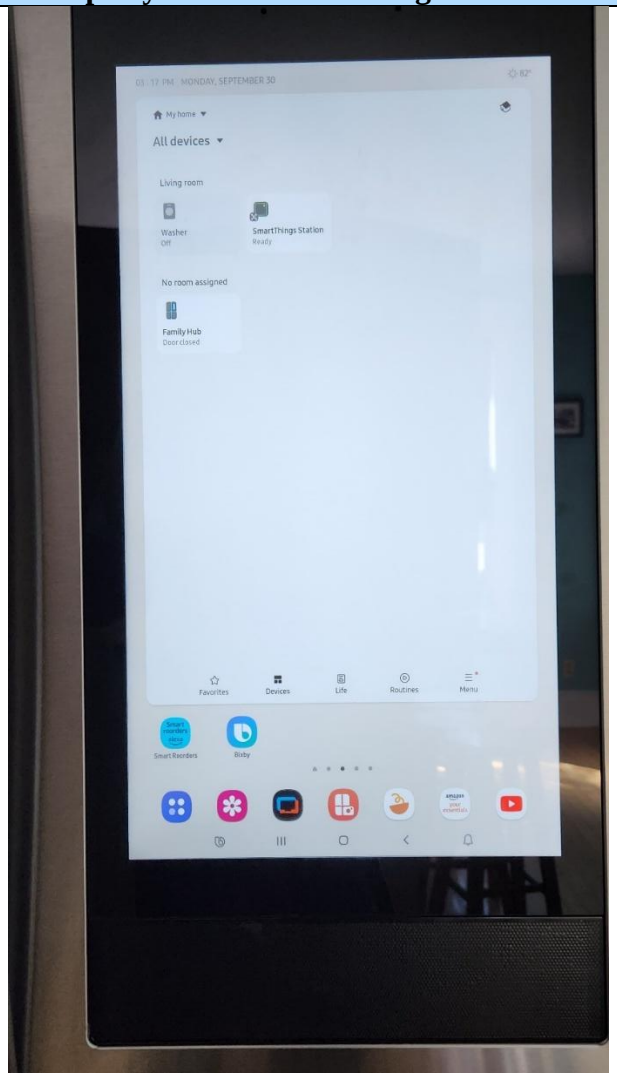
All SmartThings Find user data is encrypted and securely protected, ensuring that the device's location is not revealed to anyone except its owner.

For information on how you can make your device compatible with SmartThings Find, submit a request here.

Id.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes Wi-Fi/Bluetooth functionality to communicate with the SmartThings cloud/platform and each other to share contents for reproduction on a display and/or one or more storage medium. Specifically, additional Accused Samsung '650 Products contain Wi-Fi/Bluetooth circuitry that operate in a similar manner to create a communication system where contents are exchanged and reproduced on a display and/or recording medium. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Screenshot from the SmartThings application on the main terminal (*e.g.*, Galaxy S25), showing a list of connected devices within the "Living room" group: a first subsidiary terminal ("Family Hub"), a second subsidiary terminal ("SmartThings Station"), and an additional device ("Washer"). Each device is actively connected and displays current state information (*e.g.*, "Door closed," "Ready," "Off").

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Screenshot from the Family Hub refrigerator display showing multiple connected devices, including the "Washer," "SmartThings Station," and "Family Hub," confirming the fridge functions as a

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	subsidiary terminal displaying the unified SmartThings device network. In a similar fashion, another Family Hub refrigerator can be added as a second subsidiary terminal. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, the Accused Samsung '650 Products are designed to operate within the system consisting of a main terminal (e.g., a smartphone) controlling a plurality of subsidiary terminals (e.g., smart appliances). See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.b] wherein the main terminal comprises: a storage storing the contents;	Each of the phones in the Accused Samsung '650 Products include wherein the main terminal comprises a storage storing the contents. *See e.g.*, Technical Specifications of each of the Accused Samsung '0650 Products available at Samsung's website provide evidence that the devices include wherein the main terminal comprises a storage storing the contents. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, each of the phone in the Accused Samsung '650 Products include a storage medium for storing the contents (*e.g.*, one or more credentials, network, device names, device IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or Graphical User Interface (GUI)). To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a nonlimiting example, each of the phone in the Accused Samsung '650 Products alone or in conjunction with the SmartThings cloud/platform includes a storage medium for storing the contents (*e.g.*, one or more credentials, network, device names, device IDs, Samsung account IDs, and/or device states in the form of metadata, one or more lists (*e.g.*, Favorites list, and/or History list) and/or devices Graphical User Interface (GUI)).

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The SmartThings cloud/Platform is an extension of each the main terminal because the SmartThings cloud/platform includes virtual instances with the same capabilities and functions as the main terminal. *See e.g.*,

Device Profiles

A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile.

Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it to exchange information; https://developer.smartthings.com/docs/devices/device-profiles/

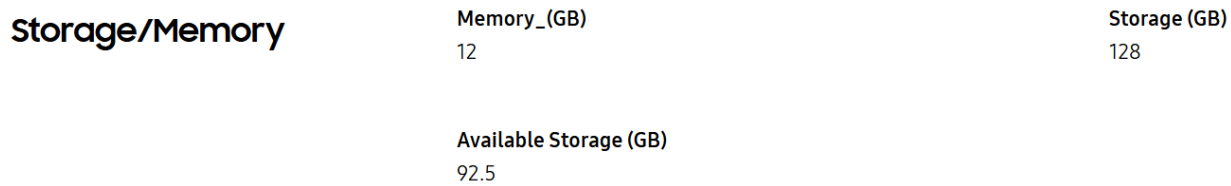
For example, the phones with the SmartThings app. alone or in conjunction with the SmartThings cloud/platform include a storage medium (*e.g.*, on the phones and on the SmartThings cloud/platform being an extension of each device onboarded/added to it).

For example, the phones in conjunction with the SmartThings app. include a storage medium (*e.g.*, on the phones and on the SmartThings cloud/platform being an extension of each device onboarded/added to it). *See e.g.*,

Samsung Galaxy S25

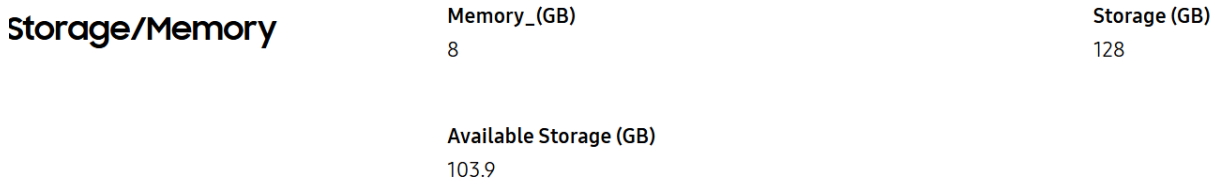
MEMORY	Card slot	No
	Internal	128GB 12GB RAM, 256GB 12GB RAM, 512GB 12GB RAM
		UFS 4.0

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



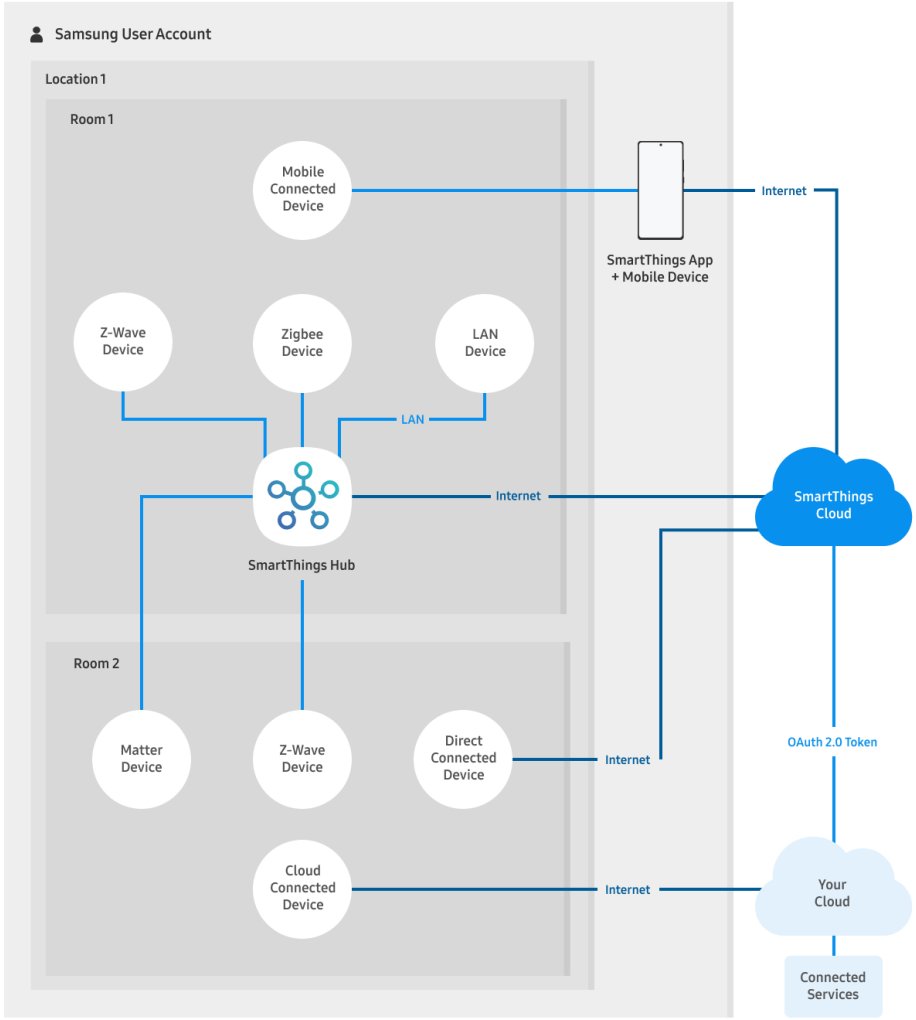
Samsung Galaxy S24

MEMORY	Card slot	No
	Internal	128GB 8GB RAM, 256GB 8GB RAM, 256GB 12GB RAM, 512GB 8GB RAM
		UFS 3.1 - 128GB only UFS 4.0



Samsung Galaxy S23 Ultra

MEMORY	Card slot	No
	Internal	256GB 8GB RAM, 256GB 12GB RAM, 512GB 12GB RAM, 1TB 12GB RAM
		UFS 4.0

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	SmartThings cloud/platform technical specification showing one or more devices using Wi-Fi and/or Bluetooth for sharing contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings/ **The SmartThings Platform** The SmartThings Platform encompasses all of the components required to execute the functions and capabilities of the SmartThings ecosystem. This includes executing a user's request, enabling device and cloud-to-cloud communication, running Automations, monitoring events in a user's home and in the SmartThings Cloud, and more. **The SmartThings Cloud** The SmartThings Cloud is the part of the Platform responsible for ensuring complex automations are executed, for maintaining device health, for onboarding devices, and for allowing users to remotely access their Devices and Automations through SmartThings Clients, such as through the SmartThings app. The SmartThings Cloud is built using standard data entities and subscriptions for the home, car, and life. Devices and Connected Services use these data entities to display data, track events, trigger automations, and more. With the launch of SmartThings Edge, we are taking some events that would have happened in the Cloud and moving them to the SmartThings Hub. SmartThings Edge uses Lua-based device drivers and our Rules API to control and automate devices connected directly to a SmartThings Hub. This includes Matter, Zigbee, Z-Wave, and LAN devices as well as automations triggered by timers and other Hub Connected Devices using drivers. **Users and Accounts** A Samsung account is required to access the SmartThings Platform. Multiple users, or members, may have access to a shared Location, but only one user is considered the owner of a Location. Any member of a given Location typically has access to all properties and associations of the Location (such as Automations, SmartApps, Devices, Rooms, and Scenes). *Id.*

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Devices and Hubs Devices are physical products that connect to the SmartThings Platform. Types of Devices include: • **Cloud Connected Device** - Devices that communicate with the SmartThings Cloud through a third-party cloud. This includes SmartThings Schema and select products that connect using a SmartApp. • **Direct Connected Device** - Devices that connect directly to the SmartThings Cloud via WiFi. This includes Samsung Appliances, products from third-party OEMs using protocols such as OCF and MQTT, and more. • **Mobile Connected Device** - Devices that communicate with the SmartThings Platform via a mobile device. This typically includes Bluetooth products that connect via your mobile device, such as wearables and headphones. • **Hub Connected Device** - Devices that connect directly to a SmartThings Hub to communicate with the SmartThings Platform. This typically includes Matter, Zigbee, Z-Wave, LAN (via SmartThings Edge Drivers), and Bluetooth products. • **Hub** - A Hub connects to the SmartThings Cloud and provides Platform connectivity for Hub Connected Devices. *Id.* **Connected Services** The second method to control and automate your devices is by building a Connected Service. With a Connected Service, you can subscribe to events, run the automation logic on your server, and send events back to the device you want to automate. While Automations and Connected Services share some similarities, Connected Services are typically used to build connections outside the SmartThings Platform. Connected Services can connect a user's smart home to the broader world through third-party apps, services, and integrations. *Id.* Also note that this diagram shows a single hub with connected devices in two separate rooms. Typically, SmartThings recommends Locations have a single hub. In some instances however, a user may have multiple hubs at a Location. Devices connected to two different hubs in the same Location can communicate with each other and are displayed in the SmartThings app no differently than if the devices were connected to the same hub.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Device Profiles

A Device Profile defines a Device and its features on the SmartThings Platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves. Before joining your Device to the SmartThings Platform, you'll need to create a Device Profile.

Devices using SmartThings Schema or SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/device-profiles/

Add a Device Profile

Next, you will need to define a Device Profile for your Device using the Developer Workspace. A Device Profile defines a Device and its features on the SmartThings Platform. It contains the components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings Platform behaves.

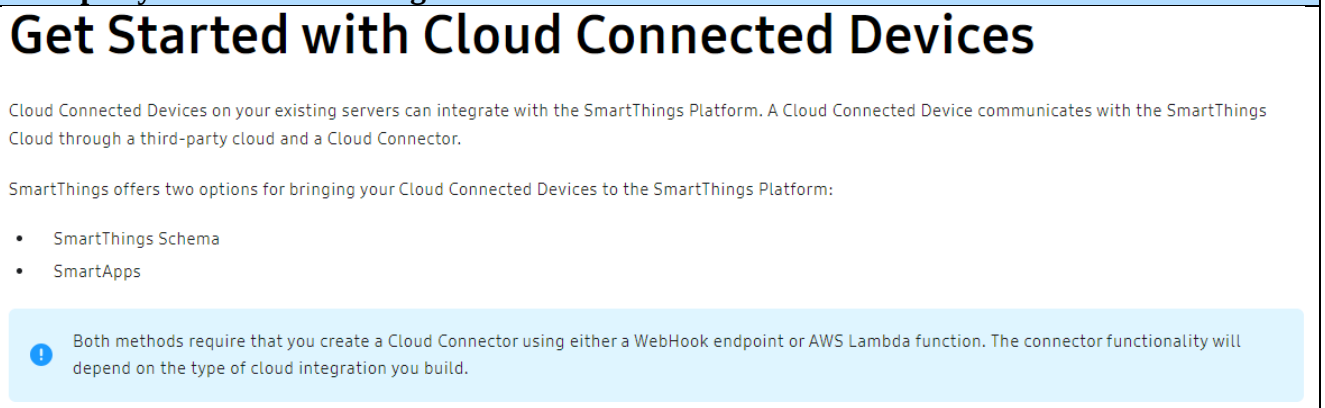
SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/register-your-device/

Get Started with Direct Connected Devices

Direct Connected Devices integrate directly with the SmartThings Platform via WiFi, eliminating the need for you to launch or manage your own cloud. Easily integrate your device using the SmartThings SDK for Direct Connected Devices. The SDK manages all MQTT topics and onboarding requirements, freeing you to focus on the **Capabilities** of your device.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices connected and communicating with it using the SmartThings app and/or Family Hub™ to exchange contents for reproduction on a display or storage medium; https://developer.smartthings.com/docs/devices/direct-connected/get-started/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Get Started with Cloud Connected Devices

Cloud Connected Devices on your existing servers can integrate with the SmartThings Platform. A Cloud Connected Device communicates with the SmartThings Cloud through a third-party cloud and a Cloud Connector.

SmartThings offers two options for bringing your Cloud Connected Devices to the SmartThings Platform:

- SmartThings Schema
- SmartApps

Both methods require that you create a Cloud Connector using either a WebHook endpoint or AWS Lambda function. The connector functionality will depend on the type of cloud integration you build.

SmartThings cloud/platform creating a profile or a virtual instance (*e.g.*, including its functionalities) of each devices in its using its one or more databases when onboarded/added for connection and communication using the SmartThings app and/or Family Hub™; https://developer.smartthings.com/docs/devices/cloud-connected/get-started/

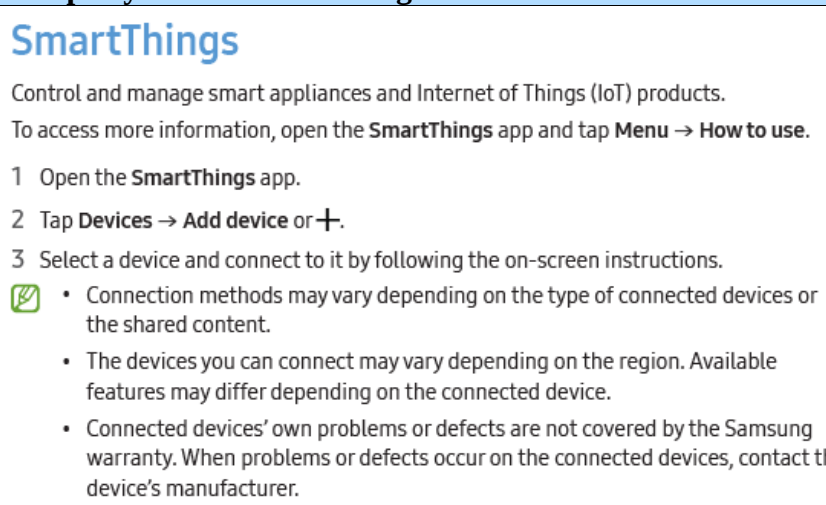
Doctrine of equivalents

To the extent Samsung argues that the use of the SmartThings cloud/platform for data storage does not literally meet the definition of the main terminal's "storage," the SmartThings cloud is at least an equivalent of the main terminal's local, onboard storage. This is because the identified structures perform substantially the same function, in substantially the same way, to achieve substantially the same result. The function of both is to persistently store and retrieve information, such as device IDs and event history logs. They accomplish this in the same way, by receiving data and writing it to a persistent, retrievable location (either local flash memory or a cloud database). The result is identical: critical system information is saved, allowing the controller to manage the system.

On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner.

See also Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, additional Accused Samsung '650 Products that function as main terminals contain a storage medium for storing contents, both locally

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	and via the cloud. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.c] a first display displaying the contents; and	The phones in the Accused Samsung '650 Products include a first display displaying the contents. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include a first display displaying the contents. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a nonlimiting example, each smartphone with SmartThings app. in the Accused Samsung '650 Products includes a first display that displays the credentials and network information exchanged during the onboarding/adding process of each fridge on the SmartThings cloud/platform. In addition, each of the smartphone with SmartThings app. In the Accused Samsung '650 Products includes a first display of the onboarded fridge's device name, device ID, and/or device state in the form of metadata, a Favorites list, History list, and/or device GUI on the SmartThings app. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a nonlimiting example, each smartphone with SmartThings app. in the Accused Samsung '650 Products includes a first display that displays the credentials, network information exchanged, device name, and device states (*e.g.*, contents) during the onboarding/adding process of each fridge on the SmartThings cloud/platform. In addition, each of the phone with SmartThings app. in the Accused Samsung '650 Products includes a first display of the onboarded fridge's device name, device ID, Samsung account ID, and/or device state in the form of metadata, a Favorites list, History list, and/or device GUI on the SmartThings app. *See e.g.*,

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23 Series User Guide at pg. 111. showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

SAMSUNG Offers Mobile TV & Audio Appliances Computing & Displays Accessories AI SmartThings Search

Samsung Family Hub and SmartThings compatibility

The SmartThings app conveniently controls and manages your home's smart appliances, including your Samsung Family Hub refrigerator. For instance, you can monitor the status of your Family Hub, view its interior, and check the latest software updates. Our guide covers the necessary steps for setting up the SmartThings app on your Android or iOS device and connecting your Family Hub!



SmartThings connection requirements

Before connecting your Android or iOS device with your Family Hub refrigerator, please review the following requirements:

- **Android**: Compatible with Android phones and tablets running OS 9 and later with 2GB RAM or more of available space.
- **iOS**: Compatible with iPhone 6s and later models and iPad mini 4 and later models running iOS 15.0 or later. 2GB RAM or more of available space is required.

Recommended Articles



Use your Family Hub refrigerator with iOS devices

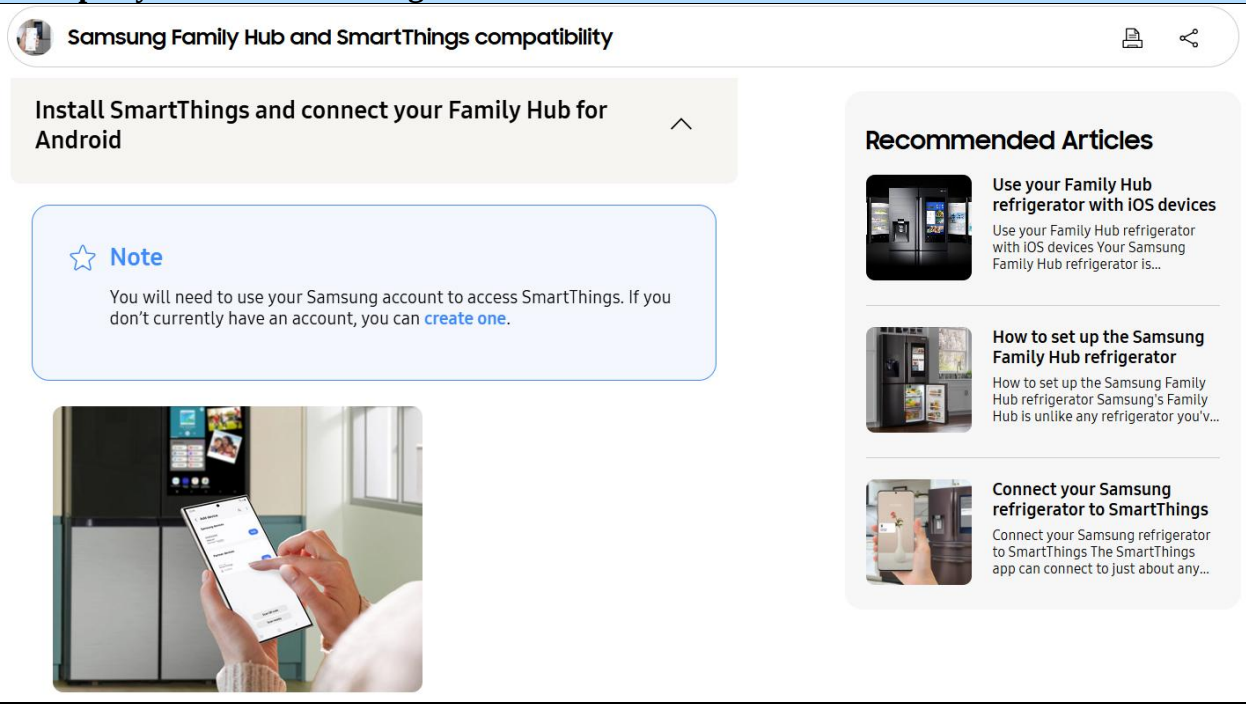
Use your Family Hub refrigerator with iOS devices Your Samsung Family Hub refrigerator is...



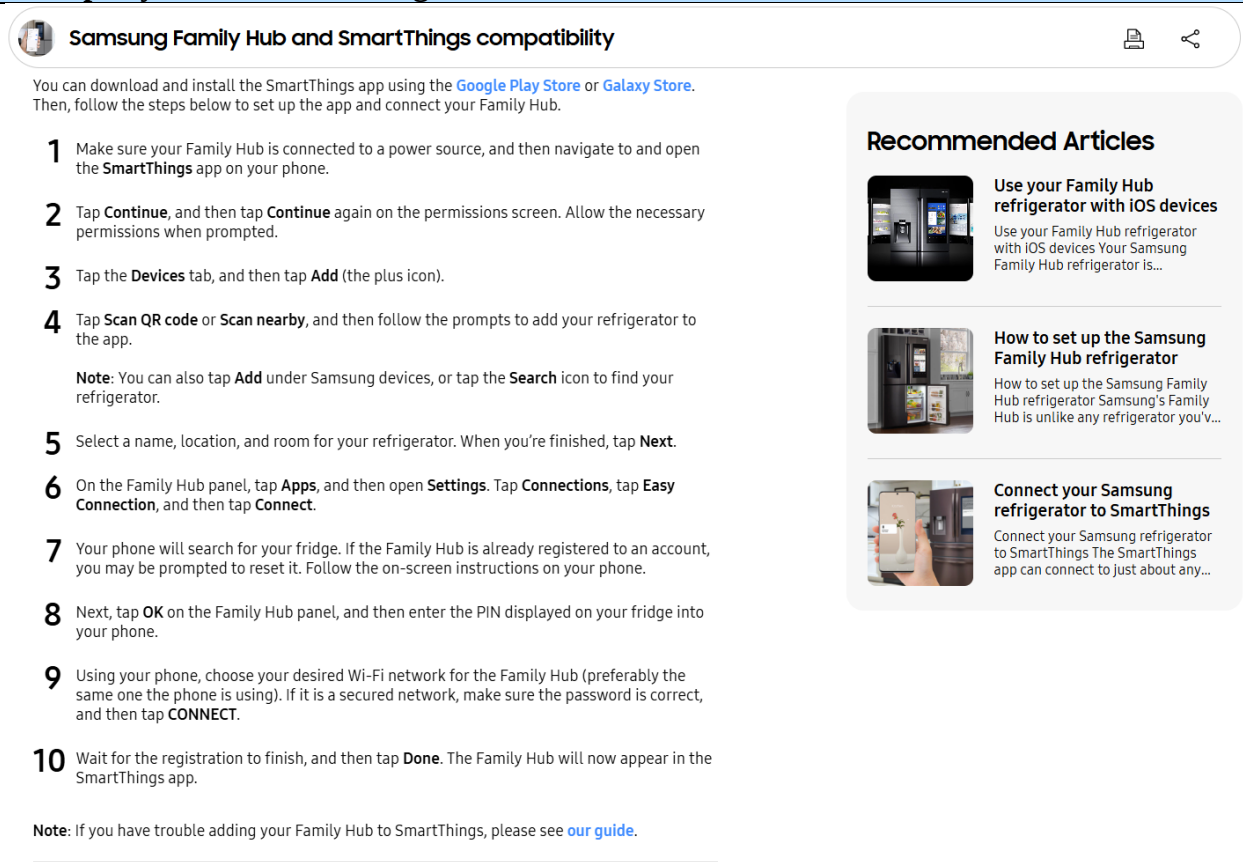
How to set up the Samsung Family Hub refrigerator

How to set up the Samsung Family Hub refrigerator Samsung's Family Hub is unlike any refrigerator you've...

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Samsung Family Hub and SmartThings compatibility

You can download and install the SmartThings app using the Google Play Store or Galaxy Store. Then, follow the steps below to set up the app and connect your Family Hub.

1. Make sure your Family Hub is connected to a power source, and then navigate to and open the **SmartThings** app on your phone.
2. Tap **Continue**, and then tap **Continue** again on the permissions screen. Allow the necessary permissions when prompted.
3. Tap the **Devices** tab, and then tap **Add** (the plus icon).
4. Tap **Scan QR code** or **Scan nearby**, and then follow the prompts to add your refrigerator to the app.

   Note: You can also tap **Add** under Samsung devices, or tap the **Search** icon to find your refrigerator.
5. Select a name, location, and room for your refrigerator. When you're finished, tap **Next**.
6. On the Family Hub panel, tap **Apps**, and then open **Settings**. Tap **Connections**, tap **Easy Connection**, and then tap **Connect**.
7. Your phone will search for your fridge. If the Family Hub is already registered to an account, you may be prompted to reset it. Follow the on-screen instructions on your phone.
8. Next, tap **OK** on the Family Hub panel, and then enter the PIN displayed on your fridge into your phone.
9. Using your phone, choose your desired Wi-Fi network for the Family Hub (preferably the same one the phone is using). If it is a secured network, make sure the password is correct, and then tap **CONNECT**.
10. Wait for the registration to finish, and then tap **Done**. The Family Hub will now appear in the SmartThings app.

Note: If you have trouble adding your Family Hub to SmartThings, please see our guide.

Recommended Articles

Use your Family Hub refrigerator with iOS devices

Use your Family Hub refrigerator with iOS devices Your Samsung Family Hub refrigerator is...

How to set up the Samsung Family Hub refrigerator

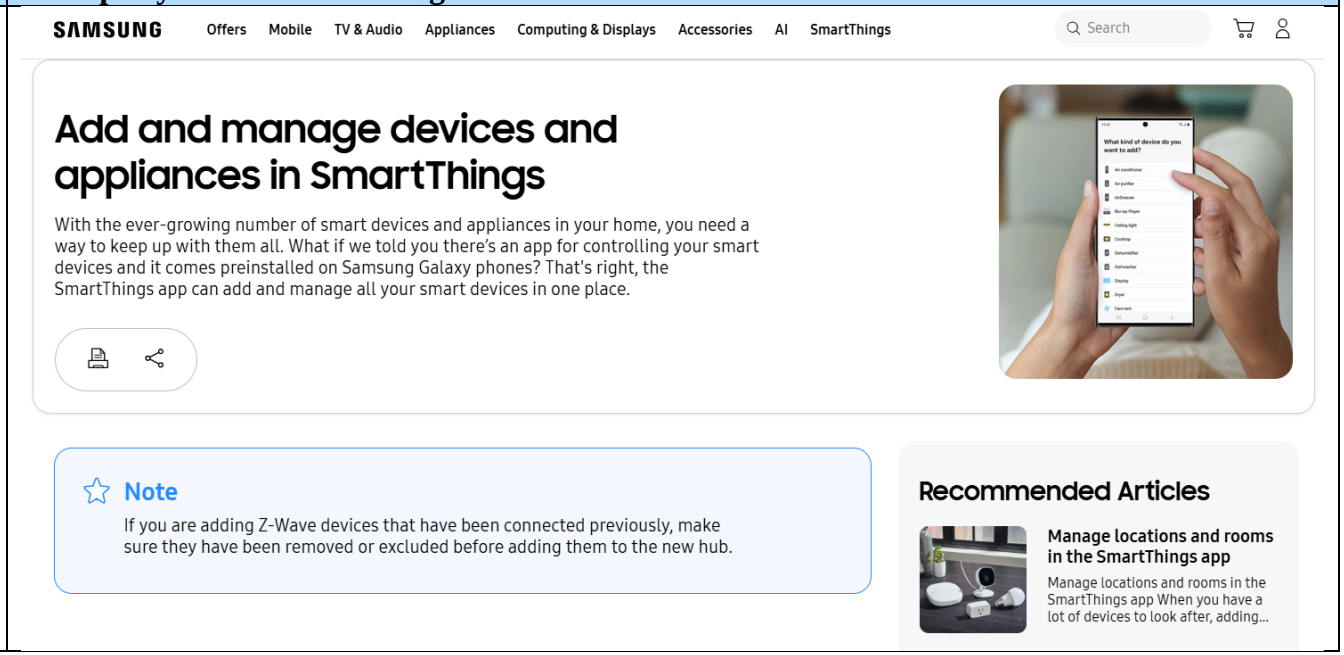
How to set up the Samsung Family Hub refrigerator Samsung's Family Hub is unlike any refrigerator you've...

Connect your Samsung refrigerator to SmartThings

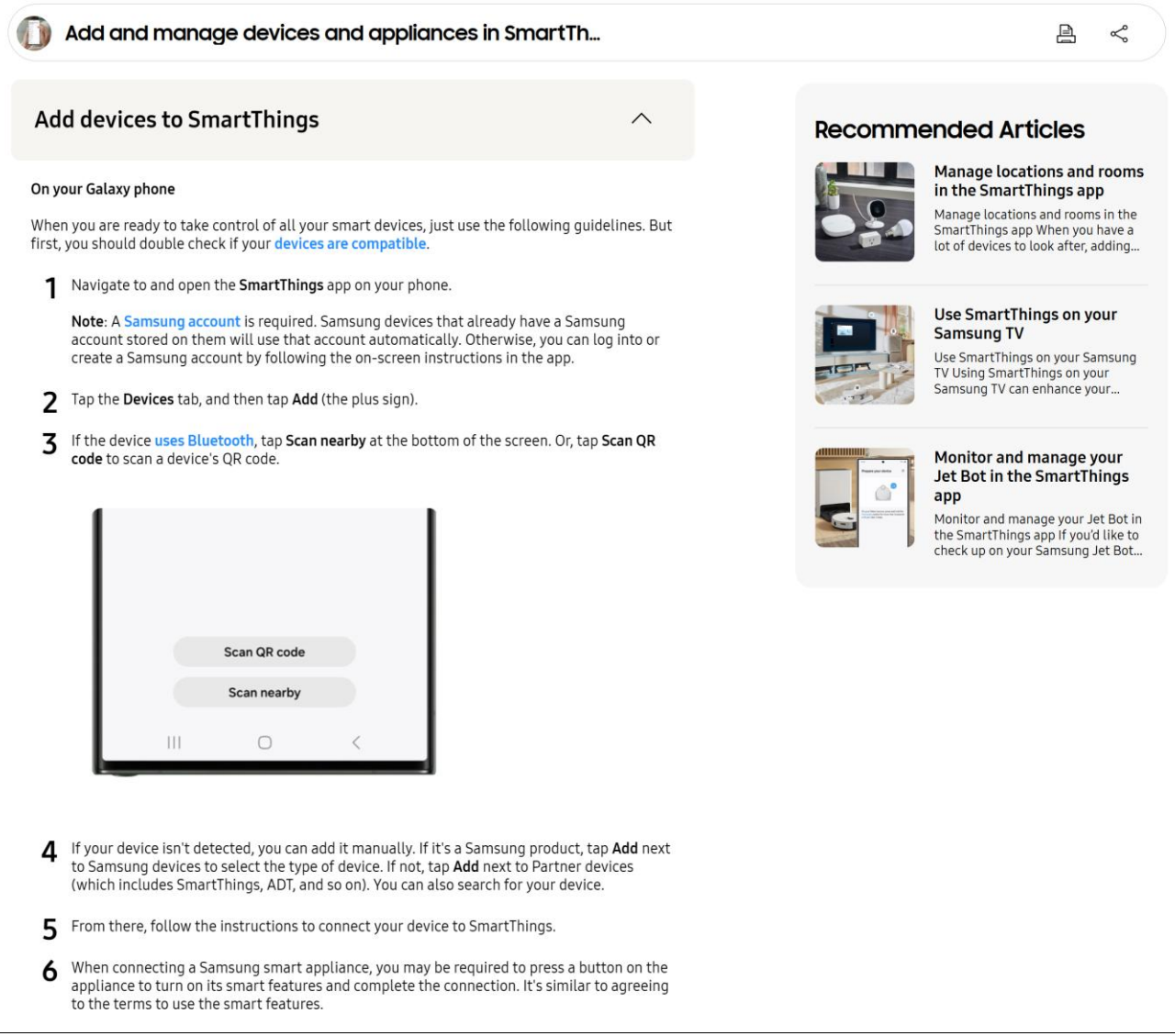
Connect your Samsung refrigerator to SmartThings The SmartThings app can connect to just about any...

Smartphone in the Accused Samsung '650 Products technical specification showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform; https://www.samsung.com/us/support/answer/ANS10001433/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Add and manage devices and appliances in SmartTh...

Add devices to SmartThings

On your Galaxy phone

When you are ready to take control of all your smart devices, just use the following guidelines. But first, you should double check if your devices are compatible.

1. Navigate to and open the **SmartThings** app on your phone.

   Note: A Samsung account is required. Samsung devices that already have a Samsung account stored on them will use that account automatically. Otherwise, you can log into or create a Samsung account by following the on-screen instructions in the app.

2. Tap the **Devices** tab, and then tap **Add** (the plus sign).

3. If the device uses Bluetooth, tap **Scan nearby** at the bottom of the screen. Or, tap **Scan QR code** to scan a device's QR code.

4. If your device isn't detected, you can add it manually. If it's a Samsung product, tap **Add** next to Samsung devices to select the type of device. If not, tap **Add** next to Partner devices (which includes SmartThings, ADT, and so on). You can also search for your device.

5. From there, follow the instructions to connect your device to SmartThings.

6. When connecting a Samsung smart appliance, you may be required to press a button on the appliance to turn on its smart features and complete the connection. It's similar to agreeing to the terms to use the smart features.

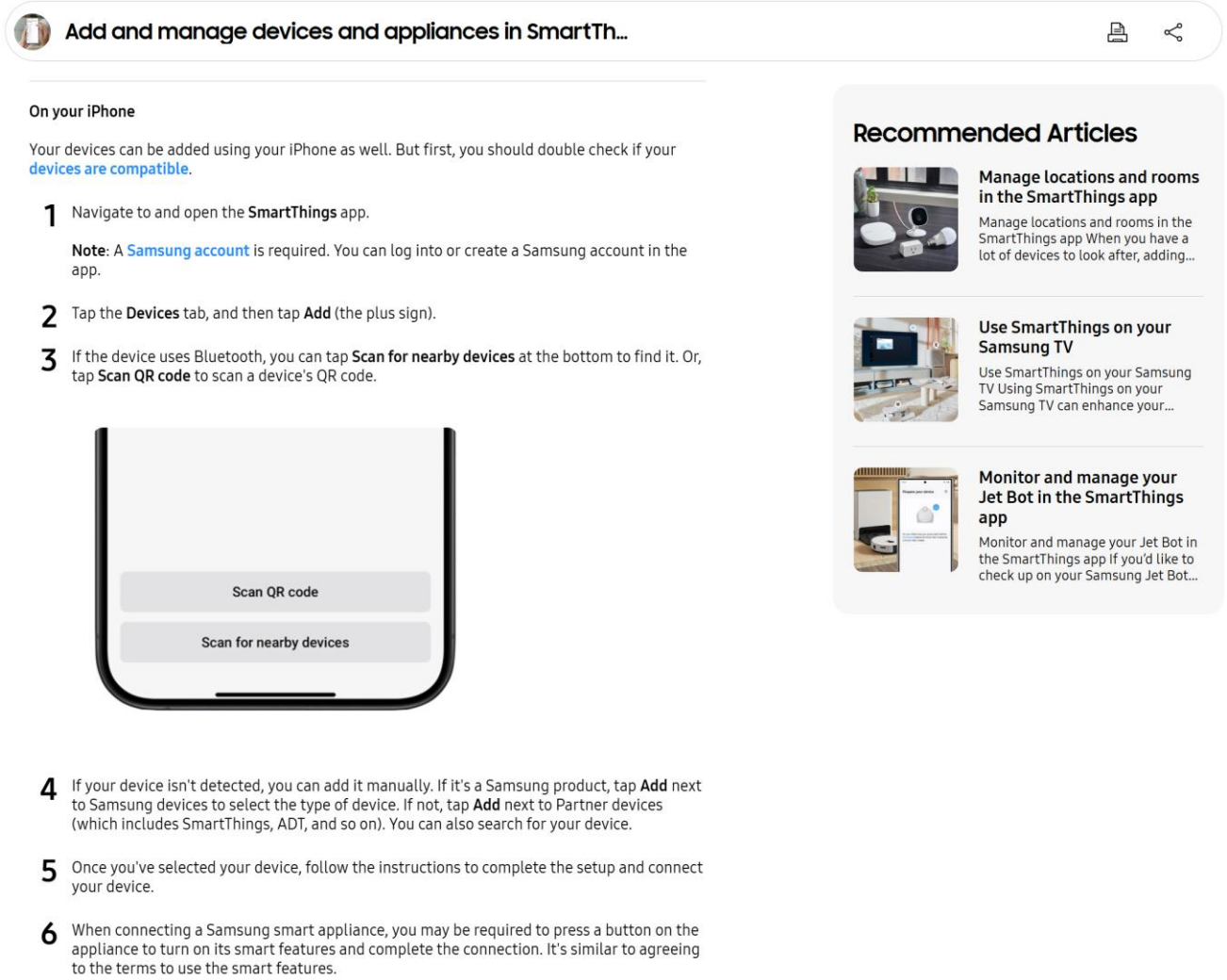
Recommended Articles

Manage locations and rooms in the SmartThings app
Manage locations and rooms in the SmartThings app When you have a lot of devices to look after, adding...

Use SmartThings on your Samsung TV
Use SmartThings on your Samsung TV Using SmartThings on your Samsung TV can enhance your...

Monitor and manage your Jet Bot in the SmartThings app
Monitor and manage your Jet Bot in the SmartThings app If you'd like to check up on your Samsung Jet Bot...

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement



Smartphone in the Accused Samsung '650 Products technical specification showing using the SmartThings app to onboard/add a device to the SmartThings cloud/platform; https://www.samsung.com/us/support/answer/ANS10002639/

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Add and manage devices and appliances in SmartTh...

Read less

Control devices in SmartThings

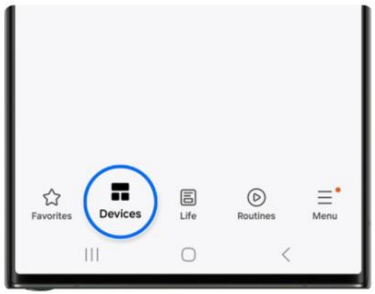
Note

The available controls may vary depending on the device.

So, you've added a whole bunch of devices - now what? You can easily monitor and control them right from the app. You can also use your phone as a TV remote through SmartThings.

On your Galaxy phone

1. Navigate to and open the **SmartThings** app. Tap the **Devices** tab, and then tap the location **drop-down menu** at the top.
2. Select your desired location with the devices you'd like to manage, and then tap the **drop-down menu** with your location's name. Tap **All devices**. Here you can view, monitor, and control all your registered devices for the location you selected.



Note: To select a different location, tap the **drop-down menu** at the top again.

3. Select your desired device and use the available settings to perform your desired actions.
4. You may be prompted to tap **Download** so you can download the device's controller.

Recommended Articles



Manage locations and rooms in the SmartThings app

Manage locations and rooms in the SmartThings app When you have a lot of devices to look after, adding...



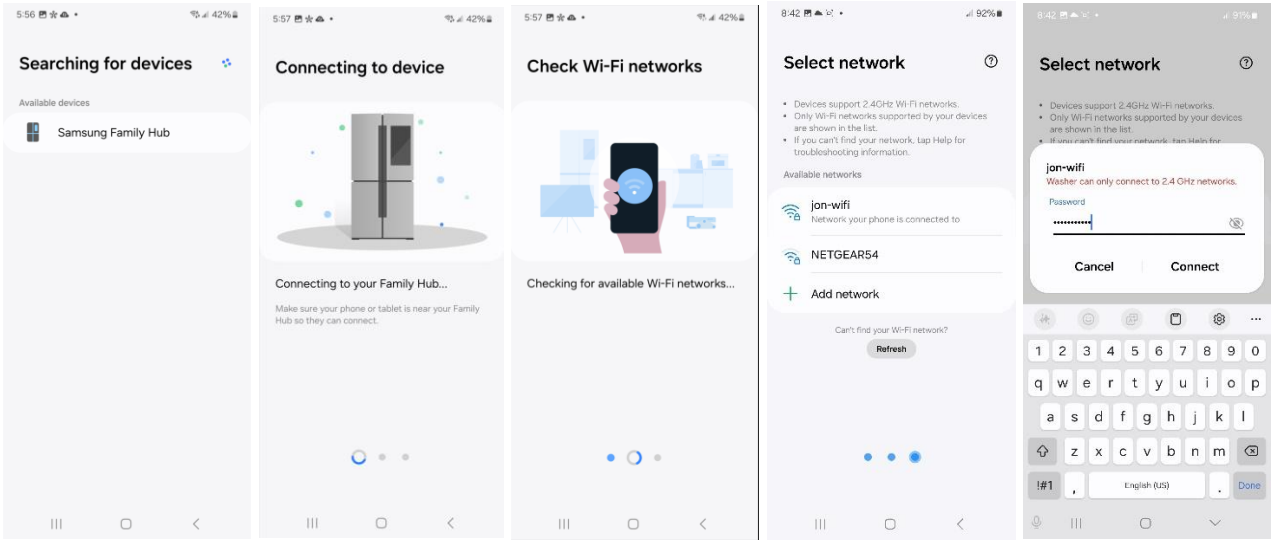
Use SmartThings on your Samsung TV

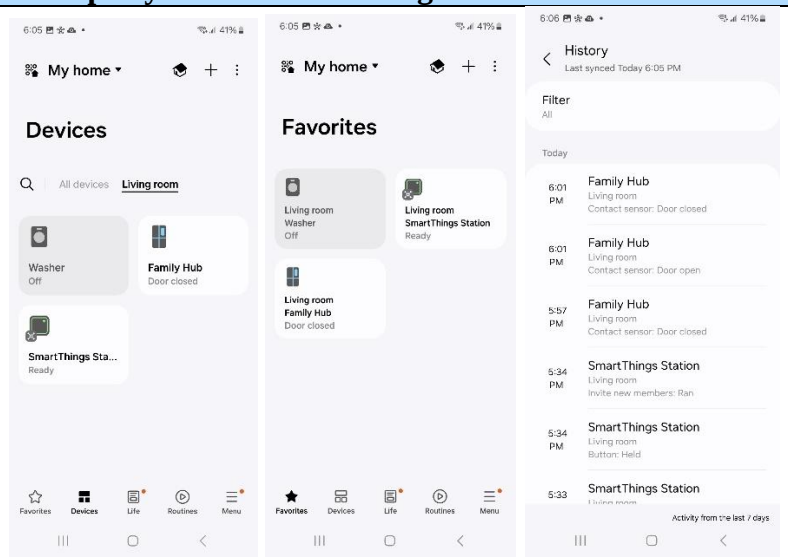
Use SmartThings on your Samsung TV Using SmartThings on your Samsung TV can enhance your...



Monitor and manage your Jet Bot in the SmartThings app

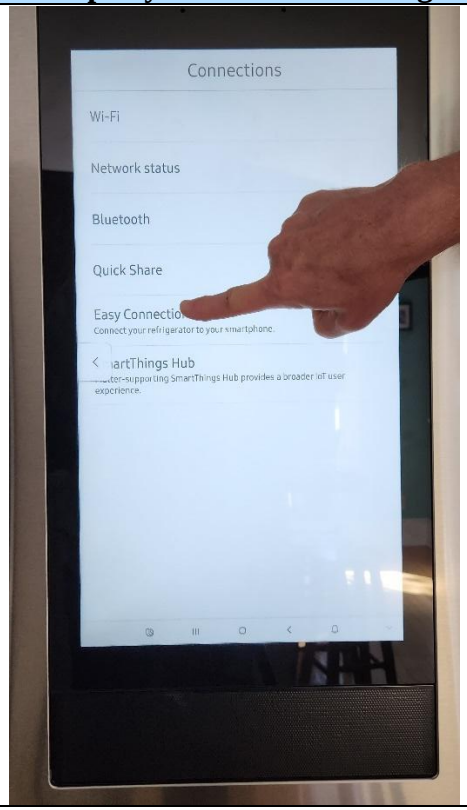
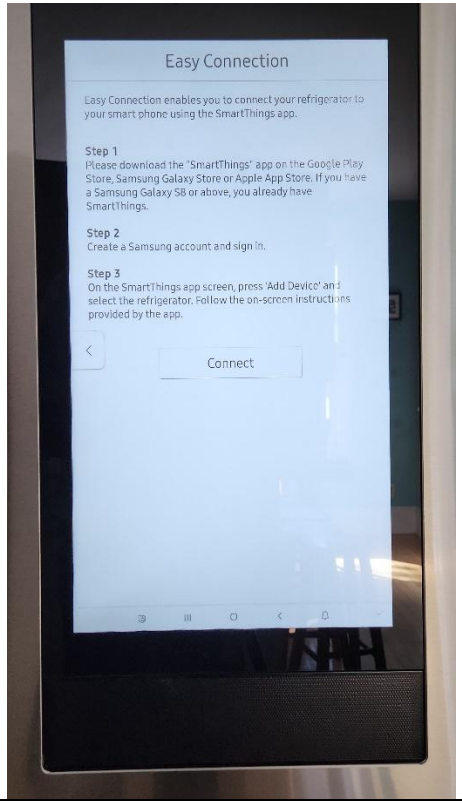
Monitor and manage your Jet Bot in the SmartThings app If you'd like to check up on your Samsung Jet Bot...

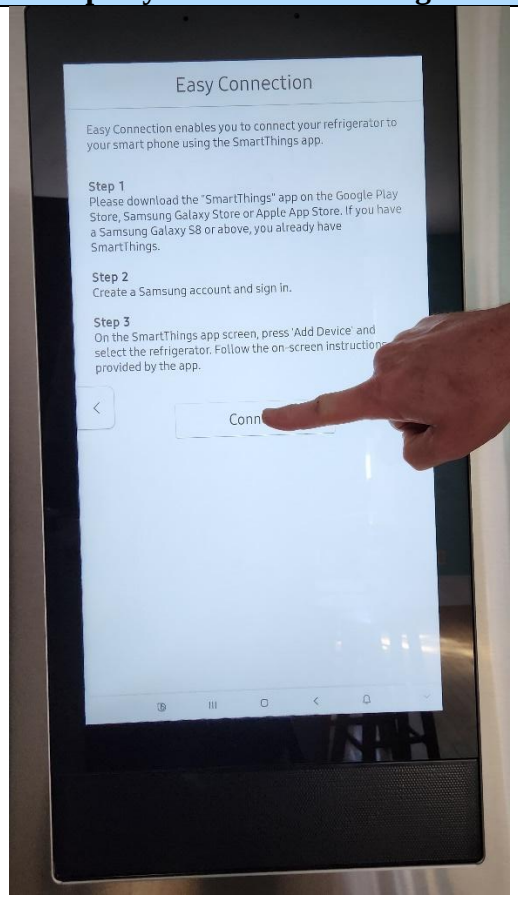
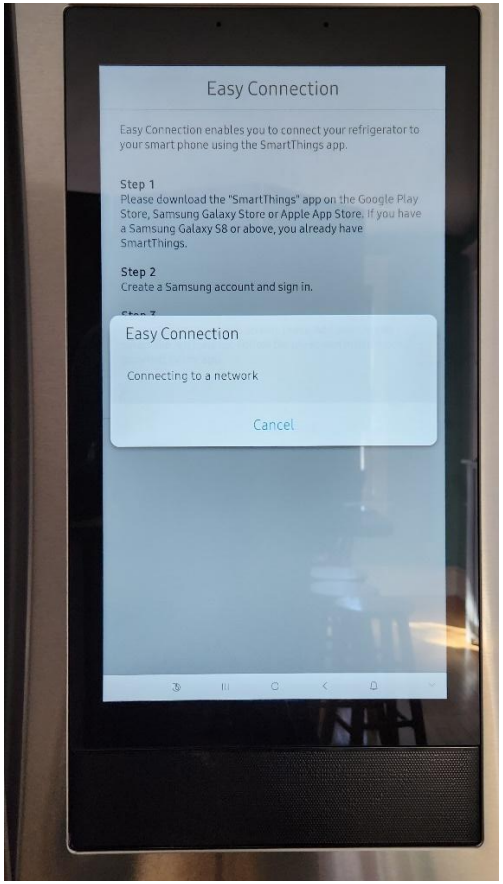
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	The phone using SmartThings app in the Accused Samsung '650 Products technical specification showing displaying controls of an onboarded device's state (*e.g.*, using device's controller add-on for turning "on"/"off") or display a device's status on a favorites list or GUI ("All devices"); https://www.samsung.com/us/support/answer/ANS10002639/ For example, testing of a Galaxy S23 using the SmartThings app. provides evidence of the onboarding process of a fridge on the SmartThings cloud/platform where the Galaxy S23 displays the credentials for Bluetooth/Wi-Fi and the SmartThings cloud, and names of networks during the onboarding process of a fridge.  Galaxy S23's display of the SmartThings app. onboarding/adding a fridge and showing credentials and Wi-Fi networks (*e.g.*, contents). In another example, testing of the Galaxy S23 using the SmartThings app. provide evidence of the Galaxy S23 displaying a Favorites list, History list, and/or GUI with device names and device states (*e.g.*, contents).

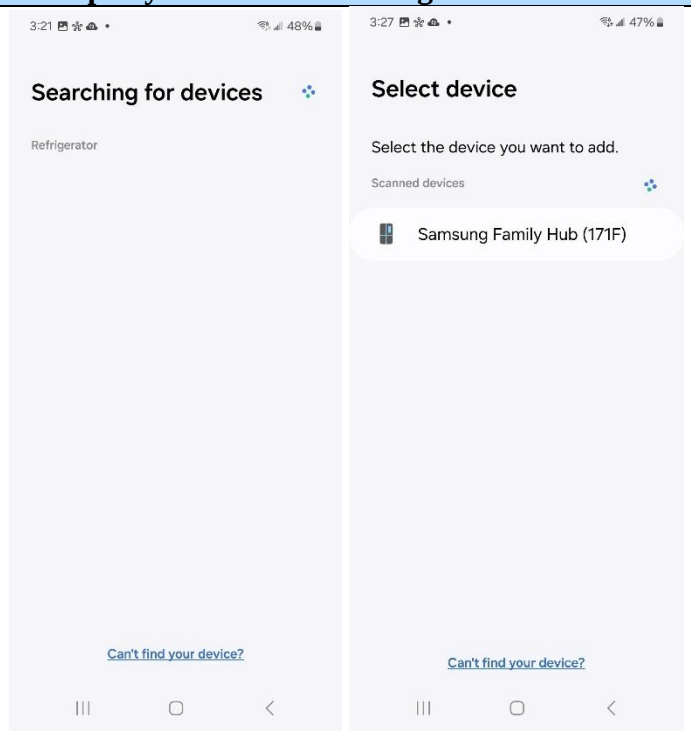
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Galaxy S23's display of the SmartThings app. showing the devices GUI, Favorites list, and History list including device names and device states (*e.g.*, contents). On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products includes displays for displaying contents. Specifically, additional Accused Samsung '650 Products contain displays for displaying information as contents. *See* https://www.smartthings.com/; *see also* https://www.samsung.com/us/home-appliances/smartthings/.
[4.d] a first controller controlling transmission/reception with the first subsidiary terminal	The phones in the Accused Samsung '650 Products include a first controller that controls transmission and reception with the subsidiary terminals. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
and the second subsidiary terminal,	(https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the first controller is the System on a Chip (SoC) within the main terminal (e.g., the Galaxy S25) operating in conjunction with the SmartThings Cloud/platform. This combined controller manages the communication pathways and proves its control over both transmission and reception throughout the user experience. Control over transmission is demonstrated during the "Easy Connection" Onboarding Process, where the first controller sends configuration commands from the main terminal that are received and confirmed by the subsidiary terminal. Simultaneously, control over reception is demonstrated by the extensive "History" logs, which show the first controller continuously receiving status updates from the subsidiary terminals. The final result of this control is a unified and perfectly synchronized system where the GUI on the subsidiary terminal mirrors the GUI on the main terminal. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first controller is the System on a Chip (SoC) within the main terminal (e.g., the phones) and/or within the SmartThings cloud/platform as an extension correspond to the first controller. This combined controller manages the communication pathways and proves its control over both transmission and reception (via LAN, Wi-Fi, and/or Bluetooth) throughout the user experience. Control over transmission is demonstrated during the "Easy Connection" Onboarding Process, where the first controller sends configuration commands from the main terminal that are received and confirmed by the subsidiary terminal. Simultaneously, control over reception is demonstrated by reception of the configuration commands and the extensive "History" logs, Favorites list, or device GUI, which show the first controller continuously receiving and sending status updates from the subsidiary terminals. The final result of this control is a unified and perfectly synchronized system where the GUI on the subsidiary terminal mirrors the GUI on the main terminal.

APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

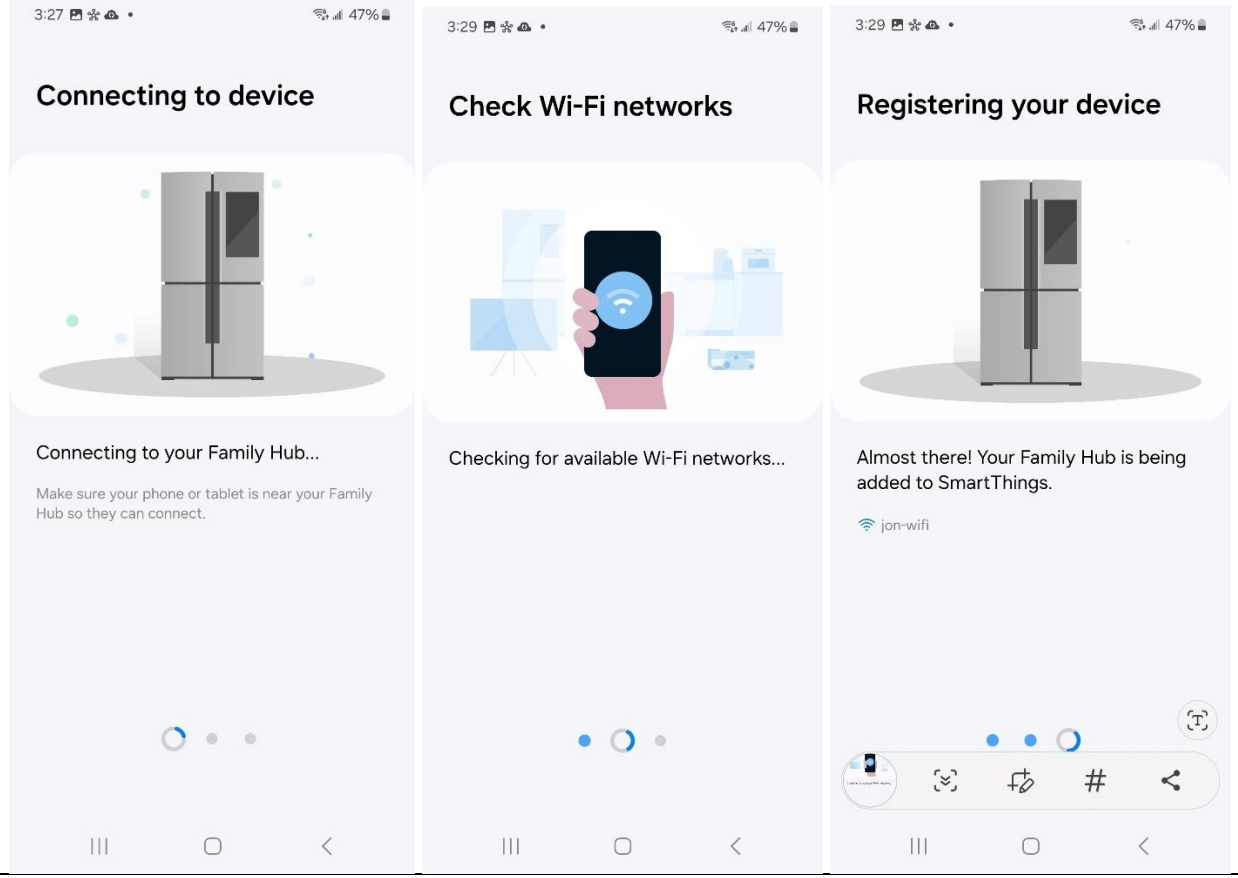
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	  A sequence showing a user initiating the "Easy Connection" process directly on the Family Hub refrigerator's touchscreen. The user selects the option from the Connections menu and presses "Connect," prompting the device to begin connecting to a network.

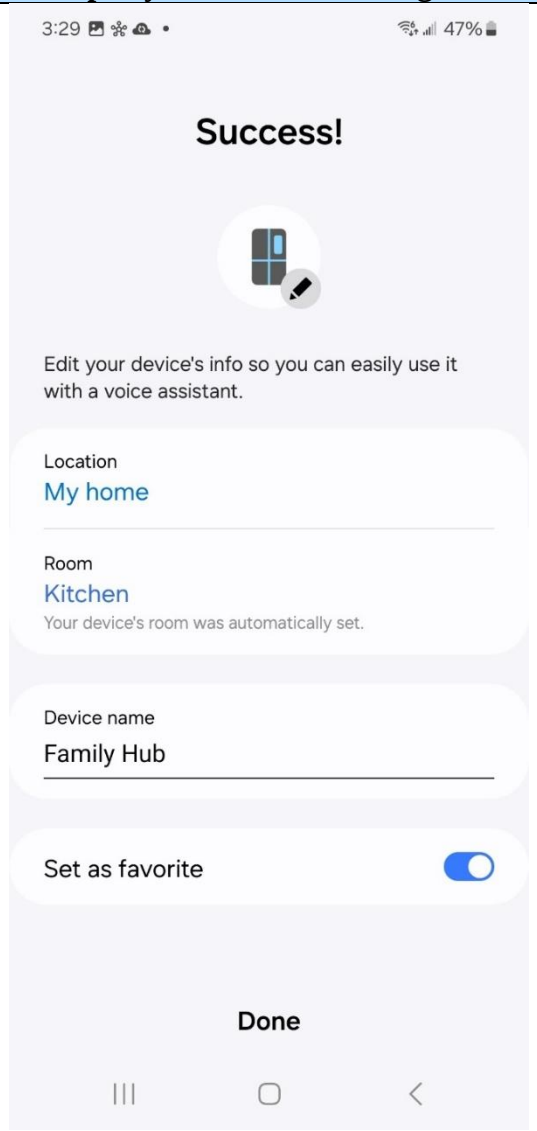
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 Screenshots from the SmartThings smartphone app showing the device discovery phase. The app is depicted first searching for a nearby refrigerator and then successfully locating and displaying the "Samsung Family Hub" for the user to select.

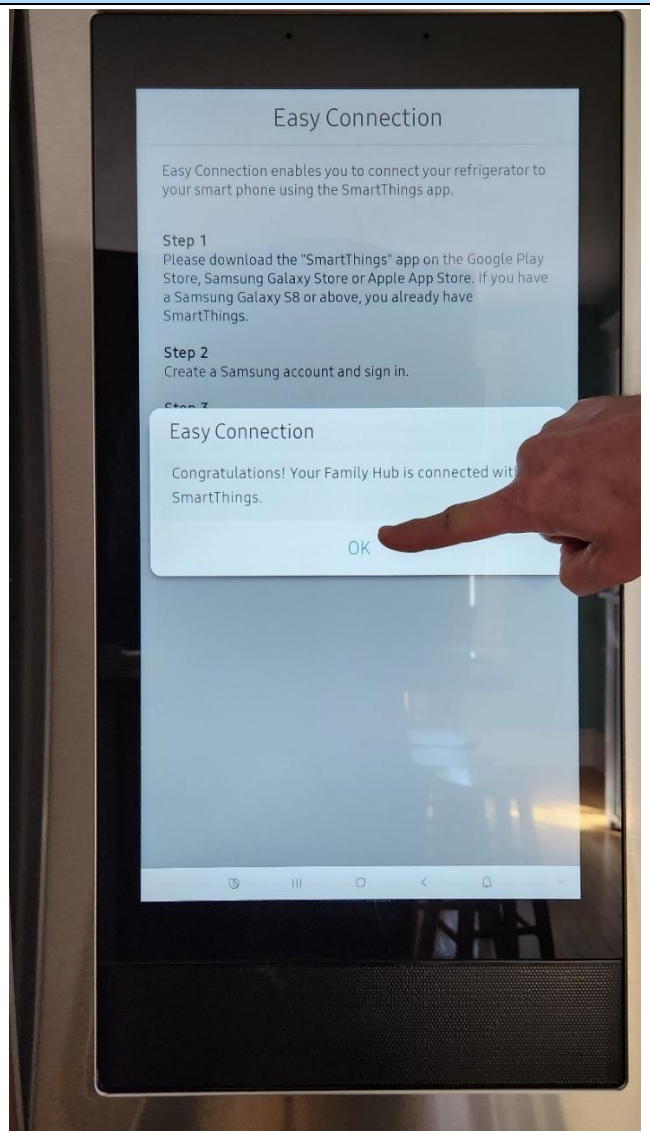
APPENDIX 2: OCTOBER 20, 2025 INFRINGEMENT CONTENTIONS APPLYING CLAIMS 1 AND 4 OF U.S. PATENT NO. 11,277,650 TO ACCUSED SAMSUNG '650 PRODUCTS

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

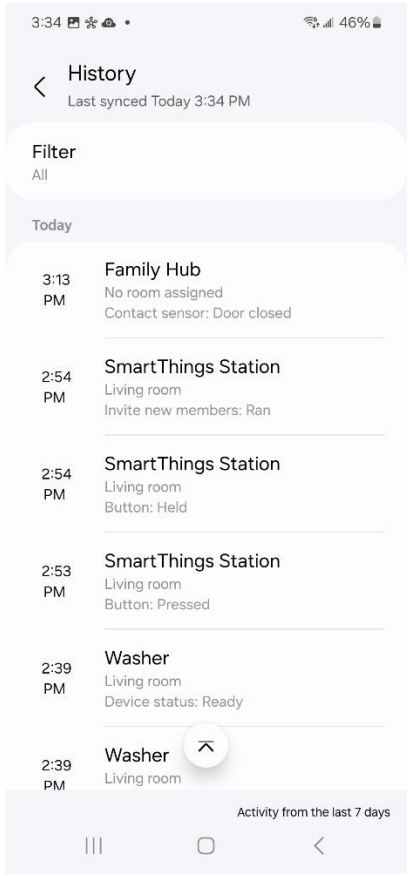


U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

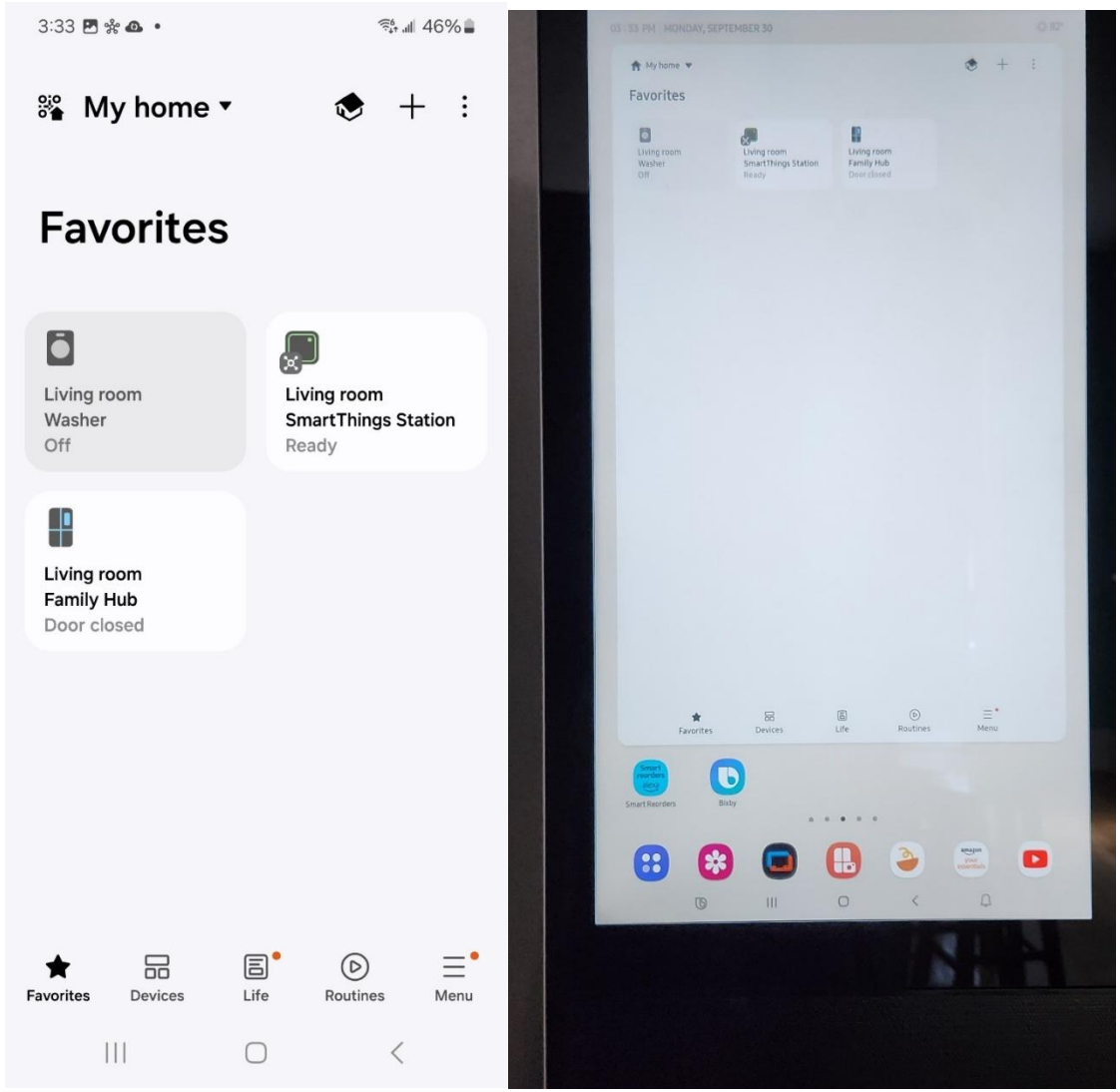




Screenshots from the smartphone app showing the automated finalization of the "Onboarding Process." The sequence depicts the app connecting to the Family Hub, checking for Wi-Fi, and

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	registering the device to the SmartThings platform, culminating in a "Success!" confirmation screen. This evidence directly corresponds to the claim language describing the first controller (the phone's SoC and the SmartThings Cloud) performing the "automated Wi-Fi network configuration and device registration" that is required to fully integrate the subsidiary terminal (the refrigerator).  The logs provide a detailed, time-stamped record of events from multiple subsidiary terminals, including the Family Hub ("Door closed"), and the SmartThings Station ("Button: Held"). This shows the first controller storing a "plurality of content information" (time, source, status) for each piece of content generated by the system.

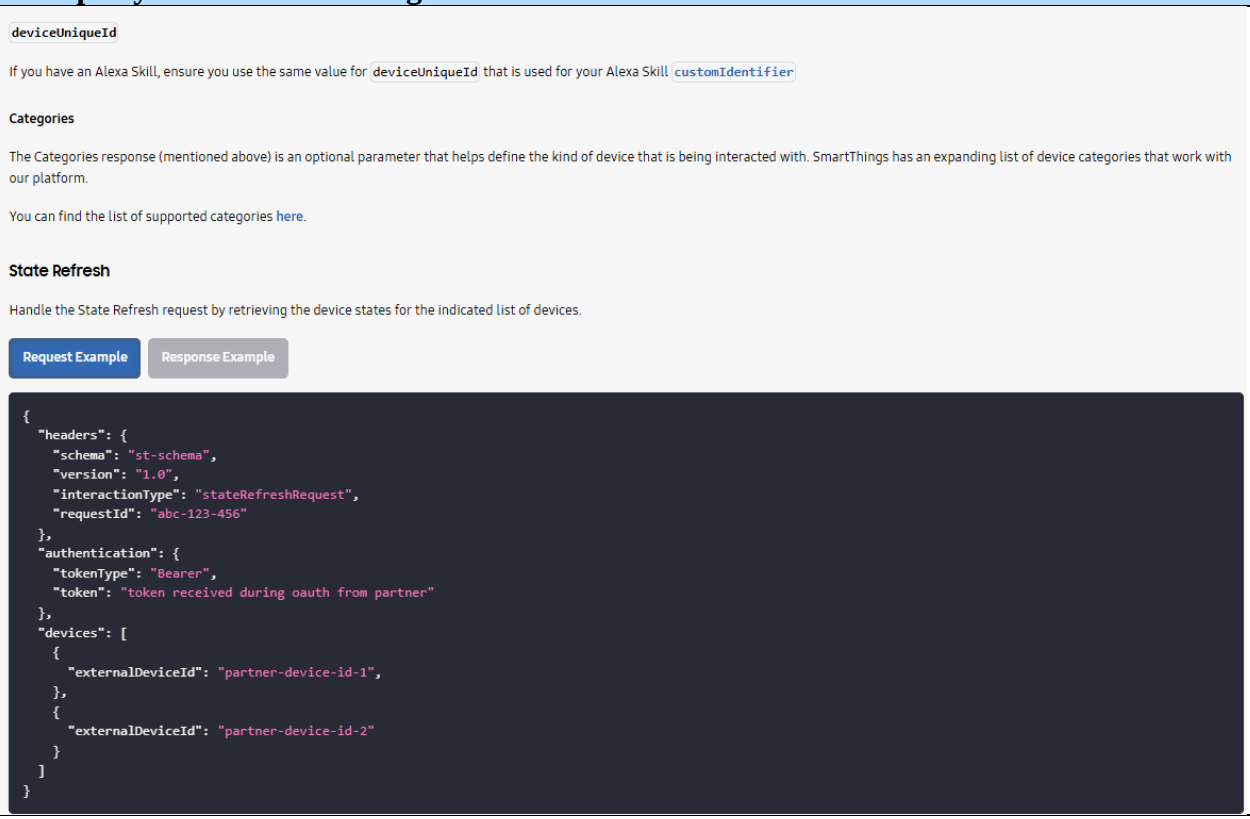
U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

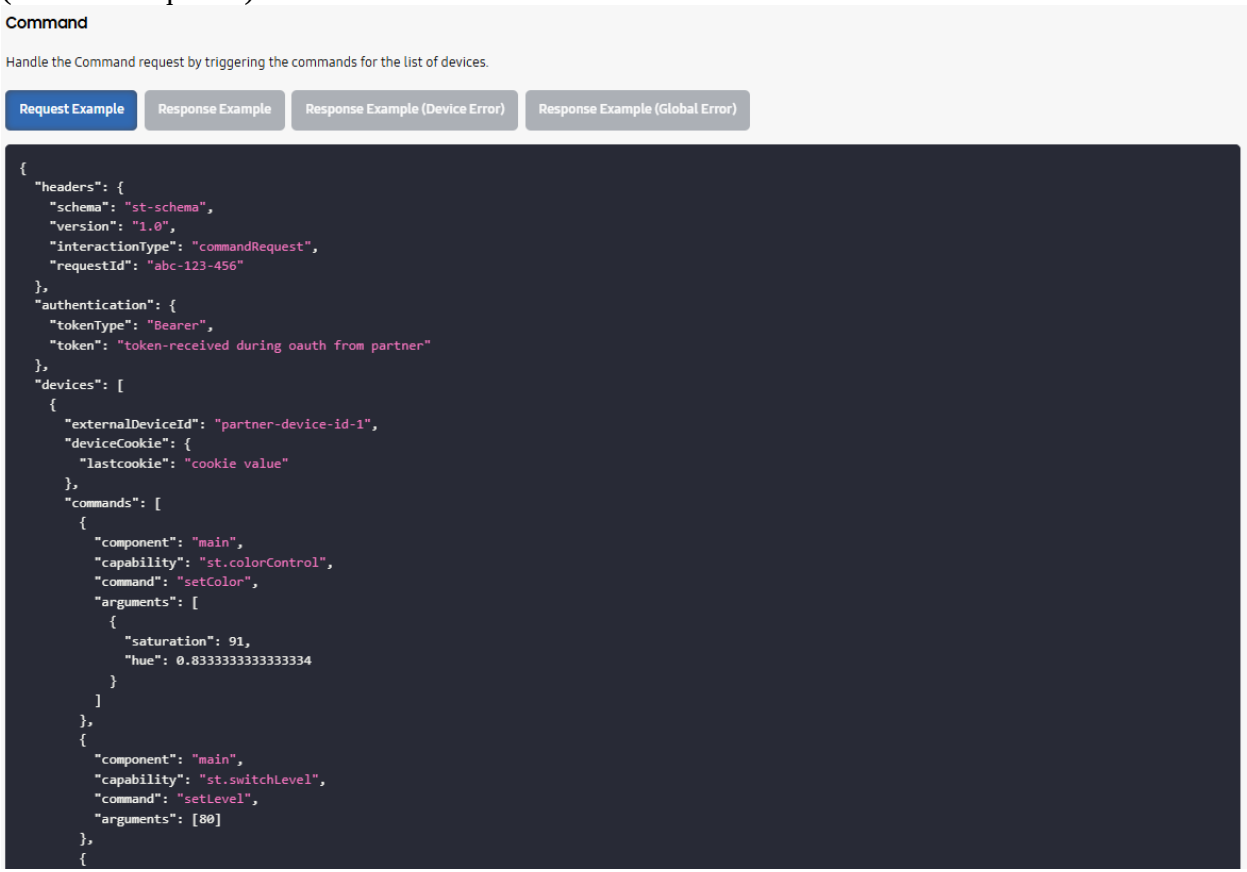


A side-by-side comparison of the "Favorites" screen on the Family Hub's display (right) and the smartphone application (left). This demonstrating the full and bidirectional integration that results

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	from the Onboarding Process. This identical state is the direct result of the first controller successfully communicating user preferences between the devices, thereby demonstrating its control over the unified ecosystem as described. Doctrine of equivalents To the extent Samsung argues that the SmartThings cloud/platform does not literally meet the definition of the "first controller," the SmartThings cloud/platform is at least an equivalent of the main terminal's onboard processor (SoC). This is because the identified structures perform substantially the same function, in substantially the same way, to achieve substantially the same result. The function of both is to manage the smart home ecosystem by processing user inputs and controlling multiple subsidiary terminals. The result is identical: the subsidiary terminals are controlled, and their status is managed across the system. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and communication hardware that operate in a similar manner to control transmission and reception with multiple subsidiary terminals. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.e] wherein the first controller is configured to: store first device specific identification (ID) information of the first subsidiary terminal and second device specific ID information of the second subsidiary terminal,	The phones in the Accused Samsung '650 Products function wherein the first controller is configured to: store first device specific identification (ID) information of the first subsidiary terminal and second device specific ID information of the second subsidiary terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/,https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/).

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	As a non-limiting example, the first controller—comprising the smartphone's SoC and the SmartThings cloud/platform—is configured to store a plurality of device specific ID information for both the first subsidiary terminal (e.g., the first Family Hub Refrigerator) and the second subsidiary terminal (*e.g.*, the second Family Hub Refrigerator). This device specific identification (ID) information includes the fundamental "UniqueDeviceId," identifiers from the "device_info.json" and "onboarding_config.json" files, and/or other technical identifiers such as "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," "publicKey," and/or "serialNumber." The persistent listing of both the first and second subsidiary terminals in the SmartThings GUI confirms that the first controller has stored their respective unique IDs, allowing it to uniquely identify and manage each device. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first controller—comprising the SoC in the phone and/or the SmartThings cloud/platform—is configured to store a plurality of device specific ID information for both the first subsidiary terminal (e.g., the first fridge) and the second subsidiary terminal (*e.g.*, the second fridge). This device specific identification (ID) information includes the "UniqueDeviceId," "device_info.json" and "onboarding_config.json" files, and/or other identifiers such as "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," "publicKey," and/or "serialNumber." The persistent listing of both the first and second subsidiary terminals in the SmartThings GUI confirms that the first controller has stored their respective device specific ID information, allowing it to uniquely identify and manage each device.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#deviceuniqueid ("deviceUniqueId")  https://developer.smartthings.com/docs/devices/direct-connected/device-app (device_info.json & onboarding_config.json)

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

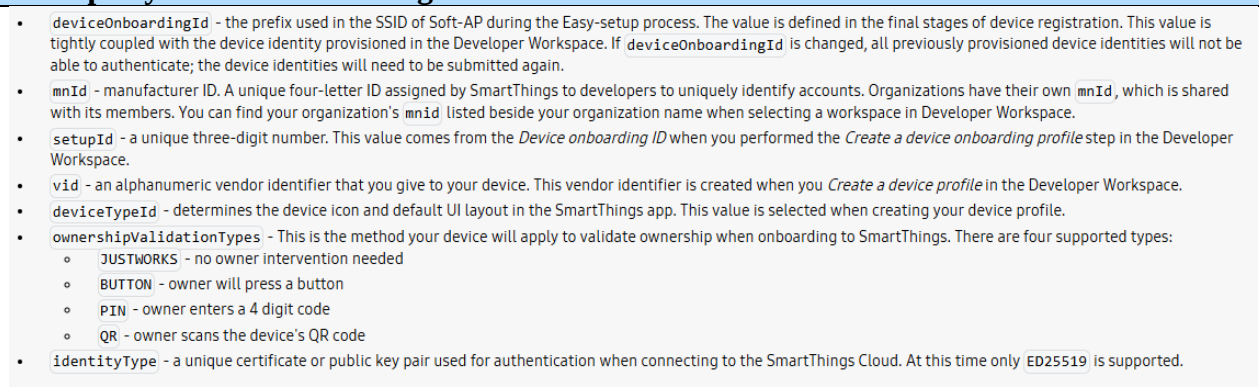
```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

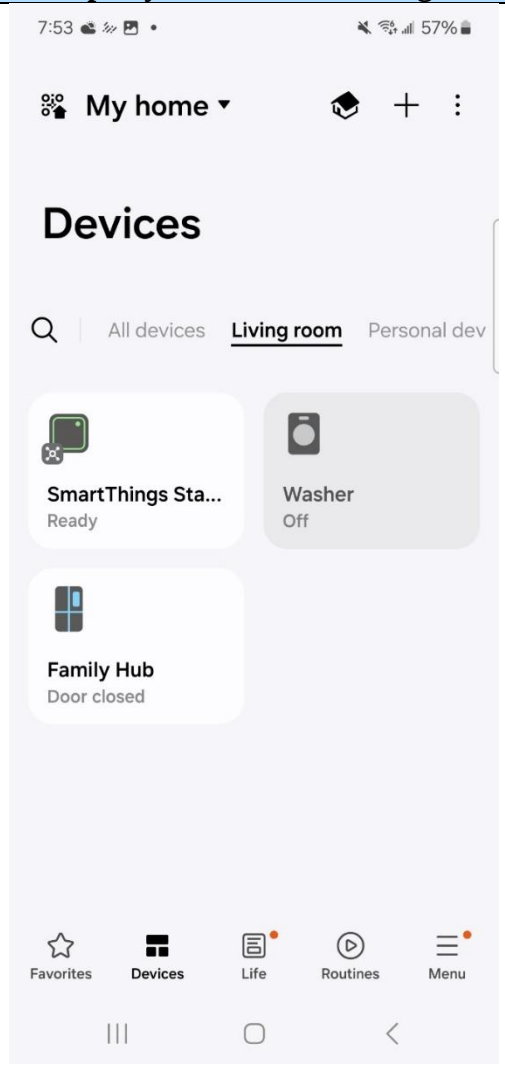
You can see an example `onboarding_config.json` file below:

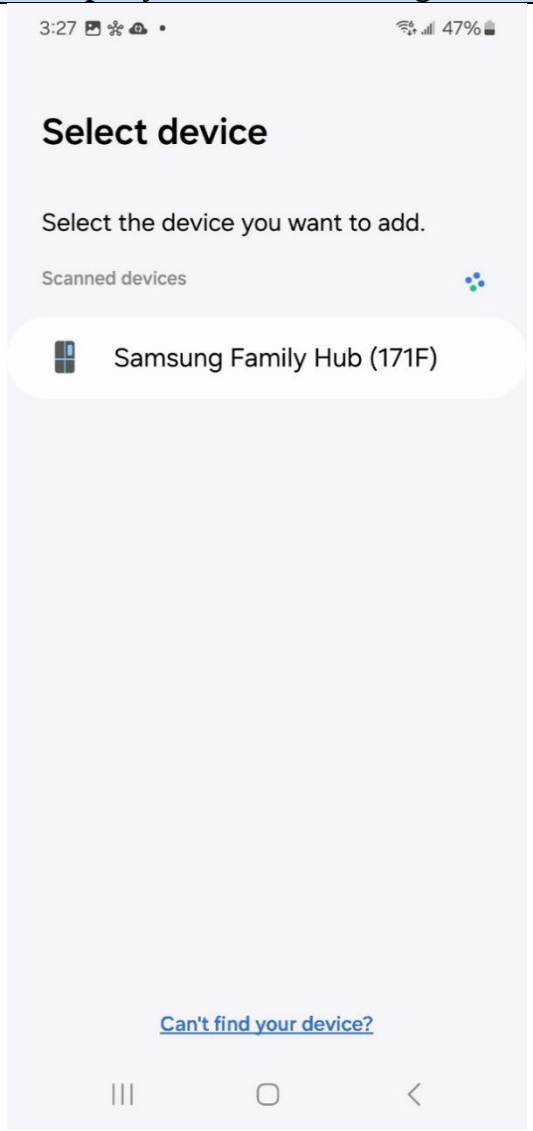
```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

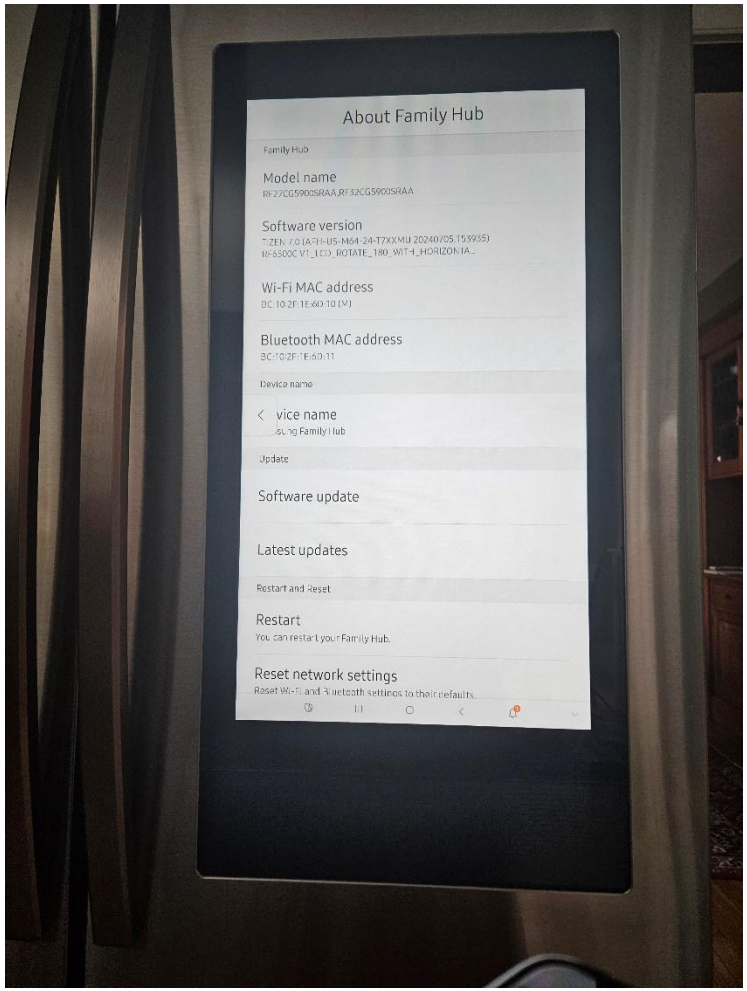
Here's a breakdown of the data contained in `onboarding_config.json`:

https://developer.smartthings.com/docs/devices/direct-connected/device-app

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	 • `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app A collection of excerpts from the Samsung SmartThings developer documentation that outlines the technical framework for device identification and control. The documents define a plurality of device-specific IDs (such as "mnId", "vid", and "deviceOnboardingId"), show how these identifiers are structured within device configuration files ("onboarding_config.json" and "device_info.json"), and provide API examples of how a stored "externalDeviceId" is used to send commands and request status updates. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: a collection of excerpts from the Samsung SmartThings developer documentation that outlines the technical framework for device identification and control. The documents define a plurality of device specific ID information (*e.g.*, such as "mnId", "vid", and "deviceOnboardingId"), show how these identifiers are structured within device configuration files ("onboarding_config.json" and "device_info.json"), and provide API examples of how a stored "externalDeviceId" is used to send commands and request status updates.

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	 A screenshot from the main terminal's GUI, which confirms that the first controller has stored the device specific ID information for the first subsidiary terminal ("Family Hub" or the first fridge). Upon information and belief, the second subsidiary terminal has the same SmartThings application and user interface as the first subsidiary terminal.

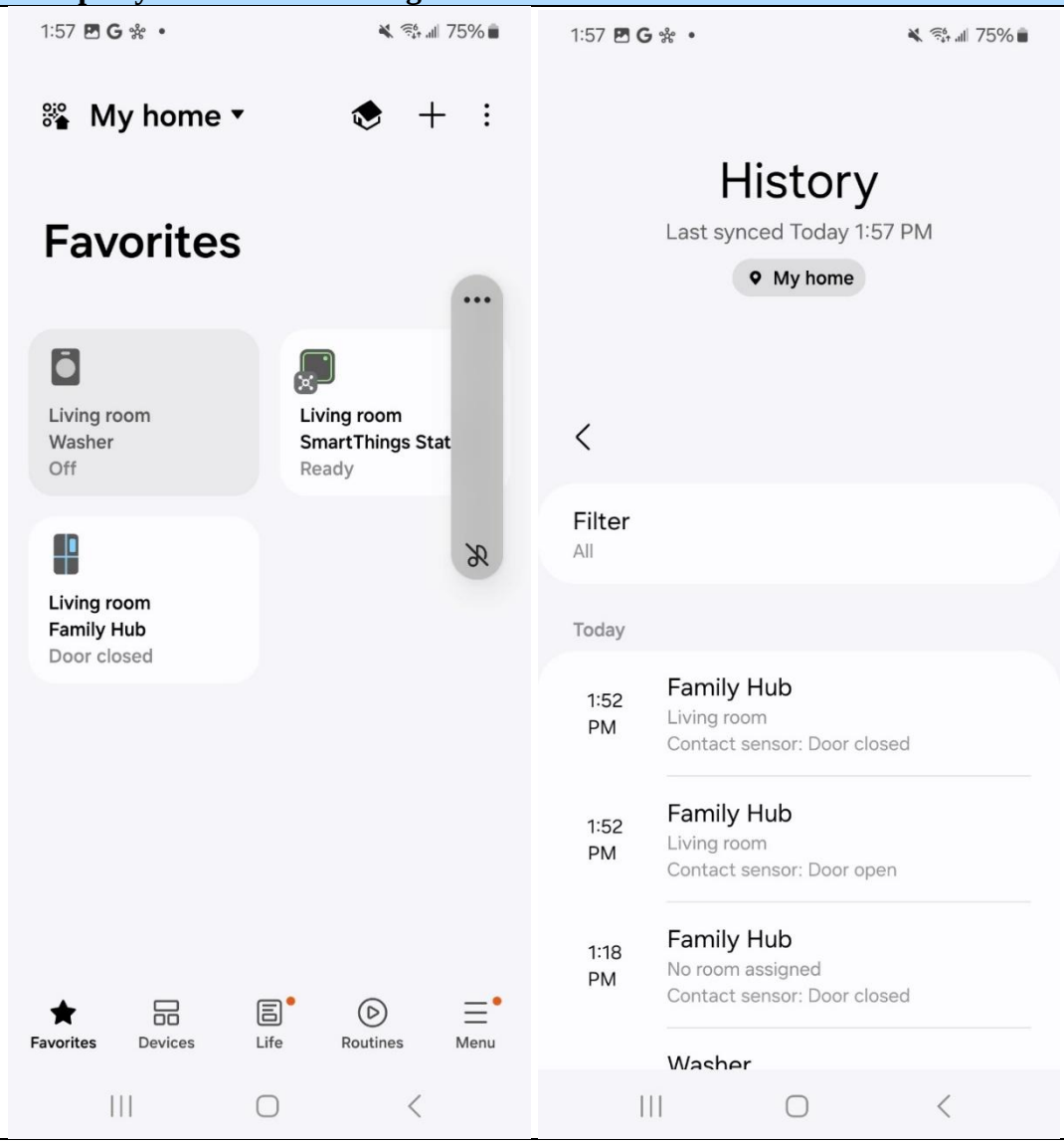
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	 A screenshot from the main terminal showing the first controller receiving the device specific ID information, including the unique identifier "(171F)", from the first subsidiary terminal during the

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	connection process. Upon information and belief, the second subsidiary terminal connects to the main terminal in the same manner, transmitting its own unique device specific ID information to the first controller.  A photo of the first subsidiary terminal's "About" screen, showing a plurality of its own stored device specific ID information, including its unique Model Name and hardware MAC addresses.

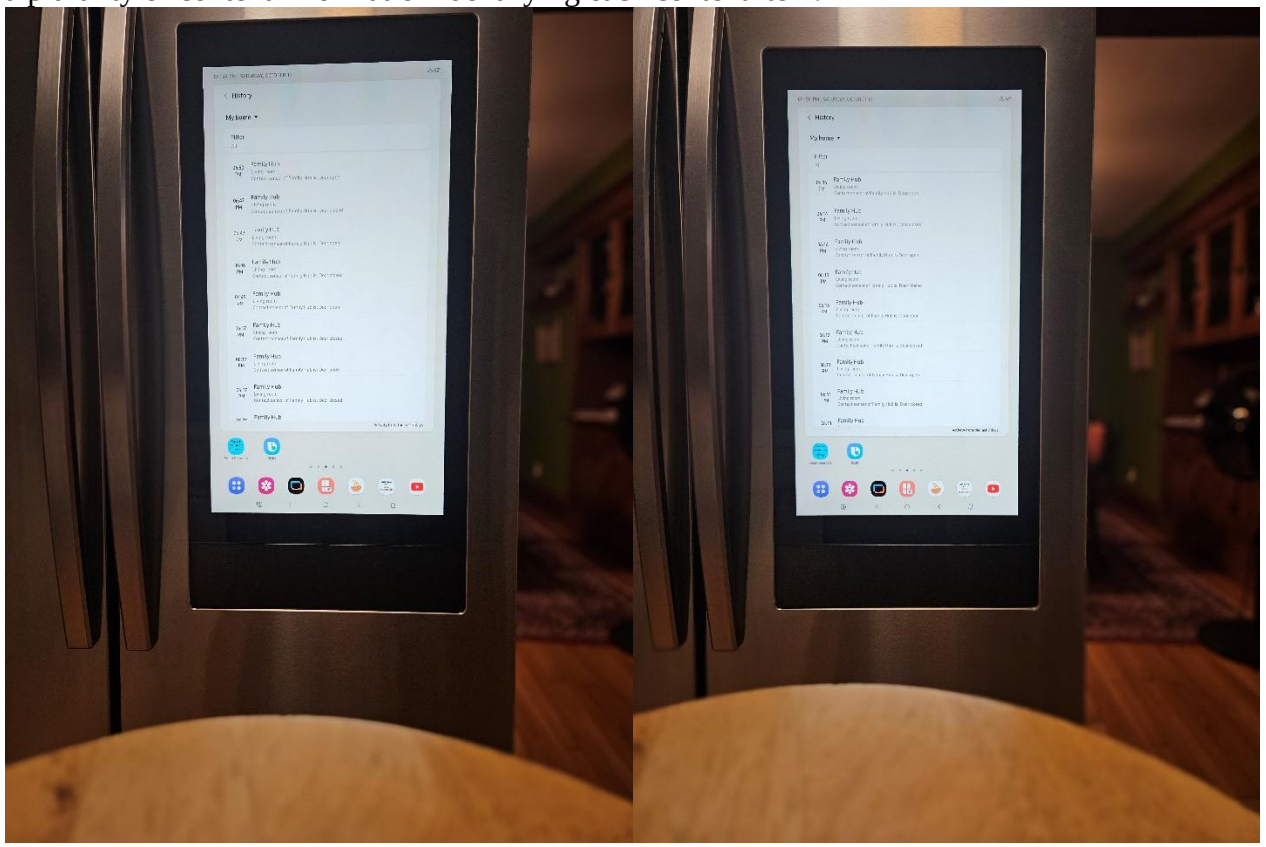
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	Upon information and belief, the second subsidiary terminal includes a similar "About" screen that displays its own unique device specific ID information. Doctrine of equivalents To the extent Samsung argues that the use of the SmartThings cloud/platform for data storage does not literally meet the definition of the main terminal's "storage," the SmartThings cloud is at least an equivalent of the main terminal's local, onboard storage. The function of both is to persistently store unique device identifiers. The result is identical: the controller can identify and manage multiple distinct subsidiary terminals. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and memory that operate in a similar manner to store unique device identifiers for multiple subsidiary terminals. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.f] store first content information for identifying first content among the contents and second content information for identifying second content among the contents, and	The phones in the Accused Samsung '650 Products include a first controller that is configured to store first content information for identifying first content among the contents and second content information for identifying second content among the contents. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/; https://www.samsung.com/us/smartthings/). As a non-limiting example, the Family Hub refrigerator and its integrated SmartThings interface store first content information for identifying a first content item—such as the Family Hub refrigerator itself—and second content information for identifying a second content item—such as

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	another Family Hub refrigerator. Screenshots below show these devices listed by name, room, and operational status on the Family Hub interface. These identifying attributes are examples of stored content information that uniquely identify each of the contents. To be clear, in view of Samsung's letter dated September 19, 2025, Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first controller stores first content information (*e.g.*, device name and/or device states for the first fridge) for identifying a first content item—such as the first fridge itself—and second content information (*e.g.*, device name and/or device states for the second fridge) for identifying a second content item—such as second fridge. Screenshots below show these devices listed by name (device name), room, and operational status (*e.g.*, first or second content) on either the first fridge or the second fridge. These identifying attributes are examples of stored content information that uniquely identify each of the contents in the phones and/or the SmartThings cloud/platform.

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	Screenshots showing the SmartThings interface storing and displaying identifying content information for multiple devices, including device names ("Washer," "SmartThings Station," "Family Hub"), room assignments, and real-time operational statuses (e.g., "Door closed," "Off," "Ready"). Upon information and belief, if a second subsidiary terminal, such as another Family Hub refrigerator, were added to the system, it would also be displayed in this interface. The event history log further confirms that the system records and stores time-stamped state changes for the Family Hub's door sensor, such as "Door open" and "Door closed," demonstrating the storage of a plurality of content information identifying each content item. Maxell provides notice that the infringement theory for this claim element includes: screenshots showing the first controller storing and displaying in the SmartThings app. identifying content information for multiple devices, including device names ("Washer," "SmartThings Station," "Family Hub"), room assignments, and real-time operational statuses/device states (e.g., "Door closed," "Off," "Ready")—first or second content. Upon information and belief, if a second subsidiary terminal, such as the second fridge, were added to the system, it would also be displayed in this interface. The event history log (*i.e.*, History list), Favorites list, device GUI further confirms that the system records and stores device names and time-stamped device state changes for the first or second fridge's door sensor, such as "Door open" and "Door closed," demonstrating the storage of

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	a plurality of content information identifying each content item.  Screenshots showing the Favorites and Devices screens on the Family Hub refrigerator, displaying stored content information such as device names, locations, and real-time statuses for connected devices. Upon information and belief, if a second refrigerator were added to the system, it would also be listed on these screens in the same manner. Maxell provides notice that the infringement theory for this claim element includes: screenshots showing the Favorites and Devices screens on the first and second fridge, displaying stored content information such as device names, locations, and real-time statuses/device states for connected

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	devices. Upon information and belief, if a second refrigerator were added to the system, it would also be listed on these screens in the same manner. Doctrine of equivalents To the extent Samsung argues that the use of the SmartThings cloud for data storage does not literally meet the definition of the main terminal's "storage," the SmartThings cloud is an equivalent. The function of both is to persistently store distinct sets of content information for later retrieval. The result is identical: the system can create detailed historical logs of events from multiple sources. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and memory that operate in a similar manner to store distinct content information for multiple events or devices. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.g] store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal,	The Accused Samsung '650 Products include a first controller that is configured to store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). The first SoC stores association information (*i.e.*, device ID) for transmitting one of the contents (i.e., device name or deviceState in the Favorites and History list) to one of the fridges.

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	Maxell provides notice that the infringement theory for this claim element includes: the first controller stores association information (*i.e.*, device ID or upon and belief a Samsung account ID) for transmitting (*e.g.*, using Wi-Fi/Bluetooth directly or via the SmartThings cloud/platform) the first or second content (i.e., device name, device state, and room in the Favorites and History list and device GUI) to one of the first or the second fridge.

Device Basics

Devices are physical products that connect to and operate with the SmartThings platform.

A **Device Profile** defines the features and functionality of a Device. These features are broken down into individual components called **Capabilities**. **Capability Presentations** then describe how a Capability is displayed in a SmartThings client, such as in the SmartThings app.

SmartThings provides a list of **standard Capabilities** to quickly get you started with your Device integration. **Custom Capabilities** allow you to create your own Capability and define the unique features of your Device.

A **Device Preference** is a configuration that enables users to customize the behavior of their Device. You may wish to implement Device Preferences when integrating your Device with SmartThings to provide users with a way to customize their Device's behavior.

Development Workflow

To integrate a device with the SmartThings platform:

1. Pick a device type that best suits your needs.
2. Build your device integration. The SmartThings SDKs on our **GitHub page** contain example device integrations and tools to help you get started. For Hub Connected Devices, we recommend getting started with the **Edge Device Builder**.
3. **Test your device**.
4. Publish your device.

Device Types

The SmartThings platform supports the following device integration types:

- **Hub Connected Devices** - Connect Matter (including Matter over Thread, Wi-Fi, and Ethernet), Zigbee, Z-Wave, and LAN devices to SmartThings-compatible Hubs.
- **Cloud Connected Devices** - Connect devices on your existing cloud to the SmartThings platform.
- **Direct Connected Devices** - Connect your Device directly to the SmartThings platform via WiFi.
- **Mobile Connected Devices** - Bluetooth devices connected to a Samsung Galaxy device can be controlled in the SmartThings app. SmartThings Find enables compatible Devices to quickly and easily be located using the SmartThings app.

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Device Events

Device events are structured, lightweight messages that communicate the state of device capabilities to the SmartThings platform and SmartThings clients.

When you develop a custom device integration, ensure that your device driver emits a device event when the state of a capability changes (e.g. when a switch turns `on`), so that clients such as the SmartThings mobile app can refresh the state of the device. Device events should be small and must not be used to track the complete state of a device domain. Device events must not contain extraneous data. Devices should generally not emit more than one event per minute, unless their state has changed as a result of user interaction (such as turning a switch `on`). SmartThings may adjust device events as necessary to support the SmartThings platform.

Namespaces

A namespace is an identifier used to group a developer's Capabilities or Preferences together. When you create a custom Capability or a Device Preference, it is created under your namespace. A unique namespace is created for you when you create your first custom Capability or Preference for your developer account; only one namespace per account is generated. A namespace may look something like `perfectlife6617`.

Manage Devices With the Devices API

Interact with the Devices API to access devices integrated with the SmartThings platform. The Devices API allows you to control devices connected to the SmartThings platform, access device metadata, and access device states.

> NOTE
>
> You will need a Personal Access Token (PAT) with the appropriate scopes to interact with the Devices API.

Example Payload Using Postman

This example uses the Postman app to send a `GET` request to `https://api.smartthings.com/v1/devices/<deviceID>` for a Z-Wave door lock.

1. Begin by creating a new `GET` request in Postman.
2. Enter the request URL: `https://api.smartthings.com/v1/devices/<deviceID>` where `<deviceID>` is the device ID of the device you want to retrieve info for.
3. In the *Authorization* tab of your `GET` request in Postman, select *Bearer Token* as your authorization type. Enter your PAT in the *Token* field.

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TIP

Use variables in Postman to keep your PAT secure and to easily authorize future API requests made from Postman.

1. Click *Send* in Postman. Below is the payload from the `GET` request:


```
{
  "deviceId": "3e04c330-d046-446c-b3e9-3edc22bf78ed",
  "name": "Door Lock",
  "label": "Front Door Lock",
  "deviceManufacturerCode": "003B-6341-5044",
  "manufacturerName": "SmartThingsCommunity",
  "deviceModel": "6341-5044",
  "presentationId": "7a15b375-294d-37fc-9ebe-000aea7436c8",
  "locationId": "8a2fa0bd-9e5a-4798-970b-c2ad73671ec9",
  "roomId": "95b1b353-d9e9-4ed0-8c83-a25fd44b93f8",
  "sharedLocations": [],
  "components": [
    {
      "id": "main",
      "label": "Door Lock",
      "capabilities": [
        {
          "id": "lock",
          "version": 1
        },
        {
          "id": "lockCodes",
          "version": 1
        },
        {
          "id": "battery",
          "version": 1
        },
        {
          "id": "refresh",
          "version": 1
        }
      ],
      "categories": [
        {
          "name": "SmartLock",
          "categoryType": "manufacturer"
```

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```
        }
      ]
    }
  ],
  "createTime": "2022-03-07T22:22:17.726Z",
  "parentDeviceId": "e061df47-ec9b-42f2-beef-81606b87d268",
  "profile": {
    "id": "8d99f687-b7d8-3650-b3be-57e13e17883b"
  },
  "zwave": {
    "networkId": "4D",
    "driverId": "0f206d13-508e-4342-9cbb-937e02489141",
    "executingLocally": true,
    "hubId": "e061df47-ec9b-42f2-beef-81606b87d268",
    "networkSecurityLevel": "ZWAVE_S0_LEGACY",
    "provisioningState": "PROVISIONED"
  },
  "type": "ZWAVE",
  "vid": "7a15b375-294d-37fc-9ebe-000aea7436c8",
  "mnmn": "SmartThingsCommunity",
  "ocfDeviceType": "oic.d.smartlock",
  "restrictionTier": 0,
  "allowed": null
}
```


Since this door lock operates on the Z-Wave network, the `parentDeviceId` field tells us what device this door lock is associated with (a `GET` request to this parent device ID tells us this parent device is a SmartThings v3 Hub).

https://developer.smartthings.com/docs/devices/device-basics

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Device Profiles

A Device Profile defines a Device and its features on the SmartThings platform. It contains the Components (which contain Device Capabilities) and metadata (ID, name, ownership, and more) of a Device, defining how a Device on the SmartThings platform behaves. Before joining your Device to the SmartThings platform, you'll need to create a Device Profile.

> NOTE
> Devices using SmartThings Edge use "implicit profiles" and do not require you to create a Device Profile for these Devices.

Components

Components are used to include and group Capabilities in a Device Profile. A Device Profile must have at least one Component. This Component is named `main` by convention for all profiles with a single Component. Each Component must include at least one Capability:

```
{
  "id": "<Device-Profile-ID-Here>",
  "name": "sample",
  "components": [
      {
          "label": "main",
          "id": "main",
          "capabilities": [
              {
                  "id": "accelerationSensor",
                  "version": 1
              }
          ],
          "categories": []
      }
  ],
  "metadata": {
      "vid": "sample",
      "deviceType": "AirConditioner",
      "ocfDeviceType": "oic.d.airconditioner",
      "mnmn": "fNTD",
      "deviceTypeId": "AirConditioner",
      "ocfSpecVer": "core 1.1.0",
      "mnid": "fNTD",
      "mnId": "fNTD"
```

https://developer.smartthings.com/docs/devices/device-profiles

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Connectivity Definitions

A device's connection `state` can have one of three values:

- `ONLINE` means a device can be expected to respond to a command (actuator devices) or report an event (sensor devices).
- `UNHEALTHY` means a device has been inactive longer than its designated health check interval. This is an intermediate state indicating that a device is possibly offline. This state can be caused by high network latency, low battery, or tamper events on security devices.
- `OFFLINE` means a device with `UNHEALTHY` status cannot be contacted by the platform. The check interval is defined here.

A hub's `connectivity` can have the following values:

- `CONNECTED` means that a "hub connected" event has been received by SmartThings Cloud, and no "hub disconnected" event has been received.
- `DISCONNECTED` means that a "hub disconnected" event has been received by SmartThings Cloud, and no "hub connected" event has been received in the last 60 seconds.

When a hub goes offline, all devices connected to this hub will also be marked `OFFLINE`.

Use the Devices API to Check Device and Hub Health

You must pass an OAuth token in the request header when calling each of the below API methods.

```
Authorization: Bearer <token>
```

For information on using tokens, see Authorization and Permissions.

Get Device Health

```
GET /devices/<deviceId>/health
```

This call returns the health of a device by its ID. You must include `deviceID` in the path to specify a device.

OAuth scope: `r:devices`

Example response

```
{
  "deviceId": "string",
  "state": "ONLINE",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

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The JSON response lists the connection `state` of the device and its `lastUpdatedDate`. The latter value is the timestamp of the last known state change of the device.

> NOTE
> Regular "online" events sent by a device are *not* considered state changes. `lastUpdatedDate` will record when an "offline" event is sent.

Get a Hub's Health

```
GET /installed-hubs/<hubDeviceId>/health
```

This call returns the health of a hub by its ID. You must include `hubDeviceID` in the path to specify a hub.

OAuth scope: `r:hubs`

Example response

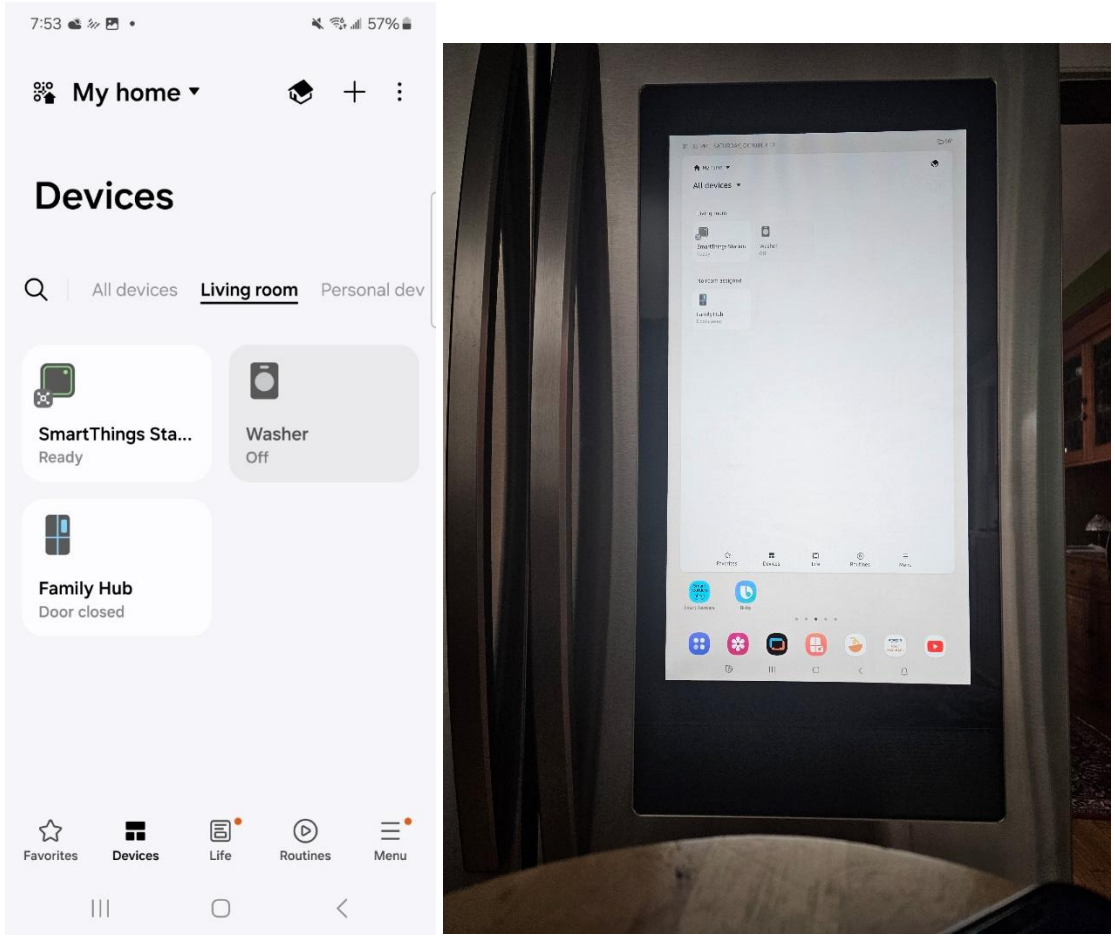
```
{
  "hubId": "string",
  "connectivity": "CONNECTED",
  "lastUpdatedDate": "2019-08-21T18:28:45Z"
}
```

The JSON response lists the `connectivity` status of the hub, its `lastUpdatedDate`, and the `hubRadioState`, which indicates the state of the Bluetooth, Zigbee, and ZWave radios on the hub.

https://developer.smartthings.com/docs/devices/health#get-device-health

As a non-limiting example, the first controller stores association information (the device ID) to correctly route the transmission of content. The system's ability to display the status of one device (*e.g.*, a washer) on the screen of the Family Hub proves that the first controller uses this stored association information. Upon information and belief, if a second subsidiary terminal, such as another Family Hub refrigerator, were added to the system, the first controller would use this same process to transmit content specifically to that second refrigerator for display.

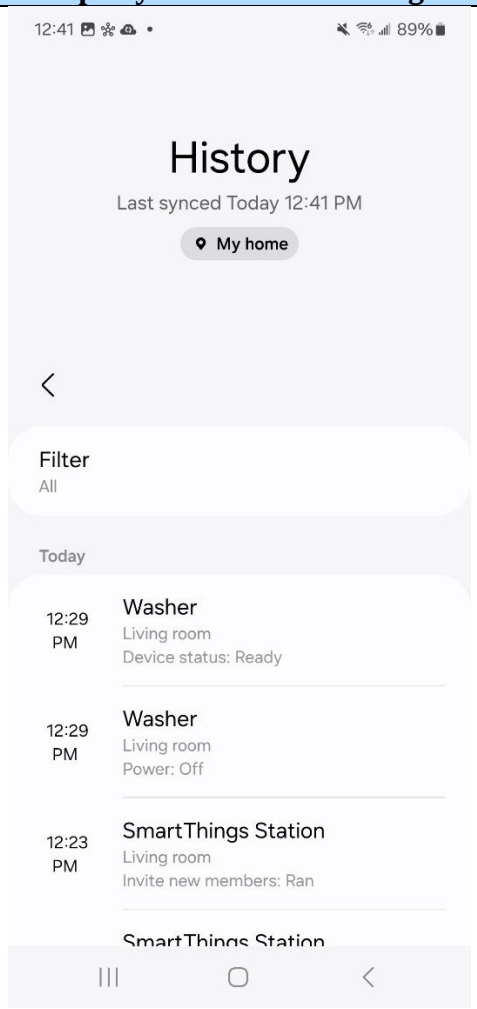
Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first controller stores association information (*i.e.*, device ID or upon and belief a Samsung account ID) to correctly route the transmission of content. The system's ability to display the device name, room, device state of one device (*e.g.*, a washer) on the screen of the fridges proves that the first controller uses this stored association information (*i.e.*, device ID or upon and belief a Samsung account ID). Upon information and belief, if a second subsidiary terminal, such as the

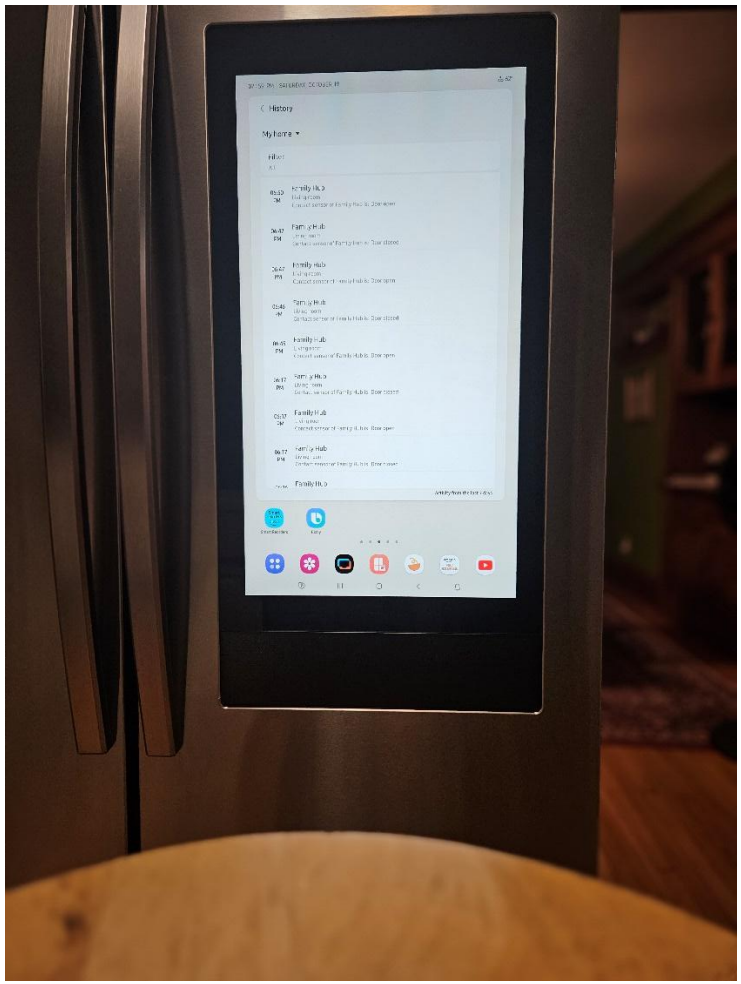
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	second fridge, were added to the system, the first controller would use this same process to transmit content specifically to that second fridge for display.  A side-by-side comparison showing the main terminal (left) and the first subsidiary terminal (right) displaying a synchronized list of devices. For the refrigerator to display the status of the "Washer." This demonstrates the controller's ability to transmit specific content to a specific subsidiary terminal based on stored association data. Upon information and belief, if a second subsidiary terminal, such

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	as another refrigerator, were added, the system would use this same capability to transmit content to it for display. Maxell provides notice that the infringement theory for this claim element includes: a side-by-side comparison showing the main terminal (left) and the first subsidiary terminal (right) displaying a synchronized list of devices. For the fridge to display the device name, room, device state of the "Washer." This demonstrates the controller's ability to transmit first and second content to a specific subsidiary terminal based on stored association information. Upon information and belief, if a second subsidiary terminal, such as another refrigerator, were added, the system would use this same capability to transmit content to it for display. <u>Doctrine of equivalents</u> To the extent Samsung argues that the use of the SmartThings cloud for this function does not literally meet the claim, the Smart Things cloud is an equivalent. The function is to store and use association data to correctly route content. The result is identical: content is transmitted to the correct destination terminal. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products operate within an ecosystem where the main controller stores association information to ensure content is transmitted to the correct subsidiary terminal. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.h] wherein the association information defines that one of the first content or the second content is associated with	The phone in the Accused Samsung '650 Products include a first controller that is configured to function wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
one of the first device specific ID information or the second device specific ID information,	(https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the "History" log visually represents this association information. The log explicitly defines that the first content (the event "Door closed") is associated with the first device specific ID information ("Family Hub"). Upon information and belief, if a second subsidiary terminal were to generate an event (the second content), the system would similarly define that this content is associated with the second device specific ID information. Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the "History" log (*e.g.*, the History list), Favorites list, device GUI visually represents this association information. The History list, Favorites list, device GUI explicitly defines that the first content (*e.g.*, device name, room, and device state being the event "Door closed") is associated with the first device specific ID information of the first fridge via the device ID or Samsung account ID. Upon information and belief, if a second subsidiary terminal were to generate device name, room, device state being an event (*i.e.*, the second content), the system would similarly define that this content is associated with the second device specific ID information via the device ID or Samsung account ID.

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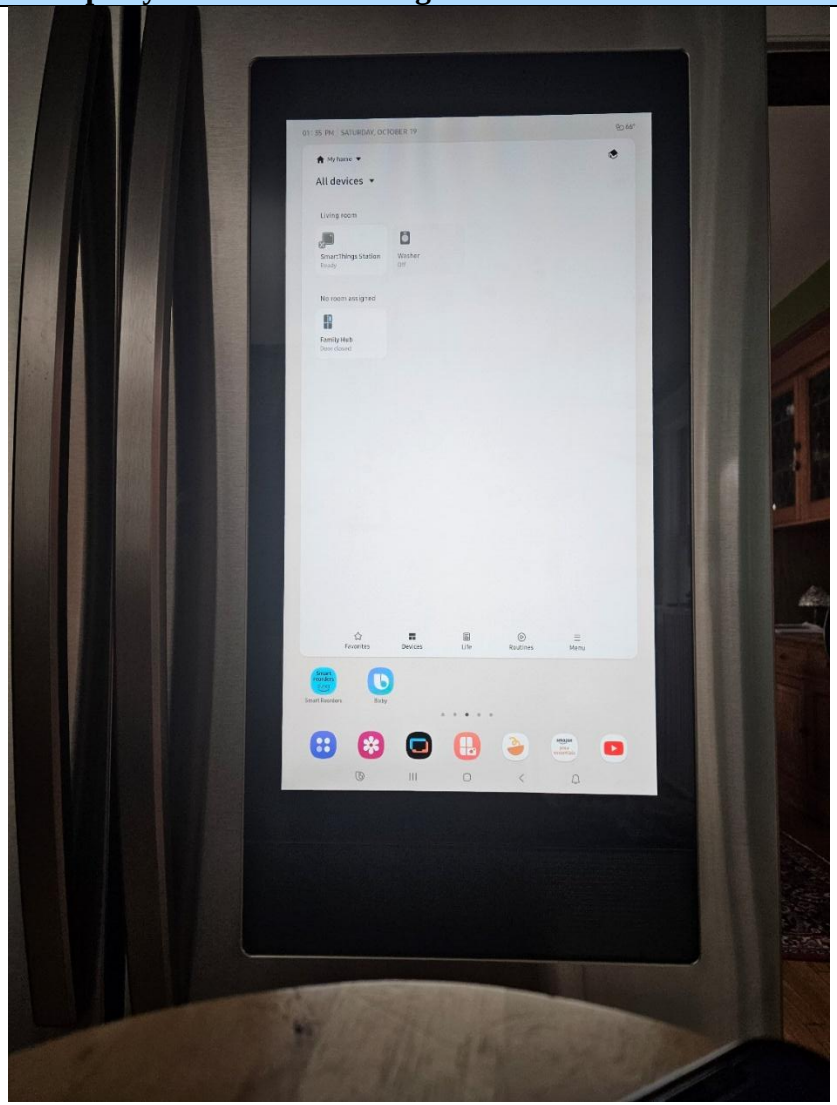




A side-by-side comparison of the "History" log as displayed on the main terminal (left) and a subsidiary terminal (right). The log visually represents the association information by linking content (*e.g.*, the event "Device status: Ready") with the specific ID of the device that generated it (*e.g.*, the "Washer"). Upon information and belief, this demonstrates the system's process of associating a first content with a first device specific ID and a second content with a second device specific ID.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Maxell provides notice that the infringement theory for this claim element includes: a side-by-side comparison of the "History" log as displayed on the main terminal (left) and a subsidiary terminal (right). The log visually represents the association information by linking content (*e.g.*, device name, room, device state being the event "Device status: Ready") with the first device specific ID information of the device that generated it (*e.g.*, the "Washer" or "Family Hub"). Upon information and belief, this demonstrates the system's process of associating a first content with a first device specific ID via device ID or Samsung account ID and a second content with a second device specific ID via device ID or Samsung account ID. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain processors and software that operate in a similar manner to associate stored content with the specific device that generated it. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.i] wherein the first subsidiary terminal comprises: a second display displaying the content; and	The Accused Samsung '650 Products with Family Hub™ function wherein the first subsidiary terminal comprises: a second display displaying the content.. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the first fridge acts as the first subsidiary terminal including a second display for displaying content. The photo evidence provides direct proof of this feature. Below screenshot shows the first fridge's integrated screen—the "second display"—actively "displaying the content" from the SmartThings system, such as the list of all connected devices.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the first fridge acts as the first subsidiary terminal including a second display for displaying content. The photo evidence provides direct proof of this feature. Below screenshot shows the first fridge's integrated screen—the "second display"—actively "displaying the content" from the SmartThings system, such as the list of all connected devices.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A photo of the Family Hub refrigerator or first fridge, which acts as the first subsidiary terminal. The photo shows the refrigerator's integrated screen—the "second display"—actively "displaying the content" from the SmartThings system.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, additional Accused Samsung '650 Products, such as other Family Hub models, contain displays for displaying information as contents. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.j] a second controller controlling transmission/reception with the main terminal, the second controller storing the first device specific ID information for identifying the first subsidiary terminal and transmitting the first device specific ID information to the main terminal when connecting to the main terminal,	The Accused Samsung '650 Products with Family Hub™ include a second controller controlling transmission/reception with the main terminal, the second controller storing the first device specific ID information for identifying the first subsidiary terminal and transmitting the first device specific ID information to the main terminal when connecting to the main terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the first subsidiary terminal (*e.g.*, the Family Hub) contains a "second controller" (its own internal processor) that controls its communications with the main terminal via the SmartThings Cloud. This second controller stores the refrigerator's own unique device specific ID information. According to SmartThings documentation, this information includes the "UniqueDeviceId," as well as identifiers from the "device_info.json" and "onboarding_config.json" files. During the initial connection process, the second controller transmits this device specific ID information to the main terminal to be authenticated and registered on the network. Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, a second controller is the SoC within the first subsidiary terminal (*e.g.*, the first fridge) and/or within the SmartThings cloud/platform as an extension corresponds to the second controller. The second controller controls its communications directly with the main terminal or via

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	the SmartThings cloud/platform. This second controller stores in the first fridge's and/or SmartThings cloud/platform its own first device specific ID information. According to SmartThings documentation, this first device specific ID information includes the "UniqueDeviceId," as well as identifiers from the "device_info.json" and "onboarding_config.json" files including identifiers, such as, "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," or "serialNumber." During the initial connection process (*i.e.*, onboarding process), the second controller transmits (*e.g.*, using WiFi/Bluetooth directly or via the SmartThings cloud/platform) this first device specific ID information to the main terminal to be authenticated and registered on the SmartThings cloud/platform. The successful transmission and reception (via LAN, WiFi, or Bluetooth) of this first device specific ID information is confirmed by the appearance of the first subsidiary terminal in the main terminal's list (i.e., Favorites list, History List, and device GUI) of connected devices. The appearance of the unique identifier "(171F)" on the main terminal's discovery screen is direct proof that this transmission from the second controller occurred. 1203-004967 Samsung Ic-vol. Detector;kia7042at,tsm,3p,2.9x1. 1203-009218 Samsung Ic-pwm Controller;sc1551c-h26-tl,sop 24D 1203-005773 Samsung Ic-posi.fixed Reg.;kia78d05pi,3p,to-220, 1203-007526 Samsung Ic-posi.fixed Reg.;7815,d-pak/to252,3p,6 1003-002900 Samsung Ic-motor Driver;drv8848pwpr,16p,htssop,t 1003-002899 Samsung Ic-motor Driver;drv8848l,16p,htssop,tp,5 0903-002203 Samsung Ic-microcontroller;hart-m320,mqfp,100p,2 0903-002197 Samsung Ic-microcontroller;hart-i910z,lqfp,64p,1 https://encompass.com/model/SMGRF27CG5900SRAA/0000/ The RF27CG5900SRAA Samsung 36-Inch 3-Door French Door Spacemax Refrigerator contains a microcontroller that serves as its onboard controller.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

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Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

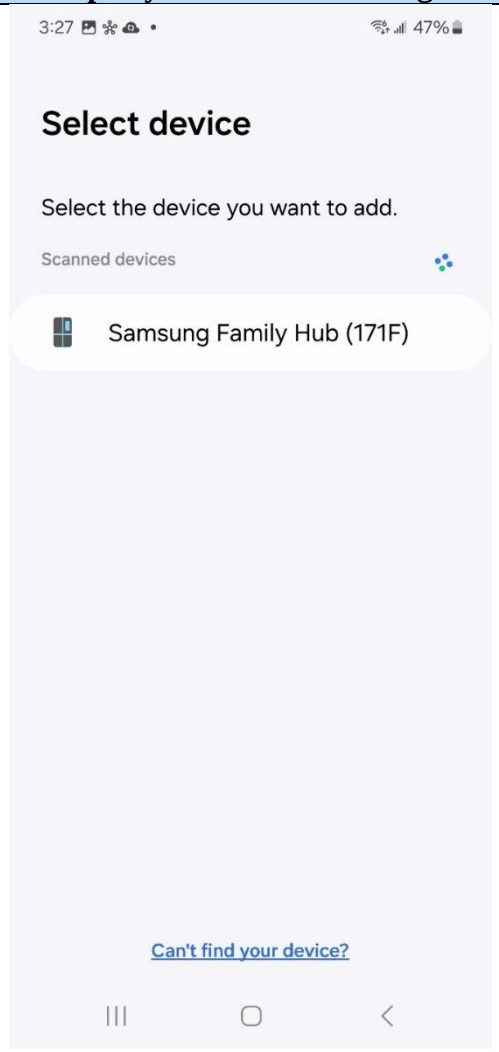
```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

You can see an example `onboarding_config.json` file below:

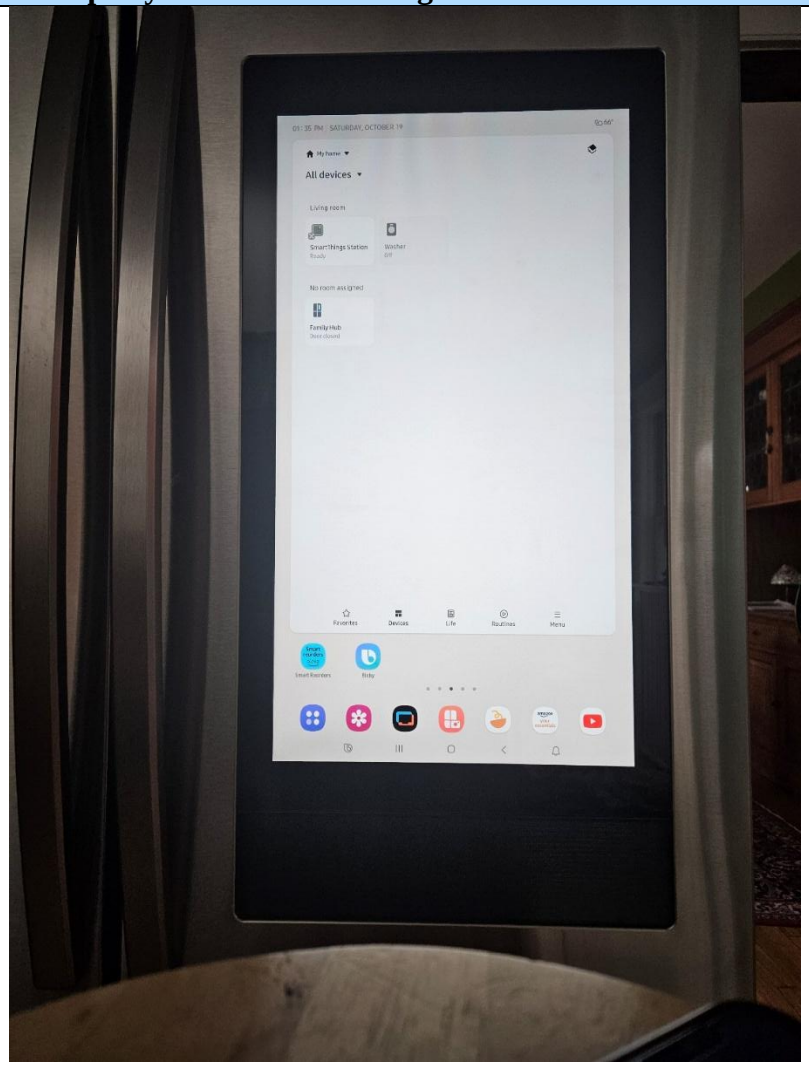
```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

Here's a breakdown of the data contained in `onboarding_config.json`:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A screenshot from the main terminal's application during the "Easy Connection" Onboarding Process. The screen shows the main terminal displaying the unique "first device specific ID information" ("Samsung Family Hub (171F)") that was transmitted by the "second controller" (the refrigerator's onboard processor) to the main terminal when connecting.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain onboard controllers and communication hardware that operate in a similar manner to store and transmit their own device identifiers during a connection process. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.k] wherein the second subsidiary terminal comprises: a third display displaying the content; and	The Accused Samsung '650 Products with Family Hub™ include a second subsidiary terminal that comprises a third display displaying the content. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the second refrigerator functions as the second subsidiary terminal and its integrated Family Hub screen acts as the required "third display." This screen is capable of displaying content received from the main terminal, such as the status of other devices on the SmartThings network, which is consistent with the system's ability to show a unified network status across its various displays. Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the second fridge functions as the second subsidiary terminal and its integrated Family Hub screen acts as the required "third display." This screen is capable of displaying content received from the main terminal, such as the device name, room, device states being status of other devices on the SmartThings cloud/platform, which is consistent with the system's ability to show a unified network status across its various displays.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	 A photo of the integrated screen on a Samsung Family Hub refrigerator. This screen functions as the "third display" of the "second subsidiary terminal," displaying content received from the SmartThings network or cloud/platform.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, many of the accused products, such as smartphones and tablets, contain displays and can function as subsidiary terminals within the ecosystem. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.l] a third controller controlling transmission/reception with the main terminal, the third controller storing the second device specific ID information for identifying the second subsidiary terminal and transmitting the second device specific ID information to the main terminal when connecting to the main terminal, and	The Accused Samsung '650 Products with Family Hub™ include a third controller controlling transmission/reception with the main terminal, the third controller storing the second device specific ID information for identifying the second subsidiary terminal and transmitting the second device specific ID information to the main terminal when connecting to the main terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the second subsidiary terminal (*e.g.*, another Family Hub refrigerator) contains a "third controller" (its internal processor) that stores the "second device specific ID information" to uniquely identify itself. Upon information and belief, when connecting to the main terminal, this third controller transmits its device specific ID information to the main terminal. The successful transmission and reception of this ID is confirmed by the appearance of the second subsidiary terminal in the main terminal's list of connected devices. Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, a third controller is the SoC within the second subsidiary terminal (*e.g.*, the second fridge) and/or within the SmartThings cloud/platform as an extension corresponds to the third controller. The third controller controls its communications directly with the main terminal or via the SmartThings cloud/platform. This third controller contains stores the in the second fridge's and/or

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	the SmartThings cloud/platform its own second device specific ID information to uniquely identify itself. According to SmartThings documentation, this second device specific ID information includes the "UniqueDeviceId," as well as identifiers from the "device_info.json" and "onboarding_config.json" files including identifiers, such as, "deviceOnboardingId," "setupId," "mnId," "vid," "privateKey," or "serialNumber." During the initial connection process (*i.e.*, onboarding process), the third controller transmits (*e.g.*, using WiFi/Bluetooth directly or via the SmartThings cloud/platform) this second device specific ID information to the main terminal to be authenticated and registered on the SmartThings cloud/platform. The successful transmission and reception (via LAN, WiFi, or Bluetooth) of this second device specific ID information is confirmed by the appearance of the second subsidiary terminal in the main terminal's list (i.e., Favorites list, History List, and device GUI) of connected devices. 1203-004967 Samsung Ic-vol. Detector;kia7042at,tsm,3p,2.9x1. 1203-009218 Samsung Ic-pwm Controller;sc1551c-h26-tl,sop 24D 1203-005773 Samsung Ic-posi.fixed Reg.;kia78d05pi,3p,to-220, 1203-007526 Samsung Ic-posi.fixed Reg.;7815,d-pak/to252,3p,6 1003-002900 Samsung Ic-motor Driver;drv8848pwpr,16p,htssop,t 1003-002899 Samsung Ic-motor Driver;drv8848l,16p,htssop,tp,5 0903-002203 Samsung Ic-microcontroller;hart-m320,mqfp,100p,2 0903-002197 Samsung Ic-microcontroller;hart-i910z,lqfp,64p,1 https://encompass.com/model/SMGRF27CG5900SRAA/0000/ The RF27CG5900SRAA Samsung 36-Inch 3-Door French Door Spacemax Refrigerator contains a microcontroller that serves as its onboard controller.

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`deviceUniqueId`

If you have an Alexa Skill, ensure you use the same value for `deviceUniqueId` that is used for your Alexa Skill `customIdentifier`

Categories

The Categories response (mentioned above) is an optional parameter that helps define the kind of device that is being interacted with. SmartThings has an expanding list of device categories that work with our platform.

You can find the list of supported categories here.

State Refresh

Handle the State Refresh request by retrieving the device states for the indicated list of devices.

Request Example | Response Example

```
{
  "headers": {
    "schema": "st-schema",
    "version": "1.0",
    "interactionType": "stateRefreshRequest",
    "requestId": "abc-123-456"
  },
  "authentication": {
    "tokenType": "Bearer",
    "token": "token received during oauth from partner"
  },
  "devices": [
    {
      "externalDeviceId": "partner-device-id-1",
    },
    {
      "externalDeviceId": "partner-device-id-2"
    }
  ]
}
```

- `headers`
  - `schema`: Schema type.
  - `version`: Schema version.
  - `interactionType`: Interaction type of payload.
  - `requestId`: A unique ID assigned to the request.
- `authentication`: See Discovery section.
- `deviceState`: Array of device states. See Callback section.

https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types#deviceuniqueid

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Update Device Information

Your device needs two files to connect to the SmartThings platform:

- Device Identity (`device_info.json`)
- Device Onboarding (`onboarding_config.json`)

Device Identity File

All devices must be provisioned in advance with the SmartThings cloud. The device's identity and authentication data are needed before the device can connect.

> Note: the device serial number has a specific format for non-WWST certified devices. This serial number is generated in the Developer Workspace in the last steps when registering your device.

For individual contributors

When testing your device, provide the following information in the *device_ info.json* file in the main directory of your device application:

```
{
  "deviceInfo": {
    "firmwareVersion": "<FW20190919>",
    "privateKey": "<privateKey_here>",
    "publicKey": "<publicKey_here>",
    "serialNumber": "<serialNumber_here>"
  }
}
```

> Note: The serial number for devices used during testing (prior to WWST certification) is created by the Developer Workspace.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement

Device onboarding file

The `onboarding_config.json` file was created in the Developer Workspace during the Device registration process. Download the file from the Developer Workspace project page and copy it to the root directory of the Device app.

The location for ESP8266 is displayed below:

```
~/st-device-sdk-c-ref/apps/esp8266/switch_example/main/
```

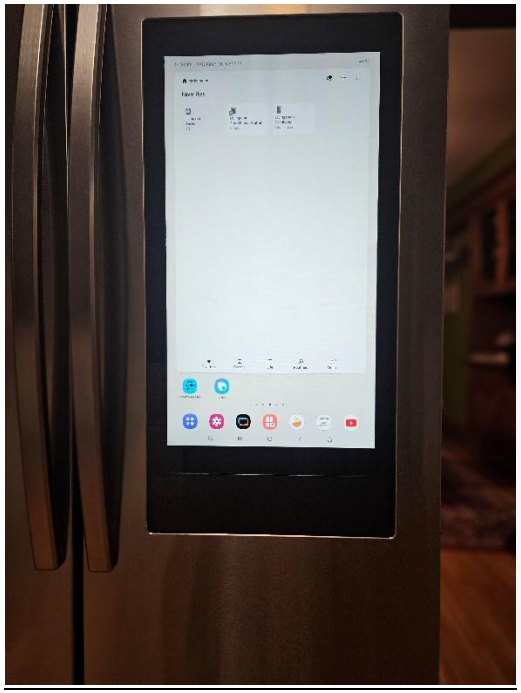
You can see an example `onboarding_config.json` file below:

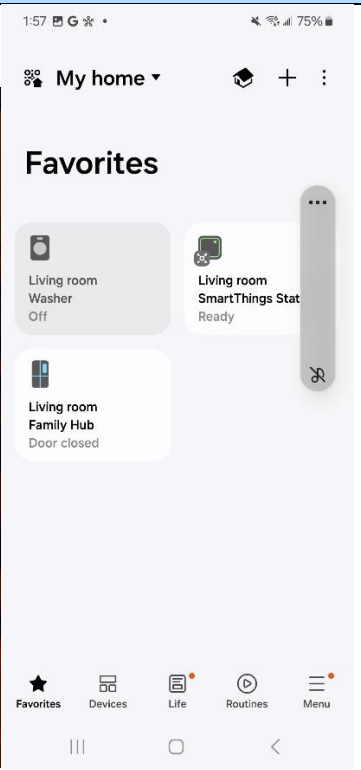
```
{
  "onboardingConfig": {
    "deviceOnboardingId": "NAME",
    "mnId": "MNID",
    "setupId": "999",
    "vid": "VID",
    "deviceTypeId": "TYPE",
    "ownershipValidationTypes": [
      "JUSTWORKS",
      "BUTTON",
      "PIN",
      "QR"
    ],
    "identityType": "ED25519",
    "deviceIntegrationProfileKey": {
      "id": "DIP_UUID",
      "majorVersion": 0,
      "minorVersion": 1
    }
  }
}
```

Here's a breakdown of the data contained in `onboarding_config.json`:

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	• `deviceOnboardingId` - the prefix used in the SSID of Soft-AP during the Easy-setup process. The value is defined in the final stages of device registration. This value is tightly coupled with the device identity provisioned in the Developer Workspace. If `deviceOnboardingId` is changed, all previously provisioned device identities will not be able to authenticate; the device identities will need to be submitted again. • `mnId` - manufacturer ID. A unique four-letter ID assigned by SmartThings to developers to uniquely identify accounts. Organizations have their own `mnId`, which is shared with its members. You can find your organization's `mnid` listed beside your organization name when selecting a workspace in Developer Workspace. • `setupId` - a unique three-digit number. This value comes from the *Device onboarding ID* when you performed the *Create a device onboarding profile* step in the Developer Workspace. • `vid` - an alphanumeric vendor identifier that you give to your device. This vendor identifier is created when you *Create a device profile* in the Developer Workspace. • `deviceTypeId` - determines the device icon and default UI layout in the SmartThings app. This value is selected when creating your device profile. • `ownershipValidationTypes` - This is the method your device will apply to validate ownership when onboarding to SmartThings. There are four supported types: ◦ `JUSTWORKS` - no owner intervention needed ◦ `BUTTON` - owner will press a button ◦ `PIN` - owner enters a 4 digit code ◦ `QR` - owner scans the device's QR code • `identityType` - a unique certificate or public key pair used for authentication when connecting to the SmartThings Cloud. At this time only `ED25519` is supported. https://developer.smartthings.com/docs/devices/direct-connected/device-app

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement





Upon information and belief, for the second subsidiary terminal to appear in the main terminal's device list in this manner, its "third controller" must first store its unique "second device specific ID information" and then successfully transmit that information to the main terminal when connecting. The appearance of the first "Family Hub" in the screenshot is therefore evidence of this capability.

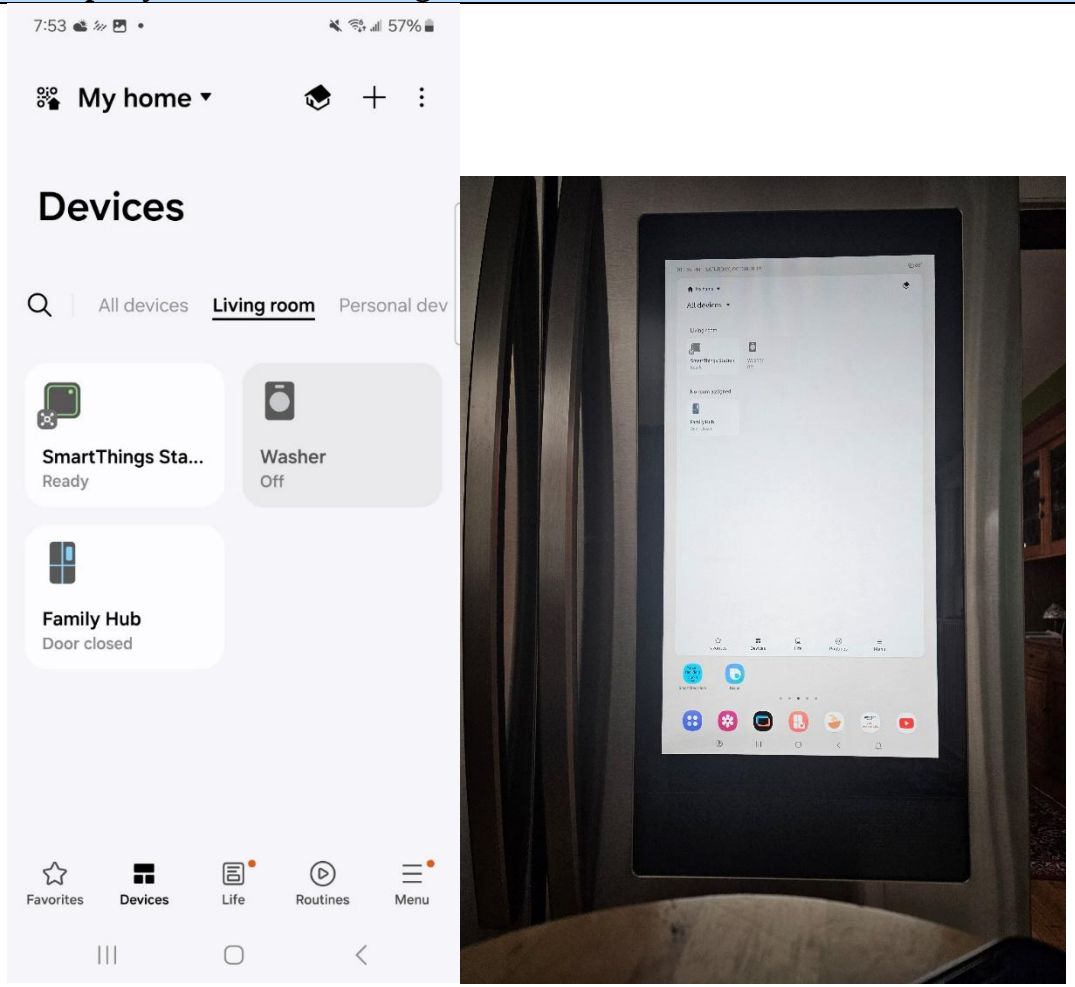
Maxell provides notice that the infringement theory for this claim element includes: Upon information and belief, for the second subsidiary terminal to appear in the main terminal's device list in this manner, its "third controller" must first store its unique "second device specific ID information" and then successfully transmit that information to the main terminal when connecting. The appearance of the second fridge in the screenshot is therefore evidence of this capability.

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products contain onboard controllers that store and transmit their unique device identifiers to the main terminal upon connection. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.m] wherein, when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal, and	The phones in the Accused Samsung '650 Products include functionality wherein, when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal. See e.g., Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the main terminal stores association information that links a first set of content with the unique ID of the first subsidiary terminal (the first refrigerator). Likewise, it stores information linking a second set of content with the unique ID of the second subsidiary terminal (the second refrigerator). When a user, through the main terminal's SmartThings app, directs the first content to the first refrigerator, the main terminal transmits that content to the first refrigerator for display on its screen. Similarly, it transmits the second content to the second refrigerator. This demonstrates that the main terminal uses the stored association between the content and the device-specific IDs to ensure the correct content is transmitted to the correct subsidiary terminal. Maxell provides notice that the infringement theory for this claim element includes: a non-limiting example, the main terminal alone or in conjunction with the SmartThings cloud/platform stores association information (*i.e.*, device ID or Samsung account ID) that links the first content with the

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	first device specific ID information of the first subsidiary terminal (the first fridge). Likewise, the main terminal alone or in conjunction with the SmartThings cloud/platform stores information linking a second content with the second device specific ID information of the second subsidiary terminal (the second fridge). When a user, through the main terminal's SmartThings app, directs the first content to the first fridge, the main terminal transmits that content to the first fridge for display on its screen. Similarly, the main terminal's SmartThings app transmits the second content to the second fridge. This demonstrates that the main terminal uses the stored association information between the first or second content and the first or second device specific ID information, respectively, to ensure the correct content is transmitted to the correct subsidiary terminal.

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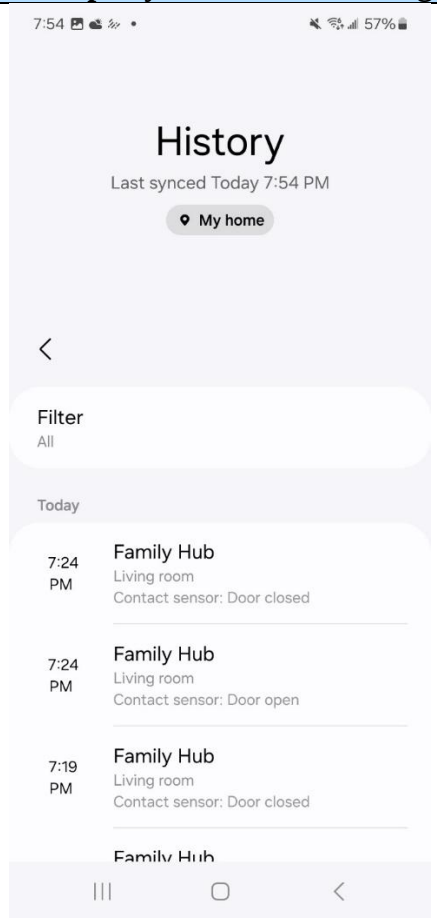


A side-by-side comparison of the synchronized device list on the main terminal (smartphone) and the first subsidiary terminal (refrigerator). Both screens show a list of connected devices, including the "Family Hub" and "Washer" . For the refrigerator to display the current status of the "Washer" (the first content), the main terminal must transmit that specific content to the first subsidiary terminal based on its stored association information. Upon information and belief, the main terminal

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	uses this same routing capability to transmit a second content (*e.g.*, the status of a different device) to a second subsidiary terminal (*e.g.*, another refrigerator) based on its unique association information. Maxell provides notice that the infringement theory for this claim element includes: a side-by-side comparison of the synchronized device list on the main terminal (phone) and the first subsidiary terminal (first fridge). Both screens show a list of connected devices, including the "Family Hub" and "Washer." For the first fridge to display the current status of the "Family Hub" (the first content), the main terminal must transmit that specific content to the first subsidiary terminal based on its stored association information. Upon information and belief, the main terminal uses this same routing capability to transmit a second content (*e.g.*, device name, room, device state being the status of the second fridge) to a second subsidiary terminal (*e.g.*, second fridge) based on its unique association information (*i.e.*, device ID or Samsung account ID). <u>Doctrine of equivalents</u> To the extent Samsung argues that the SmartThings cloud performs this function, the SmartThings cloud is an equivalent of the main terminal's controller. The function is to route content based on stored associations. The result is identical: each subsidiary terminal receives the content intended for it. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products operate in an ecosystem where the main terminal transmits specific content to specific subsidiary terminals based on stored association data. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.
[4.n] when the association information defines that the second content is associated	The phones in the Accused Samsung '650 Products function wherein, when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific ID information, the main terminal

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with the first device specific ID information and the first content is associated with the second device specific ID information, the main terminal transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal.	transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal. *See e.g.*, Technical Specifications of each of the Accused Samsung '650 Products available at Samsung's website provide evidence that the devices include this feature. (https://www.samsung.com/us/mobile/, https://www.samsung.com/us/home-appliances/refrigerators/all-refrigerators/?shop=Buy+Online&key_category_features=Wi-Fi+Connectivity, https://developer.smartthings.com/, https://www.samsung.com/us/smartthings/). As a non-limiting example, the association information can be defined or reconfigured by the user, for instance, through a routine or automation created in the SmartThings app. In a scenario where the association information defines that the second content is associated with the first device specific ID information (for the first refrigerator), and the first content is associated with the second device specific ID information (for the second refrigerator), the main terminal will execute transmissions based on this crossed association. The main terminal will transmit the second content to the first subsidiary terminal and transmit the first content to the second subsidiary terminal, demonstrating that the system's routing logic dynamically follows the stored association information as claimed. Maxell provides notice that the infringement theory for this claim element includes: as a non-limiting example, the association information can be defined or reconfigured by the user, for instance, through a different or same registration (*i.e.*, onboarding), different or same Samsung account ID/assignment, routine or automation in the SmartThings app. In a scenario where the association information defines that the second content is associated with the first device specific ID information (for the first fridge), and the first content is associated with the second device specific ID information (for the second fridge), the main terminal will execute transmissions (*e.g.*, using LAN, WiFi, or Bluetooth) based on this crossed association information. The main terminal will transmit the second content to the first subsidiary terminal and transmit the first content to the second subsidiary terminal, demonstrating that the system's routing logic dynamically follows the stored association information as claimed.

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The screenshot shows the SmartThings "History" log, which shows the system's ability to manage association information. The log demonstrates the core capability of linking specific content (*e.g.*, the event "Contact sensor: Door open") with a specific device ID ("Family Hub").

Maxell provides notice that the infringement theory for this claim element includes: the screenshot shows the SmartThings "History" log, which shows the system's ability to manage association

U.S. Patent No. 11,277,650	Exemplary Evidence of Infringement
	information. The log demonstrates the core capability of linking specific content (*e.g.*, the event "Contact sensor: Door open") with a device specific ID information of the Family Hub. Upon information and belief, this flexible association mechanism is what allows the system to perform the crossed routing. It enables a scenario where the association information can be defined to link a "second content" with a "first device ID," and a "first content" with a "second device ID," and then have the main terminal transmit the content according to those specific rules. Doctrine of equivalents To the extent Samsung argues that the SmartThings cloud performs this function, the SmartThings cloud is an equivalent of the main terminal's controller. The function is to manage bidirectional content routing based on stored associations. The result is identical: content and commands are transmitted between the correct terminals. On information and belief, and as shown by the above-referenced technical specifications, the remaining Accused Samsung '650 Products include similar capabilities and infringe in the same manner. *See also* Appendix 11 providing evidence that additional Accused Samsung '650 Products also include and perform the claimed capabilities. Specifically, these additional products operate in an ecosystem that supports bidirectional, association-based transmission of content between terminals. See https://www.smartthings.com/; see also https://www.samsung.com/us/home-appliances/smartthings/.