

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Based on information presently available, Avant Location Technologies LLC (“ALT”) contends that Defendant Apple Inc. (“Apple” or “Defendant”) infringes claims 1-2, 4-6, 7, and 9-11 (the “Asserted Claims”) of U.S. Patent No. 10,009,720 (the “’720 Patent”) through the Accused Products which are manufactured, sold, offered for sale, and/or used by Apple.

For example, the Accused Products include, but are not limited to, the following Accused Products: Apple products that implement Find My, including but not limited to: iPhone, iPad, iPod Touch, Apple Watch, Mac, AirPods, AirTag, Apple Pencil, and Apple Vision Pro; Apple products that implement or work with the Home app, including but not limited to: iPhone, iPad, HomePod, HomePod Mini, and Apple TV; Find My application, services, and servers; and Home application, services, and servers for the purposes of infringement of the ’720 Patent. Based on publicly available information, ALT believes that the Apple devices charted herein share substantially the same structure and functionality with respect to the components relevant to infringement, given that, among other things, the listed products all purport to support the Apple Find My or Home applications and modes.

Apple directly infringes each of the Asserted Claims by using, importing, testing, selling, and/or offering for sale the Accused Products in violation of 35 U.S.C. § 271(a).

Apple indirectly infringes the Asserted Claims in violation of 35 U.S.C. § 271(b) by inducing third parties, including its users and/or customers, to directly infringe through their operation and use of the Accused Products. Apple has knowingly and intentionally induced this direct infringement by, *inter alia*, (i) selling, importing, or otherwise providing the Accused Products to third parties with the intent that the Accused Products will be operated and used in a manner that practices the Asserted Claim; and (ii) marketing and advertising the Accused Products. Apple’s marketing and promotional materials for the Accused Products are found, for example, on Apple’s website, and in App stores of operating systems for which the Accused Products are made available. For example, Apple’s website offers customers instructions and/or manuals for the Accused Products that instruct customers to, among other things, use the accused functionality in the Accused Products. Apple’s website also offers support to customers, including instruction to, among other things, use the Accused Products. On information and belief, Apple knows that its actions will result in infringement of the Asserted Claim, or subjectively believes that there is a high probability that its actions will result in infringement of the Asserted Claim but has taken deliberate actions to avoid learning these facts.

Apple contributorily infringes each of the Asserted Claims in violation of 35 U.S.C. § 271(c) by selling, importing, and offering for sale the Accused Products, which when used directly infringe the Asserted Claims. The Accused Products constitute a material part of the Asserted Claims.

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Plaintiff contends that the Accused Products perform each step of the claimed methods. Plaintiff contends that use, testing, and qualification of the Accused Products by Apple itself, as well as use by customers and end-users of the Accused Products, perform each step of the claimed methods. On information and belief, backend servers, under the direction and control of the Accused Products, may perform certain steps of the claimed methods. Apple, its customers, and users of the Accused Products derive benefits from their infringement.

On information and belief, the charted version of the Find My application is representative of all versions of the Accused Products, including all variants of the Accused Products made, sold, offered for sale, or used on any operating system.

ALT does not concede that any claims of the '720 Patent that are not listed below are not infringed by the identified Accused Products. Moreover, the citations to certain documents and other information below are intended to be exemplary only and in no way foreclose ALT from citing or relying on additional documents, information, source code, and/or testimony at a later time. These contentions are preliminary in nature, and an analysis of Apple's products, internal documentation, source code, and/or testimony from relevant witnesses may more fully and accurately describe the infringing features of its Accused Products. Accordingly, ALT reserves the right to supplement, correct, modify, and/or amend these contentions once such additional information is made available to ALT. Furthermore, ALT reserves the right to supplement, correct, modify, and/or amend these contentions as discovery in this case progresses; in view of the Court's claim construction order(s); in view of any positions taken by Apple including, but not limited to, positions on claim construction, invalidity, and/or non-infringement; and in connection with the preparation and exchange of expert reports.

The contents of every below claim cell on which another claim cell depends are expressly incorporated by reference in that dependent cell, as if set forth in their entirety therein.

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>[1Pre] A method associated with the use of a mobile station and a radio communication defining device that transmits a distinctive defining signal, the method comprising:</p>	<p>The Apple Accused Products perform a method associated with the use of a mobile station and a radio communication defining device that transmits a distinctive defining signal.</p> <p>For example, the Apple Find My application is a method that is associated with a provider (<i>e.g.</i>, Apple) of presence related services (<i>e.g.</i>, the Apple Find My Network) in connection with the use of a mobile station (<i>e.g.</i>, an Apple device). Further, the method is also associated with at least a first radio communication defining device (<i>e.g.</i>, an offline user’s lost devices such as iPhone, iPad, iPod Touch, Apple Watch, Mac, AirPods, AirTag, Apple Pencil, Apple Vision Pro). The first radio communication defining device transmits a first distinctive defining signal (<i>e.g.</i>, a Bluetooth Low Energy (BLE) Beacon). The first distinctive defining signal (<i>e.g.</i>, BLE Beacon) at least partly defines a first special area by its coverage (<i>e.g.</i>, coverage area of the BLE beacon).</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="485 310 1906 1000"></div> <p data-bbox="787 1109 1612 1235">The Find My app makes it easy to keep track of your Apple devices — even if they're offline. You can also locate items using AirTag or Find My technology. Or pinpoint friends and family with Precision Finding. Everyone's location stays private every step of the way.</p> <p data-bbox="1031 1260 1367 1287">Find your stuff on iCloud.com ➔</p> <p data-bbox="871 1300 1503 1331">Source: https://www.apple.com/icloud/find-my/</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p data-bbox="632 331 1732 634">You can even find devices that are offline or powered off.</p> <p data-bbox="562 691 1801 976">If your missing device can't connect to the internet or has little to no battery life, the Find My app can still help you track it down using the Find My network — hundreds of millions of iPhone, iPad, and Mac devices around the world. Nearby devices securely send the location of your missing device to iCloud, then you can see where it is in the Find My app. It's all anonymous and encrypted to protect everyone's privacy.</p> <p data-bbox="873 1044 1503 1076">Source: https://www.apple.com/icloud/find-my/</p>

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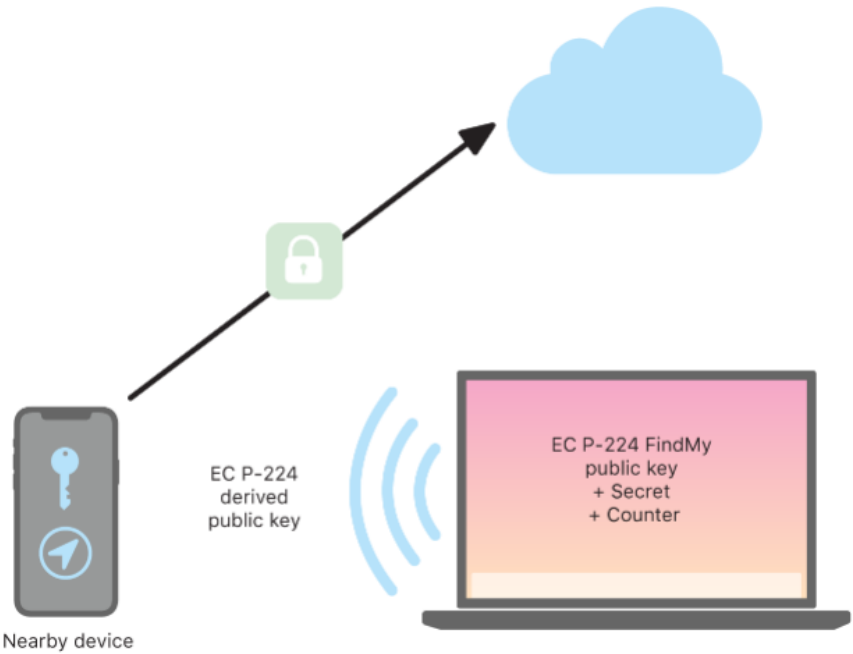
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="646 284 1766 342"><h2>Using Find My to locate missing Apple devices</h2></div> <div data-bbox="646 362 1751 607"><p>Any Apple devices within Bluetooth range that have offline finding enabled can detect a signal from another Apple device configured to allow Find My and read the current broadcast key P_i. Using an ECIES construction and the public key P_i from the broadcast, the finder devices encrypt their current location information and relay it to Apple. The encrypted location is associated with a server index which is computed as the SHA256 hash of the P-224 public key P_i obtained from the Bluetooth payload. Apple never has the decryption key, so Apple can’t read the location encrypted by the finder. The owner of the missing device can reconstruct the index and decrypt the encrypted location.</p></div> <div data-bbox="646 662 1493 1312"><p>The diagram illustrates the Find My process. A 'Nearby device' (smartphone) sends an 'EC P-224 derived public key' (represented by a green padlock icon) to a cloud server. A laptop displays the 'EC P-224 FindMy public key + Secret + Counter' and communicates wirelessly with the nearby device.</p></div> <div data-bbox="695 1321 1677 1357"><p>Source: https://support.apple.com/en-au/guide/security/sece994d0126/web</p></div>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Find My security</p> <p>The Find My app for Apple devices is built on a foundation of advanced public key cryptography.</p> <p>Overview</p> <p>The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.</p> <p>Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can’t connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with “offline finding” enabled in Find My settings can act as a “finder device”. This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.</p> <p><i>Note:</i> Find My may not be available in all countries or regions.</p> <p>Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="751 284 1650 418">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p data-bbox="968 435 1402 467">https://arxiv.org/pdf/2103.02282</p> <p data-bbox="894 516 1136 552">1 Introduction</p> <p data-bbox="894 570 1455 873">In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for offline devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> offline devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF</p> <p data-bbox="968 889 1402 922">https://arxiv.org/pdf/2103.02282</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="919 302 1461 337">6 Apple Offline Finding in Detail</p> <p data-bbox="919 358 1482 532">This section describes and discusses the technical details of Apple’s OF system. In reference to Fig. 1, we (1) explain the involved cryptography and the key exchange during initial device pairing, and then explain the protocols implementing (2) <i>losing</i>, (3) <i>finding</i>, (4) <i>searching</i> for devices.</p> <p data-bbox="919 545 1482 751">In short, devices and accessories in lost mode send out BLE advertisements containing a public key. Finder devices receive them, encrypt their location by using the public key, and upload a report to Apple’s servers. This results in an end-to-end encrypted location report that cannot be read by Apple or any other third-party that does not have access to the owner’s private keys.</p> <p data-bbox="968 797 1402 828">https://arxiv.org/pdf/2103.02282</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="501 310 1629 440">Set separation alerts in case you leave a device behind in Find My on iPhone</p> <p data-bbox="501 464 1820 574">In the Find My app, you can turn on separation alerts for a device so you don’t accidentally leave it behind. You can also set Trusted Locations, which are locations where you can leave your device without receiving an alert.</p> <p data-bbox="501 610 1787 680">If you have an iPhone Wallet with MagSafe and Find My support, you can get an alert if it detaches from your iPhone.</p> <p data-bbox="501 721 1824 833">Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See <u><a data-bbox="501 764 989 792" href="#">Change notification settings on iPhone</u>. Location sharing and finding devices aren’t available in all countries or regions.</p> <p data-bbox="453 891 1919 959">Source: <a data-bbox="453 891 1919 959" href="https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions">https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions.</p>

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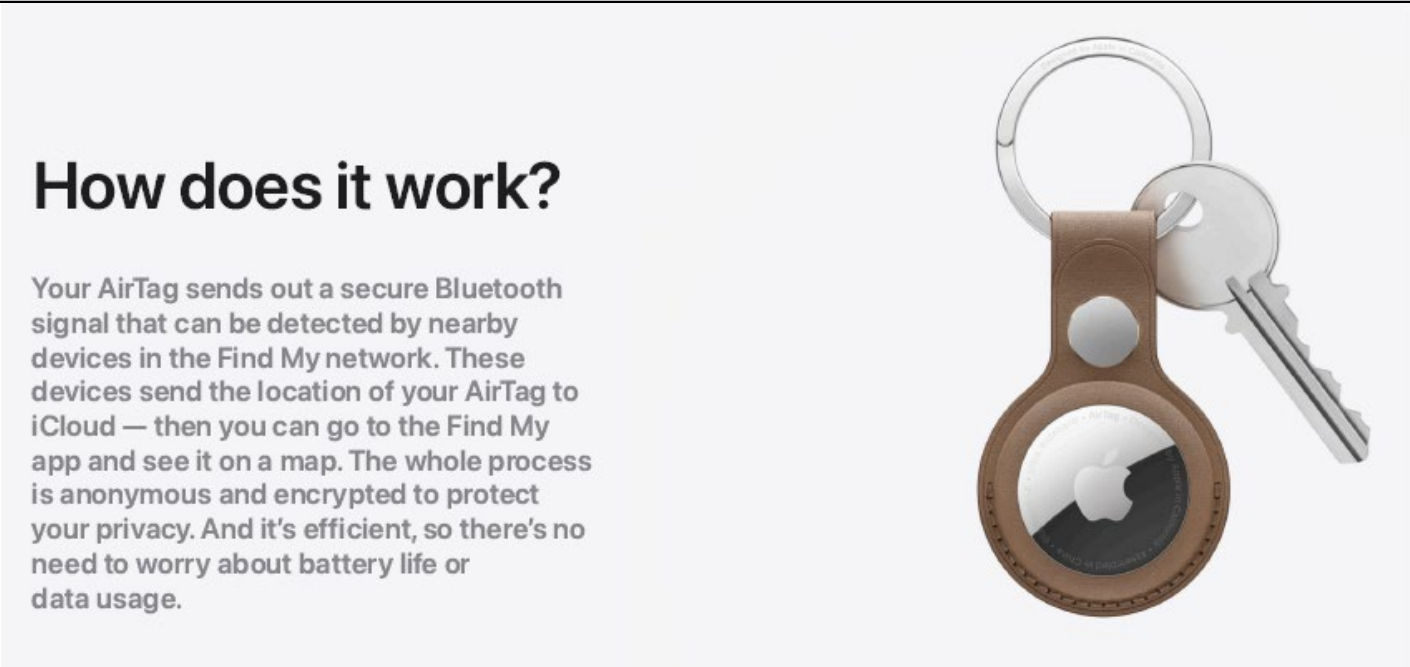
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="478 264 1879 927">  <p>How does it work?</p> <p>Your AirTag sends out a secure Bluetooth signal that can be detected by nearby devices in the Find My network. These devices send the location of your AirTag to iCloud — then you can go to the Find My app and see it on a map. The whole process is anonymous and encrypted to protect your privacy. And it's efficient, so there's no need to worry about battery life or data usage.</p> </div> <p align="center">Source: https://www.apple.com/airtag/</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p>
[1A] receiving and processing the distinctive defining signal in the mobile station, the distinctive defining signal at least defining a	<p>The Apple Accused Products perform the method of receiving and processing the distinctive defining signal in the mobile station, the distinctive defining signal at least defining a special area by one or more of:</p> <p>(1) a coverage area of the distinctive defining signal; (2) a portion of the coverage area that intersects with another area of coverage of another radio communication defining device; and (3) a sum of the area of coverage and the another area of coverage, the distinctive defining signal including information indicating whether or not the radio communication defining device is in a predetermined environment.</p> <p>For example, the radio communication defining device (<i>e.g.</i>, an Apple device) broadcasts a distinctive defining signal (<i>e.g.</i>, a Bluetooth Low Energy (BLE) beacon). The distinctive defining signal (<i>e.g.</i>, BLE Beacon) at least</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>special area by one or more of: (1) a coverage area of the distinctive defining signal; (2) a portion of the coverage area that intersects with another area of coverage of another radio communication defining device; and (3) a sum of the area of coverage and the another area of coverage, the distinctive defining signal including information indicating whether or not the radio communication defining device is in a</p>	<p>defines a first special area by its BLE beacon range (<i>e.g.</i>, coverage area of the distinctive defining signal). A mobile station when within the special area defined by the coverage area of the distinctive defining signal receives the signal and processes it for extracting identification information.</p> <p align="center">1 Introduction</p> <p>In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for off-line devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> off-line devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF will officially support the tracking of non-Apple devices in the future [6]. Regardless of its size, the system has sparked considerable interest and discussion within the broader tech and security communities [28, 29] as Apple makes strong security and privacy claims supported by new cryptographic primitives that other commercial systems are lacking [51]. In particular, Apple claims that it cannot access location reports, finder identities are not revealed, and BLE advertisements cannot be used to track devices [35]. Apple has yet to provide ample proof for their claims as, until today, only selected components have been publicized [4, 6, 35].</p> <p align="right">Source: https://arxiv.org/pdf/2103.02282</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
predetermined environment; and	<p data-bbox="709 289 1268 337">2.1 Bluetooth Low Energy</p> <p data-bbox="709 367 1604 898">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 963 1457 995">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="751 1081 1646 1214">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p data-bbox="968 1235 1402 1268">https://arxiv.org/pdf/2103.02282</p>

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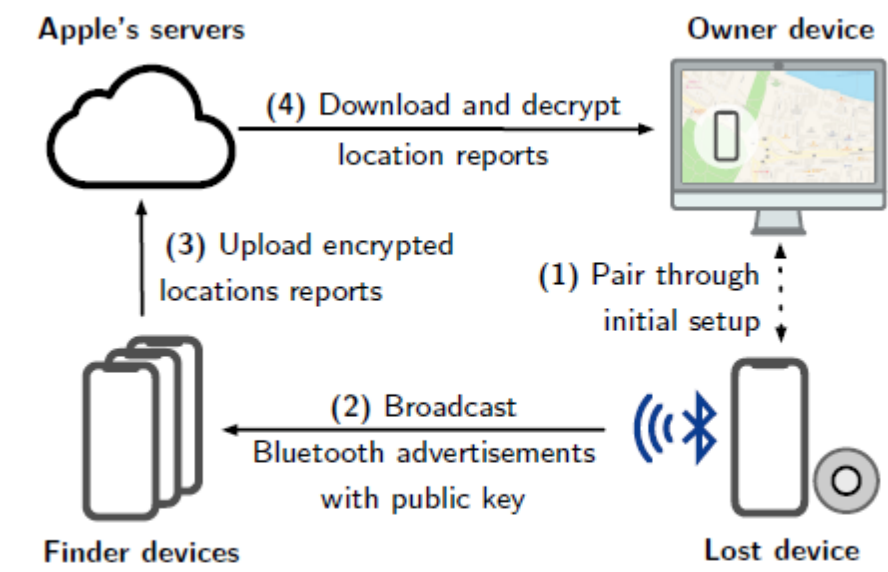
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates the simplified offline finding (OF) workflow with the following components and steps:</p> <ul style="list-style-type: none"> Apple's servers: Represented by a cloud icon. Owner device: Represented by a computer monitor icon. Finder devices: Represented by a stack of three smartphone icons. Lost device: Represented by a smartphone icon with a Bluetooth symbol and a circular icon next to it. <p>The workflow steps are as follows:</p> <ol style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device and the Lost device. (2) Broadcast Bluetooth advertisements with public key: A solid arrow points from the Lost device to the Finder devices. (3) Upload encrypted locations reports: A solid arrow points from the Finder devices to Apple's servers. (4) Download and decrypt location reports: A solid arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products																						
	<p>Table 2. OF advertisement format (with zero-indexed bytes).</p> <table border="1"> <thead> <tr> <th>Bytes</th><th>Content (details cf. [6, § 5.1])</th></tr> </thead> <tbody> <tr> <td>0–5</td><td>BLE address $((p_4[0] \mid (0b11 \ll 6)) \parallel p_4[1..5])$</td></tr> <tr> <td>6</td><td>Payload length in bytes (30)</td></tr> <tr> <td>7</td><td>Advertisement type (0xFF for manufacturer-specific data)</td></tr> <tr> <td>8–9</td><td>Company ID (0x004C)</td></tr> <tr> <td>10</td><td>OF type (0x12)</td></tr> <tr> <td>11</td><td>OF data length in bytes (25)</td></tr> <tr> <td>12</td><td>Status (e.g., battery level)</td></tr> <tr> <td>13–34</td><td>Public key bytes $p_4[6..27]$</td></tr> <tr> <td>35</td><td>Public key bits $p_4[0] \gg 6$</td></tr> <tr> <td>36</td><td>Hint (0x00 on iOS reports)</td></tr> </tbody> </table> <p>https://arxiv.org/pdf/2103.02282</p> <p>Fig. 2. Binary format of a location report.</p> <p>https://arxiv.org/pdf/2103.02282</p>	Bytes	Content (details cf. [6, § 5.1])	0–5	BLE address $((p_4[0] \mid (0b11 \ll 6)) \parallel p_4[1..5])$	6	Payload length in bytes (30)	7	Advertisement type (0xFF for manufacturer-specific data)	8–9	Company ID (0x004C)	10	OF type (0x12)	11	OF data length in bytes (25)	12	Status (e.g., battery level)	13–34	Public key bytes $p_4[6..27]$	35	Public key bits $p_4[0] \gg 6$	36	Hint (0x00 on iOS reports)
Bytes	Content (details cf. [6, § 5.1])																						
0–5	BLE address $((p_4[0] \mid (0b11 \ll 6)) \parallel p_4[1..5])$																						
6	Payload length in bytes (30)																						
7	Advertisement type (0xFF for manufacturer-specific data)																						
8–9	Company ID (0x004C)																						
10	OF type (0x12)																						
11	OF data length in bytes (25)																						
12	Status (e.g., battery level)																						
13–34	Public key bytes $p_4[6..27]$																						
35	Public key bits $p_4[0] \gg 6$																						
36	Hint (0x00 on iOS reports)																						

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="1108 305 1226 415"></div> <div data-bbox="741 453 1600 516"><h2>Connect to the Find My network</h2></div> <div data-bbox="651 548 1688 691"><p>Let users locate your products with the Find My network. With hundreds of millions of Apple devices around the world, advanced end-to-end encryption, and industry leading security, the Find My network lets users easily locate their belongings in the Find My app with the peace of mind that their privacy is protected.</p></div> <div data-bbox="564 753 1764 1313"></div> <div data-bbox="875 1357 1493 1396"><p>Source: https://developer.apple.com/find-my/</p></div>

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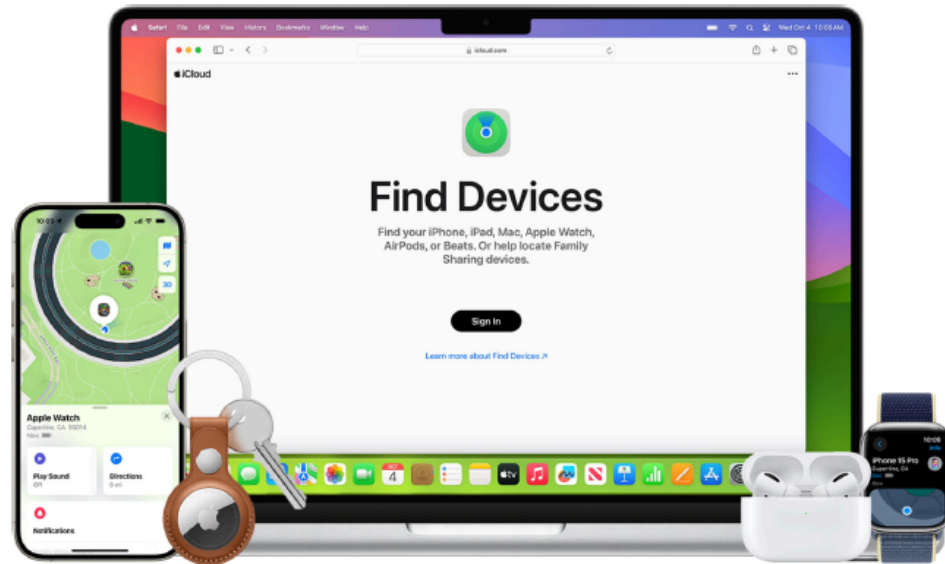
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="682 290 1619 414"><h2>Find your lost Apple device or AirTag with Find My</h2></div> <div data-bbox="682 436 1606 535"><p>If you lose your Apple device, personal item connected to an AirTag, or other Find My network accessory, use Find My to find it or mark it as lost to protect your device and personal information.</p></div> <div data-bbox="709 552 1648 1112">A composite image illustrating the Find My ecosystem. In the center is a laptop screen displaying the 'Find Devices' page of the iCloud website, which includes a 'Sign In' button and a link to 'Learn more about Find Devices'. To the left of the laptop is an iPhone showing the Find My app interface with a map and options like 'Play Sound', 'Directions', and 'Notifications'. In front of the laptop are a pair of white AirPods in their case and a set of keys with a brown leather AirTag attached. To the right of the laptop is an Apple Watch.</div> <div data-bbox="682 1151 1285 1203"><h2>Find your stuff with Find My</h2></div> <div data-bbox="682 1221 1673 1307"><p>If you've lost or misplaced an Apple device or personal item with an AirTag attached, use Find My to find your device or item on a map. You can get directions to its location and, when you're nearby, play a sound or even get help finding its exact location.</p></div> <div data-bbox="856 1343 1507 1382"><p>Source: https://support.apple.com/en-us/104978</p></div>

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	<h2 data-bbox="552 289 1465 354">Find your Apple device or AirTag</h2> <ol data-bbox="552 381 1860 751" style="list-style-type: none"><li data-bbox="552 381 762 410">1. Open Find My.<li data-bbox="552 431 900 461">2. Choose Devices or Items.<li data-bbox="552 482 1860 751">3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items.<ul data-bbox="585 574 1835 751" style="list-style-type: none"><li data-bbox="585 574 1199 604">◦ Choose Directions to open its location in Maps.<li data-bbox="585 625 995 654">◦ If you're close, tap Play Sound.<li data-bbox="585 675 1835 751">◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p data-bbox="552 781 821 810"><a data-bbox="552 781 821 810" href="#">Find a nearby AirTag ></p> <p data-bbox="552 842 1619 872">If you don't have an Apple device to use Find My, find your devices at <a data-bbox="1415 842 1619 872" href="https://support.apple.com/en-us/104978">iCloud.com/find.</p> <p data-bbox="871 911 1503 940">Source: <a data-bbox="871 911 1503 940" href="https://support.apple.com/en-us/104978">https://support.apple.com/en-us/104978</p>

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	<p data-bbox="527 310 1026 342">Use Find Devices on iCloud.com</p> <p data-bbox="527 370 1528 402">You can find your device, mark it as lost, or erase it remotely at iCloud.com/find.</p> <ul data-bbox="527 435 1843 776" style="list-style-type: none"><li data-bbox="527 435 1843 548">• When you sign in, you might be asked to enter a verification code sent to a trusted device. If you lost your only trusted device or otherwise can't get the code, select the Find Devices button instead of entering a code.<li data-bbox="527 570 1843 646">• When you're using iCloud.com/find, you can't find your device's location if it's powered off, the battery has run out, or more than 24 hours has passed since its last location was sent to Apple.<li data-bbox="527 667 1843 776">• If you have Stolen Device Protection turned on for your iPhone and you use it to change your Apple ID password while in an unfamiliar location, the location of your devices may not be visible at iCloud.com/find. <p data-bbox="527 808 1123 841">Learn more about Find Devices on iCloud.com ></p> <p data-bbox="527 865 1829 927">AirTag and Find My network accessories can be found only with the Find My app on iPhone, iPad, and Mac, or the Find Items app on Apple Watch.</p> <p data-bbox="527 959 989 992">Use a family member's device</p> <p data-bbox="527 1024 1860 1097">If you're part of a Family Sharing group, you can use Find My on a family member's device. After you share your location with your family members, your devices are listed in their Find My app under Devices.</p> <p data-bbox="527 1130 1089 1162">Learn how to find a family member's device ></p> <p data-bbox="869 1190 1503 1222">Source: https://support.apple.com/en-us/104978</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<h2 data-bbox="653 264 1461 318">Locate a device in Find My on iPhone</h2> <p data-bbox="653 334 1640 427">Use the Find My app 📍 to locate and play a sound on a missing iPhone, iPad, iPod touch, Mac, Apple Watch, AirPods, or Beats headphones (supported models). In order to locate a device, you must turn on Find My [device] <i>before</i> it's lost.</p> <p data-bbox="653 456 1661 513"><i>Note:</i> If you want to see how far away your devices are from you, make sure you turn on Precise Location for the Find My app. See Control the location information you share on iPhone.</p> <p data-bbox="653 537 1661 594">If you lose your iPhone and don't have access to the Find My app, you can locate or play a sound on your device using Find Devices on iCloud.com.</p> <p data-bbox="653 626 1467 651"><i>Note:</i> Location sharing and finding devices aren't available in all countries or regions.</p> <div data-bbox="653 683 1163 1317"></div> <p data-bbox="709 1365 1667 1399">Source: https://support.apple.com/en-au/guide/iphone/iph09b087eda/ios</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="516 305 1759 362">Use Lost Mode in Find Devices on iCloud.com</p> <p data-bbox="516 394 1749 459">Lost Mode lets you lock your iPhone, iPad, iPod touch, Mac, or Apple Watch so that others can’t access your personal information. You can turn on Lost Mode in Find Devices on iCloud.com.</p> <p data-bbox="516 492 1734 557">Lost Mode requires a device that meets the minimum system requirements listed in the Apple Support article System requirements for iCloud.</p> <p data-bbox="516 589 1094 621">To sign in to Find Devices, go to icloud.com/find.</p> <hr data-bbox="516 678 1791 682"/> <p data-bbox="644 690 1732 722">Source: https://support.apple.com/guide/icloud/use-lost-mode-mmfc0f0165/icloud</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Find My security</p> <p>The Find My app for Apple devices is built on a foundation of advanced public key cryptography.</p> <p>Overview</p> <p>The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.</p> <p>Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can’t connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with “offline finding” enabled in Find My settings can act as a “finder device”. This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.</p> <p><i>Note:</i> Find My may not be available in all countries or regions.</p> <p>Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>1 Introduction</p> <p>In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for off-line devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> off-line devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF</p> <p align="center">https://arxiv.org/pdf/2103.02282</p> <p>6 Apple Offline Finding in Detail</p> <p>This section describes and discusses the technical details of Apple’s OF system. In reference to Fig. 1, we (1) explain the involved cryptography and the key exchange during initial device pairing, and then explain the protocols implementing (2) <i>losing</i>, (3) <i>finding</i>, (4) <i>searching</i> for devices.</p> <p>In short, devices and accessories in lost mode send out BLE advertisements containing a public key. Finder devices receive them, encrypt their location by using the public key, and upload a report to Apple’s servers. This results in an end-to-end encrypted location report that cannot be read by Apple or any other third-party that does not have access to the owner’s private keys.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>[1B] sending from the mobile station via a mobile telephone network an updating signal to one or more servers of a provider of presence related services about the mobile station's presence in the special area,</p>	<p>The Apple Accused Products perform a method of sending from the mobile station via a mobile telephone network an updating signal to one or more servers of a provider of presence related services about the mobile station's presence in the special area.</p> <p>For example, when the mobile station (<i>e.g.</i>, an Apple iPhone) is within the special area defined by the range of the BLE beacon of the radio communication defining device (<i>e.g.</i>, an Apple device), the Find My network servers receive an updating signal from the mobile station to update the location data of the radio communication defining device.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Find My

Find My security

The Find My app for Apple devices is built on a foundation of advanced public key cryptography.

Overview

The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.

Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can't connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with "offline finding" enabled in Find My settings can act as a "finder device". This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.

Note: Find My may not be available in all countries or regions.

Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="720 264 1619 500">Advertising Interval. The same key is emitted during a window of 15 minutes, after which the next key p_{i+1} is used. During a window, OF-enabled iOS and macOS devices emit one BLE advertisement every two seconds when they lose Internet connectivity.</p> <p data-bbox="919 524 1457 557">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="798 573 1003 621">6.3 Finding</p> <p data-bbox="798 638 1556 800">All finder devices regularly scan for OF advertisements. When the finder receives a packet in the OF advertisement format, it generates and uploads an encrypted location report to Apple’s servers.</p> <p data-bbox="798 816 1556 1011">Generating Reports. The finder parses the public key from the advertisement. Then, it determines its current geolocation and creates a message that includes location, accuracy,³ and status information (cf. green fields in Fig. 2). The message is then encrypted using</p> <p data-bbox="919 1027 1457 1060">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

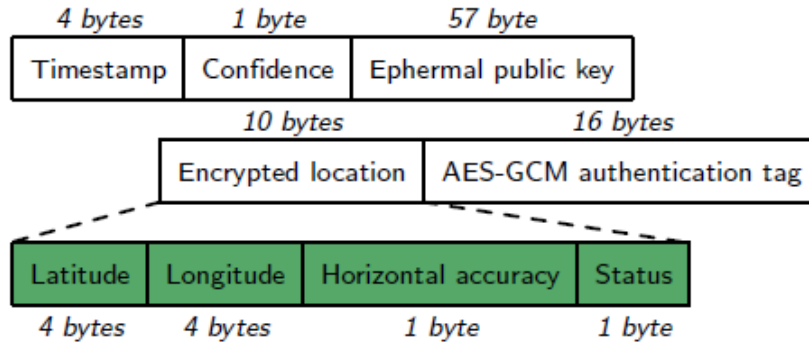
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="795 313 1598 654"><p>The diagram illustrates the binary format of a location report. It consists of the following fields and their sizes:</p><ul style="list-style-type: none">Timestamp: 4 bytesConfidence: 1 byteEphemeral public key: 57 bytesEncrypted location: 10 bytesAES-GCM authentication tag: 16 bytesLatitude: 4 bytesLongitude: 4 bytesHorizontal accuracy: 1 byteStatus: 1 byte<p>The fields Latitude, Longitude, Horizontal accuracy, and Status are highlighted in green. Dashed lines connect the Encrypted location field to the Latitude and Longitude fields, and the AES-GCM authentication tag field to the Horizontal accuracy and Status fields.</p></div> <p data-bbox="804 690 1316 719">Fig. 2. Binary format of a location report.</p> <p data-bbox="917 751 1455 781">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Uploading Reports. Finder devices accumulate reports over time and upload them in batches regularly, possibly reducing energy and bandwidth consumption. During the evaluation with our test devices, we discovered that the median time from generating to uploading a location report is 26 min. We include the delay distribution in Appendix B. The delay can increase to several hours if the finder device is in a low power mode [7]. A finder limits the number of uploaded reports for the same advertisement key to four, most likely to prevent excess traffic on Apple’s servers. The upload is implemented as an HTTPS POST request to https://gateway.icloud.com/acsnservice/submit. Every request is authenticated to ensure that only genuine Apple devices can upload requests. Table 3 shows the request header containing a device identity certificate, the signing CA’s certificate, and an Elliptic Curve Digital Signature Algorithm (ECDSA) signature over the request body. The certificates are stored in the device’s keychain. However, the private key used for signing is stored in the Secure Enclave Processor (SEP), Apple’s implementation of a trusted execution environment (TEE) [4]. The SEP prohibits the extraction of the signing key but provides an interface for signing requests. We assume that the finder authentication serves as a form of remote attestation. However, we were unable to verify this assumption due to the obfuscated code. The HTTPS request body is prefixed with a fixed header (0x0F8AE0) and one byte specifying the number of included reports. This limits the number of reports in a single request to 255. Each report consists the ID (SHA-256(p_i)) followed by the 88-byte location report shown in Fig. 2.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="506 298 1650 431">Set separation alerts in case you leave a device behind in Find My on iPhone</p> <p data-bbox="506 456 1845 573">In the Find My app, you can turn on separation alerts for a device so you don’t accidentally leave it behind. You can also set Trusted Locations, which are locations where you can leave your device without receiving an alert.</p> <p data-bbox="506 605 1808 678">If you have an iPhone Wallet with MagSafe and Find My support, you can get an alert if it detaches from your iPhone.</p> <p data-bbox="506 719 1850 836">Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See <u><a data-bbox="506 760 999 792" href="#">Change notification settings on iPhone</u>. Location sharing and finding devices aren’t available in all countries or regions.</p> <p data-bbox="455 889 1921 958">Source: <a data-bbox="590 889 1921 958" href="https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions">https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="617 298 1587 342">Set up alerts for your iPhone, iPad, Mac, or AirPods</p> <p data-bbox="617 370 1724 430">You can set up separation alerts for your iPhone, iPad, or iPod touch with iOS 15, iPadOS 15, or later; Mac with Apple silicon and macOS 12 or later; or AirPods with the Find My network turned on.</p> <p data-bbox="617 459 1696 519">You can only set up a separation alert from the device sharing your location. You receive an alert every time the device sharing your location separates from the device you set an alert for.</p> <ol data-bbox="617 548 1713 911" style="list-style-type: none"><li data-bbox="617 548 1089 574">1. Go to the Find My app  on your iPhone.<li data-bbox="617 602 1713 662">2. Tap Devices at the bottom of the screen, then tap the name of the device you want to set up an alert for.<li data-bbox="617 690 1178 716">3. Below Notifications, tap Notify When Left Behind.<li data-bbox="617 743 1409 769">4. Turn on Notify When Left Behind, then follow the onscreen instructions.<li data-bbox="617 797 1682 857">5. If you want to add a Trusted Location, you can choose a suggested location, or tap New Location, select a location on the map, then tap Done.<li data-bbox="617 885 762 911">6. Tap Done. <p data-bbox="455 959 1919 1024">Source: https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p data-bbox="611 310 1619 418">Set separation alerts in case you leave an AirTag or item behind in Find My on iPhone</p> <p data-bbox="611 440 1703 500">In the Find My app, you can turn on separation alerts for an AirTag or other item so you don't accidentally leave it behind. You receive an alert every time the device sharing your location separates from the item.</p> <p data-bbox="611 526 1703 586">You can also set Trusted Locations, which are locations where you can leave an item without receiving an alert.</p> <p data-bbox="611 620 1719 716">Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See Change notification settings on iPhone. Location sharing and finding items aren't available in all countries or regions.</p> <hr data-bbox="611 768 1719 771"/> <ol data-bbox="611 824 1661 1149" style="list-style-type: none">1. Go to the Find My app  on your iPhone.2. Tap Items at the bottom of the screen, then tap the name of the item you want to set an alert for.3. Below Notifications, tap Notify When Left Behind.4. Turn on Notify When Left Behind.5. If you want to add a Trusted Location, you can choose a suggested location, or tap New Location, select a location on the map, then tap Done.6. Tap Done. <p data-bbox="596 1219 1778 1287">Source: https://support.apple.com/guide/iphone/get-notified-if-you-leave-an-item-behind-iph5fe280d90/18.0/ios/18.0</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="581 272 1801 1174"><p>Set it so you won't forget it.</p><p>Find My can even let you know if you leave your devices in an unfamiliar location. Just turn on Notify When Left Behind on your iPhone, Apple Watch, or iPad. Want to leave your MacBook at the studio? Easy. You can fine tune your notifications by device and location.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirTagFind My-compatible products</div> <p>Source: https://www.apple.com/icloud/find-my/</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>[1C] the updating signal being useable by the one or more servers of the provider of presence related services to adjust an operating parameter, which comprises one or more of a tariff and a service flag, to adjust, activate, or deactivate the presence related services provided to the mobile station, and</p>	<p>The Apple Accused Products perform the method of the updating signal being useable by the one or more servers of the provider of presence related services to adjust an operating parameter, which comprises one or more of a tariff and a service flag, to adjust, activate, or deactivate the presence related services provided to the mobile station.</p> <p>For example, the one or more servers of the provider of the presence related services (<i>e.g.</i>, the Apple Find My service) upon receiving an updating signal from a mobile station (<i>e.g.</i>, an Apple iPhone) accesses at least a portion of the data (<i>e.g.</i>, at least the location data). The Apple Find My server then adjusts at least one operating parameter (<i>e.g.</i>, the location data) stored in the database of the provider of the presence related service.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Find My

Find My security

The Find My app for Apple devices is built on a foundation of advanced public key cryptography.

Overview

The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.

Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can't connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with "offline finding" enabled in Find My settings can act as a "finder device". This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.

Note: Find My may not be available in all countries or regions.

Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="730 293 1289 342">2.1 Bluetooth Low Energy</p> <p data-bbox="730 371 1625 906">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 935 1457 966">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="772 313 1583 367">3 Apple Offline Finding Overview</p> <p data-bbox="772 394 1598 881">Apple introduced OF in 2019 for iOS 13, macOS 10.15, and watchOS 6 [10]. OF enables locating Apple devices without an Internet connection and promises to operate in a privacy-preserving manner. In 2020, Apple announced to support third-party BLE-enabled devices to be tracked by the OF network [11] and released a protocol specification for their integration [6]. We found that this public specification is incomplete concerning the overall OF system. Within this paper, we focus on our recovered specification that was partly validated by the accessory specification [6].</p> <p data-bbox="772 894 1598 1336">In the following, we give a brief overview of how OF works and introduce the different roles of devices. Fig. 1 depicts the interplay of the roles and protocols involved in OF. In particular, OF involves (1) initial pairing of owner devices, (2) broadcasting BLE advertisements that contain a rolling public key, (3) uploading encrypted location reports to Apple’s servers, and (4) retrieving the location reports on owner devices. The terminology of the roles below has been derived from the official documentation [6].</p> <p data-bbox="919 1352 1457 1385">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p>Lost devices. Devices that determine to be in a lost state start sending out BLE advertisements with a public key to be discovered by finder devices. Apple devices</p> <p>are considered to be lost when they lose Internet connectivity. Third-party accessories [6] are small battery-powered devices that can be attached to a personal item and are set up through an owner device. Accessories determine to be <i>lost</i> when they lose their BLE connection to the owner device.</p> <p>Finder devices. Finder devices form the core of the OF network. As of 2020, only iPhones and iPads with a GPS module are offering finder capabilities. Finder devices can discover lost devices and accessories by scanning for BLE advertisements. Upon receiving an OF advertisement, a finder creates an end-to-end encrypted location report that includes its current location and sends it to Apple’s servers.</p> <p>Apple’s servers. Apple’s servers store OF location reports submitted by finder devices. Owner devices can fetch those reports and decrypt them locally.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

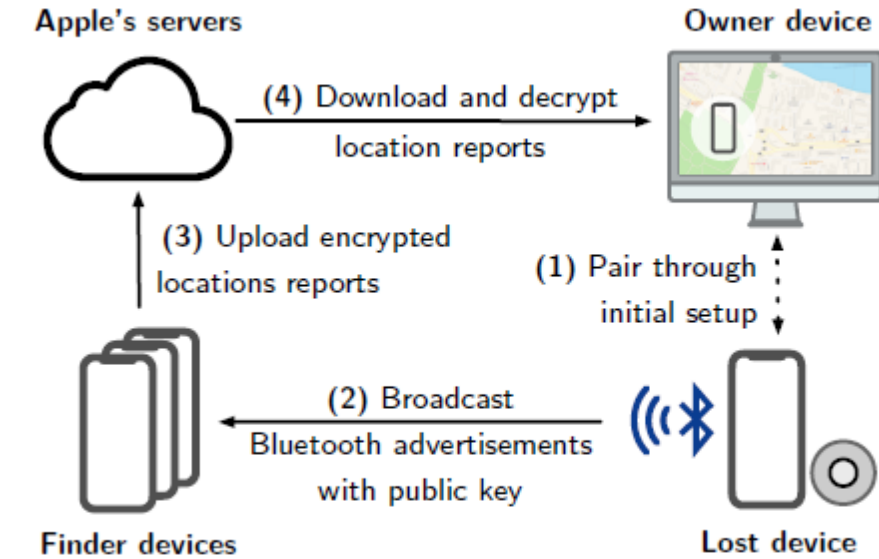
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates the simplified offline finding (OF) workflow with the following components and steps:</p> <ul style="list-style-type: none"> Apple's servers: Represented by a cloud icon. Owner device: Represented by a computer monitor showing a map. Finder devices: Represented by three overlapping smartphone icons. Lost device: Represented by a smartphone icon with a circular arrow around it. <p>The workflow steps are as follows:</p> <ol style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device and the Lost device. (2) Broadcast Bluetooth advertisements with public key: An arrow points from the Lost device to the Finder devices. (3) Upload encrypted locations reports: An arrow points from the Finder devices to Apple's servers. (4) Download and decrypt location reports: An arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="814 305 1575 357">6 Apple Offline Finding in Detail</p> <p data-bbox="814 383 1602 630">This section describes and discusses the technical details of Apple’s OF system. In reference to Fig. 1, we (1) explain the involved cryptography and the key exchange during initial device pairing, and then explain the protocols implementing (2) <i>losing</i>, (3) <i>finding</i>, (4) <i>searching</i> for devices.</p> <p data-bbox="814 646 1602 938">In short, devices and accessories in lost mode send out BLE advertisements containing a public key. Finder devices receive them, encrypt their location by using the public key, and upload a report to Apple’s servers. This results in an end-to-end encrypted location report that cannot be read by Apple or any other third-party that does not have access to the owner’s private keys.</p> <p data-bbox="919 976 1457 1011">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="720 1044 1612 1279">Advertising Interval. The same key is emitted during a window of 15 minutes, after which the next key p_{i+1} is used. During a window, OF-enabled iOS and macOS devices emit one BLE advertisement every two seconds when they lose Internet connectivity.</p> <p data-bbox="919 1300 1457 1336">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

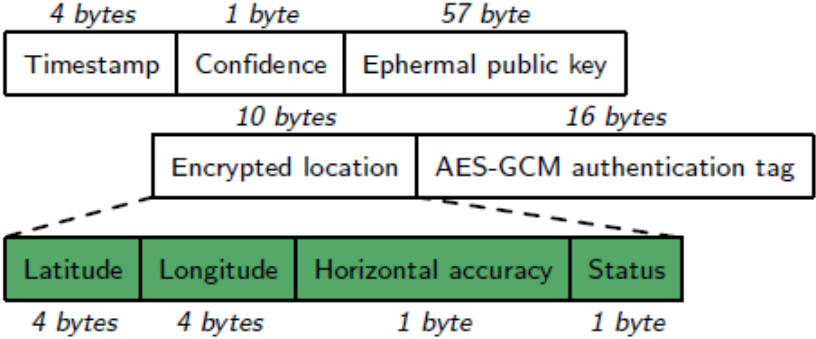
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p>6.3 Finding</p> <p>All finder devices regularly scan for OF advertisements. When the finder receives a packet in the OF advertisement format, it generates and uploads an encrypted location report to Apple's servers.</p> <p>Generating Reports. The finder parses the public key from the advertisement. Then, it determines its current geolocation and creates a message that includes location, accuracy,³ and status information (cf. green fields in Fig. 2). The message is then encrypted using</p> <p style="text-align: center;">Source: https://arxiv.org/pdf/2103.02282</p> <div style="text-align: center;">  <pre> graph TD subgraph Row1 [] direction LR T[Timestamp 4 bytes] C[Confidence 1 byte] EPK[Ephemeral public key 57 bytes] end subgraph Row2 [] direction LR EL[Encrypted location 10 bytes] AT[AES-GCM authentication tag 16 bytes] end subgraph Row3 [] direction LR L[Latitude 4 bytes] Lon[Longitude 4 bytes] HA[Horizontal accuracy 1 byte] S[Status 1 byte] end Row1 --- Row2 Row2 --- Row3 </pre> </div> <p>Fig. 2. Binary format of a location report.</p> <p style="text-align: center;">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="802 285 1045 326">6.4 Searching</p> <p data-bbox="802 354 1543 708">An owner requests reported location from Apple’s servers when searching for a lost device. As the advertisement keys are synchronized across all of the owner’s devices, the owner can use any of their other devices with Apple’s <i>Find My</i> app to download and decrypt the location reports. In short, the owner device fetches location reports from Apple’s servers by sending a list of the most recent public advertisement keys of the lost device.</p> <p data-bbox="919 721 1457 753">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Uploading Reports. Finder devices accumulate reports over time and upload them in batches regularly, possibly reducing energy and bandwidth consumption. During the evaluation with our test devices, we discovered that the median time from generating to uploading a location report is 26 min. We include the delay distribution in Appendix B. The delay can increase to several hours if the finder device is in a low power mode [7]. A finder limits the number of uploaded reports for the same advertisement key to four, most likely to prevent excess traffic on Apple’s servers. The upload is implemented as an HTTPS POST request to https://gateway.icloud.com/acsnservice/submit. Every request is authenticated to ensure that only genuine Apple devices can upload requests. Table 3 shows the request header containing a device identity certificate, the signing CA’s certificate, and an Elliptic Curve Digital Signature Algorithm (ECDSA) signature over the request body. The certificates are stored in the device’s keychain. However, the private key used for signing is stored in the Secure Enclave Processor (SEP), Apple’s implementation of a trusted execution environment (TEE) [4]. The SEP prohibits the extraction of the signing key but provides an interface for signing requests. We assume that the finder authentication serves as a form of remote attestation. However, we were unable to verify this assumption due to the obfuscated code. The HTTPS request body is prefixed with a fixed header (0x0F8AE0) and one byte specifying the number of included reports. This limits the number of reports in a single request to 255. Each report consists the ID (SHA-256(p_i)) followed by the 88-byte location report shown in Fig. 2.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="562 264 1822 1222"><p>See all your devices on a map.</p><p>Is your iPad at home or back at the office? Use the map to get a full picture of where your devices are — and where a missing one might be. For more info, just tap on a product icon. Some devices can still send their location for up to 24 hours after they've been turned off or have low battery life.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirPodsAirTagFind My-compatible products</div> <div data-bbox="1234 313 1822 1222"></div> <p>Source: https://www.apple.com/icloud/find-my/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="583 272 1801 1174"><p>Set it so you won't forget it.</p><p>Find My can even let you know if you leave your devices in an unfamiliar location. Just turn on Notify When Left Behind on your iPhone, Apple Watch, or iPad. Want to leave your MacBook at the studio? Easy. You can fine tune your notifications by device and location.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirTagFind My-compatible products</div> <p>Source: https://www.apple.com/icloud/find-my/</p> <p>For example, the registered mobile station utilizes a service or tariff flag to enable or disable a function, for example, “Play Sound” or “Find Nearby.” When the mobile station receives the operating parameter (<i>e.g.</i>, updated location data) of the Apple device (<i>e.g.</i>, the Apple device is not within the range of mobile station), the “Play Sound” or “Find Nearby” functions are enabled, allowing the user to play a sound or find nearby Apple devices.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p>Alternatively, these functions may be disabled when the updated location data (<i>e.g.</i>, the operating parameter) indicates that the mobile station is not within the range of the Apple device.</p> <h2 data-bbox="520 362 1451 423">Find your Apple device or AirTag</h2> <ol data-bbox="520 456 1850 829" style="list-style-type: none">1. Open Find My.2. Choose Devices or Items.3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items.<ul data-bbox="556 651 1822 829" style="list-style-type: none">◦ Choose Directions to open its location in Maps.◦ If you're close, tap Play Sound.◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p data-bbox="520 862 793 889">Find a nearby AirTag ></p> <p data-bbox="520 922 1604 954">If you don't have an Apple device to use Find My, find your devices at iCloud.com/find.</p> <p data-bbox="869 971 1505 1003">Source: https://support.apple.com/en-us/104978</p> <h2 data-bbox="562 1040 1822 1167">What features are available for your missing device or item</h2> <p data-bbox="562 1200 1241 1224">Find My features and availability might vary by country or region.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>iPhone, iPad</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lost Mode)• Remote Erase• Notify When Found• Notify When Left Behind <p>Mac</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lock your Mac)• Remote Erase• Notify When Found• Notify When Left Behind* <p><small>* Feature only available on MacBooks with Apple Silicon.</small></p> <p>Apple Watch</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lost Mode)• Remote Erase• Notify When Found

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>AirPods (3rd generation), AirPods Pro, AirPods Max</p> <ul style="list-style-type: none">• View Location• Find Nearby• Play a Sound• Lost Mode (Mark as Lost)• Notify When Found• Notify When Left Behind <p>AirPods (1st generation), AirPods (2nd generation), Beats products</p> <ul style="list-style-type: none">• View Location• Play a Sound <p>AirTag</p> <ul style="list-style-type: none">• View Location• Find Nearby• Play a Sound• Lost Mode (Mark as Lost)• Notify When Found• Notify When Left Behind <p>Apple Pencil Pro</p> <ul style="list-style-type: none">• View Location (iPad only)• Find Nearby (iPad only) <p>Source: https://support.apple.com/en-us/104978</p> <p>Alternatively, the Apple Find My application also supports control of home devices based on a mobile station being present within a special area (<i>e.g.</i>, geofenced location). Thus, a signal indicating the location data to a</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>mobile station and/or any other Apple device acting as a smart home hub can be considered as including a request to access to a service (<i>e.g.</i>, to enable/run an automation, run a “scene”).</p> <p>Create scenes and automations with the Home app</p> <p>With the Home app, you can automate your accessories and create scenes to do what you want, when you want.</p> <p>Create a scene ☺ Create an automation ☺ Turn off or delete an automation ☺</p> <p>Here's what you need</p> <ul style="list-style-type: none">• Set up a home hub.• Add compatible smart home accessories to the Home app.• Update your iPhone or iPad to the latest version of iOS or iPadOS. To use the Home app on Mac, update your Mac to the latest version of macOS. <p>Create a scene</p> <p>With scenes, you can control multiple accessories at the same time. Create a scene called "Good Night" that turns off all of the lights and locks the front door — all at once. Or set a "Morning" scene that plays your favorite playlist on your HomePod, Apple TV,¹ or AirPlay-enabled speaker.</p> <p>Use a suggested scene</p> <ol style="list-style-type: none">1. In the Home app, tap or click the Add button , then select Add Scene .2. Choose a suggested scene. <p>Source: https://support.apple.com/en-us/102313</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

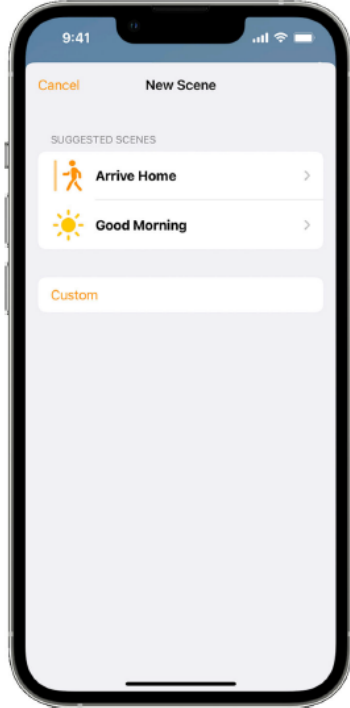
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="751 272 1098 976"></div> <p data-bbox="730 987 1604 1068">3. To adjust the settings for an accessory, tap or click it. To change which accessories are included in the scene, tap or click Add or Remove Accessories. To preview the scene, tap or click Test This Scene.</p> <p data-bbox="730 1049 903 1068">4. Tap or click Done.</p> <p data-bbox="869 1089 1503 1120">Source: https://support.apple.com/en-us/102313</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Create a custom scene</p> <ol style="list-style-type: none">1. In the Home app, tap or click the Add button , then select Add Scene .2. Tap or click Custom.3. Give your scene a name, then tap or click Add Accessories.4. Choose the accessories that you want to add, then tap or click Done.5. To adjust the settings for an accessory, tap or click it. To change which accessories are included in the scene, tap or click Add Accessories. To preview the scene, tap or click Test This Scene.6. Tap or click Done. <p>Source: https://support.apple.com/en-us/102313</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="653 277 1045 1078"></div> <p data-bbox="653 1117 1659 1174">To edit a scene on your iPhone or iPad, touch and hold it, then tap Edit Scene. On your Mac, double-click a scene.</p> <p data-bbox="653 1195 1648 1222">To turn on a scene, tap or click it. Or ask Siri. If you set up a home hub, you can also automate a scene ☺.</p> <p data-bbox="869 1243 1503 1274">Source: https://support.apple.com/en-us/102313</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Create an automation</p> <p>If you set up a home hub, you can trigger an accessory or scene based on the time of day, your location, sensor detection, and more. Create an automation that triggers your "I'm Here" scene when someone in your family arrives home. Or have all of the lights in a room turn on when a motion sensor detects movement.</p> <p>Create an automation based on an accessory's action</p> <p>When an accessory turns on, off, or detects something, you can automate other accessories and scenes to react and perform actions.</p> <ol style="list-style-type: none">1. In the Home app, tap or click the Add button , then select Add Automation .2. To start an automation when an accessory turns on or off, choose An Accessory is Controlled. Or choose A Sensor Detects Something.3. Select the accessory that starts the automation, then tap or click Next.4. Choose the action that triggers the automation, like if the accessory turns on or opens, then tap or click Next.5. Select scenes and accessories that react to the action, then tap or click Next.6. To adjust an accessory on iPhone or iPad, touch and hold it. On Mac, click the accessory. <p align="right">Source: https://support.apple.com/en-us/102313</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

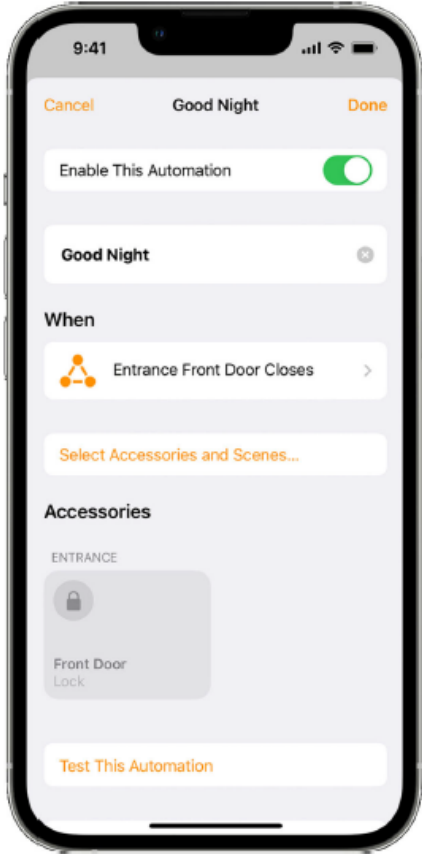
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p data-bbox="661 267 869 289">7. Tap or click Done.</p>  <p data-bbox="661 1206 1677 1263">Want to get an alert when an accessory detects something? Learn how to set up notifications for your accessories.</p> <p data-bbox="871 1281 1503 1313">Source: https://support.apple.com/en-us/102313</p> <p data-bbox="455 1354 1919 1421">ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>[1D] the updating signal comprising the information indicative of whether or not the radio communication defining device is located in the predetermined environment.</p>	<p>The Apple Accused Products perform the method wherein the updating signal comprising the information indicative of whether or not the radio communication defining device is located in the predetermined environment.</p> <p>For example, the updating signal transmitted by the mobile station to the one or more servers of the provider of the presence related service (<i>e.g.</i>, Apple Find My) comprise information related to the mobile station’s location and the identifier of the detected/connected radio communication defining device. The location information from the updated signal is used by the provider of the presence related service to determine if the radio communication defining device is in a predetermined environment.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="562 264 1822 1222"><p>See all your devices on a map.</p><p>Is your iPad at home or back at the office? Use the map to get a full picture of where your devices are — and where a missing one might be. For more info, just tap on a product icon. Some devices can still send their location for up to 24 hours after they've been turned off or have low battery life.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirPodsAirTagFind My-compatible products</div> <div data-bbox="1234 313 1822 1222"></div> <p>Source: https://www.apple.com/icloud/find-my/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

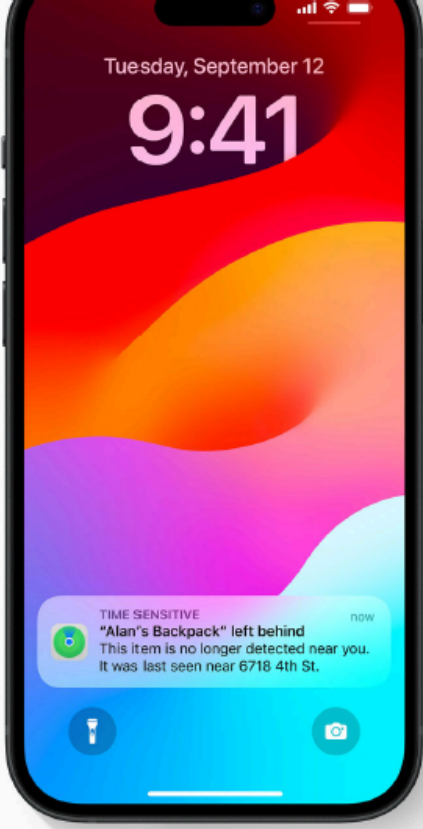
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="583 272 1801 1174"><p>Set it so you won't forget it.</p><p>Find My can even let you know if you leave your devices in an unfamiliar location. Just turn on Notify When Left Behind on your iPhone, Apple Watch, or iPad. Want to leave your MacBook at the studio? Easy. You can fine tune your notifications by device and location.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirTagFind My-compatible products</div> <p data-bbox="871 1177 1501 1206">Source: https://www.apple.com/icloud/find-my/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="730 293 1289 342">2.1 Bluetooth Low Energy</p> <p data-bbox="730 371 1625 906">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 935 1457 966">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="772 313 1583 367">3 Apple Offline Finding Overview</p> <p data-bbox="772 394 1598 881">Apple introduced OF in 2019 for iOS 13, macOS 10.15, and watchOS 6 [10]. OF enables locating Apple devices without an Internet connection and promises to operate in a privacy-preserving manner. In 2020, Apple announced to support third-party BLE-enabled devices to be tracked by the OF network [11] and released a protocol specification for their integration [6]. We found that this public specification is incomplete concerning the overall OF system. Within this paper, we focus on our recovered specification that was partly validated by the accessory specification [6].</p> <p data-bbox="772 894 1598 1336">In the following, we give a brief overview of how OF works and introduce the different roles of devices. Fig. 1 depicts the interplay of the roles and protocols involved in OF. In particular, OF involves (1) initial pairing of owner devices, (2) broadcasting BLE advertisements that contain a rolling public key, (3) uploading encrypted location reports to Apple’s servers, and (4) retrieving the location reports on owner devices. The terminology of the roles below has been derived from the official documentation [6].</p> <p data-bbox="919 1352 1457 1385">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p>Lost devices. Devices that determine to be in a lost state start sending out BLE advertisements with a public key to be discovered by finder devices. Apple devices</p> <p>are considered to be lost when they lose Internet connectivity. Third-party accessories [6] are small battery-powered devices that can be attached to a personal item and are set up through an owner device. Accessories determine to be <i>lost</i> when they lose their BLE connection to the owner device.</p> <p>Finder devices. Finder devices form the core of the OF network. As of 2020, only iPhones and iPads with a GPS module are offering finder capabilities. Finder devices can discover lost devices and accessories by scanning for BLE advertisements. Upon receiving an OF advertisement, a finder creates an end-to-end encrypted location report that includes its current location and sends it to Apple’s servers.</p> <p>Apple’s servers. Apple’s servers store OF location reports submitted by finder devices. Owner devices can fetch those reports and decrypt them locally.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

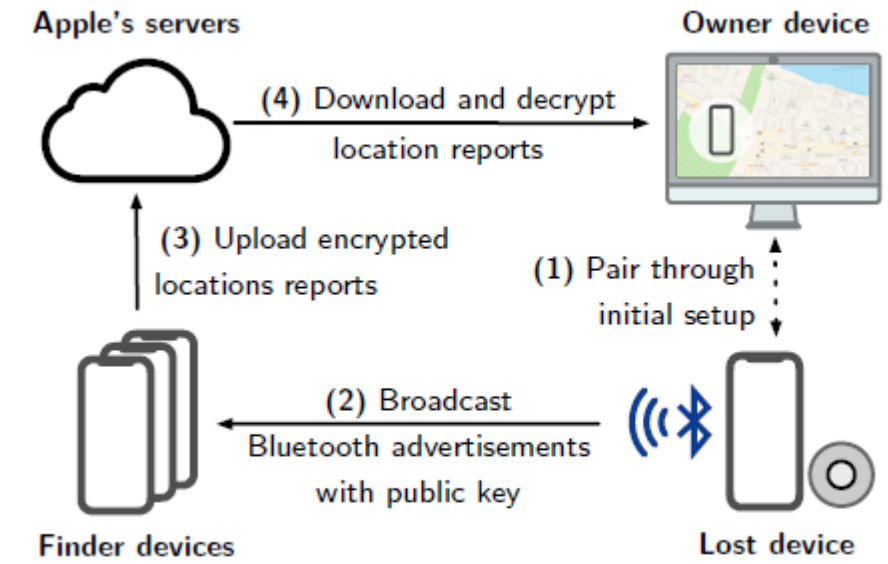
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates the simplified offline finding (OF) workflow with the following components and steps:</p> <ul style="list-style-type: none"> Apple's servers: Represented by a cloud icon. Owner device: Represented by a computer monitor icon. Finder devices: Represented by a stack of three smartphone icons. Lost device: Represented by a smartphone icon with a Bluetooth symbol and a circular icon next to it. <p>The workflow steps are as follows:</p> <ol style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device and the Lost device. (2) Broadcast Bluetooth advertisements with public key: A solid arrow points from the Lost device to the Finder devices. (3) Upload encrypted locations reports: A solid arrow points from the Finder devices to Apple's servers. (4) Download and decrypt location reports: A solid arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="814 305 1575 357">6 Apple Offline Finding in Detail</p> <p data-bbox="814 381 1602 630">This section describes and discusses the technical details of Apple’s OF system. In reference to Fig. 1, we (1) explain the involved cryptography and the key exchange during initial device pairing, and then explain the protocols implementing (2) <i>losing</i>, (3) <i>finding</i>, (4) <i>searching</i> for devices.</p> <p data-bbox="814 646 1602 938">In short, devices and accessories in lost mode send out BLE advertisements containing a public key. Finder devices receive them, encrypt their location by using the public key, and upload a report to Apple’s servers. This results in an end-to-end encrypted location report that cannot be read by Apple or any other third-party that does not have access to the owner’s private keys.</p> <p data-bbox="919 974 1459 1006">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>6.3 Finding</p> <p>All finder devices regularly scan for OF advertisements. When the finder receives a packet in the OF advertisement format, it generates and uploads an encrypted location report to Apple’s servers.</p> <p>Generating Reports. The finder parses the public key from the advertisement. Then, it determines its current geolocation and creates a message that includes location, accuracy,³ and status information (cf. green fields in Fig. 2). The message is then encrypted using</p> <p>Source: https://arxiv.org/pdf/2103.02282</p> <p>6.4 Searching</p> <p>An owner requests reported location from Apple’s servers when searching for a lost device. As the advertisement keys are synchronized across all of the owner’s devices, the owner can use any of their other devices with Apple’s <i>Find My</i> app to download and decrypt the location reports. In short, the owner device fetches location reports from Apple’s servers by sending a list of the most recent public advertisement keys of the lost device.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
<p>[2] The method according to claim 1, wherein the sending of the updating signal is uncorrelated to any mobile station phone call establishment, the updating signal being sent at least one of (i) periodically, (ii) at times recent to when the mobile station enters into or exists from the special area, and (iii) when the mobile station remains in the special area.</p>	<p>The Apple Accused Products perform the method according to claim 1, wherein the sending of the updating signal is uncorrelated to any mobile station phone call establishment, the updating signal being sent at least one of (i) periodically, (ii) at times recent to when the mobile station enters into or exists from the special area, and (iii) when the mobile station remains in the special area.</p> <p>For example, the mobile station (<i>e.g.</i>, Apple iPhone) transmits the updated location of the radio communication defining device (<i>e.g.</i>, an Apple device) both periodically and every time when enters into the special area (<i>e.g.</i>, BLE beacon range) of the radio communication defining device. Further, the Find My application is capable of transmitting the updating signal over a mobile telephone network with the transmission of the updating signal is uncorrelated to any mobile station phone call establishment</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="1108 305 1226 412"></div> <div data-bbox="751 448 1591 509"><h2>Connect to the Find My network</h2></div> <div data-bbox="661 540 1680 682"><p>Let users locate your products with the Find My network. With hundreds of millions of Apple devices around the world, advanced end-to-end encryption, and industry leading security, the Find My network lets users easily locate their belongings in the Find My app with the peace of mind that their privacy is protected.</p></div> <div data-bbox="577 740 1749 1287"></div> <div data-bbox="875 1328 1493 1369"><p>Source: https://developer.apple.com/find-my/</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

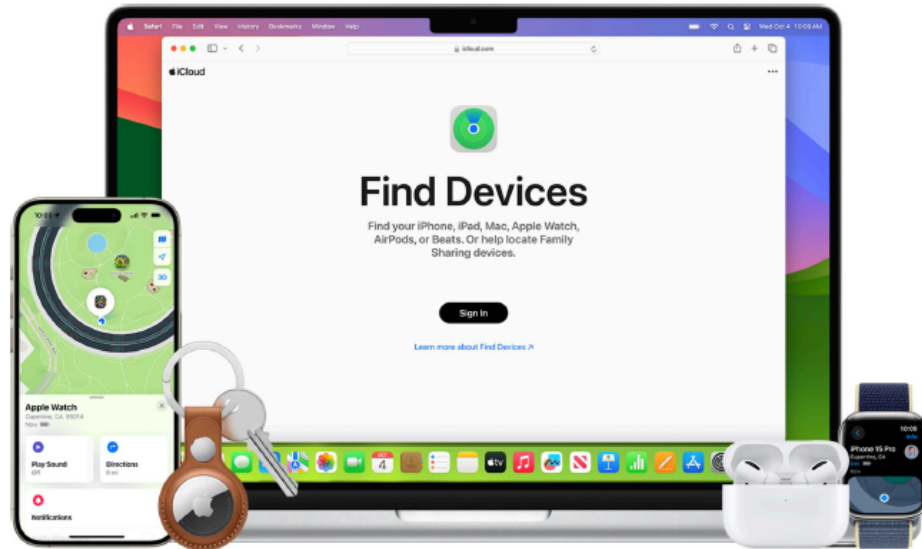
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="686 289 1598 409"><h2>Find your lost Apple device or AirTag with Find My</h2></div> <div data-bbox="686 431 1587 527"><p>If you lose your Apple device, personal item connected to an AirTag, or other Find My network accessory, use Find My to find it or mark it as lost to protect your device and personal information.</p></div> <div data-bbox="711 544 1627 1089">A composite image illustrating the Find My ecosystem. In the center is a laptop screen displaying the iCloud 'Find Devices' page, which includes a 'Sign In' button and a link to 'Learn more about Find Devices'. To the left of the laptop is an iPhone showing a map with a location pin and a notification for an 'Apple Watch' in California. In front of the laptop is a brown leather AirTag with a silver key attached. To the right of the laptop is a pair of white AirPods in their charging case and an Apple Watch.</div> <div data-bbox="686 1127 1274 1179"><h2>Find your stuff with Find My</h2></div> <div data-bbox="686 1193 1652 1279"><p>If you've lost or misplaced an Apple device or personal item with an AirTag attached, use Find My to find your device or item on a map. You can get directions to its location and, when you're nearby, play a sound or even get help finding its exact location.</p></div> <div data-bbox="856 1289 1507 1326"><p>Source: https://support.apple.com/en-us/104978</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Find your Apple device or AirTag</p> <ol style="list-style-type: none">1. Open Find My.2. Choose Devices or Items.3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items.<ul style="list-style-type: none">◦ Choose Directions to open its location in Maps.◦ If you're close, tap Play Sound.◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p>Find a nearby AirTag ></p> <p>If you don't have an Apple device to use Find My, find your devices at iCloud.com/find.</p> <p>Source: https://support.apple.com/en-us/104978</p>

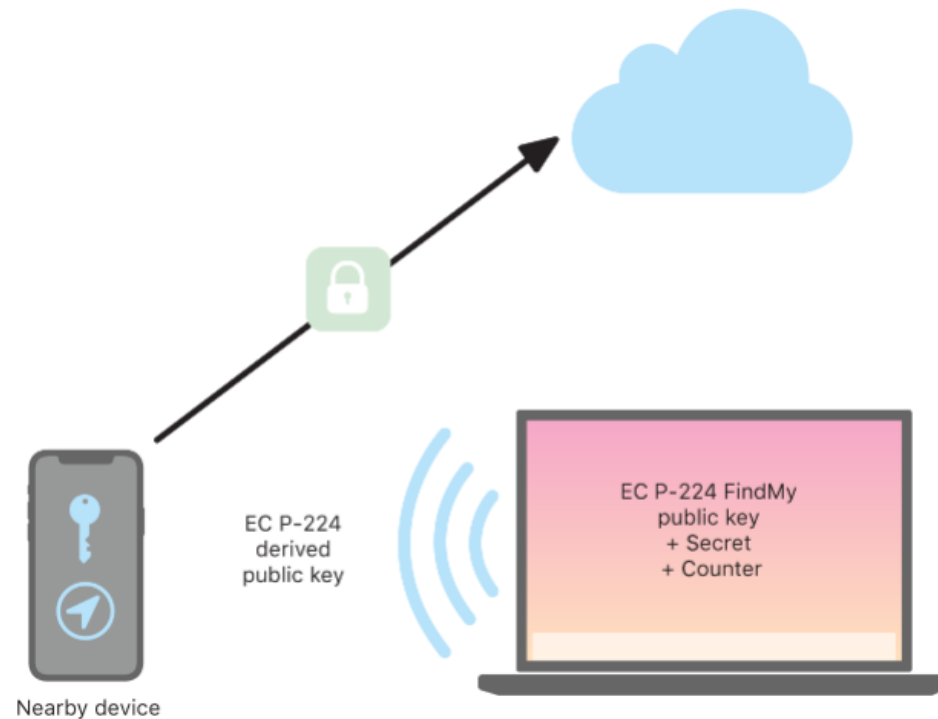
Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="653 285 821 334">Find My</p> <p data-bbox="653 383 947 423">Find My security</p> <p data-bbox="653 440 1629 505">The Find My app for Apple devices is built on a foundation of advanced public key cryptography.</p> <p data-bbox="653 553 789 586">Overview</p> <p data-bbox="653 602 1734 886">The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.</p> <p data-bbox="653 902 1734 1260">Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can’t connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with “offline finding” enabled in Find My settings can act as a “finder device”. This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.</p> <p data-bbox="653 1276 1388 1308"><i>Note:</i> Find My may not be available in all countries or regions.</p> <p data-bbox="680 1325 1698 1367">https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Using Find My to locate missing Apple devices

Any Apple devices within Bluetooth range that have offline finding enabled can detect a signal from another Apple device configured to allow Find My and read the current broadcast key P_i . Using an ECIES construction and the public key P_i from the broadcast, the finder devices encrypt their current location information and relay it to Apple. The encrypted location is associated with a server index which is computed as the SHA256 hash of the P-224 public key P_i obtained from the Bluetooth payload. Apple never has the decryption key, so Apple can't read the location encrypted by the finder. The owner of the missing device can reconstruct the index and decrypt the encrypted location.



Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="730 365 1289 414">2.1 Bluetooth Low Energy</p> <p data-bbox="730 443 1625 976">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 1003 1457 1037">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="772 313 1583 367">3 Apple Offline Finding Overview</p> <p data-bbox="772 394 1598 881">Apple introduced OF in 2019 for iOS 13, macOS 10.15, and watchOS 6 [10]. OF enables locating Apple devices without an Internet connection and promises to operate in a privacy-preserving manner. In 2020, Apple announced to support third-party BLE-enabled devices to be tracked by the OF network [11] and released a protocol specification for their integration [6]. We found that this public specification is incomplete concerning the overall OF system. Within this paper, we focus on our recovered specification that was partly validated by the accessory specification [6].</p> <p data-bbox="772 894 1598 1336">In the following, we give a brief overview of how OF works and introduce the different roles of devices. Fig. 1 depicts the interplay of the roles and protocols involved in OF. In particular, OF involves (1) initial pairing of owner devices, (2) broadcasting BLE advertisements that contain a rolling public key, (3) uploading encrypted location reports to Apple’s servers, and (4) retrieving the location reports on owner devices. The terminology of the roles below has been derived from the official documentation [6].</p> <p data-bbox="919 1352 1457 1383">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p>Lost devices. Devices that determine to be in a lost state start sending out BLE advertisements with a public key to be discovered by finder devices. Apple devices</p> <p>are considered to be lost when they lose Internet connectivity. Third-party accessories [6] are small battery-powered devices that can be attached to a personal item and are set up through an owner device. Accessories determine to be <i>lost</i> when they lose their BLE connection to the owner device.</p> <p>Finder devices. Finder devices form the core of the OF network. As of 2020, only iPhones and iPads with a GPS module are offering finder capabilities. Finder devices can discover lost devices and accessories by scanning for BLE advertisements. Upon receiving an OF advertisement, a finder creates an end-to-end encrypted location report that includes its current location and sends it to Apple’s servers.</p> <p>Apple’s servers. Apple’s servers store OF location reports submitted by finder devices. Owner devices can fetch those reports and decrypt them locally.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

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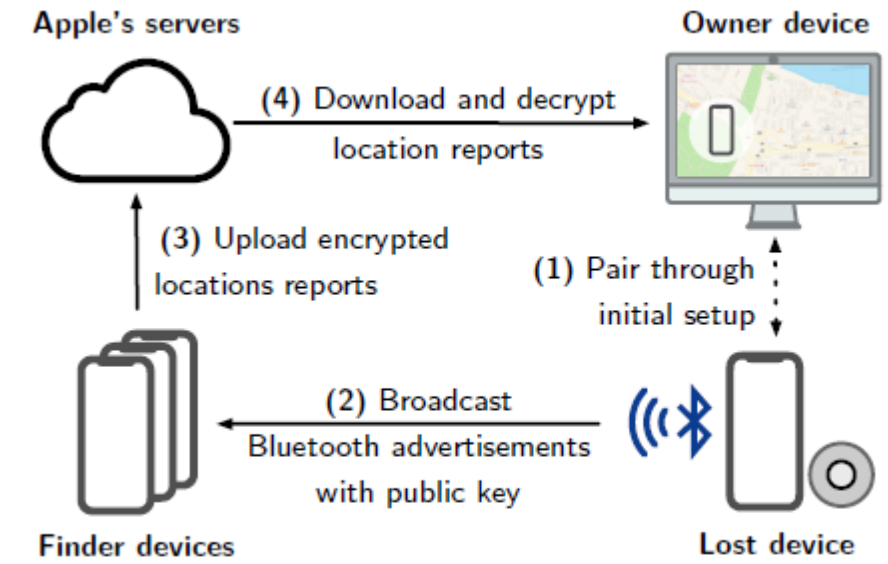
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates a four-step workflow for finding a lost device. (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device (a computer monitor showing a map) and the Lost device (a smartphone). (2) Broadcast Bluetooth advertisements with public key: A solid arrow points from the Lost device to a stack of Finder devices. (3) Upload encrypted locations reports: A solid arrow points from the Finder devices to Apple's servers (represented by a cloud). (4) Download and decrypt location reports: A solid arrow points from Apple's servers back to the Owner device.</p> <p align="center">Fig. 1. Simplified offline finding (OF) workflow.</p> <p align="center">Source: https://arxiv.org/pdf/2103.02282</p>
[4] The method according to claim 1, wherein the frequency of the updating signal is different from	<p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p> <p>The Apple Accused Products perform the method according to claim 1, wherein the frequency of the updating signal is different from the frequency of the distinctive defining signal.</p> <p>For example, the updating signal is transmitted over a cellular network from the mobile station (<i>e.g.</i>, Apple iPhone) to the one or more servers of the provider of the presence related services (<i>e.g.</i>, Apple Find My), while the distinctive defining signal is a BLE beacon. As Bluetooth employs an adaptive frequency hopping technique to avoid interference with other wireless signals including cellular network signals, the frequencies used by the distinctive</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
the frequency of the distinctive defining signal.	<p>defining signals due to the use of the adaptive frequency hopping will be different from the frequency of the updating signal majority of the time.</p> <p align="center">2.1 Bluetooth Low Energy</p> <p>Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p align="right">Source: https://arxiv.org/pdf/2103.02282</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
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Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

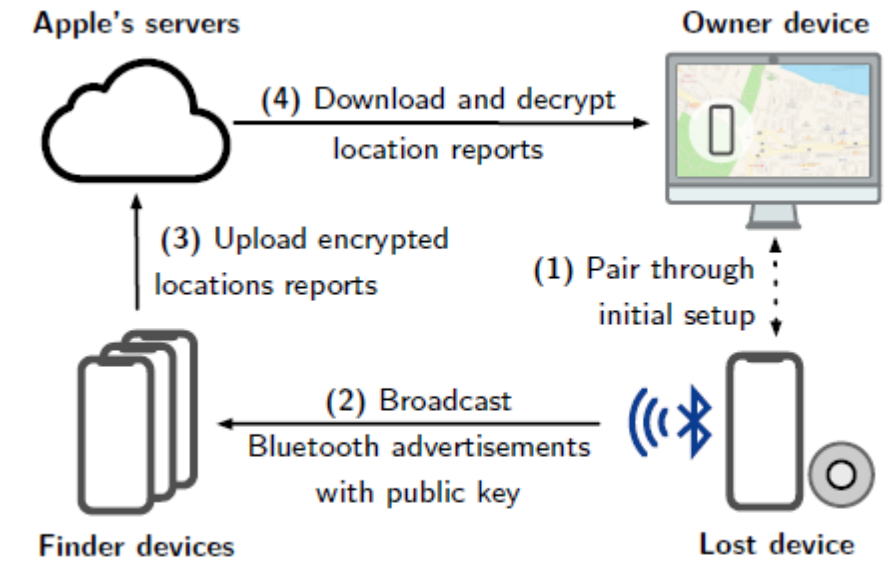
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates a four-step workflow for finding a lost device:</p> <ul style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device (a computer monitor displaying a map) and the Lost device (a smartphone). (2) Broadcast Bluetooth advertisements with public key: A solid arrow points from the Lost device to a stack of Finder devices. (3) Upload encrypted locations reports: A solid arrow points from the Finder devices to Apple's servers (represented by a cloud icon). (4) Download and decrypt location reports: A solid arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Adaptive Frequency Hopping</p> <p>One of the major challenges in radio communications concerns <i>collisions</i>, which are particularly problematic in busy radio environments. Earlier we explored collisions and explained that a collision occurs when two or more devices transmit data on the same radio channel in overlapping time periods, and that different radio technologies such as Bluetooth® technology and Wi-Fi can interfere with each other if their use of the radio spectrum overlaps.</p> <p>Bluetooth technology mitigates the risk of collisions through its use of <i>spread spectrum</i> techniques. When two devices are connected, this involves a specific technique known as <i>adaptive frequency hopping</i>.</p> <p>At each <i>connection event</i>, a pair of connected devices have the opportunity to use their radios to exchange packets at precisely timed intervals. But in addition to this, at the start of each connection event, <i>frequency hopping</i> occurs, with a radio channel being deterministically selected from the set of available channels using a <i>channel selection algorithm</i>. Each device in the connection will then switch to the selected channel and over time and a series of connection events, communication will take place using a frequently changing series of different channels, distributed across the 2.4 GHz band, thereby significantly reducing the probability of collisions occurring.</p> <p>Of the 40 channels defined for use by Bluetooth Low Energy (LE), 37 of these channels (known as the <i>general purpose channels</i>) are available for use during connected communication.</p> <p>Source: https://www.bluetooth.com/blog/how-bluetooth-technology-uses-adaptive-frequency-hopping-to-overcome-packet-interference/</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products		
	<p>AT&T</p> <ul style="list-style-type: none"> • 850 MHz: Band n5 (5G) • 39GHz: Band n260 (5G) • 700 MHz: Bands 12/17/29 (4G) • 850 MHz: Band 5 (4G) • 1900 MHz: Band 2 (4G) • 1700 MHz /2100 MHz: Bands 4/66 (4G) • 2300 MHz: Band 30 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) 	<p>Verizon Wireless</p> <ul style="list-style-type: none"> • 28 GHz: Band n261 (5G) • 39 GHz: Band n260 (5G) • 700 MHz: Band 13 (5G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 850 MHz: Band 0 (3G) • 1900 MHz: Band 1 (3G) 	<p>T-Mobile</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 2.5 GHz: Band n41 (5G) • 39 GHz: Band n260 (5G) • 28 GHz: Band n261 (5G) • 600 MHz: Band 71 (4G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 1900 MHz: Band 2 (3G) • 1700/2100 MHz: Band 4 (3G)

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products		
	<p>Sprint</p> <ul style="list-style-type: none"> • 2.5 GHz: Band n41 (5G) • 800 MHz: Band 26 (4G) • 1900 MHz: Band 25 (4G) • 2500 MHz: Band 41 (4G) • 800 MHz: Band 10 (3G) • 1900 MHz: Band 2 (3G) <p>Boost Mobile</p> <ul style="list-style-type: none"> • 2.5 GHz: Band n41 (5G) • 800 MHz: Band 26 (4G) • 1900 MHz: Band 25 (4G) • 2500 MHz: Band 41 (4G) • 800 MHz: Band 10 (3G) • 1900 MHz: Band 2 (3G) 	<p>U.S. Cellular</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100: Band 4 (4G) • 1900: Band 2 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) <p>Metro By T-Mobile</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 600 MHz: Band 71 (4G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 1900 MHz: Band 2 (3G) • 1700/2100 MHz: Band 4 (3G) 	<p>Cricket Wireless</p> <ul style="list-style-type: none"> • 850 MHz: Band n5 (5G) • 700 MHz: Bands 17 (4G) • 1900 MHz: Band 2 (4G) • 1700 MHz /2100 MHz: Band 4 (4G) • 2300 MHz: Band 30 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) <p>Source: https://surecall.com/surecall-cell-phone-signal-booster-blog/cellular-phone-frequency-bands-guide-2022/#:~:text=Cell%20phones%20operate%20using%20radio,bands%2C%20each%20containing%20multiple%20frequencies.</p> <p>Signals sent over mobile telephone networks range from 600 MHz to 39 GHz.</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>leasing them to cellular carriers. These two agencies divide the spectra into what we call bands (multiple ranges of frequencies). The majority of cellular bands are between 600 MHz and 39 GHz, which is part of the RF spectrum, as previously mentioned. The carrier and device you use determines what specific frequencies your personal device is linked to for your service.</p> <p>Source: https://surecall.com/surecall-cell-phone-signal-booster-blog/cellular-phone-frequency-bands-guide-2022/</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>
<p>[5] The method according to claim 1, wherein the predetermined environment comprises one or more of: (1) one or more specific geographic locations; (2) a physical environment; (3) an environment defined by an operator of the mobile telephone network; and (4) an area defined by a fixed network.</p>	<p>The Apple Accused Products perform the method according to claim 1, wherein the predetermined environment comprises one or more of: (1) one or more specific geographic locations; (2) a physical environment; (3) an environment defined by an operator of the mobile telephone network; and (4) an area defined by a fixed network.</p> <p>For example, the updating signal transmitted by the mobile station to the one or more servers of the provider of the presence related service (<i>e.g.</i>, Apple Find My) comprise information related to the mobile station’s location and the identifier of the detected/connected radio communication defining device. The location information from the updated signal is used by the provider of the presence related service to determine if the radio communication defining device is in a physical environment that can be mobile/moving.</p>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="1108 305 1226 412"></div> <div data-bbox="751 448 1591 509"><h2>Connect to the Find My network</h2></div> <div data-bbox="661 540 1680 682"><p>Let users locate your products with the Find My network. With hundreds of millions of Apple devices around the world, advanced end-to-end encryption, and industry leading security, the Find My network lets users easily locate their belongings in the Find My app with the peace of mind that their privacy is protected.</p></div> <div data-bbox="577 740 1749 1287"></div> <div data-bbox="875 1328 1493 1369"><p>Source: https://developer.apple.com/find-my/</p></div>

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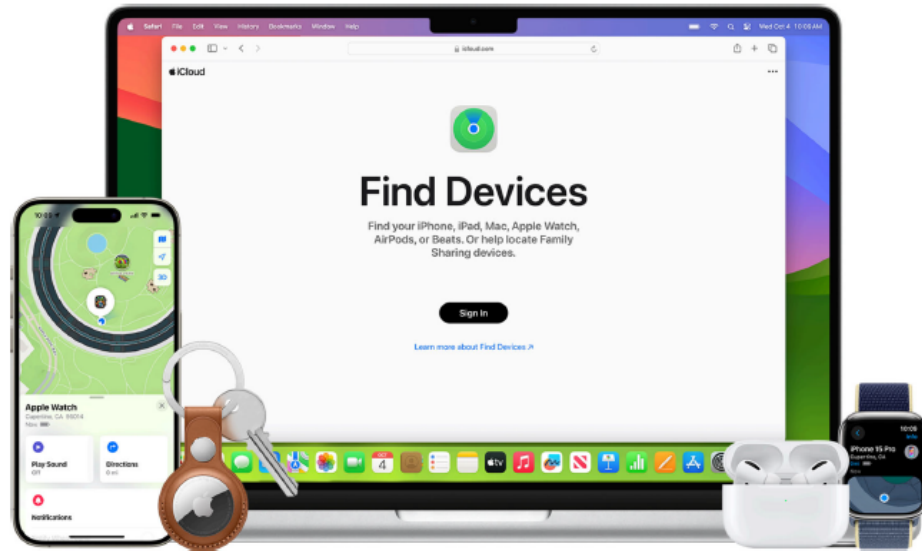
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="686 289 1598 409"><h2>Find your lost Apple device or AirTag with Find My</h2></div> <div data-bbox="686 431 1585 527"><p>If you lose your Apple device, personal item connected to an AirTag, or other Find My network accessory, use Find My to find it or mark it as lost to protect your device and personal information.</p></div> <div data-bbox="711 544 1627 1091">A composite image illustrating the Find My ecosystem. In the center is a laptop screen displaying the 'Find Devices' page on the iCloud website, which includes a 'Sign In' button and a link to 'Learn more about Find Devices'. To the left of the laptop is an iPhone showing a map with a location pin and a notification for an 'Apple Watch' in California. In front of the laptop is a pair of white AirPods in their charging case. To the right of the laptop is an Apple Watch. In front of the laptop is an AirTag attached to a key.</div> <div data-bbox="686 1127 1274 1180"><h2>Find your stuff with Find My</h2></div> <div data-bbox="686 1195 1652 1281"><p>If you've lost or misplaced an Apple device or personal item with an AirTag attached, use Find My to find your device or item on a map. You can get directions to its location and, when you're nearby, play a sound or even get help finding its exact location.</p></div> <div data-bbox="856 1289 1507 1328"><p>Source: https://support.apple.com/en-us/104978</p></div>

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Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p align="center">Find your Apple device or AirTag</p> <ol style="list-style-type: none"> 1. Open Find My. 2. Choose Devices or Items. 3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items. <ul style="list-style-type: none"> ◦ Choose Directions to open its location in Maps. ◦ If you're close, tap Play Sound. ◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p>Find a nearby AirTag ></p> <p>If you don't have an Apple device to use Find My, find your devices at iCloud.com/find.</p> <p align="center">Source: https://support.apple.com/en-us/104978</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p>
[6] The method according to claim 1, wherein the distinctive defining signal comprises a signal with a frequency that is	<p>The Apple Accused Products perform the method according to claim 1, wherein the distinctive defining signal comprises a signal with a frequency that is outside a frequency range allocated for the mobile telephone network.</p> <p>For example, the updating signal is transmitted over a cellular network from the mobile station (<i>e.g.</i>, Apple iPhone) to the one or more servers of the provider of the presence related services (<i>e.g.</i>, Apple Find My), while the distinctive defining signal is a BLE beacon. As Bluetooth employs an adaptive frequency hopping technique to avoid interference with other wireless signals including cellular network signals, the frequencies used by the distinctive defining signals due to the use of the adaptive frequency hopping will be outside the frequencies used by the mobile telephone network.</p>

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outside a frequency range allocated for the mobile telephone network.	<div data-bbox="730 329 1289 380">2.1 Bluetooth Low Energy</div> <div data-bbox="730 407 1625 943"><p>Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p></div> <div data-bbox="919 971 1457 1000"><p>Source: https://arxiv.org/pdf/2103.02282</p></div>

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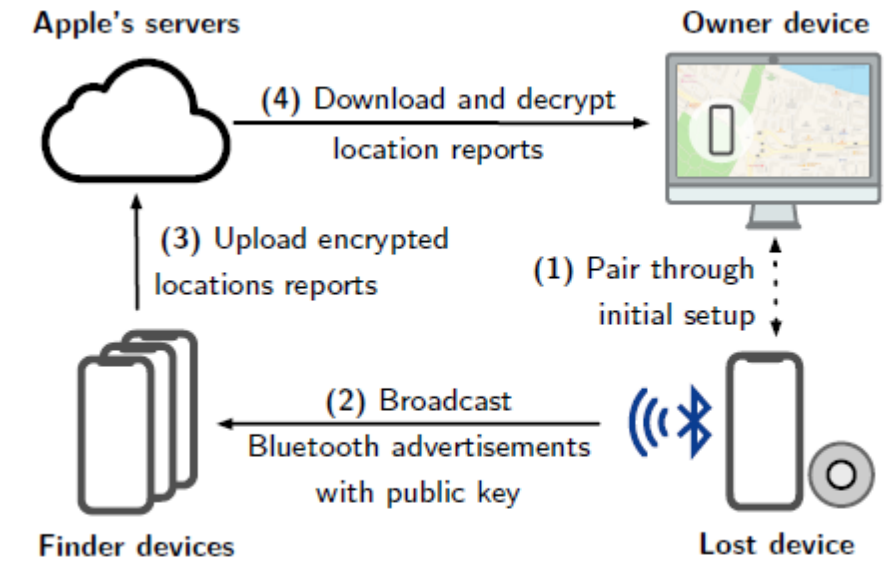
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates a four-step workflow for finding a lost device:</p> <ul style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device (a computer monitor) and the Lost device (a smartphone). (2) Broadcast Bluetooth advertisements with public key: An arrow points from the Lost device to a stack of Finder devices. (3) Upload encrypted locations reports: An arrow points from the Finder devices to Apple's servers (represented by a cloud icon). (4) Download and decrypt location reports: An arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Adaptive Frequency Hopping</p> <p>One of the major challenges in radio communications concerns <i>collisions</i>, which are particularly problematic in busy radio environments. Earlier we explored collisions and explained that a collision occurs when two or more devices transmit data on the same radio channel in overlapping time periods, and that different radio technologies such as Bluetooth® technology and Wi-Fi can interfere with each other if their use of the radio spectrum overlaps.</p> <p>Bluetooth technology mitigates the risk of collisions through its use of <i>spread spectrum</i> techniques. When two devices are connected, this involves a specific technique known as <i>adaptive frequency hopping</i>.</p> <p>At each <i>connection event</i>, a pair of connected devices have the opportunity to use their radios to exchange packets at precisely timed intervals. But in addition to this, at the start of each connection event, <i>frequency hopping</i> occurs, with a radio channel being deterministically selected from the set of available channels using a <i>channel selection algorithm</i>. Each device in the connection will then switch to the selected channel and over time and a series of connection events, communication will take place using a frequently changing series of different channels, distributed across the 2.4 GHz band, thereby significantly reducing the probability of collisions occurring.</p> <p>Of the 40 channels defined for use by Bluetooth Low Energy (LE), 37 of these channels (known as the <i>general purpose channels</i>) are available for use during connected communication.</p> <p>Source: https://www.bluetooth.com/blog/how-bluetooth-technology-uses-adaptive-frequency-hopping-to-overcome-packet-interference/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products		
	<p>AT&T</p> <ul style="list-style-type: none"> • 850 MHz: Band n5 (5G) • 39GHz: Band n260 (5G) • 700 MHz: Bands 12/17/29 (4G) • 850 MHz: Band 5 (4G) • 1900 MHz: Band 2 (4G) • 1700 MHz /2100 MHz: Bands 4/66 (4G) • 2300 MHz: Band 30 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) 	<p>Verizon Wireless</p> <ul style="list-style-type: none"> • 28 GHz: Band n261 (5G) • 39 GHz: Band n260 (5G) • 700 MHz: Band 13 (5G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 850 MHz: Band 0 (3G) • 1900 MHz: Band 1 (3G) 	<p>T-Mobile</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 2.5 GHz: Band n41 (5G) • 39 GHz: Band n260 (5G) • 28 GHz: Band n261 (5G) • 600 MHz: Band 71 (4G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 1900 MHz: Band 2 (3G) • 1700/2100 MHz: Band 4 (3G)

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products		
	<p>Sprint</p> <ul style="list-style-type: none"> • 2.5 GHz: Band n41 (5G) • 800 MHz: Band 26 (4G) • 1900 MHz: Band 25 (4G) • 2500 MHz: Band 41 (4G) • 800 MHz: Band 10 (3G) • 1900 MHz: Band 2 (3G) <p>Boost Mobile</p> <ul style="list-style-type: none"> • 2.5 GHz: Band n41 (5G) • 800 MHz: Band 26 (4G) • 1900 MHz: Band 25 (4G) • 2500 MHz: Band 41 (4G) • 800 MHz: Band 10 (3G) • 1900 MHz: Band 2 (3G) 	<p>U.S. Cellular</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100: Band 4 (4G) • 1900: Band 2 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) <p>Metro By T-Mobile</p> <ul style="list-style-type: none"> • 600 MHz: Band n71 (5G) • 600 MHz: Band 71 (4G) • 700 MHz: Band 12 (4G) • 850 MHz: Band 5 (4G) • 1700/2100 MHz: Bands 4/66 (4G) • 1900 MHz: Band 2 (4G) • 1900 MHz: Band 2 (3G) • 1700/2100 MHz: Band 4 (3G) 	<p>Cricket Wireless</p> <ul style="list-style-type: none"> • 850 MHz: Band n5 (5G) • 700 MHz: Bands 17 (4G) • 1900 MHz: Band 2 (4G) • 1700 MHz /2100 MHz: Band 4 (4G) • 2300 MHz: Band 30 (4G) • 850 MHz: Band 5 (3G) • 1900 MHz: Band 2 (3G) <p>Source: https://surecall.com/surecall-cell-phone-signal-booster-blog/cellular-phone-frequency-bands-guide-2022/#:~:text=Cell%20phones%20operate%20using%20radio,bands%2C%20each%20containing%20multiple%20frequencies.</p> <p>Signals sent over mobile telephone networks range from 600 MHz to 39 GHz.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>leasing them to cellular carriers. These two agencies divide the spectra into what we call bands (multiple ranges of frequencies). The majority of cellular bands are between 600 MHz and 39 GHz, which is part of the RF spectrum, as previously mentioned. The carrier and device you use determines what specific frequencies your personal device is linked to for your service.</p> <p>Source: https://surecall.com/surecall-cell-phone-signal-booster-blog/cellular-phone-frequency-bands-guide-2022/</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>
[7pre] A method comprising: wirelessly receiving, in a radio communication defining device, first information from a radio transmitting device;	<p>The Apple Accused Products perform a method comprising: wirelessly receiving, in a radio communication defining device, first information from a radio transmitting device.</p> <p>For example, the radio communication defining device (<i>e.g.</i>, an Apple device) when connected to a radio transmitting device (<i>e.g.</i>, a registered mobile station) can receive first information (<i>e.g.</i>, a device ID) from a radio transmitting device wirelessly via Bluetooth</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The Find My app makes it easy to keep track of your Apple devices — even if they're offline. You can also locate items using AirTag or Find My technology. Or pinpoint friends and family with Precision Finding. Everyone's location stays private every step of the way.</p> <p>Find your stuff on iCloud.com</p> <p>Source: https://www.apple.com/icloud/find-my/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="632 331 1732 634">You can even find devices that are offline or powered off.</p> <p data-bbox="562 691 1801 976">If your missing device can’t connect to the internet or has little to no battery life, the Find My app can still help you track it down using the Find My network — hundreds of millions of iPhone, iPad, and Mac devices around the world. Nearby devices securely send the location of your missing device to iCloud, then you can see where it is in the Find My app. It’s all anonymous and encrypted to protect everyone’s privacy.</p> <p data-bbox="873 1045 1503 1076">Source: https://www.apple.com/icloud/find-my/</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

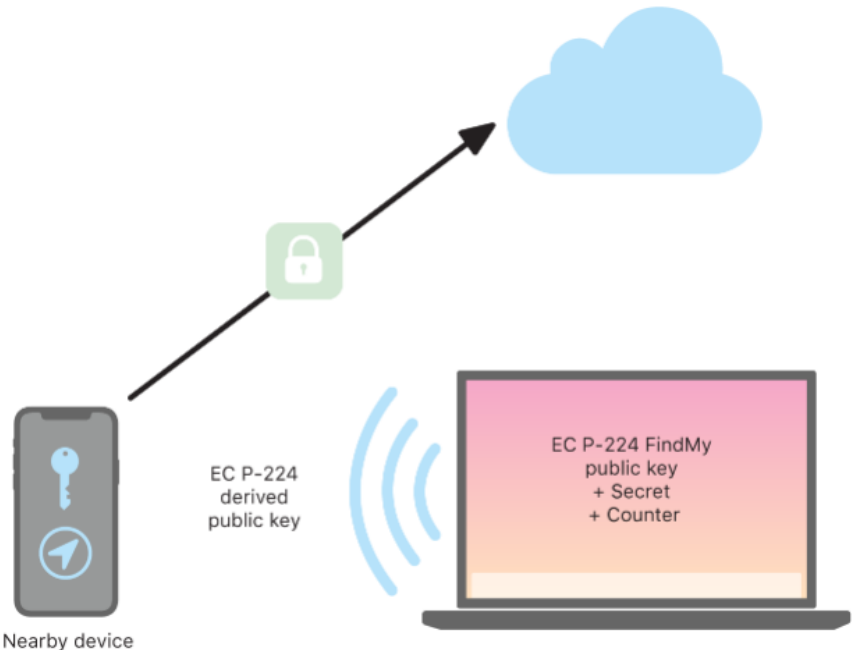
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="646 284 1766 342"><h2>Using Find My to locate missing Apple devices</h2></div> <div data-bbox="646 362 1751 605"><p>Any Apple devices within Bluetooth range that have offline finding enabled can detect a signal from another Apple device configured to allow Find My and read the current broadcast key P_i. Using an ECIES construction and the public key P_i from the broadcast, the finder devices encrypt their current location information and relay it to Apple. The encrypted location is associated with a server index which is computed as the SHA256 hash of the P-224 public key P_i obtained from the Bluetooth payload. Apple never has the decryption key, so Apple can’t read the location encrypted by the finder. The owner of the missing device can reconstruct the index and decrypt the encrypted location.</p></div> <div data-bbox="646 662 1493 1308"><p>The diagram illustrates the Find My process. A 'Nearby device' (smartphone) sends an 'EC P-224 derived public key' (represented by a green padlock icon) to a cloud server. A laptop displays 'EC P-224 FindMy public key + Secret + Counter' and communicates wirelessly with the cloud server.</p></div> <div data-bbox="625 1321 1751 1357"><p>Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Find My security</p> <p>The Find My app for Apple devices is built on a foundation of advanced public key cryptography.</p> <p>Overview</p> <p>The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.</p> <p>Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can’t connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with “offline finding” enabled in Find My settings can act as a “finder device”. This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.</p> <p><i>Note: Find My may not be available in all countries or regions.</i></p> <p>Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p data-bbox="751 284 1650 418">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p data-bbox="968 435 1402 467">https://arxiv.org/pdf/2103.02282</p> <h2 data-bbox="522 527 1451 592">Find your Apple device or AirTag</h2> <ol data-bbox="522 621 1850 998" style="list-style-type: none">1. Open Find My.2. Choose Devices or Items.3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items.<ul data-bbox="558 820 1822 998" style="list-style-type: none">◦ Choose Directions to open its location in Maps.◦ If you're close, tap Play Sound.◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p data-bbox="522 1027 795 1060">Find a nearby AirTag ></p> <p data-bbox="522 1089 1602 1122">If you don't have an Apple device to use Find My, find your devices at iCloud.com/find.</p> <p data-bbox="871 1138 1503 1170">Source: https://support.apple.com/en-us/104978</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>What features are available for your missing device or item</p> <p>Find My features and availability might vary by country or region.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>iPhone, iPad</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lost Mode)• Remote Erase• Notify When Found• Notify When Left Behind <p>Mac</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lock your Mac)• Remote Erase• Notify When Found• Notify When Left Behind* <p><small>* Feature only available on MacBooks with Apple Silicon.</small></p> <p>Apple Watch</p> <ul style="list-style-type: none">• View Location• Play a Sound• Mark as Lost (Lost Mode)• Remote Erase• Notify When Found

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p>AirPods (3rd generation), AirPods Pro, AirPods Max</p> <ul style="list-style-type: none"> • View Location • Find Nearby • Play a Sound • Lost Mode (Mark as Lost) • Notify When Found • Notify When Left Behind <p>AirPods (1st generation), AirPods (2nd generation), Beats products</p> <ul style="list-style-type: none"> • View Location • Play a Sound <p>AirTag</p> <ul style="list-style-type: none"> • View Location • Find Nearby • Play a Sound • Lost Mode (Mark as Lost) • Notify When Found • Notify When Left Behind <p>Apple Pencil Pro</p> <ul style="list-style-type: none"> • View Location (iPad only) • Find Nearby (iPad only) <p align="center">Source: https://support.apple.com/en-us/104978</p>
[7A] the radio communication defining device	The Apple Accused Products perform the method of the radio communication defining device using the first information to determine whether or not the radio communication defining device is in a predetermined environment.

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
using the first information to determine whether or not the radio communication defining device is in a predetermined environment; and	<p>For example, the radio communication defining device (<i>e.g.</i>, an Apple device) broadcasts distinctive defining signal (<i>e.g.</i>, a Bluetooth Low Energy (BLE) beacon) when a device connected to the cellular network attempts to locate is via Find My. The distinctive defining signal (<i>e.g.</i>, the BLE beacon) of the radio communication defining device only broadcasts to be detected by a nearby Apple device.</p> <p align="center">1 Introduction</p> <p>In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for off-line devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> off-line devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF will officially support the tracking of non-Apple devices in the future [6]. Regardless of its size, the system has sparked considerable interest and discussion within the broader tech and security communities [28, 29] as Apple makes strong security and privacy claims supported by new cryptographic primitives that other commercial systems are lacking [51]. In particular, Apple claims that it cannot access location reports, finder identities are not revealed, and BLE advertisements cannot be used to track devices [35]. Apple has yet to provide ample proof for their claims as, until today, only selected components have been publicized [4, 6, 35].</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="919 272 1457 305">Source: https://arxiv.org/pdf/2103.02282</p> <h2 data-bbox="709 358 1268 407">2.1 Bluetooth Low Energy</h2> <p data-bbox="709 435 1604 971">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 1031 1457 1063">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="751 1149 1646 1284">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p data-bbox="968 1300 1402 1333">https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

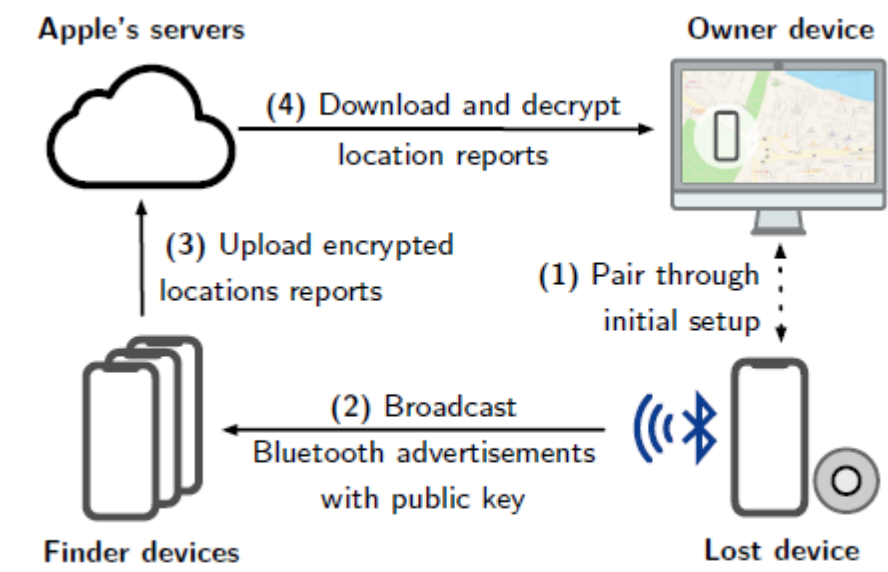
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p>The diagram illustrates the simplified offline finding (OF) workflow with the following components and steps:</p> <ul style="list-style-type: none"> Apple's servers: Represented by a cloud icon. Owner device: Represented by a computer monitor icon showing a map. Finder devices: Represented by a stack of three smartphone icons. Lost device: Represented by a smartphone icon with a Bluetooth symbol and a circular icon next to it. <p>The workflow steps are as follows:</p> <ol style="list-style-type: none"> (1) Pair through initial setup: A dashed double-headed arrow connects the Owner device and the Lost device. (2) Broadcast Bluetooth advertisements with public key: An arrow points from the Lost device to the Finder devices. (3) Upload encrypted locations reports: An arrow points from the Finder devices to Apple's servers. (4) Download and decrypt location reports: An arrow points from Apple's servers to the Owner device. <p>Fig. 1. Simplified offline finding (OF) workflow.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Find My

Find My security

The Find My app for Apple devices is built on a foundation of advanced public key cryptography.

Overview

The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.

Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can't connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with "offline finding" enabled in Find My settings can act as a "finder device". This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.

Note: Find My may not be available in all countries or regions.

Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="720 264 1619 500">Advertising Interval. The same key is emitted during a window of 15 minutes, after which the next key p_{i+1} is used. During a window, OF-enabled iOS and macOS devices emit one BLE advertisement every two seconds when they lose Internet connectivity.</p> <p data-bbox="919 524 1457 557">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="798 573 1003 621">6.3 Finding</p> <p data-bbox="798 646 1556 800">All finder devices regularly scan for OF advertisements. When the finder receives a packet in the OF advertisement format, it generates and uploads an encrypted location report to Apple’s servers.</p> <p data-bbox="798 816 1556 1011">Generating Reports. The finder parses the public key from the advertisement. Then, it determines its current geolocation and creates a message that includes location, accuracy,³ and status information (cf. green fields in Fig. 2). The message is then encrypted us-</p> <p data-bbox="919 1027 1457 1060">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="795 313 1598 654"><p>The diagram illustrates the binary format of a location report. It consists of the following fields and their sizes:</p><ul style="list-style-type: none">Timestamp: 4 bytesConfidence: 1 byteEphemeral public key: 57 bytesEncrypted location: 10 bytesAES-GCM authentication tag: 16 bytesLatitude: 4 bytesLongitude: 4 bytesHorizontal accuracy: 1 byteStatus: 1 byte<p>Dashed lines indicate that the Encrypted location and AES-GCM authentication tag fields are used to derive the Latitude, Longitude, Horizontal accuracy, and Status fields.</p></div> <p data-bbox="804 690 1316 719">Fig. 2. Binary format of a location report.</p> <p data-bbox="917 751 1455 781">Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>Uploading Reports. Finder devices accumulate reports over time and upload them in batches regularly, possibly reducing energy and bandwidth consumption. During the evaluation with our test devices, we discovered that the median time from generating to uploading a location report is 26 min. We include the delay distribution in Appendix B. The delay can increase to several hours if the finder device is in a low power mode [7]. A finder limits the number of uploaded reports for the same advertisement key to four, most likely to prevent excess traffic on Apple’s servers. The upload is implemented as an HTTPS POST request to https://gateway.icloud.com/acsnservice/submit. Every request is authenticated to ensure that only genuine Apple devices can upload requests. Table 3 shows the request header containing a device identity certificate, the signing CA’s certificate, and an Elliptic Curve Digital Signature Algorithm (ECDSA) signature over the request body. The certificates are stored in the device’s keychain. However, the private key used for signing is stored in the Secure Enclave Processor (SEP), Apple’s implementation of a trusted execution environment (TEE) [4]. The SEP prohibits the extraction of the signing key but provides an interface for signing requests. We assume that the finder authentication serves as a form of remote attestation. However, we were unable to verify this assumption due to the obfuscated code. The HTTPS request body is prefixed with a fixed header (0x0F8AE0) and one byte specifying the number of included reports. This limits the number of reports in a single request to 255. Each report consists the ID (SHA-256(p_i)) followed by the 88-byte location report shown in Fig. 2.</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="506 302 1650 431">Set separation alerts in case you leave a device behind in Find My on iPhone</p> <p data-bbox="506 459 1845 573">In the Find My app, you can turn on separation alerts for a device so you don’t accidentally leave it behind. You can also set Trusted Locations, which are locations where you can leave your device without receiving an alert.</p> <p data-bbox="506 607 1808 680">If you have an iPhone Wallet with MagSafe and Find My support, you can get an alert if it detaches from your iPhone.</p> <p data-bbox="506 721 1850 834">Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See <u><a data-bbox="506 764 999 792" href="#">Change notification settings on iPhone</u>. Location sharing and finding devices aren’t available in all countries or regions.</p> <p data-bbox="455 891 1921 959">Source: <a data-bbox="455 891 1921 959" href="https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions">https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="617 298 1587 342">Set up alerts for your iPhone, iPad, Mac, or AirPods</p> <p data-bbox="617 370 1724 430">You can set up separation alerts for your iPhone, iPad, or iPod touch with iOS 15, iPadOS 15, or later; Mac with Apple silicon and macOS 12 or later; or AirPods with the Find My network turned on.</p> <p data-bbox="617 459 1696 519">You can only set up a separation alert from the device sharing your location. You receive an alert every time the device sharing your location separates from the device you set an alert for.</p> <ol data-bbox="617 548 1713 911" style="list-style-type: none"><li data-bbox="617 548 1089 574">1. Go to the Find My app  on your iPhone.<li data-bbox="617 602 1713 662">2. Tap Devices at the bottom of the screen, then tap the name of the device you want to set up an alert for.<li data-bbox="617 690 1178 716">3. Below Notifications, tap Notify When Left Behind.<li data-bbox="617 743 1409 769">4. Turn on Notify When Left Behind, then follow the onscreen instructions.<li data-bbox="617 797 1682 857">5. If you want to add a Trusted Location, you can choose a suggested location, or tap New Location, select a location on the map, then tap Done.<li data-bbox="617 885 762 911">6. Tap Done. <p data-bbox="453 959 1919 1024">Source: https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="613 305 1619 418"><h2>Set separation alerts in case you leave an AirTag or item behind in Find My on iPhone</h2></div> <div data-bbox="613 438 1705 500"><p>In the Find My app, you can turn on separation alerts for an AirTag or other item so you don't accidentally leave it behind. You receive an alert every time the device sharing your location separates from the item.</p></div> <div data-bbox="613 524 1705 586"><p>You can also set Trusted Locations, which are locations where you can leave an item without receiving an alert.</p></div> <div data-bbox="613 618 1719 716"><p>Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See Change notification settings on iPhone. Location sharing and finding items aren't available in all countries or regions.</p></div> <div data-bbox="613 824 1663 1149"><hr/><ol style="list-style-type: none">1. Go to the Find My app  on your iPhone.2. Tap Items at the bottom of the screen, then tap the name of the item you want to set an alert for.3. Below Notifications, tap Notify When Left Behind.4. Turn on Notify When Left Behind.5. If you want to add a Trusted Location, you can choose a suggested location, or tap New Location, select a location on the map, then tap Done.6. Tap Done.</div> <div data-bbox="598 1219 1778 1287"><p>Source: https://support.apple.com/guide/iphone/get-notified-if-you-leave-an-item-behind-iph5fe280d90/18.0/ios/18.0</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<div data-bbox="583 272 1801 1174"><p>Set it so you won't forget it.</p><p>Find My can even let you know if you leave your devices in an unfamiliar location. Just turn on Notify When Left Behind on your iPhone, Apple Watch, or iPad. Want to leave your MacBook at the studio? Easy. You can fine tune your notifications by device and location.</p><p>Works with</p><ul style="list-style-type: none">iPhoneiPadiPod touchApple WatchMacAirTagFind My-compatible products</div> <div data-bbox="1297 272 1717 1101"></div> <p>Source: https://www.apple.com/icloud/find-my/</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
[7B] transmitting from the radio communication defining device to a mobile station a distinctive defining signal that at least defines a special area by one or more of: (1) a coverage area of the distinctive defining signal; (2) a portion of the coverage area that intersects with another coverage area of another radio communication defining device; and (3) a sum of the coverage area and the another coverage area, wherein the distinctive defining signal	The Apple Accused Products perform the method of transmitting from the radio communication defining device to a mobile station a distinctive defining signal that at least defines a special area by one or more of: (1) a coverage area of the distinctive defining signal; (2) a portion of the coverage area that intersects with another coverage area of another radio communication defining device; and (3) a sum of the coverage area and the another coverage area, wherein the distinctive defining signal includes second information indicating whether or not the radio communication defining device is located in a predetermined environment.

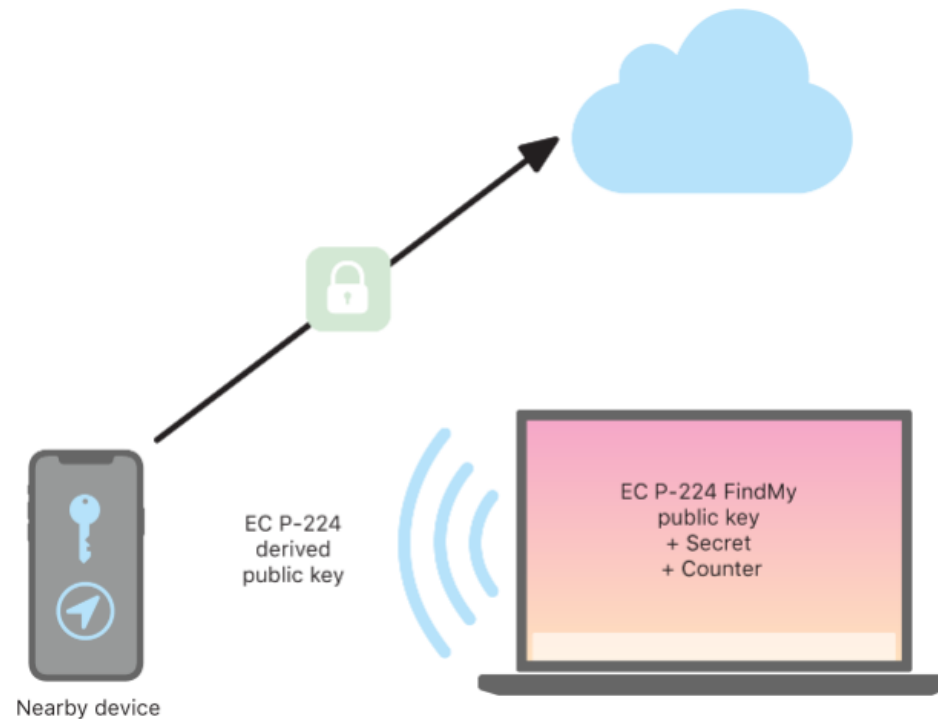
Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
includes second information indicating whether or not the radio communication defining device is located in a predetermined environment and	<p data-bbox="653 285 821 334">Find My</p> <p data-bbox="653 383 947 431">Find My security</p> <p data-bbox="653 440 1629 505">The Find My app for Apple devices is built on a foundation of advanced public key cryptography.</p> <p data-bbox="653 553 789 586">Overview</p> <p data-bbox="653 610 1734 886">The Find My app combines Find My iPhone and Find My Friends into a single app in iOS, iPadOS and macOS. Find My can help users locate a missing device, even an offline Mac. An online device can simply report its location to the user via iCloud. Find My works offline by sending out short range Bluetooth signals from the missing device that can be detected by other Apple devices in use nearby. Those nearby devices then relay the detected location of the missing device to iCloud so users can locate it in the Find My app — all while protecting the privacy and security of all the users involved. Find My even works with a Mac that is offline and asleep.</p> <p data-bbox="653 911 1734 1260">Using Bluetooth and the hundreds of millions of iOS, iPadOS and macOS devices in active use around the world, a user can locate their missing device even if it can’t connect to a Wi-Fi or mobile network. Any iOS, iPadOS or macOS device with “offline finding” enabled in Find My settings can act as a “finder device”. This means the device can detect the presence of another missing offline device using Bluetooth and then use its network connection to report an approximate location back to the owner. When a device has offline finding enabled, it also means that it can be located by other participants in the same way. This entire interaction is end-to-end encrypted, anonymous and designed to be battery and data efficient. There is minimal impact on battery life and mobile data plan usage, and user privacy is better protected.</p> <p data-bbox="653 1284 1388 1317"><i>Note:</i> Find My may not be available in all countries or regions.</p> <p data-bbox="684 1341 1692 1373">https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Using Find My to locate missing Apple devices

Any Apple devices within Bluetooth range that have offline finding enabled can detect a signal from another Apple device configured to allow Find My and read the current broadcast key P_i . Using an ECIES construction and the public key P_i from the broadcast, the finder devices encrypt their current location information and relay it to Apple. The encrypted location is associated with a server index which is computed as the SHA256 hash of the P-224 public key P_i obtained from the Bluetooth payload. Apple never has the decryption key, so Apple can't read the location encrypted by the finder. The owner of the missing device can reconstruct the index and decrypt the encrypted location.



Source: https://help.apple.com/pdf/security/en_US/apple-platform-security-guide.pdf

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products																						
	<p style="text-align: center;">Table 2. OF advertisement format (with zero-indexed bytes).</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Bytes</th><th>Content (details cf. [6, § 5.1])</th></tr> </thead> <tbody> <tr> <td>0–5</td><td>BLE address $((p_t[0] \mid (0b11 \ll 6)) \parallel p_t[1..5])$</td></tr> <tr> <td>6</td><td>Payload length in bytes (30)</td></tr> <tr> <td>7</td><td>Advertisement type (0xFF for manufacturer-specific data)</td></tr> <tr> <td>8–9</td><td>Company ID (0x004C)</td></tr> <tr> <td>10</td><td>OF type (0x12)</td></tr> <tr> <td>11</td><td>OF data length in bytes (25)</td></tr> <tr> <td>12</td><td>Status (e.g., battery level)</td></tr> <tr> <td>13–34</td><td>Public key bytes $p_t[6..27]$</td></tr> <tr> <td>35</td><td>Public key bits $p_t[0] \gg 6$</td></tr> <tr> <td>36</td><td>Hint (0x00 on iOS reports)</td></tr> </tbody> </table> <p style="text-align: center;">https://arxiv.org/pdf/2103.02282</p> <h3 style="text-align: center;">1 Introduction</h3> <p>In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for off-line devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> off-line devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF</p> <p style="text-align: center;">https://arxiv.org/pdf/2103.02282</p>	Bytes	Content (details cf. [6, § 5.1])	0–5	BLE address $((p_t[0] \mid (0b11 \ll 6)) \parallel p_t[1..5])$	6	Payload length in bytes (30)	7	Advertisement type (0xFF for manufacturer-specific data)	8–9	Company ID (0x004C)	10	OF type (0x12)	11	OF data length in bytes (25)	12	Status (e.g., battery level)	13–34	Public key bytes $p_t[6..27]$	35	Public key bits $p_t[0] \gg 6$	36	Hint (0x00 on iOS reports)
Bytes	Content (details cf. [6, § 5.1])																						
0–5	BLE address $((p_t[0] \mid (0b11 \ll 6)) \parallel p_t[1..5])$																						
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8–9	Company ID (0x004C)																						
10	OF type (0x12)																						
11	OF data length in bytes (25)																						
12	Status (e.g., battery level)																						
13–34	Public key bytes $p_t[6..27]$																						
35	Public key bits $p_t[0] \gg 6$																						
36	Hint (0x00 on iOS reports)																						

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="919 302 1461 337">6 Apple Offline Finding in Detail</p> <p data-bbox="919 358 1482 532">This section describes and discusses the technical details of Apple’s OF system. In reference to Fig. 1, we (1) explain the involved cryptography and the key exchange during initial device pairing, and then explain the protocols implementing (2) <i>losing</i>, (3) <i>finding</i>, (4) <i>searching</i> for devices.</p> <p data-bbox="919 545 1482 751">In short, devices and accessories in lost mode send out BLE advertisements containing a public key. Finder devices receive them, encrypt their location by using the public key, and upload a report to Apple’s servers. This results in an end-to-end encrypted location report that cannot be read by Apple or any other third-party that does not have access to the owner’s private keys.</p> <p data-bbox="968 797 1402 828">https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="506 310 1629 440">Set separation alerts in case you leave a device behind in Find My on iPhone</p> <p data-bbox="506 464 1818 578">In the Find My app, you can turn on separation alerts for a device so you don’t accidentally leave it behind. You can also set Trusted Locations, which are locations where you can leave your device without receiving an alert.</p> <p data-bbox="506 610 1787 683">If you have an iPhone Wallet with MagSafe and Find My support, you can get an alert if it detaches from your iPhone.</p> <p data-bbox="506 724 1822 837">Important: In order to receive separation alerts, make sure you allow notifications for the Find My app. See <u><a data-bbox="506 764 989 792" href="#">Change notification settings on iPhone</u>. Location sharing and finding devices aren’t available in all countries or regions.</p> <p data-bbox="455 894 1919 958">Source: <a data-bbox="590 894 1919 958" href="https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions">https://support.apple.com/guide/iphone/get-notified-if-you-leave-a-device-behind-iph5f53aeae0/ios#:~:text=Go%20to%20the%20Find%20My,then%20follow%20the%20onscreen%20instructions.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="478 272 1879 927"><h2 data-bbox="506 418 1031 475">How does it work?</h2><p data-bbox="506 532 1066 873">Your AirTag sends out a secure Bluetooth signal that can be detected by nearby devices in the Find My network. These devices send the location of your AirTag to iCloud — then you can go to the Find My app and see it on a map. The whole process is anonymous and encrypted to protect your privacy. And it's efficient, so there's no need to worry about battery life or data usage.</p></div> <p data-bbox="936 932 1440 964">Source: https://www.apple.com/airtag/</p> <p data-bbox="453 1008 1923 1187">For example, the radio communication defining device (<i>e.g.</i>, an Apple device) broadcasts distinctive defining signal (<i>e.g.</i>, a Bluetooth Low Energy (BLE) beacon). The distinctive defining signal (<i>e.g.</i>, BLE Beacon) at least defines a first special area by its BLE beacon range (<i>e.g.</i>, coverage area of the distinctive defining signal). A mobile station, when within the special area defined by the coverage area of the distinctive defining signal receives the signal and processes it for extracting second information.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p>1 Introduction</p> <p>In 2019, Apple introduced <i>offline finding (OF)</i>, a proprietary crowd-sourced location tracking system for off-line devices. The basic idea behind OF is that so-called <i>finder</i> devices can detect the presence of other <i>lost</i> off-line devices using Bluetooth Low Energy (BLE) and use their Internet connection to report an approximate location back to the <i>owner</i>. Apple’s OF network consists of “hundreds of millions” of devices [4], making it the currently largest crowd-sourced location tracking system in existence. We expect the network to grow as OF will officially support the tracking of non-Apple devices in the future [6]. Regardless of its size, the system has sparked considerable interest and discussion within the broader tech and security communities [28, 29] as Apple makes strong security and privacy claims supported by new cryptographic primitives that other commercial systems are lacking [51]. In particular, Apple claims that it cannot access location reports, finder identities are not revealed, and BLE advertisements cannot be used to track devices [35]. Apple has yet to provide ample proof for their claims as, until today, only selected components have been publicized [4, 6, 35].</p> <p>Source: https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="709 289 1268 337">2.1 Bluetooth Low Energy</p> <p data-bbox="709 367 1604 898">Bluetooth Low Energy (BLE) [19] is designed for small battery-powered devices such as smartwatches and fitness trackers with low data rates. Devices can broadcast BLE advertisements to inform nearby devices about their presence. The maximum BLE advertisement payload size is 31 bytes [19]. Apple heavily relies on custom BLE advertisements to announce their proprietary services such as AirDrop and bootstrap their protocols over Wi-Fi or Apple Wireless Direct Link (AWDL) [21, 36, 48]. OF devices also use BLE advertisements to inform nearby finders about their presence [6].</p> <p data-bbox="919 963 1457 995">Source: https://arxiv.org/pdf/2103.02282</p> <p data-bbox="751 1081 1646 1214">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p data-bbox="968 1235 1402 1268">https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="693 308 1575 876"> <pre> graph TD AS[Apple's servers] OD[Owner device] FD[Finder devices] LD[Lost device] OD -.-> "(1) Pair through initial setup" LD LD --> "(2) Broadcast Bluetooth advertisements with public key" FD FD --> "(3) Upload encrypted locations reports" AS AS --> "(4) Download and decrypt location reports" OD </pre> </div> <p data-bbox="693 909 1344 950">Fig. 1. Simplified offline finding (OF) workflow.</p> <p data-bbox="966 974 1407 1015">https://arxiv.org/pdf/2103.02282</p> <p data-bbox="451 1079 1921 1307">Further, for example, the distinctive defining signal (<i>e.g.</i>, the BLE beacon) of the radio communication defining device only broadcasts to be detected by a nearby Apple device. Additionally, the mobile station receiving the beacon signal can determine the signal strength, UWB capabilities and a Region ID along with the device all of which can be considered to be indicators of a predetermined environment and are part of the second information. Further, based on the location data from a mobile station and the detected BLE beacons, the Find My service can determine if the radio communication defining device is stationary or moving.</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

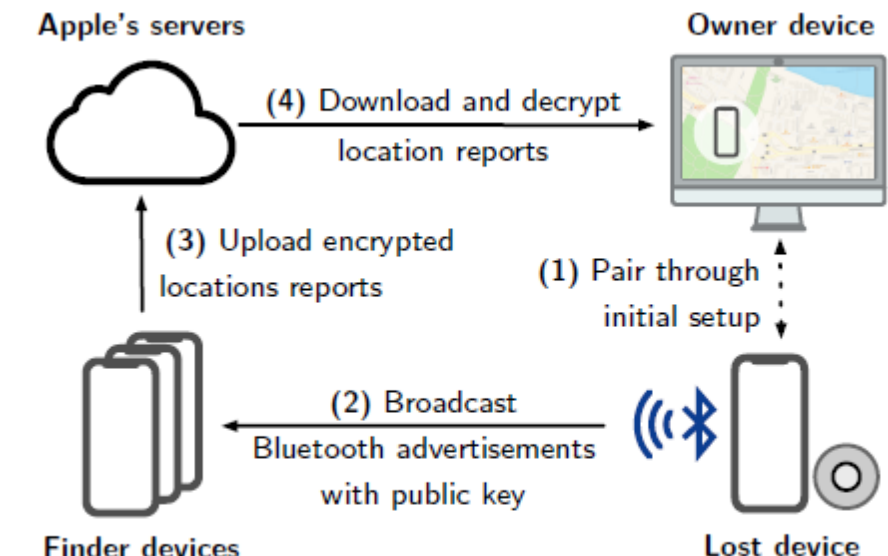
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p align="center">Owner devices. Owner devices share a common Apple ID and can use the <i>Find My</i> application on macOS and iOS to search for any devices of the same owner.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p>  <pre> graph TD AS[Apple's servers] OD[Owner device] FD[Finder devices] LD[Lost device] OD -.-> "(1) Pair through initial setup" LD LD --> "(2) Broadcast Bluetooth advertisements with public key" FD FD --> "(3) Upload encrypted locations reports" AS AS --> "(4) Download and decrypt location reports" OD </pre> <p align="center">Fig. 1. Simplified offline finding (OF) workflow.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="1108 305 1226 415"></div> <div data-bbox="741 453 1600 516"><h2>Connect to the Find My network</h2></div> <div data-bbox="651 548 1688 691"><p>Let users locate your products with the Find My network. With hundreds of millions of Apple devices around the world, advanced end-to-end encryption, and industry leading security, the Find My network lets users easily locate their belongings in the Find My app with the peace of mind that their privacy is protected.</p></div> <div data-bbox="564 753 1764 1313"></div> <div data-bbox="875 1357 1493 1396"><p>Source: https://developer.apple.com/find-my/</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

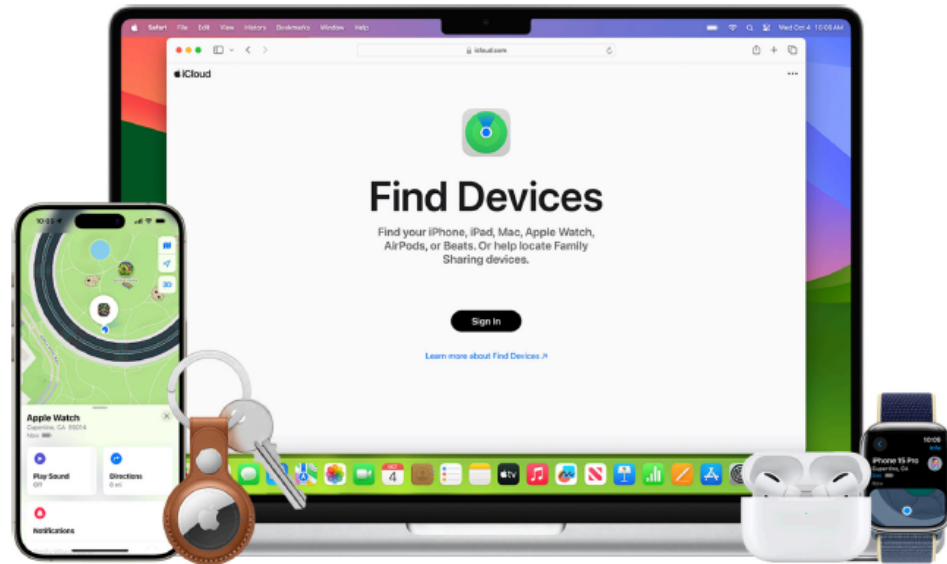
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<div data-bbox="682 290 1619 414"><h2>Find your lost Apple device or AirTag with Find My</h2></div> <div data-bbox="682 436 1606 535"><p>If you lose your Apple device, personal item connected to an AirTag, or other Find My network accessory, use Find My to find it or mark it as lost to protect your device and personal information.</p></div> <div data-bbox="709 552 1650 1112">A composite image illustrating the Find My ecosystem. In the center is a laptop screen displaying the 'Find Devices' page of the iCloud website, which includes a 'Sign In' button and a link to 'Learn more about Find Devices'. To the left of the laptop is an iPhone showing the 'Find My' app's map interface. In front of the laptop are several accessories: a set of keys with a brown leather AirTag, a pair of white AirPods in their charging case, and an Apple Watch. The background of the laptop screen shows the 'Find My' app's interface with a green circular icon and the text 'Find Devices'.</div> <div data-bbox="682 1151 1285 1203"><h2>Find your stuff with Find My</h2></div> <div data-bbox="682 1221 1673 1307"><p>If you've lost or misplaced an Apple device or personal item with an AirTag attached, use Find My to find your device or item on a map. You can get directions to its location and, when you're nearby, play a sound or even get help finding its exact location.</p></div> <div data-bbox="856 1343 1507 1382"><p>Source: https://support.apple.com/en-us/104978</p></div>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<p>Find your Apple device or AirTag</p> <ol style="list-style-type: none">1. Open Find My.2. Choose Devices or Items.3. Select your lost device or item to find it on a map. If you belong to a Family Sharing group, you can also find your family members' devices or shared items.<ul style="list-style-type: none">◦ Choose Directions to open its location in Maps.◦ If you're close, tap Play Sound.◦ If your iPhone has Ultra Wideband, you might be able to tap Find Nearby to show the distance and direction to your AirTag or AirPods Pro (2nd generation). <p>Find a nearby AirTag ></p> <p>If you don't have an Apple device to use Find My, find your devices at iCloud.com/find.</p> <p>Source: https://support.apple.com/en-us/104978</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<p data-bbox="527 310 1026 342">Use Find Devices on iCloud.com</p> <p data-bbox="527 370 1528 402">You can find your device, mark it as lost, or erase it remotely at iCloud.com/find.</p> <ul data-bbox="527 435 1843 776" style="list-style-type: none"><li data-bbox="527 435 1843 548">• When you sign in, you might be asked to enter a verification code sent to a trusted device. If you lost your only trusted device or otherwise can't get the code, select the Find Devices button instead of entering a code.<li data-bbox="527 570 1843 646">• When you're using iCloud.com/find, you can't find your device's location if it's powered off, the battery has run out, or more than 24 hours has passed since its last location was sent to Apple.<li data-bbox="527 667 1843 776">• If you have Stolen Device Protection turned on for your iPhone and you use it to change your Apple ID password while in an unfamiliar location, the location of your devices may not be visible at iCloud.com/find. <p data-bbox="527 808 1123 841">Learn more about Find Devices on iCloud.com ></p> <p data-bbox="527 865 1829 927">AirTag and Find My network accessories can be found only with the Find My app on iPhone, iPad, and Mac, or the Find Items app on Apple Watch.</p> <p data-bbox="527 959 989 992">Use a family member's device</p> <p data-bbox="527 1024 1860 1097">If you're part of a Family Sharing group, you can use Find My on a family member's device. After you share your location with your family members, your devices are listed in their Find My app under Devices.</p> <p data-bbox="527 1130 1089 1162">Learn how to find a family member's device ></p> <p data-bbox="869 1190 1503 1222">Source: https://support.apple.com/en-us/104978</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	<h3 data-bbox="653 264 1461 318">Locate a device in Find My on iPhone</h3> <p data-bbox="653 334 1640 427">Use the Find My app 📍 to locate and play a sound on a missing iPhone, iPad, iPod touch, Mac, Apple Watch, AirPods, or Beats headphones (supported models). In order to locate a device, you must turn on Find My [device] <i>before</i> it's lost.</p> <p data-bbox="653 456 1661 513"><i>Note:</i> If you want to see how far away your devices are from you, make sure you turn on Precise Location for the Find My app. See Control the location information you share on iPhone.</p> <p data-bbox="653 537 1661 594">If you lose your iPhone and don't have access to the Find My app, you can locate or play a sound on your device using Find Devices on iCloud.com.</p> <p data-bbox="653 626 1467 651"><i>Note:</i> Location sharing and finding devices aren't available in all countries or regions.</p> <div data-bbox="653 683 1163 1317"></div> <p data-bbox="709 1365 1665 1399">Source: https://support.apple.com/en-au/guide/iphone/iph09b087eda/ios</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
	<h2 data-bbox="516 305 1759 362">Use Lost Mode in Find Devices on iCloud.com</h2> <p data-bbox="516 394 1749 459">Lost Mode lets you lock your iPhone, iPad, iPod touch, Mac, or Apple Watch so that others can’t access your personal information. You can turn on Lost Mode in Find Devices on iCloud.com.</p> <p data-bbox="516 492 1734 557">Lost Mode requires a device that meets the minimum system requirements listed in the Apple Support article System requirements for iCloud.</p> <p data-bbox="516 589 1094 621">To sign in to Find Devices, go to icloud.com/find.</p> <hr data-bbox="516 678 1791 682"/> <p data-bbox="644 690 1732 722">Source: https://support.apple.com/guide/icloud/use-lost-mode-mmfc0f0165/icloud</p> <p data-bbox="455 800 1921 865">ALT reserves its right to identify source code under Local Rule 3-1 and the Court’s Standing Proposed Discovery Order, Section 3(a)(i).</p>
[7C] the second information allowing the mobile station to generate an updating signal that enables presence related services for the mobile station to be adjusted based on one or more of tariffs and service flags	<p data-bbox="455 914 1921 979">The Apple Accused Products perform the method of the distinctive defining signal includes second information indicating whether or not the radio communication defining device is located in a predetermined environment.</p> <p data-bbox="455 1023 783 1055"><i>See</i> claim [1B] and [1C].</p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products																						
generated based on the updating signal.																							
[9] The method according to claim 7, wherein the distinctive defining signal is coded.	<p>The Apple Accused Products perform the method according to claim 7, wherein the distinctive defining signal is coded.</p> <p>For example, the distinctive defining signal (<i>e.g.</i>, the BLE beacon) broadcast by the radio communication defining signal includes a coded advertisement which in turn includes a privacy ID of the device.</p> <p align="center">Table 2. OF advertisement format (with zero-indexed bytes).</p> <table border="1"> <thead> <tr> <th>Bytes</th><th>Content (details cf. [6, § 5.1])</th></tr> </thead> <tbody> <tr> <td>0–5</td><td>BLE address (($p_4[0] \mid (0b11 \ll 6)$) $p_4[1..5]$)</td></tr> <tr> <td>6</td><td>Payload length in bytes (30)</td></tr> <tr> <td>7</td><td>Advertisement type (0xFF for manufacturer-specific data)</td></tr> <tr> <td>8–9</td><td>Company ID (0x004C)</td></tr> <tr> <td>10</td><td>OF type (0x12)</td></tr> <tr> <td>11</td><td>OF data length in bytes (25)</td></tr> <tr> <td>12</td><td>Status (<i>e.g.</i>, battery level)</td></tr> <tr> <td>13–34</td><td>Public key bytes $p_k[6..27]$</td></tr> <tr> <td>35</td><td>Public key bits $p_k[0] \gg 6$</td></tr> <tr> <td>36</td><td>Hint (0x00 on iOS reports)</td></tr> </tbody> </table> <p align="center">https://arxiv.org/pdf/2103.02282</p>	Bytes	Content (details cf. [6, § 5.1])	0–5	BLE address (($p_4[0] \mid (0b11 \ll 6)$) $p_4[1..5]$)	6	Payload length in bytes (30)	7	Advertisement type (0xFF for manufacturer-specific data)	8–9	Company ID (0x004C)	10	OF type (0x12)	11	OF data length in bytes (25)	12	Status (<i>e.g.</i> , battery level)	13–34	Public key bytes $p_k[6..27]$	35	Public key bits $p_k[0] \gg 6$	36	Hint (0x00 on iOS reports)
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Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

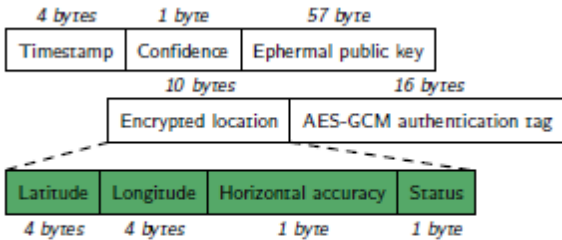
Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple's Accused Products
	 <p align="center">Fig. 2. Binary format of a location report.</p> <p align="center">https://arxiv.org/pdf/2103.02282</p> <p>ALT reserves its right to identify source code under Local Rule 3-1 and the Court's Standing Proposed Discovery Order, Section 3(a)(i).</p>
[10] The method according to claim 7, wherein the predetermined environment comprises one or more of: (1) one or more specific geographic locations; (2) a physical environment; (3) an environment defined by an operator of a mobile telephone network associated with the mobile station; and (4) an area defined by a fixed network.	<p>The Apple Accused Products perform the method according to claim 7, wherein the predetermined environment comprises one or more of: (1) one or more specific geographic locations; (2) a physical environment; (3) an environment defined by an operator of a mobile telephone network associated with the mobile station; and (4) an area defined by a fixed network.</p> <p><i>See claim [5].</i></p>

Exhibit B - Claim Chart for U.S. Patent No. 10,009,720

Claim – 10,009,720	Exemplary Supporting Evidence Regarding Apple’s Accused Products
network associated with the mobile station; and (4) an area defined by a fixed network.	
[11] The method according to claim 7, wherein the distinctive defining signal comprises a signal with a frequency that is outside a frequency range allocated for a mobile telephone network associated with the mobile station.	<p>The Apple Accused Products perform the method according to claim 7, wherein the distinctive defining signal comprises a signal with a frequency that is outside a frequency range allocated for a signal with a frequency that is outside a frequency range allocated for a mobile telephone network associated with the mobile station.</p> <p><i>See claim [6].</i></p>