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20
21 **UNITED STATES DISTRICT COURT**
22 **CENTRAL DISTRICT OF CALIFORNIA**
23 **SOUTHERN DIVISION**

24 RJ TECHNOLOGY LLC
25
26 Plaintiff,
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28 vs.
29 APPLE INC.,
30
31 Defendant.

32 Case No. 8:22-CV-1874
33 **COMPLAINT FOR PATENT**
34 **INFRINGEMENT**
35
36 **DEMAND FOR JURY TRIAL**

1 Plaintiff RJ Technology LLC brings this action for patent infringement
2 against Defendant Apple Inc. (“Defendant” or “Apple”). Plaintiff alleges the
3 following:

4 **BACKGROUND**

5 1. This lawsuit is an action for patent infringement. RJ Technology LLC
6 alleges that Apple infringes U.S. Patent No. 7,749,641 (“the ’641 patent” or the
7 “Asserted Patent”), a copy of which is attached hereto as **Exhibit A**.

8 2. Lithium-ion batteries (commonly referred to as “Li-ion batteries”)
9 have powered the modern, mobile economy. These batteries are ubiquitous,
10 supplying power to all manner of consumer electronic devices, such as mobile
11 phones, laptops, tablets, and other portable electronic devices.

12 3. As such, improvement of battery performance has been a key driver
13 for successfully competing in the electronics market. That has taken on ever more
14 significance with the universal adoption of mobile devices in the everyday lives of
15 users everywhere.

16 4. Xiaoping Ren and Jie Sun are the named inventors of the ’641 patent
17 and were early innovators in Li-ion battery technology. Their efforts culminated in
18 the invention embodied by the Asserted Patent. In 2001, they first applied for and
19 were subsequently awarded a patent in their native China. They then applied for
20 and were awarded the counterpart ’641 patent in the United States. The ’641 patent
21 has now been assigned to RJ Technology LLC, which brings these claims.

22 5. Apple directly infringes the claims of the Asserted Patent, including at
23 least claims 5 and 12, by making, using, offering for sale, selling in the United
24 States, and importing into the United States, portable electronic computing and
25 communication devices—including smartphones, tablets, smart watches, and
26 headphones—that use Li-ion batteries (together, “Accused Products”). Further,
27 Apple has indirectly infringed the claims of the Asserted Patent by inducing the
28 direct infringement of those claims by others, including among other things by (i)

1 manufacturing and selling the Accused Products, (ii) encouraging others to use the
2 Accused Products, for example, through advertising, promoting, and instructing
3 others to use the Accused Products in a manner that has resulted in the direct
4 infringement of the claims in the Asserted Patent by others, and (iii) doing the above
5 while knowing that the acts it has encouraged constitute direct patent infringement.
6 Apple’s infringement has also been willful.

7 6. RJ Technology LLC seeks damages and other relief for Apple’s
8 wrongful conduct.

9 **THE PARTIES**

10 7. RJ Technology LLC is a corporation organized and existing under the
11 laws of Delaware, with its principal place of business in Wilmington, Delaware.
12 Plaintiff’s founders and principals—Messrs. Xiaoping Ren and Jie Sun—are the
13 named inventors on the ’641 patent. They have transferred all of their rights, title,
14 and interest in the ’641 patent to Plaintiff RJ Technology LLC.

15 8. Apple is a California corporation with a principal place of business
16 located at One Apple Park Way, Cupertino, California 95014. Li-ion batteries are
17 essential to Apple’s ability to make and bring to market smartphones, tablets,
18 watches, and headphones that can satisfy consumer standards and are a crucial part
19 of its commercial success.

20 **THE ASSERTED PATENT**

21 9. The ’641 patent, titled “Secondary Lithium Ion Cell or Battery, and
22 Protecting Circuit, Electronic Device, and Charging Device of the Same,” which
23 was duly and lawfully issued on July 6, 2010, is based on a U.S. patent application
24 filed on May 6, 2004.

25 10. The ’641 patent discloses and claims an improved secondary (or
26 rechargeable) Li-ion cell or battery, along with related methods, including use of a
27 charge cutoff voltage above the then-conventionally accepted 4.2 volts and a
28

1 modification to the ratio between the material used in the positive and negative
2 electrodes of the batteries.

3 11. Claim 5 of the '641 patent is exemplary:

4 **Claim 5:** A secondary lithium ion cell or battery, characterized in that
5 the secondary lithium ion cell or battery has a charge cut-off voltage
6 of greater than 4.2 V but less than 5.8 V, and a ratio of positive
7 electrode material to negative electrode material of the secondary
8 lithium ion cell or battery is from 1:1.0 to 1:2.5, as calculated by a
9 theoretic capacity with a charge cut-off voltage set at 4.2 V.

10 The '641 patent has now been assigned to Mr. Ren and Mr. Sun's company, RJ
11 Technology LLC.

12 **JURISDICTION AND VENUE**

13 12. This action arises under the patent laws of the United States, 35 U.S.C.
14 § 1 *et seq.*, including but not limited to §§ 271, 281, 282(a), 283, 284, and 285. The
15 Court has subject matter jurisdiction over this patent infringement action pursuant
16 to 28 U.S.C. §§ 1331 and 1338(a).

17 13. The Court has personal jurisdiction over Apple. Apple has regularly
18 conducted and continues to conduct business in the State of California, has directly
19 or through its distribution network purposefully placed infringing products into the
20 stream of commerce in California, and has committed acts of infringement in this
21 federal judicial district including by making, using, offering for sale, selling, or
22 importing the Accused Products which infringe the Asserted Patent, and by
23 inducing others to infringe the Asserted Patent by using the Accused Products.

24 14. Venue is proper in this judicial district because Apple has regular and
25 established places of business in the Central District of California and has
26 committed acts of infringement in this judicial district. Apple has numerous
27 distributors and retailers in this judicial district, including 23 Apple Stores as well
28 as offices in Los Angeles, Irvine, and Culver City. All told, Apple maintains over

1 100,000 square feet of office space in this judicial district. Apple has also
2 announced plans to open two new offices totaling an additional 550,000 square feet
3 of space and to make its regional headquarters in this judicial district. Apple
4 currently employs over 1,000 people in the Central District of California, many of
5 whom design, sell, manufacture, or support the Accused Products. Apple has also
6 announced plans to hire an additional 2,000 employees here in the next few years.

7 15. Apple has committed acts of patent infringement in the Central District
8 of California, including by advertising, offering to sell, selling, importing, and/or
9 distributing infringing products, and/or inducing the sale and use of infringing
10 products in the United States, including in the Central District of California,
11 knowing and expecting them to be purchased and used by consumers in the United
12 States, including in this judicial district, and such infringing products have been
13 purchased and used in the United States and in this judicial district. For example,
14 Apple has regularly imported the Accused Products as well as relevant components,
15 including Li-ion batteries, through the Port of Los Angeles. Those products and
16 components are also stored in warehouses in the greater Los Angeles area. Apple
17 therefore has committed acts of patent infringement and has a regular and
18 established place of business in this federal judicial district. Accordingly, venue is
19 proper in this federal judicial district, pursuant to 28 U.S.C. § 1400(b).

20 **THE ACCUSED PRODUCTS**

21 16. Apple makes, uses, sells, and/or offers to sell in the United States,
22 and/or imports into the United States Accused Products, all without seeking a
23 license to the '641 patent.

24 **(1) The Accused Smartphone Products**

25 17. Apple makes, uses, sells, and/or offers to sell in the United States,
26 and/or imports into the United States various smartphones that infringe the '641
27 patent, including but not limited to the iPhone 6, iPhone 6S, iPhone 6S Plus, iPhone
28 SE, iPhone 7, iPhone 7+, iPhone 8, iPhone 8+, iPhone X, iPhone XS, iPhone XS

1 Max, iPhone XR, iPhone 11, iPhone 11 Pro, iPhone 11 Pro Max, iPhone 12, iPhone
2 12 Pro, iPhone 12 Pro Max, iPhone 12 Mini, iPhone 13, iPhone 13 Mini, iPhone 13
3 Pro, iPhone 13 Pro Max, iPhone 14, iPhone 14 Pro, iPhone 14 Pro Max, and iPhone
4 14 Plus (the “Accused Smartphone Products”).

5 18. The iPhone 11 Pro exemplifies the relevant functionality of each
6 Accused Smartphone Product.



14 *Refurbished iPhone 11 Pro 512GB – Space Gray (Unlocked)*, APPLE,
15 <https://www.apple.com/shop/product/FWCR2LL/A/refurbished-iphone-11-pro-512gb-space-gray-unlocked?fnode=1eed809e9fd38e9d7cbcc13b442e9fb586f5fe03225abd29802e9a37b77578aab466b8befddbca044aa5655ba00ede99b11f6723cd73ae0d6875e5941e77678728eccc4e565c6f3f306e15bfc259d5ae1527ca6cffa725872da72a8ab373f3d>
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18 (last visited Oct. 11, 2022).

19 19. The iPhone 11 Pro contains a secondary Li-ion battery.

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Apple Lithium-ion Batteries

22 They're inside every iPhone, iPad, iPod, Apple Watch, MacBook,
23 and AirPods, helping you do all kinds of things in all kinds of
24 places. Find out more about your battery to get the most out of it
25 throughout its lifespan — and beyond.

26 *Batteries*, APPLE, <https://www.apple.com/batteries/> (last visited Oct. 11, 2022).

27 20. Further, the Apple iPhone 11 Pro utilizes a Li-ion battery that has a
28 charging voltage of at least 4.4V.

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Replacement Battery 3046 mAh 3.79 V Compatible with Apple iPhone 11 Pro (A2160), ESOURCE PARTS, https://www.esourceparts.ca/replacement-battery-3046-mah-3-79-v-compatible-with-apple-iphone-11-pro-a2160.html?utm_source=googleshopping&utm_medium=cse&ep_cur=CAD&keyword=&gclid=Cj0KCQjwntCVBhDdARIsAMEwACnF6mH5nuYFHW3MnnJRzTeiTirg8DTPdMFa1_09PrB-H-x8RGk_pqIaAsOAEALw_wcB (last visited Oct. 11, 2022).

21. The ratio of positive electrode material to negative electrode material of the secondary Li-ion battery (i.e., the “P/N ratio”) is between 1:1.0 and 1:2.5, as calculated by a theoretic capacity with a charge cut-off voltage set at 4.2V.

22. The iPhone 11 Pro Li-ion battery maintains at least 80% of its capacity after 500 complete charge cycles.

iPhone Owners

Your battery is designed to retain up to 80% of its original capacity at 500 complete charge cycles. The one-year warranty includes service coverage for a defective battery. If it is out of warranty, Apple offers a [battery service](#). Prices and terms may vary.

Batteries, APPLE, <https://www.apple.com/batteries/service-and-recycling/#:~:text=iPhone%20Owners,Prices%20and%20terms%20may%20vary> (last visited Oct. 11, 2022).

1 **(2) The Accused Tablet Products**

2 23. Apple makes, uses, sells, and/or offers to sell in the United States,
3 and/or imports into the United States various tablets that infringe the '641 patent,
4 including but not limited to the iPad 5, iPad 6, iPad 7, iPad 8, iPad 9, iPad Air (3rd
5 Generation), iPad Air (4th Generation), iPad Air (5th Generation), iPad Mini 4, iPad
6 Mini 5, iPad Mini 6, 2016 iPad Pro (9.7”), 2017 iPad Pro (10.5”), iPad Pro 1 (11”),
7 iPad Pro 1 (12.9”), iPad Pro 2 (11”), iPad Pro 2 (12.9”), iPad Pro 3 (11”), iPad Pro
8 3 (12.9”), iPad Pro 4, and iPad Pro 5 (the “Accused Tablet Products”).

9 24. The iPad Air (4th Generation) exemplifies the relevant functionality of
10 each Accused Tablet Product.



18 *iPad Air (4th generation) – Technical Specifications*, APPLE,
19 https://support.apple.com/kb/SP828?locale=en_US (last visited Oct. 11, 2022).

20 25. The iPad Air (4th Generation) contains a Li-ion battery.

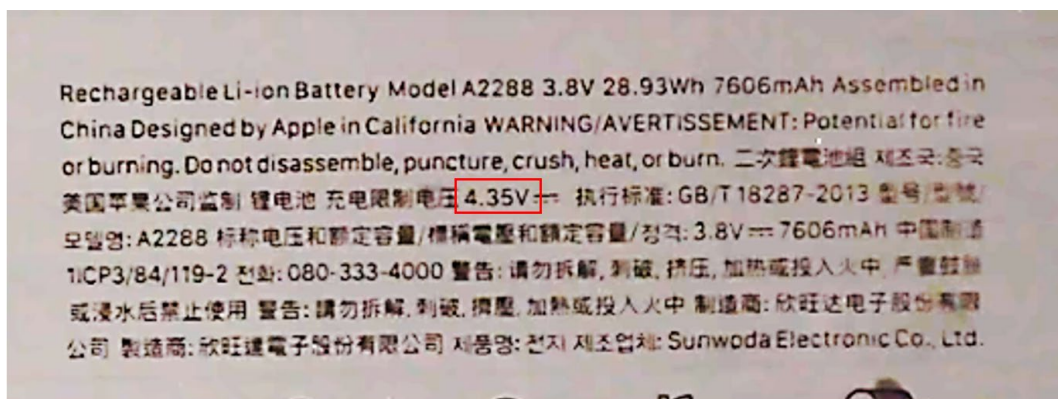
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Apple Lithium-ion Batteries

23 They're inside every iPhone, iPad, iPod, Apple Watch, MacBook,
24 and AirPods, helping you do all kinds of things in all kinds of
25 places. Find out more about your battery to get the most out of it
throughout its lifespan — and beyond.

26 *Batteries*, APPLE, <https://www.apple.com/batteries/> (last visited Oct. 11, 2022).

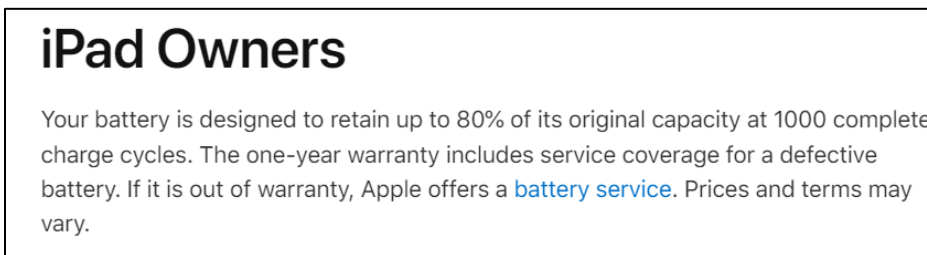
27 26. Further, the iPad Air (4th Generation) utilizes a Li-ion battery that has
28 a charging voltage of at least 4.35V.



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8 *iPad Air 4 Teardown*, iFixit (Mar. 3, 2021),
9 <https://www.ifixit.com/Teardown/iPad+Air+4+Teardown/141032> (image at 3:38,
10 which has been sharpened).

11 27. The ratio of positive electrode material to negative electrode material
12 of the secondary Li-ion battery (i.e., the “P/N ratio”) is between 1:1.0 and 1:2.5, as
13 calculated by a theoretic capacity with a charge cut-off voltage set at 4.2V.

14 28. The iPad Air (4th Generation) Li-ion battery maintains at least 80% of
15 its capacity after 1000 complete charge cycles.



21 *Batteries*, APPLE, [https://www.apple.com/batteries/service-and-
22 recycling/#:~:text=iPhone%20Owners,Prices%20and%20terms%20may%20vary](https://www.apple.com/batteries/service-and-recycling/#:~:text=iPhone%20Owners,Prices%20and%20terms%20may%20vary)
23 (last visited Oct. 11, 2022).

24 **(3) The Accused Smart Watch Products**

25 29. Apple makes, uses, sells, and/or offers to sell in the United States,
26 and/or imports into the United States various smart watches that infringe the '641
27 patent, including but not limited to the Apple Watch Series 1, Apple Watch Series
28 2, Apple Watch Series 3, Apple Watch Series 4, Apple Watch Series 5, Apple Watch
SE, Apple Watch Series 6, Apple Watch Series 7, Apple Watch Ultra, Apple Watch

1 SE (2nd Generation), Apple Watch Series 8, and Apple Watch Hermes (the
2 “Accused Smart Watch Products”).

3 30. The Apple Watch Series 7 exemplifies the relevant functionality of
4 each Accused Smart Watch Product.



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12 *Apple Watch Series 7*, APPLE,
13 [https://web.archive.org/web/20220710092539/https://www.apple.com/apple-](https://web.archive.org/web/20220710092539/https://www.apple.com/apple-watch-series-7/)
14 [watch-series-7/](https://web.archive.org/web/20220710092539/https://www.apple.com/apple-watch-series-7/) (last visited Oct. 11, 2022).

15 31. The Apple Watch Series 7 contains a Li-ion battery.

Apple Lithium-ion Batteries

They're inside every iPhone, iPad, iPod, Apple Watch, MacBook, and AirPods, helping you do all kinds of things in all kinds of places. Find out more about your battery to get the most out of it throughout its lifespan — and beyond.

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22 *Batteries*, APPLE, <https://www.apple.com/batteries/> (last visited Oct. 11, 2022).

23 32. Further, the Apple Watch Series 7 utilizes a Li-ion battery that
24 indicates a charging voltage of at least 4.45V.

1 patent, including but not limited to the AirPods, AirPods 2, AirPods 3, AirPods Pro,
2 AirPods Pro 2, and AirPods Max (the “Accused Headphone Products”).

3 36. The Apple AirPods Pro exemplifies the relevant functionality of each
4 Accused Headphone Product.



11 *AirPods Pro*, APPLE,
12 [https://web.archive.org/web/20220703124624/https://www.apple.com/airpods-](https://web.archive.org/web/20220703124624/https://www.apple.com/airpods-pro/)
13 [pro/](https://web.archive.org/web/20220703124624/https://www.apple.com/airpods-pro/) (last visited Oct. 11, 2022).

14 37. The Apple AirPods Pro contain a Li-ion battery.

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Apple Lithium-ion Batteries

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17 They're inside every iPhone, iPad, iPod, Apple Watch, MacBook,
18 and AirPods, helping you do all kinds of things in all kinds of
19 places. Find out more about your battery to get the most out of it
throughout its lifespan — and beyond.

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21 *Batteries*, APPLE, <https://www.apple.com/batteries/> (last visited Oct. 11, 2022).

22 38. Further, the Apple AirPods Pro utilize a Li-ion battery that has a
23 charging voltage of at least 4.35V.

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AirPods Pro Teardown, iFixit (Oct. 31, 2019), <https://www.ifixit.com/Teardown/AirPods+Pro+Teardown/127551>.

39. The ratio of positive electrode material to negative electrode material of the secondary Li-ion battery (i.e., the “P/N ratio”) is between 1:1.0 and 1:2.5, as calculated by a theoretic capacity with a charge cut-off voltage set at 4.2V.

COUNT ONE: INFRINGEMENT OF U.S. PATENT 7,749,641

40. Plaintiff re-alleges and incorporates by reference the allegations contained in the preceding paragraphs as if fully set forth herein.

41. The ’641 patent is valid and enforceable. Apple does not have a license to practice any of the limitations claimed in the ’641 patent.

42. By making, using, offering for sale, and/or selling products in the United States, and/or importing them into the United States, including but not limited to the Accused Products, Apple has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the Asserted Patent pursuant to 35 U.S.C. § 271(a).

43. Apple knowingly encourages and intends to induce infringement of the Asserted Patent by (i) making, using, offering for sale, and/or selling products in the United States, and/or importing them into the United States, including but not


1 limited to the Accused Products and (ii) encouraging and instructing its customers
2 on how to use the inventions claimed in the Asserted Patent, the claims of which
3 are directly infringed by Apple’s customers. Apple therefore also infringes the
4 Asserted Patent under 35 U.S.C. § 271(b).

5 44. For example, through various marketing and advertising materials,
6 Apple encourages and instructs its customers on how to use the inventions claimed
7 in the Asserted Patent, which Apple advertises as a core feature of the Accused
8 Products, as shown by way of a non-limiting example below:

9 **Charge the iPhone battery**

10 iPhone has an internal, lithium-ion rechargeable battery, which currently provides the best performance
11 for your device. Compared with traditional battery technology, lithium-ion batteries are lighter, charge
12 faster, last longer, and have a higher power density for more battery life. To understand how your battery
works so you can get the most out of it, see the [Apple Lithium-ion Batteries website](#).

13
14 *iPhone User Guide*, APPLE, <https://support.apple.com/guide/iphone/charge-the-battery-iph63eccc618/ios> (last visited Oct. 11, 2022).

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17 **Why Lithium-ion?**

18 Rechargeable lithium-ion technology currently provides the best
19 performance for your device. Compared with older battery types, lithium-
ion batteries weigh less, last longer, and charge more efficiently.

20 [Learn more about how your battery charges >](#)

21 *Batteries*, APPLE, <https://www.apple.com/batteries/> (last visited Oct. 11, 2022).

22 45. Apple was aware of the Asserted Patent no later than March 21, 2018.
23 On that date, Plaintiff’s founders and named inventors on the ’641 patent initiated
24 a patent infringement lawsuit against Apple at the Beijing Intellectual Property
25 Court to recover damages and to obtain an injunction against Apple for its
26 infringement of Patent No. ZL 01141615.7 (the “Chinese Patent”), which is the
27 Chinese counterpart to the ’641 patent.

28

1 Dated: October 13, 2022

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