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

WECREVENTION INC.	§	Case No. 2:25-cv-
Plaintiffs,	§	**JURY TRIAL DEMANDED**
v.	§	
LENOVO GROUP LIMITED, LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO. LTD., LENOVO INFORMATION PRODUCTS (SHENZHEN) CO. LTD., LCFC (HEFEI) ELECTRONICS TECHNOLOGY CO. LTD. D/B/A LC FUTURE CENTER AND LENOVO COMPAL FUTURE CENTER, LENOVO CENTRO TECNOLÓGICO S. DE R.L. DE C.V., LENOVO PC HK LTD., LENOVO (BEIJING) LIMITED, LENOVO ENTERPRISE TECHNOLOGY COMPANY LIMITED, and LENOVO NETAPP TECHNOLOGY LIMITED,	§	
Defendants.	§	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff WeCrevention Inc. ("WeCrevention" or "Plaintiff") for its Complaint against Defendants Lenovo Group Limited, Lenovo (Shanghai) Electronics Technology Co. Ltd. , Lenovo Information Products (Shenzhen) Co. Ltd., LCFC (Hefei) Electronics Technology Co. Ltd. d/b/a LC Future Center and Lenovo Compal Future Center, Lenovo Centro Tecnológico S. de R.L. de C.V., Lenovo PC HK Ltd., Lenovo (Beijing) Limited, Lenovo Enterprise Technology Company Limited, and Lenovo NetApp Technology Limited (collectively, "Lenovo " or "Defendants") for patent infringement allege as follows:

APPLE EX1070
Apple v. WeCrevention
IPR2026-00242

THE PARTIES

1. WeCrevention is incorporated under the laws of the State of Texas, with a place of business located at 5851 Legacy Circle, 6th Floor, Plano, Texas 75024.

2. Defendant Lenovo Group Limited is a corporation organized and existing under the laws of China, with its principal place of business at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong SAR, China. Lenovo Group Limited is a leading manufacturer and seller of smartphones, computers, servers, and tablets in the world and in the United States. Upon information and belief, Lenovo Group Limited does business in Texas, directly or through intermediaries, and offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas, including in the Judicial District of the Eastern District of Texas.

3. Lenovo Group Limited, acting in concert with its subsidiaries and affiliates, manufactures and sells computers and handheld devices worldwide, including throughout the United States and within Texas. In 2019, Lenovo was the world's largest supplier of personal computers—accounting for nearly a quarter of global shipments of personal computers. The Lenovo group of companies—collectively known as "The Lenovo Group" or "Lenovo"—have a global reach and have a strong presence in the United States. Lenovo has approximately 77,000 employees worldwide,[1] including thousands in the United States,[2] with many employees in the United States involved with management, design, engineering, marketing, and supply chain

[1] *See* https://www.lenovo.com/us/en/about/?orgRef=https%253A%252F%252Fwww.google.com%252F.

[2] *See* "Lenovo was named as one of America's Best Employers for Diversity 2023 by Forbes magazine." *See* Lenovo Group Ltd. 2023/2024 Annual Report at 40, available at: https://investor.lenovo.com//en/publications/reports.php.

functions. Lenovo generates more than $62 billion of goods and services worldwide,[3] including over $19 billion in revenues generated from the Americas,[4] a substantial portion of which is generated in the United States each year.

4. Officers or executives of Lenovo Group Limited (and/or affiliates acting in concert with Lenovo Group Limited) regularly work from and reside in the United States, including in Texas. These officers or executives include at least Matthew Zielinski (Austin, Texas),[5] Laura Quatela, Kurt Skaugen, Doug Fisher, and Arthur Hu. Such officers or executives are involved in the marketing, distribution, sale, import, and use of the Accused Products (the "Accused Products" include the products and services that infringe one or more claims of one or more patents as set forth in the Counts below) in the United States.

5. Lenovo Group Limited owns or controls, directly or indirectly, each of the Lenovo entities with which it coordinates the infringing sales, offers for sale, import, use, and manufacture of Accused Products in the United States. Lenovo Group Limited operates and manages a global supply chain to develop, manufacture, and deliver accused computer products, server products, and mobile products to the United States, including Texas. At the direction or control of Lenovo Group Limited, Accused Products are packaged, shipped, and sold to customers in the United States. Lenovo Group Limited reports U.S. sales of the Accused Products as its own. Lenovo Group Limited advertises that it manufactures most of its products in its own facilities, rather than through third parties. For example, on its website, Lenovo Group Limited states: "We manufacture the majority of our products in our own facilities—more than most other hardware suppliers. This

[3] *Id.*
[4] *See* Lenovo Group Ltd. 2023/2024 Annual Report at 187, available at: https://investor.lenovo.com//en/publications/reports.php.
[5] *See* https://www.linkedin.com/in/matthew-zielinski/.

hybrid model helps us bring new innovations to market efficiently while having greater control over product development and supply chain for advantages in quality, security, and time-to-market. Recently, Gartner ranked us #15 on their list of Top 25 World Class Supply Chains.[6]" On May 28, 2024, Lenovo posted a press release on its website that Gartner ranked it #10 on its list of Supply Chain Top 25 for the 2024 report.[7] In the press release, Lenovo stated: "Today, Lenovo's global hybrid manufacturing network includes 30+ manufacturing sites spanning 10 markets in the 180 markets Lenovo does business in, including Argentina, Brazil, China, Germany, Hungary, India, Japan, Mexico, ***and the US***. This ensures the supply chain remains resilient and can adapt to any disruption"[8] (emphasis added).

6. Defendant Lenovo (Shanghai) Electronics Technology Co., Ltd. ("Lenovo Shanghai") is a company organized under the laws of the People's Republic of China. Lenovo Shanghai has an office at No. 68 Building, 199 Fenju Road, Wai Gao Qiao Free Trade Zone, Shanghai, 200131, China, and may be served with process pursuant to the provisions of the Hague Convention. Lenovo Shanghai may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

7. Lenovo Shanghai, an indirect subsidiary of Lenovo Group Limited, has been and is involved in the manufacturing and distribution of accused computer devices, server devices, mobile devices, and other related products. Lenovo Shanghai has been and is involved in the

[6] *See* https://www.lenovo.com/us/en/about/whoweare/?orgRef=https%253A%252F%252Fwww.google.com%252F.
[7] *See* https://news.lenovo.com/pressroom/press-releases/gartner-supply-chain-top-25-for-2024/.
[8] *Id.*

manufacture of Accused Products that are eventually sold to Lenovo PC HK Ltd. or other companies, which then sell the Accused Products to Lenovo (United States) Inc. Lenovo Shanghai is aware that the Accused Products it manufactures are intended for the United States market. Lenovo Shanghai has been and is involved in the shipping of Accused Products, such as notebook and desktop computers, to the United States—both directly and through intermediate Lenovo entities. Lenovo Shanghai has been and is involved in shipping at least some of the Accused Products to the United States under the direction or control of Lenovo PC HK Ltd. Lenovo Shanghai's role within The Lenovo Group of companies includes applying for the necessary licenses and authorizations for accused computer products in the United States, including with the FCC.

8. Defendant Lenovo Information Products (Shenzhen) Co. Ltd. ("Lenovo Shenzhen") is a company organized under the laws of the People's Republic of China. Lenovo Shenzhen has an office at ISH2 Building, 3 Guanglan Road, Futian Free Trade Zone, Shenzhen, 518038, China, and may be served with process pursuant to the provisions of the Hague Convention. Lenovo Shenzhen may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

9. Lenovo Shenzhen, an indirect subsidiary of Lenovo Group Limited, is involved in the manufacturing and distribution of the Accused Products. Specifically, Lenovo has a "manufacturing center" in Shenzhen, China, operated by Lenovo Shenzhen. Lenovo Shenzhen has been and is involved in the manufacture of Accused Products, which are then sold to Lenovo PC HK Ltd., who then sells the Accused Products to Lenovo (United States) Inc. Lenovo Shenzhen is

aware that the Accused Products it manufactures are intended for the United States market. Further, Lenovo Shenzhen has been and is involved in the shipping of Accused Products, such as notebook and desktop computers, to the United States—both directly and through intermediate Lenovo entities. Lenovo Shenzhen has been and is involved in shipping at least some of the Accused Products to the United States under the direction or control of Lenovo Group Limited, and/or Lenovo PC HK Ltd.

10. LCFC (Hefei) Electronics Technology Co., Ltd. d/b/a LC Future Center and Lenovo Compal Future Center ("LCFC Hefei") is a company organized under the laws of a foreign jurisdiction. LCFC Hefei has an office at No. 3188-1, Yungu Road, Economic and Technological Development Zone Hefei, Anhui Province, 230601, China, and may be served with process pursuant to the provisions of the Hague Convention. LCFC Hefei may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

11. LCFC Hefei, an indirect subsidiary of Lenovo Group Limited, is involved in the manufacturing and distribution of the Accused Products. Over 60% of Lenovo laptops are manufactured by LCFC Hefei. Specifically, Lenovo has a "manufacturing center" in Hefei, China, operated by LCFC Hefei. LCFC Hefei has been and is involved in the manufacture of Accused Products that are eventually sold to Lenovo PC HK Ltd., which then sells the Accused Products to Lenovo (United States) Inc. LCFC Hefei is aware that the Accused Products it manufactures are intended for the United States market. Further, LCFC Heifei has been and is involved in the shipping of Accused Products, such as notebook computers, to the United States—both directly and through intermediate Lenovo entities. LCFC Hefei has been and is involved in shipping at

least some of the Accused Products to the United States under the direction or control of Lenovo Group Limited and/or Lenovo PC HK Ltd.

12. Lenovo Centro Tecnológico S. de R.L. de C.V. ("Lenovo Centro") is a company organized under the laws of Mexico. Lenovo Centro has an office at No. 316, Boulevard Escobedo, Apodaca Technology Park, Apodaca, Nuevo León, P.O. 66600, México, and may be served pursuant to the provisions of the Hague Convention. Lenovo Centro may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

13. Lenovo Centro, an indirect subsidiary of Lenovo Group Limited, is involved in the manufacturing, assembly, and testing of accused personal computers and other related products. Specifically, Lenovo Centro operates a "manufacturing center" in Monterrey, Mexico. Lenovo Centro has been and is involved in the manufacture of Accused Products that it sells to Lenovo PC HK Ltd., which then sells the Accused Products to Lenovo (United States) Inc. Lenovo Centro is aware that the Accused Products it manufactures are intended for the United States market. Further, Lenovo Centro has been and is involved in the shipping of Accused Products, such as desktop computers, to the United States—both directly and through intermediate Lenovo entities. Lenovo Centro has been and is involved in shipping at least some of the Accused Products to the United States under the direction or control of Lenovo Group Limited and/or Lenovo PC HK Ltd.

14. Lenovo PC HK Ltd. ("Lenovo PC HK") is a company organized under the laws of Hong Kong SAR. Lenovo PC HK has an office at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong SAR, China, and may be served pursuant to the provisions

of the Hague Convention. Lenovo PC HK may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

15. Lenovo PC HK, an indirect subsidiary of Lenovo Group Limited, is involved in the procurement, marketing, distribution, and sale of Accused Products. In particular, at the direction and control of Lenovo Group Limited, Lenovo PC HK procures, makes, sells, offers for sale, imports, and uses Accused Products manufactured for the United States by Lenovo entities, such as LCFC Hefei and Lenovo Centro. That role includes providing manufacturers with designs and specifications of accused computer products destined for the United States.

16. Further, Lenovo PC HK has been and is involved in the shipping of Accused Products, such as notebook and desktop computers, to the United States—both directly and through intermediate Lenovo entities. Lenovo PC HK has also sold and sells accused Lenovo products, such as notebook and desktop computers, to at least one U.S. distributor—Lenovo (United States) Inc. — which then re-sells them to Lenovo customers residing in the United States. Lenovo PC HK conducts these activities at the instruction and under the supervision of Lenovo Group Limited. Defendants are aware that the Accused Products sold in the United States, such as to Lenovo (United States) Inc., are distributed throughout the United States, including in Texas.

17. Lenovo (Beijing) Limited ("Lenovo Beijing") is a company organized under the laws of China. Lenovo Beijing has an office at No. 6, Chuangye Road, Shangdi, Haidan District, Beijing 100085, China, and may be served with process pursuant to the provisions of the Hague Convention. Lenovo Beijing may also be served with process by serving the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in

business in Texas but has not designated or maintained a resident agent for service of process in Texas as required by statute. This action arises out of that business.

18. Lenovo Beijing is a subsidiary of Lenovo Group Limited. Upon information and belief, Lenovo Beijing acts in concert with, and under the direction and control of, Lenovo Group Limited and/or Lenovo PC HK to sell, offer for sale, import, use, and make the Accused Products in the United States. For example, Lenovo Beijing is the registrant of www.lenovo.com, through which the Defendants sell the Accused Products directly to customers in the United States. Lenovo Beijing further operates the "Beijing Data Center to support Lenovo global core business." Upon information and belief, Lenovo Beijing, operating in concert with other Defendants, hosts www.lenovo.com from the "Beijing Data Center."

19. Defendant Lenovo Enterprise Technology Company Limited ("Lenovo Enterprise") is a corporation organized and existing under the laws of China, with its principal place of business at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong SAR, China,[9] and may be served with process pursuant to the provisions of the Hague Convention. Upon information and belief, Lenovo Enterprise acts in concert with, and under the direction and control of, Lenovo Group Limited and/or other Lenovo Group Limited subsidiaries/affiliates to sell, offer for sale, import, use, and make the Accused Products in the United States, including computer products.[10]

20. Defendant Lenovo NetApp Technology Limited ("Lenovo NetApp") is a corporation organized and existing under the laws of China, with its principal place of business

[9] *See* https://eulerpool.com/en/company/HK/Lenovo%20Enterprise%20Technology%20Company%20Limited,Hong%20Kong,2811034.
[10] *See* LGL 2023/2024 Annual Report at 260, available at: https://investor.lenovo.com//en/publications/reports.php.

located at Lenovo Innovation Park (Tianjin), Jingsan Road, Airport Economic Development Zone, Dongli District, Tianjin City, China,[11] and may be served with process pursuant to the provisions of the Hague Convention. Upon information and belief, Lenovo NetApp acts in concert with, and under the direction and control of, Lenovo Group Limited and/or other Lenovo Group Limited subsidiaries/affiliates, such as Lenovo Beijing, to sell, offer for sale, import, use, and make the Accused Products in the United States, including computer products.[12]

21. The Defendants identified in paragraphs 2 through 20 above are companies that, together with their affiliates, comprise one of the world's leading manufacturers of computers and computer-related products. The Defendants design, manufacture, use, import into the United States, sell, and/or offer for sale in the United States computer devices, mobile devices, server devices, and other related products. Defendants' devices are marketed, offered for sale, and/or sold throughout the United States, including within this Judicial District.

22. The Defendants named above and their affiliates are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and using of the Accused Products in the United States, including in the State of Texas generally and this Judicial District in particular. Defendants engage in coordinated and concerted action to direct the Accused Products throughout the United States, including Texas.

23. The Defendants named above and their affiliates share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies.

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[11] *See* https://eulerpool.com/en/company/HK/Lenovo%20Enterprise%20Technology%20Company%20Limited,Hong%20Kong,2811034.

[12] *See* LGL 2023/2024 Annual Report at 262, available at: https://investor.lenovo.com//en/publications/reports.php.

24. In promotional materials, manuals, guides, terms of use, sales agreements, warranties, or similar documentation related to the Accused Products, the Defendants regularly omit which specific Lenovo company or entity is responsible for the documents or associated products, or instead identify "Lenovo" or the "Lenovo Group." As a result, customers of the Accused Products understand that Lenovo Group Limited or the Lenovo Group as a whole, makes and sells the Accused Products.

25. Lenovo Group Limited and Lenovo as a whole, holds itself out as the entity that manufactures, sells, offers to sell, imports, and uses the Accused Products in the United States, including Texas. For example, the privacy statement of www.lenovo.com states that "[t]his privacy statement applies to data collected through websites owned and operated by Lenovo Group Ltd. and its affiliated group companies ("Lenovo")."[13] Lenovo sells and offers for sale products through its U.S. website, and "Lenovo" (*i.e.,* "Lenovo Group Ltd. and its affiliated group companies") imposes the terms of a "Lenovo Sales Agreement" on all customers, including customers within the United States and Texas.[14] Lenovo Group Limited and Lenovo as a whole, sell the Accused Products directly to customers in the United States, including within Texas, through www.lenovo.com/us/en.

26. The Defendants named above and their affiliates operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

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[13] *See* https://www.lenovo.com/us/en/privacy/; *see also* https://www.lenovo.com/us/en/legal/ ("The following are terms of a legal agreement between you and Lenovo ("we," "us," or "our").

[14] *See* https://www.lenovo.com/medias/Sales-Terms-and-Conditions-US.html?context=bWFzdGVyfHJvb3R8MTMzNzV8dGV4dC9odG1sfGg3MC9oYWMvOTQ0MTA1NTgwMTM3NC5odG1sfDgwM2RjYzkxMzNhYWYzOTJiNGEwZjU1ZjFhMWZkOGM5M2JhYzVmYTkwNzQ2OTk0ZWE5NjVkOWZiMWYwNzdhZmE.

JURISDICTION AND VENUE

27. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1332, 1338, and 1367.

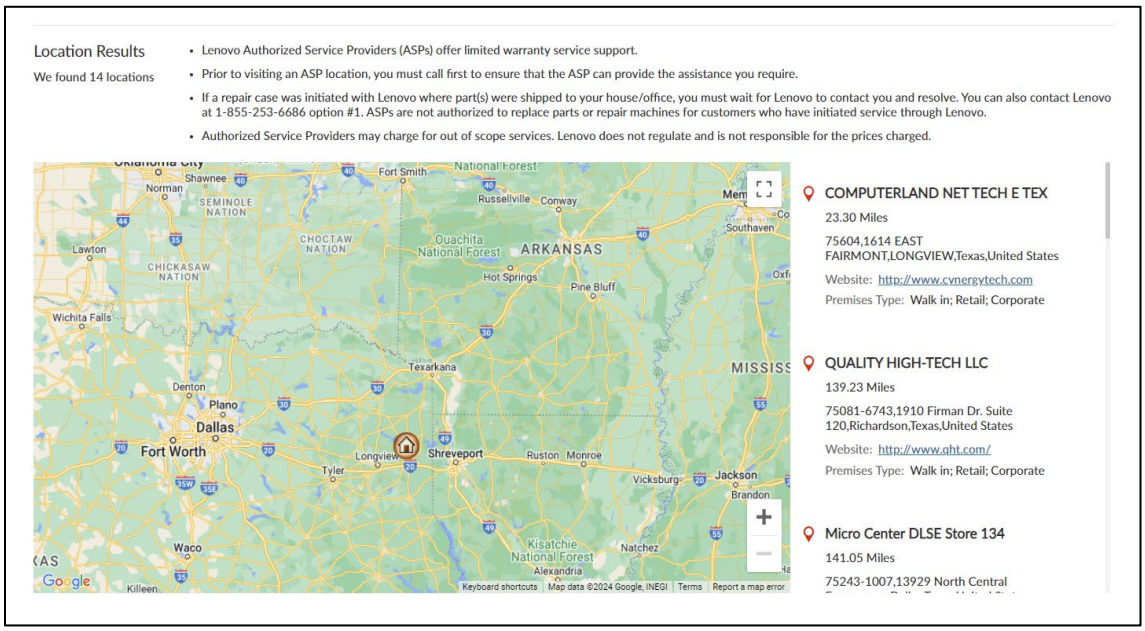
28. This Court has personal jurisdiction over Defendants. Defendants regularly conduct business and have committed acts of patent infringement and/or have induced acts of patent infringement by others in this Judicial District and/or have contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States. Defendants, directly and/or through subsidiaries or intermediaries, have committed and continue to commit acts of infringement in this Judicial District by, among other things, making, using, importing, offering to sell, and/or selling products that infringe the patents at issue in this case. Courts in Texas, including within this Judicial District, have concluded that at least Lenovo Group Limited is subject to personal jurisdiction in the State of Texas. *See*, *e.g.*, *ACQIS LLC v. Lenovo Grp. Ltd.*, 572 F. Supp. 3d 291, 307 (W.D. Tex. 2021) ("this Court finds that the exercise of personal jurisdiction over [Lenovo Group Limited] is both reasonable and fair."); *AX Wireless LLC v. Lenovo Grp. Ltd.*, No. 2:22-cv-00280-RWS-RSP, Dkt. No. 110 (report and recommendation) (E.D. Tex. Sept. 6, 2023) ("exercising personal jurisdiction [over Lenovo Grp. Ltd.] would not offend traditional notions of fair place and substantial justice."); *Eireog Innovations Ltd. v. Lenovo Grp. Ltd.*, No. 2:24-CV-00239-JRG, 2024 WL 4519763 (E.D. Tex. Oct. 17, 2024); *Universal Connectivity Techs. Inc. v. Lenovo Grp. Ltd.*, No. 2:23-CV-00449-JRG, 2024 WL 4519760 (E.D. Tex. Oct. 17, 2024); *Truesight Commc'ns LLC v. Lenovo Grp. Ltd.*, No. 2:24-CV-00031-JRG, 2024 WL 5110057 (E.D. Tex. Dec. 13, 2024).

29. Defendants induce their subsidiaries, affiliates, retail partners, and customers to make, use, sell, offer for sale, and/or import throughout the United States, including within this Judicial District, infringing products and places such products into the stream of commerce via established distribution channels, knowing or understanding that such products would be sold and used in the United States, including in the Eastern District of Texas. Defendants purposefully direct the infringing products identified herein into established distribution channels within this Judicial District and the U.S. nationally. For example, Defendants sell and offer to sell the infringing products through Lenovo's website, www.lenovo.com[15], which may be accessed throughout the United States, the State of Texas, and this Judicial District. Additionally, Defendants have authorized sellers and sales representatives that offer for sale and sell the infringing products throughout the State of Texas to consumers throughout this Judicial District, including at the following locations in this Judicial District: Best Buy, 422 West Loop 281, Suite 100, Longview, Texas 75605; Costco Wholesale, 3650 West University Drive, McKinney, Texas 75071; Office Depot, 422 West Loop 281, Suite 300, Longview, Texas 75605; Target, 3092 North Eastman Road, Suite 100, Longview, Texas 75605; and Wal-Mart, 1701 East End Boulevard North, Marshall, Texas 75670.

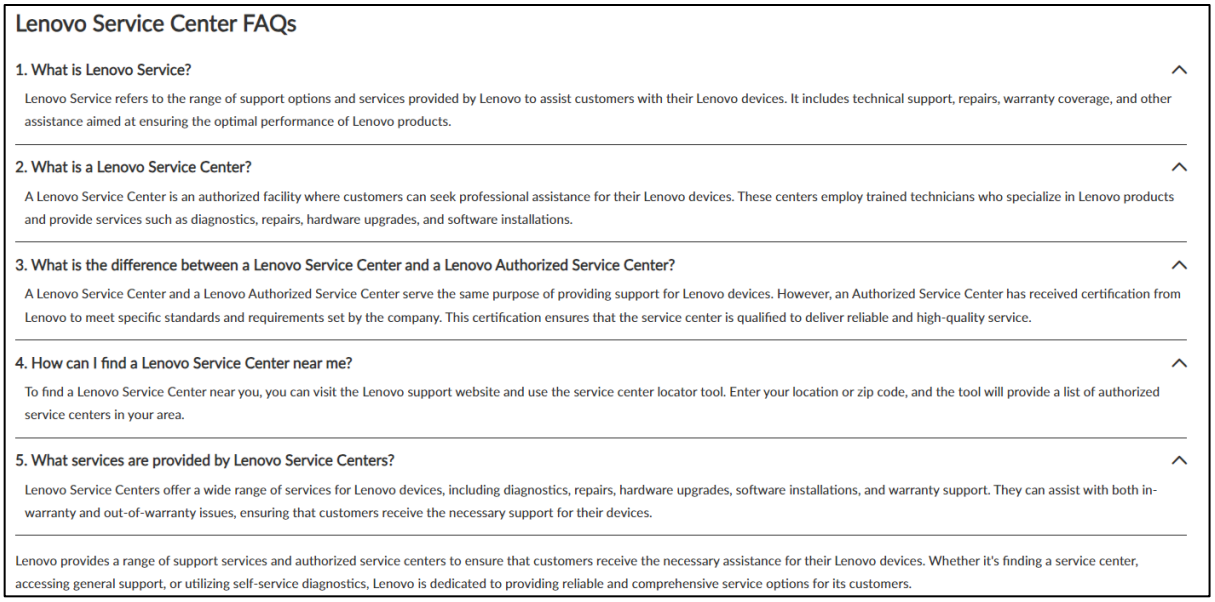
30. Defendants maintain regular and established places of business in this Judicial District, the State of Texas, and elsewhere in the United States, including a Sales Office in Fort

[15] The Lenovo website is maintained by Lenovo Beijing Limited. *See* https://www.whois.com/whois/lenovo.com.

Worth, Texas.[16] Defendants also advertise for jobs in the State of Texas.[17] Defendants also maintain Lenovo Authorized Service Providers (ASPs) in this Judicial District, the State of Texas, and elsewhere in the United States.



[16] *See* https://www.lenovo.com/us/en/about/locations/?orgRef=https%253A%252F%252Fwww.google.com%252F&cid=us:sem|se|google|pmax_smb_pcs||||18337003604|||shopping|mix|commercialconsumer&gad_source=1&gclid=CjwKCAjwvvmzBhA2EiwAtHVrb-yDPR8mEb0OOJoQq7k6lSpSZJTL4W1Ucy0kqq6ZBDwyz4H5zd7rSBoC6NQQAvD_BwE.
[17] *See*, *e.g.*, https://jobs.lenovo.com/en_US/careers/JobDetail/AI-Vertical-Solutions-Marketing-Manager/69829 (Austin, Texas).



Lenovo Service Center FAQs

1. What is Lenovo Service?

Lenovo Service refers to the range of support options and services provided by Lenovo to assist customers with their Lenovo devices. It includes technical support, repairs, warranty coverage, and other assistance aimed at ensuring the optimal performance of Lenovo products.

2. What is a Lenovo Service Center?

A Lenovo Service Center is an authorized facility where customers can seek professional assistance for their Lenovo devices. These centers employ trained technicians who specialize in Lenovo products and provide services such as diagnostics, repairs, hardware upgrades, and software installations.

3. What is the difference between a Lenovo Service Center and a Lenovo Authorized Service Center?

A Lenovo Service Center and a Lenovo Authorized Service Center serve the same purpose of providing support for Lenovo devices. However, an Authorized Service Center has received certification from Lenovo to meet specific standards and requirements set by the company. This certification ensures that the service center is qualified to deliver reliable and high-quality service.

4. How can I find a Lenovo Service Center near me?

To find a Lenovo Service Center near you, you can visit the Lenovo support website and use the service center locator tool. Enter your location or zip code, and the tool will provide a list of authorized service centers in your area.

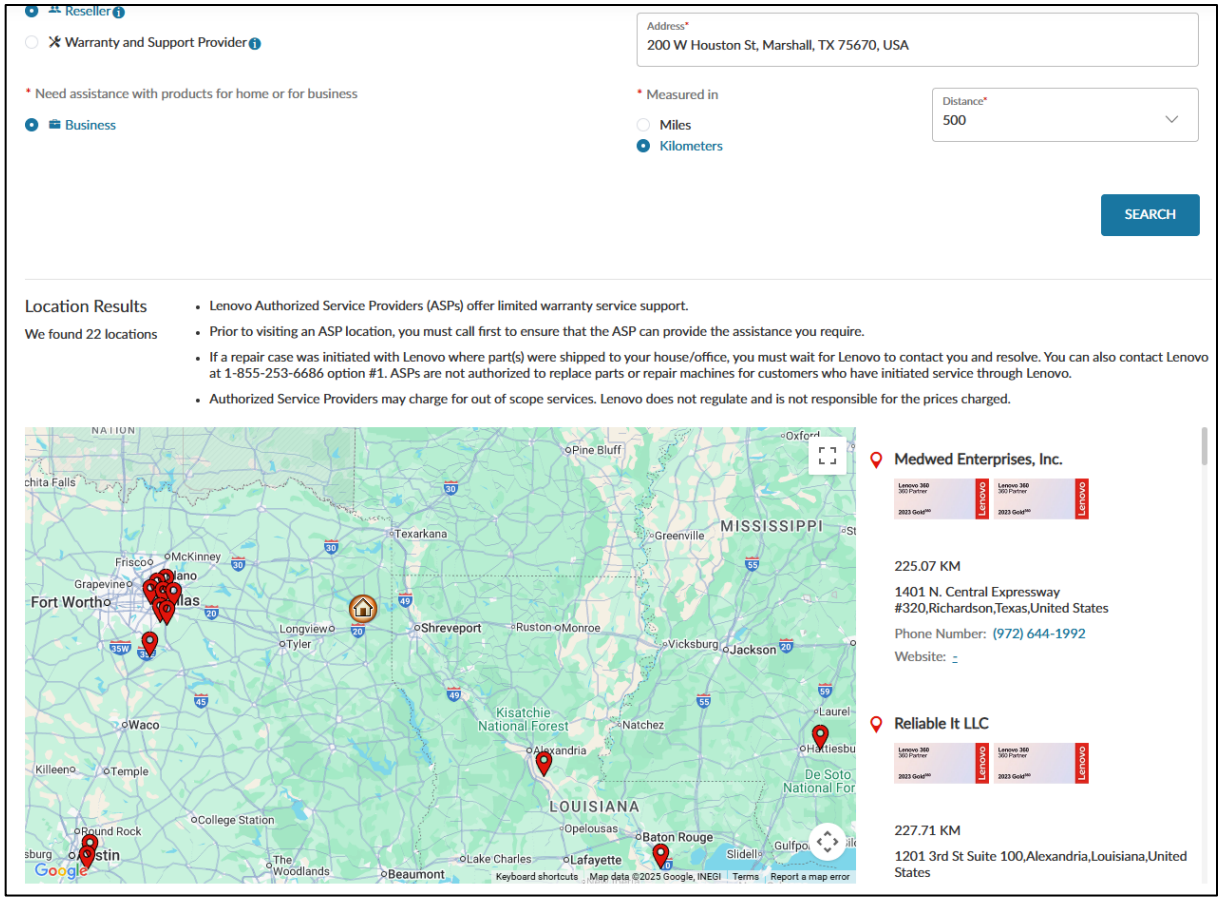
5. What services are provided by Lenovo Service Centers?

Lenovo Service Centers offer a wide range of services for Lenovo devices, including diagnostics, repairs, hardware upgrades, software installations, and warranty support. They can assist with both in-warranty and out-of-warranty issues, ensuring that customers receive the necessary support for their devices.

Lenovo provides a range of support services and authorized service centers to ensure that customers receive the necessary assistance for their Lenovo devices. Whether it's finding a service center, accessing general support, or utilizing self-service diagnostics, Lenovo is dedicated to providing reliable and comprehensive service options for its customers.[18]

Defendants also maintain authorized resellers of their products in this Judicial District, in the State of Texas, and throughout the United States.

[18] *See*, *e.g.*, https://support.lenovo.com/us/en/lenovo-service-provider: Displaying result for "Warranty and Support Provider" for "Home" within 500 miles of 200 W Houston Street, Marshall, TX 75670, USA. ("A Lenovo Service Center is an authorized facility where customers can seek professional assistance for their Lenovo devices. These centers employ trained technicians who specialize in Lenovo products and provide services such as diagnostics, repairs, hardware upgrades, and software installations.").



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At these various locations, Defendants maintain authorized sellers, sales representatives, and customer service agents that offer, sell, and service Defendants' products in this Judicial District, the State of Texas, and elsewhere in the United States.

31. Furthermore, Lenovo Group Limited provides "Hardware Maintenance Manuals" for the Accused Products in the United States, which bear a "Lenovo" copyright without specifying any particular Lenovo entity, and which are delivered pursuant to a General Services Administration "GSA" contract. These manuals specify that they are "printed in China." These English language manuals demonstrate Lenovo's knowledge and intent that the Accused Products are to be sold throughout the United States, including Texas.

[19] *Id.* Search results for "Reseller" for "Business" within 500 miles of 200 West Houston Street, Marshall, TX 75670, USA.

32. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391, because, among other things, Defendants are not residents in the United States and thus may be sued in any Judicial District pursuant to 28 U.S.C. § 1391(c)(3).

33. Defendants are subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to their substantial business in this State and Judicial District, including: (i) committing at least a portion of their past infringing activities, (ii) regularly doing or soliciting business in Texas, and/or (iii) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas. In addition, or in the alternative, this Court has personal jurisdiction over at least Lenovo Group Limited pursuant to Fed. R. Civ. P. 4(k)(2) because: (i) it has substantial contacts with the United States and committed and/or induced acts of patent infringement in the United States; and (ii) it is not subject to jurisdiction in any state's courts of general jurisdiction.

PATENTS-IN-SUIT

34. On December 1, 2015, the United States Patent and Trademark Office ("USPTO") duly and legally issued U.S. Patent No. 9,201,834 (the "'834 Patent"), entitled "Reconfigurable high speed memory chip module and electronic device with a reconfigurable high speed memory chip module." A true and correct copy of the '834 Patent is available at: https://patentimages.storage.googleapis.com/4e/e2/d1/ff9468bba93f12/US9201834.pdf.

35. On May 4, 2021, the USPTO duly and legally issued U.S. Patent No. 10,998,017 (the "'017 Patent"), entitled "Dynamic random access memory applied to an embedded display port." A true and correct copy of the '017 Patent is available at: https://patentimages.storage.googleapis.com/ed/71/f0/0ecf9fb08f5d46/US10998017.pdf.

36. On February 6, 2024, the USPTO duly and legally issued U.S. Patent No. 11,894,098 (the "'098 Patent"), entitled "Dynamic random access memory applied to an embedded display port." A true and correct copy of the '098 Patent is available at: https://patentimages.storage.googleapis.com/41/ee/fb/3abfb441cefa9d/US11894098.pdf.

37. On November 26, 2024, the USPTO duly and legally issued U.S. Patent No. 12,154,652 (the "'652 Patent"), entitled "Dynamic random access memory applied to an embedded display port." A true and correct copy of the '652 Patent is available at: https://patentimages.storage.googleapis.com/64/ae/d4/48380e305b6342/US12154652.pdf.

38. On October 20, 2015, the USPTO duly and legally issued U.S. Patent No. 9,164,942 (the "'942 Patent"), entitled "High speed memory chip module and electronics system device with a high speed memory chip module." A true and correct copy of the '942 Patent is available at: https://patentimages.storage.googleapis.com/75/51/39/6c93b51f4b3b5c/US9164942.pdf. The '834 Patent, the '017 Patent, the '098 Patent, the '652 Patent, and the '942 Patent are referred to herein collectively as the "Patents-in-Suit."

39. WeCrevention is the sole and exclusive owner of all right, title, and interest to and in the Patents-in-Suit, and it holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. WeCrevention also has the right to recover all damages for infringement of the Patents-in-Suit as appropriate under the law.

40. WeCrevention has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit. On information and belief, any and all prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

INFRINGEMENT ALLEGATIONS

41. The inventions claimed in the Patents-in-Suit are generally directed to electronics devices comprising memory chips, as well as memory chip modules. The '834 Patent was developed by Weng-Dah Ken, Chao-Chun Lu, and Jan-Mye Sung. The '017 Patent, the '098 Patent, and the '652 Patent were developed by Der-Min Yuan, Yen-An Chang, and Wei-Ming Huang. The '942 Patent was developed by Weng-Dah Ken and Nicky Lu. Lenovo has manufactured, used, marketed, distributed, sold, offered for sale, and imported into the United States, products that infringe the Patents-in-Suit. These products include at least all versions and variants of Lenovo products that include LPDDR5 DRAM since September of 2019, including, without limitation, the IdeaPad (*e.g.*, IdeaPad 1, IdeaPad Slim 3, IdeaPad Slim 5, IdeaPad Slim 5 Pro, and IdeaPad 5 2in 1), the ThinkPad (*e.g.*, ThinkPad Z13, ThinkPad Z16, ThinkPad T14 Gen 3, ThinkPad T14s Gen 3, and ThinkPad T16), the Slim (*e.g.,* Slim 7, and Slim Pro 7), and the Yogo (*e.g.*, Yoga 7) (the "Accused Products").

42. Upon information and belief, Lenovo has had knowledge and notice of the Patents-in-Suit, and its infringement thereof, since they issued. Lenovo, as a technology company, regularly monitors memory module technology advances, and monitored or was otherwise aware of Plaintiff's patented inventions, especially due to their impact on Lenovo's own technology and consumer electronics business. Alternatively, to the extent that Lenovo avoided or otherwise lacked actual knowledge of the Patents-in-Suit, and its infringement thereof, it was willfully blind. Upon information and belief, to the extent it lacked actual knowledge of infringement, prior to the filling of this action, Lenovo deliberately avoided learning of infringement, despite subjectively believing that there was a high probability that it infringed Plaintiff's patents, and specifically the Patents-in-Suit, and was therefore willfully blind. Upon information and belief, Lenovo has

adopted a policy or practice of not reviewing the patents of others, including those related to Lenovo's specific industry and of Plaintiff in particular, thereby remaining willfully blind to the Patents-in-Suit. Upon information and belief, Lenovo lacks written policies disseminated to employees regarding monitoring or avoidance of patent infringement by Lenovo and lacks mechanisms for employees to report patents which they believe Lenovo may infringe. Upon information and belief, Lenovo and its employees understood that there was a high likelihood that patents filed on innovations by Plaintiff read on the Accused Products.

43. At least as of the commencement of this action, Defendants have had both actual knowledge and notice of the Patents-in-Suit and continue to willfully infringe the Patents-in-Suit.

COUNT I
(Infringement of the '834 Patent)

44. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

45. WeCrevention has not licensed or otherwise authorized Lenovo to make, use, offer for sale, sell, or import any products that embody the inventions of the '834 Patent.

46. Lenovo has and continues to directly infringe the '834 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '834 Patent.

47. Lenovo directly infringes at least Claim 21 of the '834 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise an electronics device with a reconfigurable high speed memory chip module, the electronics system device comprising: an application-specific integrated circuit (ASIC) processor; a type of memory cell array group, wherein the type of memory cell array group comprises multiple memory cell array ICs; a first transmission bus coupled to the type of memory cell array group having a first

programmable transmitting or receiving data rate, a first programmable transmitting or receiving signal swing corresponding to firmware or software comprised in the ASIC processor; a logic unit coupled to the first transmission bus for accessing the type of memory cell array group through the first transmission bus; and a second transmission bus coupled between the logic unit and the ASIC processor having a second programmable transmitting or receiving data rate, a second programmable transmitting or receiving signal swing associated to the firmware or the software comprised in the ASIC processor.

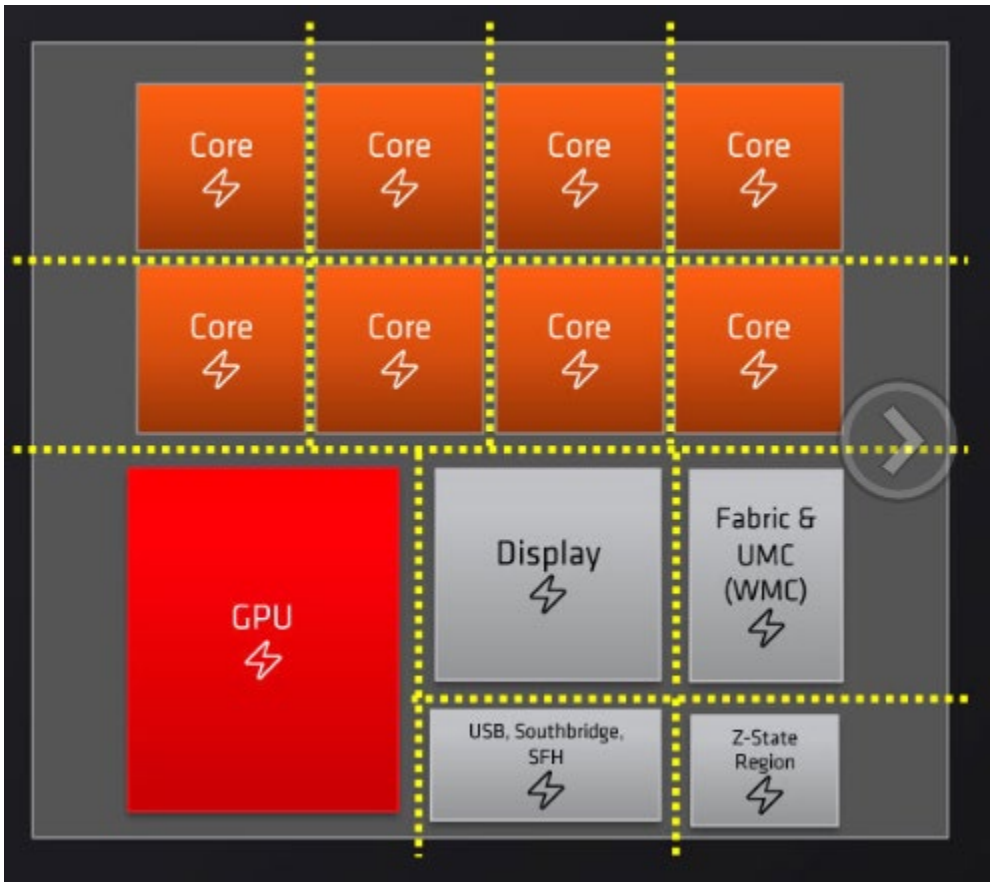
48. The Accused Products include an electronics device with a reconfigurable high speed memory chip module. For example, the IdeaPad 5 Pro (16”), which is believed to be representative of all accused products for purposes of Plaintiff’s infringement allegations, is a laptop, which is an electronics device. The IdeaPad 5 Pro (16”) includes an AMD Ryzen 5 6600HS Processor (“Ryzen”) and an on-board 16 GB LPDDR5 DRAM module, which is a reconfigurable high speed memory chip module.

Tech Specs

Processor	AMD Ryzen™ 5 6600HS Processor (3.30 GHz, up to 4.50 GHz Max Boost, 6 Cores, 12 Threads, 16 MB Cache)
Operating System	Windows 11 Home
Graphics	NVIDIA® GeForce RTX™ 3050 4 GB
Display	16″ WQXGA (2560 x 1600) IPS, anti-glare, 120Hz refresh rate, 100% sRGB, 16:10 aspect ratio, 350 nits, TÜV Eyesafe® low blue-light certification
Memory	16GB LPDDR5 6400MHz

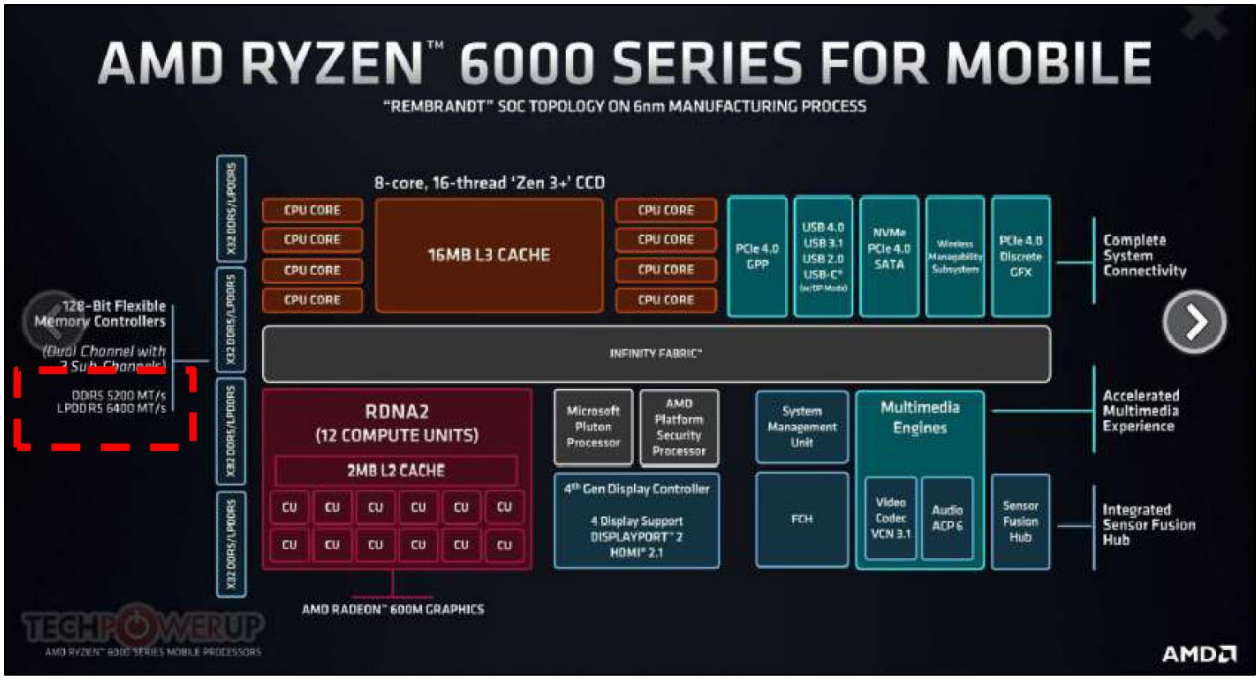
See https://www.lenovo.com/us/en/p/laptops/ideapad/ideapad-500/ideapad-5-pro-gen-7-16-inch-amd/len101i0049.

49. The Accused Products further include an application-specific integrated circuit ("ASIC") processor. For example, the Ryzen of the IdeaPad 5 Pro (16") comprises an ASIC processor that includes multiple computing cores and a graphics core, as shown below.



See https://www.techpowerup.com/292118/amd-zen3-architecture-and-ryzen-6000-rembrandt-mobile-processors-detailed#g292118-8.

50. The Accused Products further include a type of memory cell array group, wherein the type of memory cell array group comprises multiple memory cell array ICs. For example, the 16GB LPDDR5 DRAM module of the IdeaPad 5 Pro (16") includes a cell array group comprised of multiple memory cell array ICs. The LPDDR5 DRAM module is coupled to the Ryzen and controlled thereby via a memory controller ("MC") within the Ryzen, as shown below.



See id.

51. On information and belief, the Accused Products comprise a first transmission bus coupled to the type of memory cell array group having a first programmable transmitting or receiving data rate, a first programmable transmitting or receiving signal swing corresponding to firmware or software comprised in the ASIC processor. For example, the IdeaPad 5 Pro (16") includes a memory bus coupled to the memory cell array group of the LPDDR5 DRAM module and to the Ryzen. The IdeaPad 5 Pro is programmable via firmware or software stored in the ASIC of the Ryzen to change the transmitting or receiving data rate and signal swing used by the Ryzen and the LPDDR5 DRAM module for communication over the memory bus. This necessarily results in the memory bus having a programmable data rate and signal swing. For example, upon information and belief:

> "The [Ryzen 6000 series] silicon broadly combines an 8-core/16-thread CPU based on the new Zen 3+ microarchitecture, a large new iGPU based on the RDNA2 graphics architecture, complete with real-time ray tracing support; a **DDR5 + LPDDR5 memory controller**"

Source: *Id.* (emphasis added).

52. Additionally, the Ryzen further supports power saving and bandwidth adjustments, for example:

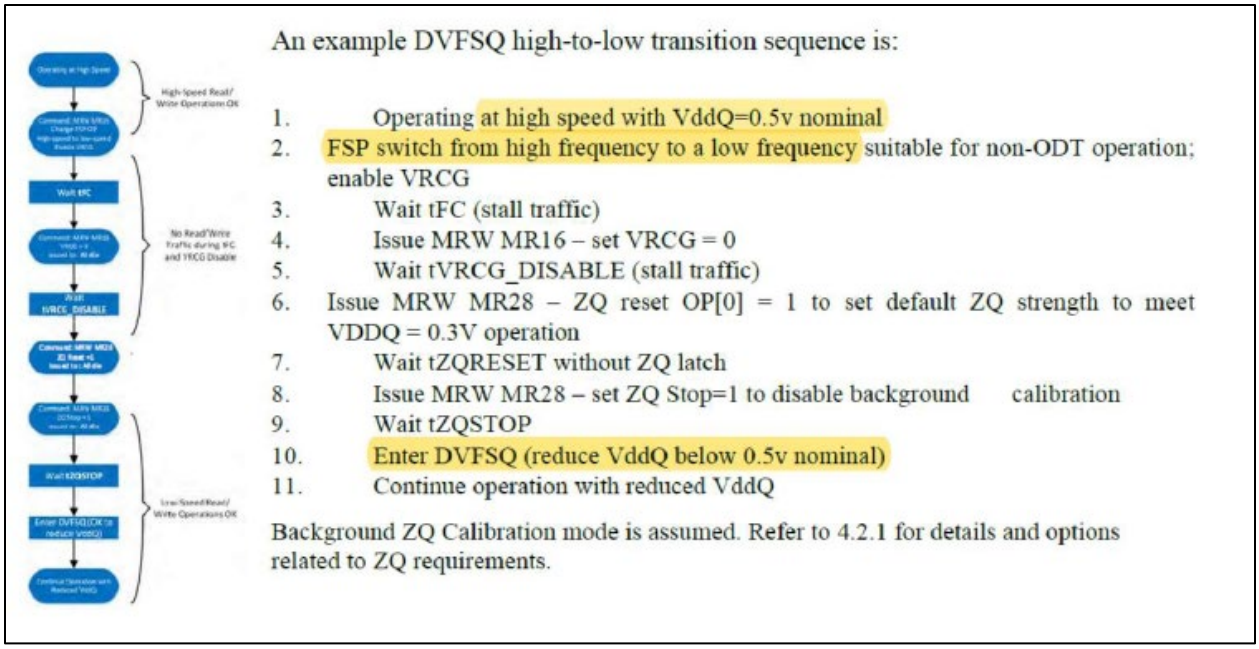
> "Platform-level power optimization **incorporate power savings from the use of LPDDR5 memory.**"

See id (emphasis added).

> "The Infinity Fabric (data fabric) can now drop into enhanced sleep states when it isn't busy, and **the memory and fabric can dynamically adjust bandwidth** in real-time **to save power**."

See https://www.tomshardware.com/news/amd-6nm-ryzen-6000-rembrandt-soc-deep-dive-gunning-for-alder-lake (emphasis added).

53. LPDDR5 DRAM, such as that of the IdeaPad 5 Pro (16"), supports Dynamic Voltage and Frequency Scaling ("DVFS") consisting of two modes ("DVFSC" and "DVFSQ"), which allow the memory operating frequency and voltages to be controllably adjusted, such as by lowering one or both of these parameters to reduce energy consumption during times when high performance is not required. *See* JESD209-5B at 414; *see also* JESD209-5C at 430. When DVFSQ mode is enabled, "LPDDR5 devices can allow the VDDQ to be ramped during operation including Read/Write transactions. Exact speeds and levels are to be determined by the system builder." *See* JESD209-5B at 416; *see also* JESD209-5C at 435.



An example DVFSQ high-to-low transition sequence is:

1. Operating at high speed with VddQ=0.5v nominal
2. FSP switch from high frequency to a low frequency suitable for non-ODT operation; enable VRCG
3. Wait tFC (stall traffic)
4. Issue MRW MR16 – set VRCG = 0
5. Wait tVRCG_DISABLE (stall traffic)
6. Issue MRW MR28 – ZQ reset OP[0] = 1 to set default ZQ strength to meet VDDQ = 0.3V operation
7. Wait tZQRESET without ZQ latch
8. Issue MRW MR28 – set ZQ Stop=1 to disable background calibration
9. Wait tZQSTOP
10. Enter DVFSQ (reduce VddQ below 0.5v nominal)
11. Continue operation with reduced VddQ

Background ZQ Calibration mode is assumed. Refer to 4.2.1 for details and options related to ZQ requirements.

See JESD209-5B at 417; *see also* JESD209-5C at 436. Since the I/O circuitry of the LPDDR5 DRAM is coupled to the memory bus of the IdeaPad 5 Pro (16”), frequency and VDDQ adjustment carried out by the MC of the Ryzen necessarily result in signal frequency and voltage scaling on the memory bus.

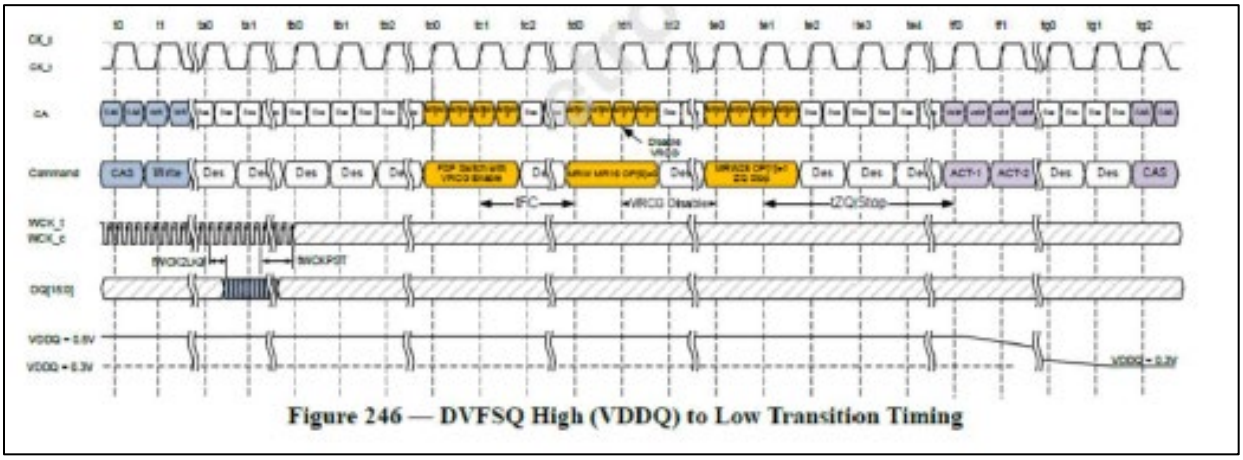


Figure 246 — DVFSQ High (VDDQ) to Low Transition Timing

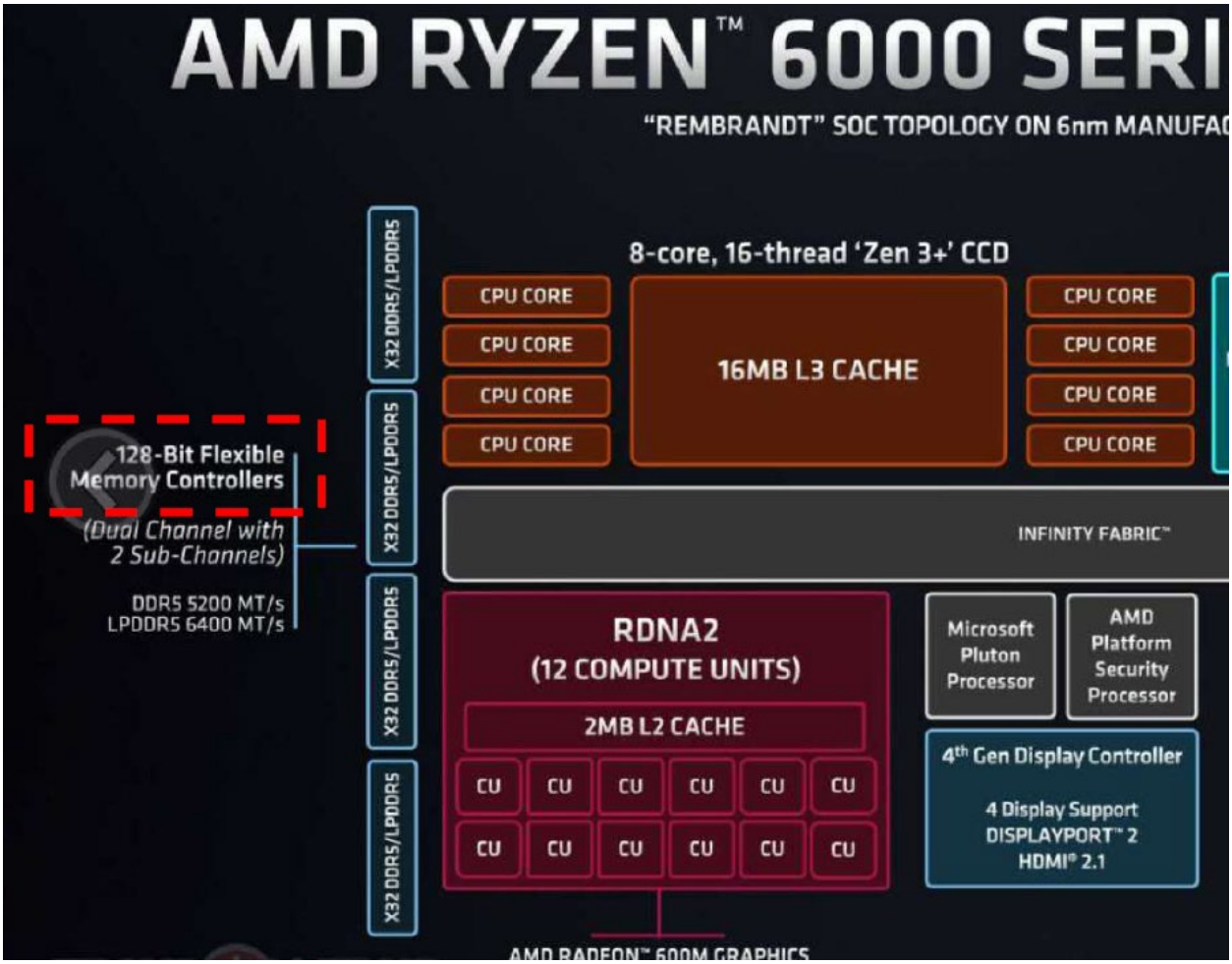
See JESD209-5B at 417; *see also* JESD209-5C at 436.

54. On information and belief, the Accused Products further include a logic unit coupled to the first transmission bus for accessing the type of memory cell array group through the first transmission bus. For example, on information and belief, the MC of the Ryzen (i.e., a logic

unit), as well as any I/O and buffer circuitry of the Ryzen, is coupled to the memory bus (*i.e.*, a first transmission bus) for accessing the LPDDR5 DRAM module of the IdeaPad 5 Pro (16"):

> "The [Ryzen] silicon broadly combines an 8-core/16-thread CPU based on the new Zen 3+ microarchitecture, a large new iGPU based on the RDNA2 graphics architecture, complete with real-time ray tracing support; a **DDR5 + LPDDR5 memory controller**."

See https://www.techpowerup.com/292118/amd-zen3-architecture-and-ryzen-6000-rembrandt-mobile-processors-detailed#g292118-8 (emphasis added).



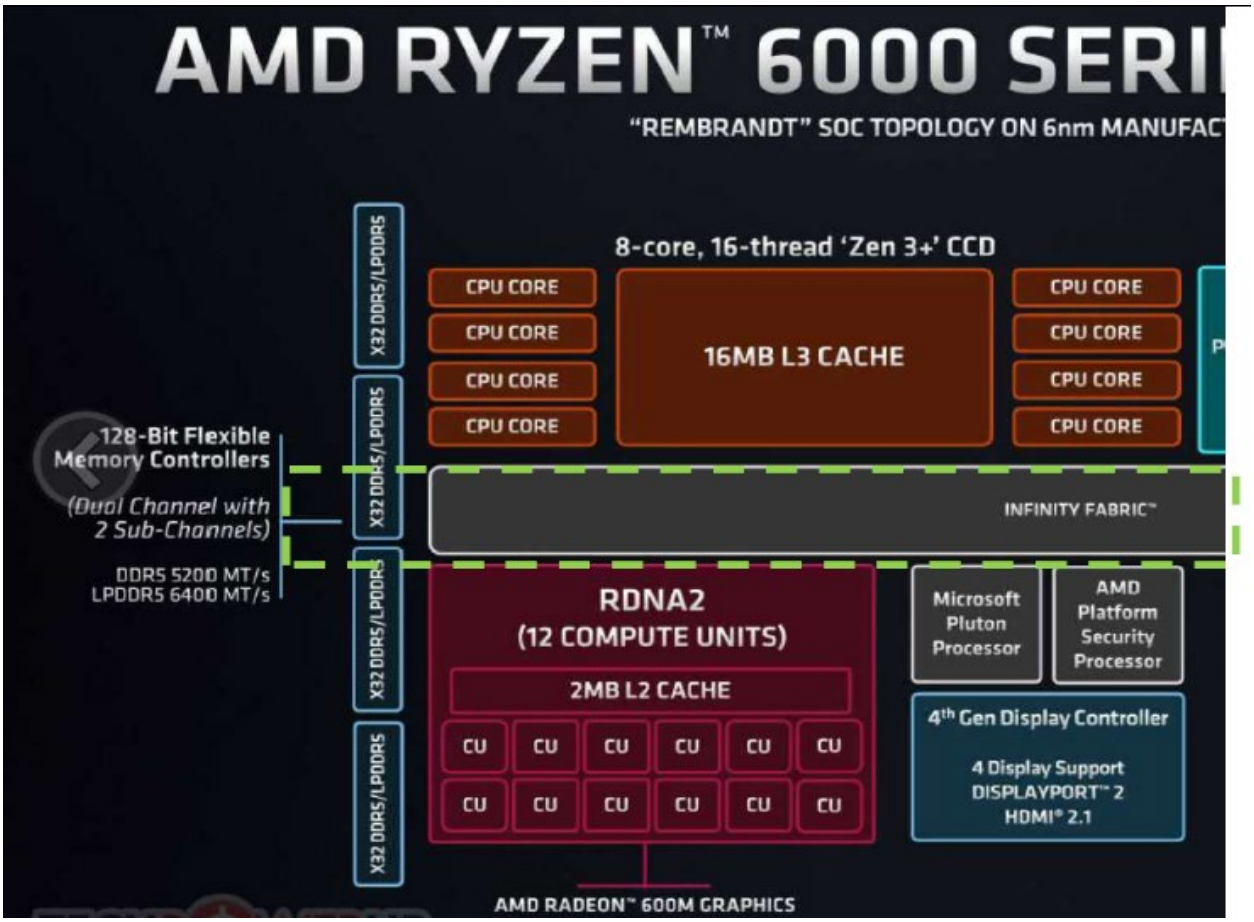
See id.

55. On information and belief, the Accused Products further comprise a second transmission bus coupled between the logic unit and the ASIC processor having a second

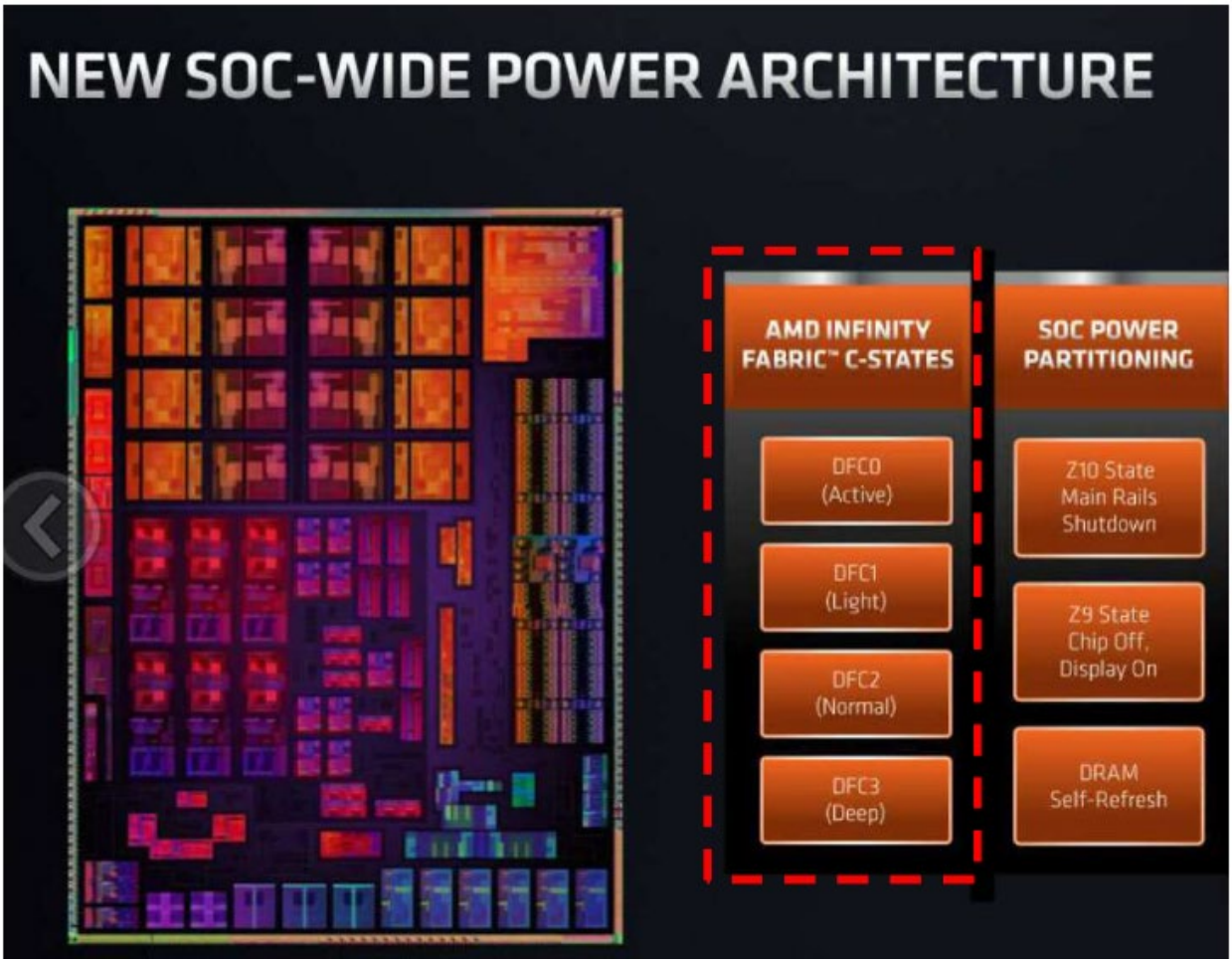
programmable transmitting or receiving data rate, a second programmable transmitting or receiving signal swing associated to the firmware or the software comprised in the ASIC processor. For example, on information and belief, the Ryzen includes internal buses (*i.e.*, a "second transmission bus") which connect the cores/GRP core to the MC of the Ryzen. On information and belief, the Ryzen supports programmable dynamic frequency (*i.e.*, "data rate") changes and signal swing controlled by firmware or software. For example, the clock and bandwidth may be scaled.

> "The SoC-wide power optimizations include **C-states** for **Infinity Fabric, the interconnect that binds all the components on the SoC**. Infinty Fabric **clock and bandwidth now scales** with workload."

Source: *id.* (emphasis added).

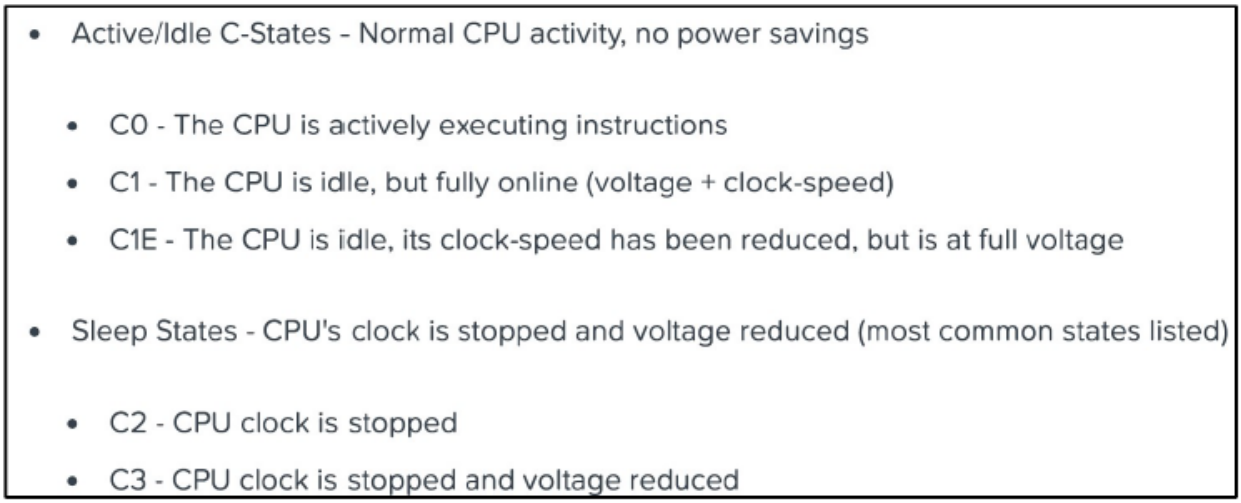


See id. (annotated).



See id. (annotated).

56. Additionally, on information and belief, the Ryzen supports dynamic voltage changes on the interconnect. For example, the Ryzen supports DF-C0, C1, C2, and C3 states, and "[i]n DF (Data Fabric) C-States, the Infinity Fabric can go into lower power states while idle." *See* https://lenovopress.lenovo.com/lp1267.pdf. On information and belief, the voltages in those DF-C0, C1, C2, and C3 states could be different, as shown below.



See https://portal.nutanix.com/page/documents/kbs/details?targetId=kA00e000000CrLqCAK

57. Moreover, AMD64 architecture provides several mechanisms by which software can monitor and control processor performance to optimize power use. *See* AMD64 Architecture, Programmer's Manual Volumes 1–5, version 4.06, January 2023, at 661.

> "Core performance boost (CPB) dynamically increases core clock rate beyond that defined for the P0 power state to achieve higher performance while maintaining power consumption below a preset level."

See id.

> "Core performance boost (CPB) dynamically monitors processor activity to create an estimate of power consumption. If the estimated processor consumption is below an internally defined power limit and software has requested P0 on a given core, **hardware may transition the core to a frequency and voltage beyond those defined for P0**."

See id. at 663 (emphasis added).

58. Upon information and belief, various operating voltages of the Ryzen processor, including voltages supplied to the infinity fabric, are programmable via the Basic Input/Output System ("BIOS") settings of the IdeaPad 5 Pro (16").

59. Lenovo indirectly infringes one or more claims of the '834 Patent by knowingly and intentionally inducing others, including Lenovo customers and end-users of the Accused

Products and products that include the Accused Products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products.

60. Lenovo indirectly infringes one or more claims of the ’834 Patent, as provided by 35 U.S.C. § 271(b), by inducing infringement by others, such as Lenovo’s customers and end-users, in this Judicial District and elsewhere in the United States. For example, Lenovo’s customers and end-users directly infringe, either literally or under the doctrine of equivalents, through their use of the inventions claimed in the ’834 Patent. Lenovo induces this direct infringement through affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users urging them to use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Lenovo’s inducement, Lenovo’s customers and end-users use Accused Products in a way Lenovo intends. Lenovo performs these affirmative acts with knowledge of the ’834 Patent and with the intent, or willful blindness, that the induced acts directly infringe the ’834 Patent.

61. Lenovo indirectly infringes one or more claims of the ’834 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this Judicial District and elsewhere in the United States. Lenovo’s affirmative acts of selling and offering to sell the Accused Products in this Judicial District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold and offered for sale contributes to others’ use and manufacture of the Accused Products, such that the ’834 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the ’834 Patent, are not staple articles or commodities of commerce, have no

substantial non-infringing uses, and are known by Lenovo to be especially made or adapted for use in the infringement of the ’834 Patent. Lenovo performs these affirmative acts with knowledge of the ’834 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’834 Patent.

62. WeCrevention has suffered damages as a result of Defendants’ direct and indirect infringement of the ’834 Patent in an amount to be proved at trial.

COUNT II
(Infringement of the ’017 Patent)

63. Paragraphs 1 through 62 are incorporated by reference as if fully set forth herein.

64. WeCrevention has not licensed or otherwise authorized Lenovo to make, use, offer for sale, sell, or import any products that embody the inventions of the ’017 Patent.

65. Lenovo has and continues to directly infringe the ’017 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’017 Patent.

66. For example, Lenovo directly infringes at least Claim 1 of the ’017 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a dynamic random access memory (“DRAM”), comprising: a DRAM core cell, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and a peripheral circuit electrically connected to the DRAM core cell, wherein the peripheral circuit is supplied with a second voltage within a second voltage range to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V, and wherein the DRAM core cell and the peripheral circuit are formed on a single

chip, and the peripheral circuit is external to the DRAM core cell; wherein the first voltage and the second voltage are capable of making the DRAM be applied to an embedded display port (eDP).

67. The Accused Products include a DRAM powered by an external voltage source. For example, the IdeaPad 5 Pro (16") includes a 16 GB LPDDR5 DRAM module, which is a dynamic random access memory. *See:* https://www.lenovo.com/us/en/p/laptops/ideapad/ideapad-500/ideapad-5-pro-gen-7-16-inch-amd/len101i0049.

68. The Accused Products further include a DRAM core cell, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V. *See*, *e.g.*, JESD209-5B at Table 6; *see also* JESD209-5C at 430-439. The LPDDR5 DRAM module of the IdeaPad 5 Pro (16") supports (DVFS), including a DVFSC mode that permits the MC of the Ryzen to change the power supply voltage to peripheral circuitry and certain portions of the core of the LPDDR5 DRAM module. *See* JESD209-5B at 414-416; *see also* JESD209-5C at 430-439. Specifically, when DVFSC mode is enabled, power to the LPDDR5 DRAM module may be provided from either a high voltage rail VDD2H or a low voltage rail VDD2L, both of which are typically less than 1.1V.

> "LPDDR5 Dynamic Voltage and Frequency Scaling (DVFS) consists of two modes intended to reduce the LPDRAM energy consumption. The two modes are **DVFSC (DVFS Core)** and DVFSQ (DVFS VDDQ)."
>
> "In DVFSC mode, when enabled by MR19 OP[1:0]=01B, the LPDRAM may operate internal circuitry from either the **VDD2H rail or the VDD2L rail**."

See JESD209-5B at 414 (emphasis added); *see also* JESD209-5C at 430.

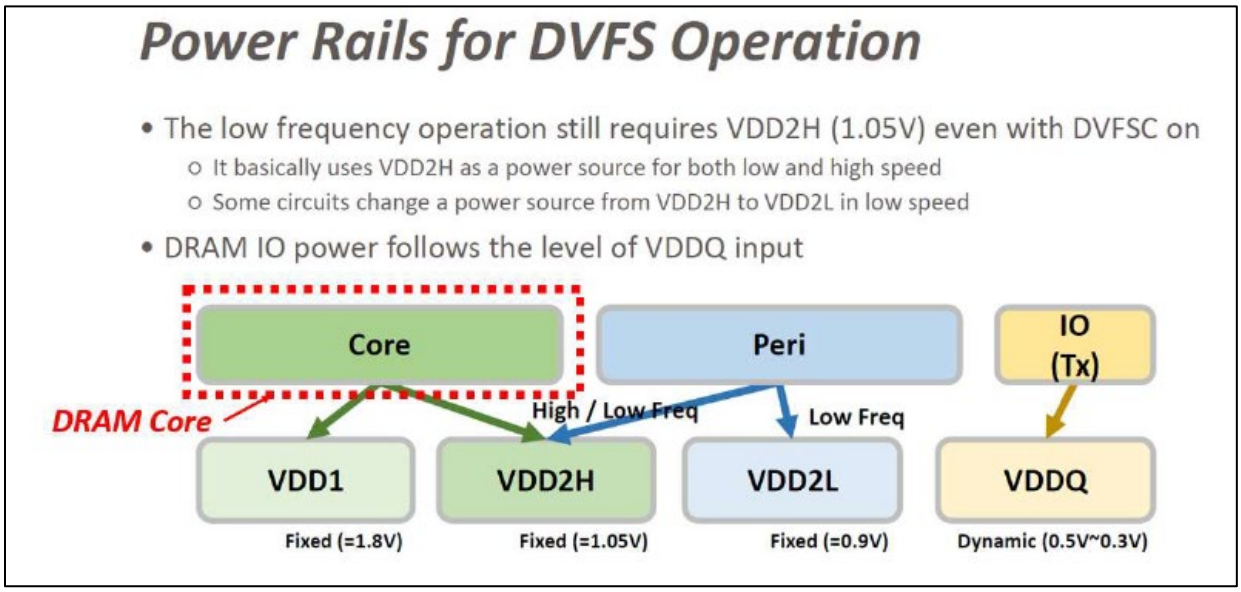
69. When DVFSC mode is enabled, the LPDDR5 DRAM module is controllable via the Ryzen to operate certain circuitry of the module from either the VDD2H or the VDD2L rail. Voltage ranges for the two rails are shown below.

11.1 Recommended DC Operating Conditions

Table 396 — Recommended Voltage o

			Low Freq Voltage Spec Freq:DC to 2 MHz			
DRAM	Symbol		Min	Typ	Max	Unit
Core 1 Power	VDD1		1.7	1.8	1.95	V
Core 2 Power/Input Buffer Power	VDD2H		1.01	1.05	1.12	V
	VDD2L	Single Core Power Rail (MR13 OP[7]=1_B)	1.01	1.05	1.12	V
		Dual Core Power Rail (MR13 OP[7]=0_B)	0.87	0.9	0.97	
I/O Buffer Power	VDDQ	SPEC Range-1	0.47	0.5	0.57	V
		Spec Range-2	0.27	0.3	0.37	V
		Allowable Range	0.27	N/A	0.57	V

See JESD209-5B at Table 396 (annotated); *see also* JESD209-5C at Table 408.



See A. Chang, "JEDEC LPDDR5 Workshop – Commands & New Features," 2019 ("LPDDR5 Workshop") at 3 (annotated).

70. The Accused Products further comprise a peripheral circuit electrically connected to the DRAM core cell, wherein the peripheral circuit is supplied with a second voltage within a second voltage range to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V. For example, the LPDDR5 DRAM module includes buffers and other data path circuits (*i.e.*, peripheral circuits) connected to the DRAM core cell of the module. When DVFSC mode is enabled, power is supplied via VDD2H or VDD2L), both of which are typically below 1.1V. *See* JESD209-5Bat 414; *see also* JESD209-5C at 430.

> "In DVFSC mode, when enabled by MR19 OP[1:0]=01B, the LPDRAM may operate internal circuitry from either the VDD2H rail or the VDD2L rail)."

See JESD209-5B at 414; *see also* JESD209-5C at 430.

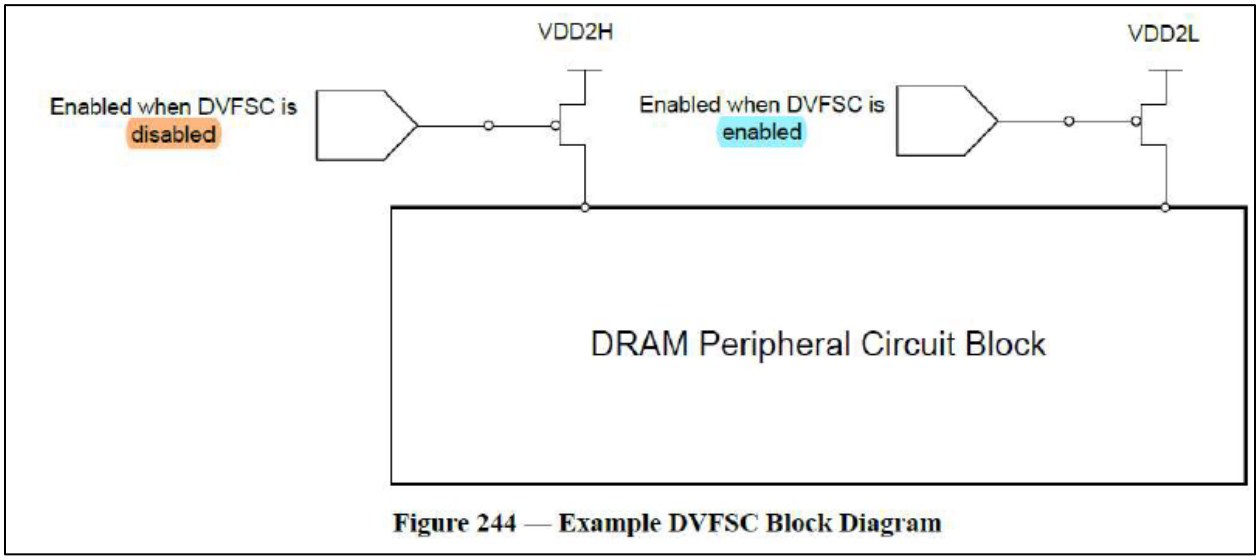
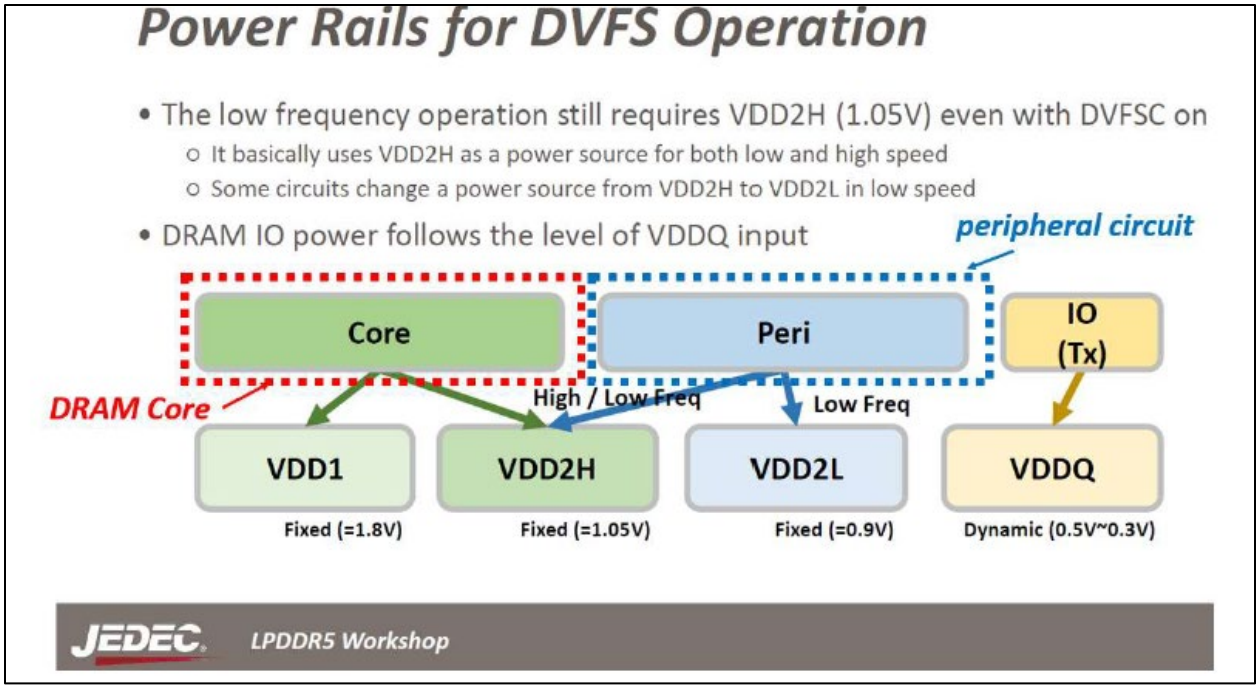


Figure 244 — Example DVFSC Block Diagram

See JESD209-5B at 416; *see also* JESD209-5C at 434.



See JEDEC LPDDR5 Workshopat 3 (annotated).

71. The Accused Products further comprise wherein the DRAM core cell and the peripheral circuit are formed on a single chip, and the peripheral circuit is external to the DRAM core cell. For example, on information and belief, DRAM core cells and the corresponding peripheral circuits of the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") are formed on a single chip module with the peripheral circuits being external to the DRAM core cells.

72. The Accused Products further comprise wherein the first voltage and the second voltage are capable of making the DRAM be applied to an embedded display port (eDP). On information and belief, the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") may be applied to an embedded display port (eDP). On information and belief, the accused Lenovo devices utilize an eDP protocol at least to communicate with embedded LCD screens and external displays.

73. Lenovo indirectly infringes one or more claims of the '017 Patent by knowingly and intentionally inducing others, including Lenovo customers and end-users of the Accused Products and products that include the Accused Products, to directly infringe, either literally or

under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

74. Lenovo indirectly infringes one or more claims of the ’017 Patent, as provided by 35 U.S.C. § 271(b), by inducing infringement by others, such as Lenovo’s customers and end-users, in this Judicial District and elsewhere in the United States. For example, Lenovo’s customers and end-users directly infringe, either literally or under the doctrine of equivalents, through their use of the inventions claimed in the ’017 Patent. Lenovo induces this direct infringement through affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users urging them to use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Lenovo’s inducement, Lenovo’s customers and end-users use Accused Products in a way Lenovo intends. Lenovo performs these affirmative acts with knowledge of the ’017 Patent and with the intent, or willful blindness, that the induced acts directly infringe the ’017 Patent.

75. Lenovo indirectly infringes one or more claims of the ’017 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this Judicial District and elsewhere in the United States. Lenovo’s affirmative acts of selling and offering to sell the Accused Products in this Judicial District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold and offered for sale contributes to others’ use and manufacture of the Accused Products, such that the ’017 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the ’017 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or adapted for

use in the infringement of the ’017 Patent. Lenovo performs these affirmative acts with knowledge of the ’017 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’017 Patent.

76. WeCrevention has suffered damages as a result of Defendants’ direct and indirect infringement of the ’017 Patent in an amount to be proved at trial.

COUNT III
(Infringement of the ’098 Patent)

77. Paragraphs 1 through 76 are incorporated by reference as if fully set forth herein.

78. WeCrevention has not licensed or otherwise authorized Lenovo to make, use, offer for sale, sell, or import any products that embody the inventions of the ’098 Patent.

79. Lenovo has and continues to directly infringe the ’098 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’098 Patent.

80. For example, Lenovo directly infringes at least Claim 1 of the ’098 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage within a second voltage range to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V, and wherein the DRAM core cell and the peripheral circuit are formed on a single chip, and the

peripheral circuit is external to the DRAM core cell, and wherein the first voltage is different from the second voltage.

81. The Accused Products include a DRAM powered by an external voltage source. For example, the IdeaPad 5 Pro (16") includes a 16 GB LPDDR5 DRAM module, which is a dynamic random access memory. *See* https://www.lenovo.com/us/en/p/laptops/ideapad/ideapad-500/ideapad-5-pro-gen-7-16-inch-amd/len101i0049.

82. The Accused Products further comprise a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V. *See* JESD209-5Bat Table 6; *see also* JESD209-5C at 430-439. The LPDDR5 DRAM module of the IdeaPad 5 Pro (16") supports Dynamic Voltage and Frequency Scaling (DVFS), including a DVFSC mode, which permits changes of power supply voltage to the core. JESD209-5B at 414-416; JESD209-5C at 430-439.

> "LPDDR5 Dynamic Voltage and Frequency Scaling (DVFS) consists of two modes intended to reduce the LPDRAM energy consumption. The two modes are **DVFSC (DVFS Core)** and DVFSQ (DVFS VDDQ)."
>
> "In DVFSC mode, when enabled by MR19 OP[1:0]=01B, the LPDRAM may operate internal circuitry from either the **VDD2H rail or the VDD2L rail**."

See JESD209-5B at 414 (emphasis added); *see also* JESD209-5C at 430.

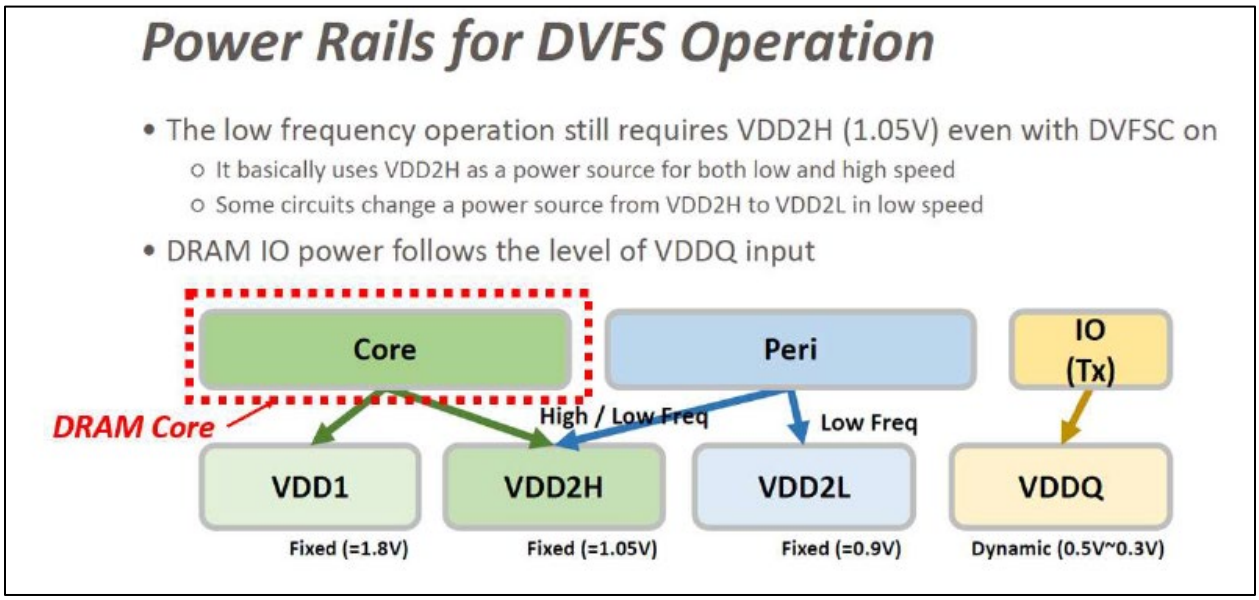
83. When DVFSC mode is enabled, the LPDDR5 DRAM module is controllable via the Ryzen to operate certain circuitry of the module from either the VDD2H or the VDD2L rail. Voltage ranges for the two rails are shown below.

11.1 Recommended DC Operating Conditions

Table 396 — Recommended Voltage o

			Low Freq Voltage Spec Freq:DC to 2 MHz			
DRAM	Symbol		Min	Typ	Max	Unit
Core 1 Power	VDD1		1.7	1.8	1.95	V
Core 2 Power/Input Buffer Power	VDD2H		1.01	1.05	1.12	V
	VDD2L	Single Core Power Rail (MR13 OP[7]=1_B)	1.01	1.05	1.12	V
		Dual Core Power Rail (MR13 OP[7]=0_B)	0.87	0.9	0.97	
I/O Buffer Power	VDDQ	SPEC Range-1	0.47	0.5	0.57	V
		Spec Range-2	0.27	0.3	0.37	V
		Allowable Range	0.27	N/A	0.57	V

See JESD209-5B at Table 396 (annotated); *see also* JESD209-5C at Table 408. However, even when the LPDDR5 DRAM module is operated in the low frequency/power mode, VDD2H still provides power to certain critical circuitry of the DRAM core.



See LPDDR5 Workshop at 3 (annotated).

84. The Accused Products further include a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage within a second voltage range to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V. For example, the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") includes buffers and other data path circuits (*i.e.*, peripheral circuits) connected to the DRAM core cell of the module. When the DVFSC mode is enabled, power is supplied to the peripheral circuits via VDD2H or VDD2L, both of which are typically below 1.1V. *See* JESD209-5B at Table 396; *see also* JESD209-5C at Table 408.

85. The Accused Products further comprise wherein the DRAM core cell and the peripheral circuit are formed on a single chip, and the peripheral circuit is external to the DRAM core cell, and wherein the first voltage is different from the second voltage. On information and belief, the DRAM core cell and peripheral circuits of the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") are formed on a single chip, with the peripheral circuit being external to the DRAM core cell, and wherein the first voltage is different from the second voltage. For example, when DVFSC mode is enabled and the LPDDR5 DRAM module is operated in a low frequency/power mode, a first voltage VDD2H supplied to certain portions of the core is different from a second voltage VDD2L supplied to the peripheral circuit of the LPDDR5 DRAM module.

86. Lenovo indirectly infringes one or more claims of the '098 Patent by knowingly and intentionally inducing others, including Lenovo customers and end-users of the Accused Products and products that include the Accused Products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

87. Lenovo indirectly infringes one or more claims of the ’098 Patent, as provided by 35 U.S.C. § 271(b), by inducing infringement by others, such as Lenovo’s customers and end-users, in this Judicial District and elsewhere in the United States. For example, Lenovo’s customers and end-users directly infringe, either literally or under the doctrine of equivalents, through their use of the inventions claimed in the ’098 Patent. Lenovo induces this direct infringement through affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users urging them to use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Lenovo’s inducement, Lenovo’s customers and end-users use Accused Products in a way Lenovo intends. Lenovo performs these affirmative acts with knowledge of the ’098 Patent and with the intent, or willful blindness, that the induced acts directly infringe the ’098 Patent.

88. Lenovo indirectly infringes one or more claims of the ’098 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this Judicial District and elsewhere in the United States. Lenovo’s affirmative acts of selling and offering to sell the Accused Products in this Judicial District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold and offered for sale contributes to others’ use and manufacture of the Accused Products, such that the ’098 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the ’098 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or adapted for use in the infringement of the ’098 Patent. Lenovo performs these affirmative acts with knowledge

of the ’098 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’098 Patent.

89. WeCrevention has suffered damages as a result of Defendants’ direct and indirect infringement of the ’098 Patent in an amount to be proved at trial.

COUNT IV
(Infringement of the ’652 Patent)

90. Paragraphs 1 through 89 are incorporated by reference as if fully set forth herein.

91. WeCrevention has not licensed or otherwise authorized Lenovo to make, use, offer for sale, sell, or import any products that embody the inventions of the ’652 Patent.

92. Lenovo has and continues to directly infringe the ’652 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’652 Patent.

93. For example, Lenovo directly infringes at least Claim 1 of the ’652 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V, and wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is different from the third voltage.

94. The Accused Products include a DRAM powered by an external voltage source. For example, IdeaPad 5 Pro (16") includes a 16 GB LPDDR5 DRAM module, which is a dynamic random access memory. *See:* https://www.lenovo.com/us/en/p/laptops/ideapad/ideapad-500/ideapad-5-pro-gen-7-16-inch-amd/len101i0049.

95. The Accused Products further include a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V. *See* JESD209-5B at Table 6; *see also* JESD209-5C at 430-439. For example, the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") includes multiple volatile DRAM memory core cells. The LPDDR5 DRAM module supports a DVFSC mode, which permits the MCof the Ryzen to change the power supply voltage to the peripheral circuitry and certain portions of the core of the module. *See* JESD209-5B at 414-416; *see also* JESD209-5C at 430-439.

> "LPDDR5 Dynamic Voltage and Frequency Scaling (DVFS) consists of two modes intended to reduce the LPDRAM energy consumption. The two modes are **DVFSC (DVFS Core)** and DVFSQ (DVFS VDDQ)."
>
> "In DVFSC mode, when enabled by MR19 OP[1:0]=01B, the LPDRAM may operate internal circuitry from either the **VDD2H rail or the VDD2L rail**."

See JESD209-5B at 414 (emphasis added); *see also* JESD209-5C at 430.

96. When DVFSC mode is enabled, the LPDDR5 DRAM module is controllable via the Ryzen to operate certain circuitry of the module from either the VDD2H or the VDD2L rail. Voltage ranges for the two rails are shown below.

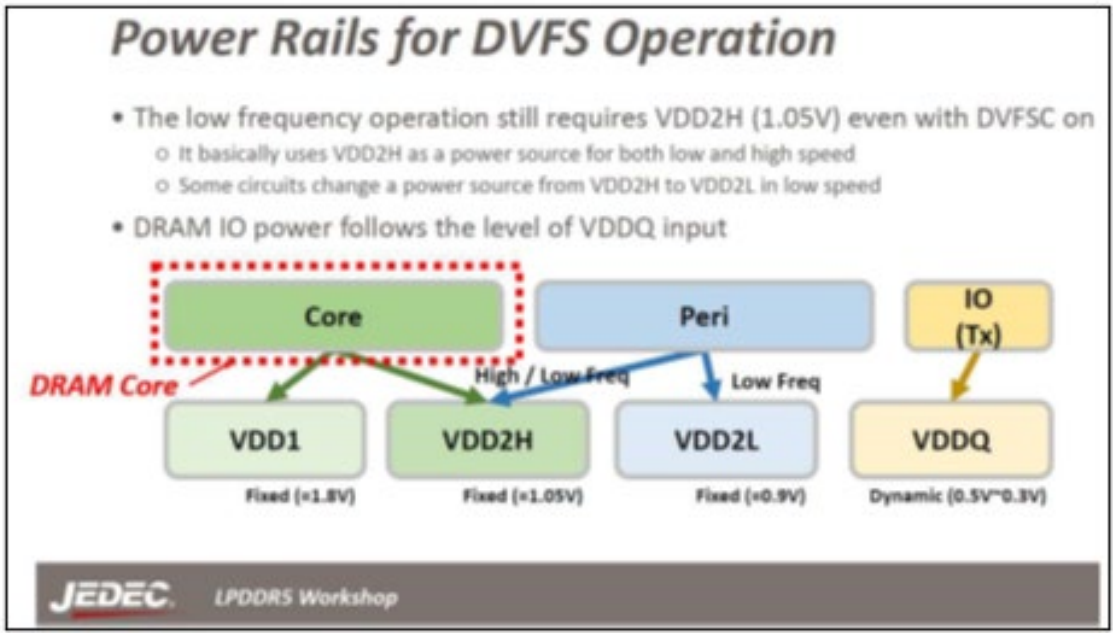
11.1 Recommended DC Operating Conditions

Table 396 — Recommended Voltage o

			Low Freq Voltage Spec Freq:DC to 2 MHz			
DRAM	Symbol		Min	Typ	Max	Unit
Core 1 Power	VDD1		1.7	1.8	1.95	V
Core 2 Power/Input Buffer Power	VDD2H		1.01	1.05	1.12	V
	VDD2L	Single Core Power Rail (MR13 OP[7]=1_B)	1.01	1.05	1.12	V
		Dual Core Power Rail (MR13 OP[7]=0_B)	0.87	0.9	0.97	
I/O Buffer Power	VDDQ	SPEC Range-1	0.47	0.5	0.57	V
		Spec Range-2	0.27	0.3	0.37	V
		Allowable Range	0.27	N/A	0.57	V

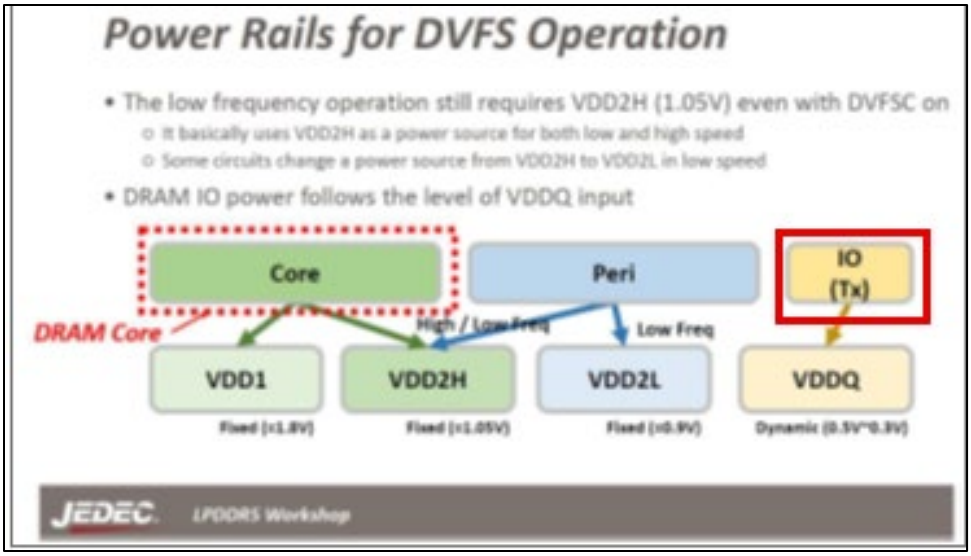
See JESD209-5B at Table 396 (annotated); *see also* JESD209-5C at Table 408.

97. However, even when the LPDDR5 DRAM module is operated in the low frequency/power mode, VDD2H still provides power to certain critical circuitry of the DRAM core.



See LPDDR5 Workshop at 3 (annotated).

98. The Accused Products further comprise an input/output circuit comprised in the LPDDR5 DRAM module, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V. For example, the LPDDR5 DRAM module includes an I/O circuit (an "an input/output circuit") that is electrically connected to the DRAM core cell which operates a voltage lower than 1.1 V, (*i.e.*, VDDQ), as shown below.



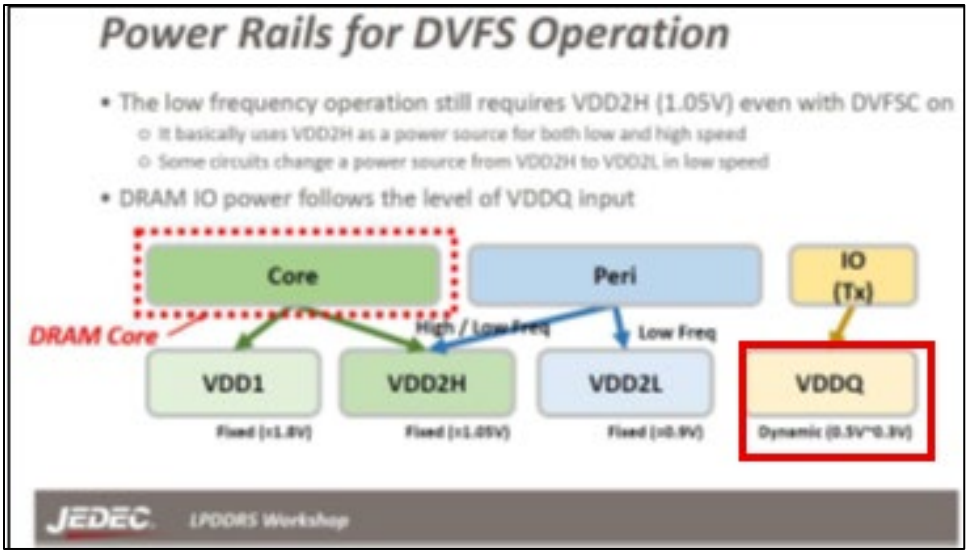
See LPDDR5 Workshop at 3 (annotated).

11.1 Recommended DC Operating Conditions

Table 396 — Recommended Voltage o

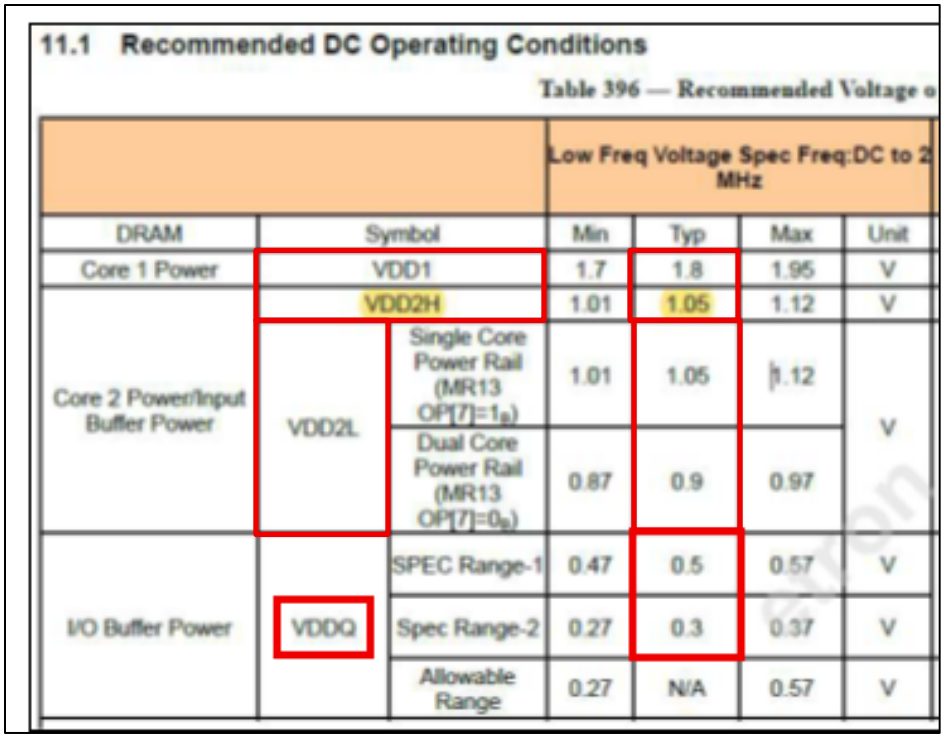
			Low Freq Voltage Spec Freq:DC to 2 MHz			
DRAM	Symbol		Min	Typ	Max	Unit
Core 1 Power	VDD1		1.7	1.8	1.95	V
Core 2 Power/Input Buffer Power	VDD2H		1.01	1.05	1.12	V
	VDD2L	Single Core Power Rail (MR13 OP[7]=1_B)	1.01	1.05	1.12	V
		Dual Core Power Rail (MR13 OP[7]=0_B)	0.87	0.9	0.97	
I/O Buffer Power	VDDQ	SPEC Range-1	0.47	0.5	0.57	V
		Spec Range-2	0.27	0.3	0.37	V
		Allowable Range	0.27	N/A	0.57	V

See JESD209-5B at Table 396 (annotated via red box); *see also* JESD209-5C at Table 408.



See LPDDR5 Workshop at 3 (annotated).

99. The Accused Products further comprise wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is different from the third voltage. For example, on information and belief, DRAM core cells and I/O circuits of the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") are formed on a single chip with the I/O circuits being external to the DRAM core cell. The DRAM core cells have different power supply rails (*e.g.*, VDD1, VDD2H, VDD2L) that are separate and distinct from the I/O circuit (*i.e.*, VDDQ).



11.1 Recommended DC Operating Conditions

Table 396 — Recommended Voltage o

			Low Freq Voltage Spec Freq:DC to 2 MHz			
DRAM	Symbol		Min	Typ	Max	Unit
Core 1 Power	VDD1		1.7	1.8	1.95	V
Core 2 Power/Input Buffer Power	VDD2H		1.01	1.05	1.12	V
	VDD2L	Single Core Power Rail (MR13 OP[7]=1_B)	1.01	1.05	1.12	V
		Dual Core Power Rail (MR13 OP[7]=0_B)	0.87	0.9	0.97	
I/O Buffer Power	VDDQ	SPEC Range-1	0.47	0.5	0.57	V
		Spec Range-2	0.27	0.3	0.37	V
		Allowable Range	0.27	N/A	0.57	V

See JESD209-5B at Table 396 (annotated via red box); *see also* JESD209-5C at Table 408.

100. Further, the DRAM core cell operates at a first voltage lower than 1.1V (*e.g.*, VDD2H = 1.05V or VDD2L = 0.9V) and the I/O circuit operates at a third voltage lower than 1.1V (*e.g.*, VDDQ at 0.3–0.5V). Thus, the first voltage is different from the third voltage. *See* JESD209-5B at 414-416; *see also* JESD209-5C at 430-439 and Table 408.

101. Lenovo indirectly infringes one or more claims of the ’652 Patent by knowingly and intentionally inducing others, including Lenovo customers and end-users of the Accused Products and products that include the Accused Products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

102. Lenovo indirectly infringes one or more claims of the ’652 Patent, as provided by 35 U.S.C. § 271(b), by inducing infringement by others, such as Lenovo’s customers and end-users, in this Judicial District and elsewhere in the United States. For example, Lenovo’s customers

and end-users directly infringe, either literally or under the doctrine of equivalents, through their use of the inventions claimed in the ’652 Patent. Lenovo induces this direct infringement through affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users urging them to use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Lenovo’s inducement, Lenovo’s customers and end-users use Accused Products in a way Lenovo intends. Lenovo performs these affirmative acts with knowledge of the ’652 Patent and with the intent, or willful blindness, that the induced acts directly infringe the ’652 Patent.

103. Lenovo indirectly infringes one or more claims of the ’652 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this Judicial District and elsewhere in the United States. Lenovo’s affirmative acts of selling and offering to sell the Accused Products in this Judicial District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold and offered for sale contributes to others’ use and manufacture of the Accused Products, such that the ’652 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the ’652 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or adapted for use in the infringement of the ’652 Patent. Lenovo performs these affirmative acts with knowledge of the ’652 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’652 Patent.

104. WeCrevention has suffered damages as a result of Defendants’ direct and indirect infringement of the ’652 Patent in an amount to be proved at trial.

COUNT V
(Infringement of the ’942 Patent)

105. Paragraphs 1 through 104 are incorporated by reference as if fully set forth herein.

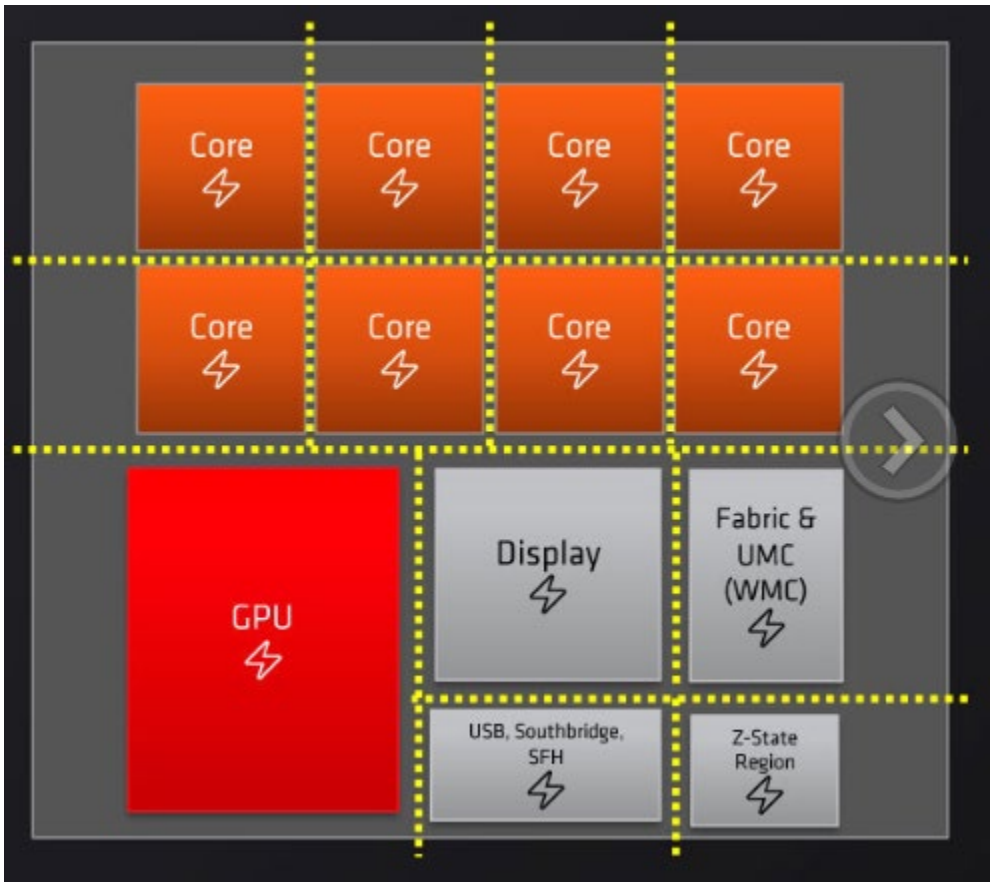
106. WeCrevention has not licensed or otherwise authorized Lenovo to make, use, offer for sale, sell, or import any products that embody the inventions of the ’942 Patent.

107. Lenovo has and continues to directly infringe the ’942 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’942 Patent.

108. For example, Lenovo directly infringes at least Claim 19 of the ’942 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise an electronics system device with a high speed memory chip module, the device comprising: an ASIC processor; a type of memory cell array group, wherein the type of memory cell array group comprises multiple memory cell array ICs, each of the memory cell array ICs has an (I/O) data bus; and a logic unit for accessing the type of memory cell array group through a first transmission bus, wherein the first transmission bus is used for transmitting a first set of parallel data along with the memory cell array ICs, and bus width of the first transmission bus is wider than bus width of an (I/O) data bus of each of the memory cell array ICs, wherein the logic unit is further used for converting the first set of parallel data of the first transmission bus into a second set of parallel data through a second transmission bus, and transmits the second set of parallel data to the ASIC processor; wherein the ASIC processor executes a predetermined function corresponding to the second set of parallel data while the ASIC processor is under operating condition, wherein bit width of the first set and the second set of parallel data are different.

109. The Accused Products comprise an electronics system device with a high speed memory chip module. For example, the IdeaPad 5 Pro (16") is a laptop (*i.e.*, an electronics system device), which has a Ryzen processor and a 16 GB LPDDR5 DRAM module (*i.e.*, high speed memory chip module). *See:* https://www.lenovo.com/us/en/p/laptops/ideapad/ideapad-500/ideapad-5-pro-gen-7-16-inch-amd/len101i0049.

110. The Accused Products further include an ASIC processor. For example, Lenovo's IdeaPad 5 Pro (16") includes an AMD Ryzen 6000 series processor ("Ryzen") that comprises an ASIC processor including multiple computing cores and a graphics core, as shown below.



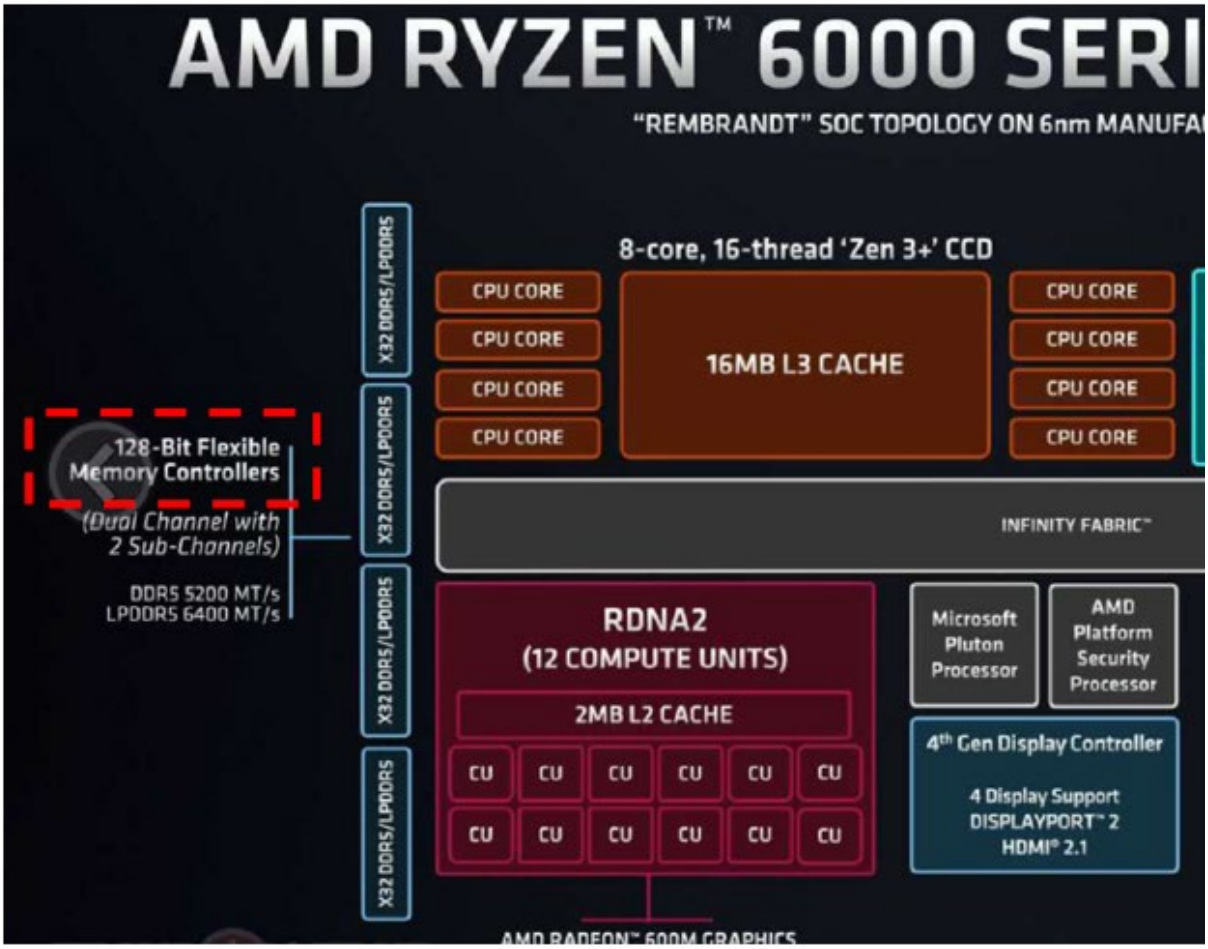
See https://www.techpowerup.com/292118/amd-zen3-architecture-and-ryzen-6000-rembrandt-mobile-processors-detailed#g292118-8.

111. On information and belief, the Accused Products further comprise a type of memory cell array group, wherein the type of memory cell array group comprises multiple memory cell array ICs, each of the memory cell array ICs has an (I/O) data bus. For example, on information and belief, the IdeaPad 5 Pro (16") includes a 16GB LPDDR5 DRAM module, which comprises a memory cell array group with multiple memory cell array ICs, each of which has an (I/O) data bus. The memory cell array ICs and their (I/O) data busses are organized to produce a combined x128 data bus across two channels (x64 width per channel). *See* http://lenovo.com/content/dam/lenovo/site-design/esg-document-library/global/corp-policies/gsc/List_of_Lenovo_Mfg_Sites_and_Suppliers.pdf?srsltid=AfmBOopEErwXKamqQfrbhA3oARUHYJysbr6uTuXn14i06oSVHx7f9zlT.

112. On information and belief, the Accused Products further comprise a logic unit for accessing the type of memory cell array group through a first transmission bus, wherein the first transmission bus is used for transmitting a first set of parallel data along with the memory cell array ICs, and bus width of the first transmission bus is wider than bus width of an (I/O) data bus of each of the memory cell array ICs, wherein the logic unit is further used for converting the first set of parallel data of the first transmission bus into a second set of parallel data through a second transmission bus, and transmits the second set of parallel data to the ASIC processor . For example, the MC of the Ryzen accesses the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") via a first transmission bus used for transmitting a first set of parallel data. The MC also communicates with the ASIC processor of the Ryzen via a second data bus used for transmitting a second set of parallel data.

> "The [Ryzen] silicon broadly combines an 8-core/16-thread CPU based on the new Zen 3+ microarchitecture, a large new iGPU based on the RDNA2 graphics architecture, complete with real-time ray tracing support; a **DDR5 + LPDDR5 memory controller**."

See https://www.techpowerup.com/292118/amd-zen3-architecture-and-ryzen-6000-rembrandt-mobile-processors-detailed#g292118-8 (emphasis added).



See id.

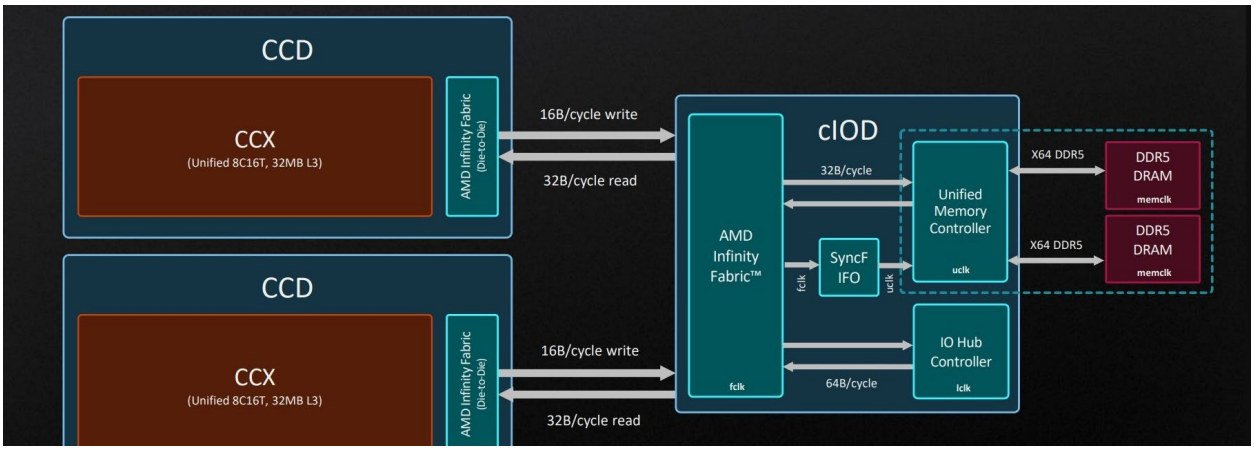
113. On information and belief, the MC is located between the processor cores of the ASIC and the LPDDR5 DRAM module.

114. On information and belief, the bus width of the first transmission bus (*i.e.*, up to x128 dual channel) is wider than bus width of an (I/O) data bus of each of the memory cell array ICs of the LPDDR5 DRAM module. Upon information and belief, the LPDDR5 DRAM module of the IdeaPad 5 Pro (16") is constructed from multiple banks and memory dies (i.e., memory cell arrays), each of which communicates over an (I/O) data bus. The (I/O) data busses of multiple

banks and dies are combined to form each of the two x64 width channels for communication over the first transmission bus. *See* https://www.systemverilog.io/design/lpddr5-tutorial-physical-structure/#:~:text=%F0%9F%A4%94,choose%20depends%20on%202%20factors.

115. Furthermore, on information and belief, the MC converts the first set of parallel data of the first transmission bus into a second set of parallel data through the second transmission bus.

116. On information and belief, the Accused Products further comprise wherein the ASIC processor executes a predetermined function corresponding to the second set of parallel data while the ASIC processor is under operating condition, wherein bit width of the first set and the second set of parallel data are different. On information and belief, the Ryzen (or computing cores and graphics core therein) is an ASIC processor that executes predetermined functions corresponding to second sets of parallel data. For example, the Ryzen executes predetermined functions while the ASIC processor is under certain operating conditions (*e.g.*, camera ISP, GPU rendering, etc.) using data fetched from the LPDDR5 DRAM module. Further, on information and belief, the width of the first set of parallel data and the second set of parallel data are different, as shown below.



See https://www.igorslab.de/wp-content/uploads/2022/09/zen4guide_slide_4.jpg.

117. Lenovo indirectly infringes one or more claims of the ’942 Patent by knowingly and intentionally inducing others, including Lenovo customers and end-users of the Accused Products and products that include the Accused Products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

118. Lenovo indirectly infringes one or more claims of the ’942 Patent, as provided by 35 U.S.C. § 271(b), by inducing infringement by others, such as Lenovo’s customers and end-users, in this Judicial District and elsewhere in the United States. For example, Lenovo’s customers and end-users directly infringe, either literally or under the doctrine of equivalents, through their use of the inventions claimed in the ’942 Patent. Lenovo induces this direct infringement through affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users urging them to use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Lenovo’s inducement, Lenovo’s customers and end-users use Accused Products in a way Lenovo intends. Lenovo performs these affirmative acts with knowledge of the ’942 Patent and with the intent, or willful blindness, that the induced acts directly infringe the ’942 Patent.

119. Lenovo indirectly infringes one or more claims of the ’942 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this Judicial District and elsewhere in the United States. Lenovo’s affirmative acts of selling and offering to sell the Accused Products in this Judicial District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold and offered for sale contributes to others’ use and manufacture of the Accused Products, such that the ’942 Patent

is directly infringed by others. The accused components within the Accused Products are material to the invention of the '942 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or adapted for use in the infringement of the '942 Patent. Lenovo performs these affirmative acts with knowledge of the '942 Patent and with intent, or willful blindness, that they cause the direct infringement of the '942 Patent.

120. WeCrevention has suffered damages as a result of Defendants' direct and indirect infringement of the '942 Patent in an amount to be proved at trial.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, WeCrevention prays for relief against Lenovo as follows:

a. Entry of judgment declaring that Defendants directly and/or indirectly infringed one or more claims of the Patents-in-Suit;

b. Entry of judgment declaring that Defendants' infringement of the Patents-in-Suit is willful;

c. An order awarding damages sufficient to compensate WeCrevention for Defendants' infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with pre-judgment and post-judgment interest and costs;

d. Entry of judgment declaring that this case is exceptional and awarding WeCrevention its costs and reasonable attorneys' fees under 35 U.S.C. § 285;

e. An accounting for acts of infringement;

f. Such other equitable relief which may be requested and to which the Plaintiff is entitled; and

g. Such other and further relief as the Court deems just and proper.

Dated: October 3, 2025

Respectfully submitted,

/s/Alfred R. Fabricant

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