IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

INTERDIGITAL, INC., INTERDIGITAL VC HOLDINGS, INC., INTERDIGITAL PATENT HOLDINGS, INC., and INTERDIGITAL MADISON PATENT HOLDINGS SAS,	)	C.A. No. 5:23-cv-493
Plaintiffs,	)	**JURY TRIAL DEMANDED**
v.	)	
LENOVO GROUP LIMITED, LENOVO (UNITED STATES) INC., and MOTOROLA MOBILITY LLC,	)	
Defendants.	)	

COMPLAINT FOR PATENT INFRINGEMENT

InterDigital, Inc., InterDigital VC Holdings, Inc., InterDigital Patent Holdings, Inc., and InterDigital Madison Patent Holdings SAS (collectively, "InterDigital" or "Plaintiffs"), bring this Complaint for patent infringement against Defendants Lenovo Group Limited, Lenovo (United States) Inc., and Motorola Mobility LLC, collectively ("Lenovo"). In support of this Complaint, InterDigital alleges as follows:

INTRODUCTION AND NATURE OF ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.

2. Defendants have infringed and continue to infringe at least one claim of United States Patent Nos. 10,250,877, (the "'877 Patent"), 8,674,859 (the "'859 Patent"), 9,674,556 (the

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"'556 Patent"), 9,173,054 (the "'054 Patent"), and 8,737,933 (the "'933 Patent") (collectively, the "Asserted Patents").

3. Defendants infringe directly, literally, and/or by the doctrine of equivalents, and/or induces infringement of the Asserted Patents by developing, making, using, selling, offering for sale, and/or importing into the United States products that incorporate InterDigital's patented technology.

4. InterDigital seeks damages and other relief for Lenovo's infringement of InterDigital's patented technology.

THE PARTIES

5. InterDigital, Inc. is a Pennsylvania corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809.

6. InterDigital VC Holdings, Inc. is a Delaware corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809.

7. InterDigital Patent Holdings, Inc. is a Delaware corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809.

8. InterDigital Madison Patent Holdings, SAS is a French corporation with its principal place of business at 3 Rue du Colonel Moll, Paris, France 75017.

9. On information and belief, Defendant Lenovo Group Limited is a corporation operating under the laws of Hong Kong with its principal place of business at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road. On information and belief, Lenovo Group Ltd. is the corporate parent of a multinational conglomerate that operates under the name "Lenovo" and refers to itself and its subsidiaries as the "Group."

10. On information and belief, Defendant Lenovo (United States) Inc. ("Lenovo USA") is a corporation organized under the laws of the state of Delaware with its principal place of business at 8001 Development Dr., Morrisville, North Carolina 27560. On information and belief, Lenovo USA is a wholly owned subsidiary of (or is otherwise controlled by) Lenovo Group Ltd. and is part of the Lenovo Group.

11. Defendant Motorola Mobility LLC ("Motorola") is a limited liability company organized and existing under the laws of the state of Delaware, with its principal place of business at 222 W. Merchandise Mart Plaza, Suite 1800, Chicago, Illinois 60654. Upon information and belief, Motorola is a wholly owned subsidiary of (or is otherwise controlled by) Lenovo Group Ltd. and is part of the Lenovo Group.

JURISDICTION AND VENUE

12. This is an action arising under the patent laws of the United States, 35 U.S.C. § 271. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

13. This Court has personal jurisdiction over Lenovo. Lenovo has done and continues to do business in the State of North Carolina. Lenovo has, directly or through subsidiaries or intermediaries, purposefully and voluntarily placed its infringing products and/or services into the stream of commerce with the specific intention and expectation that its infringing products and/or services will be purchased and used by consumers in North Carolina and in this District. In doing so, Lenovo has established minimum contacts in North Carolina such that the exercise of jurisdiction over Lenovo would not offend traditional notions of fair play and substantial justice as required to satisfy constitutional requirements for due process.

14. Venue as to Lenovo Group Ltd. is proper in this District pursuant to 28 U.S.C. § 1391(c)(3) because venue is proper in any judicial district against a foreign corporation. *See In re HTC Corp.*, 889 F.3d 1349, 1354 (Fed. Cir. 2018).

15. Venue is proper in this Court pursuant to 28 U.S.C. § 1400(b) because Lenovo has committed, and continues to commit, acts of infringement in this District and has regular and established places of business in this District.

16. Lenovo's presence in this District is substantial. Lenovo's headquarters, research center, and sales center located at 8001 Development Dr., Morrisville, North Carolina 27560 comprise Lenovo's "home."[1] In addition to its headquarters, Lenovo also maintains a physical presence in this District at a fulfillment center located at 6540 Franz Warner Pkwy, Whisett, North Carolina 37477. Lenovo employs full-time personnel at such facilities.[2]

17. In total, Lenovo employs around 6,000 people in North Carolina. Lenovo also currently employs several individuals located in this District who likely have knowledge relevant to Lenovo's infringement of the Asserted Patents.

18. Having purposefully availed itself of the privilege of conducting business with residents of this judicial district, Lenovo should reasonably and fairly anticipate being brought into court in this district to resolve the parties' dispute regarding Lenovo's infringement of InterDigital's Patents.

19. Venue as to Motorola is proper in this Court pursuant to 28 U.S.C. § 1400(b) because Motorola has committed, and continues to commit, acts of infringement in this District

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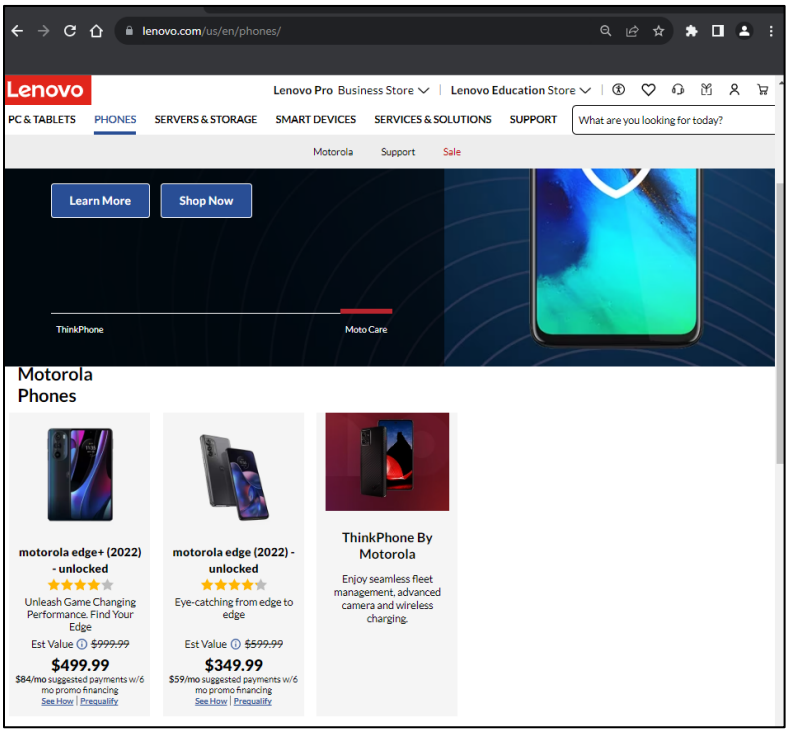
[1] *"5 ways Lenovo positively impacted the Triangle in 2022 and what's coming in 2023"* WRAL News, (Dec. 22, 2022), https://www.wral.com/5-ways-lenovo-positively-impacted-the-triangle-in-2022-and-what-s-coming-in-2023/20640384/.

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

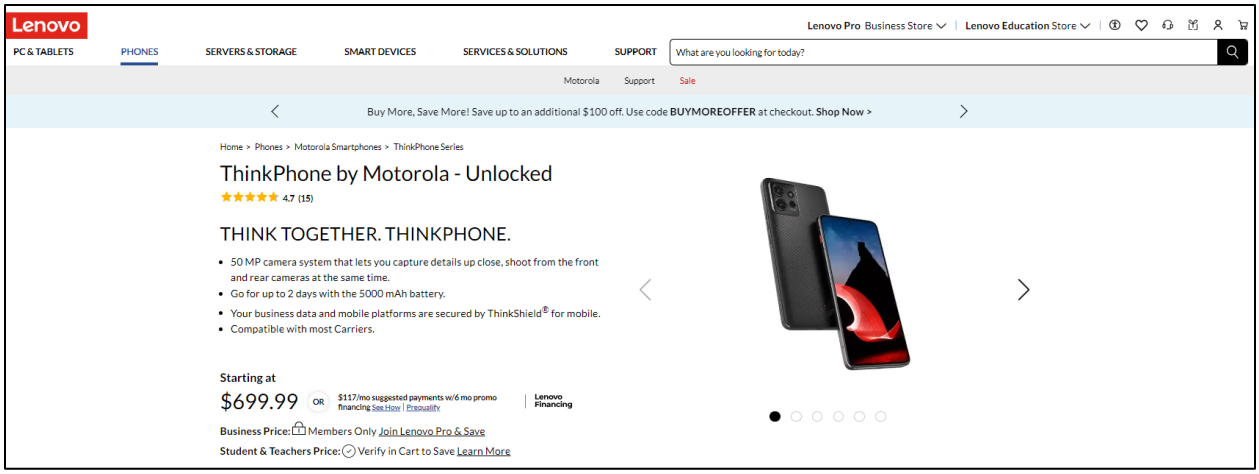
and has regular and established places of business in this District. For example, on information and belief, Motorola has an established place of business in this judicial district at 8001 Development Dr., Morrisville, North Carolina 27560. *See MyMail, LTD., v. Lenovo Group LTD., et al.*, Case No. 1:18-CV-00048-LY, Dkt. 22 at 1-2 (W.D. Tex. Apr. 12, 2018) (Lenovo and Motorola moved to transfer to this District stating "Lenovo and Motorola both have offices in Morrisville, North Carolina, and over three quarters of all Lenovo employees are located there. The EDNC will thus be a hub for relevant documents, witnesses, and evidence.").

20. Upon information and belief, Motorola is a wholly owned subsidiary of (or is otherwise controlled by) Lenovo Group Ltd. and is part of the Lenovo Group. Lenovo offers for sale Motorola devices on its website:



Source: https://www.lenovo.com/us/en/phones/.

21. Notably, one of the Accused Products in this action is the Lenovo ThinkPhone by Motorola—which is a direct collaboration between the parties:



Source: https://www.lenovo.com/us/en/p/phones/motorola-smartphones/thinkphone/thinkphone-by-motorola/pmipmfq34m3?orgRef=https%253A%252F%252Fwww.google.com%252F.

22. On information and belief, Motorola has and is hiring employees in this District. For example, Lenovo recently had a job listing for a Sales Manager and identified the role as "part of Motorola." The posting was for the Raleigh-Durham-Chapel Hill Area.[3] Motorola has twenty job postings for North Carolina as of July 17, 2023.[4]

23. Motorola currently employs several individuals in this District who likely have knowledge relevant to Motorola's infringement of the Asserted Patents as well as the crossover between Motorola and Lenovo.

24. Gregg Locher, Sr. Director, WW Alliance Partners at Lenovo, "was recruited for 2nd international assignment in China to help lead the merging of Lenovo and Motorola smart phone supply chain operations."[5] Mr. Locher is located in the Raleigh-Durham-Chapel Hill Area according to his LinkedIn Page. *Id*.

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[3] https://www.linkedin.com/jobs/view/3633510991/.

[4] https://motorolasolutions.wd5.myworkdayjobs.com/Careers?q=north%20carolina&timeType=436f05d7afa343d5a8c9f92ef3e8c71b.

[5] https://www.linkedin.com/in/gregglocher/.

25. Frederick DiBerto, Senior Procurement Manager of Mobile Memory for Phones, Tablets and Smart Devices currently works for both Lenovo and Motorola.[6] Mr. Diberto is located in Raleigh-Durham, North Carolina. *Id.*

26. Ritch Russ, Director, Technology & Innovation Sourcing at Lenovo/Motorola currently works at both Lenovo and Motorola, working on folding OLED devices, ThinkPad X1 Fold, and Motorola Razr platform.[7] Mr. Russ is located in Raleigh, NC. *Id.*

27. Finally, venue is also convenient in this District. This is at least true because of this District's close ties to this case—including the technology, relevant witnesses, and sources of proof noted above—and its ability to quickly and efficiently move this case to resolution. In fact, in a previous case where Lenovo and Motorola have both been named defendant, Lenovo and Motorola have moved for transfer to EDNC due to the significant amount of overlap in the district. *See MyMail*, Case No. 1:18-CV-00048-LY, Dkt. 22 at 1-2 ("Lenovo and Motorola both have offices in Morrisville, North Carolina, and over three quarters of all Lenovo employees are located there. The EDNC will thus be a hub for relevant documents, witnesses, and evidence.").

FACTUAL BACKGROUND

28. InterDigital is one of the most successful and innovative research and development companies of the last half century. InterDigital was founded by Sherwin Seligsohn in 1972 as International Mobile Machines Corporation (IMM). In 1976, IMM demonstrated one of the first wireless telephones during the bicentennial celebrations in Philadelphia's Fairmount Park, the same place that Alexander Graham Bell first demonstrated his telephone 100 years earlier.

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[6] https://www.linkedin.com/in/frederick-diberto-7912595a/.

[7] https://www.linkedin.com/in/ritch-russ-248b8112/.

29. Above all else, InterDigital is an engineering company that for more than 50 years has been at the forefront of developing innovative and foundational wireless communication, video coding, and other digital technologies. InterDigital has developed and implemented a wide variety of wireless technologies, systems, and products, many of which form the backbone of modern-day digital wireless communication. It has also helped develop and shape technologies in every aspect of the network – from handsets to base stations and mobile edge computing; from IoT sensors to streaming video and beyond.

30. Every year, InterDigital pours roughly 20% of its total revenues into continued research and development and has invested more than one billion dollars in research and development, alone. At its facilities in Delaware and throughout the United States, InterDigital researches, develops, engineers, and licenses technology for advanced video coding technologies as well as other cutting-edge technology. InterDigital's world-class Research and Innovation Lab—with locations in Indiana, New Jersey, and Washington D.C.—has designed and developed a range of key technologies instrumental to video coding.

31. InterDigital and its employees' technical contributions have been recognized the world over. Its employees have held or currently hold more than 100 significant leadership positions on standard setting bodies. InterDigital has also won many awards for its technical discoveries. In just the last seven years, InterDigital has won more than 25 industry awards, including several awards from entities such as IEEE, IBC, and CSI, among others. From mobile technologies that underpin smartphones, networks and services to video technologies that are the foundation for today's most popular products and services, InterDigital's research and development teams help improve every product they work on, from the most basic to the most

advanced. Today, InterDigital still follows in the footsteps of its founder, developing an even more connected world.

32. Lenovo is a global manufacturer of various cellular, wireless, and video devices—including smartphones, computers, tablets, and components thereof. Consumers use these products to utilize and enjoy a variety of audiovisual, entertainment, and social media services in the United States. On information and belief, Lenovo's products use wireless file-sharing, AOMedia Video 1 ("AV1") and VP9 ("VP9") technology, covered by InterDigital's Patents. Yet, despite reaping the benefits of InterDigital's patented technology, Lenovo refuses to pay its fair share for the technology it exploits.

THE PATENTS-IN-SUIT

33. The Asserted Patents provide benefits to the AOMedia Video 1 ("AV1") and VP9 ("VP9") protocols and enable wireless file-sharing between devices. The Asserted Patents are important to, inter alia, the delivery and consumption of an enormous amount of video content on a daily basis. The AV1/VP9 patents generally relate to video encoding/decoding ("CODEC") technology, which helps facilitate the transfer of video media to and from electronic devices by reducing the size of files prior to transmission (encoding) and decoding it on a receiving device after reception (decoding). The File-Sharing patents relate to technology that allows mobile device users to transfer data between devices without using pre-existing cellular or network infrastructure.

34. The '877 Patent is entitled "Method and Device for Coding an Image Block, Corresponding Decoding Method and Decoding Device" and issued on April 2, 2019, to inventors Philippe Bordes, Pierre Andrivon, and Philippe Salmon. InterDigital Madison Patent

Holdings SAS owns, by assignment, all right, title, and interest in and to the ’877 Patent. A true and correct copy of the ’877 Patent is attached to this Complaint as Exhibit 1.

35. The ’859 Patent is entitled “Methods for Arithmetic Coding and Decoding and Corresponding Devices” and issued on March 18, 2014, to inventors Philippe Bordes, Dominique Thoreau, Jerome Vieron, and Edouard Francois. InterDigital Madison Patent Holdings SAS owns, by assignment, all right, title, and interest in and to the ’859 Patent. A true and correct copy of the ’859 Patent is attached to this Complaint as Exhibit 2.

36. The ’556 Patent is entitled “Methods and Apparatus for in-Loop De-Artifact Filtering” and issued on June 6, 2017, to inventors Meng-Ping Kao, Peng Yin, and Divorra Escoda. InterDigital VC Holdings, Inc. owns, by assignment, all right, title, and interest in and to the ’556 Patent. A true and correct copy of the ’556 Patent is attached to this Complaint as Exhibit 3.

37. The ’054 Patent is entitled “Data Transfer Between Wireless Devices” and issued on October 27, 2015, to inventors Alan G. Carlton and Alexander Reznik. InterDigital Patent Holdings, Inc. owns, by assignment, all right, title, and interest in and to the ’054 Patent. A true and correct copy of the ’054 Patent is attached to this Complaint as Exhibit 4.

38. The ’933 Patent is entitled “Data Transfer Between Wireless Devices” and issued on May 27, 2014, to inventors Alan G. Carlton and Alexander Reznik. InterDigital Patent Holdings, Inc. owns, by assignment, all right, title, and interest in and to the ’933 Patent. A true and correct copy of the ’933 Patent is attached to this Complaint as Exhibit 5.

39. The Patents-in-Suit were duly issued by the USPTO and are valid under 35 U.S.C. §§ 101, 102, 103, and 112.

ACCUSED LENOVO DEVICES

40. The Accused Products include Lenovo smartphones, computers (including both laptop and desktop), and tablet computers.

41. On information and belief, Lenovo designs, offers, and sells smartphones, computers, and tablet computers using the AV1 and VP9 technology covered in InterDigital's Patents. For example, the Lenovo ThinkPad X1 Carbon Gen 10 uses the AV1 and VP9 technology covered in InterDigital's Patents. Lenovo operates the following website in connection with its products: https://www.lenovo.com/us/en/.

42. On information and belief, Lenovo sells the Accused Products within the United States through major retail outlets such as Best Buy, Target, Wal Mart, Verizon, AT&T, T-Mobile, Amazon, and numerous other online stores and resellers.

43. On information and belief, Lenovo also performs several services to support the sale of the Accused Products, including marketing the Accused Products, developing, and distributing software, repairing the Accused Products, and other after-sale services, such as supporting and configuring the Accused Products, as well as providing technical support to U.S.-based customers and distributors to conform the Accused Products to purchaser requests. *See, e.g.*, Ex. 6 at 6 (Lenovo offering repair and IT support for Lenovo ThinkPad X1 Carbon Gen 10); Ex. 7 (Description of Lenovo Premium Care services).

COUNT I

INFRINGEMENT OF THE '877 PATENT

44. InterDigital incorporates by reference the preceding paragraphs as if fully set forth herein.

45. The ’877 Patent generally relates to a method for reconstructing a current block of a current image from at least one block of a reconstructed reference image that is a different size from the size of the current image. A decoder can reconstruct a compressed video frame using information from a previously reconstructed reference image. But when this process results in a reference image and a current image to be reconstructed having different sizes, the reference image is resized by resampling to match the size of the current image before being motion compensated. This may include storing the reconstructed reference images and resized reference images of various sizes in the decoded picture buffer (DPB) memory, which may require more memory space. The method of the ’877 Patent, unlike previous methods for reconstructing image blocks, does not require the storage of resized, *i.e.*, upsampled and/or subsampled, versions of the reference image in the DPB memory.

46. Lenovo has infringed, contributed to the infringement of, and/or induced infringement of the ’877 Patent by making, using, selling, offering for sale, or importing into the United States, or by intending that others make, use, import into, offer for sale, or sell in the United States, products using methods covered by one or more claims of the ’877 Patent including, but not limited to, smartphones, laptops, and tablet computers that support the AV1 and VP9 video coding protocols.

47. By way of example only, Lenovo’s ThinkPad X1 Carbon Gen. 10, infringes Claim 1 of the ’877 Patent as set forth in the claim chart attached as Exhibit 8.

48. Lenovo has been aware of the ’877 Patent since at least the filing date of this Complaint.

49. Lenovo’s customers and end-users of the Accused Products directly infringe Claim 1 of the ’877 Patent, at least by using the Accused Products.

50. On information and belief, Lenovo has actively induced infringement of at least Claim 1 of the ’877 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b). Lenovo knowingly and intentionally induces users of one or more of the Accused Products to directly infringe one or more claims of the ’877 Patent by encouraging, instructing, and aiding one or more persons in the United States, including Lenovo employees who test and operate Accused Products at the direction of Lenovo, to make, use (including testing those devices and methods), sell, or offer to sell one or more of the Accused Products in a manner that infringes the ’877 Patent. *See, e.g.*, Exs. 9–13 (Lenovo advertising products for sale and their capabilities); Exs. 14, 15 (Lenovo advertising use of its products for video streaming).

51. Lenovo provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Lenovo has done so by acta including but not limited to (1) selling the Accused Products including features that—when used or resold—infringe the ’877 Patent; (2) marketing the infringing capabilities of such products; and (3) providing instructions, user guides, technical support services, customer support services, product sheets, technical specifications, and other support and encouragement for the infringing use of the Accused Products. Lenovo has performed and continues to perform these affirmative acts with knowledge of the ’877 Patent and with knowledge that such actions would induct infringement of the ’877 Patent by Lenovo’s direct and indirect customers.

52. On information and belief, by continuing to make, use, sell, offer to sell and/or import the Accused Products on or after Lenovo first had notice of InterDigital’s allegations of infringement, Lenovo contributorily infringes and continues to contributorily infringe at least claim 1 of the ’877 Patent under 35 U.S.C. § 271(c). Current’s affirmative acts of

manufacturing, selling, offering for sale, and/or importing the Accused Products and components thereof, including video processors within the Accused Products, in this District and elsewhere in the United States, contribute to Lenovo's customers and end-users directly infringing the '877 Patent. The Accused Products are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or especially adapted for use in infringement of the '877 Patent.

53. On information and belief, Lenovo has performed and continues to perform the above-identified acts of infringement with knowledge of the '877 Patent and with intent, or willful blindness, that they cause the direct and indirect infringement of the '877 Patent. Accordingly, Lenovo's continued infringement of the '877 Patent is willful and deliberate, entitling InterDigital to increased damages under 35 U.S.C. § 284.

54. On information and belief, InterDigital has suffered and continues to suffer damages as a result of Lenovo's infringement of the '877 Patent in an amount to be determined at trial.

55. On information and belief, Lenovo's infringement of the '877 Patent is causing irreparable harm for which InterDigital has no adequate remedy at law unless Lenovo is enjoined by this Court. Under 35 U.S.C. § 283, InterDigital is entitled to a permanent injunction against further infringement of the '877 Patent.

56. On information and belief, and in light of the allegations above, including Lenovo's willful infringement of the '877 Patent, this case is exceptional under 35 U.S.C. § 285, entitling InterDigital to costs and attorneys' fees incurred in prosecuting this action.

COUNT II

INFRINGEMENT OF THE ’859 PATENT

57. InterDigital incorporates by reference the preceding paragraphs as if fully set forth herein.

58. The ’859 Patent generally describes a device and method for arithmetic encoding and decoding of symbols in a stream. The arithmetic coding method of the ’859 Patent enables symbols to be coded more efficiently and at a lower cost by allowing the real probability to be approached more rapidly than other coding methods.

59. Lenovo has infringed, contributed to the infringement of, and/or induced infringement of the ’859 Patent by making, using, selling, offering for sale, or importing into the United States, or by intending that others make, use, import into, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the ’859 Patent including, but not limited to, smartphones, laptops, and tablet computers that support the AV1 and VP9 video coding protocols.

60. By way of example only, Lenovo’s ThinkPad X1 Carbon Gen. 10, infringes Claim 10 of the ’859 Patent as set forth in the claim chart attached as Exhibit 16.

61. Lenovo has been aware of the ’859 Patent since at least the filing date of this Complaint.

62. Lenovo’s customers and end-users of the Accused Products directly infringe Claim 10 of the ’859 Patent, at least by using the Accused Products.

63. On information and belief, Lenovo has actively induced infringement of at least Claim 10 of the ’859 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b). Lenovo knowingly and intentionally induces users of one or more of the

Accused Products to directly infringe one or more claims of the ’859 Patent by encouraging, instructing, and aiding one or more persons in the United States, including Lenovo employees who test and operate Accused Products at the direction of Lenovo, to make, use (including testing those devices and methods), sell, or offer to sell one or more of the Accused Products in a manner that infringes the ’859 Patent. *See, e.g.,* Exs. 9–13 (Lenovo advertising products for sale and their capabilities); Exs. 14, 15 (Lenovo advertising use of its products for video streaming).

64. Lenovo provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Lenovo has done so by acta including but not limited to (1) selling the Accused Products including features that—when used or resold—infringe the ’859 Patent; (2) marketing the infringing capabilities of such products; and (3) providing instructions, user guides, technical support services, customer support services, product sheets, technical specifications, and other support and encouragement for the infringing use of the Accused Products. Lenovo has performed and continues to perform these affirmative acts with knowledge of the ’859 Patent and with knowledge that such actions would induce infringement of the ’859 Patent by Lenovo’s direct and indirect customers.

65. On information and belief, by continuing to make, use, sell, offer to sell and/or import the Accused Products on or after Lenovo first had notice of InterDigital’s allegations of infringement, Lenovo contributorily infringes and continues to contributorily infringe at least claim 10 of the ’859 Patent under 35 U.S.C. § 271(c). Current’s affirmative acts of manufacturing, selling, offering for sale, and/or importing the Accused Products and components thereof, including video processors within the Accused Products, in this District and elsewhere in the United States, contribute to Lenovo’s customers and end-users directly infringing the ’859

Patent. The Accused Products are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or especially adapted for use in infringement of the ’859 Patent.

66. On information and belief, Lenovo has performed and continues to perform the above-identified acts of infringement with knowledge of the ’859 Patent and with intent, or willful blindness, that they cause the direct and indirect infringement of the ’859 Patent. Accordingly, Lenovo’s continued infringement of the ’859 Patent is willful and deliberate, entitling InterDigital to increased damages under 35 U.S.C. § 284.

67. On information and belief, InterDigital has suffered and continues to suffer damages as a result of Lenovo’s infringement of the ’859 Patent in an amount to be determined at trial.

68. On information and belief, Lenovo’s infringement of the ’859 Patent is causing irreparable harm for which InterDigital has no adequate remedy at law unless Lenovo is enjoined by this Court. Under 35 U.S.C. § 283, InterDigital is entitled to a permanent injunction against further infringement of the ’859 Patent.

69. On information and belief, and in light of the allegations above, including Lenovo’s willful infringement of the ’859 Patent, this case is exceptional under 35 U.S.C. § 285, entitling InterDigital to costs and attorneys’ fees incurred in prosecuting this action.

COUNT III

INFRINGEMENT OF THE ’556 PATENT

70. InterDigital incorporates by reference the preceding paragraphs as if fully set forth herein.

71. The ’556 Patent describes, among other things, a method and apparatus for decoding an image region using at least two in-loop filters in succession. In block-based video coding frameworks such as those described in the AV1 protocol, visual distortions or artifacts may result from the lossy nature of video compression. The ’556 Patent describes a two-pass method to help reduce the amount of coding artifacts by using a succession of filters on coded pictures. In the first pass, an adaptive deblocking filter is applied to remove blocking artifacts (e.g., discontinuities at the boundaries of coding blocks). In the second pass, an adaptive sparse de-noising filter is applied to reduce quantization noise due to the scaling of the output (i.e., the change in the number of possible output values for a given set of input values after performing transform on the residue values). The method and apparatus of the ’556 Patent results in enhanced decoded video quality because different types of artifacts and quantization errors are handled by different filters and successively applied.

72. Lenovo has infringed, contributed to the infringement of, and/or induced infringement of the ’556 Patent by making, using, selling, offering for sale, or importing into the United States, or by intending that others make, use, import into, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the ’556 Patent including, but not limited to, smartphones, laptops, and tablet computers that support the AV1 video coding protocol.

73. By way of example only, Lenovo’s ThinkPad X1 Carbon Gen. 10, infringes Claim 1 of the ’556 Patent as set forth in the claim chart attached as Exhibit 17.

74. Lenovo has been aware of the ’556 Patent since at least the filing date of this Complaint.

75. Lenovo's customers and end-users of the Accused Products directly infringe Claim 1 of the '556 Patent, at least by using the Accused Products.

76. On information and belief, Lenovo has actively induced infringement of at least Claim 1 of the '556 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b). Lenovo knowingly and intentionally induces users of one or more of the Accused Products to directly infringe one or more claims of the '556 Patent by encouraging, instructing, and aiding one or more persons in the United States, including Lenovo employees who test and operate Accused Products at the direction of Lenovo, to make, use (including testing those devices and methods), sell, or offer to sell one or more of the Accused Products in a manner that infringes the '556 Patent. *See, e.g.*, Exs. 9–13 (Lenovo advertising products for sale and their capabilities); Exs. 14, 15 (Lenovo advertising use of its products for video streaming).

77. Lenovo provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Lenovo has done so by acta including but not limited to (1) selling the Accused Products including features that—when used or resold—infringe the '556 Patent; (2) marketing the infringing capabilities of such products; and (3) providing instructions, user guides, technical support services, customer support services, product sheets, technical specifications, and other support and encouragement for the infringing use of the Accused Products. Lenovo has performed and continues to perform these affirmative acts with knowledge of the '556 Patent and with knowledge that such actions would induct infringement of the '556 Patent by Lenovo's direct and indirect customers.

78. On information and belief, by continuing to make, use, sell, offer to sell and/or import the Accused Products on or after Lenovo first had notice of InterDigital's allegations of

infringement, Lenovo contributorily infringes and continues to contributorily infringe at least claim 1 of the ’556 Patent under 35 U.S.C. § 271(c). Current’s affirmative acts of manufacturing, selling, offering for sale, and/or importing the Accused Products and components thereof, including video processors within the Accused Products, in this District and elsewhere in the United States, contribute to Lenovo’s customers and end-users directly infringing the ’556 Patent. The Accused Products are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or especially adapted for use in infringement of the ’556 Patent.

79. On information and belief, Lenovo has performed and continues to perform the above-identified acts of infringement with knowledge of the ’556 Patent and with intent, or willful blindness, that they cause the direct and indirect infringement of the ’556 Patent. Accordingly, Lenovo’s continued infringement of the ’556 Patent is willful and deliberate, entitling InterDigital to increased damages under 35 U.S.C. § 284.

80. On information and belief, InterDigital has suffered and continues to suffer damages as a result of Lenovo’s infringement of the ’556 Patent in an amount to be determined at trial.

81. On information and belief, Lenovo’s infringement of the ’556 Patent is causing irreparable harm for which InterDigital has no adequate remedy at law unless Lenovo is enjoined by this Court. Under 35 U.S.C. § 283, InterDigital is entitled to a permanent injunction against further infringement of the ’556 Patent.

82. On information and belief, and in light of the allegations above, including Lenovo’s willful infringement of the ’556 Patent, this case is exceptional under 35 U.S.C. § 285, entitling InterDigital to costs and attorneys’ fees incurred in prosecuting this action.

COUNT IV

INFRINGEMENT OF THE ’054 PATENT

83. InterDigital incorporates by reference the preceding paragraphs as if fully set forth herein.

84. The ’054 Patent describes, among other things, a device and method for wirelessly transferring data from a touchscreen device. According to the method of the patent, a user may select a file to transfer from a touchscreen device. The circuitry of the touchscreen device uses Bluetooth to detect nearby devices, from which the user can select a target device. After sending a message to the target device to transfer the selected file, and receiving an acceptance, the touchscreen device transfers the file to the target device using Wi-Fi. Specifically, the type of Wi-Fi used in the method and device of the ’054 Patent may include peer-to-peer communication.

85. Lenovo has infringed, contributed to the infringement of, and/or induced infringement of the ’054 Patent by making, using, selling, offering for sale, or importing into the United States, or by intending that others make, use, import into, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the ’054 Patent including, but not limited to, smartphones, laptops, and tablet computers that support wireless file sharing.

86. By way of example only, Lenovo’s ThinkPad X1 Carbon Gen. 10, infringes Claim 1 of the ’054 Patent as set forth in the claim chart attached as Exhibit 18.

87. Lenovo has been aware of the ’054 Patent since at least the filing date of this Complaint.

88. Lenovo's customers and end-users of the Accused Products directly infringe Claim 1 of the '054 Patent, at least by using the Accused Products.

89. On information and belief, Lenovo has actively induced infringement of at least Claim 1 of the '054 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b). Lenovo knowingly and intentionally induces users of one or more of the Accused Products to directly infringe one or more claims of the '054 Patent by encouraging, instructing, and aiding one or more persons in the United States, including Lenovo employees who test and operate Accused Products at the direction of Lenovo, to make, use (including testing those devices and methods), sell, or offer to sell one or more of the Accused Products in a manner that infringes the '054 Patent. *See, e.g.*, Exs. 9–13 (Lenovo advertising products for sale and their capabilities); Exs. 19, 20 (Lenovo instructions on using Nearby Share); Exs. 21–25 (Websites describing Nearby Share feature).

90. Lenovo provides its customers and end users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Lenovo has done so by acta including but not limited to (1) selling the Accused Products including features that—when used or resold—infringe the '054 Patent; (2) marketing the infringing capabilities of such products; and (3) providing instructions, user guides, technical support services, customer support services, product sheets, technical specifications, and other support and encouragement for the infringing use of the Accused Products. Lenovo has performed and continues to perform these affirmative acts with knowledge of the '054 Patent and with knowledge that such actions would induct infringement of the '054 Patent by Lenovo's direct and indirect customers.

91. On information and belief, by continuing to make, use, sell, offer to sell and/or import the Accused Products on or after Lenovo first had notice of InterDigital's allegations of infringement, Lenovo contributorily infringes and continues to contributorily infringe at least claim 1 of the '054 Patent under 35 U.S.C. § 271(c). Current's affirmative acts of manufacturing, selling, offering for sale, and/or importing the Accused Products and components thereof within the Accused Products, in this District and elsewhere in the United States, contribute to Lenovo's customers and end-users directly infringing the '054 Patent. The Accused Products are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or especially adapted for use in infringement of the '054 Patent.

92. On information and belief, Lenovo has performed and continues to perform the above-identified acts of infringement with knowledge of the '054 Patent and with intent, or willful blindness, that they cause the direct and indirect infringement of the '054 Patent. Accordingly, Lenovo's continued infringement of the '054 Patent is willful and deliberate, entitling InterDigital to increased damages under 35 U.S.C. § 284.

93. On information and belief, InterDigital has suffered and continues to suffer damages as a result of Lenovo's infringement of the '054 Patent in an amount to be determined at trial.

94. On information and belief, Lenovo's infringement of the '054 Patent is causing irreparable harm for which InterDigital has no adequate remedy at law unless Lenovo is enjoined by this Court. Under 35 U.S.C. § 283, InterDigital is entitled to a permanent injunction against further infringement of the '054 Patent.

95. On information and belief, and in light of the allegations above, including Lenovo's willful infringement of the '054 Patent, this case is exceptional under 35 U.S.C. § 285, entitling InterDigital to costs and attorneys' fees incurred in prosecuting this action.

COUNT V

INFRINGEMENT OF THE '933 PATENT

96. InterDigital incorporates by reference the preceding paragraphs as if fully set forth herein.

97. Like the'054 Patent, the '933 Patent describes a device and method for wirelessly transferring data from a touchscreen device. According to the method of the patent, a user may select a file to transfer from a touchscreen device. The processor of the touchscreen device uses Bluetooth to detect nearby devices, from which the user can select a target device. After sending a message to the target device to transfer the selected file, and receiving an acceptance, the touchscreen device transfers the file to the target device using Wi-Fi.

98. Lenovo has infringed, contributed to the infringement of, and/or induced infringement of the '933 Patent by making, using, selling, offering for sale, or importing into the United States, or by intending that others make, use, import into, offer for sale, or sell in the United States, products and/or methods covered by one or more claims of the '933 Patent including, but not limited to, smartphones, laptops, and tablet computers that support wireless file sharing.

99. By way of example only, Lenovo's ThinkPad X1 Carbon Gen. 10, infringes Claim 1 of the '933 Patent as set forth in the claim chart attached as Exhibit 26.

100. Lenovo has been aware of the '933 Patent since at least the filing date of this Complaint.

101. Lenovo's customers and end-users of the Accused Products directly infringe Claim 1 of the '933 Patent, at least by using the Accused Products.

102. On information and belief, Lenovo has actively induced infringement of at least Claim 1 of the '933 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b). Lenovo knowingly and intentionally induces users of one or more of the Accused Products to directly infringe one or more claims of the '933 Patent by encouraging, instructing, and aiding one or more persons in the United States, including Lenovo employees who test and operate Accused Products at the direction of Lenovo, to make, use (including testing those devices and methods), sell, or offer to sell one or more of the Accused Products in a manner that infringes the '933 Patent. *See, e.g.,* Exs. 9–13 (Lenovo advertising products for sale and their capabilities); Exs. 19, 20 (Lenovo instructions on using Nearby Share); Exs. 21–25 (Websites describing Nearby Share feature).

103. Lenovo provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Lenovo has done so by acta including but not limited to (1) selling the Accused Products including features that—when used or resold—infringe the '933 Patent; (2) marketing the infringing capabilities of such products; and (3) providing instructions, user guides, technical support services, customer support services, product sheets, technical specifications, and other support and encouragement for the infringing use of the Accused Products. Lenovo has performed and continues to perform these affirmative acts with knowledge of the '933 Patent and with knowledge that such actions would induct infringement of the '933 Patent by Lenovo's direct and indirect customers.

104. On information and belief, by continuing to make, use, sell, offer to sell and/or import the Accused Products on or after Lenovo first had notice of InterDigital's allegations of infringement, Lenovo contributorily infringes and continues to contributorily infringe at least claim 1 of the '933 Patent under 35 U.S.C. § 271(c). Current's affirmative acts of manufacturing, selling, offering for sale, and/or importing the Accused Products and components thereof within the Accused Products, in this District and elsewhere in the United States, contribute to Lenovo's customers and end-users directly infringing the '933 Patent. The Accused Products are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Lenovo to be especially made or especially adapted for use in infringement of the '933 Patent.

105. On information and belief, Lenovo has performed and continues to perform the above-identified acts of infringement with knowledge of the '933 Patent and with intent, or willful blindness, that they cause the direct and indirect infringement of the '933 Patent. Accordingly, Lenovo's continued infringement of the '933 Patent is willful and deliberate, entitling InterDigital to increased damages under 35 U.S.C. § 284.

106. On information and belief, InterDigital has suffered and continues to suffer damages as a result of Lenovo's infringement of the '933 Patent in an amount to be determined at trial.

107. On information and belief, Lenovo's infringement of the '933 Patent is causing irreparable harm for which InterDigital has no adequate remedy at law unless Lenovo is enjoined by this Court. Under 35 U.S.C. § 283, InterDigital is entitled to a permanent injunction against further infringement of the '933 Patent.

108. On information and belief, and in light of the allegations above, including Lenovo's willful infringement of the '933 Patent, this case is exceptional under 35 U.S.C. § 285, entitling InterDigital to costs and attorneys' fees incurred in prosecuting this action.

PRAYER FOR RELIEF

109. WHEREFORE, InterDigital respectfully requests that this Court enter judgment in favor of InterDigital as follows:

(a) That Lenovo is liable for infringement, contributing to the infringement, and/or inducing the infringement of one or more claims of the Patents-in-Suit;

(b) An award of damages adequate to compensate InterDigital for the infringement that has occurred, pursuant to 35 U.S.C. § 284, including prejudgment and post-judgment interest;

(c) An award of enhanced damages including, without limitation, treble damages for willful infringement pursuant to 35 U.S.C. § 284;

(d) An accounting and/or supplemental damages for all damages occurring after any discovery cutoff and through the Court's decision regarding the imposition of a permanent injunction;

(e) An award of attorneys' fees based on this being an exceptional case pursuant to 35 U.S.C. § 285, including prejudgment interest on such fees;

(f) Enter a permanent injunction against all Lenovo products found to infringe the Patents-in-Suit;

(g) Award, in lieu of an injunction, a compulsory forward royalty;

(h) Costs and expenses in this action; and

(i) An award of any further relief that this Court deems just and proper.

Dated: September 1, 2023

Respectfully Submitted,

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