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MEMORY TECHNOLOGIES, LLC

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

MEMORY TECHNOLOGIES, LLC, a Nevada company, Plaintiff, vs. KINGSTON TECHNOLOGY CORPORATION, a California corporation, KINGSTON TECHNOLOGY COMPANY, INC., a Delaware corporation, Defendants.	CASE No. 8:18-cv-00171 **COMPLAINT FOR PATENT INFRINGEMENT;** **DEMAND FOR JURY TRIAL**

Plaintiff Memory Technologies, LLC ("MTL") hereby alleges for its Complaint for patent infringement against Kingston Technology Corporation and Kingston Technology Company, Inc. (collectively "Defendants") on personal

knowledge as to its own actions and on information and belief as to the actions of others, as follows:

I. JURISDICTION AND VENUE

1. This civil action for patent infringement arises under the patent laws of the United States, 35 U.S.C. § 100 *et seq.,* including pursuant to 35 U.S.C. § 271. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

2. This Court has personal jurisdiction over Defendants. On information and belief, Defendants have systematic and continuous contacts with this forum at least because they conduct substantial business in, and are headquartered in, California and in this District at 17600 Newhope Street, Fountain Valley, California 92708.

3. Venue is proper in the Central District of California under 28 U.S.C. §§ 1391 and 1400(b). Venue is proper with respect to Defendant Kingston Technology Company, Inc. because it has committed acts of infringement in this District and has a regular and established place of business in this District at 17600 Newhope Street, Fountain Valley, California 92708. Venue is proper as to Kingston Technology Corporation because it resides in this District through its incorporation in the State of California, and because it has committed acts of infringement in this District and has a regular and established place of business in this district at 17600 Newhope Street, Fountain Valley, California 92708.

4. On information and belief, Defendants conduct substantial business in this District. Defendants make, use, sell, offer to sell, and/or import, within this District, systems and components that infringe one or more of the Asserted Patents (defined below), and induce infringement by others within this District. Defendants derive substantial revenue from the sale of infringing systems and components within the District, and/or expect or should reasonably expect their actions to have consequences within the District. Defendants have committed and continue to

commit acts of patent infringement in this District, including making, using, selling, offering to sell, and/or importing infringing systems, products, and components within the District, and inducing infringement by others in this District.

5. Moreover, on information and belief, Defendants are headquartered at 17600 Newhope Street, Fountain Valley, California 92708. Defendants have established a significant presence in this District by manufacturing, using, selling, offering to sell, and importing Kingston SD cards (including Kingston microSD cards), Kingston eMMC memory, and/or products containing Kingston eMMC memory that infringe one or more Asserted Patents, or inducing such acts.

6. Additionally, on information and belief, according to publicly available documentation, Defendants' principal marketing, sales, and customer service decisions are made at Defendants' headquarters within this District. Furthermore, Defendants' finance and accounting departments, as well as its legal and executive offices are located at its headquarters within this District.

7. Additionally, on information and belief, Defendants induce others, including third-parties, to infringe the Asserted Patents within this District, through, among other of its operations, its marketing, sales, and customer service operations.

II. PARTIES

8. MTL is organized in Nevada and has its headquarters at 2300 Carillon Point, Kirkland, WA 98033. MTL is a subsidiary of Pendrell Corporation. MTL owns a worldwide patent portfolio that covers numerous memory technologies. As many as 82 of MTL's patents belong to patent families containing patents essential to various memory and electronic storage standards, including the JEDEC eMMC

standard[1] and the SD Standard[2]. In the past four years, MTL has licensed the Asserted Patents (defined below) to most of the major flash memory manufacturers in the world.

9. On information and belief, Kingston Technology Company, Inc. is organized under the laws of the state of Delaware, with its principal place of business at 17600 Newhope Street, Fountain Valley, California 92708.

10. On information and belief, Kingston Technology Corporation is incorporated under the laws of the State of California, with its principal place of business at 17600 Newhope Street, Fountain Valley, California 92708.

11. On information and belief, Defendants are in the business of designing, developing, manufacturing, making, offering for sale, selling, using, selling in the United States after importation, selling for importation, and/or importing into the United States certain flash memory devices or their components, including certain SD Cards and eMMC memory.

12. This is a patent infringement action by MTL to end Defendants' unauthorized, willful, and infringing manufacture, use, sale, offering to sell, and/or importing into the United States of products and components that incorporate MTL's patented inventions, and to end Defendants' active inducement of infringement by others in the United States of MTL's patented inventions.

13. MTL is the owner of the patents at issue in this action: U.S. Patent Nos. RE45,486 ("the RE486 Patent"); RE45,542 ("the RE542 Patent"); 7,565,469 ("the 469 Patent"); 7,827,370 ("the 370 Patent"); 7,739,487 ("the 487 Patent"); 8,307,180 ("the 180 Patent"); 9,063,850 ("the 850 Patent"); and 9,367,486 ("the 486 Patent") (collectively, the "Asserted Patents").

[1] The JEDEC eMMC standard refers to the JEDEC Embedded MultiMediaCard (e.MMC) e.MMC/Card Product Standard (JESD84-A441) or higher. MTL will use "eMMC" to refer to e.MMC as governed by the JEDEC e.MMC Standard in this complaint.

[2] The SD Standard refers to the Secure Digital Association Physical Layer Specification ("SD Standard").

14. MTL holds all substantial rights and interest in the Asserted Patents, as described below, including the exclusive right to sue Defendants for infringement and recover damages.

15. Defendants make, use, sell, offer to sell, and/or import in the United States systems and components of systems that infringe one or more claims of the Asserted Patents, and actively induce infringement by others of the same. MTL seeks monetary damages and prejudgment interest for Defendants' past and ongoing direct and indirect infringement of the Asserted Patents.

III. THE ASSERTED PATENTS

16. On April 21, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. RE45,486 ("the RE486 Patent"), entitled "Method for Addressing a Memory Card, a System Using a Memory Card, and a Memory Card." A copy of the RE486 Patent is attached hereto as Exhibit 1.

17. MTL owns all substantial right, title, and interest in the RE486 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

18. On June 2, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. RE45,542 ("the RE542 Patent"), entitled "Method and a System for Determining the Power Consumption in Connection with an Electronic Device, and an Electronic Device." A copy of the RE542 Patent is attached hereto as Exhibit 2.

19. MTL owns all substantial right, title, and interest in the RE542 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

20. On July 21, 2009, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,565,469 ("the 469 Patent"), entitled "Multimedia Card Interface Method, Computer Program Product and Apparatus." A copy of the 469 Patent is attached hereto as Exhibit 3.

21. MTL owns all substantial right, title, and interest in the 469 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

22. On June 15, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,739,487 ("the 487 Patent"), entitled "Method for Booting a Host Device From an MMC/SD Device, a Host Device Bootable from an MMC/SD Device and an MMC/SD Device Method a Host Device May Booted From." A copy of the 487 Patent is attached hereto as Exhibit 4.

23. MTL owns all substantial right, title, and interest in the 487 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

24. On November 2, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,827,370 ("the 370 Patent"), entitled "Partial Permanent Write Protection of a Memory Card and Partially Permanently Write Protected Memory Card." A copy of the 370 Patent is attached hereto as Exhibit 5.

25. MTL owns all substantial right, title, and interest in the 370 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

26. On November 6, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,307,180 ("the 180 Patent"), entitled "Extended Utilization Area for a Memory Device." A copy of the 180 Patent is attached hereto as Exhibit 6.

27. MTL owns all substantial right, title, and interest in the 180 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

28. On June 23, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,063,850 ("the 850 Patent"), entitled "Extended

Utilization Area for a Memory Device." A copy of the 850 Patent is attached hereto as Exhibit 7.

29. MTL owns all substantial right, title, and interest in the 850 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

30. On June 14, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,367,486 ("the 486 Patent"), entitled "Extended Utilization Area for a Memory Device." A copy of the 486 Patent is attached hereto as Exhibit 8.

31. MTL owns all substantial right, title, and interest in the 486 Patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

32. No later than October 23, 2013, Defendants were on notice of the Asserted Patents and their infringement of the Asserted Patents. On October 23, 2013, MTL contacted John Tu, CEO of Kingston Technology Company, Inc. regarding licensing the Asserted Patents to Defendants. MTL thereafter wrote to Kingston on January 30, 2014, March 25, 2014, July 10, 2014, June 23, 2015, August 25, 2015, June 20, 2016, August 16, 2017, September 1, 2017, September 14, 2017, and October 2, 2017 in pursuit of a license agreement.

33. During the period between October 23, 2013 and August 16, 2017, MTL met or spoke with Defendants' representatives on multiple occasions to inform Defendants' that MTL is the owner of a patent portfolio relating to flash memory technologies that are widely implemented under the eMMC and SD Standards, including the Asserted Patents, and that in many instances MTL's patents are essential to the eMMC and SD Standards.

34. MTL has informed Defendants, on numerous occasions between October 23, 2013 and August 16, 2017, that Defendants are required to have a license to the Asserted Patents for any of Defendants' products that comply with

the eMMC or SD Standards.

35. MTL has offered, on numerous occasions between October 23, 2013 and August 16, 2017, a license to the Asserted Patents under reasonable and non-discriminatory ("RAND") terms.

36. Despite MTL's numerous attempts to engage Defendants, Defendants have not responded to repeated attempts to discuss licensing of the Asserted Patents.

37. Defendants have been on notice at least as early as October 23, 2013 that its actions constituted and continue to constitute infringement of one or more claims of the Asserted Patents.

IV. FIRST CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. RE45,486

38. MTL incorporates and realleges paragraphs 1 - 37 above as if fully set forth herein.

39. On information and belief, Defendants have infringed and continue to infringe one or more claims of the RE486 Patent, including but not limited to Claims 6, 9-11, 22, 23, 26, and 27 pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority High Capacity (HC) and Extended Capacity (XC) SD Cards compliant with SD Specification Version 2.00 or higher, as well as eMMC memory that is compliant with the JEDEC eMMC 4.41 (JESD84-A441) standard or higher (these SD Cards and eMMC memory devices are, collectively, the "RE486 Patent Accused Products"). The RE486 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB,

SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards (SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), and Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

40. By way of example, on information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card comprising several memory locations for storing data (for example, physical areas on the memory to store one byte), the memory card stores at least one parameter (for example, the C_SIZE parameter is stored in the CSD register), and the memory card is configured so that the number of memory locations of the memory card can be calculated on the basis of the at least one parameter (for example, memory capacity = (C_SIZE + 1) * 512K byte). *See* SD Specifications, Part 1, Physical Layer Simplified Specification, Version 2.00 (Sep. 25, 2006), available at http://users.ece.utexas.edu/~valvano/EE345M/SD_Physical_Layer_Spec.pdf at 73, 86-87 ("SD Specification 2.00"). On information and belief, each memory card is configured so that a specific number of bits is reserved for said at least one parameter (for example, 22 bits are reserved in the CSD Register for the C_SIZE parameter) and is configured to have stored therein an addressing data (for example, the value of Bit 30 of the OCR register) that is indicative of at least one addressing method supported (for example, block address format or byte address

format). *Id*. at 41, 74. On information and belief, the addressing data indicates either a basic addressing method (for example, if Bit 30 is 0, the memory card is a Standard Capacity SD Memory Card and uses byte address format) or an expanded addressing method (for example, if Bit 30 is 1, the memory card is High Capacity SD Memory Card and uses block address format), and the expanded addressing method enables the addressing of data in a larger number of memory locations than the basic addressing method (for example, in block address format in High Capacity SD Memory Cards the data is addressed in block units of 512 bytes and in byte address format in Standard Capacity SD Memory Cards the data is addressed in byte units). *Id*. at 41, 50-51, 74.

41. Moreover, on information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card wherein data is arranged to be stored and read in the memory card block-by-block (for example, single or multiple block read or write). *Id*. at 18-20.

42. Additionally, on information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card wherein the memory locations of one block are arranged to be addressed with one address (for example, block address format). *Id*. at 41.

43. On information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card wherein the basic addressing method supports addressing only one memory location with one address (for example, byte address format). *Id*. at 41.

44. Moreover, on information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card wherein the expanded addressing method supports a higher memory capacity than the basic addressing method (for example, High Capacity compared to Standard Capacity SD Cards). *Id*. at 41.

45. Additionally, on information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card that further comprises a register for

storing the addressing data (for example, the OCR Register). *Id*. at 74.

46. On information and belief, each SD Card that is a RE486 Patent Accused Product is a memory card wherein the stored addressing data comprises one bit (for example, Bit 30 of the OCR Register). *Id*.

47. As another example, on information and belief, each eMMC memory device that is a RE486 Patent Accused Product is a memory card comprising several memory locations for storing data (for example, physical areas on the memory to store one byte), the memory card stores at least one parameter (for example, the SEC_COUNT parameter is stored in the Extended CSD register), and the memory card is configured so that the number of memory locations of the memory card can be calculated on the basis of the at least one parameter (for example, device density = (SEC_COUNT) x 512B). *See* JEDEC eMMC 4.41 at 24, 113, 126, 136. On information and belief, each memory card is configured so that a specific number of bits is reserved for said at least one parameter (for example, bytes [215:212] of the Extended CSD Register are reserved for the SEC_COUNT parameter) and is configured to have stored therein an addressing data (for example, the OCR register bits [30:29] store values indicate the Access Mode) that is indicative of at least one addressing method supported (for example, byte mode or sector mode). *Id*. at 44, 113, 126. On information and belief, the addressing data indicates either a basic addressing method (for example, 00b indicates byte access mode) or an expanded addressing method (10b indicates sector access mode), and the expanded addressing method enables the addressing of data in a larger number of memory locations than the basic addressing method (for example, in sector access mode the addressable unit is 512 bytes and in byte access mode the addressable unit is one byte). *Id*. at 14, 44, 113, 119, 126.

48. Moreover, on information and belief, each eMMC memory device that is a RE486 Patent Accused Product is a memory card that complies with the MultiMediaCard specifications. *See* generally *id*.

49. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the RE486 Patent, including but not limited to Claim 6, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the RE486 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the RE486 Patent by such third parties. Defendants' acts of inducement include: providing the RE486 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the RE486 Patent Accused Products; advertising the RE486 Patent Accused Products in the United States and encouraging the sale and offer for sale of the RE486 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the RE486 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy) and encouraging third parties to communicate directly with Defendants' representatives and providing information about the RE486 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the RE486 Patent Accused Products (for example, https://www.kingston.com/us/support).

50. Defendants proceeded in this manner despite knowledge of the RE486 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the RE486 Patent. The Defendants had knowledge of the RE486 Patent and the infringement of the RE486 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the RE486 Patent and the accused infringement, they have been and remain willfully blind

regarding the infringement they have induced and continue to induce.

51. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the RE486 Patent.

52. Defendants' infringement of the RE486 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the RE486 Patent and the infringement of the RE486 Patent no later than as described in paragraphs 32-37 and have proceeded to infringe the RE486 Patent with full knowledge of that patent and its applicability to Defendants' products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

V. SECOND CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. RE45,542

53. MTL incorporates and realleges paragraphs 1 - 52 above as if fully set forth herein.

54. On information and belief, Defendants have infringed and continue to infringe one or more claims of the RE542 Patent, including but not limited to Claims 28 and 38, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority SD Cards compliant with SD Specification Version 3.00 or higher with maximum current consumption greater than 200 mA, as well as Embedded Multimedia Card ("eMMC") memory, including eMMC memory compliant with the JEDEC eMMC 4.41 (JESD84-A441) standard or higher (these SD Cards and eMMC memory are, collectively, the "RE542 Patent Accused Products"). The RE542 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325,

EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards (SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

55. By way of example, on information and belief, each SD Card that is a RE542 Patent Accused Product is a peripheral device comprising a memory storing a default value for power consumption (for example, 200mA) and a limiting value for power consumption (for example, 400mA, 600mA, and 800mA) of the peripheral device, and a connector configured to connect the peripheral device to an electronic device for supplying power to the peripheral device (for example, the power lines VSS1, VDD, VSS2 of the SD card interface). *See* SD Specifications, Part 1, Physical Layer Specification, Version 3.00 (April 16, 2009) ("SD Specification 3.00"). On information and belief, the maximum power consumption of the peripheral device is set at a startup stage to the default value (for example, power consumption is set to 200mA after initialization), and the limiting value, which is higher than the default value, is defined for the power consumption of the peripheral device (for example, 400mA, 600mA, and 800mA).

Id. at 51. On information and belief, each peripheral device also comprises a processor (for example, a controller) operable to set the maximum power consumption of the peripheral device to a value in the range from the default value to the limiting value-including the default and limiting value (for example, 200mA to 800mA). *Id*. at 15, 51. On information and belief, each peripheral device is configured to receive information from the electronic device for setting the maximum power consumption of the peripheral device (for example, Switch Function Command, CMD6, defines the current limit), and the processor operable to set the maximum power consumption is configured to obtain the value-as indicated by the received information-and to set the maximum power consumption of the peripheral device to the value (for example, a switch in power consumption occurs within 8 clocks after the end bit of status data). *Id*. at 48, 51, 60, 78.

56. As another example, on information and belief, each eMMC memory device that is a RE542 Patent Accused Product is a peripheral device comprising a memory storing a default value for power consumption (for example, 200 mA max peak current) and a limiting value for power consumption (for example, max peak currents of 220 mA to 550 mA) of the peripheral device, and a connector configured to connect the peripheral device to an electronic device for supplying power to the peripheral device (for example, the power supply connector pins VCC and VCCQ on the eMMC interface). *See* JEDEC Embedded MultiMediaCard (e.MMC) e.MMC/Card Product Standard, (MMCA, 4.41), JESD84-A441 (March 2010) at 15, 50, 127, 138 ("JEDEC eMMC 4.41"). On information and belief, the maximum power consumption of the peripheral device is set at a startup stage to the default value (for example, power consumption is set to 200 mA max peak current after power-on or a software reset), and the limiting value, which is higher than the default value, is defined for the power consumption of the peripheral device (for example, max peak currents of 220 mA up to 550 mA). *Id*. at 50, 138. On information and belief, each peripheral device also comprises a processor (for

example, a card interface controller) operable to set the maximum power consumption of the peripheral device to a value in the range from the default value to the limiting value-including the default and limiting value (for example, 200 mA to 550 mA max peak currents). *Id*. at 16, 138, 141. On information and belief, each peripheral device is configured to receive information from the electronic device for setting the maximum power consumption of the peripheral device (for example, SWITCH Command, CMD6), and the processor operable to set the maximum power consumption is configured to obtain the value-as indicated by the received information-and to set the maximum power consumption of the peripheral device to the value (for example, a SWITCH command changes the power class by changing registers). *Id*. at 50, 87, 138, 141.

57. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the RE542 Patent, including but not limited to Claims 28 and 38, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the RE542 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the RE542 Patent by such third parties. Defendants' acts of inducement include: providing the RE542 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the RE542 Patent Accused Products; advertising the RE542 Patent Accused Products in the United States and encouraging the sale and offer for sale of the RE542 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the RE542 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to

communicate directly with Defendants' representatives and providing information about the RE542 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the RE542 Patent Accused Products (for example, https://www.kingston.com/us/support).

58. Defendants proceeded in this manner despite knowledge of the RE542 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the RE542 Patent. The Defendants had knowledge of the RE542 Patent and the infringement of the RE542 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the RE542 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

59. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the RE542 Patent.

60. Defendants' infringement of the RE542 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the RE542 Patent and the infringement of the RE542 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the RE542 Patent with full knowledge of that patent and its applicability to Kingston's products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

VI. THIRD CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 7,565,469

61. MTL incorporates and realleges paragraphs 1 - 60 above as if fully set forth herein.

62. On information and belief, Defendants have infringed and continue to

infringe one or more claims of the 469 Patent, including but not limited to Claim 19, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority SD Cards compliant with SD Specification Version 3.00 or higher with CMD23 (SET_BLOCK_COUNT) functionality, as well as eMMC memory compliant with the JEDEC eMMC 4.41 (JESD84-A441) standard or higher (these SD and eMMC memory devices are, collectively, the "469 Patent Accused Products"). The 469 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards (SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

63. By way of example, on information and belief, each SD Card that is a 469 Patent Accused Product is a memory device comprising a bus interface configured to be coupled to a host through a bus having a data signal line (for example, the SD card nine-line bus interface is configured to be coupled to an SD

Memory Card Host and has four data signal lines, DAT0-3), and the bus interface comprises a driver at the memory device coupled to a data signal line and a receiver at the memory device coupled to a data signal line (for example, each data line is bidirectional and so each must be coupled to a driver to send data and a receiver to receive data). *See* SD Specification 3.00 at 141. On information and belief, the receiver is operable to receive information comprising a first information portion and a second information portion from the host over the data signal line (for example, a first and second data block) within a command execution (for example, within a CMD25 multiple block write operation), and the driver is operable to drive a change of state of the data signal line to the host within the command execution (for example, the SD Card is operable to drive the data signal line from HIGH to LOW, "busy," within the CMD25 command execution). *See* SD Specification 3.00 at 11, 38, 74. On information and belief, the bus interface also comprises a controller coupled to the driver and to the receiver (for example, the card interface controller) that is operable to cause the change of state of the data signal line to have a first meaning after receiving the first information portion within the command execution and to have a second meaning different from the first meaning after receiving the second information portion within the command execution from the host over the data signal line (for example, when CMD23 is used in conjunction with CMD25, after receiving any data block other than the final data block the data signal line is held LOW for the duration of time that the buffers are busy [up to 250 ms] and the meaning of the change of state of the data signal line from HIGH to LOW is "buffer busy," and after receiving the final data block the data signal line is held LOW for the duration of time that the card is in the programming state [up to 500 ms] and the meaning of the change of state of the data signal line from HIGH to LOW is "programming busy"). *Id*. at 87.

64. As another example, on information and belief, each eMMC memory device that is a 469 Patent Accused Product is a memory device comprising a bus

interface configured to be coupled to a host through a bus having a data signal line (for example, the eMMC device has a bus interface with ten communication lines configured to be coupled to a MultiMediaCard Host and has eight data signal lines, DAT0:7), and the bus interface comprises a driver at the memory device coupled to a data signal line and a receiver at the memory device coupled to a data signal line (for example, each data line is bidirectional and so each must be coupled to a driver to transmit data and a receiver to receive data). *See* JEDEC eMMC 4.41 at 163. On information and belief, the receiver is operable to receive information comprising a first information portion and a second information portion from the host over the data signal line (for example, a first and second data block) within a command execution (for example, within a WRITE_MULTIPLE_BLOCK CMD25 operation), and the driver is operable to drive a change of state of the data signal line to the host within the command execution (for example, the eMMC device is operable to generate a busy signal on the data signal line within the CMD25 command execution). *Id*. at 19, 89, 163, 182. On information and belief, the bus interface also comprises a controller coupled to the driver and to the receiver (for example, the card interface controller) that is operable to cause the change of state of the data signal line to have a first meaning after receiving the first information portion within the command execution and to have a second meaning different from the first meaning after receiving the second information portion within the command execution from the host over the data signal line (for example, after receiving any data block other than the final data block the meaning of the change of state of the data signal line is "buffer busy," and after receiving the final data block the meaning of the change of state of the data signal line is "programming busy"). *Id*. at 16, 107.

65. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the 469 Patent, including but not limited to Claim 19, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as

users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 469 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 469 Patent by such third parties. Defendants' acts of inducement include: providing the 469 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 469 Patent Accused Products; advertising the 469 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 469 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the 469 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 469 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the 469 Patent Accused Products (for example, https://www.kingston.com/us/support).

66. Defendants proceeded in this manner despite knowledge of the 469 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 469 Patent. The Defendants had knowledge of the 469 Patent and the infringement of the 469 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 469 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

67. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 469 Patent.

68. Defendants' infringement of the 469 Patent has been and continues to

be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 469 Patent and the infringement of the 469 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 469 Patent with full knowledge of that patent and its applicability to Kingston's products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

VII. FOURTH CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 7,739,487

69. MTL incorporates and realleges paragraphs 1 - 68 above as if fully set forth herein.

70. On information and belief, Defendants have infringed and continue to infringe one or more claims of the 487 Patent, including but not limited to Claims 20 and 21, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority eMMC memory compliant with the JEDEC eMMC 4.41 (JESD84-A441) standard or higher (the "487 Patent Accused Products"). The 487 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards (SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB,

SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

71. By way of example, on information and belief, each 487 Patent Accused Product is a peripheral device having an MMC/SD-interface (for example, an MMCinterface) configured for booting (for example, the boot operation mode) a bootable host device that is configured for being booted from a peripheral device having an MMC/SD interface. *See* JEDEC eMMC 4.41 at 34. Each peripheral device, on information and belief, further comprises an MMC/SD-interface (for example, an MMC-interface), provided with power terminal (for example, Vcc and Vccq pins), a data bus with data bus terminals (for example, the DAT0-DAT7 pins), a clock line with a clock terminal (for example, the CLK pin), and a command line with command terminal (for example, the CMD pin). *Id*. at 15-16. On information and belief, each peripheral device further comprises a peripheral device controller (for example, a card interface controller), connected to said MMC/SD-interface. *Id*. at 16. Each peripheral device further comprises, on information and belief, a memory module (for example, the memory core), connected to said peripheral device controller, and wherein said peripheral device controller is configured for sending the first data (for example, first boot data) of a predefined storage area (for example, a boot area or user area) via a data bus, starting with a start bit of the first data frame (for example, start bit "S"), when receiving power at the terminal of said MMC/SD-interface of said peripheral device, and a low signal at the command terminal of said MMC/SD-interface

during power-up (for example, holding the command line for at least 74 cycles during power up). *Id*. at 16, 35-37, 108, 165.

72. Further, on information and belief, each peripheral device controller is further configured to send said first data of a predefined storage area via data bus, only when receiving a low signal at said command terminal of said MMC/SD-interface before or during power-up during the transmission of between 24 to 148, preferably between 60 and 100 and most preferably 74 initialization clock signals. *Id*. at 36, 38, 165.

73. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the 487 Patent, including but not limited to Claim 20 and 21, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 487 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 487 Patent by such third parties. Defendants' acts of inducement include: providing the 487 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 487 Patent Accused Products; advertising the 487 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 487 Patent Accused Products (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 487 Patent Accused Products for purposes of technical assistance, design, sales, and marketing of the 487 Patent Accused Products (for example, https://www.kingston.com/us/support).

74. Defendants proceeded in this manner despite knowledge of the 487

Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 487 Patent. The Defendants had knowledge of the 487 Patent and the infringement of the 487 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 487 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

75. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 487 Patent.

76. Defendants' infringement of the 487 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 487 Patent and the infringement of the 487 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 487 Patent with full knowledge of that patent and its applicability to Kingston's products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

VIII. FIFTH CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 7,827,370

77. MTL incorporates and realleges paragraphs 1 - 76 above as if fully set forth herein.

78. On information and belief, Defendants have infringed and continue to infringe one or more claims of the 370 Patent, including but not limited to Claims 12 and 19 pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority eMMC memory compliant with the JEDEC eMMC 4.41 (JESD84-A441) standard or higher (the "370 Patent Accused

Products"). The 370 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525).

79. By way of example, on information and belief, each 370 Patent Accused Product is an apparatus comprising an interface controller (for example, a card interface controller) arranged to write protect at least one part of a memory of said apparatus (for example, the addressed write-protect group) by a command (for example, SET_WRITE_PROT). *See* JEDEC eMMC 4.41 at 16, 63. On information and belief, each apparatus further comprises a data register (for example, the Extended CSD Register) arranged to define at least one bit to indicate that permanent write protection of the at least one part of the memory is allowed (for example, Bit[2] and Bit[4] of the USER_WP[171] slice of the Extended CSD Register). *Id*. at 128, 146. Each apparatus further comprises, on information and belief, a controller (for example, the card interface controller) arranged to set the at least one bit (for example, Bit[2] and Bit[4] of the USER_WP[171] slice of the Extended CSD Register) in order to redefine the command (for example, SET_WRITE_PROT) to allow permanent write protection, that cannot be un-protected by a command (for example, a permanent clear write protect command), of the at least one part of the memory of said apparatus (for example, the addressed write-protect group). *Id*. at 16, 63-64, 146. On information and belief, the controller in each apparatus (for example, the card interface controller) is further arranged to execute the command in order to permanently write protect said at least one part of the memory (for example, CMD28 or SET_WRITE_PROT). *Id*. at 16, 89.

80. Further, on information and belief, the apparatus is a multimedia card (MMC).

81. On information and belief, Defendants have induced and continue to

induce infringement of one more claims of the 370 Patent, including but not limited to Claims 12 and 19, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 370 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 370 Patent by such third parties. Defendants' acts of inducement include: providing the 370 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 370 Patent Accused Products; advertising the 370 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 370 Patent Accused Products (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 370 Patent Accused Products for purposes of technical assistance, design, sales, and marketing of the 370 Patent Accused Products (for example, https://www.kingston.com/us/support).

82. Defendants proceeded in this manner despite knowledge of the 370 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 370 Patent. The Defendants had knowledge of the 370 Patent and the infringement of the 370 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 370 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

83. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 370 Patent.

84. Defendants' infringement of the 370 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 370 Patent and the infringement of the 370 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 370 Patent with full knowledge of that patent and its applicability to Kingston's products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

IX. SIXTH CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 8,307,180

85. MTL incorporates and realleges paragraphs 1 - 84 above as if fully set forth herein.

86. On information and belief, Defendants have infringed and continue to infringe one or more claims of the 180 Patent, including but not limited to Claims 17-19 and 21-22 pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority SD Cards compliant with SD Specification Version 3.00 or higher with Speed Class Control Command Functionality, as well as eMMC memory, compliant with the JEDEC eMMC 4.51 (JESD84-B451) standard or higher (these SD Cards and eMMC memory devices are, collectively, the "180 Patent Accused Products"). The 180 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards

(SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

87. By way of example, on information and belief, each SD Card that is a 180 Patent Accused Product is a memory device comprising one more registers for storing one or more predefined access profiles associated with the memory device (for example, SSR register stores one more predefined access profiles in SPEED_CLASS), and the predefined access profiles (for example, Speed Class profiles Class 2, Class 4, Class 6, and Class 10) are effective for determining how access to the memory device is configured for at least one usage (for example, a write using a Speed Class). *See* SD Specification 3.00 at 7, 15, 89-90. On information and belief, the memory device also comprises a controller (for example, a card interface controller) for receiving one or more commands related to at least one usage of said memory device (for example, via the CMD line), and the one or more commands activate the one or more predefined access profiles associated with the memory device (for example, Initialization Command ACMD41 activates at least one Speed Class profile by setting the XPC bit, command frame bit 36, to 1). *Id*. at 15, 27, 90. On information and belief, the controller is also for configuring access to the memory device in accordance with at least one of the predefined access profiles so that the memory device is effective

for the at least one usage (for example, CMD20, the Speed Class Control Command, configures the Allocation Units, "AUs," which are portions of the user area of the memory device, such that the host writes sequentially in an AU according to the Speed Class Profile to ensure recording meets the minimum performance rate). *Id*. at 93, 108-09, 113-15, 117-19.

88. On information and belief, one or more access profiles correspond to at least one of a random and a sequential mode of access (for example, the Speed Class host writes sequentially in an AU). *Id*. at 109, 113, 115.

89. On information and belief, one or more access profiles corresponds to at least one of a read, a write, an erase, and a modify attribute operation (for example, the Speed Class host writes sequentially in an AU). *Id*. at 109, 113, 115.

90. On information and belief, one or more access profiles are adapted to produce an optimized performance associated with said memory device (for example, a Speed Class Profile ensures recording meets the minimum performance rate). *Id*. at 7, 117.

91. On information and belief, the performance is optimized in accordance with at least one of: data throughput, lifetime, and power consumption associated with the memory device (for example, a Speed Class Profile ensures recording meets the minimum performance rate). *Id*. at 7, 117.

92. As another example, on information and belief, each eMMC memory device that is a 180 Patent Accused Product is a memory device comprising one or more registers for storing one or more predefined access profiles associated with the memory device (for example, up to fifteen registers, CONTEXT_CONF[51:37], available to store context configuration information), and the predefined access profiles (for example, an eMMC device has up to 15 contexts and has context configuration information that may be associated with a context) are effective for determining how access to the memory device is configured for at least one usage (for example, a read or write). *See* JEDEC eMMC

4.51 at 81, 152, 184. On information and belief, the memory device also comprises a controller for receiving one or more commands (for example, an eMMC Device Controller) related to at least one usage of said memory device, and the one or more commands activate the one or more predefined access profiles associated with the memory device (for example, CMD6 writes a non-zero value into bits [1:0] of a context configuration register). *Id*. at 7, 41, 81, 103, 149, 184. On information and belief, the controller is also for configuring access to the memory device in accordance with at least one of the predefined access profiles so that the memory device is effective for the at least one usage (for example, CMD23 with the subsequent read and/or write commands defines a portion of the memory to be configured in accordance with the designated context). *Id*. at 81, 105.

93. On information and belief, one or more access profiles correspond to at least one of a random and a sequential mode of access (for example, the Large Unit context flag indicates if the context is following Large Unit rules, and the Large Unit is the smallest unit that can be used for large sequential read/write operations). *Id*. at 81-82, 184.

94. On information and belief, one or more access profiles corresponds to at least one of a read, a write, an erase, and a modify attribute operation (for example, a context can be configured as a read-only context, a write-only context, or a read/write context). *Id*. at 81-82, 184.

95. On information and belief, one or more access profiles are adapted to produce an optimized performance associated with said memory device. *Id*. at 81.

96. On information and belief, the performance is optimized in accordance with at least one of: data throughput, lifetime, and power consumption associated with the memory device (for example, for a large, sequential write pattern, all of the commands that fill a unit work faster because they can reduce overhead). *Id*. at 81.

97. On information and belief, Defendants have induced and continue to

induce infringement of one more claims of the 180 Patent, including but not limited to Claim 17-19, and 21-22, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 180 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 180 Patent by such third parties. Defendants' acts of inducement include: providing the 180 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 180 Patent Accused Products; advertising the 180 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 180 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the 180 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 180 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the 180 Patent Accused Products (for example, https://www.kingston.com/us/support).

98. Defendants proceeded in this manner despite knowledge of the 180 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 180 Patent. The Defendants had knowledge of the 180 Patent and the infringement of the 180 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 180 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

99. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 180 Patent.

100. Defendants' infringement of the 180 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 180 Patent and the infringement of the 180 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 180 Patent with full knowledge of that patent and its applicability to Kingston's products. Defendants' intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

X. SEVENTH CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 9,063,850

101. MTL incorporates and realleges paragraphs 1 - 100 above as if fully set forth herein.

102. On information and belief, Defendants have infringed and continue to infringe one or more claims of the 850 Patent, including but not limited to Claims 10 and 13, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority SD Cards compliant with SD Specification Version 3.00 or higher with Speed Class Control Command Functionality, as well as eMMC memory compliant with the JEDEC eMMC 4.51 (JESD84-B451) standard or higher (these SD Cards and eMMC memory devices are, collectively, the "850 Patent Accused Products"). The 850 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I

Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards (SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

103. By way of example, on information and belief, each SD Card that is a 850 Patent Accused Product is a memory device comprising one or more predefined access profiles (for example, Speed Class profiles Class 2, Class 4, Class 6, and Class 10) to determine how access to the memory device is configured for at least one usage of the memory device (for example, a write using a Speed Class), and a controller configured to receive at least one first command (for example, a card interface controller) to activate at least one of the predefined access profiles associated with the memory device (for example, Initialization Command ACMD41 activates at least one Speed Class profile by setting the XPC bit, command frame bit 36, to 1) and to receive at least one second command (for example, CMD20, the Speed Class Control Command) to configure access to the memory device in accordance with the at least one of the one more predefined access profiles such that at least a portion of the memory device is configured according to the at least one of the more or more predefined access profiles for the at least one usage (for example, CMD20 configures the Allocation Units, "AUs,"

which are portions of the user area of the memory device, such that the host writes sequentially in an AU according to the Speed Class Profile to ensure recording meets the minimum performance rate). *See* SD Specification 3.00 at 7, 15, 27, 89, 93, 108-09, 113-15, 117-19.

104. As another example, on information and belief, each eMMC memory device that is a 850 Patent Accused Product is a memory device comprising one or more predefined access profiles (for example, an eMMC device has up to 15 contexts and has context configuration information that may be associated with a context) to determine how access to the memory device is configured for at least one usage of the memory device (for example, a read or write), and a controller configured to receive at least one first command (for example, an eMMC Device Controller) to activate at least one of the one more predefined access profiles associated with the memory device (for example, CMD6 writes a non-zero value into bits [1:0] of a context configuration register) and to receive at least one second command (for example, CMD23) to configure access to the memory device in accordance with the at least one of the one more predefined access profiles such that at least a portion of the memory device is configured according to the at least one of the more or more predefined access profiles for the at least one usage (for example, CMD23 with the subsequent read and/or write commands defines a portion of the memory to be configured in accordance with the designated context). *See* JEDEC Embedded MultiMediaCard (e.MMC), Electrical Standard 4.51, JESD84-B451 (June 2012) at 7, 41, 81, 103, 105, 149, 152, 184 ("JEDEC eMMC 4.51").

105. On information and belief, each eMMC memory device comprises an embedded MultiMediaCard (eMMC) device.

106. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the 850 Patent, including but not limited to Claim 10, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as

users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 850 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 850 Patent by such third parties. Defendants' acts of inducement include: providing the 850 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 850 Patent Accused Products; advertising the 850 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 850 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the 850 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 850 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the 850 Patent Accused Products (for example, https://www.kingston.com/us/support).

107. Defendants proceeded in this manner despite knowledge of the related 180 Patent and the 850 Patent and their knowledge that specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 850 Patent. The Defendants had knowledge of the 850 Patent and the related 180 Patent, and the infringement of the 850 Patent no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 850 Patent and the accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

108. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 850 Patent.

109. Defendants' infringement of the 850 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 850 Patent and the related 180 Patent and the infringement of the 850 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 850 Patent with full knowledge of that patent and its applicability to Kingston's products. Kingston's intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

XI. EIGHTH CLAIM FOR RELIEF

DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 9,367,486

110. MTL incorporates and realleges paragraphs 1 - 109 above as if fully set forth herein.

111. On information and belief, Defendants have infringed and continue to infringe one or more claims of the 486 Patent, including but not limited to Claim 8, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States without authority SD Cards compliant with SD Specification Version 3.00 or higher with Speed Class Control Command Functionality, as well as eMMC memory compliant with the JEDEC eMMC 4.51 (JESD84-B451) standard or higher (these SD Cards and eMMC memory devices are, collectively, the "486 Patent Accused Products"). The 486 Patent Accused Products include, for example and without limitation, Kingston eMMC™ products (EMMC04G-M627, EMMC08G-M325, EMMC16G-M525, EMMC32G-M525, EMMC64G-M525, EMMC04G-S627, EMMC04G-W627, EMMC08G-W325, EMMC16G-W525, EMMC32G-W525, EMMC64G-W525), Kingston SDHC/SDXC Class 10 UHS-I Cards (SD10VG2/16GB, SD10VG2/32GB, SD10VG2/64GB, SD10VG2/128GB), Kingston SDHC/SDXC Class 10 UHS-I Cards

(SDA10/16GB, SDA10/32GB, SDA10/64GB SDA10/128GB, SDA10/256GB, SDA10/512GB), Kingston SDHC/SDXC UHS-I U3 Cards (SDA3/32GB, SDA3/64GB, SDA3/128GB, SDA3/256GB), Kingston microSDHC Class 4 Cards (SDC4/8GBSP, SDC4/16GBSP, SDC4/32GBSP), Kingston microSDHC/microSDXC Class 10 UHS-I Cards (SDC10G2/16GBSP, SDC10G2/32GBSP, SDC10G2/64GBSP, SDC10G2/128GBSP), Kingston Gold microSD UHS-I Speed Class 3 (U3) Cards (SDCG/16GBSP, SDCG/32GBSP, SDCG/64GBSP), Kingston Industrial Temperature microSD UHS-I Cards (SDCIT/8GBSP, SDCIT/16GBSP, SDCIT/32GBSP), Kingston microSDHC/SDXC UHS-I U3 90R/80W Cards (SDCA3/32GBSP, SDCA3/64GBSP, SDCA3/128GBSP).

112. By way of example, on information and belief, each SD Card that is a 486 Patent Accused Product is configured to perform during operation a method including receiving one or more commands to activate at least one predefined access profile (for example, receiving a Speed Class Control Command [CMD20] to activate at least one of the Speed Class Control profiles by setting a corresponding value into the SCC argument bits) of two or more predefined access profiles (for example, the SCC argument bits can correspond to Speed Class Control profiles including a Start Recording profile and a Create DIR profile) associated with a memory device. *See* SD Specification 3.00 at 15, 117-19. The two or more predefined access profiles determine how access to the memory device is configured for at least one usage of the memory device, and a first predefined access profile corresponds to a random mode of access (for example, Create DIR corresponds to writing to a specified address in a random mode) and second predefined access profile corresponds to a sequential mode of access (for example, Start Recording corresponds to stream recording/writing which is sequential access). *See Id.* Each SD Card that is a 486 Patent Accused Product is further configured to configure access to the memory device in accordance with the at

least one predefined access profile such that at least a portion of the memory device is configured according to the at least one predefined access profile for the at least one usage (for example, CMD20 configures the Allocation Units, "AUs," which are portions of the user area of the memory device, such that the host writes sequentially in an AU according to the Speed Class Profile to ensure recording meets the minimum performance rate). *See* SD Specification 3.00 at 7, 15, 27, 89, 93, 108-09, 113-15, 117-19.

113. As another example, on information and belief, each eMMC memory device that is a 486 Patent Accused Product is configured to perform during operation a method including receiving one or more commands to activate at least one predefined access profile (for example, CMD6 writes a non-zero value into bits [1:0] of a context configuration register) of two or more predefined access profiles (for example, an eMMC device has up to 15 contexts and has context configuration information that may be associated with a context) associated with a memory device. *See* JEDEC Embedded MultiMediaCard (e.MMC), Electrical Standard 4.51, JESD84-B451 (June 2012) at 7, 41, 81, 103, 105, 149, 152, 184 ("JEDEC eMMC 4.51"). The two or more predefined access profiles determine how access to the memory device is configured for at least one usage of the memory device, and a first predefined access profile corresponds to a random mode of access (for example, some contexts can correspond to small random operations) and second predefined access profile corresponds to a sequential mode of access (for example, some contexts can correspond to large sequential operations). *See Id.* Each eMMC memory device Card that is a 486 Patent Accused Product is further configured to configure access to the memory device in accordance with the at least one predefined access profile such that at least a portion of the memory device is configured according to the at least one predefined access profile for the at least one usage (for example, CMD23 with the subsequent read and/or write commands defining a portion of the memory to be configured in

accordance with the designated context). *See Id.*

114. On information and belief, Defendants have induced and continue to induce infringement of one more claims of the 486 Patent, including but not limited to Claim 8, pursuant to 35 U.S.C. § 271(b) by encouraging third parties such as users, customers, distributors, wholesalers, retailers, affiliates, parents, subsidiaries, importers, or sellers to make, use, offer to sell, sell, and/or import into the United States without authorization the 486 Patent Accused Products. The making, using, offering to sell, selling, and/or importing into the United States constitutes direct infringement, literally or under the doctrine of equivalents, of one or more claims of the 486 Patent by such third parties. Defendants' acts of inducement include: providing the 486 Patent Accused Products or components thereof to third parties and intending them to make, use, offer to sell, sell, and/or import the 486 Patent Accused Products; advertising the 486 Patent Accused Products in the United States and encouraging the sale and offer for sale of the 486 Patent Accused Products by other entities by listing stores where Kingston products, including specifically the 486 Patent Accused Products, can be purchased (for example, https://www.kingston.com/us/wheretobuy); and encouraging third parties to communicate directly with Defendants' representatives and providing information about the 486 Patent Accused Products for purposes of technical assistance, design, replacement, sales, and marketing of the 486 Patent Accused Products (for example, https://www.kingston.com/us/support)

115. Defendants proceeded in this manner despite knowledge of the 486 Patent and the related 180 and 850 Patents and their knowledge that the specific actions they actively induced and continue to actively induce on the part of third parties constitute infringement of the 486 Patent. The Defendants had knowledge of the 486 Patent and the related 180 and 850 Patents, and the infringement of the 486 Patent, no later than as described in paragraphs 32-37. At the very least, because Defendants have been and remain on notice of the 486 Patent and the

accused infringement, they have been and remain willfully blind regarding the infringement they have induced and continue to induce.

116. MTL has suffered and continues to suffer damages as a result of Defendants' infringement of the 486 Patent.

117. Defendants' infringement of the 486 Patent has been and continues to be willful, deliberate, and in disregard of MTL's patent rights. The Defendants had knowledge of the 486 Patent and the related 180 and 850 Patents and the infringement of the 486 Patent no later than as described in paragraphs 32-37, and have proceeded to infringe the 850 Patent with full knowledge of that patent and its applicability to Kingston's products. Kingston's intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles MTL to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

XII. PRAYER FOR RELIEF

MTL respectfully prays for relief as follows:

A. a judgment that Defendants have infringed and continue to infringe one or more claims of the Asserted Patents;

B. a judgment that Defendants have induced infringement and continue to induce infringement of one or more claims of the Asserted Patents;

C. a judgment that Defendants have willfully infringed one or more claims of the Asserted Patents;

D. a judgment awarding MTL all damages adequate to compensate for Defendants' infringement, and in no event less than a reasonable royalty for Defendants' infringement, including all pre-judgment and post-judgment interest at the maximum rate allowed by law;

E. a judgment awarding MTL treble damages pursuant to 35 U.S.C. § 284 as a result of Defendants' willful conduct;

F. a judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding MTL its reasonable Attorneys' Fees and Taxable Costs incurred in connection with this action, pursuant to 35 U.S.C. §285 and the teachings of the U.S. Supreme Court in the *Octane Fitness LLC v. Icon Health & Fitness Inc.*, 572 U.S. ___, 134 S. Ct. 1749 (2014) line of cases and their more recent progeny.

G. For such additional and further relief in law and equity, as the Court may deem just and proper.

Respectfully submitted,

LEE & HAYES PLLC

Dated: January 31, 2018

/s/Andrew G. Strickland

Andrew G. Strickland (CA SBN 272364)

William B. Dyer III (*Pro Hac Vice* To Be Filed)

Lee & Hayes, PLLC

Attorneys for Plaintiff,

MEMORY TECHNOLOGIES, LLC

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff MTL demands a trial by jury of this action.

Respectfully submitted,

LEE & HAYES PLLC

Dated: January 31, 2018

/s/Andrew G. Strickland

Andrew G. Strickland (CA SBN 272364)

William B. Dyer III (*Pro Hac Vice* To Be Filed)

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