UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

DYNAMICS INC., a Delaware corporation, Plaintiff, v. SAMSUNG ELECTRONICS CO., LTD., a Korean corporation; SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation; SAMSUNG RESEARCH AMERICA, Inc., a California corporation; Defendants.	**Civil Action No.: 19-6479** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT
AND BREACH OF CONTRACT

Plaintiff Dynamics Inc. ("Dynamics" or "Plaintiff"), by and through its attorneys, files this Complaint for Patent Infringement and Breach of Contract against Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Research America, Inc. (collectively "Samsung" or "Defendants"), as follows:

NATURE OF ACTION

1. This is an action arising under the patent laws of the United States, 35 U. S. C. §§ 1 et seq. for patent infringement by the Samsung Defendants, individually and collectively, and for breach of contract arising under the laws of the state of New York against Samsung.

PARTIES

2. Dynamics is a corporation organized under the laws of Delaware with its principal place of business located at 492 Nixon Road, Cheswick, PA 15024. Dynamics is the owner, through assignment, of the entire right, title and interest in U.S. Patent No. 8,827,153 issued on September 9, 2014, entitled "SYSTEMS AND METHODS FOR WAVEFORM GENERATION FOR DYNAMIC MAGNETIC STRIPE COMMUNICATIONS DEVICES" ("the '153 Patent"); U.S. Patent No. 10,032,100 issued on July 24, 2018, entitled "CARDS AND DEVICES WITH MULTIFUNCTION MAGNETIC EMULATORS AND METHODS FOR USING SAME" ("the '100 Patent"); U.S. Patent No. 10,223,631 issued on March 5, 2019, entitled "CARDS AND DEVICES WITH MULTIFUNCTION MAGNETIC EMULATORS AND METHODS FOR USING SAME" ("the 631 Patent"); and U.S. patent No. 10,255,545 issued on April 9, 2019, entitled "CARDS AND DEVICES WITH MULTIFUNCTION MAGNETIC EMULATORS AND METHODS FOR USING SAME" ("the '545 Patent") (collectively referred to herein as the "Patents-in-Suit"). True and correct copies of the '153 Patent, '100 Patent, the '631 Patent, and the '545 Patent are attached herein as Exhibits "A," "B," "C," and "D," respectively.

3. Samsung Electronics Co., Ltd (referred to individually herein as "SEC") is a Korean corporation organized under the laws of Republic of Korea ("South Korea") with its principal place of business at 129 Samseong-ro, Yeongtong-Gu, Suwon-si, Gyeonggi-do, South Korea. Upon information and belief, SEC designs, manufactures, and imports to the U.S. and world markets a wide range of devices, products and systems, including consumer electronics, computer components and numerous mobile and entertainment products.

4. Samsung Electronics America, Inc. (referred to individually herein as "SEA") is a New York corporation with its principal place of business at 85 Challenger Road, Ridgefield

Park, NJ 07660. Upon information and belief, SEA is a subsidiary of SEC that markets, sells, or offers for sale a variety of devices, products, and systems including consumer electronics, memory chips and computer accessories.

5. Samsung Research America, Inc. (referred to individually herein as "SRA") is a California corporation with its principal place of business at 665 Clyde Avenue, Mountain View, CA 94043. Upon information and belief, SRA is a subsidiary of SEA, and primarily engaged in commercial physical and biological research and development. Upon information and belief, SRA changed its corporate entity name from Samsung Information Systems America, Inc. ("SISA") on or about August 8, 2014. *See* Certificate of Amendment filed with Secretary of State, State of California on September 2, 2014. A true and correct copy of the Certificate of Amendment is attached herein as Exhibit "E." On or about January 10, 2012, Dynamics and SISA (now SRA) entered into a mutual Non-Disclosure Agreement ("the NDA"). A true and correct copy of the NDA is attached herein as Exhibit "F." The General Counsel Joie Le of the then SISA duly executed the NDA on behalf of the SISA, and thus, the NDA is legally valid, effective, and binding on Samsung and its personnel as of January 10, 2012.

6. At all times relevant to this action, Samsung has been engaged in the business of manufacturing, using, offering for sale and selling in the United States, and importing into the United States, electronic devices, products and systems that infringe one or more of the Patents-in-Suit, and/or in violation of the NDA.

JURISDICTION AND VENUE

7. This Court has subject matter jurisdiction under 35 U.S.C. § 271 (the patent laws), 28 U.S.C. § 1331 (federal question), 28 U.S.C. § 1338(a) (any Act of congress relating to patents or trademarks), and 28 U.S.C. § 1367 (supplemental jurisdiction).

8. This Court has personal jurisdiction over Samsung in this district, in that Samsung, directly or through its agents, is a resident of this district in that it is incorporated in New York, and further has regularly conducted business activities in this district, has committed infringing activities in this district in violation of 35 U.S.C. § 271 and in violation of the NDA, and places infringing devices, products and systems into the stream of commerce, with the knowledge or understanding that such devices, products and systems are sold, used, or offered for sale by others in the State of New York, including this district. The acts by Samsung have caused and continue to cause injury to Dynamics within this district. Upon information and belief, Samsung has derived and continue to derive substantial revenue from the sale of infringing devices, products and systems within this district, across the United States and worldwide.

9. SRA in particular has consented to personal jurisdiction and venue within this district pursuant to the NDA entered by and between SRA (then SISA) and Dynamics on or about January 10, 2012.

10. Venue is proper within this district under 28 U.S.C. §§ 1391(b) and 1400(b).

PATENTS-IN-SUIT

11. The ‘153 Patent was duly and legally issued by the United States Patent and Trademark Office (“USPTO”) on September 9, 2014, naming Randy L. Rhodes and David J. Hartwick as inventors and Dynamics Inc. as assignee.

12. The ‘153 Patent is generally related to, among other things, dynamic magnetic stripe communications devices, namely, a device including a magnetic stripe emulator operable to communicate an encoded analog waveform and a waveform generator operable to generate the

encoded analog waveform from a digital representation of at least one track of magnetic stripe data. *See* Exhibit A.

13. The ‘100 Patent was duly and legally issued by the USPTO on July 24, 2018, naming Jeffrey D. Mullen, David Lambeth, and Bruce Cloutier as inventors and Dynamics Inc. as assignee.

14. The ‘100 Patent is generally related to, among other things, cards and mobile devices having magnetic emulators operable to communicate information to magnetic stripe readers, the devices including a circuit operable to emit an electromagnetic field and transmit data to a read-head located on a magnetic stripe reader. The circuit is further operable to communicate the data to the read-head while the circuit is located outside of the magnetic stripe reader. *See* Exhibit B.

15. The ‘631 Patent was duly and legally issued by the USPTO on March 5, 2019, naming Jeffrey D. Mullen, David N. Lambeth, and Bruce Cloutier as inventors and Dynamics Inc. as assignee.

16. The ‘631 Patent is generally related to, among other things, cards and mobile devices having magnetic emulators operable to communicate information to magnetic stripe readers, the devices including: (i) structures for receiving manual inputs, and (ii) dynamic magnetic stripe communication devices operable to electrically couple to a payment terminal when the dynamic magnetic stripe communication device is located outside and within proximity of the payment terminal and to serially communicate two sets of magnetic stripe track data while being electrically coupled to the payment terminal. *See* Exhibit C.

17. The ‘545 Patent was duly and legally issued by the USPTO on April 9, 2019, naming Jeffrey D. Mullen, David N. Lambeth, and Bruce Cloutier as inventors and Dynamics Inc. as assignee.

18. The ‘545 Patent is generally related to, among other things, cards and mobile devices having magnetic emulators operable to communicate information to magnetic stripe readers, the devices including circuitry operable to communicate with a cellular network, RFID circuitry operable to electrically couple the devices to a payment terminal and to communicate RFID data to the payment terminal, and a coil operable to electrically couple the devices to the payment terminal and to communicate date in magnetic stripe data format to the payment terminal from a position beneath a surface of the devices. *See* Exhibit D.

19. Dynamics is the exclusive and current owner of all rights, title and interest in the Patents-in-suit, and is entitled to enforce the Patents-in-Suit against infringers, including by commencing the present action.

20. As set forth more fully below, Samsung has engaged and continues to engage in acts of infringement under 35 U.S.C. § 271, *inter alia*, by using, offering for sale and selling in the United States, and importing into the United States, various mobile devices that infringe at least one claim of one or more of the Patents-in-Suit, either literally or under the doctrine of equivalents.

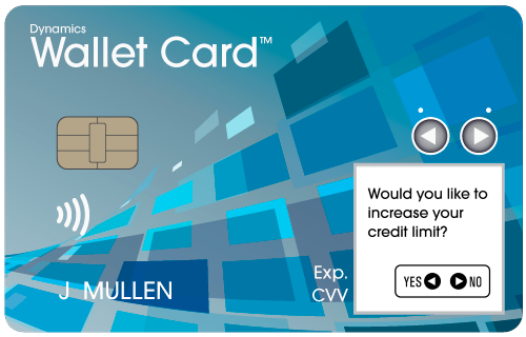
21. Samsung does not have a license or other authorization to practice the claims set forth in the Patents-in-Suit.

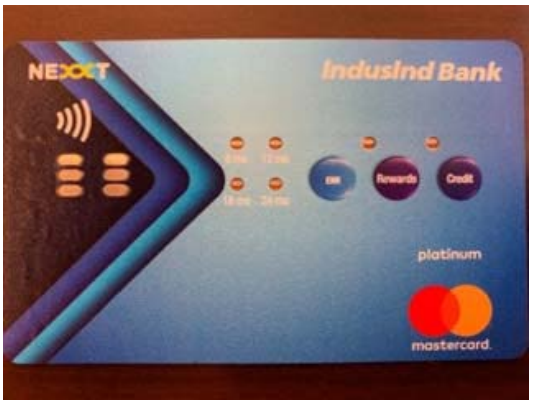
FACTUAL ALLEGATIONS

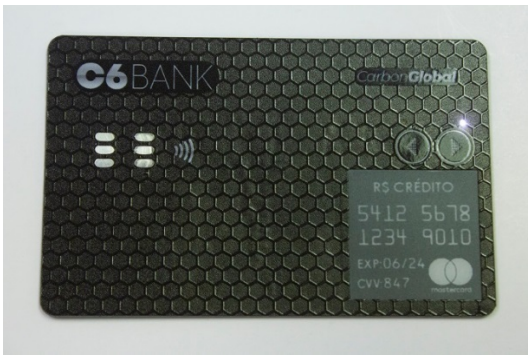
Dynamics's Breakthrough Technologies

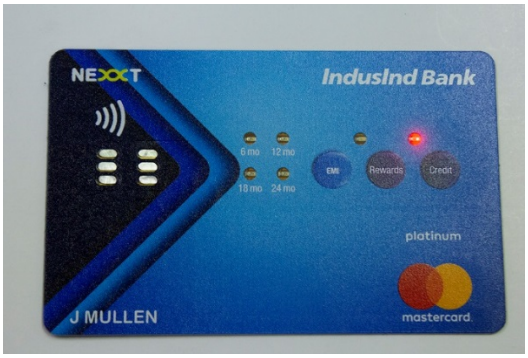
22. Since the 2000s, Dynamics has designed, developed, manufactured, marketed, and sold its innovative products, e.g., payment cards for making payment transactions via magnetic emulation and near field communication technology, throughout the United States and the world.

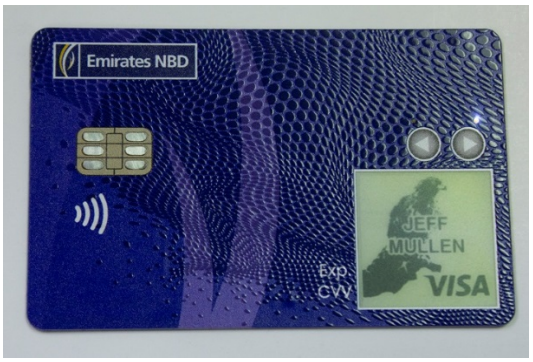
23. Examples of some of Dynamics's representative products and devices using patented systems and apparatuses, are shown below:

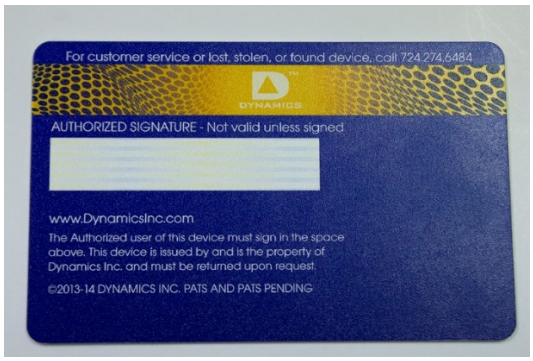












24. These products, devices, systems, and apparatuses employ, among other things, mobile devices that communicate with magnetic stripe readers and other payment terminals in carrying out financial and other transactions, and represent numerous breakthroughs in technology including devices and apparatuses for executing financial transactions and storing financial account information in a safe and secure manner. The innovations embodied in the patented devices and apparatuses have been recognized in the United States and worldwide, and are protected by numerous United States and foreign intellectual property rights, including rights

deriving from patents and trademarks. To date, Dynamics has been issued more than 20 United States Patents and more than 15 patents in foreign jurisdiction throughout the world. Additionally, Dynamics has more than 30 pending United States patent applications and more than 30 pending foreign patent applications throughout the world.

25. Prior to the introduction of Dynamics's patented devices and apparatuses, there were no devices on the market that were made to communicate with payment terminals in the manner described in the Dynamics patents. Indeed, before Dynamics's patented devices and apparatuses, no market existed for such products and services.

26. Since its introduction, Dynamics's technologies have become widely acclaimed by professionals, and consumers, and have garnered many media awards from sources such as the San Francisco Business Plan Competitions, the McGinnis Venture Competition, DEMO, at which Dynamics was named DEMO God in 2010, and the Consumer Electronics Show ("CES"), at which Dynamics won numerous awards, including Best of Show.

27. In innovating and developing the patented devices and apparatuses, Dynamics expended much time, resources, and efforts, including but not limited to, over $48,000,000 invested in research and development towards advanced payment technologies, e.g., smart battery-powered payment cards capable of, among other things, emulating magnetic stripes found on traditional payment cards such as credit, debit, or charge cards.

Samsung Breaches a Non-Disclosure Agreement with Dynamics, Causes a Third Party LoopPay, Inc. to Copy the Technologies under the Non-Disclosure Agreement, including Technologies Covered by the Patents-in-Suit, and Infringes Dynamics's Patented Devices, Systems and Apparatuses

28. In January 2012, Dynamics participated at the Consumer Electronics Show ("CES") in Las Vegas. During CES, personnel from Samsung visited the Dynamics booth and spoke with an employee of Dynamics. Samsung then requested that Jeffrey D. Mullen, the CEO

of Dynamics, leave CEO in order to meet with Samsung executives at Samsung in a private area located in the Bellagio Hotel in Las Vegas.

29. On or about January 10, 2012, Dynamics and SRA (then doing business as SISA) entered into the NDA. The General Counsel Joie Le of the SISA duly executed the NDA on behalf of the SISA, and thus, the NDA became legally valid, effective, and binding on Samsung and its personnel as of January 10, 2012. *See* Exhibit F.

30. The NDA prohibited Samsung from using, disseminating, or in any way disclosing confidential information ("the Confidential Information") to any third party. *See id.* at Section 3. The Confidential Information is defined by the NDA as:

> (i) information embodied in tangible material, including software, hardware, drawings, graphs, charts, disks, tapes, prototypes and samples,(ii) all technical and non-technical information relating to patents and patent applications, trade secrets, and proprietary information, inventions, ideas, techniques, designs, sketches, drawings, works of authorship, models, inventions, know-how, processes, apparatuses, equipment, algorithms, software programs (including source and object codes), software source documents, and formulas related to current, future, and proposed products and services, including information concerning research, experimental work, development, design details and specifications, and engineering; (iii) financial information, procurement requirements, purchasing, manufacturing; (iv) customer, partner and employee lists; (v) business and contractual relationships, business plans or forecasts, roadmaps, products, sales and merchandising, prices, and product and marketing plans; (vi) technical data, specifications, documentation, rules and procedures, contracts, presentations, know-how, product plans, sales and marketing plans, business methods, product functionality, services, data, markets, competitive analysis, databases, formats, methodologies, applications, developments, inventions, processes, payment, delivery and inspection procedures, designs, models, drawings, proprietary software, algorithms and formulas; and (vii) the existence and content of any negotiations or other discussions between the parties.

See id. at Section 2.

31. Subsequently on the same day, Jeff Mullen went to the Bellagio Hotel and was escorted into a private theater space that had a large number of Samsung executives. There was

also a direct video conference connection to an additional team of Samsung employees in Korea who participated as well.

32. During the presentation, Jeff Mullen demonstrated Dynamics's magnetic emulation technologies to Samsung personnel and discussed, pursuant to the NDA, how the technologies could be incorporated into a device, e.g., a payment card, a mobile device, etc., in making secure and safe financial and other transactions. Jeff Mullen also displayed internal circuitry of devices through the use of clear payment devices that employed the Dynamics technologies for observation by Samsung employees.

33. On the next day or so, at Samsung's request, Jeff Mullen returned to meet with Samsung at the Bellagio Hotel and continued discussing Dynamics's advanced payment technologies under the NDA.

34. At no time after the January 2012 presentations have Samsung and Dynamics ever come to an agreement for licensing or otherwise engaging in any partnership with respect to the disclosed Dynamics's technologies disclose by Jeff Mullen to Samsung under the NDA.

35. Upon information and belief, Samsung subsequently sought out a company that had the potential of duplicating the technology Jeff Mullen disclosed to Samsung under the NDA in order to incorporate that technology into its mobile devices.

36. Upon information and belief, at some point in time after meetings with Jeff Mullen under the NDA at the Bellagio in 2012, Samsung became aware of LoopPay, Inc. ("LoopPay"), a rival of Dynamics, and began the process of disclosing information it received from Jeff Mullen under the NDA to LoopPay, in violation of the NDA.

37. Upon information and belief, Samsung made an initial investment in LoopPay along with other investors.

38. Upon information and belief, without the Dynamics information Jeff Mullen disclosed to Samsung under the NDA, neither LoopPay nor Samsung would have incorporated the magnetic emulation features into Samsung products that provide consumers with the ability to complete safe and secure financial and other transactions.

39. Upon information and belief, using the information Jeff Mullen disclosed to Samsung under the NDA, LoopPay tried to copy Dynamics's magnetic emulation technologies and to incorporate them into various Samsung products.

40. Upon information and belief, in February 2015 Samsung purchased LoopPay for approximately $250 million dollars. *See* Jason Del Rey, Samsung Paid Around $250 Million for LoopPay, Its Apple Pay Competitor, VOX (May 13, 2015) (hereinafter, "the Del Rey Article"), *available at* https://www.vox.com/2015/5/13/11562614/samsung-paid-around-250-million-for-looppay-its-apple-pay-competitor (retrieved on July 2, 2019). A true and correct copy of the Del Rey article is attached herein as Exhibit "G."

41. Upon information and belief, Samsung incorporated information it received from Jeffrey Mullen at the Bellagio under the NDA into Samsung products, including but not limited to (i) Samsung Galaxy S10+; (ii)Samsung Galaxy S10; (iii) Samsung Galaxy S10e; (iv) Samsung Galaxy S105G; (v) Samsung Galaxy S9; (vi) Samsung Galaxy S9+; (vii) Samsung Galaxy S8; (viii) Samsung Galaxy S8+; (ix) Samsung Galaxy Note9; (x) Samsung Galaxy Note8; and (xi) Samsung Gear S3 Frontier (hereinafter, collectively referred to as "the Infringing Products"). Upon information and belief, Samsung has made a substantial revenue directly related to the information disclosed to Samsung by Jeffrey Mullen under the NDA from the sales of the Infringing Products in this district, in the United States, and around the world.

42. Dynamics is the rightful recipient and owner of at least the purchase price Samsung paid for LoopPay, as well as for the revenue directly related to magnetic emulation technologies Jeff Mullen disclosed to Samsung under the NDA.

43. Dynamics has communicated with and met with Samsung representatives on multiple occasions to Dynamic's allegations of patent infringement by various Samsung products. Those meetings included two face-to-face meetings in Korea at which Dynamics made presentations that included claim charts showing such infringement. Dynamics's efforts to amicably resolve the infringement and breach of the NDA issues with Samsung, however, have been without success to date.

44. Therefore, Dynamics had brought this action to recover damages for patent infringement and breach of the NDA.

COUNT I
PATENT INFRINGEMENT OF U.S. PATENT NO. 8,827,153 BY SAMSUNG

45. Dynamics re-alleges and incorporates herein by reference in their entireties the allegations set forth in paragraphs 1-44, inclusive, of this Complaint.

46. On information and belief, Samsung has engaged and continues to engage in acts of infringement under 35 U.S.C. § 271, *inter alia*, by using, offering for sale and selling in the United States, and importing into the United States, the Infringing Products (see paragraph 39 above) that each embody each element of at least claim 1 of the '153 Patent.

47. By way of example only, one of the Infringing Products that Samsung has specifically used, offered for sale and sold in the United States, and imported into the United States for sale, and continues to use, offer for sale and sell in the United States, and import into the United States for sale, is the Samsung Galaxy S10+ . Samsung Galaxy S10+ is a device, specifically a mobile telephonic device. Accordingly, to the extent, if any, that the preamble of

claim 1 is deemed to be limiting, the Samsung Galaxy S10+ meets the language of the preamble of claim 1.

48. Further, the Samsung Galaxy S10+ includes an emulator that couples with a read-head of a magnetic stripe reader using Magnetic Secure Transmission ("MST") technology. *See* the claim chart comparing the '153 patent to the Samsung Galaxy S10+, p. 2, of which a true and correct copy is attached herein as Exhibit "H." The emulator includes an MST antenna that is operable to communicate with the read-head in order to transmit a magnetic signal similar to that of a traditional payment card when it is swiped in a payment terminal's card reader, e.g., a read-head on a magnetic stripe reader. *Id.* Accordingly, the Samsung Galaxy S10+ including the MST antenna meets the claim limitations of the first element of claim 1 that recites "a magnetic stripe emulator operable to communicate an analog waveform encoded with at least one track of magnetic stripe data to a magnetic stripe reader."

49. Further, the Samsung Galaxy S10+ including MST components, e.g., the emulator including the MST antenna, generates a magnetic signal from a digital representation of payment card magnetic stripe data encoded with three tracks of data. *Id.* at pp. 4 and 6-8. Accordingly, the Samsung Galaxy S10+ including the emulator meets the claim limitations of the second element of claim 1 that recites "a wave form generator operable to generate said analog waveform from a digital representation of said at least one track of magnetic stripe data."

50. Further, the Samsung Galaxy S10+ retrieves from memory a digital representation (e.g., a digital card) of the payment card information including data stored on the payment card's magnetic stripe tracks. *Id.* at pp. 8 and 9. The track data contains the digital card number that corresponds to a payment card/account number and the digital card number is transmitted in up to three tracks of magnetic stripe data. *See id.* Accordingly, the Samsung Galaxy S10+

including the emulator meets the claim limitations of the third element of claim 1, which recites "wherein said device is operable to retrieve said digital representation from a plurality of digital representations of said at least one track of magnetic stripe data."

51. Accordingly, the Samsung Galaxy S10+ including the MST antenna embodies all of the elements of, and therefore infringes, at least claim 1 of the '153 Patent.

COUNT II
PATENT INFRINGEMENT OF U.S. PATENT NO. 10,032,100 BY SAMSUNG

52. Dynamics re-alleges and incorporates herein by reference in their entireties the allegations set forth in paragraphs 1-44, inclusive, of this Complaint.

53. On information and belief, Samsung has engaged and continues to engage in acts of infringement under 35 U.S.C. § 271, *inter alia*, by using, offering for sale and selling in the United States, and importing into the United States, the Infringing Products, that each embody each element of at least claim 1 of the '100 Patent.

54. By way of example only, one of the Infringing Products that Samsung has specifically used, offered for sale and sold in the United States, and imported into the United States for sale, and continue to use, offer for sale and sell in the United States, and import into the United States for sale, is Samsung Galaxy S10+. Samsung Galaxy S10+ is a device, specifically a mobile telephone device. Accordingly, to the extent, if any, that the preamble of claim 1 is deemed to be limiting, the Samsung Galaxy S10+ meets the language of the preamble of claim 1.

55. Further, the Samsung Galaxy S10+ includes a circuit (hereinafter, referred to as "the Circuit") comprising the MST antenna, a near field communication antenna, and a wireless charging coil, located at the back of the Samsung Galaxy S10+. *See* the claim chart comparing the '100 patent to the Samsung Galaxy S10+, pp. 2, 3, of which a true and correct copy is

attached herein as Exhibit "I." The Circuit, including the MST antenna, generates and transmits the magnetic signal, i.e., the electromagnetic field as the analog waveform representing the encoded form (e.g., the digital card number) of payment card magnetic stripe track data stored in the memory by Samsung Pay application. *See id.* at p. 2. Accordingly, the Samsung Galaxy S10+ including the Circuit meets the claim limitations of the first element of claim 1, which recites "a circuit operable to emit an electromagnetic field and to electrically coupled to, and transmit data to, a read-head located on a magnetic stripe reader."

56. The Samsung Galaxy S10+ includes a processor (e.g., 8 nm 64-bit Octa-Core, 7 nm 64-bit Octa-Core., etc.) that controls the Circuit as well as most application functions on the Samsung Galaxy S10+. *See* Exhibit I, p. 5. For example, the processor causes the Circuit to generate an electromagnetic field and communicate data to a read-head of the magnetic stripe reader (e.g., a payment terminal). *Id.* at pp. 5-7. Accordingly, the Samsung Galaxy S10+ including the 8 nm 64-bit or 7 nm 64-bit Octa-Core processor meets the claim limitations of the second element of claim 1, which recites "a processor for controlling the circuit."

57. Further, the Circuit is operable to communicate the data to a read-head of a payment terminal outside by a user placing the Samsung Galaxy S10+ against the read-head at a distance of at least a quarter of an inch from the read-head. *Id.* at p. 6. Accordingly, the Samsung Galaxy S10+ including the Circuit and the 8 nm 64-bit Octa-Core or 7 nm 64-bit Octa-Core processor meets the claim limitations of the third element of claim 1, which recites "wherein the circuit is operable to communicate the data to the read-head while located outside of the magnetic stripe reader at a distance of at least a quarter of an inch from the read-head."

58. Accordingly, the Samsung Galaxy S10+ including the Circuit and the Octa-Core processor embodies all of the elements of, and therefore infringes, at least claim 1 of the ’100 Patent.

COUNT III
PATENT INFRINGEMENT OF U.S. PATENT NO. 10,223,631 BY SAMSUNG

59. Dynamics re-alleges and incorporates herein by reference in their entireties the allegations set forth in paragraphs 1-44, inclusive, of this Complaint.

60. On information and belief, Samsung has engaged and continues to engage in acts of infringement under 35 U.S.C. § 271, *inter alia*, by using, offering for sale and selling in the United States, and importing into the United States, the Infringing Products that each embody each element of at least claim 1 of the ‘631 Patent.

61. By way of example only, one of the Infringing Products that Defendants have specifically used, offered for sale and sold in the United States, and imported into the United States for sale, and continue to use, offer for sale and sell in the United States, and import into the United States for sale, is Samsung Galaxy S10+. Samsung Galaxy S10+ is an apparatus, specifically a mobile telephone device. Accordingly, to the extent, if any, that the preamble of claim 1 is deemed to be limiting, the Samsung Galaxy S10+ meets the language of the preamble of claim 1 of the ‘631 Patent.

62. Further, the Samsung Galaxy S10+ includes a structure for receiving manual input. For example, the Samsung Galaxy S10+ may retrieve a digital representation from its memory based on a signal from a touch screen button display on the screen of the Samsung Galaxy S10+, where a user may manually input his or her PIN via the touch screen button shown on the Samsung Galaxy S10+’s screen. *See* the claim chart comparing the ’631 patent to the Samsung Galaxy S10+, p. 2, of which a true and correct copy is attached herein as Exhibit “J.”

Accordingly, the Samsung Galaxy S10+ displaying the touch screen button display meets the claim limitations of the first element of claim 1, which recites "a structure for receiving manual input."

63. The Samsung Galaxy S10+ supports Magnetic Secure Transmission ("MST") technologies, and includes an MST antenna, which is a dynamic magnetic stripe communication device. *See id.* at p. 3. Accordingly, the Samsung Galaxy S10+ including the MST device meets the claim limitations of the first element of claim 1, which recites "a dynamic magnetic stripe communication device."

64. Further, the Samsung Galaxy S10+ includes a processor (e.g., 8nm 64-bit Octa-Core, 7 nm 64-bit Octa-Core, etc.) that controls the dynamic magnetic communication device function as well as most application functions on the Samsung Galaxy S10+. *See id.* at p. 4. Accordingly, the Samsung Galaxy S10+ including the Octa-Core processor meets the claim limitations of the third element of claim 1, which recites "a processor for controlling the dynamic magnetic stripe communication device."

65. The Samsung Galaxy S10+ including the MST antenna is operable to electrically couple to a read-head of a card reader, e.g., a payment terminal, located outside and within proximity of the Samsung Galaxy S10+. *See id.* at p. 5. Further, the Samsung Galaxy S10+ transmits a plurality of magnetic stripe data tracks (e.g., three tracks of data) of a payment card serially. *See id.* Accordingly, the Samsung Galaxy S10+ meets the claim limitations of the fourth element of claim 1, which recites "wherein the dynamic magnetic stripe communication device is operable to electrically couple to a payment terminal when the dynamic magnetic stripe communication device is located outside and within proximity of the payment terminal and to

serially communicate first magnetic stripe track data and second magnetic stripe track data while electrically couple do the payment terminal."

66. Accordingly, the Samsung Galaxy S10+ including the MST device embodies all of the elements of, and therefore infringes, at least claim 1 of the '631 Patent.

COUNT IV
PATENT INFRINGEMENT OF U.S. PATENT NO. 10,255,545 BY SAMSUNG

67. Dynamics re-alleges and incorporates herein by reference in their entireties the allegations set forth in paragraphs 1-44, inclusive, of this Complaint.

68. On information and belief, Samsung has engaged and continues to engage in acts of infringement under 35 U.S.C. § 271, *inter alia*, by using, offering for sale and selling in the United States, and importing into the United States, the Infringing Products that each embody each element of at least claim 1 of the '545 Patent.

69. By way of example only, one of the Infringing Products that Samsung has specifically used, offered for sale and sold in the United States, and imported into the United States for sale, and continue to use, offer for sale and sell in the United States, and import into the United States for sale, is Samsung Galaxy S10+. Samsung Galaxy S10+ is a device, specifically a mobile telephone device. Accordingly, to the extent, if any, that the preamble of claim 1 is deemed to be limiting, the Samsung Galaxy S10+ meets the language of the preamble of claim 1 of the '545 Patent.

70. Further, the Samsung Galaxy S10+ includes one or more SIM cards that support communication with GSM compatible cellular telephone networks. *See* the claim chart comparing the '545 patent to the Samsung Galaxy S10+, p. 2, of which a true and correct copy is attached herein as Exhibit "K." Accordingly, the Samsung Galaxy S10+ including one or more

SIM cards meets the claim limitations of the second element of claim 1, which recites "circuitry operable to communicate with a cellular network."

71. As previously mentioned, the Samsung Galaxy S10+ includes the Circuit which, in turn, includes a near field communication (NFC) antenna. An NFC antenna includes an RFID antenna, and emits RFID data that is received at an NFC capable payment terminal. *See* Exhibit K at p. 3. Accordingly, the Samsung Galaxy S10+ including the NFC antenna meets the claim limitations of the second element of claim 1, which recites "RFID circuitry operable to electrically couple the device to a payment terminal and to communicate RFID data to the payment terminal."

72. The Circuit includes the wireless charging coil and an Octa-Core processor for controlling most functionality of the Samsung Galaxy S10+, e.g., controlling the operation of the wireless charging coil. *See id.* at pp. 6 and 7. Accordingly, the Samsung Galaxy S10+ including the wireless charging coil and the Octa-Core processor meets the claim limitations of the third and fourth elements of claim 1, which recites "a coil" and "a processor for controlling the operation of the coil such that the coil is operable to electrically couple the device to the payment terminal and to communicate data in magnetic stripe data format to the payment terminal," respectively.

73. Further, the wireless charging coil is located internally (i.e., beneath the surface of the Samsung Galaxy S10+). *Id.* at p. 9. The coil as the part of the Circuit electrically couples the Samsung Galaxy S10+ to a payment terminal, and the user places the Circuit located at the back of the Samsung Galaxy S10+ against a card reader of the payment terminal. *Id.* at pp. 4-5. Accordingly, the Samsung Galaxy S10+ including the wireless charging coil meets the claim

limitations of fifth element of claim 1, which recites "wherein the coil is operable to electrically couple the device to the payment terminal from a position beneath a surface of the device."

74. Accordingly, the Samsung Galaxy S10+ including the wireless charging coil and the Octa-Core processor embodies all of the elements of, and therefore infringes, at least claim 1 of the '545 Patent.

COUNT V
BREACH OF CONTRACT BY SAMSUNG

75. Dynamics re-alleges and incorporates herein by reference in their entireties the allegations set forth in paragraphs 1-44, inclusive, of this Complaint.

76. On or about January 10, 2012, Samsung willfully and willingly entered into the NDA with Dynamics. *See* Exhibit F. The NDA prohibited Samsung from using, disseminating, or disclosing in any way the Confidential Information to any third party except to its employees.

77. On or about January 10 and 11, 2012, relying on the NDA, Jeffrey D. Mullen, the CEO of Dynamics, disclosed, shared, presented, and offered the Confidential Information, including at least prototypes, technologies, and/or proprietary information that are covered by the Patents-in-Suit.

78. Upon information and belief, Samsung intentionally and maliciously breached the Agreement by divulging and/or utilizing Dynamics's Confidential Information with a third-party LoopPay, a direct competitor of Dynamics.

79. Upon information and belief, LoopPay copied, utilized, and/or otherwise incorporated Confidential Information Jeff Mullen disclosed to Samsung under the NDA, in order to provide Samsung devices with Dynamics's magnetic emulation technology.

80. Upon information and belief, without the Confidential Information disclosed by Jeff Mullen under the NDA, neither LoopPay nor Samsung would have been able to incorporate Dynamics's magnetic emulation technologies into Samsung products.

81. Upon information and belief, Samsung purchased LoopPay in or about February 2015 for approximately $250,000,000 ("the Purchase Price"), and has made substantial revenue directly related to the Confidential Information Jeff Mullen disclosed to Samsung pursuant to the NDA. *See* Exhibit G.

82. As a result of Samsung's willful breach of the Agreement, Dynamics has suffered injury, including but not limited to, the loss of the Purchase Price and other economic losses associated with the substantial revenue directly related to the Confidential Information in an amount to be determined during the trial.

DEMAND FOR JURY TRIAL

83. Dynamics hereby demands a trial by jury of all issues triable of right before a jury.

PRAYER FOR RELIEF

WHEREFORE, Dynamics respectfully requests the following relief:

1. That this Court enter judgment in favor of Dynamics and against Samsung that Samsung has infringed the Patents-in-Suit either literally or under the doctrine of equivalents, and Samsung breached the Agreement;

2. That this Court award Dynamics all damages adequate to compensate Dynamics for the harm it has suffered as a result of Samsung's infringement of the Patents-in-Suit and breach of the NDA, but in no event less than the Purchase Price, a reasonable royalty, together with pre-and post-judgment interest and costs as fixed by the Court, pursuant to 35 U.S.C. § 284;

3. In the event that evidence is adduced through discovery or at trial that Samsung's infringement was willful and deliberate, that this Court award Dynamics enhanced damages pursuant to 35 U.S.C. § 284;

4. In the event that circumstances warrant a declaration that this case be declared to be exceptional, that this Court award Dynamics its reasonable attorneys' fees and expenses pursuant to 35 U.S.C. § 285;

5. That this Court award Dynamics's costs; and

6. That this Court award to Dynamics such other and further relief as this court deems to be just and proper.

Respectfully submitted,

Dated: July 12, 2019

/s/ *Robert W. Morris*

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