

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of:

**CERTAIN MOBILE DEVICES WITH
MULTIFUNCTION EMULATORS**

Inv. No. 337-TA-_____

**VERIFIED COMPLAINT UNDER SECTION 337
OF THE TARIFF ACT OF 1930, AS AMENDED**

COMPLAINANT:

Dynamics Inc.
492 Nixon Road
Cheswick, PA 15024
123.456.7890

COUNSEL FOR COMPLAINANT:

Robert W. Morris
Ojeiku C. Aisiku
ECKERT SEAMANS CHERIN & MELLOTT, LLC
10 Bank Street, Suite 700
White Plains, NY 10606
D: 914.286.6440
F: 914.949.5424
E-Mail: rwmorris@eckertseamans.com
oaisiku@eckertseamans.com

Deanna Tanner Okun
Paul M. Bartkowski
ADDUCI, MASTRIANI & SCHAUMBERG, LLP
1133 Connecticut Avenue, NW, 12th Floor
Washington, DC 20036
Telephone: (202) 467-6300
Facsimile: (202) 466-2006
E-Mail: okun@adduci.com
bartkowski@adduci.com

PROPOSED RESPONDENTS:

Samsung Electronics Co., Ltd
129, Samseong-Ro, Yoeongtong-Gu
Suwon, Gyeonggi 16677
Republic of Korea
Phone: +82-3-1200-0114

Samsung Electronics America, Inc.
85 Challenger Road
Ridgefield Park, NJ 07660-2118
Phone: 201.229.4000

CONTENTS

Contents	i
Documentary Exhibits	iii
Appendix List.....	iv
I. Introduction.....	1
II. The Parties	7
A. The Complainant – Dynamics.....	7
B. Proposed Respondents.....	8
III. The Technology and Products at Issue	9
A. Clear Statement in Plain English Describing the Categories of the Products Accused ...	9
B. Description of the Technology at Issue.....	9
C. Background Information on the Products and Processes at Issue.....	11
IV. The Patents-in-Suit.....	13
A. The '153 Patent	13
1. Identification of the Patent and Dynamics's Interest Therein	13
2. Non-Technical Description of the Patented Invention	14
3. Foreign Counterparts	14
B. The '100 Patent	16
1. Identification of the Patent and Dynamics's Interest Therein	16
2. Non-Technical Description of the Patented Invention	17
3. Foreign Counterparts	18
C. The '631 Patent	20
1. Non-Technical Description of the Patented Invention	20
2. Foreign Counterparts	21
D. The '545 Patent	23
3. Non-Technical Description of the Patented Invention	23
4. Foreign Counterparts	24
E. Licenses.....	26
V. Unlawful and Unfair Acts of Respondent.....	26
A. Infringement of the '153 Patent	27
B. Infringement of the '100 Patent	28
C. Infringement of the '631 Patent	30
D. Infringement of the '545 Patent	32

VI.	Specific Instances of Sale and Importation.....	33
VII.	Related Litigation.....	34
A.	District of New York.....	34
VIII.	Harmonized Tariff Schedule	35
IX.	Domestic Industry.....	35
A.	Technical Prong.....	36
B.	Economic Prong – Significant Investment in Plant, Equipment, Labor, and Capital	36
X.	Exclusion Order	38
XI.	Relief.....	39

DOCUMENTARY EXHIBITS

Exhibit	Description
1A	Samsung Electronics Co., Ltd Company Information
1B	Samsung Electronics America, Inc. Company Information
2A	Certified U.S. Patent No. 8,827,153
2B	Certified Assignment for U.S. Patent No. 8,827,153
3A	Certified U.S. Patent No. 10,032,100
3B	Certified Assignment for U.S. Patent No. 10,032,100
4A	Certified U.S. Patent No. 10,223,631
4B	Certified Assignment for U.S. Patent No. 10,223,631
5A	Certified U.S. Patent No. 10,255,545
5B	Certified Assignment for U.S. Patent No. 10,255,545
6	Declaration of Melisa Fernandez
A1-K2	Exhibits Showing Importation of Accused Products
7 (Confidential)	Declaration of Warren Weiner
8 (Confidential)	Domestic Industry Charts for Dynamics (U.S. Patent No. 8,827,153)
9A-9B (Confidential)	Domestic Industry Charts for Dynamics (U.S. Patent No. 10,032,100)
10A-10B (Confidential)	Domestic Industry Charts for Dynamics (U.S. Patent No. 10,223,631)
11 (Confidential)	Domestic Industry Charts for Dynamics (U.S. Patent No. 10,255,545)
12	Samsung Pay Infringement Chart (U.S. Patent No. 8,827,153)
13	Samsung Pay Infringement Chart (U.S. Patent No. 10,032,100)
14	Samsung Pay Infringement Chart (U.S. Patent No. 10,223,631)
15	Samsung Pay Infringement Chart (U.S. Patent No. 10,255,545)
16 (Confidential)	Intellectual Property Licensing Agreement

APPENDIX LIST

Appendix	Description
A	Prosecution History of U.S. Patent No. 8,827,153 (Certified Copy)
B	Technical References Cited in Prosecution History of U.S. Patent No. 8,827,153
C	Prosecution History of U.S. Patent No. 10,032,100 (Certified Copy)
D	Technical References Cited in Prosecution History of U.S. Patent No. 10,032,100
E	Prosecution History of U.S. Patent No. 10,223,631 (Certified Copy)
F	Technical References Cited in Prosecution History of U.S. Patent No. 10,223,631
G	Prosecution History of U.S. Patent No. 10,255,545 (Certified Copy)
H	Technical References Cited in Prosecution History of U.S. Patent No. 10,255,545

I. INTRODUCTION

1. Complainant Dynamics Inc. (“Dynamics” or “Complainant”) files this Verified Complaint for violation of Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”) and respectfully requests that the United States International Trade Commission (“ITC”) institute an investigation and grant relief to remedy the unlawful importation into the United States, the sale for importation into the United States, and/or the sale within the United States after importation, by the owner, importer or consignee of certain mobile devices with multifunction magnetic emulators, that infringe Dynamics’s United States patents in the manner described below.

2. Since the 2000s, Dynamics has designed, developed, manufactured, marketed, and sold in the United States (and worldwide) its innovative products – *e.g.*, payment cards for making payment transactions via magnetic emulation and near field communication (“NFC”) technology. Examples of some of Dynamics’s representative products are shown below:





3. The patented devices and methods developed by Dynamics are secure alternatives to traditional payment cards that include magnetic stripes, such as credit cards, debit cards, and even gift cards (“traditional payment cards”). Traditional payment cards are well known to have various drawbacks.

4. For instance, it is well known that traditional payment cards include a stripe attached to a rear surface of the cards. That stripe is called a magnetic stripe. The magnetic stripe is encoded with information corresponding to a payment account associated with the card. When a user swipes a magnetic card through a card reader at, for instance, a retail store checkout machine, the magnetic stripe generates a magnetic field that is received by the card reader. The magnetic field includes information that is read by the card reader, allowing the card reader to process the transaction by withdrawing funds from the associated payment account.

5. One of the practical problems with magnetic stripes is that they wear out over time. This occurs because when a user swipes a card through a card reader, the magnetic stripe must come into direct contact with an internal surface of the card reader. The stress of physically swiping the magnetic stripe across the internal surface of the card reader causes the magnetic stripe to get scratched, scuffed, and otherwise worn out. As this occurs over time, consumers and business employees often experience difficulties processing payment transactions. Often times,

people are forced to resort to awkward attempts to “hack” the cards (*e.g.*, wrapping the card in a plastic shopping bag, swiping the card multiple times at varying speeds, etc.) in an effort to get the cards to work.

6. One of the security problems with magnetic stripes is that they can also be relatively easily copied by criminals, allowing the criminals to forge fraudulent cards for their own use. This is often performed by placing fraudulent card readers on payment machines that read and record the magnetic stripe information directly off of the magnetic stripes.

7. Dynamics has developed improvements that have addressed these problems and more. For instance, Dynamics’s payment cards are essentially miniature computers that include antennas for generating electromagnetic fields that include the magnetic stripe data included in traditional payment cards. Those antennas are located beneath the surface of the payment card, meaning the “magnetic stripe” of Dynamics’s cards (which Dynamics often refers to as a “magnetic emulator”) does not need to come into direct contact with the card reader, and therefore is not susceptible to the stresses that cause magnetic stripes of traditional payment cards to wear out.

8. Another improvement provided by Dynamics’s technology is that they are substantially more secure than traditional payment cards. As stated before, Dynamics’s payment cards are essentially miniature computers, often including antennas, buttons, screens, and memory. Thus, Dynamics’s cards are able to be programmed to communicate with card readers in much more “dynamic” ways than traditional payment cards are capable of doing. For example, many of Dynamics’s cards may be programmed to provide varying data that corresponds to a payment account and is unique to a particular payment transaction. As a result of the varying data, criminals seeking to copy Dynamics’s payment cards are incapable of recording the necessary data to

successfully carry out their fraud. These improvements are just two of the many examples of improvements provided by Dynamics's patented devices, systems, and methods.

9. The patented devices, systems, and methods were developed by Dynamics over many years at great expense and effort, and represent numerous breakthroughs in technology consisting of devices and methods for executing financial transactions and storing financial account information. Those devices and methods employ, among other things, mobile devices that communicate with magnetic stripe readers and other payment terminals in order to carry out financial and other transactions. The innovations embodied in the patented devices and methods have been recognized not only in the United States, but worldwide, and are protected by numerous United States and foreign intellectual property rights, including rights deriving from patents and trademarks.

10. As described in more detail below, Dynamics has invested considerable resources in the development of a domestic industry with respect to the patented devices, systems, and methods. Dynamics is headquartered in a large manufacturing facility located in Cheswick, PA. Dynamics designs, develops, manufactures, markets, and sells the patented devices and methods from that location.

11. Prior to the introduction of Dynamics's patented devices and methods, there were no devices on the market that were made to communicate with payment terminals in the manners described in Dynamics's patents. Indeed, before Dynamics's patented devices and methods, no market existed for such products and services. Dynamics expended considerable resources, including millions of dollars, to create the market and to educate the public regarding payment cards and other devices with multifunction magnetic emulators as well to market and sell its devices and methods.

12. Since its introduction, Dynamics's technologies have become widely acclaimed by professionals and consumers both in the United States and internationally, and has garnered many media awards from sources such as the San Francisco Business Plan Competition, the McGinnis Venture Competition, DEMO, at which Dynamics was named DEMO God in 2010, Finovate, where Dynamics won the Best of Show award in 2010, 2011, 2012, and 2018, and the Consumer Electronics Show ("CES"), at which Dynamics won awards for Security Technologies, Computers, Embedded Technologies, and Technologies for a Better World at CES 2018.

13. The proposed respondents in this investigation are Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. (collectively "Samsung" or "Proposed Respondents").

14. The accused products are imported electronic devices with multifunction magnetic emulators, and specifically include, but are not limited to: (1) Samsung Galaxy S10, (2) Samsung Galaxy S10+, (3) Samsung Galaxy S10e, (4) Samsung Galaxy S10 5G, (5) Samsung Galaxy S9, (6) Samsung Galaxy S9+, (7) Samsung Galaxy S8, (8) Samsung Galaxy S8+, (9) Samsung Galaxy Note9, (10) Samsung Galaxy Note8, and (11) Samsung Gear S3 Frontier (collectively the "Accused Products").

15. As addressed herein, Samsung is engaged in unlawful and unfair acts of competition in violation of 19 U.S.C. § 1337(a)(1)(B) by selling within the United States for importation, selling for importation, and/or importing certain electronic devices that infringe claims of one or more of the following patents: United States Letters Patent Numbers (i) 8,827,153 ("the '153 patent"); (ii) 10,032,100 ("the '100 patent"); (iii) 10,223,631 ("the '631 patent"); and (iv) 10,255,545 ("the '545 patent") (collectively the "Asserted Patents").

16. The Accused Products are sold for importation into the United States, imported into the United States, and/or sold in the United States after importation by the Proposed Respondents.

The Accused Products are imported into the United States and sold to consumers through many channels, including the Proposed Respondents' retail stores, third party retail stores, and online outlets, including online stores operated by Proposed Respondents.

17. An industry exists in the United States relating to the articles protected by the Asserted Patents, as required by 19 U.S.C. § 1337(a)(2) and (3).

18. The following table summarizes Samsung's infringing products and infringed intellectual property.

Accused Product	Infringement Exhibits	'100 Patent Claims	'153 Patent Claims	'631 Patent Claims	'545 Patent Claims
Samsung Galaxy S10+	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S10	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S10e	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S10 5G	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S9+	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S9	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S8+	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy S8	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy Note9	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims
Samsung Galaxy Note8	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims

Accused Product	Infringement Exhibits	'100 Patent Claims	'153 Patent Claims	'631 Patent Claims	'545 Patent Claims
Samsung Gear S3 Frontier	Ex. 12-15	All Claims	1 and 5-8	1-7, 9-13, 19 and 21-22	All Claims

19. Dynamics is the owner of all substantial rights, including the right to bring suit of protectable patent rights (including the Asserted Patents) as described herein. Complainant seeks a limited exclusion order to prohibit Samsung from importing and selling within the United States products with multifunction magnetic emulators that infringe these patents. Complainant also seeks permanent cease and desist orders to halt the marketing, sales, and distribution of such imported infringing products in the United States by Samsung.

II. THE PARTIES

A. The Complainant – Dynamics

20. Dynamics is a corporation residing in Pennsylvania and incorporated under the laws of Delaware on November 29, 2007, with its principal place of business at 492 Nixon Road, Cheswick, PA 15024.

21. Dynamics is currently actively engaged in the design, development, assembly, and support of mobile devices utilizing magnetic emulation technology. Dynamics designs, develops, and commercializes products that incorporate the technology protected by the Asserted Patents, including through its various products. Much of this technology has been incorporated into cellular telephones, including products manufactured by Proposed Respondents or incorporated into Proposed Respondents' products.

22. Dynamics is the owner of all right, title, and interest in the Asserted Patents.

B. Proposed Respondents

23. Upon information and belief, Proposed Respondent Samsung Electronics Co., Ltd is a multinational corporation organized and existing under the laws of the Republic of Korea ("South Korea"), with its principal place of business at 129 Samseong-Ro, Yoeongtong-Gu, Suwon, Gyeonggi, South Korea. Samsung includes various wholly owned subsidiaries doing business in several locations throughout the United States, including the New York metropolitan area, California, and Texas, as follows below.

24. Upon information and belief, Proposed Respondent Samsung Electronics America, Inc. is a New York corporation with its principal place of business located at 85 Challenger Road, Ridgefield Park, NJ 07660.

25. Upon information and belief, Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. (collectively "Samsung" or "Proposed Respondents") manufacture, market, and sell electronic devices capable of communicating with magnetic card readers and other payment terminals.

26. Upon information and belief, Samsung's infringing products are manufactured outside of the United States and imported into and sold in the United States. For example, affixed to the packaging, as well as the rear surface of the Accused Products, are markings indicating that the devices are designed by Samsung and manufactured in various foreign countries, including, but not limited to, Vietnam.

27. Samsung's infringing products are available and sold in the United States through retailers nationwide, such as Amazon.com, Samsung.com, Newegg.com, AT&T retail stores nationwide, and Samsung retail stores nationwide.

28. Accordingly, Samsung is responsible for importing into the United States, selling for importation into the United States, and/or selling within the United States after importation Samsung's infringing products.

29. As set forth below, Samsung's products infringe at least one claim of the Asserted Patents.

III. THE TECHNOLOGY AND PRODUCTS AT ISSUE

A. Clear Statement in Plain English Describing the Categories of the Products Accused

30. The Accused Products are Samsung mobile devices, namely, mobile phones, wearables, and smartwatches. All of the Accused Products, which are configured to communicate with magnetic stripe readers for the purpose of executing financial and other transactions, utilize this patented technology, as described below.

B. Description of the Technology at Issue

31. The technology at issue in this investigation relates to certain mobile devices and systems (*e.g.*, certain payment cards and cellular telephones) for communicating with a payment terminal (*e.g.*, a magnetic stripe reader) for the purpose of executing a financial transaction.

32. Generally speaking, the technology at issue involves physical and digital payment cards. Specifically, Dynamics has developed payment cards that emulate the magnetic stripe of a traditional payment card. Dynamics's patented devices and systems methods include antennas that emit an electromagnetic field that is capable of being read by a magnetic card reader. These devices and systems are alternatives to traditional payment cards and mobile phones. As stated above, Dynamics's technology improves upon traditional payment cards through its internal circuitry that prevents wear and tear and other practical problems suffered by traditional payment cards. Dynamics's technology also improves upon traditional payment cards through its memory,

processors, and other components that allow for magnetic stripe data to be communicated dynamically to a magnetic card reader (*e.g.*, sending account and transaction information that is unique to each transaction), preventing illegal copying and other fraudulent behavior.

33. Dynamics's technology also improves upon more modern payment technologies, such as Apple Pay and other payment technologies that involve mobile devices that communicate with payment terminals via radio frequency identification ("RFID"). For instance, RFID communications require specialized equipment that is not available at every business. In contrast, Dynamics's payment technology provides new solutions that utilize existing widespread technology. Specifically, Dynamics's magnetic emulation technology involves a mobile device utilizing its antenna to emit an electromagnetic field in a substantially identical manner as traditional payment cards. This allows a mobile device utilizing Dynamics's technology to "convince" a card reader into believing that a traditional payment card has been "swiped" through the card reader, and processing the transaction as normal. As a result, Dynamics's technology may be used anywhere that traditional payment cards are accepted. In contrast, RFID-based technology, such as Apple Pay, is only available where the RFID technology is available, which is very limiting for consumers.

34. Samsung, after interacting with Dynamics and learning of certain intricacies of Dynamics's technology from Dynamics under the protection of a mutual nondisclosure agreement, began importing and/or selling mobile devices that employ Dynamics's patented technology. Samsung largely utilizes this circuitry through its Samsung Pay application, which Samsung provides already downloaded prior to importation, or in some instances encourages users to install after importation.

35. Upon information and belief, the Proposed Respondents maintain commercially significant volumes of imported infringing products in the United States.

C. Background Information on the Products and Processes at Issue

36. Prior to attending business school, inventor Jeffery D. Mullen sought to find a better solution for processing financial transactions and to improve upon payment cards commonly used by consumers (*e.g.*, credit cards, debit cards, etc.).

37. In the early 2000s, traditional payment cards were known to have various shortcomings. For instance, as noted above, these cards were lacking in several security features, and therefore consumers were at high risk of being victims of theft and fraud. Additionally, these cards generally were tied to a single account corresponding to a user. Thus, on a day-to-day basis, consumers had to physically carry every payment card associated with each payment account that they used on a daily basis on their persons.

38. The products at issue resolve these shortcomings through the use of the cards and devices that employ magnetic emulation as described in the Asserted Patents. These devices included internal circuitry that could not be copied, cloned, or otherwise reproduced nearly as easily as magnetic stripes on traditional payment cards. These devices also included internal memory for storing multiple payment methods, including information for multiple payment accounts and information for multiple payment methods (*e.g.*, gift cards, points cards, etc.).

39. As generally described above, magnetic emulation is a process by which a device communicates with another device via electromagnetic field emission. Devices, systems, and methods described in the Asserted Patents use magnetic emulation to emulate the magnetic fields generated by traditional payment cards. For instance, Dynamics's devices may be swiped, or may simply be placed in proximity of a read head of a magnetic card reader to "convince" the card

reader into “thinking” a traditional card has been swiped through the card reader’s read head (the “read head” is the portion that actually comes into physical contact with a traditional payment card and “reads” the magnetic stripe data generated by the traditional payment card), which allows Dynamics’s devices to perform the same function of traditional payment cards.

40. The benefits of the cards and devices developed by Dynamics and described in the Asserted Patents are numerous. For instance, these cards and devices are vastly more secure than common payment cards. As an example, one common fraudulent act committed using common payment cards is to connect a magnetic stripe recorder to a magnetic card reader. When a common payment card is swiped through the magnetic card reader, the magnetic stripe of the common payment card is recorded and copied, allowing fraudulent cards to be created. The cards and devices described in the Asserted Patents do not require a magnetic stripe, and thus cannot be physically copied for the purpose of magnetic emulation. The magnetic field emitted by the cards and devices described in the Asserted Patents is not generated by a physical magnetic stripe that can be copied, but rather circuitry and other internal components that generate the magnetic fields in accordance with specific programming.

41. Another benefit of the cards and devices described in the Asserted Patents is that these cards and devices are capable of transmitting dynamic information (information that can change between transactions, such as multi-digit codes associated with a financial account) and static information (information that remains the same between payment card transactions, such as personal account numbers). Thus, even if a person seeking to commit fraud were capable of copying the data associated with a particular transaction, the use of dynamic information prevents that person from obtaining vital information associated with a personal financial account, protecting sensitive information. These features were not available to the general public prior to

Dynamics's contributions to the art, and are now being copied by the Proposed Respondents, who, by various Accused Products, infringe the Asserted Patents, as will be shown in greater detail below.

IV. THE PATENTS-IN-SUIT

42. Dynamics's breakthrough technology enjoys significant intellectual property protection, including at least 100 issued United States Patents and at least 15 issued foreign patents. Each of the Asserted Patents described below is, to the best of Complainant's knowledge, information, and belief, infringed by at least one of the Accused Products.

43. The Asserted Patents relate to and cover the innovative features of, for instance, magnetic emulation, including the ability of a mobile device to communicate with a magnetic stripe reader to execute a financial transaction.

A. The '153 Patent

1. Identification of the Patent and Dynamics's Interest Therein

44. U.S. Patent No. 8,827,153 issued on September 9, 2014, and is entitled "System and Methods for Waveform Generation for Dynamic Magnetic Stripe Communications Devices." The inventors are Randy L. Rhoades and David J. Hartwick.

45. A certified copy of the '153 patent is attached as **Exhibit 2A**.

46. The '153 patent has 20 claims, three of which are independent claims, and Dynamics is asserting at least claims 1 and 5-8 against the Proposed Respondents.

47. Each of the inventors assigned his entire right, title, and interest in the '153 patent to Dynamics. A certified copy of the recorded assignment of the '153 patent transferring title to Dynamics is attached as **Exhibit 2B**.

48. The '153 patent is valid, enforceable, and currently in full force and effect. The '153 patent expires on October 23, 2032.

49. Pursuant to Commission Rule 210.2(c), the original of this Complaint is accompanied by a certified copy of the '153 patent at Ex. 2A, three additional copies of the file history of the '153 patent at **Appendix A**, and four copies of each document of record in the file history of the '153 patent at **Appendix B**.

2. Non-Technical Description of the Patented Invention

50. The '153 patent is generally directed to cards and devices that include magnetic emulators. In one embodiment, the '153 patent provides, for instance, a device that generates an electromagnetic field that corresponds to a particular user's payment account. That user's payment account may include multiple payment methods (*e.g.*, a credit card number, a debit card number, a gift card, etc.). The user may select on the device a particular payment method stored in the memory of the device (referred to in various dependent claims as a "digital representation"), as well as a payment plan (*e.g.*, using the associated payment account to pay to total cost of the transaction in eight, twelve, eighteen, or twenty-four monthly installments), and a purchase transaction may be carried out via the selected payment method.

3. Foreign Counterparts

51. In accordance with Commission Rule 210.2(a)(9)(v), the following is a list of foreign counterparts of the '153 patent:

Patent/Application No.	Country	Status
2008340226	Australia	Issued
2011218216	Australia	Abandoned - Rejected
2011255568	Australia	Abandoned - Rejected
2011283665	Australia	Abandoned - Rejected
2012240353	Australia	Abandoned - Rejected
2012253439	Australia	Abandoned - Rejected

Patent/Application No.	Country	Status
2008340226	Australia	Issued
2016201777	Australia	Issued
2016259296	Australia	Issued
2017201100	Australia	Abandoned - Rejected
2017201242	Australia	Abandoned - Rejected
2017204011	Australia	Abandoned - Rejected
2017219095	Australia	Pending
2018202290	Australia	Pending
2018202281	Australia	Pending
2018250532	Australia	Pending
2019200568	Australia	Pending
2710641	Canada	Issued
2789461	Canada	Issued
2798984	Canada	Pending
2805310	Canada	Pending
2831459	Canada	Pending
2831464	Canada	Pending
2835508	Canada	Pending
2864986	Canada	Pending
2983911	Canada	Pending
8865573.3	European Patent Office	Pending
11745157.5	European Patent Office	Pending
11784196.5	European Patent Office	Pending
11813282.8	European Patent Office	Pending
12767357.2	European Patent Office	Abandoned - Rejected
12783038.8	European Patent Office	Abandoned - Rejected
2805348	European Patent Office	Issued
16172188.1	European Patent Office	Pending
17173592.1	European Patent Office	Pending
17182452.7	European Patent Office	Pending
19179714.1	European Patent Office	Pending
602013023445	Germany	Issued
2805348	Great Britain	Issued
11103477.3	Hong Kong	Pending
13105777.3	Hong Kong	Pending
13103946.4	Hong Kong	Pending
13107319.4	Hong Kong	Pending
14101310.5	Hong Kong	Pending
14109459.9	Hong Kong	Pending

Patent/Application No.	Country	Status
15104492.8	Hong Kong	Issued
17104402.5	Hong Kong	Pending
18108599.8	Hong Kong	Pending
8586/DELNP/2013	India	Pending
9998/DELNP/2013	India	Pending
2805348	Ireland	Issued
5866302	Japan	Issued
2013-511340	Japan	Abandoned - Rejected
2013-522010	Japan	Abandoned - Rejected
2016-000177	Japan	Abandoned - Rejected
2016-153360	Japan	Abandoned - Rejected
2016-210782	Japan	Abandoned - Rejected
2017-195295	Japan	Pending
2018-044358	Japan	Pending
2018-202971	Japan	Pending
2019-000095	Japan	Pending
2805348	Luxembourg	Issued
10-2013-7029089	South Korea	Abandoned - Rejected
10-2013-7029089	South Korea	Pending
2805348	Sweden	Issued
2805348	Switzerland	Issued
2805348	Turkey	Issued

52. This list includes all of the counterparts to the '153 patent known to the Complainant. No other related applications are pending.

B. The '100 Patent

1. Identification of the Patent and Dynamics's Interest Therein

53. U.S. Patent No. 10,032,100 issued on July 24, 2018, and is entitled "Cards and Devices with Multifunction Magnetic Emulators and Methods for Using Same." The inventors are Jeffrey D. Mullen (founder and CEO of Dynamics), David Lambeth, and Bruce Cloutier.

54. The '100 patent generally relates to, among other things, cards and mobile devices having magnetic emulators operable to communicate information to magnetic stripe readers. The devices include a circuit and a processor for controlling the circuit. The circuit is operable to emit

an electromagnetic field and to electrically couple to, 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 located outside of the magnetic stripe reader.

55. A certified copy of the '100 patent is attached as **Exhibit 3A**.

56. The '100 patent has 20 claims, two of which are independent claims, and Dynamics is asserting all 20 claims against the Proposed Respondents.

57. Each of the inventors assigned his entire right, title, and interest in the '100 patent to Dynamics. A certified copy of the recorded assignment of the '100 patent transferring title to Dynamics is attached as **Exhibit 3B**.

58. The '100 patent is valid, enforceable, and currently in full force and effect. The '100 patent expires on December 19, 2028.

59. Pursuant to Commission Rule 210.2(c), the original of this Complaint is accompanied by a certified copy of the '100 patent at Ex. 3A, three additional copies of the file history of the '100 patent at **Appendix C**, and four copies of each document of record in the file history of the '100 patent at **Appendix D**.

2. Non-Technical Description of the Patented Invention

60. The '100 patent is generally directed to cards and devices that include magnetic emulators. In an embodiment, the '100 patent recites a device that includes a circuit and a processor. The circuit emits an electromagnetic field that allows the circuit to electrically couple, or "pair" with a magnetic stripe reader (*e.g.*, a conventional point of sale device typically found in retail stores). The processor controls the circuit, and by using the circuit's electromagnetic field, the device is able to communicate with the magnetic stripe reader, such as by transmitting payment account information to the magnetic stripe reader. The electromagnetic field is strong enough to

allow the communication between the device and the magnetic stripe reader to occur at a distance of at least a quarter of an inch between the device and the magnetic stripe reader.

3. Foreign Counterparts

61. In accordance with Commission Rule 210.2(a)(9)(v), the following is a list of foreign counterparts of the '100 patent:

Patent/Application No.	Country	Status
2008340226	Australia	Issued
2011218216	Australia	Abandoned - Rejected
2011255568	Australia	Abandoned - Rejected
2011283665	Australia	Abandoned - Rejected
2012240353	Australia	Abandoned - Rejected
2012253439	Australia	Abandoned - Rejected
2008340226	Australia	Issued
2016201777	Australia	Issued
2016259296	Australia	Issued
2017201100	Australia	Abandoned - Rejected
2017201242	Australia	Abandoned - Rejected
2017204011	Australia	Abandoned - Rejected
2017219095	Australia	Pending
2018202290	Australia	Pending
2018202281	Australia	Pending
2018250532	Australia	Pending
2019200568	Australia	Pending
2710641	Canada	Issued
2789461	Canada	Issued
2798984	Canada	Pending
2805310	Canada	Pending
2831459	Canada	Pending
2831464	Canada	Pending
2835508	Canada	Pending
2864986	Canada	Pending
2983911	Canada	Pending
8865573.3	European Patent Office	Pending
11745157.5	European Patent Office	Pending
11784196.5	European Patent Office	Pending
11813282.8	European Patent Office	Pending

Patent/Application No.	Country	Status
12767357.2	European Patent Office	Abandoned - Rejected
12783038.8	European Patent Office	Abandoned - Rejected
2805348	European Patent Office	Issued
16172188.1	European Patent Office	Pending
17173592.1	European Patent Office	Pending
17182452.7	European Patent Office	Pending
19179714.1	European Patent Office	Pending
602013023445	Germany	Issued
2805348	Great Britain	Issued
11103477.3	Hong Kong	Pending
13105777.3	Hong Kong	Pending
13103946.4	Hong Kong	Pending
13107319.4	Hong Kong	Pending
14101310.5	Hong Kong	Pending
14109459.9	Hong Kong	Pending
15104492.8	Hong Kong	Issued
17104402.5	Hong Kong	Pending
18108599.8	Hong Kong	Pending
8586/DELNP/2013	India	Pending
9998/DELNP/2013	India	Pending
2805348	Ireland	Issued
5866302	Japan	Issued
2013-511340	Japan	Abandoned - Rejected
2013-522010	Japan	Abandoned - Rejected
2016-000177	Japan	Abandoned - Rejected
2016-153360	Japan	Abandoned - Rejected
2016-210782	Japan	Abandoned - Rejected
2017-195295	Japan	Pending
2018-044358	Japan	Pending
2018-202971	Japan	Pending
2019-000095	Japan	Pending
2805348	Luxembourg	Issued
10-2013-7029089	South Korea	Abandoned - Rejected
10-2013-7029089	South Korea	Pending
2805348	Sweden	Issued
2805348	Switzerland	Issued
2805348	Turkey	Issued

62. This list includes all of the counterparts to the '100 patent known to the Complainant. No other related applications are pending.

C. The '631 Patent

63. U.S. Patent No. 10,223,631 was issued on March 5, 2019 and is entitled "Cards and Devices with Multifunction Magnetic Emulators and Methods for Using Same." The inventors are Jeffrey D. Mullen, David N. Lambeth, and Bruce Cloutier.

64. A certified copy of the '631 patent is attached as **Exhibit 4A**.

65. The '631 patent has 22 claims, one of which is an independent claim, and Dynamics is asserting at least claims 1-7, 9-13, 19 and 21-22 against the Proposed Respondents.

66. Each of the inventors assigned his entire right, title, and interest in the '631 patent to Dynamics. A certified copy of the recorded assignment of the '631 patent transferring title to Dynamics is attached as **Exhibit 4B**.

67. The '631 patent is valid, enforceable, and currently in full force and effect. The '631 patent expires on December 19, 2028.

68. Pursuant to Commission Rule 210.2(c), the original of this Complaint is accompanied by a certified copy of the '631 patent at Ex. 4A, three additional copies of the file history of the '631 patent at **Appendix E**, and four copies of each document of record in the file history of the '631 patent at **Appendix F**.

1. Non-Technical Description of the Patented Invention

69. The '631 patent generally relates to, among other things, mobile devices having magnetic emulators that allow the devices to communicate information to magnetic stripe readers. These devices also include buttons, which may take the form of traditional buttons or may be digitally represented on a touch screen. A notable feature of the systems and devices claimed in

the '631 patent is that a mobile device may generate electromagnetic fields that allow the mobile device to communicate with a card reader without actually being swiped or otherwise inserted into the card reader. Instead, the mobile device is capable of communicating with the card reader from outside the card reader.

2. Foreign Counterparts

70. In accordance with Commission Rule 210.2(a)(9)(v), the following is a list of foreign counterparts of the '631 patent:

Patent/Application No.	Country	Status
2008340226	Australia	Issued
2011218216	Australia	Abandoned - Rejected
2011255568	Australia	Abandoned - Rejected
2011283665	Australia	Abandoned - Rejected
2012240353	Australia	Abandoned - Rejected
2012253439	Australia	Abandoned - Rejected
2008340226	Australia	Issued
2016201777	Australia	Issued
2016259296	Australia	Issued
2017201100	Australia	Abandoned - Rejected
2017201242	Australia	Abandoned - Rejected
2017204011	Australia	Abandoned - Rejected
2017219095	Australia	Pending
2018202290	Australia	Pending
2018202281	Australia	Pending
2018250532	Australia	Pending
2019200568	Australia	Pending
2710641	Canada	Issued
2789461	Canada	Issued
2798984	Canada	Pending
2805310	Canada	Pending
2831459	Canada	Pending
2831464	Canada	Pending
2835508	Canada	Pending
2864986	Canada	Pending
2983911	Canada	Pending
8865573.3	European Patent Office	Pending

Patent/Application No.	Country	Status
11745157.5	European Patent Office	Pending
11784196.5	European Patent Office	Pending
11813282.8	European Patent Office	Pending
12767357.2	European Patent Office	Abandoned - Rejected
12783038.8	European Patent Office	Abandoned - Rejected
2805348	European Patent Office	Issued
16172188.1	European Patent Office	Pending
17173592.1	European Patent Office	Pending
17182452.7	European Patent Office	Pending
19179714.1	European Patent Office	Pending
602013023445	Germany	Issued
2805348	Great Britain	Issued
11103477.3	Hong Kong	Pending
13105777.3	Hong Kong	Pending
13103946.4	Hong Kong	Pending
13107319.4	Hong Kong	Pending
14101310.5	Hong Kong	Pending
14109459.9	Hong Kong	Pending
15104492.8	Hong Kong	Issued
17104402.5	Hong Kong	Pending
18108599.8	Hong Kong	Pending
8586/DELNP/2013	India	Pending
9998/DELNP/2013	India	Pending
2805348	Ireland	Issued
5866302	Japan	Issued
2013-511340	Japan	Abandoned - Rejected
2013-522010	Japan	Abandoned - Rejected
2016-000177	Japan	Abandoned - Rejected
2016-153360	Japan	Abandoned - Rejected
2016-210782	Japan	Abandoned - Rejected
2017-195295	Japan	Pending
2018-044358	Japan	Pending
2018-202971	Japan	Pending
2019-000095	Japan	Pending
2805348	Luxembourg	Issued
10-2013-7029089	South Korea	Abandoned - Rejected
10-2013-7029089	South Korea	Pending
2805348	Sweden	Issued
2805348	Switzerland	Issued

Patent/Application No.	Country	Status
2805348	Turkey	Issued

71. This list includes all of the counterparts to the '631 patent known to the Complainant. No other related applications are pending.

D. The '545 Patent

72. U.S. Patent No. 10,255,545 was issued on April 9, 2019 and is entitled "Cards and Devices with Multifunction Magnetic Emulators and Methods for Using Same." The inventors are Jeffrey D. Mullen, David N. Lambeth, and Bruce Cloutier.

73. A certified copy of the '545 patent is attached as **Exhibit 5A**.

74. The '545 patent has 16 claims, one of which is an independent claim, and Dynamics is asserting all 16 claims against the Proposed Respondents.

75. Each of the inventors assigned his entire right, title, and interest in the '545 patent to Dynamics. A certified copy of the recorded assignment of the '545 patent transferring title to Dynamics is attached as **Exhibit 5B**.

76. The '545 patent is valid, enforceable, and currently in full force and effect. The '545 patent expires on August 1, 2036.

77. Pursuant to Commission Rule 210.2(c), the original of this Complaint is accompanied by a certified copy of the '545 patent at Ex. 5A, three additional copies of the file history of the '545 patent at **Appendix G**, and four copies of each document of record in the file history of the '545 patent at **Appendix H**.

3. Non-Technical Description of the Patented Invention

78. The '545 patent generally relates to, among other things, mobile devices that are capable of communicating with a cellular network, and RFID reader, and a traditional payment card reader. Specifically, what is claimed in the '545 patent includes a mobile device that includes

circuitry for communicating with a cellular network, RFID circuitry, and an antenna. Notably, the antenna is located internally, which is in contrast to a traditional payment card, which includes a magnetic stripe on an external surface. Because the antenna is located internally, the antenna is capable of communicating with a payment terminal from a position beneath the surface of the mobile device. This provides the aforementioned benefit of preventing the general wear and tear and potential for fraud commonly experienced with traditional payment cards.

4. Foreign Counterparts

79. In accordance with Commission Rule 210.2(a)(9)(v), the following is a list of foreign counterparts of the '545 patent:

Patent/Application No.	Country	Status
2008340226	Australia	Issued
2011218216	Australia	Abandoned - Rejected
2011255568	Australia	Abandoned - Rejected
2011283665	Australia	Abandoned - Rejected
2012240353	Australia	Abandoned - Rejected
2012253439	Australia	Abandoned - Rejected
2008340226	Australia	Issued
2016201777	Australia	Issued
2016259296	Australia	Issued
2017201100	Australia	Abandoned - Rejected
2017201242	Australia	Abandoned - Rejected
2017204011	Australia	Abandoned - Rejected
2017219095	Australia	Pending
2018202290	Australia	Pending
2018202281	Australia	Pending
2018250532	Australia	Pending
2019200568	Australia	Pending
2710641	Canada	Issued
2789461	Canada	Issued
2798984	Canada	Pending
2805310	Canada	Pending
2831459	Canada	Pending
2831464	Canada	Pending

Patent/Application No.	Country	Status
2835508	Canada	Pending
2864986	Canada	Pending
2983911	Canada	Pending
8865573.3	European Patent Office	Pending
11745157.5	European Patent Office	Pending
11784196.5	European Patent Office	Pending
11813282.8	European Patent Office	Pending
12767357.2	European Patent Office	Abandoned - Rejected
12783038.8	European Patent Office	Abandoned - Rejected
2805348	European Patent Office	Issued
16172188.1	European Patent Office	Pending
17173592.1	European Patent Office	Pending
17182452.7	European Patent Office	Pending
19179714.1	European Patent Office	Pending
602013023445	Germany	Issued
2805348	Great Britain	Issued
11103477.3	Hong Kong	Pending
13105777.3	Hong Kong	Pending
13103946.4	Hong Kong	Pending
13107319.4	Hong Kong	Pending
14101310.5	Hong Kong	Pending
14109459.9	Hong Kong	Pending
15104492.8	Hong Kong	Issued
17104402.5	Hong Kong	Pending
18108599.8	Hong Kong	Pending
8586/DELNP/2013	India	Pending
9998/DELNP/2013	India	Pending
2805348	Ireland	Issued
5866302	Japan	Issued
2013-511340	Japan	Abandoned - Rejected
2013-522010	Japan	Abandoned - Rejected
2016-000177	Japan	Abandoned - Rejected
2016-153360	Japan	Abandoned - Rejected
2016-210782	Japan	Abandoned - Rejected
2017-195295	Japan	Pending
2018-044358	Japan	Pending
2018-202971	Japan	Pending
2019-000095	Japan	Pending
2805348	Luxembourg	Issued

Patent/Application No.	Country	Status
10-2013-7029089	South Korea	Abandoned - Rejected
10-2013-7029089	South Korea	Pending
2805348	Sweden	Issued
2805348	Switzerland	Issued
2805348	Turkey	Issued

80. This list includes all of the counterparts to the '545 patent known to the Complainant. No other related applications are pending.

E. Licenses

81. In February 2017, Dynamics entered into a licensing agreement with LG Electronics, Inc., agreeing to grant a nonexclusive license of various intellectual property belonging to Dynamics, including the Asserted Patents to LG. A true and correct copy of the licensing agreement is attached as **Exhibit 16 (Confidential)**. The Asserted Patents have not been the subject of any other licensing agreements.

V. UNLAWFUL AND UNFAIR ACTS OF RESPONDENT

82. The allegations contained in this Complaint include claimed violations of Section 337(a)(1)(B)(i) by the importation into the United States, the sale for importation, and/or the sale within the United States after importation of articles that infringe the Asserted Patents, either literally or under the doctrine of equivalents.

83. The infringement analyses contained in **Exhibits 12-15**, attached hereto, were undertaken on the infringing products in the form in which those products were imported into the United States, sold for importation into the United States, and/or sold within the United States after importation.

A. Infringement of the '153 Patent

84. Proposed Respondent Samsung violates Section 337 with respect to the '153 patent by, inter alia, importing into the United States, selling for importation into the United States, and/or selling within the United States after importation certain products that infringe claims of the '153 patent, including the Accused Products.

85. Dynamics has procured, or attempted to procure, samples of each of the infringing products in the United States.

86. Examination of Samsung's Accused Products demonstrates that those products directly infringe claims 1 and 5-8 of the '153 patent both literally and under the doctrine of equivalents. Charts comparing claim 1 of the '153 patent to the Accused Products are attached as **Exhibit 12**.

87. Upon information and belief, the Accused Products are devices that include processors and circuitry operable to emit electromagnetic fields, and electrically couple and transmit data to read heads located on magnetic stripe readers. In particular, all of the Accused Products include Samsung Pay functionality, which utilizes magnetic emulation technology, and thereby infringe claims 1 and 5-8 of the '153 patent. Upon information and belief, Samsung also knowingly induces and/or contributorily infringes claims 1 and 5-8 of the '153 patent.

88. Upon information and belief, Samsung has had knowledge of the '153 patent, and its infringement of the '153 patent since at least the filing of this Complaint. Upon information and belief, Samsung tests, demonstrates, or otherwise operates its Accused Products in the United States, thereby making and using the claimed devices directly infringing any asserted claims of the '153 patent. Similarly, Samsung's customers and the end users of the Accused Products test and/or operate the Accused Products in the United States in accordance with Samsung's

instructions contained in, for example, Samsung's user manuals and websites, thereby also making and using the claimed devices directly infringing the asserted claims of the '153 patent.

89. Samsung also contributes to infringement of the '153 patent by selling for importation into the United States, importing into the United States, and/or selling within the United States after importation the Accused Products and the non-staple constituent parts of those products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '153 patent. These products are known by Samsung to be especially made or especially adapted for use in the infringement of the '153 patent. Upon information and belief, Samsung also contributes to the infringement of the '153 patent by selling for importation into the United States after importation components of the Accused Products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '153 patent. These components are known by Samsung to be especially made or especially adapted for use in the infringement of the '153 patent. Specifically, upon information and belief, Samsung sells Accused Products, with knowledge that the devices are used for infringement, to resellers, retailers, and end users. End users of those products directly infringe the '153 patent.

B. Infringement of the '100 Patent

90. Proposed Respondent Samsung violates Section 337 with respect to the '100 patent by, *inter alia*, importing into the United States, selling for importation into the United States, and/or selling within the United States after importation certain products that infringe claims of the '100 patent, including the Accused Products.

91. Dynamics has procured, or attempted to procure, samples of each of the infringing products in the United States.

92. Examination of Samsung's Accused Products demonstrates that those products directly infringe claims 1-20 of the '100 patent both literally and under the doctrine of equivalents. Charts comparing claims 1 and 12 of the '100 patent to the Accused Products are attached as **Exhibit 13**.

93. Upon information and belief, the Accused Products are devices that include processors and circuitry operable to emit electromagnetic fields, and electrically couple and transmit data to read-heads located on magnetic stripe readers. In other words, all of the Accused Products include Samsung Pay functionality, specifically magnetic emulation technology, and thereby infringe claims 1-20 of the '100 patent. Upon information and belief, Samsung also knowingly induces and/or contributorily infringes claims 1-20 of the '100 patent.

94. Upon information and belief, Samsung has had knowledge of the '100 patent, and its infringement of the '100 patent since at least the filing of this Complaint. Upon information and belief, Samsung tests, demonstrates, or otherwise operates its Accused Products in the United States, thereby making and using the claimed devices directly infringing any asserted claims of the '100 patent. Similarly, Samsung's customers and the end users of the Accused Products test and/or operate the Accused Products in the United States in accordance with Samsung's instructions contained in, for example, Samsung's user manuals and websites, thereby also making and using the claimed devices directly infringing the asserted claims of the '100 patent.

95. Samsung also contributes to infringement of the '100 patent by selling for importation into the United States, importing into the United States, and/or selling within the United States after importation the Accused Products and the non-staple constituent parts of those products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '100 patent. These products are known by Samsung to be

especially made or especially adapted for use in the infringement of the '100 patent. Upon information and belief, Samsung also contributes to the infringement of the '100 patent by selling for importation into the United States after importation components of the Accused Products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '100 patent. These components are known by Samsung to be especially made or especially adapted for use in the infringement of the '100 patent. Specifically, upon information and belief, Samsung sells Accused Products, with knowledge that the devices are used for infringement, to resellers, retailers, and end users. End users of those products directly infringe the '100 patent.

C. Infringement of the '631 Patent

96. Respondent Samsung violates Section 337 with respect to the '631 patent by, *inter alia*, importing into the United States, selling for importation into the United States, and/or selling within the United States after importation certain products that infringe claims of the '631 patent, including the Accused Products.

97. Dynamics has procured, or attempted to procure, samples of each of the infringing products in the United States.

98. Examination of Samsung's Accused Products demonstrates that those products directly infringe claims 1-7, 9-13, 19 and 21-22 of the '631 patent both literally and under the doctrine of equivalents. Charts comparing claim 1 of the '631 patent to the Accused Products are attached as **Exhibit 14**.

99. Upon information and belief, the Accused Products are devices that include processors and circuitry operable to emit electromagnetic fields, and electrically couple and transmit data to read-heads located on magnetic stripe readers. In other words, all of the Accused

Products include Samsung Pay functionality, specifically magnetic emulation technology, and thereby infringe claims 1-7, 9-13, 19 and 21-22 of the '631 patent. Upon information and belief, Samsung also knowingly induces and/or contributorily infringes claims 1-7, 9-13, 19 and 21-22 of the '631 patent.

100. Upon information and belief, Samsung has had knowledge of the '631 patent, and its infringement of the '631 patent since at least the filing of this Complaint. Upon information and belief, Samsung tests, demonstrates, or otherwise operates its Accused Products in the United States, thereby making and using the claimed devices directly infringing any asserted claims of the '631 patent. Similarly, Samsung's customers and the end users of the Accused Products test and/or operate the Accused Products in the United States in accordance with Samsung's instructions contained in, for example, Samsung's user manuals and websites, thereby also making and using the claimed devices directly infringing the asserted claims of the '631 patent.

101. Samsung also contributes to infringement of the '631 patent by selling for importation into the United States, importing into the United States, and/or selling within the United States after importation the Accused Products and the non-staple constituent parts of those products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '631 patent. These products are known by Samsung to be especially made or especially adapted for use in the infringement of the '631 patent. Upon information and belief, Samsung also contributes to the infringement of the '631 patent by selling for importation into the United States after importation components of the Accused Products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '631 patent. These components are known by Samsung to be especially made or especially adapted for use in the infringement of the '631 patent. Specifically, upon

information and belief, Samsung sells Accused Products, with knowledge that the devices are used for infringement, to resellers, retailers, and end users. End users of those products directly infringe the '631 patent.

D. Infringement of the '545 Patent

102. Respondent Samsung violates Section 337 with respect to the '545 patent by, *inter alia*, importing into the United States, selling for importation into the United States, and/or selling within the United States after importation certain products that infringe claims of the '545 patent, including the Accused Products.

103. Dynamics has procured, or attempted to procure, samples of each of the infringing products in the United States.

104. Examination of Samsung's Accused Products demonstrates that those products directly infringe claims 1-16 of the '545 patent both literally and under the doctrine of equivalents. Charts comparing claims 1 and 9 of the '545 patent to the Accused Products are attached as **Exhibit 15**.

105. Upon information and belief, the Accused Products are devices that include processors and circuitry operable to emit electromagnetic fields, and electrically couple and transmit data to read-heads located on magnetic stripe readers. In other words, all of the Accused Products include Samsung Pay functionality, specifically magnetic emulation technology, and thereby infringe claims 1-16 of the '545 patent. Upon information and belief, Samsung also knowingly induces and/or contributorily infringes claim 1-16 of the '545 patent.

106. Upon information and belief, Samsung has had knowledge of the '545 patent, and its infringement of the '545 patent since at least the filing of this Complaint. Upon information and belief, Samsung tests, demonstrates, or otherwise operates its Accused Products in the United

States, thereby making and using the claimed devices directly infringing any asserted claims of the '545 patent. Similarly, Samsung's customers and the end users of the Accused Products test and/or operate the Accused Products in the United States in accordance with Samsung's instructions contained in, for example, Samsung's user manuals and websites, thereby also making and using the claimed devices directly infringing the asserted claims of the '545 patent.

107. Samsung also contributes to infringement of the '545 patent by selling for importation into the United States, importing into the United States, and/or selling within the United States after importation the Accused Products and the non-staple constituent parts of those products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '545 patent. These products are known by Samsung to be especially made or especially adapted for use in the infringement of the '545 patent. Upon information and belief, Samsung also contributes to the infringement of the '545 patent by selling for importation into the United States after importation components of the Accused Products, which are not suitable for substantial non-infringing use and which embody a material part of the invention described in the '545 patent. These components are known by Samsung to be especially made or especially adapted for use in the infringement of the '545 patent. Specifically, upon information and belief, Samsung sells Accused Products, with knowledge that the devices are used for infringement, to resellers, retailers, and end users. End users of those products directly infringe the '545 patent.

VI. SPECIFIC INSTANCES OF SALE AND IMPORTATION

108. Each of the mobile electronic devices identified above as infringing one or more of Dynamics's patents were imported, sold for importation, and/or sold after importation in the

United States by Samsung in violation of, *inter alia*, 19 U.S.C. §§ 1337(a)(1)(B)(i) and (a)(1)(A)(i).

109. Dynamics has obtained in the United States representative samples of each of Samsung's imported products. Specifically, as set forth in detail below, Dynamics has obtained in the United States samples of the Accused Products. A detailed description of the steps that Dynamics took in procuring those devices is set forth in the attached Declaration (and exhibits) of Melisa Fernandez at **Exhibit 6**. As shown in the supplemental exhibits attached to Exhibit 6, the Accused Products were all manufactured abroad and imported into the United States by or on behalf of Samsung. Exhibit 6 includes photographs of Samsung's representative infringing products. Dynamics is informed and believes that Samsung intends to continue to sell for importation, import, and/or sell after importation such infringing products.

110. Upon information and belief, Samsung's products are manufactured in various foreign countries, primarily Vietnam, and imported for sale into the United States. For example, as stated above, affixed to the packaging and/or the rear side of the Accused Products are markings that the devices are manufactured in one or more foreign countries, including, but not limited to, Vietnam.

VII. RELATED LITIGATION

A. District of New York

111. On July 12, 2019, Dynamics filed a civil action against Samsung in the Southern District of New York, Case. No. 1:19-cv-06479, in parallel to the filing of this Complaint, alleging that the Accused Products infringe the asserted patents as described herein. The Asserted Patents have not been the subject of litigation before any other court or agency.

VIII. HARMONIZED TARIFF SCHEDULE

112. The Harmonized Tariff Schedule item numbers for the mobile electronic devices at issue are at least 8517.12.00, 8517.18.00, 8517.62.00 (mobile phones, wearables, and smartwatches).

IX. DOMESTIC INDUSTRY

113. For at least the reasons discussed below, Dynamics's operations constitute a domestic industry and/or an industry in the process of being established under 19 U.S.C. § 1337(a). This domestic industry is directly related to components of Dynamics's covered products that practice the claims of the Asserted Patents (including, but not limited to, the Canadian Imperial Bank of Commerce payment card, the IndusInd payment card, and the Sumitomo Mitsui Banking Corporation payment card). The domestic industry in the process of being established under 19 U.S.C. § 1337(a) includes the Wallet Card, which is currently in development and expected for release by the end of 2020 by at least two different payment card issuers.

114. Dynamics's patents cover and relate to components of Dynamics's products, developed by Dynamics over many years and at great expense and effort. A disproportionately large amount of Dynamics's business is the development, design, manufacture, marketing, and sale of mobile electronic devices that utilize magnetic emulation.

115. Dynamics has made significant investments in property and equipment and employs a significant amount of labor and capital in the United States for the manufacture, design, research, development, testing, marketing, sales, and licensing of its covered products.

116. Since 2005, Dynamics has spent significant amount on developing, implementing, maintaining, advertising, and upgrading its covered products.

A. Technical Prong

117. Various components of Dynamics's covered products practice the claims of the Asserted Patents.

118. Claim charts demonstrating how Dynamics's covered products practice exemplary claims of the asserted patents are attached as **Exhibits 8-11 (Confidential)**. Exhibits 8-11 include photographs of Dynamics covered products.

119. The following table provides a summary of which components of Dynamics's covered products fall within the scope of the Asserted Patents.

Intellectual Property	Dynamics's Product(s)
'153 Patent, Claim 1	IndusInd Card ¹
'100 Patent, Claim 1	IndusInd Card; CIBC Card
'631 Patent, Claim 1	IndusInd Card; CIBC Card
'545 Patent, Claim 1	Wallet Card ²

B. Economic Prong – Significant Investment in Plant, Equipment, Labor, and Capital

120. Dynamics's current headquarters, principal place of business and manufacturing is located in Pittsburgh, Pennsylvania, USA (the "Dynamics Headquarters").

121. The Dynamics Headquarters is home to Dynamic's senior executive officers, as well as the research, engineering, design, development, clinical and consumer testing, manufacture, marketing, customer service, sales, consumer affairs, administrative management, and financial management functions of Dynamics's business.

¹ All of Dynamics's payment cards are covered by the '100 patent and the '631 patent. However, for the purposes of illustration only, the IndusInd Card and the CIBC Card are being presented as representative products of Dynamics's payment cards.

² The Wallet Card is a product line that Dynamics's is preparing to release. It will comprise two products: 1) a payment card for the C6 Bank in Brazil; and 2) a payment card for Emirates NBD in the United Arab Emirates. The term "Wallet Card" as that term is used in this Complaint refers to those two payment cards. Because those products have not yet been officially released, Dynamics is in the process of establishing a domestic industry with respect to the Wallet Card.

122. Dynamics has invested a significant amount equipping the manufacturing portion of the Dynamics Headquarters to produce components of Dynamics's covered products. Dynamics continues to make significant investments in plant and equipment with respect to each of Dynamics's covered products. Those investments in plant and equipment are dedicated to design, development, assembly, and various customer support activities focused on Dynamics's covered products.

123. Dynamics has made and continues to make significant investments in labor and capital with respect to each of Dynamics's covered products. Those investments in labor and capital are dedicated to design, development, assembly, and various customer support activities focused on Dynamics's covered products. Dynamics employs dozens of employees in the United States, including employees in manufacturing and operations, research and development, sales and marketing, and general and administrative functions.

124. Dynamics's United States-based research and development employees have responsibility for designing the products of, and processes for, Dynamics's covered products. Significant sums were invested in research and development, and all of the costs were invested in the United States.

125. Dynamics's investment in its plants, equipment, and labor in the United States supports each of the patents asserted in this investigation. The substantial investment of millions of dollars incurred by Dynamics in developing, acquiring, and installing the technology and equipment that is utilized in its manufacturing facility is devoted solely to producing Dynamics's various products, which are embodied in the patents asserted herein.

126. Dynamics further engages in exploitation of the Asserted Patents through its substantial domestic investments in licensing the Asserted Patents. Products developed by licensees of the Asserted Patents are covered by at least one claim of each of the Asserted Patents.

127. A significant amount of Dynamics's technical activities directed to Dynamics's covered products takes place in Dynamics's Pittsburgh, Pennsylvania headquarters.

128. Dynamics's investments and activities are significant and substantial both in absolute terms and relative to Dynamics's overall operations, taking into account the nature of such expenditures in the electronic financial transactions industry, Dynamics's relative size, and the relative importance of Dynamics's domestic operations compared to its overseas activities.

129. As noted above, certain Dynamics covered products are in development. Investments related to those products, to the extent the Commission determines that they are not allocable to Dynamics's existing domestic industry, constitute an industry in the process of being established under Section 337(a)(2).

130. The activities described above and Dynamics's investments made to support those activities are explained in detail in the Declaration of Warren Weiner, attached as **Exhibit 7 (Confidential)**.

X. EXCLUSION ORDER

131. On information and belief, there are many other infringing devices similar to those of Samsung's specifically identified in this Complaint.

132. Because the Proposed Respondents continue to develop, manufacture, and import into the United States additional infringing products not listed in this Complaint, a limited exclusion order against Samsung as to all products that may infringe the Asserted Patents is necessary to fully protect Dynamics, the domestic industry, and the consuming public.

XI. RELIEF

133. By reason of the foregoing, Dynamics requests that the United States International Trade Commission:

a. institute an immediate investigation pursuant to Section 337, as amended, with respect to violations of that section based on the unlawful importation into the United States, the sale for importation or the sale within the United States after importation by Samsung of certain mobile electronic devices with magnetic emulators that infringe claims of the valid and enforceable Asserted Patents.

b. schedule and conduct a hearing on said unlawful acts and, following said hearing;

c. issue a limited exclusion order under 19 U.S.C. § 1337(d) to exclude the importation and entry into the United States of mobile electronic devices with magnetic emulators that infringe the claims of the Asserted Patents;


d. issue a permanent cease and desist order to Samsung under 19 U.S.C. § 1337(f) directing Samsung to cease and desist the importation, sale, offering for sale, marketing, advertising, distribution, transfer or solicitation of United States distributors, dealers, agents, or the like of imported products that infringe the Asserted Patents;

e. impose a bond upon Samsung who continues to import infringing products during the 60-day Presidential Review period per 19 U.S.C. § 1337(j); and

f. grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Dated: July 12, 2019

Respectfully submitted,



Robert W. Morris

Ojeiku C. Aisku

ECKERT SEAMANS CHERIN & MELLOTT, LLC

10 Bank Street, Suite 700

White Plains, NY 10606

Telephone: (914) 286-6440

Facsimile: (914) 949-5424

E-Mail: rwmorris@eckertseamans.com

oisiku@eckertseamans.com

Deanna Tanner Okun

Paul M. Bartkowski

ADDUCI, MASTRIANI & SCHAUMBERG, LLP

1133 Connecticut Avenue, NW, 12th Floor

Washington, DC 20036

Telephone: (202) 467-6300

Facsimile: (202) 466-2006

E-Mail: DYNAMICS-001@adduci.com

Counsel for Complainant Dynamics Inc.