UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of	
CERTAIN DIGITAL TELEVISIONS AND COMPONENTS THEREOF	**Investigation No. 337-TA-___**

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

Complainant:

Vizio, Inc.
39 Tesla
Irvine, California 92618
(949) 428-2525

Counsel For Complainant:

Blaney Harper
JONES DAY
51 Louisiana Avenue, N.W.
Washington, D.C. 20001-2113
Telephone: (202) 879-3939
Facsimile: (202) 626-1700

Proposed Respondents:

Coby Electronics Corp.
1991 Marcus Avenue
Suite 301
Lake Success, New York 11042
Telephone: (718) 416-3300
Facsimile: (718) 416-3305

Curtis International, Inc.
315 Attwell Drive
Etobicoke, Ontario M9W 5C1
Telephone: (416) 674-2123
Facsimile: (416) 674-2135

ESI Enterprises, Inc.
d/b/a Viore
7801 Hayvenhurst Avenue
Van Nuys, California 91406
Telephone: (818) 887-0700
Facsimile: (818) 702-6344

MStar Semiconductor, Inc.
4F-1, No. 26, Tai-Yuan St.,
ChuPei Hsinchu Hsien,
Taiwan 302, R.O.C.

ON Corp US, Inc.
4370 La Jolla Village Drive, Suite 400
San Diego, California 92122

Renesas Electronics Corporation
1753 Shimonumabe, Nakahara-Ku, Kawasaki,
Kanagawa 211-8668, Japan

Renesas Electronics America, Inc.
2880 Scott Boulevard
Santa Clara, CA 95050-2554
Telephone: (408) 588-6000

Sceptre, Inc.
16800 East Gale Avenue
City of Industry, California 91745
Telephone: (626) 369-3698
Facsimile: (626) 369-3488

Westinghouse Digital, LLC
500 North State College Boulevard
Suite 1300
Orange, California 92868
Telephone: (714) 221-9800
Facsimile: (714) 221-9838

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I. INTRODUCTION

1. Complainant VIZIO, Inc. ("Vizio") respectfully requests that the United States International Trade Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 C.F.R. § 1337, based upon the unlawful importation into the United States of certain digital televisions and components thereof that infringe one or more claims of each of United States Patent No. 5,511,096 ("the '096 patent"), United States Patent No. 5,621,761 ("the '761 patent"), United States Patent No. 5,703,887 ("the '887 patent"), United States Patent No. 5,745,522 ("the '522 patent"), and United States Patent No. 5,511,082 ("the '082 patent") (collectively, the "Asserted Patents"). These claims include, but are not limited to, claims 22-25 of the '096 patent, claim 11 of the '761 patent, claims 22-23 of the '887 patent, claims 1-15 of the '522 patent, and claim 1 of the '082 patent (collectively, the "Asserted Claims").

2. The proposed respondents have engaged in unfair acts in violation of Section 337 through the unlicensed sale for importation, importation, and/or sale after importation, by or on their behalf, of infringing digital televisions and components thereof. Examples of the accused products include, but are not limited to, the Coby TVTF-TV3225, the Curtis LCD2443A, the Sceptre E420BV-F120, the ESI Viore LC26VH56, the ON Corp RCA LED24A45RQ, and the Westinghouse TX-42F810G digital televisions; and the MStar MSD319EL-LF, MSB1501-LF, and MSD318QT-LF, and Renesas R8J66977BG and R8A66983BG components. Additional discovery may lead to the identification of additional accused products.

3. A domestic industry as contemplated under Section 337(a)(2) and (3) exists or is in the process of being established with respect to products that are protected by one or more claims of each of the Asserted Patents.

4. Pursuant to Section 337(d), Vizio seeks an order excluding from entry into the United States the infringing digital televisions and components thereof. Vizio further seeks a cease and desist order pursuant to Section 337(f) compelling the proposed respondents to stop the promotion, marketing, advertising, demonstrating, testing, or warehousing of inventory of the infringing products for distribution and/or sale within the United States.

II. COMPLAINANT

5. Complainant Vizio, Inc. is a corporation organized under the laws of the state of California, with its principal place of business at 39 Tesla, Irvine, California 92618.

6. Vizio is a leading seller of LCD television displays in the United States. In 2009, Vizio became the #1 selling brand of LCD flat panel high definition televisions ("HDTV") in North America, and became the first American brand in over a decade to lead television sales in the United States. Since 2007, Vizio HDTV shipments remain in the top ranks in the United States and were again #1 in Q1, 2009 for the LCD flat panel HDTV market. Vizio has won numerous awards including a #1 ranking in the Inc. 500 for Top Companies in Computers and Electronics, Fast Company's 6th Most Innovative CE Company of 2009, and made the lists of Ad Age's Hottest Brands, Good Housekeeping's Best Big-Screens, CNET's Top 10 Holiday Gifts and PC World's Best Buy, among others.

7. Vizio and its licensees have made and continue to make significant investments in plant and equipment, significant investments in the employment of labor and capital, and substantial investments in the exploitation of the Asserted Patents, including after-market customer service and technical support. Vizio has also made significant investments in the licensing of the Asserted Patents.

III. PROPOSED RESPONDENTS

A. Coby Electronics Corporation

8. Upon information and belief, Coby Electronics Corp. ("Coby") is a corporation organized under the laws of the State of New York, with its principal place of business at 1991 Marcus Avenue, Suite 301, Lake Success, New York 11042. Upon information and belief, Coby manufactures consumer electronic devices, such as digital televisions, in China and imports them into the United States. Upon information and belief, Coby has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and components thereof. Further information regarding Coby's operations may be found in Exhibit 1.

B. Curtis International, Inc.

9. Upon information and belief, Curtis International, Inc. ("Curtis") is a corporation organized under the laws of the country of Canada, with its principal place of business at 315 Atwell Drive, Etobicoke, Ontario M9W 5C1, Canada. Upon information and belief, Curtis manufactures televisions systems in China and imports them into the United States. Upon information and belief, Curtis has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and components thereof. Further information regarding Curtis' operations may be found in Exhibit 2.

C. ESI Enterprises, Inc. d/b/a Viore

10. Upon information and belief, ESI Enterprises, Inc. ("ESI") is a corporation organized under the laws of the State of California, with its principal place of business at 7801 Hayvenhurst Avenue, Van Nuys, California 91406. Upon information and belief, ESI conducts business under the fictitious business name "Viore." A copy of ESI's Fictitious Name Statement filed with the State of California is attached to this Complaint as Exhibit 3. Upon information and belief, ESI re-labels televisions manufactured in China and imports them into the United States. Upon information and belief, ESI d/b/a Viore has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and components thereof. Further information regarding ESI's operations may be found in Exhibit 4.

D. Sceptre, Inc.

11. Upon information and belief, Sceptre, Inc. ("Sceptre") is a corporation organized under the laws of the State of California, with its principal place of business at 16800 East Gale Avenue, City of Industry, California 91745. Upon information and belief, Sceptre manufactures display devices in China and imports them into the United States. Upon information and belief, Sceptre has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and

components thereof. Further information regarding Sceptre's operations may be found in Exhibit 5.

E. MStar Semiconductor, Inc.

12. Upon information and belief, MStar Semiconductor, Inc. ("MStar") is a corporation organized under the laws of the country of Taiwan, with its principal place of business at 4F-1, No. 26, Tai-Yuan St., ChuPei Hsinchu Hsien, Taiwan 302, R.O.C. Upon information and belief, MStar manufactures semiconductor components in Taiwan, which are incorporated into downstream consumer electronic devices that are imported into the United States. Upon information and belief, MStar has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing QAM decoders. Further information regarding MStar's operations may be found in Exhibit 6.

F. ON Corp US, Inc.

13. Upon information and belief, ON Corp US, Inc. ("ON Corp") is a corporation organized under the laws of the State of Delaware, with its principal place of business at 7240 La Jolla Village Drive, San Diego, California 92122. Upon information and belief, ON Corp manufactures consumer electronic devices in China and imports them into the United States at least under the RCA brand. Upon information and belief, ON Corp has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and components thereof. Further information regarding ON Corp's operations may be found in Exhibit 7.

G. Renesas Electronics Corporation

14. Upon information and belief, Renesas Electronics Corporation ("Renesas") is a corporation organized under the laws of the country of Japan, with its principal place of business at 1753 Shimonumabe, Nakahara-Ku, Kawasaki, Kanagawa 211-8668, Japan. Upon information and belief, Renesas manufactures semiconductor components in Japan, which are incorporated into downstream consumer electronic devices that are imported into the United States. Upon information and belief, Renesas has manufactured, assembled, sold for importation, imported,

and/or sold after importation into the United States, by or on its behalf, certain infringing QAM decoders. Further information regarding Renesas' operations may be found in Exhibit 8.

H. Renesas Electronics America, Inc.

15. Upon information and belief, Renesas Electronics America, Inc. ("Renesas America") is a corporation organized under the laws of the state of California, with its principal place of business at 2880 Scott Boulevard, Santa Clara, CA 95050-2554. Upon information and belief, Renesas America is the American subsidiary of Renesas Electronics Corporation, and is responsible for, among other things, supporting Renesas's customers in the Americas. Upon information and belief, Renesas America has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing QAM decoders. Further information regarding Renesas America's operations may be found in Exhibit 9.

I. Westinghouse Digital, LLC

16. Upon information and belief, Westinghouse Digital, LLC ("Westinghouse") is a corporation organized under the laws of the State of Delaware, with its principal place of business at 500 North State College Boulevard, Suite 1300, Orange, California 92868. Upon information and belief, Westinghouse manufactures digital televisions in China and imports them into the United States. Upon information and belief, Westinghouse has manufactured, assembled, sold for importation, imported, and/or sold after importation into the United States, by or on its behalf, certain infringing digital televisions and components thereof. Further information regarding Westinghouse's operations may be found in Exhibit 10.

IV. The Patented Technology and Products At Issue

17. The general technology at issue in this Complaint involves reception of digital television ("TV") signals via cable delivery systems, such as those provided by cable television providers. More specifically, all of the Asserted Patents relate to the decoding and demodulation of digital TV signals transmitted via digital cable TV delivery system to a receiver. For the purposes of this Section, the digital TV signals are supplied over a coaxial cable directly to the QAM tuner in a digital television.

18. A digital TV signal is a highly compressed stream of digital data containing video, audio and various types of signaling and control information for a TV. This stream is placed onto a radio frequency (RF) "carrier wave" by modulating the carrier wave – varying its amplitude and phase according to the data intended to be sent. The digital data stream consists of literally millions of bits (0's or 1's) per second. The broadcast signal carrying the digital data stream may be sent over the air, or through a cable connection (*e.g.*, wired) connected to a TV receiver. The Asserted Patents relate to digital signals sent via a wired connection.

19. At millions of bits per second, the transmission of a digital TV data stream must be extremely fast. One technique for efficiently transmitting such a high data rate broadcast over a carrier wave on cable is known as Quadrature Amplitude Modulation ("QAM"), described further below. In addition to being fast, the digital TV data stream must also have an extremely low error rate to produce a high quality TV display. In other words, the data recovered must faithfully represent the data that was sent with few errors to produce a high quality TV display. This low error rate must be achieved even though the act of transmitting the data introduces errors into the digital data. To achieve the low error rate (well below parts per million), information is added (*i.e.*, coded) into the transmitted digital data stream that permits the TV receiver to accurately reconstruct the originally transmitted data, even if errors have been introduced during transmission.

20. The Asserted Patents all involve various techniques for reception of digital cable TV signals that is both fast and has a low error rate, which includes using QAM as implemented in all digital cable TV delivery systems throughout the United States.

21. Each of the digital televisions identified in this Complaint utilize QAM decoders that infringe the Asserted Patents.

V. The Asserted Patents

22. At issue in this Complaint is that each of the proposed Respondents has infringed five United States Patents: the '096, '761, '887, '522 and '082 patents. The '096 patent describes a system for demodulating a QAM encoded carrier wave signal and decoding that signal into digital data representing an image to be displayed. The '761, '887, '522, and '082

patents describe enhancements to such as system. Each of the Asserted Patents is described in further detail below.

A. The '096 Patent

1. Identification and Ownership

23. The '096 patent is entitled "Quadrature Amplitude Modulated Data for Standard Bandwidth Television Channel." The '096 patent duly and legally issued on April 23, 1996, in the names of Zheng Huang and Chris Heegard, based on Application No. 184,499 filed on January 18, 1994. A certified copy of the '096 patent is attached hereto as Exhibit 11.

24. Vizio is the owner by assignment of all rights, title, and interest in the '096 patent. A certified copy of the assignment of the '096 patent to Vizio is attached hereto as Exhibit 12.

25. A certified copy and three additional copies of the prosecution history of the '096 patent, and four copies of each reference cited therein, are attached hereto as Appendices A and B, respectively.

2. Non-Technical Description of the Patented Invention[1]

26. The '096 patent generally discloses methods and apparatus for transmitting and receiving Quadrature Amplitude Modulated (QAM) digital television signals. The '096 patent discloses a system for encoding a video bit stream with a "concatenated code," meaning the stream is encoded by one "outer" encoder, and that output is encoded again by a different "inner" encoder. In the '096 patent, the stream is first encoded by a block coder such as the well known Reed Solomon code, and its output is encoded again by a trellis coder. This concatenated (*i.e.*, nested) code is itself a digital bit stream that is resilient to transmission errors. This digital bit stream is then modulated into the QAM signal to be transmitted over a channel. To reverse this modulation, the '096 patent also discloses a system combining a trellis decoder with an outer decoder to recover the original video data stream.

[1] The non-technical descriptions of the inventions for all the patents asserted herein are presented to give a general background of those inventions. None of these statements is, or is intended to be, used for purposes of patent claim interpretation. Vizio presents these statements subject to and without waiver of its right to explain and otherwise argue that claim terms should be construed in accordance with record evidence and applicable authority.

27. In the '096 patent, the trellis coder achieves improved performance by a process known as puncturing convolutional codes. A convolutional code is a type of code used in a trellis coder or decoder. It encodes the data stream using a memory that holds the most recently inputted bit, as well as some number of previous bits. The output is a predetermined combination of the bits currently in the memory. The specific combination efficiently represents the decoded data.

28. A convolutional code has a certain rate that corresponds to the number of bits input relative to the number of bits output. An example of a convolutional code rate is ½, where two bits are output for every one input bit.

29. Puncturing involves deleting some of the output bits of a lower rate convolutional code, resulting in a higher rate code. For example, the input of 4 uncoded bits could result in the output of 5 coded bits ($^4/_5$ rate), instead of 8 bits had the code not been punctured (½ rate). In other words, deleting the right bits results in a output stream that is only 125% the size of the input stream ($^4/_5$), instead of 200% the size of the input stream (½). The result is a digital bit stream that uses less bandwidth than its non-punctured counterpart. Since digital TV signals require high bandwidth, the '096 patent describes using a punctured convolutional code in order to meet this demand for bandwidth in an efficient and accurate manner.

30. The use of concatenated coding as described in the '096 patent means that a high bandwidth digital TV signal can be transmitted with reduced error. The outer encoder and outer decoder may include block codes, while the inner trellis coder and inner trellis decoder may include convolutional codes, as described above. Generally speaking, block codes accept a group of bits input at a time (a block), and output a different block of bits using a translation table or set formula. One conventional example of a block code is referred to as a Reed-Solomon code. Both trellis coding and block coding both have qualities that thwart the introduction of certain types of errors. The combination of the two as provided in the '096 patent permits the system to employ the positive qualities of both types, resulting in a very low bit error rate at the output.

3. Foreign Counterparts

31. The following patents claim priority to the '096 patent: AU 679591 (B1), CA 2140484 (C), EP 0663775 (B1), ES 2156591 (T3), JP 3119290 (B2) and NO 315020 (B1).

32. The following published patent applications claim priority to the '096 patent: AT 200721 (T), AU 1026895 (A), CA 2140484 (A1), DE 69520696 (T2), EP 0663775 (A2), EP 0663775 (A3), JP 7288556 (A), MX 9500541 (A) and NO 950190 (A).

33. Other than those listed above, there are no foreign patents or patent applications that correspond to the '096 patent that have been filed, abandoned, withdrawn, or rejected.

B. The '761 Patent

1. Identification and Ownership

34. The '761 is entitled "Rotationally Invariant Trellis Coding Incorporating Transparent Binary Codes." The '761 patent duly and legally issued April 15, 1997, in the name of Chris Heegard, based on Application No. 353,064 filed on Dec. 9, 1994. A certified copy of the '761 patent is attached hereto as Exhibit 13.

35. Vizio is the owner by assignment of all rights, title, and interest in the '761 patent. A certified copy of the assignment of the '761 patent to Vizio is attached hereto as Exhibit 14.

36. A certified copy and three additional copies of the prosecution history of the '761 patent, and four copies of each reference cited therein, are attached hereto as Appendices C and D, respectively.

2. Non-Technical Description of the Patented Invention

37. The '761 patent generally discloses methods and apparatus for transmitting and receiving digital television signals. Recalling that the QAM signal results from varying the amplitude and phase of a carrier wave, the '761 patent teaches using a particular precoder and postcoder to implement certain algorithms to correct for the possibility that the receiver misinterpreted the phase. This combination of precoder at the transmitter and postcoder at the receiver correct the phase of the received signal to reduce errors. The components enhance systems such as disclosed in the '096 patent to provide them with the ability to decode the

transmitted signals even in the presence of phase variations. This feature is called "rotational invariance."

38. When decoding a QAM signal, it is important to correctly separate the RF carrier wave into its in-phase ("I") and quadrature ("Q") components. In general, the phase angle of the transmitted carrier is unknown at the receiver and must be estimated. Even in the absence of noise there is typically a phase ambiguity – that is, to a receiver, the I signal looks like the Q signal, which follows by 90°, and the Q signal looks like an inverted I signal, which follows by 90°. Moreover, the signal recovered at the receiver is not perfect since the channel (*i.e.* the cable wire over which the signal is sent) introduces impairments. Because of these uncertainties, the receiver may mistake an I signal for a Q signal, obscuring the correct detection of the QAM symbol, which is the data value represented by the combination of the I and Q signals at that moment in time.

39. The '761 patent relates to how to overcome phase ambiguity for trellis coded QAM modulation. At the transmitter, a precoder notes the least significant bits of the QAM symbol's I and Q coordinates, and then determines the "difference" between this pair of bits and the corresponding bits for the previous symbol transmitted. Instead of transmitting the pair of bits with the rest of the QAM symbol however, the transmitter transmits this difference instead. At the receiver, a postcoder receives this difference, and adds it to the least significant I and Q bits from the previous received symbol, thus reconstituting the current symbol. Because this difference is not dependent on a known reference such as the phase angle, the result is that the signal can now be recovered regardless of whether the receiver correctly identified the I and Q signals. This allows the receiver to recover the I and Q signals without regard to their phase.

3. Foreign Counterparts

40. The following patents claim priority to the '761 patent: CA 2164174 (C), CN 1106102 (C) and JP 3685269 (B2).

41. The following published patent applications claim priority to the '761 patent: CA 2164174 (A1), CN 1139319 (A), EP 0716529 (A2), EP 0716529 (A3) and JP 8265386 (A).

42. Other than those listed above, there are no foreign patents or patent applications that correspond to the '761 patent that have been filed, abandoned, withdrawn, or rejected.

C. The '887 Patent

1. Identification and Ownership

43. The '887 patent is entitled "Synchronization and Error Detection in a Packetized Data Stream." The '887 patent duly and legally issued on December 30, 1997, in the name of Chris Heegard, Andrew J. King, Sydney Lovely, and Thomas J. Kolze, based on Application No. 363,252 filed on December 23, 1994. A certified copy of the '887 patent is attached hereto as Exhibit 15.

44. Vizio is the owner by assignment of all rights, title, and interest in the '887 patent. A certified copy of the assignment of the '887 patent to Vizio is attached hereto as Exhibit 16.

45. A certified copy and three additional copies of the prosecution history of the '887 patent, and four copies of each reference cited therein, are attached hereto as Appendices E and F, respectively.

2. Non-Technical Description of the Patented Invention

46. The '887 patent generally discloses methods and apparatus for transmitting and receiving digital television signals. The '887 patent provides for the synchronization of a signal to be transmitted from a transmitter to a receiver, and further provides for error detection at the receiver. This disclosed system is added to a system such as described by the '096 patent to aid in recovering the transmitted signal.

47. The stream of 1's and 0's in a digital TV broadcast signal is grouped in many packets that have a format consistent with the Motion Picture Experts Group (MPEG)-2 standard. The MPEG-2 standard identifies the various functions to which the bits in the stream correspond. The '887 patent modifies the data in the packets such that a synchronization portion, or sync byte, of an MPEG-2 packet is replaced with a parity byte that is computed from the information bits in the packet. After synchronization and error detection are achieved at a receiver, the sync byte is re-inserted in the MPEG-2 packet in place of the parity byte for further processing.

48. To correctly display an MPEG-2 stream, a receiver must know where in the stream of bits the packet begins and ends. MPEG-2 uses a sync byte to tell the video processor where the packet begins and ends. Because the packet may be corrupted between transmission and reception, it is important to have a feature that identifies when a packet has been correctly delivered. The '887 patent accomplishes both goals of informing the receiver that the packets were correctly delivered and informing the receiver where the beginnings and ends of the packets are.

49. An MPEG-2 packet is 1504 bits long, including the 8-bit sync byte. At transmission, the disclosed system performs a mathematical formula on the first 1496 bits, reducing them to an 8 bit code called a parity code. The system replaces the MPEG-2 sync byte with this parity code, and transmits the altered packet. At the receiver, the disclosed system scans the incoming stream and runs the same mathematical formula on the first set of 1496 bits to produce a parity code. If the parity code did not match the next 8 bits, the system shifts one bit down the stream, and analyzes the 1496 bits beginning with the second bit. The system will continue to shift one bit at a time until it finds a match. If the parity code matches the next 8 bits in the stream, the system has confirmed that these 1504 bits (the 1496 bits plus the parity code) are a valid MPEG packet. The system then replaces the parity code with the MPEG-2 sync byte, and passes the packet onward to a standard MPEG-2 video decoder.

3. Foreign Counterparts

50. The following patent claims priority to the '887 patent: CA 2165604 (C).

51. The following published patent applications claim priority to the '887 patent: CA 2165604 (A1), JP 8256336 (A) and MX 9505284 (A).

52. Other than those listed above, there are no foreign patents or patent applications that correspond to the '887 patent that have been filed, abandoned, withdrawn, or rejected.

D. The '522 Patent

1. Identification and Ownership

53. The '522 patent is entitled "Randomizer for Byte-Wise Scrambling of Data." The '522 patent duly and legally issued on April 28, 1998, in the name of Chris Heegard, based on

Application No. 556,415 filed on November 9, 1995. A certified copy of the '522 patent is attached hereto as Exhibit 17.

54. Vizio is the owner by assignment of all rights, title, and interest in the '522 patent. A certified copy of the assignment of the '522 patent to Vizio is attached hereto as Exhibit 18.

55. A certified copy and three additional copies of the prosecution history of the '522 patent, and four copies of each reference cited therein, are attached hereto as Appendices G and H, respectively.

2. Non-Technical Description of the Patented Invention

56. The '522 patent generally discloses methods and apparatus for transmitting and receiving digital television signals. The '522 patent teaches use of a derandomizer to be used at the receiver to scramble the signal. The derandomizer provides improved transmission characteristics by preventing long sequences of "1" and "0". The derandomizer disclosed by the '522 patent is used in a system such as described by the '096 patent between the inner and outer decoders to make the resulting code more resilient to transmission errors.

57. The '522 patent discloses a technique for processing bytes of data so as to randomize the bits; that is, randomly change about half of the bits from the "one" state to the "zero" state, and vice versa. The sequence is not actually random, but is pseudo-random – it has the appearance of being random, but in fact it is a very long, known sequence. This achieves the objective of ensuring that all of the possible combinations of bits are used with approximately the same frequency, thereby facilitating synchronization at the receiver. Because the sequence produced by the randomizer is known, the same equipment that is used to achieve randomization at the transmitter is used at the receiver to de-randomize. Thus, as stated in the patent, a randomizer is also a de-randomizer.

58. In a preferred embodiment of the '522 patent, linear feedback shift registers (LFSRs) are used. A shift register is a small memory where bits input into the shift register shift one position at a time towards the output of the shift register, much like a conveyor belt. An LFSR contains some number of coupled stages. The bit currently at the output from the last stage is algebraically processed with the bits appearing at selected stages within the shift register.

The resulting bit is fed back to one or more prior stages of the shift register. The bits produced at the output will appear to be randomly generated, but, in fact, they are pseudo randomly generated since, after some period of time dependent on the shift register length and algebraic operations chosen, the output bits repeat.

59. Rather than using shift registers in which a single bit is stored in each stage, the LFSR in a preferred embodiment of the '522 patent stores a byte of data per stage, where a byte is defined as including N bits. This approach has the advantage of allowing high speed bit streams to be randomized/derandomized with relatively lower rate digital electronics. In this embodiment, the LFSR will produce an extremely long sequence before repeating.

3. Foreign Counterparts

60. There are no foreign patents or patent applications that correspond to the '522 patent that have been filed, abandoned, withdrawn, or rejected.

E. The '082 Patent

1. Identification and Ownership

61. The '082 patent is entitled "Punctured Convolutional Decoder." The '082 patent duly and legally issued on April 23, 1996, in the names of Stephen K. How and Chris Heegard, based on Application No. 240,232 filed on May 10, 1994. A certified copy of the '082 patent is attached hereto as Exhibit 19.

62. Vizio is the owner by assignment of all rights, title, and interest in the '082 patent. A certified copy of the assignment of the '082 patent to Vizio is attached hereto as Exhibit 20.

63. A certified copy and three additional copies of the prosecution history of the '082 patent, and four copies of each reference cited therein, are attached hereto as Appendices I and J, respectively.

2. Non-Technical Description of the Patented Invention

64. The '082 patent generally discloses methods and apparatus for transmitting and receiving digital television signals. The '082 patent teaches using particular punctured convolutional codes which are resilient to transmission errors, yet do not add a significant amount of overhead. These codes have a given number of states, a particular rate, and a certain

puncture map that results in reduced error when compared with other codes that were conventionally considered to be more optimal.

65. A puncture map is a representation of the bit to be punctured (*i.e.* deleted). One of the convolutional codes is implemented in an encoder at a receiver to assist with decoding of digital television signals. For example, in a system such as described in the '096 patent, the receiver may use an encoder in a coded path to provide an additional coding process for improved error correction. This encoder can implement the codes provided in the '082 patent for improved signal-to-noise ratios.

3. Foreign Counterparts

66. The following patents claim priority to the '082 patent: AU 681768 (B2), CA 2147816 (C), EP 0682415 (B1), ES 2139771 (T3), JP 3544033 (B2) and NO 314919 (B1).

67. The following published patent applications claim priority to the '082 patent: AT 187587 (T), AU 1790695 (A), CA 2147816 (A1), DE 69513720 (T2), EP 0682415 (A1), JP 7321672 (A) and NO 951817 (A).

68. Other than those listed above, there are no foreign patents or patent applications that correspond to the '082 patent that have been filed, abandoned, withdrawn, or rejected.

VI. UNLAWFUL AND UNFAIR ACTS OF PROPOSED RESPONDENTS

69. Upon information and belief, the use, sale, offer for sale, and/or importation of the accused products by each of proposed respondents Coby, Curtis, ESI, ON Corp, Sceptre, and Westinghouse (collectively, the "Television Respondents") directly infringe, and/or induce the infringement of at least: claims 22-25 of the '096 patent; claim 11 of the '761 patent; claims 22-23 of the '887 patent; claims 1-15 of the '522 patent; and claim 1 of the '082 patent. Upon information and belief, the use, sale, offer for sale, and/or importation of components of the accused digital televisions also directly infringe and/or induce the infringement of those same claims. Further discovery may reveal the infringement of other claims by these and other accused products and/or components.

70. As shown in paragraph 114, *infra*, proposed respondents Coby, Curtis, ESI, ON Corp, Sceptre, and Westinghouse have been aware of the asserted patents since at least May of 2011.

71. Upon information and belief, components of the accused digital televisions supplied by proposed respondents MStar, Renesas, and Renesas America (collectively, the "Component Respondents") also directly infringe at least: claims 22-25 of the '096 patent; claim 11 of the '761 patent; claims 22-23 of the '887 patent; claims 1-15 of the '522 patent; and claim 1 of the '082 patent.

A. Infringement of the '096 Patent

72. Upon information and belief, each of the Television Respondents directly infringe and/or induce the infringement of claims 22-25 of the '096 patent.

73. Upon information and belief each of the Component Respondents directly infringe claims 22-25 of the '096 patent.

74. Claim charts demonstrating how each of the proposed Respondents' exemplar digital television products and/or components thereof infringe the asserted independent claim 22 and dependent claim 23 of the '096 patent is attached to this Complaint as Exhibit 21.

B. Infringement of the '761 Patent

75. Upon information and belief, each of the Television Respondents directly infringe and/or induce the infringement of claim 11 of the '761 patent.

76. Upon information and belief, each of the Component Respondents directly infringe claim 11 of the '761 patent.

77. Claim charts demonstrating how each of the proposed Respondents' exemplar digital television products and/or components thereof infringe asserted independent claim 11 of the '761 patent is attached to this Complaint as Exhibit 22.

C. Infringement of the '887 Patent

78. Upon information and belief, each of the Television Respondents directly infringe and/or induce the infringement of claims 22-23 of the '887 patent.

79. Upon information and belief, each of the Component Respondents directly infringe claims 22-23 of the '887 patent.

80. Claim charts demonstrating how each of the proposed Respondents' exemplar digital television products and/or components thereof infringe the asserted independent claim 22 of the '887 patent is attached to this Complaint as Exhibit 23.

D. Infringement of the '522 Patent

81. Upon information and belief, each of the Television Respondents directly infringe and/or induce the infringement of claims 1-15 of the '522 patent.

82. Upon information and belief, each of the Component Respondents directly infringe claims 1-15 of the '522 patent.

83. Claim charts demonstrating how each of the proposed Respondents' exemplar digital television products and/or components thereof infringe the asserted independent claims 1, 6 and 12 of the '522 patent is attached to this Complaint as Exhibit 24.

E. Infringement of the '082 Patent

84. Upon information and belief, each of the Television Respondents directly infringe and/or induce the infringement of claim 1 of the '082 patent.

85. Upon information and belief, each of the Component Respondents directly infringe claim 1 of the '082 patent.

86. Claim charts demonstrating how each of the proposed Respondents' exemplar digital television products and/or components thereof infringe the asserted independent claim 1 of the '082 patent is attached to this Complaint as Exhibit 25.

VII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

87. Upon information and belief, each of the proposed Respondents' digital television products and/or components thereof are manufactured, assembled, and/or packaged overseas. Those same products are then imported into the United States, sold for importation into the United States, or sold after importation into the United States, by or on behalf of each of the proposed Respondents. Specific instances of such unfair importation and sale are described below for each proposed Respondent.

A. Coby

88. Attached as Exhibit 26 is a description of the representative Coby TF-TV3225 digital television found on the website http://www.cobyusa.com, which is controlled by Coby. The technical specifications therein indicate that the TF-TV3225 includes a QAM tuner.

89. On May 10, 2011, Vizio purchased a Coby TF-TV3225 digital television in the United States. *See* Exhibit 27. Labels on the body of the TF-TV3225 indicate that it was made in China. *See* Exhibit 28. An inspection of the TF-TV3225's mainboard reveals that it incorporates a QAM decoder labeled MSD319EL-LF. *See* Exhibit 29. The MSD319EL-LF chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the TF-TV3225 infringes each Asserted Claim of each Asserted Patent.

B. Curtis

90. Attached as Exhibit 31 is a description of the representative Curtis LCD2443A digital television found on the website http://www.curtisint.com, which is controlled Curtis. The technical specifications found in the user's manual for the LCD2443A, attached to this Complaint as Exhibit 32, indicate that it includes a QAM tuner.

91. On May 10, 2011, Vizio purchased a Curtis LCD2443A digital television in the United States. *See* Exhibit 27. Labels on the body of the LCD2443A indicate that it was made in China. *See* Exhibit 33. An inspection of the LCD2443A's mainboard reveals that it incorporates a QAM decoder labeled MSB1501-LF. *See* Exhibit 34. The MSB1501-LF chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the LCD2443A infringes each Asserted Claim of each Asserted Patent.

C. Sceptre

92. Attached as Exhibit 35 is a description of the representative Sceptre E420BV-F120 digital television found on the website http://www.sceptre.com, which is controlled by Sceptre. The technical specifications found in the user's manual for the E420BV-F120, attached to this Complaint as Exhibit 36, indicate that it includes a QAM tuner.

93. On May 10, 2011, Vizio purchased a Sceptre E420BV-F120 digital television in the United States. *See* Exhibit 27. Labels on the body of the E420BV-F120 indicate that it was

made in China. *See* Exhibit 37. An inspection of the E420BV-F120's mainboard reveals that it incorporates a QAM decoder labeled R8J66977BG. *See* Exhibit 38. The R8J66977BG is produced by Renesas. *See* Exhibit 39. As set forth above, the E420BV-F120 infringes each Asserted Claim of each Asserted Patent.

D. ESI

94. Attached as Exhibit 40 is a description of the representative Viore LC26VH56 digital television found on the website http://www.viore.com, which is controlled by ESI. The technical specifications found in the user's manual for the Viore LC26VH56, attached to this Complaint as Exhibit 41, indicate that it includes a QAM tuner.

95. On May 10, 2011, Vizio purchased a Viore LC26VH56 digital television in the United States. *See* Exhibit 27. Labels on the body of the LC26VH56 indicate that it was made in China. *See* Exhibit 42. An inspection of the LC26VH56's mainboard reveals that it incorporates a QAM decoder labeled MSD318QT-LF. *See* Exhibit 43. The MSD318QT-LF chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the LC26VH56 infringes each Asserted Claim of each Asserted Patent.

E. ON Corp

96. Attached as Exhibit 44 is a description of the representative RCA LED24A45RQ digital television found on the website http://tv.rca.com, which is controlled by ON Corp. The technical specifications found in the specification sheet for the RCA LED24A45RQ, attached to this Complaint as Exhibit 45, indicate that it includes a QAM tuner.

97. On May 17, 2011, Vizio purchased a RCA LED24A45RQ digital television in the United States. *See* Exhibit 46. Labels on the body of the LED24A45RQ indicate that it was made in China. *See* Exhibit 47. An inspection of the LED24A45RQ's mainboard reveals that it incorporates an QAM decoder labeled R8A66983BG. *See* Exhibit 48. The R8A66983BG is produced by Renesas. *See* Exhibit 49. As set forth above, the LED24A45RQ infringes each Asserted Claim of each Asserted Patent.

F. Westinghouse

98. Attached as Exhibit 50 is a description of the representative Westinghouse TX-42F810G digital television found on the website http://www.wde.com, which is controlled by Westinghouse.

99. On May 10, 2011, Vizio purchased a Westinghouse TX-42F810G digital television in the United States. *See* Exhibit 27. Labels on body of the TX-42F810G indicate that it was made in China. *See* Exhibit 51. An inspection of the TX-42F810G's mainboard reveals that it incorporates an Zoran SupraHD 785 QAM decoder. *See* Exhibit 52. The Zoran SupraHD 785 includes a QAM tuner. *See* Exhibit 53. As set forth above, the TX-42F810G infringes each Asserted Claim of each Asserted Patent.

G. MStar

100. On May 10, 2011, Vizio purchased a Coby TF-TV3225 digital television in the United States. *See* Exhibit 27. Labels on the body of the TF-TV3225 indicate that it was made in China. *See* Exhibit 28. An inspection of the TF-TV3225's mainboard reveals that it incorporates a QAM decoder labeled MSD319EL-LF. *See* Exhibit 29. The MSD319EL-LF chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the MSD319EL-LF infringes each Asserted Claim of each Asserted Patent.

101. On May 10, 2011, Vizio purchased a Curtis LCD2443A digital television in the United States. *See* Exhibit 27. Labels on the body of the LCD2443A indicate that it was made in China. *See* Exhibit 33. An inspection of the LCD2443A's mainboard reveals that it incorporates a QAM decoder labeled MSB1501-LF. *See* Exhibit 34. The MSB1501-LF chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the MSB1501-LF infringes each Asserted Claim of each Asserted Patent.

102. On May 10, 2011, Vizio purchased a Viore LC26VH56 digital television in the United States. *See* Exhibit 27. Labels on the body of the LC26VH56 indicate that it was made in China. *See* Exhibit 42. An inspection of the LC26VH56's mainboard reveals that it incorporates a QAM decoder labeled MSD318QT-LF. *See* Exhibit 43. The MSD318QT-LF

chip bears the MStar corporate logo. *See* Exhibit 30. As set forth above, the MSD318QT-LF infringes each Asserted Claim of each Asserted Patent.

H. Renesas

103. On May 10, 2011, Vizio purchased a Sceptre E420BV-F120 digital television in the United States. *See* Exhibit 27. Labels on the body of the E420BV-F120 indicate that it was made in China. *See* Exhibit 37. An inspection of the E420BV-F120's mainboard reveals that it incorporates a QAM decoder labeled R8J66977BG. *See* Exhibit 38. The R8J66977BG chip is produced by Renesas. *See* Exhibit 39. As set forth above, the R8J66977BG QAM decoder infringes each Asserted Claim of each Asserted Patent.

104. On May 17, 2011, Vizio purchased a RCA LED24A45RQ digital television in the United States. *See* Exhibit 46. Labels on the body of the LED24A45RQ indicate that it was made in China. *See* Exhibit 47. An inspection of the LED24A45RQ's mainboard reveals that it incorporates an QAM decoder labeled R8A66983BG. *See* Exhibit 48. The R8A66983BG is produced by Renesas. *See* Exhibit 49. As set forth above, the R8A66983BG infringe each Asserted Claim of each Asserted Patent.

VIII. LICENSEES

105. A list of licensees to the Asserted Patents is attached to the Complaint as Confidential Exhibit 54. There are no other licensees of the Asserted Patents.

IX. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

106. Upon information and belief, the Harmonized Tariff Schedule of the United States ("HTSUS") item numbers under which the infringing digital televisions and components thereof have been imported into the United States may be classified under at least 8528.72.7250. This HTSUS classification is intended for illustration only and is not intended to restrict the accused products and components thereof.

X. DOMESTIC INDUSTRY

107. A domestic industry exists, or is in the process of being established, as defined by 19 U.S.C. §§ 1337(a)(3)(B) and (C) relating to the significant employment of labor and capital and the substantial investment in the exploitation of the Asserted Patents, including after-market

customer service and technical support for Vizio's digital televisions, and Vizio's licensing activities related to the Asserted Patents. Vizio's domestic industry products covered by the claims of the Asserted Patents include Vizio's digital televisions.

B. Technical Prong

108. Vizio sells in the United States digital televisions that practice at least one claim of each of the Asserted Patents. For example, the Vizio E420VL is covered by at least one claim of each of the Asserted Patents. The Vizio E420VL is manufactured in China and sold after importation into the United States. Attached as Exhibit 55 is an image from the website http://www.vizio.com, which is controlled by Vizio, that shows the Vizio E420VL and its offer for sale in the United States. A copy of the user manual for the Vizio E420VL is attached as Exhibit 56. Claim charts demonstrating how the Vizio E420VL practices the asserted patents are attached as Exhibit 57.

C. Economic Prong

109. Vizio's significant investment in the employment of labor and capital, and its substantial investment in exploitation of the Asserted Patents, including its customer service and technical support operations, as well as its ongoing licensing activities, constitute a domestic industry under 19 U.S.C. §§ 1337(a)(3) (B) and (C), or demonstrate that such an industry is in the process of being established.

110. For example, Vizio operates two call center facilities in the United States that provide after-market customer service and technical support for the Vizio domestic industry products. Vizio's facilities are located in Irvine, California and Dakota Dunes, South Dakota. Vizio personnel employed at these facilities field calls from Vizio's customers regarding all aspects of the Vizio domestic industry products, respond to customers' questions regarding the same, and perform over-the-phone troubleshooting and technical support. To the extent that physical repair of the Vizio domestic industry products is required, Vizio's call center employees coordinate that repair, such as connecting the customer with a third party repair center, scheduling an appointment, and ensuring that the customer is satisfied with the work once

completed. Additional information regarding the investments in Vizio's Irvine and Dakota Dunes call centers can be found in Confidential Exhibit 58.

111. Vizio also contracts with a third party call center facilities located in Utah and Florida. These third party call centers are seamlessly integrated with Vizio's other facilities, and perform the same technical support functions as the Vizio-operated facilities. Additional information regarding Vizio's investments in the Utah and Florida facilities can be found in Confidential Exhibit 58.

112. Vizio's investments in its domestic after-market customer service and technical support programs add significant value to Vizio domestic industry products. Additional information regarding the value added by Vizio's investments can be found in Confidential Exhibit 58.

113. Vizio has also made substantial investments in activities related to the licensing of the Asserted Patents. These activities include, but are not limited to, researching the digital television market to identify potential licensees and communicating with those potential licensees regarding a license to the Asserted Patents. Additional information regarding Vizio's investments in the licensing of the Asserted Patents can be found in Confidential Exhibit 58.

XI. RELATED LITIGATION

114. Each of the Asserted Patents are the subject of litigation in the United States District Court for the Central District of California, styled *Vizio, Inc. v. Coby Electronics Corp, et al.*, Case No. 11-cv-04381, filed on May 20, 2011. Proposed respondents Coby, Curtis, ESI, ON Corp, Sceptre and Westinghouse are named defendants in that case which is in its pretrial phase with no trial date set as of yet.

115. Each of the Asserted Patents were the subject of litigation in the United States District Court for Maryland, styled *Vizio, Inc. v. LG Electronics, Inc. and LG Electronics U.S.A., Inc.*, Case No. 09-cv-1481, filed on June 5, 2009. This case was dismissed based upon settlement on March 3, 2011.

116. The Asserted Patents were the subject of litigation in the United States District Court for the Central District of California, styled *Vizio, Inc. v. Funai Electric Co., Ltd. and*

Funai Corp., Inc., Case 09-cv-05813, filed on May 20, 2009. This case was dismissed based upon settlement on May 26, 2010.

117. The Asserted Patents were the subject of litigation in the United States District Court for the Southern District of California, styled Sony Corp. and Sony Electronics, Inc. v. Vizio, Inc., Case 09-cv-01043, filed on May 13, 2009. This case was dismissed based upon settlement on November 9, 2009.

118. Each of the Asserted Patents were the subject of a section 337 investigation before the International Trade Commission, styled *Certain Flat Panel Digital Televisions and Components Thereof*, Inv. No. 337-TA-733, filed on July 16, 2010. The Investigation was terminated by settlement agreement on February 11, 2011.

119. Vizio is currently unaware of any other litigations, judicial or administrative, concerning the Asserted Patents.

XII. REQUESTED RELIEF

WHEREFORE, pursuant to Commission Rule 210.12 (a)(10), 19 C.F.R. § 210.12 (a)(10), Vizio respectfully requests that the Commission:

(A) institute an immediate investigation pursuant to § 337 of the Tariff Act of 1930, as amended, into the proposed Respondents' unfair acts and methods of competition in the importation into the United States, sale for importation, and/or the sale within the United States after importation, of certain digital televisions and components thereof that infringe one or more of the claims of the Asserted Patents;

(B) schedule and conduct a hearing and, following said hearing, issue a determination of a violation of Section 337;

(C) issue a permanent exclusion order pursuant to 19 U.S.C. § 1337(d) excluding from entry into the United States certain digital televisions and components thereof, that are manufactured and/or assembled by or on behalf of the proposed Respondents that are covered by one or more of the claims of the Asserted Patents;

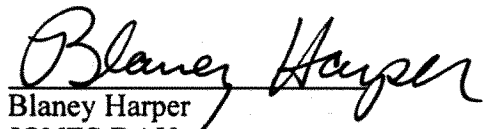
(D) issue an order or orders pursuant to 19 U.S.C. § 337 directing the proposed Respondents to cease and desist their unfair acts and methods of competition, including

assembly, testing, marketing, distributing, offering for sale, selling, or otherwise transferring in the United States imported digital televisions and components thereof, that are manufactured and/or assembled by or on behalf of the proposed Respondents that are covered by one or more of the claims of the Asserted Patents; and

(E) grant such other and further relief as the Commission finds appropriate and just under the law, based upon the facts complained of herein and determined in the investigation.

Dated: June 16, 2011

Respectfully submitted,



Blaney Harper
JONES DAY
51 Louisiana Avenue, N.W.
Washington, DC 20001
Telephone: (202) 879-3939
Facsimile: (202) 626-1700

Counsel to Complainant Vizio, Inc.

WAI-3007055

VERIFICATION

I, Rob Brinkman, for and on behalf of Complainant Vizio, Inc. ("Vizio"), declare as follows:

1. I am duly authorized to execute this Verification on behalf of Vizio;

2. I have read this Complaint and am aware of its contents;

3. To the best of my knowledge, information, and belief, based upon a reasonable inquiry, the foregoing Complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;

4. The allegations or other factual contentions therein have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery, and;

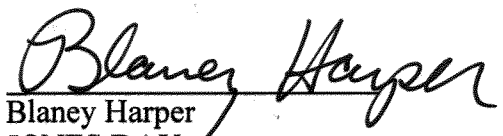
5. This Complaint is not being filed for any improper purpose, such as to harass or cause unnecessary delay or needless increase in the cost of litigation.

Executed this 16th day of June, 2011.

Rob Brinkman
Chief Administrative Officer
Vizio, Inc.

Dated: June 16, 2011

Respectfully submitted,



Blaney Harper
JONES DAY
51 Louisiana Avenue, N.W.
Washington, DC 20001
Telephone: (202) 879-3939
Facsimile: (202) 626-1700

Counsel to Complainant Vizio, Inc.

WAI-3007055

VERIFICATION

I, Rob Brinkman, for and on behalf of Complainant Vizio, Inc. ("Vizio"), declare as follows:

1. I am duly authorized to execute this Verification on behalf of Vizio;

2. I have read this Complaint and am aware of its contents;

3. To the best of my knowledge, information, and belief, based upon a reasonable inquiry, the foregoing Complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;

4. The allegations or other factual contentions therein have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery, and;

5. This Complaint is not being filed for any improper purpose, such as to harass or cause unnecessary delay or needless increase in the cost of litigation.

Executed this 16th day of June, 2011.

Rob Brinkman
Chief Administrative Officer
Vizio, Inc.