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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

ENTROPIC COMMUNICATIONS, LLC, Plaintiff, v. DISH NETWORK CORPORATION, *et al.*, Defendants.	Case No.: 2:23-cv-01043-JWH-KES (Lead Case) Case No.: 2:23-cv-01047-JWH-KES (Related Case) Case No.: 2:23-cv-01048-JWH-KES (Related Case) Case No.: 2:23-cv-05253-JWH-KES (Related Case) **CORRECTED SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT FOR CASE NO. 2:23-cv-01048-JWH-KES** **DEMAND FOR JURY TRIAL**
ENTROPIC COMMUNICATIONS, LLC, Plaintiff, v. COX COMMUNICATIONS, INC., *et al.*, Defendants.	

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COMCAST CORPORATION, *et al.*,

Defendants.

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

DIRECTV, LLC, *et al.*,

Defendants.

Plaintiff, Entropic Communications, LLC ("Entropic"), files this complaint for patent infringement against Comcast Corporation ("Comcast Corp."); Comcast Cable Communications, LLC ("Comcast Communications"); and Comcast Cable Communications Management, LLC ("Comcast Management"), (collectively, "Comcast") and in support thereof alleges as follows:

1. Around the turn of the millennium, cable and satellite providers were eager to deploy new and improved services, but they faced a big problem. The providers needed a high-speed data network inside buildings to deliver those services to various rooms. With existing technology, this meant installing new cabling inside each premises to carry the network. Aside from the costly materials themselves, technicians would be forced to spend hours planning the work, cutting and drilling into walls, and fishing cables throughout a building, all while doing so in ways customers might tolerate. The costs would run into the billions of dollars.

2. A group of inventors had a vision: what if they could repurpose the already-existing coaxial cables common in buildings to do the job? The challenges were daunting. Existing coaxial cabling was never intended to work this way. The mess of existing coax topologies in homes and businesses was a formidable barrier. The splitter devices used to distribute legacy TV obstructed signals from room-to-room. Making it all work would require nothing less than the invention of a new networking architecture founded upon a host of new technologies.

3. They succeeded. The inventors' company, called Entropic Communications Inc. ("Entropic Inc."), made the technology work. The company was awarded a portfolio of patents for the advances that made it possible. And the company spearheaded forming a new industry standard for the architecture, commonly called MoCA (Multimedia over Coax Alliance).

4. Today, MoCA is the backbone of data and entertainment services for tens of millions of customers. MoCA is widely used by every major provider in the industry,

saving them billions of dollars in costs and avoiding the hassle of re-wiring for providers and customers alike. Unfortunately, the defendants take advantage of MoCA without paying appropriate licensing fees for the technology. This lawsuit is about redressing that wrong.

5. This is a civil action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on the defendants' infringement of U.S. Patent Nos. 7,295,518 (the "'518 Patent"), 7,594,249 (the "'249 Patent") (together the "Network Patents"); U.S. Patent Nos. 7,889,759 (the "'759 Patent"), 8,085,802 (the "'802 Patent") (together the "Node Admission Patents"); U.S. Patent Nos. 9,838,213 (the "'213 Patent"), 10,432,422 (the "'422 Patent") (together the "PQoS Flows Patents"); U.S. Patent Nos. 8,631,450 (the "'450 Patent"), 8,621,539 (the "'539 Patent") (together the "Link Maintenance Patents"); U.S. Patent No. 8,320,566 (the "'0,566 Patent" or the "OFDMA Patent"); U.S. Patent No. 10,257,566 (the "'7,566 Patent" or the "Network Coordinator Patent"); U.S. Patent No. 8,228,910 (the "'910 Patent" or the "Packet Aggregation Patent"); U.S. Patent No. 8,363,681 (the "'681 Patent" or the "Clock Sync Patent") (collectively, the "Patents-in-Suit"). These patents incorporate various elements of technology set forth in the Multimedia over Coax Alliance standards (the "MoCA" standards).[1]

THE PARTIES

6. Entropic is a Delaware limited liability company with an office at 7150 Preston Road, Suite 300, Plano, Texas 75024.

7. Entropic is the owner by assignment to all right, title, and interest to the Patents-in-Suit. Entropic is the successor-in-interest for the Patents-in-Suit.

[1] Each version of the MoCA standards is referred to herein as "MoCA 1.0," "MoCA 1.1," and "MoCA 2.0."

8. Upon information and belief, Comcast Corp. is a corporation organized and existing under the laws of Pennsylvania, with a principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

9. Comcast Corp. has, as its registered agent in California, CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

10. Comcast Corp., along with the other defendants, develops, markets, sells, offers for sale and/or provides "Comcast" and "Xfinity" branded cable television services and equipment to customers.

11. Comcast Communications is a limited liability company organized and existing under the laws of Delaware, with a principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Communications is a subsidiary of Comcast Corp.

12. Comcast Communications has, as its registered agent in California, CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

13. Comcast Communications, along with the other defendants, develops, markets, sells, offers for sale and/or provides "Comcast" and "Xfinity" branded cable television services and equipment to customers.

14. Comcast Management is a limited liability company organized and existing under the laws of Delaware, with a principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Management, is a subsidiary of Comcast Corp.

15. Comcast Management has, as its registered agent in California, CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

16. Comcast Management, along with the other defendants, develops, markets, sells, offers for sale and/or provides "Comcast" and "Xfinity" branded cable television services and equipment to customers.

17. Comcast Corp. and/or Comcast Communications owns or leases, and maintains and operates several stores in this district by and through subsidiary limited liability companies that they own, manage and control, including Comcast of Santa Maria, LLC and Comcast of Lompoc LLC. Upon information and belief, Comcast Corp. and/or Comcast Communications (and/or personnel employed by them) negotiates and signs agreements on behalf of each of these entities.

18. Upon information and belief, Comcast Corp. and/or Comcast Communications are the corporate managers of their subsidiary LLCs that own or lease property in this district, and that own, store, sell, demonstrate, and lease equipment in this district. Comcast Corp. and/or Comcast Communications have the right to exercise near total control of each entity's operations through its LLC agreements with each entity.

19. In each of those stores, Comcast Corp. and/or Comcast Communications owns and stores equipment such as modems and set top boxes ("STBs") and demonstrates services provided via those products to Comcast customers by and through subsidiary limited liability companies that it manages and controls.

20. Upon information and belief, Comcast Corp. and/or Comcast Communications employs personnel that install, service, repair and/or replace equipment, as appropriate, in this district by and through subsidiary limited liability companies that it manages and controls.

21. Upon information and belief, Comcast Corp. and/or Comcast Communications have two wholly owned subsidiaries in this Judicial District of Central California that serve as their agents.

22. Comcast of Santa Maria, LLC ("Comcast Santa Maria") is a limited liability company organized and existing under the laws of Pennsylvania, with a principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Comcast Santa Maria is a subsidiary of Comcast Corp.

23. Comcast Santa Maria, along with the other defendants, markets, sells, offers for sale and/or provides "Comcast" and "Xfinity" branded cable television services and equipment to customers.

24. Comcast of Lompoc, LLC ("Comcast Lompoc") is a limited liability company organized and existing under the laws of Pennsylvania, with a principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Comcast Lompoc is a subsidiary of Comcast Corp.

25. Comcast Lompoc, along with the other defendants, markets, sells, offers for sale and/or provides "Comcast" and "Xfinity" branded cable television services and equipment to customers.

26. Upon information and belief, Comcast Communications, Comcast, Management, Comcast Santa Maria, and Comcast Lompoc are the agents of Comcast Corp. Upon information and belief, Comcast Corp. has complete and total control over its agents Comcast Communications, Comcast Management, Comcast Santa Maria, and Comcast Lompoc. Upon information and belief, Comcast Corp. shares management, common ownership, advertising platforms, facilities, distribution chains and platforms, stores, and accused product lines and products involving related technologies with its agents, including at least Comcast Communications, Comcast Management, Comcast Santa Maria, and Comcast Lompoc.

27. For example, Comcast Corp., Comcast Communications, Comcast Management, Comcast Santa Maria, and Comcast Lompoc all have the same principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

28. The Comcast "Xfinity Residential Services Agreement" purports to bind Comcast's customers, including those customers in this Judicial District to an agreement with Comcast Communications for, *inter alia*, the Accused Services (defined below) that Comcast's customers receive through the infringing use of the Accused MoCA

Instrumentalities (defined below).[2] This agreement further provides that an entity other than Comcast Communications provides the services. Upon information and belief, the entity that provides the services to Comcast's customers and subscribers is Comcast Management.

29. Comcast Management further shares a leadership team with Comcast Corp.[3] For example, Brian Roberts is the Chairman and Chief Executive Officer of both Comcast Management and Comcast Corp.; Daniel Murdock is Executive Vice President and Chief Accounting Officer of both Comcast Corp. and Comcast Management; Francis Buono is Executive Vice President of Legal Regulatory Affairs and Senior Deputy General Counsel of both Comcast Corp. and Comcast Management; and Karen Buchholz is Executive Vice President, Administration of both Comcast Corp. and Comcast Management.

30. As further alleged herein, this Court has personal jurisdiction over the defendants and venue is proper in this Judicial District.

PRE-SUIT DISCUSSIONS

31. Prior to filing this Complaint, Entropic sent a communication by physical means to Comcast on August 9, 2022, in an attempt to engage Comcast and/or its agents in good faith licensing discussions regarding Entropic's patent portfolio, including the Patents-in-Suit. Comcast replied to the communication on October 10, 2022, asking for additional information. On December 23, 2022 and January 2, 2023, Entropic sent Comcast another communication by both physical and electronic means regarding a

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[2] https://www.xfinity.com/Corporate/Customers/Policies/SubscriberAgreement.

[3] *Compare* names found in Exhibit A, https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received--by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf, *with* the biographies of the identified personnel at Comcast's corporate leadership website, https://corporate.comcast.com/company/leadership.

separate license to Entropic's patents for the field of the standardized networking technology commonly called MoCA, and also seeking to discuss with Comcast a typical non-disclosure agreement in order to share such information.

ENTROPIC'S LEGACY AS AN INNOVATOR

32. Entropic Communications, Inc. ("Entropic Inc."), the predecessor-in-interest to Plaintiff Entropic as to the Patents-in-Suit, was founded in San Diego, California in 2001 by Dr. Anton Monk, Itzhak Gurantz, Ladd El Wardani and others. Entropic Inc. was exclusively responsible for the development of the initial versions of the MoCA standards, including MoCA 1.0, ratified in 2006 and MoCA 1.1, ratified in 2007, and was instrumental in the development of MoCA 2.0, ratified in 2010. It also developed Direct Broadcast Satellite ("DBS") Outdoor Unit ("ODU") single wire technology, and System-on-Chip ("SoC") solutions for set-top boxes (STBs) in the home television and home video markets. Entropic was widely known in the cable industry for these innovations and its foundational development of MoCA.

33. Under the technical guidance of Dr. Monk, Entropic Inc. grew to be publicly listed on the NASDAQ in 2007. After the public listing, the company acquired RF Magic, Inc. in 2007, a company specializing in DBS ODU technology and related hardware.

34. Additional growth between 2007 and 2015 bolstered the technical expertise of Entropic Inc. with respect to signal acquisition, stacking, filtering, processing, and distribution for STBs and cable modems.

35. For years, Entropic Inc. pioneered innovative networking technologies, as well as television and internet related technologies. These technologies simplified the installation required to support wideband reception of multiple channels for demodulation, improved home internet performance, and enabled more efficient and responsive troubleshooting and upstream signal management for cable providers. These

innovations represented significant advances in the field, simplified the implementation of those advances, and reduced expenses for providers and customers alike.

MAXLINEAR'S TRANSFER OF PATENTS TO ENTROPIC

36. In 2015, MaxLinear, Inc. and MaxLinear, LLC (collectively, "MaxLinear")—leading providers of radio-frequency, analog, digital, and mixed-signal semiconductor solutions—acquired Entropic Inc., as well as the pioneering intellectual property developed by Dr. Monk and his team.

37. Plaintiff Entropic was established in 2021 [redacted]

38. [redacted]

39. [redacted]

40. [redacted]

[4] [redacted]

41. [redacted]

42. Entropic has the full right to pursue the patent infringement claims asserted in this action against Comcast.

A. [redacted]

43. [redacted]

44. [redacted]

45. [redacted]

46. [redacted]

47. [redacted]

48. [redacted]

49. [redacted]

50. [redacted]

51. [redacted]

52. [redacted]

53. [redacted]

54. [redacted]

55. [redacted]

56. [redacted]

57. [redacted]

58. [redacted]

59. [redacted]

60. [redacted]

61. [redacted]

[5] [redacted]

62. [redacted]

63. [redacted]

64. [redacted]

65. [redacted]

66. [redacted]

67. [redacted]

68. [redacted]

69. [redacted]

70. [redacted]

B. Comcast Has, and Continues, to Willfully and Intentionally Infringe Entropic's Non-SEP Patents[6]

65. Comcast invested in Entropic Inc. once in 2003, and again in 2006.

66. Upon information and belief, Comcast substantively reviewed and analyzed Entropic Inc.'s patents and patent applications related to the Non-SEP Patents as part of its due diligence prior to investing in Entropic Inc.

67. In addition, Comcast has willfully infringed the Non-SEP Patents in at least the following ways.

1. The Charter Suits

68. On information and belief, Comcast had knowledge of its infringement of certain of the Non-SEP Patents based on its awareness of the patent infringement suit filed by Entropic against Charter Communications, Inc. ("Charter") in the Eastern

[6] The Non-Sep Patents are set forth in Entropic's concurrently filed action, *Entropic v. Comcast, et al.*, Case No. 2:23-cv-1050-JWH-KES (C.D. Cal. 2023).

District of Texas, Case No. 2:22-CV-00125-JRG ("the Charter Suit"), on April 27, 2022. This suit against Charter asserted the '775 Patent, the '690 Patent, the '008 Patent, the '362 Patent, the '826 Patent, and the '682 Patent against Charter's provision of cable television and internet services, cable modem products and STBs.

69. On information and belief, Comcast had knowledge of its infringement of certain of the Non-SEP Patents based on its awareness of the patent infringement suit filed by Entropic against Charter in the Eastern District of Texas, Case No. 2:23-CV-00052-JRG, on February 10, 2023. This second suit against Charter asserted the '866 Patent and the '206 Patent against Charter's provision of cable television and internet services, cable modem products and STBs. The complaint was amended on October 31, 2023, to assert the '275 Patent and '438 Patent against Charter.

70. Both Charter and Comcast are part of the close-knit business community that is the cable industry, which is led by key industry players. These key players work collaboratively to develop new technology and programs to drive the industry forward, including through organizations like MoCA and the Society of Cable Telecommunications Engineers.

71. Comcast and Charter actively collaborate together, have monthly meetings across various departments, and have even collaborated together on accused technologies. Specifically, Comcast and Charter have collaborated together on Profile Management Application ("PMA") technology and the implementation of full band capture.

72. Comcast's PMA implementation infringes the '682 Patent in substantially the same manner as Charter's PMA implementation. Given the amount of collaboration that occurs between Charter and Comcast, Comcast was aware of the accusations against Charter's PMA implementation.

73. Comcast's implementation of remote spectrum monitoring functionality in its Proactive Network Maintenance ("PNM") system infringes the '008 and '826 Patents

in substantially the same manner as Charter's implementation of remote spectrum monitoring in its PNM system. Given the amount of collaboration that occurs between Charter and Comcast, Comcast was aware of the accusations against Charter's implementation of remote spectrum monitoring in its PNM system. Additionally, Comcast collects information regarding the upstream channels as part of the operation of its network, in a similar manner as Charter. This collection of information regarding the upstream channels as part of the operation of a cable network infringes the '690 Patent.

74. Comcast's usage of full band capture-enabled cable modems and STBs infringes the '362, '866, '206 and '275 Patents in substantially the same manner as Charter's usage of full band capture-enabled cable modems and STBs. Given the amount of collaboration that occurs between Charter, Comcast and its common supplied of the cable modems, STBs and underlying full band capture system-on-chips (or SoCs), Comcast was aware of the accusations against Charter's usage of full band capture-enabled cable modems and STBs.

75. Comcast uses cable modem termination system ("CMTS") hardware and software as part of its cable network.

76. Comcast and Charter also collaborate together at events for the Society of Cable Telecommunications Engineers ("SCTE"), of which both Comcast and Charter are members. Among other things, Comcast and Charter participate in panels together, share data and achievements related to SCTE, and work on peer-reviewed papers together.

77. Charter and Comcast also "team up" to offer streaming devices and other technology to customers. Indeed, The New York Times published an article about such

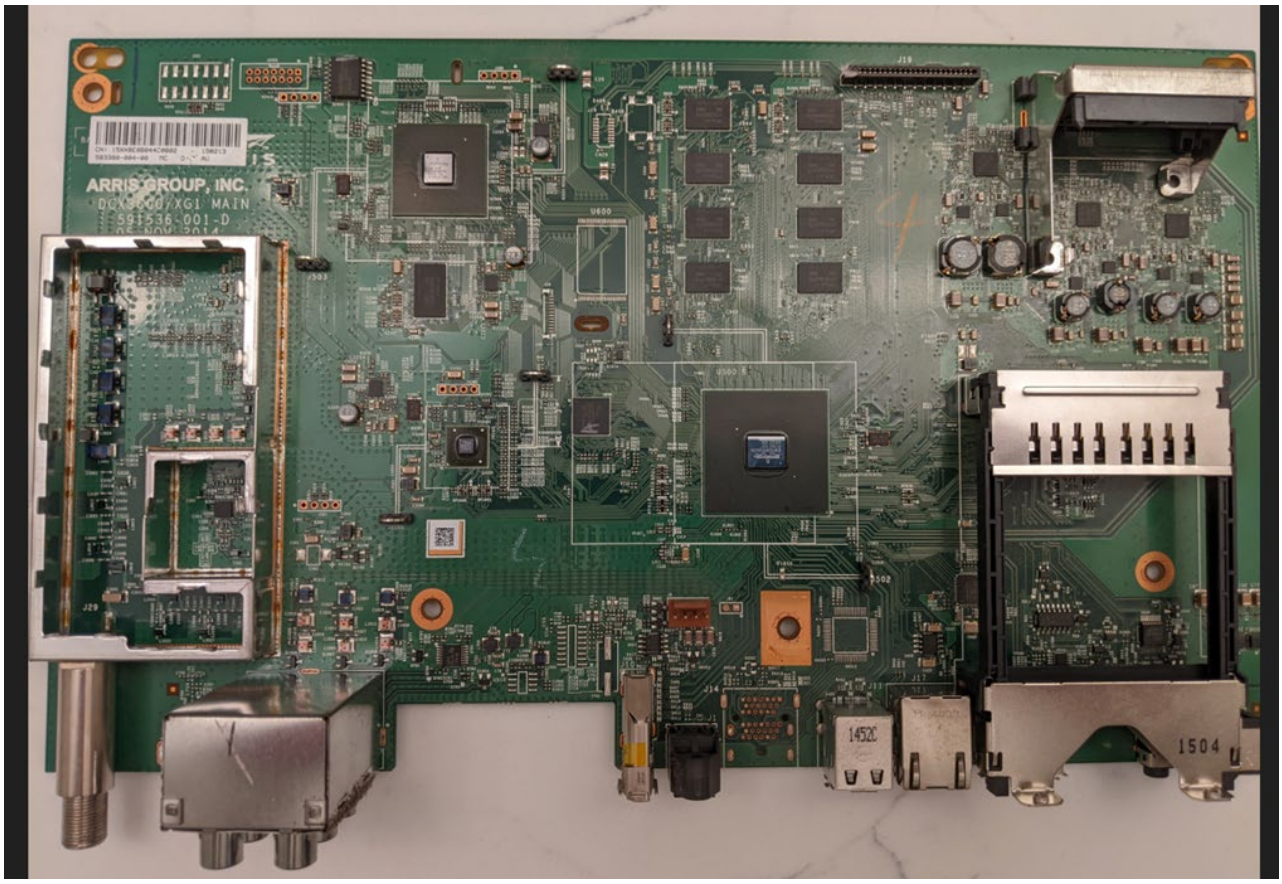
a joint venture between Comcast and Charter on April 27, 2022, the very same day that the first suit against Charter was filed.

78. As evidenced by this article, Comcast knows that Charter utilizes technology that functions almost identically to Comcast's technology.

79. Among other things, Charter and Comcast utilize similar product offerings that incorporate the same technologies. Charter and Comcast purchase their products, including cable modems, STBs, and CMTS hardware and software, from the same third parties. These products utilize the same or similar SoCs and other processors and provide similar functionality. For example, both Charter and Comcast provide whole-home DVR solutions utilizing MoCA to create an in-home network over the on-premises coaxial cabling. Similarly, both Charter and Comcast utilize cable modems having Broadcom BCM3390 SoCs and STBs utilizing a combination of Broadcom full-band capture SoCs utilizing a combination of Broadcom full-band capture SoCs to interface with the cable network and STB SoCs to decode and display television content.

80. For example, one supplier of STBs, Arris, provides the DCX3600 to both Comcast and Charter. Comcast refers to the Arris DCX3600 as the Arris MX011ANM or XG1-A, and Charter refers to it simply as the Arris DCX3600. An image of the circuit board included in the Arris DCX3600 is shown below, clearly showing both the

DCX3600 and XG1 branding:



81. The two Charter suits discussed herein asserted the same patents and involved largely the same technology as is at issue in this action.

82. Given the close business relationship between Comcast and Charter, as well as the joint ventures that Comcast was pursuing with Charter when these suits were filed against Charter, Comcast was almost certainly aware of their filings.

83. Upon information and belief, and based on Comcast's awareness of the substantial similarities between Comcast's and Charter's technology and products, Comcast analyzed the claims asserted against Charter, the Patents-in-Suit, and the Accused Products.

84. Upon information and belief, Comcast then analyzed its own products' functionality in light of the patents asserted against Charter, and it confirmed that its own products were functionally identical to the Charter products accused.Upon information

and belief, Comcast monitored the ongoing prosecution of the '362 Patent family, and therefore was aware of the U.S. Patent No. 11,381,866 (the "'866 Patent") issued on July 5, 2022, and U.S. Patent No. 11,399,206 (the "'206 Patent") issued on July 26, 2022.

85. Upon information and belief, Comcast analyzed its products' functionality in light of the '866 Patent.

86. Upon information and belief, Comcast analyzed its products' functionality in light of the '206 Patent.

87. Upon information and belief, Comcast thereafter determined that its products infringe the Non-SEP Patents in substantially the same manner as Charter.

88. Nevertheless, Comcast continued to make, sell, or offer for sell the infringing products.

89. Upon information and belief, Comcast requested indemnification from Comcast's suppliers for each of the patents asserted against Charter, including the MoCA-related patents, prior to Entropic filing the current action.

90. Comcast's request for indemnification evidences its knowledge of the risk that it infringed at least Entropic's Non-SEP Patents, and that a suit similar to the Charter Suit was likely to be initiated against Comcast.

2. The DISH and DirecTV Suits

91. Entropic filed a patent infringement suit against Dish Network Corporation, DISH Network, LLC, and Dish Network Service, LLC (collectively, "Dish") in the Eastern District of Texas, Case No. 2:22-CV-00076, on March 9, 2022, asserting infringement of three Entropic patents, including the '008 Patent (the "Dish Suit").

92. Entropic filed a patent infringement suit against DirecTV, LLC, AT&T, Inc., AT&T Services, Inc., and AT&T Communications, LLC in the Eastern District of

Texas, Case No. 2:22-CV-00075 on March 9, 2022, asserting infringement of three Entropic patents, including the '008 Patent (the "DirecTV Suit").

93. Upon information and belief, Comcast contacted RPX Corporation ("RPX") regarding the Charter Suit, Dish Suit, and DirecTV Suit after being served with the complaint in these actions. Either before or shortly after its discussions with RPX, Comcast substantively reviewed and analyzed the patents asserted in the Charter Suit, Dish Suit, and DirecTV Suit.

3. Comcast's Relationship with MaxLinear

94. Comcast has willfully infringed the Non-SEP Patents based on knowledge it gained from Patrick Tierney. Tierney, one of the named inventors of the '008 Patent and '826 Patent, now works at Comcast. Accordingly, upon information and belief, Comcast knew of the aforementioned Non-SEP Patents as early as the day Patrick Tierney was hired. For example, upon information and belief, Comcast looked at patents which named Patrick Tierney as an inventor as part of the process of determining whether to offer him employment at Comcast.

95. Patrick Tierney and other MaxLinear employees frequently met with Comcast and discussed the technologies of both MaxLinear and Entropic Inc. that practiced the Non-SEP Patents . Thus, Patrick Tierney was well aware of the technology and functionality of the Non-SEP Patents.

96. Indeed, before his employment at Comcast, Patrick Tierney often met with Comcast personnel to discuss new technology for which MaxLinear and Entropic Communications, Inc. had recently applied for or received patent protection.

97. For example, Patrick Tierney met with Sam Chernak of Comcast on December 20, 2012, less than a month after the '566 Patent issued. Upon information and belief, Mr. Tierney told Mr. Chernak about the '566 Patent.

98. As another example, Comcast met with MaxLinear to ask MaxLinear to support a low cost D3 modem on January 20, 2013, less than a month after the '681

Patent issued.

99. In his role at Comcast, on information and belief, Patrick Tierney shared what he knew about the functionality and operation of the Non-SEP Patents with other Comcast personnel, so that Comcast could continue to create products that infringe upon the Non-SEP Patents.

100. Comcast also learned about the functionality of the Non-SEP Patents through other events it attended, including the 2015 International Broadcasting Convention, where MaxLinear presented information about new products and technology that implemented the Non-SEP Patents.

101. MaxLinear also held several business discussions with Comcast in 2015, wherein MaxLinear discussed its products and technology that implemented the Non-SEP Patents and explained how that technology could benefit Comcast's business.

102. Specifically, MaxLinear gave a presentation to Comcast in March 2015 wherein it discussed confidential, new technology being developed by MaxLinear and Entropic Inc. MaxLinear's March 2015 presentation specifically referenced that much of this technology was covered by "[a]lmost 2000 issued and pending patents."

103. Finally, Comcast has been willfully infringing since at least October 2021, when it intentionally misappropriated MaxLinear's technology and related patents by disclosing that information to MaxLinear's competitor.

104. In 2020, Comcast began pursuing full duplex ("FDX") technology to implement DOCSIS 4.0, which was intended to enable higher speeds for both downstream and upstream communications.

105. However, Comcast soon realized that the only then-viable FDX architecture could not be deployed to serve the majority of Comcast's network.

106. Comcast turned to MaxLinear to solve this problem, as MaxLinear was a well-known innovator in the FDX space. Indeed, since at least 2016, Comcast itself

acknowledged that MaxLinear was the only company able to deliver viable FDX technology.

107. In 2020, after entering into a non-disclosure agreement, MaxLinear shared its confidential FDX technologies with Comcast in the hopes of expanding their business relationship.

108. On information and relief, Comcast knew that MaxLinear's disclosures regarding the FDX technology were confidential and were owned by MaxLinear, including by virtue of the non-disclosure agreement signed by Comcast, as well as the confidentiality designations MaxLinear marked its FDX disclosures with.

109. On information and belief, in October 2021, Comcast nevertheless took credit for MaxLinear's technology in a published article. *See* Elad Nafshi, *Announcing Another 10G Milestone Amidst a Flurry of Innovation*, Comcast (Oct. 14, 2021), https://tinyurl.com/yphyu6a9.

110. In September 2022, Richard Prodan, one of the Comcast employees who attended and received copies of MaxLinear's confidential presentation on the design of its FDX-amplifier solution, published an industry paper that described an FDX-amplifier design that was materially identical to the one MaxLinear developed and confidentially shared with Comcast.

111. On information and belief, Comcast was aware that its use of MaxLinear's FDX technology misappropriated MaxLinear's trade secrets, including based on the parties' prior business dealings, the NDA, and based on the recent counterclaims filed by MaxLinear against Comcast on December 1, 2023 in the United States District Court for the Southern District of New York, Comcast Cable Communications LLC, et al. v. MaxLinear, Inc., Case No. 1:23-cv-04436-AKH (DE 88).

4. Comcast's Willful Infringement of Specific Non-SEP Patents

112. Upon information and belief, Comcast substantively reviewed and analyzed Entropic's U.S. Patent No. 8,223,775 (the "'775 Patent"), duly issued on July

17, 2012 from an application filed September 30, 2003, as part of its due diligence prior to investing in Entropic in 2006.

113. Accordingly, upon information and belief, no later than the day prior to its latest investment in Entropic in 2006, Comcast knew or had every reason to know that Entropic owned the '775 Patent. Because Comcast knew of the '775 Patent and substantively reviewed its claims, Comcast began willfully infringing the '775 Patent no later than the dates it began offering its cable modem products and services, having knowledge that such use and deployment infringed the '775 Patent.

114. As addressed above, Comcast has willfully infringed at least the '362 patent, the '826 patent, and the '206 patent through its knowledge gained from the Charter litigation, and was aware of (and substantively analyzed its infringement of) the other Non-SEP Patents no later than the letter sent by Entropic in August 2022.

115. Comcast has also willfully infringed at least the '682 Patent as evidenced by its own patents that cite to U.S. Patent No. 9,419,858 (the '858 Patent"), which is the ultimate parent of the '682 Patent. Specifically, Comcast's patents including U.S. Patent No. 11,191,087; U.S. Patent No. 10,582,515; U.S. Patent No. 11,758,574 cite the '858 Patent.

116. Comcast's reference to the '858 Patent, which is closely related to and involves similar technology and functionality as the '682 Patent, evidences Comcast's awareness that it infringes upon '682 Patent.

117. Further, Comcast filed an application for U.S. Patent No. 9,178,765 on July 23, 2013, in the same month that the application for the '682 Patent was filed. On information and belief, Comcast was aware of the '682 Patent based on the investigation it undertook during the application and prosecution process for U.S. Patent No. 9,178,765. Thus, Comcast has willfully infringed the '682 Patent since at least July 23, 2013.

118. Accordingly, Comcast either knew about the Non-SEP Patents, or

alternatively engaged in a scheme to be willfully blind to the existence of the Non-SEP Patents.

C. Comcast Has, and Continues, to Willfully and Intentionally Infringe the Patents-in-Suit

119. Comcast invested in Entropic once in 2003, and again in 2006.

120. Upon information and belief, Comcast substantively reviewed and analyzed Entropic's patents and patent applications related to the Entropic's MoCA standard patents as part of its due diligence prior to investing in Entropic.

121. Upon information and belief, as part of its due diligence prior to investing in Entropic in 2006, Comcast substantively reviewed and analyzed the following Patents-in-Suit: the '518 Patent, duly issued on November 13, 2007 from an application filed December 18, 2002, an application filed August 19, 2002 and, *inter alia*, a provisional application filed August 30, 2001; the '249 Patent, duly issued on September 22, 2009 from an application filed July 21, 2001, and a provisional application filed May 4, 2001; the '759 Patent, duly issued on February 15, 2011 from an application filed July 12, 2004, an application filed August 29, 2002, and, *inter alia*, a provisional application filed August 30, 2001; the '802 Patent, duly issued on December 27, 2011 from an application filed December 2, 2005, and a provisional application filed December 2, 2004; '450 Patent, duly issued on January 14, 2014, from an application filed September 19, 2005 and, *inter alia*, a provisional application filed December 2, 2004; the '539 Patent, duly issued on December 31, 2013 from an application filed September 29, 2005 and, *inter alia*, a provisional application filed December 2, 2004; the '7,566 Patent, duly issued on April 9, 2019 from an application filed February 7, 2017, an application filed September 19, 2005, and, *inter alia*, a provisional application filed December 2, 2004 (collectively, the "Pre-Investment Patents"). On information and belief, Comcast knew, based on its own analysis and also potentially statements from Entropic itself, that these

patents were standard-essential to MoCA, such that practicing the MoCA standard would infringe these patents.

122. Upon information and belief, no later than the day prior to its latest investment in Entropic in 2006, Comcast knew or had every reason to know that Entropic owned the Pre-Investment Patents related to the MoCA technology such that deployment of MoCA standard-compliant devices would infringe patents owned by Entropic.

123. Because Comcast knew of the Pre-Investment Patents and substantively reviewed such Patents, Comcast began willfully infringing the Pre-Investment Patents no later than the dates it began offering the Accused Services as alleged herein, having knowledge that such use and deployment infringed the Pre-Investment Patents.

124. No later than 2010 and continuing to the present, Comcast has used products that provided signals, programming and content utilizing a data connection carried over a coaxial cable network in accordance with the MoCA standards, including at least the Arris DCX3200, DCX3400, DCX3500, XG1-A, XG1v3, XG1v4, XG2v2, Ariss MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, Samsung SR150BNM, and similarly operating devices. Because Comcast was already aware of Entropic's Pre-Investment Patents and knew that those patents were standard-essential, Comcast knew that its use of these devices would directly infringe the Pre-Investment Patents. Despite this knowledge, Comcast willfully infringed the Pre-Investment Patents beginning no later than 2010.

1. Comcast's Involvement in MoCA

125. Upon information and belief, Comcast was involved with and/or a member of MoCA from the earliest days of the MoCA, through at least August 2019. Indeed, Comcast was a member of the MoCA board of directors.[7]

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[7] *See* https://mocalliance.org/about/faqs.php.

126. As an early and active member of MoCA, Comcast helped to develop the MoCA standard, and therefore would have been knowledgeable about the technology essential to the practice of that standard.

127. Upon information and belief, Comcast was aware that Entropic, its close partner in the endeavor to grow and developed the MoCA standard, owned patents for its technology that was MoCA-standard-compliant. [8]

128. Specifically, Comcast would have been aware of at least the '249 Patent, which was filed on July 21, 2001; the '518 Patent, which was filed on December 18, 2002; the '759 Patent, which was filed on July 24, 2004; the '450 Patent, which was filed on September 19, 2005; the '539 Patent, which was filed on September 29, 2005; and the '802 Patent, which was filed on December 2, 2005. These Patents, all of which are essential to the practice of the MoCA standard, were filed during the time that MoCA was being developed by Entropic Inc., Comcast, and others.

129. Upon information and belief, no later than the day prior to its latest investment in Entropic in 2006, any reasonable commercial party in Comcast's position, with Comcast's knowledge, would perceive a substantial likelihood that deployment of MoCA standard-compliant devices would infringe on Pre-Investment Patents owned by Entropic.

130. On information and belief, Comcast continued to monitor and analyze Entropic's MoCA-related patents and was aware of later-filed patents that are standard-essential to MoCA simply due to the importance of MoCA to Comcast's business and Comcast's later involvement as a board member of the MoCA.

131. As a member of the MoCA, Comcast was well aware that Entropic, the owner of the Patents-in-Suit, was the leading contributor of technology to the standards

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[8] *See* https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr20141231 10-k.htm.

promulgated by MoCA, which are implicated by the claims of patent infringement herein. Indeed, Comcast was aware that, at the time, Entropic was the only entity capable of developing the technology necessary to practice the MoCA standard.

132. Upon information and belief, Comcast knew that MoCA standard-compliant devices had tremendous success, given the public success through Verizon Wireless's deployment of Fios.

133. Comcast also willfully infringed the '518 Patent by virtue of its involvement in MoCA. On October 28, 2008, Anton Monk, the Vice President of Technology for Entropic Inc., disclosed Entropic Inc.'s ownership of the '518 Patent via email to the MoCA Board of Directors.

134. Attached to this email was a document entitled "Disclosure of Intellectual Property," which represents to the MoCA Board of Directors that the '518 Patent was essential to the practice of the MoCA standard.

135. On information and belief, Comcast was a member of the Board at the time and therefore received this notice from Entropic.

136. Comcast therefore had direct notice of the '518 Patent and that the '518 Patent is essential to the practice of the MoCA standard.

137. The '759 Patent is a continuation-in-part of the '518 Patent. Given the close relationship between the '759 Patent and the '518 Patent, Comcast also was on notice that the '759 Patent was owned by Entropic Inc. and is essential to the practice of the MoCA standard.

138. At the very least, Comcast engaged in a scheme to be willfully blind to the existence of the '759 Patent and the fact that it is essential to the practice of MoCA standard based on its relation to the '518 Patent.

2. Comcast's Relationship with MaxLinear, Inc.

139. Comcast and MaxLinear, Inc. were engaged in a longstanding commercial relationship for years. Upon information and belief, Comcast knew that MaxLinear, Inc. was a member of MoCA since at least 2011.

140. Comcast and MaxLinear, Inc. were both board members of MoCA from at least 2015 through August 2019. By virtue of Comcast's participation in MoCA and its ongoing, extensive use of MoCA standards, on information and belief, Comcast monitored and reviewed the publication and issuance of patents that would be standard-essential, including MaxLinear and Entropic Inc. patents. Because Comcast was using the devices that practiced the MoCA standards, Comcast willfully infringed each MaxLinear and Entropic Inc. patent that was standard-essential to MoCA no later than shortly after the issuance of those patents. To the extent Comcast did not engage in such review, it constitutes willful blindness to patent infringement due to Comcast's knowledge of the foundational role and contributions of Entropic Inc. and MaxLinear to the MoCA standards.

141. At least as early as January 1, 2020, Comcast knew that MaxLinear owned patents that were essential to practicing the technology embodied in one or more standards promulgated by MoCA.

142. Comcast knew that MaxLinear acquired Entropic Inc. and its patents in 2015.[9] Because Comcast already knew it was willfully infringing patents owned by Entropic Inc., Comcast therefore knew that it was willfully infringing patents that were standard-essential to MoCA that now were owned by MaxLinear no later than 2015.

143. [redacted]

[9] *See* https://investors.maxlinear.com/annual-reports?form_type=10-K&year=.

[redacted]

144. [redacted]

145. [redacted]

146. [redacted] related to non-standardized technologies deployed in the cable television and/or cable internet businesses, technologies that Comcast uses and deploys.

147. Despite this knowledge, Comcast continued to use and deploy devices practicing the MoCA standards and therefore willfully infringed patents owned by MaxLinear, including the Patents-in-Suit.

148. Accordingly, Comcast either knew about the Patents-in-Suit, or alternatively engaged in a scheme to be willfully blind to the existence of the Patents-in-Suit. Comcast therefore willfully infringed at least the Pre-Investment Patents and later-issued MoCA patents no later than the day prior to signing [redacted]

149. Upon information and belief, in addition to the knowledge as set forth above, one of the named inventors of the '008 Patent and '826 Patent, as set forth in Entropic's concurrently filed action *Entropic v. Comcast, et al.*, No. 2:23-cv-1050-JWH-KES, was Patrick Tierney. Mr. Tierney now works at Comcast; thus, upon information and belief, Comcast knew of the aforementioned Patents-in-Suit as early as the day Mr. Tierney was hired.

150. Comcast also attached to its own motion to dismiss [redacted] *See Entropic v. Comcast*, No. 2:23-cv-1050-JWH-KES, at Dkt. No. 39-1, Ex. A. [redacted]

151. Comcast also willfully infringed two other MaxLinear patents no later than June 9, 2022. Specifically, during prosecution of Comcast's 17/201,189 patent application, the patent examiner cited to MaxLinear, Inc.'s MoCA-related U.S. Patent No. 10,075,333 (the "'333 Patent") in a non-final rejection, which Comcast received on June 9, 2022. Additionally, the '116 Patent was cited during prosecution of Comcast's patent application 16/777,622. The examiner cited MaxLinear, Inc.'s MoCA-related U.S. Patent No. 10,285,116 ("'116 Patent")'s publication in a non-final rejection, which Comcast received on October 16, 2020. On information and belief, no later than June 9, 2022, Comcast substantively reviewed and analyzed the '333 Patent. On information and belief, no later than October 16, 2020, Comcast substantively reviewed and analyzed the '116 Patent. On information and belief, Comcast has willfully infringed the '333 and '116 Patents beginning no later than June 9, 2022 and October 16, 2020, respectively.

3. The ViXS Suit

152. Entropic filed a patent infringement suit against ViXS Systems, Inc. and ViXS USA, Inc. in the Southern District of California, Case No. 13-CV-1102-

WQHBGS ("the ViXS Suit"), on May 8, 2013, asserting infringement of the '759 Patent and the '518 Patent. Both patents are essential to the standards developed and promulgated by the MoCA.

153. Upon information and belief, as a member of the MoCA, Comcast analyzed the claims in the ViXS Suit and the patents asserted in that case, which included the '759 and '518 Patents.

154. Upon information and belief, Comcast analyzed its products' functionality in light of the patents asserted in the ViXS Suit.

155. Because Comcast already was using and deploying devices practicing the MoCA standards (and continued to do so), Comcast willfully infringed the '759 and '518 Patents no later than May 8, 2013, after substantively analyzing the complaint and the patents asserted in the the ViXS Suit.

156. As addressed above, Comcast has willfully infringed at least the '759 Patent and the '518 Patent through its knowledge gained from the ViXS Suit, and was aware of (and substantively analyzed its infringement of) the other Patents-in-Suit no later than the letter sent by Entropic in August 2022.

157. As a member of MoCA, Comcast was well aware that Entropic Inc., the owner of the MoCA Patents in the ViXS Suit, was the leading contributor of technology to the standards promulgated by MoCA, which are implicated by the claims of patent infringement in the ViXS Suit.

D. Comcast has willfully infringed each of the Patents-in-Suit through its post-suit conduct.[10]

158. Despite having knowledge of its infringement of the Patents-in-Suit by virtue of Entropic's original Complaint, its First Amended Complaint, and its

[10] Entropic has filed a motion for leave to supplement its complaint with the allegations contained in Section E herein contemporaneously with this Second Amended Complaint. This motion requests leave to include allegations of events that occurred after the filing of the original complaint, and it includes a redlined copy of the proposed

infringement contentions, Comcast continues to make, use, sell, or offer for sale the Accused Products. Thus, Comcast continues to willfully infringe the Patents-in-Suit.

159. Further, on December 1, 2023, MaxLinear, Inc. filed a Counterclaim against Comcast in the Southern District of New York ("SDNY") containing detailed allegations of Comcast's misappropriation of MaxLinear's trade secrets. These allegations shed further light on Comcast's willful infringement of the Patents-in-Suit.

160. Even if Comcast had not willfully infringed the Patents-in-Suit, MaxLinear, Inc. provided notice of termination of the VSA to Comcast on May 18, 2023, and the VSA is therefore no longer in effect.

1. Original Complaint

161. Before the filing of this Second Amended Complaint, on February 16, 2023, Comcast accepted service of Entropic's original Complaint alleging infringement of the same Patents-in-Suit. *See* DE 1. Entropic hereby incorporates its original Complaint into this Second Amended Complaint by reference.

162. Entropic's original Complaint specifically described the infringing nature of the Accused Products, which are the same as those described herein. Further, the original complaint set forth detailed allegations of how each of the Patents-in-Suit was infringed by one of or more of the Accused Products.

163. Comcast thereafter analyzed Entropic's allegations of infringement and has indeed engaged in substantive discussions with Entropic related to Entropic's infringement allegations.

164. Indeed, after Entropic's Complaint was filed, on information and belief, Comcast again sought indemnification from its suppliers for Entropic's claims.

165. Thus, Comcast was on notice of the basis for Entropic's infringement claims and sought protection for those claims from its suppliers. On information and

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supplemental pleading to Entropic's First Amended Complaint, consistent with this Court's Standing Order.

belief, Comcast could not have stated grounds for indemnification by specific suppliers unless it had knowledge of the basis for Entropic's infringement claims, as well as the specific products that were being accused.

166. Thus, Comcast has been aware that it infringed Patents-in-Suit since the service of Entropic's original Complaint, on February 16, 2023.

2. First Amended Complaint

167. Before the filing of this Second Amended Complaint, on June 5, 2023, Comcast was served with Entropic's First Amended Complaint alleging infringement of the same Patents-in-Suit. *See* DE 67. Entropic hereby incorporates its First Amended Complaint into this Second Amended Complaint by reference.

168. Even more so than its original Complaint, Entropic's First Amended Complaint set forth specific allegations of Comcast's infringement of each of the Patents-in-Suit. Entropic included reference to particular patents that Comcast willfully infringed based on its use of particular technology.

169. Comcast thereafter analyzed Entropic's allegations of infringement and has indeed engaged in substantive discussions with Entropic related to Entropic's infringement allegations.

170. Thus, Comcast has been aware that it infringed Patents-in-Suit since the service of Entropic's original Complaint, on June 5, 2023.

3. Entropic's Infringement Contentions

171. Further, Entropic's infringement contentions, served on September 15, 2023, provided Comcast with additional notice of infringement. Entropic hereby incorporates its infringement contentions into this Second Amended Complaint by reference.

172. Entropic's infringement contentions set forth Entropic's infringement positions in detail, and they include charts setting forth how each Accused Product specifically infringed each Asserted Patent.

173. In particular, Entropic identified how Comcast's development and use of a PMA system that generates and transacts D3.1 downstream (DS) profiles infringes upon Entropic's '682 Patent.

174. Comcast thereafter analyzed the infringement contentions and has engaged in thorough discussions with Entropic regarding the substance of these contentions.

175. Thus, Comcast has been aware that it infringed Patents-in-Suit since at least September 15, 2023.

176. To date, Comcast has continued its wrongful and willful use of the Patents-in-Suit, and has further continued its attempts to shield itself from liability for its wrongful use thereof.

177. Comcast's continued sale of the Accused Products despite its knowledge of the infringement set forth in Entropic's original Complaint, Second Amended Complaint, and Entropic's infringement contentions demonstrates its intent to willfully infringe the Patents-in-Suit.

4. MaxLinear's SDNY Counterclaim

178. On December 1, 2023, MaxLinear, Inc. filed a Counterclaim against Comcast, alleging that Comcast breached the nondisclosure agreement (the "NDA") it entered into with MaxLinear, Inc. and misappropriated MaxLinear, Inc.'s trade secrets. *See Comcast Cable Communications Management, LLC, et al. v. MaxLinear, Inc.*, Case No. 1:23-cv-04436-AKH, DE 88 (S.D.N.Y. Dec. 1, 2023). This Counterclaim is hereby incorporated into this Second Amended Complaint by reference.

179. In its Counterclaim, MaxLinear, Inc. alleges that Comcast intentionally, and in violation of the NDA, capitalized off of MaxLinear's breakthrough FDX technology by first convincing MaxLinear to disclose that technology to Comcast, and then by taking credit for technology and divulging the information it learned to MaxLinear's competitor.

180. Specifically, Comcast knowingly published aspects of MaxLinear's FDX amplifier design as its own through its employee, Richard Prodan; disclosed the amplifier design to MaxLinear's competitor; and paid the competitor to create a functionally identical amplifier for Comcast.

181. MaxLinear goes on to allege that, while Comcast has previously hid behind Section 7.3 of the VSA—an agreement which ***Comcast itself drafted***—Comcast's knowing misappropriation of MaxLinear's FDX-amplifier trade secret technology has rendered this provision irrelevant.

5. [redacted]

182. [redacted]

183. [redacted]

184. [redacted]

MOCA® AND THE MOCA® STANDARDS

185. MoCA is an alliance of companies that operate in the field of technology associated with providing multimedia services, such as television operators, consumer electronics, manufacturers, semiconductor vendors, and original equipment manufacturers (OEMs). MoCA has developed and published a standard governing the operation of devices using existing coaxial cable.

186. By the year 2000, cable and satellite providers were facing the problem of distributing services as data between the various locations in a dwelling where desired by customers. This would require a full digital network, capable of communication between any node in the network, in any direction. Traditional computer networking such as Ethernet provided some of the functionality, but the cabling necessary for Ethernet or the like was (and is) very expensive to install.

187. At the time, millions of dwellings and businesses across the United States often already had existing coaxial cable ("coax") deployed throughout the premises to provide traditional television programming services to various rooms. However, this cabling was not designed or envisaged as a two-way and point-to-point network, nor a network capable of carrying high speed digital data traffic. The coax was deployed as a "tree" topology which simply splits the signal coming from an external source (the cable or satellite feed) for distribution of video content to the various locations on the premises in the "downlink" direction only. Thus, it was impossible to simply use this existing cable to make the new point-to-point high-quality network connections between devices located on the premises desired by the cable and satellite providers.

188. Entropic Inc. tackled the problem and managed what was considered unlikely or impossible—to make a high-speed point-to-point digital communication network using existing coax installations. This required substantial inventive effort that is embodied by the Patents in suit. For example, one of the significant challenges faced by Entropic Inc. was the varying nature of the exact topology of existing on-premises coax infrastructure that a network architecture would have to handle. The topology and types of devices (such as passive or active splitters, their characteristics, etc.) greatly influence the environment for signals transferred from node to node.

189. Entropic Inc. later founded an organization to standardize the networking architecture and promote its use. This became known as the Multimedia over Coax Alliance, or "MoCA." That acronym has also come into common usage as the name given to the networking architecture itself—now embodied in the MoCA standards. The technology defined in the MoCA standards enables the point-to-point high-quality network so badly needed by cable and satellite providers. Crucially it also provides the operators the ability to deploy their services without the enormously costly effort of installing Ethernet or similar cabling to carry the data.

190. There have been several iterations of the MoCA standards, beginning with MoCA 1.0, which was ratified in 2006. Since 2006, MoCA has ratified subsequent versions of the MoCA standards, including MoCA 1.1 and MoCA 2.0.

191. The MoCA standards ensure network robustness along with inherent low packet error rate performance and very low latency that is relatively independent of network load. The logical network model of the MoCA network is significantly different from the underlying on-premises legacy coaxial network. For example, due to the effects of splitter jumping and reflections, the channel characteristics for a link between two MoCA nodes may be dramatically different from a link between any other two MoCA nodes.

192. **The Network Patents (the '518 and '249 Patents)** and the **OFDMA Patent (the '0,566 Patent)** describe MoCA networks, including how data communicated via MoCA networks is modulated by full-mesh pre-equalization techniques known as Adaptive Constellation Multitone (ACMT), a form of OFDM modulation.

193. As described in the **Network Coordinator Patent (the '7,566 Patent) and the Node Admission Patents (the '759 and '802 Patents)**, a particular MoCA node, known as a Network Coordinator, controls the admission of nodes to the MoCA Network. The Network Coordinator sends out a variety of data packets using a modulation profile that all the MoCA nodes can receive. For broadcast and multicast transmissions, a broadcast bitloading profile can be calculated and used for each node receiving the transmissions in the MoCA network.

194. MoCA nodes use a modulation profile for every point-to-point link. A variety of probe messages are transmitted by the MoCA nodes and used to create modulation profiles, optimize performance, and allow for various calibration mechanisms. In order to maintain network performance as network conditions change, the MoCA standards define techniques to maintain optimized point-to-point and

broadcast links between all of the MoCA nodes. The **Link Maintenance Patents (the '450 and '539 Patents)** describe link maintenance operations involving the processing of probe messages at regular intervals to recalculate parameters such as modulation profile and transmit power.

195. This MoCA network allows for devices (MoCA nodes) connected to a MoCA network to communicate data formatted in a variety of formats. **The Packet Aggregation Patent (the '910 Patent)**, for example, describes the communication of data packets in an Ethernet format, via the on-premises coaxial network without the need to deploy a separate physical network on the premises.

196. **The Clock Sync Patent (the '681 Patent)** describes the synchronization of the clocks of each MoCA node in the network with a master clock provided by the Network Coordinator as these transmissions are fully coordinated.

197. The MoCA standards and the **PQoS Flow Patents (the '213 and '422 Patents)** describe how particular MoCA nodes can request additional network resources and/or transmission opportunities. This allows the MoCA node to transfer data more quickly across the MoCA network by borrowing resources that have been scheduled to other MoCA nodes.

198. These technological developments enable users to avoid the significant costs associated with rewiring their home or business in order to deploy a number of devices throughout the premises. Further, these technological developments allow services requiring reliable, high-speed data and video communications to be provided to the user while utilizing the on-premises coaxial network already present in the user's home or business.

199. Entropic Inc. spearheaded MoCA, and its founders are the inventors of several patents that cover various mandatory aspects of the MoCA standards. In other words, by conforming to the MoCA standards, a product necessarily practices those

patents, either by itself, as a part of a MoCA-compliant system, or in the method in which it operates.

THE ACCUSED MOCA INSTRUMENTALITIES AND ACCUSED SERVICES

200. Comcast utilizes various instrumentalities, deployable as nodes in a MoCA-compliant coaxial cable network.

201. Comcast deploys the instrumentalities to, *inter alia*, provide a whole-premises DVR network over an on-premises coaxial cable network, with components including gateway devices (including, but not limited to, the XG1-A, XG1v3, XG1v4, XG2v2, and devices that operate in a similar matter) and client devices (including, but not limited to, the Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, Samsung SR150BNM, and devices that operate in a similar manner) as nodes operating with data connections compliant with MoCA 1.0, 1.1, and/or 2.0. Such components are referred to herein as the "Accused MoCA Instrumentalities." The MoCA-compliant services offered by Comcast employing the Accused MoCA Instrumentalities, including the operation of a MoCA-compliant network in which such instrumentalities are deployed, are referred to herein as the "Accused Services."

202. An exemplary illustration of the topology of various Accused MoCA Instrumentalities in a Comcast deployment is pictured below.[11]

[11] This is an example of the products used in the infringing network and is not intended to limit the scope of products accused of infringement.

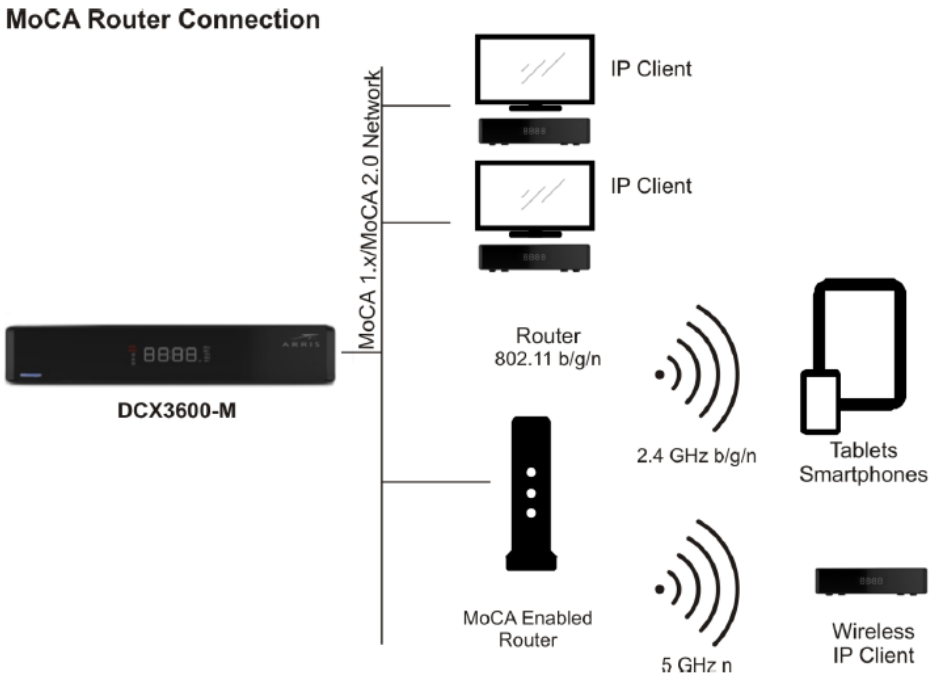

Figure 5 - A Typical Mixed MoCA/WiFi Home Network

203. Upon information and belief, the Accused MoCA Instrumentalities form networks over a coaxial cable network in accordance with MoCA 1.0, 1.1, and/or 2.0.

204. Comcast's business includes the provision of Accused Services to its customers, by means of the Accused MoCA Instrumentalities.

205. Most commonly, the Accused Services are offered and provided in exchange for fees paid to Comcast.

206. Comcast itself also sometimes tests and demonstrates the Accused Services, by means of the Accused MoCA Instrumentalities.

207. In some deployments of the Accused MoCA Instrumentalities and the performance of the Accused Services, Comcast uses one or more of: the XG1-A, XG1v3, XG1v4, XG2v2, Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, Samsung SR150BNM and similarly operating devices,

to provide signals, programming and content utilizing a data connection carried over a coaxial cable network in accordance with the MoCA standards.

208. In October 2010, Chris Albano, in his capacity as Comcast's senior director/CPE and home networking stated, "The whole world is moving to MoCA. We at Comcast have made the decision that all new products will have MoCA embedded into them."[12]

209. Upon information and belief, Mr. Albano and/or other authorized Comcast personnel authorized the publication and attribution of the preceding quotation to Mr. Albano.

210. Mr. Albano further stated in October 2010, in his capacity as Comcast's senior director/CPE and home networking that, "everyone is moving toward building MoCA in new devices. . . When you put MoCA (filters) in a home, you would be blocking MoCA energy and the home networking revolution."[13]

211. Upon information and belief, Mr. Albano and/or other authorized Comcast personnel authorized the publication and attribution of the preceding quotation to Mr. Albano.

212. Comcast was aware of its deployment and use of MoCA at least as early as the later of its involvement with MoCA and six years prior to the filing of this complaint.

213. Upon information and belief, Comcast was aware that Entropic Inc. invented technology underlying the MoCA standards. Accordingly, such Entropic, Inc. technology would be incorporated into any instrumentality compliant with the MoCA standards.

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[12] https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits.

[13] https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits.

214. Upon information and belief, Comcast and/or its subsidiaries was a member of MoCA beginning in 2010, which provided Comcast full access to all then-existing versions of the MoCA standards.

215. Upon information and belief, Comcast was aware that Entropic Inc. intended to and did pursue patent protection for technology related to MoCA, at least as early as the later of its involvement with MoCA and the issue date of the Patents-in-Suit.

216. When Comcast obtained, deployed and/or used instrumentalities with MoCA functionality not provided by Entropic Inc., Comcast knew or should have known that Entropic Inc. had provided no authorization for such activities, for example by a patent license.

217. Upon information and belief, when Comcast obtained, deployed and/or used instrumentalities with MoCA functionality not provided by Entropic Inc., Comcast failed to investigate whether Entropic Inc. authorized the use of Entropic Inc.'s patents for such activity.

218. Alternatively, upon information and belief, when Comcast obtained, deployed and/or used instrumentalities with MoCA functionality not provided by Entropic Inc., Comcast knew the use of Entropic Inc.'s patents for such activity was not authorized by Entropic Inc.

JURISDICTION AND VENUE

219. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the claims herein arise under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271.

220. Venue in this Judicial District is proper under 28 U.S.C. § 1400(b) because Comcast has regular and established places of business in this District. The defendants, by themselves and/or through their agents have committed acts of patent infringement within the State of California and in this Judicial District by making, importing, using, selling, offering for sale, and/or leasing the Accused MoCA Instrumentalities, as well as

Accused Services employing the Accused MoCA Instrumentalities that comply with one or more of MoCA 1.0, 1.1, and/or 2.0.

221. This Court has general personal jurisdiction over Comcast Corp. because it conducts systematic and regular business within the State of California by, *inter alia*, providing cable television, internet, and phone services to businesses and residents throughout this State. Comcast Corp.'s website states that, "Comcast is deeply committed to California, where our nearly 5,000 employees serve more than 3 million customers throughout the state."[14]

222. Upon information and belief, Comcast Management has a regular and established place of business in the State of California at 3055 Comcast Place, Livermore, California 94551.

223. The Court has personal jurisdiction over Comcast Corp., Comcast Communications, and Comcast Management because they have committed acts of infringement within the State of California and within this Judicial District through, for example, making infringing networks using the Accused MoCA Instrumentalities, and using the Accused MoCA Instrumentalities to provide the Accused Services in the State of California and this Judicial District.

224. Upon information and belief, Comcast Corp., Comcast Communications, and/or Comcast Management, by themselves and/or through their agents offer various telecommunication services throughout the United States. Comcast operates and maintains a nationwide television and data network through which it sells, leases, and offers products and services, including the Accused MoCA Instrumentalities, to businesses, consumers, and government agencies. Through its subsidiaries, Comcast Corp. offers to sell, sells, and provides "Comcast" and "Xfinity" branded products and services, including, set top boxes and digital video, audio, and other content services to

[14] https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service.

customers. Subscribers to Comcast's television services receive one or more receivers and/or set-top boxes, within this Judicial District.

225. Upon information and belief, the Accused Services are provided using the Accused MoCA Instrumentalities.

226. Upon information and belief, Comcast Corp., Comcast Communications, and/or Comcast Management, by themselves and/or through their agents Comcast Santa Maria and/or Comcast Lompoc operate their businesses through, *inter alia*, offices, warehouses, storefronts, and/or other operational locations within this Judicial District, including, for example, at the Xfinity by Comcast stores located in this Judicial District at 685 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436. Comcast holds out these locations as its own through the use of branding on the locations themselves.

227. Comcast lists these Xfinity by Comcast stores on its website and holds them out as places where customers can obtain the Accused MoCA Instrumentalities.

228. Upon information and belief, one or more of the defendants own and/or leases the premises where these Xfinity by Comcast stores are located.

229. Upon information and belief, these Xfinity by Comcast stores are staffed by persons directly employed by Comcast, many of whom live in this Judicial District.

230. Upon information and belief, one or more of the defendants has engaged in regular and established business at physical places within this Judicial District such as at these two Xfinity by Comcast stores.

231. Upon information and belief, Comcast employs and/or contracts with persons and directs them to install, service, repair, and/or replace equipment, as appropriate, in this Judicial District.

232. Upon information and belief, in each of these stores and/or service centers, Comcast owns and stores the Accused MoCA Instrumentalities and demonstrates the Accused Services provided via those products to Comcast customers.

233. Comcast has adopted and ratified the Comcast and Xfinity-branded locations identified in this Judicial District. The Comcast website advertises Comcast service packages available from Comcast-authorized retailers in this Judicial District, and prospective employees can find Comcast job listings in this Judicial District. Furthermore, the "corporate" section of Comcast's main website has a section containing "Special Information Regarding California Residents' Privacy Rights," which demonstrates that Comcast is purposefully holding itself out as providing products and services in California.

234. Upon information and belief, Comcast Corp., and/or Comcast Communications, collectively, by themselves and/or through their agent Comcast Management provides the Accused Services throughout the United States and in this Judicial District.

235. Upon information and belief, Comcast Corp., and/or Comcast Management, collectively, by themselves, and/or through their agent, Comcast Communications sells, and offers for sale, and provides the Accused Services and the Accused MoCA Instrumentalities throughout the United States and in this Judicial District.

236. The Accused Services are available for subscription from various physical stores, including those at 685 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

237. The Accused MoCA Instrumentalities, provided by Comcast to supply the Accused Services are provided to customers in this Judicial District and may be obtained by customers from physical locations in this District, including those at 685 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

238. Venue is further proper because Comcast has committed and continues to commit acts of patent infringement in this Judicial District, including, making, using,

importing, offering to sell, and/or selling Accused Services and Accused MoCA Instrumentalities, and MoCA networks, and thereafter providing Accused Services in this Judicial District, including by Internet sales and sales via retail and wholesale stores. Furthermore, for example, Comcast deploys Accused MoCA Instrumentalities to many thousands of locations (customer premises) in this Judicial District and subsequently, by means of those Accused MoCA Instrumentalities, uses the claimed inventions at those locations in this Judicial District. Comcast infringes by inducing and contributing to acts of patent infringement in this Judicial District and/or committing at least a portion of any other infringements alleged herein in this Judicial District.

239. Comcast continues to conduct business in this Judicial District, including the acts and activities described in the preceding paragraph.

COUNT I

(Infringement of the '518 Patent)

240. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

241. The '518 Patent duly issued on November 13, 2007 from an application filed December 18, 2002, an application filed August 29, 2002 and, *inter alia*, a provisional application filed August 30, 2001.

242. Entropic owns all substantial rights, interest, and title in and to the '518 Patent, including the sole and exclusive right to prosecute this action and enforce the '518 Patent against infringers, and to collect damages for all relevant times.

243. The '518 Patent is one of the Network Patents, and is generally directed to, *inter alia,* broadband local area data networks using on-premises coaxial cable wiring for interconnection of devices. Probe messages can be "sent between devices to characterize the communication channel and determine optimum bit loading" for communicating data between devices. '518 Patent, Abstract. The '518 Patent has four claims, of which claims 1 and 4 are independent. At least these claims of the '518 Patent

are directed to the creation of the MoCA network using the on-premises coaxial cable wiring. A true and accurate copy of the '518 Patent is attached hereto as Exhibit A.

244. The '518 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

245. The '518 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

246. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

247. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

248. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

249. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit B),[15] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the '518 Patent.

250. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

251. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

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[15] The prior claim chart for this patent can be found at DE 67.

252. The Accused MoCA Instrumentalities are compliant with the provisions of MoCA 1.0, 1.1., and/or 2.0, as described in the '518 Patent claim chart, Exhibit B.

253. Comcast therefore directly infringes at least claim 1 of the '518 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

254. Comcast directly infringes at least claim 1 of the '518 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

255. Comcast directly infringes at least claim 1 of the '518 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities in connection with providing the Accused Services over an on-premises coaxial cable network, which meets each and every limitation of at least claim 1 of the '518 Patent.

256. [redacted]

257. Comcast has known of or has been willfully blind to the '518 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

258. Comcast has known of or has been willfully blind to the '518 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

259. Comcast has known of or has been willfully blind to the '518 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

260. Comcast has known of or has been willfully blind to the '518 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

261. Comcast has known of or has been willfully blind to the '518 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

262. Comcast has been aware that it infringes the '518 Patent since at least as early as receipt of Entropic's communications sent to Comcast on August 9, 2022.

263. Comcast has known of or has been willfully blind to the '518 Patent since at least the day before [redacted]

264. Comcast has known of or has been willfully blind to the '518 Patent since at least October 28, 2008, when Anton Monk provided notice of the '518 Patent to the MoCA Board of Directors.

265. Comcast has known of or has been willfully blind to the '518 Patent since at least the day before investing in Entropic Inc. in or about 2006.

266. The '518 Patent issued while or before Comcast was a member of MoCA.

267. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '518 Patent before August 9, 2022 or was willfully blind to its existence.

268. The claims of the '518 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

269. Comcast knew, or was willfully blind to the fact that the technology of the '518 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '518 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant

with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '518 Patent.

270. Since learning of the '518 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

271. Comcast's customers and subscribers directly infringe at least claim 1 of the '518 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

272. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

273. For example, Comcast actively induces infringement of at least claim 1 of the '518 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities in a manner that infringes the '518 Patent.

274. Comcast aids, instructs, supports, and otherwise acts with, the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities in a manner that infringes each and every element of at least claim 1 of the '518 Patent.

275. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 1 of the '518 Patent.

276. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user necessarily directly infringes at least claim 1 of the '518 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

277. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '518 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

278. Comcast's infringement of the '518 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

279. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

280. Upon information and belief, there is no duty to mark any instrumentality with the '518 Patent in accordance with 35 U.S.C. § 287.

COUNT II

(Infringement of the '249 Patent)

281. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

282. The '249 Patent duly issued on September 22, 2009 from an application filed July 21, 2001, and a provisional application filed May 4, 2001.

283. Entropic owns all substantial rights, interest, and title in and to the '249 Patent, including the sole and exclusive right to prosecute this action and enforce the '249 Patent against infringers, and to collect damages for all relevant times.

284. The '249 Patent is one of the Network Patents, and is generally directed to, *inter alia*, broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other devices in the network and establishes parameters to overcome channel impairments in the coaxial cable network. '249 Patent, col. 3, lines 11–22. The '249 Patent has 17 claims, of which

claims 1, 5, and 10 are independent. At least these claims of the '249 Patent are directed to the creation of the MoCA network using the on-premises coaxial cable wiring. A true and accurate copy of the '249 Patent is attached hereto as Exhibit C.

285. The '249 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

286. The '249 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

287. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

288. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

289. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

290. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit D),[16] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 10 of the '249 Patent.

291. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

[16] The prior claim chart for this patent can be found at DE 67.

292. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

293. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1., and/or 2.0, as described in the '249 Patent claim chart, Exhibit D.

294. Comcast therefore directly infringes at least claim 10 of the '249 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

295. Comcast directly infringes at least claim 10 of the '249 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

296. Comcast directly infringes at least claim 10 of the '249 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities in connection with providing the Accused Services over an on-premises coaxial cable network, which meets each and every limitation of at least claim 10 of the '249 Patent.

297. [redacted]

298. Comcast has known of or has been willfully blind to the '249 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

299. Comcast has known of or has been willfully blind to the '249 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

300. Comcast has known of or has been willfully blind to the '249 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

301. Comcast has known of or has been willfully blind to the '249 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

302. Comcast has known of or has been willfully blind to the '249 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

303. Comcast has been aware that it infringes the '249 Patent no later than its receipt of Entropic's communications sent to Comcast on August 9, 2022.

304. Comcast has known of or has been willfully blind to the '249 Patent since at least the day before [redacted]

305. Comcast has known of or has been willfully blind to the '249 Patent since at least the day before investing in Entropic in or about 2006.

306. The '249 Patent issued while or before Comcast was a member of MoCA.

307. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '249 Patent before August 9, 2022 or was willfully blind to its existence.

308. The claims of the '249 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

309. Comcast knew, or was willfully blind to the fact that the technology of the '249 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '249 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant

with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '249 Patent.

310. Since learning of the '249 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

311. Comcast's customers and subscribers directly infringe at least claim 10 of the '249 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

312. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

313. For example, Comcast actively induces infringement of at least claim 10 of the '249 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities in a manner that infringes the '249 Patent.

314. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities in a manner that infringes every element of at least claim 10 of the '249 Patent.

315. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 10 of the '249 Patent.

316. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user necessarily directly infringes at least claim 10 of the '249 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

317. Comcast's inducement of, and contribution to, the direct infringement of at least claim 10 of the '249 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

318. Comcast's infringement of the '249 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

319. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

320. Entropic is aware of no obligation to mark any instrumentality with the '249 Patent in accordance with 35 U.S.C. § 287.

COUNT III

(Infringement of the '759 Patent)

321. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

322. The '759 Patent duly issued on February 15, 2011 from an application filed July 12, 2004, an application filed August 29, 2002, and, *inter alia* a provisional application filed August 30, 2001.

323. Entropic owns all substantial rights, interest, and title in and to the '759 Patent, including the sole and exclusive right to prosecute this action and enforce the '759 Patent against infringers, and to collect damages for all relevant times.

324. The '759 Patent is one of the Node Admission Patents, and is generally directed to, *inter alia*, broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other devices in the network and establishes a common modulation scheme between the

devices in the network. '759 Patent, Abstract. The '759 Patent has 22 claims, of which claims 1–7, 14, 20–22 are independent. At least these claims of the '759 Patent are directed to a variety of techniques for establishing a modulation scheme for communications between nodes in the MoCA network. A true and correct copy of the '759 Patent is attached hereto as Exhibit E.

325. The '759 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

326. The '759 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

327. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

328. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

329. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

330. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit F),[17] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 2 of the '759 Patent.

331. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

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[17] The prior claim chart for this patent can be found at DE 67.

332. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

333. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1, and/or 2.0, as described in the '759 Patent claim chart, Exhibit F.

334. Comcast therefore directly infringes at least claim 2 of the '759 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

335. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 2 of the '759 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 2 of the '759 Patent in order to generate revenue from its customers and subscribers.

336. Comcast directly infringes at least claim 2 of the '759 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

337. [redacted]

338. Comcast has known of or has been willfully blind to the '759 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

339. Comcast has known of or has been willfully blind to the '759 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

340. Comcast has known of or has been willfully blind to the '759 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

341. Comcast has known of or has been willfully blind to the '759 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

342. Comcast has known of or has been willfully blind to the '759 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

343. Comcast has been aware that it infringes the '759 Patent no later than its receipt of Entropic's communications sent to Comcast on August 9, 2022.

344. Comcast has known of or has been willfully blind to the '759 Patent since at least the day before [redacted]

345. Comcast has known of or has been willfully blind to the '759 Patent since at least October 28, 2008, when Anton Monk provided notice of the '518 Patent to the MoCA Board of Directors.

346. Comcast has known of or has been willfully blind to the '759 Patent since at least the day before investing in Entropic in or about 2006.The '759 Patent issued while or before Comcast was a member of MoCA.

347. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '759 Patent before August 9, 2022 or was willfully blind to its existence.

348. The claims of the '759 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

349. Comcast knew, or was willfully blind to the fact that the technology of the '759 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '759 Patent. Because of

its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '759 Patent.

350. Since learning of the '759 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

351. Comcast's customers and subscribers directly infringe at least claim 2 of the '759 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

352. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

353. For example, Comcast actively induces infringement of at least claim 2 of the '759 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '759 Patent.

354. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 2 of the '759 Patent.

355. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 2 of the '759 Patent.

356. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user necessarily directly infringes

at least claim 2 of the '759 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

357. Comcast's inducement of, and contribution to, the direct infringement of at least claim 2 of the '759 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

358. Comcast's infringement of the '759 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

359. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

360. Upon information and belief, there is no duty to mark any instrumentality with the '759 Patent in accordance with 35 U.S.C. § 287.

COUNT IV

(Infringement of the '802 Patent)

361. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

362. The '802 Patent duly issued on December 27, 2011 from an application filed December 2, 2005, and a provisional application filed December 2, 2004.

363. Entropic owns all substantial rights, interest, and title in and to the '802 Patent, including the sole and exclusive right to prosecute this action and enforce the '802 Patent against infringers, and to collect damages for all relevant times.

364. The '802 Patent is one of the Node Admission Patents, and is generally directed to, *inter alia,* broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other

devices in the network and establishes the best modulation and other transmission parameters that is optimized and periodically adapted to the channel between each pair of devices. '802 Patent, col. 4, lines 7–24. The '802 Patent has four claims, all of which are independent. At least these claims of the '802 Patent are directed to a variety of techniques for establishing a modulation scheme for communications between nodes in the MoCA network. A true and accurate copy of the '802 Patent is attached hereto as Exhibit G.

365. The '802 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

366. The '802 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

367. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

368. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

369. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

370. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit H),[18] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 3 of the '802 Patent.

[18] The prior claim chart for this patent can be found at DE 67.

371. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

372. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

373. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1, and/or 2.0, as described in the '802 Patent claim chart, Exhibit H.

374. Comcast therefore directly infringes at least claim 3 of the '802 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

375. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 3 of the '802 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 3 of the '802 Patent in order to generate revenue from its customers and subscribers.

376. Comcast directly infringes at least claim 3 of the '802 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services and/or the Accused MoCA Instrumentalities.

377. [redacted]

378. Comcast has known of or has been willfully blind to the '802 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

379. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

380. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

381. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

382. Comcast has known of or has been willfully blind to the '802 Patent since at least the day before [redacted]

383. Comcast has been aware that it infringes the '802 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

384. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

385. Comcast has known of or has been willfully blind to the '802 Patent since at least the day before investing in Entropic in or about 2006.

386. The '802 Patent issued while or before Comcast was a member of MoCA.

387. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '802 Patent before August 9, 2022 or was willfully blind to its existence.

388. The claims of the '802 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

389. Comcast knew, or was willfully blind to the fact that the technology of the '802 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '802 Patent. Because of

its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '802 Patent.

390. Since learning of the '802 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

391. Comcast's customers and subscribers directly infringe at least claim 3 of the '802 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

392. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

393. For example, Comcast actively induces infringement of at least claim 3 of the '802 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '802 Patent.

394. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 3 of the '802 Patent.

395. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 3 of the '802 Patent.

396. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user necessarily directly infringes

at least claim 3 of the '802 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

397. Comcast's inducement of, and contribution to, the direct infringement of at least claim 3 of the '802 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

398. Comcast's infringement of the '802 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

399. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

400. Upon information and belief, there is no duty to mark any instrumentality with the '802 Patent in accordance with 35 U.S.C. § 287.

COUNT V

(Infringement of the '450 Patent)

401. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

402. The '450 Patent duly issued on January 14, 2014, from an application filed September 19, 2005 and, *inter alia*, a provisional application filed December 2, 2004.

403. Entropic owns all substantial rights, interest, and title in and to the '450 Patent, including the sole and exclusive right to prosecute this action and enforce the '450 Patent against infringers, and to collect damages for all relevant times.

404. The '450 Patent is one of the Link Maintenance Patents, and is generally directed to, *inter alia*, broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other

devices in the network and establishes a common modulation scheme between the devices in the network. '450 Patent, col. 4, lines 12-28. The '450 Patent has 38 claims, of which, claim 1, 8, 27, 29, and 34 are independent. At least these claims of the '450 Patent are directed to a variety of techniques for determining a common modulation scheme for communications between nodes in the MoCA network. A true and accurate copy of the '450 Patent is attached hereto as Exhibit I.

405. The '450 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

406. The '450 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

407. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

408. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

409. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

410. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit J),[19] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 29 of the '450 Patent.

[19] The prior claim chart for this patent can be found at DE 67.

411. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

412. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

413. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1, and/or 2.0, as described in the '450 Patent claim chart, Exhibit J.

414. Comcast therefore directly infringes at least claim 29 of the '450 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

415. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 29 of the '450 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 29 of the '450 Patent in order to generate revenue from its customers and subscribers.

416. Comcast directly infringes at least claim 29 of the '450 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

417. [redacted]

418. Comcast has known of or has been willfully blind to the '450 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

419. Comcast has known of or has been willfully blind to the '450 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

420. Comcast has known of or has been willfully blind to the '450 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

421. Comcast has known of or has been willfully blind to the '450 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

422. Comcast has known of or has been willfully blind to the '450 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

423. Comcast has been aware that it infringes the '450 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

424. Comcast has known of or has been willfully blind to the '450 Patent since at least the day before [redacted]

425. Comcast has known of or has been willfully blind to the '450 Patent since at least the day before investing in Entropic in or about 2006.

426. The '450 Patent issued while or before Comcast was a member of MoCA.

427. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '450 Patent before August 9, 2022 or was willfully blind to its existence.

428. The claims of the '450 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

429. Comcast knew, or was willfully blind to the fact that the technology of the '450 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '450 Patent. Because of

its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '450 Patent.

430. Since learning of the '450 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

431. Comcast's customers and subscribers directly infringe at least claim 29 of the '450 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

432. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

433. For example, Comcast actively induces infringement of at least claim 29 of the '450 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '450 Patent.

434. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 29 of the '450 Patent.

435. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 29 of the '450 Patent.

436. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim

29 of the '450 Patent. The Accused MoCA Instrumentalities are especially made or especially adapted for use in an infringing manner.

437. Comcast's inducement of, and contribution to, the direct infringement of at least claim 29 of the '450 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

438. Comcast's infringement of the '450 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

439. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

440. Upon information and belief, there is no duty to mark any instrumentality with the '450 Patent in accordance with 35 U.S.C. § 287.

COUNT VI

(Infringement of the '7,566 Patent)

441. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

442. The '7,566 Patent duly issued on April 9, 2019 from an application filed February 7, 2017, an application filed September 19, 2005, and, *inter alia*, a provisional application filed December 2, 2004.

443. Entropic owns all substantial rights, interest, and title in and to the '7,566 Patent, including the sole and exclusive right to prosecute this action and enforce the '7,566 Patent against infringers, and to collect damages for all relevant times.

444. The '7,566 Patent is the Network Coordinator Patent, and is generally directed to, *inter alia,* broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to

modify the existing cable infrastructure. Each device communicates with the other devices in the network and establishes the best modulation and other transmission parameters that is optimized and periodically adapted to the channel between each pair of devices. '7,566 Patent, col. 4, lines 23–39. The '7,566 Patent has 20 claims, of which claims 1, 11, and 19 are independent. At least these claims of the '7,566 Patent are directed to a variety of techniques for controlling the admission of nodes in the MoCA network. A true and accurate copy of the '7,566 Patent is attached hereto as Exhibit K.

445. The '7,566 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

446. The '7,566 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

447. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

448. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

449. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

450. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit L),[20] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 11 of the '7,566 Patent.

[20] The prior claim chart for this patent can be found at DE 67.

451. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

452. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

453. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1, and/or 2.0, as described in the '7,566 Patent claim chart, Exhibit L.

454. Comcast therefore directly infringes at least claim 11 of the '7,566 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

455. Comcast directly infringes at least claim 11 of the '7,566 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services and/or the Accused MoCA Instrumentalities.

456. Comcast directly infringes at least claim 11 of the '7,566 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities, which meet every limitation of at least claim 11 of the '7,566 Patent, in connection with providing the Accused Services over an on-premises coaxial cable network.

457. [redacted]

458. Comcast has known of or has been willfully blind to the '7,566 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

459. Comcast has known of or has been willfully blind to the '7,566 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

460. Comcast has known of or has been willfully blind to the '7,566 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

461. Comcast has known of or has been willfully blind to the '7,566 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

462. Comcast has been aware that it infringes the '7,566 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

463. Comcast has known of or has been willfully blind to the '7,566 Patent since at least the day before [redacted]

464. Comcast has known of or has been willfully blind to the '7,566 Patent since at least the day before investing in Entropic in or about 2006.

465. The '7,566 Patent issued while or before Comcast was a member of MoCA.

466. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '7,566 Patent before August 9, 2022 or was willfully blind to its existence.

467. The claims of the '7,566 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

468. Comcast knew, or was willfully blind to the fact that the technology of the '7,566 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '7,566 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities

compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '7,566 Patent.

469. Since learning of the '7,566 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

470. Comcast's customers and subscribers directly infringe at least claim 11 of the '7,566 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

471. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services through the Accused MoCA Instrumentalities, and associated support.

472. For example, Comcast actively induces infringement of at least claim 11 of the '7,566 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '7,566 Patent.

473. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 11 of the '7,566 Patent.

474. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides, *inter alia*, the Accused MoCA Instrumentalities designed and configured to create a MoCA network and operate as nodes in the network, the use of which infringes at least claim 11 of the '7,566 Patent.

475. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 11 of the '7,566 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

476. Comcast's inducement of, and contribution to, the direct infringement of at least claim 11 of the '7,566 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

477. Comcast's infringement of the '7,566 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

478. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

479. Entropic is aware of no obligation to mark any instrumentality with the '7,566 Patent in accordance with 35 U.S.C. § 287.

COUNT VII

(Infringement of the '539 Patent)

480. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

481. The '539 Patent duly issued on December 31, 2013 from an application filed September 29, 2005 and, *inter alia*, a provisional application filed December 2, 2004.

482. Entropic owns all substantial rights, interest, and title in and to the '539 Patent, including the sole and exclusive right to prosecute this action and enforce the '539 Patent against infringers, and to collect damages for all relevant times.

483. The '539 Patent is one of the Link Maintenance Patents, and is generally directed to, *inter alia,* a physical layer transmitter that performs all of the necessary RF, analog and digital processing required for transmitting MAC messages between devices in a broadband cable network. '539 Patent, col. 4, lines 37–48. The '539 Patent has seven claims, of which claim 1 is independent. At least this claim of the '539 Patent is directed

at a variety of techniques for monitoring and maintaining utilized modulation profiles in the MoCA network. A true and accurate copy of the '539 Patent is attached hereto as Exhibit M.

484. The '539 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

485. The '539 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

486. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

487. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

488. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

489. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit N),[21] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the '539 Patent.

490. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

[21] The prior claim chart for this patent can be found at DE 67.

491. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

492. The Accused MoCA Instrumentalities are compliant with MoCA 1.0, 1.1, and/or 2.0, as described in the '539 Patent claim chart, Exhibit N.

493. Comcast therefore directly infringes at least claim 1 of the '539 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

494. Comcast directly infringes at least claim 1 of the '539 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

495. Comcast directly infringes at least claim 1 of the '539 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities, which meet every limitation of at least claim 1 of the '539 Patent, in connection with providing the Accused Services over an on-premises coaxial cable network.

496. [redacted]

497. Comcast has known of or has been willfully blind to the '539 Patent since its filing, given that this patent was filed during the time that MoCA was being developed and Comcast was intimately aware of the technology needed to comply with the MoCA standard that was being created.

498. Comcast has known of or has been willfully blind to the '539 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

499. Comcast has known of or has been willfully blind to the '539 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

500. Comcast has known of or has been willfully blind to the '539 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

501. Comcast has known of or has been willfully blind to the '539 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

502. Comcast has been aware that it infringes the '539 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

503. Comcast has known of or has been willfully blind to the '539 Patent since at least the day before [redacted]

504. Comcast has known of or has been willfully blind to the '539 Patent since at least the day before investing in Entropic in or about 2006.

505. The '539 Patent issued while or before Comcast was a member of MoCA.

506. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '539 Patent before August 9, 2022 or was willfully blind to its existence.

507. The claims of the '539 Patent are essential to practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

508. Comcast knew, or was willfully blind to the fact that the technology of the '539 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '539 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant

with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '539 Patent.

509. Since learning of the '539 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

510. Comcast's customers and subscribers directly infringe at least claim 1 of the '539 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

511. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services through the Accused MoCA Instrumentalities, and associated support.

512. For example, Comcast actively induces infringement of at least claim 1 of the '539 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '539 Patent.

513. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 1 of the '539 Patent.

514. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides, *inter alia*, the Accused MoCA Instrumentalities designed and configured to create a MoCA network and operate as nodes in the network, the use of which infringes at least claim 1 of the '539 Patent.

515. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 1 of the '539 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

516. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '539 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

517. Comcast's infringement of the '539 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

518. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

519. Entropic is aware of no obligation to mark any instrumentality with the '539 Patent in accordance with 35 U.S.C. § 287.

COUNT VIII

(Infringement of the '213 Patent)

520. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

521. The '213 Patent duly issued on December 5, 2017 from an application filed February 6, 2008, and, *inter alia*, a provisional application filed on February 6 2007.

522. Entropic owns all substantial rights, interest, and title in and to the '213 Patent, including the sole and exclusive right to prosecute this action and enforce the '213 Patent against infringers, and to collect damages for all relevant times.

523. The '213 Patent is one of the PQoS Flows Patents, and is generally directed to, *inter alia*, low-cost and high-speed management of resources within a network in order to secure the capability to distribute multimedia data (such as video/audio, games, images, generic data, and interactive services) between devices within existing on-premises coaxial cable networks. '213 Patent, col. 3, lines 46–53. The '213 Patent has 24 claims, of which claims 1, 13, and 23 are independent. At least these claims of the

'213 Patent are directed to a variety of techniques for allocating resources for guaranteed quality of service flows in the MoCA network. A true and accurate copy of the '213 Patent is attached hereto as Exhibit O.

524. The '213 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

525. The '213 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

526. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

527. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

528. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

529. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit P),[22] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '213 Patent.

530. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

[22] The prior claim chart for this patent can be found at DE 67.

531. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

532. The Accused MoCA Instrumentalities are compliant with MoCA 1.1 and/or MoCA 2.0, as described in the '213 Patent claim chart, Exhibit P.

533. Comcast therefore directly infringes at least claim 1 of the '213 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

534. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 1 of the '213 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 1 of the '213 Patent in order to generate revenue from its customers and subscribers.

535. Comcast directly infringes at least claim 1 of the '213 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

536. [redacted]

537. Comcast has known of or has been willfully blind to the '213 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

538. Comcast has known of or has been willfully blind to the '213 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

539. Comcast has known of or has been willfully blind to the '213 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

540. Comcast has known of or has been willfully blind to the '213 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

541. Comcast has been aware that it infringes the '213 Patent no later than its receipt of Entropic's communications sent to Comcast on August 9, 2022.

542. Comcast has known of or has been willfully blind to the '213 Patent since at least the day before [redacted]

543. The '213 Patent issued while or before Comcast was a member of MoCA.

544. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '213 Patent before August 9, 2022 or was willfully blind to its existence.

545. The claims of the '213 Patent are essential to practicing at least MoCA standards versions 1.1, and/or 2.0.

546. Comcast knew, or was willfully blind to the fact that the technology of the '213 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '213 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '213 Patent.

547. Since learning of the '213 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

548. Comcast's customers and subscribers directly infringe at least claim 1 of the '213 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

549. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

550. For example, Comcast actively induces infringement of at least claim 1 of the '213 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '213 Patent.

551. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 1 of the '213 Patent.

552. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 1 of the '213 Patent.

553. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 1 of the '213 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

554. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '213 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

555. Comcast's infringement of the '213 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

556. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

557. Upon information and belief, there is no duty to mark any instrumentality with the '213 Patent in accordance with 35 U.S.C. § 287(a).

COUNT IX

(Infringement of the '422 Patent)

558. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

559. The '422 Patent duly issued on October 1, 2019 from an application filed December 5, 2017, an application filed February 6, 2008, and, *inter alia*, a provisional application filed February 6, 2007.

560. Entropic owns all substantial rights, interest, and title in and to the '422 Patent, including the sole and exclusive right to prosecute this action and enforce the '422 Patent against infringers, and to collect damages for all relevant times.

561. The '422 Patent is one of the PQoS Flows Patents, and is generally directed to, *inter alia*, low-cost and high-speed management of resources within a network in order to secure the capability to distribute multimedia data (such as video/audio, games, images, generic data, and interactive services) between devices within existing on-premises coaxial cable networks. '422 Patent, col. 3, lines 53–60. The '422 Patent has 20 claims, of which, claims 1, 5, 12–17 are independent. At least these claims of the '422 Patent are directed to a variety of techniques for allocating resources for guaranteed

quality of service flows in the MoCA network. A true and accurate copy of the '422 Patent is attached hereto as Exhibit Q.

562. The '422 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

563. The '422 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

564. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

565. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

566. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

567. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit R),[23] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '422 Patent.

568. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

569. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

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[23] The prior claim chart for this patent can be found at DE 67.

570. The Accused MoCA Instrumentalities are compliant with MoCA 1.1 and/or MoCA 2.0, as described in the '422 Patent claim chart, Exhibit R.

571. Comcast therefore directly infringes at least claim 1 of the '422 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

572. Comcast directly infringes at least claim 1 of the '422 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

573. Comcast directly infringes at least claim 1 of the '422 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities in connection with providing the Accused Services over an on-premises coaxial cable network, which meets every limitation of at least claim 1 of the '422 Patent.

574. [redacted]

575. Comcast has known of or has been willfully blind to the '422 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

576. Comcast has known of or has been willfully blind to the '422 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

577. Comcast has known of or has been willfully blind to the '422 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023

578. Comcast has known of or has been willfully blind to the '422 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

579. Comcast has been aware that it infringes the '422 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

580. Comcast has known of or has been willfully blind to the '422 Patent since at least the day before [redacted]

581. The '422 Patent issued while or before Comcast was a member of MoCA.

582. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '422 Patent before August 9, 2022 or was willfully blind to its existence.

583. The claims of the '422 Patent are essential to practicing at least MoCA standards versions 1.1, and/or 2.0.

584. Comcast knew, or was willfully blind to the fact that the technology of the '422 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '422 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '422 Patent.

585. Since learning of the '422 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

586. Comcast's customers and subscribers directly infringe at least claim 1 of the '422 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

587. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

588. For example, Comcast actively induces infringement of at least claim 1 of the '422 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and

maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '422 Patent.

589. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 1 of the '422 Patent.

590. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 1 of the '422 Patent.

591. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 1 of the '422 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

592. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '422 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

593. Comcast's infringement of the '422 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

594. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

595. Upon information and belief, there is no duty to mark any instrumentality with the '422 Patent in accordance with 35 U.S.C. § 287.

COUNT X

(Infringement of the '910 Patent)

596. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

597. The '910 Patent duly issued on July 24, 2012 from an application filed May 9, 2008, and a provisional application filed May 9, 2007.

598. Entropic owns all substantial rights, interest, and title in and to the '910 Patent, including the sole and exclusive right to prosecute this action and enforce the '910 Patent against infringers, and to collect damages for all relevant times.

599. The '910 Patent is the Packet Aggregation Patent, and is generally directed to, *inter alia,* transmitting data over a network, where the transmitting device aggregates packets that are directed to a common destination node. This reduces the transmitted packet overhead of the network by eliminating interframe gaps, preamble information, and extra headers. '910 Patent, col. 1, line 66 – col. 2, line 3. The '910 Patent has three claims, all of which are independent. At least these claims of the '910 Patent are directed to a variety of techniques for aggregating packet data units in the MoCA network. A true and accurate copy of the '910 Patent is attached hereto as Exhibit S.

600. The '910 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

601. The '910 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

602. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

603. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

604. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

605. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit T),[24] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 3 of the '910 Patent.

606. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

607. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

608. The Accused MoCA Instrumentalities are compliant with MoCA 1.1., and/or MoCA 2.0, as described in the '910 Patent claim chart, Exhibit T.

609. Comcast therefore directly infringes at least claim 3 of the '910 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

610. Comcast directly infringes at least claim 3 of the '910 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

611. Comcast directly infringes at least claim 3 of the '910 Patent by making, importing, selling, and/or offering for sale the Accused MoCA Instrumentalities, which meet every limitation of at least claim 3 of the '910 Patent, in connection with providing the Accused Services over an on-premises coaxial cable network.

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[24] The prior claim chart for this patent can be found at DE 67.

612. [redacted]

613. Comcast has known of or has been willfully blind to the '910 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

614. Comcast has known of or has been willfully blind to the '910 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

615. Comcast has known of or has been willfully blind to the '910 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

616. Comcast has known of or has been willfully blind to the '910 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

617. Comcast has been aware that it infringes the '910 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

618. Comcast has known of or has been willfully blind to the '910 Patent since at least the day before [redacted]

619. The '910 Patent issued while or before Comcast was a member of MoCA.

620. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '910 Patent before August 9, 2022 or was willfully blind to its existence.

621. The claims of the '910 Patent are essential to practicing at least MoCA standards versions 1.1, and/or 2.0.

622. Comcast knew, or was willfully blind to the fact that the technology of the '910 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '910 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '910 Patent.

623. Since learning of the '910 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

624. Comcast's customers and subscribers directly infringe at least claim 3 of the '910 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

625. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services through the Accused MoCA Instrumentalities, and associated support.

626. For example, Comcast actively induces infringement of at least claim 3 of the '910 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '910 Patent.

627. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 3 of the '910 Patent.

628. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides, *inter alia*, the Accused MoCA Instrumentalities designed and configured to create a MoCA network and operate as nodes in the network, the use of which infringes at least claim 3 of the '910 Patent.

629. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 3 of the '910 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

630. Comcast's inducement of, and contribution to, the direct infringement of at least claim 3 of the '910 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

631. Comcast's infringement of the '910 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

632. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

633. Entropic is aware of no obligation to mark any instrumentality with the '910 Patent in accordance with 35 U.S.C. § 287.

COUNT XI

(Infringement of the '0,566 Patent)

634. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

635. The '0,566 Patent duly issued on November 27, 2012 from an application filed October 15, 2009, and, *inter alia*, a provisional application filed October 16, 2008.

636. Entropic owns all substantial rights, interest, and title in and to the '0,566 Patent, including the sole and exclusive right to prosecute this action and enforce the '0,566 Patent against infringers, and to collect damages for all relevant times.

637. The '0,566 Patent is the OFDMA Patent, and is generally directed to, *inter alia,* "allow[ing] multiple transmitting network devices to transmit under an orthogonal frequency divisional multiple access (OFDMA) mode to a receiving network device." '0,566 Patent, Abstract. The '0,566 Patent has 18 claims, of which claims 1, 7, 13, and 16 are independent. At least these claims of the '0,566 Patent are directed to a variety of techniques for assigning communication resources to one or more nodes in the MoCA network. A true and accurate copy of the '0,566 Patent is attached hereto as Exhibit U.

638. The '0,566 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

639. The '0,566 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

640. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

641. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

642. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

643. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit V),[25] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 2.0 necessarily infringes at least claim 1 of the '0,566 Patent.

[25] The prior claim chart for this patent can be found at DE 67.

644. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

645. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

646. The Accused MoCA Instrumentalities are compliant with MoCA 2.0, as described in the '0,566 Patent claim chart, Exhibit V.

647. Comcast therefore directly infringes at least claim 1 of the '0,566 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

648. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 1 of the '0,566 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 1 of the '0,566 Patent in order to generate revenue from its customers and subscribers.

649. Comcast directly infringes at least claim 1 of the '0,566 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

650. [redacted]

651. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

652. Comcast has known of or has been willfully blind to the '0,566 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

653. Comcast has known of or has been willfully blind to the '0,566 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

654. Comcast has known of or has been willfully blind to the '0,566 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

655. Comcast has been aware that it infringes the '0,566 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

656. Comcast has known of or has been willfully blind to the '0,566 Patent since at least the day before [redacted]

657. The '0,566 Patent issued while or before Comcast was a member of MoCA.

658. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '0,566 Patent before August 9, 2022 or was willfully blind to its existence.

659. The claims of the '0,566 Patent are essential to practicing at least MoCA standards versions 1.1, and/or 2.0.

660. Comcast knew, or was willfully blind to the fact that the technology of the '0,566 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '0,566 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '0,566 Patent.

661. Since learning of the '0,566 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

662. Comcast's customers and subscribers directly infringe at least claim 1 of the '0,566 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

663. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

664. For example, Comcast actively induces infringement of at least claim 1 of the '0,566 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '0,566 Patent.

665. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 1 of the '0,566 Patent.

666. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 1 of the '0,566 Patent.

667. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 1 of the '0,566 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

668. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '0,566 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

669. Comcast's infringement of the '0,566 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

670. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

671. Upon information and belief, there is no duty to mark any instrumentality with the '0,566 Patent in accordance with 35 U.S.C. § 287(a).

COUNT XII

(Infringement of the '681 Patent)

672. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

673. The '681 Patent duly issued on January 29, 2013 from an application filed October 15, 2009 and, *inter alia*, a provisional application filed October 16, 2008.

674. Entropic owns all substantial rights, interest, and title in and to the '681 Patent, including the sole and exclusive right to prosecute this action and enforce the '681 Patent against infringers, and to collect damages for all relevant times.

675. The '681 Patent is the Clock Sync Patent, and is generally directed to, *inter alia,* improving local clock time synchronization between a plurality of nodes in a communication network. '681 Patent, Abstract. The '681 Patent has 40 claims, of which claims 1, 11, 21, and 31 are independent. At least these claims of the '681 Patent are directed to a variety of techniques for clock synchronization for nodes in the MoCA network. A true and accurate copy of the '681 Patent is attached hereto as Exhibit W.

676. The '681 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

677. The '681 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

678. Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

679. The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.

680. The Accused MoCA Instrumentalities operate while deployed in a manner controlled and intended by Comcast.

681. As set forth in the infringement contentions that were served on Comcast on September 29, 2023 (attached hereto as Exhibit X),[26] any product or system operating in a MoCA network compliant with the charted provisions of MoCA 2.0 necessarily infringes at least claim 1 of the '681 Patent.

682. Each aspect of the functioning of the Accused MoCA Instrumentalities described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

683. Comcast provides no software, support or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused MoCA Instrumentalities while deployed to customer premises.

684. The Accused MoCA Instrumentalities are compliant with MoCA 2.0 described in the '681 Patent claim chart, Exhibit X.

685. Comcast therefore directly infringes at least claim 1 of the '681 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to customers.

[26] The prior claim chart for this patent can be found at DE 67.

686. Comcast sells the Accused Services to its customers and subscribers for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at least claim 1 of the '681 Patent to provide the Accused Services to Comcast's customers and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore engaging in the infringing use of at least claim 1 of the '681 Patent in order to generate revenue from its customers and subscribers.

687. Comcast directly infringes at least claim 1 of the '681 Patent when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or otherwise provide Accused Services.

688. [redacted]

689. Comcast has known of or has been willfully blind to the '802 Patent since before, and no later than the date of, its acceptance of service of the original Complaint in this action on February 16, 2023.

690. Comcast has known of or has been willfully blind to the '681 Patent since before, and no later than the date of, its acceptance of service of the First Amended Complaint in this action on June 5, 2023.

691. Comcast has known of or has been willfully blind to the '681 Patent since before, and no later than the date of, its acceptance of service of Entropic's infringement contentions on September 29, 2023.

692. Comcast has known of or has been willfully blind to the '681 Patent since before, and no later than the date of, its receipt of the August 9, 2022 communications from Entropic.

693. Comcast has been aware that it infringes the '681 Patent no later than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

694. Comcast has known of or has been willfully blind to the '681 Patent since at least the day before [redacted]

695. The '681 Patent issued while or before Comcast was a member of MoCA.

696. Because of Comcast's knowledge of Entropic Inc.'s work and contributions related to MoCA technology, Comcast had knowledge of the '681 Patent before August 9, 2022 or was willfully blind to its existence.

697. The claims of the '681 Patent are essential to practicing at least MoCA standards versions 1.1, and/or 2.0.

698. Comcast knew, or was willfully blind to the fact that the technology of the '681 Patent directly relates to networking over coaxial cable, including MoCA, at least as early as Comcast became aware of the existence of the '681 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one or more claims of the '681 Patent.

699. Since learning of the '681 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

700. Comcast's customers and subscribers directly infringe at least claim 1 of the '681 Patent by using the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast.

701. Comcast actively induces its customers' and subscribers' direct infringement by providing the Accused Services and associated support.

702. For example, Comcast actively induces infringement of at least claim 1 of the '681 Patent by providing the Accused MoCA Instrumentalities to Comcast customers with specific instructions and/or assistance (including installation and maintenance) regarding the instantiation of a MoCA network and the use of the Accused MoCA Instrumentalities to infringe the '681 Patent.

703. Comcast aids, instructs, supports, and otherwise acts with the intent to cause an end user to make and/or use the MoCA network and/or use the Accused MoCA Instrumentalities to infringe every element of at least claim 1 of the '681 Patent.

704. Additionally, Comcast contributes to the customers' and subscribers' direct infringement. Comcast provides at least the Accused MoCA Instrumentalities that create and are at least substantially all of a MoCA network to be used to infringe at least claim 1 of the '681 Patent.

705. The Accused MoCA Instrumentalities have no substantial noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in connection with the Accused Services provided by Comcast, the end user directly infringes at least claim 1 of the '681 Patent. The Accused MoCA Instrumentalities are therefore especially made or especially adapted for use in an infringing manner.

706. Comcast's inducement of, and contribution to, the direct infringement of at least claim 1 of the '681 Patent has been, and is, continuous and ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

707. Comcast's infringement of the '681 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

708. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

709. Upon information and belief, there is no duty to mark any instrumentality with the '681 Patent in accordance with 35 U.S.C. § 287(a).

PRAYER FOR RELIEF

WHEREFORE, Entropic requests that:

A. The Court find that Comcast has directly infringed the Patents-in-Suit and hold Comcast liable for such infringement;

B. The Court award damages pursuant to 35 U.S.C. § 284 adequate to compensate Entropic for Comcast's past and future infringement of the Patents-in-Suit, including both pre- and post-judgment interest and costs as fixed by the Court;

C. The Court increase any award to Entropic by a judicially appropriate amount;

D. The Court find that Comcast willfully infringed the Patents-in-Suit, and increase the damages to be awarded to Entropic by three times the amount found by the jury or assessed by the Court;

E. The Court declare that this is an exceptional case entitling Entropic to its reasonable attorneys' fees under 35 U.S.C. § 285; and

F. The Court award such other relief as the Court may deem just and proper.

JURY TRIAL DEMANDED

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Entropic hereby requests a trial by jury on all issues raised by this Complaint.

Dated: December 15, 2023

Respectfully submitted,

By: */s/ Christina Goodrich*

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