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12 *Entropic Communications, LLC*

13 **UNITED STATES DISTRICT COURT**  
14 **CENTRAL DISTRICT OF CALIFORNIA**

15 ENTROPIC COMMUNICATIONS, LLC,

16 Plaintiff,

17 v.

18 COMCAST CORPORATION;  
19 COMCAST CABLE  
20 COMMUNICATIONS, LLC; AND  
21 COMCAST CABLE  
22 COMMUNICATIONS MANAGEMENT,  
23 LLC,

24 Defendants.

Case No. 2:23-cv-1048-JWH-KES

**FIRST AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT**

**DEMAND FOR JURY TRIAL**

1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for  
2 patent infringement against Comcast Corporation (“Comcast Corp.”); Comcast Cable  
3 Communications, LLC (“Comcast Communications”); and Comcast Cable  
4 Communications Management, LLC (“Comcast Management”), (collectively,  
5 “Comcast”) and in support thereof alleges as follows:

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

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

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

26 4. Today, MoCA is the backbone of data and entertainment services for tens  
27 of millions of customers. MoCA is widely used by every major provider in the industry,  
28 saving them billions of dollars in costs and avoiding the hassle of re-wiring for providers

1 and customers alike. Unfortunately, the defendants take advantage of MoCA without  
2 paying appropriate licensing fees for the technology. This lawsuit is about redressing  
3 that wrong.

4 5. This is a civil action arising under the patent laws of the United States,  
5 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on the defendants’  
6 infringement of U.S. Patent Nos. 7,295,518 (the “’518 Patent”), 7,594,249 (the  
7 “’249 Patent”) (together the “Network Patents”); U.S. Patent Nos. 7,889,759 (the  
8 “’759 Patent”), 8,085,802 (the “’802 Patent”) (together the “Node Admission Patents”);  
9 U.S. Patent Nos. 9,838,213 (the “’213 Patent”), 10,432,422 (the “’422 Patent”) (together  
10 the “PQoS Flows Patents”); U.S. Patent Nos. 8,631,450 (the “’450 Patent”), 8,621,539  
11 (the “’539 Patent”) (together the “Link Maintenance Patents”); U.S. Patent No.  
12 8,320,566 (the “’0,566 Patent” or the “OFDMA Patent”); U.S. Patent No. 10,257,566  
13 (the “’7,566 Patent” or the “Network Coordinator Patent”); U.S. Patent No. 8,228,910  
14 (the “’910 Patent” or the “Packet Aggregation Patent”); U.S. Patent No. 8,363,681 (the  
15 “’681 Patent” or the “Clock Sync Patent”) (collectively all of the patents are referred to  
16 herein as the “Patents-in-Suit” or “Asserted Patents”). These patents incorporate various  
17 elements of technology set forth in the Multimedia over Coax Alliance standards (the  
18 “MoCA” standards).<sup>1</sup>

19 **THE PARTIES**

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

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

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27 <sup>1</sup> Each version of the MoCA standards is referred to herein as “MoCA 1.0,” “MoCA  
28 1.1,” and “MoCA 2.0.”

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

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

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

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

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

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

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

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

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

27          17.    Comcast Corp. and/or Comcast Communications owns or leases, and  
28 maintains and operates several stores in this district by and through subsidiary limited

1 liability companies that they own, manage and control, including Comcast of Santa  
2 Maria, LLC and Comcast of Lompoc LLC. Upon information and belief, Comcast Corp.  
3 and/or Comcast Communications (and/or personnel employed by them) negotiates and  
4 signs agreements on behalf of each of these entities.

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

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

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

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

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

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

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

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

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

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

20           28. The Comcast “Xfinity Residential Services Agreement” purports to bind  
21 Comcast’s customers, including those customers in this Judicial District to an agreement  
22 with Comcast Communications for, *inter alia*, the Accused Services (defined below)  
23 that Comcast’s customers receive through the infringing use of the Accused MoCA  
24 Instrumentalities (defined below).<sup>2</sup> This agreement further provides that an entity other  
25 than Comcast Communications provides the services. Upon information and belief, the  
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28 <sup>2</sup> <https://www.xfinity.com/Corporate/Customers/Policies/SubscriberAgreement>.

1 entity that provides the services to Comcast’s customers and subscribers is Comcast  
2 Management.

3 29. Comcast Management further shares a leadership team with Comcast  
4 Corp.<sup>3</sup> For example, Brian Roberts is the Chairman and Chief Executive Officer of both  
5 Comcast Management and Comcast Corp.; Daniel Murdock is Executive Vice President  
6 and Chief Accounting Officer of both Comcast Corp. and Comcast Management;  
7 Francis Buono is Executive Vice President of Legal Regulatory Affairs and Senior  
8 Deputy General Counsel of both Comcast Corp. and Comcast Management; and Karen  
9 Buchholz is Executive Vice President, Administration of both Comcast Corp. and  
10 Comcast Management.

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

13 **PRE-SUIT DISCUSSIONS**

14 31. Prior to filing this Complaint, Entropic sent a communication by physical  
15 means to Comcast on August 9, 2022, in an attempt to engage Comcast and/or its agents  
16 in good faith licensing discussions regarding Entropic’s patent portfolio, including the  
17 Patents-in-Suit. Comcast replied to the communication on October 10, 2022, asking for  
18 additional information. On December 23, 2022 and January 2, 2023, Entropic sent  
19 Comcast another communication by both physical and electronic means regarding a  
20 separate license to Entropic’s patents for the field of the standardized  
21 networking technology commonly called MoCA, and also seeking to discuss with  
22 Comcast a typical non-disclosure agreement in order to share such information.

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25 <sup>3</sup> 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  
26 the identified personnel at Comcast’s corporate leadership website,  
27 <https://corporate.comcast.com/company/leadership>.  
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1 **ENTROPIC’S LEGACY AS AN INNOVATOR**

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

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

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

19 35. For years, Entropic Inc. pioneered innovative networking technologies, as  
20 well as television and internet related technologies. These technologies simplified the  
21 installation required to support wideband reception of multiple channels for  
22 demodulation, improved home internet performance, and enabled more efficient and  
23 responsive troubleshooting and upstream signal management for cable providers. These  
24 innovations represented significant advances in the field, simplified the implementation  
25 of those advances, and reduced expenses for providers and customers alike.

26 **MAXLINEAR’S TRANSFER OF PATENTS TO ENTROPIC**

27 36. In 2015, MaxLinear, Inc. and MaxLinear, LLC (collectively,  
28 “MaxLinear”)—leading providers of radio-frequency, analog, digital, and mixed-signal



1 semiconductor solutions—acquired Entropic Inc., as well as the pioneering intellectual  
2 property developed by Dr. Monk and his team.

3 37. Plaintiff Entropic was established in 2021 [REDACTED]

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21 41. [REDACTED]  
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24 42. Entropic has the full right to pursue the patent infringement claims asserted  
25 in this action against Comcast.  
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28 <sup>4</sup> [REDACTED]

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1           **C. Comcast Has, and Continues, to Willfully and Intentionally Infringe**  
2           **Entropic’s Non-SEP Patents<sup>5</sup>**

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

4           66. Upon information and belief, Comcast substantively reviewed and  
5 analyzed Entropic’s patents and patent applications related to the Patents-in-Suit as part  
6 of its due diligence prior to investing in Entropic.

7           67. Upon information and belief, Comcast substantively reviewed and  
8 analyzed Entropic’s U.S. Patent No. 8,223,775 (the “’775 Patent”), duly issued on July  
9 17, 2012 from an application filed September 30, 2003, as part of its due diligence prior  
10 to investing in Entropic in 2006.

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

17           69. Entropic filed a patent infringement suit against Charter Communications,  
18 Inc. (“Charter”) in the Eastern District of Texas, Case No. 2:22-CV-00125-JRG (“the  
19 Charter Suit”), on April 27, 2022, asserting the ’775 Patent, U.S. Patent No. 8,284,690  
20 (the “’690 Patent”), U.S. Patent No. 8,792,008 (the “’008 Patent”), U.S. Patent No.  
21 9,210,362 (the “’362 Patent”), U.S. Patent No. 9,825,826 (the “’826 Patent”), and U.S.

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27           <sup>5</sup> The Non-Sep Patents are set forth in Entropic’s concurrently filed action *Entropic v.*  
28 *Comcast, et al.*, Case No. 2:23-cv-1050-JWH-KES (C.D. Cal. 2023).

1 Patent No. 10,135,682 (the “’682 Patent”) against Charter’s provision of cable television  
2 and internet services, cable modem products and STBs.

3 70. Upon information and belief, Comcast analyzed the causes of action in the  
4 Charter Suit and the asserted patents.

5 71. Upon information and belief, Comcast analyzed its products’ functionality  
6 in light of the patents asserted in the Charter Suit.

7 72. Upon information and belief, Comcast monitored the ongoing prosecution  
8 of the ’362 Patent family, and therefore was aware of the U.S. Patent No. 11,381,866  
9 (the “’866 Patent”) issued on July 5, 2022, and U.S. Patent No. 11,399,206 (the “’206  
10 Patent”) issued on July 26, 2022.

11 73. Upon information and belief, Comcast analyzed its products’ functionality  
12 in light of the ’866 Patent.

13 74. Upon information and belief, Comcast analyzed its products’ functionality  
14 in light of the ’206 Patent.

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

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

22 77. Entropic filed a patent infringement suit against DirecTV, LLC, AT&T,  
23 Inc., AT&T Services, Inc., and AT&T Communications, LLC in the Eastern District of  
24 Texas, Case No. 2:22-CV-00075 on March 9, 2022, asserting infringement of three  
25 Entropic patents, including the ’008 Patent (the “DirecTV Suit”).

26 78. Upon information and belief, Comcast discussed the Charter Suit, Dish  
27 Suit, and DirecTV Suit with RPX Corporation (“RPX”). Either before or shortly after  
28

1 its discussions with RPX, Comcast substantively reviewed and analyzed the patents  
2 asserted in the Charter Suit, Dish Suit, and DirecTV Suit.

3 79. Upon information and belief, Comcast subsequently suggested that RPX  
4 reach out to Entropic to try to resolve the matters.

5 **D. Comcast Has, and Continues, to Willfully and Intentionally Infringe the**  
6 **Patents-in-Suit**

7 80. Upon information and belief, as part of its due diligence prior to investing  
8 in Entropic in 2006, Comcast substantively reviewed and analyzed the following  
9 Patents-in-Suit: the '518 Patent, duly issued on November 13, 2007 from an application  
10 filed December 18, 2002, an application filed August 19, 2002 and, *inter alia*, a  
11 provisional application filed August 30, 2001; the '249 Patent, duly issued on September  
12 22, 2009 from an application filed July 21, 2001, and a provisional application filed May  
13 4, 2001; the '759 Patent, duly issued on February 15, 2011 from an application filed July  
14 12, 2004, an application filed August 29, 2002, and, *inter alia*, a provisional application  
15 filed August 30, 2001; the '802 Patent, duly issued on December 27, 2011 from an  
16 application filed December 2, 2005, and a provisional application filed December 2,  
17 2004; '450 Patent, duly issued on January 14, 2014, from an application filed September  
18 19, 2005 and, *inter alia*, a provisional application filed December 2, 2004; the '539  
19 Patent, duly issued on December 31, 2013 from an application filed September 29, 2005  
20 and, *inter alia*, a provisional application filed December 2, 2004; the '7,566 Patent, duly  
21 issued on April 9, 2019 from an application filed February 7, 2017, an application filed  
22 September 19, 2005, and, *inter alia*, a provisional application filed December 2, 2004  
23 (collectively, the "Pre-Investment Patents"). On information and belief, Comcast knew,  
24 based on its own analysis and also potentially statements from Entropic itself, that these  
25 patents were standard-essential to MoCA, such that practicing the MoCA standard  
26 would infringe these patents.

27 81. Upon information and belief, no later than the day prior to its latest  
28 investment in Entropic in 2006, Comcast knew or had every reason to know that

1 Entropic owned the Pre-Investment Patents related to the MoCA technology such that  
2 deployment of MoCA standard-compliant devices would infringe patents owned by  
3 Entropic.

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

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

18 84. Upon information and belief, Comcast was involved with and/or a member  
19 of MoCA from the earliest days of the MoCA, through at least August 2019. Indeed,  
20 Comcast was a member of the MoCA board of directors.<sup>6</sup>

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

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28 <sup>6</sup> See <https://mocalliance.org/about/faqs.php>.



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

5           87. As a member of the MoCA, Comcast was well aware that Entropic, the  
6 owner of the Patents-in-Suit, was the leading contributor of technology to the standards  
7 promulgated by MoCA, which are implicated by the claims of patent infringement  
8 herein.

9           88. Upon information and belief, Comcast knew that MoCA standard-  
10 compliant devices had tremendous success, given the public success through Verizon  
11 Wireless’s deployment of Fios.

12           89. Upon information and belief, Comcast knew that MaxLinear, Inc. was a  
13 member of MoCA since at least 2011.

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

1           91. Upon information and belief, Comcast was aware that Entropic  
2 Communications Inc. owned patents that were and are essential to the practice of the  
3 MoCA standard.<sup>7</sup>

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

7           93. Entropic filed a patent infringement suit against ViXS Systems, Inc. and  
8 ViXS USA, Inc. in the Southern District of California, Case No. 13-CV-1102-  
9 WQHBGS (“the ViXS Suit”), on May 8, 2013, asserting infringement of the ’759 Patent  
10 and the ’518 Patent. Both patents are essential to the standards developed and  
11 promulgated by the MoCA.

12           94. Upon information and belief, as a member of the MoCA, Comcast analyzed  
13 the claims in the ViXS Suit and the Asserted Patents.

14           95. Upon information and belief, Comcast analyzed its products’ functionality  
15 in light of the patents asserted in the ViXS Suit.

16           96. Because Comcast already was using and deploying devices practicing the  
17 MoCA standards (and continued to do so), Comcast willfully infringed the ’759 and  
18 ’518 Patents no later than May 8, 2013, after substantively analyzing the complaint and  
19 Asserted Patents from the ViXS Suit.

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

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25  
26  
27 <sup>7</sup> See  
28 <https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm>.

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

5 99. Additionally, Comcast and MaxLinear, Inc. were engaged in a longstanding  
6 commercial relationship for years.

7 100. Upon information and belief, Comcast knew that MaxLinear, Inc. acquired  
8 Entropic Communications Inc. in 2015.

9 101. Comcast knew that MaxLinear acquired Entropic Communications Inc. and  
10 its patents in 2015.<sup>8</sup> Because Comcast already knew it was willfully infringing patents  
11 owned by Entropic Communications Inc., Comcast therefore knew that it was willfully  
12 infringing patents that were standard-essential to MoCA that now were owned by  
13 MaxLinear no later than 2015.

14 102. [REDACTED]

20 103. [REDACTED]

24 104. [REDACTED]

27 \_\_\_\_\_  
28 <sup>8</sup> See [https://investors.maxlinear.com/annual-reports?form\\_type=10-K&year=](https://investors.maxlinear.com/annual-reports?form_type=10-K&year=).

[REDACTED]

105. [REDACTED]

[REDACTED]

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

106. 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.

107. 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, later-issued MoCA patents, and the patents asserted in the ViXS Suit no later than the day prior to [REDACTED]

108. 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.

109. Comcast also attached to its own motion to dismiss [REDACTED]

[REDACTED] See *Entropic v. Comcast*, No. 2:23-cv-1050-JWH-KES, at Dkt. No. 39-1, Ex. A. [REDACTED]

[REDACTED]

1 110. Comcast also willfully infringed two other MaxLinear patents no later than  
2 June 9, 2022. Specifically, during prosecution of Comcast’s 17/201,189 patent  
3 application, the patent examiner cited to MaxLinear, Inc.’s MoCA-related U.S. Patent  
4 No. 10,075,333 (the “’333 Patent”) in a non-final rejection, which Comcast received on  
5 June 9, 2022. Additionally, the ’116 Patent was cited during prosecution of Comcast’s  
6 patent application 16/777,622. The examiner cited MaxLinear, Inc.’s MoCA-related  
7 U.S. Patent No. 10,285,116 (“’116 Patent”)’s publication in a non-final rejection, which  
8 Comcast received on October 16, 2020. On information and belief, no later than June 9,  
9 2022, Comcast substantively reviewed and analyzed the ’333 Patent. On information  
10 and belief, no later than October 16, 2020, Comcast substantively reviewed and analyzed  
11 the ’116 Patent. On information and belief, Comcast has willfully infringed the ’333 and  
12 ’116 Patents beginning no later than June 9, 2022 and October 16, 2020, respectively.

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

16 **MOCA® AND THE MOCA® STANDARDS**

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

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

28

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

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

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

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

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

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

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

23 121. MoCA nodes use a modulation profile for every point-to-point link. A  
24 variety of probe messages are transmitted by the MoCA nodes and used to create  
25 modulation profiles, optimize performance, and allow for various calibration  
26 mechanisms. In order to maintain network performance as network conditions change,  
27 the MoCA standards define techniques to maintain optimized point-to-point and  
28 broadcast links between all of the MoCA nodes. The **Link Maintenance Patents (the**

1 **'450 and '539 Patents)** describe link maintenance operations involving the processing  
2 of probe messages at regular intervals to recalculate parameters such as modulation  
3 profile and transmit power.

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

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

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

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

23 126. Entropic Inc. spearheaded MoCA, and its founders are the inventors of  
24 several patents that cover various mandatory aspects of the MoCA standards. In other  
25 words, by conforming to the MoCA standards, a product necessarily practices those  
26 patents, either by itself, as a part of a MoCA-compliant system, or in the method in  
27 which it operates.

28



**THE ACCUSED MOCA INSTRUMENTALITIES AND  
ACCUSED SERVICES**

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2  
3 127. Comcast utilizes various instrumentalities, deployable as nodes in a MoCA-  
4 compliant coaxial cable network.

5 128. Comcast deploys the instrumentalities to, *inter alia*, provide a whole-  
6 premises DVR network over an on-premises coaxial cable network, with components  
7 including gateway devices (including, but not limited to, the XG1-A, XG1v3, XG1v4,  
8 XG2v2, and devices that operate in a similar matter) and client devices (including, but  
9 not limited to, the Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace  
10 PX032ANI, Pace PXD01ANI, Samsung SR150BNM, and devices that operate in a  
11 similar manner) as nodes operating with data connections compliant with MoCA 1.0,  
12 1.1, and/or 2.0. Such components are referred to herein as the “Accused MoCA  
13 Instrumentalities.” The MoCA-compliant services offered by Comcast employing the  
14 Accused MoCA Instrumentalities, including the operation of a MoCA-compliant  
15 network in which such instrumentalities are deployed, are referred to herein as the  
16 “Accused Services.”

17 129. An exemplary illustration of the topology of various Accused MoCA  
18 Instrumentalities in a Comcast deployment is pictured below.<sup>9</sup>



27 <sup>9</sup> This is an example of the products used in the infringing network and is not intended  
28 to limit the scope of products accused of infringement.

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**MoCA Router Connection**

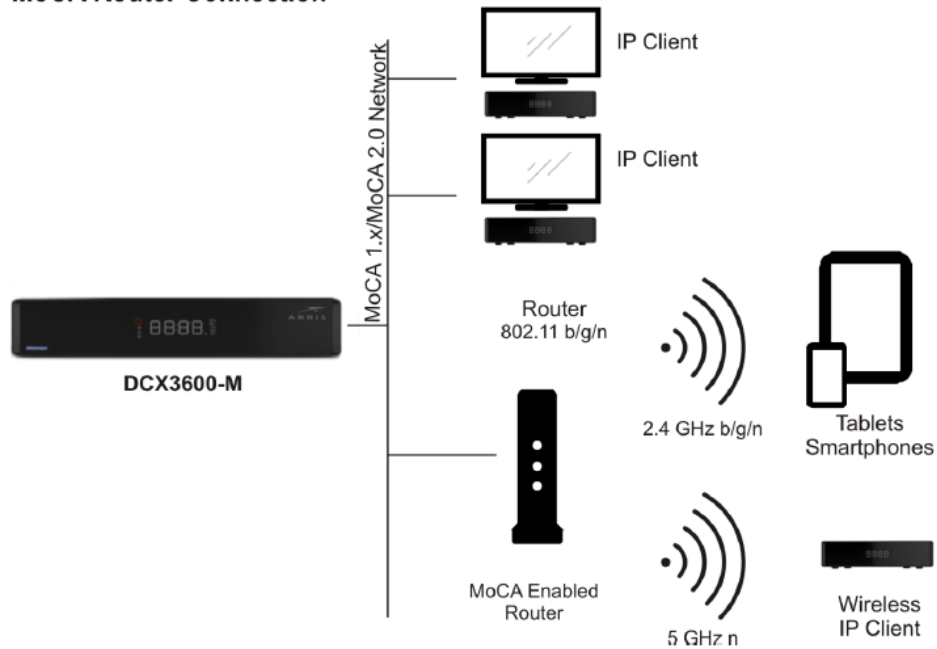


Figure 5 - A Typical Mixed MoCA/WiFi Home Network

130. 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.

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

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

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

134. 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.

1           135. In October 2010, Chris Albano, in his capacity as Comcast’s senior  
2 director/CPE and home networking stated, “The whole world is moving to MoCA. We  
3 at Comcast have made the decision that all new products will have MoCA embedded  
4 into them.”<sup>10</sup>

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

8           137. Mr. Albano further stated in October 2010, in his capacity as Comcast’s  
9 senior director/CPE and home networking that, “everyone is moving toward building  
10 MoCA in new devices. . . . When you put MoCA (filters) in a home, you would be  
11 blocking MoCA energy and the home networking revolution.”<sup>11</sup>

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

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

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

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

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25           <sup>10</sup> [https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-  
26 capacity-and-doing-the-splits.](https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits)

27           <sup>11</sup> [https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-  
28 capacity-and-doing-the-splits.](https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits)

1 142. Upon information and belief, Comcast was aware that Entropic Inc.  
2 intended to and did pursue patent protection for technology related to MoCA, at least as  
3 early as the later of its involvement with MoCA and the issue date of the Asserted  
4 Patents.

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

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

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

17 **JURISDICTION AND VENUE**

18 146. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331  
19 and 1338(a) because the claims herein arise under the patent laws of the United States,  
20 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271.

21 147. Venue in this Judicial District is proper under 28 U.S.C. § 1400(b) because  
22 Comcast has regular and established places of business in this District. The defendants,  
23 by themselves and/or through their agents have committed acts of patent infringement  
24 within the State of California and in this Judicial District by making, importing, using,  
25 selling, offering for sale, and/or leasing the Accused MoCA Instrumentalities, as well as  
26 Accused Services employing the Accused MoCA Instrumentalities that comply with one  
27 or more of MoCA 1.0, 1.1, and/or 2.0.

1           148. This Court has general personal jurisdiction over Comcast Corp. because it  
2 conducts systematic and regular business within the State of California by, *inter alia*,  
3 providing cable television, internet, and phone services to businesses and residents  
4 throughout this State. Comcast Corp.’s website states that, “Comcast is deeply  
5 committed to California, where our nearly 5,000 employees serve more than 3 million  
6 customers throughout the state.”<sup>12</sup>

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

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

16           151. Upon information and belief, Comcast Corp., Comcast Communications,  
17 and/or Comcast Management, by themselves and/or through their agents offer various  
18 telecommunication services throughout the United States. Comcast operates and  
19 maintains a nationwide television and data network through which it sells, leases, and  
20 offers products and services, including the Accused MoCA Instrumentalities, to  
21 businesses, consumers, and government agencies. Through its subsidiaries, Comcast  
22 Corp. offers to sell, sells, and provides “Comcast” and “Xfinity” branded products and  
23 services, including, set top boxes and digital video, audio, and other content services to  
24 customers. Subscribers to Comcast’s television services receive one or more receivers  
25 and/or set-top boxes, within this Judicial District.

26 \_\_\_\_\_  
27 <sup>12</sup> <https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20com>  
28 [mitted%20to,smart%20home%E2%80%9D%20and%20phone%20service.](https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service.)

1 152. Upon information and belief, the Accused Services are provided using the  
2 Accused MoCA Instrumentalities.

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

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

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

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

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

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

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

26 160. Comcast has adopted and ratified the Comcast and Xfinity-branded  
27 locations identified in this Judicial District. The Comcast website advertises Comcast  
28 service packages available from Comcast-authorized retailers in this Judicial District,

1 and prospective employees can find Comcast job listings in this Judicial District.  
2 Furthermore, the “corporate” section of Comcast’s main website has a section containing  
3 “Special Information Regarding California Residents’ Privacy Rights,” which  
4 demonstrates that Comcast is purposefully holding itself out as providing products and  
5 services in California.

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

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

15 163. The Accused Services are available for subscription from various physical  
16 stores, including those at 685 East Betteravia Rd., Santa Maria, California 93454; and  
17 1145 N. H Street, Suite B, Lompoc, California 93436.

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

23 165. Venue is further proper because Comcast has committed and continues to  
24 commit acts of patent infringement in this Judicial District, including, making, using,  
25 importing, offering to sell, and/or selling Accused Services and Accused MoCA  
26 Instrumentalities, and MoCA networks, and thereafter providing Accused Services in  
27 this Judicial District, including by Internet sales and sales via retail and wholesale stores.  
28 Furthermore, for example, Comcast deploys Accused MoCA Instrumentalities to many

1 thousands of locations (customer premises) in this Judicial District and subsequently, by  
2 means of those Accused MoCA Instrumentalities, uses the claimed inventions at those  
3 locations in this Judicial District. Comcast infringes by inducing and contributing to acts  
4 of patent infringement in this Judicial District and/or committing at least a portion of  
5 any other infringements alleged herein in this Judicial District.

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

8 **COUNT I**

9 **(Infringement of the '518 Patent)**

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

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

15 169. Entropic owns all substantial rights, interest, and title in and to the '518  
16 Patent, including the sole and exclusive right to prosecute this action and enforce the  
17 '518 Patent against infringers, and to collect damages for all relevant times.

18 170. The '518 Patent is one of the Network Patents, and is generally directed to,  
19 *inter alia*, broadband local area data networks using on-premises coaxial cable wiring  
20 for interconnection of devices. Probe messages can be “sent between devices to  
21 characterize the communication channel and determine optimum bit loading” for  
22 communicating data between devices. '518 Patent, Abstract. The '518 Patent has four  
23 claims, of which claims 1 and 4 are independent. At least these claims of the '518 Patent  
24 are directed to the creation of the MoCA network using the on-premises coaxial cable  
25 wiring. A true and accurate copy of the '518 Patent is attached hereto as Exhibit A.

26 171. The '518 Patent is directed to patent-eligible subject matter pursuant to  
27 35 U.S.C. § 101.

28



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

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

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

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

12 176. As set forth in the attached non-limiting claim chart (Exhibit B), any  
13 product or system operating in a MoCA network compliant with the charted provisions  
14 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the '518 Patent.

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

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

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

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

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

28

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

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

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

10 185. Comcast has known of or has been willfully blind to the '518 Patent since  
11 at least the day before [REDACTED]

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

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

15 188. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
16 related to MoCA technology, Comcast had knowledge of the '518 Patent before August  
17 9, 2022 or was willfully blind to its existence.

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

20 190. Comcast knew, or was willfully blind to the fact that the technology of  
21 the '518 Patent directly relates to networking over coaxial cable, including MoCA, at  
22 least as early as Comcast became aware of the existence of the '518 Patent. Because of  
23 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
24 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
25 with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe  
26 one or more claims of the '518 Patent.

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

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

4 193. Comcast actively induces its customers’ and subscribers’ direct  
5 infringement by providing the Accused Services and associated support.

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

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

15 196. Additionally, Comcast contributes to the customers’ and subscribers’ direct  
16 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
17 and are at least substantially all of a MoCA network to be used to infringe at least claim  
18 1 of the ’518 Patent.

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

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

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

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

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

10 **COUNT II**

11 **(Infringement of the ’249 Patent)**

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

14 203. The ’249 Patent duly issued on September 22, 2009 from an application  
15 filed July 21, 2001, and a provisional application filed May 4, 2001.

16 204. Entropic owns all substantial rights, interest, and title in and to the ’249  
17 Patent, including the sole and exclusive right to prosecute this action and enforce the  
18 ’249 Patent against infringers, and to collect damages for all relevant times.

19 205. The ’249 Patent is one of the Network Patents, and is generally directed to,  
20 *inter alia*, broadband cable networks that allow devices to communicate directly over  
21 the existing coaxial cable with its current architecture without the need to modify the  
22 existing cable infrastructure. Each device communicates with the other devices in the  
23 network and establishes parameters to overcome channel impairments in the coaxial  
24 cable network. ’249 Patent, col. 3, lines 11–22. The ’249 Patent has 17 claims, of which  
25 claims 1, 5, and 10 are independent. At least these claims of the ’249 Patent are directed  
26 to the creation of the MoCA network using the on-premises coaxial cable wiring. A true  
27 and accurate copy of the ’249 Patent is attached hereto as Exhibit C.

1           206. The '249 Patent is directed to patent-eligible subject matter pursuant to  
2 35 U.S.C. § 101.

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

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

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

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

14           211. As set forth in the attached non-limiting claim chart (Exhibit D), any  
15 product or system operating in a MoCA network compliant with the charted provisions  
16 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 10 of the '249 Patent.

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

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

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

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

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

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

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

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

13           220. Comcast has known of or has been willfully blind to the '249 Patent since  
14 at least the day before [REDACTED]

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

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

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

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

23           225. Comcast knew, or was willfully blind to the fact that the technology of  
24 the '249 Patent directly relates to networking over coaxial cable, including MoCA, at  
25 least as early as Comcast became aware of the existence of the '249 Patent. Because of  
26 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
27 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
28

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

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

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

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

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

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

19 231. Additionally, Comcast contributes to the customers' and subscribers' direct  
20 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
21 and are at least substantially all of a MoCA network to be used to infringe at least claim  
22 10 of the '249 Patent.

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

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1 claims 1–7, 14, 20–22 are independent. At least these claims of the '759 Patent are  
2 directed to a variety of techniques for establishing a modulation scheme for  
3 communications between nodes in the MoCA network. A true and correct copy of the  
4 '759 Patent is attached hereto as Exhibit E.

5 241. The '759 Patent is directed to patent-eligible subject matter pursuant to  
6 35 U.S.C. § 101.

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

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

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

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

18 246. As set forth in the attached non-limiting claim chart (Exhibit F), any  
19 product or system operating in a MoCA network compliant with the charted provisions  
20 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 2 of the '759 Patent.

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

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

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

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

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

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

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

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

17           255. Comcast has known of or has been willfully blind to the '759 Patent since  
18 at least the day before [REDACTED]

19           256. Comcast has known of or has been willfully blind to the '759 Patent since  
20 at least the day before investing in Entropic in or about 2006.

21           257. The '759 Patent issued while or before Comcast was a member of MoCA.

22           258. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
23 related to MoCA technology, Comcast had knowledge of the '759 Patent before August  
24 9, 2022 or was willfully blind to its existence.

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

27           260. Comcast knew, or was willfully blind to the fact that the technology of  
28 the '759 Patent directly relates to networking over coaxial cable, including MoCA, at

1 least as early as Comcast became aware of the existence of the '759 Patent. Because of  
2 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
3 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
4 with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe  
5 one or more claims of the '759 Patent.

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

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

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

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

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

21 266. Additionally, Comcast contributes to the customers' and subscribers' direct  
22 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
23 and are at least substantially all of a MoCA network to be used to infringe at least claim  
24 2 of the '759 Patent.

25 267. The Accused MoCA Instrumentalities have no substantial noninfringing  
26 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
27 the Accused Services provided by Comcast, the end user necessarily directly infringes  
28

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

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

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

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

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

15 **COUNT IV**

16 **(Infringement of the '802 Patent)**

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

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

21 274. Entropic owns all substantial rights, interest, and title in and to the '802  
22 Patent, including the sole and exclusive right to prosecute this action and enforce the  
23 '802 Patent against infringers, and to collect damages for all relevant times.

24 275. The '802 Patent is one of the Node Admission Patents, and is generally  
25 directed to, *inter alia*, broadband cable networks that allow devices to communicate  
26 directly over the existing coaxial cable with its current architecture without the need to  
27 modify the existing cable infrastructure. Each device communicates with the other  
28 devices in the network and establishes the best modulation and other transmission

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

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

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

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

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

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

20 281. As set forth in the attached non-limiting claim chart (Exhibit H), any  
21 product or system operating in a MoCA network compliant with the charted provisions  
22 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 3 of the '802 Patent.

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

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

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

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

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

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

14           288. Comcast has known of or has been willfully blind to the '802 Patent since  
15 at least the day before [REDACTED]

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

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

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

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

24           293. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
25 related to MoCA technology, Comcast had knowledge of the '802 Patent before August  
26 9, 2022 or was willfully blind to its existence.

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

1           295. Comcast knew, or was willfully blind to the fact that the technology of  
2 the '802 Patent directly relates to networking over coaxial cable, including MoCA, at  
3 least as early as Comcast became aware of the existence of the '802 Patent. Because of  
4 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
5 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
6 with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe  
7 one or more claims of the '802 Patent.

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

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

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

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

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

23           301. Additionally, Comcast contributes to the customers' and subscribers' direct  
24 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
25 and are at least substantially all of a MoCA network to be used to infringe at least claim  
26 3 of the '802 Patent.

27           302. The Accused MoCA Instrumentalities have no substantial noninfringing  
28 uses. When an end user uses the Accused MoCA Instrumentalities in connection with

1 the Accused Services provided by Comcast, the end user necessarily directly infringes  
2 at least claim 3 of the '802 Patent. The Accused MoCA Instrumentalities are therefore  
3 especially made or especially adapted for use in an infringing manner.

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

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

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

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

16 **COUNT V**

17 **(Infringement of the '450 Patent)**

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

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

22 309. Entropic owns all substantial rights, interest, and title in and to the '450  
23 Patent, including the sole and exclusive right to prosecute this action and enforce the  
24 '450 Patent against infringers, and to collect damages for all relevant times.

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



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

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

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

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

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

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

20 316. As set forth in the attached non-limiting claim chart (Exhibit J), any product  
21 or system operating in a MoCA network compliant with the charted provisions of MoCA  
22 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 29 of the '450 Patent.

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

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

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

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

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

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

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

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

19 325. Comcast has known of or has been willfully blind to the '450 Patent since  
20 at least the day before [REDACTED]

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

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

24 328. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
25 related to MoCA technology, Comcast had knowledge of the '450 Patent before August  
26 9, 2022 or was willfully blind to its existence.

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

1           330. Comcast knew, or was willfully blind to the fact that the technology of  
2 the '450 Patent directly relates to networking over coaxial cable, including MoCA, at  
3 least as early as Comcast became aware of the existence of the '450 Patent. Because of  
4 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
5 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
6 with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe  
7 one or more claims of the '450 Patent.

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

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

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

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

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

23           336. Additionally, Comcast contributes to the customers' and subscribers' direct  
24 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
25 and are at least substantially all of a MoCA network to be used to infringe at least claim  
26 29 of the '450 Patent.

27           337. The Accused MoCA Instrumentalities have no substantial noninfringing  
28 uses. When an end user uses the Accused MoCA Instrumentalities in connection with

1 the Accused Services provided by Comcast, the end user directly infringes at least claim  
2 29 of the '450 Patent. The Accused MoCA Instrumentalities are especially made or  
3 especially adapted for use in an infringing manner.

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

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

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

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

16 **COUNT VI**

17 **(Infringement of the '7,566 Patent)**

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

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

23 344. Entropic owns all substantial rights, interest, and title in and to the '7,566  
24 Patent, including the sole and exclusive right to prosecute this action and enforce the  
25 '7,566 Patent against infringers, and to collect damages for all relevant times.

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

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

8 346. The '7,566 Patent is directed to patent-eligible subject matter pursuant to  
9 35 U.S.C. § 101.

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

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

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

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

21 351. As set forth in the attached non-limiting claim chart (Exhibit L), any  
22 product or system operating in a MoCA network compliant with the charted provisions  
23 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 11 of the '7,566 Patent.

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

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

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

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

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

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

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

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

21 360. Comcast has known of or has been willfully blind to the '7,566 Patent since  
22 at least the day before [REDACTED]

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

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

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

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

3           365. Comcast knew, or was willfully blind to the fact that the technology of  
4 the '7,566 Patent directly relates to networking over coaxial cable, including MoCA, at  
5 least as early as Comcast became aware of the existence of the '7,566 Patent. Because  
6 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
7 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
8 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily  
9 infringe one or more claims of the '7,566 Patent.

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

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

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

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

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

26           371. Additionally, Comcast contributes to the customers' and subscribers' direct  
27 infringement. Comcast provides, *inter alia*, the Accused MoCA Instrumentalities  
28

1 designed and configured to create a MoCA network and operate as nodes in the network,  
2 the use of which infringes at least claim 11 of the '7,566 Patent.

3 372. The Accused MoCA Instrumentalities have no substantial noninfringing  
4 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
5 the Accused Services provided by Comcast, the end user directly infringes at least claim  
6 11 of the '7,566 Patent. The Accused MoCA Instrumentalities are therefore especially  
7 made or especially adapted for use in an infringing manner.

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

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

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

18 376. Entropic is aware of no obligation to mark any instrumentality with the  
19 '7,566 Patent in accordance with 35 U.S.C. § 287.

20 **COUNT VII**

21 **(Infringement of the '539 Patent)**

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

24 378. The '539 Patent duly issued on December 31, 2013 from an application  
25 filed September 29, 2005 and, *inter alia*, a provisional application filed December 2,  
26 2004.



1           379. Entropic owns all substantial rights, interest, and title in and to the '539  
2 Patent, including the sole and exclusive right to prosecute this action and enforce the  
3 '539 Patent against infringers, and to collect damages for all relevant times.

4           380. The '539 Patent is one of the Link Maintenance Patents, and is generally  
5 directed to, *inter alia*, a physical layer transmitter that performs all of the necessary RF,  
6 analog and digital processing required for transmitting MAC messages between devices  
7 in a broadband cable network. '539 Patent, col. 4, lines 37–48. The '539 Patent has seven  
8 claims, of which claim 1 is independent. At least this claim of the '539 Patent is directed  
9 at a variety of techniques for monitoring and maintaining utilized modulation profiles in  
10 the MoCA network. A true and accurate copy of the '539 Patent is attached hereto as  
11 Exhibit M.

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

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

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

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

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

25           386. As set forth in the attached non-limiting claim chart (Exhibit N), any  
26 product or system operating in a MoCA network compliant with the charted provisions  
27 of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the '539 Patent.  
28

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

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

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

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

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

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

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

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

23 395. Comcast has known of or has been willfully blind to the '539 Patent since  
24 at least the day before [REDACTED]

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

27 397. The '539 Patent issued while or before Comcast was a member of MoCA.  
28

1           398. Because of Comcast’s knowledge of Entropic Inc.’s work and contributions  
2 related to MoCA technology, Comcast had knowledge of the ’539 Patent before August  
3 9, 2022 or was willfully blind to its existence.

4           399. The claims of the ’539 Patent are essential to practicing at least MoCA  
5 standards versions 1.0, 1.1, and/or 2.0.

6           400. Comcast knew, or was willfully blind to the fact that the technology of  
7 the ’539 Patent directly relates to networking over coaxial cable, including MoCA, at  
8 least as early as Comcast became aware of the existence of the ’539 Patent. Because of  
9 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully  
10 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
11 with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe  
12 one or more claims of the ’539 Patent.

13           401. Since learning of the ’539 Patent and its infringing activities, Comcast has  
14 failed to cease its infringing activities.

15           402. Comcast’s customers and subscribers directly infringe at least claim 1 of  
16 the ’539 Patent by using the Accused MoCA Instrumentalities in connection with the  
17 Accused Services provided by Comcast.

18           403. Comcast actively induces its customers’ and subscribers’ direct  
19 infringement by providing the Accused Services through the Accused MoCA  
20 Instrumentalities, and associated support.

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

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



1 414. Entropic owns all substantial rights, interest, and title in and to the '213  
2 Patent, including the sole and exclusive right to prosecute this action and enforce the  
3 '213 Patent against infringers, and to collect damages for all relevant times.

4 415. The '213 Patent is one of the PQoS Flows Patents, and is generally directed  
5 to, *inter alia*, low-cost and high-speed management of resources within a network in  
6 order to secure the capability to distribute multimedia data (such as video/audio, games,  
7 images, generic data, and interactive services) between devices within existing on-  
8 premises coaxial cable networks. '213 Patent, col. 3, lines 46–53. The '213 Patent has  
9 24 claims, of which claims 1, 13, and 23 are independent. At least these claims of the  
10 '213 Patent are directed to a variety of techniques for allocating resources for guaranteed  
11 quality of service flows in the MoCA network. A true and accurate copy of the '213  
12 Patent is attached hereto as Exhibit O.

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

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

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

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

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

26 421. As set forth in the attached non-limiting claim chart (Exhibit P), any  
27 product or system operating in a MoCA network compliant with the charted provisions  
28 of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '213 Patent.

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

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

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

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

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

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

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

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

25           430. Comcast has known of or has been willfully blind to the '213 Patent since  
26 at least the day before [REDACTED]

27           431. The '213 Patent issued while or before Comcast was a member of MoCA.  
28

1           432. Because of Comcast’s knowledge of Entropic Inc.’s work and contributions  
2 related to MoCA technology, Comcast had knowledge of the ’213 Patent before August  
3 9, 2022 or was willfully blind to its existence.

4           433. The claims of the ’213 Patent are essential to practicing at least MoCA  
5 standards versions 1.1, and/or 2.0.

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

13           435. Since learning of the ’213 Patent and its infringing activities, Comcast has  
14 failed to cease its infringing activities.

15           436. Comcast’s customers and subscribers directly infringe at least claim 1 of  
16 the ’213 Patent by using the Accused MoCA Instrumentalities in connection with the  
17 Accused Services provided by Comcast.

18           437. Comcast actively induces its customers’ and subscribers’ direct  
19 infringement by providing the Accused Services and associated support.

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

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

28

1 440. Additionally, Comcast contributes to the customers' and subscribers' direct  
2 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
3 and are at least substantially all of a MoCA network to be used to infringe at least claim  
4 1 of the '213 Patent.

5 441. The Accused MoCA Instrumentalities have no substantial noninfringing  
6 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
7 the Accused Services provided by Comcast, the end user directly infringes at least claim  
8 1 of the '213 Patent. The Accused MoCA Instrumentalities are therefore especially made  
9 or especially adapted for use in an infringing manner.

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

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

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

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

22 **COUNT IX**

23 **(Infringement of the '422 Patent)**

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

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



1 448. Entropic owns all substantial rights, interest, and title in and to the '422  
2 Patent, including the sole and exclusive right to prosecute this action and enforce the  
3 '422 Patent against infringers, and to collect damages for all relevant times.

4 449. The '422 Patent is one of the PQoS Flows Patents, and is generally directed  
5 to, *inter alia*, low-cost and high-speed management of resources within a network in  
6 order to secure the capability to distribute multimedia data (such as video/audio, games,  
7 images, generic data, and interactive services) between devices within existing on-  
8 premises coaxial cable networks. '422 Patent, col. 3, lines 53–60. The '422 Patent has  
9 20 claims, of which, claims 1, 5, 12–17 are independent. At least these claims of the  
10 '422 Patent are directed to a variety of techniques for allocating resources for guaranteed  
11 quality of service flows in the MoCA network. A true and accurate copy of the '422  
12 Patent is attached hereto as Exhibit Q.

13 450. The '422 Patent is directed to patent-eligible subject matter pursuant to  
14 35 U.S.C. § 101.

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

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

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

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

26 455. As set forth in the attached non-limiting claim chart (Exhibit R), any  
27 product or system operating in a MoCA network compliant with the charted provisions  
28 of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '422 Patent.

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

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

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

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

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

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

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

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

23 464. Comcast has known of or has been willfully blind to the '422 Patent since  
24 at least the day before [REDACTED]

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

26 466. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
27 related to MoCA technology, Comcast had knowledge of the '422 Patent before August  
28 9, 2022 or was willfully blind to its existence.

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

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

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

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

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

17           472. For example, Comcast actively induces infringement of at least claim 1 of  
18 the '422 Patent by providing the Accused MoCA Instrumentalities to Comcast  
19 customers with specific instructions and/or assistance (including installation and  
20 maintenance) regarding the instantiation of a MoCA network and the use of the Accused  
21 MoCA Instrumentalities to infringe the '422 Patent.

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

25           474. Additionally, Comcast contributes to the customers' and subscribers' direct  
26 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
27 and are at least substantially all of a MoCA network to be used to infringe at least claim  
28 1 of the '422 Patent.



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

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

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

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

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

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

20 489. As set forth in the attached non-limiting claim chart (Exhibit T), any  
21 product or system operating in a MoCA network compliant with the charted provisions  
22 of MoCA 1.1, or 2.0 necessarily infringes at least claim 3 of the '910 Patent.

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

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

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

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

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

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

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

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

17 498. Comcast has known of or has been willfully blind to the '910 Patent since  
18 at least the day before [REDACTED]

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

20 500. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
21 related to MoCA technology, Comcast had knowledge of the '910 Patent before August  
22 9, 2022 or was willfully blind to its existence.

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

25 502. Comcast knew, or was willfully blind to the fact that the technology of  
26 the '910 Patent directly relates to networking over coaxial cable, including MoCA, at  
27 least as early as Comcast became aware of the existence of the '910 Patent. Because of  
28 its familiarity with, and access to, the MoCA standards, Comcast knew, or was willfully

1 blind to the fact, that use (by Comcast or its customers) of instrumentalities compliant  
2 with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily infringe one  
3 or more claims of the '910 Patent.

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

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

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

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

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

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

24 509. The Accused MoCA Instrumentalities have no substantial noninfringing  
25 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
26 the Accused Services provided by Comcast, the end user directly infringes at least claim  
27 3 of the '910 Patent. The Accused MoCA Instrumentalities are therefore especially made  
28 or especially adapted for use in an infringing manner.





1           518. The '0,566 Patent is directed to patent-eligible subject matter pursuant to  
2 35 U.S.C. § 101.

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

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

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

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

14           523. As set forth in the attached non-limiting claim chart (Exhibit V), any  
15 product or system operating in a MoCA network compliant with the charted provisions  
16 of MoCA 2.0 necessarily infringes at least claim 1 of the '0,566 Patent.

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

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

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

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

27           528. Comcast sells the Accused Services to its customers and subscribers for a  
28 fee. Pursuant to the sale of these services, Comcast uses the method recited in at least

1 claim 1 of the '0,566 Patent to provide the Accused Services to Comcast's customers  
2 and subscribers through the Accused MoCA Instrumentalities. Comcast is therefore  
3 engaging in the infringing use of at least claim 1 of the '0,566 Patent in order to generate  
4 revenue from its customers and subscribers.

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

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

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

13 532. Comcast has known of or has been willfully blind to the '0,566 Patent since  
14 at least the day before [REDACTED]

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

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

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

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

28

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

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

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

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

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

16           542. Additionally, Comcast contributes to the customers' and subscribers' direct  
17 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
18 and are at least substantially all of a MoCA network to be used to infringe at least claim  
19 1 of the '0,566 Patent.

20           543. The Accused MoCA Instrumentalities have no substantial noninfringing  
21 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
22 the Accused Services provided by Comcast, the end user directly infringes at least claim  
23 1 of the '0,566 Patent. The Accused MoCA Instrumentalities are therefore especially  
24 made or especially adapted for use in an infringing manner.

25           544. Comcast's inducement of, and contribution to, the direct infringement of at  
26 least claim 1 of the '0,566 Patent has been, and is, continuous and ongoing through the  
27 acts described above in connection with Comcast's provision of the Accused Services.  
28

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

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

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

10 **COUNT XII**

11 **(Infringement of the '681 Patent)**

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

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

16 550. Entropic owns all substantial rights, interest, and title in and to the '681  
17 Patent, including the sole and exclusive right to prosecute this action and enforce the  
18 '681 Patent against infringers, and to collect damages for all relevant times.

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

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

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

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

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

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

10 557. As set forth in the attached non-limiting claim chart (Exhibit X), any  
11 product or system operating in a MoCA network compliant with the charted provisions  
12 of MoCA 2.0 necessarily infringes at least claim 1 of the '681 Patent.

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

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

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

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

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

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

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

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

9 566. Comcast has known of or has been willfully blind to the '681 Patent since  
10 at least the day before [REDACTED]

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

12 568. Because of Comcast's knowledge of Entropic Inc.'s work and contributions  
13 related to MoCA technology, Comcast had knowledge of the '681 Patent before August  
14 9, 2022 or was willfully blind to its existence.

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

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

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

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

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

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

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

11 576. Additionally, Comcast contributes to the customers' and subscribers' direct  
12 infringement. Comcast provides at least the Accused MoCA Instrumentalities that create  
13 and are at least substantially all of a MoCA network to be used to infringe at least claim  
14 1 of the '681 Patent.

15 577. The Accused MoCA Instrumentalities have no substantial noninfringing  
16 uses. When an end user uses the Accused MoCA Instrumentalities in connection with  
17 the Accused Services provided by Comcast, the end user directly infringes at least claim  
18 1 of the '681 Patent. The Accused MoCA Instrumentalities are therefore especially made  
19 or especially adapted for use in an infringing manner.

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

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

26 580. Entropic has been damaged as a result of the infringing conduct alleged  
27 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
28

1 Comcast’s infringement, which by law cannot be less than a reasonable royalty, together  
2 with interest and costs as fixed by this Court under 35 U.S.C. § 284.

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

5 **PRAYER FOR RELIEF**

6 WHEREFORE, Entropic requests that:

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

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

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

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

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

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

20 **JURY TRIAL DEMANDED**

21 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Entropic hereby  
22 requests a trial by jury on all issues raised by this Complaint.  
23

24 Dated: June 5, 2023

Respectfully submitted,

25 By: /s/ Christina Goodrich  
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