

1 Christina Goodrich (SBN 261722)
2 christina.goodrich@klgates.com
3 Connor J. Meggs (SBN 336159)
4 connor.meggs@klgates.com
5 K&L GATES LLP
6 10100 Santa Monica Boulevard
7 Eighth Floor
8 Los Angeles, CA 90067
9 Telephone: +1 310 552 5000
10 Facsimile: +1 310 552 5001

11 *Attorneys for Plaintiff*
12 *Entropic Communications, LLC*

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

15 ENTROPIC COMMUNICATIONS, LLC,

16 Plaintiff,

17 v.

18 DIRECTV, LLC; AT&T, INC.; AT&T
19 SERVICES, INC.; AND AT&T
20 COMMUNICATIONS, LLC,

21 Defendants.

Case No. 2:23-cv-05253

**ORIGINAL COMPLAINT FOR
PATENT INFRINGEMENT**

1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for
2 patent infringement against DIRECTV, LLC (“the DIRECTV defendants”), AT&T,
3 Inc., AT&T Services, Inc., and AT&T Communications, LLC (the defendants are
4 collectively referred to as “DIRECTV”) and in support thereof alleges as follows:

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

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

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

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

1 MoCA without paying appropriate licensing fees for the technology. This lawsuit is
2 about redressing that wrong.

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

18 **THE PARTIES**

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

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

23 8. The DIRECTV defendants have as their registered agent in California,
24 CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91023.

25 9. AT&T Services, Inc. and AT&T Communications, LLC are wholly
26 owned by AT&T, Inc. (collectively “AT&T”).

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

1 DIRECTV’s patent infringement of each Asserted Patent by virtue of DIRECTV’s
2 deployment of MoCA technology.

3 **ENTROPIC’S LEGACY AS AN INNOVATOR**

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

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

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

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

28

1 20. In 2015, MaxLinear, Inc. (“MaxLinear”)—a leading provider of radio-
2 frequency, analog, digital, and mixed-signal semiconductor solutions—acquired
3 Entropic Inc., and the pioneering intellectual property developed by Dr. Monk and
4 his team.

5 21. In 2021, Plaintiff Entropic was established and MaxLinear transferred
6 to Entropic a portfolio of intellectual property representing the Entropic and
7 MaxLinear innovation in the cable and satellite services markets.

8 **MOCA® AND THE MOCA® STANDARDS**

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

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

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

1 quality network connections between devices located on the premises desired by the
2 cable and satellite providers.

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

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

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

23 28. The MoCA standards ensure network robustness along with inherent
24 low packet error rate performance and very low latency that is relatively independent
25 of network load. The logical network model of the MoCA network is significantly
26 different from the underlying on-premises legacy coaxial network. For example, due
27 to the effects of splitter jumping and reflections, the channel characteristics for a link
28

1 between two MoCA nodes may be dramatically different from a link between any
2 other two MoCA nodes.

3 29. The Asserted Patents address the very technological advances set forth
4 in the MoCA standards. **The Network Patents (the '518 and '249 Patents)** and the
5 **OFDMA Patent (the '0,566 Patent)** describe MoCA networks, including how data
6 communicated via MoCA networks is modulated by full-mesh pre-equalization
7 techniques known as Adaptive Constellation Multitone (ACMT), a form of OFDM
8 modulation.

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

16 31. MoCA nodes use a modulation profile for every point-to-point link. A
17 variety of probe messages are transmitted by the MoCA nodes and used to create
18 modulation profiles, optimize performance, and allow for various calibration
19 mechanisms. In order to maintain network performance as network conditions
20 change, the MoCA standards define techniques to maintain optimized point-to-point
21 and broadcast links between all of the MoCA nodes. The **Link Maintenance Patents**
22 **(the '450 and '539 Patents)** describe link maintenance operations involving the
23 processing of probe messages at regular intervals to recalculate parameters such as
24 modulation profile and transmit power.

25 32. This MoCA network allows for devices (MoCA nodes) connected to a
26 MoCA network to communicate data formatted in a variety of formats. **The Packet**
27 **Aggregation Patent (the '910 Patent)**, for example, describes the communication
28

1 of data packets in an Ethernet format, via the on-premises coaxial network without
2 the need to deploy a separate physical network on the premises.

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

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

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

17 36. Entropic Inc. spearheaded MoCA, and its founders are the inventors of
18 several patents that cover various mandatory aspects of the MoCA standards. In other
19 words, by conforming to the MoCA standards, a product necessarily practices those
20 patents, either by itself, as a part of a MoCA-compliant system, or in the method in
21 which it operates.

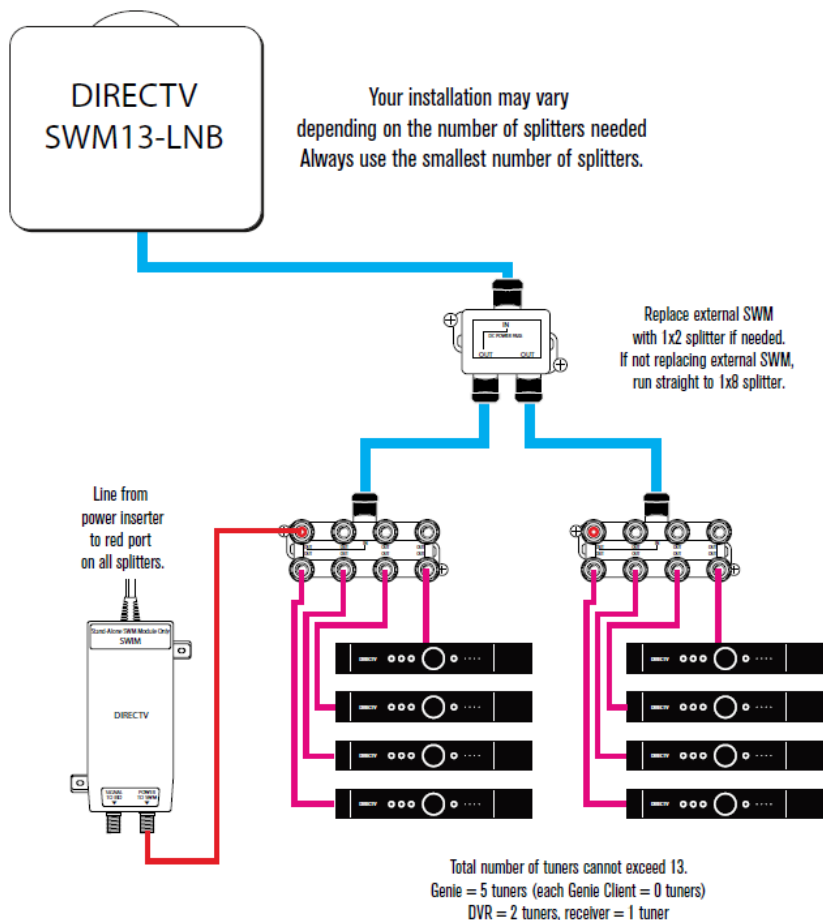
22 **THE ACCUSED MOCA INSTRUMENTALITIES AND**
23 **ACCUSED SERVICES**

24 37. DIRECTV utilizes various instrumentalities, deployable as nodes in a
25 MoCA-compliant coaxial cable network.

26 38. DIRECTV deploys the instrumentalities to, *inter alia*, provide a whole-
27 premises DVR network over an on-premises coaxial cable network, with products
28 including DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61,

1 DIRECTV C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44,
 2 DIRECTV HR54, and DIRECTV HS17 (and devices that operate in a similar
 3 manner) serving as nodes operating with data connections compliant with MoCA 1.0,
 4 1.1, and/or 2.0. Such components are referred to herein as the “Accused MoCA
 5 Instrumentalities.” The MoCA-compliant services offered by DIRECTV employing
 6 the Accused MoCA Instrumentalities, including the operation of a MoCA-compliant
 7 network in which such instrumentalities are deployed, are referred to herein as the
 8 “Accused Services.”

9 39. An exemplary illustration of the topology of various Accused MoCA
 10 Instrumentalities in a DIRECTV deployment is pictured below.²



27 _____
 28 ² This is an example of the products used in the infringing network and is not intended to limit the scope of products accused of infringement.

1 40. Upon information and belief, the Accused MoCA Instrumentalities form
2 networks over a coaxial cable network in accordance with the MoCA 1.0, 1.1, and/or
3 2.0.

4 41. Specifically, upon information and belief, DIRECTV instrumentalities
5 including the DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61,
6 DIRECTV C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44,
7 DIRECTV HR54, and DIRECTV HS17 form networks over a coaxial cable network
8 in accordance with MoCA 1.0, 1.1, and/or 2.0.

9 42. Most commonly, the Accused Services are offered and provided in
10 exchange for fees paid to DIRECTV.

11 43. DIRECTV itself also sometimes tests and demonstrates the Accused
12 Services, by means of Accused MoCA Instrumentalities.

13 44. In some deployments of the Accused MoCA Instrumentalities and the
14 performance of the Accused Services, DIRECTV uses one or more of the DIRECTV
15 C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV C61K, DIRECTV
16 HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and DIRECTV HS17
17 (and devices that operate in a similar manner), to provide signals, programming and
18 content utilizing a data connection carried over a coaxial cable network in accordance
19 with the MoCA standards.

20 45. In or about January 2013 Rudy Ramirez, in his capacity as DIRECTV
21 Panamericana’s senior director of product development, stated that MoCA
22 technology “will allow for simpler home network installations and home topology
23 that will allow us to provide our customers with the best entertainment experience in
24 the region.”³

25
26 _____
27 ³[https://www.globenewswire.com/news-](https://www.globenewswire.com/news-release/2013/01/08/515194/9308/en/DIRECTV-PanAmericana-Selects-Entropic-s-Silicon-and-Software-to-Roll-Out-Advanced-TV-Viewing-Services.html)
28 [release/2013/01/08/515194/9308/en/DIRECTV-PanAmericana-Selects-Entropic-s-](https://www.globenewswire.com/news-release/2013/01/08/515194/9308/en/DIRECTV-PanAmericana-Selects-Entropic-s-Silicon-and-Software-to-Roll-Out-Advanced-TV-Viewing-Services.html)
[Silicon-and-Software-to-Roll-Out-Advanced-TV-Viewing-Services.html](https://www.globenewswire.com/news-release/2013/01/08/515194/9308/en/DIRECTV-PanAmericana-Selects-Entropic-s-Silicon-and-Software-to-Roll-Out-Advanced-TV-Viewing-Services.html)

1 46. Upon information and belief, Mr. Ramirez, and/or other authorized
2 DIRECTV or DIRECTV Panamericana personnel authorized the publication and
3 attribution of the preceding quote to Mr. Ramirez.

4 47. In January 2010, Romulo Pontual, in his capacity as DIRECTV's chief
5 technology officer stated, "[b]y integrating MoCA technology into our STBs along
6 with the existing deployment of Single Wire Multiswitch, we will set ourselves apart
7 from the competition as a leading provider of connected home technology."⁴

8 48. Upon information and belief, Mr. Pontual, and/or other authorized
9 DIRECTV personnel authorized the publication and attribution of the preceding
10 quotation to Mr. Pontual.

11 49. In or about January 2012, Mike Pulli, in his capacity as CEO of Pace
12 Americas, the manufacturer and/or supplier of DIRECTV receivers, announced that
13 MoCA was a core requirement in DIRECTV receivers.⁵

14 50. Upon information and belief, DIRECTV required that its receivers be
15 equipped with MoCA capabilities in at least 2012.

16 51. Upon information and belief, DIRECTV continues to require that
17 certain of DIRECTV's set top boxes have MoCA capabilities.

18 52. DIRECTV was aware of its deployment and use of MoCA at least as
19 early as the later of its involvement with MoCA and six years prior to the filing of
20 this complaint.

21 53. Upon information and belief, DIRECTV was aware that Entropic Inc.
22 invented technology underlying the MoCA standards. Accordingly, such Entropic
23

24 _____
25 ⁴ [https://www.globenewswire.com/news-
26 release/2010/01/25/412869/9308/en/Entropic-Communications-Silicon-Selected-
by-DIRECTV-for-Home-Networking-Deployments.html](https://www.globenewswire.com/news-release/2010/01/25/412869/9308/en/Entropic-Communications-Silicon-Selected-by-DIRECTV-for-Home-Networking-Deployments.html)

27 ⁵ [https://www.globenewswire.com/en/news-
28 release/2012/01/11/465253/9308/en/Entropic-Communications-Powers-the-Pace-
HR34-Home-Media-Center-HD-DVR-for-DIRECTV.html](https://www.globenewswire.com/en/news-release/2012/01/11/465253/9308/en/Entropic-Communications-Powers-the-Pace-HR34-Home-Media-Center-HD-DVR-for-DIRECTV.html)

1 Inc. technology would be incorporated into any instrumentality compliant with the
2 MoCA standards.

3 54. Upon information and belief, DIRECTV and/or its subsidiaries was a
4 member of MoCA beginning in 2012 through at least October, 2019, providing it
5 with full access to then-existing versions of the MoCA standards.

6 55. Upon information and belief, DIRECTV was aware that Entropic Inc.
7 intended to and did pursue patent protection for technology related to MoCA, at least
8 as early as the later of its involvement with MoCA and the issue date of the Asserted
9 Patents.

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

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

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

22 **JURISDICTION AND VENUE**

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

26 60. Venue in this Judicial District is proper under 28 U.S.C. § 1400(b)
27 because DIRECTV has regular and established places of business in this District.
28 DIRECTV, by itself and/or through its agents have committed acts of patent

1 infringement within the State of California and in this Judicial District by making,
2 importing, using, selling, offering for sale, and/or leasing the Accused MoCA
3 Instrumentalities, as well as Accused Services employing the Accused MoCA
4 Instrumentalities, that comply with one or more of MoCA 1.0, 1.1, and/or 2.0.

5 61. This Court currently has before it another case involving the same
6 parties that also concerns DIRECTV providing satellite television services to its
7 customers, including those in this Judicial District. *Entropic Comm's. LLC v.*
8 *DIRECTV LLC*, Case No. 2:22-cv-07775-JWH-JEM (*DIRECTV I CDCA*). That co-
9 pending matter was transferred to this Court from the Eastern District of Texas on
10 October 26, 2022 on motion from the DIRECTV defendants, which alleged that such
11 matter could have been properly brought originally in this Judicial District. *See*
12 *DIRECTV I CDCA*, Dkt. No. 110.

13 62. Venue in this Judicial District of California is proper pursuant to 28
14 U.S.C. § 1400(b), because DIRECTV has regular and established places of business
15 in this District, and have committed acts of patent infringement in this Judicial
16 District. DIRECTV has committed acts of patent infringement within the State of
17 California and in this Judicial District by making, using, selling, offering for sale,
18 and/or leasing the Accused MoCA Instrumentalities, as well as Accused Services
19 employing the Accused MoCA Instrumentalities, that comply with one or more of
20 MoCA 1.0, 1.1, and/or 2.0.

21 63. This Court has general personal jurisdiction over the DIRECTV
22 defendants because the DIRECTV defendants conduct systematic and regular
23 business within the State of California by, *inter alia* providing satellite television and
24 internet services to businesses and residents throughout this State.

25 64. This Court has general personal jurisdiction over AT&T because AT&T
26 conducts systematic and regular business within the State of California by, *inter alia*
27 providing telephone, satellite television and internet services to businesses and
28 residents throughout this State.

1 65. The Court has specific personal jurisdiction over DIRECTV because it
2 has committed acts of infringement within the State of California and this Judicial
3 District through, for example, making infringing networks using the Accused MoCA
4 Instrumentalities, and using the Accused MoCA Instrumentalities to provide the
5 Accused Services in the State of California and this Judicial District.

6 66. DIRECTV's regular and established places of business within this
7 District are used to conduct DIRECTV's business, i.e. the development,
8 maintenance, and provision of the Accused Services and Accused MoCA
9 Instrumentalities.

10 67. DIRECTV's business in this Judicial District includes employing
11 hardware and software engineers who developed and maintain the Accused MoCA
12 Instrumentalities and related software.

13 68. Upon information and belief, DIRECTV, by itself and/or through its
14 agents offers various telecommunication services throughout the United States.
15 DIRECTV operates and maintains a nationwide television and data network through
16 which DIRECTV sells, leases, and offers for sale or lease products and services,
17 including the Accused MoCA Instrumentalities, to businesses, consumers, and
18 government agencies. DIRECTV offers to sell, sells, and provides DIRECTV
19 branded products and services, including, set top boxes and digital video, audio, and
20 other content services to customers. Subscribers to DIRECTV's television services
21 receive one or more receivers and/or set-top boxes, within this Judicial District.

22 69. Upon information and belief, AT&T, by itself and/or through its agents
23 has offered and continues to offer various "DIRECTV" branded telecommunication
24 services throughout the United States. AT&T has operated and maintained a
25 nationwide television and data network through which AT&T sold, leased, offered
26 for sale, sells, leases, and offered for sale and/or continues to do so, products and
27 services, including the Accused MoCA Instrumentalities, to businesses, consumers,
28 and government agencies. AT&T offers to sell, sells, and provides DIRECTV

1 branded products and services, including, set top boxes and digital video, audio, and
2 other content services to customers. Subscribers to the “DIRECTV” branded
3 television services receive one or more receivers and/or set-top boxes, within this
4 Judicial District.

5 70. Upon information and belief, DIRECTV provides the Accused Services
6 and Accused MoCA Instrumentalities throughout the United States and in this
7 Judicial District.

8 71. Upon information and belief, DIRECTV employs and/or contracts with
9 persons and directs them to install, service, repair, and/or replace equipment, as
10 appropriate, in this District.

11 72. Venue is further proper because DIRECTV has committed and
12 continues to commit acts of patent infringement in this Judicial District, including,
13 making, using, importing, offering to sell, and/or selling Accused Services and
14 Accused MoCA Instrumentalities, and MoCA networks, and thereafter providing
15 Accused Services in this Judicial District, including by Internet sales and sales via
16 retail and wholesale stores. Furthermore, for example, DIRECTV deploys Accused
17 MoCA Instrumentalities to many thousands of locations (customer premises) in this
18 Judicial District and subsequently, by means of those Accused MoCA
19 Instrumentalities, uses the claimed inventions at those locations in this Judicial
20 District. DIRECTV infringes by inducing and contributing to acts of patent
21 infringement in this Judicial District and/or committing at least a portion of any other
22 infringements alleged herein in this Judicial District.

23 73. DIRECTV continues to conduct business in this Judicial District,
24 including the acts and activities described in the preceding paragraph.

25 74. By virtue of AT&T’s prior ownership of the DIRECTV defendants,
26 Entropic alleges that AT&T is liable for the DIRECTV defendants’ infringement
27 below.

28

COUNT I

(Infringement of the '518 Patent)

1
2
3 75. Entropic incorporates by reference each allegation of Paragraphs 1
4 through 74.

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

8 77. Entropic owns all substantial rights, interest, and title in and to the '518
9 Patent, including the sole and exclusive right to prosecute this action and enforce the
10 '518 Patent against infringers, and to collect damages for all relevant times.

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

20 79. The '518 Patent is directed to patent-eligible subject matter pursuant to
21 35 U.S.C. § 101.

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

24 81. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
25 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
26 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
27 DIRECTV HS17) in connection with operating and providing the Accused Services.
28

1 82. The Accused MoCA Instrumentalities deployed by DIRECTV to
2 customer premises remain the property of DIRECTV while deployed.

3 83. The Accused MoCA Instrumentalities operate while deployed in a
4 manner controlled and intended by DIRECTV.

5 84. As set forth in the attached non-limiting claim chart (Exhibit B), any
6 product or system operating in a MoCA network compliant with the charted
7 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the
8 '518 Patent.

9 85. Each aspect of the functioning of the Accused MoCA Instrumentalities
10 described in the claim chart operates while deployed to customer premises in a
11 manner controlled and intended by DIRECTV.

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

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

17 88. DIRECTV therefore directly infringes at least claim 1 of the '518 Patent
18 by using the Accused MoCA Instrumentalities to provide Accused Services to
19 customers.

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

23 90. DIRECTV directly infringes at least claim 1 of the '518 Patent by
24 making, importing, selling, and/or offering for sale the Accused MoCA
25 Instrumentalities in connection with providing the Accused Services over an
26 on-premises coaxial cable network, which meets each and every limitation of at least
27 claim 1 of the '518 Patent.
28

1 91. DIRECTV had knowledge of the '518 Patent no later than its receipt of
2 Entropic's communications sent to DIRECTV on March 9, 2022.

3 92. DIRECTV has been aware that it infringes the '518 Patent since at least
4 as early as receipt of Entropic's communications sent to DIRECTV on March 9,
5 2022.

6 93. DIRECTV has known of or has been willfully blind to the '518 Patent
7 since before the March 9, 2022 communications from Entropic.

8 94. The '518 Patent issued while or before DIRECTV was a member of
9 MoCA.

10 95. Because of DIRECTV's knowledge of Entropic Inc.'s work and
11 contributions related to MoCA technology, DIRECTV had knowledge of the '518
12 Patent before March 9, 2022 or was willfully blind to its existence.

13 96. DIRECTV has been aware of its infringement of the '518 Patent no later
14 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
15 infringement of the '518 Patent by MoCA technology, which is deployed by
16 DIRECTV. The claim charts DIRECTV received approximately three months before
17 the filing of this Complaint show that the claims of the '518 Patent are essential to
18 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

21 98. DIRECTV knew, or was willfully blind to the fact that the technology
22 of the '518 Patent directly relates to networking over coaxial cable, including MoCA,
23 at least as early as DIRECTV became aware of the existence of the '518 Patent.
24 Because of its familiarity with, and access to, the MoCA standards, DIRECTV knew,
25 or was willfully blind to the fact, that use (by DIRECTV or its customers) of
26 instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver DIRECTV
27 services would necessarily infringe one or more claims of the '518 Patent.
28

1 99. Since learning of the '518 Patent and its infringing activities, DIRECTV
2 has failed to cease its infringing activities.

3 100. DIRECTV's customers and subscribers directly infringe at least claim 1
4 of the '518 Patent by using the Accused MoCA Instrumentalities in connection with
5 the Accused Services provided by DIRECTV.

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

8 102. For example, DIRECTV actively induces infringement of at least claim
9 1 of the '518 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
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
12 Accused MoCA Instrumentalities in a manner that infringes the '518 Patent.

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

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

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

26 106. DIRECTV's inducement of, and contribution to, the direct infringement
27 of at least claim 1 of the '518 Patent has been, and is, continuous and ongoing through
28

1 the acts described above in connection with DIRECTV's provision of the Accused
2 Services.

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

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

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

12 **COUNT II**

13 **(Infringement of the '249 Patent)**

14 110. Entropic incorporates by reference each allegation of Paragraphs 1
15 through 109.

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

18 112. Entropic owns all substantial rights, interest, and title in and to the '249
19 Patent, including the sole and exclusive right to prosecute this action and enforce the
20 '249 Patent against infringers, and to collect damages for all relevant times.

21 113. The '249 Patent is one of the Network Patents, and is generally directed
22 to, *inter alia*, broadband cable networks that allow devices to communicate directly
23 over the existing coaxial cable with its current architecture without the need to
24 modify the existing cable infrastructure. Each device communicates with the other
25 devices in the network and establishes parameters to overcome channel impairments
26 in the coaxial cable network. '249 Patent, col. 3, lines 11–22. The '249 Patent has 17
27 claims, of which claims 1, 5, and 10 are independent. At least these claims of the
28 '249 Patent are directed to the creation of the MoCA network using the on-premises

1 coaxial cable wiring. A true and accurate copy of the '249 Patent is attached hereto
2 as Exhibit C.

3 114. The '249 Patent is directed to patent-eligible subject matter pursuant to
4 35 U.S.C. § 101.

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

7 116. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
8 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
9 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
10 DIRECTV HS17) in connection with operating and providing the Accused Services.

11 117. The Accused MoCA Instrumentalities deployed by DIRECTV to
12 customer premises remain the property of DIRECTV while deployed.

13 118. The Accused MoCA Instrumentalities operate while deployed in a
14 manner controlled and intended by DIRECTV.

15 119. As set forth in the attached non-limiting claim chart (Exhibit D), any
16 product or system operating in a MoCA network compliant with the charted
17 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 10 of the
18 '249 Patent.

19 120. Each aspect of the functioning of the Accused MoCA Instrumentalities
20 described in the claim chart operates while deployed to customer premises in a
21 manner controlled and intended by DIRECTV.

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

25 122. The Accused MoCA Instrumentalities are compliant with MoCA 1.0,
26 1.1., and/or 2.0, as described in the '249 Patent claim chart, Exhibit D.

27
28

1 123. DIRECTV therefore directly infringes at least claim 10 of the '249
2 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to
3 customers.

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

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

12 126. DIRECTV had knowledge of the '249 Patent no later than its receipt of
13 Entropic's communications sent to DIRECTV on March 9, 2022.

14 127. DIRECTV has been aware that it infringes the '249 Patent no later than
15 its receipt of Entropic's communications sent to DIRECTV on March 9, 2022.

16 128. DIRECTV has known of or has been willfully blind to the '249 Patent
17 since before the March 9, 2022 communications from Entropic.

18 129. The '249 Patent issued while or before DIRECTV was a member of
19 MoCA.

20 130. Because of DIRECTV's knowledge of Entropic Inc.'s work and
21 contributions related to MoCA technology, DIRECTV had knowledge of the '249
22 Patent before March 9, 2022 or was willfully blind to its existence.

23 131. DIRECTV has been aware of its infringement of the '249 Patent no later
24 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
25 infringement of the '249 Patent by MoCA technology, which is deployed by
26 DIRECTV. The claim charts DIRECTV received approximately three months before
27 the filing of this Complaint show that the claims of the '249 Patent are essential to
28 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

3 133. DIRECTV knew, or was willfully blind to the fact that the technology
4 of the '249 Patent directly relates to networking over coaxial cable, including MoCA,
5 at least as early as DIRECTV became aware of the existence of the '249 Patent.
6 Because of its familiarity with, and access to, the MoCA standards, DIRECTV knew,
7 or was willfully blind to the fact, that use (by DIRECTV or its customers) of
8 instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver DIRECTV
9 services would necessarily infringe one or more claims of the '249 Patent.

10 134. Since learning of the '249 Patent and its infringing activities, DIRECTV
11 has failed to cease its infringing activities.

12 135. DIRECTV's customers and subscribers directly infringe at least claim
13 10 of the '249 Patent by using the Accused MoCA Instrumentalities in connection
14 with the Accused Services provided by DIRECTV.

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

17 137. For example, DIRECTV actively induces infringement of at least claim
18 10 of the '249 Patent by providing the Accused MoCA Instrumentalities to
19 DIRECTV customers with specific instructions and/or assistance (including
20 installation and maintenance) regarding the instantiation of a MoCA network and the
21 use of the Accused MoCA Instrumentalities in a manner that infringes the '249
22 Patent.

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

27 139. Additionally, DIRECTV contributes to the customers' and subscribers'
28 direct infringement. DIRECTV provides at least the Accused MoCA

1 Instrumentalities that create and are at least substantially all of a MoCA network to
2 be used to infringe at least claim 10 of the '249 Patent.

3 140. 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 DIRECTV, the end user necessarily directly
6 infringes at least claim 10 of the '249 Patent. The Accused MoCA Instrumentalities
7 are therefore especially made or especially adapted for use in an infringing manner.

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

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

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

19 144. Entropic is aware of no obligation to mark any instrumentality with the
20 '249 Patent in accordance with 35 U.S.C. § 287.

21 **COUNT III**

22 **(Infringement of the '759 Patent)**

23 145. Entropic incorporates by reference each allegation of Paragraphs 1
24 through 144.

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

28

1 147. Entropic owns all substantial rights, interest, and title in and to the '759
2 Patent, including the sole and exclusive right to prosecute this action and enforce the
3 '759 Patent against infringers, and to collect damages for all relevant times.

4 148. The '759 Patent is one of the Node Admission Patents, and is generally
5 directed to, *inter alia*, broadband cable networks that allow devices to communicate
6 directly over the existing coaxial cable with its current architecture without the need
7 to modify the existing cable infrastructure. Each device communicates with the other
8 devices in the network and establishes a common modulation scheme between the
9 devices in the network. '759 Patent, Abstract. The '759 Patent has 22 claims, of
10 which claims 1–7, 14, 20–22 are independent. At least these claims of the '759 Patent
11 are directed to a variety of techniques for establishing a modulation scheme for
12 communications between nodes in the MoCA network. A true and correct copy of
13 the '759 Patent is attached hereto as Exhibit E.

14 149. The '759 Patent is directed to patent-eligible subject matter pursuant to
15 35 U.S.C. § 101.

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

18 151. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
19 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
20 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
21 DIRECTV HS17) in connection with operating and providing the Accused Services.

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

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

26 154. As set forth in the attached non-limiting claim chart (Exhibit F), any
27 product or system operating in a MoCA network compliant with the charted
28

1 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 2 of the
2 '759 Patent.

3 155. Each aspect of the functioning of the Accused MoCA Instrumentalities
4 described in the claim chart operates while deployed to customer premises in a
5 manner controlled and intended by DIRECTV.

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

9 157. The Accused MoCA Instrumentalities are compliant with MoCA 1.0,
10 1.1., and/or 2.0, as described in the '759 Patent claim chart, Exhibit F.

11 158. DIRECTV therefore directly infringes at least claim 2 of the '759 Patent
12 by using the Accused MoCA Instrumentalities to provide Accused Services to
13 customers.

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

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

23 161. DIRECTV had knowledge of the '759 Patent no later than its receipt of
24 Entropic's communications sent to DIRECTV on March 9, 2022.

25 162. DIRECTV has been aware that it infringes the '759 Patent no later than
26 its receipt of Entropic's communications sent to DIRECTV on March 9, 2022.

27 163. DIRECTV has known of or has been willfully blind to the '759 Patent
28 since before the March 9, 2022 communications from Entropic.

1 164. The '759 Patent issued while or before DIRECTV was a member of
2 MoCA.

3 165. Because of DIRECTV's knowledge of Entropic Inc.'s work and
4 contributions related to MoCA technology, DIRECTV had knowledge of the '759
5 Patent before March 9, 2022 or was willfully blind to its existence.

6 166. DIRECTV has been aware of its infringement of the '759 Patent no later
7 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
8 infringement of the '759 Patent by MoCA technology, which is deployed by
9 DIRECTV. The claim charts DIRECTV received approximately three months before
10 the filing of this Complaint show that the claims of the '759 Patent are essential to
11 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

14 168. DIRECTV knew, or was willfully blind to the fact that the technology
15 of the '759 Patent directly relates to networking over coaxial cable, including MoCA,
16 at least as early as DIRECTV became aware of the existence of the '759 Patent.
17 Because of its familiarity with, and access to, the MoCA standards, DIRECTV knew,
18 or was willfully blind to the fact, that use (by DIRECTV or its customers) of
19 instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver DIRECTV
20 services would necessarily infringe one or more claims of the '759 Patent.

21 169. Since learning of the '759 Patent and its infringing activities, DIRECTV
22 has failed to cease its infringing activities.

23 170. DIRECTV's customers and subscribers directly infringe at least claim 2
24 of the '759 Patent by using the Accused MoCA Instrumentalities in connection with
25 the Accused Services provided by DIRECTV.

26 171. DIRECTV actively induces its customers' and subscribers' direct
27 infringement by providing the Accused Services and associated support.
28

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

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

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

14 175. The Accused MoCA Instrumentalities have no substantial noninfringing
15 uses. When an end user uses the Accused MoCA Instrumentalities in connection with
16 the Accused Services provided by DIRECTV, the end user necessarily directly
17 infringes at least claim 2 of the '759 Patent. The Accused MoCA Instrumentalities
18 are therefore especially made or especially adapted for use in an infringing manner.

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

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

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

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

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

5 **COUNT IV**

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

7 180. Entropic incorporates by reference each allegation of Paragraphs 1
8 through 179.

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

11 182. Entropic owns all substantial rights, interest, and title in and to the '802
12 Patent, including the sole and exclusive right to prosecute this action and enforce the
13 '802 Patent against infringers, and to collect damages for all relevant times.

14 183. The '802 Patent is one of the Node Admission Patents, and is generally
15 directed to, *inter alia*, broadband cable networks that allow devices to communicate
16 directly over the existing coaxial cable with its current architecture without the need
17 to modify the existing cable infrastructure. Each device communicates with the other
18 devices in the network and establishes the best modulation and other transmission
19 parameters that is optimized and periodically adapted to the channel between each
20 pair of devices. '802 Patent, col. 4, lines 7–24. The '802 Patent has four claims, all
21 of which are independent. At least these claims of the '802 Patent are directed to a
22 variety of techniques for establishing a modulation scheme for communications
23 between nodes in the MoCA network. A true and accurate copy of the '802 Patent is
24 attached hereto as Exhibit G.

25 184. The '802 Patent is directed to patent-eligible subject matter pursuant to
26 35 U.S.C. § 101.

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

1 186. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
2 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
3 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
4 DIRECTV HS17) in connection with operating and providing the Accused Services.

5 187. The Accused MoCA Instrumentalities deployed by DIRECTV to
6 customer premises remain the property of DIRECTV while deployed.

7 188. The Accused MoCA Instrumentalities operate while deployed in a
8 manner controlled and intended by DIRECTV.

9 189. As set forth in the attached non-limiting claim chart (Exhibit H), any
10 product or system operating in a MoCA network compliant with the charted
11 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 3 of the
12 '802 Patent.

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

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

19 192. The Accused MoCA Instrumentalities are compliant with MoCA 1.0,
20 1.1., and/or 2.0, as described in the '802 Patent claim chart, Exhibit H.

21 193. DIRECTV therefore directly infringes at least claim 3 of the '802 Patent
22 by using the Accused MoCA Instrumentalities to provide Accused Services to
23 customers.

24 194. DIRECTV sells the Accused Services to its customers and subscribers
25 for a fee. Pursuant to the sale of these services, DIRECTV uses the method recited in
26 at least claim 3 of the '802 Patent to provide the Accused Services to DIRECTV's
27 customers and subscribers through the Accused MoCA Instrumentalities. DIRECTV
28

1 is therefore engaging in the infringing use of at least claim 3 of the '802 Patent in
2 order to generate revenue from its customers and subscribers.

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

6 196. DIRECTV had knowledge of the '802 Patent no later than its receipt of
7 Entropic's communications sent to DIRECTV on March 9, 2022.

8 197. DIRECTV has been aware that it infringes the '802 Patent no later than
9 its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

10 198. DIRECTV has known of or has been willfully blind to the '802 Patent
11 since before the March 9, 2022 communications from Entropic.

12 199. The '802 Patent issued while or before DIRECTV was a member of
13 MoCA.

14 200. Because of DIRECTV's knowledge of Entropic Inc.'s work and
15 contributions related to MoCA technology, DIRECTV had knowledge of the '802
16 Patent before March 9, 2022 or was willfully blind to its existence.

17 201. DIRECTV has been aware of its infringement of the '802 Patent no later
18 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
19 infringement of the '802 Patent by MoCA technology, which is deployed by
20 DIRECTV. The claim charts DIRECTV received approximately three months before
21 the filing of this Complaint show that the claims of the '802 Patent are essential to
22 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

25 203. DIRECTV knew, or was willfully blind to the fact that the technology
26 of the '802 Patent directly relates to networking over coaxial cable, including MoCA,
27 at least as early as DIRECTV became aware of the existence of the '802 Patent.
28 Because of its familiarity with, and access to, the MoCA standards, DIRECTV knew,

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

4 204. Since learning of the '802 Patent and its infringing activities, DIRECTV
5 has failed to cease its infringing activities.

6 205. DIRECTV's customers and subscribers directly infringe at least claim 3
7 of the '802 Patent by using the Accused MoCA Instrumentalities in connection with
8 the Accused Services provided by DIRECTV.

9 206. DIRECTV actively induces its customers' and subscribers' direct
10 infringement by providing the Accused Services and associated support.

11 207. For example, DIRECTV actively induces infringement of at least claim
12 3 of the '802 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
13 customers with specific instructions and/or assistance (including installation and
14 maintenance) regarding the instantiation of a MoCA network and the use of the
15 Accused MoCA Instrumentalities to infringe the '802 Patent.

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

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

24 210. 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 DIRECTV, the end user necessarily directly
27 infringes at least claim 3 of the '802 Patent. The Accused MoCA Instrumentalities
28 are therefore especially made or especially adapted for use in an infringing manner.

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

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

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

10 221. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
11 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
12 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
13 DIRECTV HS17) in connection with operating and providing the Accused Services.

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

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

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

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

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

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

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

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

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

15 231. DIRECTV had knowledge of the '450 Patent no later than its receipt of
16 Entropic's communications sent to DIRECTV on March 9, 2022.

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

19 233. DIRECTV has known of or has been willfully blind to the '450 Patent
20 since before the March 9, 2022 communications from Entropic.

21 234. The '450 Patent issued while or before DIRECTV was a member of
22 MoCA.

23 235. Because of DIRECTV's knowledge of Entropic Inc.'s work and
24 contributions related to MoCA technology, DIRECTV had knowledge of the '450
25 Patent before March 9, 2022 or was willfully blind to its existence.

26 236. DIRECTV has been aware of its infringement of the '450 Patent no later
27 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
28 infringement of the '450 Patent by MoCA technology, which is deployed by

1 DIRECTV. The claim charts DIRECTV received approximately three months before
2 the filing of this Complaint show that the claims of the '450 Patent are essential to
3 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

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

13 239. Since learning of the '450 Patent and its infringing activities, DIRECTV
14 has failed to cease its infringing activities.

15 240. DIRECTV's customers and subscribers directly infringe at least claim
16 29 of the '450 Patent by using the Accused MoCA Instrumentalities in connection
17 with the Accused Services provided by DIRECTV.

18 241. DIRECTV actively induces its customers' and subscribers' direct
19 infringement by providing the Accused Services and associated support.

20 242. For example, DIRECTV actively induces infringement of at least claim
21 29 of the '450 Patent by providing the Accused MoCA Instrumentalities to
22 DIRECTV customers with specific instructions and/or assistance (including
23 installation and maintenance) regarding the instantiation of a MoCA network and the
24 use of the Accused MoCA Instrumentalities to infringe the '450 Patent.

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

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

4 252. Entropic owns all substantial rights, interest, and title in and to the
5 '7,566 Patent, including the sole and exclusive right to prosecute this action and
6 enforce the '7,566 Patent against infringers, and to collect damages for all relevant
7 times.

8 253. The '7,566 Patent is the Network Coordinator Patent, and it uses the
9 claimed controller to form, manage, and optimize mesh networks over coaxial cable,
10 thereby allowing nodes to communicate efficiently with each other. *Id.* at col. 3, lines
11 21-24; col. 4, lines 22-42. This invention resulted in creating the ability for set top
12 boxes to communicate with one another over coaxial cable networks. '7,566 Patent,
13 col. 3, lines 39-46. The '7,566 Patent is generally directed to, *inter alia*, broadband
14 cable networks that allow devices to communicate directly over the existing coaxial
15 cable with its current architecture without the need to modify the existing cable
16 infrastructure. Each device communicates with the other devices in the network and
17 establishes the best modulation and other transmission parameters that is optimized
18 and periodically adapted to the channel between each pair of devices. '7,566 Patent,
19 col. 4, lines 23–39. The '7,566 Patent has 20 claims, of which claims 1, 11, and 19
20 are independent. At least these claims of the '7,566 Patent are directed to a variety of
21 techniques for controlling the admission of nodes in the MoCA network. A true and
22 accurate copy of the '7,566 Patent is attached hereto as Exhibit K.

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

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

27 256. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
28 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV

1 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
2 DIRECTV HS17) in connection with operating and providing the Accused Services.

3 257. The Accused MoCA Instrumentalities deployed by DIRECTV to
4 customer premises remain the property of DIRECTV while deployed.

5 258. The Accused MoCA Instrumentalities operate while deployed in a
6 manner controlled and intended by DIRECTV.

7 259. As set forth in the attached non-limiting claim chart (Exhibit L), any
8 product or system operating in a MoCA network compliant with the charted
9 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 11 of the
10 '7,566 Patent.

11 260. Each aspect of the functioning of the Accused MoCA Instrumentalities
12 described in the claim chart operates while deployed to customer premises in a
13 manner controlled and intended by DIRECTV.

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

17 262. The Accused MoCA Instrumentalities are compliant with MoCA 1.0,
18 1.1., and/or 2.0, as described in the '7,566 Patent claim chart, Exhibit L.

19 263. DIRECTV therefore directly infringes at least claim 11 of the '7,566
20 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to
21 customers.

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

25 265. DIRECTV directly infringes at least claim 11 of the '7,566 Patent by
26 making, importing, selling, and/or offering for sale the Accused MoCA
27 Instrumentalities, which meet every limitation of at least claim 11 of the '7,566
28

1 Patent, in connection with providing the Accused Services over an on-premises
2 coaxial cable network.

3 266. DIRECTV had knowledge of the '7,566 Patent no later than its receipt
4 of Entropic's communications sent to DIRECTV on March 9, 2022.

5 267. DIRECTV has been aware that it infringes the '7,566 Patent no later
6 than its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

7 268. DIRECTV has known of or has been willfully blind to the '7,566 Patent
8 since before the March 9, 2022 communications from Entropic.

9 269. The '7,566 Patent issued while or before DIRECTV was a member of
10 MoCA.

11 270. Because of DIRECTV's knowledge of Entropic Inc.'s work and
12 contributions related to MoCA technology, DIRECTV had knowledge of the '7,566
13 Patent before March 9, 2022 or was willfully blind to its existence.

14 271. DIRECTV has been aware of its infringement of the '7,566 Patent no
15 later than February 17, 2023 when Entropic sent DIRECTV claim charts detailing
16 the infringement of the '7,566 Patent by MoCA technology, which is deployed by
17 DIRECTV. The claim charts DIRECTV received approximately three months before
18 the filing of this Complaint show that the claims of the '7,566 Patent are essential to
19 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

22 273. DIRECTV knew, or was willfully blind to the fact that the technology
23 of the '7,566 Patent directly relates to networking over coaxial cable, including
24 MoCA, at least as early as DIRECTV became aware of the existence of the '7,566
25 Patent. Because of its familiarity with, and access to, the MoCA standards,
26 DIRECTV knew, or was willfully blind to the fact, that use (by DIRECTV or its
27 customers) of instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver
28

1 DIRECTV services would necessarily infringe one or more claims of the '7,566
2 Patent.

3 274. Since learning of the '7,566 Patent and its infringing activities,
4 DIRECTV has failed to cease its infringing activities.

5 275. DIRECTV's customers and subscribers directly infringe at least claim
6 11 of the '7,566 Patent by using the Accused MoCA Instrumentalities in connection
7 with the Accused Services provided by DIRECTV.

8 276. DIRECTV actively induces its customers' and subscribers' direct
9 infringement by providing the Accused Services through the Accused MoCA
10 Instrumentalities, and associated support.

11 277. For example, DIRECTV actively induces infringement of at least claim
12 11 of the '7,566 Patent by providing the Accused MoCA Instrumentalities to
13 DIRECTV customers with specific instructions and/or assistance (including
14 installation and maintenance) regarding the instantiation of a MoCA network and the
15 use of the Accused MoCA Instrumentalities to infringe the '7,566 Patent.

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

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

24 280. 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 DIRECTV, the end user directly infringes at least
27 claim 11 of the '7,566 Patent. The Accused MoCA Instrumentalities are therefore
28 especially made or especially adapted for use in an infringing manner.

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

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

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

12 284. Entropic is aware of no obligation to mark any instrumentality with the
13 '7,566 Patent in accordance with 35 U.S.C. § 287.

14 **COUNT VII**

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

16 285. Entropic incorporates by reference each allegation of Paragraphs 1
17 through 284.

18 286. The '539 Patent duly issued on December 31, 2013 from an application
19 filed September 29, 2005 and, *inter alia*, a provisional application filed December 2,
20 2004.

21 287. Entropic owns all substantial rights, interest, and title in and to the '539
22 Patent, including the sole and exclusive right to prosecute this action and enforce the
23 '539 Patent against infringers, and to collect damages for all relevant times.

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

1 '539 Patent is directed at a variety of techniques for monitoring and maintaining
2 utilized modulation profiles in the MoCA network. A true and accurate copy of the
3 '539 Patent is attached hereto as Exhibit M.

4 289. The '539 Patent is directed to patent-eligible subject matter pursuant to
5 35 U.S.C. § 101.

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

8 291. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
9 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
10 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
11 DIRECTV HS17) in connection with operating and providing the Accused Services.

12 292. The Accused MoCA Instrumentalities deployed by DIRECTV to
13 customer premises remain the property of DIRECTV while deployed.

14 293. The Accused MoCA Instrumentalities operate while deployed in a
15 manner controlled and intended by DIRECTV.

16 294. As set forth in the attached non-limiting claim chart (Exhibit N), any
17 product or system operating in a MoCA network compliant with the charted
18 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the
19 '539 Patent.

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

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

26 297. The Accused MoCA Instrumentalities are compliant with MoCA 1.0,
27 1.1., and/or MoCA 2.0, as described in the '539 Patent claim chart, Exhibit N.
28

1 298. DIRECTV therefore directly infringes at least claim 1 of the '539 Patent
2 by using the Accused MoCA Instrumentalities to provide Accused Services to
3 customers.

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

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

12 301. DIRECTV had knowledge of the '539 Patent no later than its receipt of
13 Entropic's communications sent to DIRECTV on March 9, 2022.

14 302. DIRECTV has been aware that it infringes the '539 Patent no later than
15 its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

16 303. DIRECTV has known of or has been willfully blind to the '539 Patent
17 since before the March 9, 2022 communications from Entropic.

18 304. The '539 Patent issued while or before DIRECTV was a member of
19 MoCA.

20 305. Because of DIRECTV's knowledge of Entropic Inc.'s work and
21 contributions related to MoCA technology, DIRECTV had knowledge of the '539
22 Patent before March 9, 2022 or was willfully blind to its existence.

23 306. DIRECTV has been aware of its infringement of the '539 Patent no later
24 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
25 infringement of the '539 Patent by MoCA technology, which is deployed by
26 DIRECTV. The claim charts DIRECTV received approximately three months before
27 the filing of this Complaint show that the claims of the '539 Patent are essential to
28 practicing at least MoCA standards versions 1.0, 1.1, and/or 2.0.

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

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

10 309. Since learning of the '539 Patent and its infringing activities, DIRECTV
11 has failed to cease its infringing activities.

12 310. DIRECTV's customers and subscribers directly infringe at least claim 1
13 of the '539 Patent by using the Accused MoCA Instrumentalities in connection with
14 the Accused Services provided by DIRECTV.

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

18 312. For example, DIRECTV actively induces infringement of at least claim
19 1 of the '539 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
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
22 Accused MoCA Instrumentalities to infringe the '539 Patent.

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

27 314. Additionally, DIRECTV contributes to the customers' and subscribers'
28 direct infringement. DIRECTV provides, *inter alia*, the Accused MoCA

1 Instrumentalities designed and configured to create a MoCA network and operate as
2 nodes in the network, the use of which infringes at least claim 1 of the '539 Patent.

3 315. 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 DIRECTV, the end user directly infringes at least
6 claim 1 of the '539 Patent. The Accused MoCA Instrumentalities are therefore
7 especially made or especially adapted for use in an infringing manner.

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

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

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

19 319. Entropic is aware of no obligation to mark any instrumentality with the
20 '539 Patent in accordance with 35 U.S.C. § 287.

21 **COUNT VIII**

22 **(Infringement of the '213 Patent)**

23 320. Entropic incorporates by reference each allegation of Paragraphs 1
24 through 319.

25 321. The '213 Patent duly issued on December 5, 2017 from an application
26 filed February 6, 2008, and, *inter alia*, a provisional application filed on February 6
27 2007.

1 322. 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.

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

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

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

17 326. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
18 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
19 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
20 DIRECTV HS17) in connection with operating and providing the Accused Services.

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

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

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

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

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

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

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

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

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

21 336. DIRECTV had knowledge of the '213 Patent no later than its receipt of
22 Entropic's communications sent to DIRECTV on March 9, 2022.

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

25 338. DIRECTV has known of or has been willfully blind to the '213 Patent
26 since before the March 9, 2022 communications from Entropic.

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

1 340. Because of DIRECTV's knowledge of Entropic Inc.'s work and
2 contributions related to MoCA technology, DIRECTV had knowledge of the '213
3 Patent before March 9, 2022 or was willfully blind to its existence.

4 341. DIRECTV has been aware of its infringement of the '213 Patent no later
5 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
6 infringement of the '213 Patent by MoCA technology, which is deployed by
7 DIRECTV. The claim charts DIRECTV received approximately three months before
8 the filing of this Complaint show that the claims of the '213 Patent are essential to
9 practicing at least MoCA standards versions 1.1, and/or 2.0.

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

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

19 344. Since learning of the '213 Patent and its infringing activities, DIRECTV
20 has failed to cease its infringing activities.

21 345. DIRECTV's customers and subscribers directly infringe at least claim 1
22 of the '213 Patent by using the Accused MoCA Instrumentalities in connection with
23 the Accused Services provided by DIRECTV.

24 346. DIRECTV actively induces its customers' and subscribers' direct
25 infringement by providing the Accused Services and associated support.

26 347. For example, DIRECTV actively induces infringement of at least claim
27 1 of the '213 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
28 customers with specific instructions and/or assistance (including installation and

1 maintenance) regarding the instantiation of a MoCA network and the use of the
2 Accused MoCA Instrumentalities to infringe the '213 Patent.

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

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

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

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

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

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

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

COUNT IX

(Infringement of the '422 Patent)

1
2
3 355. Entropic incorporates by reference each allegation of Paragraphs 1
4 through 354.

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

8 357. Entropic owns all substantial rights, interest, and title in and to the '422
9 Patent, including the sole and exclusive right to prosecute this action and enforce the
10 '422 Patent against infringers, and to collect damages for all relevant times.

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

20 359. The '422 Patent is directed to patent-eligible subject matter pursuant to
21 35 U.S.C. § 101.

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

24 361. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
25 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
26 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
27 DIRECTV HS17) in connection with operating and providing the Accused Services.
28

1 362. The Accused MoCA Instrumentalities deployed by DIRECTV to
2 customer premises remain the property of DIRECTV while deployed.

3 363. The Accused MoCA Instrumentalities operate while deployed in a
4 manner controlled and intended by DIRECTV.

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

9 365. Each aspect of the functioning of the Accused MoCA Instrumentalities
10 described in the claim chart operates while deployed to customer premises in a
11 manner controlled and intended by DIRECTV.

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

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

17 368. DIRECTV therefore directly infringes at least claim 1 of the '422 Patent
18 by using the Accused MoCA Instrumentalities to provide Accused Services to
19 customers.

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

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

28

1 371. DIRECTV had knowledge of the '422 Patent no later than its receipt of
2 Entropic's communications sent to DIRECTV on March 9, 2022.

3 372. DIRECTV has been aware that it infringes the '422 Patent no later than
4 its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

5 373. DIRECTV has known of or has been willfully blind to the '422 Patent
6 since before the March 9, 2022 communications from Entropic.

7 374. The '422 Patent issued while or before DIRECTV was a member of
8 MoCA.

9 375. Because of DIRECTV's knowledge of Entropic Inc.'s work and
10 contributions related to MoCA technology, DIRECTV had knowledge of the '422
11 Patent before March 9, 2022 or was willfully blind to its existence.

12 376. DIRECTV has been aware of its infringement of the '422 Patent no later
13 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
14 infringement of the '422 Patent by MoCA technology, which is deployed by
15 DIRECTV. The claim charts DIRECTV received approximately three months before
16 the filing of this Complaint show that the claims of the '422 Patent are essential to
17 practicing at least MoCA standards versions 1.1, and/or 2.0.

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

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

27 379. Since learning of the '422 Patent and its infringing activities, DIRECTV
28 has failed to cease its infringing activities.

1 380. DIRECTV’s customers and subscribers directly infringe at least claim 1
2 of the ’422 Patent by using the Accused MoCA Instrumentalities in connection with
3 the Accused Services provided by DIRECTV.

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

6 382. For example, DIRECTV actively induces infringement of at least claim
7 1 of the ’422 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
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
10 Accused MoCA Instrumentalities to infringe the ’422 Patent.

11 383. DIRECTV aids, instructs, supports, and otherwise acts with the intent
12 to cause an end user to make and/or use the MoCA network and/or use the Accused
13 MoCA Instrumentalities to infringe every element of at least claim 1 of the ’422
14 Patent.

15 384. Additionally, DIRECTV contributes to the customers’ and subscribers’
16 direct infringement. DIRECTV provides at least the Accused MoCA
17 Instrumentalities that create and are at least substantially all of a MoCA network to
18 be used to infringe at least claim 1 of the ’422 Patent.

19 385. 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 DIRECTV, the end user directly infringes at least
22 claim 1 of the ’422 Patent. The Accused MoCA Instrumentalities are therefore
23 especially made or especially adapted for use in an infringing manner.

24 386. DIRECTV’s inducement of, and contribution to, the direct infringement
25 of at least claim 1 of the ’422 Patent has been, and is, continuous and ongoing through
26 the acts described above in connection with DIRECTV’s provision of the Accused
27 Services.

28

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

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

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

10 **COUNT X**

11 **(Infringement of the '910 Patent)**

12 390. Entropic incorporates by reference each allegation of Paragraphs 1
13 through 389.

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

16 392. Entropic owns all substantial rights, interest, and title in and to the '910
17 Patent, including the sole and exclusive right to prosecute this action and enforce the
18 '910 Patent against infringers, and to collect damages for all relevant times.

19 393. The '910 Patent is the Packet Aggregation Patent, and it addresses the
20 problem in the prior art that "overhead admission is associated with each packet
21 transmitted through the network," and such information, "including identifiers,
22 source and destination addresses, error control fields, etc., is added to the user data
23 and reduces the availability of network bandwidth for user data." '910 Patent, col. 1,
24 lines 32-37. To address this problem the '910 Patent is generally directed to, *inter*
25 *alia*, transmitting data over a network, where the transmitting device aggregates
26 packets that are directed to a common destination node. This reduces the transmitted
27 packet overhead of the network by eliminating interframe gaps, preamble
28 information, and extra headers. '910 Patent, col. 1, line 66 – col. 2, line 3. The '910

1 Patent has three claims, all of which are independent. At least these claims of the
2 '910 Patent are directed to a variety of techniques for aggregating packet data units
3 in the MoCA network. A true and accurate copy of the '910 Patent is attached hereto
4 as Exhibit S.

5 394. The '910 Patent is directed to patent-eligible subject matter pursuant to
6 35 U.S.C. § 101.

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

9 396. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
10 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
11 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
12 DIRECTV HS17) in connection with operating and providing the Accused Services.

13 397. The Accused MoCA Instrumentalities deployed by DIRECTV to
14 customer premises remain the property of DIRECTV while deployed.

15 398. The Accused MoCA Instrumentalities operate while deployed in a
16 manner controlled and intended by DIRECTV.

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

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

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

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

1 403. DIRECTV therefore directly infringes at least claim 3 of the '910 Patent
2 by using the Accused MoCA Instrumentalities to provide Accused Services to
3 customers.

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

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

12 406. DIRECTV had knowledge of the '910 Patent no later than its receipt of
13 Entropic's communications sent to DIRECTV on March 9, 2022.

14 407. DIRECTV has been aware that it infringes the '910 Patent no later than
15 its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

16 408. DIRECTV has known of or has been willfully blind to the '910 Patent
17 since before the March 9, 2022 communications from Entropic.

18 409. The '910 Patent issued while or before DIRECTV was a member of
19 MoCA.

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

23 411. DIRECTV has been aware of its infringement of the '910 Patent no later
24 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
25 infringement of the '910 Patent by MoCA technology, which is deployed by
26 DIRECTV. The claim charts DIRECTV received approximately three months before
27 the filing of this Complaint show that the claims of the '910 Patent are essential to
28 practicing at least MoCA standards versions 1.1, and/or 2.0.

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

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

10 414. Since learning of the '910 Patent and its infringing activities, DIRECTV
11 has failed to cease its infringing activities.

12 415. DIRECTV's customers and subscribers directly infringe at least claim 3
13 of the '910 Patent by using the Accused MoCA Instrumentalities in connection with
14 the Accused Services provided by DIRECTV.

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

18 417. For example, DIRECTV actively induces infringement of at least claim
19 3 of the '910 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
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
22 Accused MoCA Instrumentalities to infringe the '910 Patent.

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

27 419. Additionally, DIRECTV contributes to the customers' and subscribers'
28 direct infringement. DIRECTV provides, *inter alia*, the Accused MoCA

1 Instrumentalities designed and configured to create a MoCA network and operate as
2 nodes in the network, the use of which infringes at least claim 3 of the '910 Patent.

3 420. 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 DIRECTV, the end user directly infringes at least
6 claim 3 of the '910 Patent. The Accused MoCA Instrumentalities are therefore
7 especially made or especially adapted for use in an infringing manner.

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

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

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

19 424. Entropic is aware of no obligation to mark any instrumentality with the
20 '910 Patent in accordance with 35 U.S.C. § 287.

21 **COUNT XI**

22 **(Infringement of the '0,566 Patent)**

23 425. Entropic incorporates by reference each allegation of Paragraphs 1
24 through 424.

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

28

1 427. Entropic owns all substantial rights, interest, and title in and to the
2 '0,566 Patent, including the sole and exclusive right to prosecute this action and
3 enforce the '0,566 Patent against infringers, and to collect damages for all relevant
4 times.

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

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

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

17 431. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
18 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
19 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
20 DIRECTV HS17) in connection with operating and providing the Accused Services.

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

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

25 434. As set forth in the attached non-limiting claim chart (Exhibit V), any
26 product or system operating in a MoCA network compliant with the charted
27 provisions of MoCA 2.0 necessarily infringes at least claim 1 of the '0,566 Patent.
28

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

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

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

9 438. DIRECTV therefore directly infringes at least claim 1 of the '0,566
10 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to
11 customers.

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

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

21 441. DIRECTV had knowledge of the '0,566 Patent no later than its receipt
22 of Entropic's communications sent to DIRECTV on March 9, 2022.

23 442. DIRECTV has been aware that it infringes the '0,566 Patent no later
24 than its receipt of Entropic's communication sent to DIRECTV on March 9, 2022.

25 443. DIRECTV has known of or has been willfully blind to the '0,566 Patent
26 since before the March 9, 2022 communications from Entropic.

27 444. The '0,566 Patent issued while or before DIRECTV was a member of
28 MoCA.

1 445. Because of DIRECTV's knowledge of Entropic Inc.'s work and
2 contributions related to MoCA technology, DIRECTV had knowledge of the '0,566
3 Patent before March 9, 2022 or was willfully blind to its existence.

4 446. DIRECTV has been aware of its infringement of the '0,566 Patent no
5 later than February 17, 2023 when Entropic sent DIRECTV claim charts detailing
6 the infringement of the '0,566 Patent by MoCA technology, which is deployed by
7 DIRECTV. The claim charts DIRECTV received approximately three months before
8 the filing of this Complaint show that the claims of the '0,566 Patent are essential to
9 practicing at least MoCA standards versions 1.1, and/or 2.0.

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

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

20 449. Since learning of the '0,566 Patent and its infringing activities,
21 DIRECTV has failed to cease its infringing activities.

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

25 451. DIRECTV actively induces its customers' and subscribers' direct
26 infringement by providing the Accused Services and associated support.

27 452. For example, DIRECTV actively induces infringement of at least claim
28 1 of the '0,566 Patent by providing the Accused MoCA Instrumentalities to

1 DIRECTV customers with specific instructions and/or assistance (including
2 installation and maintenance) regarding the instantiation of a MoCA network and the
3 use of the Accused MoCA Instrumentalities to infringe the '0,566 Patent.

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

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

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

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

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

24 458. Entropic has been damaged as a result of the infringing conduct alleged
25 above. DIRECTV is liable to Entropic in an amount that compensates Entropic for
26 DIRECTV's infringement, which by law cannot be less than a reasonable royalty,
27 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
28

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

3 **COUNT XII**

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

5 460. Entropic incorporates by reference each allegation of Paragraphs 1
6 through 459.

7 461. The '681 Patent duly issued on January 29, 2013 from an application
8 filed October 15, 2009 and, *inter alia*, a provisional application filed October 16,
9 2008.

10 462. Entropic owns all substantial rights, interest, and title in and to the '681
11 Patent, including the sole and exclusive right to prosecute this action and enforce the
12 '681 Patent against infringers, and to collect damages for all relevant times.

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

20 464. The '681 Patent is directed to patent-eligible subject matter pursuant to
21 35 U.S.C. § 101.

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

24 466. DIRECTV deploys one or more of the Accused MoCA Instrumentalities
25 (e.g., DIRECTV C31, DIRECTV C41, DIRECTV C51, DIRECTV C61, DIRECTV
26 C61K, DIRECTV HR24, DIRECTV HR34, DIRECTV HR44, DIRECTV HR54, and
27 DIRECTV HS17) in connection with operating and providing the Accused Services.
28

1 467. The Accused MoCA Instrumentalities deployed by DIRECTV to
2 customer premises remain the property of DIRECTV while deployed.

3 468. The Accused MoCA Instrumentalities operate while deployed in a
4 manner controlled and intended by DIRECTV.

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

8 470. Each aspect of the functioning of the Accused MoCA Instrumentalities
9 described in the claim chart operates while deployed to customer premises in a
10 manner controlled and intended by DIRECTV.

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

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

16 473. DIRECTV therefore directly infringes at least claim 1 of the '681 Patent
17 by using the Accused MoCA Instrumentalities to provide Accused Services to
18 customers.

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

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

28

1 476. DIRECTV had knowledge of the '681 Patent no later than its receipt of
2 Entropic's communications sent to DIRECTV on August 9, 2022.

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

5 478. DIRECTV has known of or has been willfully blind to the '681 Patent
6 since before the August 9, 2022 communications from Entropic.

7 479. The '681 Patent issued while or before DIRECTV was a member of
8 MoCA.

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

12 481. DIRECTV has been aware of its infringement of the '681 Patent no later
13 than February 17, 2023 when Entropic sent DIRECTV claim charts detailing the
14 infringement of the '681 Patent by MoCA technology, which is deployed by
15 DIRECTV. The claim charts DIRECTV received approximately three months before
16 the filing of this Complaint show that the claims of the '681 Patent are essential to
17 practicing at least MoCA standards versions 1.1, and/or 2.0.

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

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

27 484. Since learning of the '681 Patent and its infringing activities, DIRECTV
28 has failed to cease its infringing activities.

1 485. DIRECTV’s customers and subscribers directly infringe at least claim 1
2 of the ’681 Patent by using the Accused MoCA Instrumentalities in connection with
3 the Accused Services provided by DIRECTV.

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

6 487. For example, DIRECTV actively induces infringement of at least claim
7 1 of the ’681 Patent by providing the Accused MoCA Instrumentalities to DIRECTV
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
10 Accused MoCA Instrumentalities to infringe the ’681 Patent.

11 488. DIRECTV aids, instructs, supports, and otherwise acts with the intent
12 to cause an end user to make and/or use the MoCA network and/or use the Accused
13 MoCA Instrumentalities to infringe every element of at least claim 1 of the ’681
14 Patent.

15 489. Additionally, DIRECTV contributes to the customers’ and subscribers’
16 direct infringement. DIRECTV provides at least the Accused MoCA
17 Instrumentalities that create and are at least substantially all of a MoCA network to
18 be used to infringe at least claim 1 of the ’681 Patent.

19 490. 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 DIRECTV, the end user directly infringes at least
22 claim 1 of the ’681 Patent. The Accused MoCA Instrumentalities are therefore
23 especially made or especially adapted for use in an infringing manner.

24 491. DIRECTV’s inducement of, and contribution to, the direct infringement
25 of at least claim 1 of the ’681 Patent has been, and is, continuous and ongoing through
26 the acts described above in connection with DIRECTV’s provision of the Accused
27 Services.

28

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

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

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

10 **JURY DEMAND**

11 Entropic hereby requests a trial by jury on all issues so triable by right.

12 **PRAYER FOR RELIEF**

13 WHEREFORE, Entropic requests that:

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

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

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

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

23 E. The Court award such other relief as the Court may deem just and
24 proper.

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1 Dated: July 1, 2023

Respectfully submitted,

2 By: */s/ Christina Goodrich*

3 Christina Goodrich (SBN 261722)

4 christina.goodrich@klgates.com

5 Connor J. Meggs (SBN 336159)

6 connor.meggs@klgates.com

K&L GATES LLP

10100 Santa Monica Boulevard

7 Eighth Floor

8 Los Angeles, CA 90067

Telephone: +1 310 552 5000

9 Facsimile: +1 310 552 5001

10 James A. Shimota (*pro hac vice*
11 *forthcoming*)

jim.shimota@klgates.com

12 George C. Summerfield (*pro hac vice*
13 *forthcoming*)

george.summerfield@klgates.com

K&L GATES LLP

14 70 W. Madison Street, Suite 3300

15 Chicago, IL 60602

16 Tel.: (312) 372-1121

Facsimile: (312) 827-8000

17 Peter E. Soskin (SBN 280347)

18 peter.soskin@klgates.com

K&L GATES LLP

19 Four Embarcadero Center, Suite 1200

20 San Francisco, CA 94111

Telephone: (415) 882-8200

21 Facsimile: (415) 882-8220

22 Darlene F. Ghavimi (*pro hac vice*
23 *forthcoming*)

darlene.ghavimi@klgates.com

K&L GATES LLP

24 2801 Via Fortuna, Suite #650

25 Austin, TX 78746

Telephone: (512) 482-6919

26 Facsimile: (512) 482-6800

27 *Attorneys for Plaintiff*

28 *Entropic Communications, LLC*