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

15 ENTROPIC COMMUNICATIONS,
16 LLC,

17 Plaintiff,

18 v.

19 COX COMMUNICATIONS, INC.;
20 COXCOM, LLC; AND COX
21 COMMUNICATIONS CALIFORNIA,
22 LLC,

23 Defendants.

Case No. 2:23-cv-01049

**ORIGINAL COMPLAINT FOR
PATENT INFRINGEMENT**

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ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for
2 patent infringement against Cox Communications, Inc. (“Cox Communications”),
3 CoxCom LLC (“CoxCom”), and Cox Communications California, LLC (“Cox
4 California”), (collectively “Cox”) and in support thereof alleges as follows:

5 1. This is a civil action arising under the patent laws of the United States, 35
6 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on Cox’s infringement
7 of U.S. Patent Nos. 8,223,775 (the “’775 Patent”), 8,284,690 (the “’690 Patent”),
8 8,792,008 (the “’008 Patent”), 9,210,362 (the “’362 Patent”), 9,825,826 (the “’826
9 Patent”), 10,135,682 (the “’682 Patent”), 11,381,866 (the “’866 Patent”), and
10 11,399,206 (the “’206 Patent”) (collectively, the “Patents-in-Suit”).

11 **THE PARTIES**

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

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

16 4. Upon information and belief, Cox Communications is a privately-owned
17 subsidiary of Cox Enterprises Inc. and is a Delaware Corporation with a principal place
18 of business at 6205 Peachtree Dunwoody Road, Atlanta, Georgia 30328.

19 5. Cox Communications has, as its registered agent in Delaware, Corporation
20 Service Company, located at 251 Little Falls Drive, Wilmington, Delaware, 19808.

21 6. Upon information and belief, CoxCom is a subsidiary of Cox
22 Communications, and incorporated in Delaware, with a principal place of business at
23 6205 Peachtree Dunwoody Road, Atlanta, Georgia 30328.

24 7. CoxCom has, as its registered agent in California, Corporation Service
25 Company d/b/a CSC - Lawyers Incorporating Service Company, located at 2710
26 Gateway Oaks Dr., Suite 150N, Sacramento, California 95833.

1 8. Upon information and belief, Cox California is a Delaware limited liability
2 company, with a regular and established place of business at 6205 Peachtree Dunwoody
3 Road, Atlanta, Georgia 30328.

4 9. Cox California has, as its registered agent in California, Corporation
5 Service Company d/b/a CSC - Lawyers Incorporating Service Company, located at
6 2710 Gateway Oaks Dr., Suite 150N, Sacramento, California 95833.

7 10. Cox Communications holds itself out as “the largest private telecom
8 company in America, serving six million homes and business.”¹

9 11. Upon information and belief, CoxCom and Cox California are agents of
10 Cox Communications.

11 12. The website of Cox Communications’ parent company, Cox Enterprises,
12 Inc., identifies Cox Communications as a “division” of Cox Communications, and upon
13 information and belief, includes job listings for employment with all Cox entities,
14 including Cox Communications, CoxCom and Cox California.

15 13. Upon information and belief, employees of Cox employees, regardless of
16 the Cox entity for which they work, have email addresses with the @cox.com domain.

17 14. Cox Communications is a manager/member of CoxCom.

18 15. Cox Communications has complete control over CoxCom.²

19 16. CoxCom is a manager/member of Cox California.

20 17. Cox Communications provides cable services in at least California through
21 its agent Cox California.³

22
23 ¹ [https://jobs.coxenterprises.com/en/jobs/job/r202314876-manager-marketing-](https://jobs.coxenterprises.com/en/jobs/job/r202314876-manager-marketing-analytics-b2b/)
24 [analytics-b2b/](https://jobs.coxenterprises.com/en/jobs/job/r202314876-manager-marketing-analytics-b2b/)

25 ² <https://fcc.report/IBFS/ITC-T-C-20210517-00085/7754627.pdf>

26 ³ [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/go-156-procurement-plans/2020/cox-communications.pdf?sc_lang=en&hash=CC575B1DDB9F6FBB153692B6B610ED67)
27 [outreach/documents/bco/go-156-procurement-plans/2020/cox-](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/go-156-procurement-plans/2020/cox-communications.pdf?sc_lang=en&hash=CC575B1DDB9F6FBB153692B6B610ED67)
28 [communications.pdf?sc_lang=en&hash=CC575B1DDB9F6FBB153692B6B610ED67](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/go-156-procurement-plans/2020/cox-communications.pdf?sc_lang=en&hash=CC575B1DDB9F6FBB153692B6B610ED67)
(Accessed October 13, 2022).

18. Cox Communications provides its customers with a “Residential Customer Service Agreement” in which it “sets for the terms and conditions under which CoxCom, LLC or one or more of its subsidiaries or affiliates authorized by applicable regulatory, franchise or license authority. . . agrees to provide services.”⁴ Upon information and belief, the entity that provides the services to Cox’s customers and subscribers is Cox California.

19. Upon information and belief, Cox Communications shares management, common ownership, advertising platforms, facilities, distribution chains and platforms, stores, and accused product lines and products involving related technologies with its agents, including at least CoxCom and Cox California. For example, Cox Communications, CoxCom and Cox California, share a principal place of business at 6205 Peachtree Dunwoody Road, Atlanta, Georgia 30328.

20. Upon information and belief, Cox Communications is the corporate manager of its subsidiary LLCs that own or lease property in this district, that employ employees in this district, and that own, store, sell, demonstrate, and lease equipment in this district. Cox has the right to exercise near total control of each entity’s operations through its LLC agreements with each entity.

PRESUIT DISCUSSIONS

21. Prior to filing this Complaint, Entropic sent a communication by physical means to Cox on August 9, 2022, in an attempt to engage Cox and/or its agents in good faith licensing discussions regarding Entropic’s patent portfolio, including the Patents-in-Suit⁵. On December 23, 2022, Entropic sent Cox another communication by both physical and electronic means regarding a separate license to Entropic’s patents for the

⁴ <https://www.cox.com/aboutus/policies/customer-service-agreement.html> (accessed October 12, 2022).

⁵ The ’206 Patent was not included in the list of issued Entropic patents sent on August 9, 2022.

1 field of the standardized networking technology commonly called MoCA, and also
2 seeking to discuss with Cox a typical non-disclosure agreement. Cox has failed to
3 respond to either communication.

4 **ENTROPIC'S LEGACY AS A CABLE INNOVATOR**

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

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

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

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

1 26. 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 his
4 team.

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

8 28. The Patents-in-Suit are the result of years of research and development in
9 satellite and cable technology. These innovations are utilized by Cox to provide
10 enhanced and expanded services to customers, which in turn has increased revenues for
11 Cox while at the same time reducing costs.

12 29. Entropic filed a patent infringement suit against Charter Communications,
13 Inc. (“Charter”) in the Eastern District of Texas, Case No. 2:22-CV-00125-JRG, on
14 April 27, 2022, asserting the ’775 Patent, the ’690 Patent, the ’008 Patent, the ’362
15 Patent, the ’826 Patent, and the ’682 Patent against Charter’s provision of cable
16 television and internet services, cable modem products and STBs. Upon information
17 and belief, Cox analyzed the causes of action, the asserted patents, and its own products’
18 functionality in light of those patents.

19 30. Upon information and belief, Cox analyzed the causes of action in the
20 Charter Suit and the asserted patents.

21 31. Upon information and belief, Cox analyzed its products’ functionality in
22 light of the patents asserted in the Charter Suit.

23 32. Upon information and belief, Cox monitored the ongoing prosecution of
24 the ’362 Patent family, and therefore was aware the ’866 Patent issued on July 5, 2022,
25 and the ’206 Patent issued on July 26, 2022.

26 33. Upon information and belief, Cox analyzed its products’ functionality in
27 light of the ’866 Patent.

1 34. Upon information and belief, Cox analyzed its products' functionality in
2 light of the '206 Patent.

3 **JURISDICTION AND VENUE**

4 35. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331
5 and 1338(a) because the claims herein arise under the patent laws of the United States,
6 35 U.S.C. § 1 et seq., including 35 U.S.C. § 271.

7 36. Venue in this Judicial District of Central California ("District") is proper
8 pursuant to 28 U.S.C. § 1400(b), because Cox has regular and established places of
9 business in this District. The defendants, by themselves and/or through their agents,
10 have committed acts of patent infringement within the State of California and within
11 this District by using, selling, offering for sale, and/or leasing various
12 telecommunication services products and services.

13 37. This Court has general personal jurisdiction over Cox because Cox
14 conducts systematic and regular business within the State of California by, *inter alia*
15 providing cable television, internet, and phone services to businesses and residents
16 throughout the state.

17 38. Upon information and belief, Cox Communications has a regular and
18 established place of business within this District including at least at 27121 Towne
19 Centre Drive, Foothill Ranch, California, 92610.

20 39. The Court has personal jurisdiction over Cox Communications, CoxCom
21 and Cox California, because they have committed acts of infringement within the State
22 of California and within this District through, for example, providing through their
23 wholly owned subsidiaries, Cox branded products and services, including, Cox Contour
24 set top boxes and Cox digital video, audio, and other content services to customers. Cox
25 provides cable television and internet services ("Accused Services") via the lease, sale,
26 and/or distribution of cable modems and set top boxes both online and from Cox stores
27 in this District. For example, Cox has and continues to sell, lease, and/or distribute the
28 Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable

1 modem, Technicolor CGM4331 cable modem, and products that operate in a similar
2 manner (“Accused Cable Modem Products”), as well as the Arris AX013ANC STB,
3 Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung
4 SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar
5 manner (“Accused Set Top Products”).

6 40. Upon information and belief, Cox Communications, CoxCom and Cox
7 California, by themselves and/or through their agents, offer various telecommunication
8 services throughout the United States. Cox operates and maintains a nationwide
9 television and data network through which Cox sells, leases, and offers for sale or lease
10 products and services, including the Accused Services, Accused Cable Modem Products
11 and Accused Set Top Products, to businesses, consumers, and government agencies.
12 Through its subsidiaries, Cox Communications offers to sell, sells, and provides Cox
13 branded products and services, including, set top boxes and digital video, audio, and
14 other content services to customers. Subscribers to Cox’s television services receive
15 one or more receivers and/or set-top boxes within this District.

16 41. Upon information and belief, those services are provided through and
17 using the Accused Cable Modem Products and Accused Set Top Products.

18 42. Upon information and belief, Cox Communications, CoxCom and Cox
19 California, by themselves and/or through their agents, own, and/or operate their
20 businesses through *inter alia*, offices, storefronts, and/or other operational locations
21 within this District including, for example, at Cox stores located at 6234 Irvine Blvd.,
22 Irvine, California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El
23 Toro Rd., Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel,
24 California 92677; and 30652 Santa Margarita Pkwy F-101B, Rancho Santa Margarita,
25 California 92688. Cox holds out these locations as its own through the use of branding
26 on the locations themselves.

1 43. Cox Communications lists these storefronts on its website and holds them
2 out as places where customers can obtain the Accused Services, Accused Cable Modem
3 Products and Accused Set Top Products.

4 44. Upon information and belief, Cox Communications, CoxCom and Cox
5 California, by themselves and/or through their agents, own and/or lease the premises
6 where these Cox stores are located.

7 45. Upon information and belief, these Cox stores are staffed by persons
8 directly employed by Cox, many of whom live in this District.

9 46. Upon information and belief, one or more of the defendants has engaged
10 in regular and established business at physical places within this District such as at these
11 Cox stores.

12 47. Upon information and belief, Cox employs and/or contracts with persons
13 and directs them to install, service, repair, and/or replace equipment, as appropriate, in
14 this District.

15 48. Upon information and belief, in each of these stores and/or service centers,
16 Cox owns and stores equipment such as cable modems and set top boxes and
17 demonstrates services provided via those products to Cox customers.

18 49. On the Cox Communications website, Cox has a section regarding the
19 California Consumer Privacy Notice, which demonstrates that Cox Communications is
20 purposefully holding itself out as providing products and services in California. Cox
21 Communications explicitly confirms that this agreement applies to CoxCom and its
22 “communication related affiliates.” Upon information and belief, such communication
23 related affiliates include Cox California, and of course, Cox Communications.

24 50. Upon information and belief, Cox Communications and/or CoxCom, by
25 themselves and/or through their agent, Cox California, provides the Accused Services
26 throughout the United States and in this District.

27 51. Venue is further proper because Cox has committed and continues to
28 commit acts of patent infringement in this District, including making, using, offering to

1 sell, and/or selling Accused Services, Accused Cable Modem Products and Accused Set
2 Top Products in this District, and/or importing the Cable Modem Products and Accused
3 Set Top Products into, and thereafter providing Accused Services in, this District,
4 including by Internet sales and sales via retail and wholesale stores. Furthermore, for
5 example, Cox deploys Accused Cable Modem Products and Accused Set Top Products
6 to many thousands of locations (customer premises) in this District and subsequently,
7 by means of those instrumentalities, uses the claimed inventions at those locations in
8 this District. Cox infringes by inducing and contributing to acts of patent infringement
9 in this District and/or committing at least a portion of any other infringement alleged
10 herein in this District.

11 52. Cox continues to conduct business in this District, including the acts and
12 activities described in the preceding paragraph.

13 **COUNT I**

14 **(Infringement of the '775 Patent)**

15 53. Entropic incorporates by reference each allegation of Paragraphs 1 through
16 52.

17 54. The '775 Patent duly issued on July 17, 2012 from an application filed
18 September 30, 2003.

19 55. Entropic owns all substantial rights, interest, and title in and to the
20 '775 Patent, including the sole and exclusive right to prosecute this action and enforce
21 the '775 Patent against infringers and to collect damages for all relevant times.

22 56. The '775 Patent generally describes a partitioned cable modem that
23 performs cable modem functions and data and home networking functions. Functionally
24 partitioning a cable modem to perform cable modem functions and data and home
25 networking functions enables a cable modem to incorporate a variety of enhanced
26 functions. A true and accurate copy of the '775 Patent is attached hereto as Exhibit 1.

27 57. The '775 Patent is directed to patent-eligible subject matter pursuant to
28 35 U.S.C. § 101.

1 58. The '775 Patent is valid and enforceable, and presumed as such, pursuant
2 to 35 U.S.C. § 282.

3 59. Cox deploys one or more of the Accused Cable Modem Products in
4 connection with operating and providing the Accused Services.

5 60. The Accused Cable Modem Products deployed by Cox to customer
6 premises remain the property of Cox while deployed.

7 61. The Accused Cable Modem Products operate while deployed in a manner
8 controlled and intended by Cox.

9 62. As set forth in the attached nonlimiting claim chart (Exhibit 2), Cox has
10 directly infringed and is infringing at least Claims 18 and 19 of the '775 Patent by using,
11 importing, selling, and/or offering for sale the Accused Cable Modem Products and/or
12 the Accused Services.

13 63. Each aspect of the functioning of the Accused Cable Modem Products
14 described in the claim chart operates while deployed to customer premises in a manner
15 controlled and intended by Cox.

16 64. Cox provides no software, support, or other facility to customers to modify
17 any aspect of the functioning described in the claim chart of the Accused Cable Modem
18 Products while deployed to customer premises.

19 65. Cox directly infringes at least Claims 18 and 19 of the '775 Patent by using,
20 importing, selling, and/or offering for sale the Accused Cable Modem Products (for
21 example, the Technicolor CGM4141 cable modem) and/or the Accused Services (for
22 example, utilizing cable modem functions).

23 66. The use of the Accused Cable Modem Products by Cox to, for example,
24 demonstrate products in brick-and-mortar stores at 6234 Irvine Blvd., Irvine, California
25 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd., Lake
26 Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California 92677;
27 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California 92688, or
28

1 to, for example, test those products, constitute acts of direct infringement of at least
2 Claims 18 and 19 of the '775 Patent.

3 67. Cox had knowledge of the '775 Patent no later than its receipt of Entropic's
4 communication sent to Cox on August 9, 2022.

5 68. Cox has been aware that it infringes the '775 Patent no later than its receipt
6 of Entropic's communication sent to Cox on August 9, 2022.

7 69. Cox has known of or has been willfully blind to the '775 Patent since
8 before the August 9, 2022 communication from Entropic.

9 70. Cox has been aware that it infringes the '775 Patent since at least as early
10 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
11 obtaining knowledge of the '775 Patent and its infringing activities, Cox has failed to
12 cease its infringing activities.

13 71. Customers and subscribers of Cox infringe at least Claims 18 and 19 of the
14 '775 Patent by using the claimed system, at least during the use of the Accused Cable
15 Modem Products (for example, the Technicolor CGM4141 cable modem).

16 72. Cox actively induces customers' direct infringement. For example, Cox
17 actively induces infringement of at least Claims 18 and 19 of the '775 Patent by
18 providing the Accused Cable Modem Products to Cox customers with specific
19 instructions and/or assistance (including installation) regarding the use of the Accused
20 Cable Modem Products to infringe the '775 Patent in accordance with the ordinary
21 course of operation through the provision of the Accused Services. For at least the
22 above-listed reasons, Cox aids, instructs, supports, and otherwise acts with the intent to
23 cause an end user to use the Accused Cable Modem Products to infringe at least Claims
24 18 and 19 of the '775 Patent.

25 73. Cox contributes to the customers' direct infringement. Cox provides
26 apparatuses, namely the Accused Cable Modem Products, that are used by customers
27 to directly infringe at least Claims 18 and 19 of the '775 Patent.

1 81. Entropic owns all substantial rights, interest, and title in and to the '690
2 Patent, including the sole and exclusive right to prosecute this action and enforce the
3 '690 Patent against infringers and to collect damages for all relevant times.

4 82. The '690 Patent generally describes the process of generating probe
5 transmissions in response to a request from a receiving node of a network, wherein the
6 probe request specifies a plurality of parameters that specify content payload of the
7 probe transmission, and a second node to receive the probe transmission, which
8 enhances flexibility and therefore, improves the receiving node's ability to efficiently
9 recognize the precise form of the transmitted probe. A true and accurate copy of the
10 '690 Patent is attached hereto as Exhibit 3.

11 83. The '690 Patent is directed to patent-eligible subject matter pursuant to
12 35 U.S.C. § 101.

13 84. The '690 Patent is valid and enforceable, and presumed as such, pursuant
14 to 35 U.S.C. § 282.

15 85. Cox deploys one or more of the Accused Cable Modem Products in
16 connection with operating and providing the Accused Services.

17 86. The Accused Cable Modem Products deployed by Cox to customer
18 premises remain the property of Cox while deployed.

19 87. The Accused Cable Modem Products operate while deployed in a manner
20 controlled and intended by Cox.

21 88. As set forth in the attached nonlimiting claim chart (Exhibit 4), Cox has
22 directly infringed and is infringing at least Claims 7, 8, 11, 15, and 16 of the '690 Patent
23 by using, importing, selling, and/or offering for sale the Accused Cable Modem
24 Products and/or the Accused Services.

25 89. Each aspect of the functioning of the Accused Cable Modem Products
26 described in the claim chart operates while deployed to customer premises in a manner
27 controlled and intended by Cox.

1 90. Cox provides no software, support, or other facility to customers to modify
2 any aspect of the functioning described in the claim chart of the Accused Cable Modem
3 Products while deployed to customer premises.

4 91. Cox directly infringes at least Claims 7, 8, 11, 15, and 16 the '690 Patent
5 by using, importing, selling, and/or offering for sale the Accused Cable Modem
6 Products (for example, the Technicolor CGM4141 cable modem) and/or the Accused
7 Services (for example, performing bidirectional communication with cable modems).

8 92. The use of the Accused Services by Cox to, for example, demonstrate
9 products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine, California 92620;
10 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd., Lake Forest,
11 California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California 92677; 30652
12 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California 92688, or to, for
13 example, test those products, constitute acts of direct infringement of at least Claims 7,
14 8, 11, 15, and 16 of the '690 Patent.

15 93. Cox had knowledge of the '690 Patent no later than its receipt of Entropic's
16 communication sent to Cox on August 9, 2022.

17 94. Cox has been aware that it infringes the '690 Patent no later than its receipt
18 of Entropic's communication sent to Cox on August 9, 2022.

19 95. Cox has known of or has been willfully blind to the '690 Patent since
20 before the August 9, 2022 communication from Entropic.

21 96. Cox has been aware that it infringes the '690 Patent since at least as early
22 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
23 obtaining knowledge of the '690 Patent and its infringing activities, Cox has failed to
24 cease its infringing activities.

25 97. Customers and subscribers of Cox infringe at least Claims 7 and 8 of the
26 '690 Patent by using the claimed method, at least during receipt of the Accused Services
27 utilizing, for example, the Accused Cable Modem Products (for example, the
28 Technicolor CGM4141 cable modem).

1 98. Cox actively induces customers' direct infringement. For example, Cox
2 actively induces infringement of at least Claims 7 and 8 of the '690 Patent by providing
3 the Accused Cable Modem Products to Cox customers with specific instructions and/or
4 assistance (including installation) regarding the use of the Accused Cable Modem
5 Products to infringe the '690 Patent in accordance with the ordinary course of operation
6 through the provision of the Accused Services. Cox provides the cable modem functions
7 claimed by the '690 Patent via the Accused Services, which enable and induce its
8 customers to directly infringe the '690 Patent. For at least the above-listed reasons, Cox
9 aids, instructs, supports, and otherwise acts with the intent to cause an end user to use
10 the Accused Cable Modem Products to infringe at least Claims 7 and 8 of the '690
11 Patent.

12 99. Cox contributes to the customers' direct infringement. Cox provides
13 apparatuses, namely the Accused Cable Modem Products, that are used by customers
14 to directly infringe at least Claims 7, and 8 of the '690 Patent.

15 100. The Accused Cable Modem Products have no substantial noninfringing
16 uses. When an end user uses the Accused Cable Modem Products to receive the Accused
17 Services, the end user directly infringes at least Claims 7 and 8 of the '690 Patent. The
18 Accused Cable Modem Products are especially made or especially adapted for use in
19 an infringing manner.

20 101. Cox's inducement of, and contribution to, the direct infringement of at
21 least Claims 7 and 8 of the '690 Patent is continuous and ongoing through acts such as
22 providing the Accused Cable Modem Products to Cox customers, which enables those
23 customers to receive the Accused Services; Cox's provision of the Accused Services;
24 and technical assistance provided by Cox for equipment it provides to its customers in
25 support of the provision of the Accused Services.

26 102. Cox's infringement of the '690 Patent is, has been, and continues to be
27 willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under
28 the patent.

1 113. The Accused Set Top Products operate while deployed in a manner
2 controlled and intended by Cox.

3 114. As set forth in the attached nonlimiting claim chart (Exhibit 6), Cox has
4 directly infringed and is infringing at least Claims 1 and 2 of the '008 Patent by using,
5 importing, selling, and/or offering for sale the Accused Set Top Products and/or the
6 Accused Services.

7 115. Each aspect of the functioning of the Accused Set Top Products described
8 in the claim chart operates while deployed to customer premises in a manner controlled
9 and intended by Cox.

10 116. Cox provides no software, support, or other facility to customers to modify
11 any aspect of the functioning described in the claim chart of the Accused Set Top
12 Products while deployed to customer premises.

13 117. Cox directly infringes at least Claims 1 and 2 of the '008 Patent by using,
14 importing, selling, and/or offering for sale the Accused Set Top Products (for example,
15 the Arris AX013ANM STB) and/or the Accused Services (for example, monitoring
16 signals by the Accused Set Top Products).

17 118. The use of the Accused Set Top Products by Cox to, for example,
18 demonstrate products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine,
19 California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd.,
20 Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California
21 92677; 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California
22 92688, or to, for example, test those products, constitute acts of direct infringement of
23 at least Claims 1 and 2 of the '008 Patent.

24 119. Cox had knowledge of the '008 Patent no later than its receipt of Entropic's
25 communication sent to Cox on August 9, 2022.

26 120. Cox has been aware that it infringes the '008 Patent no later than its receipt
27 of Entropic's communication sent to Cox on August 9, 2022.
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1 121. Cox has known of or has been willfully blind to the '008 Patent since
2 before the August 9, 2022 communication from Entropic.

3 122. Cox has been aware that it infringes the '008 Patent since at least as early
4 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
5 obtaining knowledge of the '008 Patent and its infringing activities, Cox has failed to
6 cease its infringing activities.

7 123. Customers and subscribers of Cox infringe at least Claims 1 and 2 of the
8 '008 Patent by using the claimed system, at least during the use of the Accused Set Top
9 Products (for example, the Arris AX013ANM STB).

10 124. Cox actively induces customers' direct infringement. For example, Cox
11 actively induces infringement of at least Claims 1 and 2 of the '008 Patent by providing
12 the Accused Set Top Products to Cox customers with specific instructions and/or
13 assistance (including installation) regarding the use of the Accused Set Top Products to
14 infringe the '008 Patent in accordance with the ordinary course of operation through the
15 provision of the Accused Services. Cox provides the full band digital tuning and signal
16 monitoring functions claimed by the '008 Patent via the Accused Services, which enable
17 and induce its customers to directly infringe the '008 Patent. For at least the above-
18 listed reasons, Cox aids, instructs, supports, and otherwise acts with the intent to cause
19 an end user to use the Accused Set Top Products to infringe at least Claims 1 and 2 of
20 the '008 Patent.

21 125. Cox contributes to the customers' direct infringement. Cox provides
22 apparatuses, namely the Accused Set Top Products, that are used by customers to
23 directly infringe at least Claims 1 and 2 of the '008 Patent.

24 126. The Accused Set Top Products have no substantial noninfringing uses.
25 When an end user uses the Accused Set Top Products to receive the Accused Services,
26 the end user directly infringes at least Claims 1 and 2 of the '008 Patent. The Accused
27 Set Top Products are especially made or especially adapted for use in an infringing
28 manner.

127. Cox's inducement of, and contribution to, the direct infringement of at least Claims 1 and 2 of the '008 Patent is continuous and ongoing through acts such as providing the Accused Set Top Products to Cox customers, which enables those customers to receive the Accused Services; Cox's provision of the Accused Services; and technical assistance provided by Cox for equipment it provides to its customers in support of the provision of the Accused Services.

128. Cox's infringement of the '008 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

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

130. Entropic is aware of no obligation to mark any instrumentality with the '008 Patent in accordance with 35 U.S.C. § 287.

COUNT IV

(Infringement of the '362 Patent)

131. Entropic incorporates by reference each allegation of Paragraphs 1 through 130.

132. The '362 Patent duly issued on December 8, 2015 from an application filed February 5, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

133. Entropic owns all substantial rights, interest, and title in and to the '362 Patent, including the sole and exclusive right to prosecute this action and enforce the '362 Patent against infringers and to collect damages for all relevant times.

134. The '362 Patent generally describes a wideband receiver system that down converts a plurality of frequencies including desired television channels and undesired television channels, digitizes frequencies, selects desired television channels from the

1 frequencies, and outputs the selected television channels to a demodulator as a digital
2 data stream. A true and accurate copy of the '362 Patent is attached hereto as Exhibit 7.

3 135. The '362 Patent is directed to patent-eligible subject matter pursuant to
4 35 U.S.C. § 101.

5 136. The '362 Patent is valid and enforceable, and presumed as such, pursuant
6 to 35 U.S.C. § 282.

7 137. Cox deploys one or more of the Accused Set Top Products in connection
8 with operating and providing the Accused Services.

9 138. The Accused Set Top Products deployed by Cox to customer premises
10 remain the property of Cox while deployed.

11 139. The Accused Set Top Products operate while deployed in a manner
12 controlled and intended by Cox.

13 140. As set forth in the attached nonlimiting claim chart (Exhibit 8), Cox has
14 directly infringed and is infringing at least Claim 11 of the '362 Patent by using,
15 importing, selling, and/or offering for sale the Accused Set Top Products and/or the
16 Accused Services.

17 141. Each aspect of the functioning of the Accused Set Top Products described
18 in the claim chart operates while deployed to customer premises in a manner controlled
19 and intended by Cox.

20 142. Cox provides no software, support, or other facility to customers to modify
21 any aspect of the functioning described in the claim chart of the Accused Set Top
22 Products while deployed to customer premises.

23 143. Cox directly infringes at least Claim 11 of the '362 Patent by using,
24 importing, selling, and/or offering for sale the Accused Set Top Products (for example,
25 the Arris AX013ANM STB) and/or the Accused Services (for example, digitizing and
26 selecting desired television channels provided by Cox).

27 144. The use of the Accused Set Top Products by Cox to, for example,
28 demonstrate products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine,

1 California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd.,
2 Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California
3 92677; 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California
4 92688, or to, for example, test those products, constitute acts of direct infringement of
5 at least Claim 11 of the '362 Patent.

6 145. Cox had knowledge of the '362 Patent no later than its receipt of Entropic's
7 communication sent to Cox on August 9, 2022.

8 146. Cox has been aware that it infringes the '362 Patent no later than its receipt
9 of Entropic's communication sent to Cox on August 9, 2022.

10 147. Cox has known of or has been willfully blind to the '362 Patent since
11 before the August 9, 2022 communication from Entropic.

12 148. Cox has been aware that it infringes the '362 Patent since at least as early
13 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
14 obtaining knowledge of the '362 Patent and its infringing activities, Cox has failed to
15 cease its infringing activities.

16 149. Customers and subscribers of Cox infringe at least Claim 11 of the '362
17 Patent by using the claimed system, at least during the use of the Accused Set Top
18 Products (for example, the Arris AX013ANM STB).

19 150. Cox actively induces customers' direct infringement. For example, Cox
20 actively induces infringement of at least Claim 11 of the '362 Patent by providing the
21 Accused Set Top Products to Cox customers with specific instructions and/or assistance
22 (including installation) regarding the use of the Accused Set Top Products to infringe
23 the '362 Patent in accordance with the ordinary course of operation through the
24 provision of the Accused Services. Cox provides the television channel digitization,
25 selection, and output functions claimed by the '362 Patent via the Accused Services,
26 which enable and induce its customers to directly infringe the '362 Patent. For at least
27 the above-listed reasons, Cox aids, instructs, supports, and otherwise acts with the intent
28

1 to cause an end user to use the Accused Set Top Products to infringe at least Claim 11
2 of the '362 Patent.

3 151. Cox contributes to the customers' direct infringement. Cox provides
4 apparatuses, namely the Accused Set Top Products, that are used by customers to
5 directly infringe at least Claim 11 of the '362 Patent.

6 152. The Accused Set Top Products have no substantial noninfringing uses.
7 When an end user uses the Accused Set Top Products to receive the Accused Services,
8 the end user directly infringes at least Claim 11 of the '362 Patent. The Accused Set
9 Top Products are especially made or especially adapted for use in an infringing manner.

10 153. Cox's inducement of, and contribution to, the direct infringement of at
11 least Claim 11 of the '362 Patent is continuous and ongoing through acts such as
12 providing the Accused Set Top Products to Cox customers, which enables those
13 customers to receive the Accused Services; Cox's provision of the Accused Services;
14 and technical assistance provided by Cox for equipment it provides to its customers in
15 support of the provision of the Accused Services.

16 154. Cox's infringement of the '362 Patent is, has been, and continues to be
17 willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under
18 the patent.

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

23 156. No apparatus claims of the '362 Patent are presently asserted. Accordingly,
24 there is no duty to mark pursuant to 35 U.S.C. § 287.

25 **COUNT V**

26 **(Infringement of the '826 Patent)**

27 157. Entropic incorporates by reference each allegation of Paragraphs 1 through
28 156.

1 158. The '826 Patent duly issued on November 21, 2017 from an application
2 filed November 23, 2015, an application filed July 28, 2014, an application filed
3 September 10, 2012, and, *inter alia* a provisional application filed September 8, 2011.

4 159. Entropic owns all substantial rights, interest, and title in and to the '826
5 Patent, including the sole and exclusive right to prosecute this action and enforce the
6 '826 Patent against infringers and to collect damages for all relevant times.

7 160. The '826 Patent generally describes a system that receives a signal having
8 a plurality of channels, digitizes the received signal, and reports certain signal
9 characteristics to the source of the received signal. A true and accurate copy of the '826
10 Patent is attached hereto as Exhibit 9.

11 161. The '826 Patent is directed to patent-eligible subject matter pursuant to
12 35 U.S.C. § 101.

13 162. The '826 Patent is valid and enforceable, and presumed as such, pursuant
14 to 35 U.S.C. § 282.

15 163. Cox deploys one or more of the Accused Set Top Products in connection
16 with operating and providing the Accused Services.

17 164. The Accused Set Top Products deployed by Cox to customer premises
18 remain the property of Cox while deployed.

19 165. The Accused Set Top Products operate while deployed in a manner
20 controlled and intended by Cox.

21 166. As set forth in the attached nonlimiting claim chart (Exhibit 10), Cox has
22 directly infringed and is infringing at least Claim 1 of the '826 Patent by using,
23 importing, selling, and/or offering for sale the Accused Set Top Products and/or the
24 Accused Services.

25 167. Each aspect of the functioning of the Accused Set Top Products described
26 in the claim chart operates while deployed to customer premises in a manner controlled
27 and intended by Cox.
28

1 168. Cox provides no software, support, or other facility to customers to modify
2 any aspect of the functioning described in the claim chart of the Accused Set Top
3 Products while deployed to customer premises.

4 169. Cox directly infringes at least Claim 1 of the '826 Patent by using,
5 importing, selling, and/or offering for sale the Accused Set Top Products (for example,
6 the Arris AX013ANM STB) and/or the Accused Services (for example, monitoring
7 signals by the Accused Set Top Products).

8 170. The use of the Accused Set Top Products by Cox to, for example,
9 demonstrate products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine,
10 California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd.,
11 Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California
12 92677; 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California
13 92688, or to, for example, test those products, constitute acts of direct infringement of
14 at least Claim 1 of the '826 Patent.

15 171. Cox had knowledge of the '826 Patent no later than its receipt of Entropic's
16 communication sent to Cox on August 9, 2022.

17 172. Cox has been aware that it infringes the '826 Patent no later than its receipt
18 of Entropic's communication sent to Cox on August 9, 2022.

19 173. Cox has known of or has been willfully blind to the '826 Patent since
20 before the August 9, 2022 communication from Entropic.

21 174. Cox has been aware that it infringes the '826 Patent since at least as early
22 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
23 obtaining knowledge of the '826 Patent and its infringing activities, Cox has failed to
24 cease its infringing activities.

25 175. Customers and subscribers of Cox infringe at least Claim 1 of the '826
26 Patent by using the claimed system, at least during the use of the Accused Set Top
27 Products (for example, the Arris AX013ANM STB).

1 176. Cox actively induces customers' direct infringement. For example, Cox
2 actively induces infringement of at least Claim 1 of the '826 Patent by providing the
3 Accused Set Top Products to Cox customers with specific instructions and/or assistance
4 (including installation) regarding the use of the Accused Set Top Products to infringe
5 the '826 Patent in accordance with the ordinary course of operation through the
6 provision of the Accused Services. Cox provides the signal monitoring claimed by the
7 '826 Patent via the Accused Services, which enable and induce its customers to directly
8 infringe the '826 Patent. For at least the above-listed reasons, Cox aids, instructs,
9 supports, and otherwise acts with the intent to cause an end user to use the Accused Set
10 Top Products to infringe at least Claim 1 of the '826 Patent.

11 177. Cox contributes to the customers' direct infringement. Cox provides
12 apparatuses, namely the Accused Set Top Products, that are used by customers to
13 directly infringe at least Claim 1 of the '826 Patent.

14 178. The Accused Set Top Products have no substantial noninfringing uses.
15 When an end user uses the Accused Set Top Products to receive the Accused Services,
16 the end user directly infringes at least Claim 1 of the '826 Patent. The Accused Set Top
17 Products are especially made or especially adapted for use in an infringing manner.

18 179. Cox's inducement of, and contribution to, the direct infringement of at
19 least Claim 1 of the '826 Patent is continuous and ongoing through acts such as
20 providing the Accused Set Top Products to Cox customers, which enables those
21 customers to receive the Accused Services; Cox's provision of the Accused Services;
22 and technical assistance provided by Cox for equipment it provides to its customers in
23 support of the provision of the Accused Services.

24 180. Cox's infringement of the '826 Patent is, has been, and continues to be
25 willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under
26 the patent.

27 181. Entropic has been damaged as a result of the infringing conduct alleged
28 above. Cox is liable to Entropic in an amount that compensates Entropic for Cox's

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

3 182. No apparatus claims of the '826 Patent are presently asserted. Accordingly,
4 there is no duty to mark pursuant to 35 U.S.C. § 287.

5 **COUNT VI**

6 **(Infringement of the '682 Patent)**

7 183. Entropic incorporates by reference each allegation of Paragraphs 1 through
8 182.

9 184. The '682 Patent duly issued on November 20, 2018 from an application
10 filed January 9, 2018, an application filed February 16, 2017, an application filed
11 August 4, 2016, an application filed July 23, 2013, and, *inter alia* a provisional
12 application filed July 23, 2012.

13 185. Entropic owns all substantial rights, interest, and title in and to the '682
14 Patent, including the sole and exclusive right to prosecute this action and enforce the
15 '682 Patent against infringers and to collect damages for all relevant times.

16 186. The '682 Patent generally describes a method performed by a cable modem
17 termination system and/or converged cable access platform, the method including
18 determining a corresponding signal-to-noise-ratio ("SNR") related metric, assigning
19 cable modems to service groups based on a respective corresponding SNR-related
20 metric, generating a composite SNR-related metric based on a worst-case SNR profile,
21 selecting a physical layer communication parameter to be used for communicating with
22 a service group based on a composite SNR-related metric, and communicating with
23 cable modems in the service group using the selected physical layer communication
24 parameter. A true and accurate copy of the '682 Patent is attached hereto as Exhibit 11.

25 187. The '682 Patent is directed to patent-eligible subject matter pursuant to
26 35 U.S.C. § 101.

27 188. The '682 Patent is valid and enforceable, and presumed as such, pursuant
28 to 35 U.S.C. § 282.

1 189. Cox deploys one or more of the Accused Cable Modem Products in
2 connection with operating and providing the Accused Services.

3 190. The Accused Cable Modem Products deployed by Cox to customer
4 premises remain the property of Cox while deployed.

5 191. The Accused Cable Modem Products operate while deployed in a manner
6 controlled and intended by Cox.

7 192. As set forth in the attached nonlimiting claim chart (Exhibit 12), Cox has
8 directly infringed and is infringing at least Claim 1 of the '682 Patent by using,
9 importing, selling, and/or offering for sale the Accused Services.

10 193. Each aspect of the functioning of the Accused Cable Modem Products
11 described in the claim chart operates while deployed to customer premises in a manner
12 controlled and intended by Cox.

13 194. Cox provides no software, support, or other facility to customers to modify
14 any aspect of the functioning described in the claim chart of the Accused Cable Modem
15 Products while deployed to customer premises.

16 195. Cox directly infringes at least Claim 1 of the '682 Patent by using,
17 importing, selling, and/or offering for sale the Accused Services, which utilize cable
18 modem termination systems and/or converged cable access platforms that communicate
19 with the Accused Cable Modem Products (for example, the Technicolor CGM4141
20 cable modem).

21 196. The use of the Accused Services by Cox to, for example, demonstrate
22 products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine, California 92620;
23 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd., Lake Forest,
24 California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California 92677; 30652
25 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California 92688, or to, for
26 example, test those products, constitute acts of direct infringement of at least Claim 1
27 of the '682 Patent.

1 197. Cox had knowledge of the '682 Patent no later than its receipt of Entropic's
2 communication sent to Cox on August 9, 2022.

3 198. Cox has been aware that it infringes the '682 Patent no later than its receipt
4 of Entropic's communication sent to Cox on August 9, 2022.

5 199. Cox has known of or has been willfully blind to the '682 Patent since
6 before the August 9, 2022 communication from Entropic.

7 200. Cox has been aware that it infringes the '682 Patent since at least as early
8 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
9 obtaining knowledge of the '682 Patent and its infringing activities, Cox has failed to
10 cease its infringing activities.

11 201. Cox's infringement of the '682 Patent is, has been, and continues to be
12 willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under
13 the patent.

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

18 203. No apparatus claims of the '682 Patent are presently asserted. Accordingly,
19 there is no duty to mark pursuant to 35 U.S.C. § 287.

20 **COUNT VII**

21 **(Infringement of the '866 Patent)**

22 204. Entropic incorporates by reference each allegation of Paragraphs 1 through
23 203.

24 205. The '866 Patent duly issued on July 5, 2022 from an application filed
25 January 28, 2022, an application filed March 30, 2021, an application filed June 4, 2019,
26 an application filed October 24, 2017, an application filed November 23, 2015, an
27 application filed February 10, 2015, an application filed August 8, 2013, an application
28 filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

1 206. Entropic owns all substantial rights, interest, and title in and to the '866
2 Patent, including the sole and exclusive right to prosecute this action and enforce the
3 '866 Patent against infringers and to collect damages for all relevant times.

4 207. The '866 Patent generally describes a cable television device that digitizes
5 an entire input signal, concurrently selects a plurality of desired channels from the
6 digitized input signal without selecting any undesired channels, and provides the
7 plurality of desired channels. A true and accurate copy of the '866 Patent is attached
8 hereto as Exhibit 13.

9 208. The '866 Patent is directed to patent-eligible subject matter pursuant to
10 35 U.S.C. § 101.

11 209. The '866 Patent is valid and enforceable, and presumed as such, pursuant
12 to 35 U.S.C. § 282.

13 210. Cox deploys one or more of the Accused Set Top Products in connection
14 with operating and providing the Accused Services.

15 211. The Accused Set Top Products deployed by Cox to customer premises
16 remain the property of Cox while deployed.

17 212. The Accused Set Top Products operate while deployed in a manner
18 controlled and intended by Cox.

19 213. As set forth in the attached nonlimiting claim chart (Exhibit 14), Cox has
20 directly infringed and is infringing at least Claim 27 of the '866 Patent by using,
21 importing, selling, and/or offering for sale the Accused Set Top Products and/or the
22 Accused Services.

23 214. Each aspect of the functioning of the Accused Set Top Products described
24 in the claim chart operates while deployed to customer premises in a manner controlled
25 and intended by Cox.

26 215. Cox provides no software, support, or other facility to customers to modify
27 any aspect of the functioning described in the claim chart of the Accused Set Top
28 Products while deployed to customer premises.

1 216. Cox directly infringes at least Claim 27 of the '866 Patent by using,
2 importing, selling, and/or offering for sale the Accused Set Top Products (for example,
3 the Arris AX013ANM STB) and/or the Accused Services (for example, digitizing and
4 selecting desired television channels from an input signal).

5 217. The use of the Accused Set Top Products by Cox to, for example,
6 demonstrate products in brick-and-mortar stores at 66234 Irvine Blvd., Irvine,
7 California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704 El Toro Rd.,
8 Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel, California
9 92677; 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita, California
10 92688, or to, for example, test those products, constitute acts of direct infringement of
11 at least Claim 27 of the '866 Patent.

12 218. Cox had knowledge of the '866 Patent no later than its receipt of Entropic's
13 communication sent to Cox on August 9, 2022.

14 219. Cox has been aware that it infringes the '866 Patent no later than its receipt
15 of Entropic's communication sent to Cox on August 9, 2022.

16 220. Cox has known of or has been willfully blind to the '866 Patent since
17 before the August 9, 2022 communication from Entropic.

18 221. Cox has been aware that it infringes the '866 Patent since at least as early
19 as receipt of Entropic's August 9, 2022 communication, attached as Exhibit 17. Since
20 obtaining knowledge of the '866 Patent and its infringing activities, Cox has failed to
21 cease its infringing activities.

22 222. Customers and subscribers of Cox infringe at least Claim 27 of the '866
23 Patent by using the claimed system, at least during the use of the Accused Set Top
24 Products (for example, the Arris AX013ANM STB).

25 223. Cox actively induces customers' direct infringement. For example, Cox
26 actively induces infringement of at least Claim 27 of the '866 Patent by providing the
27 Accused Set Top Products to Cox customers with specific instructions and/or assistance
28 (including installation) regarding the use of the Accused Set Top Products to infringe

1 the '866 Patent in accordance with the ordinary course of operation through the
2 provision of the Accused Services. For at least the above-listed reasons, Cox aids,
3 instructs, supports, and otherwise acts with the intent to cause an end user to use the
4 Accused Set Top Products to infringe at least Claim 27 of the '866 Patent.

5 224. Cox contributes to the customers' direct infringement. Cox provides
6 apparatuses, namely the Accused Set Top Products, that are used by customers to
7 directly infringe at least Claim 27 of the '866 Patent.

8 225. The Accused Set Top Products have no substantial noninfringing uses.
9 When an end user uses the Accused Set Top Products to receive the Accused Services,
10 the end user directly infringes at least Claim 27 of the '866 Patent. The Accused Set
11 Top Products are especially made or especially adapted for use in an infringing manner.

12 226. Cox's inducement of, and contribution to, the direct infringement of at
13 least Claim 27 of the '866 Patent is continuous and ongoing through acts such as
14 providing the Accused Set Top Products to Cox customers, which enables those
15 customers to receive the Accused Services; Cox's provision of the Accused Services;
16 and technical assistance provided by Cox for equipment it provides to its customers in
17 support of the provision of the Accused Services.

18 227. Cox's infringement of the '866 Patent is, has been, and continues to be
19 willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under
20 the patent.

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

25 229. Entropic is aware of no obligation to mark any instrumentality with the
26 '866 Patent in accordance with 35 U.S.C. § 287.

COUNT VIII

(Infringement of the '206 Patent)

230. Entropic incorporates by reference each allegation of Paragraphs 1 through 229.

231. The '206 Patent duly issued on July 26, 2022 from an application filed January 28, 2022, an application filed March 30, 2021, an application filed June 4, 2019, an application filed October 24, 2017, an application filed November 23, 2015, an application filed February 10, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

232. Entropic owns all substantial rights, interest, and title in and to the '206 Patent, including the sole and exclusive right to prosecute this action and enforce the '206 Patent against infringers and to collect damages for all relevant times.

233. The '206 Patent generally describes a receiver system that receives an input signal from a cable network, digitizes the entire input signal, concurrently selects a plurality of desired channels from the digitized input signal without selecting any undesired channels, and provides the plurality of desired channels. A true and accurate copy of the '206 Patent is attached hereto as Exhibit 15.

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

235. The '206 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

236. Cox deploys one or more of the Accused Set Top Products in connection with operating and providing the Accused Services.

237. The Accused Set Top Products deployed by Cox to customer premises remain the property of Cox while deployed.

238. The Accused Set Top Products operate while deployed in a manner controlled and intended by Cox.

1 239. As set forth in the attached nonlimiting claim chart (Exhibit 16), Cox has
2 directly infringed and is infringing at least Claim 25 of the '206 Patent by using, selling,
3 and/or offering for sale the Accused Services through the Accused Set Top Products.

4 240. Each aspect of the functioning of the Accused Set Top Products described
5 in the claim chart operates while deployed to customer premises in a manner controlled
6 and intended by Cox.

7 241. Cox provides no software, support, or other facility to customers to modify
8 any aspect of the functioning described in the claim chart of the Accused Set Top
9 Products while deployed to customer premises.

10 242. Cox directly infringes at least Claim 25 of the '206 Patent by using,
11 importing, selling, and/or offering for sale the Accused Set Top Products (for example,
12 the Arris AX013ANM STB) and/or the Accused Services (for example, digitizing and
13 selecting desired television channels from an input signal).

14 243. The use of the Accused Services through the Accused Set Top Products by
15 Cox to, for example, demonstrate products in brick-and-mortar stores at 66234 Irvine
16 Blvd., Irvine, California 92620; 6771 Quail Hill Pkwy., Irvine, California 92603; 23704
17 El Toro Rd., Lake Forest, California 92630; 27321 La Paz Rd. Suite B, Laguna Niguel,
18 California 92677; 30652 Santa Margarita Pkwy. F-101B, Rancho Santa Margarita,
19 California 92688, or to, for example, test those products, constitute acts of direct
20 infringement of at least Claim 25 of the '206 Patent.

21 244. Customers and subscribers of Cox infringe at least Claim 25 of the '206
22 Patent by using the claimed method, at least during receipt of the Accused Services
23 utilizing, for example, the Accused Set Top Products (for example, the Arris
24 AX013ANM STB).

25 245. The Accused Set Top Products have no substantial noninfringing uses.
26 When an end user uses the Accused Set Top Products to receive the Accused Services,
27 the end user directly infringes at least Claim 25 of the '206 Patent. The Accused Set
28 Top Products are especially made or especially adapted for use in an infringing manner.

1 Dated: February 10, 2023

Respectfully submitted,

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EXHIBIT 4

U.S. Patent No. 8,284,690 (the “’690 Patent”) Exemplary Infringement Chart

Cox operates and maintains a nationwide television and data network through which it sells, leases, and offers for sale products and services, including the Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner (“Accused Cable Modem Products”), as well as the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner (“Accused Set Top Products”). Cox provides cable television and internet services (“Accused Services”) via the lease, sale, and/or distribution of the Accused Cable Modem Products and/or the Accused Set Top Products. Cox literally and/or under the doctrine of equivalents infringes the claims of the ’690 Patent under 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing the Accused Services, Accused Cable Modem Products, and/or the Accused Set Top Products.

#	U.S. Patent No. 8,284,690	Cox Accused Products and Services
1pre	A method comprising:	The Accused Services perform the claimed method utilizing, for example, including a Cable Modem Termination System (“CMTS”) and/or Converged Cable Access Platform (“CCAP”) operated by Cox and at least one Accused Cable Modem Product located at each subscriber location, including, for example, the Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner. By way of example, the Technicolor CGM4141 cable modem is charted herein.
1a	a) receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node;	The Accused Services include receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node. Specifically, the Technicolor CGM4141, using circuitry and/or applicable software modules located in the Technicolor CGM4141, samples and digitizes the entire 1GHz downstream spectrum of a cable plant and includes remote diagnostics capabilities that provide real time, unobtrusive diagnostic and spectrum analysis capabilities. These remote

#	U.S. Patent No. 8,284,690	Cox Accused Products and Services
		diagnostic capabilities include measuring statistics of the downstream spectrum. The Technicolor CGM4141 provides an agent that receives requests querying the performance of the downstream spectrum from a second node. Upon information and belief, the requests include the first plurality of parameters that at least specify content payload of the probe and the second node. For example, in a deployed system, the first node may be a cable modem and the second node may be a CMTS and/or CCAP.
1b	b) determining a second plurality of parameters associated with generation and transmission of the probe;	The Accused Cable Modem Products determine a second plurality of parameters associated with generation and transmission of the probe. Specifically, the Technicolor CGM4141 determines information responsive to the received request based on the measured statistics of the downstream spectrum. Upon information and belief, the information includes a second plurality of parameters associated with the generation and transmission of the probe.
1c	c) generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and	The Accused Cable Modem Products generate the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters. Specifically, the Technicolor CGM4141 generates a message responsive to the received request, the message indicating the responsive information and having a particular form determined by the request.
1d	d) transmitting the probe from the first node to the second node.	The Accused Cable Modem Product transmit the probe from the first node to the second node. Specifically, the Technicolor CGM4141 transmits the message to the second node using its agent.
7	The method of claim 1, wherein the probe request requests a	The probe request requests a probe that assists in diagnosing a network problem.

#	U.S. Patent No. 8,284,690	Cox Accused Products and Services
	probe that assists in diagnosing a network problem.	Specifically, the Technicolor CGM4141, using circuitry and/or applicable software modules located in the Technicolor CGM4141, provides remote diagnostics capabilities that provide real time, unobtrusive diagnostic and spectrum analysis capabilities related to diagnosing network problems. Upon information and belief, Cox utilizes these remote diagnostic capabilities to assist in diagnosing a network problem.
8	The method of claim 7, wherein the probe request is generated by a network operator and uploaded to the second node.	The probe request is generated by a network operator and uploaded to the second node. Specifically, a collector server operated by Cox provides the probe request to the second node.
9pre	A method comprising:	The Accused Services perform the claimed method utilizing, for example, including a Cable Modem Termination System (“CMTS”) and/or Converged Cable Access Platform (“CCAP”) operated by Cox and at least one cable modem located at each subscriber location, including, for example, the Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner.
9a	a) a first node transmitting a probe request to a second node, the probe request specifying a first plurality of probe parameters for a physical layer probe, the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe;	The Accused Services include a first node transmitting a probe request to a second node, the probe request specifying a first plurality of probe parameters for a physical layer probe, the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe. Specifically, the CMTS and/or CCAP provides a set of SNMP (Simple Network Management Protocol) variables supported by the CMTS known collectively as the MIB (Management Information Base). The MIBs includes support for per modem/per upstream channel stats, RCC definitions, per MAC event handling, per modem event handling and counts, and per modem impairment reporting. The CMTS and/or CCAP transmits, to cable modems, requests specifying parameters as defined in the MIBs. The requests have a

#	U.S. Patent No. 8,284,690	Cox Accused Products and Services
		modulation profile. For example, in a deployed system, the first node may be at least a CMTS and/or CCAP and the second node may be a cable modem.
9b	b) the first node receiving the probe from the second node, wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters determined by the second node.	The CMTS and/or CCAP receives the probe from the second node, wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters determined by the second node. Specifically, the CMTS and/or CCAP receives, from the cable modems, messages responsive to the requests. The message includes data relevant to the request and generated based on the MIBs.
11pre	The method of claim 9, further comprising:	See 9pre.
11a	a) the first node transmitting a second probe request to a third node;	See 9a.
11b	b) and the first node receiving a second probe from the third node, wherein the second probe is generated according to the second probe request; and	See 9b.
11d	wherein the first probe and second probe are transmitted simultaneously using OFDMA.	The first probe and second probe are transmitted simultaneously using OFDMA.
15	The method of claim 9, wherein the probe request is configured to diagnose a network problem.	The probe request is configured to diagnose a network problem.

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		Upon information and belief, Cox utilizes these remote diagnostic capabilities to assist in diagnosing a network problem. For example, the MIBs may include support for per modem/per upstream channel stats, RCC definitions, per MAC event handling, per modem event handling and counts, and per modem impairment reporting, which can be used to diagnose a network problem.
16	The method of claim 15, wherein the probe request is generated by a network operator and uploaded to the first node.	The probe request is generated by a network operator and uploaded to the first node. Specifically, a collector server operated by Cox can provide the probe request to the first node.