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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COX COMMUNICATIONS, INC., *et al.*,

Defendants.

Case No. 2:23-cv-1049-JWH-KES (Lead Case)

Case No. 2:23-cv-01050-JWH-KES (Related Case)

JOINT CLAIM CONSTRUCTION AND PRE-HEARING STATEMENT

Hearing Date: July 16, 2024
Hearing Time: 10:00 a.m.
Courtroom: 9D

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COMCAST CORPORATION, *et al.*,

Defendants.

ENTROPIC EXHIBIT 2001
Comcast v. Entropic
IPR2024-00442

Pursuant to the Court's August 21, 2023 Order (ECF No. 75), Plaintiff Entropic Communications, LLC ("Plaintiff" or "Entropic") and Defendants Comcast Corporation, Comcast Cable Communications, LLC, and Comcast Cable Communications Management, LLC (collectively, "Comcast") and Defendants Cox Communications, Inc., Coxcom, LLC, and Cox Communications California LLC (collectively, "Cox") (together with Comcast, "Defendants") hereby submit their Joint Claim Construction and Pre-Hearing Statement regarding U.S. Patent Nos. 8,223,775 (the "'775 Patent"), 8,284,690 (the "'690 Patent"), 8,792,008 (the "'008 Patent"), 9,210,362 (the "'362 Patent"), 9,825,826 (the "'826 Patent"), 10,135,682 (the "'682 Patent"), 11,381,866 (the "'866 Patent"), and 11,399,206 (the "'206 Patent").

A. Agreed Upon Constructions

The Parties have agreed to the following constructions:

Term	Agreed Construction
"network management messages" ('826 Patent, claim 1)	Plain and Ordinary Meaning
"operable to" ('008 Patent, claim 1)	Plain and Ordinary Meaning
"probe" ('690 Patent, claim 1, 7, 8)	Plain and Ordinary Meaning
"probe request" ('690 Patent, claim 1, 7, 8)	Plain and Ordinary Meaning
[Order of the Steps] ('362 Patent, claim 11)	In Claim 11 of the '362 Patent, the "digitizing . . ." step must be performed before the "selecting . . ." step, and the "selecting . . ." step must be performed before the "outputting . . ." step. No other order of steps is required.

B. Each Party's Proposed Constructions

The parties have attached a chart hereto as Appendix A, which shows each party's proposed construction of each disputed claim term, phrase, or clause, together with an identification of references from the specification or prosecution history that support that construction, and an identification of extrinsic evidence known to the party on which it intends to rely either to support its construction or to oppose any other party's proposed construction, including but not limited to, as permitted by law, dictionary definitions, citations to learned treatises and prior art, and testimony of percipient and expert witnesses.

Furthermore, the parties have agreed that a party can rely upon any of the evidence listed in Appendix A regardless of which party listed the evidence.

C. Anticipated Time for Hearing

The parties propose a combined total of 3 hours for presentation at the hearing, with the time divided equally between the sides.

D. Witness Testimony at Hearing

Entropic may call its claim-construction expert Mr. John Holobinko to testify at the claim-construction hearing.

Defendants may call their claim-construction expert Dr. Sandeep Chatterjee, to testify at the claim-construction hearing.

E. Other Issues for a Prehearing Conference

In light of the Court's April 3, 2024 Order in *Entropic Communications, LLC v. DISH Network Corp., et al.*, No. 2:23-cv-01043, the parties would like guidance from the Court as to whether the Court would prefer simultaneous opening and responsive claim construction briefs. At this time, the claim construction schedule

for the current case includes deadlines for opening, responsive, and reply claim construction briefs.[1,2,3]

SIGNATURE CERTIFICATION

Pursuant to L.R. 5-4.3.4(a)(2)(i), I, Connor J. Meggs, attest that all other signatories listed herein and on whose behalf the filing is submitted concur in the filing's content and have authorized the filing.

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[1] Pursuant to the Advisory Notes to FRCP 53, Entropic further informs the Court that it is amenable to the Special Master's participation in claim construction to the extent deemed appropriate by the Court. Entropic notes that Special Master Keyzer has particular expertise in the technology of this case, having served as the Technical Advisor to the district court during claim construction of the same Asserted Patents in *Entropic Communications, LLC v. Charter Communications, Inc.*, No. 2:22-cv-00125 (E.D. Tex.). Should the Court wish to involve Special Master Keyzer, Entropic offers to coordinate with Defendants and Special Master Keyzer to set a schedule that will accommodate the Special Master.

Defendants believe that a *Markman* hearing before the District Court will result in the most efficient disposition of the parties' claim-construction disputes. Indefiniteness will be a central issue at the claim-construction hearing. If the hearing proceeds before the Special Master, it is likely the losing party will seek to preserve its appeal rights on this critical issue through an appropriate objection. Defendants respectfully submit that the Court will be best positioned to assess the merits of the parties' positions by hearing argument and any expert-witness testimony in the first instance, rather than through review of a post-hearing record.

[2] Defendants also request the Court's guidance regarding disposition of Entropic's motions for leave to supplement and amend. Special Master Keyzer recommended that these motions be granted on March 6, 2023. Case 2:23-cv-1043, Dkt. 397-1; Case 2:23-cv-1049, Dkt. 277-1. Unless and until the Court adopts the Special Master's Report and Recommendation, and Entropic files its amended complaints—or is otherwise permitted to file a pleading—it is Defendants' position that there is no operative complaint in this matter. A complaint asserting infringement claims is necessary in advance of claim construction.

[3] Comcast plans to move to dismiss the complaint once entered, while claim construction proceeds in parallel.

Dated: April 19, 2024

By: */s/ Connor J. Meggs*

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APPENDIX A

JOINT CLAIM CONSTRUCTION AND PRE-HEARING STATEMENT
APPENDIX A

'775 PATENT				
Term (Claim)	**Entropic's Proposed Construction**	**Entropic's Evidence**	**Defendants' Proposed Construction**	**Defendants' Evidence**
"wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine" ('775 Patent, Claim 18)	"wherein the cable modem engine and the data networking engine are not necessarily physically separate but are functionally separate such that the cable modem functions are performed only by the cable modem engine and the home networking functions are performed only by the data networking engine"	The specification and claims of the '775 Patent, including *e.g.* Abstract; 1:7–9; 1:20–29; 1:61–2:6; 2:13–15; 2:20–27; 3:14–17; 3:22–24; 3:58–62; 4:13–40; Figs. 1, 2 and corresponding description in specification; Claims 1, 14, 15, 18. '775 Patent File History, including *e.g.* April 5, 2010 Response to Final Office Action; June 7, 2010 Response to Final Office Action. November 28, 2024 Report and Recommendation of Magistrate Judge Roy S. Payne (Dkt. 354), and the December 8, 2024 Order Adopting the Report and Recommendation	Ordinary and customary meaning	<u>Intrinsic Evidence:</u> The specification and claims of the '775 patent, including *e.g.* Abstract; 1:12-57, 1:61-2:34, 2:49-3:20, 3:49-62,4:13-40; Figures 1-2 and corresponding description in the specification; Claim 1, 14, 15, and 18. App. 10/675,566 ('775 File History), including *e.g.*: Feb. 19, 2009, Office Action at ENTROPIC_COMCAST 021133 – ENTROPIC_COMCAST 021140; May 19, 2009, Response to Office Action at ENTROPIC_ COMCAST_ 021147 – ENTROPIC_COMCAST 021155; Feb. 5, 2010, Office Action at ENTROPIC_COMCAST_021174 – ENTROPIC_COMCAST 021184; Apr. 5, 2010, Response to Office Action at ENTROPIC_

		(Dkt. 398) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG). Claim Construction Memorandum Opinion and Order (Dkt. 123) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG).		COMCAST_ 021190 – ENTROPIC_COMCAST_021199; May 11, 2010, Advisory Action at ENTROPIC_COMCAST 021208 – ENTROPIC_COMCAST 021210; June 7, 2010, Request for Continued Examination at ENTROPIC_COMCAST 021211 – ENTROPIC_COMCAST 021227; Sep. 2, 2011, Office Action at ENTROPIC_COMCAST 021230 – ENTROPIC_COMCAST 021241; Mar. 2, 2012, Response to Office Action at ENTROPIC_COMCAST 021251 – ENTROPIC_COMCAST 021264; March 19, 2012, Notice of Allowability at ENTROPIC_COMCAST 021266 – ENTROPIC_COMCAST 021270. <u>Extrinsic Evidence</u> 2001/0039600 (Brooks), including *e.g.* ¶¶ 24-26, 34-35, 42, 53, 62; Figures 1-2. US 6,944,706 (Schain) including *e.g.* 4:12-43, 8:35-48, 9:26-51, 10:10-34, 12:55-64, 13:26-36.

See '775 Patent, Claim 18:

A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media, and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine, the cable modem engine including a DOCSIS controller and a DOCSIS MAC processor, the DOCSIS MAC processor configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput; and

a data bus that connects the data networking engine to the cable modem engine, ***wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine***.

'690 PATENT				
Term (Claim)	**Entropic's Proposed Construction**	**Entropic's Evidence**	**Defendants' Proposed Construction**	**Defendants' Evidence**
"content payload" ('690 Patent, Claim 1)	Plain and ordinary meaning	The specification and claims of the '690 Patent, including *e.g.* Abstract; 1:66–2:19; 2:28–42; 3:36–64; 5:57–6:16; 7:64–9:42; Figs. 3, 5 and corresponding description in	"data to be transmitted in the probe"	<u>Intrinsic Evidence</u> The specification and claims of the '690 Patent, including *e.g.* Abstract; 1:18-62, 1:66-2:42, 3:36-64, 5:57-6:8, 7:64-8:58; Figures 3, 5; Claim 1, 3, 12, 19, 20. App. 12/635,649 ('690 File History), including *e.g.*:

		Specification; Claims 1, 3, 12, 17, 19, 20. Claim Construction Memorandum Opinion and Order (Dkt. 123) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG).		Dec. 21, 2011, Office Action at ENTROPIC_COMCAST_021719 – ENTROPIC_COMCAST_021744; May 21, 2012, Response to Office Action at ENTROPIC_COMCAST 021751 – ENTROPIC_COMCAST 021766; June 11, 2012, Notice of Allowability at ENTROPIC_COMCAST 021769 – ENTROPIC_COMCAST 021775. <u>Extrinsic Evidence</u> IEEE Dictionary, 7th ed. (2000), 801 (COMCAST_ENTROPIC00039195). Newton, Newton's Telecom Dictionary, 16th ed. (2000), 663 (COMCAST_ENTROPIC00039159)

See '690 Patent, Claim 1:

A method comprising:

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;

b) determining a second plurality of parameters associated with generation and transmission of the probe;

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

d) transmitting the probe from the first node to the second node.

’682 PATENT				
Term (Claim)	**Entropic’s Proposed Construction**	**Entropic’s Evidence**	**Defendants’ Proposed Construction**	**Defendants’ Evidence**
“CMTS” (’682 Patent, Claims 1, 3-5, 9)	Plain and ordinary meaning	The specification and claims of the ’682 Patent, including *e.g.* 2:32–40; 2:50–55; 2:61–3:16; 3:42–46; 7:31–44; Fig. 1. and corresponding description in specification; Claims 1, 3, 4, 5, 7, 9, 10, 14, 16, 18. IPR2024-00444 and all exhibits submitted in support thereof. IPR2024-00445 and all exhibits submitted in support thereof. Opinions and testimony of John Holobinko, including but not limited to, all intrinsic and extrinsic evidence cited in Mr. Holobinko’s anticipated claim construction declaration. November 28, 2024 Report and Recommendation of Magistrate Judge Roy S. Payne (Dkt. 354), and the December 8, 2024 Order Adopting the Report and Recommendation (Dkt. 398) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG). Claim Construction Memorandum Opinion and	“equipment at which the cable modem’s connection to the hybrid-fiber coaxial network terminates”	<u>Intrinsic Evidence</u> The specification and claims of the’682 Patent, including *e.g.* Abstract; 2:56-5:39, 6:3-7:22; Figures 1, 2A, 3A, 3B, 4A, 4B; Claim 1, 3-5, 7, 9, 10, 14, 16, 18. App. No. 15/866,106 (’682 File History), including *e.g.*: Apr. 3, 2018, Office Action at ENTROPIC_COMCAST 021505 – ENTROPIC_COMCAST 021536; June 21, 2018, Response to Office Action at ENTROPIC_COMCAST 021541 – ENTROPIC_COMCAST 021549; Aug. 1, 2018, Notice of Allowability at ENTROPIC_COMCAST_021574 – ENTROPIC_COMCAST 021580. App. No. 13/948,444 (9,419,858 File History), including *e.g.*: Apr. 9, 2015, Office Action at ENTROPIC_COMCAST 018653 – ENTROPIC_COMCAST 018687; July 30, 2015, Response to Office Action at ENTROPIC_COMCAST 018700 – ENTROPIC_COMCAST 018715;

		Order (Dkt. 123) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG).		Nov. 3, 2015, Office Action at ENTROPIC_COMCAST 018716 – ENTROPIC_COMCAST_018745; Jan. 4, 2016, Response to Office Action at ENTROPIC_COMCAST 018756 – ENTROPIC_COMCAST_018774; Feb. 2, 2016, Advisory Action at ENTROPIC_COMCAST 018775 – ENTROPIC_COMCAST 018782; Feb. 24, 2016, Request for Continued Examination and Response to Office Action at ENTROPIC_COMCAST 018783 – ENTROPIC_COMCAST 018806; Apr. 13, 2016, Notice of Allowability at ENTROPIC_COMCAST 018809 – ENTROPIC_COMCAST 018823. <u>Extrinsic Evidence</u> Ciciora, Modern Cable Television Technology, 2nd ed. (2004), including *e.g.* 194-207. Riddel, PacketCable Implementation (2007), including *e.g.* 34-38. DOCSIS 3.0 MAC and Upper Layer Protocols Interface Specification, CM-SP-MULPIv3.0-I15-110210 (Feb. 10, 2011), including *e.g.* 1, 10-21, 29-33, Fig. 1. DOCSIS 3.0 Physical Layer Specification, CM-SP-PHYv3.0-I10-

				111117 (Feb. 10, 2011) (Nov. 17, 2011), 9-15. DOCSIS 2.0 Radio Frequency Interface Specification, CM-SP-RFIv2.0-I11-060602 (June 2, 2006), 11-22. Newton, Newton's Telecom Dictionary, 26th ed. (2011), 232, 251. Evans, Digital Telephony Over Cable (2001), 16-19. Cisco UBR 10K Data Sheet Cisco uBR-MC3GX60V Cable Interface Line Card Hardware Installation Guide ARRIS C4 24U CAM Data Sheet DOCSIS Downstream External PHY Interface Specification, CM-SP-DEPI-I08-100611 (June 11, 2010) ARRIS Unveils E6000 Converged Edge Router ARRIS C4 CMTS Release 8.1 Data Sheet EE Times, Beating Impairments with Cable Modem Test Opinions and testimony of Dr. Sandeep Chatterjee, including but not limited to, all intrinsic and extrinsic evidence cited in Dr. Chatterjee's anticipated claim construction declaration.

"SNR-related metric" ('682 Patent, Claims 1, 9)	Plain and ordinary meaning	The specification and claims of the '682 Patent, including *e.g.* Abstract; 1:38–40; 2:15–17; 3:53–4:8; Figs. 2B, 2C and corresponding description in the specification Claims 1, 3, 9, 18. US 9,178,765 (*e.g.* at 3:40–44), which the '682 Patent incorporates by reference at 1:38–40. IPR2024-00441 and all exhibits submitted in support thereof. IPR2024-00444 and all exhibits submitted in support thereof. IPR2024-00445 and all exhibits submitted in support thereof, including *e.g.* Ex. 1102. Ciciora et al., MODERN CABLE TELEVISION TECHNOLOGY, 2nd Ed. (2004). U.S. Pat. Publication 2008/0089402 (Massey et al.). U.S. Pat. Publication 2009/0003468 (Karabulut et al.). U.S. Pat. No. 7,457,588 (Love et al.). Lin et al. RANDOM ACCESS HETEROGENEOUS MIMO NETWORKS. Opinions and testimony of John Holobinko, including but not limited to, all intrinsic and extrinsic evidence cited in Mr.	Indefinite	<u>Intrinsic Evidence</u> The specification and claims of the '682 Patent, including *e.g.* Abstract; 3:53-5:6, 5:7-6:6, 6:7-38, 6:39-41, 6:46-7:22; Figures 1, 2B, 2C, 3A, 3B, 4A, 4B; Claim 1, 6, 7. App. No. 15/866,106 ('682 File History), including *e.g.*: Apr. 3, 2018, Office Action at ENTROPIC_COMCAST 021505 – ENTROPIC_COMCAST 021536; June 21, 2018, Response to Office Action at ENTROPIC_COMCAST 021541 – ENTROPIC_COMCAST 021549; Aug. 1, 2018, Notice of Allowability at ENTROPIC_COMCAST_021574 – ENTROPIC_COMCAST 021580. U.S. Patent No. 9,577,886, including *e.g.* claim 1. U.S. Patent No. 9,419,858, including *e.g.* claim 1. U.S. Patent No. 9,866,438, including *e.g.* claim 1. U.S. Patent Application No. 13/948,401, including *e.g.* at ¶ 24 (COMCAST_ENTROPIC00043311–354). U.S. Patent Pub. No. 2014/0022926 <u>Extrinsic Evidence</u>

		Holobinko's anticipated claim construction declaration. November 28, 2024 Report and Recommendation of Magistrate Judge Roy S. Payne (Dkt. 354), and the December 8, 2024 Order Adopting the Report and Recommendation (Dkt. 398) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG). Claim Construction Memorandum Opinion and Order (Dkt. 123) in *Entropic Communications, LLC v. Charter Communications, Inc.*, (E.D. Tex. Case No 2:22-cv-00125-JRG). Defendants' preliminary invalidity contentions.		U.S. Patent No 7,457,588, including *e.g.* at 5:28-31 U.S Patent No. 9,184,898, including *e.g.* at 7:46-49 U.S. Patent No 8,611,439, including *e.g.* at 4:56-59, 4:64-67 Excerpts from Newton's Telecom Dictionary, 26th ed. (2011), 674-675, 738, 1157 Keiser & Strange, Digital Telephony and Network Integration (1985) Saadawi, Fundamentals of Telecommunication Networks (1994) Subscriber Drop Wiring For Interactive Services – Part 2, July 1997 CM-GL-PNMP-V02-110623 (Proactive Network Maintenance Using Pre-equalization) EE Times, Beating Impairments with Cable Modem Test Opinions and testimony of Dr. Sandeep Chatterjee, including but not limited to, all intrinsic and extrinsic evidence cited in Dr. Chatterjee's anticipated claim construction declaration..

See '682 Patent, Claim 1:

A method comprising:

determining, by a ***cable modem termination system (CMTS)***, for each cable modem served by said ***CMTS***, a corresponding ***signal-to-noise ratio (SNR) related metric***;

assigning, by said ***CMTS***, each cable modem among a plurality of service groups based on a respective corresponding ***SNR-related metric***;

generating, by said ***CMTS*** for each one of said plurality of service groups, a composite ***SNR-related metric*** based at least in part on a worst-case SNR profile of said ***SNR-related metrics*** corresponding to said one of said plurality of service groups;

selecting, by said ***CMTS***, one or more physical layer communication parameter to be used for communicating with said one of said plurality of service groups based on said composite ***SNR-related metric***; and

communicating, by said ***CMTS***, with one or more cable modems corresponding to said one of said plurality of service groups using said selected one or more physical layer communication parameter.

See '682 Patent, Claim 3:

The method of claim 1, wherein said ***CMTS*** uses orthogonal frequency division multiplexing (OFDM) over a plurality of subcarriers for said communicating.

See '682 Patent, Claim 4:

The method of claim 3, comprising selecting, by said ***CMTS***, said one or more physical layer communication parameter on a per-OFDM-subcarrier basis.

See '682 Patent, Claim 5:

The method of claim 4, wherein said one or more physical layer communication parameter includes one or both of: which of said OFDM subcarriers to use for transmission to said ***CMTS***, and which of said OFDM subcarriers to use for reception of information from said ***CMTS***.

See '682 Patent, Claim 9:

The method of claim 1, wherein said determining said plurality of ***SNR-related metrics*** comprises:

transmitting a probe message to each cable modem, said probe message comprising instructions for measuring a metric and reporting said measured metric back to said ***CMTS***; and

receiving a metric reporting message from each cable modem.