MB Docket No. 10-263

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
ZOOM TELEPHONICS, INC.	)	File No. _____
Complainant,	)	
	)	
vs.	)	
	)	
COMCAST CABLE COMMUNICATIONS, LLC,	)	
A Subsidiary of	)	
COMCAST CORPORATION,	)	
Respondent.	)	
	)	

FILED/ACCEPTED

NOV 29 2010

Federal Communications Commission
Office of the Secretary

TO: Chief, Media Bureau

COMPLAINT

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November 29, 2010

** Admitted only in Virginia*

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TO: Chief, Media Bureau

Complainant Zoom Telephonics, Inc. ("Zoom" or "Zoom Telephonics") makes the following allegations against Respondent Comcast Cable Communications, LLC ("Comcast"):

I. INTRODUCTION AND SUMMARY

1. This is an action seeking relief for violations of the Commission's regulations implementing Section 629 of the Communications Act of 1934, 47 U.S.C. § 549. Comcast, the nation's largest cable operator and provider of broadband Internet access service, has flagrantly violated the Commission's rules by infringing subscribers' right to attach cable modems of their choice to Comcast's network.

2. This year, Comcast instituted a new Physical and Environmental (P&E) testing regime that cable modems sold at retail must pass before Comcast will allow them to be attached to its network. This new testing program is in addition to four other sets of testing that a cable modem

must pass before it may be attached to Comcast's network: a set of tests designed to ensure that a cable modem meets Federal Communications Commission ("FCC") requirements; safety testing administered by Underwriters Laboratories ("UL") or another nationally recognized testing laboratory ("NRTL"); a set of tests administered by CableLabs; and a certification testing regime administered by Comcast itself.

3. While the Commission's regulations permit Comcast to restrict subscribers' ability to attach cable modems only to prevent such devices from causing harm to the network or facilitating theft of service, the vast majority of Comcast's P&E testing regime has nothing to do with either of these objectives.

4. Rather, Comcast's P&E testing regime contains a host of unreasonable, irrelevant, time-consuming, and costly requirements that curtail the availability of cable modems at retail outlets and thereby encourage subscribers to lease or rent cable modems directly from Comcast. These new standards, among other things, address a modem's weight, labeling, and packaging as well as its physical appearance following the application of various substances, such as waxes. They also require a cable modem to suffer no degradation in performance at temperatures far in above those generally found in the United States and well above the requirement for electronics equipment such as an iPad or a personal computer. Moreover, Comcast's new testing regime requires cable modem manufacturers to pay for Comcast personnel to conduct lengthy site inspections at the manufacturer's facility (along with business class airfare and expensive hotels).

5. In addition to implementing this unlawful set of requirements, Comcast has also violated the Commission's rules by arbitrarily refusing even to test a new cable modem model with wireless connectivity that Zoom would like to introduce into the retail market. When Zoom

informed Comcast earlier this year that it wanted to submit two new cable modem models for testing, Comcast only agreed to accept one, notwithstanding the fact that Comcast is the only cable operator who charges cable modem manufacturers for such testing.

6. Unless the Commission provides relief in a prompt manner, Comcast's anti-competitive behavior will harm consumers in at least two ways.

7. First, consumers' ability to purchase cable modems at retail will be significantly diminished. Because Comcast provides service to approximately 39% of the cable market in the United States, a cable modem is not attractive to national retail chains unless that cable modem can be connected to the Comcast network. And Comcast's new requirements significantly increase the cost and time required for a cable modem to qualify for attachment to the Comcast network (assuming that Comcast even agrees to accept that cable modem for testing). As a result, if Comcast's new testing standards are allowed to remain in place, Zoom Telephonics, the second largest supplier of cable modems sold at retail in the United States, likely will not attempt to introduce any new cable modem models into the United States retail market, and the number of cable modems qualified in the future for use on Comcast's network will substantially diminish.

8. Comcast's new testing regime, as well as its arbitrary refusal to test certain new cable modems, therefore threatens all of the benefits associated with a competitive retail market for devices such as cable modems. Consumers will be faced with fewer choices, higher prices, and less innovation. The number of attractive cable modem products sold at national retailers such as Best Buy and Staples will diminish, and consumers will be even more likely to lease or rent a cable modem from Comcast. The retail cable modem market, already restricted by unusually

high costs and delays associated with the current certification processes, will become even less dynamic and competitive, and may come to resemble the more troubled market for set-top boxes.

9. Second, in addition to harming the competitive retail market for cable modems envisioned by Section 629, Comcast's new testing regime and unilateral refusal to even test certain devices also violate the Commission's Open Internet principles. See Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, Policy Statement, 20 FCC Rcd 14986 (2005) ("Policy Statement"). In the Comcast-NBC Universal merger proceeding, Comcast has stated that it has an "abiding commitment to the four principles of the FCC's Internet Policy Statement" and that it "is and will remain committed to the principles of the Internet Policy Statement." Opposition to Petitions to Deny and Response to Comments, MB Docket No. 10-56, at 195 (filed July 21, 2010). Moreover, Comcast has represented to the Commission that "[s]ince the company began offering [broadband service] in 1996, as one of the first companies to deliver broadband to American homes, Comcast has operated in a manner consistent with the openness embodied by the four principles of the FCC's Internet Policy Statement." Id. at 193.

10. Comcast's actions clearly violate the Commission's Open Internet principles, which entitle consumers to connect to the Internet their choice of non-harmful and legal devices. See Policy Statement at ¶ 4. Indeed, Comcast does not even recognize this right to attach. Rather, the company informed Zoom last month that "Comcast is under no obligation to certify Zoom's or any other vendor's high speed Internet devices for use with Comcast's broadband Internet network." This explicitly conflicts with the representations that Comcast has made about its commitment to the Commission's Open Internet principles in the Comcast-NBC Universal merger proceeding.

11. This is not the first time that Comcast has threatened the open character of the Internet. In 2008, the Commission found that Comcast had unreasonably interfered with its customers' use of peer-to-peer networking applications, including those that use the BitTorrent protocol. See In the Matters of Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications and Broadband Industry Practices Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management," Memorandum Opinion and Order, 23 FCC Rcd 13028 (2008) ("Comcast Network Management Order"). The Commission concluded that Comcast's actions had significantly impeded Internet users' ability to use applications and access content of their choice. See id. at ¶ 44.

12. In order to remedy the anticompetitive effects of Comcast's conduct, protect the competitive retail market for cable modems, and safeguard the open nature of the Internet, Zoom Telephonics respectfully requests that the Commission find Comcast in violation of the Commission's rules implementing Section 629, 47 C.F.R. §§ 76.1201-03, enjoin Comcast from requiring cable modems sold at retail to participate in its P&E testing regime, enjoin Comcast from requiring cable modems sold at retail to participate in any Comcast testing unrelated to preventing harm to the network or theft of service; require Comcast to test Zoom's two new cable modem models in an expedited fashion without charge; enjoin Comcast from asking CableLabs to add any additional testing requirements to its testing of these two new cable modems; enjoin Comcast from refusing to test Zoom cable modems in the future; order Comcast to publish its standards for testing cable modems and (i) provide a detailed justification for how each test relates to whether a device will harm its network or facilitate theft of service and (ii)

require Comcast to provide an explanation of why the CableLabs testing process does not fully address any justification or concerns about cable modems harming Comcast's network or facilitating theft of service; and order other appropriate relief.

II. PARTIES

13. Complainant Zoom Telephonics produces cable modems and numerous other communications products. Currently, Zoom is the second largest supplier of cable modems to retailers in the United States, and cable modems represent approximately one-third of Zoom's total sales. Zoom Telephonics is incorporated in Delaware. Complainant's address is 207 South Street, Boston, MA 02111, and its telephone number is 617-423-1072.

14. Respondent Comcast Cable Communications, LLC is a subsidiary of Comcast Corporation. Comcast is the nation's largest cable operator and provider of broadband Internet access service. Comcast's address is One Comcast Center, Philadelphia, PA 19103. Its telephone number is 215-286-1700.

III. JURISDICTION AND CERTIFICATION

15. The Commission has jurisdiction over this complaint pursuant to Section 629 of the Communications Act and the regulations promulgated by the Commission to implement that statutory provision. This complaint is filed pursuant to 47 C.F.R. § 1.41 and 47 C.F.R. § 76.7.

16. Attached hereto as Exhibit 3 is a declaration executed by William Hume Vance, Director of Firmware Engineering for Zoom Telephonics, supporting the allegations set forth herein. See 47 C.F.R. § 76.6(a)(3).

17. Attached here to as Exhibits 4 through 7 is correspondence between Zoom personnel and Comcast personnel, supporting the allegations set forth herein. See 47 C.F.R. § 76.6(a)(3).

IV. STATUTORY AND REGULATORY BACKGROUND

18. In 1996, Congress, pursuant to Section 629 of the Communications Act, directed the Commission to "adopt regulations to assure the commercial availability, to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor." 47 U.S.C. § 549(a) (adopted as part of the Telecommunications Act of 1996, Pub. L. 104-104, 110 Stat. 56 (1996)) (emphasis added).

19. Congress, in its consideration of Section 629, noted that "competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices, and higher quality." H.R. Rep. No. 104-204, 104th Cong., 1st Sess. 112 (1995) (emphasis added).

20. The Commission, in 1998, adopted regulations implementing Section 629. See In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Report and Order, CS Docket No. 97-80, 13 FCC Rcd 14775 (1998) ("1998 Report and Order").

21. In its 1998 Report and Order, the Commission stated that "[t]he language of Section 629 indicates that Congress sought to have the marketplace offer consumers a choice over a broad range of equipment." Id. at ¶ 25. The Commission therefore concluded that "Section 629 neither exempts nor limits any category of equipment used to access multichannel video programming or services offered over such systems from its coverage." Id. The Commission specifically listed "televisions, VCRs, cable set-top boxes, personal computers, program guide

equipment, and cable modems," id. (emphasis added), as examples of "navigation devices" that would be covered by the Commission's regulations implementing Section 629.

22. In order to promote competition and facilitate the commercial availability of equipment, the Commission "mandate[d] that subscribers have a right to attach any compatible navigation device to an MVPD system, regardless of its source, subject to the proviso that the attached equipment not cause harmful interference, injury to the system or compromise legitimate access control mechanisms." Id. at ¶ 26. The Commission concluded that this "right to attach" would create a "substantial incentive" for manufacturers "to develop and distribute new products in response to consumer demands for equipment and features" and "lead to a broader market for equipment used with MVPD systems." Id.

23. The Commission codified this "right to attach" in three separate rules that are relevant for purposes of this complaint proceeding.

24. First, the Commission prohibited any MVPD from "prevent[ing] the connection or use of navigation devices to or with its multichannel video programming system, except in those circumstances where electronic or physical harm would be caused by the attachment or operation of such devices or such devices may be used to assist or are intended or designed to assist in the unauthorized receipt of service." 47 C.F.R. § 76.1201.

25. Second, the Commission forbid any MVPD to "by contract, agreement, patent right, intellectual property right or otherwise prevent navigation devices that do not perform conditional access or security functions from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with such owner or operator, subject to [theft of service protections]." 47 C.F.R. § 76.1202.

26. Third, while the Commission allowed an MVPD to develop "standards and descriptions of devices that may not be used with or attached to its system," the Commission required that those "standards shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service." 47 C.F.R. § 76.1203 (emphasis added). The Commission also cautioned that any standards developed by an MVPD may not be used "as a means to unreasonably restrict the use of navigation devices obtained from a source other than an MVPD." 1998 Report and Order at ¶ 38.

27. Following the 1998 adoption of these regulations, the Commission has not amended any of these three rules that form the core of the "right to attach": 47 C.F.R. §§ 76.1201-76.1203.

28. Neither has the Commission deviated from its position that cable modems are covered by Section 629 and the rules it adopted to assure the commercial availability of navigation devices. Most recently, in its National Broadband Plan, the Commission reaffirmed that Section 629 covers cable modems. See Connecting America: The National Broadband Plan, at 24, n.24 (2010).

29. In 2005, the Commission issued a Policy Statement affirming the Commission's commitment to maintaining the open character of the Internet. Specifically, the Commission concluded that it had "a duty to preserve and promote the vibrant and open character of the Internet as the telecommunications marketplace enters the broadband age." Policy Statement at ¶ 5. It therefore adopted four principles "to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers." Id. at ¶ 4.

30. One of these principles states as follows: "To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet, consumers are entitled to connect their choice of legal devices that do not harm the network." Id.

31. In 2008, the Commission concluded that Comcast had run afoul of federal Internet policy by selectively targeting and interfering with its customers' use of peer-to-peer applications. See Comcast Network Management Order. Specifically, the Commission found that Comcast had acted contrary to one of the principles set forth in its Policy Statement by "significantly imped[ing] consumers' ability to access the content and use the applications of their choice." Id. at ¶ 44. Thus, the Commission concluded that Comcast's conduct posed "a substantial threat to both the open character and efficient operation of the Internet." Id. at ¶ 51

32. While the U.S. Court of Appeals for the District of Columbia Circuit ruled in 2010 that the Commission had failed to demonstrate that it had the statutory authority to take enforcement action against Comcast for its conduct, it did not dispute any of the Commission's factual findings regarding Comcast's behavior. See Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010).

V. STATEMENT OF FACTS

A. Zoom Telephonics

33. Zoom Telephonics was founded in 1977. It is based in Boston and produces cable modems, ADSL modems, dial-up modems, wireless products, Voice over Internet Protocol products, and other communications products. Ex. 3, ¶ 4.

34. Zoom began to produce cable modems in 2001. Since that time, it has developed and offered for sale in the United States six cable modem models. Ex. 3, ¶ 8.

35. Currently, Zoom produces two cable modem models: a DOCSIS 2.0 model; and a DOCSIS 3.0 model. Ex. 3, ¶ 8.

36. Zoom focuses on producing and distributing its cable modems to national retail outlets. Although Zoom also sells cable modems through a few smaller cable service providers

in the United States and abroad, the majority of Zoom's customers buy cable modems at high-volume retailers such as Best Buy, Staples, Fry's, and Micro Center. Ex. 3, ¶ 9.

37. Zoom is currently the second-largest producer of cable modems at retail in the United States – second only to Motorola. At present, cable modems comprise one-third of Zoom's current sales. Ex. 3, ¶ 9.

B. Testing and Certification Requirements for Cable Modems

38. Before a cable modem model may be sold in the United States and attached to cable operators' networks, it must undergo a plethora of tests and meet a variety of standards. The required certification programs vary both in terms of cost and the time needed to complete testing. Ex. 3, ¶ 10-15.

39. First, the Federal Communications Commission ("FCC") requires that cable modems and other home electronics equipment meet the requirements of Part 15, Subpart B of the Commission's rules ("FCC Part 15B"). These requirements restrict the electronic emissions of a cable modem or other electronic device radiated into the environment or conducted onto AC power lines. When an independent lab performs testing of a cable modem that meets the FCC's requirements, the process, including tests, generation of a test report, and receipt of a certificate of FCC conformity from the testing lab, generally takes about four weeks and costs between $6,000 and $8,000. Ex. 3, ¶ 11.

40. Second, to be sold in all jurisdictions and used in all workplaces within the United States, cable modems must be safety tested. The requisite testing may be administered by any nationally recognized testing laboratory ("NRTL"). Underwriters Laboratories ("UL") is the largest and most widely recognized NRTL. UL tests cable modems for a variety of potential safety risks, such as fire, electric shock, and hot surfaces. Safety testing of a cable modem typically costs between $6,500 and $8,500 and takes six to eight weeks. Ex. 3, ¶ 12.

41. Third, cable modems must complete CableLabs testing. CableLabs is a research and development consortium of cable operators. CableLabs tests cable modems for adherence to a set of standards called the Data Over Cable Service Interface Specification ("DOCSIS"). These standards have been developed so that all equipment from all cable modem manufacturers can operate on the networks of all cable operators. DOCSIS includes radio frequency interface ("RFI") standards designed, among other considerations, to ensure that a cable modem will not inject harmful signals into a cable operator's network, and a Baseline Privacy Interface ("BPI") to ensure that a cable modem will not facilitate theft of services. DOCSIS also ensures that a cable modem will not transmit in a time slot reserved for another cable modem. Ex. 3, ¶ 13.

42. A cable modem manufacturer seeking certification from CableLabs first must conduct a suite of tests that verify its cable modem complies with DOCSIS standards and turn in appropriate documentation as part of its submission. Success in this part of the CableLabs certification is defined as passing every test, with not a single failure unless CableLabs agrees to a documented exception. CableLabs itself then may run the cable modem through any or all of the tests specified in the DOCSIS test suite. CableLabs also evaluates how the cable modem handles large data flows over extended periods and tests for interoperability with other DOCSIS equipment in its laboratories. The interoperability testing evaluates in a realistic setting whether the cable modem injects harmful signals into the network and/or transmits at times reserved for other cable modems. CableLabs also verifies the validity of the cable modem's security mechanisms to ensure that the device will not facilitate theft of service. Ex. 3, ¶ 14.

43. CableLabs testing for new cable modem models generally costs $75,000 and takes twelve weeks to complete, though tests for a DOCSIS 2.0 cable modem model may take as few as eight weeks. Ex. 3, ¶ 15.

44. Because CableLabs certification testing verifies that a cable modem adheres to DOCSIS specifications, it is extremely unlikely that a CableLabs-certified cable modem will inject harmful signals into a network, or otherwise cause electronic or physical harm to a network. DOCSIS specifications ensure within very stringent limits that a cable modem's signals will neither harm the provider's network nor interfere with other cable modems or equipment connected to that network. Ex. 3, ¶ 28.

45. It is also extremely unlikely that a CableLabs-certified cable modem will facilitate the unauthorized receipt of service from a cable operator. DOCSIS specifications include the BPI security infrastructure that dramatically minimizes the possibility that someone could steal service using a cable modem. Ex. 3, ¶ 29.

46. Once a cable modem model has been certified by the FCC, an NRTL, and CableLabs, it may be attached to the networks of many cable operators in the United States. For example, Time Warner Cable does not require a cable modem to undergo any additional company-specific testing. Ex. 3, ¶ 19.

47. However, some other cable operators have their own proprietary certification programs. For example, Cox Communications requires additional certification testing at the company's own laboratories before a cable modem is permitted to attach to its network. Ex. 3, ¶ 19.

C. Comcast's Testing and Certification Requirements for Cable Modems

48. Comcast, the nation's largest cable operator and broadband service provider, runs its own testing program. Cable modems must pass Comcast's tests before they may be attached to Comcast's network. See Ex. 12. Comcast mandates this testing both for cable modems that are distributed to retailers and cable modems that Comcast directly purchases and leases to customers. Ex. 3, ¶ 22.

49. Comcast's extensive testing in its laboratories begins after a cable modem has obtained FCC, NRTL, and CableLabs approval. Moreover, Comcast imposes a fee for its mandatory tests, and Zoom is unaware of any other cable operator in the United States that does so. Comcast's lab testing regime costs $25,000, can only begin at certain times specified by Comcast, and takes 6 weeks for laboratory tests followed by another 3 weeks for a beta test, where a modem is placed in a live operating network and its performance is monitored. Ex. 3, ¶ 23, 25.

50. Any cable modem model sold through nationwide retailers in the United States must be accepted on the Comcast network in order for it to be a commercially viable product. This is because Comcast accounts for approximately 39% of all cable customers in the United States. A cable modem that does not have Comcast certification and that is offered, for example, in all Best Buy and Staples stores will have an extremely high return rate, unless it clearly states that it cannot be used on Comcast's network, thereby significantly reducing the available market. Ex. 3, ¶ 27.

D. Comcast's Testing of Zoom's New DOCSIS 3.0 Cable Modem Model

51. Earlier this year, Zoom introduced a new DOCSIS 3.0 cable modem model into the retail market and encountered substantial difficulty in obtaining certification so that it could be attached to Comcast's network. See Ex. 3, ¶ 26.

52. In January 2010, Zoom contacted Comcast's test group to initiate submission of its new DOCSIS 3.0 cable modem model for testing. After several discussions, Zoom was informed that the DOCSIS 3.0 model would have to undergo Comcast's Physical and Environmental ("P&E") tests in addition to its standard "certification" tests. Ex. 3, ¶ 32-33.

53. Because Zoom sells its modems at retail rather than selling them directly to Comcast, these P&E tests had never before been applied to Zoom's cable modems. Comcast provided

little information about these new P&E tests, other than a flow chart about the process that, among other things, mentioned an "onsite-evaluation" requirement. Ex. 10. Zoom's OEM partner for the device suggested that the P&E testing was inappropriate for a cable modem to be provided at retail, and that Zoom should ask Comcast to waive this testing for this reason. Ex. 3, ¶ 34-36.

54. Following further discussions between Zoom and Comcast, Comcast agreed to waive the P&E testing for Zoom's new DOCSIS 3.0 cable modem model because, like prior Zoom models, it was going to be sold at retail rather than being purchased directly by Comcast. Ex. 3, ¶ 37, 44.

55. Zoom received CableLabs certification for its DOCSIS 3.0 cable modem on February 23, 2010. However, Zoom's attempt to get its cable modem model certified for attachment to Comcast's network was delayed. Zoom planned to submit the new DOCSIS 3.0 cable modem model to Comcast on March 1, 2010, so that testing would be completed in mid-April. As the project progressed, it may not have been possible for Zoom to prepare and submit samples to Comcast by March 1. In any case, Comcast informed Zoom in late February that there was a bottleneck for "DOCSIS devices" to be sold at retail in its testing facility and that Zoom's submission would need to be delayed. Ex. 3, ¶ 38-40.

56. More than a month later, Comcast lifted this hold and allowed Zoom to submit the new DOCSIS 3.0 cable modem model for testing on April 1, 2010. Ex. 3, ¶ 42.

57. Zoom's submission did not pass Comcast's tests because of an issue Comcast identified with the software for the Texas Instruments chipset in the modem. Specifically, following a power outage or similar disruption to service, there could be a delay before the cable modem registered with the network. This problem, however, would not have caused electronic

or physical harm to Comcast's network. Neither would it have facilitated theft of service. The registration delay would have been an inconvenience to the cable modem's owner. Additionally, once a cable modem has registered, it is likely to remain connected for a considerable length of time, typically months or even years, before it experiences a service disruption, depending, for instance, on the time until the next power outage. During that time, a code update could have been propagated to users, so that the vast majority would never have experienced the problem at all. Ex. 3, ¶ 42, 46.

58. Zoom addressed this issue and resubmitted the modem to Comcast on May 1, 2010. This time, the new DOCSIS 3.0 cable modem model passed Comcast's tests, and it was approved for attachment to Comcast's network on June 23, 2010, more than two months after the date that Zoom had initially anticipated that testing would be completed. Ex. 3, ¶ 43.

59. When Comcast notified Zoom that its new DOCSIS 3.0 cable modem model had passed testing, it informed Zoom that the modem had "passed our lab-based certification tests for a retail-only device. As noted before, this means we did not execute physical and environmental tests since these are not devices to be purchased by Comcast." Ex. 7, at 10; Ex. 3, ¶ 44.

60. The substantial delay caused by Comcast's testing process caused Zoom significant hardship in dealing with retail stores that initially expected shipments of cable modems by April 15, 2010. Ex. 3, ¶ 45.

E. Zoom's Two New DOCSIS 2.0 Cable Modem Models

61. During the summer of 2010, Zoom concluded that it needed to produce a new DOCSIS 2.0 cable modem model. This is because Zoom soon would no longer be able to produce its current model due to the fact it was becoming impossible to obtain the necessary parts. Ex. 3, ¶ 49.

62. Zoom planned to produce a direct replacement for the current model with a wired Ethernet Local Access Network ("LAN") port, and another DOCSIS 2.0 cable modem model with wireless connectivity. Ex. 3, ¶ 49.

63. Zoom's DOCSIS 2.0 cable modem model currently outsells its DOCSIS 3.0 cable modem by a margin of greater than two-to-one. This, in part, is because the DOCSIS 2.0 model sells for about twenty dollars less than the DOCSIS 3.0 model, and in part is because broadband service tiers that require DOCSIS 3.0 modems to achieve the higher speeds associated with those tiers cost considerably more than comparatively slower tiers whose speeds are supported by both DOCSIS 2.0 and DOCSIS 3.0 modems. Ex. 3, ¶ 50.

64. On August 31, 2010, Hume Vance, Director of Firmware Engineering at Zoom Telephonics, informed Comcast that Zoom would have to stop manufacturing its current DOCSIS 2.0 cable modem next year and was planning to produce a new DOCSIS 2.0 model ("Model 5242") to replace it. Ex. 3, ¶ 51. Mr. Vance shared some details regarding the activity of Model 5242's light-emitting diodes (LEDs) and asked if Comcast would be able to approve such a cable modem. Ex. 6, at 2.

65. Earle Iveson, the Director of Comcast's Certification Lab, responded to Mr. Vance's inquiry on September 8, 2010. In his e-mail message, he questioned whether Comcast would even be willing to test a new DOCSIS 2.0 cable modem. Ex. 6, at 1; Ex. 3, ¶ 51.

66. The next day, Frank Manning, Zoom's President and Chief Executive Officer, contacted Jason Livingood, Executive Director of Internet Systems Engineering at Comcast, to seek a clarification of Comcast's position regarding the testing of DOCSIS 2.0 cable modems. In particular, Mr. Manning expressed his concern that Comcast might not be willing to test new DOCSIS 2.0 cable modems. Mr. Manning indicated that Zoom was looking to update its current

DOCSIS 2.0 cable modem and was also considering the introduction of a DOCSIS 2.0 cable modem with wireless connectivity for retail. Mr. Manning expressed Zoom's view that Comcast "must have a process for certifying these cable modems" and that the "FCC and Congress would not accept the notion of Comcast effectively preventing any new [DOCSIS] 2.0 cable modems from being offered by national retailers like Best Buy and Staples." He further pointed out that DOCSIS 3.0 cable modems were much more expensive to manufacture than DOCSIS 2.0 cable modems. In conclusion, Mr. Manning asked Mr. Livingood to confirm that Comcast would continue to certify DOCSIS 2.0 cable modems in a timely manner and stated that he looked forward to continuing to work cooperatively with Comcast. Ex. 6, at 3; Ex. 3, ¶ 52.

67. Mr. Livingood responded to Mr. Manning later that day but did not address any of Mr. Manning's concerns. Rather, Mr. Livingood indicated that because Mr. Manning had mentioned "the FCC and/or legal action," he could not be "further involved in this topic" and was referring the matter to Jeffrey Smith, Comcast Vice President and Deputy General Counsel. Ex. 6, at 3; Ex. 3, ¶ 52.

68. Following further discussions between Mr. Manning and Mr. Smith, Mr. Manning sent a letter to Mr. Smith on September 13, 2010. Mr. Manning asked that Comcast promptly agree to test Zoom's two new DOCSIS 2.0 cable modems models provided that they complied with certain principles set forth in Mr. Manning's letter. Mr. Manning also quoted the language of Section 629 of the Communications Act and stated that it was important for Comcast to act in a manner consistent with that provision. Ex. 3, ¶ 54.

69. Mr. Smith answered Mr. Manning's letter on October 6, 2010. In his response, Mr. Smith stated that "Comcast ceased its review and certification of DOCSIS 2.0 devices approximately one year ago." Although Mr. Smith admitted that Comcast had "not yet

designated DOCSIS 2.0 modems as 'End of Life'" and continued to purchase and deploy such modems, he maintained that Comcast had "scaled back its purchase of those modems significantly and increasingly deploys DOCSIS 3.0 modems to its customers." Ex. 5, at 2.

70. In his October 6 letter, Mr. Smith also took the position that "Comcast is under no obligation to certify Zoom's or any other vendor's high speed Internet devices for use with Comcast's broadband Internet network." In support of that position, Mr. Smith falsely claimed that Section 629 did not apply to "cable modem devices or services," but rather "clearly and solely applies to converter boxes and other equipment used to access multichannel video programming and services." Ex. 5, at 2. See Ex. 3, ¶ 56.

71. Mr. Smith concluded his letter by stating that notwithstanding Comcast's concerns, it was willing to test "Zoom's modification to its previously approved DOCSIS 2.0 device only." He informed Mr. Manning that Comcast was "currently evaluating the impact of such an exception to [its] existing device testing process and policies, and [was] reviewing resources required to accommodate [Zoom's] request." He further advised Mr. Manning that a representative from Comcast would contact Zoom "with additional information in the next few weeks." Ex. 5, at 2.

72. On October 7, 2010, Mr. Manning sought clarification from Mr. Smith as to what Comcast was willing to test. Mr. Smith responded that Comcast was only willing to proceed with testing one device: "the device for which [Zoom is] changing the current chipset (and accompanying electronics)." Ex. 6, at 5. Mr. Manning thanked Mr. Smith for the clarification. He stated that Zoom would "go forward with that one DOCSIS 2.0 cable modem product right away." Ex. 6, at 7. See Ex. 3, ¶ 58.

73. On October 12, 2010, Norm Baker, a Senior Network Engineer at Comcast, contacted Mr. Manning and Mr. Vance. Mr. Baker indicated that he had been asked to contact Zoom to begin making arrangements for the testing of Zoom's new DOCSIS 2.0 cable modem device. Mr. Baker attached to his e-mail message, Ex. 6, at 7, documents related to Comcast's P&E testing regime. Ex. 8; Ex. 9; and Ex. 11. See Ex. 3, ¶ 59,

74. Because Zoom's cable modems had never before been subject to Comcast's P&E testing regime, Mr. Vance was concerned by Mr. Baker's message and reached out to Mr. Livingood. Ex. 3, ¶ 60. In his e-mail message, Mr. Vance first expressed Zoom's appreciation that Comcast had agreed to test Zoom's new DOCSIS 2.0 cable modem device. He then informed Comcast that Zoom's plan was to sell this device at retail only and recounted that when Zoom had submitted its new DOCSIS 3.0 cable modem model to Comcast earlier in the year, Comcast had waived its P&E testing requirements because the cable modem was to be sold at retail only. Mr. Vance then asked whether the P&E tests similarly could be waived for Comcast's new DOCSIS 2.0 cable model device. Ex. 6, at 10; Ex. 3, ¶ 61.

75. In response to Mr. Vance's question, Mr. Livingood refused to waive Comcast's P&E tests. Rather, he indicated that Comcast's "testing/cert policies continue to evolve" and that Comcast now believed "it is important that all devices in the network, whether customer-purchased or Comcast-purchased, should pass P&E evaluation." Ex. 6, at 10; Ex. 3, ¶ 62.

76. Mr. Vance asked both Mr. Livingood and Mr. Iveson when Comcast had changed its testing policies and if there was a document that described those policies. Mr. Livingood responded that he wasn't sure why it mattered when the policy had changed and that any questions concerning the policy modification should be referred to Mr. Smith. Mr. Livingood further stated: "I'm sure we can send you a formal letter explaining the fact that P&E testing is

part of the certification process, but I'm unsure of the utility of that given that we've already explained that via email." Ex. 6, at 16; Ex. 3, ¶ 62.

F. Comcast's P&E Testing Regime

77. That same day, Mr. Vance and Mr. Baker exchanged e-mail messages that shed additional light on the requirements of Comcast's P&E testing regime. For example, Mr. Baker indicated that Comcast would need to perform two weeks of onsite inspections at Zoom's facilities. Ex. 6, at 12-14.

78. The vast majority of the requirements contained in Comcast's P&E testing regime have nothing to do with preventing electronic or physical harm to Comcast's network or theft of service, and are unreasonable for Comcast to apply to cable modems purchased by their subscribers at retail. Ex. 3, ¶ 67-68.

79. For example, Comcast evaluates the performance of cable modems at temperatures far above those generally found in the United States and far above those at which many other electronic devices are designed to operate. Specifically, [redacted] Ex. 8, at 11. Zoom's cable modems support operation at ambient temperatures from 0° to 40°C (32° to 104°F). For reference, the Apple iPad is specified to operate from 0° to 35°C (32° to 95°F), and a typical HP PC (for example, the model HP Pro 3130 Minitower) is specified to operate from 5° to 35°C (41° to 95°F). Even if a cable modem were to suffer decreased performance at extremely high temperatures, this would not cause harm to the network or facilitate theft of service. Ex. 3, ¶ 69.

80. Comcast places greater restrictions on the surface temperatures of cable modems than are found in UL safety standards. Specifically, [redacted]

[redacted] Ex. 8, at 13. Zoom's cable modems meet UL safety standards (UL 60950) that a plastic case of an electronic device may nowhere exceed 70°C, when the device is operated at an ambient temperature of 25°C. Stricter regulations regarding the temperature of a cable modem's outside surface neither protect Comcast's network from harm nor prevent theft of service. Ex. 3, ¶ 69.

81. Comcast regulates how the prolonged application of certain substances to a cable modem affects its appearance. Specifically, [redacted] Ex. 8, at 20. This requirement neither protects Comcast's network from harm nor prevents theft of service. Ex. 3, ¶ 69.

82. Comcast regulates a cable modem's weight. Specifically, [redacted] Ex. 8, at 14. This requirement neither protects Comcast's network from harm nor prevent theft of service. Ex. 3, ¶ 69.

83. Comcast regulates the strength of a cable modem's packaging. Specifically [redacted] Ex. 8, at 19. This requirement neither protects Comcast's network from harm nor prevent theft of service. Ex. 3, ¶ 69.

84. Comcast places labeling requirements on cable modems. Specifically, [redacted]