

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TQ DELTA, LLC,)	
)	
Plaintiff,)	C.A. No. 14-cv-954-RGA
)	
v.)	
)	JURY TRIAL DEMANDED
ADTRAN, INC.,)	
)	
Defendant.)	
)	

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff, TQ Delta, LLC, for its Amended Complaint against Defendant, ADTRAN, Inc. (“ADTRAN” or “Defendant”), alleges as follows:

THE PARTIES

1. TQ Delta, LLC (“TQ Delta” or “Plaintiff”) is a limited liability company organized and existing under the laws of the State of Delaware and having a principal place of business at 805 Las Cimas Parkway, Suite 240, Austin, Texas 78746.

2. Upon information and belief, Defendant ADTRAN is a corporation under the laws of the State of Delaware. On information and belief, Defendant has a principal place of business at 901 Explorer Boulevard, Huntsville, Alabama 35806.

JURISDICTION AND VENUE

3. This action is for patent infringement under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

4. This Court has subject matter jurisdiction over this dispute pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has personal jurisdiction over Defendant at least because ADTRAN is incorporated in Delaware and Defendant makes, uses, sells, offers for sale, and/or imports infringing products into this jurisdiction and/or otherwise benefits from such acts of infringement in this jurisdiction.

6. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391 and 1400(b) at least because Defendant ADTRAN is incorporated in Delaware and because Defendant regularly conducts business in this venue.

BACKGROUND

7. TQ Delta is the owner by assignment of a portfolio of patents relating to digital subscriber line (“DSL”) technology, including for example asymmetric digital subscriber line (“ADSL”) technology and very-high-bit-rate digital subscriber line (“VDSL”) technology.

8. DSL technology is used to provide broadband access to data networks, such as the Internet, via copper wires of a local telephone network. More recently, DSL has been used by telephone carriers to deliver video services to subscribers.

9. Inventors of the patents at issue in this case have been substantial contributors of valuable technology to various DSL-related standards on behalf of TQ Delta and, previously, Aware, Inc. (“Aware”), a world-leading innovator and provider of DSL technologies and the prior owner of the patents-in-suit.

10. The International Telecommunication Union (“ITU”) has adopted a number of industry standards relating to various DSL technologies, including ITU-T ADSL2 (G.992.3), ITU-T ADSL2+ (G.992.5), ITU-T VDSL2 (G.993.2), and ITU-T G.bond (e.g., G.998.1, G.998.2) (collectively, “DSL Standards”).

11. Defendant makes, uses, sells, offers for sale, and/or imports customer premise equipment (“CPE”) products, including without limitation modems, gateways, routers, and integrated access devices, that operate in accordance with various DSL-related standards (“DSL CPE Products”). Defendant also makes, uses, sells, offers for sale, and/or imports central office equipment (“CO”) products, including without limitation DSLAMs, MSANs, and line cards, that operate in accordance with various DSL-related standards (“DSL CO Products”).

12. Defendant provides its DSL CPE Products and/or DSL CO products to telephone/broadband carriers and/or such carriers’ subscribers/customers (collectively, “Customers”) knowing that its DSL CPE Products and DSL CO Products will be deployed and used in a DSL network to provide DSL service by operating in accordance with the DSL Standards.

13. Defendant also provides instructions and support (including, for example, providing upgrades, troubleshooting, and warranty support) to its Customers to ensure that its DSL CPE Products operate as intended (e.g., in accordance with the DSL Standards).

14. Defendant also makes available, including on its website, data sheets and other information that indicate that its DSL CPE Products and DSL CO Products operate in accordance with, and/or comply with, one or more of the DSL Standards.

DEFENDANT’S KNOWLEDGE OF THE ASSERTED PATENTS

Knowledge of the Asserted Patents Gained From the Complaint

15. At least as of the time of service of the Complaint, Defendant had actual knowledge of the patents asserted in Counts I-XXXII of this Amended Complaint. A reasonable opportunity for further investigation or discovery will likely show that at least shortly thereafter, Defendant also knew that the normal, intended use of its DSL CPE Products and DSL CO

Products that operate in accordance with the DSL Standards infringe and/or would induce actual infringement of the patents asserted in Counts I-XXXII of this Amended Complaint except as follows: A reasonable opportunity for further investigation or discovery will likely show that, with respect to the DSL CPE Products accused in Counts I-VI, XX-XXI, XXIII, XXVI-XXVII, and XXIX-XXXII, at or shortly after the time that TQ Delta served its Paragraph 4.a Identification of Accused Products and Asserted Patents for the patents asserted in Counts I-VI, XX-XXI, XXIII, XXVI-XXVII, and XXIX-XXXII, Defendant also knew that the normal, intended use of those DSL CPE Products that operate in accordance with the DSL Standards infringe and/or would induce actual infringement of the asserted patents.

Knowledge of the Asserted Patents Prior to Filing of the Complaint Gained from Acts Relating to Plaintiff's Attempts to Negotiate a License to Plaintiff's Patents In Suit

16. A reasonable opportunity for further investigation or discovery will likely show that on or about July 15, 2013, Defendant gained actual knowledge of the patents asserted in Counts I-XXXII of this Amended Complaint by virtue of actions taken in response to efforts by TQ Delta to license those patents.

17. As referenced below, TQ Delta attempted to negotiate a license under TQ Delta's DSL patent portfolio and advised Defendant that a license under one or more of its DSL patents may be required to practice or otherwise comply with certain DSL-related Recommendations, Deliverables, and/or Standards.

18. On July 15, 2013, TQ Delta sent a first letter to Defendant in care of Mr. Thomas R. Stanton (Defendant's Chief Executive Officer and Chairman), which included an overview of TQ Delta's DSL patent portfolio and an invitation to open licensing discussions upon execution of a proposed litigation standstill agreement. In its July 15, 2013 letter, TQ Delta requested a response by August 1, 2013.

19. Having received no response to its letter of July 15, 2013, TQ Delta sent a follow-up email to Mr. Stanton on August 2, 2013; this letter requested a response by August 16, 2013.

20. TQ Delta made numerous attempts between July and November of 2013 to engage with ADTRAN in negotiations relating to TQ Delta's patent portfolio. ADTRAN was often unresponsive to those numerous attempts.

21. On or about November 8, 2013, the parties executed a Mutual Standstill & Confidentiality Agreement.

22. On or about December 16, 2013, the parties engaged in a WebEx online meeting. During that meeting, TQ Delta presented to ADTRAN numerous exemplary patent claim charts describing how products that operate in accordance with applicable industry DSL standards infringe claims of those exemplary patents, including at least one such chart for every patent family being asserted in this Amended Complaint (except for the patent family related to the U.S. Pat. No. 8,625,660 asserted in Count XXXII).

23. The parties scheduled a follow-up call on January 24, 2014 to discuss the matter, but ADTRAN cancelled that call.

24. On or about March 19, 2014, TQ Delta sent to ADTRAN an offer to license its DSL patent portfolio for a running royalty with proposed terms and rates.

25. On or about April 27, 2014, the parties scheduled a follow-up meeting for May 20, 2014. ADTRAN cancelled this meeting.

26. After significant delay on the part of ADTRAN, the parties finally agreed to a date for a follow-up meeting. On or about June 17, 2014, the parties held a follow-up meeting at ADTRAN's offices in Huntsville, Alabama.

27. Throughout TQ Delta's efforts to negotiate a license with ADTRAN, TQ Delta has made numerous requests for information from ADTRAN regarding ADTRAN's sales volumes, revenues, profits, and product mix. To date, ADTRAN has not provided the requested information.

28. TQ Delta made good-faith efforts to negotiate a license over the course of nearly a year with Defendant under TQ Delta's DSL patent portfolio, but those efforts were frustrated by Defendant's delay and refusal to meaningfully engage in licensing negotiations or provide relevant information.

29. Defendant has never requested a license under TQ Delta's DSL patent portfolio.

30. In view of the allegations set forth herein, a reasonable opportunity for further investigation or discovery will likely show that, prior to the filing of the Complaint, Defendant had (1) actual knowledge of the patents asserted in Counts I-XXXII of this Amended Complaint by investigating the patents owned by TQ Delta/Aware relating to the DSL Standards identified in paragraph 10, and (2) actual knowledge that implementations and practice of DSL Standards by its products (i.e., Defendant's standard-compliant products and the practice of methods executed by the normal and intended use of Defendant's standard-compliant products by Defendant's Customers) would infringe and/or induce actual infringement of patents owned by TQ Delta, including the patents asserted in Counts I-XXXII of this Amended Complaint.

**Knowledge of the Asserted Patents Prior to Filing of the Complaint
By Virtue of Reasonable Steps Taken in View of ITU-T Standards and Policies**

31. From a time prior to Defendant's infringing conduct alleged herein, the ITU-T ADSL2 (G.992.3), ITU-T ADSL2+ (G.992.5) and ITU-T VDSL2 (G.993.2) standards have been published with an intellectual property rights warning that "strongly urge[s]" implementers to consult the ITU's database regarding applicable intellectual property as follows:

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU [had/had not] received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

See, e.g., Exhibits A-C (emphasis added).

32. From a time prior to Defendant's infringing conduct alleged herein, the ITU-T G.bond (e.g., G.998.1, G.998.2) standards and prior versions of the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and ITU-T VDSL2 (G.993.2) standards have been published with an intellectual property rights warning that "strongly urge[s]" implementers to consult the ITU's database regarding applicable intellectual property as follows:

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU [had/had not] received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

See Exhibits D-H (emphasis added).

33. From a time prior to Defendant's infringing conduct as alleged herein, the "TSB patent database" identified TQ Delta (or its predecessor-in-interest, Aware) as having submitted

a Patent Statement and Licensing Declaration (“PSLD”) with respect to each DSL Standard identified in paragraph 10. *See* Exhibits I-M.

34. All PSLDs submitted by TQ Delta/Aware have been publicly available through the “TSB database” and contain the following language:

The Patent Holder believes that it holds granted and/or pending applications for patents, the use of which would be required to implement the above document and hereby declares, in accordance with the Common Patent Policy for ITU-T/ITU-R/ISO/IEC, that [...] the Patent Holder is prepared to grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to make, use or sell implementations of the above document.

See, e.g., Exhibit N (Aware’s PSLD submitted on April 5, 2005 with respect to the VDSL2 (G.993.2) standard).

35. Prior to Defendant’s infringing conduct alleged herein, Defendant had actual knowledge of, and was familiar with, the intellectual property rights warnings, the ITU procedures and requirements for submissions of PSLDs, and the process of identifying parties who had submitted PSLDs for the DSL Standards. Defendant had such knowledge at least as early as April 26, 1999, when Defendant submitted a General Patent Statement and Licensing Declaration (“GPSLD”) of its own to the ITU. *See* Exhibit O.

36. A reasonable opportunity for further investigation or discovery will likely show that, prior to Defendant’s infringing conduct alleged herein, Defendant had actual knowledge of the patents asserted in Counts I-XXXII of this Amended Complaint at least by virtue of visiting the TSB patent database and investigating the patents and applications owned by TQ Delta/Aware relating to the DSL Standards identified in paragraph 10.

37. A reasonable opportunity for further investigation or discovery will also likely show that, prior to Defendant’s infringing conduct alleged herein, Defendant knew that implementations and practice of the DSL-related standards (i.e., Defendant’s standard-compliant

products and practice of methods executed by the normal, intended use of Defendant's standard-compliant products by Defendant's Customers) would infringe and/or induce actual infringement of patents owned by TQ Delta/Aware, including the patents asserted in Counts I-XXXII of this Amended Complaint. Such a reasonable opportunity for further investigation or discovery will likely show that (1) Defendant had actual knowledge of the ITU-T intellectual property rights warnings that warn implementers like Defendant that practice of the particular DSL Standards may involve the use of others' intellectual property rights and "strongly urge[s]" implementers to consult the TSB patent database, (2) Defendant had actual knowledge of TQ Delta/Aware's PSLDs indexed in the TSB patent database that state that Aware/TQ Delta "holds granted and/or pending applications for patents, the use of which would be required to implement" the DSL-related standards," and (3) Defendant was familiar with the implications of the warning and PSLD.

38. A reasonable opportunity for further investigation or discovery will also likely show that, prior to Defendant's infringing conduct alleged herein, Defendant knew that implementations and practice of the DSL-related standards (i.e., Defendant's standard-compliant products and practice of methods executed by the normal, intended use of Defendant's standard-compliant products by Defendant's Customers) would necessarily infringe and/or induce infringement of patents owned by Aware/TQ Delta, including the patents asserted in Counts I-XXXII of this Amended Complaint, by virtue of Defendant having conducted an investigation of the patents asserted in Counts I-XXXII of this Amended Complaint.

In the Alternative, Defendant Was Willfully Blind to the Existence of the Asserted Patents and Infringement Thereof

39. In the alternative and to the extent Defendant did not gain actual knowledge in the manners described above, a reasonable opportunity for further investigation or discovery will

likely show that, prior to Defendant's infringing conduct alleged herein, Defendant was willfully blind to the existence of the patents asserted in Counts I-XXXII of this Amended Complaint, and its infringement of those patents, because:

- (a) Defendant was aware of (1) the ITU's intellectual property rights warnings that the practice or implementation of the DSL Standards may involve the use of claimed intellectual property rights of others, and (2) the ITU's statement that parties are "strongly urged to consult the TSB patent database" to obtain notice of intellectual property that is protected by patents, which may be required to implement the standard;
- (b) Defendant was familiar with the ITU requirements and procedures for submission and identification of PSLDs, at least by virtue of Defendant's prior submission of a GPSLD;
- (c) As noted above, Defendant was informed by TQ Delta that its DSL products infringe certain of the TQ Delta patents in suit, as well as other patents in the same patent families. On about December 16, 2013, the parties engaged in a WebEx online meeting during which TQ Delta presented to ADTRAN numerous exemplary patent claim charts describing how products that operate in accordance with applicable industry DSL standards infringe claims of those exemplary patents, including at least one such chart for every patent family being asserted in this Amended Complaint (except for the patent family related to the U.S. Pat. No. 8,625,660 asserted in Count XXXII).
- (d) By virtue of the allegations set forth herein, Defendant subjectively believed that there was a high probability that TQ Delta/Aware submitted PSLDs to the ITU

and that TQ Delta/Aware owned patents that Defendant and its Customers would necessarily infringe by implementing and practicing the DSL Standards identified in paragraph 10;

- (e) Notwithstanding the warnings and strong urging of the ITU and the representations of TQ Delta made in its PSLDs regarding its ownership of standard-essential patents, and other facts obtained from discovery or investigation showing that the practice or implementation of the subject DSL Standards involve the use of claimed intellectual property rights of patents owned by TQ Delta/Aware, Defendant took deliberate actions to purposefully avoid confirming the high probability that TQ Delta owns patents relating to DSL technology, including the patents identified in Counts I-XXXII of this Amended Complaint, and that Defendant's DSL CPE Products and DSL CO Products infringe and/or induce actual infringement of those patents. These acts include a deliberate decision not to (1) seek a license from TQ Delta/Aware, (2) review the TSB patent database, the U.S. Patent and Trademark Office patent database or other suitable patent database, and/or (3) otherwise conduct an investigation to identify and review TQ Delta/Aware's patents, including those identified in Counts I-XXXII of this Amended Complaint.

40. In the alternative and to the extent Defendant did not gain actual knowledge in the manners described above, a reasonable opportunity for further investigation or discovery will likely show that, since the time Defendant received TQ Delta's letter on July 15, 2013, Defendant was willfully blind to the existence of the patents asserted in Counts I-XXXII of this Amended Complaint, and its infringement of those patents, because:

- (a) Defendant was notified by TQ Delta that TQ Delta's patents "are highly relevant to a number of current and future DSL products and services . . ." and that "[i]n light of ADTRAN's DSL offerings, TQD believes ADTRAN would benefit from a license to TQD's patents"; and
- (b) Notwithstanding TQ Delta's letters, further discovery and investigation will likely show that Defendant took deliberate actions to purposefully avoid confirming the high probability that its DSL CPE Products and DSL CO Products that operate in accordance with the DSL Standards identified in paragraph 10 infringe and/or induce actual infringement of TQ Delta's patents, including the patents identified in Counts I-XXXII of this Amended Complaint. These acts include an affirmative decision to (1) delay substantive negotiations with TQ Delta, (2) not review the TSB patent database, the U.S. Patent and Trademark Office patent database or other suitable patent database, and/or (3) not otherwise conduct an investigation to identify and review TQ Delta's patents, including those identified in Counts I-XXXII of this Amended Complaint.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,090,008

41. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

42. On January 3, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,090,008 ("the '008 patent"), entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System." TQ Delta is the owner and assignee of the '008 patent. A copy of the '008 patent is attached as Exhibit 1.

43. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '008 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

44. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '008 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '008 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '008 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

45. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in

accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '008 patent.

46. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products)), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '008 patent, by selling and DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '008 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '008 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

47. As a result of Defendant's infringement of the '008 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 8,073,041

48. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

49. On December 6, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,073,041 ("the '041 patent"), entitled "System and Method for Descrambling the Phase of the Carriers in a Multicarrier Communications System." TQ Delta is the owner and assignee of the '041 patent. A copy of the '041 patent is attached as Exhibit 2.

50. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '041 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

51. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '041 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '041 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE

Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '041 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '041 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

52. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '041 patent.

53. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '041 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '041 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to

practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '041 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '041 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

54. As a result of Defendant's infringement of the '041 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,292,627

55. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

56. On November 6, 2007, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,292,627 ("the '627 patent"), entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System." TQ Delta is the owner and assignee of the '627 patent. A copy of the '627 patent is attached as Exhibit 3.

57. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '627 patent by making, using, selling, offering to sell, and/or importing, without license or

authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

58. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '627 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '627 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '627 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '627 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

59. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant

specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '627 patent.

60. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '627 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '627 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '627 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '627 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

61. As a result of Defendant's infringement of the '627 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event

less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 7,471,721

62. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

63. On December 30, 2008, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,471,721 (“the ‘721 patent”), entitled “System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System.” TQ Delta is the owner and assignee of the ‘721 patent. A copy of the ‘721 patent is attached as Exhibit 4.

64. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the ‘721 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

65. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘721 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta’s Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more method claims of the ‘721 patent by selling, providing support for, and/or providing instructions for use of DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘721 patent by operating Defendant’s DSL CPE Products and DSL CO Products to

practice and use methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '721 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

66. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '721 patent.

67. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '721 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '721 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an

infringement of the '721 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '721 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

68. As a result of Defendant's infringement of the '721 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT V – INFRINGEMENT OF U.S. PATENT NO. 8,218,610

69. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

70. On July 10, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,218,610 ("the '610 patent"), entitled "System and Method for Descrambling the Phase of Carriers in a Multicarrier Communications System." TQ Delta is the owner and assignee of the '610 patent. A copy of the '610 patent is attached as Exhibit 5.

71. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '610 patent by making and/or using (including for purposes of testing or demonstration), without license or authority, a system, which includes Defendant's DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

72. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '610 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of the '610 patent by selling, providing support for, and/or providing instructions for use of DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '610 patent by making and using a system that includes Defendant's DSL CPE Products and DSL CO Products, and using such system to practice and use methods, in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '610 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

73. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '610 patent.

74. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '610 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '610 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use as a component of the patented DSL system and in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are a material part of the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '610 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '610 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

75. As a result of Defendant's infringement of the '610 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event

less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT VI – INFRINGEMENT OF U.S. PATENT NO. 8,355,427

76. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

77. On January 15, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,355,427 (“the ‘427 patent”), entitled “System and Method for Descrambling the Phase of Carriers in a Multicarrier Communications System.” TQ Delta is the owner and assignee of the ‘427 patent. A copy of the ‘427 patent is attached as Exhibit 6.

78. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘427 patent by making and/or using (including for purposes of testing or demonstration), without license or authority, a system, which includes Defendant’s DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

79. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘427 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta’s Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of the ‘427 patent by selling, providing support for, and/or providing instructions for use of DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the ‘427 patent by making and using a system that includes Defendant’s DSL CPE Products and DSL CO

Products, and using such system to practice and use methods, in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '427 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

80. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '427 patent.

81. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '427 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '427 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use as a component of the patented DSL system and in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are a material part of the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are

especially made or especially adapted for use in an infringement of the '427 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '427 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See,* *e.g.,*

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

82. As a result of Defendant's infringement of the '427 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT VII – INFRINGEMENT OF U.S. PATENT NO. 7,453,881

83. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

84. On November 18, 2008, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,453,881 ("the '881 patent"), entitled "Systems and Methods for Multi-pair ATM over DSL." TQ Delta is the owner and assignee of the '881 patent. A copy of the '881 patent is attached as Exhibit 7.

85. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '881 patent by making, using, selling, offering to sell, and/or importing, without license or

authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2).

86. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '881 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '881 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '881 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). Defendant knows that its Customers infringe the '881 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)).

87. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '881 patent.

88. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '881 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '881 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '881 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '881 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T G.bond standard (e.g., G.998.1, G.998.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

89. As a result of Defendant's infringement of the '881 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT VIII – INFRINGEMENT OF U.S. PATENT NO. 7,809,028

90. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

91. On October 5, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,809,028 (“the ‘028 patent”), entitled “Systems and Methods for Multi-pair ATM over DSL.” TQ Delta is the owner and assignee of the ‘028 patent. A copy of the ‘028 patent is attached as Exhibit 8.

92. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the ‘028 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T G.bond standard (e.g., G.998.1).

93. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘028 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘028 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the ‘028 patent by using Defendant’s DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T G.bond standard (e.g., G.998.1). Defendant knows that its Customers infringe the ‘028 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T G.bond standard (e.g., G.998.1). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

Total_Access_1248_GigE_IP_Mini_DSLAM_Data_Sheet.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with G.bond (e.g., G.998.1)).

94. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T G.bond standard (e.g., G.998.1) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '028 patent.

95. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '028 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '028 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '028 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '028 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T G.bond standard (e.g., G.998.1). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/Total_Access_1248_GigE_IP_

Mini_DSLAM_Data_Sheet.pdf (accessed July 14, 2014),
http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with G.bond (e.g., G.998.1)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

96. As a result of Defendant' infringement of the '028 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT IX – INFRINGEMENT OF U.S. PATENT NO. 7,978,706

97. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

98. On July 12, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,978,706 ("the '706 patent"), entitled "Combining Multiple DSL Transceivers for a High Data Rate Connection." TQ Delta is the owner and assignee of the '706 patent. A copy of the '706 patent is attached as Exhibit 9.

99. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the '706 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2).

100. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '706 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40

above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '706 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the '706 patent, by operating Defendant's DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). Defendant knows that its Customers infringe the '706 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)).

101. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '706 patent.

102. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '706 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is

contributorily infringing, the '706 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '706 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '706 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T G.bond standard (e.g., G.998.1, G.998.2). See, e.g., http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

103. As a result of Defendant's infringement of the '706 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT X – INFRINGEMENT OF U.S. PATENT NO. 8,422,511

104. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

105. On April 16, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,422,511 (“the ‘511 patent”), entitled “Systems and Methods for Multi-pair ATM over DSL.” TQ Delta is the owner and assignee of the ‘511 patent. A copy of the ‘511 patent is attached as Exhibit 10.

106. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the ‘511 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2).

107. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘511 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘511 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘511 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). Defendant knows that its Customers infringe the ‘511 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2). *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf

(accessed July 14, 2014) (example data sheet specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)).

108. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T G.bond standard (e.g., G.998.1, G.998.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '511 patent.

109. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '511 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '511 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '511 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '511 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T G.bond standard (e.g., G.998.1, G.998.2). See, e.g., http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61200639G1-8_NV873.pdf

(accessed July 14, 2014) (example data sheet specifying that product is compliant with G.bond (e.g., G.998.1, G.998.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

110. As a result of Defendant's infringement of the '511 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XI – INFRINGEMENT OF U.S. PATENT NO. 7,889,784

111. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

112. On February 15, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,889,784 ("the '784 patent"), entitled "Multicarrier Modulation Messaging for SNR per Subchannel during Showtime Information." TQ Delta is the owner and assignee of the '784 patent. A copy of the '784 patent is attached as Exhibit 11.

113. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '784 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

114. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '784 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '784 patent by selling, providing support for,

and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the '784 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the '784 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

115. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '784 patent.

116. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '784 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '784 patent, by selling DSL CPE Products and DSL CO Products to

its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '784 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '784 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

117. As a result of Defendant's infringement of the '784 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XII – INFRINGEMENT OF U.S. PATENT NO. 7,835,430

118. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

119. On November 16, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,835,430 (“the ‘430 patent”), entitled “Multicarrier Modulation Messaging for Frequency Domain Received Idle Channel Noise Information.” TQ Delta is the owner and assignee of the ‘430 patent. A copy of the ‘430 patent is attached as Exhibit 12.

120. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘430 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

121. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘430 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘430 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘430 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the ‘430 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

122. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '430 patent.

123. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '430 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '430 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '430 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '430 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

124. As a result of Defendant's infringement of the '430 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XIII – INFRINGEMENT OF U.S. PATENT NO. 7,570,686

125. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

126. On August 4, 2009, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,570,686 ("the '686 patent"), entitled "Systems and Methods for Establishing a Diagnostic Transmission Mode and Communicating over the Same." TQ Delta is the owner and assignee of the '686 patent. A copy of the '686 patent is attached as Exhibit 13.

127. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '686 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

128. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '686 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40

above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '686 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the '686 patent, by operating Defendant's DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the '686 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

129. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '686 patent.

130. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '686 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40

above), Defendant, in violation of 35 U.S.C. § 271 (c), has contributorily infringed, and is contributorily infringing, the '686 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '686 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '686 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

131. As a result of Defendant's infringement of the '686 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XIV – INFRINGEMENT OF U.S. PATENT NO. 8,238,412

132. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

133. On August 7, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,238,412 (“the ‘412 patent”), entitled “Multicarrier Modulation Messaging for Power Level per Subchannel Information.” TQ Delta is the owner and assignee of the ‘412 patent. A copy of the ‘412 patent is attached as Exhibit 14.

134. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘412 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

135. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘412 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘412 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘412 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the ‘412 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014),
[http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf)

NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

136. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '412 patent.

137. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '412 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '412 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '412 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '412 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.,*

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

[8_TA1148V%20w%20Vectoring.pdf](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf) (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

[NetVanta_3130_Data_Sheet.pdf](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf) (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

138. As a result of Defendant's infringement of the '412 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XV – INFRINGEMENT OF U.S. PATENT NO. 8,432,956

139. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

140. On April 30, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,432,956 ("the '2,956 patent"), entitled "Multicarrier Modulation Messaging for Power Level per Subchannel Information." TQ Delta is the owner and assignee of the '2,956 patent. A copy of the '2,956 patent is attached as Exhibit 15.

141. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '2,956 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

142. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘2,956 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘2,956 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘2,956 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the ‘2,956 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

143. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the ‘2,956 patent.

144. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘2,956 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the ‘2,956 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the ‘2,956 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the ‘2,956 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

145. As a result of Defendant’s infringement of the ‘2,956 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no

event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XVI – INFRINGEMENT OF U.S. PATENT NO. 7,451,379

146. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

147. On November 11, 2008, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,451,379 (“the ‘379 patent”), entitled “CRC Counter Normalization.” TQ Delta is the owner and assignee of the ‘379 patent. A copy of the ‘379 patent is attached as Exhibit 16.

148. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘379 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

149. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘379 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘379 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘379 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the ‘379 patent by the normal and

intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

150. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '379 patent.

151. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '379 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '379 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '379 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL

CO Products to Customers knowing that the products directly infringe the ‘379 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

152. As a result of Defendant’s infringement of the ‘379 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XVII – INFRINGEMENT OF U.S. PATENT NO. 8,516,337

153. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

154. On August 20, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,516,337 (“the ‘337 patent”), entitled “CRC Counter Normalization.” TQ Delta is the owner and assignee of the ‘337 patent. A copy of the ‘337 patent is attached as Exhibit 17.

155. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘337 patent by making, using, selling, offering to sell, and/or importing, without license or

authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

156. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '337 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '337 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the '337 patent, by operating Defendant's DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the '337 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

157. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the

products in a way that would necessarily infringe standard-essential patent claims of the '337 patent.

158. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '337 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '337 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '337 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '337 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

159. As a result of Defendant's infringement of the '337 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XVIII – INFRINGEMENT OF U.S. PATENT NO. 7,979,778

160. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

161. On July 12, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,979,778 ("the '778 patent"), entitled "CRC Counter Normalization." TQ Delta is the owner and assignee of the '778 patent. A copy of the '778 patent is attached as Exhibit 18.

162. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the '778 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

163. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '778 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '778 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the '778 patent, by

operating Defendant's DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the '778 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

164. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '778 patent.

165. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '778 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '778 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are

not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '778 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '778 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014), http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

166. As a result of Defendant's infringement of the '778 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XIX – INFRINGEMENT OF U.S. PATENT NO. 7,925,958

167. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

168. On April 12, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,925,958 ("the '958 patent"), entitled "CRC Counter

Normalization.” TQ Delta is the owner and assignee of the ‘958 patent. A copy of the ‘958 patent is attached as Exhibit 19.

169. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘958 patent by making and/or using (including for purposes of testing or demonstration), without license or authority, a system, which includes Defendant’s DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards.

170. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘958 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of the ‘958 patent by selling, providing support for, and/or providing instructions for use of DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘958 patent by making and using a system that includes Defendant’s DSL CPE Products and DSL CO Products, and using such system to practice and use methods, in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. Defendant knows that its Customers infringe the ‘958 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *E.g.,*

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

[8_TA1148V%20w%20Vectoring.pdf](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf) (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

171. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '958 patent.

172. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '958 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '958 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use as a component of the patented DSL system and in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are a material part of the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '958 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '958 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2) standards. *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

NetVanta_3130_Data_Sheet.pdf (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3), ADSL2+ (G.992.5), and/or VDSL2 (G.993.2)).

The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

173. As a result of Defendant's infringement of the '958 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XX – INFRINGEMENT OF U.S. PATENT NO. 8,462,835

174. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

175. On June 11, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,462,835 ("the '835 patent"), entitled "Impulse Noise Management." TQ Delta is the owner and assignee of the '835 patent. A copy of the '835 patent is attached as Exhibit 20.

176. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '835 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

177. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '835

patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '835 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '835 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '835 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

178. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '835 patent.

179. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40

above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '835 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '835 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '835 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

180. As a result of Defendant's infringement of the '835 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXI – INFRINGEMENT OF U.S. PATENT NO. 8,594,162

181. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

182. On November 26, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,594,162 (“the ‘162 patent”), entitled “Impulse Noise Management.” TQ Delta is the owner and assignee of the ‘162 patent. A copy of the ‘162 patent is attached as Exhibit 21.

183. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘162 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

184. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘162 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta’s Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘162 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the ‘162 patent by using Defendant’s DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the ‘162 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

185. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '162 patent.

186. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '162 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '162 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '162 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use. As a result of Defendant's infringement of the '162 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXII – INFRINGEMENT OF U.S. PATENT NO. 7,978,753

187. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

188. On July 12, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,978,753 (“the ‘753 patent”), entitled “Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability.” TQ Delta is the owner and assignee of the ‘753 patent. A copy of the ‘753 patent is attached as Exhibit 22.

189. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘753 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards.

190. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the ‘753 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘753 patent by selling, providing support for, and/or

providing instructions for use of its DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '753 patent by using Defendant's DSL CO Products and practicing methods in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. Defendant knows that its Customers infringe the '753 patent by the normal and intended use of Defendant's DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)).

191. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '753 patent.

192. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '753 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '753 patent, by selling DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '753 patent. Such discovery or investigation will likely show that

Defendant sold its DSL CO Products to Customers knowing that the products directly infringe the '753 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3) and ADSL2+ (G.992.5). *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

193. As a result of Defendant's infringement of the '753 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXIII – INFRINGEMENT OF U.S. PATENT NO. 6,445,730

194. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

195. On September 3, 2002, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 6,445,730 ("the '730 patent"), entitled "Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability." TQ Delta is the owner and assignee of the '730 patent. A copy of the '730 patent is attached as Exhibit 23.

196. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '730 patent by making, using, selling, offering to sell, or importing, without license or authority, DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards.

197. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the '730 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '730 patent by selling, providing support for, and/or providing instructions for use of its DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '730 patent by using Defendant's DSL CO Products and practicing methods in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. Defendant knows that its Customers infringe the '730 patent by the normal and intended use of Defendant's DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)).

198. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '730 patent.

199. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '730

patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '730 patent, by selling DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '730 patent. Such discovery or investigation will likely show that Defendant sold its DSL CO Products to Customers knowing that the products directly infringe the '730 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

200. As a result of Defendant's infringement of the '730 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXIV – INFRINGEMENT OF U.S. PATENT NO. 8,611,404

201. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

202. On Dec. 17, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,611,404 (“the ‘404 patent”), entitled “Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability.” TQ Delta is the owner and assignee of the ‘404 patent. A copy of the ‘404 patent is attached as Exhibit 24.

203. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘404 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards.

204. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the ‘404 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘404 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the ‘404 patent by using Defendant’s DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. Defendant knows that its Customers infringe the ‘404 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. *E.g.,*

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

[8_TA1148V%20w%20Vectoring.pdf](#) (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

[NetVanta_3130_Data_Sheet.pdf](#) (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)).

205. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '404 patent.

206. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '404 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '404 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '404 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '404 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5). *See, e.g.,*

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

[8_TA1148V%20w%20Vectoring.pdf](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf) (accessed July 14, 2014),

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/

[NetVanta_3130_Data_Sheet.pdf](http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/NetVanta_3130_Data_Sheet.pdf) (accessed July 14, 2014) (example data sheets specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

207. As a result of Defendant's infringement of the '404 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXV – INFRINGEMENT OF U.S. PATENT NO. 8,437,382

208. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

209. On May 7, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,437,382 ("the '382 patent"), entitled "Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability." TQ Delta is the owner and assignee of the '382 patent. A copy of the '382 patent is attached as Exhibit 25.

210. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '382 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CO Products that operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards.

211. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the '382 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '382 patent by selling, providing support for, and/or providing instructions for use of its DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '382 patent by using Defendant's DSL CO Products and practicing methods in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. Defendant knows that its Customers infringe the '382 patent by the normal and intended use of Defendant's DSL CO Products, including by use in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)).

212. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CO Products operate in accordance with the ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5) standards, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '382 patent.

213. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '382 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is

contributorily infringing, the '382 patent, by selling DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '382 patent. Such discovery or investigation will likely show that Defendant sold its DSL CO Products to Customers knowing that the products directly infringe the '382 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T ADSL2 (G.992.3) and/or ADSL2+ (G.992.5). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with ADSL2 (G.992.3) and/or ADSL2+ (G.992.5)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

214. As a result of Defendant's infringement of the '382 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXVI – INFRINGEMENT OF U.S. PATENT NO. 7,836,381

215. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

216. On November 16, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,836,381 ("the '381 patent"), entitled "Computer Readable Medium with Instructions for Resource Sharing in a Telecommunications Environment." TQ

Delta is the owner and assignee of the '381 patent. A copy of the '381 patent is attached as Exhibit 26.

217. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '381 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

218. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '381 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '381 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '381 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '381 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

219. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '381 patent.

220. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '381 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '381 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '381 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying

that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

221. As a result of Defendant's infringement of the '381 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXVII – INFRINGEMENT OF U.S. PATENT NO. 7,844,882

222. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

223. On November 30, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,844,882 ("the '882 patent"), entitled "Resource Sharing in a Telecommunications Environment." TQ Delta is the owner and assignee of the '882 patent. A copy of the '882 patent is attached as Exhibit 27.

224. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '882 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

225. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '882 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has

knowingly induced, and is inducing, the direct infringement of one or more claims of the '882 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '882 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '882 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

226. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '882 patent.

227. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '882 patent, by selling DSL CPE

Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '882 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '882 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

228. As a result of Defendant's infringement of the '882 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXIII – INFRINGEMENT OF U.S. PATENT NO. 8,276,048

229. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

230. On September 25, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,276,048 ("the '048 patent"), entitled "Resource Sharing in a Telecommunications Environment." TQ Delta is the owner and assignee of the '048 patent. A copy of the '048 patent is attached as Exhibit 28.

231. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '048 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

232. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '048 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '048 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '048 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '048 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

233. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '048 patent.

234. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '048 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '048 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '048 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

235. As a result of Defendant's infringement of the '048 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXIX – INFRINGEMENT OF U.S. PATENT NO. 8,495,473

236. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

237. On July 23, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,495,473 (“the ‘473 patent”), entitled “Resource Sharing in a Telecommunications Environment.” TQ Delta is the owner and assignee of the ‘473 patent. A copy of the ‘473 patent is attached as Exhibit 29.

238. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the ‘473 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

239. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘473 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta’s Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘473 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the ‘473 patent by using Defendant’s DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the ‘473 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T

VDSL2 (G.993.2) standard. *E.g.*,

http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

[8_TA1148V%20w%20Vectoring.pdf](#) (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

240. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '473 patent.

241. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '473 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its and DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '473 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '473 patent when used for their normal and intended purpose, including by

operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

242. As a result of Defendant's infringement of the '473 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXX – INFRINGEMENT OF U.S. PATENT NO. 8,607,126

243. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

244. On December 10, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,607,126 ("the '126 patent"), entitled "Resource Sharing in a Telecommunications Environment." TQ Delta is the owner and assignee of the '126 patent. A copy of the '126 patent is attached as Exhibit 30.

245. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '126 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

246. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '126 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40

above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '126 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '126 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '126 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

247. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '126 patent.

248. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a

Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the ‘126 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the ‘126 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the ‘126 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

249. As a result of Defendant’s infringement of the ‘126 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXXI – INFRINGEMENT OF U.S. PATENT NO. 7,831,890

250. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

251. On November 9, 2010, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,831,890 (“the ‘890 patent”), entitled “Resource Sharing in a Telecommunications Environment.” TQ Delta is the owner and assignee of the ‘890 patent. A copy of the ‘890 patent is attached as Exhibit 31.

252. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing one or more method claims of the ‘890 patent by using (including for purposes of testing or demonstration), without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

253. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the ‘890 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta’s Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the ‘890 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to infringe the ‘890 patent, by operating Defendant’s DSL CPE Products and DSL CO Products to practice and use methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the ‘890 patent by the normal and intended use of Defendant’s DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

254. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '890 patent.

255. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '008 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has contributorily infringed, and is contributorily infringing, the '890 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '890 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '890 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-

8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use.

256. As a result of Defendant's infringement of the '890 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

COUNT XXXII – INFRINGEMENT OF U.S. PATENT NO. 8,625,660

257. TQ Delta hereby incorporates by reference Paragraphs 1 through 40 of this Amended Complaint.

258. On January 7, 2014, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,625,660 ("the '660 patent"), entitled "Systems and Methods for a Multicarrier Modulation System with a Variable Margin." TQ Delta is the owner and assignee of the '660 patent. A copy of the '660 patent is attached as Exhibit 32.

259. Defendant, in violation of 35 U.S.C. § 271(a), has been and is directly infringing the '660 patent by making, using, selling, offering to sell, and/or importing, without license or authority, DSL CPE Products and DSL CO Products that operate in accordance with the ITU-T VDSL2 (G.993.2) standard.

260. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '660 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs

7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(b), has knowingly induced, and is inducing, the direct infringement of one or more claims of the '660 patent by selling, providing support for, and/or providing instructions for use of its DSL CPE Products and DSL CO Products to Customers, with the intent to encourage those Customers to directly infringe the '660 patent by using Defendant's DSL CPE Products and DSL CO Products and practicing methods in accordance with the ITU-T VDSL2 (G.993.2) standard. Defendant knows that its Customers infringe the '660 patent by the normal and intended use of Defendant's DSL CPE Products and DSL CO Products, including by use in accordance with the ITU-T VDSL2 (G.993.2) standard. *E.g.*, http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)).

261. Defendant has provided and continues to provide product literature and information specifying that certain of its DSL CPE Products and DSL CO Products operate in accordance with the ITU-T VDSL2 (G.993.2) standard, thereby indicating that Defendant specifically intended for its Customers to use the products in a way that would necessarily infringe standard-essential patent claims of the '660 patent.

262. Upon information and belief, a reasonable opportunity for further investigation or discovery will likely show that, with knowledge or willful blindness of the existence of the '660 patent (at least as of the service of the Complaint and/or earlier as set forth in paragraphs 7-40 above for its DSL CO Products and at least as of the service of TQ Delta's Paragraph 4.a Identification of Accused Products and Asserted Patents and/or earlier as set forth in paragraphs 7-40 above for its DSL CPE Products), Defendant, in violation of 35 U.S.C. § 271(c), has

contributorily infringed, and is contributorily infringing, the '660 patent, by selling DSL CPE Products and DSL CO Products to its Customers in the United States for use in practicing the patented methods, knowing that its DSL CPE Products and DSL CO Products are material to practicing the claimed inventions, are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are especially made or especially adapted for use in an infringement of the '660 patent. Such discovery or investigation will likely show that Defendant sold its DSL CPE Products and DSL CO Products to Customers knowing that the products directly infringe the '660 patent when used for their normal and intended purpose, including by operating in accordance with ITU-T VDSL2 (G.993.2). *See, e.g.,* http://www.adtran.com/pub/Library/Data_Sheets/Default_Public/61179930F1-8_TA1148V%20w%20Vectoring.pdf (accessed July 14, 2014) (example data sheet specifying that product is compliant with VDSL2 (G.993.2)). The products are made for the specific purpose of operating according to the DSL Standards and have no substantial non-infringing use. As a result of Defendant's infringement of the '660 Patent, TQ Delta has suffered damages and is entitled to monetary relief to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, TQ Delta, respectfully requests that the following relief:

A. That the Court enter judgment in favor of TQ Delta that Defendant have infringed TQ Delta's '008 patent, '041 patent, '627 patent, '721 patent, '610 patent, '427 patent, '881 patent, '028 patent, '706 patent, '511 patent, '784 patent, '430 patent, '686 patent, '412 patent, '2,956 patent, '379 patent, '337 patent, '778 patent, '958 patent, '835 patent; '162 patent, '753

patent, '730 patent, '404 patent, '382 patent, '381 patent, '882 patent, '048 patent, '473 patent, '126 patent, '890 patent, and '660 patent;

B. That the Court enter an order declaring that Plaintiff has complied with any RAND obligations and further enter a permanent injunction under 35 U.S.C. § 283 enjoining Defendant and its officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert or participation with it, from infringement of TQ Delta's '008 patent, '041 patent, '627 patent, '721 patent, '610 patent, '427 patent, '881 patent, '028 patent, '706 patent, '511 patent, '784 patent, '430 patent, '686 patent, '412 patent, '2,956 patent, '379 patent, '337 patent, '778 patent, '958 patent, '835 patent; '162 patent, '753 patent, '730 patent, '404 patent, '382 patent, '381 patent, '882 patent, '048 patent, '473 patent, '126 patent, '890 patent, and '660 patent;

C. That the Court enter a judgment and order under 35 U.S.C. § 284 requiring Defendant to pay TQ Delta its damages, costs, expenses, and pre-judgment and post-judgment interest for Defendant's infringement of TQ Delta's '008 patent, '041 patent, '627 patent, '721 patent, '610 patent, '427 patent, '881 patent, '028 patent, '706 patent, '511 patent, '784 patent, '430 patent, '686 patent, '412 patent, '2,956 patent, '379 patent, '337 patent, '778 patent, '958 patent, '835 patent; '162 patent, '753 patent, '730 patent, '404 patent, '382 patent, '381 patent, '882 patent, '048 patent, '473 patent, '126 patent, '890 patent, and '660 patent;

D. That the Court find this case exceptional under 35 U.S.C. § 285, and award TQ Delta its costs and fees in this action, including reasonable attorneys' fees and pre-judgment interest thereon; and

E. That the Court grant TQ Delta such other and further relief as it deems just and proper.

DEMAND FOR JURY TRIAL

TQ Delta, pursuant to Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable.

DATED: July 6, 2015

Respectfully submitted,

FARNAN LLP

/s/ Michael J. Farnan

Brian E. Farnan (Bar No. 4089)
Michael J. Farnan (Bar No. 5165)
919 North Market Street, 12th Floor
Wilmington, Delaware 19801
(302) 777-0300
(302) 777-0301 (Fax)
bfarnan@farnanlaw.com
mfarnan@farnanlaw.com

Peter J. McAndrews (admitted *pro hac vice*)
Timothy J. Malloy (admitted *pro hac vice*)
Thomas J. Wimbiscus (admitted *pro hac vice*)
Sharon A. Hwang (admitted *pro hac vice*)
Paul W. McAndrews (admitted *pro hac vice*)
Anna M. Targowska (admitted *pro hac vice*)
MCANDREWS, HELD & MALLOY, LTD.
500 West Madison Street, 34th Floor
Chicago, Illinois 60661
(312) 775-8000
(312) 775-8100 (Fax)
pmcandrews@mcandrews-ip.com

Counsel for Plaintiff TQ Delta, LLC