IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

NEXTGEN INNOVATIONS, LLC, Plaintiff, v. II-VI, INC. and FINISAR CORPORATION, Defendants.	Case No.: 4:20-cv-854 Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff NextGen Innovations, LLC ("NextGen") files this Complaint against II-VI, Inc. ("II-VI") and Finisar Corporation ("Finisar") (individually and collectively referred to herein as "Defendants") for patent infringement of United States Patent Nos. 8,238,754 ("the '754 patent"), 8,958,697 ("the '697 patent"), 9,887,795 ("the '795 patent"), 10,263,723 ("the '723 patent"), 10,763,958 ("the '958 patent"), and 10,771,181 ("the '181 patent") (collectively the "patents-in-suit") and alleges as follows:

NATURE OF THE ACTION

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

THE PARTIES

2. Plaintiff NextGen Innovations, LLC is a Delaware limited liability company with its principal place of business at 8 The Green, Suite 5359, Dover, DE 19901.

3. On information and belief, Defendant II-VI, Inc. is incorporated under the laws of the commonwealth of Pennsylvania with its principal place of business at 375 Saxonburg Blvd., Saxonburg, PA 16056-9430.

4. On information and belief, II-VI may be served with process through its registered agent, Corporation Service Company, 2595 Interstate Drive, Suite 103 Harrisburg, PA 17110.

5. On information and belief, Defendant Finisar Corporation is incorporated under the laws of the State of Delaware with its principal place of business at 1389 Moffett Park Drive, Sunnyvale, California, 94089-1134.

6. On information and belief, Finisar may be served with process through its registered agent, Corporation Service Company D/B/A CSC-Lawyers Incorporating SE, 211 East 7th Street, Suite 620, Austin, Texas 78701-3218.

7. On information and belief, since on or about January 11, 2005 Finisar has been registered to do business in the state of Texas under Texas SOS file number 0800438736.

8. On information and belief, on or about November 8, 2018, II-VI and Finisar entered into an Agreement and Plan of Merger.[1]

9. On information and belief, on or about September 24, 2019, II-VI acquired Finisar.[2]

10. On information and belief, since on or about September 24, 2019, II-VI and Finisar have been operated as a "combined company" with integrated operations, facilities, strategies, technologies, and personnel.[3]

11. On information and belief, some or all of the Finisar's liabilities for patent infringement set forth herein became and are, in whole or in part, the liabilities of II-VI.[4]

12. On information and belief, Defendants have acted in concert with each other to form a joint enterprise to infringe the patents-in-suit by making, using, importing, selling, and/or, offering for sale in this District and this Division the accused Optical Communications Products and by promoting, encouraging, and supporting the use, importation, sales, and/or offers for sale in this District and this Division of the

---

[1] *See* https://www.sec.gov/Archives/edgar/data/1094739/000110465918067123/a18-39922_1ex2d1.htm.

[2] *See* https://www.lightwaveonline.com/business/mergers-acquisitions/article/14067640/iivi-closes-finisar-acquisition.

[3] *See* https://ii-viincorporated1.box.com/shared/static/pl9676hsdku9yebhdti1w4ipxm67ehmm.pdf.

[4] *See* https://www.sec.gov/Archives/edgar/data/1094739/000110465918067123/a18-39922_1ex2d1.htm.

accused Optical Communications Products by their customers, distributors, resellers, merchants, and/or other partners.

13. On information and belief, Defendants had and continue to have an agreement, express or implied, to make, use, import, sell, and/or, offer to sell, including within this District and this Division, the accused Optical Communications Products, and to promote, encourage, and support the use, importation, sales, and/or offers for sale, including within this District and this Division, of the accused Optical Communications Products by their customers, distributors, resellers, merchants, and/or other partners.

14. On information and belief, Defendants had and continue to have a common purpose to make, use, import, sell, and/or, offer to sell, including within this District and this Division, the accused Optical Communications Products, and to promote, encourage, and support the use, importation, sales, and/or offers for sale, including within this District and this Division, of the accused Optical Communications Products by their customers, distributors, resellers, merchants, and/or other partners. On information and belief, Defendants have shared and continue to share a community of pecuniary interest in that purpose, namely by profiting from the sales of the Optical Communications Products.

15. On information and belief, Defendants had and continue to have a "voice" in the direction of establishing, participating, and controlling the joint enterprise, such that each has an equal right of control over the making, using, importing, selling, and/or, offering for sale, including within this District and this Division, the accused

Optical Communications Products and the promotion, encouragement, and support of the use, importation, sales, and/or offers for sale, including within this District and this Division, of the accused Optical Communications Products by their customers, distributors, resellers, merchants, and/or other partners.

16. On information and belief, Defendants provide the use of their business premises for the use of employees employed by each defendant, to use as a regular and established place to conduct business in this District and in this Division.[5]

17. As a result of this joint enterprise, each defendant is charged with the acts of the other defendant, rendering each liable jointly and severally liable for the infringement of the patents-in-suit.

JURISDICTION AND VENUE

18. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

19. Defendants are subject to this Court's personal jurisdiction, in accordance with due process and/or the Texas Long Arm Statute because, in part, the Defendants "[r]ecruit[] Texas residents, directly or through an intermediary located in this State, for employment inside or outside this State." *See* Tex. Civ. Prac. & Rem. Code § 17.042.

[5] *See* https://www.linkedin.com/company/finisar/people/?facetGeoRegion=us%3A764&keywords=texas; https://www.linkedin.com/company/ii-vi-incorporated/people/?facetGeoRegion=us%3A764.

20. Finisar has already admitted that this Court has personal jurisdiction over it in a patent litigation bearing docket number: 2:13-cv-00178-JRG.

21. This Court has personal jurisdiction over Defendants because they have committed and continue to commit acts of infringement in this judicial district in violation of 35 U.S.C. §§ 271(a) and (b). In particular, on information and belief, Defendants have made, used, imported, offered to sell and/or sold, and, at least since the filing of this Complaint, have induced others to use, import, sell and/or offer to sell the infringing products, services, and/or systems in this judicial district.

22. On information and belief, Defendants are subject to the Court's jurisdiction because they regularly conduct and solicit business, or otherwise engage in other persistent courses of conduct in this judicial district, and/or derive substantial revenue from the sale and distribution of goods and services provided to individuals and businesses in this judicial district.

23. This Court has personal jurisdiction over Defendants because, *inter alia*, Defendants, on information and belief: (1) have committed acts of patent infringement in this judicial district; (2) maintain a regular and established place of business in the judicial district; (3) have substantial, continuous, and systematic contacts with this State and this judicial district; (4) own, manage, and operate facilities in this State and this judicial district; (5) enjoy substantial income from its operations and sales in this State and this judicial district; (6) employ Texas residents in this State and this judicial district, and (7) solicit business and markets products, systems and/or services in this State and judicial district including, without limitation, with respect to the accused

Optical Communication Products, including but not limited to the following accused instrumentalities: (1) Optical Time Domain Reflectometer – Dual Port XFP Pluggable OTDR; (2) Optical Time Domain Reflectometer – Embedded OTDR; (3) FTEN2115P1NUN; (4) FTEN2x17P1CUN; (5) FTEN2115P1NUN-BC; (6) FTEN2x17P1CUN-BC; (7) FTGN2117P2xxN; (8) FTCD1314E1BCL; (9) FTCD1324E1BCL; (10) FTCD3312x1BCL; (11) and all other products imported, made, used, sold, or offered for sale by Defendants that operate in a substantially similar manner as the above-listed products, (collectively referred to herein as the "Optical Communications Products").

24. Venue is proper pursuant to 28 U.S.C. §§ 1391(b), (c), (d) and/or 1400(b), at least because Defendants, have committed acts of infringement in this judicial district, and have a regular and established place of business in this judicial district.

25. In fact, this judicial district was deemed to be a proper venue for patent cases against Finisar in an action bearing docket number: 2:13-cv-00178-JRG.

26. On information and belief, II-VI maintains a regular and established place of business where it conducts "production and RD&E operations" that is located in the State of Texas and in this Judicial District.[6]

27. On information and belief, Finisar has maintained a regular and established place of business in this judicial district located at 600 Millennium Drive, Allen, Texas 75013-2791.

[6] *See* https://ii-viincorporated1.box.com/shared/static/pl9676hsdku9yebhdti1w4ipxm67ehmm.pdf.

28. On information and belief, Finisar is the owner of the property at 600 Millennium Drive, Allen, Texas 75013-2791, with an assessed 2020 market value of over $8 Million.

29. On information and belief, Finisar has maintained a regular and established place of business in this judicial district located at 2811 Telecom Pkwy, Richardson, TX 75082.

30. On information and belief, Finisar is the owner of the property at 2811 Telecom Pkwy Richardson, TX 75082, with an assessed 2020 market value of over $300,000.

31. On information and belief, from on or about 2017 to the present, Finisar has maintained and operated a regular and established place of business in this judicial district located at 6800 South, US-75, Sherman, TX 75090 ("The Sherman Office").

32. On information and belief, at least since on or about September 2019 the Defendants have jointly owned and operated The Sherman Office.[7]

33. On information and belief, II-VI takes part in the operation of The Sherman Office as a regular and established business in this Division, either alone, or as part of a joint enterprise with Finisar.

[7] *See* https://ii-viincorporated1.box.com/shared/static/pl9676hsdku9yebhdti1w4ipxm67ehmm.pdf.

34. On information and belief, the Defendants have collectively invested about $160 Million in the Sherman Office location to prepare it for production.[8]

35. On information and belief, The Sherman Office includes approximately 700,000 square feet of space.[9]

36. On information and belief, The Sherman Office is emblazoned with signage evidencing Defendants' operation of a regular and established business at The Sherman Office location:

37. On information and belief, as of 2017, Finisar employed over 530 employees in this judicial district. [10] On information and belief, the number of employees that Finisar employs in this judicial district has increased since 2017.

---

[8] *See* https://www.heralddemocrat.com/news/20191004/amid-announced-layoffs-at-allen-office-finisar-in-sherman-receives-270k-incentive-check.

[9] *See* https://www.heralddemocrat.com/news/20191004/amid-announced-layoffs-at-allen-office-finisar-in-sherman-receives-270k-incentive-check.

[10] *See* https://www.heralddemocrat.com/news/20191004/amid-announced-layoffs-at-allen-office-finisar-in-sherman-receives-270k-incentive-check.

38. On information and belief, Defendants use the Sherman Office as a regular and established business location because this corporate office location is where numerous senior employees are based, including but not limited to employees holding the following titles: Senior Director of Equipment Engineering and Facilities, Senior Systems Administrator, Senior Architect, Senior Process Engineer, Senior Epi Process Engineer, Senior Industrial Engineer, Senior Quality Management Systems Engineer, Facilities Engineer, Process Technician Manager, Fabrication Operations Manager, Facilities Manager, Epi Equipment Technician, Equipment Engineering Technician, Electronic Engineering Technician, Process Engineering Technician, Fabrication Operations Supervisor, Fabricator, Training Coordinator, and Production Operator.

39. On information and belief, publicly-available information lists at least 11 H-1B labor applications that Defendants filed for persons employed in Sherman, Texas since 2018.[11] On information and belief, the workers Defendants employ in the judicial district, including but not limited to those workers holding, or who have held, H-1B visas, are highly specialized and important to the regular operation of Defendants because workers holding an H-1B visa are employed in a specialty occupation that requires a "theoretical and practical application of a body of highly specialized knowledge . . . and attainment of a bachelor's or higher degree in the specific specialty. . . . " *See generally* 8 U.S.C. § 1184.

[11] *See* https://h1bdata.info/index.php?em=finisar&job=&city=SHERMAN&year=All+Years

40. On information and belief, the accused products and services offered by Defendants, including but not limited to the accused Optical Communications Products, that Defendants import, use, make, market, distribute, offer to sell, and sell to consumers throughout the United States and in this judicial district, infringe one or more of the claims of the patents-in-suit, were/are imported by, were/are used by, were/are made by, were/are developed by, were/are marketed by, were/are supported by, or were/are serviced by employees located in the judicial district who work at one or more of Defendants' regular and established business locations in the judicial district, including without limitation, The Sherman Office.

41. On information and belief, Defendants maintain a partnership with an authorized distributor known as Avnet.[12]

42. On information and belief, Defendants have established a partnership with authorized distributors, including but not limited to Avnet in order to supply their customers that are located in the State of Texas and in this judicial district with Defendants' products, including Optical Communications Products.[13]

43. On information and belief, the Defendants maintain a partnership with an authorized distributor known as Arrow Electronics, Inc.[14]

---

[12] *See* https://www.avnet.com/shop/us/m/finisar/.

[13] *See* https://optical.communications.ii-vi.com/how-buy/contact-local-partner/avnet.

[14] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online.

44. On information and belief, the Defendants have established a partnership with authorized distributors, including but not limited to Arrow Electronics, Inc. in order to supply their customers that are located in the State of Texas and in this judicial district with Defendants' products, including Optical Communications Products.[15] On information and belief, Defendants' authorized distributors, including but not limited to Arrow Electronics, Inc. maintain physical locations in the State of Texas and in this judicial district.[16]

45. On information and belief, Defendants rely on their partnerships with authorized distributors, including but not limited to Arrow Electronics, Inc. in order to sell the accused Optical Communications Products to customers located in the State of Texas and in this judicial district.[17]

46. On information and belief, Defendants' authorized distributors supply customers located in this judicial district with the accused Optical Communications Products both through online sales and from offices located in this judicial district.

---

[15] *See* https://www.arrow.com/en/support/contact-support/find-an-arrow-office?country=US_Offices.

[16] https://www.arrow.com/en/support/contact-support/find-an-arrow-office?country=US_Offices

[17] *See e.g.* https://static6.arrow.com/aropdfconversion/5241a00288fc4363f99793aea10fcdd688595491/epon20product20brief209_201120v2.pdf; https://static6.arrow.com/aropdfconversion/3bffbcc421e4ff44074d75dc4044c5aa6bb27eb1/finisar_transceivers_transponders_active_cables_dat.pdf

47. On information and belief, Defendants derive substantial revenue within the judicial district from the offer of infringing products and services, including but not limited to the accused Optical Communications Products. On information and belief, many users of the accused Optical Communications Products who reside in the judicial district regularly use the accused Optical Communications Products while they are present in this judicial district.

BACKGROUND

48. Walter Soto and Alexander Soto are brothers, and the inventors of the claimed subject matter described in the Patents-in-Suit. Walter Soto has a Bachelor's degree in Electrical Engineering and has worked in the telecommunications industry since 1991. Alexander Soto has a Master's degree in Electrical Engineering and has worked in the telecommunications industry since 2000. The Soto brothers are the principals of their company, NextGen Innovations, LLC. To date, the United States Patent and Trademark Office ("USPTO") has granted twenty-seven patents to the Soto brothers, including all of the patents-in-suit.

49. The Sotos founded iPON Systems, Inc. in May of 2005 with the purpose of developing and producing products that reduce the costs associated with the deployment and maintenance of fiber optic networks. The Sotos engaged with venture capitalists and engaged with companies to partner with as part of a business model to become a licensor and technology supplier of lower cost and easy to deploy high performance fiber optic networks.

United States Patent No. 8,238,754

50. On August 7, 2012, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 8,238,754 ("the '754 patent") entitled "System and method for pluggable optical modules for passive optical networks" to inventors Alexander Soto and Walter Soto.

51. The '754 patent is presumed valid under 35 U.S.C. § 282.

52. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '754 Patent. Under the exclusive license, NextGen was granted all substantial rights in the '754 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

53. NextGen has not granted Defendants a license to the rights under the '754 patent.

54. The '754 patent relates to, among other things, optical fiber networks.

55. The claimed invention(s) of the '754 patent sought to solve problems with, and improve upon, existing optical networking systems. For example, the '754 patent states:

> Implementations of the invention may include one or more of the following advantages. A network manager in an optical local area network can provide switching functions of a hub, a switch or a router. A switch configuration in which network managers are aggregated enables a high performance network in a compact apparatus. Connectivity of network managers and network client adapters to existing conventional routers and switches using industry standard form factor optical modules enables a high performance network upgrade with minimal new equipment. A network client switch can support multiple physical layer

> ports without necessarily requiring a Layer-2 MAC or switching elements and the associated routing tables and packet memory. The number of optical transceivers and switching elements used to sustain the same number of computing nodes in a LAN via a point-to-multipoint optically coupled network configuration is reduced, thus saving the majority of expense described above.

See '754 Specification at col. 4, l. 55 - col. 5, l. 4.

56. The '754 patent then states:

> Aspects of an embodiment of the invention includes enabling Media Access Control (MAC), Transmission Convergence Layer (TC-Layer) and Physical Layer (PHY-Layer) functionality via a plurality of discrete electronic components in an optical module, which can interface to existing Physical Media Attachment (PMA) layer devices or to devices via the Media Independent Interface (MII). This enables a consolidation of a plurality of network equipment layers resulting in cost savings.

See '754 Specification at col. 5, ll. 5-13.

57. The invention(s) claimed in the '754 patent solves various technological problems inherent in the then-existing optical network systems to, among other things, (1) reduce capital expenditure cost for network operators, and (2) reduce hardware space and other requirements inherent in prior art optical network systems.

United States Patent No. 8,958,697

58. On February 17, 2015, the USPTO duly and legally issued United States Patent No. 8,958,697 ("the '697 patent") entitled "System and method for optical layer management in optical modules and remote control of optical modules" to inventors Alexander Soto and Walter Soto.

59. The '697 patent is presumed valid under 35 U.S.C. § 282.

60. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '697 Patent. Under the exclusive license, NextGen was granted all substantial rights in the '697 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

61. NextGen has not granted Defendants a license to the rights under the '697 patent.

62. The '697 patent relates to, among other things, optical modules or optical transceivers generally, a system and method for a PON optical transceiver module, and more specifically to a network architecture employing optical modules or optical transceivers.

63. The claimed invention(s) of the '697 patent sought to solve problems with, and improve upon, existing optical networking systems. For example, the '697 patent states:

> Manufacturers of optical networking systems find optical modules attractive, because the highly integrated packaging approach can cut several months of system development and manufacturing time, consume less power and increase port densities over board-level solutions built from discrete components. But with so much functionality in one module, timely and sufficient component supply becomes even more essential for successful system delivery. Multi-source agreement (MSA) developed so systems vendors can feel more confident about getting the components they need and being able to incorporate them without costly and time-consuming system redesigns. MSAs define specification for an optical module such as: physical dimensions or cage hardware, electrical connector interfaces, electrical levels, jitter, power supply, max power draw, EMI containment, optical connector interfaces, and thermal analysis.

See '697 Specification at col. 2, ll. 11-26.

64. The '697 patent then states:

> The invention involves enabling data link layer or Media Access Control (MAC), Transmission Convergence Layer (TC-Layer) and Physical Layer (PHY-Layer) functionality via a one or more of discrete electronic components in an optical transceiver module for a passive optical network (PON), which can interface to existing Physical Media Attachment (PMA) layer devices or to devices via the Media Independent Interface (MII). This enables a consolidation of a one or more network equipment layers resulting in cost savings as well as enabling point-to-multipoint PON communications in previously only point-to-point communications such as Ethernet communications.

See '697 Specification at col. 2, ll. 50-61.

65. The '697 patent then states:

> Some of the advantages of the invention in a local area network are a reduction in the number of switches, a reduction in the power consumed by the network and an increase the span or physical reach of the network to support and connect a given number of clients.
>
> …
>
> The advantage of the invention in a broadband access PON is a reduction in the number of switches, a reduction in the installation time and labor, and a reduction in the power consumed by the network to support and connect a given number of clients.

See '697 Specification at col. 14, ll. 27-31; col. 14, l. 67 – col. 15, l.4

66. The invention(s) claimed in the '697 patent solves various technological problems inherent in the then-existing optical network systems to, among other things, (1) reduce capital and operational expenditure costs for network operators, and (2) reduce hardware space and other requirements inherent in prior art optical network systems.

United States Patent No. 9,887,795

67. On February 6, 2018, the USPTO duly and legally issued United States Patent No. 9,887,795 ("the '795 patent") entitled "System and method for performing high-speed communications over fiber optical networks" to inventors Alexander Soto and Walter Soto.

68. The '795 patent is presumed valid under 35 U.S.C. § 282.

69. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '795 Patent. Under the exclusive license, NextGen was granted all substantial rights in the '795 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

70. NextGen has not granted Defendants a license to the rights under the '795 patent.

71. The '795 patent relates to, among other things, optical fiber communications generally, and more specifically to m-ary modulation in optical communication network.

72. The claimed invention(s) of the '795 patent sought to solve problems with, and improve upon, existing optical networking systems. For example, the '795 patent states:

> The performance of a fiber optic network can be measured by the maximum data throughput rate (or information carrying capacity) and the maximum distance between source and destination achievable (or reach). For Passive Optical Networks (PONs) in particular, additional measures of performance are the maximum number of Optical Networking Units

(ONUs) and/or Optical Networking Terminals (ONTs) possible on a network and the minimum and maximum distance between the Optical Line Terminator (OLT) and an ONU/ONT. These performance metrics are constrained by, among other things, amplitude degradation and temporal distortions as a result of light traveling through an optical fiber.

Amplitude degradation is substantially a function of length or distance between two end points of an optical fiber. Temporal distortion mechanisms include intramodal (chromatic) dispersion and intermodal (modal) dispersion. Intramodal dispersion is the dominant temporal dispersion on Single-mode fiber (SMF), while intermodal dispersion is dominant on Multi-mode fiber (MMF). Both types of temporal distortions are measured as functions of frequency or rate of transmission (also referred as line rate of a communication protocol) over distance in MHz·km. Temporal distortions are greater, hence a constraint on network performance, with increasing frequency transmission.

See '795 Specification at col.1, l. 47 – col. 2, l. 4.

73. The '795 patent then states:

Implementations of the invention may include one or more of the following advantages.

A system is proposed that provides for high-speed communications over fiber optic networks. The system may include the use of the one or more of the following techniques either individually or in combination: m-ary modulation; channel equalization; demultiplexing across multiple fibers, coding and error correction. M-ary modulation allows for increased data throughput for a given line rate due to an increase in the number of bits per symbol transmitted. Channel equalization reduces the effects of temporal distortions allowing for increased reach. Demultiplexing across multiple fibers allows lower lines rates for a given data throughput rate due to the increased aggregate data throughput from the multiplexing. Coding and error correction allows for a greater selection of qualifying optical components that can be used in the network and complements m-ary modulation and channel equalization for overall system performance improvement as measured by transmit energy per bit. These methods when combined (in part or in total) increase the data throughput and reach for fiber optic networks. For PONs in particular, these methods may increase the number of ONU/ONTs and the distance between OLT and ONU/ONT by decreasing the line rate as compared to a conventional communication system of equivalent data throughput.

See '795 Specification at col. 6, ll. 3-26.

74. The invention(s) claimed in the '795 patent solves various technological problems inherent in the then-existing optical network systems to, by among other things, teaching how to (1) increase data throughput due to an increase in the number of bits per symbol transmitted, (2) reduce the effects of temporal distortions allowing for increased reach, (3) allow lower lines rates for a given data throughput rate due to the increased aggregate data throughput, (4) allow for a greater selection of qualifying optical components that can be used in the network and complements m-ary modulation and channel equalization for overall system performance improvement as measured by transmit energy per bit, (5) increase the data throughput and reach for fiber optic networks, and (6) increasing the number of ONU/ONTs and the distance between OLT and ONU/ONT by decreasing the line rate as compared to a conventional communication system of equivalent data throughput.

United States Patent No. 10,263,723

75. On April 16, 2019, the USPTO duly and legally issued United States Patent No. 10,263,723 ("the '723 patent") entitled "System and method for performing high-speed communications over fiber optical networks" to inventors Alexander Soto and Walter Soto.

76. The '723 patent is presumed valid under 35 U.S.C. § 282.

77. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '723 Patent. Under the exclusive license, NextGen was granted all

substantial rights in the '723 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

78. NextGen has not granted Defendants a license to the rights under the '723 patent.

79. The '723 patent relates to, among other things, optical fiber communications generally, and more specifically to m-ary modulation in optical communication network.

80. The specification of the '723 patent is the same as the '795 patent specification, and addresses and solves the problems recited above and described in the '795 patent specification.

United States Patent No. 10,763,958

81. On September 1, 2020, the USPTO duly and legally issued United States Patent No. 10,763,958 ("the '958 patent") entitled "System and method for performing in-service optical network certification" to inventors Alexander Soto and Walter Soto.

82. The '958 patent is presumed valid under 35 U.S.C. § 282.

83. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '958 Patent. Under the exclusive license, NextGen was granted all substantial rights in the '958 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

84. NextGen has not granted Defendants a license to the rights under the '958 patent.

85. The '958 patent relates generally to optical fiber communication networks, and more specifically to the network certification, diagnostic testing, and optical measurement of an optical fiber network.

86. The claimed invention(s) of the '958 patent sought to solve problems with, and improve upon, existing optical networking systems. For example, the '958 patent states:

> Troubleshooting, maintenance, and related administration to support customer's service level agreements (SLA) are a large part of an Optical Fiber Network Operator's operational expenses (OpEx) for optical fiber networks. The labor and material costs for troubleshooting and diagnosing maintenance or service outage problems within an optical fiber network can dominate an Operator's operating budgets and impact customer's SLAs negatively. Operators have deployed redundant networks that have multiple optical fiber links with automatic loss of link detection and switchover capabilities to insure SLAs and other mission critical services are maintained.
>
> Usually when optical fibers are first deployed, highly skilled personnel or technicians with expensive fiber test equipment are assigned the task of ensuring and verifying desired optical fiber plant link budgets are met. This process of fiber plant deployment occurs before service is enabled to customers or during out-of-service periods, which are closely monitored and sometimes restricted due to customer's SLA constraints. All Long Haul, Metro and Access optical fiber networks are similarly deployed in this manner.
>
> Once a customer or subscriber service is enabled, Operators are responsible for the troubleshooting, maintenance and servicing required by the optical fiber links as they degrade over time. This places extra cost burden on the fiber plants to provide field testability. Typically this field testability requires extra splitters at ends of optical fiber links to allow the connection of optical test equipment. Each additional splitter not only means more capital expense (CapEx) is incurred by the Operator but it

> also takes away precious dBs from the optical link budget. Operators greatly value their fiber plant optical link budgets where reach and other optical link margin related policies are used to differentiate its service offerings at an optical fiber link level. Operators thus use non-network affecting optical test methods like Optical Time Domain Reflectometry (OTDR) using specialized hand-held devices which use maintenance wavelengths, or optical supervision channels, such as 1625 nm wavelength that is separate and independent from all other wavelengths used to carry customer service network data communications. This is a capital and labor intensive method for routine fiber maintenance checks while ensuring service outages do not occur.
>
> Therefore performing optical fiber network certification or a troubleshooting procedure or maintenance procedure without the requirement for manual troubleshooting, additional maintenance splitters, and without the requirement for a separate and dedicated maintenance wavelength is highly desirable to Operators due to realized OpEx, CapEx and optical link budget savings.

See '958 Specification at col. 1, l. 61 – col. 2, l. 43.

87. The invention(s) claimed in the '958 patent solves various technological problems inherent in the then-existing optical network systems to, among other things, (1) reduce Optical Fiber Network Operator's operational expenses (OpEx) for optical fiber networks, (2) reduce the need for redundancy in optical fiber networks, (3) reduce capital expense (CapEx) incurred by optical fiber network operator, (4) more efficiently allocating the optical link budget of optical network systems, (5) reducing the need for manual troubleshooting, additional maintenance splitters, and the requirement for a separate and dedicated maintenance wavelength during optical fiber network certification or a troubleshooting procedure or maintenance procedure.

United States Patent No. 10,771,181

88. On September 8, 2020, the USPTO duly and legally issued United States Patent No. 10,771,181 ("the '181 patent") entitled "System and method for performing high-speed communications over fiber optical networks" to inventors Alexander Soto and Walter Soto.

89. The '181 patent is presumed valid under 35 U.S.C. § 282.

90. On November 29, 2018, the Sotos each granted NextGen an exclusive license to the '181 Patent. Under the exclusive license, NextGen was granted all substantial rights in the '181 Patent until its expiration date including, without limitation, the exclusive right to sublicense, sue or chose not to sue for infringement and collect all past, present and future damages.

91. NextGen has not granted Defendants a license to the rights under the '181 patent.

92. The '181 patent relates to optical fiber communications generally, and more specifically to m-ary modulation in optical communication networks.

93. The specification of the '181 patent is the same as the '795 patent specification, and addresses and solves the problems recited above and described in the '181 patent specification.

DEFENDANTS' WILLFUL PATENT INFRINGEMENT

94. On information and belief, Defendants developed, made, imported, sold, and/or offered to sell the accused products and services despite having knowledge of one or more of the patents-at-issue.

95. On information and belief, Defendants developed, made, imported, sold, and/or offered to sell the accused products despite knowing that one or more of those activities constituted infringement of one or more of the patents-at-issue.

96. In or about December 2006, Walter Soto contacted Finisar in order to solicit engagements with decision-makers at Finisar about a joint business venture. The initial correspondence between Walter Soto and Finisar led to an in-person meeting between Walter Soto and senior Finisar employees in or about January 2007 (hereinafter "The First In-Person Meeting").

97. The First In-Person Meeting between Walter Soto and Finisar employees was attended by senior Finisar employees including then-Director of Strategic Marketing, Mr. Jan Meise; then-Director of Product Marketing and current Chief Strategy Officer, Mr. Rafik Ward; and then Senior Product Line Manager, Ms. Ley Mee Hii.

98. During The First In-Person Meeting, Walter Soto explained the benefits of a proposed joint business venture with Finisar that was premised in part on NextGen's then patent-pending technology. During The First In-Person Meeting, Walter Soto further offered to organize meetings with Finisar's potential customers to explore the market interest in such a joint business venture. Walter Soto further presented a business proposal for leveraging Finisar's existing optical components to expand into new markets based on the technology of one or more of the patents-in-suit. The business proposal that was presented at The First In-Person Meeting envisioned a collaboration between Finisar and iPON Systems, Inc., which was then co-owned and

co-directed by Walter and Alex Soto. One of the purposes of the proposed collaboration between Finisar and iPON Systems, Inc., included Finisar's assistance in securing funding needed for the development of products based on one or more of the patents-in-suit that would be ultimately be commercialized by Finisar.

99. During The First In-Person Meeting and subsequently, Senior Finisar employees, including Mr. Jan Meise and Mr. Anders Olsson, then-Senior Vice President of Engineering, made multiple inquiries to Walter Soto relating to the details of the technical details and breadth of the claimed inventions, and the inventorship, novelty, and defensibility of the then-pending patent applications, which ultimately led to the issuance of the patents-in-suit.

100. During The First In-Person Meeting, Mr. Jan Meise expressed a willingness to participate in VC discussions in support of a joint business venture between Finisar and iPON Systems, Inc. This sentiment was later repeated during a subsequent meeting between Walter Soto and Finisar by Mr. Todd Swanson, then-Vice President of Sales and Marketing and current CEO and COO of Finisar.

101. The response from Finisar's decision makers at The First In-Person Meeting was very positive and resulted in the mutual acceptance of NDA agreements on or about January 3, 2007.

102. Following The First In-Person Meeting, Finisar wanted to explore the viability of a joint business venture to develop and market the products that were discussed at The First In-Person Meeting. Finisar took affirmative steps in order to realize the proposed joint business venture discussed at The First In-Person Meeting,

including but not limited to the affirmative step of introducing Walter Soto to Ms. Barbara Grant, a partner at American River Ventures, for the purpose of assisting iPON Systems, Inc. in relation to a request for funding for the joint business venture.

103. In or about March 2007, as a part of ongoing discussions relating to the proposed joint business venture, Walter Soto informed Mr. Todd Swanson of the time and money that iPON Systems, Inc. had spent in growing their patent portfolio. In response, Mr. Todd Swanson indicated that he was pleased about iPON Systems, Inc.'s patent prosecution efforts and said that those efforts were important to relay internally at Finisar as he and other senior Finisar employees made their internal case for a joint proposed business venture with iPON Systems.

104. On information and belief, Mr. Todd Swanson and/or one or more senior Finisar employees detailed the internal case for a joint proposed business venture with iPON Systems, Inc. based at least in part on one or more of the patents-in-suit and/or one or more of the patent applications that eventually issued as one or more of the patents-in-suit.

105. On information and belief, Finisar has obtained copies of one or more of the patents-in-suit and/or one or more of the patent applications that eventually issued as one or more of the patents-in-suit.

106. On information and belief, Finisar relied on one or more of the patent applications that eventually issued as one or more of the patent-in-suit as a part of its internal evaluations for entering into a joint business venture with iPON Systems, Inc.

107. Following The First In-Person Meeting, Finisar and Walter Soto began jointly drafting a MOU letter to frame Finisar and iPON Systems, Inc.'s mutual business objectives. Mr. Todd Swanson, Mr. Kurt Adzema, then-Vice President of Legal Counsel, and former Vice President for Strategy and Corporate Development and Chief Financial Officer, and Mr. Anders Olsson were involved in the drafting of the MOU letter.

108. On or about March 14, 2007, Mr. Todd Swanson, acting in his capacity on behalf of Finisar, executed a memorandum of understanding letter between Finisar and iPON Systems, Inc. ("2007 MOU Letter", attached hereto as Exhibit "A").

109. By executing the 2007 MOU Letter, Finisar acknowledged that it understood and agreed that the purpose of the proposed "business venture between Finisar and iPON Systems [was] to develop, manufacture, test, market and sell the world's first GPON optical transceiver and dongle products that [would] offer new levels of intelligence and capabilities that [were] [then] unavailable in the market place."

110. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that prior to the signing of the 2007 MOU Letter, GPON Optical Transceivers and Dongle Products were not yet commercially available at that time.

111. On information and belief, as late as sometime in 2012, Finisar continued to believe that GPON Optical Transceivers and Dongle Products were not yet commercially available.[18]

[18] *See* https://www.youtube.com/watch?v=3ELISum9mSI.

112. On information and belief, GPON Optical Transceivers and Dongle Products were not commercially available prior to 2012.[19]

113. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that there was a "business need for new products like those created by th[e] proposed collaborative venture between Finisar and iPON Systems."

114. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that the business need for new products like those to be created by the proposed collaborative venture between Finisar and iPON Systems, potentially represented "a multi-billion dollar problem for operators" that could be solved by one or more of the innovations disclosed in the patents-in-suit.

115. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that to achieve the objectives of the joint business venture, "the proposed business venture would create sustainable and defendable product differentiation that takes advantage of iPON's patent pending technology."

116. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s, Alexander Soto's, and/or Walter Soto's then-pending patent applications related to, among other things, OLT SFP Transceiver products.

117. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s, Alexander Soto's, and/or Walter Soto's then-

[19] *See* https://www.youtube.com/watch?v=3ELISum9mSI.

pending patent applications related to, among other things, the ability to reuse Edge-Router's SFP transceiver socket to enable operators to convert point-to-point optical links into point-to-multipoint links.

118. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s, Alexander Soto's, and/or Walter Soto's then-pending patent applications related to, among other things, optical network physical layer diagnostics.

119. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s, Alexander Soto's, and/or Walter Soto's then-pending patent applications related to, among other things, "the ability to reuse an optical transceiver's wavelengths to perform in-service fiber diagnostics to provide operators with the capability of performing optical layer supervision of their optical distribution network (ODN) without field technicians involvement."

120. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s, Alexander Soto's, and/or Walter Soto's then-pending patent applications related to, among other things, the "three client ONU Dongles (MoCA-Dongle, DSL-Dongle & Ethernet-Dongle) and one head-end OLT SFP transceiver (OLT-Edge) products" mentioned in the 2007 MOU Letter.

121. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that "iPON's unique System's technologies will be added to Finisar's unique OLT and ONU subsystems or third-party optical subassemblies to create the world's first products specifically designed to reduce operator's labor expenses to deploy, install

and maintain fiber-based broadband Access services for triple play (voice, data & video)."

122. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s intellectual property rights would be required for the purposes of marketing and selling the ONU Dongles and OLT SFP transceiver products mentioned in the 2007 MOU Letter.

123. By executing the 2007 MOU Letter, Finisar acknowledged that it understood that iPON Systems, Inc.'s intellectual property rights would be required for the purposes of marketing and selling the products detailed in Appendixes A-D to the 2007 MOU Letter.

124. By executing the 2007 MOU Letter, Finisar acknowledged its intention to meet with representatives from Verizon and AT&T responsible for GPON deployments to confirm their understanding of the value proposition added by the products proposed in the 2007 MOU Letter.

125. By executing the 2007 MOU Letter, Finisar acknowledged its intention to meet with representatives from Alcatel's IPD group responsible for Edge Router's support for GPON based Ethernet services to confirm the value added by the OLT-Edge SFP product proposed in the 2007 MOU Letter.

126. By executing the 2007 MOU Letter Finisar acknowledged an intent to proceed with the proposed collaborative business venture, subject to mutually agreeable terms and conditions.

127. Attached to the 2007 MOU Letter, were four Appendixes, containing preliminary draft specifications for three client ONU Dongles (MoCA-Dongle, DSL-Dongle & Ethernet-Dongle) and one head-end OLT SFP transceiver (OLT-Edge) products. Mr. Walter Soto contributed to the drafting of the preliminary draft specifications by confirming technical details relating to iPON Systems, Inc.'s intellectual property. The preliminary draft specifications specifically included technology that is claimed by the patents-in-suit.

128. Following The First In-Person Meeting, Mr. Anders Olsson inquired about the possibility of Finisar licensing patent rights related to the proposed joint business venture from iPON Systems, Inc.

129. After The First In-Person Meeting, Finisar and Walter Soto jointly began preparing joint presentation materials for meetings with the potential customers of the products that were to be jointly developed by Finisar and iPON Systems, Inc. based in-part on the inventions of one or more of the patents in suit.

130. Following The First In-Person meeting, Walter Soto continued to have discussions with Mr. Anders Olsson, relating to the joint development of Finisar and iPON Systems, Inc.'s presentation materials for meetings with Finisar's potential customers.

131. The jointly prepared presentation materials were shown to multiple potential customers of the products referenced in the 2007 MOU Letter.

132. The jointly prepared presentation materials disclosed that the proposed products and services to be sold by Finisar were based in-part on iPON Systems, Inc.'s patent pending technologies.

133. Throughout 2007 and 2008, Walter Soto and Finisar co-presented their jointly created meeting materials relating to the innovations of one or more of the patents-in-suit to Finisar's potential customers.

134. In some instances, these presentations led to follow-up meetings with Finisar's potential customers based on the potential customer's interest in the proposed products that were based in-part on the inventions of one or more of the patents-in-suit.

135. For example, in or about March 2007, Walter Soto and Finisar jointly presented a networking solution based on one or more of the patents-in-suit to AT&T. During the course of the joint presentation to AT&T, it was represented to AT&T that the proposed technological solutions were based on iPON Systems, Inc.'s patent pending technology. More specifically, at the March 2007 meeting with AT&T, attended by Ms. Ley Mee Hii, in her capacity as Finisar's Product Line Manager, jointly prepared presentation materials referenced iPON Systems, Inc.'s patent-pending expansion port, which "supports multi-tenant dwelling service deployments of a unique residential gateway per tenant by use of Snap-ON DSL-Dongle Extension."

136. In or about August 2008, Walter Soto met with Mr. Todd Swanson, Mr. Rafik Ward, and Ms. Ley Mee Hii to further discuss the potential joint business venture between Finisar and iPON Systems, Inc. During the meeting, Walter Soto discussed

various pending patent applications, which resulted in one or more of the patents-in-suit.

137. In or about September 2008, during a meeting concerning iPON Systems, Inc.'s joint business venture relating to the proposed Optical Time-Domain Reflectometer ("OTDR") implementation with Ms. Ley Mee Hii and Mr. Bernd Huebner, then-Finisar's Director of Optical Sub-Assembly, and Finisar's former Vice President of Optical Sub-Assembly, Walter Soto provided Finisar notice that one of the patent applications that he and Mr. Alexander Soto had filed had issued.

138. In or about late 2008 and/or the beginning of 2009, despite multiple customer meetings that confirmed an interest in the products, which were to be jointly developed by Finisar and iPON Systems, Inc., Finisar's years-long positivity towards a partnership with iPON Systems, Inc. started to shift. On or about that time, Finisar delayed meetings with Walter Soto and began slipping on their joint business venture development commitments.

139. On or about the second quarter of 2009, Finisar began to stop responding to Walter Soto's emails and voice messages. At this time, Finisar did not attempt to explain its change in course to Walter Soto.

140. On information and belief, Defendants have at all times since 2007 to the present had and still have one or more patent review boards, whose responsibilities include performing freedom-to-operate analyses related to pending and/or issued patents.

141. On information and belief, at least as early as 2005 and at all times subsequent to 2005 to the present, Defendants had and still have significant operational experience relating to patent litigation and patent prosecution. For example, on information and belief, Finisar was recognized by IEEE Spectrum magazine as ranking first in "Patent Power" for the telecommunications industry for 2005.[20]

142. On information and belief, some or all of the infringing activities set forth in this Complaint, including but not limited to the direct and/or induced making, use, importation, sale, and offers to sell the accused products arose from Defendants' culpable, intentional, and deliberate disregard for the property rights set forth in the patents-in-suit, and therefore constitute acts of willful infringement. *See* 35 USC § 284.

143. On information and belief, Defendants prevented the patentees from offering a license to other manufacturing companies. On information and belief, and beginning no later than the filing of this Complaint, Defendants have made, used, imported, sold and/or offered to sell their accused products with full knowledge that their accused products and related activities infringed and infringe one or more of the patents-in-suit.

144. On information and belief, and beginning no later than the filing of this Complaint, Defendants have had full knowledge of their infringement of the patents-in-suit and continue to make, use, import, sell, and/or offer to sell, and to induce others to

[20] *See* https://evertiq.com/news/6098.

make, use, import, sell, and/or offer to sell the accused products with a reckless disregard for Plaintiff's patent rights.

CLAIMS FOR RELIEF

Count I – Infringement of United States Patent No. 8,238,754

145. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

146. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

147. On information and belief, Defendants make, use, import, sell, and/or offer to sell the accused Optical Communications Products. One or more of the accused Optical Communications Products, as well as the hardware and software components comprising the Optical Communications Products that enables the Optical Communications Products to operate, infringes, literally and/or under the doctrine of equivalents, at least claim 1 of the '754 patent.

148. On information and belief, one or more of the accused Optical Communications Products is a network client optical transceiver module for a passive optical network, as demonstrated by the following images, video, and links:

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

149. On information and belief, one or more of the accused Optical Communications Products is configured to serve as an optical transceiver module for a passive optical network having one or more passive optical splitters for coupling the network client optical transceiver module over one or more optical fibers to the head end of the passive optical network as demonstrated by the images, video, and links below:

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

150. On information and belief, one or more of the accused Optical Communications Products has a pluggable form factor and are configured to removably couple to an optical module port of a switch or router as demonstrated by the images, video, and links below:

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

VI. Pin Descriptions

Pin	Symbol	Name/Description
1	VeeT	Transmitter Ground (Common with Receiver Ground)
2	TX Fault	Transmitter Fault.
3	TX Disable	Transmitter Disable.
4	MOD-DEF2	Module Definition 2.
5	MOD-DEF1	Module Definition 1.
6	MOD_DEF0	Module Definition 0.
7	Rate Select	Not Connected
8	LOS	LOS of Signal
9	VeeR	Receiver Ground (Common with Transmitter Ground)
10	VeeR	Receiver Ground (Common with Transmitter Ground)
11	VeeR	Receiver Ground (Common with Transmitter Ground)
12	RD-	Receiver Inverted DATA out.
13	RD+	Receiver Non-inverted DATA out.
14	VeeR	Receiver Ground (Common with Transmitter Ground)
15	VccR	Receiver Power Supply
16	VccT	Transmitter Power Supply
17	VeeT	Transmitter Ground (Common with Receiver Ground)
18	TD+	Transmitter Non-Inverted DATA in.
19	TD-	Transmitter Inverted DATA in.
20	VeeT	Transmitter Ground (Common with Receiver Ground)

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

151. On information and belief, one or more of the accused Optical Communications Products includes optical ports configured to optically couple to one or more optical fibers of the passive optical network having one or more passive optical splitters as demonstrated by the images, video, and links below:

- Single fiber Bi-Directional SC Receptacle

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

152. On information and belief, one or more of the accused Optical Communications Products comprises a bi-directional optical interface block optically coupled to the optical port and configured to perform optical-to-electrical and electrical-to-optical signal conversion as demonstrated by the images, video, and links below:

IV. Optical Characteristics (Top, VCC = 3.15 to 3.45 Volts)

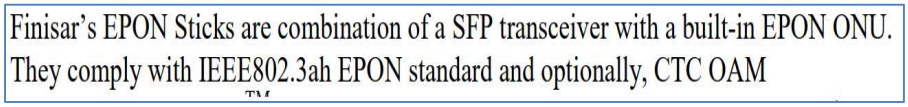
Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Cross-talk 1310nm Tx to 1490nm Rx				-40	dB	
Transmitter						
Data Rate (Continuous Wave)	BR		1250		Mb/s	
Center Wavelength (CW)	λ	1260	1310	1360	nm	PX10
	λ	1290	1310	1330	nm	PX20+
SMSR		30			dB	PX20+
Output Optical Power	P_{OUT}	-1		4	dBm	PX10; Note 3
		0		4		PX20+; Note 3
Burst turn on/off time	Ton/Toff			32	ns	
Optical Return Loss Tolerance				15	dB	
Average launch power of OFF Tx	P_{OFF}			-45	dBm	Note 3
Transmitter eye		Compliant with IEEE802.3ah				Note 4
Optical Extinction Ratio	ER	9			dB	
Receiver						
Data Rate	BR		1250		Mb/s	
Optical Center Wavelength	λ_C	1480		1500	nm	
Rx Sensitivity	R_{SENS}			-25	dBm	PX10; Note 5
				-27		PX20+; Note 5
Receiver Overload	P_{OVR}	-3			dBm	Note 5
Receiver Reflectance				-12	dB	
LOS Asserted	-	-40			dBm	
LOS De-Asserted	-			-25	dBm	PX10
	-			-27		PX20+
LOS Hysteresis	-		2		dB	

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

153. On information and belief, one or more of the accused Optical Communications Products comprises a control module electrically coupled to the bi-directional optical interface block and configured to receive from the head end of the passive optical network data communications representing one or more start times for transmitting data communications to the head end of the passive optical network and configured to transmit the data communications to the head end of the passive optical network responsive to the start times as demonstrated by the images, video, and links below:



See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

154. On information and belief, one or more of the accused Optical Communications Products comprises an electrical network interface port electrically coupled to the control module and for electrically coupling into the optical module port of the switch or router and for communicating with the switch or router as demonstrated by the image, video, and links below:

VI. Pin Descriptions

Pin	Symbol	Name/Description
1	VeeT	Transmitter Ground (Common with Receiver Ground)
2	TX Fault	Transmitter Fault.
3	TX Disable	Transmitter Disable.
4	MOD-DEF2	Module Definition 2.
5	MOD-DEF1	Module Definition 1.
6	MOD_DEF0	Module Definition 0.
7	Rate Select	Not Connected
8	LOS	LOS of Signal
9	VeeR	Receiver Ground (Common with Transmitter Ground)
10	VeeR	Receiver Ground (Common with Transmitter Ground)
11	VeeR	Receiver Ground (Common with Transmitter Ground)
12	RD-	Receiver Inverted DATA out.
13	RD+	Receiver Non-inverted DATA out.
14	VeeR	Receiver Ground (Common with Transmitter Ground)
15	VccR	Receiver Power Supply
16	VccT	Transmitter Power Supply
17	VeeT	Transmitter Ground (Common with Receiver Ground)
18	TD+	Transmitter Non-Inverted DATA in.
19	TD-	Transmitter Inverted DATA in.
20	VeeT	Transmitter Ground (Common with Receiver Ground)

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

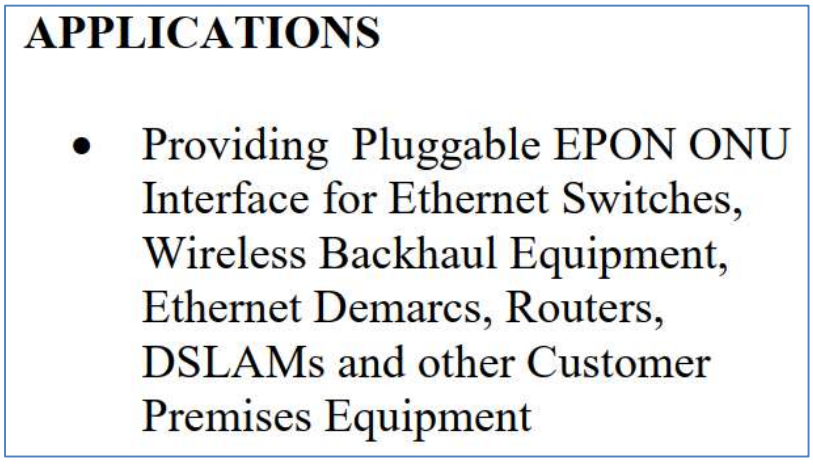
155. On information and belief, one or more of the accused Optical Communications Products is configured to optically communicate with the head end of the passive optical network responsive to start times for transmitting data communications to the head end of the passive optical network as demonstrated by the images, video, and links below:

- Compatibility with EPON OLTs and CPE Equipment

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

156. On information and belief, one or more of the accused Optical Communications Products is configured to removably couple to the optical module port of the switch or router and electrically communicate with the switch or router as demonstrated by the images, video, and links below:



See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

157. On information and belief, Defendants directly infringe at least claims 1, 18, 32, and 49 of the '754 patent, and are in violation of 35 U.S.C. § 271(a) by using, selling and offering to sell one or more of the accused Optical Communications Products.

158. On information and belief, Defendants have been on notice of the '754 patent at least as early as the filing and service of the Complaint in this action.

159. On information and belief, at least since its post-filing knowledge of the '754 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or

more claims of the '754 patent, including by, without limitation, instructing and encouraging their domestic customers, resellers, distributors, and other partners to make, use, import, sell, and/or offer to sell one or more of the accused Optical Communications Products through their product specifications,[21] online advertisements,[22] promotional materials,[23] and videos.[24]

160. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to make, use, import, sell, and/or offer to sell one or more of the accused Optical Communications Products including, without limitation, through Defendants' websites[25], which provide access to, and support for, using one or more of the accused Optical Communications Products.

---

[21] *See e.g.* https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

[22] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers/ften2x15p1xun.

[23] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[24] *See e.g.* https://www.youtube.com/watch?v=3ELISum9mSI.

[25] *See* https://www.finisar.com/; https://www.ii-vi.com.

161. On information and belief, Defendants' domestic customers and authorized distributors[26], including but not limited to Arrow and Avnet, directly infringe at least claims 1, 18, 32, and 49 of the '754 patent through their use, importation, sales, and/or offers for sale of one or more of the accused Optical Communications Products.

162. On information and belief, Defendants have violated 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '754 patent, indirectly infringing and continue to indirectly infringe at least claims 1, 18, 32, and 49 of the '754 patent by knowingly and specifically inducing infringement by others (including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

163. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and will continue to suffer irreparable harm and damages as a result of Defendants' infringement.

Count II – Infringement of United States Patent No. 8,958,697

164. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

165. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

[26] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

166. On information and belief, Defendants make, use, import, sell, and/or offer to sell the accused Optical Communications Products. On information and belief, one or more of the accused Optical Communications Products, as well as the hardware and software components comprising the accused products that enables the accused products to operate, infringes, literally and/or under the doctrine of equivalents, at least claim 1 of the '697 patent.

167. On information and belief, one or more of the accused Optical Communications Products is an integrated pluggable Passive Optical Network (PON) optical transceiver module adapted to process and perform PON data link layer communications and functions and configured to removably couple to an optical module port of a switch, router or media adapter and adapted to communicate with the switch, router or media adapter using an Ethernet protocol as demonstrated by the images below:

See https://www.youtube.com/watch?v=3ELISum9mSI.

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

X. Ordering Information

Part Number	Link Budget	Operating Case Temperature	EPON OAM
FTEN2115P1NUN	PX10	-20 ~ 70 °C	CTC
FTEN2115P1NUN-BC	PX10	-30 ~ 85 °C	CTC
FTEN2217P1CUN	PX20+	-20 ~ 70 °C	DPoE Compatible
FTEN2217P1CUN-BC	PX20+	-30 ~ 85 °C	DPoE Compatible

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

168. On information and belief, one or more of the accused Optical Communications Products comprises a PON protocol processor for managing the transmission and reception of data link layer optical network communications including performing one or more of the following functions comprising: encapsulating user data into data link layer frames; frame synchronization; forward error correction; physical layer addressing; data packet queuing, and operation administration and maintenance (OAM) message processing as is demonstrated at least by the following image.

> Finisar's EPON Sticks are combination of a SFP transceiver with a built-in EPON ONU. They comply with IEEE802.3ah EPON standard and optionally, CTC OAM specifications, or DPoE™ specifications. Digital diagnostics functions are available via the 2-wire serial bus specified in the SFP MSA.

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

169. On information and belief, one or more of the accused Optical Communications Products comprises an optical fiber interface port disposed to removably couple an optical fiber to the PON optical transceiver module as demonstrated by the images, video, and links below.

- Single fiber Bi-Directional SC Receptacle

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

170. On information and belief, one or more of the accused Optical Communications Products comprises an electrical network interface port disposed for electrically coupling the PON optical transceiver module in a pluggable manner to a switch, router or media converter and for receiving and transmitting Ethernet electrical signals to the switch, router or media converter as demonstrated by the images, video, and links below:

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

VI. Pin Descriptions

Pin	Symbol	Name/Description
1	VeeT	Transmitter Ground (Common with Receiver Ground)
2	TX Fault	Transmitter Fault.
3	TX Disable	Transmitter Disable.
4	MOD-DEF2	Module Definition 2.
5	MOD-DEF1	Module Definition 1.
6	MOD_DEF0	Module Definition 0.
7	Rate Select	Not Connected
8	LOS	LOS of Signal
9	VeeR	Receiver Ground (Common with Transmitter Ground)
10	VeeR	Receiver Ground (Common with Transmitter Ground)
11	VeeR	Receiver Ground (Common with Transmitter Ground)
12	RD-	Receiver Inverted DATA out.
13	RD+	Receiver Non-inverted DATA out.
14	VeeR	Receiver Ground (Common with Transmitter Ground)
15	VccR	Receiver Power Supply
16	VccT	Transmitter Power Supply
17	VeeT	Transmitter Ground (Common with Receiver Ground)
18	TD+	Transmitter Non-Inverted DATA in.
19	TD-	Transmitter Inverted DATA in.
20	VeeT	Transmitter Ground (Common with Receiver Ground)

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

171. On information and belief, one or more of the accused Optical Communications Products comprises a bidirectional optical assembly optically coupled to the optical fiber interface port and electrically coupled to the PON protocol processor and disposed for transmitting optical signals through the optical fiber interface port responsive to electrical signals received from the PON protocol processor and disposed to conveying an electrical communication signal to the PON protocol processor responsive to receiving an optical communication signal through the optical fiber interface port as demonstrated by the images, video, and links below:

Finisar

Product Specification

EPON Stick (EPON SFP ONU)

FTEN2115P1NUN; FTEN2x17P1CUN; FTEN2115P1NUN-BC and FTEN2x17P1CUN-BC;

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

IV. Optical Characteristics (Top, VCC = 3.15 to 3.45 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Cross-talk 1310nm Tx to 1490nm Rx				-40	dB	
Transmitter						
Data Rate (Continuous Wave)	BR		1250		Mb/s	
Center Wavelength (CW)	λ	1260	1310	1360	nm	PX10
	λ	1290	1310	1330	nm	PX20+
SMSR		30			dB	PX20+
Output Optical Power	P_{OUT}	-1		4	dBm	PX10; Note 3
		0		4		PX20+; Note 3
Burst turn on/off time	Ton/Toff			32	ns	
Optical Return Loss Tolerance				15	dB	
Average launch power of OFF Tx	P_{OFF}			-45	dBm	Note 3
Transmitter eye		Compliant with IEEE802.3ah				Note 4
Optical Extinction Ratio	ER	9			dB	
Receiver						
Data Rate	BR		1250		Mb/s	
Optical Center Wavelength	λ_C	1480		1500	nm	
Rx Sensitivity	R_{SENS}			-25	dBm	PX10; Note 5
				-27		PX20+; Note 5
Receiver Overload	P_{OVR}	-3			dBm	Note 5
Receiver Reflectance				-12	dB	
LOS Asserted	-	-40			dBm	
LOS De-Asserted	-			-25	dBm	PX10
	-			-27		PX20+
LOS Hysteresis	-		2		dB	

See

https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

172. On information and belief, one or more of the accused Optical Communications Products comprises an Ethernet MAC electrically coupled to the PON protocol processor and electrically coupled to the electrical network interface, the Ethernet MAC disposed to enable communications between the PON protocol processor and the switch, router or media converter using an Ethernet protocol as demonstrated by the image and link below:

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

Finisar's EPON Sticks are combination of a SFP transceiver with a built-in EPON ONU. They comply with IEEE802.3ah EPON standard and optionally, CTC OAM specifications, or DPoE™ specifications. Digital diagnostics functions are available via the 2-wire serial bus specified in the SFP MSA.

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_finisar_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

173. On information and belief, one or more of the accused Optical Communications Products is disposed to manage the PON data link layer optical network data communications, and communicate with a switch, router or media

converter using an Ethernet protocol as demonstrated by the images, video, and links below:

PRODUCT FEATURES

- EPON ONU in MSA SFP Footprint
- Compliance with IEEE802.3ah[1]
- Optional CTC OAM Support, or DPoE™ Support
- Built-in Digital Diagnostics Functions
- Single fiber Bi-Directional SC Receptacle
- Compatibility with EPON OLTs and CPE Equipment

APPLICATIONS

- Providing Pluggable EPON ONU Interface for Ethernet Switches, Wireless Backhaul Equipment, Ethernet Demarcs, Routers, DSLAMs and other Customer Premises Equipment

Finisar's EPON Sticks are combination of a SFP transceiver with a built-in EPON ONU. They comply with IEEE802.3ah EPON standard and optionally, CTC OAM specifications, or DPoE™ specifications. Digital diagnostics functions are available via the 2-wire serial bus specified in the SFP MSA.

See https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

See https://www.youtube.com/watch?v=3ELISum9mSI.

174. On information and belief, Defendants directly infringe at least claims 1 and 15 of the '697 patent, and are in violation of 35 U.S.C. § 271(a) by making, using, importing, selling, and/or offering to sell one or more of the accused Optical Communications Products.

175. On information and belief, Defendants have been on notice of the '697 patent at least as early as the filing and service of the Complaint in this action.

176. On information and belief, at least since its post-filing knowledge of the '697 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or more claims of the '697 patent, including by, without limitation, instructing and encouraging their domestic customers, resellers, distributors, and other partners to use,

import, sell, and/or offer to sell one or more of the accused Optical Communications Products through its product specifications,[27] online advertisements,[28] promotional materials,[29] and videos.[30]

177. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to use, import, sell, and/or offer to sell the accused Optical Communications Products including, without limitation, through Defendants websites,[31] which provide access to, and support for, using the accused Optical Communications Products.

178. On information and belief, Defendants' domestic customers and authorized distributors,[32] including but not limited to Arrow and Avnet, directly infringe at least claims 1 and 15 of the '697 patent through their use, importation, sales, and/or offers for sale of one or more of the accused Optical Communications Products.

---

[27] *See e.g.* https://www.finisar.com/sites/default/files/downloads/finisar_ften2115p1nun_ften2x17p1cun_ften2115p1nun-bc_ften2x17p1cun-bc_epon_stick_productspecrevg1.pdf

[28] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers/ften2x15p1xun.

[29] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[30] *See e.g.* https://www.youtube.com/watch?v=3ELISum9mSI.

[31] *See* https://www.finisar.com/; https://www.ii-vi.com.

[32] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

179. On information and belief, Defendants are in violation of 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '697 patent, indirectly infringing and continue to indirectly infringe at least claims 1 and 15 of the '697 patent by knowingly and specifically inducing infringement by others (including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

180. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and will continue to suffer irreparable harm and damages as a result of Defendants' infringement.

Count III – Infringement of United States Patent No. 9,887,795

181. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

182. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

183. On information and belief, Defendants make, use, import, sell, and/or offer to sell the accused Optical Communications Products. One or more of the accused Optical Communications Products, as well as the hardware and software components comprising the accused Optical Communications Products that enables the accused Optical Communications Products to operate, infringes, literally and/or under the doctrine of equivalents, at least claim 1 of the '795 patent.

184. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module as demonstrated by the following images and links below:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

- Hot-pluggable CFP8 form factor
- Supports 425 Gb/s aggregate bit rate
- Power dissipation <16W
- RoHS compliant
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface
- Commercial case temperature range: 0°C to 70°C

See https://optical.communications.ii-vi.com/node/3756.

185. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising receiving a first electrical binary data signal through a system interface of the pluggable optical transceiver module, as demonstrated by the following images and links:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

- Hot-pluggable CFP8 form factor
- Supports 425 Gb/s aggregate bit rate
- Power dissipation <16W
- RoHS compliant
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface
- Commercial case temperature range: 0°C to 70°C

See https://optical.communications.ii-vi.com/node/3756.

186. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising converting the first electrical binary data signal in the pluggable optical transceiver module to a first electrical m-ary modulation signal, as demonstrated by the following images and links:

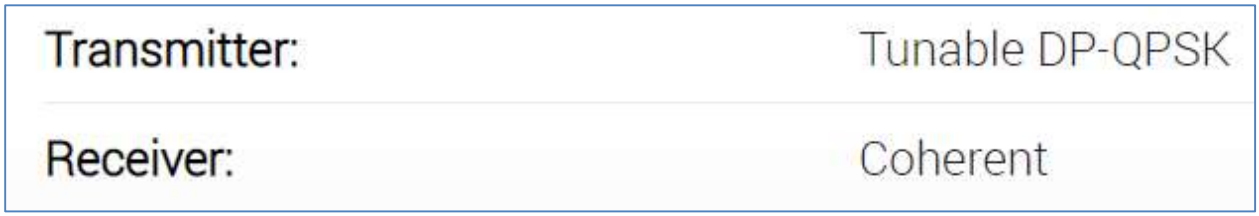
Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

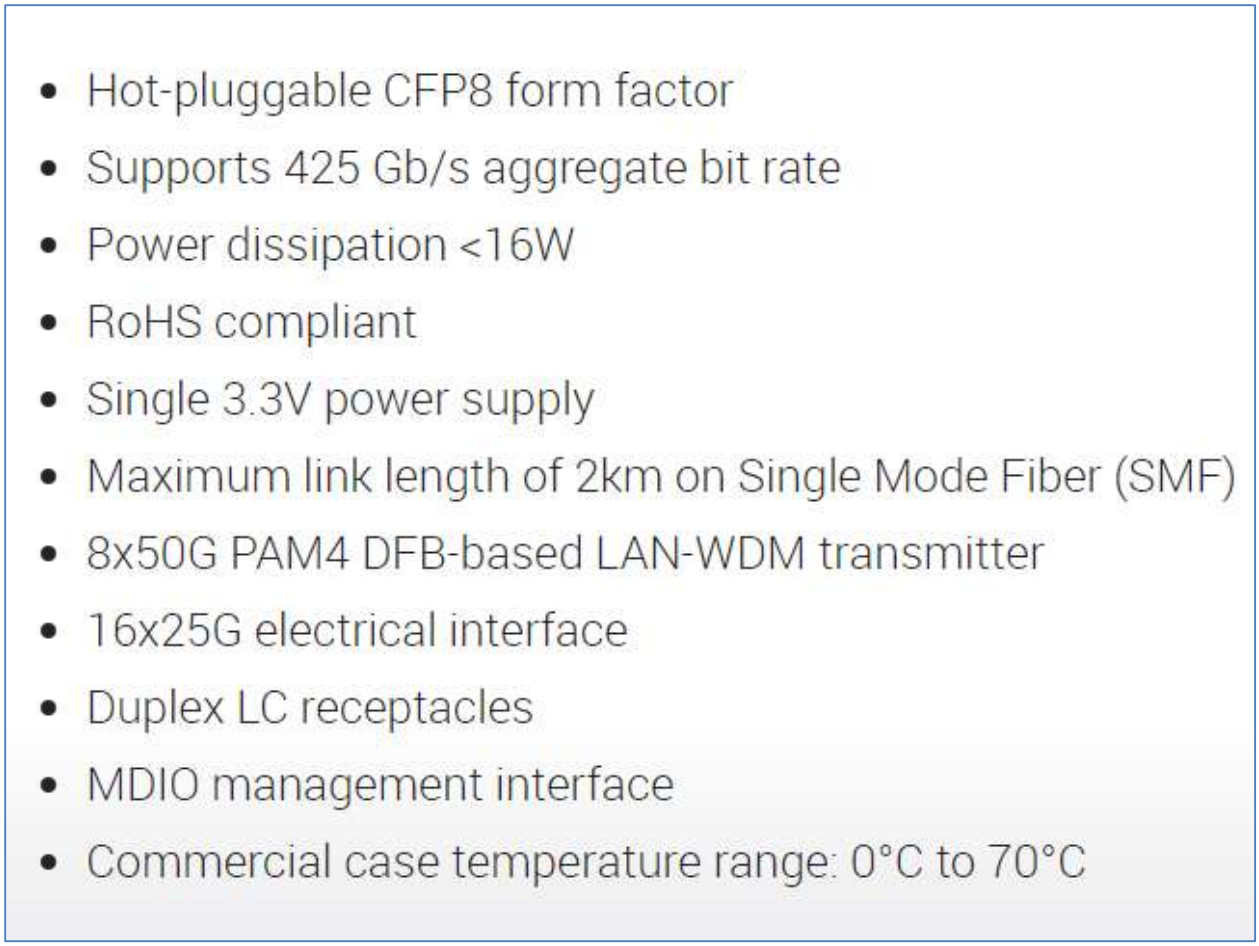
- Hot-pluggable CFP8 form factor
- Supports 425 Gb/s aggregate bit rate
- Power dissipation <16W
- RoHS compliant
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface
- Commercial case temperature range: 0°C to 70°C

See https://optical.communications.ii-vi.com/node/3756.

187. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising amplifying the first electrical m-ary modulation signal to drive an optical transmitter in the pluggable optical transceiver module, as demonstrated by the following images and links:



See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.



See https://optical.communications.ii-vi.com/node/3756.

188. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising emitting a first optical signal on a first wavelength responsive to and representative of the amplified first electrical m-ary modulation signal from the optical transmitter in the pluggable optical transceiver module, as demonstrated by the following images and links:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

Wavelength:	C-Band DWDM Tunable

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

See https://optical.communications.ii-vi.com/node/3756.

IV. Optical Characteristics (EOL, T_{OP} = 0 to 70°C, V_{CC} = 3.2 to 3.4 Volts)

Meets 400GBASE-FR8 as being defined by IEEE P802.3bs

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Transmitter						
Signaling rate (each lane (range)			26.5625 ± 100 ppm		GBd	
Modulation format			PAM4			
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19		nm	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

189. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising receiving a second optical signal on a second wavelength and producing an electrical signal from an optical detector in the

pluggable optical transceiver module, as demonstrated by the following images and links:

Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

190. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising amplifying the electrical signal to facilitate clock and data recovery in the pluggable optical transceiver module as demonstrated by the following images and links:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

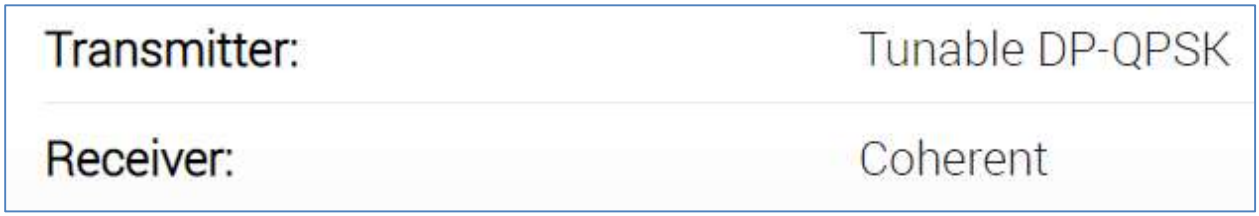
See https://optical.communications.ii-vi.com/node/3756.

FTCD1324E1BCL PRELIMINARY Product Specification – January 2018 FINISAR

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Receiver						
Signaling rate (each lane (range)			26.5625 ± 100 ppm		GBd	
Modulation format			PAM4			
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19		nm	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

191. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising recovering a clock data information from the amplified electrical signal to produce a second m-ary modulation signal in the pluggable optical transceiver module, as demonstrated by the following images and links:



See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Eye width		0.57			UI
Eye height, differential		228			mV

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

192. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising demodulating the second m-ary modulation signal to a second electrical binary data signal in the pluggable optical transceiver module, as demonstrated by the following images and links:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

Transmitter:	Tunable DP-QPSK
Receiver:	Coherent

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

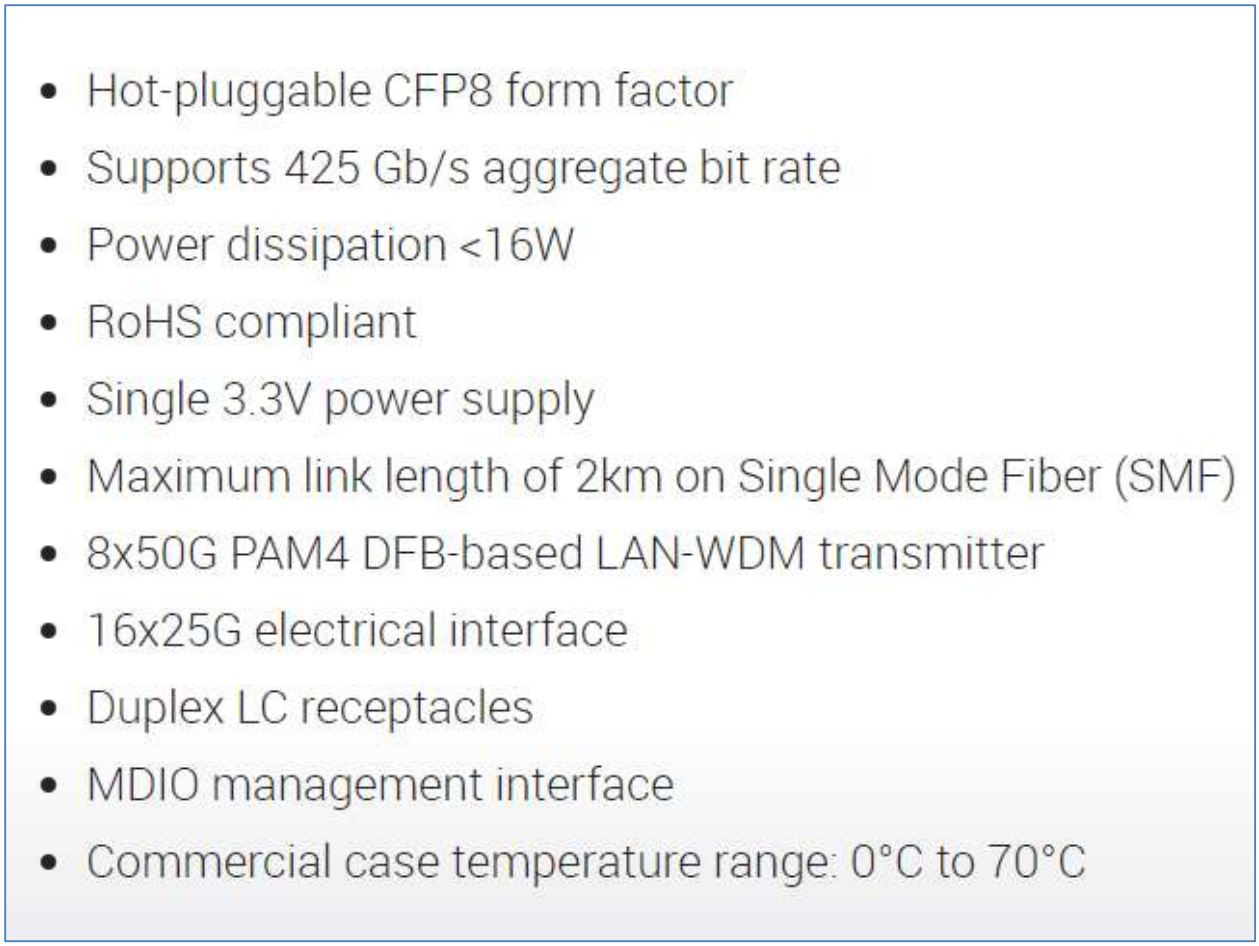
400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

See https://optical.communications.ii-vi.com/node/3756.



See https://optical.communications.ii-vi.com/node/3756.

193. On information and belief, one or more of the accused Optical Communications Products practices a method for m-ary modulation communication by a pluggable optical transceiver module comprising transmitting the second electrical binary data signal through the system interface of the pluggable optical transceiver module, as demonstrated by the following images and links:

Optical Transceivers

400G CFP2-DCO Digital Coherent Optics Transceiver

FTCD3312x1BCL

Form Factor: CFP2

The FTCD3312M1BCL CFP2 Digital Coherent Optics (DCO) transceiver supports multi-rate coherent transmission for data center interconnect, as well as metro and long-haul transport applications. On the host side, the module can accommodate a variety of signal types including 100GE, 200GE, 400GE, OTU4 and OTUCn (FlexO). On the line side the module supports 100G, 200G, 300G, and 400G interfaces with different modulation formats and forward error correction (FEC) codes. Multiple 100G clients can be multiplexed onto a single 200G, 300G, or 400G line side interface.

The transceiver module is compliant to the CFP MSA CFP2 Hardware Specification, with extensions specified in the OIF CFP2-DCO implementation agreement. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

- Multi-rate IEEE Ethernet or ITU-T OTN/FlexO compliant host interface

See https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl.

Optical Transceivers

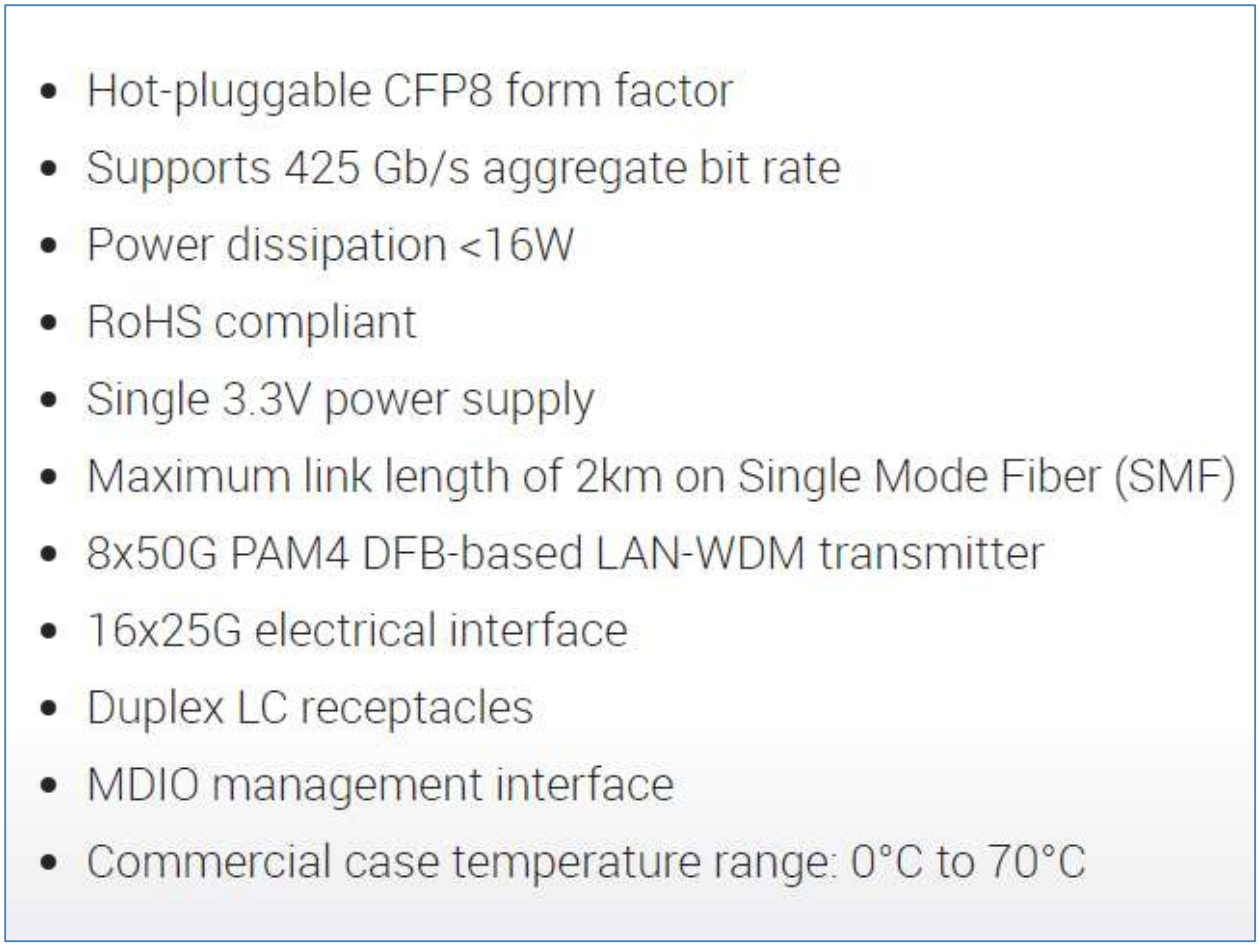
400GBASE-FR8 2km CFP8 Optical Transceiver

FTCD1324E1BCL

Form Factor: CFP8

FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA, IEEE P802.3bs 400GBASE-FR8 and 400GAUI-16. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Application Note AN-20xx. The optical transceiver is RoHS compliant as described in Application Note AN-2038.

See https://optical.communications.ii-vi.com/node/3756.



See https://optical.communications.ii-vi.com/node/3756.

194. On information and belief, Defendants directly infringe at least claim 1 of the '795 patent, and are in violation of 35 U.S.C. § 271(a) by using, selling and offering to sell one or more of the accused Optical Communications Products.

195. On information and belief, Defendants have been on notice of the '795 patent at least as early as the filing and service of the Complaint in this action.

196. On information and belief, at least since its post-filing knowledge of the '795 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or

more claims of the '795 patent, including by, without limitation, instructing and encouraging its domestic customers, resellers, distributors, and other partners to import, use, sell, and/or offer to sell one or more of the accused Optical Communications Products through its product specifications,[33] online advertisements,[34] an promotional materials.[35]

197. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to import, use, sell, and/or offer to sell the accused Optical Communications Products including, without limitation, through Defendants' websites,[36] which provide access to, and support for, using the accused Optical Communications Products.

198. On information and belief, Defendants' domestic customers and authorized distributors,[37] including but not limited to Arrow and Avnet, directly infringe at least

---

[33] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl, https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

[34] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers.

[35] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[36] *See* https://www.finisar.com/; https://www.ii-vi.com.

[37] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

claim 1 of the '795 patent through their use, importation, sales, and/or offers for sale of one or more of the accused Optical Communications Products.

199. On information and belief, Defendants are in violation of 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '795 patent, indirectly infringing and continue to indirectly infringe at least claim 1 of the '795 patent by knowingly and specifically inducing infringement by others (including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

200. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and will continue to suffer irreparable harm and damages as a result of Defendants' infringement.

Count IV – Infringement of United States Patent No. 10,263,723

201. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

202. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

203. On information and belief, Defendants make, use, import, sell, and/or offer to sell the Optical Communications Products. The one or more of the accused Optical Communications Products, as well as the hardware and software components comprising the accused Optical Communications Products that enables the Optical

Communications Products to operate, infringes, literally and/or under the doctrine of equivalents, at least claim 1 of the '723 patent.

204. On information and belief, one or more of the accused Optical Communications Products comprises an electrical system interface for receiving a first electrical data signal and for transmitting a second electrical data signal as demonstrated by the image and link below:

205. On information and belief, one or more of the accused Optical Communications Products comprises an encoder unit for coding the first electrical data signal according to an error correcting code to produce a first electrical encoded data signal as demonstrated by the image and link below:

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

206. On information and belief, one or more of the accused Optical Communications Products comprises an m-ary modulator for increasing the number of bits per symbol in the first electrical encoded data signal to produce a first m-ary modulation signal as demonstrated by the image and link below:

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

207. On information and belief, one or more of the accused Optical Communications Products comprises a digital to analog converter for converting the first m-ary modulation signal to a first electrical m-ary analog modulation signal as demonstrated by the image and link below:

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

208. On information and belief, one or more of the accused Optical Communications Products comprises a driver for amplifying the first electrical m-ary analog modulation signal to an amplified first electrical m-ary analog modulation signal to drive an optical transmitter as demonstrated by the image and link below:

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

209. On information and belief, one or more of the accused Optical Communications Products comprises an optical transmitter for emitting a first optical signal on a first wavelength responsive to and representative of the amplified first electrical m-ary analog modulation signal from the driver as demonstrated by the image and link below:

IV. Optical Characteristics (EOL, T_{OP} = 0 to 70°C, V_{CC} = 3.2 to 3.4 Volts)

Meets 400GBASE-LR8 as being defined by IEEE P802.3bs

Parameter	Symbol	Min	Typ	Max
Transmitter				
Signaling rate (each lane (range)			26.5625 ± 100 ppm	
Modulation format			PAM4	
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

210. On information and belief, one or more of the accused Optical Communications Products comprises an optical detector for receiving a second optical signal on a second wavelength and producing an electrical analog signal as demonstrated by the image and link below:

Parameter	Symbol	Min	Typ	Ma
Receiver				
Signaling rate (each lane (range)			26.5625 ± 100 ppm	
Modulation format			PAM4	
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

211. On information and belief, one or more of the accused Optical Communications Products comprises an amplifier for amplifying the electrical analog

signal to an amplified electrical analog signal as demonstrated by the image and link below:

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

212. On information and belief, one or more of the accused Optical Communications Products comprises a clock data recovery unit for recovering clock and data information to produce a second m-ary modulation signal from the amplified electrical analog signal as demonstrated by the image and link below:

Eye width		0.57			UI
Eye height, differential		228			mV

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

213. On information and belief, one or more of the accused Optical Communications Products comprises an equalizer for performing equalization on the second m-ary modulation signal to remove noise as demonstrated by the image and link below:

> Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-LR8[2] and 400GAUI-16[2]. Digital diagnostics functions

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

214. On information and belief, one or more of the accused Optical Communications Products comprises an m-ary demodulator for decreasing the number of bits per symbol in the equalized second m-ary modulation signal to produce a second electrical encoded data signal as demonstrated by the image and link below:

PRODUCT FEATURES

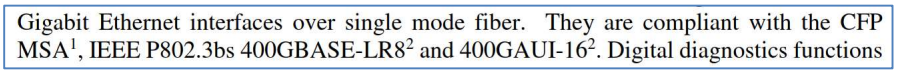
- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

215. On information and belief, one or more of the accused Optical Communications Products comprises a decoder unit for decoding the second electrical encoded data signal according to an error correcting code to produce the second electrical data signal as demonstrated by the image and link below:


Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-LR8[2] and 400GAUI-16[2]. Digital diagnostics functions

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

216. On information and belief, Defendants directly infringe at least claim 1 of the '723 patent, and are in violation of 35 U.S.C. § 271(a) by using, importing, selling and offering to sell one or more of the accused Optical Communications Products.

217. On information and belief, Defendants have been on notice of the '723 patent at least as early as the filing and service of the Complaint in this action.

218. On information and belief, at least since its post-filing knowledge of the '723 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or more claims of the '723 patent, including by, without limitation, instructing and encouraging their domestic customers, resellers, distributors, and other partners to import, use, sell, and/or offer to sell one or more of the accused Optical

Communications Products through their product specifications,[38] online advertisements,[39] and promotional materials.[40]

219. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to import, make, use, sell, and/or offer to sell the accused Optical Communications Products including, without limitation, through Defendants' websites,[41] which provide access to, and support for, using the accused Optical Communications Products.

220. On information and belief, Defendants' domestic customers and authorized distributors,[42] including but not limited to Arrow and Avnet, directly infringe at least claim 1 of the '723 patent through their use, importation, sales, and/or offers for sale of the accused Optical Communications Products.

221. On information and belief, Defendants are in violation of 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '723 patent,

---

[38] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers/ftcd3312x1bcl, https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf.

[39] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers.

[40] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[41] *See* https://www.finisar.com/; https://www.ii-vi.com.

[42] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

indirectly infringing and continue to indirectly infringe at least claim 1 of the '723 patent by knowingly and specifically inducing infringement by others (including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

222. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and will continue to suffer irreparable harm and damages as a result of Defendants' infringement.

Count V – Infringement of United States Patent No. 10,763,958

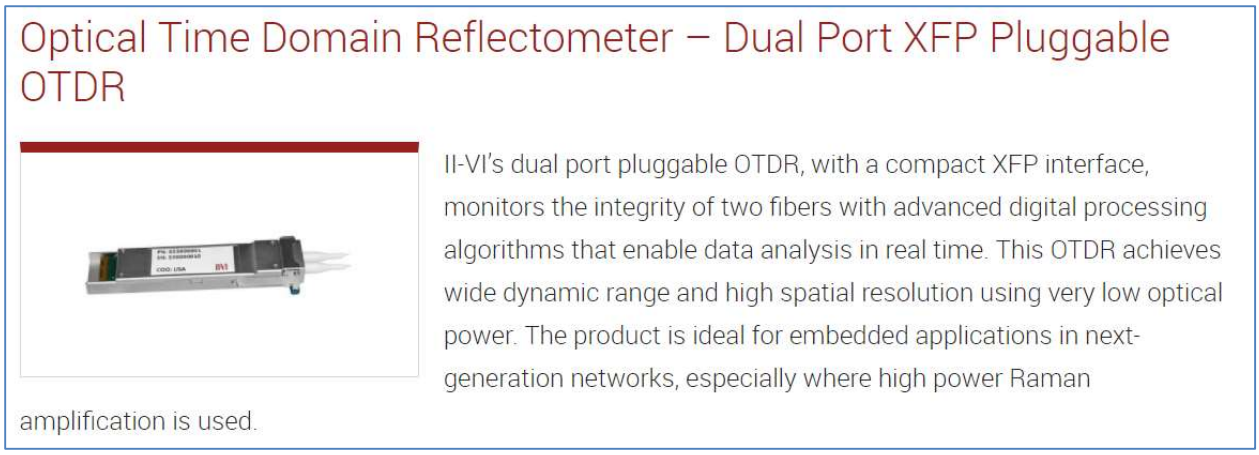
223. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

224. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

225. On information and belief, Defendants make, use, import, sell, and/or offer to sell the accused Optical Communications Products. The accused Optical Communications Products, as well as the hardware and software components comprising the accused Optical Communications Products that enable accused Optical Communications Products to operate, infringe, literally and/or under the doctrine of equivalents, at least claim 1 of the '958 patent.

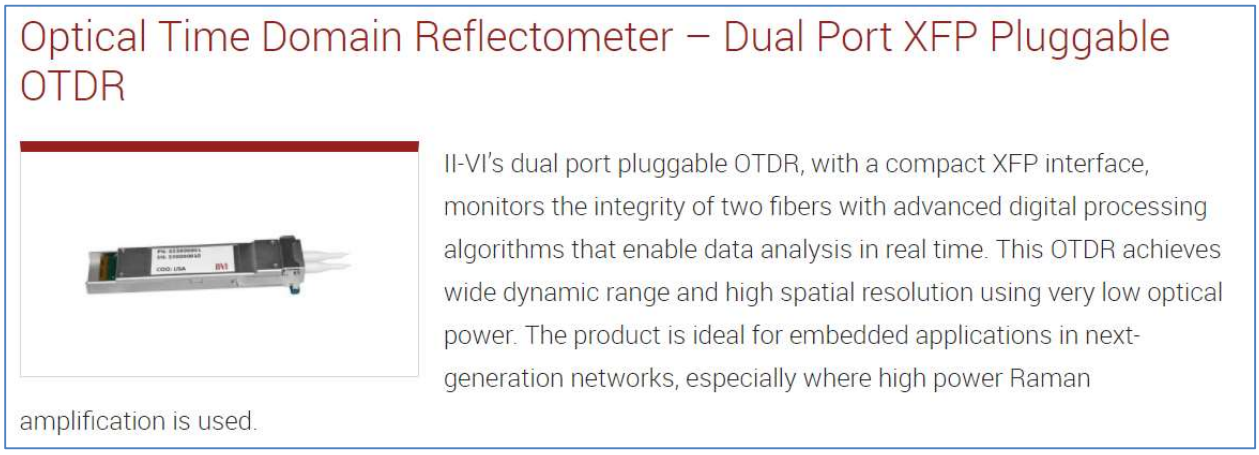
226. On information and belief, one or more of the accused Optical Communications Products practices a method of monitoring an optical fiber with at least one optical transceiver having an optical time domain reflectometry (OTDR)

and/or optical frequency domain reflectometry (OFDR) function that is disposed to couple to the optical fiber as demonstrated by the following images and links:



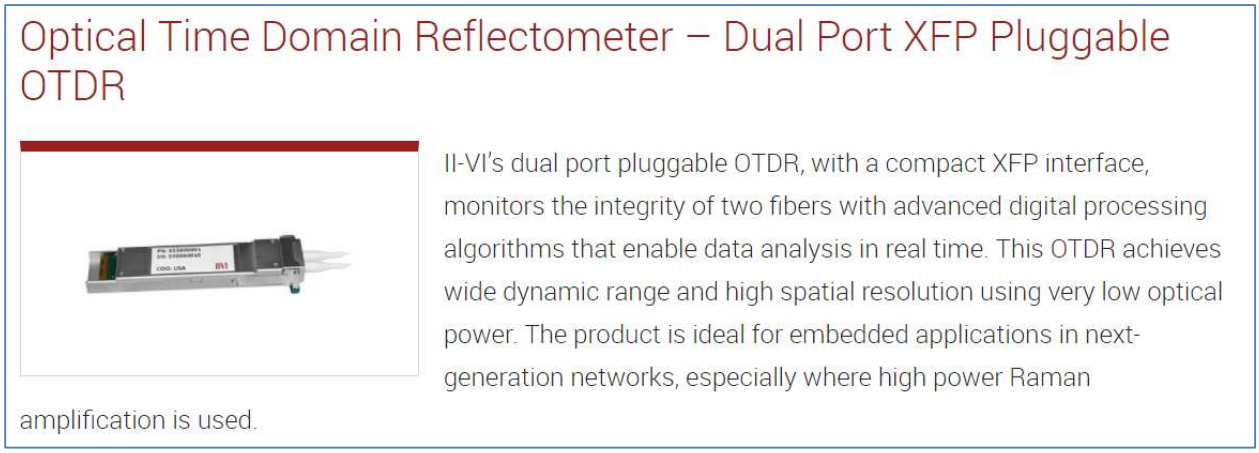
See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

227. On information and belief, one or more of the accused Optical Communications Products practices a method comprising connecting an optical transceiver to a network terminal, the optical transceiver having OTDR and/or OFDR function and the network terminal is configured to read information from the optical transceiver as demonstrated by the image and link below:



See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

228. On information and belief, one or more of the accused Optical Communications Products practices a method comprising coupling the optical fiber to the optical transceiver as demonstrated by the image and link below:



See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

229. On information and belief, one or more of the accused Optical Communications Products practices a method comprising performing data communications on a same wavelength with the optical transceiver as suggested by the image and link below:

Optical Time Domain Reflectometer – Dual Port XFP Pluggable OTDR

II-VI's dual port pluggable OTDR, with a compact XFP interface, monitors the integrity of two fibers with advanced digital processing algorithms that enable data analysis in real time. This OTDR achieves wide dynamic range and high spatial resolution using very low optical power. The product is ideal for embedded applications in next-generation networks, especially where high power Raman amplification is used.

See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

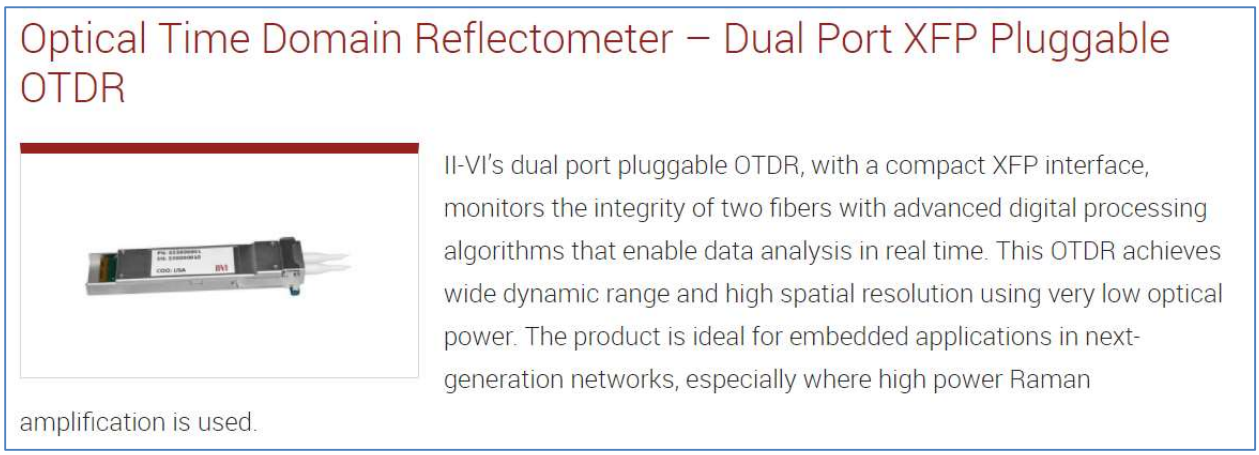
230. On information and belief, one or more of the accused Optical Communications Products practices a method comprising performing OTDR and/or OFDR function on the same wavelength with the optical transceiver responsive to a disruption in the data communications as suggested by the image and link below:

Optical Time Domain Reflectometer – Dual Port XFP Pluggable OTDR

II-VI's dual port pluggable OTDR, with a compact XFP interface, monitors the integrity of two fibers with advanced digital processing algorithms that enable data analysis in real time. This OTDR achieves wide dynamic range and high spatial resolution using very low optical power. The product is ideal for embedded applications in next-generation networks, especially where high power Raman amplification is used.

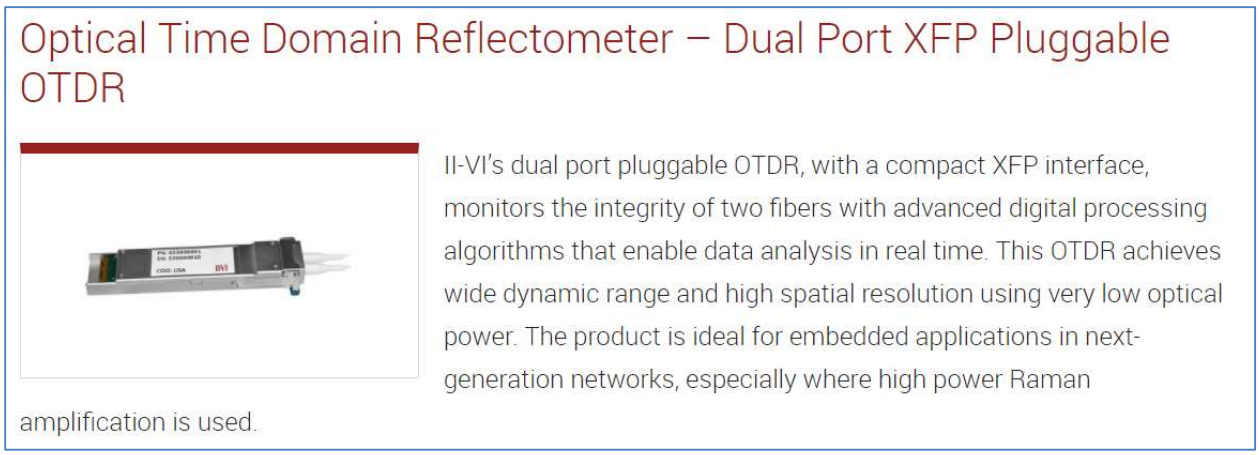
See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

231. On information and belief, one or more of the accused Optical Communications Products practices a method comprising gathering measurements from the OTDR and/or OFDR function to determine at least one fault on the optical fiber as demonstrated by the image and link below:



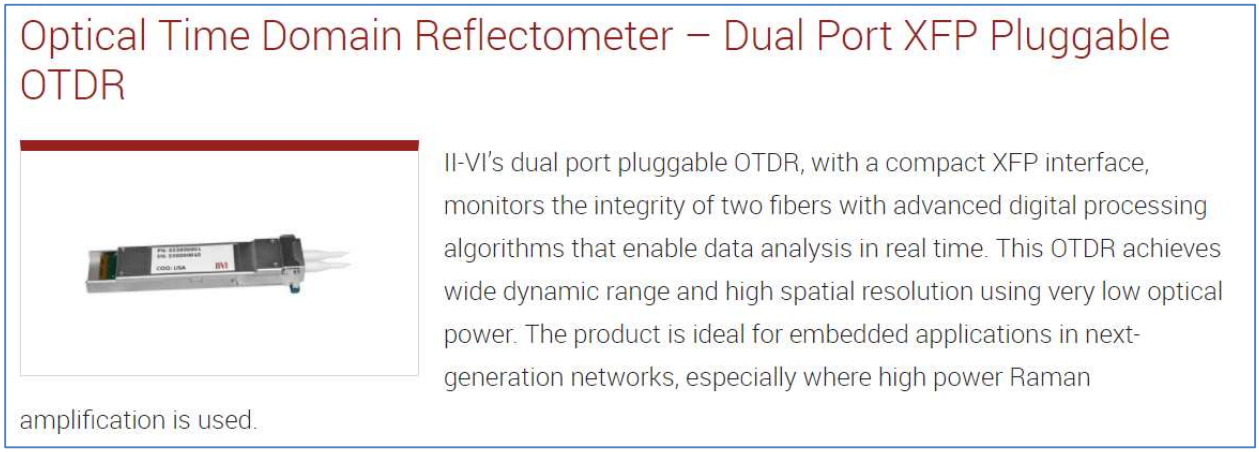
See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

232. On information and belief, one or more of the accused Optical Communications Products practices a method comprising storing the measurements in the optical transceiver as demonstrated by the image and link below:



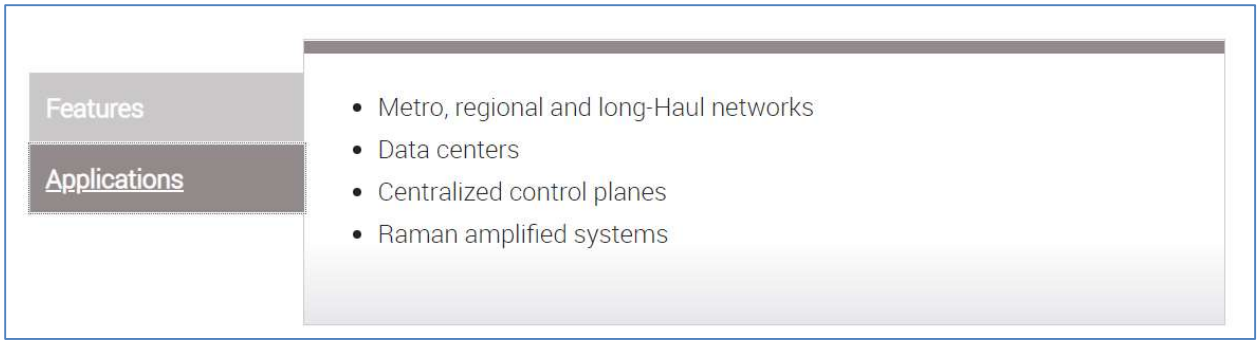
See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

233. On information and belief, one or more of the accused Optical Communications Products practices a method comprising reading the stored measurements from the optical transceiver to the network terminal as suggested by the image and link below:



See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

234. On information and belief, one or more of the accused Optical Communications Products practices a method comprising reporting by the network terminal of the at least one fault on the optical fiber as demonstrated by the image and link below:



See https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

235. On information and belief, Defendants directly infringe at least claim 1 of the '958 patent, and are in violation of 35 U.S.C. § 271(a) by importing, using, selling, and/or offering to sell one or more of the accused Optical Communications Products.

236. On information and belief, Defendants have been on notice of the '958 patent at least as early as the filing and service of the Complaint in this action.

237. On information and belief, at least since their post-filing knowledge of the '958 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or more claims of the '958 patent, including by, without limitation, instructing and encouraging its domestic customers, resellers, distributors, and other partners to make, import, use, sell, and/or offer to sell the accused Optical Communications Products

through its product specifications,[43] online advertisements,[44] and promotional materials.[45]

238. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to import, make, use, sell, and/or offer to sell the accused Optical Communications Products including, without limitation, through Defendants' websites,[46] which provide access to, and support for, using the accused Optical Communications Products.

239. On information and belief, Defendants' domestic customers and authorized distributors,[47] including but not limited to Arrow and Avnet, directly infringe at least claim 1 of the '958 patent through their use, importation, sales, and/or offers for sale of one or more of the accused Optical Communications Products.

240. On information and belief, Defendants have violated 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '958 patent, indirectly infringing and continues to indirectly infringe at least claim 1 of the '958 patent by

---

[43] *See e.g.* https://optical.communications.ii-vi.com/roadms-wavelength-management/optical-time-domain-reflectometer-%E2%80%93-dual-port-xfp-pluggable-otdr.

[44] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers.

[45] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[46] *See* https://www.finisar.com/; https://www.ii-vi.com.

[47] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

knowingly and specifically inducing infringement by others (including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

241. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and continue to suffer irreparable harm and damages as a result of Defendants' infringement.

Count VI – Infringement of United States Patent No. 10,771,181

242. NextGen repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs above.

243. On information and belief, Defendants are the manufacturers of the accused Optical Communications Products.

244. On information and belief, Defendants make, use, import, sell, and/or offer to sell the accused Optical Communications Products. One or more of the accused Optical Communications Products, as well as the hardware and software components comprising the accused Optical Communications Products that enables accused Optical Communications Products to operate, infringe, literally and/or under the doctrine of equivalents, at least claim 1 of the '181 patent.

245. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an electrical system interface for receiving a first electrical data signal and for transmitting a second electrical data signal as demonstrated by the image and links below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

246. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an m-ary modulator for increasing the number of bits per symbol in the first electrical data signal

to produce a first m-ary modulation signal as demonstrated by the image and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

247. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising a digital to analog converter for converting the first m-ary modulation signal to a first electrical m-ary analog modulation signal as demonstrated by the image and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

248. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising a driver for amplifying the first electrical m-ary analog modulation signal to an amplified first electrical m-ary analog modulation signal to drive an optical transmitter as demonstrated by the image and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

249. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising the optical transmitter for emitting a first optical signal on a first wavelength responsive to and

representative of the amplified first electrical m-ary analog modulation signal from the driver as demonstrated by the images and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

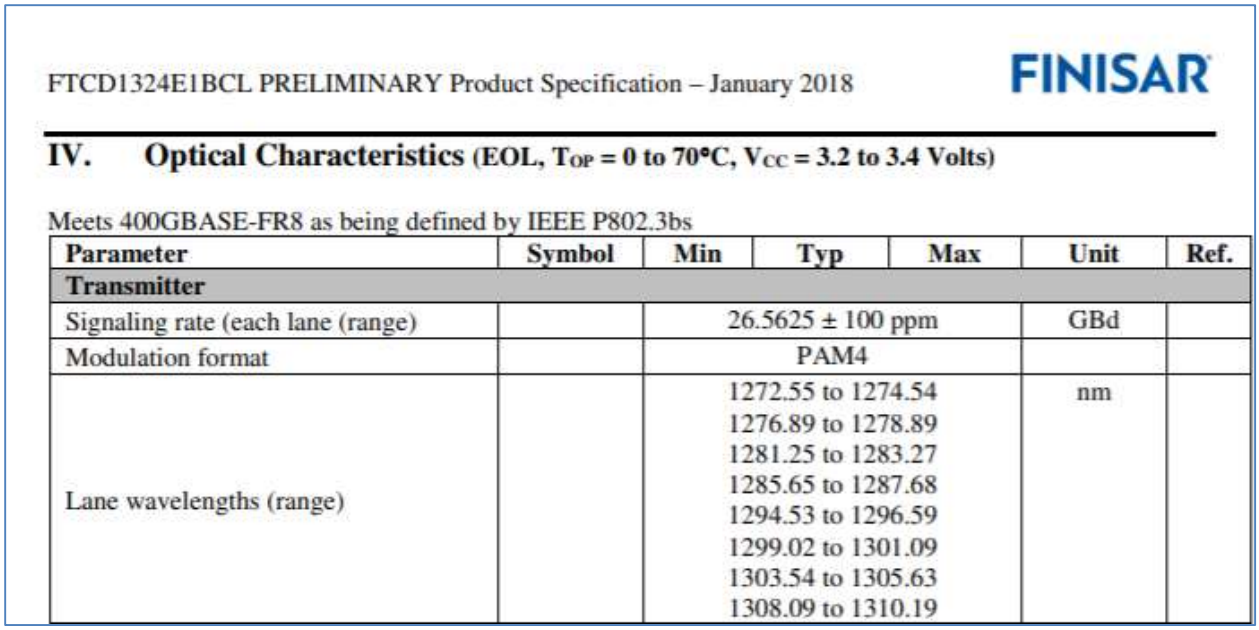
PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].



FTCD1324E1BCL PRELIMINARY Product Specification – January 2018 FINISAR

IV. Optical Characteristics (EOL, T_{OP} = 0 to 70°C, V_{CC} = 3.2 to 3.4 Volts)

Meets 400GBASE-FR8 as being defined by IEEE P802.3bs

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Transmitter						
Signaling rate (each lane (range)			26.5625 ± 100 ppm		GBd	
Modulation format			PAM4			
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19		nm	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

250. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an optical detector for receiving a second optical signal on a second wavelength to produce an electrical analog signal as demonstrated by the images and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

FTCD1324E1BCL PRELIMINARY Product Specification – January 2018 FINISAR

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Receiver						
Signaling rate (each lane (range)			26.5625 ± 100 ppm		GBd	
Modulation format			PAM4			
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19		nm	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

251. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an amplifier for amplifying the electrical analog signal to an amplified electrical analog signal as suggested by the image and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

252. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising a clock data recovery unit for recovering clock and data information to produce a second m-ary

modulation signal from the amplified electrical analog signal as demonstrated by the image and link below:

Eye width		0.57			UI
Eye height, differential		228			mV

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

253. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an equalizer for performing equalization on the second m-ary modulation signal to remove noise as suggested by the image and link below:

PRELIMINARY Product Specification

2km Duplex SMF 400G CFP8 Optical Transceiver

FTCD1324E1BCL

PRODUCT FEATURES

- Hot-pluggable CFP8 form factor
- Supports 425Gb/s aggregate bit rate
- Power dissipation < 16W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 2km on Single Mode Fiber (SMF)
- 8x50G PAM4 DFB-based LAN-WDM transmitter
- 16x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

APPLICATIONS

- 400GBASE-FR8 400G Ethernet

Finisar's FTCD1324E1BCL 400G CFP8 transceiver modules are designed for use in 400 Gigabit Ethernet interfaces over single mode fiber. They are compliant with the CFP MSA[1], IEEE P802.3bs 400GBASE-FR8[2] and 400GAUI-16[2]. Digital diagnostics functions are available via the MDIO interface, as specified by the CFP MSA and Finisar Application Note AN-20xx[4]. The transceiver is RoHS compliant per Directive 2011/65/EU[3].

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

254. On information and belief, one or more of the accused Optical Communications Products is a pluggable transceiver module comprising an m-ary demodulator for decreasing the number of bits per symbol in the equalized second m-

ary modulation signal to produce the second electrical data signal as demonstrated by the image and link below:

FTCD1324E1BCL PRELIMINARY Product Specification – January 2018 FINISAR

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Receiver						
Signaling rate (each lane (range)			26.5625 ± 100 ppm		GBd	
Modulation format			PAM4			
Lane wavelengths (range)			1272.55 to 1274.54 1276.89 to 1278.89 1281.25 to 1283.27 1285.65 to 1287.68 1294.53 to 1296.59 1299.02 to 1301.09 1303.54 to 1305.63 1308.09 to 1310.19		nm	

See https://www.epsglobal.com/Media-Library/EPSGlobal/Products/files/finisar/transceivers/FTCD1324E1BCL.pdf?ext=.pdf

255. On information and belief, Defendants directly infringe at least claims 1, 22, and 23 of the '181 patent, and are in violation of 35 U.S.C. § 271(a) by using, selling and offering to sell one or more of the accused Optical Communications Products.

256. On information and belief, Defendants have been on notice of the '181 patent at least as early as the filing and service of the Complaint in this action.

257. On information and belief, at least since its post-filing knowledge of the '181 patent, Defendants knowingly encourage, and continue to encourage, their domestic customers, resellers, distributors, and other partners to directly infringe one or more claims of the '181 patent, including by, without limitation, instructing and encouraging its domestic customers, resellers, distributors, and other partners to make, import, use, sell, and/or offer to sell the accused Optical Communications Products

through its product specifications,[48] online advertisements,[49] an promotional materials.[50]

258. On information and belief, Defendants instruct and continue to instruct their domestic customers, resellers, distributors, and other partners, to import, make, use, sell, and/or offer to sell the accused Optical Communications Products including, without limitation, through Defendants' websites[51], which provide access to, and support for, using the accused Optical Communications Products.

259. On information and belief, Defendants' domestic customers and authorized distributors[52], including but not limited to Arrow and Avnet, directly infringe at least claims 1, 22, and 23 of the '181 patent through their use, importation, sales, and/or offers for sale of one or more of the accused Optical Communications Products.

260. On information and belief, Defendants are in violation of 35 U.S.C. § 271(b) and have been, at least since their post-filing knowledge of the '181 patent, indirectly infringing and continues to indirectly infringe at least claim 1, 22, and 23 of the '181 patent by knowingly and specifically inducing infringement by others

---

[48] *See e.g.* https://optical.communications.ii-vi.com/node/3756.

[49] *See e.g.* https://optical.communications.ii-vi.com/optical-transceivers.

[50] *See e.g.* https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_transceiver_transponder_aoc_product_guide_04142020.pdf; https://optical.communications.ii-vi.com/sites/default/files/resources/ii-vi_pluggable_finisar_transceivers_for_the_data_center_042020.pdf;

[51] *See* https://www.finisar.com/; https://www.ii-vi.com.

[52] *See* https://optical.communications.ii-vi.com/how-buy/order-products-online

(including, without limitation, Defendants' domestic customers, resellers, distributors, and other partners) and possessing specific intent to encourage infringement by Defendants' domestic customers, resellers, distributors, and other partners.

261. Defendants' direct and/or indirect infringement has damaged NextGen and caused it to suffer and continue to suffer irreparable harm and damages as a result of Defendants' infringement.

JURY DEMANDED

262. Pursuant to Federal Rule of Civil Procedure 38(b), NextGen hereby requests a trial by jury on all issues so triable.

PRAYER FOR RELIEF

NextGen respectfully requests this Court to enter judgment in NextGen's favor and against Defendants as follows:

a. finding that Defendants have infringed one or more claims of the '754 patent under 35 U.S.C. § 271(a) and/or (b);

b. finding that Defendants have infringed one or more claims of the '697 patent under 35 U.S.C. § 271(a) and/or (b);

c. finding that Defendants have infringed one or more claims of the '795 patent under 35 U.S.C. § 271(a) and/or (b);

d. finding that Defendants have infringed one or more claims of the '723 patent under 35 U.S.C. § 271(a) and/or (b);

e. finding that Defendants have infringed one or more claims of the '181 patent under 35 U.S.C. § 271(a) and/or (b);

f. finding that Defendants have infringed one or more claims of the '958 patent under 35 U.S.C. § 271(a) and/or (b);

g. awarding NextGen damages under 35 U.S.C. § 284, or otherwise permitted by law, including supplemental damages for any continued post-verdict infringement;

h. enter a judgment that the infringement was willful and awarding NextGen treble damages pursuant to 35 U.S.C. § 284;

i. awarding NextGen pre-judgment and post-judgment interest on the damages award and costs;

j. declaring this case exceptional and awarding costs of this action (including all disbursements), attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and

k. awarding such other costs and further relief that the Court determines to be just and equitable.

Dated: October 30, 2020

Respectfully submitted,

/s/Raymond W. Mort, III

Raymond W. Mort, III
Texas State Bar No. 00791308
raymort@austinlaw.com

THE MORT LAW FIRM, PLLC
100 Congress Avenue, Suite 2000
Austin, Texas 78701
Tel/Fax: 512-865-7950

Of Counsel:
Ronald M. Daignault (*pro hac vice* to be filed)
Chandran B. Iyer (*pro hac vice* to be filed)
Jason S. Charkow (*pro hac vice* to be filed)
Oded Burger (*pro hac vice* to be filed)
rdaignault@goldbergsegalla.com
ciyer@goldbergsegalla.com
jcharkow@goldbergsegalla.com
oburger@goldbergsegalla.com
GOLDBERG SEGALLA LLP
711 Third Avenue, Suite 1900
New York, New York 10017
Telephone: (646) 292-8700

Attorneys for *NextGen Innovations, LLC*