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

OYSTER OPTICS, LLC, Plaintiff, v. FUJITSU NETWORK COMMUNICATIONS INC., FUJITSU LIMITED, AND FUJITSU OPTICAL COMPONENTS, LTD. Defendants.	Civil Action No. _ **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq*. in which Plaintiff Oyster Optics, LLC ("Oyster" or "Plaintiff") makes the following allegations against Defendants Fujitsu Network Communications Inc., Fujitsu Limited, and Fujitsu Optical Components, Ltd. (collectively, "Fujitsu" or "Defendant").

PARTIES

1. Oyster Optics, LLC is a Texas company, and has a place of business at 11921 Freedom Drive, Suite 550, Reston, VA 20190.

2. On information and belief, Fujitsu Network Communications Inc. is a Delaware corporation with its principal place of business at 2801 Telecom Parkway, Richardson, TX 75082. Fujitsu Network Communications Inc. can be served through its registered agent C T Corporation System, 1999 Bryan St., Suite 900, Dallas, TX 75201.

3. On information and belief, Fujitsu Limited is a corporation organized and existing under the laws of Japan and having a principal place of business at 1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken, 211-8588 Japan.

4. On information and belief, Fujitsu Optical Components, Ltd. is a Japanese Corporation with its principal place of business at 4-1-1 Kamikodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa, 211-8588, Japan.

JURISDICTION AND VENUE

5. This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has personal jurisdiction over Defendant in this action because, among other reasons, Defendant has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with the forum state of Texas. Defendant directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, making, using, importing, offering for sale, and/or selling products and/or services that infringe the patents-in-suit. Thus, Defendant purposefully availed itself of the benefits of doing business in the State of Texas and the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice. Fujitsu Network Communications is registered to do business in the State of Texas, and has appointed C T Corporation System as its agent for service of process. Furthermore, on information and belief, Defendant Fujitsu Optical Components, Ltd. supplies and/or sells numerous infringing components to Fujitsu Network Communications Inc. and/or unaffiliated third parties for use in products and/or services made,

used, sold, offered for sale, and/or imported into this District. Fujitsu Limited, on information and belief, is the controlling parent of both Fujitsu Network Communications Inc. and Fujitsu Optical Communications, and has previously sought relief (including injunctive relief) for patent infringement in this District. *See, e.g.,* Case No. 1:09-cv-04530, D.I. 1 (E.D. Tex., January 29, 2008). For at least these reasons, this Court has personal jurisdiction over each of Fujitsu Network Communications Inc., Fujitsu Limited, and Fujitsu Optical Components, Ltd (collectively, "Defendant") in this action.

7. Venue is proper in this District under 28 U.S.C. §§ 1391 (b)-(c) and 1400(b) because Defendant is subject to personal jurisdiction in this District, has transacted business in this District, has committed acts of patent infringement in this District, and has sought relief in the Courts of this District.

BACKGROUND

8. In the early 2000s, Oyster Optics, Inc., a research, development, and engineering company, was focused upon innovation in government, commercial, security, and broad-band applications of leading edge fiber optics technology. Mr. Peter ("Rocky") Snawerdt was at Oyster Optics, Inc. when he invented the subject matter of U.S. Patent Nos. 8,913,898, 7,620,327, and 9,363,012 (collectively, "asserted patents" or "patents-in-suit").

9. Oyster is the owner by assignment of United States Patent No. 9,363,012 ("the '012 Patent") entitled "Fiber Optic Telecommunications Card with Energy Level Monitoring." The '012 Patent was duly and legally issued by the United States Patent and Trademark Office on February June 7, 2016. A true and correct copy of the '012 Patent is included as Exhibit A.

10. Oyster is the owner by assignment of United States Patent No. 8,913,898 ("the '898 Patent") entitled "Fiber Optic Telecommunications Card with Energy Level Monitoring." The '898 Patent was duly and legally issued by the United States Patent and Trademark Office on December 16, 2014. A true and correct copy of the '898 Patent is included as Exhibit B.

11. Oyster is the owner by assignment of United States Patent No. 7,620,327 ("the '327 Patent") entitled "Fiber Optic Telecommunications Card with Energy Level Monitoring." The '327 Patent was duly and legally issued by the United States Patent and Trademark Office on November 17, 2009. A true and correct copy of the '327 Patent is included as Exhibit C.

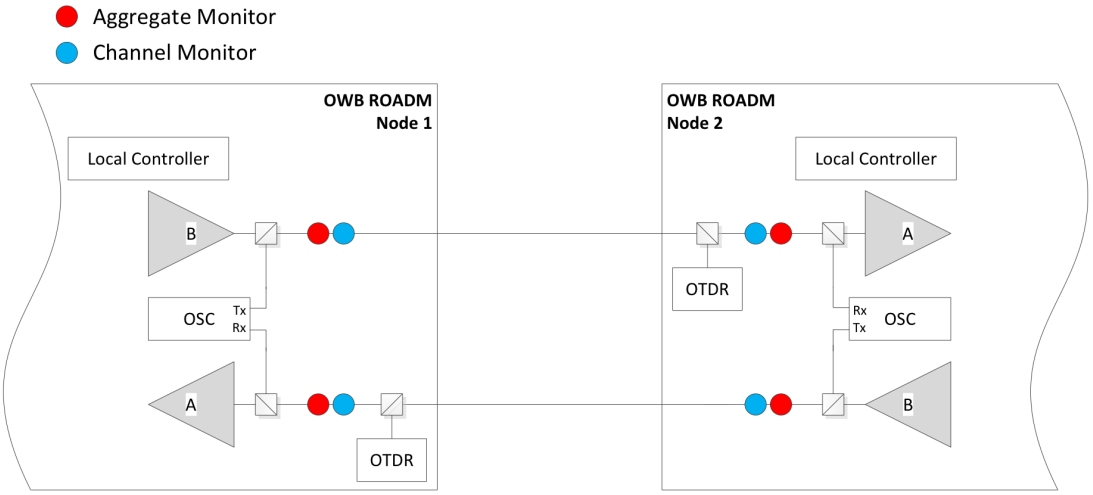
COUNT I

INFRINGEMENT OF THE '012 PATENT

12. Oyster incorporates by reference the foregoing paragraphs of this Complaint.

13. On information and belief, Defendant makes, uses, offers to sell and/or sells in the United States the Products that infringe various claims of the '012 Patent, including at least Claim 14, and continues to do so. These products include, without limitation, Fujitsu's 1Finity series of products such as the 1Finity L100, L200, and other members of the 1Finity Lambda Blade DWDM family, the 1Finity C200, C201, C202, T100, T200, T210, T300, T310, T400, Virtuora Network Controllers, Flashwave CDS, and Flashwave 9500. On information and belief, Defendant Fujitsu Optical Components, Ltd. supplies and/or sells numerous infringing components to Fujitsu Network Communications Inc. and/or other unaffiliated third parties for use in at least the products listed in this paragraph. These components include without limitation the 100G OIF 168pin Coherent Transceiver (FIM85200), 100G CFP Digital Coherent Optics Transceiver (FIM38000/101, FIM38100/101, FIM38200/101), 100G/200G CFP2 Analog Coherent Optics Transceiver (FIM38500, FIM38550/110, FIM38550/102), 100G CFP Transceiver (FIM37102, FIM37202), 100G CFP2 Transceiver (FIM37302, FIM37402), 100G QSFP28 Transceiver (FIM37700, FIM37800), 100G/400G LN Modulator (FTM7992HM, FTM7990HKA, FTM7977HQA, and the Integrated Coherent Receiver (FIM24901, FIM2472). All of the products and components in this paragraph shall be referred to collectively hereinafter as the "Accused Instrumentalities."

14. On information and belief, the Accused Instrumentalities practice a telecommunications monitoring method comprising receiving an incoming optical signal at a downstream termination point, located within an optical multiplexor box, of an optical fiber. The Accused Instrumentalities, on information and belief, are designed in accordance with the Open Reconfigurable Optical Add-Drop Multiplexer ("ROADM") Multi-Source Agreement ("Open ROADM MSA"). "Fujitsu has been a key contributing member since the [Open ROADM MSA] project's inception."[1] The figure below depicts a product designed in accordance with the Open ROADM MSA, which shows receipt of optical signals at downstream termination points located within an optical multiplexor box (OWB ROADM Nodes 1 and 2).[2]



15. On information and belief, the Accused Instrumentalities practice the step of splitting, within the optical multiplexor box, the incoming optical signal into a data optical signal and a test optical signal. On information and belief, and for the reasons stated above, the Accused Instrumentalities operate in compliance with the Open ROADM MSA. As depicted

[1] FNC-Fujitsu-Open-ROADM-Solution-Brief, at 2, *available at* http://www.fujitsu.com/us/Images/FNC-Fujitsu-Open-ROADM-Solution-Brief.pdf.
[2] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.

above in the figure from the Open ROADM MSA, the incoming optical signal is split at the boxes labelled "OTDR" in both Node 1 and Node 2. On information and belief, one of those split signals is a test optical signal, and the other is a data optical signal.

16. On information and belief, the Accused Instrumentalities perform the step of tapping the data optical signal to produce a tapped optical signal. On information and belief, and for the reasons stated above, the Accused Instrumentalities operate in compliance with the Open ROADM MSA. As depicted above in the figure from the Open ROADM MSA, the incoming optical signal is split at multiple points downstream of the OTDR. For example, it may be tapped at either the aggregate (red) or channel (blue) monitors, or at the unlabeled box just upstream of "A" in either node 1 or node 2.

17. On information and belief, the Accused Instrumentalities perform the step of processing, within the optical multiplexor box, the data optical signal to produce a data electrical signal indicative of data encoded in the incoming optical signal. On information and belief, and for the reasons stated above, the Accused Instrumentalities operate in compliance with the Open ROADM MSA. As depicted above in the figure from the Open ROADM MSA, the data optical signal is received at the "Rx" for the "OSC," which on information and belief is an acronym for "Optical Service Channel." On information and belief, the structure receiving the data optical signal at the rectangle labelled "OSC" performs the step of producing a data electrical signal indicative of data encoded in the incoming optical signal.

18. On information and belief, the Accused Instrumentalities perform the step of processing the tapped optical signal to produce an electrical signal indicative of a power of the data optical signal. On information and belief, and for the reasons stated above, the Accused Instrumentalities operate in compliance with the Open ROADM MSA. The Open ROADM MSA

specifies numerous "PM," or "Performance Monitoring" requirements. Some of these are listed in the table reproduced below.[3]

PM Description	MW
Optical Power Output (OPOUT-OTS)	x
Optical Power Input (OPIN-OTS)	x
Optical Power Output (OPOUT-OMS)	x
Optical Power Input (OPIN-OMS)	x
Optical Return Loss (ORL-OTS/ORL-OMS)	x
OSC Optical Power Receive (OPR-OSC)	x
OSC Optical Power Transmit (OPT-OSC)	x
Optical Channel Power Receive (OPR-OCH)	x
Optical Channel Power Transmit (OPT-OCH)	x
Optical Power Receive (OPR)	
Optical Power Transmit (OPT)	

On information and belief, the Accused Instrumentalities monitor at least "optical power input (OPIN-OTS)," "OSC Optical Power Receive (OPR-OSC)" "Optical Power Input (OPIN-OMS)," and "Optical Channel Power Receive (OPR-OCH)" by processing one or more tapped optical signals to produce an electrical signal indicative of a power of the data optical signal.

19. On information and belief, the Accused Instrumentalities perform optical time-domain reflectometry ("OTDR") monitoring of an incoming optical fiber associated with the incoming optical signal an OTDR module within the optical multiplexor box. On information and belief, and for the reasons stated above, the Accused Instrumentalities operate in compliance with the Open ROADM MSA. As depicted above in the figure from the Open ROADM MSA, the there is an optical time-domain reflectometer (OTDR) module at the box labelled "OTDR," which is located on the path of the incoming optical signal in both Node 1 and Node 2. On

[3] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.

information and belief, the structure(s) represented by this box perform OTDR monitoring of an incoming optical fiber associated with the incoming optical signal.

20. On information and belief, Defendant has directly infringed and continues to directly infringe the ’012 Patent by, among other things, making, using, offering for sale, and/or selling the Accused Instrumentalities. On information and belief, such products and/or services are covered by one or more claims of the ’012 Patent, including at least claim 1. On information and belief, Defendant also sold and offered for sale other products that also infringe in a substantially similar manner.

21. By making, using, offering for sale, and/or selling the Accused Instrumentalities infringing the ’012 Patent, Defendant has injured Oyster and is liable to Oyster for infringement of the ’012 Patent pursuant to 35 U.S.C. § 271(a) directly and/or under the doctrine of equivalents.

22. In addition, Defendant is actively inducing others, such as its customers and end users of Accused Instrumentalities, services based thereupon, and related products and/or processes, to directly infringe each and every claim limitation, including without limitation claim 1 of the ’012 Patent, in violation of 35 U.S.C. § 271(b). Upon information and belief, Defendant’s customers and/or end users have directly infringed and are directly infringing each and every claim limitation, including without limitation claim 1 of the ’012 Patent. Defendant has actual knowledge of the ’012 Patent at least as of service of this Complaint. Defendant is knowingly inducing its customers and/or end users to directly infringe the ’012 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Defendant’s inducement includes, for example, providing technical guides, product data sheets, demonstrations, software and hardware specifications, installation guides,

and other forms of support that induce its customers and/or end users to directly infringe the ’012 Patent.

23. To the extent facts learned in discovery show that Defendant’s infringement of the ’012 Patent is or has been willful, Oyster reserves the right to request such a finding at trial.

24. As a result of Defendant’s infringement of the ’012 Patent, Oyster has suffered monetary damages in an amount adequate to compensate for Defendant’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court, and Oyster will continue to suffer damages in the future unless Defendant’s infringing activities are enjoined by this Court.

25. Unless a permanent injunction is issued enjoining Defendant and its agents, employees, representatives, affiliates, and all others acting or in active concert therewith from infringing the ’012 Patent, Oyster will be greatly and irreparably harmed.

COUNT II

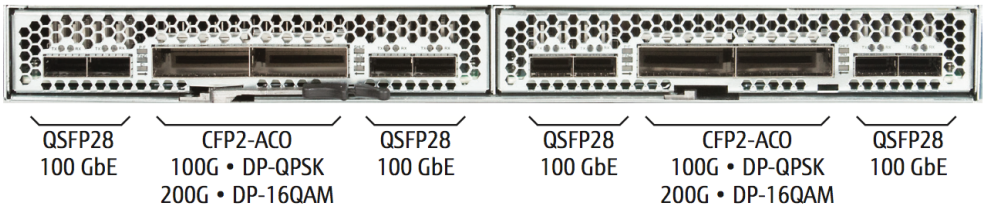
INFRINGEMENT OF THE ’898 PATENT

26. Oyster incorporates by reference the foregoing paragraphs of this Complaint.

27. On information and belief, Defendant makes, uses, offers to sell and/or sells in the United States the Products that infringe various claims of the ’898 Patent, including at least Claim 14, and continues to do so. These products include, without limitation, Fujitsu’s 1Finity products such as the 1Finity L100, L200, and other members of the 1Finity Lambda Blade DWDM family, the 1Finity C200, C201, C202, T100, T200, T210, T300, T310, T400 products, and all compatible CFP2-ACO modules utilizing DP-QPSK.[4] On information and belief, the

[4] The 1Finity products can interface with CFP2-ACO compliant pluggable transponders as shown in the figure below depicting the pluggable connection options for the exemplary 1Finity T100. http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.

1Finity series products were first announced in August, 2015, with commercial rollout of some 1Finity products beginning in late 2015.[5] On information and belief, additional 1Finity products became available between April and June of 2016.[6] Other infringing products include Virtuora Network Controllers, Flashwave CDS, and Flashwave 9500, including without limitation compatible CFP2-ACO modules utilizing DP-QPSK, along with compatible shelf-installed 100G transponder and muxponder cards. In late 2015, Fujitsu announced the impending release of 100G hardware for use with the Flashwave CDS and Flashwave 9500 product lines.[7] On information and belief, this 100G hardware became available to customers in 2016. On information and belief, Defendant Fujitsu Optical Components, Ltd. supplies and/or sells numerous infringing components to Fujitsu Network Communications Inc. and/or other unaffiliated third parties for use in at least the products listed in this paragraph. These components include without limitation the 100G OIF 168pin Coherent Transceiver (FIM85200), 100G CFP Digital Coherent Optics Transceiver (FIM38000/101, FIM38100/101, FIM38200/101), 100G/200G CFP2 Analog Coherent Optics Transceiver (FIM38500, FIM38550/110, FIM38550/102), 100G CFP Transceiver (FIM37102, FIM37202), 100G CFP2 Transceiver (FIM37302, FIM37402), 100G QSFP28 Transceiver (FIM37700, FIM37800), 100G/400G LN Modulator (FTM7992HM, FTM7990HKA, FTM7977HQA, and the Integrated



[5] *See, e.g.,* http://www.fujitsu.com/global/about/resources/news/press-releases/2015/0818-01.html.
[6] *See, e.g.*, http://www.fujitsu.com/global/about/resources/news/press-releases/2016/0323-01.html.
[7] *See, e.g.*, http://www.fujitsu.com/us/about/resources/news/press-releases/2015/fnc-20151109.html.

Coherent Receiver (FIM24901, FIM2472. All of the foregoing accused products and components named in this paragraph shall be referred to collectively hereinafter as the "'898 Accused Instrumentalities."

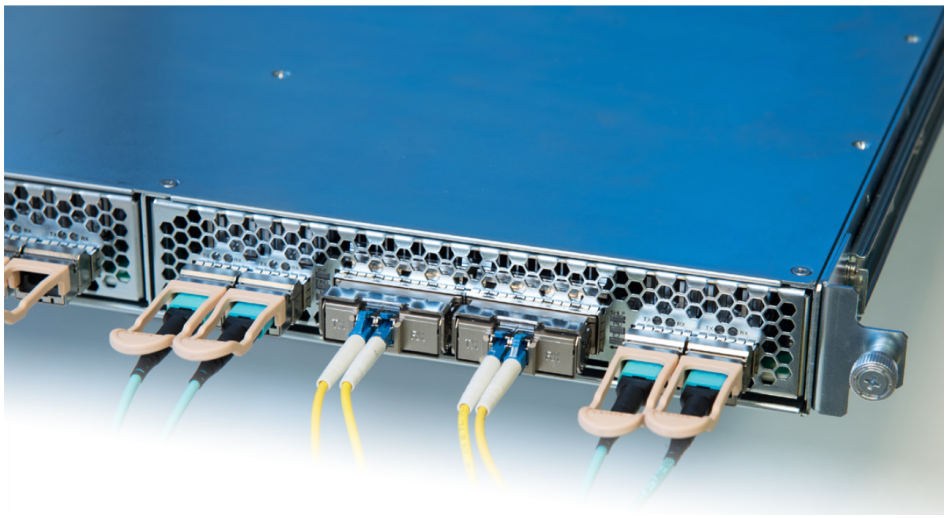
28. On information and belief, the '898 Accused Instrumentalities comprise a transceiver card for a telecommunications box for transmitting data over a first optical fiber and receiving data over a second optical fiber. For example, the Flashwave 9500 features "[i]ndustry-leading 100G coherent optics transport technology" with "full-band tunable interface units," including a "100G transponder/muxponder" that transmits and receives optical data signals.[8] On information and belief, 100G transponders and muxponders operate as cards that may be installed into a chassis ("shelf") having as many as 24 interface slots.[9] They may also be installed as "pluggable" units that comply with standards governing the CFP2-ACO interface format, and other standardized interface formats used the '898 Accused Instrumentalities for such pluggable units. Furthermore, the exemplary 1Finity products utilize "Tx" and "Rx" wavelengths for optical transport.[10] "Tx" is an abbreviation meaning "transmit" while "Rx" is an abbreviation meaning "receive." On information and belief, transmission and receipt of optical signals occurs over different fibers at different ports for all of the '898 Accused Instrumentalities.

29. On information and belief, the '898 Accused Instrumentalities comprise a transmitter having a laser, a modulator, and a controller configured to receive input data and control the modulator to generate a first optical signal as a function of the input data. For example, 1Finity products are described as "Class 1M laser products" emitting "invisible laser

[8] http://www.fujitsu.com/us/Images/flashwave9500.pdf
[9] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.
[10] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T310.pdf.

radiation."[11] 1Finity products also use "DP-QPSK and DP-16QAM technologies to achieve 100 and 200 Gbps per wavelength."[12] Each of the DP-QPSK and DP-16QAM are modulation formats requiring a phase modulator and controller configured to receive input data and control the modulator to generate an optical signal as a function of the input data. The Flashwave 9500 features "[i]ndustry-leading 100G coherent optics transport technology" with "full-band tunable interface units" that also, on information and belief, comprise a laser.[13] On information and belief, the exemplary Flashwave 9500 products also utilize DP-QPSK, which as discussed earlier requires a phase modulator and controller configured to receive input data and control the modulator to generate an optical signal as a function of the input data.

30. On information and belief, the Accused Instrumentalities comprise a fiber output optically connected to the transmitter and configured to optically connect an optical fiber to the transceiver card. For example, the figure below depicts an exemplary 1Finity product with fiber outputs and inputs, used for optically connecting fibers to the transceiver.[14]



[11] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[12] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[13] http://www.fujitsu.com/us/Images/flashwave9500.pdf.
[14] *See, e.g.*, http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.

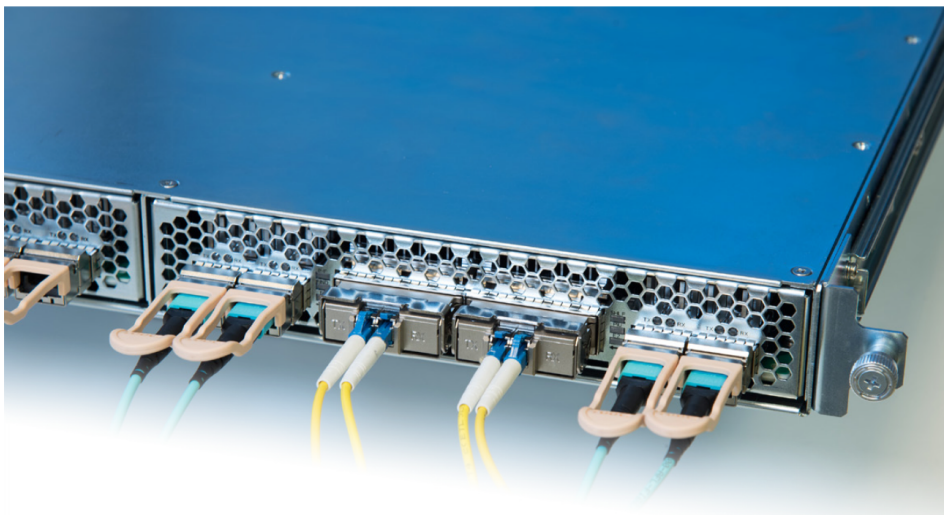
Fiber input and output ports used to connect fibers to transceivers are also present in the exemplary Flashwave 9500 product, as shown in the figure below.[15]

31. On information and belief, the Accused Instrumentalities comprise a receiver configured to receive an optical signal from the second optical fiber and to convert that optical signal to output data. For example, the 1Finity products utilize an "Rx" wavelengths for optical transport,[16] and "Rx" is an abbreviation meaning "receive." The exemplary Flashwave 9500 supports interfaces for "100G/OTU4" that include available 100G transponder/muxponder cards.[17] On information and belief, these cards comprise a receiver configured to receive optical signals from optical fibers and convert them to output data.

32. On information and belief, the Accused Instrumentalities comprise a fiber input optically connected to the receiver and configured to optically connect the second optical fiber to

[15] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.
[16] *See, e.g.*, http://www.fujitsu.com/us/Images/1FINITY-T310.pdf.
[17] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

the transceiver card. For example, the figure below depicts an exemplary 1Finity product with fiber outputs and inputs optically connecting fibers to the transceiver.[18]



Fiber input and output ports used to optically connect fibers to receivers are also present in the exemplary Flashwave 9500 product, as shown in the figure below.[19]

[18] *See, e.g.*, http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[19] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

33. On information and belief, the Accused Instrumentalities comprise an energy level detector configured to measure an energy level of the second optical signal, the energy level detector including a threshold indicating a drop in amplitude of the incoming optical signal. On information and belief, and for the reasons stated above, the '898 Accused Instrumentalities operate in compliance with the Open ROADM MSA. The Open ROADM MSA specifies numerous "PM," or "Performance Monitoring" requirements. Some of these are listed in the table reproduced below.[20]

PM Description	MW
Optical Power Output (OPOUT-OTS)	x
Optical Power Input (OPIN-OTS)	x
Optical Power Output (OPOUT-OMS)	x
Optical Power Input (OPIN-OMS)	x
Optical Return Loss (ORL-OTS/ORL-OMS)	x
OSC Optical Power Receive (OPR-OSC)	x
OSC Optical Power Transmit (OPT-OSC)	x
Optical Channel Power Receive (OPR-OCH)	x
Optical Channel Power Transmit (OPT-OCH)	x
Optical Power Receive (OPR)	
Optical Power Transmit (OPT)	

On information and belief, the Accused Instrumentalities monitor at least "optical power input (OPIN-OTS)," "OSC Optical Power Receive (OPR-OSC)" "Optical Power Input (OPIN-OMS)," "Optical Channel Power Receive (OPR-OCH)," and "Optical Return Loss (ORL-OTS/ORL-OMS)" by using an energy level detector configured to measure an energy level of the second optical signal. On information and belief, "Optical Return Loss (ORL-OTS/ORL-OMS)" utilizes a threshold indicating a drop in amplitude of the incoming optical signal. Furthermore, and as

[20] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.

shown in the table Open ROADM MSA also specifies numerous parameters for the optical line port, including monitoring and alarms for "dLOS" or "loss of optical power defect."[21]

OSC Optical Layer Monitoring & Alarms:
Optical Power Transmit
Optical Power Received
dLOS (loss of optical power defect)
OSC Link Down Alarm

On information and belief, "dLOS" is triggered by failure of the incoming optical signal to meet a certain power threshold. Because amplitude of the signal is directly related to the signal's optical power, a loss of optical power corresponds to a drop in signal amplitude.

34. On information and belief, Defendant has directly infringed and continues to directly infringe the '898 Patent by, among other things, making, using, offering for sale, and/or selling the '898 Accused Instrumentalities. On information and belief, such products and/or services are covered by one or more claims of the '898 Patent, including at least claim 14. On information and belief, Defendant also sold and offered for sale other products that also infringe in a substantially similar manner.

35. By making, using, offering for sale, and/or selling the '898 Accused Instrumentalities infringing the '898 Patent, Defendant has injured Oyster and is liable to Oyster for infringement of the '898 Patent pursuant to 35 U.S.C. § 271(a) directly and/or under the doctrine of equivalents.

36. In addition, Defendant is actively inducing others, such as its customers and end users of '898 Accused Instrumentalities, services based thereupon, and related products and/or processes, to directly infringe each and every claim limitation, including without limitation claim 14 of the '898 Patent, in violation of 35 U.S.C. § 271(b). Upon information and belief,

[21] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.

Defendant's customers and/or end users have directly infringed and are directly infringing each and every claim limitation, including without limitation claim 14 of the '898 Patent. Defendant has actual knowledge of the '898 Patent at least as of November 23, 2016, when an earlier action asserting infringement of this patent was commenced against the Defendant. Defendant is knowingly inducing its customers and/or end users to directly infringe the '898 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Defendant's inducement includes, for example, providing technical guides, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '898 Patent.

37. To the extent facts learned in discovery show that Defendant's infringement of the '898 Patent is or has been willful, Oyster reserves the right to request such a finding at trial.

38. As a result of Defendant's infringement of the '898 Patent, Oyster has suffered monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court, and Oyster will continue to suffer damages in the future unless Defendant's infringing activities are enjoined by this Court.

39. Unless a permanent injunction is issued enjoining Defendant and its agents, employees, representatives, affiliates, and all others acting or in active concert therewith from infringing the '898 Patent, Oyster will be greatly and irreparably harmed.

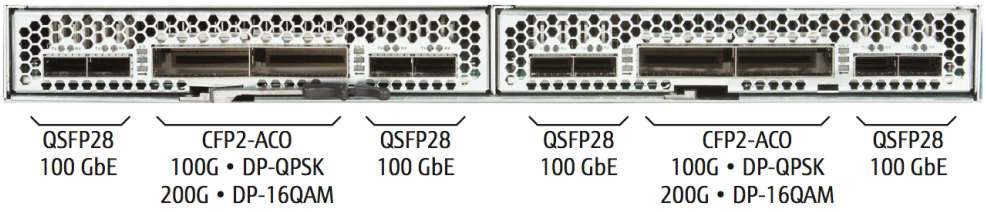
COUNT III

INFRINGEMENT OF THE '327 PATENT

40. Oyster incorporates by reference the foregoing paragraphs of this Complaint.

41. On information and belief, Defendant makes, uses, offers to sell and/or sells in the United States the Products that infringe various claims of the '327 Patent, including at least Claim 25, and continues to do so. These products include, without limitation, Fujitsu's 1Finity products such as the 1Finity L100, L200, and other members of the 1Finity Lambda Blade DWDM family, the 1Finity C200, C201, C202, T100, T200, T210, T300, T310, T400 products, and all compatible CFP2-ACO modules utilizing DP-QPSK.[22] On information and belief, the 1Finity series products were first announced in August, 2015, with commercial rollout of some 1Finity products beginning in late 2015.[23] On information and belief, additional 1Finity products became available between April and June of 2016.[24] Other infringing products include Virtuora Network Controllers, Flashwave CDS, and Flashwave 9500, including without limitation compatible CFP2-ACO modules utilizing DP-QPSK, along with compatible shelf-installed 100G transponder and muxponder cards. In late 2015, Fujitsu announced the impending release of 100G hardware for use with the Flashwave CDS and Flashwave 9500 product lines.[25] On information and belief, this 100G hardware became available to customers in 2016. On information and belief, Defendant Fujitsu Optical Components, Ltd. supplies and/or sells

[22] The 1Finity products can interface with CFP2-ACO compliant pluggable transponders as shown in the figure below depicting the pluggable connection options for the exemplary 1Finity T100. http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.



[23] *See, e.g.,* http://www.fujitsu.com/global/about/resources/news/press-releases/2015/0818-01.html.

[24] *See, e.g.*, http://www.fujitsu.com/global/about/resources/news/press-releases/2016/0323-01.html.

[25] *See, e.g.*, http://www.fujitsu.com/us/about/resources/news/press-releases/2015/fnc-20151109.html.

numerous infringing components to Fujitsu Network Communications Inc. and/or other unaffiliated third parties for use in at least the products listed in this paragraph. These components include without limitation the 100G OIF 168pin Coherent Transceiver (FIM85200), 100G CFP Digital Coherent Optics Transceiver (FIM38000/101, FIM38100/101, FIM38200/101), 100G/200G CFP2 Analog Coherent Optics Transceiver (FIM38500, FIM38550/110, FIM38550/102), 100G CFP Transceiver (FIM37102, FIM37202), 100G CFP2 Transceiver (FIM37302, FIM37402), 100G QSFP28 Transceiver (FIM37700, FIM37800), 100G/400G LN Modulator (FTM7992HM, FTM7990HKA, FTM7977HQA, and the Integrated Coherent Receiver (FIM24901, FIM2472). All of the foregoing accused products and components named in this paragraph shall be referred to collectively hereinafter as the "'327 Accused Instrumentalities."

42. On information and belief, the '327 Accused Instrumentalities comprise a transceiver card for a telecommunications box for transmitting data over a first optical fiber and receiving data over a second optical fiber. For example, the Flashwave 9500 features "[i]ndustry-leading 100G coherent optics transport technology" with "full-band tunable interface units," including a "100G transponder/muxponder" that transmits and receives optical data signals.[26] On information and belief, 100G transponders and muxponders operate as cards that may be installed into a chassis ("shelf") having as many as 24 interface slots.[27] They may also be installed as "pluggable" units that comply with standards governing the CFP2-ACO interface format, and other standardized interface formats used the '327 Accused Instrumentalities for such pluggable units. Furthermore, the exemplary 1Finity products utilize "Tx" and "Rx"

[26] http://www.fujitsu.com/us/Images/flashwave9500.pdf.
[27] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

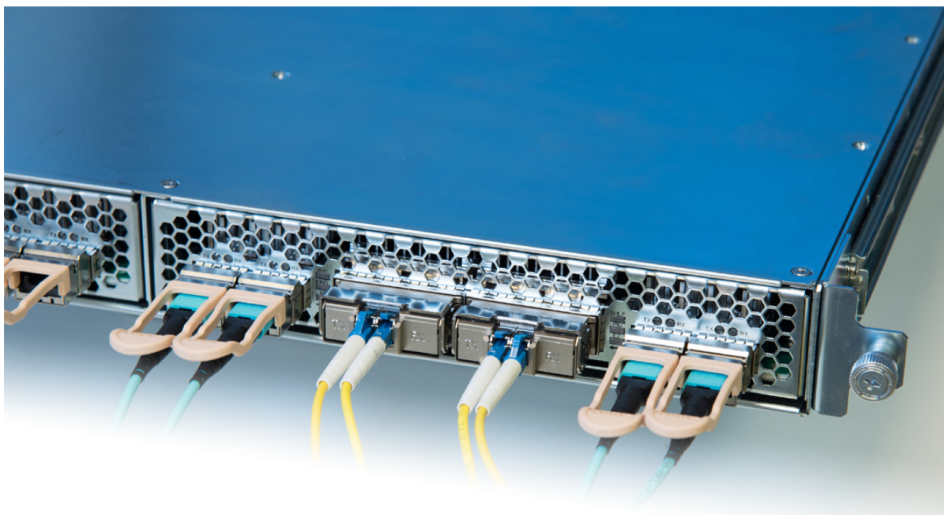
wavelengths for optical transport.[28] "Tx" is an abbreviation meaning "transmit" while "Rx" is an abbreviation meaning "receive." On information and belief, transmission and receipt of optical signals occurs over different fibers at different ports for all of the '327 Accused Instrumentalities.

43. On information and belief, the '327 Accused Instrumentalities comprise a transmitter for transmitting data over the first optical fiber, the transmitter having a laser, a modulator and a controller receiving input data and controlling the modulator as a function of the input data, the transmitter transmitting optical signals for telecommunication as a function of the input data. For example, 1Finity products are described as "Class 1M laser products" emitting "invisible laser radiation."[29] 1Finity products also use "DP-QPSK and DP-16QAM technologies to achieve 100 and 200 Gbps per wavelength."[30] At least DP-QPSK is a modulation format requiring a phase modulator and controller configured to receive input data and control the modulator to generate an optical signal as a function of the input data that is thereafter transmitted over the fiber. The Flashwave 9500 features "[i]ndustry-leading 100G coherent optics transport technology" with "full-band tunable interface units" that also, on information and belief, comprise a laser.[31] On information and belief, the exemplary Flashwave 9500 products also utilize DP-QPSK, which requires a phase modulator and controller configured to receive input data and control the modulator to generate an optical signal as a function of the input data that is thereafter transmitted over the fiber.

44. On information and belief, the Accused Instrumentalities comprise a fiber output optically connected to the laser for connecting the first optical fiber to the card. For example, the

[28] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T310.pdf.
[29] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[30] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[31] http://www.fujitsu.com/us/Images/flashwave9500.pdf.

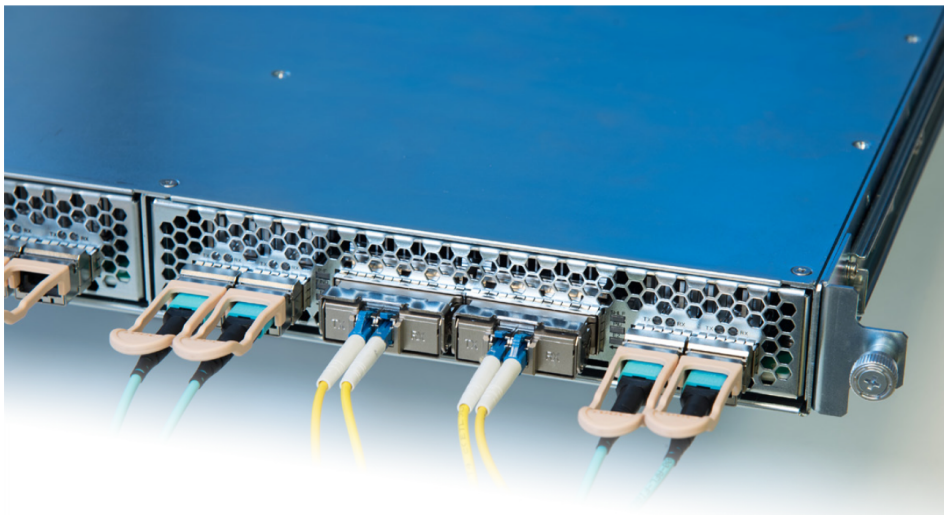
figure below depicts an exemplary 1Finity product with fiber outputs and inputs, used for optically connecting fibers to the transceiver.[32]



Fiber input and output ports used to connect fibers to transceivers are also present in the exemplary Flashwave 9500 product, as shown in the figure below.[33]

[32] *See, e.g.*, http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[33] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

45. On information and belief, the Accused Instrumentalities comprise a fiber input for connecting the second optical fiber to the card. For example, the figure below depicts an exemplary 1Finity product with fiber outputs and inputs optically connecting fibers to the transceiver.[34]



Fiber input and output ports used to optically connect fibers to receivers are also present in the exemplary Flashwave 9500 product, as shown in the figure below.[35]

[34] *See, e.g.*, http://www.fujitsu.com/us/Images/1FINITY-T100.pdf.
[35] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

46. On information and belief, the Accused Instrumentalities comprise a receiver optically connected to the fiber input for receiving data from the second optical fiber. For example, the 1Finity products utilize an "Rx" wavelengths for optical transport,[36] and as discussed above, "Rx" is an abbreviation meaning "receive." The exemplary Flashwave 9500 supports interfaces for "100G/OTU4" that include available 100G transponder/muxponder cards.[37] On information and belief, these cards comprise a receiver configured to receive optical signals from optical fibers and convert them to output data.

47. On information and belief, the Accused Instrumentalities comprise an energy level detector to measure an energy level of the optical signals, the energy level detector including a threshold indicating a drop in amplitude of a phase-modulated signal. On information and belief, and for the reasons stated above, the '327 Accused Instrumentalities operate in compliance with the Open ROADM MSA. The Open ROADM MSA specifies numerous "PM,"

[36] *See, e.g.,* http://www.fujitsu.com/us/Images/1FINITY-T310.pdf.
[37] *See, e.g.*, http://www.fujitsu.com/us/Images/flashwave9500.pdf.

or "Performance Monitoring" requirements. Some of these are listed in the table reproduced below.[38]

PM Description	MW
Optical Power Output (OPOUT-OTS)	x
Optical Power Input (OPIN-OTS)	x
Optical Power Output (OPOUT-OMS)	x
Optical Power Input (OPIN-OMS)	x
Optical Return Loss (ORL-OTS/ORL-OMS)	x
OSC Optical Power Receive (OPR-OSC)	x
OSC Optical Power Transmit (OPT-OSC)	x
Optical Channel Power Receive (OPR-OCH)	x
Optical Channel Power Transmit (OPT-OCH)	x
Optical Power Receive (OPR)	
Optical Power Transmit (OPT)	

On information and belief, the Accused Instrumentalities monitor at least "optical power input (OPIN-OTS)," "OSC Optical Power Receive (OPR-OSC)" "Optical Power Input (OPIN-OMS)," "Optical Channel Power Receive (OPR-OCH)," and "Optical Return Loss (ORL-OTS/ORL-OMS)" by using an energy level detector configured to measure an energy level of the second optical signal. On information and belief, "Optical Return Loss (ORL-OTS/ORL-OMS)" utilizes a threshold indicating a drop in amplitude of the incoming optical signal. Furthermore, and as shown in the table Open ROADM MSA also specifies numerous parameters for the optical line port, including monitoring and alarms for "dLOS" or "loss of optical power defect."[39]

OSC Optical Layer Monitoring & Alarms:
Optical Power Transmit
Optical Power Received
dLOS (loss of optical power defect)
OSC Link Down Alarm

[38] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.
[39] *See, e.g.,* 20171121a-Open-ROADM-MSA-specification-ver-2-00.xlsx, *available at* http://www.openroadm.org/download.html.

On information and belief, "dLOS" is triggered by failure of the incoming optical signal to meet a certain power threshold. Because amplitude of the signal is directly related to the signal's optical power, a loss of optical power corresponds to a drop in signal amplitude.

48. On information and belief, Defendant has directly infringed and continues to directly infringe the '327 Patent by, among other things, making, using, offering for sale, and/or selling the '327 Accused Instrumentalities. On information and belief, such products and/or services are covered by one or more claims of the '327 Patent, including at least claim 25. On information and belief, Defendant also sold and offered for sale other products that also infringe in a substantially similar manner.

49. By making, using, offering for sale, and/or selling the '327 Accused Instrumentalities infringing the '327 Patent, Defendant has injured Oyster and is liable to Oyster for infringement of the '327 Patent pursuant to 35 U.S.C. § 271(a) directly and/or under the doctrine of equivalents.

50. In addition, Defendant is actively inducing others, such as its customers and end users of '327 Accused Instrumentalities, services based thereupon, and related products and/or processes, to directly infringe each and every claim limitation, including without limitation claim 14 of the '327 Patent, in violation of 35 U.S.C. § 271(b). Upon information and belief, Defendant's customers and/or end users have directly infringed and are directly infringing each and every claim limitation, including without limitation claim 25 of the '327 Patent. Defendant has actual knowledge of the '327 Patent at least as of November 23, 2016, when an earlier action asserting infringement of this patent was commenced against the Defendant. Defendant is knowingly inducing its customers and/or end users to directly infringe the '327 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute

patent infringement. Defendant's inducement includes, for example, providing technical guides, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '327 Patent.

51. To the extent facts learned in discovery show that Defendant's infringement of the '327 Patent is or has been willful, Oyster reserves the right to request such a finding at trial.

52. As a result of Defendant's infringement of the '327 Patent, Oyster has suffered monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court, and Oyster will continue to suffer damages in the future unless Defendant's infringing activities are enjoined by this Court.

53. Unless a permanent injunction is issued enjoining Defendant and its agents, employees, representatives, affiliates, and all others acting or in active concert therewith from infringing the '327 Patent, Oyster will be greatly and irreparably harmed.

PRAYER FOR RELIEF

Plaintiff respectfully requests the following relief from this Court:

A. A judgment that Defendant has infringed one or more claims of the '012, '898 and/or '327 Patents;

B. A permanent injunction enjoining Defendant and its officers, directors, agents, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert or participation with Defendant, from infringing the '012, '898 and/or '327 Patents;

C. A judgment and order requiring Defendant to pay Oyster its damages, costs, expenses, and prejudgment and post-judgment interest for Defendant's acts of infringement in accordance with 35 U.S.C. § 284;

D. A judgment and order requiring Defendant to provide accountings and to pay supplemental damages to Oyster, including, without limitation, prejudgment and post-judgment interest;

E. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Oyster its reasonable attorneys' fees against Defendant; and

F. Any and all other relief to which Oyster may show itself to be entitled.

JURY TRIAL DEMANDED

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Oyster requests a trial by jury of any issues so triable by right.

Dated: April 17, 2018

Respectfully submitted,

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