LAWRENCE M. HADLEY - State Bar No. 157,728
lhadley@glaserweil.com
STEPHEN E. UNDERWOOD - State Bar No. 320,303
sunderwood@glaserweil.com
GLASER WEIL FINK HOWARD
AVCHEN & SHAPIRO LLP
10250 Constellation Boulevard, 19th Floor
Los Angeles, California 90067
Telephone: (310) 553-3000
Facsimile: (310) 556-2920

LAWRENCE R. LAPORTE, SB# 130,003
Lawrence.LaPorte@lewisbrisbois.com
LEWIS BRISBOIS BISGAARD & SMITH LLP
633 West 5th Street, Suite 4000
Los Angeles, California 90071
Telephone: 213.250.1800
Facsimile: 213.250.7900

Attorneys for Plaintiff
Core Optical Technologies, LLC

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

CORE OPTICAL TECHNOLOGIES, LLC,

Plaintiff,

v.

JUNIPER NETWORKS, INC., a Delaware Corporation, and DOES 1 through 10, inclusive,

Defendants.

CASE NO: 21-CV-02428-SK

THIRD AMENDED COMPLAINT FOR PATENT INFRINGEMENT

JURY TRIAL DEMANDED

Plaintiff Core Optical Technologies, LLC ("Plaintiff" or "Core"), through its undersigned counsel, hereby files this Third Amended Complaint against Defendants Juniper Networks, Inc. ("Juniper") and Does 1 through 10, inclusive ("Does") (collectively, "Defendants"). For its complaint, Core alleges as follows:

THE PARTIES

1. Core is a limited liability company organized and existing under the laws of the State of California. Core has a principal place of business located at 18792 Via Palatino, Irvine, California 92603.

2. Defendant Juniper is a corporation organized and existing under the laws of the State of Delaware, which maintains its principal place of business at 1194 Mathilda Avenue, Sunnyvale, California.

3. Defendants Does are: (i) customers and/or end-users of Juniper's fiber optic cross polarization interference cancelling devices; (ii) other end-users of Juniper's fiber optic cross polarization interference cancelling devices; (iii) persons, such as third-party vendors or contractors, who have assisted Juniper or the other Doe Defendants in using Juniper's fiber optic cross polarization interference cancelling devices in a manner that infringes the Asserted Claims (as defined below); and/or (iv) other persons, all of whom have infringed the Asserted Claims, or who have assisted other Defendants in infringing the Asserted Claims, by or through their use of Juniper's fiber optic cross polarization interference cancelling devices

4. The true names and identities of the Doe Defendants are unknown at this time. Therefore, they are being sued under their fictitious names. At such time as their true names are ascertained, this Complaint will be amended to so reflect.

5. On information and belief, each Doe Defendant has directly and/or indirectly infringed the Asserted Claims, either by themselves or in concert with other Defendants, by using Juniper's fiber optic cross polarization interference cancelling devices in the United States. Core reserves the right to amend this Complaint to identify the specific infringing acts of each Doe Defendant once it learns such facts. Core expect that most, or all, of such facts are non-public. Core expects to uncover such facts in discovery.

JURISDICTION AND VENUE

6. This is an action for infringement of method claims, and *only* method

claims, of U.S. Patent No. 6,782,211, entitled "Cross Polarization Interface [sic] Canceler," which was duly issued by the United States Patent and Trademark Office on August 24, 2004 ("the '211 patent"). The asserted claims in this case are *only* method claims 30, 32, 33, 35 and 37 of the '211 patent ("the Asserted Claims").

7. This Court has subject matter jurisdiction over this case under 28 U.S.C. §§ 1331 and 1338(a), because the claims arise under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*.

8. This Court has personal jurisdiction over Defendants, because Defendants conduct continuous and systematic business in California, including, upon information and belief, in this judicial district.

9. This Court also has personal jurisdiction over Defendants because Defendants maintain regular and established places of business in this judicial district.

10. This court has general personal jurisdiction over Defendant Juniper because Juniper resides in California, because its principal place of business is located at 1194 Mathilda Avenue, Sunnyvale, California.

11. This Court also has specific personal jurisdiction over Defendants because, on information and belief, Defendants have committed acts of infringement in California, and in this judicial district. Specifically, on information and belief, Defendants have made, used, offered for sale, sold, imported, and/or distributed within California, and in this judicial district, devices that can be configured to cancel cross polarization interference in received fiber optic signals—which, as so used and configured, perform all the steps of the Asserted Claims. Also, on information and belief, Defendants have performed all the steps of at least one of the Asserted Claims in California, and in this judicial district. Also, on information and belief, Defendants have induced and/or contributed to customers' infringing uses of the cross-polarization interference canceling devices in California, and in this judicial district.

12. Venue is proper in this judicial district against Defendants, because: (i) Defendant Juniper resides in this district, because its principal place of business is

located at 1194 Mathilda Avenue, Sunnyvale, California; and (ii) on information and belief, each Defendant has regular and established place(s) of business in this district, and each Defendant committed acts of infringement in this judicial district, including by performing all steps of the method(s) claimed in the Asserted Claims in this judicial district, and/or by performing acts of contributory or induced infringement in this judicial district. *See* 28 U.S.C. § 1400(b).

13. Additionally, venue is proper in this district because Defendant Juniper consented to venue here, by moving to transfer the case to this district.

THE ASSERTED PATENT

14. Mark Core, the sole named inventor of the '211 patent, earned his Ph.D. in electrical and computer engineering from the University of California, Irvine, and is the Manager of Core Optical Technologies, LLC. The pioneering technology set forth in the '211 patent greatly increases data transmission rates in fiber optic networks, by enabling two optical signals transmitted in the same frequency band, but at generally orthogonal polarizations, to be recovered at a receiver. The patented technology that enables the recovery of these signals includes coherent optical receivers and related methods that mitigate cross-polarization interference associated with the transmission of the signals through the fiber optic network. The coherent receivers and their patented methods mitigate the effects of polarization dependent loss and dispersion effects that limit the performance of optical networks, greatly increasing the transmission distance and eliminating or reducing the need for a variety of conventional network equipment such as amplifiers, regenerators, and compensators. The patented technology set forth in the '211 patent has been adopted by Defendants in, at least, their packet-optical transport solutions described below.

15. On November 5, 1998, Mark Core filed with the United States Patent and Trademark Office ("USPTO") Provisional Patent Application No. 60/107,123 ("the '123 application") directed to his pioneering inventions. On November 4, 1999, Mark Core filed with the USPTO a non-provisional patent application, U.S. Patent

Application No. 09/434,213 ("the '213 application"), claiming priority to the '123 application. On August 24, 2004, the USPTO issued the '211 patent from the '213 application. The entire right, title, and interest in and to the '211 patent, including all rights to past damages, has been assigned to Core in an assignment recorded with the USPTO. The '211 patent is attached as Exhibit 1 to this Complaint.

16. The Asserted Claims of the '211 patent are all method claims. One of these is claim 33, an independent method claim. Claim 33 is reproduced below, with parenthetical annotations to identify the different elements of the claim:

> 33. A method comprising:
>
> > (33a) receiving an optical signal over a single fiber optic transmission medium,
> >
> > > (33a1) the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms; and
> >
> > (33b) mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms
> >
> > > (33b1) using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components.

DEFENDANTS' CROSS POLARIZATION CANCELLING DEVICES

17. Defendants and/or their divisions, subsidiaries, and/or agents are engaged in the business of making, using, distributing, importing, offering for sale and/or selling devices that can be configured to mitigate and/or cancel cross polarization interference in received fiber optic signals. As so configured, the devices, when used, perform all the steps of the methods claimed in the Asserted Claims

during normal use. These devices include, but are not limited to: the PTX 3000, PTX 5000, and PTX 10000 Series Optical Platforms (the "PTX Family"); the BTI7800 Series Optical Transport Platforms, which includes the BTI 7801, the BTI 7802, and the BTI 7814 (the "BTI 7800 Series"); the MX Series routers, which include the MX 240, MX 480, MX 960, MX 2008, MX 2010, and MX 2020 routers (the "MX Series"); the QFX 10000 Series, which includes the QFX 10008 and the QFX 10016 (the "QFX 10000 Series"); and the ACX 6000 Series, which includes the ACX 6160 and the ACX 6360 (the "ACX 6000 Series") (collectively, "the Platforms"); and, the modules, line cards and interface cards which are used with the Platforms to implement Juniper's polarization-division multiplexing ("PDM") and cross-polarization interference ("XPI") mitigation functionality, including the relevant Universal Forwarding Modules (UFMs), BTI Interface Cards (BICs), transceivers, Dense Port Concentrators (DPCs), Physical Interface Cards (PICs), Flexible PIC Concentrators (FPCs), Modular Interface Cards (MICs), Modular Port Concentrators (MPCs), and other relevant modules and cards (the "Modules and Cards"); and, the software that is used with the foregoing to perform dual-polarization communication, including the JunOS operating system software (the "Software") (all together, "the Fiber Optic XPIC Devices" or the "Accused Instrumentalities.")

18. The Modules and Cards include, but are not limited to, the following line cards and modules that are used with the Platforms to perform infringing dual-polarization communication: (i) PTX-2-100G-WDM (100-Gigabit DWDM OTN PIC); (ii) PTX-5-100G-WDM (100-Gigabit DWDM OTN PIC); (iii) PTX10K-LC1104 (PTX10K 6x100G/150G/200G DWDM line card); (iv) MIC3-100G-DWDM; (v) BT8A78UFM3; (vi) BT8A78UFM4 (Universal Forwarding Module with Integrated 100G Coherent MSA XCVR); (vii) BT8A78UFM6 (Universal Forwarding Module with Integrated 400G Coherent); (viii) QFX10K-12C-DWDM (QFX10K DWDM full capacity 1.2T line card bundle); (ix) QFX10K-6C-DWDM; (x) QFX10K-2P-DWDM (Coherent Line Card); (xi) 2x100G DWDM Mezzanine Card;

(xii) 2x200G Coherent Optical Module; (xiii) 100G-400G Flex-Rate DWDM Optical Module; (xiv) 100G CFP ZR; (xv) 100G CFP DWDM; (xvi) CFP-DCO, 100G only; (xvii) CFP2-DCO, 100G/200G; (xviii) TCFP2-100G-C (CFP2 100G Module); (xix) CFP-100GBASEZR (100GBASE-ZR CFP pluggable optics module); (xx) CFP2-DCO-T-WDM-1; (xxi) CFP2-DCO-100G-HG; (xxii) 100G DWDM CFP2 Optics Module; (xxiii) BP3AMCTL; (xxiv) 100G Coherent MSA Transceiver Module; (xxv) CFP2-DCO-T-WDM-2; (xxvi) UFM3; (xxvii) UFM4; (xxviii) UFM5; (xxix) UFM6; (xxx) Part No. 740-053622; (xxxi) Part No. 740-073963; (xxxii) Part No. 740-067752; (xxxiii) Part No. 740-072229; (xxxiv) Part No. SC004594; (xxxv) Capella; (xxxvi) Voodoo; (xxxvii) Cordoba; (xxxviii) CFP-100GBASE-CHRT; (xxxix) MSA-UFM4; (xl) CFPUFM3; (xli) BT8A78CFP1G; (xlii) BT8A78UFM5; and (xliii) any other Juniper line card, transponder, muxponder, pluggable optical module, or other such equipment used with the Platforms to perform dual-polarization communication.

19. Each Fiber Optic XPIC Device is, or can be, configured to perform all of the steps recited in the Asserted Claims of the ’211 Patent, during normal use. On information and belief, each Defendant has actually used the Fiber Optic XPIC Devices to perform each step of the methods recited in the Asserted Claims of the ’211 Patent, within the United States, either itself, through intermediaries, or in conjunction with one or more joint venturers or customers.

The PTX Family

20. The PTX Family is a family of optical networking equipment with “100GbE coherent dense wavelength-division multiplexing (DWDM)” communication capability. Exh. 2 (Juniper Datasheet, “PTX5000 and PTX3000 PICs”) at 2; *see also* Exh. 3 (Juniper publication, “PTX5000 100G Packet Optical Solution”) at 3 (stating that the PTX5000 uses “100G DWDM optics”); Ex. 21 (PTX 10000 Series datasheet) at 3 (PTX 10000 Series has “integrated 100GbE coherent transport for superior performance.”)

21. Element 33(a) recites “receiving an optical signal over a single fiber

optic transmission medium." The PTX Family includes optical receivers that receive optical signals over a single fiber optic transmission medium. *See, e.g.,* Exh. 2 at 3 (PTX Family "contains a coherent ***receiver*** to correct linear and nonlinear effects that have accumulated traversing the ***fiber span***"); Ex. 21 at 4 (PTX 10000 can be used with the PTX10K-LC1104 line card, which receives optical signals over fiberoptic cables with "integrated coherent optics.") Thus, the PTX Family is configured to perform element 33(a) during normal use.

22. Element 33(a1) recites "the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms." When used with appropriate components, the PTX Family is configured to perform polarization-division multiplexing ("PDM"), in which the optical signal contains two "polarized field components," at orthogonal polarizations, which are "independently modulated with independent information bearing waveforms." *See, e.g.,* Exh. 2 at 2 ("The 2-port 100GbE coherent DWDM PIC transmits a ***DP-QPSK signal***" - "DP-QPSK" means "***Dual Polarization*** – Quadrature Phase Shift Keying. Thus, the PTX Family, when used with the 2-port 100GbE PIC, performs polarization-division multiplexing); Exh. 3 at 3 (the PTX Family, when used with "100G DWDM optics," uses "***dual-polarization*** quadrature phase shift keying (DP-QPSK)"); Ex. 22 ("PTX10008 Line Card Components and Description") at 16-17 (stating that the PTX10K-LC1104 line card used with the PTX 10000 Series uses "***DP***-QPSK" modulation). Thus, when used with appropriate components, the PTX Family is configured to perform element 33(a1), during normal use.

23. Element 33(b) recites "mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms." Publicly available information demonstrates that the PTX Family, when used with appropriate components, is configured to perform this step during normal use.

24. For instance, the PTX Family Datasheet (Exh. 2) states that the PTX

Family "contains a ***coherent receiver*** to ***correct linear and nonlinear effects*** that have accumulated traversing the fiber span." Exh. 2 at 2. On information and belief, one of the "linear and non-linear effects" that is "corrected" by the coherent receiver in the PTX Family is "cross polarization interference," which accumulates in the signal as it "travers[es] the fiber span." *Id.*

25. Similarly, Exhibit 3 states that the PTX Family receivers use "DSP [Digital Signal Processing] for compensation of chromatic and polarization mode dispersion." Exh. 3 at 3. On information and belief, the "compensation" performed by the "Digital Signal Processor" in the PTX Family mitigates "cross polarization interference" that accumulates in the signal as it propagates down the line.

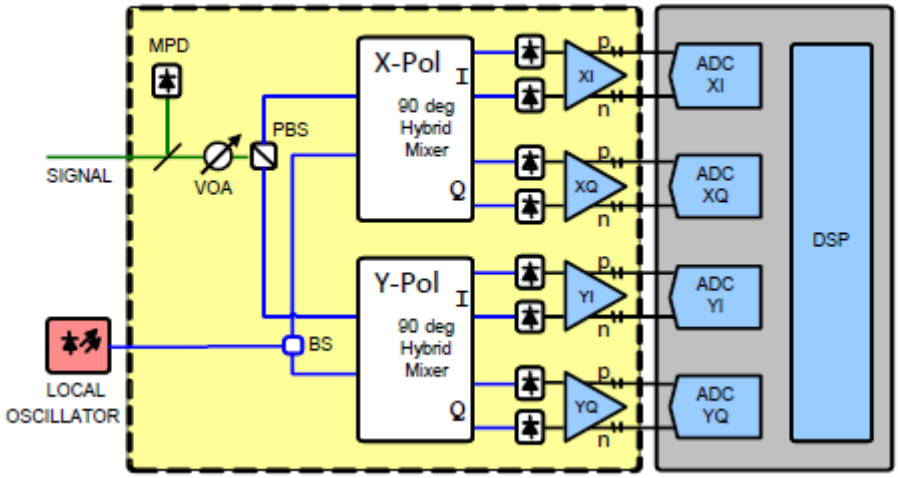
26. Moreover, the PTX Family Datasheet (Exh. 2) states that the PTX Family "leverages the latest Optical Internetworking Forum ***(OIF)-compliant*** optical technology." Exh. 2 at 2. Thus, any documents that describe the technical characteristics of "OIF-compliant optical technology," for 100G+ DWDM DP-QPSK transmission, also describe the technical characteristics of the PTX Family.

27. One such document is the OIF's "100G Ultra Long Haul DWDM Framework Document." *See* Exh. 4. According to this document, the "coherent receivers" in OIF-compliant 100G DWDM DP-QPSK transceivers, such as those in the PTX Family, include an "electronic equalizer" which is "used to recover both polarizations" of the DP-QPSK signal, and also used "to ***compensate for a number of signal impairments***, including chromatic dispersion and polarization mode dispersion, ***caused by long distance propagation***." Exh. 4 at 5 (emphasis added). On information and belief, one of the "signal impairments" that is "compensated for" in the "electronic equalizer" in the PTX Family is cross-polarization interference. Thus, the OIF document confirms that the PTX Family, when used with appropriate components, is configured to perform element 33(b) during normal use.

28. Element 33(b1) of claim 33 recites "using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting

to the at least two modulated polarized field components." On information and belief, and based on publicly available information, the PTX Family performs this step, when it is used with appropriate components, during normal use.

29. For instance, OIF document "Implementation Agreement for Integrated Dual Polarization Intradyne Coherent Receivers" (Exh. 5), dated November 14, 2013, shows the structure of the "OIF-compliant" receiver in the PTX Family, as follows (Exh. 5 at 9, Fig. 1):



30. As seen above, the PTX Family's coherent receiver separates the incoming optical signal into four components: (i) an in-phase X-polarized component, Xi; (ii) a quadrature (90° offset) X-polarized component, Xq; (iii) an in-phase Y-polarized component, Yi; and (iv) a quadrature Y-polarized component, Yq. Those four components are then sent to the "DSP" (Digital Signal Processing), to compensate for "signal impairments . . . caused by long distance propagation." Exh. 4 at 5. On information and belief, the DSP in the PTX Family's coherent receiver performs this "compensation" via a computation that uses "a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting" to the components. Thus, when used with appropriate components, the PTX Family is configured to perform element 33(b1) during normal use.

31. Accordingly, the PTX Family, when used with appropriate components, is configured to perform all the elements of claim 33 during normal use.

The BTI 7800 Series

32. The BTI 7800 Series is a "line of packet optical transport systems" that "can be equipped with 10 Gbps, 100 Gbps, and 200 Gbps interfaces . . . to support a wide range of muxponders and transponder connectivity." Exh. 7 (Datasheet, BTI7800 Packet Optical Transport Systems) at 1.

33. Element 33(a) of claim 33 recites "receiving an optical signal over a single fiber optic transmission medium." The BTI 7800 Series performs this initial step. *See, e.g.,* Exh. 7 at 2 (diagram showing BTI 7800 units transmitting and receiving optical signals over a single fiber optic transmission medium). Thus, the BTI 7800 Series is configured to perform element 33(a) during normal use.

34. Element 33(a1) recites "the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms." Public information shows that the BTI 7800 Series, when used with appropriate components, is configured to perform this step during normal use.

35. For instance, the document "BTI7800 Series Software Configuration Guide, v. 2.1" (Exh. 8) states that the BTI 7800 Series can send and receive both an "X-polarization signal" ***and*** a "Y-polarization signal." Exh. 8 at 11-4. Thus, the BTI 7800 Series, when used with appropriate components, receives an "optical signal" having "at least two polarized field components independently modulated with independent information." Accordingly, when used with appropriate components, the BTI 7800 Series is configured to perform element 33(a1) during normal use.

36. Element 33(b) recites "mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms." Publicly available information shows that the BTI 7800 Series, when used with appropriate components, is configured to perform this step during normal use.

37. For instance, the Datasheet "BTI 7800 Series Intelligent Networking Systems" (Exh. 9), dated 2015 (*id.* at 3), states that the BTI 7800 includes "100G Coherent modules." Exh. 9 at 1. The Datasheet further states that the BTI 7800 is "[o]ptimized for metro and regional networks;" thus, the BTI 7800 is designed for long-distance communication. *Id.* The Datasheet further states that the BTI 7800's "Coherent Optics" achieve a Polarization-Mode Dispersion ("PDM") tolerance of 15 picoseconds, and a Polarization-Dependent Loss ("PDL") tolerance of 3 dB. *Id.* at 3.

38. On information and belief, the only way to achieve these tolerances with a coherent optical receiver, in long-haul operation, is to mitigate cross-polarization interference, as described and claimed in the '211 patent. Thus, on information and belief, the BTI 7800 Series, when used with appropriate components, is configured to perform element 33(b) during normal use.

39. Element 33(b1) recites "using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components." On information and belief, the BTI 7800 Series can be used with OIF-compliant coherent optical receivers, just like the PTX Family, as described in Paragraphs 26-27 *supra*. Thus, for the same reasons as the PTX Family, the BTI 7800 Series, when used with appropriate components, is configured to perform element 33(b1) during normal use.

The MX Series

40. The MX Series are a "robust portfolio of SDN-enabled routing platforms that provide industry-leading system capacity, density, security, and performance with unparalleled longevity." Exh. 6 (https://www.juniper.net/us/en/products-services/routing/mx-series/) at 1.

41. Element 33(a) of claim 33 recites "receiving an optical signal over a single fiber optic transmission medium." The MX Series does this. *See, e.g.,* Exh. 18 (Datasheet, MX2000 Universal Routing Platforms) at 4 (MX Series has "high system capacity, high FIB scale, high-density 400GbE interfaces as well as ***DWDM and***

IP/optical support"); *see also id.* at 9 (listing various Modular Interface Cards, or "MICs," which can be used with the MX Series to perform "OTN" (Optical Transport Network) communication; this necessarily involves receiving optical signals over a single fiber optic transmission medium). Thus, the MX Series is configured to perform element 33(a) during normal use.

42. Element 33(a1) recites "the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms." Publicly available information shows that the MX Series, when used with appropriate components, is configured to perform this step during normal use.

43. For instance, the Juniper web page "Understanding Optical Transport Network (OTN)" (https://www.juniper.net/documentation/en_US/junos/topics/topic-map/ethernet-otn-options-overview.html), attached as Exhibit 17, states that the "MX240, MX480, MX960, MX2010, and MX2020 routers" can be used with the "MIC3-100G-DWDM MIC" card. Exh. 17 at 16. This card uses "***DP-QPSK*** with ***coherent reception*** and OTU4 and OTU4 (v) framing modes." *Id.* As discussed above, DP-QPSK is ***dual polarization***-quadrature phase shift keying. Thus, at least when they are used with the MIC3-100G-DWDM MIC card, the MX Series routers are configured to perform element 33(a1) during normal use.

44. Element 33(b) recites "mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms." Publicly available information shows that the MX Series, when used with appropriate components, is configured to perform this step during normal use.

45. As discussed above, the MX Series can be used with the MIC3-100G-DWDM MIC card, to perform "100-Gigabit" communication via "DP-QPSK with coherent reception." Exh. 17 at 16. This card uses a "CFP2-ACO DWDM optical transceiver." *Id.* On information and belief, a CFP2-ACO DWDM optical transceiver, performing DP-QPSK communication, necessarily mitigates cross-polarization

interference (XPI) to reconstruct the information-bearing waveforms. Thus, at least when they are used with the MIC3-100G-DWDM MIC card, the MX Series routers are configured to perform element 33(b) during normal use

46. Element 33(b1) recites "using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components." On information and belief, the CFP2-ACO DWDM optical transceiver in the MIC3-100G-DWDM MIC card, or other components in or used with that card, mitigate XPI by performing a computation which uses a plurality of matrix coefficients, being complex values, to apply both amplitude scaling and phase shifting to the orthogonally-polarized field components. Thus, at least when they are used with the MIC3-100G-DWDM MIC card, the MX Series routers are configured to perform element 33(b1) during normal use.

The QFX 10000 Series

47. The QFX 10000 Series are "modular Ethernet switches" which can "deliver up to 96 Tbps of system throughput." Ex. 23 (QFX 10000 Datasheet) at 1.

48. Element 33(a) recites "receiving an optical signal over a single fiber optic transmission medium." The QFX 10000 are used with a number of "optic[al]" line cards that receive optical signals over fiber optic media. *Id.* at 12-13. Thus, the QFX 10000 Series are configured to perform element 33(a) during normal use..

49. Element 33(a1) recites "the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms." A number of line cards used with the QFX 10000 Series perform such dual-polarization communication. For instance, the QFX 10000 Series can be used with the QFX10K-12C-DWDM line card. *See* Ex. 15 (datasheet for this line card). This line card uses "***DP***-16QAM," "***DP***-8QAM," or "***DP***-QPSK" modulation. *Id.* at 3. All of these are dual-polarization formats. Thus, at least when it is used with the QFX10K-12C-DWDM line card, the QFX 10000 Series is configured to perform element 33(a1) during normal use.

50. Element 33(b) recites "mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms." The QFX10K-12C-DWDM line card achieves PMD tolerance of 15-30 ps, and polarization tracking speed of 50-100 krad/s. *Id.* at 5-6. On information and belief, the only way to achieve such tolerances while performing long-haul dual-polarization communication is to mitigate cross-polarization interference to reconstruct the original information bearing waveforms. Thus, on information and belief, the QFX10K-12C-DWDM line card is configured to perform this element during normal operation. Thus, when the QFX 10000 Series are used with this line card, they perform this element during normal operation.

51. Element 33(b1) recites "using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components." On information and belief, the QFX10K-12C-DWDM line card, and other dual-polarization line cards used with the QFX 10000 Series, mitigate cross polarization interference by using a plurality of matrix coefficients being complex values that apply both amplitude scaling and phase shifting to the at least two modulated polarized field components received. Thus, at least when it is used with the QFX10K-12C-DWDM line card, and other dual-polarization line cards, the QFX 10000 Series performs this element in normal use.

The ACX 6000 Series

52. The ACX 6000 Series is a line of "Universal Metro Routers," comprising two models, the ACX 6160 and the ACX 6360. Ex. 24 (ACX 6000 Datasheet) at 1.

53. Element 33(a) recites "receiving an optical signal over a single fiber optic transmission medium." The ACX 6000 Series are "optical transport" routers that receive optical signals over fiber optic media. *Id.* Thus, the ACX 6000 Series are configured to perform this element during normal use.

54. Element 33(a1) recites "the optical signal being at least two polarized field components independently modulated with independent information bearing

waveforms." The ACX 6000 Series are used with "100 Gbps / 200Gbps CFP-DCO line-side interfaces." *Id.* at 1. These CFP2-DCO line-side interfaces use "***DP***-QPSK," "***DP***-8QAM," or "***DP***-16QAM" modulation. *See* Ex. 25 (CFP2 hardware compatibility sheet) at 1. Thus, the ACX Series routers use dual-polarization line-side communication, and they are configured to perform element 33(a1) in normal use.

55. Element 33(b) recites "mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms." The CFP2-DCO modules used with the ACX 6000 Series achieve PMD tolerance of 15-30 ps, and PDL tolerance of 3dB. *Id.* at 2. On information and belief, the only way to achieve such tolerances while performing long-haul dual polarization communication is to mitigate cross polarization interference associated with the at least two received modulated polarized field components to reconstruct the original information bearing waveforms. Thus, the ACX 6000 routers are configured to perform this element during normal use.

56. Element 33(b1) recites "using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components." On information and belief, the ACX 6000 Series routers and/or CFP2-DCO modules mitigate cross polarization interference by applying a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two received modulated polarized field components. Thus, the ACX 6000 Series routers and modules are configured to perform this element 33(b1) during normal use.

The Modules and Cards

57. Juniper makes, sells, offers for sale, uses and/or imports various line cards, interface cards, and modules for use with its optical networking platforms. These Modules and Cards can be used with the BTI 7800, the PTX Family, the MX Series, the QFX 10000 Series, the ACX 6000 Series, and/or with other Juniper networking platforms, to perform dual-polarization communication.

58. Many of the Modules and Cards are configured to perform all the elements of claim 33 during normal use, either alone or with other equipment.

59. For instance, Juniper sells the "CFP transceiver" with part number "CFP-100GBASE-ZR." *See* Exh. 10 (https://m.cdw.com/product/juniper-100gbase-zr-cfp-pluggable/5294431) at 1. This Module is a "pluggable optical interface transceiver module" that "uses ***DP-QPSK modulation*** and ***coherent receiver technology*** with an ***optimized DSP*** and FEC implementation." *Id*. (emphasis added). Since the module uses "DP-QPSK modulation," it receives PDM signals; thus, it is configured to satisfy elements 33(a) and 33(a1) during normal use. Since it has a "coherent receiver" with "an optimized DSP," on information and belief, it also mitigates XPI; thus, it is configured to satisfy elements 33(b) and 33(b1) during normal use. Thus, this Module is configured to perform all the elements of claim 33 during normal use.

60. Similarly, Juniper sells the "PTX-2-100G-WDM" Physical Interface Card (PIC). *See* Exh. 11 (https://www.juniper.net/documentation/en_US/release-independent/junos/topics/reference/general/pic-ptx-series-100-ge-dwdm.html) at 1. This Module, which is "designed for metro, regional, or long-haul applications," uses "DP-QPSK" modulation. *Id.* at 2. Thus, this Module is configured to perform elements 33(a) and 33(a1) during normal use. Meanwhile, on information and belief, either this Module, or a component with which it is used, is configured to perform elements 33(b) and 33(b1) during normal use.

61. Other Juniper Modules and Cards that are configured to perform all the elements of claim 33 during normal use include: (i) the PTX-5-100G-WDM Physical Interface Card, which uses "DP-QPSK" modulation (*see* Exh. 12); (ii) the MIC3-100G-DWDM Modular Interface Card, which "supports DP-QPSK with coherent reception" (*see* Exh. 13); (iii) the CFP2-DCO-T-WDM-1 transceiver, which uses "DP-QPSK" modulation (*see* Exh. 14); (iv) the QFX10000-Series Coherent DWDM Line Cards, which use "DP-QPSK" modulation (*see* Exh. 15 at 2); (v) the PTX10K-LC1104 Line Card, which uses "DP-QPSK" modulation (*see* Exh. 16 at 12-16); (vi)

the CFP2-DCO-100G-HG module, which uses DP-QPSK modulation (Ex. 25 at 1); (vii) the TCFP2-100G-C module (*see* Ex. 26); (viii) the BT8A78UFM3 Universal Forwarding Module (Ex. 27 at 1); (ix) the BT8A78UFM4 Universal Forwarding Module (*id.*); and (x) the BT8A78UFM6 Universal Forwarding Module (*id.*).

62. The foregoing is merely an illustrative list of some of the Juniper Modules and Cards that are configured to perform all the elements of claim 33 during normal use. On information and belief, additional Juniper Modules and Cards are also configured to perform all the elements of claim 33 during normal use. Core reserves the right to amend this Complaint to identify such additional Modules and Cards as it identifies them in discovery.

Juniper's Liability for BTI's Infringing Activities

63. The BTI 7800 Series, along with the BT8A78UFMx Modules and Cards, were originally made and sold by BTI Systems, Inc. of Ottawa, Canada ("BTI").

64. On information and belief, BTI was a privately-held company organized under the laws of Canada.

65. On information and belief, BTI made, sold, used, offered for sale, and/or imported into the United States Accused Instrumentalities—including BTI 7800 Series Platforms, and BT8A78UFMx Modules and Cards—while the '211 patent was still in force, and less than six years prior to Core's original filing of its complaint against Juniper on November 12, 2019 (the "Relevant Time Period").

66. On information and belief, BTI committed direct infringement of the Asserted Claims, during the Relevant Time Period, by using Accused Instrumentalities in the U.S., either directly or through intermediaries, and/or by providing direct assistance to its U.S. customers in using Accused Instrumentalities.

67. On information and belief, BTI induced infringement of the Asserted Claims, during the Relevant Time Period, by selling Accused Instrumentalities to customers in the United States, along with instructions on how to use the Accused Instrumentalities in an infringing manner, and/or by providing active assistance to

U.S. customers in using the Accused Instrumentalities, all while knowing (or being willfully blind) that such use infringes the Asserted Claims.

68. On information and belief, BTI contributed to infringement of the Asserted Claims, during the Relevant Time Period, by selling Accused Instrumentalities to customers in the United States, knowing (or being willfully blind) that the Accused Instrumentalities are especially adapted for use in infringing the Asserted Claims, knowing (or being willfully blind) that the Accused Instrumentalities are not staple articles of commerce, and knowing (or being willfully blind) that the components in the Accused Instrumentalities that perform dual-polarization communication have no substantial non-infringing use.

69. Accordingly, for the foregoing reasons, BTI was liable to Core for its direct and indirect infringement of the Asserted Claims.

70. According to Juniper's Form 10-Q Quarterly Report filed with the SEC on May 9, 2016 (Ex. 28), "[o]n April 1, 2016, the Company [Juniper] acquired BTI Systems Inc. ('BTI'), a provider of cloud and metro optical networking systems and software to content, cloud and service providers, for $65.0 million in cash (inclusive of the repayment of $23.9 million of certain outstanding BTI liabilities), subject to adjustments for working capital, cash on hand, and certain tax credits." Ex. 28 at 31.

71. According to Juniper's Form 10-K Annual Report filed with the SEC on February 24, 2017 (Ex. 29), "[t]he Company completed four acquisitions during the three years ended December 31, 2016," including the acquisition of BTI. Ex. 29 at 81. The Annual Report states that, when it acquired BTI, Juniper ***assumed net liabilities of $19.7 million from BTI***. *Id.* In addition to Juniper's assumption of BTI's liabilities, upon closing of the acquisition, the separate corporate existence of BTI ceased, and BTI's former business operations became wholly absorbed into Juniper.

72. This is confirmed by Juniper's Form 10-K Annual Report filed with the SEC on February 22, 2019 (Ex. 30). The 2019 annual report states: "On April 1, 2016, the Company acquired the remaining ownership interest in BTI, increasing its

ownership from 12% ***to 100%*** , for $25.8 million of cash. BTI ***was*** a privately-held provider of cloud and metro networking systems and software to content, cloud, and service providers." *Id.* at 84. Because the annual report states that BTI "***was***" a privately-held company—past tense—it is clear that, after the merger, the separate corporate existence of BTI ceased. And this passage expressly states that Juniper acquired 100% of the former BTI entity's stock.

73. For the foregoing reasons, the separate corporate existence of BTI has ceased, and Juniper has assumed all assets and liabilities of BTI. Therefore, Juniper is liable to Core for BTI's acts of infringement committed prior to the merger.

74. Even if the separate corporate existence of BTI did not cease[1], Juniper would still be liable for BTI's pre-merger infringements as a matter of successor liability. A successor entity is liable for the acts of a predecessor entity, even in the absence of a complete merger, when: "(1) the successor expressly or impliedly agrees to assume the subject liabilities; (2) the transaction amounts to a consolidation or merger of the successor and the predecessor; (3) the successor is a mere continuation of the predecessor; or (4) the transfer of assets to the successor is for the fraudulent purpose of escaping liability." *Ray v. Alad Corporation*, 19 Cal. 3d 22, 28 (1977).

75. Here, even if the Juniper-BTI merger was not a complete merger of BTI into Juniper, the foregoing statements from Juniper's annual reports indicate that it was, at least, a *de facto* merger, which "amounts to a consolidation or merger of the successor and the predecessor" under *Ray* factor (2). *See also* Ex. 27 at 32 (stating that "The Company believes that this acquisition will allow ***the Company*** to accelerate the delivery of open and automated packet optical transport solutions with integrated network management based on BTI Systems' proNX Service Manager and

[1] The best way to confirm this either way would be for Juniper to produce the BTI-Juniper merger documents, which are not a matter of public record. Core has repeatedly insisted that Juniper produce such documents, but Juniper has refused. Core intends to raise this issue before the Magistrate at the earliest opportunity.

Juniper's Connectivity Services Director, as well as NorthStar Controller. ***The Company believes that, together, these products provide*** a unified management interface for multi-layer provisioning of end-to-end services.")

76. Moreover, if the Juniper-BTI merger was not a complete merger of BTI into Juniper, Juniper is operating a "mere continuation" of the business of BTI with respect to the BTI 7800 Platforms and the related Modules and Cards under *Ray* factor (3), because Juniper has continued selling those Platforms and Modules and Cards exactly as BTI had sold them prior to the merger, and because Juniper has simply absorbed the relevant facilities and personnel of BTI. *See* Ex. 28 at 32; *see also* https://www.juniper.net/us/en/contact-us/development-offices/ (current Juniper website, listing the former offices of BTI at "200-1000 Innovation Drive, Kanata, ON" as the "Juniper Networks Canada Head Office.")

77. Furthermore, Juniper's 2017 Annual Report admits that Juniper assumed the net liabilities of BTI (Ex. 29 at 81), which means that Juniper "expressly or impliedly agree[d] to assume the subject liabilities" under *Ray* factor (1).

78. Accordingly, even if the Juniper-BTI merger did not effect a complete dissolution of BTI into Juniper, Juniper is still liable to Core for BTI's pre-merger acts of infringement, as a matter of successor liability.

79. Given that Juniper is liable as a matter of law for BTI's pre-merger acts of infringement, under the doctrines of merger and/or successor liability, the remainder of this Third Amended Complaint refers to Juniper and the former BTI entity collectively as "Juniper" or "Defendants."

Marking – 35 U.S.C. § 287(a)

80. Core has never made, sold, used, offered to sell, or imported into the United States any article that practices any claim of the '211 Patent. Core has never sold, commercially performed, or offered to commercially perform any service that practices any claim of the '211 Patent.

81. Prior to October 21, 2014, Core had never authorized, licensed, or in any

way permitted any third party to practice any claim of the '211 Patent.

82. Moreover, Core alleges that Defendants infringe ***only*** method claims of the '211 patent. Core does not allege that Defendants infringe any apparatus claims of the '211 patent. The marking requirement of 35 U.S.C. § 287(a) does not apply when a patentee only asserts infringement of method claims. *See Crown Packaging Tech., Inc. v. Rexam Beverage Can Co*., 559 F.3d 1308, 1316 (Fed. Cir. 2009); *Hanson v. Alpine Valley Ski Area, Inc*., 718 F.2d 1075, 1082-83 (Fed.Cir.1983).

83. Because Core has never directly marketed any product or service that practices any of the claimed inventions of the '211 Patent, and no third party was authorized to practice any claimed inventions of the '211 patent prior to October 21, 2014, 35 U.S.C. § 287(a) cannot prevent or otherwise limit Core's entitlement to damages for acts of infringement that occurred prior to October 21, 2014.

84. Because Core alleges that Defendants infringe only method claims of the '211 patent, 35 U.S.C. § 287(a) does not apply, even for acts of infringement that occurred after October 21, 2014. Thus, 35 U.S.C. § 287(a) does not limit Core's entitlement to damages against Defendants, in any way, for any period of time.

85. In another pending case, *Core Optical Techs., LLC v. Nokia Corp. et al.*, C.D. Cal. Case No. 19-cv-02190 ("the *Nokia* case"), the court has ruled that the marking requirement does not apply, because Core is asserting only method claims against the Nokia Defendants. *See Nokia* case, Dkt. 61 at 5-7.

COUNT I – DIRECT PATENT INFRINGEMENT (35 U.S.C § 271(a))

86. Plaintiff repeats and realleges each and every allegation contained in Paragraphs 1-85 above, as if fully set forth herein.

87. Defendants have made, used, offered for sale, and/or sold, directly and/or through intermediaries, in this judicial district and/or elsewhere in the United States, one or more of the Fiber Optic XPIC Devices, and/or imported into the United States one or more of the Fiber Optic XPIC Devices.

88. Defendants' acts complained of herein, including their use of the Fiber

Optic XPIC Devices, directly infringes the Asserted Claims, because—as shown in Paragraphs 17-62 *supra* (for claim 33)—the Fiber Optic XPIC Devices are configured to perform all of the steps recited in those claims, during normal use.

89. Defendants have directly infringed the Asserted Claims of the '211 Patent by performing all of the steps of those claims within the U.S., either themselves, through intermediaries, or in conjunction with joint venturers and/or customers. Specifically, on information and belief, Defendants performed all of the steps recited in each Asserted Claim, either personally, through intermediaries, or in conjunction with joint venturers and/or customers, by operating the Fiber Optic XPIC Devices within the U.S.. Such operation necessarily performs all of the steps recited in those claims, as shown in Paragraphs 17-62 *supra* (for claim 33).

90. Thus, Defendants are liable to Core for their direct infringement. Moreover, for the reasons explained in Paragraphs 63-79 *supra*, Defendant Juniper is liable to Core for infringements committed by BTI during the Relevant Time Period.

COUNT II – INDUCEMENT OF INFRINGEMENT (35 U.S.C § 271(b))

91. Plaintiff repeats and realleges each and every allegation contained in Paragraphs 1-90 *supra*, as if fully set forth herein.

92. Defendants have actively induced infringement of the Asserted Claims of the '211 patent, in violation of 35 U.S.C. § 271(b).

93. Defendants have actively induced infringement of the Asserted Claims by selling the Fiber Optic XPIC Devices to one or more customers in the U.S., along with documentation and instructions demonstrating how to use the Devices to infringe the claims, and/or by providing service, maintenance, technical support, or other active assistance to their customers in using the Devices in the U.S.

94. For instance, Defendant Juniper provides, on its website, detailed "Hardware Guides," "System Admin Guides," "User Guides," "Developer Guides," and other documentation to assist customers in operating the Accused Instrumentalities in an infringing manner. *See, e.g.,* Ex. 31 (listing documentation

available at https://www.juniper.net/documentation/product/us/en/ptx5000 for the PTX 5000); Ex. 32 (at https://www.juniper.net/documentation/product/us/en/ptx3000 for the PTX 3000); Ex. 33 (listing documentation available at https://www.juniper.net/documentation/product/us/en/bti7802 for BTI 7802); etc.

95. Moreover, on information and belief, Defendant Juniper often provides (and BTI often provided) extensive, hands-on assistance to its customers in installing and operating the Accused Instrumentalities. Juniper's website states that Juniper provides extensive services to customers, including "Advisory Services," "Implementation Services," "Migration Services," "Support Services," and "Optimization Services." Ex. 34 (https://www.juniper.net/us/en/services/). Juniper further provides "Juniper Care," Juniper Flex," and "Juniper Advanced and Premium Care" services to further assist its customers in using the Accused Instrumentalities. *Id.* On information and belief, during the Relevant Time Period, Defendants have actively assisted customers in installing, setting up, optimizing, and using Accused Instrumentalities in a manner that infringes the Asserted Claims. Such acts constitute further acts of inducement by Defendants.

96. For instance, the LinkedIn page of BTI's former engineer Blake Wilson (Ex. 35) indicates that Mr. Wilson "serve[d] as technical lead for ***customer NPI [New Product Installation] rollout***" of BTI 7800 systems. Ex. 35 at 2. It further states that his "Primary objective [was] to ensure network deployments and ***day to day operation of the deployed networks run as seamlessly as possible***." *Id.* Thus, Mr. Wilson (and other BTI/Juniper employees) specifically assisted customers in their ***day to day*** operation of Accused Instrumentalities. *See also id.* at 3 (stating that Mr. Wilson would "Create detailed Method of Procedure documents used by internal field teams ***as well as end customers***," and would "***Provide onsite expertise during network rollout activities.*** In particular, ensure that First Office Applications/Deployments are successful and end customer's comfort/satisfaction level is maximized.")

97. The LinkedIn pages of several other BTI/Juniper employees indicate that

BTI/Juniper employees often ***directly*** assisted customers in operating the Accused Instrumentalities. *See, e.g.,* Ex. 36 (LinkedIn page of Juniper Engineer Aamir Khan) at 3-5 (indicating that Mr. Khan provided "Focal Technical support and handle[d] high priority issues for Advanced Services customers like Verizon, Google, ATT on Juniper Networks routing products," including "[a]nalyz[ing] and/or configur[ing] live networks supported with Juniper products," and "Real time interaction with clients to troubleshoot various routing, switching . . . issues"); Ex. 37 (LinkedIn page of Juniper's Senior Manager Vinay Kallesh, who was "Responsible for Engineering Escalation Supporting Cloud Data Center Infrastructure for customers like ATT, Google, Microsoft, AMZN, Equinox, Oracle and Dropbox"); Ex. 38 (LinkedIn page of Rogini P., who "Design[ed], develop[ed] and execute[d] network test solutions for customers(Facebook, Google and Yahoo)." Such acts of direct assistance further constitute acts of inducing customers to commit direct infringement.

98. For the reasons shown in Paragraphs 17-62 *supra*, when Defendants' customers used the Fiber Optic XPIC Devices in the U.S., such use met all the elements recited in the Asserted Claims. Thus, Defendants have committed affirmative acts (i.e., selling the Fiber Optic XPIC Devices, providing documentation on how to use the Fiber Optic XPIC Devices, and/or providing service, maintenance, technical support, or other active assistance to their customers) which have resulted in direct infringement of the Asserted Claims by their customers in the United States.

99. On information and belief, Defendants had actual knowledge of the existence and relevance of the '211 patent, or were willfully blind to its existence and relevance, prior to the filing of the Complaint.

100. For example, on information and belief, Defendants knew of the '211 patent's existence and relevance due to Core's filing of complaints for infringement of that patent in: (1) Central District of California Case No. SACV 12-1872 AG, *Core Optical Technologies, LLC v. Ciena Corporation, et al*. (filed October 29, 2012); (2) Central District of California Case No. SACV 16-0437 AG, *Core Optical*

Technologies, LLC v. Fujitsu Network Communications, Inc. (filed March 7, 2016); and (3) Central District of California Case No. SACV 8:17-cv-00548AG, *Core Optical Technologies, LLC v. Infinera Corp*. (filed March 24, 2017).

101. On information and belief, as major participants in the optical networking industry, Defendants monitored patent suits against other participants. On information and belief, through such monitoring, Defendants knew of—or were willfully blind to—the existence of the '211 patent, prior to the filing of this Complaint, due to Core's three prior lawsuits against other industry participants. Through such monitoring, Defendants knew—or were willfully blind—that the Fiber Optic XPIC Devices are configured to infringe the '211 patent during normal use.

102. Furthermore, on information and belief, Juniper learned of the '211 patent through its "partner," Fujitsu. Fujitsu is listed on Juniper's website as an "Elite/Select partner" of Juniper in the Asia-Pacific region. *See* Ex. 39 (Juniper partner list) at 4. In co-pending C.D. Cal. Case No. 20-cv-01468, *Core Optical Techs., LLC v. Cisco Systems, Inc.* (the "*Cisco* case"), Defendant Cisco has admitted that its customer Fujitsu informed it of the '211 patent on or about July 7, 2016, shortly after Core filed its suit against Fujitsu in C.D. Cal. Case No. 16-cv-437 ("the *Fujitsu* case"). On information and belief, because Fujitsu notified Cisco of the '211 patent, Fujitsu must have also notified its "Elite/Select partner" Juniper of that patent. Accordingly, on information and belief, Juniper learned of the existence and relevance of the '211 patent sometime in or about July 7, 2016, when it was likely informed of the '211 patent by Fujitsu.

103. On information and belief, when Defendants sold the Fiber Optic XPIC Devices to customers within the United States, and/or provided service, maintenance, technical support, or other active assistance to such customers, they did so with the specific intent to encourage the customers to perform acts that constitute direct infringement of the '211 patent. Specifically, on information and belief, Defendants performed such acts despite knowing (or being willfully blind) that their customers'

use of the Fiber Optic XPIC Devices, as configured, would perform all of the steps of the Asserted Claims during normal use.

104. Therefore, Defendants have unlawfully induced infringement of the '211 patent, in violation of 35 U.S.C. § 271(b).

105. Defendants are liable to Core for their inducement of infringement. Moreover, for the reasons explained in Paragraphs 63-79 *supra*, Defendant Juniper is liable to Core for inducements committed by BTI during the Relevant Time Period.

COUNT III – CONTRIBUTORY INFRINGEMENT (35 U.S.C. § 271(c))

106. Plaintiff repeats and realleges each and every allegation contained in Paragraphs 1-105 *supra*, as if fully set forth herein.

107. Defendants have committed contributory infringement of each Asserted Claim of the '211 patent, in violation of 35 U.S.C. § 271(c).

108. Defendants have committed contributory infringement by selling, offering to sell and/or importing into the United States the Fiber Optic XPIC Devices. As shown in Paragraphs 17-62 *supra,* the Fiber Optic XPIC Devices contain certain components—including the coherent optical receivers, and accompanying electronics, in the "interface cards" or "line cards"—which, as configured, perform cross-polarization interference mitigation on polarization-multiplexed optical signals. These components, when used as configured during normal operation, practice the inventions claimed in the Asserted Claims.

109. The components of the Fiber Optic XPIC Devices that perform cross-polarization interference mitigation practice a material part of the Asserted Claims, because they perform one of the key inventive functions of the '211 Patent – i.e. they mitigate the effects of cross-polarization interference, using matrix operations, to reconstruct the original polarization-division-multiplexed signals.

110. On information and belief, prior to the filing of the Complaint, Defendants had actual knowledge, or were willfully blind, that these components of the Fiber Optic XPIC Devices were especially made or adapted for use in an

infringement of the '211 patent. As shown in Paragraphs 99-102 *supra*, Defendants knew, or were willfully blind, that the Fiber Optic XPIC Devices are configured to infringe the '211 patent upon use, at least because of Core's prior litigations against others in the optical networking industry, because of Defendant Juniper's attorneys' prior experience representing Infinera in litigation over the '211 patent, and because of the likely notice of the '211 patent supplied by Fujitsu. For at least the reasons set forth in Paragraphs 99-102 *supra*, and on information and belief, Defendants knew, or were willfully blind, that normal use of the Fiber Optic XPIC Devices infringes each Asserted Claim of the '211 patent. Despite that knowledge (or willful blindness), Defendants actively sold and used the Fiber Optic XPIC Devices in the United States, knowing that their customers would use the Fiber Optic XPIC Devices in the United States, and knowing (or being willfully blind) that such use would constitute direct infringement of the Asserted Claims.

111. The components of the Fiber Optic XPIC Devices that are configured to perform cross-polarization interference mitigation are not staple articles of commerce, and—as configured to perform cross-polarization interference mitigation during normal operation—are not capable of substantial noninfringing use. To the contrary, these components, as configured, are ***especially adapted*** to perform the claimed cross-polarization interference mitigation methods, during normal use. *Id.*

112. Accordingly, Defendants have unlawfully contributed to infringement of the '211 patent, in violation of 35 U.S.C. § 271(c).

113. Defendants are liable to Core for their contributory infringement. Moreover, for the reasons explained in Paragraphs 63-79 *supra*, Defendant Juniper is liable to Core for contributory infringements by BTI in the Relevant Time Period.

REMEDIES, ENHANCED DAMAGES, EXCEPTIONAL CASE

114. Plaintiff repeats and realleges each and every allegation contained in Paragraphs 1-113 *supra*, as if fully set forth herein.

115. Defendants' direct infringement (Count I), induced infringement (Count

II), and contributory infringement (Count III) of the '211 patent have caused significant damage to Core. As a result, Core is entitled to an award of damages adequate to compensate it for Defendants' infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284. Core is also entitled to recover prejudgment interest, post-judgment interest, and costs.

116. For at least the reasons set forth in Paragraphs 99-102 *supra*, prior to the filing of this Complaint, Defendants knew (or were willfully blind) that the Fiber Optic XPIC Devices are configured to infringe the Asserted Claims during normal use. Despite this known, objectively-high risk that their actions constituted infringement, Defendants continued to directly and indirectly infringe the Asserted Claims of the '211 patent, up to the filing of Core's original Complaint. Thus, Defendants' infringement of the Asserted Claims has been willful.

117. Additionally, Defendants' conduct has been egregious.

118. As set forth in Paragraphs 99-102 *supra*, despite knowing of (or being willfully blind to) their infringement, Defendants continued to infringe, on a large scale, up to the very date when the '211 patent expired. Juniper is a massive company, with over $4 billion in annual revenue.[2] Meanwhile, Plaintiff is a small company, owned by an individual inventor. On information and belief, Defendants persisted in their willful infringement, at least in part, because they believed they could use their superior financial resources to overwhelm Plaintiff in litigation. If proven, this would constitute "egregious" conduct, warranting an award of enhanced damages.

119. Moreover, the validity of the '211 patent has been thrice confirmed by the Patent Trial and Appeal Board ("PTAB"), in: (i) IPR2016-01618, filed by Fujitsu Network Communications, Inc.; (ii) IPR2018-01259, filed by Infinera Corporation; and (iii) IPR2020-01664, filed by Nokia and Juniper. In all three *Inter Partes* Review proceedings, the Petitioners—who were defendants in litigation—cited numerous

[2] *See* https://craft.co/juniper-networks.

prior art references, to attempt to establish that claims of the '211 patent, including the Asserted Claims, were invalid. Yet, in all three cases, the PTAB ***denied*** institution, finding that the Petitioners had failed to establish a "reasonable likelihood" that ***any*** claim of the '211 patent was invalid. *See* Ex. 40 (decision denying review in IPR2016-01618); Ex. 41 (decision denying review in IPR2018-01259); Ex. 42 (decision denying review in IPR2020-01664). Because the PTAB has already rejected three extensive invalidity challenges to the '211 patent, Defendants cannot reasonably believe that they have a viable invalidity defense. Defendants' decision to persist in known, clearly-infringing conduct, despite the lack of any viable invalidity defense, is further evidence of "egregiousness."

120. For at least the foregoing reasons, Defendants' conduct has been willful and egregious. Accordingly, under 35 U.S.C. § 284, the Court should enhance Core's damages in this case by up to three times the amount found or assessed.

121. For at least the foregoing reasons, this case is an "exceptional" case within the meaning of 35 U.S.C. § 285. Accordingly, Core is entitled to an award of attorneys' fees and costs, and the Court should award such fees and costs.

PRAYER FOR RELIEF

WHEREFORE, Core prays for relief as follows:

1. That judgment be entered in favor of Core, and against Defendants;

2. That Core be awarded damages adequate to compensate it for Defendants' infringement of the Asserted Claims of the '211 patent, in an amount to be determined at trial, as well as interest thereon;

3. That Core be awarded the costs of suit;

4. That Defendants' infringement be declared willful and egregious;

5. That the Court increase Core's damages up to three times the amount assessed under 35 U.S.C. § 284;

5. That the Court declare this an exceptional case under 35 U.S.C. § 285, and award Core its attorneys' fees and costs incurred in this action; and

6. That the Court grant such further relief as it deems just and proper.

JURY TRIAL DEMAND

Core demands a jury trial on all issues so triable.

DATED: May 28, 2021

GLASER WEIL FINK HOWARD AVCHEN & SHAPIRO LLP

By: */s/Lawrence M. Hadley*
LAWRENCE M. HADLEY
STEPHEN E. UNDERWOOD

LAWRENCE R. LAPORTE, LEWIS BRISBOIS BISGAARD & SMITH LLP

Attorneys for Plaintiff
Core Optical Technologies, LLC