IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TESSERA, INC. and INVENSAS CORPORATION, Plaintiff, v. AVAGO TECHNOLOGIES U.S. INC., AVAGO TECHNOLOGIES WIRELESS (U.S.A.) MANUFACTURING INC., EMULEX CORPORATION, LSI CORPORATION and PLX TECHNOLOGY, INC., Defendants.	)	C.A. No. 16-cv-1034-LPS-CJB DEMAND FOR JURY TRIAL

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Tessera, Inc. and Invensas Corporation (collectively "Tessera" or "Plaintiffs") bring this action for patent infringement against Defendants Avago Technologies U.S. Inc. and Avago Technologies Wireless (U.S.A.) Manufacturing Inc. (collectively "Avago"), Emulex Corporation ("Emulex"), LSI Corporation ("LSI"), and PLX Technology, Inc. ("PLX") (collectively "Defendants") and allege as follows:

THE PARTIES

1. Plaintiff Tessera, Inc. is a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, California 95134. Tessera, Inc. is a wholly-owned subsidiary of Tessera Technologies, Inc.

2. Plaintiff Invensas Corporation ("Invensas") is a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, California 95134. Invensas is a wholly-owned subsidiary of Tessera Intellectual Property Corporation which is a wholly-owned subsidiary of Tessera Technologies, Inc.

3. Upon information and belief, Defendant Avago Technologies U.S. Inc. is a Delaware corporation with its principal place of business at 1320 Ridder Park Drive, San Jose, California 95131. Avago Technologies U.S. Inc. has appointed Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808 as its agent for service of process. On information and belief, Avago Technologies U.S. Inc. is a subsidiary of Broadcom Limited.

4. Upon information and belief, Defendant Avago Technologies Wireless (U.S.A.) Manufacturing Inc. is a Delaware corporation with its principal place of business at 4380 Ziegler Road, Fort Collins, Colorado 80525. Avago Technologies Wireless (U.S.A.) Manufacturing Inc. has appointed Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808 as its agent for service of process. On information and belief, Avago Technologies Wireless (U.S.A.) Manufacturing Inc. is a subsidiary of Broadcom Limited.

5. Upon information and belief, Defendant Emulex Corporation ("Emulex") is a Delaware corporation with its principal place of business at 3333 Susan Street, Costa Mesa, California 92626. Emulex has appointed Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808, as its agent for service of process. On information and belief, Emulex Corporation is a subsidiary of Broadcom Limited.

6. Upon information and belief, Defendant LSI Corporation ("LSI") is a Delaware corporation with its principal place of business at 1320 Ridder Park Drive, San Jose, California 95131. LSI has appointed Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808 as its agent for service of process. On information and belief, LSI Corporation is a subsidiary of Broadcom Limited.

7. Upon information and belief, Defendant PLX Technology, Inc. ("PLX") is a Delaware corporation with its principal place of business at 870 W. Maude Avenue, Sunnyvale,

California 94085. PLX has appointed Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808 as its agent for service of process. On information and belief, PLX Technology, Inc. is a subsidiary of Broadcom Limited.

JURISDICTION AND VENUE

8. This is an action for patent infringement under the patent laws of the United States of America, 35 U.S.C. §§ 1 *et seq.*, including 35 U.S.C. § 271. The Court has subject matter jurisdiction over the matters pleaded herein under 28 U.S.C. §§ 1331 and 1338(a).

9. The Court has personal jurisdiction over Defendants because, on information and belief, each of the Defendants has regularly and systematically transacted business in this judicial district, directly or through intermediaries, and/or committed acts of infringement in this judicial district. Each of the Defendants has also placed infringing products into the stream of commerce by shipping those products into this district or knowing that the products would be shipped into this district.

10. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1400 and 1391(b) and (c) because, among other reasons, each of the Defendants is subject to personal jurisdiction in this district and has committed acts of infringement in this district, including selling and distributing infringing products in this district.

CLAIMS FOR PATENT INFRINGEMENT

Count I: Infringement of U.S. Patent No. 6,573,609

(Against Avago)

11. Tessera hereby incorporates the allegations of Paragraphs 1 through 10 as if fully set forth herein.

12. United States Patent No. 6,573,609 ("'609 Patent") is titled "Microelectronic Component With Rigid Interposer." It issued on June 3, 2003, and names Joseph Fjelstad and

John Myers as the inventors. The '609 Patent issued from United States Patent Application No. 09/771,412, filed on January 26, 2001.

13. Tessera Inc. is the sole owner by assignment of all right, title, and interest in the '609 Patent. A true and correct copy of the '609 Patent is attached as **Exhibit A.**

14. The '609 Patent discloses and claims a connection component that resolves problems associated with thermal stresses. Electrical power that is dissipated when a microelectronic device is in operation tends to heat up that device. When the device is no longer in operation, it tends to cool down. As the device is repeatedly turned on and off, it may undergo a number of heating up and cooling down cycles. These cycles, which cause an associated expansion and contraction of the device, are commonly referred to as "thermal cycling." For example, a device in which a hybrid circuit is bonded to a printed circuit board using solid core solder balls would be subject to substantial strain, caused by thermal cycling, during operation of the device. Because the hybrid circuit and the printed circuit board are constructed from different materials having different coefficients of thermal expansion (CTE), the hybrid circuit and printed circuit board would normally expand and contract by different amounts. This is commonly referred to as "thermal mismatch." Thermal mismatch causes the electrical contacts on the hybrid circuit to move relative to the electrical contact pads on the printed circuit board as the temperature of the hybrid circuit and printed circuit board change. The relative movement may deform the electrical interconnections between the hybrid circuit and the printed circuit board, and place them under mechanical stress. These stresses are applied with repeated operation of the device, and cause breakage of the electrical interconnections. The '609 Patent solves problems associated with these thermal stresses by disclosing a microelectronic component with a first microelectronic element having a plurality of first contacts exposed at a

front surface and a first and second interposer, where the second interposer is more flexible than the first interposer. The '609 Patent discloses that a first surface of the first interposer is disposed under the first microelectronic element, and that the top surface of the second interposer is disposed under a second surface of the first interposer. Moreover, the '609 Patent discloses a plurality of conductive structures electrically connected to a first contact, and a plurality of planar leads exposed at the bottom surface of the second interposer, where the planar leads are electrically connected to at least one of the conductive structures, and where the first microelectronic element and first interposer have substantially similar coefficients of thermal expansion.

15. Tessera is informed and believes, and thereon alleges, that Avago has infringed, is currently infringing, and/or will infringe the '609 Patent in violation of 35 U.S.C. § 271 by, among other things, making, using, selling, offering to sell, and/or importing within this district and elsewhere in the United States, without license or authority, products falling within the scope of one or more claims of the '609 Patent, including at least Claim 58, literally and/or under the doctrine of equivalents.

16. Based on the information presently available to it, Tessera alleges that Avago's A7007 K508JB, A7007 K512JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AB4n 4631, AB51 3139, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, DFI626, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 semiconductor devices are exemplary devices that infringe

at least Claim 58 of the '609 Patent. The exemplary devices fall into different product families and series that span across different Avago product categories and include the following infringing Avago products:

- Avago's AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, DFI626, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 FBAR Filters are part of Avago's family of FBAR Filter devices. On information and belief, the infringing products from this family include Avago's AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 devices, other Avago FBAR Filter devices, all Avago devices that are the same or substantially similar to the AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, SFI529 198109, or other Avago FBAR Filter devices, and all products containing the same.
- Avago's A7007 K508JB, A7007 K512JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 K508JB, A7007 K512JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030,

AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 K508JB, A7007 K512JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246 or other Avago Front-End Module devices, and all products containing the same.

The infringing products identified in this paragraph, all Avago products that are substantially similar to these products, and products containing the same, are referred to collectively as the "Infringing '609 Products." Tessera makes this preliminary identification of infringing products and infringed claims without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

17. On information and belief, Avago directly infringes and/or is inducing infringement of the '609 Patent, in violation of 35 U.S.C. § 271(a) and (b), by making, using, offering to sell, selling, and/or importing the Infringing '609 Products in this judicial district and elsewhere in the United States, and inducing others to make, use, offer to sell, sell, and/or import Infringing '609 Products or products containing Infringing '609 Products. The Infringing '609 Products comprise a microelectronic and/or connection component that resolves problems

associated with thermal stresses. Specifically, the Infringing ’609 Products include a microelectronic component with a first microelectronic element having a plurality of first contacts exposed at a front surface and a first and second interposer, where the second interposer is more flexible than the first interposer. The ‘609 Patent discloses that a first surface of the first interposer is disposed under the first microelectronic element, and that the top surface of the second interposer is disposed under a second surface of the first interposer. Moreover, the ’609 Patent discloses a plurality of conductive structures electrically connected to a first contact, and a plurality of planar leads exposed at the bottom surface of the second interposer, where the planar leads are electrically connected to at least one of the conductive structures, and where the first microelectronic element and first interposer have substantially similar coefficients of thermal expansion.

18. Avago has been aware of the ’609 Patent since no later than November 7, 2016, —the date on which Tessera filed its complaint in this action. Avago also has been aware that Avago customers, distributors and other purchasers of the Infringing ’609 Products are infringing the ’609 Patent as set forth in this Complaint.

19. Avago is knowingly and intentionally inducing infringement of the ’609 Patent, in violation of 35 U.S.C. § 271(b), by actively encouraging others to make, use, offer for sale, sell, and/or import within this judicial district and elsewhere in the United States, without license or authority, Infringing ’609 Products or products containing Infringing ’609 Products that directly infringe the ’609 Patent. For example, Avago markets, promotes and advertises its infringing semiconductor devices and offers product briefs and descriptions, press releases, data sheets, manuals, user guides, and other materials that actively encourage others to directly infringe the ’609 Patent by making, using, selling, offering to sell and/or importing products that contain

Avago's infringing semiconductor devices through its website (www.avagotech.com), at trade shows and conferences, and through its sales representatives, distributors and other channels that encourage and facilitate infringing use of Avago's semiconductor devices by others. *See, e.g.*, **Exhibit B** (Avago product pages, press releases and other information about exemplary devices). Since at least November 7, 2016, Avago has had knowledge that the Infringing '609 Products infringe the '609 Patent and it has intended that Avago customers, distributors and other purchasers infringe the '609 Patent by making, using, selling, offering to sell and/or importing Infringing '609 Products or products containing the Infringing '609 Products.

20. Avago's infringement of the '609 Patent has been and continues to be willful and deliberate, entitling Tessera to increased damages under 35 U.S.C. § 284.

21. Avago's acts of infringement have caused damage to Tessera in an amount yet to be determined and subject to proof at trial.

Count II: Infringement of U.S. Patent No. 6,972,480

(Against Avago)

22. Tessera hereby incorporates the allegations of Paragraphs 1 through 21 as if fully set forth herein.

23. United States Patent No. 6,972,480 ("'480 Patent") is titled "Methods and Apparatus for Packaging Integrated Circuit Devices." It issued on December 6, 2005, and names Gil Zaber, Reuven Katraro, Julia Aksenton, and Vage Oganesian as the inventors. The '480 Patent issued from United States Patent Application No. 10/462,576, filed on June 16, 2003.

24. Invensas Corporation is the sole owner by assignment of all right, title, and interest in the '480 Patent. A true and correct copy of the '480 Patent is attached as **Exhibit C.**

25. The '480 Patent discloses and claims an integrally packaged integrated circuit device. The integrally packaged integrated circuit device includes an integrated circuit die

including a crystalline substrate with first and second generally planar surfaces and edge surfaces. An active surface is formed on the first generally planar surface of the crystalline substrate, and a gap is formed in the crystalline substrate. A chip scale packaging layer is formed over the active surface of the crystalline substrate, and a gap is formed between the crystalline substrate and the chip scale packaging layer. An electrical contact is formed over the chip scale packaging layer, and the electrical contact is connected to circuitry on the active surface of the crystalline substrate by a pad formed on the first surface.

26. Tessera is informed and believes, and thereon alleges, that Avago has infringed, is currently infringing, or will infringe the ’480 Patent in violation of 35 U.S.C. § 271 by, among other things, making, using, selling, offering to sell, and/or importing within this district and elsewhere in the United States, without license or authority, products falling within the scope of the ’480 Patent, including at least Claim 9, literally and/or under the doctrine of equivalents.

27. Based on the information presently available to it, Tessera alleges on information and belief that Avago’s 1412 2613, A7007 K508JB, A7007 K512JB, A7007 K524 JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AB4n 4631, AB51 3139, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246, AH4E MR82, AM4H 4229, AW4V 9662, DRrs, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, HFI1 1620 0773, and SFI529 198109 semiconductor devices are exemplary devices that infringe at least Claim 9 of the ’480 Patent. The exemplary devices fall into different product families and series that span across different Avago product categories and include the following infringing Avago products:

- Avago's 1412 2613, AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, DRrs, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, HFI1 1620 0773, and SFI529 198109 FBAR Filters are part of Avago's family of FBAR Filter devices. On information and belief, the infringing products from this family include Avago's 1412 2613, AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, DRrs, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, HFI1 1620 0773, and SFI529 198109 devices, other Avago FBAR Filter devices, all Avago devices that are the same or substantially similar to the 1412 2613, AB4n 4631, AB51 3139, AH4E MR82, AM4H 4229, AW4V 9662, DRrs, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, HFI1 1620 0773, SFI529 198109, or other Avago FBAR Filter devices, and all products containing the same.
- Avago's A7007 K508JB, A7007 K512JB, A7007 K524 JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 K508JB, A7007 K512JB, A7007 K524 JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025

KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 K508JB, A7007 K512JB, A7007 K524 JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246 or other Avago Front-End Module devices, and all products containing the same.

The infringing products identified in this paragraph, all Avago products that are substantially similar to these products, and products containing the same are referred to collectively as the "Infringing '480 Products." Tessera makes this preliminary identification of infringing products and infringed claims without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

28. On information and belief, Avago directly infringes and/or is inducing infringement of the '480 Patent, in violation of 35 U.S.C. § 271(a) and (b), by making, using, offering to sell, selling, and/or importing the Infringing '480 Products in this judicial district and elsewhere in the United States, and inducing others to make, use, offer to sell, sell, and/or import Infringing '480 Products or products containing Infringing '480 Products. The Infringing '480 Products comprise an integrally packaged integrated circuit device. The integrally packaged integrated circuit device includes an integrated circuit die including a crystalline substrate with

first and second generally planar surfaces and edge surfaces. An active surface is formed on the first generally planar surface of the crystalline substrate, and a gap is formed in the crystalline substrate. A chip scale packaging layer is formed over the active surface of the crystalline substrate, and a gap is formed between the crystalline substrate and the chip scale packaging layer. An electrical contact is formed over the chip scale packaging layer, and the electrical contact is connected to circuitry on the active surface of the crystalline substrate by a pad formed on the first surface.

29. Avago has been aware of the ’480 Patent since no later than November 7, 2016—the date on which Tessera filed its complaint in this action. Avago also has been aware that Avago customers, distributors and other purchasers of the Infringing ’480 Products are infringing the ’480 Patent as set forth in this Complaint.

30. On information and belief, Avago is knowingly and intentionally inducing infringement of the ’480 Patent, in violation of 35 U.S.C. § 271(b), by actively encouraging others to make, use, offer for sale, sell, and/or import within this judicial district and elsewhere in the United States, without license or authority, Infringing ’480 Products or products containing Infringing ’480 Products that directly infringe the ’480 Patent. For example, Avago markets, promotes and advertises its infringing semiconductor devices and offers product briefs and descriptions, press releases, data sheets, manuals, user guides, and other materials that actively encourage others to directly infringe the ’480 patent by making, using, selling, offering to sell and/or importing products that contain Avago’s infringing semiconductor devices through its website (www.avagotech.com), at trade shows and conferences, and through its sales representatives, distributors and other channels that encourage and facilitate infringing use of Avago’s semiconductor devices by others. *See, e.g.*, **Exhibit B** (Avago product pages, press

releases and other information about exemplary devices). Since at least November 7, 2016, Avago has had knowledge that the Infringing '480 Products infringe the '480 Patent and it has intended that Avago customers, distributors and other purchasers infringe the '480 Patent by making, using, selling, offering to sell and/or importing Infringing '480 Products or products containing the Infringing '480 Products.

31. Avago's infringement of the '480 Patent has been and continues to be willful and deliberate, entitling Tessera to increased damages under 35 U.S.C. § 284.

32. Avago's acts of infringement have caused damage to Tessera in an amount yet to be determined and subject to proof at trial.

Count III: Infringement of U.S. Patent No. 6,218,215

(Against All Defendants)

33. Tessera hereby incorporates the allegations of Paragraphs 1 through 32 as if fully set forth herein.

34. United States Patent No. 6,218,215 ("the '215 Patent"), titled "Methods of Encapsulating a Semiconductor Chip Using a Settable Encapsulant," issued on April 17, 2001, to named inventors Thomas H. Di Stefano and Craig S. Mitchell. The '215 Patent issued from United States Patent Application No. 09/520,357, filed on March 7, 2000. It is a division of United States Application No. 09/166,812, filed on October 6, 1998 (now U.S. Patent No. 6,080,605), which claims the benefit of Provisional Application No. 60/062,471, filed on October 15, 1997.

35. Tessera, Inc. is the sole owner by assignment of all right, title, and interest in the '215 Patent. A true and correct copy of the '215 Patent is attached as **Exhibit D.**

36. In non-technical terms, the '215 Patent discloses and claims methods of making a semiconductor chip package using a thixotropic encapsulating composition. The claimed

methods involve shearing a thixotropic composition to reduce its viscosity, disposing the sheared thixotropic composition between a chip and a dielectric layer, and curing the sheared thixotropic composition to form a cured encapsulant. When exposed to a shear force, the viscosity of the thixotropic composition decreases, allowing the composition to fill the area between the chip and the dielectric layer. When the shear force is removed, the thixotropic composition regains some or all of its initial viscosity, preventing the composition from flowing out prior to or during the curing step. Using the methods described in the '215 Patent, the time and energy required to make a semiconductor chip package is reduced and production throughput is increased.

37. Tessera is presently not aware of any analytical technique that can be applied to publicly-available information or materials to establish definitively that Defendants' products were packaged using a thixotropic encapsulating composition. Thus, on November 9, 2016, Tessera sent a letter to Defendants requesting additional information in order to conclusively determine whether Defendants are practicing or have practiced the '215, '605, and/or '076 Patents. **Exhibit E**. Specifically, this letter sought information from Defendants that would assist Tessera in confirming whether any of Defendants' products were packaged using a thixotropic encapsulating composition. *Id.* Defendants replied on November 15, 2016 and proposed that the parties enter into a non-disclosure agreement. **Exhibit F**. On November 28, 2016, Tessera proposed that the parties agree that any exchange of information would be treated pursuant to Delaware Local Rule 26.2 in lieu of entering a non-disclosure agreement. **Exhibit G.** Defendants refused this offer on December 5, 2016, **Exhibit H**, and Tessera provided Defendants with a Non-Disclosure Agreement on December 12, 2016. **Exhibit I.** On December 20, 2016, Defendants said they were reviewing the draft. **Exhibit J.** On January 24, 2017, after

multiple inquiries from Plaintiff, Defendants informed Tessera that they did not intend to provide any information related to the ’215, ’605, and/or ’076 Patents. **Exhibit K**.

38. Tessera accordingly alleges on information and belief that Defendants have infringed, are currently infringing, or will infringe the ’215 Patent in violation of 35 U.S.C. § 271(a) and/or (g) by, among other things, making, using, selling, offering to sell, and/or importing within this district and elsewhere in the United States, without license or authority, products made by a patented process falling within the scope of the ’215 Patent, including at least Claim 1, literally and/or under the doctrine of equivalents. Tessera intends to resort to the judicial process and the aid of discovery to obtain such information as is required to confirm this belief.

39. Based on the information presently available to it, Tessera alleges on information and belief that Defendants’ flip chips packaged using a capillary flow underfill process (the “Capillary Flow Underfill Chips”), including as exemplary devices without limitation SAS2008, SAS2108, SAS2208, SAS2308, SAS3008, SAS3108, SAS3108-2, SAS3216, SAS3224, SAS3316, SAS3324, SAS3408, SAS3416, SAS3508, SAS3516, XE104-P1, XE201, XE501, PEX8616-BB50RBC F, PEX8624-BB50RBC F, PEX8632-BB50RBC F, PEX8648-BB50RBC F, PEX8664-AA50RBC F, PEX8680-AA50RBC F, PEX8712-CA80BC G, PEX8713-CA80BC G, PEX8716-CA80BC G, PEX8717-CA80BC G, PEX8724-CA80BC G, PEX8725-CA80BC G, PEX8732-CA80BC G, PEX8733-CA80BC G, PEX8747-CA80BC G, PEX8749-CA80BC G, PEX9749-AA80BC G, PEX9765-AA80BC G, A7007, or AVSP-4412-002 semiconductor devices and Avago’s FBAR devices, such as the A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, A9374140 KM1430

AAH, AB4n 4631, AB51 3139, ACAE 9307, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 are exemplary devices that are made by a patented process that infringes at least Claim 1 of the ’215 Patent. The exemplary devices fall into different product families and series that span across different Defendants’ product categories and include the following infringing products:

- LSI’s SAS2108, SAS2208, SAS3108, SAS3316, SAS3324, SAS3508, and SAS3516 Serial Attached SCSI (SAS) RAID-On-a-Chip (ROC) semiconductor devices are part of LSI’s RAID-On-a-Chip (ROC) family of devices. On information and belief, the infringing products from this family include LSI’s SAS2108, SAS2208, SAS3108, SAS3316, SAS3324, SAS3508, and SAS3516 semiconductor devices, other LSI RAID-On-a-Chip (ROC) semiconductor devices, all LSI semiconductor devices that are the same or substantially similar to the LSI SAS2108, SAS2208, SAS3108, SAS3316, SAS3324, SAS3508, SAS3516 or other LSI RAID-On-a-Chip (ROC) semiconductor devices, and all products containing the same.
- LSI’s SAS2008, SAS2308, SAS3008, SAS3108-2, SAS3216, SAS3224, SAS3408, and SAS3416 Serial Attached SCSI (SAS)I/O Controller semiconductor devices are part of LSI’s SAS I/O Controller family of devices. On information and belief, the infringing products from this family include LSI’s SAS2008, SAS2308, SAS3008, SAS3216, SAS3224, SAS3408, and SAS3416

semiconductor devices, all LSI semiconductor devices that are the same or substantially similar to the LSI SAS2008, SAS2308, SAS3008, SAS3216, SAS3224, SAS3408, SAS3416 or other LSI SAS I/O Controller semiconductor devices, and all products containing the same.

- Emulex's XE104-P1 Ethernet Controller is part of Emulex's XE100 (Skyhawk) family of Ethernet Controllers. On information and belief, the infringing products from this family include Emulex's XE104-P1 semiconductor devices, other Emulex Ethernet Controller semiconductor devices, all Emulex semiconductor devices that are the same or substantially similar to the XE104-P1 or other Emulex Ethernet Controller semiconductor devices, and all products containing the same.
- Emulex's XE201 and XE501 I/O Controller semiconductor devices are part of Emulex's I/O Controller family of devices. On information and belief, the infringing products from this family include Emulex's XE201 and XE501 semiconductor devices, all Emulex semiconductor devices that are the same or substantially similar to the Emulex XE201, XE501 or other Emulex I/O Controller semiconductor devices, and all products containing the same.
- PLX's PEX8616-BB50RBC F, PEX8624-BB50RBC F, PEX8632-BB50RBC F, PEX8648-BB50RBC F, PEX8664-AA50RBC F, and PEX8680-AA50RBC F PCI Express Switchs are part of PLX's 8600 family of PCI ExpressLane (PCIe Gen2) Switch devices. On information and belief, the infringing products from this family include PEX8616-BB50RBC F, PEX8624-BB50RBC F, PEX8632-BB50RBC F, PEX8648-BB50RBC F, PEX8664-AA50RBC F, and PEX8680-

AA50RBC F semiconductor devices, other PLX 8600 family PCI ExpressLane (PCIe Gen2) Switch semiconductor devices, all PLX semiconductor devices that are the same or substantially similar to the PEX8616-BB50RBC F, PEX8624-BB50RBC F, PEX8632-BB50RBC F, PEX8648-BB50RBC F, PEX8664-AA50RBC F, PEX8680-AA50RBC F, or other PLX 8600 family PCI ExpressLane (PCIe Gen2) Switch semiconductor devices, and all products containing the same.

- PLX's PEX8712-CA80BC G, PEX8713-CA80BC G, PEX8716-CA80BC G, PEX8717-CA80BC G, PEX8724-CA80BC G, PEX8725-CA80BC G, PEX8732-CA80BC G, PEX8733-CA80BC G, PEX8747-CA80BC G, and PEX8749-CA80BC G PCI Express Switches are part of PLX's 8700 family of PCI ExpressLane (PCIe Gen3) Switch devices. On information and belief, the infringing products from this family include the PEX8712-CA80BC G, PEX8713-CA80BC G, PEX8716-CA80BC G, PEX8717-CA80BC G, PEX8724-CA80BC G, PEX8725-CA80BC G, PEX8732-CA80BC G, PEX8733-CA80BC G, PEX8747-CA80BC G, and PEX8749-CA80BC G semiconductor device, other PLX 8700 family PCI ExpressLane (PCIe Gen3) Switch semiconductor devices, all PLX semiconductor devices that are the same or substantially similar to the PEX8712-CA80BC G, PEX8713-CA80BC G, PEX8716-CA80BC G, PEX8717-CA80BC G, PEX8724-CA80BC G, PEX8725-CA80BC G, PEX8732-CA80BC G, PEX8733-CA80BC G, PEX8747-CA80BC G, and PEX8749-CA80BC G PCI Express Switches, or other PLX 8700 family PCI ExpressLane (PCIe Gen3) Switch semiconductor devices, and all products containing the same.

- PLX's PEX9749-AA80BC G and PEX9765-AA80BC G PCI Express Switches are part of PLX's 9700 family of PCI ExpressFabric (PCIe Gen3) Switch devices. On information and belief, the infringing products from this family include PLX's PEX9749-AA80BC G and PEX9765-AA80BC G semiconductor devices, other PLX 9700 family PCI ExpressFabric (PCIe Gen3) Switch semiconductor devices, all PLX semiconductor devices that are the same or substantially similar to the PEX9749-AA80BC G, PEX9765-AA80BC G or other PLX 9700 family PCI ExpressFabric (PCIe Gen3) Switch semiconductor devices, and all products containing the same.
- Avago's A7007 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 or other Avago Front-End Module devices, and all products containing the same.
- Avago's AVSP-4412-002 Bidirectional Retimer IC is part of Avago's family of multi-channel retimer IC devices. On information and belief, the infringing products from this family include Avago's AVSP-4412-002 semiconductor devices, other Avago Multi-Channel Retimer IC semiconductor devices, all Avago semiconductor devices that are the same or substantially similar to the AVSP-4412-002 or other Avago Multi-Channel Retimer IC semiconductor devices, and all products containing the same.

- Avago's A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 FBAR Filters are part of Avago's family of FBAR Filter devices. On information and belief, the infringing products from this family include Avago's A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 devices, other Avago FBAR Filter devices, all Avago devices that are the same or substantially similar to the A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, SFI529 198109, or other Avago FBAR Filter devices, and all products containing the same.
- Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140,

A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246 or other Avago Front-End Module devices, and all products containing the same.

The infringing products identified in this paragraph, all Defendants' products that are substantially similar to these products, and products containing the same are referred to collectively as the "Infringing '215 Products." Tessera makes this preliminary identification of infringing products without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

40. On information and belief, Defendants directly infringe, and are inducing infringement of, the '215 Patent by making, using, offering to sell, selling, and/or importing the Infringing '215 Products in this judicial district and elsewhere in the United States and inducing others to make, use, offer to sell, sell, and/or import Infringing '215 Products or products

containing Infringing ’215 Products. These products are made by shearing a thixotropic composition to reduce its viscosity, disposing the sheared thixotropic composition between a chip and a dielectric layer, and curing the sheared thixotropic composition to form a cured encapsulant. When exposed to a shear force, the viscosity of the thixotropic composition decreases, allowing the composition to fill the area between the chip and the dielectric layer. When the shear force is removed, the thixotropic composition regains some or all of its initial viscosity, preventing the composition from flowing out prior to or during the curing step. Tessera is informed and believes that the Infringing ’215 Products are made by the method described in one or more of the claims of the ’215 Patent and thereby infringe one or more of the claims of the ’215 Patent.

41. Defendants have been aware of the ’215 Patent and of its infringement of the ’215 Patent since no later than November 9, 2016, the date when Defendants received Tessera’s letter. Defendants also have been aware that Defendants subcontractors, customers, distributors and other purchasers of the Infringing ’215 Products are infringing the ’215 Patent as set forth in this Complaint.

42. On information and belief, Defendants are knowingly and intentionally inducing infringement of the ’215 Patent, in violation of 35 U.S.C. § 271(b), by actively encouraging others to make, use, offer for sale, sell, and/or import within this judicial district and elsewhere in the United States, without license or authority, Infringing ’215 Products or products containing Infringing ’215 Products that directly infringe the ’215 Patent. For example, Defendants market, promote and advertise their infringing semiconductor devices and offers product briefs and descriptions, press releases, data sheets, manuals, user guides, and other materials that actively encourage others to directly infringe the ’215 Patent by making, using, selling, offering to sell

and/or importing products that contain Defendants' infringing semiconductor devices through their website (www.Avagotech.com), at trade shows and conferences, and through their sales representatives, distributors and other channels that encourage and facilitate infringing use of Defendants' semiconductor devices by others. *See, e.g.*, **Exhibit L** and **Exhibit B** (Defendants product pages and press releases for the exemplary semiconductor devices). Since at least November 9, 2016, Defendants have had knowledge that the Infringing '215 Products infringe the '215 Patent and they have intended that Defendants' subcontractors, customers, distributors and other purchasers infringe the '215 Patent by making, using, selling, offering to sell and/or importing Infringing '215 Products or products containing the Infringing '215 Products.

43. Defendants' infringement of the '215 Patent has been and continues to be willful and deliberate, entitling Tessera to increased damages under 35 U.S.C. § 284.

44. Defendants' acts of infringement have caused damage to Tessera in an amount yet to be determined and subject to proof at trial.

Count IV: Infringement of U.S. Patent No. 6,080,605

(Against Avago)

45. Tessera hereby incorporates the allegations of Paragraphs 1 through 44 as if fully set forth herein.

46. United States Patent No. 6,080,605 ("the '605 Patent"), titled "Methods of Encapsulating a Semiconductor Chip Using a Settable Encapsulant," issued on June 27, 2000, to named inventors Thomas H. Di Stefano and Craig S. Mitchell. The '605 Patent issued from United States Patent Application No. 09/166,812, filed on October 6, 1998. It claims the benefit of Provisional Application No. 60/062,471, filed on October 15, 1997.

47. Tessera, Inc. is the sole owner by assignment of all right, title, and interest in the '605 Patent. A true and correct copy of the '605 Patent is attached as **Exhibit M.**

48. In non-technical terms, the ’605 Patent discloses and claims methods of making a semiconductor chip package using a thixotropic encapsulating composition and a mold. The claimed methods involve placing a dielectric layer and attached chip(s) into a mold, shearing a thixotropic composition to reduce its viscosity, disposing the sheared thixotropic composition into a cavity created by the mold, waiting to allow the thixotropic composition to regain at least a portion of its initial viscosity, removing the dielectric layer and attached chip(s) from the mold, and curing the sheared thixotropic composition to form a cured encapsulant. When exposed to a shear force, the viscosity of the thixotropic composition decreases, allowing the composition to fill the area between the chip(s) and the dielectric layer. When the shear force is removed, the thixotropic composition regains some or all of its initial viscosity, preventing the composition from flowing out prior to or during the curing step. Using the methods described in the ’605 Patent, the time and energy required to make a semiconductor chip package is reduced and production throughput is increased.

49. Tessera is presently not aware of any analytical technique that can be applied to publicly-available information or materials to establish definitively that Avago’s products were packaged using a thixotropic encapsulating composition that was cured after the dielectric layer and attached chip(s) were removed from the mold. Thus, on November 9, 2016, Tessera sent a letter to Avago requesting additional information in order to conclusively determine whether Avago is practicing or has practiced the ’215, ’605, and/or ’076 Patents. **Exhibit E**. Specifically, this letter sought information from Avago that would assist Tessera in confirming whether any of Avago’s products were packaged using a mold underfill process using a thixotropic encapsulating composition that was cured after the dielectric layer and attached chip(s) were removed from the mold. *Id.* Defendants replied on November 15, 2016 and

proposed that the parties enter into a non-disclosure agreement. **Exhibit F**. On November 28, 2016, Tessera proposed that the parties agree that any exchange of information would be treated pursuant to Delaware Local Rule 26.2 in lieu of entering a non-disclosure agreement. **Exhibit G.** Defendants refused this offer on December 5, 2016, **Exhibit H**, and Tessera provided Defendants with a Non-Disclosure Agreement on December 12, 2016. **Exhibit I.** On December 20, 2016, Defendants said they were reviewing the draft. **Exhibit J.** On January 24, 2017, after multiple inquiries from Plaintiff, Defendants informed Tessera that they did not intend to provide any information related to the '215, '605, and/or '076 Patents. **Exhibit K**.

50. Tessera accordingly alleges on information and belief that Avago has infringed, is currently infringing, or will infringe the '605 Patent in violation of 35 U.S.C. § 271(a) and/or (g) by, among other things, making, using, selling, offering to sell, and/or importing within this district and elsewhere in the United States, without license or authority, products made by a patented process falling within the scope of the '605 Patent, including at least Claim 1, literally and/or under the doctrine of equivalents. Tessera intends to resort to the judicial process and the aid of discovery to obtain such information as is required to confirm this belief.

51. Based on the information presently available to it, Tessera alleges on information and belief that Avago's FBAR devices, such as the A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798,

GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 are exemplary devices that are made by a patented process that infringes at least Claim 1 of the '605 Patent. The exemplary devices fall into different product families and series that span across different Avago product categories and include the following infringing Avago products:

- Avago's A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 FBAR Filters are part of Avago's family of FBAR Filter devices. On information and belief, the infringing products from this family include Avago's A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 devices, other Avago FBAR Filter devices, all Avago devices that are the same or substantially similar to the A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, SFI529 198109, or other Avago FBAR Filter devices, and all products containing the same.
- Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603

KH246 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246 or other Avago Front-End Module devices, and all products containing the same.

The infringing products identified in this paragraph, all Avago products that are substantially similar to these products, and products containing the same are referred to collectively as the "Infringing '605 Products." Tessera makes this preliminary identification of infringing products without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

52. On information and belief, Avago directly infringes, and is inducing infringement of, the ’605 Patent by making, using, offering to sell, selling, and/or importing the Infringing ’605 Products in this judicial district and elsewhere in the United States and inducing others to make, use, offer to sell, sell, and/or import Infringing ’605 Products or products containing Infringing ’605 Products. These products are made by placing a dielectric layer and attached chip(s) into a mold, shearing a thixotropic composition to reduce its viscosity, disposing the sheared thixotropic composition into a cavity created by the mold, waiting to allow the thixotropic composition to regain at least a portion of its initial viscosity, removing the dielectric layer and attached chip(s) from the mold, and curing the sheared thixotropic composition to form a cured encapsulant. When exposed to a shear force, the viscosity of the thixotropic composition decreases, allowing the composition to fill the area between the chip(s) and the dielectric layer. When the shear force is removed, the thixotropic composition regains some or all of its initial viscosity, preventing the composition from flowing out prior to or during the curing step. Tessera is informed and believes that the Infringing ’605 Products are made by the method described in one or more of the claims of the ’605 Patent and thereby infringe one or more of the claims of the ’605 Patent.

53. Avago has been aware of the ’605 Patent and of its infringement of the ’605 Patent since no later than November 9, 2016, the date when Avago received Tessera’s letter. Avago also has been aware that Avago subcontractors, customers, distributors and other purchasers of the Infringing ’605 Products are infringing the ’605 Patent as set forth in this Complaint.

54. On information and belief, Avago is knowingly and intentionally inducing infringement of the ’605 Patent, in violation of 35 U.S.C. § 271(b), by actively encouraging

others to make, use, offer for sale, sell, and/or import within this judicial district and elsewhere in the United States, without license or authority, Infringing '605 Products or products containing Infringing '605 Products that directly infringe the '605 Patent. For example, Avago markets, promotes and advertises its infringing semiconductor devices and offers product briefs and descriptions, press releases, data sheets, manuals, user guides, and other materials that actively encourage others to directly infringe the '605 Patent by making, using, selling, offering to sell and/or importing products that contain Avago's infringing semiconductor devices through its website (www.Avago.com), at trade shows and conferences, and through its sales representatives, distributors and other channels that encourage and facilitate infringing use of Avago's semiconductor devices by others. *See, e.g.*, **Exhibit B** (Avago product pages and press releases for the exemplary semiconductor devices). Since at least November 9, 2016, Avago has had knowledge that the Infringing '605 Products infringe the '605 Patent and it has intended that Avago subcontractors, customers, distributors and other purchasers infringe the '605 Patent by making, using, selling, offering to sell and/or importing Infringing '605 Products or products containing the Infringing '605 Products.

55. Avago's infringement of the '605 Patent has been and continues to be willful and deliberate, entitling Tessera to increased damages under 35 U.S.C. § 284.

56. Avago's acts of infringement have caused damage to Tessera in an amount yet to be determined and subject to proof at trial.

Count V: Infringement of U.S. Patent No. 6,046,076

(Against Avago)

57. Tessera hereby incorporates the allegations of Paragraphs 1 through 56 as if fully set forth herein.

58. United States Patent No. 6,046,076 ("the '076 Patent"), titled "Vacuum Dispense Method for Dispensing an Encapsulant and Machine Therefor," issued on April 4, 2000, to named inventors Craig S. Mitchell and Thomas H. Di Stefano. The '076 Patent issued from United States Patent Application No. 08/975,590, filed on November 20, 1997. It is a continuation-in-part of United States Application No. 08/842,313, filed April 24, 1997, which is a division of United States Application No. 08/365.699, filed on December 29, 1994 (now U.S. Patent No. 5,659,952). It claims the benefit of Provisional Application No. 60/046,932, filed on May 16, 1997.

59. Tessera, Inc. is the sole owner by assignment of all right, title, and interest in the '076 Patent. A true and correct copy of the '076 Patent is attached as **Exhibit N**.

60. In non-technical terms, the '076 Patent discloses and claims methods for encapsulating a semiconductor package assembly (e.g., a chip and a substrate) using a vacuum dispense chamber. The claimed methods involve placing the semiconductor package assembly into a vacuum chamber, applying a flowable encapsulant composition to the semiconductor package assembly under subatmospheric pressure, then bringing the assembly to a higher pressure after the flowable encapsulant composition has been applied and holding the assembly at said higher pressure, and then curing the flowable encapsulant composition. By applying the flowable encapsulant composition at subatmospheric pressure, the amount of air trapped in and around the semiconductor package assembly is minimized, allowing the encapsulant composition to more readily flow in areas surrounding the chip. Moreover, when the semiconductor package assembly is taken to and held at a higher pressure, any trapped gas bubbles (also known as "voids") that may have formed in the encapsulant composition are diffused and/or collapsed to a smaller size, without any violent bubbling of the encapsulant composition that might cause the

composition to splatter onto adjacent surfaces. The claimed methods therefore substantially eliminate the presence of voids, which are known to undermine the structural integrity of the semiconductor package assembly.

61. Tessera is presently not aware of any analytical technique that can be applied to publicly-available information or materials to establish definitively that Avago's products were packaged by applying a flowable encapsulant composition to the semiconductor package assembly under subatmospheric pressure, then bringing the assembly to a higher pressure and holding the assembly at said higher pressure, and then curing the flowable encapsulant composition. Thus, on November 9, 2016, Tessera sent a letter to Avago requesting additional information in order to conclusively determine whether Avago is practicing or has practiced the '215, '605, and/or '076 Patents. **Exhibit E**. Specifically, this letter sought information from Avago that would assist Tessera in confirming whether any of Avago's products were packaged by applying a flowable encapsulant composition to the semiconductor package assembly under subatmospheric pressure, then bringing the assembly to a higher pressure and holding the assembly at said higher pressure, and then curing the flowable encapsulant composition. *Id.* Defendants replied on November 15, 2016 and proposed that the parties enter into a non-disclosure agreement. **Exhibit F**. On November 28, 2016, Tessera proposed that the parties agree that any exchange of information would be treated pursuant to Delaware Local Rule 26.2 in lieu of entering a non-disclosure agreement. **Exhibit G.** Defendants refused this offer on December 5, 2016, **Exhibit H**, and Tessera provided Defendants with a Non-Disclosure Agreement on December 12, 2016. **Exhibit I.** On December 20, 2016, Defendants said they were reviewing the draft. **Exhibit J.** On January 24, 2017, after multiple inquiries from

Plaintiff, Defendants informed Tessera that they did not intend to provide any information related to the ’215, ’605, and/or ’076 Patents. **Exhibit K**.

62. Tessera accordingly alleges on information and belief that Avago has infringed the ’076 Patent in violation of 35 U.S.C. § 271(a) and/or (g) by, among other things, making, using, selling, offering to sell, and/or importing within this district and elsewhere in the United States, without license or authority, products made by a patented process falling within the scope of the ’076 Patent, including at least Claim 4, literally and/or under the doctrine of equivalents. Tessera intends to resort to the judicial process and the aid of discovery to obtain such information as is required to confirm this belief.

63. Based on the information presently available to it, Tessera alleges on information and belief that Avago’s A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 semiconductor devices are exemplary devices that are made by a patented process that infringes at least Claim 4 of the ’076 Patent. The exemplary devices fall into different product families and series that span across different Avago product categories and include the following infringing Avago products:

- Avago’s A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427

015676, GFI429 178748, GFI505 287716, and SFI529 198109 FBAR Filters are part of Avago's family of FBAR Filter devices. On information and belief, the infringing products from this family include Avago's A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, and SFI529 198109 devices, other Avago FBAR Filter devices, all Avago devices that are the same or substantially similar to the A9374140 KM1430 AAH, AB4n 4631, AB51 3139, ACAE 9307, AH4E MR82, AM4H 4229, AW4V 9662, BFI606 065436, GBFI437 126798, GFI427 015676, GFI429 178748, GFI505 287716, SFI529 198109, or other Avago FBAR Filter devices, and all products containing the same.

- Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-9040 KA1603 KH246 Front-End Modules are part of Avago's family of Front-End Module devices. On information and belief, the infringing products from this family include Avago's A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, and AFEM-

9040 KA1603 KH246 semiconductor devices, other Avago Front-End Module devices, all Avago devices that are the same or substantially similar to the A7007 K447JB, A7007 K452JB, A7007 K508JB, A7007 K512JB, A7007 K524JB, A8010 KA1426 JN007, A8010 KA1428 JN119, A8020 KA1429 JT140, A8020 KA1432 JR130, A8020 KA1547 JR030, AFEM-8030 KM1527 MB025, AFEM-8030 KA1531 KA2060, AFEM-9020 KA1505 JW132, AFEM-9020 KA1511 JW039, AFEM-9025 KA1528 JY018, AFEM-9025 KA1529 JY100, AFEM-9040 KA1603 KH108, AFEM-9040 KA1603 KH246 or other Avago Front-End Module devices, and all products containing the same.

The infringing products identified in this paragraph, all Avago products that are substantially similar to these products, and products containing the same are referred to collectively as the "Infringing '076 Products." Tessera makes this preliminary identification of infringing products without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

64. On information and belief, Avago directly infringed the '076 Patent by making, using, offering to sell, selling, and/or importing the Infringing '076 Products in this judicial district and elsewhere in the United States Infringing '076 Products or products containing Infringing '076 Products. These products are made by encapsulating a semiconductor package assembly (e.g., a chip and a substrate) using a vacuum dispense chamber. Specifically, these products are made by placing the semiconductor package assembly into a vacuum chamber, applying a flowable encapsulant composition to the semiconductor package assembly under subatmospheric pressure, then bringing the assembly to a higher pressure after the flowable

encapsulant composition has been applied and holding the assembly at said higher pressure, and then curing the flowable encapsulant composition. Tessera is informed and believes that the Infringing '076 Products are made by the method described in one or more of the claims of the '076 Patent and thereby infringe one or more of the claims of the '076 Patent.

65. Avago's acts of infringement have caused damage to Tessera in an amount yet to be determined and subject to proof at trial.

PRAYER FOR RELIEF

WHEREFORE, Tessera prays for relief as follows:

A. Judgment that Avago has directly infringed the '609, '480, '215, '605, and '076 Patents, literally and/or under the doctrine of equivalents;

B. Judgment that Avago has induced the infringement of the '609, '480, '215, and '605 Patents;

C. Judgment that PLX has directly infringed the '215 Patent, literally and/or under the doctrine of equivalents;

D. Judgment that PLX has induced the infringement of the '215 Patent;

E. Judgment that Emulex has directly infringed the '215 Patent, literally and/or under the doctrine of equivalents;

F. Judgment that Emulex has induced the infringement of the '215 Patent;

G. Judgment that LSI has directly infringed the '215 Patent, literally and/or under the doctrine of equivalents;

H. Judgment that LSI has induced the infringement of the '215 Patent;

I. Judgment that Avago has willfully infringed the '609, '480, '215, and '605 Patents, and for enhanced damages under 35 U.S.C. § 284 for three times the amount found or measured;

J. Judgment that PLX, Emulex, and LSI have willfully infringed the ’215 Patent, and for enhanced damages under 35 U.S.C. § 284 for three times the amount found or measured;

K. Compensatory damages in an amount according to proof, and in any event no less than a reasonable royalty;

L. An award of reasonable attorneys’ fees, costs, and expenses pursuant to 35 U.S.C. § 285 because this is an exceptional case;

M. Prejudgment interest on all damages awarded to Tessera;

N. Post-judgment interest on all sums awarded to Tessera from the date of the judgment;

O. Costs of suit incurred herein; and

P. Any and all other relief that the Court deems just and equitable.

DEMAND FOR JURY TRIAL

Tessera hereby demands a trial by jury on all issues so triable.

Dated: January 31, 2017

Respectfully submitted,

FARNAN LLP

/s/ Brian E. Farnan

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