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

GREENTHREAD, LLC v. OMNIVISION TECHNOLOGIES, INC.	2:23-cv-00212-JRG (Lead Case)
GREENTHREAD, LLC v. TEXAS INSTRUMENTS INCORPORATED	2:23-cv-00157-JRG (Member Case)
GREENTHREAD, LLC v. AMS-OSRAM AG et al	2:23-cv-00179-JRG (Member Case)

DEFENDANT OMNIVISION TECHNOLOGIES, INC.'S ANSWER AND COUNTERCLAIMS TO PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Defendant OmniVision Technologies, Inc. ("Defendant" or "OmniVision"), by and through its attorneys, submits its answer, defenses, and counterclaims to Plaintiff Greenthread, LLC's ("Plaintiff" or "Greenthread") complaint. OmniVision reserves the right to amend its answer if it subsequently gains additional information.

OmniVision's reproduction below of the headings and paragraphs set forth in the Complaint is solely for the purpose of convenience and is not, and should not be construed as, an admission by OmniVision that any allegation or other statements in the headings or

the paragraphs of the Complaint, whether explicit or implied, are true, correct, or admitted by OmniVision. All allegations in Greenthread's Complaint, including those in the headings, that OmniVision does not specifically admit or deny in this Answer are denied by OmniVision.

RESPONSES

THE NATURE OF THE ACTION

1. This is a patent infringement action. Two related actions are pending in this court for infringement of the same patents: *Greenthread, LLC v. OSRAM GMBH* et al., 23-cv-00179- JRG (E.D. Tex.) and *Greenthread, LLC v Texas Instruments Incorporated*, 23-cv-00157-JRG (E.D. Tex.). This Court has already construed the claims of the patents-in-suit and/or patents of the same family in *Greenthread, LLC v. Samsung Electronics Co., Ltd. et al.*, 19-cv-00147-JRG (E.D. Tex.). *See* Dkt. 67.

RESPONSE: OmniVision admits that Greenthread asserts patent infringement and that *Greenthread, LLC v. OSRAM GMBH* et al., 23-cv-00179- JRG (E.D. Tex.) and *Greenthread, LLC v Texas Instruments Incorporated*, 23-cv-00157-JRG (E.D. Tex.) are pending in this Court and assert the same patents. OmniVision denies that the Court construed the claims of the Asserted Patents based entirely on the disclosures set forth in the asserted patents or that the same claim terms were in dispute or addressed by the Court. OmniVision also denies that OmniVision is precluded from presenting appropriate claim constructions to the Court.

2. Greenthread owns a family of patents related to transistors and other components of integrated semiconductor devices. Greenthread's patented inventions describe semiconductor devices that employ graded dopants and well regions for creating electric fields for aiding and/or limiting the movement of carriers to (or from) the semiconductor surface to (or from) the semiconductor substrate. These inventions improve semiconductor devices by (1) creating faster, more efficient, and more reliable processors, logic devices, and image

sensors; and (2) allowing manufacturers to scale down the feature size of their semiconductor products.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them. OmniVision further denies that Greenthread has provided any allegations directed to the movement of carriers to (of from) the semiconductor surface to (or from) the semiconductor substrate in the OmniVision OV24A1Q accused product.

3. Defendant has infringed and continues to infringe six Greenthread patents: U.S. Patent Nos. 8,421,195 ("the '195 Patent"), 9,190,502 ("the '502 Patent"), 10,510,842 ("the '842 Patent"), 10,734,481 ("the '481 Patent"), 11,121,222 ("the '222 Patent"), and 11,316,014 ("the '014 Patent"), (collectively "the Greenthread Patents"), copies of which are attached hereto as Exhibits 1-6, respectively. Defendant has infringed and continue to infringe the Greenthread Patents by making, using, selling, offering for sale, and/or importing into the United States, semiconductor devices with infringing graded dopant regions and/or electronic products containing the same.

RESPONSE: OmniVision denies all allegations of patent infringement in this paragraph, including any acts related to "semiconductor devices with infringing graded dopant regions and/or electronic products containing the same." OmniVision admits that Greenthread attached copies of the patents-in-suit as Exhibits 1-6.

THE PARTIES

4. Plaintiff Greenthread, LLC ("Greenthread") is a limited liability company organized and existing under the laws of Texas, having its principal place of business at 7424 Mason Dells Drive, Dallas, Texas 75230-3244.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

5. Defendant OmniVision Technologies, Inc. is a corporation organized and existing under the laws of Delaware. Defendant may be served with process by serving its registered agent, the Corporation Trust Company, at 1209 Orange Street, Wilmington, Delaware, 19801.

RESPONSE: Admitted.

6. OmniVision designs and develops digital imaging products for use in mobile phones, security & surveillance, automotive, computing, medical, and emerging applications. OmniVision describes itself as a "global fabless semiconductor organization" who has "enabled smoother human/machine interfacing solutions within the automotive, medical, security &surveillance, computing, mobile phone, and emerging technology spaces." *(footnote referencing https://www.ovt.com/company/about-us*).

RESPONSE: Admitted.

7. OmniVision controls the www.ovt.com internet domain.

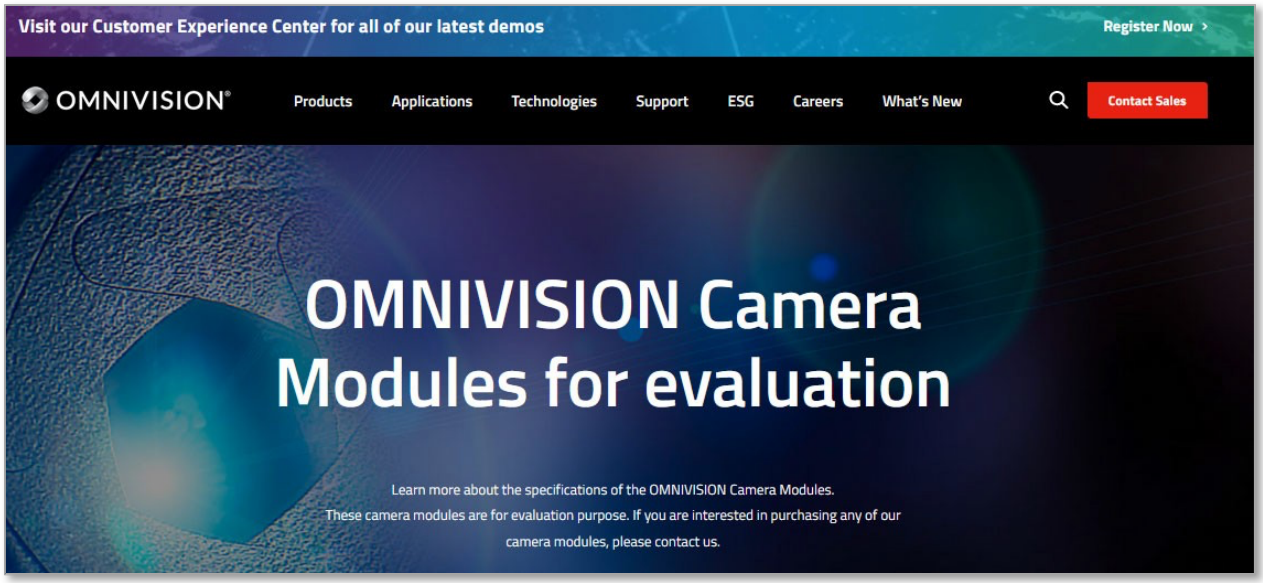
RESPONSE: Admitted.

8. OmniVision designs, tests, imports into the United States, uses, sells, and offers to sell OmniVision Accused Products, which occurs in the United States. OmniVision has employees throughout the United States including responsible for these functions, including in Texas, California, Colorado, Illinois, and Michigan. *(footnote referencing https://www.ovt.com/company/contact-us/).*

RESPONSE: OmniVision admits that it designs, tests, and imports into the United States certain products and that it has employees in California and other locations. OmniVision denies the remainder of this paragraph.

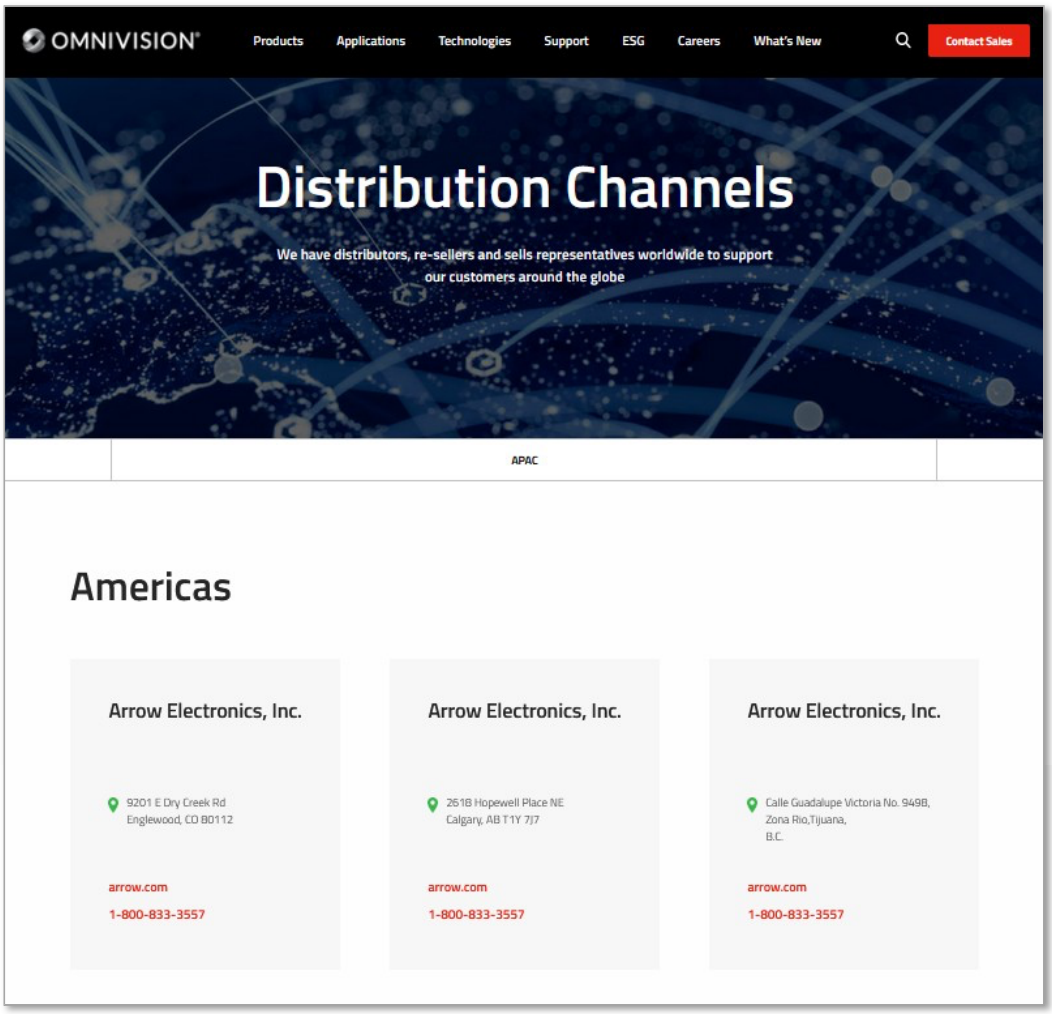
9. During Omnivision's markeing [sic], testing, and quality control, OmniVision uses and sells sample products of the Omnivision [sic] Accused Products in the United States. (*footnote* referencing https://www.ovt.com/partners/) Those uses of the OmniVision Accused

Products are essential to its ability to make sales to customers world-wide, including in the United States.



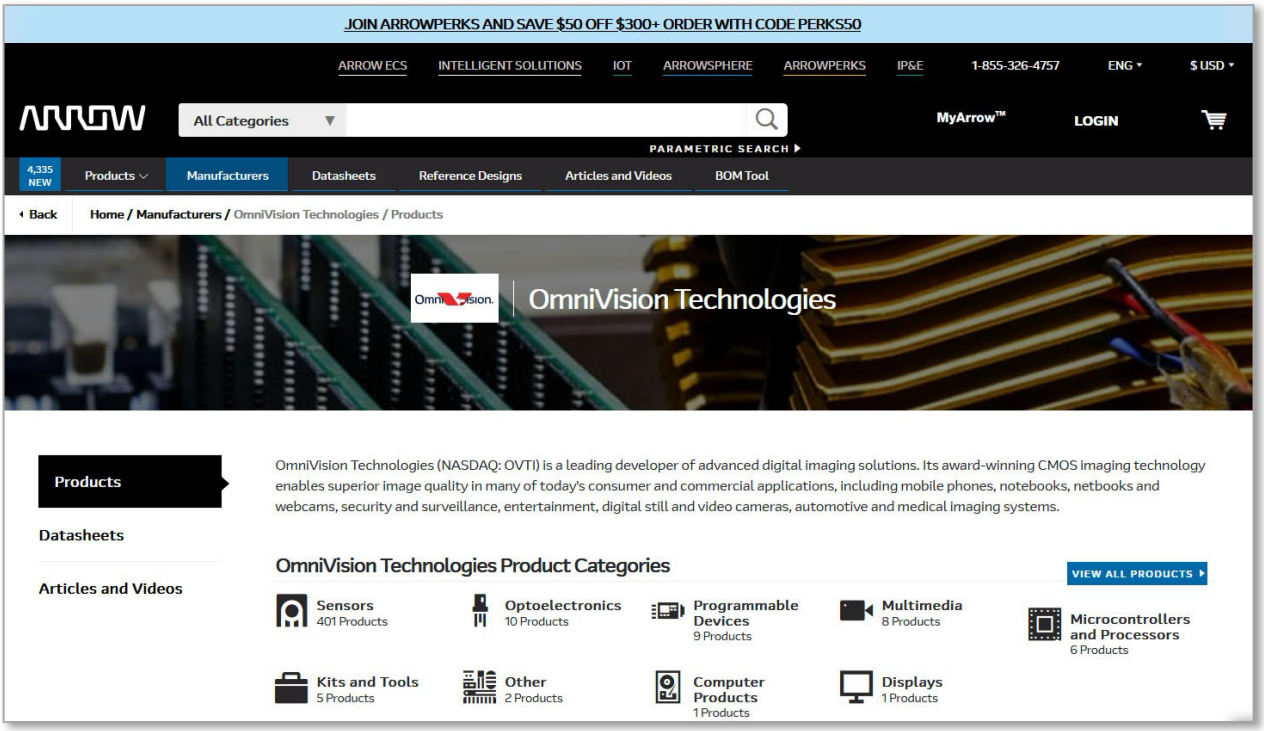
RESPONSE: OmniVision admits that the above screenshot is an accurate depiction of a portion of the page at http://www.ovt.com/partners and that sample products can be sold for evaluation purposes. OmniVision denies the remainder of the allegations in the paragraph.

10. Further, OmniVision partners with United States authorized distributors to sell OmniVision Accused Products in the United States and directs potential U.S. consumers to purchase OmniVision products through these U.S. distributors and "representatives" on its website. (*Footnote referencing https://www.ovt.com/contact-sales/distribution-channels; https://www.arrow.com/en/manufacturers/omnivision-technologies/view-all)*



RESPONSE: OmniVision admits that certain distributors, including Arrow Electronics, Inc., sell certain OmniVision products in the United States. OmniVision denies the remainder of the allegations contained in this paragraph.

11. OmniVision sells OmniVision Accused Products in the United States through its distributors on OmniVision-branded product pages.



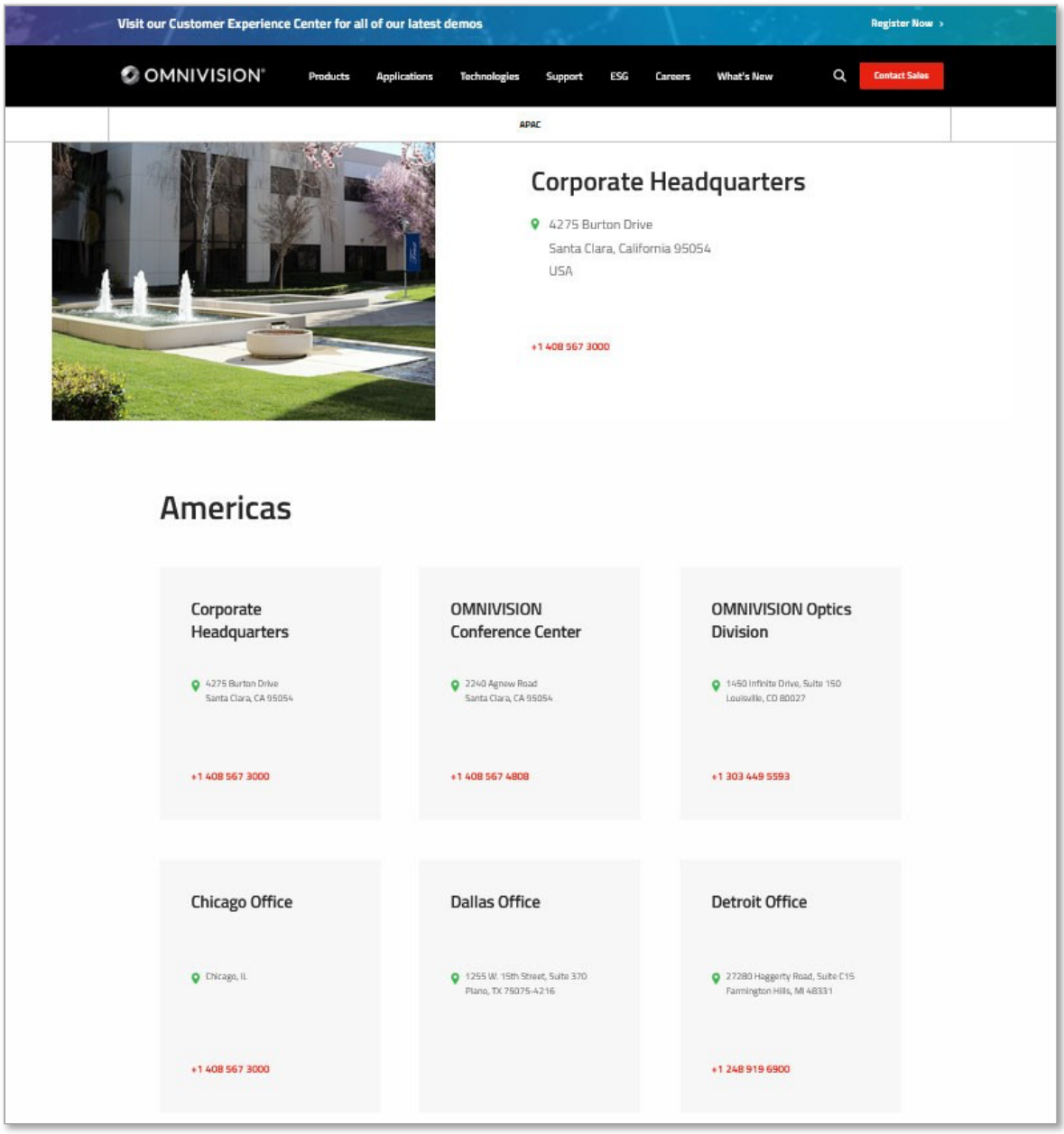
RESPONSE: Denied. Further, OmniVision lacks sufficient knowledge and information to admit or deny the allegations to the extent they relate to third-party activities and therefore denies them.

12. OmniVision's U.S.-based employees include personnel responsible for sales of OmniVision Accused Products to the U.S. automotive industry.

RESPONSE: Denied.

13. OmniVision maintains an office in this district at 1255 W. 15th Street, Suite 370 Plano, TX 75075-4216. On information and belief, OmniVision uses its Plano office to serve and make infringing sales of the Accused Products to its customer Texas Instruments

Inc. ("Texas Instruments") in this district. *(Footnote referencing https://www.ti.com/about-ti/company/ti-at-a-glance/manufacturing/richardson.html#more- information*)

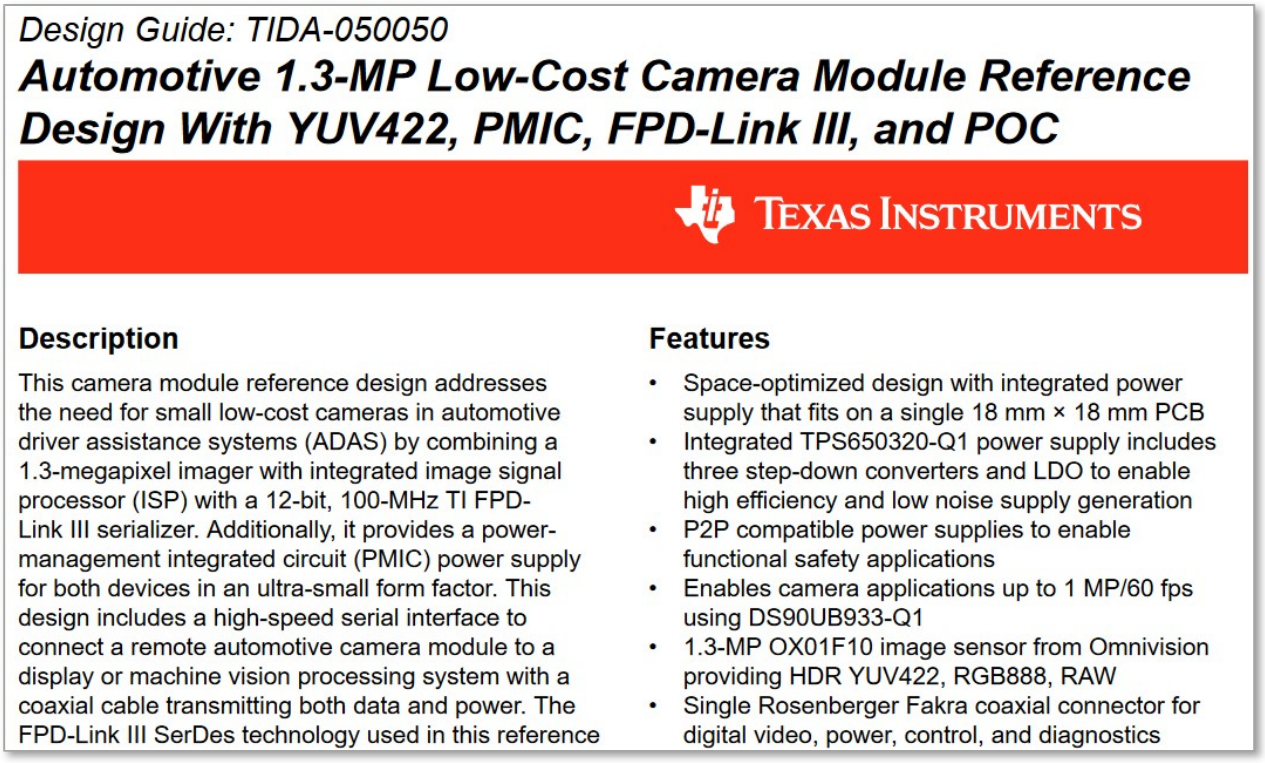


RESPONSE: OmniVision admits that it maintains an office in this district at 1255 W. 15th Street, Suite 370 Plano, TX 75075-4216. OmniVision denies the remainder of the allegations in this paragraph.

14. Texas Instruments incorporates OmniVision Accused Products into its products, including, on information and belief at Texas Instruments facilities in this district.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

15. For example, Texas Instruments markets an "Automotive 1.3-MP Low-Cost Camera Module Reference Design With YUV422, PMIC, FPD-Link III, and POC" which includes an OmniVision Accused Product, a "1.3-MP OX01F10 image sensor from Omnivision."
(*footnote referencing* https://www.ti.com/lit/ug/tidubf0/tidubf0.pdf?ts=1683552290038)



Design Guide: TIDA-050050

Automotive 1.3-MP Low-Cost Camera Module Reference Design With YUV422, PMIC, FPD-Link III, and POC

TEXAS INSTRUMENTS

Description

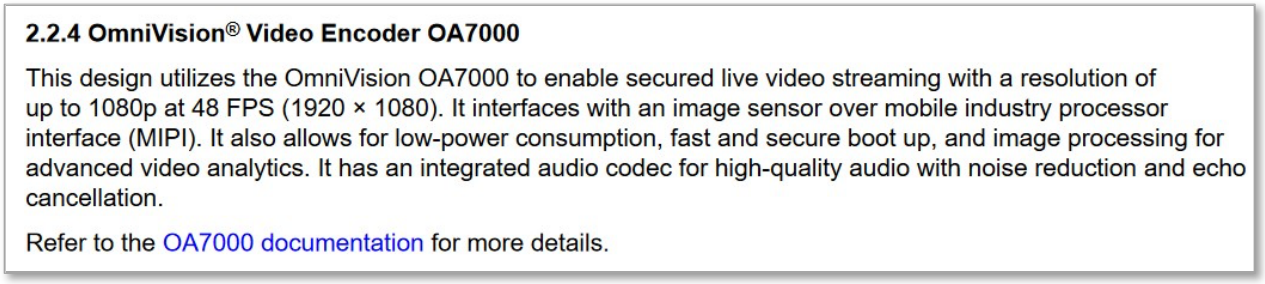
This camera module reference design addresses the need for small low-cost cameras in automotive driver assistance systems (ADAS) by combining a 1.3-megapixel imager with integrated image signal processor (ISP) with a 12-bit, 100-MHz TI FPD-Link III serializer. Additionally, it provides a power-management integrated circuit (PMIC) power supply for both devices in an ultra-small form factor. This design includes a high-speed serial interface to connect a remote automotive camera module to a display or machine vision processing system with a coaxial cable transmitting both data and power. The FPD-Link III SerDes technology used in this reference

Features

- Space-optimized design with integrated power supply that fits on a single 18 mm × 18 mm PCB
- Integrated TPS650320-Q1 power supply includes three step-down converters and LDO to enable high efficiency and low noise supply generation
- P2P compatible power supplies to enable functional safety applications
- Enables camera applications up to 1 MP/60 fps using DS90UB933-Q1
- 1.3-MP OX01F10 image sensor from Omnivision providing HDR YUV422, RGB888, RAW
- Single Rosenberger Fakra coaxial connector for digital video, power, control, and diagnostics

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

16. For example, Texas Instruments also markets a "Low-Power Wireless Camera Reference Design for Extended Battery Life" stating that it includes an OmniVision Accused Product: "This design utilizes the OmniVision OA7000 to enable secured live video streaming with a resolution of up to 1080p at 48 FPS (1920 × 1080)." *(Footnote referencing https://www.ti.com/lit/ug/tiduez4/tiduez4.pdf?ts=1683652725026&ref_url=https%253A%252F%252Fwww.google.com%252F)*



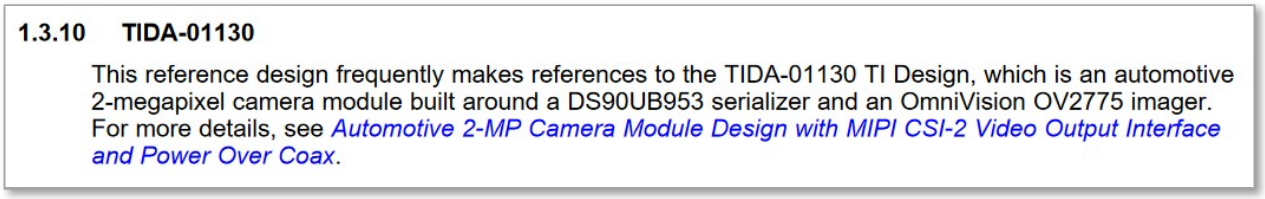
2.2.4 OmniVision® Video Encoder OA7000

This design utilizes the OmniVision OA7000 to enable secured live video streaming with a resolution of up to 1080p at 48 FPS (1920 × 1080). It interfaces with an image sensor over mobile industry processor interface (MIPI). It also allows for low-power consumption, fast and secure boot up, and image processing for advanced video analytics. It has an integrated audio codec for high-quality audio with noise reduction and echo cancellation.

Refer to the OA7000 documentation for more details.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

17. For example, Texas Instruments also markets a "ADAS 8-Channel Sensor Fusion Hub Reference Design With Two 4-Gbps Quad Deserializers" which is "built around ... an OmniVision OV2775 imager," which is an OmniVision Accused Product.



1.3.10 TIDA-01130

This reference design frequently makes references to the TIDA-01130 TI Design, which is an automotive 2-megapixel camera module built around a DS90UB953 serializer and an OmniVision OV2775 imager. For more details, see *Automotive 2-MP Camera Module Design with MIPI CSI-2 Video Output Interface and Power Over Coax*.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

SUBJECT MATTER JURISDICTION

18. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

RESPONSE: OmniVision admits that the Complaint purports to be an action for patent infringement arising under Title 35 of the United States Code. OmniVision denies all allegations of patent infringement.

19. This court has subject matter jurisdiction over the patent infringement claims asserted in this case under 28 U.S.C. §§ 1331 and 1338(a).

RESPONSE: The allegations of this paragraph constitute a conclusion of law to which no response is required.

PERSONAL JURISDICTION AND VENUE

20. This Court has specific personal jurisdiction over Defendant because it has committed acts within this District giving rise to this action (including acts of infringement) and has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice. Such acts include selling, offering to sell, demonstrating, and marketing OmniVision Accused Products to Texas Instruments in this district.

RESPONSE: Denied.

21. Venue is proper under 28 U.S.C. §§ 1391(b) and 1400(b), because OmniVision has a regular and established place of business in this district, including at 1255 W. 15th

Street, Suite 370 Plano, TX 75075-4216 and has committed acts of infringement in this district, including sales to Texas Instruments.

RESPONSE: OmniVision admits that it has a place of business at 1255 W. 15th Street, Suite 370 Plano, TX 75075-4216. OmniVision denies the remainder of allegations in this paragraph.

22. This Court has personal jurisdiction over OmniVision in accordance with the Texas Long Arm Statute, Tex. Civ. Prac. & Rem. Code § 17.042, because, among other things, OmniVision has (1) committed acts of infringement in Texas, including, on information and belief, selling, offering to sell, and demonstrating OmniVision Accused Products in Texas, including to Texas Instrument, and (2) recruited Texas residents for employment, including at OmniVision's facility in Plano Texas.

RESPONSE: Denied.

23. "OmniVision Accused Products" are products accused of meeting the claim limitations of a Greenthread Patent in this suit. OmniVision designs, manufactures, sells, and uses semiconductor devices containing transistors and other structures that infringe the Greenthread Patents in the United States.

RESPONSE: OmniVision admits that it designs, sells, and uses semiconductor devices containing transistors. OmniVision denies the remainder of the allegations in the paragraph.

24. The infringing structures within semiconductor devices identified in Exhibit 8 have application, not only in the product identified in Exhibit 8 (OV24A1Q), but in many types of devices designed and manufactured by OmniVision, including image sensors, ASICs, CameraCubeChip®, LCOS, power management, touch & display, OVMed® ISP, and OVMed® cable module devices. *(footnote referencing https://www.ovt.com/company/about-us/)* To obtain the benefits of the claimed technology, on information and belief, OmniVision incorporates the infringing structures similar to those described in Exhibit 8 into transistors in its other products, including ASICs, CameraCubeChip®, LCOS, power management, touch & display,

OVMed® ISP, and OVMed® cable module devices. The infringement described in Exhibit 8 is therefore exemplary of infringement by transistors in other OmniVision products.

RESPONSE: Denied. OmniVision further denies that Greenthread has attempted to chart all of the limitations of any Asserted Patent claim.

25. Exhibit 8 demonstrates how exemplary OmniVision Accused Products meet the claim limitations of Greenthread Patents and is herein incorporated by reference.

RESPONSE: Denied. OmniVision further denies that Greenthread has attempted to chart all of the limitations of any Asserted Patent claim.

THE GREENTHREAD PATENTS

26. On April 16, 2013, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 8,421,195 ("the '195 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed January 12, 2007. The '195 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '195 Patent is attached hereto as Exhibit 1 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '195 Patent lists an issue date of January 12, 2007, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of January 12, 2007, and that a copy of what purports to be the '195 patent is attached as Exhibit 1. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '195 Patent. OmniVision lacks sufficient knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

27. On November 17, 2015, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 9,190,502 ("the '502 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed October 16, 2014. The '502 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '502 Patent is attached hereto as Exhibit 2 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '502 Patent lists an issue date of November 17, 2015, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of October 16, 2014, and that a copy of what purports to be the '502 patent is attached as Exhibit 2. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '502 Patent. OmniVision lacks sufficient knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

28. On December 17, 2019, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 10,510,842 ("the '842 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed on May 9, 2017. The '842 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '842 Patent is attached hereto as Exhibit 3 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '842 Patent lists an issue date of December 17, 2019, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of May 9, 2017, and that a copy of what purports to be the '842 patent is attached as Exhibit 3. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '842 Patent. OmniVision lacks sufficient

knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

29. On August 4, 2020, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 10,734,481 ("the '481 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed on December 17, 2019. The '481 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '481 Patent is attached hereto as Exhibit 4 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '481 Patent lists an issue date of August 4, 2020, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of December 17, 2019, and that a copy of what purports to be the '481 patent is attached as Exhibit 4. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '481 Patent. OmniVision lacks sufficient knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

30. On September 14, 2021, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 11,121,222 ("the '222 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed on July 27, 2020. The '222 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '222 Patent is attached hereto as Exhibit 5 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '222 Patent lists an issue date of September 14, 2021, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of July 27, 2020, and that a copy

of what purports to be the '222 patent is attached as Exhibit 5. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '222 Patent. OmniVision lacks sufficient knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

31. On April 26, 2022, the U.S. Patent and Trademark Office duly and legally issuedU.S. Patent No. 11,316,014 ("the '014 Patent"), entitled "Semiconductor Devices with Graded Dopant Regions," listing Dr. Mohan Rao as the inventor, from a patent application filed on July 9, 2021. The '014 Patent claims priority from U.S. Patent Application No. 10/934,915 *(footnote referencing Pub. No. US 2006/0049464)*, filed on September 3, 2004. A true and correct copy of the '014 Patent is attached hereto as Exhibit 6 and incorporated herein by reference.

RESPONSE: OmniVision admits that the face of the '014 Patent lists an issue date of April 26, 2022, is titled "Semiconductor Devices with Graded Dopant Regions," lists Dr. Mohan Rao as the purported inventor, lists a filing date of July 9, 2021, and that a copy of what purports to be the '014 patent is attached as Exhibit 6. OmniVision states the question of priority is a conclusion of law, rather than a statement of fact, to which no response is required. To the extent a response is required, OmniVision admits September 3, 2004 appears to be the earliest filing date listed on the face of the '014 Patent. OmniVision lacks sufficient knowledge and information to admit or deny the remaining allegations contained in this paragraph and therefore denies them.

32. The '195, '502, '842, '481, '222, and '014 Patents are collectively referred to as the "Greenthread Patents."

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

33. Greenthread exclusively owns all rights, title, and interest in the Greenthread Patents necessary to bring this action, including the right to recover past and future damages. Certain of the Greenthread Patents were previously owned by Dr. G.R. Mohan Rao ("Dr. Rao"). On April 27, 2015, Dr. Rao assigned to Greenthread the then-issued Greenthread Patents and all related "continuations, continuations-in-part and extensions of said Applications and Patents and any pending applications or issued patents that directly claim or are amended to claim priority to any of the Applications or Patents." Dr. Rao's assignment was recorded with the U.S. Patent and Trademark Office on May 13, 2015, and again on July 22, 2021, and is attached hereto as Exhibit 7. Greenthread has therefore owned all rights to the Greenthread Patents necessary to bring this action throughout the period of Defendant's infringement and still owns those rights to the Greenthread Patents.

RESPONSE: OmniVision admits that a copy of what purports to be patent assignments is attached as Exhibit 7. OmniVision denies that Greenthread is the owner of the Asserted Patents and that it has standing to bring this action.

34. Defendant is not currently licensed to practice the Greenthread Patents.

RESPONSE: Defendant admits that it is not a party to any agreement providing OmniVision with a license to practice the Greenthread Patents and that it has not sought to obtain a license to practice the Greenthread Patents. OmniVision lacks sufficient knowledge and information to admit or deny whether existing licenses provide OmniVision with a license to practice the Greenthread Patents in some manner, and therefore denies the allegations contained in this paragraph.

35. The Greenthread Patents are valid and enforceable.

RESPONSE: Denied.

FACTUAL BACKGROUND

36. Dr. G.R. Mohan Rao ("Dr. Rao"), the sole inventor of the Greenthread Patents, has been an innovator in the semiconductor industry since the 1960s. He is a named inventor on more than 100 Patents worldwide and authored numerous technical publications over the last 50 years.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

37. In September 1968, Dr. Rao received a Ph.D. in physics with a specialization in electronics from Andhra University in Waltair, India. He then traveled to the United States to attend a graduate program in physics at the University of Cincinnati.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

38. After learning of an opportunity to work with Professor William Carr of Southern Methodist University ("SMU"), Dr. Rao transferred to SMU where he earned a Ph.D. in Electrical Engineering. While there, he worked in the SMU laboratory with Jack Kilby of Texas Instruments (a pioneering electrical engineer who would later receive a Nobel Prize for his work), on metal- oxide-silicon transistors ("MOS devices"), which are used for switching and amplifying electronic signals in electronic devices. MOS devices form the basis of modern electronics and are the most widely used semiconductor devices in the world. The U.S. Patent and Trademark Office has called this device a "groundbreaking invention that transformed life and culture around the world." *(footnote referencing https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-2019-international-lectual-property-conference).* Dr. Rao built these devices from scratch while a graduate student at SMU.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

39. Through his mentor, Jack Kilby, Dr. Rao interviewed with—and was ultimately hired by—Texas Instruments to continue his work on MOS devices in 1972. Dr. Rao worked at Texas Instruments for the next twenty-two years, rising from an engineer to a Senior

Fellow. At that time, Texas Instruments had only 12 Senior Fellows out of approximately 20,000 engineers. Eventually, Dr. Rao moved into a management position at Texas Instruments, ultimately becoming a Senior Vice President in 1985.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

40. At Texas Instruments, Dr. Rao received his first patent while working in a process and product engineering capacity to solve a production problem with Texas Instruments' 4-kilobit RAM product. That patent was merely the beginning of Dr. Rao's long inventive career. Indeed, from the late 1970s through the mid-1980s, Dr. Rao worked on or managed projects relating to Texas Instruments' 64kb RAM, 256Kb RAM, 1Mb RAM, 4 Mb RAM, EEPROM, SRAM, and microcontrollers. For that work, Dr. Rao received numerous additional U.S. Patents.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

41. The USPTO was not the only organization to recognize Dr. Rao's achievements. Some of Dr. Rao's work at Texas Instruments was so remarkable that it has been credited in multiple exhibits in the National Museum of American History at the Smithsonian Institution. *(footnote referencing http://smithsonianchips.si.edu/texas/wafer.htm)* For example, the Smithsonian has displayed Texas Instruments' experimental 1-megabit CMOS DRAM, produced in April 1985 under Dr. Rao's leadership, and credited Dr. Rao for the achievement. *(footnote referencing http://smithsonianchips.si.edu/texas/t_360.htm)*



RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

42. In 1994, Dr. Rao left Texas Instruments for Cirrus Logic. During his two-year tenure at Cirrus Logic, he received more U.S. Patents relating to his work on integrated graphics controllers and memory.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

43. In 1996, Dr. Rao started a company called Silicon Aquarius. Through a relationship between Silicon Aquarius and Matsushita, Dr. Rao led a design team in working on a 256Mb DRAM chip. After Silicon Aquarius ceased operations, Dr. Rao did consulting work for a number of different consulting companies and devoted much of his free time to thinking about various challenges and problems with which the semiconductor industry had struggled for years.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

44. In 2003, Dr. Rao and Philip John founded Greenthread to continue Dr. Rao's pioneering work. A focal point of Dr. Rao's research was poor refresh time and the related problem of how to deal with and control the movement of both wanted and unwanted carriers in semiconductor devices, including memory and logic devices. Dr. Rao realized that graded dopants could be used to create a "drift layer" and other structures to facilitate the movement—in an upward or downward direction, as appropriate—of carriers from the semiconductor surfaces down into the substrate and vice versa. It was Dr. Rao's work on this problem that culminated in the Greenthread Patents.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

45. Dr. Rao resides in this district.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them.

OMNIVISION'S INFRINGEMENT

46. OmniVision has directly infringed, and continues to infringe, one or more claims of each of the Greenthread Patents through making, using, offering to sell, selling within the United States, and/or importing into the United States semiconductor products, including OV24A1Q, that practice the claimed inventions (*i.e.*, the OmniVision Accused Products). A non-exhaustive, exemplary list of the types or categories of products or devices that infringe are further identified in Exhibit 8.

RESPONSE: Denied.

47. Further, in concert with its authorized distributors and customers, OmniVision causes or induces infringing accused products to be made, used, offered to be sold, sold within the United States, and/or imported into the United States. Omnivision has obtained knowledge of Greenthread's patents and its infringement at least through the filing of this Complaint.

RESPONSE: Denied

48. As shown in Exhibit 8, the exemplary OmniVision Accused Product, OV24A1Q, meets each and every element of at least one claim of the Greenthread Patents.

RESPONSE: Denied

49. Upon information and belief, OmniVision fabricates and designs the OmniVision Accused Products using similar designs according to a limited number of processes, many or all of which utilize substantially similar process steps, including process steps for creating regions with graded dopant concentrations, because the invention would have application in those categories of products, for example by improving switching time in transistors in the OmniVision Accused Products. Upon information and belief, the OmniVision Accused Products are in relevant part substantially similar to the exemplary

OV24A1Q shown in Exhibit 8, particularly with regard to the manner in which the exemplary OV24A1Q includes and utilizes regions with graded dopant concentrations. Exhibit 8 is thus illustrative of the manner in which the OmniVision Accused Products meet the claim limitations of the Greenthread Patents. *(footnote stating -This Court already interpreted and adopted Greenthread's claim construction in Greenthread, LLC v. Samsung Electronics Co., Ltd. et al., Case No. 2:19-cv-00147-JRG (E.D. Tex.). See Dkt. 67. Multiple other courts have also upheld Greenthread's construction of the Greenthread Patents in related matters. In Greenthread, LLC v. Intel Corp., et al., Case No. 6:22-cv-00105-ADA (W.D. Tex.), the Western District of Texas similarly issued a preliminary claim construction order adopting Greenthread's construction. See Dkt. 36-21 in Greenthread, LLC v. Intel Corp., Case No. 3:22-cv-02001-JR (attaching as an exhibit the Western District of Texas's preliminary claim construction order in a status update before the District of Oregon). The claims in this matter against Intel were ultimately severed and transferred to Oregon, and the District of Oregon adopted the Western District of Texas' preliminary claim construction. See Dkt. 44 ("The Court also finds that the WDTX's preliminary constructions and summary judgment rulings are neither legally incorrect nor factually distinguishable. As a result, the Court adopts the WDTX's preliminary constructions and summary judgment rulings as its own. . ."). The Western District of Texas also denied Defendants' motions to dismiss and for summary judgment on similar grounds. See Dkt. 36-22 in Greenthread, LLC v. Intel Corp., Case no. 3:22-cv-02001-JR (attaching as an exhibit the Western District of Texas' denial of Defendants' motion for summary judgment); Dkt. 110 in Greenthread LLC v. Intel Corp., Case No. 6:22-cv-00105-ADA (W.D. Tex.). The District of Oregon similarly adopted these rulings. See Dkt. 44 in Greenthread, LLC v. Intel Corp., Case no. 3:22-cv-02001-JR.)*

RESPONSE: OmniVision admits that it designs OmniVision products and that court rulings have occurred in several cases in which OmniVision was not a defendant, and thus OmniVision has not yet participated in any claim construction proceedings. OmniVision denies the remainder of the allegations of this paragraph.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 8,421,195

50. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: OmniVision incorporates by reference its responses to the allegations contained in the foregoing paragraphs.

51. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: OmniVision lacks sufficient knowledge and information to admit or deny the allegations contained in this paragraph and therefore denies them. OmniVision further denies that Greenthread has conducted a reasonable investigation of the structure and operation of any of the products listed in Exhibit 8 and notes that Greenthread charts for the OV24A1Q image sensor do not attempt to address every claim limitation for the asserted claims.

52. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

53. As alleged above and in Exhibit 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '195 Patent.

RESPONSE: Denied.

54. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

55. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '195 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

56. As alleged above, Defendant induces infringement of at least one claim of the '195 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

57. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 9,190,502

58. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: Denied.

59. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: Denied.

60. As alleged above and in Exhibit 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '502 Patent.

RESPONSE: Denied.

61. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

62. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '502 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

63. As alleged above, Defendant induces infringement of at least one claim of the '502 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

64. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 10,510,842

65. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: Denied.

66. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: Denied.

67. As alleged above and in Exhibits 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '842 Patent.

RESPONSE: Denied.

68. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

69. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '842 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

70. As alleged above, Defendant induces infringement of at least one claim of the '842 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

71. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 10,734,481

72. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: Denied.

73. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: Denied.

74. As alleged above and in Exhibits 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '481 Patent.

RESPONSE: Denied.

75. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

76. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '481 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

77. As alleged above, Defendant induces infringement of at least one claim of the '481 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

78. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. 11,121,222

79. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: Denied.

80. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: Denied.

81. As alleged above and in Exhibit 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '222 Patent.

RESPONSE: Denied.

82. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

83. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '222 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

84. As alleged above, Defendant induces infringement of at least one claim of the '222 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

85. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 11,316,014

86. Greenthread incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

RESPONSE: Denied.

87. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the OmniVision Accused Products. Greenthread reserves the right to modify this description, including, for example, on the basis of information about the OmniVision Accused Products that it obtains during discovery.

RESPONSE: Denied.

88. As alleged above and in Exhibits 8, the products analyzed in Exhibit 8 meet each and every one of the claim limitations of at least one claim of the '014 Patent.

RESPONSE: Denied.

89. As alleged above, the products analyzed in Exhibit 8 are exemplary of the OmniVision Accused Products.

RESPONSE: Denied.

90. As alleged above, Defendant has infringed and continue to infringe at least one claim of the '014 Patent by making, using, offering to sell, selling within the United States, and/or importing into the United States OmniVision Accused Products.

RESPONSE: Denied.

91. As alleged above, Defendant induces infringement of at least one claim of the '014 Patent by designing and marketing infringing products for sale, use, and importation into the United States.

RESPONSE: Denied.

92. Defendant's infringement has damaged and continues to damage Greenthread in an amount yet to be determined, of at least a reasonable royalty.

RESPONSE: Denied.

DAMAGES

93. As a result of OmniVision's acts of infringement, Greenthread has suffered and continues to suffer actual and consequential damages. However, Greenthread does not yet know the full extent of the infringement and the amount of damages cannot be ascertained except through discovery and special accounting. To the fullest extent permitted by law, Greenthread seeks recovery of damages at least for reasonable royalties, unjust enrichment, and benefits received by Defendant as a result of using the patented technology. Greenthread further seeks any other damages to which Greenthread is entitled under law or in equity.

RESPONSE: Denied.

DEMAND FOR JURY TRIAL

94. Greenthread hereby demands a jury trial for all issues so triable.

RESPONSE: No response to the Demand for Jury Trial is necessary.

PRAYER FOR RELIEF

RESPONSE: No response is necessary for Greenthread's requested relief. OmniVision denies that Greenthread is entitled to any of the requested relief against OmniVision.

DEFENSES

OmniVision asserts the following defenses to Greenthread's claims without admitting or acknowledging that it bears the burden of proof as to any of the defenses asserted. OmniVision reserves the right to amend its Answer to add additional defenses.

FIRST DEFENSE:

NON-INFRINGEMENT

OmniVision does not infringe and has never infringed any valid and enforceable claim of the '195 Patent, the '502 Patent, the '842 Patent, the '481 Patent, the '222 Patent, or the '014 Patent ("Asserted Patents"), under any theory—directly, indirectly, jointly with any other person or entity, by inducement, contributorily, literally, under the doctrine of equivalents, or otherwise under any section of 35 U.S.C. § 271—and as such, is without any liability to Greenthread.

SECOND DEFENSE:

INVALIDITY

Each of the claims of the Asserted Patents are invalid for failure to comply with the requirements of the patent laws of the United States, including provisions of 35 U.S.C. §§ 101, 102, 103, and/or 112.

THIRD DEFENSE:

LIMITATION ON DAMAGES

Any recovery of damages by Greenthread is limited in whole or in part by 35 U.S.C. §§ 252, 286, 287, and/or 288.

FOURTH DEFENSE:

LIMITATION FOR SALES COVERED BY 28 U.S.C. § 1498(A)

Greenthread's remedies are limited under 28 U.S.C. § 1498(a) for the accused OmniVision products or services that are provided, made, or used by or for the government of the United States of America.

FIFTH DEFENSE:

LICENSE

Greenthread's claims for patent infringement are precluded in whole or in part: (i) to the extent that any OmniVision accused products are imported by, sold by or to, offered for sale by, made by, made for, or otherwise supplied (directly or indirectly) by or to any entity or entities having express or implied licenses to the Asserted Patents; (ii) under the doctrine of

patent exhaustion; and/or (iii) any doctrine precluding double recovery for claims of infringement attributable to the same device.

SIXTH DEFENSE:

NO STANDING

Plaintiff lacks constitutional and prudential standing to bring this action because it is not the owner of all right and title to the Asserted Patents. On September 30, 2003, G.R. Mohan Rao executed an assignment to GlobiTech Incorporated that transferred the entire right, title, and interest in the inventions described in U.S. Patent Application No. 10/664,091, which issued as U.S. Patent No. 6,921,943. As part of the assignment, G.R. Mohan Rao also transferred to GlobiTech Incorporated "any improvements on said invention or inventions now or hereafter made by us during the period of our employment," as well as "the entire right, title and interest in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention, inventions, or improvements." U.S. Patent No. 6,921,943 describes using a graded dopant concentration to aid minority carrier movement down towards and into the substrate. Upon information and belief, the Asserted Patents were conceived or reduced to practice during the period of G.R. Mohan Rao's employment with GlobiTech Incorporated. The Asserted Patents describe the same inventions that are described in U.S. Patent No. 6,921,943. The assignment to GlobiTech used present-tense words of assignment ("we do hereby sell, assign, and transfer unto said GlobiTech Incorporated") to affect a present automatic assignment of both current and prospective intellectual property rights. As such, the Asserted Patents and any associated inventions were assigned to GlobiTech Incorporated. Thus, Plaintiff lacks both constitutional and prudential standing to bring this lawsuit.

RESERVATION OF RIGHT TO ASSERT ADDITIONAL DEFENSES

OmniVision has not knowingly or intentionally waived any applicable defenses, and it reserves the right to assert and rely upon other applicable defenses that may become available or apparent throughout the course of this action. OmniVision reserves the right to amend, or seek to amend, its answer, including its affirmative and other defenses.

COUNTERCLAIMS

Pursuant to Federal Rule of Civil Procedure 13, OmniVision Technologies, Inc. ("OmniVision") counterclaims against Greenthread, LLC ("Greenthread") and, in support thereof, alleges the following:

PARTIES

1. Counterclaim-Plaintiff OmniVision is a Delaware corporation with its principal place of business at 4275 Burton Drive, Santa Clara, CA 95054.

2. On information and belief, as averred in its Complaint, Counterclaim-Defendant Greenthread is a limited liability company organized and existing under the laws of Texas, having its principal place of business at 7424 Mason Dells Drive, Dallas, Texas 75230-3244.

JURISDICTION AND VENUE

3. This is an action for declaratory judgment of invalidity and non-infringement of the '195 Patent, the '502 Patent, the '842 Patent, the '481 Patent, the '222 Patent, and the '014 Patent ("Asserted Patents"). This Court has subject matter jurisdiction over this claim

pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201, and 2202.

4. Venue is proper in the Eastern District of Texas, under 28 U.S.C. §§ 1391 and 1400, as a result of Greenthread having filed this action in this District. By filing its Complaint in this District, Greenthread has consented to personal jurisdiction and venue.

BACKGROUND

5. On May 10, 2023, Greenthread filed suit against OmniVision, claiming infringement of the '195 Patent, the '502 Patent, the '842 Patent, the '481 Patent, the '222 Patent, and the '014 Patent ("Asserted Patents").

6. In its Complaint, Greenthread alleges it is the owner of all substantial rights in the Asserted Patents, including the right to sue and recover for past and future damages. Compl. (ECF No. 1) ¶ 33.

7. Prior to the filing of its complaint against OmniVision in case no. 2:23-cv-00212-JRG, Greenthread never provided OmniVision with notice of infringement for any Asserted Patent.

8. On information and belief, prior to the filing of its complaint against OmniVision in case no. 2:23-cv-00212-JRG, Greenthread has entered into licensing agreements that cover products accused of infringement in prior cases and allowed those products to continue to be sold in the United States without any obligation to be marked with any Asserted Patent number.

9. On information and belief, Greenthread never identified any OmniVision product as infringing any Asserted Patent in any case involving any Asserted Patent at any

time prior to the filing of its complaint against OmniVision in case no. 2:23-cv-00212-JRG.

10. Greenthread never disclosed to OmniVision any claim charts or other documents purporting to demonstrate infringement of any claim of any Asserted Patent by any OmniVision product prior to the filing if its complaint against OmniVision in case no. 2:23-cv-00212-JRG.

11. On information and belief, Greenthread never disclosed to any third-party any claim charts or other documents purporting to show infringement of any claim of any Asserted Patent by any OmniVision product prior to the filing if its complaint against OmniVision in case no. 2:23-cv-00212-JRG.

12. Greenthread has asserted that public information does not provide enough information to determine whether OmniVision products infringe the Asserted Patents. *See* Dkt. 93 at 2 ("Public Information Does Not Disclose Which OV Transistors Infringe.")

13. Multiple reverse engineering reports are available for OmniVision products from Tech Insights, but Greenthread only obtained one, a report for the OV24A1Q image sensor.

14. Attached to the Complaint is a Tech Insights Report for the OV24A1Q image sensor ("OV24A1Q Tech Insights Report"). Dkt. 1–8 at 65–193.

15. According to the OV24A1Q Tech Insights Report, the OV24A1Q image sensor is a stacked, back-illuminated sensor comprised of two dies, the image signal processor (ISP) die and the CMOS image sensor (CIS) die, bonded together. *Id.* at 68.

16. The OV24A1Q Tech Insights Report explains that the OV24A1Q image sensor is manufactured by TSMC. *Id.* at 70–72. TSMC manufactures the ISP die in a 40 nm CMOS

process. *Id.* at 72. TSMC manufactures the CIS die using a 65 nm process. *Id.*

17. According to Greenthread, "[t]he accused products each contain millions of transistors and Greenthread's allegations are not limited to transistors in the CIS die [in the OV24A1Q], or even just the exemplary product in the Complaint" and "even if the CIS die transistors don't infringe, the ISP transistors clearly do." Dkt. 37 at 15

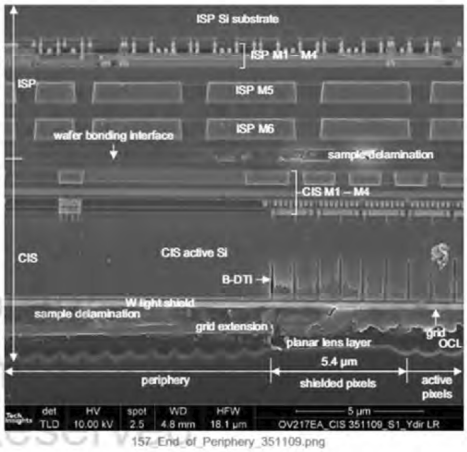
18. The ISP transistors that Greenthread accuses of infringement are manufactured by TSMC.

19. The CIS die transistors that Greenthread accuses of infringement are manufactured by TSMC.

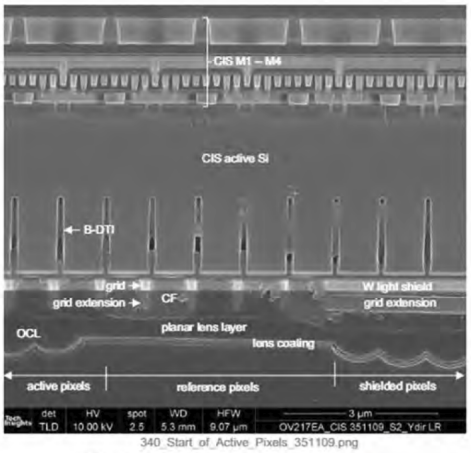
20. Greenthread alleges that the "images copied below show a silicon (Si) substrate having a first doping type at first doping level, the substrate having a first and second surface" and copies in three pages of the Tech Insights Report. Dkt. 1-8, 9-12. However, none of the referenced pages in the Tech Insights Report identify a "substrate" near the alleged "graded doping" as required by the asserted claims. *See id.*

21. For the first pair of pictures, the left-side picture shows the ISP and CIS dies bonded together. *Id.* at 10. The only reference to a substrate is the reference to "ISP Si Substrate" in the ISP die. *Id.* The ISP die is not asserted by Greenthread as having the alleged "gradient doping." The right-side picture, directed to the CIS die portions that

Greenthread asserts contains the alleged "graded doping," does not identify a "substrate." *Id.*

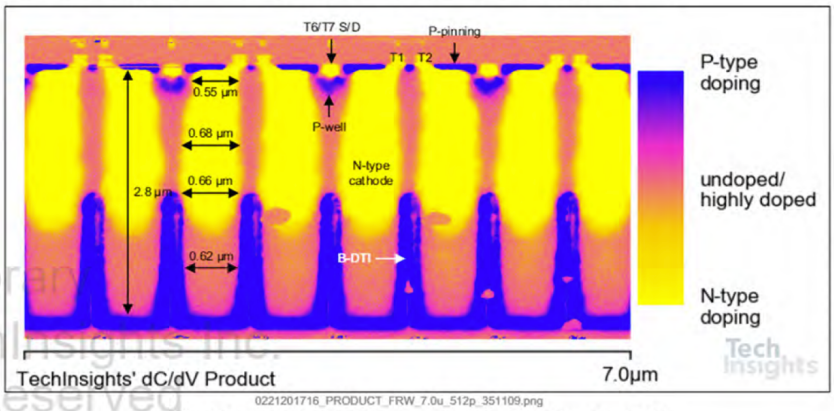


Shielded Pixels – Top



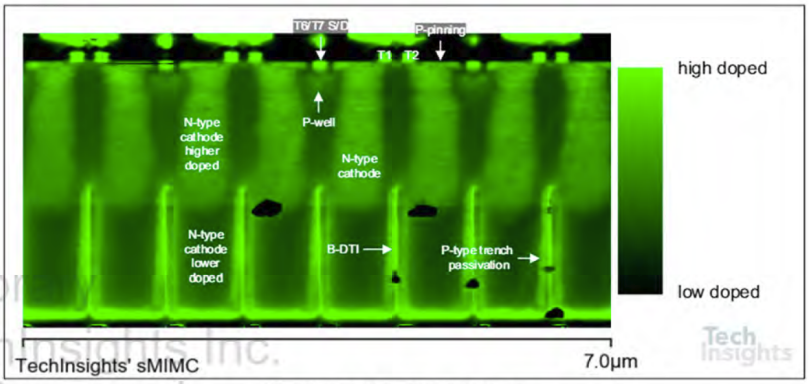
Start of Shielded Pixels – Bottom

22. The following two reproduced pages from the Tech Insight Report relate to a further magnified portion of the CIS die. *Id.* at 11–12. Neither page mentions a "substrate." *Id.*



Pixel Center and T6/T7 S/D Overview (Section Line C) – SCM

Id. at 11.



Id. at 12.

23. In Greenthread's September 15, 2023 Infringement Contentions, Greenthread points to a n-doped portion of a photodiode as constituting the "substrate" in the OV24A1Q image sensor.

24. In Greenthread's September 15, 2023 Infringement Contentions, Greenthread points to p-doped areas as the "first surface" and "second surface" of the "substrate" in the OV24A1Q image sensor.

25. Greenthread has no evidence that the OV24A1Q or any other product has a "graded dopant concentration to aid carrier movement" from one physical location to another with at least one of the locations defined in relation to a "substrate," as required in each asserted claim. *See* Dkt. 1–1 at 4:28-29; 1–2 at 4:39, 67; 1–3 at 4:59-60, 5:28-29; 1–4 at 5:2-3, 6:14-15; 1–5 at 4:53-54, 5:65-67, 7:25-27, 8:1-3., 31:33; 1–6 at 4:65-67 (relevant claim limitations).

26. According to Greenthread, "Greenthread's infringement contentions identified more than 200 specific products, but also categories of accused products (e.g., light sensors, capacitive sensors) that would use these beneficial transistors and confirmed that its contentions apply to this list and 'any other similar past, present, or future products, as well

as systems incorporating the accused products or other products with the same or substantially similar features.' Dkt. 85-05 at 3-4; *see also* Dkt. 1-8."

27. The OV3610 image sensor was on sale and publicly disclosed no later than March 3, 2003, as confirmed by the press release reproduced below and at OVTI0043328-OVTI0043332. Samples of the OV3610 were made available to customers at least as early as March 3, 2003 and the product was demonstrated publicly at least as early as March 2–5, 2003 at the PMA 2003 Camera Show in Las Vegas, Nevada.



OMNIVISION Announces 3.1-Megapixel CameraChip™ with New VarioPixel Technology – New High Resolution Chip Has Advanced Video and Low-light Sensitivity Modes

Mar 03, 2003

SUNNYVALE, Calif. — March 3, 2003 — OmniVision Technologies, Inc. (Nasdaq: OVTI), a marketleading independent supplier of CameraChip™ solutions for high-volume imaging applications, today announced it has begun sampling 3.1 Mega-Pixel CameraChips to customers with its newly developed VarioPixel™ technology. The 3.1 Mega-Pixel OV3610 CameraChip is designed for use by volume manufacturers of Digital Still Cameras or combination still image/video cameras where high image quality and low power constraints place stringent demands on CameraChip providers. VarioPixel is a new technology developed by OmniVision to enhance the video and low light capabilities of its high resolution CameraChips.

"OmniVision continues to demonstrate technology leadership with our new 3.1 mega pixel CameraChip," stated John Lynch, Vice President Sales and Marketing at OmniVision. "By providing enhanced capabilities afforded by our VarioPixel technology, we believe we will be able to offer the most competitive solution in terms of price, performance and features."

VarioPixel is a newly developed technology that uses multiple pixels to act as a single pixel in order to improve the chips performance. CameraChips that incorporate the technology can provide significantly improved low light performance at video resolutions giving consumers improved LCD preview capabilities and enhanced video capture.

The OV3610 is a 1/2 inch optical format CMOS CameraChip with 2048 x 1536 pixels, enabling high quality 3″x 5″, 4″x 6″ and 8″ x 10″ prints. This latest CameraChip offering by Omnivision outputs Bayer Pattern RGB data and integrates auto-white balance, auto-exposure, auto-gain control and performs correlated double sampling. Based on the VarioPixel technology, it can output XGA resolution video with 4x low light performance enhancement.

The OV3610 is pin-for-pin compatible with OmniVision's current OV9620 1.3 Mega-Pixel and the OV2610 2 Mega-Pixel CameraChips. It draws less than 50mA at 3.3 volts, significantly less than comparable CCD based multi-chip image sensor solutions currently available on the market. CMOS CameraChips require fewer supporting components than comparable CCD offerings. This allows manufacturers to reduce the overall size and complexity of their camera design and speed the camera manufacturers' time-to-market.

OmniVision is demonstrating the OV3610 in their booth at the PMA 2003 Camera Show in Las Vegas March 2-5.

For More Information
For more information on OmniVision's OV3610 CameraChip or the Early Access Partner program, please contact OmniVision by phone at 408-733-3030, via e-mail at sales@ovt.com or visit our website at www.ovt.com.

28. The OV3610 was the subject of a Chip Works structural analysis, version 4 of which is dated June 23, 2004 and has been produced at OVTI0043333-OVTI0043423 ("OV3610 Report"). The OV3610 Report confirms that the chip analyzed was produced in 2003.

A 2003 package date code is indicated by the package marking 0319.

The package bottom photograph shows the 48-pin pad array with a 1.00 mm pitch. The pin #1 location is marked by the metal tab located at the left hand in the middle portion of the package (see Figure 3.1.1b, the photograph of the package bottom).

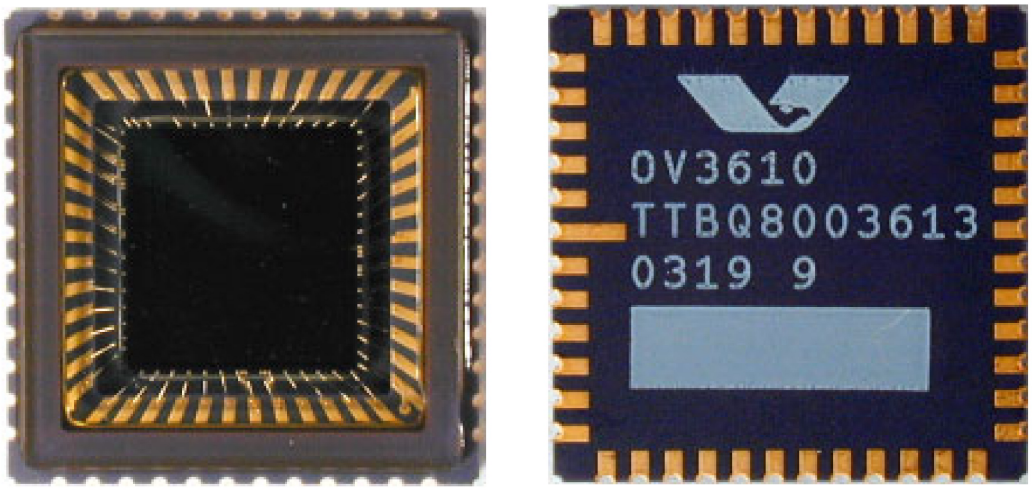


Figure 3.1.1a and b: Package Photographs

29. The OV3610 include both a non-epitaxial substrate "P-substrate" and an epitaxial layer "P-epi" as shown below in the OV3610 Report.

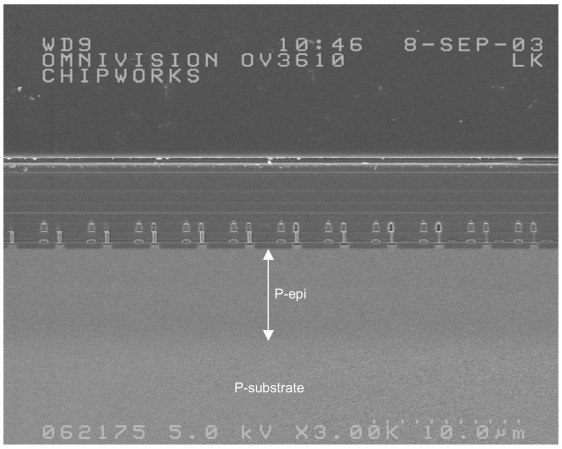


Figure 4.8.2 FESEM Cross-Section of P-epi

30. The OV3610 also discloses photodiodes with N-type doping as shown in yellow below the STI in the OV3610 Report.

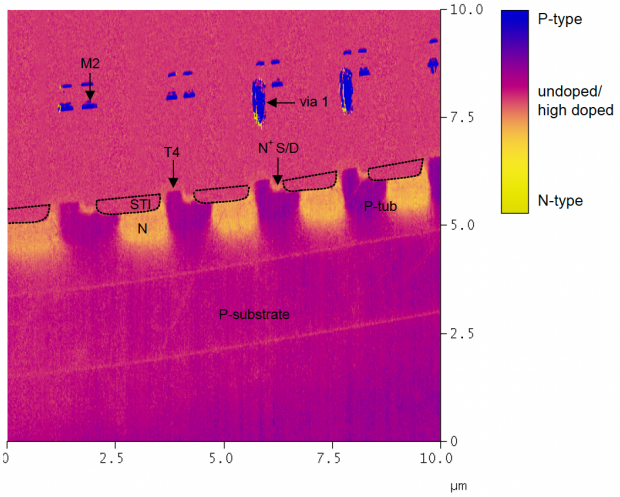


Figure 7.2.2 SCM Cross-Section Through Photodiode

31. The OV3610 discloses a N^+ S/D region and the reset transistor T4 as shown

above.

32. Each pixel cell in the OVTI3610 includes a photodiode and a transistor.

6 Image Cell Analysis

This section provides a more detailed microstructural analysis of an active pixel from the Omnivision OV3610 CMOS Image Sensor device. The pixel consists of one photodiode (PD) and three transistors forming a photodiode type Active Pixel Sensor (APS). The fill factor of the active pixel was estimated around ~31%.

A set of 512x4 columns x 1544 rows of pixels was found on this device (see Figure 6.0.1). In total, 3,162,112 pixels were observed in the device. All the cross-sectional FESEM, and Optical Planar images were obtained from the pixel array in the center of the die.

Figure 6.0.1 shows the OV3610 die, annotated with the FESEM section cuts. The FESEM analyses were performed along the bitline (cross-section 2) and through the bitline (cross-section 1) in the pixel area.

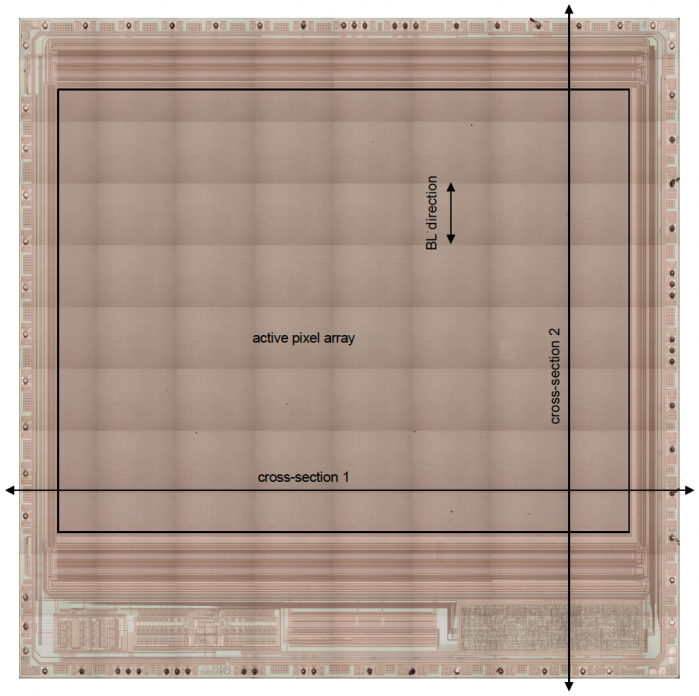


Figure 6.0.1 Annotated Die Showing Bitline and Cross-Section Directions

33. The Asserted Patents claim priority to U.S. Patent Application No. 10/934,915, filed on September 3, 2004, published as U.S. Patent Publication No. 2006/0049464, and listing G. R. Mohan Rao ("Dr. Rao") as the sole inventor.

34. Dr. Rao did not invent the transistor. Transistors are prior art to the Asserted

Patents.

35. Dr. Rao did not invent "active regions" in which transistors can be formed. Active regions are prior art to the Asserted Patents.

36. In semiconductor devices, impurities are added to silicon to aid carrier movement. P-type doping adds holes. N-type doping adds electrons.

37. There are only two available doping types in semiconductor devices: P-type and N-type.

38. The Asserted Patents acknowledge that graded dopant concentrations were previously known in the art.

39. As understood by Dr. Rao, graded dopants generate the electric field that aids movement of the carriers.

40. Dr. Rao was not the first person to recognize that graded concentrations of dopants can be used to improve the performance of transistors and other semiconductor devices.

41. Dr. Rao abandoned U.S. Application No. 10/934,915 and filed a divisional application in 2007.

42. Dr. Rao filed continuation-in-part application number 12/549,283 on August 27, 2009, which published as U.S. Patent Publication No. 2010/0006138.

43. U.S. Patent Application No. 12/549,283 adds text and figures not included in in U.S. Patent Application No. 10/934,915.

44. There is no disclosure of an "epitaxial substrate" in U.S. Patent Application

No. 10/934,915. "Epitaxial substrate" is added in U.S. Patent Application No. 12/549,283.

45. In case no. 2:19-cv-00147-JRG, Greenthread asserted infringement of U.S. Patent Nos. 8,106,481 and 9,647,070, both of which include the disclosure added by U.S. Application No. 12/549,283 as well as the '195 and '502 Patents.

46. In the present case, no Asserted Patents claim priority to U.S. Patent Application No. 12/549,283 or include the additional disclosure included therein.

47. According to Greenthread, "'[s]ubstrate' is a relative term, and Dr. Rao sometimes used it to refer to the bottom layer, and other times he used it to refer to the wells that are underneath the surface layer and active region." *See* 6:22-cv-00105-ADA, Dkt. 96, at 16.

48. This Court has never construed "substrate." In case no. 2:19-cv-00147-JRG (E.D. Tex), Dkt. 67, the parties never asked for construction of "substrate" nor is Greenthread's present interpretation of "substrate" as "underlying layer" ever mentioned.

49. Greenthread has not identified any instance in which "substrate" was construed to mean "underlying layer" by any court.

50. U.S. Patent No. 4,160,985 ("Kamins") was cited by the examiner at the United States Patent and Trademark Office ("USPTO") during prosecution of the '195 patent.

51. During claim construction in case no. *Greenthread, LLC v. Intel Corp.*, 6:22-cv-00105-ADA, Greenthread represented to United States District Court for the Western District of Texas, "Kamins has three layers with uniform dopants."

52. As of December 14, 2023, Greenthread asserts that "Kamins has three layers

with uniform dopants" was a "misstatement" to the court by Greenthread.

53. During prosecution of the '842 Patent, the USPTO examiner rejected the pending claims in view of U.S. Patent Publication No. 2007/0045682 ("Hong").

54. Hong discloses an image sensor pixel array including graded doping concentrations.

55. Figure 4D in Hong, referenced by the Greenthread in its amendments to the claims and remarks, is reproduced below:

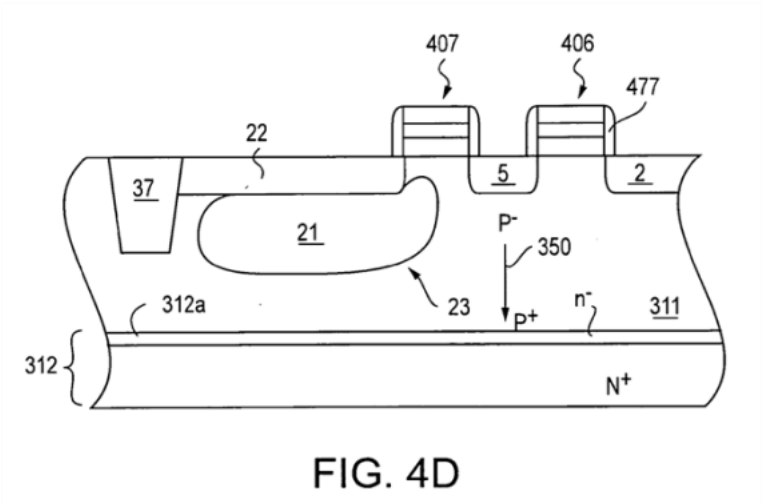


FIG. 4D

56. In response to the USPTO examiner's rejection, Greenthread stated, "the structure formed by the region 22, region 21 and the region 311 forms a P-N-P photodiode. Thus, the question is – what is an active region?"

57. Greenthread further stated, "The Examiner has referred to the second active region as being defined by the source/drain region 2 or the regions 2 or 5 or 22 of the pixel cell" and "the current amendments set forth that 'circuitry' is now 'transistors' formed in at least one of the active regions. This is a clear distinction as well 2 or 5 cannot have a transistor formed therein."

58. Greenthread further stated, "there is no discussion in Hong that a transistor

of any type can or could be formed in the active region 21."

59. Greenthread asserted that Hong's pixel cell disclosed only a single active region: the epitaxial layer 311. Specifically, Greenthread stated, "There are no transistors formed within the region 22 or the region 5 or the region 2 – the transistors are formed only within the 'single' active region 311."

60. During prosecution, Greenthread did not contest that Hong disclosed adjacent pixel cells.

61. An actual, substantial, and justiciable controversy, within the meaning of 28 U.S.C. §§ 2201 and 2202, exists between Greenthread and OmniVision concerning the non-infringement and invalidity of the Asserted Patents. An actual, substantial, and justiciable controversy, within the meaning of 28 U.S.C. §§ 2201 and 2202, exists between Greenthread and OmniVision concerning whether OmniVision products fabricated by third party processes, such as TSMC's processes, do or do not infringe the Asserted Patents. This controversy is of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

62. Through discovery, OmniVision has informed Greenthread that certain products Greenthread has identified as being OmniVision Accused Products include transistors made by TSMC using TSMC processes.

COUNT ONE:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '195 PATENT

63. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

64. The claims of the '195 Patent are invalid for failure to comply with one or

more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102, 103, and/or 112.

65. OmniVision is entitled to a declaratory judgment that the claims of the '195 Patent are invalid.

COUNT TWO:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '502 PATENT

66. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

67. The claims of the '502 Patent are invalid for failure to comply with one or more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102, 103, and/or 112.

68. OmniVision is entitled to a declaratory judgment that the claims of the '502 Patent are invalid.

COUNT THREE:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '842 PATENT

69. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

70. The claims of the '842 Patent are invalid for failure to comply with one or more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102,

103, and/or 112.

71. OmniVision is entitled to a declaratory judgment that the claims of the '842 Patent are invalid.

COUNT FOUR:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '481 PATENT

72. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

73. The claims of the '481 Patent are invalid for failure to comply with one or more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102, 103, and/or 112.

74. OmniVision is entitled to a declaratory judgment that the claims of the '481 Patent are invalid.

COUNT FIVE:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '222 PATENT

75. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

76. The claims of the '222 Patent are invalid for failure to comply with one or more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102, 103, and/or 112.

77. OmniVision is entitled to a declaratory judgment that the claims of the '222

Patent are invalid.

COUNT SIX:

DECLARATORY JUDGMENT OF PATENT INVALIDITY OF THE '014 PATENT

78. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

79. The claims of the '014 Patent are invalid for failure to comply with one or more requirements of patentability, including requirements under 35 U.S.C. §§ 101, 102, 103, and/or 112.

80. OmniVision is entitled to a declaratory judgment that the claims of the '014 Patent are invalid.

COUNT SEVEN:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '195 PATENT

81. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

82. OmniVision has not infringed and does not infringe any of the claims of the '195 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

83. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '195 Patent.

84. TSMC provides transistors to OmniVision that do not infringe any asserted

claim of the ’195 Patent.

85. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the ’195 Patent.

86. OmniVision’s products that incorporate only transistors made by TSMC using TSMC processes do not infringe any asserted claim of the ’195 Patent.

87. OmniVision is entitled to a declaratory judgment that it has not infringed and does not infringe any of the asserted claims of the ’195 Patent in any manner.

COUNT EIGHT:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE ’502 PATENT

88. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

89. OmniVision has not infringed and does not infringe any of the claims of the ’502 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

90. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the ’502 Patent.

91. TSMC provides transistors to OmniVision that do not infringe any asserted claim of the ’502 Patent.

92. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the ’502 Patent.

93. OmniVision’s products that incorporate only transistors made by TSMC using

TSMC processes do not infringe any asserted claim of the '502 Patent.

94. OmniVision is entitled to a declaratory judgment that it has not infringed and does not infringe any of the asserted claims of the '502 Patent in any manner.

COUNT NINE:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '842 PATENT

95. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

96. OmniVision has not infringed and does not infringe any of the claims of the '842 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

97. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '842 Patent.

98. TSMC provides transistors to OmniVision that do not infringe any asserted claim of the '842 Patent.

99. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the '842 Patent.

100. OmniVision's products that incorporate only transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '842 Patent.

101. OmniVision is entitled to a declaratory judgment that it has not infringed and

does not infringe any of the asserted claims of the '842 Patent in any manner.

COUNT TEN:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '481 PATENT

102. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

103. OmniVision has not infringed and does not infringe any of the claims of the '481 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

104. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '481 Patent.

105. TSMC provides transistors to OmniVision that do not infringe any asserted claim of the '481 Patent.

106. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the '481 Patent.

107. OmniVision's products that incorporate only transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '481 Patent.

108. OmniVision is entitled to a declaratory judgment that it has not infringed and does not infringe any of the asserted claims of the '481 Patent in any manner.

COUNT ELEVEN:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '222 PATENT

109. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

110. OmniVision has not infringed and does not infringe any of the claims of the '222 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

111. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '222 Patent.

112. TSMC provides transistors to OmniVision that do not infringe any asserted claim of the '222 Patent.

113. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the '222 Patent.

114. OmniVision's products that incorporate only transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '222 Patent.

115. OmniVision is entitled to a declaratory judgment that it has not infringed and does not infringe any of the asserted claims of the '222 Patent in any manner.

COUNT TWELVE:

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '014 PATENT

116. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set

forth herein.

117. OmniVision has not infringed and does not infringe any of the claims of the '014 Patent literally, under the doctrine of equivalents, directly, contributorily, by inducement, or in any other manner.

118. Transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '014 Patent.

119. TSMC provides transistors to OmniVision that do not infringe any asserted claim of the '014 Patent.

120. Products made for OmniVision by TSMC using TSMC processes do not infringe any asserted claim of the '014 Patent.

121. OmniVision's products that incorporate only transistors made by TSMC using TSMC processes do not infringe any asserted claim of the '014 Patent.

122. OmniVision is entitled to a declaratory judgment that it has not infringed and does not infringe any of the asserted claims of the '014 Patent in any manner.

COUNT THIRTEEN:

DECLARATORY JUDGMENT OF NO ENTITLEMENT TO PRE-SUIT DAMAGES

123. OmniVision incorporates paragraphs 1–62 of its Counterclaims as if fully set forth herein.

124. Plaintiff accused various products of infringing the '195 and '502 Patents.

125. Plaintiff granted licenses to parties who were alleged to practice the

Greenthread Patents before Greenthread filed suit against OmniVision.

126. At least some licensees received claim charts from Plaintiff identifying where Plaintiff asserts that each element of at least one claim of at least one of the Greenthread Patents is present in a product made or sold by the licensee.

127. Plaintiff has no evidence that any licensees of the Greenthread patents marked any products that Plaintiff accused of infringement with any of the Greenthread Patent numbers at any time.

128. Plaintiff has not contractually obligated any licensee to mark any products with any of the Greenthread Patent numbers.

129. Plaintiff believes that licensees of the Greenthread Patents have sold or manufactured products in the United States that practice the Greenthread Patents.

130. Greenthread has no evidence that any licensee marked any product with any of the Greenthread Patent numbers prior to filing suit against OmniVision.

131. Licensees were granted a license by Greenthread for products that Greenthread accused of infringement, but the licensee did not mark the accused products after receiving a license prior to filing suit against OmniVision.

132. Plaintiff failed to provide OmniVision with pre-suit notice of its infringement allegations against OmniVision.

133. Plaintiff is precluded from recovering damages prior to the filing of the Complaint because at least one of its licensees marked the licensed products as set forth in 35 U.S.C. § 287(a) that their products, including any products incorporating Accused

OmniVision Products as components, were made for or under the Greenthread Patents.

134. OmniVision is entitled to a declaratory judgment that Greenthread is not entitled to pre-suit damages for any of the Greenthread Patents.

DEMAND FOR JURY TRIAL

OmniVision demands a jury trial on all issues that may be so tried.

PRAYER FOR RELIEF

For these reasons, OmniVision respectfully requests that this Court enter judgment in its favor and grant the following relief:

a. Enter judgment that OmniVision does not and has not infringed any valid and enforceable claim of the '195 Patent, the '502 Patent, the '842 Patent, the '481 Patent, the '222 Patent, and the '014 Patent under any theory—directly, indirectly, jointly with any other person or entity, by inducement, contributorily, literally, under the doctrine of equivalents, or otherwise under any section of 35 U.S.C. § 271;

b. Enter judgment and a declaration that the claims of the '195 Patent, the '502 Patent, the '842 Patent, the '481 Patent, the '222 Patent, and the '014 Patent are invalid and unenforceable;

c. Deny each request for relief made by Greenthread;

d. Enter an order declaring that this is an exceptional case and award OmniVision its costs, expenses, and reasonable attorney fees under 35 U.S.C. § 285 and all other applicable statutes, rules, and common law;

e. Dismiss Greenthread's Complaint against OmniVision with prejudice; and,

f. Any such other relief as the Court may deem appropriate and just under the circumstances

Dated: December 28, 2023

/s/ David H. Bluestone

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CERTIFICATE OF SERVICE

I hereby certify that on December 28, 2023, a true and correct copy of the foregoing document was served on all counsel of record through the Court's CM/ECF system.

/s/ David H. Bluestone
David H. Bluestone