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

MONTEREY RESEARCH, LLC, Plaintiff, v. RENESAS ELECTRONICS CORPORATION, DENSO CORPORATION, AND DENSO INTERNATIONAL AMERICA, INC. Defendants.	Case No. 2:24-cv-00238 **Complaint for Patent Infringement** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff Monterey Research, LLC ("Plaintiff" or "Monterey") makes the following allegations against Defendants Renesas Electronics Corporation ("Renesas"), Denso Corporation ("Denso") and Denso International America, Inc. ("DIA") (collectively "Defendants"):

INTRODUCTION

1. This complaint arises under 35 U.S.C. §271 from Defendants' unlawful infringement of the following United States patents owned by Monterey: United States Patent No. 6,243,300 (the " '300 patent"); United States Patent No. 7,679,968 (the " '968 patent"); United States Patent No. 7,089,133 (the " '133 patent"); and United States Patent No. 7,825,688 (the "'688 patent") (collectively, the "Asserted Patents").

2. Monterey is an intellectual property and technology licensing company. Monterey's patent portfolio comprises over 750 active and pending patents worldwide, including

approximately 650 active United States patents. Monterey acquired these patents from Cypress Semiconductor. In some instances, Cypress acquired patent assets from other entities such as Advanced Micro Devices or Fujitsu through acquisitions. Monterey's patent portfolio stems from technology developed from a number of leading high-technology companies. For instance, the asserted patents were developed by Advanced Micro Devices, a leading developer and manufacturer of microprocessors and integrated circuits; and Cypress Semiconductor Corporation, a well-known American semiconductor design and manufacturing company that was acquired by Infineon Technologies in 2020 for nearly $10 billion[1]. Those innovations have greatly enhanced the capabilities of computer systems, increased electronic device processing power and capabilities, reduced electronic device power consumption, and improved the functioning of computer processors and memory.

3. Defendants have infringed and continue to infringe Monterey's patents. Moreover, despite Monterey notifying them of infringement, Defendants have thus far refused to license those patents. Instead, they have continued to make, use, sell, offer to sell, and/or import Monterey's intellectual property within the United States without Monterey's permission. Monterey attempted to engage in licensing discussions with Renesas for some time before initiating this action. For example, Monterey had multiple meetings with Renesas about potential licensing in 2017 and 2018. However, after engaging with Monterey over several months, and discussing licensing, Renesas simply stopped responding to all communications about any licensing. Monterey therefore contacted Renesas' customer Denso Corp., who incorporates Renesas products into products that it sells. Denso, however, simply referred Monterey to Renesas.

[1] *See* "Infineon snaps up San Jose's Cypress Semiconductor in $10B deal", *available at* https://www.bizjournals.com/sanjose/news/2019/06/03/infineon-snaps-up-san-jose-s-cypress-semiconductor.html.

PARTIES

4. Plaintiff Monterey is a limited liability company incorporated under the laws of Delaware with offices in California.

5. Upon information and belief, Defendant Renesas Electronics Corporation ("Renesas") is a corporation organized under the laws of Japan, with its principal place of business at Toyosu Foresia, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan.

6. Upon information and belief, Defendant Denso Corporation ("Denso") is a corporation organized under the laws of Japan, with its principal place of business at 1-1, Showacho, Kariya, Aichi Prefecture, 448-0029, Japan.

7. Upon information and belief, Defendant Denso International America, Inc. ("DIA") is a wholly-owned subsidiary of Denso and a corporation organized under the laws of Delaware, with a regular and established place of business at 2701 W Plano Pkwy, Plano, TX 75075. DIA may be served with process through its registered agent, Corporation Service Company d/b/a CSC Lawyers Incorporating Service Company, 211 E. 7th Street, Suite 620, Austin, TX 78701.

8. Upon information and belief, Defendant Renesas designs and manufactures and/or has manufactured on its behalf various products and components that infringe the Asserted Patents. Defendants Denso and DIA (collectively "Denso Defendants") incorporate infringing Renesas products and components into products sold by the Denso Defendants. The infringing products are then sold for importation into the United States, imported into the United States, and/or sold, offered for sale, and/or used within the United States after importation (including importing products made by a patented process), including within this District. Denso and Renesas are close collaborators in making and developing computer components for use in a wide variety of applications served by Denso products. Denso owns approximately 5% of the equity of Renesas.

JURISDICTION AND VENUE

9. This action arises under the patent laws of the United States, Title 35 of the United States Code § 1, *et seq*, including 35 U.S.C. §§ 271, 281, 283, 284, and 285. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. This Court has personal jurisdiction over Defendants in this action because Defendants have committed acts within this District giving rise to this action, and have established minimum contacts with this forum such that the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Defendants, directly and/or through subsidiaries or intermediaries, have committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the asserted patents, and inducing others to infringe the asserted patents in this District. Defendants are directly and/or through intermediaries making, using, selling, offering for sale, distributing, advertising, promoting, and otherwise commercializing their infringing products in this District. Defendants regularly conduct and solicit business in, engage in other persistent courses of conduct in, and/or derive substantial revenue from goods and services provided to the residents of this District and the State of Texas. Renesas is subject to jurisdiction pursuant to due process and/or the Texas Long Arm Statute due to its substantial business in this State and District including at least its infringing activities, regularly doing or soliciting business with the Denso Defendants, including through their operations in Texas and within this District, and engaging in persistent conduct and deriving substantial revenues from goods and services provided to residents in the State of Texas including the Eastern District of Texas. Denso Defendants are also subject to jurisdiction pursuant to due process and/or the Texas Long Arm Statute due to their substantial business in this State and District, including at least their infringing

activities, regularly doing or soliciting business within this State and within this District, and operating multiple places of business within this District. All Defendants direct infringing products and services into this District and sell, offer for sale, service and support infringing activities in this District, including by customers of Defendants' products, such as Toyota, which operates in this District.

11. Venue is proper in this District pursuant to 28 U.S.C. § 1391(b), (c), (d), and 1400(b). Renesas is a foreign corporation as to which venue is proper in any judicial district pursuant to 28 U.S.C. § 1391(c)(3). Likewise, Denso is a foreign corporation as to which venue is proper in any judicial District pursuant to 28 U.S.C. § 1391(c)(3). DIA has a permanent and continuous presence in, has committed acts of infringement in, and maintains regular and established places of business in this district. Defendants have committed acts of direct and indirect infringement in this judicial District including using and purposefully transacting business involving infringing products in this judicial District such as by sales to one or more customers in the State of Texas including in the Eastern District of Texas. DIA maintains a regular and established places of business in this District, including at 2701 W. Plano Pkwy, Plano, Texas 75075. DIA also maintains a regular and established place of business at 801 South Ware Rd., Suite 200, McAllen, Texas 78503. Further, Denso, through its subsidiaries, operates a regular and established place of business at 5850 Granite Parkway, Suite 950, Plano, Texas 75024.

THE PATENTS-IN-SUIT

12. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

13. The '300 Patent, titled "Substrate Hole Injection for Neutralizing Spillover Charge Generated During Programming of a Non-Volatile Memory Cell" duly issued by the USPTO on

June 5, 2001. Ex. 1.

14. The '968 Patent, titled "Enhanced Erasing Operation for Non-Volatile Memory" duly issued by the USPTO on March 16, 2010. Ex. 2.

15. The '133 Patent, titled "Method and Circuit for Providing a System Level Reset Function For an Electronic Device" duly issued by the USPTO on August 8, 2006. Ex. 3

16. The '688 Patent, titled "Programmable Microcontroller Architecture (Mixed Analog/Digital)" duly issued by the USPTO on November 2, 2010. Ex. 4.

17. Monterey is the sole owner by assignment of all right, title, and interest in each Asserted Patent.

18. Each Asserted Patent is valid and enforceable.

FACTUAL BACKGROUND

19. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

20. The Patents-in-Suit stem from the research and design of innovative and proprietary technology developed by leading high-technology companies, including Cypress Semiconductor Corporation ("Cypress"), Advanced Micro Devices ("AMD"), and Fujitsu. The patents not originally developed by Cypress were acquired by Cypress through acquisitions. Cypress was an American multinational company and pioneer of cutting- edge semiconductor technology. Founded in 1982, Cypress made substantial investments in researching, developing, and manufacturing high-quality semiconductor devices, integrated circuits, and products containing the same. Its acquisition by Infineon Technologies valued at nearly $10 billion made Infineon one

of the world's top 10 semiconductor manufacturers following the transaction.[2]

21. The Patents-in-Suit are directed to inventive technology relating to computer memory, computer processors and microcontrollers, and computer display interfaces, and/or products containing the same.

22. Defendant Renesas works closely with its customers, OEMs, foundry suppliers, distributors, and/or other third parties to make, use, sell, offer to sell, and/or import semiconductor devices, integrated circuits, and/or products containing the same. The Denso Defendants are an important customer and OEM for Renesas. Denso integrates Renesas semiconductor devices and integrated circuits into a wide variety of devices that are integrated into other products, particularly for applications in the automotive industry, ranging from engine control units to in-cabin information and display systems. The Denso Defendants make such devices for numerous leading auto manufacturers. Renesas develops and optimizes semiconductor products for automotive applications that are integrated by Denso into products designed for leading auto manufacturers in the United States and around the world. Defendants' affirmative acts in furtherance of the manufacture, use, sale, offer to sell, and importation of their products into the United States include, but are not limited to, any one or combination of: (i) designing specifications for manufacture of their products; (ii) collaborating on, encouraging, and/or funding the development of processes for the manufacture of their products; (iii) soliciting and/or sourcing the manufacture of their products; (iv) licensing, developing, and/or transferring technology and know-how to enable the manufacture of their products; (v) enabling and encouraging the use, sale, or importation of their products in the United States; and (vi) advertising and selling their products and/or downstream

[2] *See* "Infineon Technologies AG completes acquisition of Cypress Semiconductor Corporation", available at https://www.infineon.com/cms/en/about-infineon/press/press-releases/2020/INFXX202004-049.html.

products incorporating them in the United States.

23. Defendants also provide marketing and/or technical support services for their products from facilities in the United States. For example, Defendants maintain websites that advertise their products, including identifying the applications for which they can be used and specifications for the products. Defendants make available user manuals, product documentation, and other materials related to their products to residents of this District and to the United States as a whole. As discussed above, Renesas develops and sells semiconductor and integrated circuit products that are designed and marketed for automotive applications. Denso utilizes these Renesas products in its automotive components and markets and sells those products through sales channels located in the United States and specifically in this District to auto manufacturers for incorporation into automobiles sold in the United States and in this District. The Denso Defendants have noted, for example, that a sales office in this District was specifically located to provide service to Toyota in connection with its operations in this District.

DEFENDANTS' PRE-SUIT KNOWLEDGE OF THEIR INFRINGEMENT OF MONTEREY'S PATENTS

24. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

25. Before filing this action, Monterey, through its agent, IPValue Management, Inc. ("IPValue"), notified Defendants about the Asserted Patents and their infringement thereof. Among other things, Monterey identified the Asserted Patents to Renesas in multiple communications from 2017-2022; alleged that Renesas infringed the Asserted Patents, including identifying exemplary infringing products; sought to engage Renesas in discussions regarding its use of Monterey's intellectual property (including the Asserted Patents); and offered to license the

Asserted Patents to Renesas. For example:

a. Monterey had many communications with Renesas about patent licensing, including through correspondence and in-person meetings between Monterey and Renesas beginning in 2017. In an October 2017 meeting, Monterey presented Renesas with a claim chart involving the '968 patent. Subsequently in a December 2017 meeting, Monterey presented a claim chart involving the '300 patent. On August 7, 2018, Monterey sent a letter to Renesas, further notifying Renesas of its infringement of certain Monterey patents, including the '300 patent and the '968 patent. There, Monterey specifically identified Renesas's H8SX MCU products, as well as Renesas products containing embedded flash memory manufactured using either its 40 nm or 28 nm process as exemplary infringing products.

b. Monterey conducted multiple in-person meetings with Renesas about licensing its patents, including on July 17, 2017, October 25, 2017, December 20, 2017, and March 7, 2018. Monterey was scheduled to meet further with Renesas on May 23, 2018, but Renesas cancelled this meeting on May 15, 2018, and failed to respond to multiple messages requesting further communication and to further subsequent correspondence.

c. On March 1, 2022, Monterey sent another letter to Renesas after failing to obtain further response from Renesas to Monterey's licensing efforts. The letter notified Renesas of its infringement of a variety of Monterey patents, including the '133 patent and the '688 patent. There, Monterey specifically identified various infringing Renesas products, including its M16C family microcontrollers, its RA6 Series, RX Family, RX700 Series and RL78/F15 products, its R8A66597FP/DFP/BG, and R8A66593FP/BG products, its RH850 family microcontrollers, and its R-Car products, including its R-Car E2 products and R-Car E3 products.

d. When it became clear that Renesas was not negotiating in good faith

regarding a license, Monterey contacted Renesas' customer, Denso, because it incorporated infringing Renesas products into its products. And if Renesas refused to take a license, then that obligation fell to Denso. Consequently, Monterey wrote to Denso on September 11, 2018 regarding Denso's infringement of various Monterey patents, including the '300 patent and the '968 patent. In addition, on September 7, 2018, Monterey contacted Denso's customer Toyota. Monterey's correspondence to Toyota included references to infringement of the '300 and the '968 patents. Monterey similarly contacted Denso customer Honda on September 14, 2018 regarding Monterey's patents. Denso responded on November 2, 2018 indicating that it believed any licensing discussion should be with Renesas. Denso also noted that it had received notification from its customers, including Toyota and Honda, regarding notices that those customers had received regarding infringement of Monterey patents (involving use of Denso components).

e. Monterey further communicated with Denso customer Toyota additional times, including March 26, 2020, and March 1, 2022, referencing Toyota's infringement of various Monterey patents, including the '133 patent. On information and belief, Toyota provided these communications to Denso as well.

f. Despite Monterey's repeated efforts—which have continued for well over five years—neither Renesas nor Denso engaged in meaningful discussions to license the Asserted Patents, and have also not taken steps to end their infringement of the Asserted Patents. Instead, Defendants continue to knowingly, intentionally, and willfully infringe Monterey's patents directly, contributorily, and by inducement, to obtain their significant benefits without a license from Monterey.

COUNT I
INFRINGEMENT OF THE '300 PATENT

26. Monterey realleges and incorporates by reference the foregoing paragraphs as if

fully set forth herein.

27. The ’300 patent is generally directed to methods of erasing memory cells in solid state memory devices.

28. The ’300 patent explains that solid state memory devices before the invention achieved electrical erasure through application of a negative voltage to the gate of a memory cell, or zero bias on the gate, in conjunction with a positive bias on the drain over multiple cycles. These approaches produce carriers through band-to-band tunnelling that can slow down the erasure process. The ’300 patent teaches a method for erasure that utilizes neutralizing holes that can neutralize spillover electrons to prevent degradation of the programmed threshold voltage.

29. Defendants have directly infringed one or more claims of the ’300 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, making, using, selling, offering to sell, and/or importing in or into the United States without authorization products covered by one or more claims of the ’300 patent, including, by way of example and not limitation, Renesas products incorporating Renesas embedded flash memory devices made using Renesas’ 40 nm process, Renesas’ 28 nm process, and all variations or iterations thereof (collectively, the “’300 Accused Products”). These products were made and sold by Renesas, and were incorporated by Denso Defendants into products made and sold by Denso Defendants.

30. The ’300 Accused Products satisfy all claim limitations of numerous claims of the ’300 Patent. As just one non-limiting example, Defendants infringe claim 1 of the ’300 Patent. For example, the Renesas RH850 devices incorporate Renesas embedded flash memory and, as with each of the ’300 Accused Products, practices a method of erasing a memory cell with a substrate that comprises a first region and a second region with a channel therebetween that has spillover

electrons and a gate above the channel, and a charge trapping region that contains a first amount of charge. The Renesas devices contain a substrate with two regions (for a given memory cell) that contain a channel between them, a gate above the channel, and a nitride film charge trapping region which contains trapped electrons in a programmed state until the cell is fully erased. The method comprises:

a. generating neutralizing holes in the substrate; moving the neutralizing holes to the channel; and substantially neutralizing the spillover electrons with the neutralizing holes moved to the channel. Holes are generated by applying a large positive pulse to the source line for the memory cell. They move to the channel in response to the large negative voltage on the memory gate and thereby neutralize the spillover electrons.

31. Defendants have known of the ’300 Patent and their infringement of that patent since at least as early as August 7, 2018.

32. Defendants, knowing their products infringed the ’300 patent and with the specific intent for others to infringe the ’300 patent, induced infringement of one or more claims of the ’300 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, actively inducing others, including their customers, to make, use, sell, offer to sell, and/or import in or into the United States without authorization the ‘300 Accused Products, as well as products containing the same. Infringement arises from the use of the ‘300 Accused Products in their normal mode of operation, which Defendants recommend to their customers and end users.

33. Defendants have contributed to the infringement of one or more claims of the ’300 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, selling, offering to sell, and/or importing in or into the United States the ‘300 Accused

Products, which constitute a material part of the invention of the ’300 patent, knowing the ‘300 Accused Products to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.

34. Monterey has complied with § 287. At a minimum, Monterey provided Renesas with pre-suit notice of infringement of the patent no later than August 7, 2018 and provided Denso with notice of the patent no later than September 11, 2018. Further, Monterey is unaware of any patented articles subject to a duty to mark sold prior to that time.

35. Monterey has sustained and is entitled to recover damages as a result of Defendants’ infringement.

36. As described above, Defendants’ infringement of the ’300 Patent was knowing, deliberate, and willful, since at least as early as August 7, 2018, the date of Monterey’s first letter to Renesas and therefore the date on which Renesas knew of the ’300 Patent and that its conduct constituted and resulted in infringement of the ’300 Patent. And Monterey again identified the ’300 patent and Defendant’s infringement thereof several times thereafter, as described above. Defendants’ nonetheless committed acts of direct and indirect infringement despite knowing that their actions constituted infringement of the valid and enforceable ’300 patent, despite a risk of infringement that was known or so obvious that it should have been known to Defendants, and/or even though Defendants otherwise knew or should have known that their actions constituted an unjustifiably high risk of infringement of that valid and enforceable patent. Defendants’ conduct in light of these circumstances is egregious. Defendants’ knowing, deliberate, and willful infringement of the ’300 patent entitles Monterey to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT II
INFRINGEMENT OF THE '968 PATENT

37. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

38. The '968 Patent is generally directed to improved methods of erasing cells in solid state memory devices.

39. The '968 Patent explains that prior memory systems could experience inefficiencies and potential parasitic capacitance in erasing memory cells that could impact the performance of the system. The '968 Patent provides an improved memory system by adjusting the timing of application of current to the relevant components to enable faster and more effective erasing operations.

40. Defendants have directly infringed, and continue to directly infringe, one or more claims of the '968 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, making, using, selling, offering to sell, and/or importing in or into the United States without authorization products covered by one or more claims of the '968 Patent, including, by way of example and not limitation, Renesas products incorporating Renesas embedded flash memory devices made using Renesas' 90 nm process, Renesas' 40 nm process, Renesas' 28 nm process, and all variations or iterations thereof (collectively, the "'968 Accused Products"). These products are made and sold by Renesas, and are incorporated by Denso Defendants into products made and sold by Denso Defendants.

41. The '968 Accused Products satisfy all claim limitations of numerous claims of the '968 Patent. As just one non-limiting example, Defendants infringe claim 1 of the '968 Patent. For example, Renesas RX600 family devices incorporate Renesas embedded flash memory and, as

with each of the '968 Accused Products, incorporates a semiconductor device comprising:

a. A memory cell array having a plurality of non-volatile memory cells. The '968 Accused Products include non-volatile flash memory devices with multiple memory cells for storing data.

b. A negative voltage generating circuit for applying a negative voltage to a word line of the memory cell array during an erasing operation of the memory cell array. The '968 Accused Products include a circuit which generates an NHV (Negative High Voltage) to apply to the word line of the memory array during an erasing operation.

c. A positive voltage generating circuit for applying a positive voltage to a well of the memory cell array when the negative voltage reaches a predetermined voltage, wherein there is a timing gap between a start of the applying the negative voltage and a start of the applying the positive voltage. The '968 Accused Products include a circuit which generates a PHV (Positive High Voltage) which is applied to the well of the memory cell during an erase operation. The positive voltage is applied when the negative voltage has reached a pre-determined level, and there is a timing gap in the start of application of the positive and negative voltages in the system.

42. Defendants have known of the '968 Patent and their infringement of that patent since at least as early as October 25, 2017.

43. Defendants, knowing their products infringe the '968 Patent and with the specific intent for others to infringe the '968 Patent, have induced infringement of, and continue to induce infringement of, one or more claims of the '968 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, actively inducing others, including their customers, to make, use, sell, offer to sell, and/or import in or into the United States without authorization the '968 Accused Products, as well as products containing the same.

Infringement arises from the use of the '968 Accused Products in their normal mode of operation, which Defendants recommend to their customers and end users.

44. Defendants have contributed to the infringement of, and continue to contribute to the infringement of, one or more claims of the '968 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, selling, offering to sell, and/or importing in or into the United States the '968 Accused Products, which constitute a material part of the invention of the '968 Patent, knowing the '968 Accused Products to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.

45. Monterey has complied with § 287. At a minimum, Monterey provided Renesas with pre-suit notice of infringement of the patent no later than October 25, 2017 and provided Denso with notice of the patent no later than September 11, 2018. Further, Monterey is unaware of any patented articles subject to a duty to mark sold prior to that time.

46. Monterey has sustained and is entitled to recover damages as a result of Defendants' past and continuing infringement.

47. As described above, Defendants' infringement of the '968 Patent has been knowing, deliberate, and willful, since at least as early as October 25, 2017, the date on which Monterey presented a claim chart relating to the '968 Patent to Renesas in a meeting, and therefore the date on which Renesas knew of the '968 Patent and that its conduct constituted and resulted in infringement of the '968 Patent. And Monterey again identified the '968 Patent and Defendants' infringement thereof several times thereafter, including in a letter dated August 7, 2018 to Renesas, and a letter dated September 11, 2018 to Denso as described above, and also including through this Complaint. Defendants nonetheless have committed—and continue to commit—acts of direct

and indirect infringement despite knowing that their actions constituted infringement of the valid and enforceable '968 Patent, despite a risk of infringement that was known or so obvious that it should have been known to Defendants, and/or even though Defendants otherwise knew or should have known that their actions constituted an unjustifiably high risk of infringement of that valid and enforceable patent. Defendants' conduct in light of these circumstances is egregious. Defendants' knowing, deliberate, and willful infringement of the '968 Patent entitles Monterey to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT III
INFRINGEMENT OF THE '133 PATENT

48. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

49. The '133 Patent is generally directed to methods and circuits for system level reset functions for an electronic device.

50. The '133 Patent explains that traditional integrated circuits using pre-existing technologies, such as conventional Power on Reset circuits have limitations due to imprecision at detecting low voltage conditions that could lead to data corruption or other malfunctions. Conventional approaches to addressing these issues often required external components that could be both expensive and space and power consuming in conjunction with the integrated circuit. Other approaches involving tuning or training on the integrated circuit device itself could substantially increase manufacturing costs due to the requirement of special circuits, and may also be insufficient because the necessary tuning can only take place after the device is powered on and thus there could be additional risks of problem voltage exposure before the tuning is complete.

51. The '133 Patent overcame the disadvantages of conventional reset functionalities

by teaching, among other things, methods and circuits for combining an initial reset function under a low voltage supply condition, such as when the device is first powered on, and also providing a tunable reset function that can first be asserted at a voltage level setting less precise than the setting becomes after complete tuning. This helps to avoid the drawbacks of conventional techniques and increases the reliability and functionality of the circuit to avoid data corruption or other faulty operation of the device.

52. Defendants have directly infringed, and continue to directly infringe, one or more claims of the '133 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, making, using, selling, offering to sell, and/or importing in or into the United States without authorization products covered by one or more claims of the '133 Patent, including, by way of example and not limitation, Renesas M16C family Microcontrollers, RA 6 Series controllers, RX and RL series Microcontrollers and products incorporating such microcontrollers, as well as any other Renesas Microcontrollers using comparable power on reset circuits, and all variations or iterations thereof (collectively, the "'133 Accused Products"). These products are made and sold by Renesas, and are incorporated by Denso Defendants into products made and sold by Denso Defendants.

53. The '133 Accused Products satisfy all claim limitations of numerous claims of the '133 Patent. As just one non-limiting example, Defendants infringe claim 1 of the '133 Patent. For example, the RL78 MCUs, as with each of the '133 Accused Products, utilizes a method for providing a system level reset function for an electronic device comprising:

a. Performing a first reset function, operable under a low voltage condition of supply voltage of the electronic device wherein the low voltage condition characterizes an initial state upon energizing the electronic device. The '133 Accused Products implement this through

the operation of a power on reset circuit that triggers a reset state at a voltage level below a set power on voltage that is lower than the operating voltage range of the device.

b. Performing a second reset function comprising using a tunable monitor of the supply voltage. The '133 Accused Products implement this second reset function by determining whether the supply voltage has exceeded a LVD detection voltage which is calibrated during operation of the device.

c. Performing a third reset function comprising setting a precision level wherein setting the precision reset level comprises verifying calibration data relating to the precision reset level. The '133 Accused Products implement this function by utilizing a boot up function after power is up and for maintaining the power in the intended range. This reset function can be cleared after it is properly verified/calibrated by the system.

d. Holding the electronic device in the system level reset condition responsive to any of said first, said second and said third reset functions. In the '133 Accused Products, the system applies an internal reset signal during any of the reset signals generated by the first, second, or third reset functions discussed above.

54. Defendants have known of the '133 Patent and their infringement of that patent since at least as early as March 1, 2022.

55. Defendants, knowing their products infringe the '133 Patent and with the specific intent for others to infringe the '133 Patent, have induced infringement of, and continue to induce infringement of, one or more claims of the '133 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, actively inducing others, including its customers, to make, use, sell, offer to sell, and/or import in or into the United States without authorization the '133 Accused Products, as well as products containing the same.

Infringement arises from the use of the '133 Accused Products in their normal mode of operation, which Defendants recommend to their customers and end users.

56. Defendants have contributed to the infringement of, and continue to contribute to the infringement of, one or more claims of the '133 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, selling, offering to sell, and/or importing in or into the United States the '133 Accused Products, which constitute a material part of the invention of the '133 Patent, knowing the '133 Accused Products to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.

57. Monterey has complied with § 287. At a minimum, Monterey provided Defendants with pre-suit notice of infringement of the patent no later than March 1, 2022. Further, Monterey is unaware of any patented articles subject to a duty to mark sold prior to that time.

58. Monterey has sustained and is entitled to recover damages as a result of Defendants' past and continuing infringement.

59. As described above, Defendants' infringement of the '133 Patent has been knowing, deliberate, and willful, since at least as early as March 1, 2022, the date of Monterey's letters to Renesas and to Denso customer Toyota and therefore the date on which Defendants knew of the '133 Patent and that their conduct constituted and resulted in infringement of the '133 Patent. And Monterey again identified the '133 Patent and Defendants' infringement including through this Complaint. Defendants nonetheless have committed—and continue to commit—acts of direct and indirect infringement despite knowing that their actions constituted infringement of the valid and enforceable '133 Patent, despite a risk of infringement that was known or so obvious that it should have been known to Defendants, and/or even though Defendants otherwise knew or should

have known that their actions constituted an unjustifiably high risk of infringement of that valid and enforceable patent. Defendants' conduct in light of these circumstances is egregious. Defendants' knowing, deliberate, and willful infringement of the '133 Patent entitles Monterey to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT IV
INFRINGEMENT OF THE '688 PATENT

60. Monterey realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

61. The '688 Patent is generally directed to a programmable architecture for microcontrollers with both analog and digital components.

62. The '688 Patent explains the disadvantages of pre-existing microcontrollers that typically utilized only pre-programmed analog circuits such as Continuous Time amplifiers or Switched Capacitor circuits, and that typically these two types of circuits would not be present on the same semiconductor device, and could not be dynamically programmed. Further, the patent explains that these analog circuits typically were not realized on the same semiconductor device along with digital circuits.

63. The '688 Patent overcame these disadvantages by teaching, among other things, an architecture for a microcontroller that includes both programmable analog blocks and programmable digital blocks interconnected with a programmable interconnect structure fabricated on a single semiconductor chip in a programmable System on a Chip.

64. Defendants have directly infringed, and continue to directly infringe, one or more claims of the '688 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, making, using, selling, offering to sell, and/or importing in or

into the United States without authorization products covered by one or more claims of the '688 Patent, including, by way of example and not limitation, Renesas RH850 family Microcontrollers and products incorporating such microcontrollers, as well as any other Renesas Microcontrollers using comparable programmable digital and analog circuit blocks, and all variations or iterations thereof (collectively, the "'688 Accused Products").

65. The '688 Accused Products satisfy all claim limitations of numerous claims of the '688 Patent. As just one non-limiting example, Defendants infringe claim 1 of the '688 Patent. For example, the Renesas RH850 Microcontrollers, as with each of the '688 Accused Products, includes a circuit comprising:

a. A plurality of circuit blocks, wherein at least one of the circuit blocs is an analog circuit block and at least one of the circuit blocks is a digital circuit block. As just one example, the RH850 Microcontrollers include analog circuit blocks such as an A/D converter block, and digital circuit blocks such as a Clocked Serial Interface Block;

b. A bus coupling analog input/output data and digital input/output data for the plurality circuit blocks. For example, the RH850 Microcontrollers contain a P-Bus connecting peripheral blocks, including both analog and digital blocks; and

c. A clock controlling the coupling of the analog input/output data and the digital input/output data to the bus. For example, the RH850 Microcontrollers utilize a Low Power Sampling or LPS block, which includes a clock, to control the coupling of the analog input/output data and the digital input/output data to the bus.

66. Renesas has known of the '688 Patent and the infringement of that patent since at least as early as March 1, 2022.

67. Renesas, knowing its products infringe the '688 Patent and with the specific intent

for others to infringe the ’688 Patent, has induced infringement of, and Defendants continue to induce infringement of, one or more claims of the ’688 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, actively inducing others, including their customers, to make, use, sell, offer to sell, and/or import in or into the United States without authorization the Accused ’688 Products, as well as products containing the same. Infringement arises from the use of the ‘688 Accused Products in their normal mode of operation, which Defendants recommend to their customers and end users.

68. Defendants have contributed to the infringement of, and continue to contribute to the infringement of, one or more claims of the ’688 Patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, by, among other things, selling, offering to sell, and/or importing in or into the United States the ’688 Accused Products, which constitute a material part of the invention of the ’688 Patent, knowing the ’688 Accused Products to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.

69. Monterey has complied with § 287. At a minimum, Monterey provided Renesas with pre-suit notice of infringement of the patent no later than March 1, 2022. Further, Monterey is unaware of any patented articles subject to a duty to mark sold prior to that time.

70. Monterey has sustained and is entitled to recover damages as a result of Defendants’ past and continuing infringement.

71. As described above, Renesas’ infringement of the ’688 Patent has been knowing, deliberate, and willful, since at least as early as March 1, 2022, the date of Monterey’s letter to Renesas and therefore the date on which Renesas knew of the ’688 Patent and that its conduct constituted and resulted in infringement of the ’688 Patent. And Monterey again identified the

'688 patent and Defendants' infringement thereof thereafter including through this Complaint. Defendants nonetheless have committed—and continue to commit—acts of direct and indirect infringement despite knowing that their actions constituted infringement of the valid and enforceable '688 Patent, despite a risk of infringement that was known or so obvious that it should have been known to Defendants, and/or even though Defendants otherwise knew or should have known that their actions constituted an unjustifiably high risk of infringement of that valid and enforceable patent. Defendants' conduct in light of these circumstances is egregious. Defendants' knowing, deliberate, and willful infringement of the '688 Patent entitles Monterey to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, Monterey respectfully requests that this Court enter:

a. A judgment in favor of Monterey that Defendants have infringed, either literally and/or under the doctrine of equivalents the '300 Patent, the '968 Patent, the '133 Patent, and the '688 Patent;

c. A judgment and order requiring Defendants to pay Monterey its damages, costs, expenses, and pre-judgment and post-judgment interest for Defendants' infringement of the '300 Patent, the '968 Patent, the '133 Patent, and the '688 Patent;

d. A judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Monterey, including without limitation, pre-judgment and post-judgment interest and an award of an ongoing royalty for Defendants' post-judgment infringement in an amount according to proof;

e. A judgment and order finding that this is an exceptional case within the meaning

of 35 U.S.C. § 285 and awarding to Monterey its reasonable attorneys' fees and costs against Defendants, and enhanced damages pursuant to 35 U.S.C. § 284; and

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

DEMAND FOR JURY TRIAL

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

Dated: April 10, 2024

Respectfully submitted,

/s/ Brian Ledahl

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