

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

NETWORK SYSTEM TECHNOLOGIES, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	
TEXAS INSTRUMENTS INCORPORATED;	)	Civil Action No. 2:22-cv-482
FORD MOTOR COMPANY; VOLKSWAGEN	)	
AG; AUDI AG,	)	<b>JURY TRIAL DEMANDED</b>
	)	
Defendants.	)	
	)	
	)	

**COMPLAINT**

Plaintiff Network System Technologies, LLC (“NST” or “Plaintiff”), by and through its attorneys, demands a trial by jury on all issues so triable, and for its complaint against Texas Instruments Incorporated, Ford Motor Company, Volkswagen AG, and Audi AG (collectively, “Defendants”), alleges as follows:

**NATURE OF THE ACTION**

1. This is a civil action for patent infringement under the patent laws of the United States, Title 35, United States Code, Section 271, *et seq.*, involving the follow United States Patents (collectively, “Asserted Patents”) and seeking damages and injunctive relief as provided in 35 U.S.C. §§ 281 and 283-285.

U.S. Patent No. 7,366,818 (Exhibit 1, “818 patent”)
U.S. Patent No. 7,373,449 (Exhibit 2, “449 patent”)
U.S. Patent No. 7,594,052 (Exhibit 3, “052 patent”)
U.S. Patent No. 7,769,893 (Exhibit 4, “9893 patent”)
U.S. Patent No. 8,072,893 (Exhibit 5, “2893 patent”)
U.S. Patent No. 8,086,800 (Exhibit 6, “800 patent”)

## THE PARTIES

2. Plaintiff is a limited liability company formed under the laws of Delaware, with a principal place of business at 533 Congress Street, Portland, ME 04101. Plaintiff is the owner by assignment of the Asserted Patents.

3. On information and belief, Texas Instruments Incorporated (“TI”) is a corporation organized and existing under the laws of Delaware, having a principal place of business at 12500 TI Boulevard, Dallas, Texas 75243. On information and belief, TI has business locations in this Judicial District at 6412 U.S. Highway 75, Sherman, Texas 75090; 300 W. Renner Road, Richardson, Texas 75080; and 2501 S. State Highway 121 Bus., Lewisville, Texas 75067.<sup>1</sup> Further, on information and belief, TI is building new semiconductor wafer fabrication plants in this Judicial District in Sherman, Texas, an investment which could reach \$30 billion and create 3,000 jobs.<sup>2</sup> On information and belief, TI may be served in Texas via its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

4. On information and belief, Ford Motor Company (“Ford”) is a corporation organized and existing under the laws of Delaware, having a principal place of business at 1 American Road, Dearborn, Michigan 48126. On information and belief, Ford has a business location in this Judicial District at 5700 Granite Parkway, Suite 1000, Plano, Texas 75024.<sup>3</sup> Ford describes this office as “its Central Market Area Office” and “the principal office of Ford in the State of Texas,” where “the decision makers for [Ford] within this state conduct the daily affairs of the organization.” *Ford Motor Co. v. Johnson*, 473 S.W.3d 925, 927 (Tex. App. 2015). On

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<sup>1</sup> See Defendant Texas Instruments Incorporated’s Answer and Counterclaims to Plaintiff’s Complaint for Patent Infringement, *MIMO Research, LLC v. Texas Instruments Incorporated*, 5:22-cv-00083, Dkt. No. 9 at 3-4 (E.D. Tex. Sept. 6, 2022).

<sup>2</sup> <https://www.ti.com/about-ti/company/ti-at-a-glance/manufacturing/sherman.html> (last visited December 19, 2022); <https://news.ti.com/texas-instruments-breaks-ground-on-new-300-mm-semiconductor-wafer-fabrication-plants-in-sherman-texas> (last visited December 19, 2022).

<sup>3</sup> <https://www.granitepark.com/directory> (last visited December 19, 2022).

information and belief, Ford may be served in Texas via its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

5. On information and belief, Volkswagen AG is a company organized and existing under the laws of Germany, having a principal place of business at Berliner Ring 2, 38440 Wolfsburg, Niedersachsen, Germany. On information and belief, Audi AG (“Audi”) is a wholly owned subsidiary of Volkswagen AG, having a principal place of business at Auto-Union-Str. 1, 85057 Ingolstadt, Bayern, Germany.<sup>4</sup> (Volkswagen AG and Audi AG will be collectively referred to as “Volkswagen”.)

6. On information and belief, the Defendants are engaged in making, using, offering for sale, selling, importing, or otherwise providing, within the United States and in particular the State of Texas and this Judicial District, directly or indirectly, system-on-a-chip products (“SoCs”) and/or products containing SoCs with features and functionalities that infringe the Asserted Patents.

### **JURISDICTION AND VENUE**

7. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. Each Defendant is subject to this Court’s personal jurisdiction consistent with the principles of due process and the Texas Long Arm Statute. Tex. Civ. Prac. & Rem. Code §§ 17.041, *et seq.*

9. Jurisdiction and venue for this action are proper in this Judicial District.

10. This Court has personal jurisdiction over Defendants at least because, through a

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<sup>4</sup> Defendant Audi AG and Volkswagen AG’s Answer and Defenses to Complaint and Counterclaims, Wildcat Licensing WI LLC v. Audi AG et al, DDE-1-19-cv-00833, Dkt. 27 at 3 (D. Del. Oct. 16, 2020) (admitting that Audi AG is a subsidiary of Volkswagen AG).

respective Defendant's own acts and/or through the acts of each other Defendant acting as its agent, representative, or alter ego, they (i) have a presence or regular and established place of business in the State of Texas and this Judicial District; (ii) have purposefully availed themselves of the rights and benefits of the laws of the State of Texas and this Judicial District; (iii) have done and are doing substantial business in the State of Texas and this Judicial District, directly or through intermediaries, both generally and, on information and belief, with respect to the allegations in this Complaint, including their one or more acts of infringement in the State of Texas and this Judicial District; (iv) maintain continuous and systematic contacts in the State of Texas and this Judicial District; and/or (v) place products alleged to be infringing in this Complaint in the stream of commerce, directly or through intermediaries, with awareness that those products are likely destined for use, offer for sale, sale, and/or importation in the State of Texas and this Judicial District.

11. For example, Defendants have authorized retailers and distributors in the State of Texas and this Judicial District for the products alleged to be infringing in this Complaint, and Defendants have derived substantial revenues from their infringing acts occurring within the State of Texas and this Judicial District.

12. Defendants have established sufficient minimum contacts with the State of Texas and this Judicial District such that they should reasonably and fairly anticipate being brought into court in the State of Texas and this Judicial District without offending traditional notions of fair play and substantial justice; and Defendants have purposefully directed activities at residents of the State of Texas and this Judicial District. Moreover, the patent infringement claims alleged herein arise out of or are related to one or more of the foregoing activities. On information and belief, a substantial part of the events giving rise to Plaintiff's claims, including acts of patent

infringement, have occurred in the State of Texas and this Judicial District.

13. Venue is proper in this Judicial District as to Defendants under 28 U.S.C. §§ 1391(b) and (c) and 1400(b).

14. Venue is proper as to Volkswagen because, on information and belief, they are foreign entities, as identified above in paragraph 5. 28 U.S.C. § 1391(c); *In re HTC Corp.*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (holding that “[t]he Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule).

15. Venue is proper as to TI and Ford because, on information and belief, they have committed acts of infringement and each have a regular and established place of business in this Judicial District, as identified above in paragraphs 3 and 4. 28 U.S.C. § 1400(b).

#### **JOINDER**

16. Joinder is proper under at least Federal Rule of Civil Procedure 20 and 35 U.S.C. § 299 at least because Defendants’ infringing conduct alleged herein arises out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, or selling of the same accused product or process, and questions of fact common to all Defendants will arise in this action.

17. On information and belief, the accused products are either the accused TI SoCs (as in the case of TI) or products containing the accused TI SoCs (as in the case of the remaining Defendants), and thus the TI SoCs are common to all Defendants’ infringement of the Asserted Patents. On information and belief, all Defendants infringe the Asserted Patents by, for example, making, using, importing, offering for sale, and selling TI SoCs, whether alone or integrated into other products. Stated differently, on information and belief, each of the Defendants’ accused products infringes the same Asserted Patents by using TI SoCs—meaning that all accused products

use identically sourced components and that there is overlap of the accused products' and processes' development and manufacture. Thus, on information and belief, common SoC technology is a defining characteristic for each of the Defendant's infringement, and the factual question of infringement will substantially overlap for all Defendants.

18. Further, on information and belief, Ford and Volkswagen purchase or otherwise obtain the TI SoCs from TI, and there are licensing or technology agreements between TI and Ford and between TI and Volkswagen.

### **THE ASSERTED PATENTS**

19. The Asserted Patents result from extensive research and development by Philips Semiconductors, a subsidiary of Koninklijke Philips N.V. ("Philips") that included VLSI Technology, Inc., which Philips acquired in 1999. Prior to being spun off in 2006 as NXP Semiconductors N.V. ("NXP"), Philips Semiconductors was one of the largest semiconductor companies in the world. Each of the Asserted Patents predate the NXP spin-off and were retained by Philips until all right, title, and interest in the Asserted Patents were transferred to Plaintiff.

### **U.S. Patent No. 7,366,818**

20. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 7,366,818 ("818 patent"), entitled "INTEGRATED CIRCUIT COMPRISING A PLURALITY OF PROCESSING MODULES AND A NETWORK AND METHOD FOR EXCHANGING DATA USING SAME," including the right to sue and to recover for infringement thereof. The '818 patent was duly and legally issued on April 29, 2008, naming Andrei Radulescu and Kees Gerard Willem Goossens as inventors. A copy of the '818 patent is attached hereto as Exhibit 1.

21. The '818 patent has 7 claims: 1 independent claim and 6 dependent claims.

22. The '818 patent covers SoCs that have an interface that comprises a dropping means for dropping data exchanged by two modules and where the interface can control the dropping of data and therefore completion of message transactions.

23. The claims of the '818 patent, including claim 1 (reproduced below), recite at least these inventive concepts of the '818 patent.

1. Integrated circuit comprising a plurality of processing modules (M, S) said modules being disposed on the same chip, and a network (N; RN) arranged for providing at least one connection between a first and at least one second module (M, S),

wherein said modules communicate via a network on chip, and

wherein said connection supports transactions comprising outgoing messages from the first module to the second modules and return messages from the second modules to the first module, the integrated circuit comprising at least one dropping means (DM) for dropping data exchanged by said first and second module (M, S), and

at least one interface means (ANIP, PNIP) for managing the interface between a module (M, S) and the network (N, RN),

wherein said interface means (ANIP, PNIP) comprises a first dropping means (DM) for dropping data, and

wherein the dropping of data and therefore the transaction completion can be controlled by the interface means.

(Exhibit 1, '818 patent at claim 1.) The subject matter described and claimed by the '818 patent, including the integrated circuit of claim 1, was an improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '818 patent.

24. Defendants had knowledge of the '818 patent at least as of the date of this Complaint.

25. The '818 patent was developed and patented by Philips Semiconductors, one of the

largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '818 patent. On information and belief, such industry participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '818 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

26. The '818 patent is widely and publicly known, and frequently referenced, in the tight-knit semiconductor industry, having been cited during prosecution of approximately 76 patent applications assigned to industry leaders such as Intel Corporation, Arm Limited, NEC Corporation, IBM Corporation, and others.<sup>5</sup>

27. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in the semiconductor space.

28. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

29. On information and belief, Defendants were aware of and considered the '818 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

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<sup>5</sup> <https://patents.google.com/patent/US7366818B2/en?q=7%2c366%2c818> (last visited December 19, 2022).



30. On information and belief, Defendants have expertise in the subject matter of the '818 patent and possesses sufficient technical competence to understand the scope of such patent.

31. By virtue of Philips' and the '818 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '818 patent around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

**U.S. Patent No. 7,373,449**

32. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 7,373,449 ("449 patent"), entitled "APPARATUS AND METHOD FOR COMMUNICATING IN AN INTEGRATED CIRCUIT," including the right to sue and to recover for infringement thereof. The '449 patent was duly and legally issued on May 13, 2008, naming Andrei Radulescu and Kees Gerard Willem Goossens as inventors. A copy of the '449 patent is attached hereto as Exhibit 2.

33. The '449 patent has 18 claims: 2 independent claims and 16 dependent claims.

34. The '449 patent covers SoCs that have a resource manager that manages network resources by determining whether the resources (i.e., communication channels and connection properties) are available.

35. The claims of the '449 patent, including claim 10 (reproduced below), recite at least these inventive concepts of the '449 patent.

10. Method for exchanging messages in an integrated circuit comprising a plurality of modules, the messages between the modules being exchanged over connections via a network, wherein said connections comprises a set of communication channels each having a set of connection properties, any communication channel being independently configurable, wherein said connection through the network supports transactions comprising at least one

of outgoing messages from the first module to the second module and return messages from the second module to the first module and further comprising the steps of:

the first module issuing a request for a connection with the second module to a communication manager, wherein the request comprises desired connection properties associated with the sets of communication channels;

the communication manager forwarding the request to a resource manager;

the resource manager determining whether a target connection with the desired connection properties is available;

the resource manager responding with the availability of the target connection to the communication manager; and

the target connection between the first and second module being established based on the available properties of said communication channels of said connection.

(Exhibit 2, '449 patent at claim 10.) The subject matter described and claimed by the '449 patent, including the method for exchanging messages in an integrated circuit of claim 10, was an improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '449 patent.

36. Defendants had knowledge of the '449 patent at least as of the date of this Complaint.

37. The '449 patent was developed and patented by Philips Semiconductors, one of the largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '449 patent. On information and belief, such industry

participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '449 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

38. The '449 patent is widely and publicly known, and frequently referenced, in the tight-knit semiconductor industry, having been cited during prosecution of approximately 76 patent applications assigned to industry leaders such as Intel Corporation, Arm Limited, NEC Corporation, IBM Corporation, and others.<sup>6</sup>

39. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in the semiconductor space.

40. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

41. On information and belief, Defendants were aware of and considered the '449 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

42. On information and belief, Defendants have expertise in the subject matter of the '449 patent and possesses sufficient technical competence to understand the scope of such patent.

43. By virtue of Philips' and the '449 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '449 patent

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<sup>6</sup> <https://patents.google.com/patent/US7373449B2/en?q=7%2c373%2c449> (last visited December 19, 2022).

around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

**U.S. Patent No. 7,594,052**

44. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 7,594,052 (“’052 patent”), entitled “INTEGRATED CIRCUIT AND METHOD OF COMMUNICATION SERVICE MAPPING,” including the right to sue and to recover for infringement thereof. The ’052 patent was duly and legally issued on September 22, 2009, naming Andrei Radulescu and Kees Gerard Willem Goossens as inventors. A copy of the ’052 patent is attached hereto as Exhibit 3.

45. The ’052 patent has 7 claims: 3 independent claims and 4 dependent claims.

46. The ’052 patent covers SoCs that offer differentiated intermodular communication services based on connections with corresponding properties. The covered SoCs map a requested communication service to a connection based on communication and connection properties.

47. The claims of the ’052 patent, including claim 6 (reproduced below), recite at least these inventive concepts of the ’052 patent.

6. Method of communication service mapping in an integrated circuit, having a plurality of processing modules (M, S), wherein at least one first of said processing modules (M) requests at least one communication service to at least one second processing module (S) based on specific communication properties and at least one communication service identification, wherein said at least one communication service identification comprises at least one communication thread or at least one address range, said address range for identifying one or more second processing modules (S) or a memory region within said one or more second processing modules (S), comprising the steps of:

coupling said plurality of processing modules (M, S) by an interconnect means (N)  
and

enabling a connection based communication having a set of connection properties,

controlling the communication between said at least one first of said plurality of processing modules (M) and said interconnect means (N) by at least one network interface (NI) associated to said at least one first of said processing modules,

mapping the requested at least one communication service based on said specific communication properties to a connection based on a set of connection properties according to said at least one communication service identification.

(Exhibit 3, '052 patent at claim 6.) The subject matter described and claimed by the '052 patent, including the method of communication service mapping in an integrated circuit of claim 6, was an improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '052 patent.

48. Defendants had knowledge of the '052 patent at least as of the date of this Complaint.

49. The '052 patent was developed and patented by Philips Semiconductors, one of the largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '052 patent. On information and belief, such industry participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '052 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

50. The '052 patent is widely and publicly known, and frequently referenced, in the tight-knit semiconductor industry, having been cited during prosecution of approximately 19

patent applications assigned to industry leaders such as Samsung Electronics Co. and others.<sup>7</sup>

51. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in the semiconductor space.

52. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

53. On information and belief, Defendants were aware of and considered the '052 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

54. On information and belief, Defendants have expertise in the subject matter of the '052 patent and possesses sufficient technical competence to understand the scope of such patent.

55. By virtue of Philips' and the '052 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '052 patent around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

### **U.S. Patent No. 7,769,893**

56. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 7,769,893 ("9893 patent"), entitled "INTEGRATED CIRCUIT AND METHOD FOR ESTABLISHING TRANSACTIONS," including the right to sue and to recover for infringement thereof. The '9893 patent was duly and legally issued on August 3, 2010, naming Kees Gerard

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<sup>7</sup> <https://patents.google.com/patent/US7594052B2/en?q=7%2c594%2c052> (last visited December 19, 2022).

Willem Goossens as inventor. A copy of the '9893 patent is attached hereto as Exhibit 4.

57. The '9893 patent has 11 claims: 2 independent claims and 9 dependent claims.

58. The '9893 patent covers SoCs that use an address translation unit, which is part of a network interface, for address mapping, where the address translation unit determines both the location of a message receiving module and a location within the message receiving module.

59. The claims of the '9893 patent, including claim 4 (reproduced below), recite at least these inventive concepts of the '9893 patent.

4. A method for exchanging messages in an integrated circuit comprising a plurality of modules, the messages between the plurality of modules being exchanged via a network wherein a message issued by an addressing module M comprises:

first information indicative of a location of an addressed message receiving module S within the network and is comprised of (1) a connection identifier identifying two or more message receiving modules S and (2) an identifier of a passive network interface means associated with the addressed message receiving module S, and second information indicative of a particular location within the addressed message receiving module S, such as a memory, or a register address, the method including the steps of:

(a) issuing from said addressing module M a message request including said first information, said second information, and data and/or connection properties to an address translation unit included as part of an active network interface module associated with said addressing module M,

(b) arranging, at said address translation unit, the first and the second information comprising said issued message as a single address,

(c) determining, at said address translation unit, which message receiving module S is being addressed in said message request issued from said addressing module M based on said single address, and

(d) further determining, at said address translation unit, the particular location within the addressed message receiving module S based on said single address.

(Exhibit 4, '9893 patent at claim 4.) The subject matter described and claimed by the '9893 patent, including the method for exchanging messages in an integrated circuit of claim 4, was an

improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '9893 patent.

60. Defendants had knowledge of the '9893 patent at least as of the date of this Complaint.

61. The '9893 patent was developed and patented by Philips Semiconductors, one of the largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '9893 patent. On information and belief, such industry participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '9893 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

62. The '9893 patent is widely and publicly known, and frequently referenced, in the tight-knit semiconductor industry, having been cited during prosecution of approximately 76 patent applications assigned to industry leaders such as Intel Corporation, Arm Limited, NEC Corporation, IBM Corporation, and others.<sup>8</sup>

63. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in the semiconductor space.

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<sup>8</sup> <https://patents.google.com/patent/US7769893B2/en?q=7%2c769%2c893> (last visited December 19, 2022).



64. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

65. On information and belief, Defendants were aware of and considered the '9893 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

66. On information and belief, Defendants have expertise in the subject matter of the '9893 patent and possesses sufficient technical competence to understand the scope of such patent.

67. By virtue of Philips' and the '9893 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '9893 patent around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

**U.S. Patent No. 8,072,893**

68. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 8,072,893 ("2893 patent"), entitled "INTEGRATED CIRCUIT WITH DATA COMMUNICATION NETWORK AND IC DESIGN METHOD," including the right to sue and to recover for infringement thereof. The '2893 patent was duly and legally issued on December 6, 2011, naming John Dielissen and Edwin Rijpkema as inventors. A copy of the '2893 patent is attached hereto as Exhibit 5.

69. The '2893 patent has 12 claims: 5 independent claims and 7 dependent claims.

70. The '2893 patent covers SoCs that improve data communication speed and frequency synchronization between processing units through the use of packetized data

(comprising  $N$  data elements) and introduction of a delay (of  $M*N$  cycles) on a communication channel for communication synchronization, with such delay correlated to the size ( $N$ ) of the data packet.

71. The claims of the '2893 patent, including claims 1 and 10 (reproduced below), recite at least these inventive concepts of the '2893 patent.

1. An integrated circuit comprising:

a plurality of functional blocks; and

a data communication network comprising a plurality of network stations being interconnected via a plurality of communication channels for communicating data packages between the functional blocks, each data package comprising  $N$  data elements including a data element comprising routing information for the network stations,  $N$  being an integer of at least two, the plurality of network stations comprising a plurality of data routers and a plurality of network interfaces, each of the data routers being coupled to a functional block via a network interface, the data communication network comprising a first network station and a second network station interconnected through a first communication channel, the data communication network further comprising  $M*N$  data storage elements,  $M$  being a positive integer, the data communication introducing a delay of  $M*N$  cycles on the first communication channel when the data communication network identifies the first communication channel as having a data transfer delay exceeding a predefined delay threshold.

10. A method of designing an integrated circuit comprising a plurality of functional blocks, and a data communication network comprising a plurality of network stations being interconnected via a plurality of communication channels for communicating data packages between the functional blocks, each data package comprising  $N$  data elements including a data element comprising routing information for the network stations,  $N$  being an integer of at least two, the plurality of network stations comprising a plurality of data routers and a plurality of network interfaces, each of the data routers being coupled to a functional block via a network interface; the method comprising the acts of:

identifying a first communication channel between a first network station and a second network station that has a data transfer delay exceeding a predefined delay threshold; and

in response to the identifying act, inserting  $M*N$  data storage elements into the data communication network,  $M$  being a positive integer, for introducing a delay of  $M*N$  cycles on the first communication channel.

(Exhibit 5, '2893 patent at claims 1 and 10.) The subject matter described and claimed by the '2893 patent, including the integrated circuit of claim 1 and method of designing an integrated circuit of claim 10, was an improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '2893 patent.

72. Defendants had knowledge of the '2893 patent at least as of the date of this Complaint.

73. The '2893 patent was developed and patented by Philips Semiconductors, one of the largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '2893 patent. On information and belief, such industry participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '2893 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

74. The '2893 patent is widely and publicly known, and frequently referenced, in the tight-knit semiconductor industry, having been cited during prosecution of approximately 13 patent applications assigned to industry leaders such as Intel Corporation and others.<sup>9</sup>

75. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in

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<sup>9</sup> <https://patents.google.com/patent/US8072893B2/en?q=8%2c072%2c893> (last visited December 19, 2022).

the semiconductor space.

76. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

77. On information and belief, Defendants were aware of and considered the '2893 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

78. On information and belief, Defendants have expertise in the subject matter of the '2893 patent and possesses sufficient technical competence to understand the scope of such patent.

79. By virtue of Philips' and the '2893 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '9893 patent around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

#### **U.S. Patent No. 8,086,800**

80. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 8,086,800 ("800 patent"), entitled "INTEGRATED CIRCUIT AND METHOD FOR BUFFERING TO OPTIMIZE BURST LENGTH IN NETWORKS ON CHIPS," including the right to sue and to recover for infringement thereof. The '800 patent was duly and legally issued on December 27, 2011, naming Andrei Radulescu and Kees Gerard Willem Goossens as inventors. A copy of the '800 patent is attached hereto as Exhibit 6.

81. The '800 patent has 21 claims: 4 independent claims and 17 dependent claims.

82. The '800 patent covers SoCs that employ data buffering at requesting (master) and

responding (slave) modules and where each module has a network interface with a wrapper that buffers data into optimal amounts for transfer.

83. The claims of the '800 patent, including claim 10 (reproduced below), recite at least these inventive concepts of the '800 patent.

10. A method for buffering data in an integrated circuit having a plurality of processing modules being connected with an interconnect through interface units, wherein a first processing module communicates to a second processing module using transactions, the method comprising the acts of:

configuring the first processing module having a first memory as a master the provides requests;

configuring the second processing module having a second memory as a slave the provides responses to the requests;

connecting the master to a master interface unit of the interface units;

connecting the master interface unit to the interconnect so that the master interface unit is between the master and the interconnect;

connecting the slave to a slave interface unit of the interface units;

connecting the slave interface unit to the interconnect so that the slave interface unit is between the slave and the interconnect;

determining by a master determination unit of the master interface unit a first optimal amount of data to be buffered by a master wrapper of the master interface unit;

determining by a slave determination unit of the slave interface unit a second optimal amount of data to be buffered by a slave wrapper of the slave interface unit;

buffering by the slave wrapper of the slave interface unit data from the slave to be transferred over the interconnect until a first optimal amount of data is buffered;

transferring the buffered data from the slave wrapper to the master wrapper when said first optimal amount of data has been buffered by the slave wrapper;

buffering by the master wrapper of the master interface unit data from the master to be transferred over the interconnect until a second optimal amount of data is buffered by the master wrapper;

transferring the buffered data from the master wrapper to the slave wrapper when said second optimal amount of data has been buffered by the master wrapper,

wherein at least one of the first determination unit and the second determination unit is further configured to determine an optimal moment for sending the data in said first wrapper or said second wrapper according to communication properties of the communication between the master and the slave, wherein the communication properties include ordering of data transport, flow control including when a remote buffer is reserved for a connection, then a data producer will be allowed to send data only when it is guaranteed that space is available for the produced data at the remote buffer, throughput where a lower bound on throughput is guaranteed, latency where an upper bound for latency is guaranteed, lossiness including dropping of data, transmission termination, transaction completion, data correctness, priority, and data delivery.

(Exhibit 6, '800 patent at claim 10.) The subject matter described and claimed by the '800 patent, including the method for buffering data in an integrated circuit of claim 10, was an improvement in the functionality, performance, and efficiency of integrated circuits and the connections and communication networks thereof and was novel and not well-understood, routine, or conventional at the time of the '800 patent.

84. Defendants had knowledge of the '800 patent at least as of the date of this Complaint.

85. The '800 patent was developed and patented by Philips Semiconductors, one of the largest semiconductor companies in the world. Because of the size and prominence of Philips in the tight-knit semiconductor industry, industry participants, including, on information and belief, Defendants, monitored patenting activity by Philips and reviewed, and were aware of shortly after their publication, at least the U.S. published patent applications and patents obtained by Philips in the semiconductor space, including the '800 patent. On information and belief, such industry

participants, including Defendants, considered Philips' U.S. published patent applications and patents in the semiconductor space, including the '800 patent, and such Philips U.S. published patent applications and patents' actual or potential applicability to their own current products and product roadmaps, including the products described herein.

86. On information and belief, Defendants sought to develop their products and product roadmaps, including the products described herein, in ways that would not infringe U.S. patents in the semiconductor space.

87. Therefore, on information and belief, Defendants monitored U.S. published patent applications and patents obtained by Philips in the semiconductor space in around the years 2006-2012.

88. On information and belief, Defendants were aware of and considered the '800 patent, and its actual or potential applicability to their own current products and product roadmaps, including the products described herein.

89. On information and belief, Defendants have expertise in the subject matter of the '800 patent and possesses sufficient technical competence to understand the scope of such patent.

90. By virtue of Philips' and the '800 patent's fame in the semiconductor industry, the patent's inclusion in the Philips Semiconductor portfolio, and Defendants' desires to develop non-infringing products and product roadmaps, Defendants had actual knowledge of the '800 patent around the time it issued or its U.S. application published, and in no event later than the date of this Complaint.

#### **BACKGROUND OF DEFENDANTS' INFRINGING CONDUCT**

91. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 90 above.

92. SoCs are widely used in consumer electronics or computing devices, including smartphones, laptops, tablets, and embedded systems such as vehicle infotainment devices and advanced driver assistance systems. SoCs are complex integrated circuits that may incorporate multiple processors, memory units, and interfaces onto a single chip.

93. As SoCs have developed over time, more processing cores and other IP blocks were incorporated into SoCs, resulting in increased intermodular connections and a greater need for intra-SoC communication efficiency. Thus, intra-SoC communication designs have moved from prior interconnect technologies (e.g., bus or point-to-point designs) to network interconnects, which provide advantages compared to other forms of intra-SoC communication, such as fewer wires, lower routing congestion, and decreased SoC die area, all leading to: smaller devices; increased IP block density, which results in more powerful devices; increased power efficiency, which enables better battery life; decreased thermal load, which leads to longer system life; and improved system performance. Therefore, interconnect efficiency—driven by the pioneering innovations claimed in the Asserted Patents—is now a dominant factor in determining overall SoC system performance, size, and cost.

94. As discussed above, the Asserted Patents relate to fundamental innovations in SoCs, including how the multitude of processors, memories, and other functional units residing on an SoC are interconnected and communicate with each other.

95. The Defendants are a leading semiconductor company (TI) and leading automobile companies (Ford and Volkswagen). On information and belief, TI provides SoCs that are incorporated into Ford and Volkswagen's products. On information and belief, TI's SoCs include Arteris interconnect technology and/or a derivative thereof.<sup>10</sup> Further, on information and belief,

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<sup>10</sup> <https://www.arteris.com/customers> (last visited December 19, 2022) (identifying TI as an Arteris customer and



Ford and Volkswagen provide products that contain TI SoCs including Arteris interconnect technology and/or a derivative thereof.<sup>11</sup> Thus, on information and belief, Defendants make, use, sell, offer for sale, and/or import, or have otherwise made, used, sold, offered for sale, and/or imported, SoCs including Arteris interconnect technology and/or a derivative thereof, and/or products containing such SoCs.

96. As set forth in the charts appended hereto, the TI SoCs, including their incorporation of Arteris interconnect technology and/or a derivative thereof, as well as products incorporating the TI SoCs, infringe each of the Asserted Patents.

97. On information and belief, TI’s products that infringe the Asserted Patents (collectively, “TI Accused Products”) include the following:

<b>TI Accused Products</b>
<ul style="list-style-type: none"> <li>• TI Jacinto processors including, for example, the OMAP, TDA and DRA families of processors</li> <li>• TI SimpleLink processors including, for example, the CC26xx and CC13xx processors</li> <li>• TI integrated circuits containing Arteris interconnect technology and/or a derivative thereof</li> <li>• Phones, tablets, computers, laptops and Chromebooks containing TI processors or other TI integrated circuits containing Arteris interconnect technology and/or a derivative thereof</li> <li>• Vehicles and components thereof containing TI</li> </ul>

stating: “Texas Instruments has used Arteris® IP technology for over a decade. [Arteris] technology is used in the Jacinto 5/6 and TDA2x / TDA3x advanced driver-assistance system (ADAS) and infotainment SoCs, the CC26xx / CC13xx SimpleLink IoT SoCs, and the OMAP 4 / OMAP 5 SoCs.”); *see also* <https://news.thomasnet.com/fullstory/arteris-flexnoc-network-on-chip-technology-designed-into-majority-of-mobile-socs-20009449> (last visited December 19, 2022) (Arteris FlexNoC was incorporated into over 60% of SoCs deployed in smartphones and tablets).

<sup>11</sup> <https://www.prnewswire.com/news-releases/tis-innovative-automotive-infotainment-platform-enables-ford-to-redefine-the-user-experience-in-fords-sync-3-300016382.html> (last visited December 19, 2022) (stating that “[TI] and Ford Motor Company have collaborated on an infotainment solution” and that Ford’s infotainment system “incorporates TI’s OMAP™ 5 processor, a member of the ‘Jacinto’ family of automotive processors”); <https://seekingalpha.com/article/4513926-texas-instruments-automotive-growth-continues> (last visited December 19, 2022) (identifying Ford and Volkswagen as customers of TI’s automotive SoCs for infotainment systems, including the Jacinto SoC product family); <https://www.prnewswire.com/news-releases/more-than-150-million-automotive-processors-from-texas-instruments-drive-innovation-in-the-automotive-market-enabling-a-safer-and-more-connected-driving-experience-300382846.html> (last visited December 19, 2022) (stating that TI’s “‘Jacinto’ family of processors is powering infotainment systems” for Ford and Volkswagen vehicles).

<p>Jacinto processors or other TI integrated circuits containing Arteris interconnect technology and/or a derivative thereof</p> <ul style="list-style-type: none"><li>• Virtual Reality, Augmented Reality and wearable products containing TI processors or other TI integrated circuits containing Arteris interconnect technology and/or a derivative thereof</li><li>• IoT, Audio, Wireless Network and Smart Home products containing SimpleLink processors or other TI integrated circuits containing Arteris interconnect technology and/or a derivative thereof</li></ul>
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98. The above-listed TI Accused Products are non-limiting. Additional products of TI may infringe the Asserted Patents, and the above-listed TI Accused Products may infringe additional patents.

99. TI has infringed and continues to infringe the Asserted Patents by making, using, selling, offering to sell, and/or importing, without license or authority, the TI Accused Products as alleged herein, which embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

100. Comparisons of claims of the Asserted Patents to exemplary products of the TI Accused Products are attached as Exhibit 7 ('818 patent), Exhibit 8 ('449 patent), Exhibit 9 ('052 patent), Exhibit 10 ('9893 patent), Exhibit 11 ('2893), and Exhibit 12 ('800 patent), which are incorporated herein by reference.

101. TI has induced infringement and continues to induce infringement of the Asserted Patents by actively and knowingly inducing others to make, use, sell, offer to sell, and/or import, without license or authority, the TI Accused Products as alleged herein, which embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

102. TI markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products and, on information and belief, does so to actively and knowingly induce, encourage,

instruct, and aid one or more persons in the United States to make, use, sell, offer to sell and/or import the TI Accused Products. For example, TI, or an entity under TI's direction or control, advertises, offers for sale, and/or otherwise promotes the TI Accused Products on its website.<sup>12</sup> TI, or one or more related entities, further publishes and distributes data sheets, manuals, and guides for the TI Accused Products.<sup>13</sup> Therein, on information and belief, TI describes and touts the use of the subject matter claimed in the Asserted Patents, as described and alleged herein.

103. TI has contributorily infringed and continues to contributorily infringe the Asserted Patents by selling or offering to sell TI Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the Asserted Patents and not a staple article or commodity of commerce suitable for substantial non-infringing use.

104. On information and belief, and as alleged above, TI has known of the existence of the Asserted Patents and their applicability to TI's Accused Products, and its acts of infringement have been willful and in disregard for the Asserted Patents, without any reasonable basis for believing that it had a right to engage in the infringing conduct, at least as of the dates of knowledge of the Asserted Patents alleged above, and no later than the date of this Complaint.

105. On information and belief, Ford's products that infringe the Asserted Patents (collectively, "Ford Accused Products") include the following:

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<sup>12</sup> See, e.g., <https://www.ti.com/lit/pdf/spry313> (last visited December 19, 2022) (Jacinto 6 marketing white paper); <https://www.ti.com/lit/pdf/spry250> (last visited December 19, 2022) (discussing TDA2x in marketing white paper); <https://www.ti.com/lit/pdf/spry272> (last visited December 19, 2022) (TDA3x marketing white paper); <https://www.ti.com/lit/pdf/szpz146> (last visited December 19, 2022) (CC13xx/CC26xx new product update presentation); <https://www.ti.com/lit/pdf/swpt034> (last visited December 19, 2022) (OMAP 4 product bulletin); and <https://www.ti.com/lit/pdf/swct010> (last visited December 19, 2022) (OMAP 5 product bulletin).

<sup>13</sup> See, e.g., <https://www.ti.com/lit/pdf/sprui29g> (last visited December 19, 2022) (TDA2x manual); <https://training.ti.com/tda2-and-tda3-processors-training-series> (last visited December 19, 2022) (TDA2x and TDA3x training materials); <https://www.ti.com/lit/pdf/swru439m> (last visited December 19, 2022) (CC26xx / CC13xx guide); [https://www.ti.com/lit/ug/spruif7c/spruif7c.pdf?ts=1638387986460&ref\\_url=https%253A%252F%252Fw](https://www.ti.com/lit/ug/spruif7c/spruif7c.pdf?ts=1638387986460&ref_url=https%253A%252F%252Fw) (last visited December 19, 2022) (DRA79x manual discussing DRA794).

<b>Ford Accused Products</b>
<ul style="list-style-type: none"><li>• Ford vehicles and components thereof containing Jacinto processors or other TI integrated circuits, including for example, the Ford SYNC3 infotainment system and Ford Explorer vehicle</li><li>• Lincoln vehicles and components thereof containing Jacinto processors or other TI integrated circuits</li></ul>

106. The above-listed Ford Accused Products are non-limiting. Additional products of Ford may infringe the Asserted Patents, and the above-listed Ford Accused Products may infringe additional patents.

107. On information and belief, the Ford Accused Products include TI SoCs with Arteris interconnect technology and/or a derivative thereof.

108. Ford has infringed and continues to infringe the Asserted Patents by making, using, selling, offering to sell, and/or importing, without license or authority, the Ford Accused Products as alleged herein, which embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

109. Comparison of claims of the Asserted Patents to an exemplary product of the Ford Accused Products are attached as Exhibit 13 ('818 patent), Exhibit 14 ('449 patent), Exhibit 15 ('052 patent), Exhibit 16 ('9893 patent), Exhibit 17 ('2893) and Exhibit 18 ('800 patent), which are incorporated herein by reference.

110. Ford has induced infringement and continues to induce infringement of the Asserted Patents by actively and knowingly inducing others to make, use, sell, offer to sell, and/or import, without license or authority, the Ford Accused Products as alleged herein, which embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

111. Ford markets, advertises, offers for sale, and/or otherwise promotes the Ford

Accused Products and, on information and belief, does so to actively and knowingly induce, encourage, instruct, and aid one or more persons in the United States to make, use, sell, offer to sell and/or import the Ford Accused Products. For example, Ford, or an entity under Ford's direction or control, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products on its website.<sup>14</sup> Ford, or one or more related entities, further publishes and distributes data sheets, manuals, and guides for the Ford Accused Products.<sup>15</sup> Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the Asserted Patents, as described and alleged herein.

112. Ford has contributorily infringed and continues to contributorily infringe the Asserted Patents by selling or offering to sell Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the Asserted Patents and not a staple article or commodity of commerce suitable for substantial non-infringing use.

113. On information and belief, and as alleged above, Ford has known of the existence of the Asserted Patents and their applicability to Ford's Accused Products, and its acts of infringement have been willful and in disregard for the Asserted Patents, without any reasonable basis for believing that it had a right to engage in the infringing conduct, at least as of the dates of knowledge of the Asserted Patents alleged above, and no later than the date of this Complaint.

114. On information and belief, Volkswagen's products that infringe the Asserted Patents (collectively, "Volkswagen Accused Products") include the following:

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<sup>14</sup> See, e.g., <https://www.ford.com/technology/sync/?gnav=footer-aboutford> (last visited December 19, 2022) (advertising the SYNC3 and other SYNC infotainment systems); and <https://www.ford.com/suvs/explorer/pricing-and-incentives/?gnav=vhpnav-io> (last visited December 19, 2022) (Ford Explorer Pricing and Incentives webpage).

<sup>15</sup> See, e.g., <https://www.ford.com/support/how-tos/sync/sync-3/> (last visited December 19, 2022) (providing numerous product support articles for SYNC3); <https://www.ford.com/suvs/explorer/models/explorer/> (last visited December 19, 2022) (Ford Explorer overview and specifications); and [https://www.ford.com/suvs/explorer/features/technology/#pasrk\\_assist](https://www.ford.com/suvs/explorer/features/technology/#pasrk_assist) (last visited December 19, 2022) (Ford Explorer park assist feature overview).

<b>Volkswagen Accused Products</b>
<ul style="list-style-type: none"><li>• VW vehicles and components thereof containing Jacinto processors or other TI integrated circuits, including for example, the MIB 3 infotainment system and the VW Jetta</li><li>• Audi vehicles and components thereof containing Jacinto processors or other TI integrated circuits, including for example, the MIB 3 infotainment system and the Audi A4</li></ul>

115. The above-listed Volkswagen Accused Products are non-limiting. Additional products of Volkswagen may infringe the Asserted Patents, and the above-listed Volkswagen Accused Products may infringe additional patents.

116. On information and belief, the Volkswagen Accused Products include TI SoCs with Arteris interconnect technology and/or a derivative thereof.

117. Volkswagen has infringed and continues to infringe the Asserted Patents by making, using, selling, offering to sell, and/or importing, without license or authority, the Volkswagen Accused Products as alleged herein, which embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

118. Comparison of claims of the Asserted Patents to exemplary products of the Volkswagen Accused Products are attached as Exhibits 19 and 25 ('818 patent), Exhibits 20 and 26 ('449 patent), Exhibits 21 and 27 ('052 patent), Exhibits 22 and 28 ('9893 patent), Exhibits 23 and 29 ('2893), and Exhibits 24 and 30 ('800 patent), which are incorporated herein by reference.

119. Volkswagen has induced infringement and continues to induce infringement of the Asserted Patents by actively and knowingly inducing others to make, use, sell, offer to sell, and/or import, without license or authority, the Volkswagen Accused Products as alleged herein, which

embody or use the inventions claimed in the Asserted Patents literally or under the doctrine of equivalents.

120. Volkswagen markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products and, on information and belief, does so to actively and knowingly induce, encourage, instruct, and aid one or more persons in the United States to make, use, sell, offer to sell and/or import the Volkswagen Accused Products. For example, Volkswagen, or an entity under Volkswagen's direction or control, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products on its website.<sup>16</sup> Volkswagen, or one or more related entities, further publishes and distributes data sheets, manuals, and guides for the Volkswagen Accused Products.<sup>17</sup> Therein, on information and belief, Volkswagen describes and touts the use of the subject matter claimed in the Asserted Patents, as described and alleged herein.

121. Volkswagen has contributorily infringed and continues to contributorily infringe the Asserted Patents by selling or offering to sell Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the Asserted Patents and not a staple article or commodity of commerce suitable for substantial non-infringing use.

122. On information and belief, and as alleged above, Volkswagen has known of the existence of the Asserted Patents and their applicability to Volkswagen's Accused Products, and its acts of infringement have been willful and in disregard for the Asserted Patents, without any

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<sup>16</sup> See, e.g., <https://www.vw.com/en/models/taos.html> (last visited December 19, 2022)(displaying offers for sale of 2023 Taos that includes driver assistance systems); and <https://www.vw.com/en/iq-drive.html> (last visited December 19, 2022) (displaying list of VW cars that utilize Volkswagen IQ.Drive); <https://media.audiusa.com/en-us/releases/409> (last visited December 19, 2022) (press release listing Audi models including MIB 3 infotainment system).

<sup>17</sup> See, e.g., <https://www.vw.com/en/newsroom/discover-vw/iq-drive-fall.html> (last visited December 19, 2022)(discussing owner's manuals for VW cars); and <https://www.vw.com/en/iq-drive.html> (last visited December 19, 2022) (providing further guidance on IQ.Drive); <https://media.audiusa.com/en-us/releases/409> (last visited December 19, 2022) (press release listing Audi models including MIB 3 infotainment system); <http://ownersmanual.audiusa.com/> (last visited December 19, 2022) (database of online owner's manuals, "The Audi Online Owner's Manual features Owner's, Radio and Navigation Manuals for Audi vehicles from model year 2008 to current.").

reasonable basis for believing that it had a right to engage in the infringing conduct, at least as of the dates of knowledge of the Asserted Patents alleged above, and no later than the date of this Complaint.

123. On information and belief, the TI Accused Products, Ford Accused Products, and Volkswagen Accused Products all include SoC technology that infringes each of the Asserted Patents.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,366,818**

124. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 123 above.

125. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '818 patent in violation of 35 U.S.C. § 271(a), including claim 1. Comparison of claim 1 of the '818 patent to an exemplary product of the TI Accused Products is attached as Exhibit 7, which is incorporated herein by reference.

126. On information and belief, with knowledge of the '818 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the TI Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '818 patent, including claim 1, with the intent to encourage those customers and/or end users to infringe the '818 patent.



127. By way of example, on information and belief, TI actively induces infringement of the '818 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use TI's products, including at least the TI Accused Products, to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products, in a manner that infringes at least one claim of the '818 patent, including claim 1. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Therein, on information and belief, TI describes and touts the use of the subject matter claimed in the '818 patent.

128. On information and belief, with knowledge of the '818 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the TI Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '818 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the TI Accused Products, which are especially made or especially adapted for use in infringement of the '818 patent when used for their normal and intended purpose. This is also evidenced by, among other things, TI's informational and promotional materials described above, which describe the normal use and intended purpose of the TI Accused Products and demonstrate that the TI Accused Products are especially made or especially adapted for a use that infringes the '818 patent.

129. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and

continue to make, use, sell, offer to sell, or import, TI's products, including the TI Accused Products, in ways that directly infringe one or more claims of the '818 patent, including claim 1. On information and belief, TI had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint.

130. On information and belief, with knowledge of the '818 patent, TI has willfully, deliberately, and intentionally infringed the '818 patent, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '818 patent. On information and belief, TI had actual knowledge of the '818 patent and TI's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly infringe the '818 patent as set forth above. On information and belief, TI knew or should have known that its conduct amounted to infringement of the '818 patent at least because TI was aware of the '818 patent and TI's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '818 patent's fame in the semiconductor industry, TI's expertise in the subject matter of the '818 patent, TI's technical competence to understand the scope of the '818 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '818 patent, and TI's infringement of the '818 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

131. On information and belief, TI will continue to infringe the '818 patent unless and

until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '818 patent, Plaintiff will continue to suffer irreparable harm.

132. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '818 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

133. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '818 patent in violation of 35 U.S.C. § 271(a), including claim 1. A comparison of claim 1 of the '818 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 13, which is incorporated herein by reference.

134. On information and belief, with knowledge of the '818 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '818 patent, including claim 1, with the intent to encourage those customers and/or end users to infringe the '818 patent.

135. By way of example, on information and belief, Ford actively induces infringement

of the '818 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '818 patent, including claim 1. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the '818 patent.

136. On information and belief, with knowledge of the '818 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '818 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '818 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '818 patent.

137. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported,

and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '818 patent, including claim 1. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint.

138. On information and belief, with knowledge of the '818 patent, Ford has willfully, deliberately, and intentionally infringed the '818 patent, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '818 patent. On information and belief, Ford had actual knowledge of the '818 patent and Ford's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly and indirectly infringe the '818 patent as set forth above. On information and belief, Ford knew or should have known that its conduct amounted to infringement of the '818 patent at least because Ford was aware of the '818 patent and Ford's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '818 patent's fame in the semiconductor industry, Ford's expertise in the subject matter of the '818 patent, Ford's technical competence to understand the scope of the '818 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '818 patent, and Ford's infringement of the '818 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

139. On information and belief, Ford will continue to infringe the '818 patent unless and

until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '818 patent, Plaintiff will continue to suffer irreparable harm.

140. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '818 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

141. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '818 patent in violation of 35 U.S.C. § 271(a), including claim 1. Comparisons of claim 1 of the '818 patent to exemplary products of the Volkswagen Accused Products are attached as Exhibits 19 and 25, which are incorporated herein by reference.

142. On information and belief, with knowledge of the '818 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '818 patent, including claim 1, with the intent to encourage those customers and/or end users to infringe the '818 patent.

143. By way of example, on information and belief, Volkswagen actively induces

infringement of the '818 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '818 patent, including claim 1. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information and belief, Volkswagen describes and touts the use of the subject matter claimed in the '818 patent.

144. On information and belief, with knowledge of the '818 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '818 patent, including claim 1, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '818 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '818 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '818 patent.

145. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or

imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '818 patent, including claim 1. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint.

146. On information and belief, with knowledge of the '818 patent, Volkswagen has willfully, deliberately, and intentionally infringed the '818 patent, at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '818 patent. On information and belief, Volkswagen had actual knowledge of the '818 patent and Volkswagen's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '818 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '818 patent at least because Volkswagen was aware of the '818 patent and Volkswagen's infringement of the '818 patent at least as of the dates of knowledge of the '818 patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '818 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '818 patent, Volkswagen's technical competence to understand the scope of the '818 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '818 patent, and Volkswagen's



infringement of the '818 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

147. On information and belief, Volkswagen will continue to infringe the '818 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '818 patent, Plaintiff will continue to suffer irreparable harm.

148. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '818 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**COUNT II – INFRINGEMENT OF U.S. PATENT NO. 7,373,449**

149. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 148 above.

150. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '449 patent in violation of 35 U.S.C. § 271(a), including claim 10. Comparison of claim 10 of the '449 patent to an exemplary product of the TI Accused Products is attached as Exhibit 8, which is incorporated herein by reference.

151. On information and belief, with knowledge of the '449 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its

products, including at least the TI Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '449 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '449 patent.

152. By way of example, on information and belief, TI actively induces infringement of the '449 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use TI's products, including at least the TI Accused Products, to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products, in a manner that infringes at least one claim of the '449 patent, including claim 10. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Therein, on information and belief, TI describes and touts the use of the subject matter claimed in the '449 patent.

153. On information and belief, with knowledge of the '449 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the TI Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '449 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the TI Accused Products, which are especially made or especially adapted for use in infringement of the '449 patent when used for their normal and intended purpose. This is also evidenced by, among other things, TI's informational and

promotional materials described above, which describe the normal use and intended purpose of the TI Accused Products and demonstrate that the TI Accused Products are especially made or especially adapted for a use that infringes the '449 patent.

154. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, TI's products, including the TI Accused Products, in ways that directly infringe one or more claims of the '449 patent, including claim 10. On information and belief, TI had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint.

155. On information and belief, with knowledge of the '449 patent, TI has willfully, deliberately, and intentionally infringed the '449 patent, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '449 patent. On information and belief, TI had actual knowledge of the '449 patent and TI's infringement of the '449 patent at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly infringe the '449 patent as set forth above. On information and belief, TI knew or should have known that its conduct amounted to infringement of the '449 patent at least because TI was aware of the '449 patent and TI's infringement of the '449 patent at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '449 patent's fame in the semiconductor industry, TI's expertise in

the subject matter of the '449 patent, TI's technical competence to understand the scope of the '449 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '449 patent, and TI's infringement of the '449 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

156. On information and belief, TI will continue to infringe the '449 patent unless and until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '449 patent, Plaintiff will continue to suffer irreparable harm.

157. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '449 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

158. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '449 patent in violation of 35 U.S.C. § 271(a), including claim 10. A comparison of claim 10 of the '449 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 14, which is incorporated herein by reference.

159. On information and belief, with knowledge of the '449 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing

instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '449 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '449 patent.

160. By way of example, on information and belief, Ford actively induces infringement of the '449 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '449 patent, including claim 10. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the '449 patent.

161. On information and belief, with knowledge of the '449 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '449 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '449 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and

promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '449 patent.

162. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '449 patent, including claim 10. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint.

163. On information and belief, with knowledge of the '449 patent, Ford has willfully, deliberately, and intentionally infringed the '449 patent, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '449 patent. On information and belief, Ford had actual knowledge of the '449 patent and Ford's infringement of the '449 patent at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly and indirectly infringe the '449 patent as set forth above. On information and belief, Ford knew or should have known that its conduct amounted to infringement of the '449 patent at least because Ford was aware of the '449 patent and Ford's infringement of the '449 patent at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '449 patent's fame in the semiconductor

industry, Ford's expertise in the subject matter of the '449 patent, Ford's technical competence to understand the scope of the '449 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '449 patent, and Ford's infringement of the '449 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

164. On information and belief, Ford will continue to infringe the '449 patent unless and until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '449 patent, Plaintiff will continue to suffer irreparable harm.

165. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '449 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

166. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '449 patent in violation of 35 U.S.C. § 271(a), including claim 10. Comparisons of claim 10 of the '449 patent to exemplary products of the Volkswagen Accused Products are attached as Exhibits 20 and 26, which are incorporated herein by reference.

167. On information and belief, with knowledge of the '449 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support

for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '449 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '449 patent.

168. By way of example, on information and belief, Volkswagen actively induces infringement of the '449 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '449 patent, including claim 10. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information and belief, Volkswagen describes and touts the use of the subject matter claimed in the '449 patent.

169. On information and belief, with knowledge of the '449 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '449 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '449 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '449 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's



informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '449 patent.

170. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '449 patent, including claim 10. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint.

171. On information and belief, with knowledge of the '449 patent, Volkswagen has willfully, deliberately, and intentionally infringed the '449 patent, at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '449 patent. On information and belief, Volkswagen had actual knowledge of the '449 patent and Volkswagen's infringement of the '449 patent at least as of the dates of knowledge of the '449 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '449 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '449 patent at least because Volkswagen was aware of the '449 patent and Volkswagen's infringement of the '449 patent at least as of the dates of knowledge of the '449

patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '449 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '449 patent, Volkswagen's technical competence to understand the scope of the '449 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '449 patent, and Volkswagen's infringement of the '449 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

172. On information and belief, Volkswagen will continue to infringe the '449 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '449 patent, Plaintiff will continue to suffer irreparable harm.

173. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '449 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,594,052**

174. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 173 above.

175. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '052 patent in violation of 35 U.S.C. § 271(a), including claim 6. Comparison of claim 6 of

the '052 patent to an exemplary product of the TI Accused Products is attached as Exhibit 9, which is incorporated herein by reference.

176. On information and belief, with knowledge of the '052 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the TI Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '052 patent, including claim 6, with the intent to encourage those customers and/or end users to infringe the '052 patent.

177. By way of example, on information and belief, TI actively induces infringement of the '052 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use TI's products, including at least the TI Accused Products, to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products, in a manner that infringes at least one claim of the '052 patent, including claim 6. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Therein, on information and belief, TI describes and touts the use of the subject matter claimed in the '052 patent.

178. On information and belief, with knowledge of the '052 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the TI Accused Products, knowing them to be especially made or especially adapted for practicing

the inventions of the '052 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the TI Accused Products, which are especially made or especially adapted for use in infringement of the '052 patent when used for their normal and intended purpose. This is also evidenced by, among other things, TI's informational and promotional materials described above, which describe the normal use and intended purpose of the TI Accused Products and demonstrate that the TI Accused Products are especially made or especially adapted for a use that infringes the '052 patent.

179. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, TI's products, including the TI Accused Products, in ways that directly infringe one or more claims of the '052 patent, including claim 6. On information and belief, TI had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint.

180. On information and belief, with knowledge of the '052 patent, TI has willfully, deliberately, and intentionally infringed the '052 patent, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '052 patent. On information and belief, TI had actual knowledge of the '052 patent and TI's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly

infringe the '052 patent as set forth above. On information and belief, TI knew or should have known that its conduct amounted to infringement of the '052 patent at least because TI was aware of the '052 patent and TI's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '052 patent's fame in the semiconductor industry, TI's expertise in the subject matter of the '052 patent, TI's technical competence to understand the scope of the '052 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '052 patent, and TI's infringement of the '052 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

181. On information and belief, TI will continue to infringe the '052 patent unless and until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '052 patent, Plaintiff will continue to suffer irreparable harm.

182. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '052 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

183. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '052 patent in violation of 35 U.S.C. § 271(a), including claim 6. A comparison of claim 6 of the '052 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 15,

which is incorporated herein by reference.

184. On information and belief, with knowledge of the '052 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '052 patent, including claim 6, with the intent to encourage those customers and/or end users to infringe the '052 patent.

185. By way of example, on information and belief, Ford actively induces infringement of the '052 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '052 patent, including claim 6. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the '052 patent.

186. On information and belief, with knowledge of the '052 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for

practicing the inventions of the '052 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '052 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '052 patent.

187. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '052 patent, including claim 6. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint.

188. On information and belief, with knowledge of the '052 patent, Ford has willfully, deliberately, and intentionally infringed the '052 patent, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '052 patent. On information and belief, Ford had actual knowledge of the '052 patent and Ford's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly

and indirectly infringe the '052 patent as set forth above. On information and belief, Ford knew or should have known that its conduct amounted to infringement of the '052 patent at least because Ford was aware of the '052 patent and Ford's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '052 patent's fame in the semiconductor industry, Ford's expertise in the subject matter of the '052 patent, Ford's technical competence to understand the scope of the '052 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '052 patent, and Ford's infringement of the '052 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

189. On information and belief, Ford will continue to infringe the '052 patent unless and until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '052 patent, Plaintiff will continue to suffer irreparable harm.

190. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '052 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

191. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '052 patent in violation of 35 U.S.C. § 271(a), including claim 6. Comparisons of claim 6 of the '052 patent to exemplary products of the Volkswagen Accused Products are attached



as Exhibits 21 and 27, which are incorporated herein by reference.

192. On information and belief, with knowledge of the '052 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '052 patent, including claim 6, with the intent to encourage those customers and/or end users to infringe the '052 patent.

193. By way of example, on information and belief, Volkswagen actively induces infringement of the '052 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '052 patent, including claim 6. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information and belief, Volkswagen describes and touts the use of the subject matter claimed in the '052 patent.

194. On information and belief, with knowledge of the '052 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '052 patent, including claim 6, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially

adapted for practicing the inventions of the '052 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '052 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '052 patent.

195. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '052 patent, including claim 6. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint.

196. On information and belief, with knowledge of the '052 patent, Volkswagen has willfully, deliberately, and intentionally infringed the '052 patent, at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '052 patent. On information and belief, Volkswagen had actual knowledge of the '052 patent and Volkswagen's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later

than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '052 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '052 patent at least because Volkswagen was aware of the '052 patent and Volkswagen's infringement of the '052 patent at least as of the dates of knowledge of the '052 patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '052 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '052 patent, Volkswagen's technical competence to understand the scope of the '052 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '052 patent, and Volkswagen's infringement of the '052 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

197. On information and belief, Volkswagen will continue to infringe the '052 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '052 patent, Plaintiff will continue to suffer irreparable harm.

198. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '052 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 7,769,893**

199. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 198

above.

200. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '9893 patent in violation of 35 U.S.C. § 271(a), including claim 4. Comparison of claim 4 of the '9893 patent to an exemplary product of the TI Accused Products is attached as Exhibit 10, which is incorporated herein by reference.

201. On information and belief, with knowledge of the '9893 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the TI Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '9893 patent, including claim 4, with the intent to encourage those customers and/or end users to infringe the '9893 patent.

202. By way of example, on information and belief, TI actively induces infringement of the '9893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use TI's products, including at least the TI Accused Products, to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products, in a manner that infringes at least one claim of the '9893 patent, including claim 4. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Therein, on information

and belief, TI describes and touts the use of the subject matter claimed in the '9893 patent.

203. On information and belief, with knowledge of the '9893 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the TI Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '9893 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the TI Accused Products, which are especially made or especially adapted for use in infringement of the '9893 patent when used for their normal and intended purpose. This is also evidenced by, among other things, TI's informational and promotional materials described above, which describe the normal use and intended purpose of the TI Accused Products and demonstrate that the TI Accused Products are especially made or especially adapted for a use that infringes the '9893 patent.

204. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, TI's products, including the TI Accused Products, in ways that directly infringe one or more claims of the '9893 patent, including claim 4. On information and belief, TI had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products, at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint.

205. On information and belief, with knowledge of the '9893 patent, TI has willfully, deliberately, and intentionally infringed the '9893 patent, at least as of the dates of knowledge of

the '9893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '9893 patent. On information and belief, TI had actual knowledge of the '9893 patent and TI's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly infringe the '9893 patent as set forth above. On information and belief, TI knew or should have known that its conduct amounted to infringement of the '9893 patent at least because TI was aware of the '9893 patent and TI's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '9893 patent's fame in the semiconductor industry, TI's expertise in the subject matter of the '9893 patent, TI's technical competence to understand the scope of the '9893 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '9893 patent, and TI's infringement of the '9893 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

206. On information and belief, TI will continue to infringe the '9893 patent unless and until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '9893 patent, Plaintiff will continue to suffer irreparable harm.

207. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '9893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

208. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '9893 patent in violation of 35 U.S.C. § 271(a), including claim 4. A comparison of claim 4 of the '9893 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 16, which is incorporated herein by reference.

209. On information and belief, with knowledge of the '9893 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '9893 patent, including claim 4, with the intent to encourage those customers and/or end users to infringe the '9893 patent.

210. By way of example, on information and belief, Ford actively induces infringement of the '9893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '9893 patent, including claim 4. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed

in the '9893 patent.

211. On information and belief, with knowledge of the '9893 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '9893 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '9893 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '9893 patent.

212. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '9893 patent, including claim 4. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint.

213. On information and belief, with knowledge of the '9893 patent, Ford has willfully, deliberately, and intentionally infringed the '9893 patent, at least as of the dates of knowledge of



the '9893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '9893 patent. On information and belief, Ford had actual knowledge of the '9893 patent and Ford's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly and indirectly infringe the '9893 patent as set forth above. On information and belief, Ford knew or should have known that its conduct amounted to infringement of the '9893 patent at least because Ford was aware of the '9893 patent and Ford's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '9893 patent's fame in the semiconductor industry, Ford's expertise in the subject matter of the '9893 patent, Ford's technical competence to understand the scope of the '9893 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '9893 patent, and Ford's infringement of the '9893 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

214. On information and belief, Ford will continue to infringe the '9893 patent unless and until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '9893 patent, Plaintiff will continue to suffer irreparable harm.

215. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '9893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

216. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '9893 patent in violation of 35 U.S.C. § 271(a), including claim 4. Comparisons of claim 4 of the '9893 patent to exemplary products of the Volkswagen Accused Products are attached as Exhibits 22 and 28, which are incorporated herein by reference.

217. On information and belief, with knowledge of the '9893 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '9893 patent, including claim 4, with the intent to encourage those customers and/or end users to infringe the '9893 patent.

218. By way of example, on information and belief, Volkswagen actively induces infringement of the '9893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '9893 patent, including claim 4. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen's Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information

and belief, Volkswagen describes and touts the use of the subject matter claimed in the '9893 patent.

219. On information and belief, with knowledge of the '9893 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '9893 patent, including claim 4, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '9893 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '9893 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '9893 patent.

220. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '9893 patent, including claim 4. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '9893 patent alleged above, and no later than

the date of this Complaint.

221. On information and belief, with knowledge of the '9893 patent, Volkswagen has willfully, deliberately, and intentionally infringed the '9893 patent, at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '9893 patent. On information and belief, Volkswagen had actual knowledge of the '9893 patent and Volkswagen's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '9893 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '9893 patent at least because Volkswagen was aware of the '9893 patent and Volkswagen's infringement of the '9893 patent at least as of the dates of knowledge of the '9893 patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '9893 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '9893 patent, Volkswagen's technical competence to understand the scope of the '9893 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '9893 patent, and Volkswagen's infringement of the '9893 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

222. On information and belief, Volkswagen will continue to infringe the '9893 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against

Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '9893 patent, Plaintiff will continue to suffer irreparable harm.

223. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '9893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**COUNT V – INFRINGEMENT OF U.S. PATENT NO. 8,072,893**

224. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 223 above.

225. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, made or designed by processes that infringe, either literally or under the doctrine of equivalents, one or more claims of the '2893 patent in violation of 35 U.S.C. § 271(a) and/or § 271(g), including claim 10. Comparison of claim 10 of the '2893 patent to an exemplary product of the TI Accused Products made or designed by infringing processes is attached as Exhibit 11, which is incorporated herein by reference.

226. On information and belief, with knowledge of the '2893 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '2893 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its suppliers, customers, and/or end users of its products, including at least the TI Accused Products, by selling, designing, providing support for, providing designs and/or specifications for, providing instructions for use of, and/or otherwise encouraging its suppliers, customers, and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '2893 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '2893 patent.

227. By way of example, on information and belief, TI actively induces infringement of the '2893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to suppliers who supply and/or design components (for example, semiconductor IPs) of, test, operate, and/or use TI's products, including at least the TI Accused Products or components thereof (for example, semiconductor IPs), to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products or components thereof (for example, semiconductor IPs), in a manner that infringes at least one claim of the '2893 patent, including claim 10. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Additionally, on information and belief, TI provides its suppliers with specifications and/or designs for components, including by way of example, semiconductor IPs, for the TI Accused Products. Therein, TI describes, encourages, and touts the use of the subject matter claimed in the '2893 patent.

228. On information and belief, with knowledge of the '2893 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '2893 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by providing specifications and/or designs for the TI Accused Products or components thereof (for example, semiconductor IPs), knowing them to be especially made or especially adapted for practicing the inventions of the '2893 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the specifications and/or designs for TI Accused Products or components thereof (for example, semiconductor IPs), which are especially made or especially adapted for use in infringement of the '2893 patent when used for their normal and intended purpose. This is also evidenced by, among

other things, the normal use and intended purpose of the specifications and/or designs for the TI Accused Products or components thereof (for example, semiconductor IPs), which demonstrate that the specifications and/or designs for the TI Accused Products or components thereof (for example, semiconductor IPs) are especially made or especially adapted for a use that infringes the '2893 patent.

229. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its suppliers, customers, and/or end users designed, made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, TI's products or components thereof (for example, semiconductor IPs), including the TI Accused Products, in ways that directly infringe one or more claims of the '2893 patent, including claim 10. On information and belief, TI had actual knowledge of its suppliers', customers', and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products or components thereof (for example, semiconductor IPs), at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint.

230. On information and belief, with knowledge of the '2893 patent, TI has willfully, deliberately, and intentionally infringed the '2893 patent, at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '2893 patent. On information and belief, TI had actual knowledge of the '2893 patent and TI's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly infringe the '2893 patent as set forth above. On information and belief, TI knew or

should have known that its conduct amounted to infringement of the '2893 patent at least because TI was aware of the '2893 patent and TI's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '2893 patent's fame in the semiconductor industry, TI's expertise in the subject matter of the '2893 patent, TI's technical competence to understand the scope of the '2893 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '2893 patent, and TI's infringement of the '2893 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

231. On information and belief, TI will continue to infringe the '2893 patent unless and until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '2893 patent, Plaintiff will continue to suffer irreparable harm.

232. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '2893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

233. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '2893 patent in violation of 35 U.S.C. § 271(a), including claim 1. A comparison of claim 1 of the '2893 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 17, which is incorporated herein by reference.



234. On information and belief, with knowledge of the '2893 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '2893 patent, including claim 1, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '2893 patent, including claim 1, with the intent to encourage those customers and/or end users to infringe the '2893 patent.

235. By way of example, on information and belief, Ford actively induces infringement of the '2893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '2893 patent, including claim 1. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the '2893 patent.

236. On information and belief, with knowledge of the '2893 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '2893 patent, including claim 1, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '2893 patent and not a staple article or commodity of commerce

suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '2893 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '2893 patent.

237. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '2893 patent, including claim 1. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint.

238. On information and belief, with knowledge of the '2893 patent, Ford has willfully, deliberately, and intentionally infringed the '2893 patent, at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '2893 patent. On information and belief, Ford had actual knowledge of the '2893 patent and Ford's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly and indirectly infringe the '2893 patent as set forth above. On information and belief, Ford knew

or should have known that its conduct amounted to infringement of the '2893 patent at least because Ford was aware of the '2893 patent and Ford's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '2893 patent's fame in the semiconductor industry, Ford's expertise in the subject matter of the '2893 patent, Ford's technical competence to understand the scope of the '2893 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '2893 patent, and Ford's infringement of the '2893 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

239. On information and belief, Ford will continue to infringe the '2893 patent unless and until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '2893 patent, Plaintiff will continue to suffer irreparable harm.

240. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '2893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

241. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '2893 patent in violation of 35 U.S.C. § 271(a), including claim 1. Comparisons of claim 1 of the '2893 patent to exemplary products of the Volkswagen Accused Products are attached as Exhibits 23 and 29, which are incorporated herein by reference.

242. On information and belief, with knowledge of the '2893 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '2893 patent, including claim 1, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '2893 patent, including claim 1, with the intent to encourage those customers and/or end users to infringe the '2893 patent.

243. By way of example, on information and belief, Volkswagen actively induces infringement of the '2893 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '2893 patent, including claim 1. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information and belief, Volkswagen describes and touts the use of the subject matter claimed in the '2893 patent.

244. On information and belief, with knowledge of the '2893 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '2893 patent, including claim 1, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '2893 patent and not a staple article or commodity of

commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '2893 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '2893 patent.

245. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '2893 patent, including claim 1. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint.

246. On information and belief, with knowledge of the '2893 patent, Volkswagen has willfully, deliberately, and intentionally infringed the '2893 patent, at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '2893 patent. On information and belief, Volkswagen had actual knowledge of the '2893 patent and Volkswagen's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no

later than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '2893 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '2893 patent at least because Volkswagen was aware of the '2893 patent and Volkswagen's infringement of the '2893 patent at least as of the dates of knowledge of the '2893 patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '2893 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '2893 patent, Volkswagen's technical competence to understand the scope of the '2893 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '2893 patent, and Volkswagen's infringement of the '2893 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

247. On information and belief, Volkswagen will continue to infringe the '2893 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '2893 patent, Plaintiff will continue to suffer irreparable harm.

248. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '2893 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**COUNT VI – INFRINGEMENT OF U.S. PATENT NO. 8,086,800**

249. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 248

above.

250. On information and belief, TI has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the TI Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '800 patent in violation of 35 U.S.C. § 271(a), including claim 10. Comparison of claim 10 of the '800 patent to an exemplary product of the TI Accused Products is attached as Exhibit 12, which is incorporated herein by reference.

251. On information and belief, with knowledge of the '800 patent, TI has actively induced and continues to induce the direct infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the TI Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '800 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '800 patent.

252. By way of example, on information and belief, TI actively induces infringement of the '800 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use TI's products, including at least the TI Accused Products, to make, use, sell, offer to sell, and/or import TI's products, including at least the TI Accused Products, in a manner that infringes at least one claim of the '800 patent, including claim 10. For example, as described above, TI actively markets, advertises, offers for sale, and/or otherwise promotes the TI Accused Products by publishing and distributing data sheets, manuals, and guides for the TI Accused Products. Therein, on information

and belief, TI describes and touts the use of the subject matter claimed in the '800 patent.

253. On information and belief, with knowledge of the '800 patent, TI also contributed to, and continues to contribute to, the infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the TI Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '800 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the TI Accused Products, which are especially made or especially adapted for use in infringement of the '800 patent when used for their normal and intended purpose. This is also evidenced by, among other things, TI's informational and promotional materials described above, which describe the normal use and intended purpose of the TI Accused Products and demonstrate that the TI Accused Products are especially made or especially adapted for a use that infringes the '800 patent.

254. On information and belief, as a result of TI's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, TI's products, including the TI Accused Products, in ways that directly infringe one or more claims of the '800 patent, including claim 10. On information and belief, TI had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of TI's products, including the TI Accused Products, at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint.

255. On information and belief, with knowledge of the '800 patent, TI has willfully, deliberately, and intentionally infringed the '800 patent, at least as of the dates of knowledge of



the '800 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '800 patent. On information and belief, TI had actual knowledge of the '800 patent and TI's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, TI continued to directly and indirectly infringe the '800 patent as set forth above. On information and belief, TI knew or should have known that its conduct amounted to infringement of the '800 patent at least because TI was aware of the '800 patent and TI's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. TI was aware of its infringement by virtue of the '800 patent's fame in the semiconductor industry, TI's expertise in the subject matter of the '800 patent, TI's technical competence to understand the scope of the '800 patent, and TI's intimate familiarity with its Accused Products. Additionally, TI was aware of the '800 patent, and TI's infringement of the '800 patent, at least as of the date of this Complaint because Plaintiff notified TI of such.

256. On information and belief, TI will continue to infringe the '800 patent unless and until it is enjoined by this Court. TI, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against TI's acts of infringement and, unless TI is enjoined from its infringement of the '800 patent, Plaintiff will continue to suffer irreparable harm.

257. Plaintiff is entitled to recover from TI damages at least in an amount adequate to compensate for its infringement of the '800 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

258. On information and belief, Ford has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Ford Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '800 patent in violation of 35 U.S.C. § 271(a), including claim 10. A comparison of claim 10 of the '800 patent to an exemplary product of the Ford Accused Products is attached as Exhibit 18, which is incorporated herein by reference.

259. On information and belief, with knowledge of the '800 patent, Ford has actively induced and continues to induce the direct infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Ford Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '800 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '800 patent.

260. By way of example, on information and belief, Ford actively induces infringement of the '800 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Ford's products, including at least the Ford Accused Products, to make, use, sell, offer to sell, and/or import Ford's products, including at least the Ford Accused Products, in a manner that infringes at least one claim of the '800 patent, including claim 10. For example, as described above, Ford actively markets, advertises, offers for sale, and/or otherwise promotes the Ford Accused Products by publishing and distributing data sheets, manuals, and guides for the Ford Accused Products. Therein, on information and belief, Ford describes and touts the use of the subject matter claimed in the '800

patent.

261. On information and belief, with knowledge of the '800 patent, Ford also contributed to, and continues to contribute to, the infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Ford Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '800 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Ford Accused Products, which are especially made or especially adapted for use in infringement of the '800 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Ford's informational and promotional materials described above, which describe the normal use and intended purpose of the Ford Accused Products and demonstrate that the Ford Accused Products are especially made or especially adapted for a use that infringes the '800 patent.

262. On information and belief, as a result of Ford's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Ford's products, including the Ford Accused Products, in ways that directly infringe one or more claims of the '800 patent, including claim 10. On information and belief, Ford had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Ford's products, including the Ford Accused Products, at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint.

263. On information and belief, with knowledge of the '800 patent, Ford has willfully, deliberately, and intentionally infringed the '800 patent, at least as of the dates of knowledge of

the '800 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '800 patent. On information and belief, Ford had actual knowledge of the '800 patent and Ford's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Ford continued to directly and indirectly infringe the '800 patent as set forth above. On information and belief, Ford knew or should have known that its conduct amounted to infringement of the '800 patent at least because Ford was aware of the '800 patent and Ford's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. Ford was aware of its infringement by virtue of the '800 patent's fame in the semiconductor industry, Ford's expertise in the subject matter of the '800 patent, Ford's technical competence to understand the scope of the '800 patent, and Ford's intimate familiarity with its Accused Products. Additionally, Ford was aware of the '800 patent, and Ford's infringement of the '800 patent, at least as of the date of this Complaint because Plaintiff notified Ford of such.

264. On information and belief, Ford will continue to infringe the '800 patent unless and until it is enjoined by this Court. Ford, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Ford's acts of infringement and, unless Ford is enjoined from its infringement of the '800 patent, Plaintiff will continue to suffer irreparable harm.

265. Plaintiff is entitled to recover from Ford damages at least in an amount adequate to compensate for its infringement of the '800 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

266. On information and belief, Volkswagen has made, used, offered for sale, sold, and/or imported products, including within this Judicial District, including at least the Volkswagen Accused Products, that infringe, either literally or under the doctrine of equivalents, one or more claims of the '800 patent in violation of 35 U.S.C. § 271(a), including claim 10. Comparisons of claim 10 of the '800 patent to exemplary products of the Volkswagen Accused Products are attached as Exhibits 24 and 30, which are incorporated herein by reference.

267. On information and belief, with knowledge of the '800 patent, Volkswagen has actively induced and continues to induce the direct infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(b), by its customers and/or end users of its products, including at least the Volkswagen Accused Products, by selling, providing support for, providing instructions for use of, and/or otherwise encouraging its customers and/or end-users to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the '800 patent, including claim 10, with the intent to encourage those customers and/or end users to infringe the '800 patent.

268. By way of example, on information and belief, Volkswagen actively induces infringement of the '800 patent by encouraging, instructing, and aiding one or more persons in the United States, including but not limited to customers and/or end users who test, operate, and use Volkswagen's products, including at least the Volkswagen Accused Products, to make, use, sell, offer to sell, and/or import Volkswagen's products, including at least the Volkswagen Accused Products, in a manner that infringes at least one claim of the '800 patent, including claim 10. For example, as described above, Volkswagen actively markets, advertises, offers for sale, and/or otherwise promotes the Volkswagen Accused Products by publishing and distributing data sheets, manuals, and guides for the Volkswagen Accused Products. Therein, on information and belief,

Volkswagen describes and touts the use of the subject matter claimed in the '800 patent.

269. On information and belief, with knowledge of the '800 patent, Volkswagen also contributed to, and continues to contribute to, the infringement of one or more claims of the '800 patent, including claim 10, in violation of 35 U.S.C. § 271(c), by offering to sell, selling, and/or importing the Volkswagen Accused Products, knowing them to be especially made or especially adapted for practicing the inventions of the '800 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. This is evidenced by, among other things, the design, configuration, and functionality of the Volkswagen Accused Products, which are especially made or especially adapted for use in infringement of the '800 patent when used for their normal and intended purpose. This is also evidenced by, among other things, Volkswagen's informational and promotional materials described above, which describe the normal use and intended purpose of the Volkswagen Accused Products and demonstrate that the Volkswagen Accused Products are especially made or especially adapted for a use that infringes the '800 patent.

270. On information and belief, as a result of Volkswagen's inducement of, and/or contribution to, infringement, its customers and/or end users made, used, sold, offered for sale, or imported, and continue to make, use, sell, offer to sell, or import, Volkswagen's products, including the Volkswagen Accused Products, in ways that directly infringe one or more claims of the '800 patent, including claim 10. On information and belief, Volkswagen had actual knowledge of its customers' and/or end users' direct infringement at least by virtue of their sales, instruction, and/or otherwise promotion of Volkswagen's products, including the Volkswagen Accused Products, at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint.

271. On information and belief, with knowledge of the '800 patent, Volkswagen has

willfully, deliberately, and intentionally infringed the '800 patent, at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint, and continues to willfully, deliberately, and intentionally infringe the '800 patent. On information and belief, Volkswagen had actual knowledge of the '800 patent and Volkswagen's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. On information and belief, after acquiring that knowledge, Volkswagen continued to directly and indirectly infringe the '800 patent as set forth above. On information and belief, Volkswagen knew or should have known that its conduct amounted to infringement of the '800 patent at least because Volkswagen was aware of the '800 patent and Volkswagen's infringement of the '800 patent at least as of the dates of knowledge of the '800 patent alleged above, and no later than the date of this Complaint. Volkswagen was aware of its infringement by virtue of the '800 patent's fame in the semiconductor industry, Volkswagen's expertise in the subject matter of the '800 patent, Volkswagen's technical competence to understand the scope of the '800 patent, and Volkswagen's intimate familiarity with its Accused Products. Additionally, Volkswagen was aware of the '800 patent, and Volkswagen's infringement of the '800 patent, at least as of the date of this Complaint because Plaintiff notified Volkswagen of such.

272. On information and belief, Volkswagen will continue to infringe the '800 patent unless and until it is enjoined by this Court. Volkswagen, by way of its infringing activities, has caused and continues to cause Plaintiff to suffer damages in an amount to be determined, and has caused and is causing Plaintiff irreparable harm. Plaintiff has no adequate remedy at law against Volkswagen's acts of infringement and, unless Volkswagen is enjoined from its infringement of the '800 patent, Plaintiff will continue to suffer irreparable harm.

273. Plaintiff is entitled to recover from Volkswagen damages at least in an amount adequate to compensate for its infringement of the '800 patent, which amount has yet to be determined, together with interest and costs fixed by the Court.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff Network System Technologies, LLC requests that the Court enter judgment for Plaintiff and against Defendants TI, Ford, and Volkswagen and enter the following relief:

A. A judgment that Defendants infringe the following Asserted Patents:

U.S. Patent No. 7,366,818 (Exhibit 1, "'818 patent")
U.S. Patent No. 7,373,449 (Exhibit 2, "'449 patent")
U.S. Patent No. 7,594,052 (Exhibit 3, "'052 patent")
U.S. Patent No. 7,769,893 (Exhibit 4, "'9893 patent")
U.S. Patent No. 8,072,893 (Exhibit 5, "'2893 patent")
U.S. Patent No. 8,086,800 (Exhibit 6, "'800 patent")

B. A preliminary and permanent injunction restraining and enjoining Defendants, their officers, partners, agents, servants, employees, parents, subsidiaries, divisions, affiliate corporations, joint ventures, other related business entities and all other persons acting in concert, participation, or in privity with them, and their successors and assigns, from infringing the Asserted Patents;

C. An award of damages to Plaintiff arising from Defendants' past and continuing infringement up until the date Defendants are finally and permanently enjoined from further infringement, including compensatory damages;

D. A determination that Defendants' infringement of the Asserted Patents has been willful, and an award of treble damages to Plaintiff pursuant to 35 U.S.C. § 284;

E. A determination that this is an exceptional case and awarding Plaintiff's attorneys' fees pursuant to 35 U.S.C. § 285;



- F. An order awarding Plaintiff costs and expenses in this action;
- G. An order awarding Plaintiff pre- and post-judgment interest on its damages; and
- H. Such other and further relief in law or in equity as this Court deems just and proper.

**JURY DEMAND**

Plaintiff respectfully requests a jury trial on all issues so triable.

Dated: December 19, 2022

Respectfully submitted,

*/s/ William E. Davis, III*

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