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

GRANITE VEHICLE VENTURES LLC, Plaintiff, v. TESLA, INC. Defendant.	Civil Action No. 2:24-cv-01007 **JURY TRIAL DEMAND**

COMPLAINT FOR PATENT INFRINGEMENT

Granite Vehicle Ventures ("Granite" or "Plaintiff") hereby submits this Complaint for patent infringement against Defendant Tesla, Inc. ("Tesla" or "Defendant") and states as follows:

THE PARTIES

1. Granite Vehicle Ventures LLC ("Granite") is a company duly organized and existing under the laws of Texas with its principal place of business at 301 South Fremont Avenue, Baltimore, Maryland 21230.

2. On information and belief, Tesla, Inc. is a corporation organized and existing under the laws of the state of Texas, with a principal place of business at 1 Tesla Road, Austin, Texas 78725. On information and belief, Tesla, Inc. may be served through its registered agent, CT Corporation System, at 1999 Bryan St., Suite 900, Dallas, Texas 75201-3136.

NATURE OF THE ACTION

3. This is a civil action for infringement of U.S. Patent No. 11,597,402 ("the '402 Patent", Ex. A), U.S. Patent No. 11,738,765 ("the '765 Patent", Ex. B), and U.S. Patent No. 12,037,004 ("the '004 Patent", Ex. C) (collectively, the "Asserted Patents"), arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.

4. Granite holds all rights, title, and interest in and to the Asserted Patents, including the right to bring this suit and recover all past, present, and future damages for infringement of the Asserted Patents. *See* Ex. D. Tesla is not licensed to the Asserted Patents, either expressly or implicitly, nor does it enjoy or benefit from any other rights in or to the Asserted Patents whatsoever.

5. Granite alleges that Tesla directly infringes the Asserted Patents by making, using, offering for sale, selling, and/or importing the Accused Products, described below. Granite further alleges that Tesla induces the infringement of third parties through their use of the Accused

Products as directed by Tesla. Granite seeks damages and other relief for Tesla's infringement of the Asserted Patents.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 101 *et seq.*

7. Tesla re-incorporated from Delaware to Texas in 2024. https://ir.tesla.com/press-release/tesla-releases-results-2024-annual-meeting-stockholders (last visited Nov. 6, 2024). As part of the decision, Tesla listed several reasons to move to Texas, including it has thousands of employees in Texas and the "Texas legal regime is strong, fair and more appropriate to our mission." https://www.votetesla.com/solidifying-our-ties-to-texas/ (last visited Nov. 6, 2024).

8. In preparation for its Shareholder decision to re-incorporate Tesla in Texas, Tesla stated: Tesla's "global headquarters – and future – are in Texas." https://www.votetesla.com/solidifying-our-ties-to-texas/ (last visited Nov. 6, 2024).

9. Tesla's operations in the Eastern District of Texas are substantial and varied.

10. Tesla has one or more regular and established places of business in the Eastern District of Texas.

11. For example, Tesla has a store, gallery, service center, and demo drive located in Plano at 5800 Democracy Drive Plano, TX 75024. https://www.tesla.com/findus/location/store/planodemocracydr (last visited Nov. 6, 2024).

12. Additionally, Tesla has a store and gallery located in Plano at 7500 Windrose Avenue Space B185 Plano, TX 75024. https://www.tesla.com/findus/location/store/planotexas (last visited Nov. 6, 2024).

13. Further, Tesla has a store, gallery, and service center located in Tyler at 3408 S SW Loop 323 Tyler, TX 75701. https://www.tesla.com/findus/location/store/tylersouthservice (last visited Nov. 6, 2024).

14. These stores are physically located within the district, are regular and established places of business of Tesla with signage of Tesla, and actively market Tesla's infringing products to consumers.

15. Tesla has committed acts of infringement in the Eastern District of Texas, including at the locations identified above, by making, using, offering for sale, selling, and/or importing the Accused Products.

16. Tesla's "Gigafactory" and "Global Headquarters" is located in Austin, Texas. https://www.tesla.com/giga-texas (last visited Nov. 6, 2024). This factory has "over 10 million square feet of factory floor" and is a "manufacturing hub for Model Y and the home of Cybertruck." *Id.*

17. Tesla advertises that a customer "can contact Tesla, Inc.'s Board of Directors to provide comments, to report concerns, or to ask a question at" 1 Tesla Road, Austin, TX 78725. https://ir.tesla.com/contact-us#contact-us (last visited Nov. 6, 2024).

18. On information and belief, Tesla's "Gigafactory" houses a supercomputer computer cluster named "Cortex." https://www.notateslaapp.com/news/2215/a-look-at-teslas-new-ai-training-center-at-giga-texas-video (last visited Nov. 6, 2024). On information and belief, Cortex's primary focus is to explore and expand FSD's performance envelope to include AI4. *Id.*

19. Tesla has job postings for self-driving engineers in Texas. *See, e.g.*, https://www.tesla.com/careers/search/job/sr-soc-rtl-designer-self-driving-223433 (last visited

Sept. 9, 2024); https://www.tesla.com/careers/search/job/sr-machine-learning-engineer-self-driving-hardware-223131 (last visited Sept. 9, 2024).

Title	Category	Location
Sr. Staff Hardware Engineer	AI & Robotics	Austin, Texas
Physical Design Engineer, Self-Driving	AI & Robotics	Austin, Texas
Sr. SOC RTL Designer, Self-Driving	AI & Robotics	Austin, Texas
Sr. Machine Learning Engineer, Self-Driving Hardware	AI & Robotics	Austin, Texas

20. On information and belief, Tesla has many employees working on self-driving technology located in Texas.

21. For example, Kevin Zitny is an "Autopilot Hardware Design Engineer; RTL design for next generation of Autopilot" in Austin, Texas. https://www.linkedin.com/in/kevin-zitny-b1245085 (last visited Sept. 9, 2024).

22. Dan Hopper is an "Autopilot Senior Staff Hardware Engineer" in Austin, Texas. https://www.linkedin.com/in/dan-hopper-78299a4/ (last visited Sept. 9, 2024).

23. Tesla is subject to personal jurisdiction under the provisions of the Texas Long Arm Statute, TX CIV. PRAC. & REM. CODE § 17.041 *et seq.*, by virtue of the fact that Tesla is a resident of the State of Texas and because Tesla has availed itself of the privilege of conducting and soliciting business within this State, including engaging in at least some of the infringing activities in this State, as well as by others acting as Tesla's agents and/or representatives, such that it would be reasonable for this Court to exercise jurisdiction consistent with principles underlying the U.S. Constitution, and the exercise of jurisdiction by this Court would not offend traditional notions of fair play and substantial justice.

24. Tesla has also established minimum contacts with this judicial district and regularly transacts and does business within this district, including advertising, promoting and selling products and/or services in its stores, over the internet, through intermediaries, representatives and/or agents located within this judicial district, that infringe the Asserted Patents. Tesla has purposefully directed activities at citizens of this State including those located within this judicial district. Tesla derives substantial revenue from the goods and services it provides to individuals in the state of Texas and in this judicial district.

25. Tesla has purposefully and voluntarily placed its products and/or services into the stream of commerce with the expectation that they will be purchased and used by customers located in the State of Texas and the Eastern District of Texas. Tesla's customers in the Eastern District of Texas have purchased and used and continue to purchase and use Tesla's products.

26. Tesla has manufactured, used, sold, and/or offered for sale vehicles which infringed the Asserted Patents in the State of Texas and this judicial district. Tesla derives benefits from its presence in this federal judicial district, including, but not limited to, sales revenue.

27. Tesla has solicited business in the State of Texas, transacted business within the State of Texas and attempted to derive financial benefit from residents of the State of Texas, including benefits directly related to the instant patent infringement causes of action set forth herein.

28. Venue as to Tesla is proper in this judicial district under 28 U.S.C. § 1400(b) at least because Tesla, as a company incorporated in Texas, resides in the Eastern District of Texas. *Diem LLC v. BigCommerce, Inc.*, No. 6:17-CV-00186, 2017 U.S. Dist. LEXIS 117602, at *4 (E.D. Tex. July 26, 2017) ("This Court holds that a domestic corporation resides in the state of its

incorporation and if that state contains more than one judicial district, the corporate defendant resides in each such judicial district for venue purposes."); *see also* 28 U.S.C. §1391(d).

29. In addition, Venue as to Tesla is proper in this judicial district under 28 U.S.C. § 1400(b) at least because Tesla has committed acts of infringement in this judicial district and has regular and established places of business in this judicial district. Tesla makes, uses, sells, offers to sell, and/or imports products and/or services accused of infringement in this case into and/or within this judicial district and maintains a permanent and/or continuing presence within this judicial district. Tesla's commission of acts of infringement, and the presence of Tesla locations in the Eastern District of Texas, establish venue over it under 28 U.S.C. § 1400(b). *See, e.g.*, *Intellectual Ventures II LLC v. FedEx Corp.*, Case No. 16-cv-980-JRG, 2017 WL 5630023, at *6–7 (E.D. Tex. Nov. 22, 2017) (Gilstrap, J.) (venue proper based on defendants' "physical retail and service locations").

BACKGROUND

30. Tesla sold over 650,000 electric vehicles in 2023. https://www.cbtnews.com/u-s-ev-sales-hit-1-2-million-in-2023-tesla-remains-market-leader/ (last visited Nov. 6, 2024).

31. There are about 2.5 million Tesla vehicles on US roads. https://www.barrons.com/articles/tesla-stock-price-tsla-fsd-1148ec6b (last visited Nov. 6, 2024).

32. As of April 2024, about 400,000 Tesla owners use Tesla's Full Self-Driving (FSD (Supervised)) service. https://www.barrons.com/articles/tesla-stock-price-tsla-fsd-1148ec6b (last visited Nov. 6, 2024).

33. Tesla offers FSD (Supervised) as a subscription for $99 per month. https://www.tesla.com/support/full-self-driving-subscriptions (last visited Nov. 6, 2024). Tesla

also offers FSD (Supervised) for a one-time purchase of $8,000. https://www.tesla.com/modely/design#overview (last visited Nov. 6, 2024).

34. All vehicles made by Tesla after October 2016 are shipped with the hardware necessary to enable FSD (Supervised). https://insideevs.com/news/713846/tesla-fsd-trial-us-musk/ (last visited Nov. 6, 2024).

35. If a customer does not have the Full-Self Driving computer already installed in their car, that customer can schedule a hardware installation to receive a Full Self-Driving computer and utilize FSD (Supervised) in their earlier production vehicle. https://www.tesla.com/support/full-self-driving-subscriptions#hardware-upgrades (last visited Nov. 6, 2024).

36. Tesla's FSD (Supervised) software is instrumental to Tesla's competitive advantage. *See, e.g.*, https://x.com/Tesla/status/1830640752185282821 (last visited Nov. 6, 2024) ("Commuting with FSD Supervised makes a big difference"); *see also* https://x.com/elonmusk/status/1811421880622174707 (last visited Nov. 6, 2024) (tweet from Elon Musk, Tesla's CEO, reposting a video of FSD, stating "It's true, buying anything except a Tesla will seem like buying a horse and buggy.").

37. Tesla has stated its FSD (Supervised) software is a SAE Level 2 driver-assist system. https://www.tesla.com/blog/bigger-picture-autopilot-safety (last visited Nov. 6, 2024). Telsa states that when operating a vehicle in FSD (Supervised), the driver needs to be ready to take over and drive manually at any point in time. *Id.*

38. To increase driver awareness during use of the FSD (Supervised), Tesla has implemented many safety features, including requiring the driver to periodically apply a slight force to the steering wheel. https://www.tesla.com/ownersmanual/model3/en_us/GUID-

2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024). Failure to periodically apply the slight force to the driving wheel results in the car disabling FSD (Supervised). https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024). Many of these features were added in a safety recall that affected 100% of Tesla vehicles. https://static.nhtsa.gov/odi/rcl/2023/RCLRPT-23V838-8276.PDF (last visited Nov. 6, 2024).

THE ASSERTED PATENTS

39. The Asserted Patents claim priority to the nonprovisional patent application 14/865,393, which was filed on September 25, 2015.

40. On March 7, 2023, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 11,597,402 ("the '402 Patent"), titled "Controlling Driving Modes of Self-Driving Vehicles."

41. On August 29, 2023, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 11,738,765 ("the '765 Patent"), titled "Controlling Driving Modes of Self-Driving Vehicles."

42. On July 16, 2024, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 12,037,004 ("the '004 Patent"), titled "Controlling Driving Modes of Self-Driving Vehicles."

43. On September 25, 2015, the Inventors assigned their rights to the 14/865,393 patent application to International Business Machines Corporation (IBM). *See* USPTO Reel/frame 036656/0158. On September 30, 2019, IBM assigned the rights to the patents issued from the 14/865,393 patent application, as well as the rights to continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, and divisions of the

14/865,393 patent application to Daedalus Group LLC. *See* USPTO Reel/frame 051032/0784; 051710/0445. On January 29, 2020, Daedalus Group LLC assigned these rights to Slingshot IOT LLC. *See* USPTO Reel/frame 051733/0463. On July 27, 2023, Slingshot IOT LLC assigned the rights to the'402 Patent, 17/374,656 Patent Application (later issued as the '765 Patent), and 18/222,774 Patent Application (later issued as the '004 Patent) to Granite Vehicle Ventures LLC. *See* USPTO Reel/frame 064405/0422.

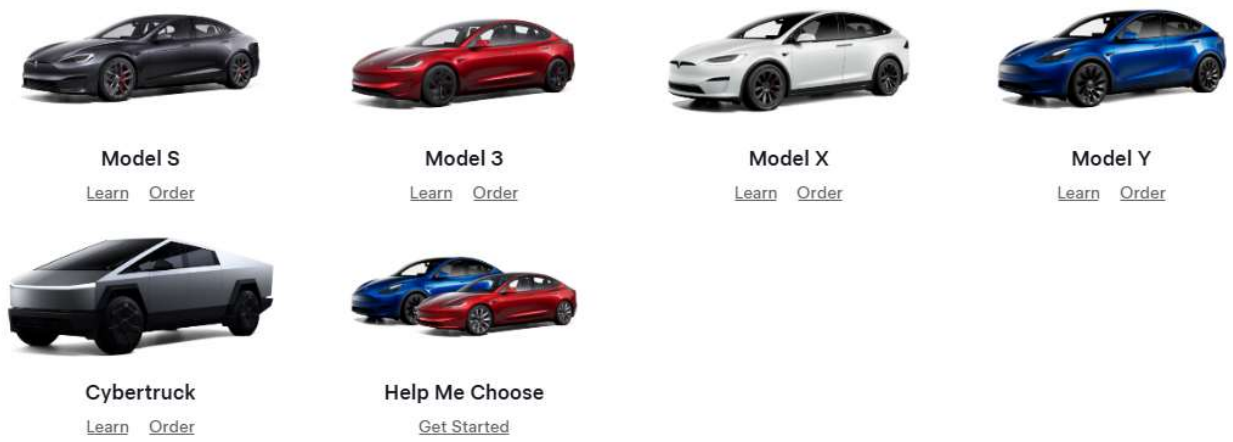
44. The Asserted Patents share a common specification.

45. The Asserted Patents are generally directed to a computer-implemented method, system, and/or computer program product that controls a driving mode of a self-driving vehicle (SDV). '402 Patent at Abstract. In some instances, a self-driving vehicle (SDV) is operated in a manual mode, where the "human driver controls the engine throttle, engine on/off switch, steering mechanism, braking system, horn, signals, etc." *Id.* at 6:41-44. In other instances, the SDV is operated in an autonomous mode "such that the engine, steering mechanism, braking system, horn, signals, etc. are controlled by the SDV control processor." *Id.* at 6:51-54. Sensor readings are used to determine whether the car should be in manual or autonomous mode. *See, e.g.*, *id.* at 8:29-46.

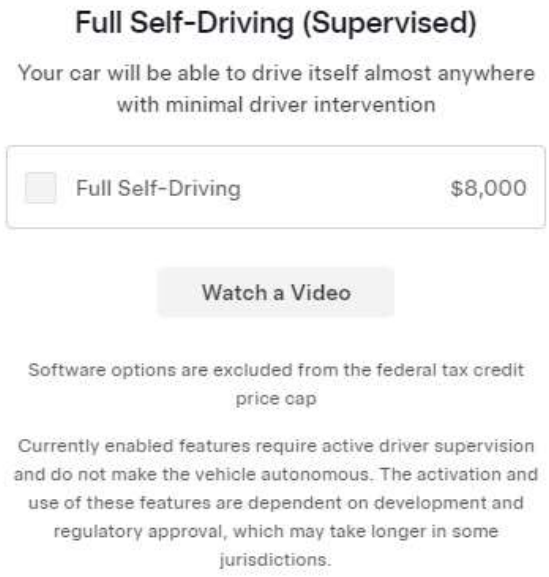
TESLA'S USE OF THE PATENTED TECHNOLOGY

46. The Accused Products include Tesla's FSD (Supervised) program and all of Tesla's vehicles that are compatible with Tesla's FSD (Supervised) program. This includes, but is not limited to the Model 3, Model S, Model X, Model Y, and Cybertruck including all trims and versions since 2016. *See* https://insideevs.com/news/713846/tesla-fsd-trial-us-musk/ (last visited Nov. 6, 2024); https://www.tesla.com/model3/design#overview (last visited Nov. 6, 2024); https://www.tesla.com/models/design#overview (last visited Nov. 6, 2024); https://www.tesla.com/modelx/design#overview (last visited Nov. 6, 2024);

https://www.tesla.com/modely/design#overview (last visited Nov. 6, 2024); https://www.tesla.com/cybertruck/design#overview (last visited Nov. 6, 2024). Examples of the Accused Products are shown below:



See https://www.tesla.com/ (last visited Nov. 6, 2024).



See, e.g., https://www.tesla.com/modely/design#overview (last visited Nov. 6, 2024).

47. FSD (Supervised) is an "included" feature of the Cybertruck Foundation Series. https://www.tesla.com/cybertruck/design#overview (last visited Sept. 11, 2024);

https://www.autoevolution.com/news/at-least-30000-tesla-cybertruck-owners-have-paid-for-the-fsd-capability-and-got-nothing-239366.html (last visited Nov. 6, 2024).

48. Telsa also uses the Accused Products for testing and promotional purposes. *See, e.g.*, https://www.teslaoracle.com/2023/08/27/elon-musk-demonstrates-tesla-fsd-12-no-code-autopilot-ai/ (last visited Nov. 6, 2024) (Elon Musk, Tesla's CEO, demonstrated the capabilities of FSD (Supervised) on the streets of California).

49. Tesla has infringed directly and continues to infringe directly the Asserted Patents in its implementation of Tesla's FSD (Supervised) software in the Accused Products. The infringing activities include, but are not limited to, the manufacture, use, sale, importation, and/or offer for sale of products and/or services by Tesla for the implementation of FSD (Supervised) on the Accused Products.

50. For example, the Accused Products infringe claim 4 from the '402 Patent, which is directed to a self-driving vehicle (SDV).

51. Claim 4 of the '402 Patent states:

4. A self-driving vehicle (SDV) comprising:

a sensor system comprising a plurality of sensors;

vehicle controls comprising: engine throttle, steering mechanism, and braking system;

a computer system comprising a processor coupled to a non-transitory computer readable storage medium containing program code, the program code readable and executable by a processor;

the computer system is capable of receiving a sensor reading from the system of sensors;

the computer system is capable of operating the vehicle controls;

the computer system is capable of determining the operational state of the self-driving vehicle (SDV);

the computer system is capable of determining a vehicle fault;

the computer system is capable of determining a competence level of the processor;

the computer system is capable of determining competence level of a human driver;

the computer system is capable of determining a corrective action using the competence level of the processor and the competence level of the human driver;

the computer system is capable of implementing the corrective action; and

the computer system is capable of issuing an alert indicating the corrective action.

'402 Patent at 21:64-22:24.

52. The Accused Products implement, for example, Claim 4 of the '402 Patent. Granite's infringement allegations are not limited to Claim 4 and Granite will provide claim charts for all asserted claims in compliance with the Court's schedule and the Patent Local Rules.

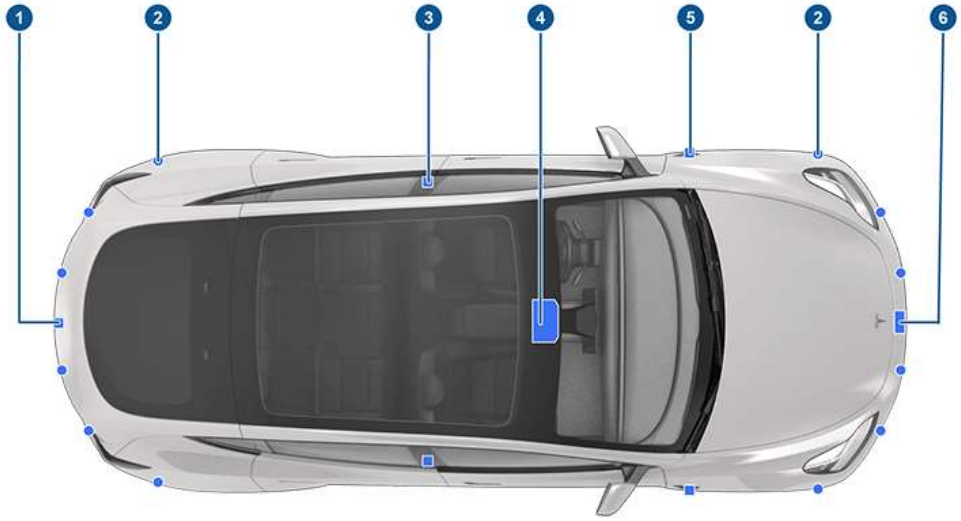
53. The Accused Products are "self-driving vehicle[s] (SDV[s])." As part of the SDV, FSD (Supervised) can be purchased for $8,000, or alternatively, FSD (Supervised) can be purchased as a subscription for $99 per month. *See, e.g.*, https://www.tesla.com/modely/design#overview (last visited Nov. 6, 2024); https://www.tesla.com/support/full-self-driving-subscriptions (last visited Nov. 6, 2024). Tesla's website states:

> Full Self-Driving (Supervised) uses inputs from cameras mounted at the front, rear, left, and right of Model Y to build a model of the area surrounding Model Y (see Cameras). The Full Self-Driving computer installed in Model Y is designed to use this input, rapidly process neural networks, and make decisions to safely guide you to your destination.

https://www.tesla.com/ownersmanual/modely/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

54. The Accused Products include "a sensor system comprising a plurality of sensors." For example, the Accused Products have several cameras for monitoring the surrounding area, as shown below:

Your Model Y includes the following components that actively monitor the surrounding area:



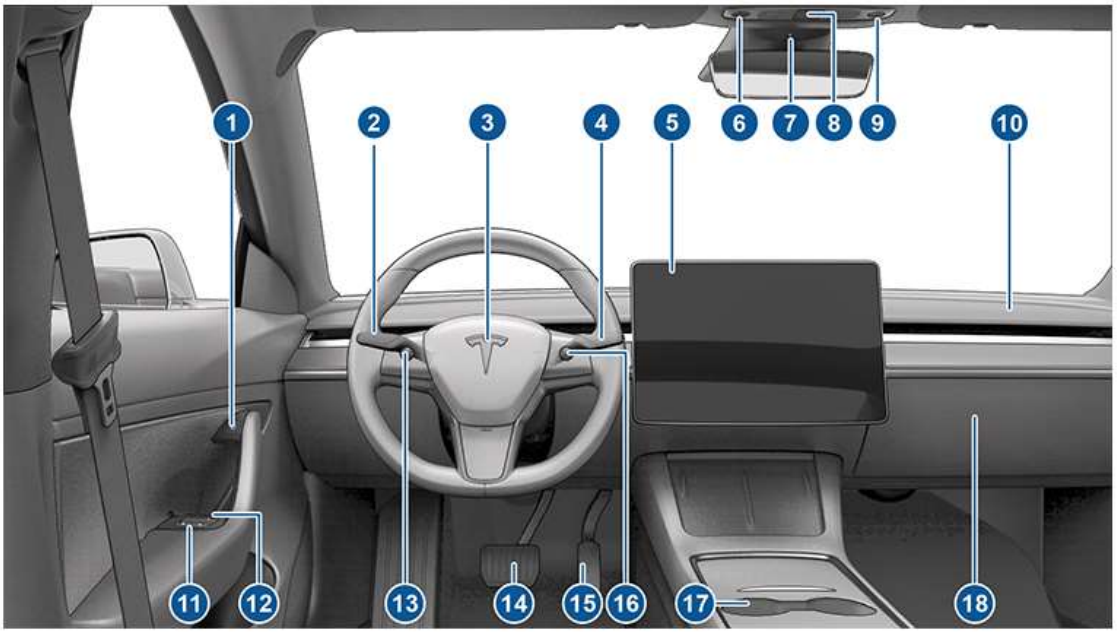
1. A camera is mounted above the rear license plate.
2. Ultrasonic sensors (if equipped) are located in the front and rear bumpers.
3. A camera is mounted in each door pillar.
4. Three cameras are mounted to the windshield above the rear view mirror.
5. A camera is mounted to each front fender.
6. Radar (if equipped) is mounted behind the front bumper.

Model Y is also equipped with high precision electronically-assisted braking and steering systems.

https://www.tesla.com/ownersmanual/modely/en_us/GUID-682FF4A7-D083-4C95-925A-5EE3752F4865.html (last visited Nov. 6, 2024).

55. The Accused Products also include a sensor coupled to the steering wheel to detect a slight turning force on the steering wheel. *See, e.g.*, https://www.tesla.com/ownersmanual/modely/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

56. The accused products also include "vehicle controls comprising: engine throttle, steering mechanism, and braking system." These components, or controls for these components, are shown below:



1. Door open button (Opening Doors from the Interior)
2. Turn signal stalk (High Beam Headlights), Turn Signals, and Wipers and Washers)
3. Horn (Horn)
4. Drive stalk (How to Shift, Autopilot Features)
5. Touchscreen (Touchscreen)
6. Driver dome light (Lights)
7. Cabin camera (Cabin Camera)
8. Hazard warning flashers (Hazard Warning Flashers)
9. Passenger dome light (Lights)
10. Climate control vent (see Operating Climate Controls)
11. Power window switches (Windows)
12. Manual door release (Opening Doors from the Interior)
13. Left scroll button (Scroll Buttons)
14. Brake pedal (Braking and Stopping)
15. Accelerator pedal (Regenerative Braking)
16. Right scroll button (Scroll Buttons)
17. Center console (Interior Electronics)
18. Glovebox (Glovebox)

https://www.tesla.com/ownersmanual/modely/en_us/GUID-A5F2B9D0-E7C8-40F5-9642-58F3657B123E.html (last visited Nov. 6, 2024).

57. The Accused Products further include "a computer system comprising a processor coupled to a non-transitory computer readable storage medium containing program code, the program code readable and executable by a processor." The Accused products include a "Full Self-Driving (FSD) Computer." https://www.autopilotreview.com/tesla-custom-ai-chips-hardware-3/ (last visited Nov. 6, 2024). This FSD Computer must be installed in the vehicle to utilize FSD

(Supervised). https://www.tesla.com/support/full-self-driving-subscriptions (last visited Nov. 6, 2024).

58. The Accused Products comprise "the computer system is capable of receiving a sensor reading from the system of sensors." The Accused Products utilize the FSD computer to analyze the data from the system of cameras. https://www.tesla.com/autopilot (last visited Nov. 6, 2024). "The Full Self-Driving computer installed in Model 3 is designed to use this input, rapidly process neural networks, and make decisions to safely guide you to your destination." https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

Processing Power Increased 40x

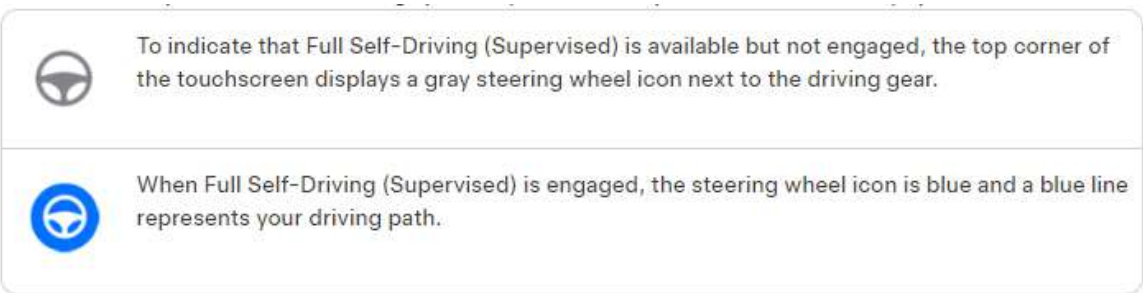
To make sense of all of this information, our Hardware 3 onboard computer processes more than 40 times the data compared to our previous generation system. This computer runs the Tesla-developed neural net, which is the foundation for how we train and develop Autopilot. This system provides a view of the world that a driver alone cannot access, seeing in every direction simultaneously, and on wavelengths that go far beyond the human senses.

https://www.tesla.com/autopilot (last visited Nov. 6, 2024).

59. The Accused Products comprise "the computer system is capable of operating the vehicle controls." "When Full Self-Driving (Supervised) (also referred to as Autosteer on City Streets) is engaged, Model 3 attempts to drive to your destination by following curves in the road, stopping at and negotiating intersections, making left and right turns, navigating roundabouts, and entering/exiting highways." https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024); *see also* https://www.youtube.com/watch?v=tJc-ZtO5b_E&t=68s (last visited Nov. 6, 2024).

60. The Accused Products comprise "the computer system is capable of determining the operational state of the self-driving vehicle (SDV)." The Accused Products utilize a steering

wheel icon to display if the vehicle is in autonomous mode or manual mode. *See, e.g.*, https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024). This is shown below:



https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024). The sensor system described above also provides information used to determine the operational state of the SDV.

61. Further, the Accused Products require the human driver to apply a slight force to the steering wheel sensor when the vehicle is in autonomous mode, and do not require this when the car is in manual mode. https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

62. The Accused Products comprise "the computer system is capable of determining a vehicle fault." The Accused Products disengage FSD (Supervised) in scenarios when the vehicle cannot assure safely operating in autonomous mode. *See, e.g.*, https://www.youtube.com/watch?v=_0ABC8qEwEY (last visited Nov. 6, 2024) at 8:25-8:35 ("take over immediately" is shown on the vehicle's screen, and the driver guesses it is because "the sun blinded it"); *see also* https://www.youtube.com/watch?v=G3pLfzTL17g (last visited Nov. 6, 2024) at 8:57-9:17 ("take over immediately" is shown on the vehicle's screen, and the driver guesses it was because "the car realized it was out of its element and needed a human being to take over"). Additionally, the Accused Products give a warning that FSD (Supervised) may be

degraded based on poor weather conditions. *See, e.g.*, https://www.youtube.com/watch?v=r2s89VAovCM (last visited Nov. 6, 2024) at 5:39-5:47.

63. Additionally, faults may be based on the behavior of the driver. The FSD (Supervised) software requires that the driver must remain alert and be prepared to take over. *See, e.g.*, https://www.tesla.com/ownersmanual/model3/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

64. The Accused Products comprise "the computer system is capable of determining a competence level of the processor." For example, when conditions are ideal, the computer system determines that the competence level of the processor is sufficient; in this case no alerts are issued and there is no warning that the FSD (Supervised) may be degraded. *See, e.g.*, https://www.youtube.com/watch?v=Exdsl6-ijp8 (last visited Nov. 6, 2024). However, as described above, non-ideal conditions (*e.g.* snowy conditions) may result in the computer system determining that the competence level of the processor is insufficient; in this case an alert that FSD (Supervised) may be degraded based on poor weather conditions is issued and the driver may be required to "take over immediately." *See, e.g.*, https://www.youtube.com/watch?v=_0ABC8qEwEY (last visited Nov. 6, 2024); *see also* https://www.youtube.com/watch?v=G3pLfzTL17g (last visited Nov. 6, 2024).

65. The Accused Products utilize a neural network to train FSD (Supervised). "A full build of Autopilot neural networks involves 48 networks that take 70,000 GPU hours to train." https://www.tesla.com/en_eu/AI (last visited Nov. 6, 2024). These neural networks "learn from the most complicated and diverse scenarios in the world, iteratively sourced from our fleet of millions of vehicles in real time." *Id.* On information and belief, the Accused Products utilize these neural networks to determine the competence level of the processor.

66. The Accused Products comprise "the computer system is capable of determining competence level of a human driver." The competence of a human driver is based, for example, on the measurement of the degree to which the human driver is awake, aware, and paying attention to the operational status of the vehicle. For example, the Accused products use a combination of sensors to detect and determine whether the human driver is paying attention, including sensors on the steering wheel and an interior facing camera that detects whether the driver is distracted. *See, e.g.*, https://www.tesla.com/ownersmanual/modely/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024).

67. Tesla has implemented Vision-Based Attention Monitoring, which primarily relies on the cabin camera to determine driver attentiveness in some Teslas. https://www.notateslaapp.com/software-updates/version/2024.15.5/release-notes (last visited Nov. 6, 2024). This feature monitors the driver's eyes to determine the competence level of the human driver. *Id.*

68. On information and belief, Tesla utilizes its neural networks to determine the competence level of the human driver. Tesla trains its neural networks with videos of human drivers to determine when a driver is attentive or inattentive.

69. The Accused Products are equipped with software called Safety Score^{Beta} that "assesses driving behavior of Tesla vehicles based on several metrics called Safety Factors." https://www.tesla.com/support/insurance/safety-score#version-2.0 (last visited Nov. 6, 2024). Tesla originally used this score to determine which users got access to FSD Beta (the precursor to FSD (Supervised)). https://www.notateslaapp.com/news/993/tesla-is-pushing-fsd-beta-automatically-to-owners-who-qualify (last visited Nov. 6, 2024). Additionally, drivers with FSD (Supervised) may lose access to the software for unsafe behavior. https://www.teslarati.com/tesla-

resets-fsd-beta-strikes-forced-disengagement/ (last visited Nov. 6, 2024) *see also* https://www.youtube.com/watch?v=adBzEjL_cO0 (last visited Nov. 6, 2024) (driver loses access to FSD beta for repeated safety violations).

70. The Accused Products comprise "the computer system is capable of determining a corrective action using the competence level of the processor and the competence level of the human driver." If the vehicle detects that the competence level of the human driver is insufficient (*e.g.*, the human driver is distracted), the vehicle will issue a warning to the driver. https://www.tesla.com/ownersmanual/modely/en_us/GUID-2CB60804-9CEA-4F4B-8B04-09B991368DC5.html (last visited Nov. 6, 2024). If the driver ignores or does not comply with the warnings, the vehicle may disengage FSD (Supervised) and give control back to the human driver. *Id.* In other instances, the Accused Products issue a warning that FSD (Supervised) may be degraded when the competence level of the processor is insufficient (*e.g.*, due to poor weather conditions). *See, e.g.*, https://www.youtube.com/watch?v=_0ABC8qEwEY (last visited Nov. 6, 2024); *see also* https://www.youtube.com/watch?v=G3pLfzTL17g (last visited Nov. 6, 2024).

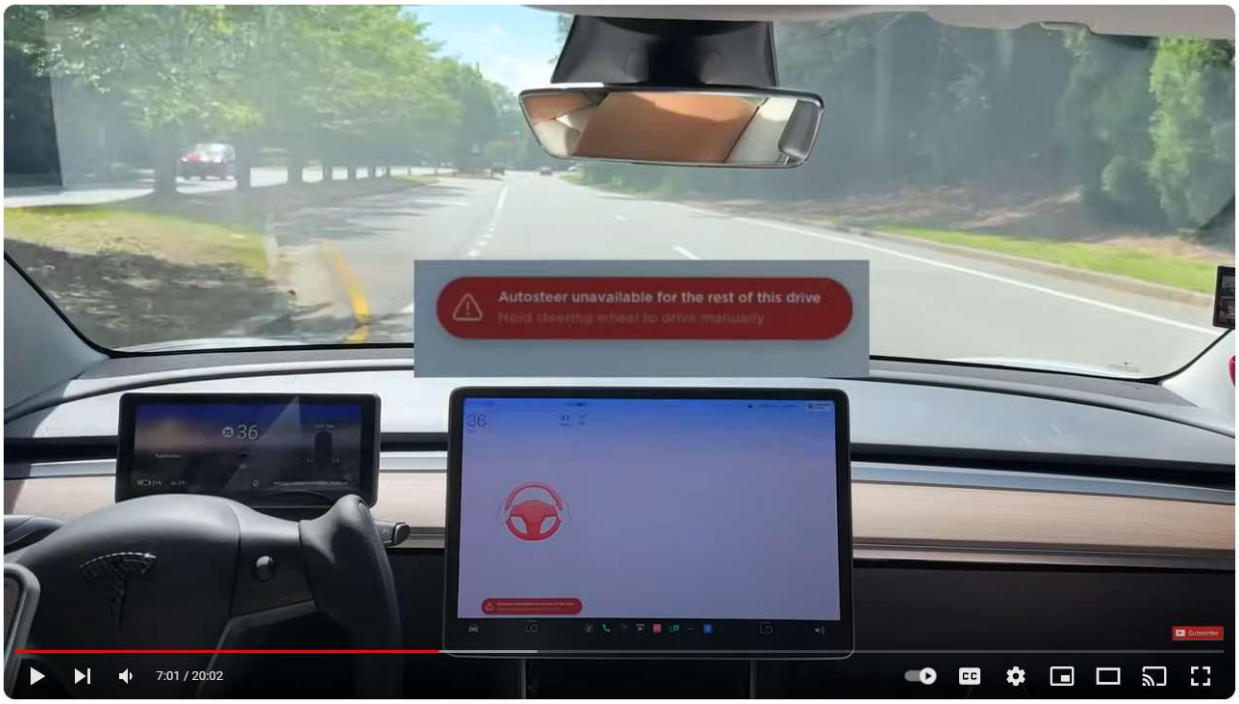
71. On information and belief, in other situations, the Accused Products determine the human driver should take over immediately and present this decision with warning sounds and a red steering wheel shown on the screen with the instructions for the driver to "take over immediately." *See, e.g.*, https://www.youtube.com/watch?v=_0ABC8qEwEY (last visited Nov. 6, 2024) at 8:25-8:35; *see also* https://www.youtube.com/watch?v=G3pLfzTL17g (last visited Nov. 6, 2024) at 8:57-9:17.

72. On information and belief, in other situations, such as when the driver looks down at his or her phone, the Accused Products tell the driver to "please pay attention to the road." https://www.youtube.com/watch?v=adBzEjL_cO0 (last visited Nov. 6, 2024) at 5:40-5:52. Then,

if the "please pay attention to the road" alert is ignored, warning sounds and a red steering wheel icon is shown on the screen with the instructions for the driver to drive manually. *Id.* at 6:43-7:23. If the driver does not resume manual driving, the Accused Products turn on hazard lights and slow down. *Id.*

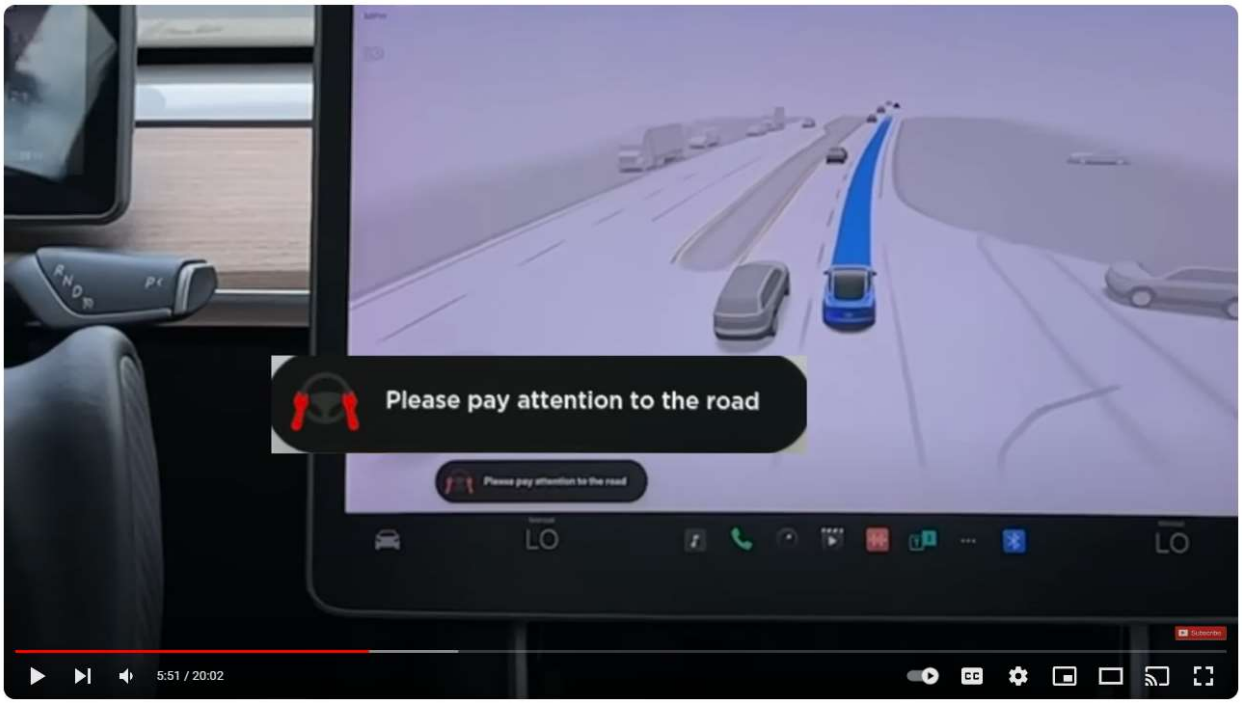
73. Tesla advertises its safety features that monitor driver attention as making the Accused Products safer when FSD (Supervised) is engaged than when the Accused Products are in manual mode. https://www.tesla.com/blog/bigger-picture-autopilot-safety (last visited Nov. 6, 2024).

74. The Accused Products comprise "the computer system is capable of implementing the corrective action." The preceding paragraphs show that this claim limitation is met. If the competence level of the human driver is insufficient (*e.g.*, if the human driver is inattentive and the driver does not correct his attentiveness), the Accused Products suspend FSD (Supervised) for the remainder of the drive. https://www.notateslaapp.com/software-updates/version/2024.15.5/release-notes (last visited Nov. 6, 2024). When the Accused Products suspend FSD (Supervised), the touch screen flashes, a beeping notification sounds, the hazard lights come on, the vehicle slows to a stop, and a message appears on the screen that FSD (Supervised) is unavailable for the rest of the drive. https://www.youtube.com/watch?v=adBzEjL_cO0 (last visited Nov. 6, 2024) at 6:30-7:30.



https://www.youtube.com/watch?v=adBzEjL_cO0 (last visited Nov. 6, 2024) at 6:30-7:30.

75. The Accused Products comprise "the computer system is capable of issuing an alert indicating the corrective action." The preceding paragraphs show that this claim limitation is met. If the competence level of the human driver is insufficient (*e.g.*, if the human driver is inattentive), the Accused Products issue a warning telling the driver to pay attention. https://www.notateslaapp.com/software-updates/version/2024.15.5/release-notes (last visited Nov. 6, 2024); *see also* https://www.youtube.com/watch?v=l_1r4rtQPBw (last visited Nov. 6, 2024).



https://www.youtube.com/watch?v=adBzEjL_cO0 (last visited Nov. 6, 2024) at 5:40-6:00.

COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 11,597,402

76. Granite hereby incorporates and re-alleges the preceding paragraphs as if fully set forth herein.

77. Granite holds all rights, title, and interest in and to the '402 Patent, including the right to bring this suit and recover all past, present and future damages for infringement of the '402 Patent. Tesla is not licensed to the '402 Patent, either expressly or implicitly, nor does it enjoy or benefit from any other rights in or to the '402 Patent whatsoever. As such, Tesla's infringement described below has injured, and continues to injure, Granite.

78. The '402 Patent is presumed valid and enforceable.

79. Viewed in light of the specification of the '402 Patent, the claims are ***not directed*** to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

80. The ’402 Patent claims are ***not directed*** to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

81. The ’402 Patent claims are ***not directed*** to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

82. The ’402 Patent ***does not*** take a well-known or established business method or process and apply it to a general-purpose computer.

83. Tesla directly infringes the ’402 Patent under 35 U.S.C. § 271(a) by making, using, selling, and/or offering to sell in the United States, and/or importing into the United States products that directly infringe the ’402 Patent, including the above identified Accused Products. The Accused Products infringe claim 1 *et seq.* of the ’402 Patent at least for the reasons Tesla infringes claim 4 of the ’402 Patent, detailed above.

84. Tesla also indirectly infringes claim 1 *et seq.* of the ’402 Patent. Acts constituting direct infringement of the ’402 Patent are performed by Tesla’s customers or end-users who act at the direction and/or control of Tesla, with Tesla’s knowledge.

85. Granite is informed and believes, and on that basis alleges, that Tesla indirectly infringes claim 1 *et seq.* of the ’402 Patent by active inducement in violation of 35 U.S.C. § 271(b), by at least manufacturing, supplying, distributing, selling, and/or offering for sale the Accused Products to its customers with the knowledge and intent that use of those products would constitute direct infringement of the ’402 Patent.

86. Upon information and belief, Tesla intends to cause, and has taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller

partners, solution partners, consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g.*, https://x.com/Tesla/status/1825543473061355937 (last visited Nov. 6, 2024) (advertising Full-Self Driving updates on over the air software updates); *see also* https://www.youtube.com/watch?v=Yj4-mNGKdTM (last visited Nov. 6, 2024) (showing software can be updated via the Tesla App).

87. At least by the filing date of this Complaint, Tesla was aware of the Asserted Patents and the infringement allegations regarding the '402 Patent contained herein. Furthermore, Tesla's infringement of the '402 Patent, at least since the filing date of this Complaint, is deliberate and willful. Tesla's continued infringement is deliberate, wanton and egregious, with reckless disregard of Granite's patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

88. The acts of infringement by Tesla have caused damage to Granite, and Granite is entitled to recover from Tesla the damages sustained by Granite as a result of Tesla's wrongful acts in an amount subject to proof at trial. The infringement of the '402 Patent by Tesla has damaged and will continue to damage Granite.

COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 11,738,765

89. Granite hereby incorporates and re-alleges the preceding paragraphs as if fully set forth herein.

90. Granite holds all rights, title, and interest in and to the '765 Patent, including the right to bring this suit and recover all past, present and future damages for infringement of the '765 Patent. Tesla is not licensed to the '765 Patent, either expressly or implicitly, nor does it enjoy or benefit from any other rights in or to the '765 Patent whatsoever. As such, Tesla's infringement described below has injured, and continues to injure, Granite.

91. The '765 Patent is presumed valid and enforceable.

92. Viewed in light of the specification of the '765 Patent, the claims are ***not directed*** to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

93. The '765 Patent claims are ***not directed*** to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

94. The '765 Patent claims are ***not directed*** to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

95. The '765 Patent ***does not*** take a well-known or established business method or process and apply it to a general-purpose computer.

96. Tesla directly infringes the '765 Patent under 35 U.S.C. § 271(a) by making, using, selling, and/or offering to sell in the United States, and/or importing into the United States products that directly infringe the '765 Patent, including the above identified Accused Products. The

Accused Products infringe claim 1 *et seq.* of the ’765 Patent, in part, at least for the reasons Tesla infringes claim 4 of the ’402 Patent, detailed above.

97. Tesla also indirectly infringes claim 1 *et seq.* of the ’765 Patent. Acts constituting direct infringement of the ’765 Patent are performed by Tesla’s customers or end-users who act at the direction and/or control of Tesla, with Tesla’s knowledge.

98. Granite is informed and believes, and on that basis alleges, that Tesla indirectly infringes claim 1 *et seq.* of the ’765 Patent by active inducement in violation of 35 U.S.C. § 271(b), by at least manufacturing, supplying, distributing, selling, and/or offering for sale the Accused Products to its customers with the knowledge and intent that use of those products would constitute direct infringement of the ’765 Patent.

99. Upon information and belief, Tesla intends to cause, and has taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g.*, https://x.com/Tesla/status/1825543473061355937 (last visited Nov. 6, 2024) (advertising Full-Self Driving updates on over the air software updates); *see also* https://www.youtube.com/watch?v=Yj4-mNGKdTM (last visited Nov. 6, 2024) (showing software can be updated via the Tesla App).

100. At least by the filing date of this Complaint, Tesla was aware of the Asserted Patents and the infringement allegations regarding the '765 Patent contained herein. Furthermore, Tesla's infringement of the '765 Patent, at least since the filing date of this Complaint, is deliberate and willful. Tesla's continued infringement is deliberate, wanton and egregious, with reckless disregard of Granite's patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

101. The acts of infringement by Tesla have caused damage to Granite, and Granite is entitled to recover from Tesla the damages sustained by Granite as a result of Tesla's wrongful acts in an amount subject to proof at trial. The infringement of the '765 Patent by Tesla has damaged and will continue to damage Granite.

COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 12,037,004

102. Granite hereby incorporates and re-alleges the preceding paragraphs as if fully set forth herein.

103. Granite holds all rights, title, and interest in and to the '004 Patent, including the right to bring this suit and recover all past, present and future damages for infringement of the '004 Patent. Tesla is not licensed to the '004 Patent, either expressly or implicitly, nor does it enjoy or benefit from any other rights in or to the '004 Patent whatsoever. As such, Tesla's infringement described below has injured, and continues to injure, Granite.

104. The '004 Patent is presumed valid and enforceable.

105. Viewed in light of the specification of the '004 Patent, the claims are ***not directed*** to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

106. The ’004 Patent claims are ***not directed*** to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

107. The ’004 Patent claims are ***not directed*** to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

108. The ’004 Patent ***does not*** take a well-known or established business method or process and apply it to a general-purpose computer.

109. Tesla directly infringes the ’004 Patent under 35 U.S.C. § 271(a) by making, using, selling, and/or offering to sell in the United States, and/or importing into the United States products that directly infringe the ’004 Patent, including the above identified Accused Products. The Accused Products infringe claim 1 *et seq.* of the ’004 Patent, in part, at least for the reasons Tesla infringes claim 4 of the ’402 Patent, detailed above.

110. Tesla also indirectly infringes claim 1 *et seq.* of the ’004 Patent. Acts constituting direct infringement of the ’004 Patent are performed by Tesla’s customers or end-users who act at the direction and/or control of Tesla, with Tesla’s knowledge.

111. Granite is informed and believes, and on that basis alleges, that Tesla indirectly infringes claim 1 *et seq.* of the ’004 Patent by active inducement in violation of 35 U.S.C. § 271(b), by at least manufacturing, supplying, distributing, selling, and/or offering for sale the Accused Products to its customers with the knowledge and intent that use of those products would constitute direct infringement of the ’004 Patent.

112. Upon information and belief, Tesla intends to cause, and has taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller

partners, solution partners, consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g.*, https://x.com/Tesla/status/1825543473061355937 (last visited Nov. 6, 2024) (advertising Full-Self Driving updates on over the air software updates); *see also* https://www.youtube.com/watch?v=Yj4-mNGKdTM (last visited Nov. 6, 2024) (showing software can be updated via the Tesla App).

113. At least by the filing date of this Complaint, Tesla was aware of the Asserted Patents and the infringement allegations regarding the ’004 Patent contained herein. Furthermore, Tesla’s infringement of the ’004 Patent, at least since the filing date of this Complaint, is deliberate and willful. Tesla’s continued infringement is deliberate, wanton and egregious, with reckless disregard of Granite’s patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys’ fees pursuant to 35 U.S.C. §§ 284-285.

114. The acts of infringement by Tesla have caused damage to Granite, and Granite is entitled to recover from Tesla the damages sustained by Granite as a result of Tesla’s wrongful acts in an amount subject to proof at trial. The infringement of the ’004 Patent by Tesla has damaged and will continue to damage Granite.

JURY DEMAND

115. Plaintiff hereby demands a trial by jury on all issues.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff requests entry of judgment in its favor and against Tesla as follows:

a) A judgment that Tesla has infringed and is infringing one or more claims of the '402 Patent, either literally or under the doctrine of equivalents;

b) A judgment that Tesla has infringed and is infringing one or more claims of the '765 Patent, either literally or under the doctrine of equivalents;

c) A judgment that Tesla has infringed and is infringing one or more claims of the '004 Patent, either literally or under the doctrine of equivalents;

d) An award of damages pursuant to 35 U.S.C. §§ 284, 285, 286, and 287 adequate to compensate Granite for Tesla's infringement of the Asserted Patents in an amount according to proof at trial (together with prejudgment and post-judgment interest), but no less than a reasonable royalty, including but not limited to a post-judgment running royalty in lieu of a permanent injunction;

e) A declaration that Tesla's infringement is willful since at least the filing of this Complaint (Dkt. 1) and enhancing damages pursuant to 35 U.S.C. § 284;

f) An award of costs and expenses pursuant to 35 U.S.C. § 284 or as otherwise permitted by law;

g) An award of attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law; and

h) Such other and further relief, whether legal, equitable, or otherwise, to which Plaintiff may be entitled or which this Court may order.

Dated: December 6, 2024

Respectfully submitted,

/s/ Alden G. Harris

Leslie Payne
Texas Bar No. 0784736
lpayne@hpcllp.com
Alden Harris (lead counsel)
Texas Bar No. 24083138
aharris@hpcllp.com
Blaine Larson
Texas Bar No. 24083360
blarson@hpcllp.com
Kyle Ruvolo
Texas Bar No. 24122153
kruvolo@hpcllp.com
Lily Glick
Texas Bar No. 24131333
lglick@hpcllp.com
HEIM PAYNE & CHORUSH LLP
609 Main St, Suite 3200
Houston, Texas 77002
Telephone: 713-221-2000
Facsimile: 713-221-2021

ATTORNEYS FOR PLAINTIFF GRANITE VEHICLE VENTURES LLC.