

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

LONGHORN AUTOMOTIVE GROUP LLC,

Plaintiff,

v.

VOLKSWAGEN AG and AUDI AG,

Defendants.

Case No. 2:24-cv-00933-JRG
(LEAD CASE)

JURY TRIAL DEMANDED

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Longhorn Automotive Group LLC (“LAG” or “Plaintiff”) for its Amended Complaint for patent infringement against Defendants Volkswagen AG (“VWAG”) and Audi AG (“Audi”) (VWAG and Audi collectively, “VW” or “Defendants”) alleges as follows:

THE PARTIES

1. LAG is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 104 E. Houston Street, Marshall, Texas 75670.

2. Upon information and belief, VWAG is a German corporation with its principal place of business located at Berliner Ring 2, 38440 Wolfsburg, Germany. VWAG is one of the largest car manufacturers and sellers in the world and in the United States. Upon information and belief, VWAG does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

3. Upon information and belief, Audi is a German corporation with its principal place of business located at Ettinger Street, 85057 Ingolstadt, Germany. Audi is one of the largest car manufacturers and sellers in the world and in the United States. Upon information and belief, Audi

is a wholly-owned subsidiary of VWAG. Upon information and belief, Audi does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

JURISDICTION

4. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has personal jurisdiction over Defendants. Defendants regularly conduct business and have committed acts of patent infringement and/or have induced acts of patent infringement by others in this Judicial District and/or have contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States.

6. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, Defendants are not residents in the United States, and thus may be sued in any judicial district pursuant to 28 U.S.C. § 1391(c)(3).

7. Defendants are subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to their substantial business in this State and Judicial District, including (a) at least part of their past infringing activities, (b) regularly doing or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas.

PATENTS-IN-SUIT

8. On August 19, 2014, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,810,803 (the "'803 Patent") entitled "Lens System". A true and

correct copy of the '803 Patent is available at:
<https://patentimages.storage.googleapis.com/b8/ee/03/9912346a786072/US8810803.pdf>.

9. On July 26, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,987,002 (the "'002 Patent") entitled "Arrangement for Distributed Measurement System for Measurement and Simulation in Distributed Control Systems". A true and correct copy of the '002 Patent is available at:
<https://patentimages.storage.googleapis.com/2e/7c/c3/eaf362f9a8faf3/US7987002.pdf>.

10. On April 7, 2009, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,513,238 (the "'238 Patent") entitled "Directly Injecting Internal Combustion Engine." A true and correct copy of the '238 Patent is available at:
<https://patentimages.storage.googleapis.com/23/6c/e0/5d3e6ec82760c9/US7513238.pdf>.

11. On September 11, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,265,353 (the "'353 Patent") entitled "Method of Reconstructing an Image Acquired Using Several Imagery Modes." A true and correct copy of the '353 Patent is available at:
<https://patentimages.storage.googleapis.com/c3/ee/14/9676306bcc9887/US8265353.pdf>.

12. On December 27, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,085,192 (the "'192 Patent") entitled "Device, System and Method for Controlling and Storing Sensitive Information on a GPS Device". A true and correct copy of the '192 Patent is available at:
<https://patentimages.storage.googleapis.com/55/8f/0d/14facb235e78ec/US8085192.pdf>.

13. LAG is the sole and exclusive owner of all right, title, and interest in the '803 Patent, the '002 Patent, the '238 Patent, the '353 Patent, and the '192 Patent (collectively, the

“Patents-in-Suit”) and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. LAG also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

14. LAG has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit.

FACTUAL ALLEGATIONS

15. The Accused Products comprise all VW vehicles made, sold, offered for sale, distributed, imported into the United States, and exported from the United States including, but not limited to, all trims and configurations of the following models: VW ID.4, the VW Atlas, the VW Atlas Cross Sport, the VW Taos, the VW Jetta, the VW Jetta GLI, the VW Arteon, the VW Golf R, and the VW Golf GTI; Audi models including, but not limited to, the e-tron GT models, the Q4 e-tron models, the Q8, e-tron models, the Q3 models, the Q5 models, the Q7 models, the Q8 models, the A3 models, the A4 models, the A5 models, the A6 models, the A7 models, the TT models, and the R8 models among other vehicles (collectively, the “Accused Products”). The Accused Products further comprise any and all components, accessories, applications, services, and devices identified herein. For example, the Accused Products further comprise Volkswagen Car-Net and Audi Connect, myVW App and myAudi app, and any related components, accessories, applications, services, and devices related thereto and identified herein. For example, the Accused Products comprise any and all headlight systems, internal combustion engines, driver assistance systems, GPS, and any related components, accessories, applications, services, and devices related thereto and identified herein.

16. The '803 Patent generally relates to a plurality of lenses, which is used for focusing and projecting the light in plurality of directions. Such patterns include those generated by systems from an emitted light source. These patterns may be analyzed by computers to identify and determine aspects of the light patterns. The technology described in the '803 Patent was developed by inventor Matt Bell. For example, this technology is implemented in VW and Audi's headlight systems included in the Accused Products. Each of the Accused Products practices the technology in the '803 Patent, including the exemplary vehicle discussed below in Count I.

17. The '002 Patent generally relates to a monitoring system with plurality of monitoring units communicating with a first interface in a first protocol which in turn is connected to a distributed control systems using a second protocol. The technology described in the '002 Patent was developed by inventor Lars-Berno Fredriksson. For example, this technology is implemented in Volkswagen Car-Net and Audi Connect, and all previous versions and iterations, included with the Accused Products. Each of the Accused Products practices the technology of the '002 Patent, including the exemplary vehicle discussed below in Count II.

18. The '238 Patent generally relates to novel direct injection in internal combustion engines where the shapes of the piston allow for early or late injection to optimize the direct injection. The technology described in the '238 Patent was developed by inventors Ruediger Pfaff, Martin Schnabel, and Joachim Suess at Daimler AG. For example, this technology is implemented in VW internal combustion engines included in VW and Audi vehicles, in all trims and configurations, including the Accused Vehicles. Each of the Accused Products practices the technology in the '238 Patent, including the exemplary vehicle discussed below in Count III.

19. The '353 Patent generally relates to measuring a mobile object using a plurality of imaging techniques in synchronization to provide video images of an object's state. The

technology described in the '353 Patent was developed by Stéphane Bonnet and Pierre Grangeat. For example, this technology is implemented in Volkswagen's and Audi's driver assistance systems, including IQ.Drive and Audi Pre Sense, and all previous versions and iterations, in all trims and configurations, including the Accused Products. Each of the Accused Products practices the technology in the '353 Patent, including the exemplary vehicle discussed below in Count IV.

20. The '192 Patent generally relates to a system and method for controlling and storing sensitive information on a global positioning system (GPS) device. The technology described in the '192 Patent was developed by Leigh M. Rothschild. For example, this technology is implemented infotainment and navigation systems in Volkswagen and Audi Multimedia Interface (MMI) systems, currently known as MIB 3, and all previous versions and iterations, included in VW and Audi vehicles, in all trims and configurations, including the Accused Products. Each of the Accused Products practices the technology in the '192 Patent, including the exemplary vehicle discussed below in Count V.

21. Defendants have infringed and are continuing to infringe the Patents-in-Suit by one or more of making, using, selling, offering to sell, importing and/or exporting, and by actively inducing others to make, use, sell, offer to sell, import and/or the Accused Products, which are used or tested by Defendants and their direct or indirect customers or end-users in the United States.

COUNT I
(Infringement of the '803 Patent)

22. Paragraphs 1 through 21 are incorporated by reference as if fully set forth herein.

23. LAG has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '803 Patent.

24. Defendants have and continue to directly infringe the '803 Patent, either literally or

under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by one or more of making, using, offering to sell, selling, importing into the United States, and/or exporting from the United States the Accused Products that satisfy each and every limitation of one or more claims of the '803 Patent. The Accused Products include, but are not limited to, VW's and Audi's headlight systems, included in all trims and configurations, such as the Audi e-tron Sportback 55 quattro. The Audi e-tron Sportback 55 quattro is exemplary and representative of the Accused Products.

25. For example, Defendants have and continue to directly infringe at least claim 15 of the '803 Patent by making, using, offering to sell, selling, and/or importing the Accused Vehicles into the United States, and/or exporting from the United States the Accused Products that include LED headlights, or equivalent thereof, such as the Audi e-tron Sportback 55 quattro, among other products.

26. For example, the Audi e-tron Sportback 55 quattro comprises a system for projecting a pattern of light (e.g., through incorporation of Digital Matrix LED Headlights):



Audi e-tron Sportback 55 quattro

1



Audi e-tron Sportback

2

HERNDON, Va., Oct. 14, 2020 – As lighting technology advances, Audi continues leading the way, now offering Digital Matrix LED (DML) headlights as optional equipment in **2021 e-tron** and **e-tron Sportback** models. This is the first time DML headlights have been mass-produced for a production vehicle.

3

¹ <https://www.audi-mediacycenter.com/en/photos/album/audi-e-tron-series-digital-matrix-led-headlights-2021>

² *Id.*

³ <https://media.audiusa.com/en-us/releases/444>

Audi's innovate lighting technology provides customers with a confidence-inspiring drive that can illuminate their road ahead. Beyond the welcome/leaving animations currently available for U.S. vehicles, the full feature set of DML headlights includes:

- A 50-meter "light carpet" that is designed to keep light within the driver's lane and extends the carpet left or right when changing lanes and helps to avoid a "blinding" effect for oncoming traffic
- Low-beam curved lighting that bends below oncoming traffic and can help illuminate people or objects on the side of the road, which are otherwise difficult to detect
- Electrostatically controlled micromirrors that can adjust light beam pixels up to 5,000 times per second
- On-ground light arrows that place the vehicle's tires within its lane

4

Comprised of 1.3 million micromirrors per headlight, DML headlights essentially operate like movie projectors, emitting tiny unique particles or adaptable light. At market introduction, this lighting technology offers a selection of five different welcome/leaving animations when the vehicle is parked, each with unique motion graphics and text selected through a vehicle's MMI touchscreen display. With DML headlights – and other innovations like a capacitive-touch steering wheel and **Integrated Toll Module®** technology – the Audi e-tron lineup continues to lead the brand in offering the latest technologies to customers.

5

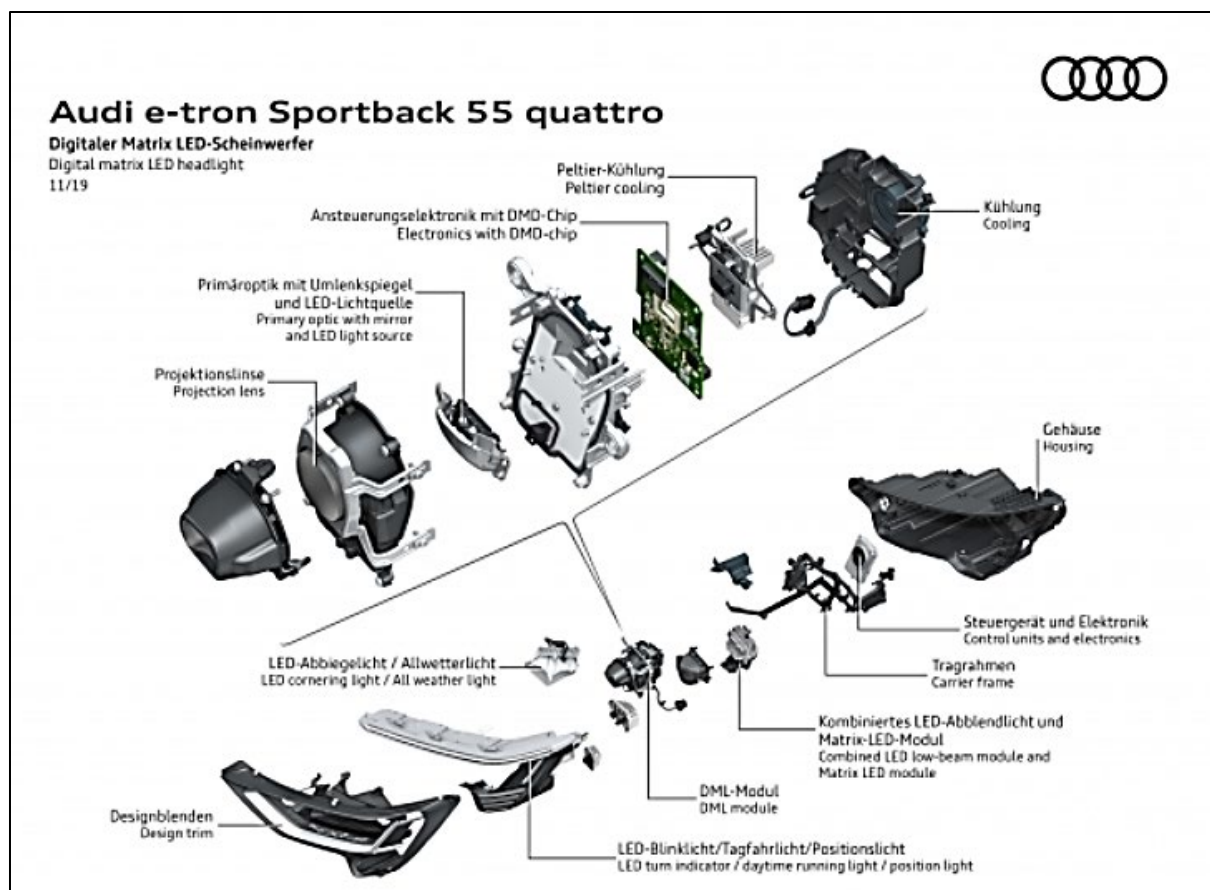
Digital Matrix LED headlights are based on digital micromirror device (DMD) technology, which is also used in video projectors for example. At its core is a small chip with around 1.3 million micromirrors with edges only a few hundredths of a millimeter long. Using electrostatic fields, each and every one of them can be angled up to 5,000 times a second. Depending on the setting, the LED light is either directed onto the road via the lenses or absorbed for the purpose of masking. This allows the light to be controlled intelligently, creating a continuously regenerating video image rather than a static beam.

6

⁴ *Id.*

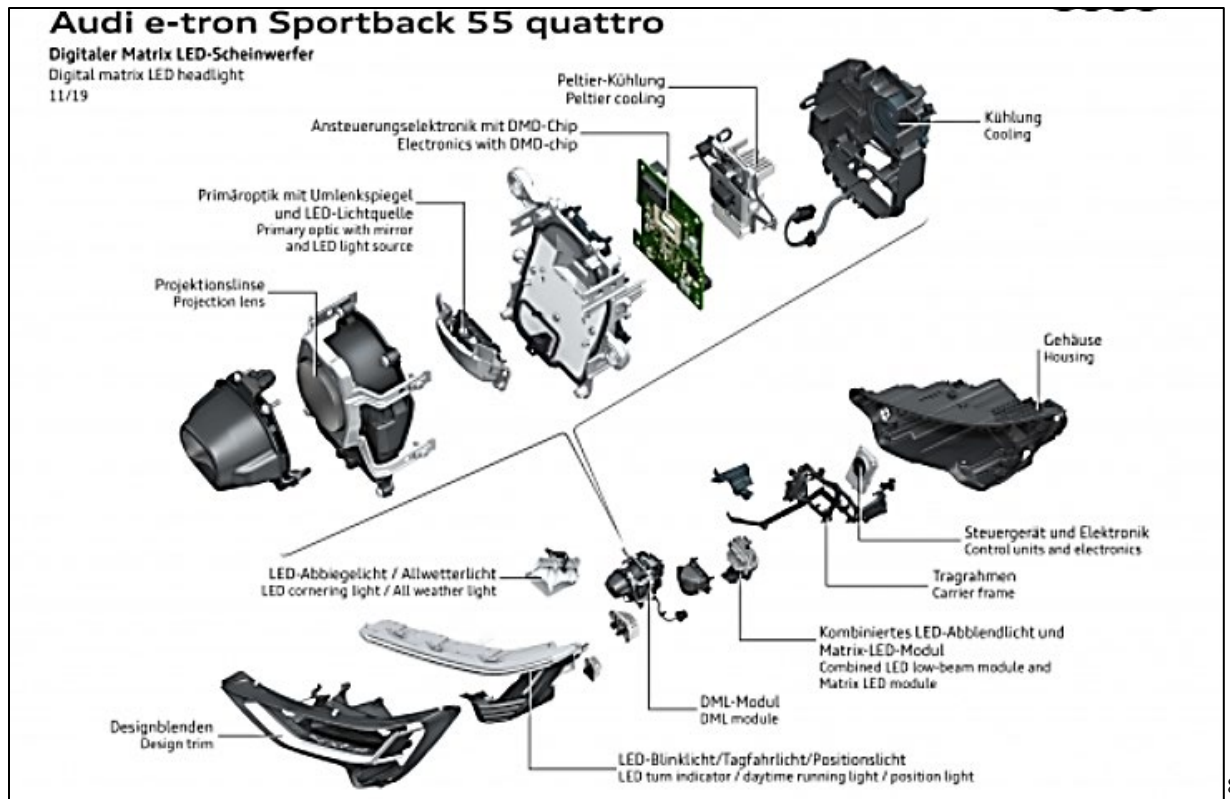
⁵ *Id.*

⁶ <https://www.audi-mediacycenter.com/en/the-new-audi-q8-e-tron-15069/new-functions-digital-matrix-led-headlights-15081>



27. The Audi e-tron Sportback 55 quattro comprises a light source (e.g., the LED lights) including a plurality of emitters configured to emit light:

⁷ <https://media.audiusa.com/en-us/releases/444>



8

Digital Matrix LED headlights are based on digital micromirror device (DMD) technology, which is also used in video projectors for example. At its core is a small chip with around 1.3 million micromirrors with edges only a few hundredths of a millimeter long. Using electrostatic fields, each and every one of them can be angled up to 5,000 times a second. Depending on the setting, the LED light is either directed onto the road via the lenses or absorbed for the purpose of masking. This allows the light to be controlled intelligently, creating a continuously regenerating video image rather than a static beam.

9

⁸ <https://media.audiusa.com/en-us/releases/444>

⁹ <https://www.audi-mediacycenter.com/en/the-new-audi-q8-e-tron-15069/new-functions-digital-matrix-led-headlights-15081>

Each of the headlights consists of 1.3 million micro-reflectors. These headlights are the same as a movie projector, each micro-mirror can emit tiny and unique adaptive light particles to project images when the car is stopped or moving.

Besides that, the mirrors' position determines what happens to the light generated by the three LEDs. A lens system directs the majority of the light onto the street; when a particular area should be dimmed, the necessary light is directed to an absorber that swallows it up.

10

28. The Audi e-tron Sportback 55 quattro comprises a cluster of lenses (e.g., a projector lens of the two-light system within one headlight), each lens included in the cluster of lenses being configured to receive the emitted light from each of the plurality of emitters:



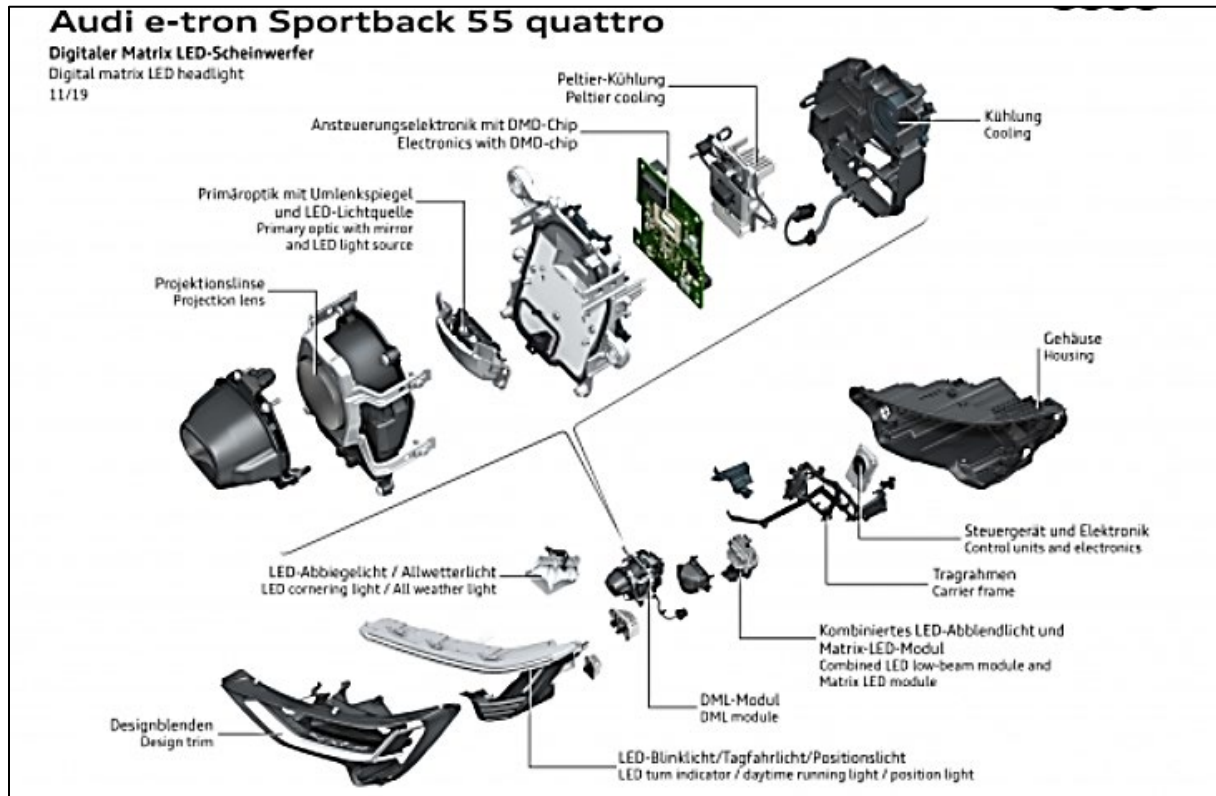
11

¹⁰ <https://www.techgenyz.com/2020/10/15/audis-new-dmled-headlights-mass-produced-models/>

¹¹ <https://www.audi-mediacycenter.com/en/photos/album/audi-e-tron-series-digital-matrix-led-headlights-2021>

Digital Matrix LED headlights are based on digital micromirror device (DMD) technology, which is also used in video projectors for example. At its core is a small chip with around 1.3 million micromirrors with edges only a few hundredths of a millimeter long. Using electrostatic fields, each and every one of them can be angled up to 5,000 times a second. Depending on the setting, the LED light is either directed onto the road via the lenses or absorbed for the purpose of masking. This allows the light to be controlled intelligently, creating a continuously regenerating video image rather than a static beam.

12



13

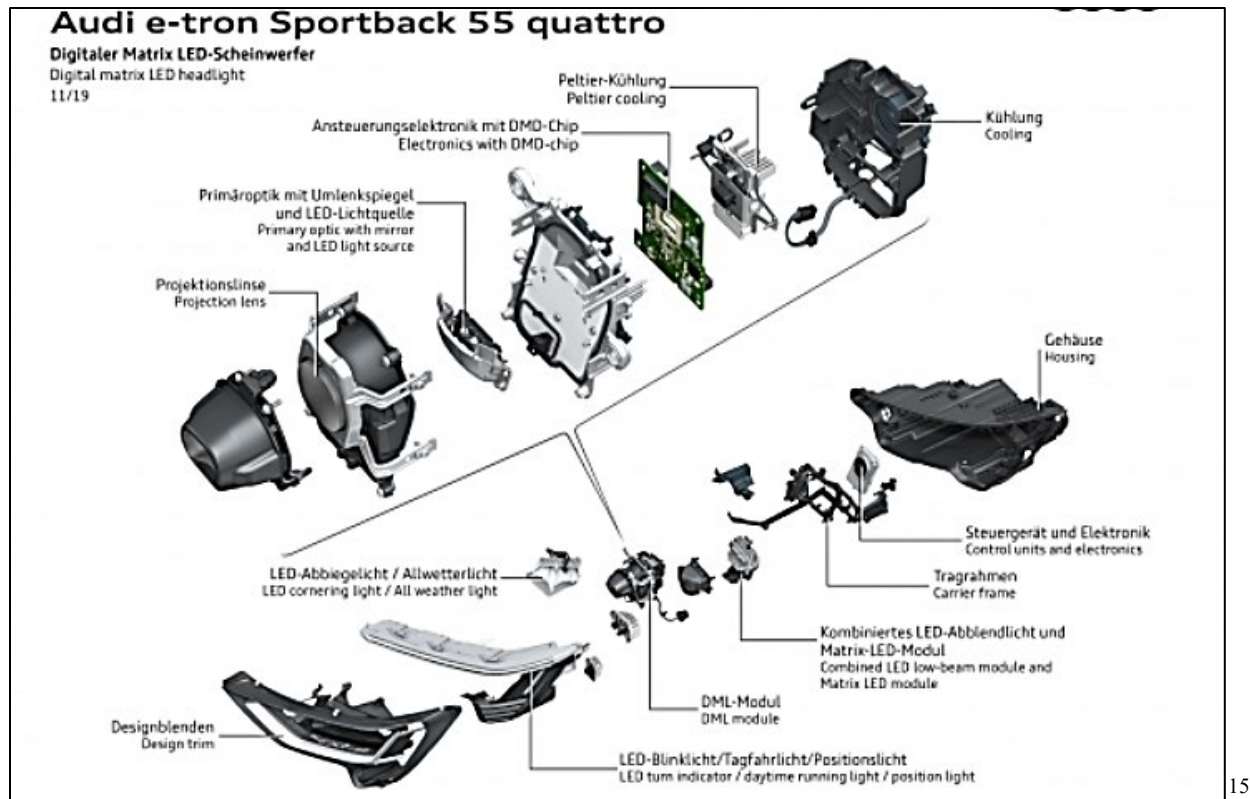
¹² <https://www.audi-mediacenter.com/en/the-new-audi-q8-e-tron-15069/new-functions-digital-matrix-led-headlights-15081>

¹³ <https://media.audiusa.com/en-us/releases/444>



29. The Audi e-tron Sportback 55 quattro comprises a condenser lens (e.g., a primary optic with a mirror) located between said light source (e.g., LEDs) and said cluster of lenses, the condenser lens concentrating light from each of the plurality of emitters towards a center of the cluster of lenses:

¹⁴ <https://www.carscoops.com/2020/10/2021-audi-e-tron-and-e-tron-sportback-now-available-with-digital-matrix-led-headlights/>



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¹⁵ <https://media.audiusa.com/en-us/releases/444>

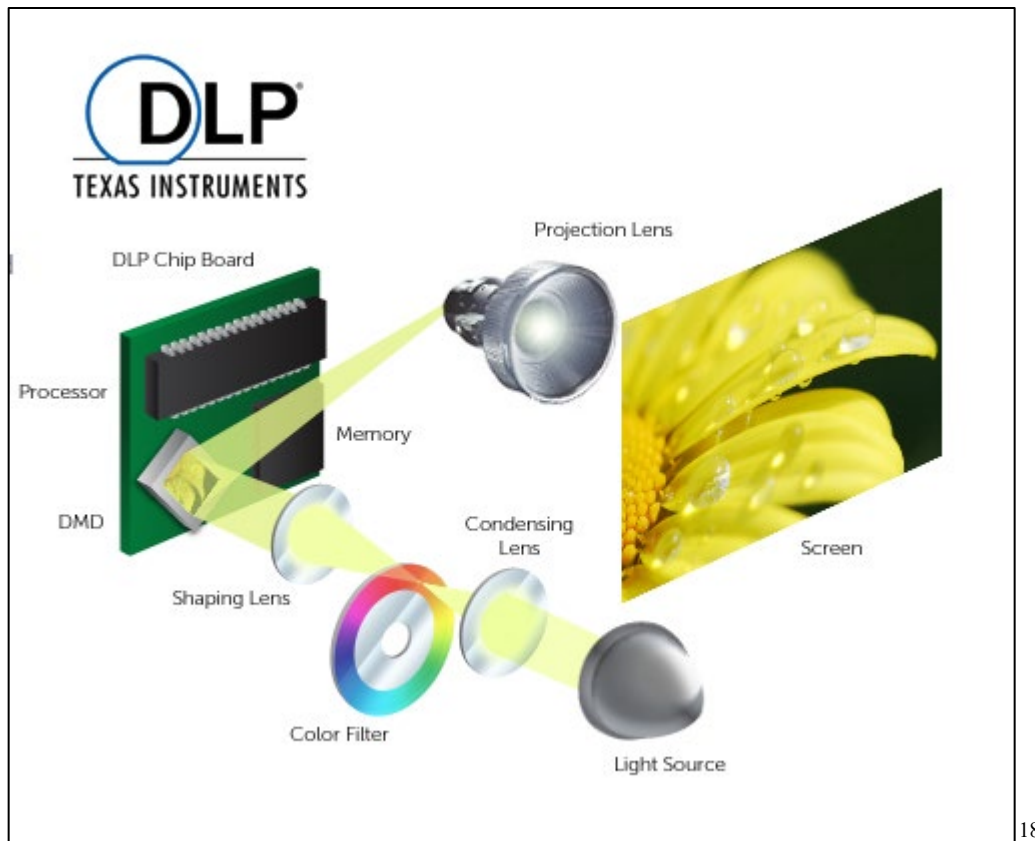


¹⁶ <https://www.carscoops.com/2020/10/2021-audi-e-tron-and-e-tron-sportback-now-available-with-digital-matrix-led-headlights/>



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¹⁷ <https://www.youtube.com/watch?v=oRY8wN5ue2Y>



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30. Defendants have and continue to indirectly infringe one or more claims of the '803 Patent by knowingly and intentionally inducing others, including VW customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology. Defendants, with knowledge that these products, or the use thereof, infringe the '803 Patent at least as of the date of the Original Complaint, knowingly and intentionally induced, and continue to knowingly and intentionally induce, direct infringement of the '803 Patent by providing these products to customers and end-users for use in an infringing manner. Alternatively, on information and belief, Defendants have adopted a policy of not reviewing the patents of others, and instructing their officers, agents, and employees to not review the patents of others, including specifically

¹⁸ <https://www.vivitek.eu/support/want-the-facts/technology-learning-center>

those related to Defendants' specific industry, with the subject belief that there was a high probability that Defendants would learn of their infringing activities, thereby remaining willfully blind to the '803 Patent at least as early as the issuance of the '803 Patent.

31. Defendants have and continue to induce infringement by others, including customers and end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '803 Patent, but while remaining willfully blind to the infringement. Defendants have and continue to induce infringement by their customers and end-users by supplying them with instructions on how to operate the infringing technology in an infringing manner, while also making publicly available information on the infringing technology via Defendants' website, product literature and packaging, and other publications.¹⁹ For example, Defendants prepare and provide customers and end-users with Owner's Manuals for their specific vehicles, as well as access to other vehicle information. On information and belief, Defendants' Owner's Manuals and other vehicle information documents are prepared by or under the direction of Defendants to instruct customers and end-users on how to use the Accused Products in an infringing manner. On information and belief, these Owner's Manuals and other vehicle information documents are prepared by Defendants.

¹⁹ See Audi e-tron Sportback 55 quattro Owner's Manual, available with VIN Number at: <https://ownersmanual.audiusa.com/>; see also <https://www.vw.com/en/owners-and-services/about-my-vehicle/owners-manual.html>; <https://maintenance.vw.com/#/search>; <https://literature.vw.com/welcome.asp>; https://literature.vw.com/find.asp?session=69E100F528554708BC81DC9ABED8D049&c=NGN9O8SF6VVQ1FD&s=&dept_id=26.

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Owner's Manual
English North America 01.2024
4M2012721BA

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32. Because of Defendants' inducement, Defendants' customers and end-users use Accused Products in a way Defendants intend and directly infringe the '803 Patent. Defendants perform these affirmative acts with knowledge of the '803 Patent and with the intent, or willful blindness, that the induced acts directly infringe the '803 Patent.

33. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the '803 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States.

²⁰ See 2025 Volkswagen Jetta Owner's Manual, Edition 2024/07, United States Version, available at: <https://ownersmanuals2.com/d/101620/volkswagen-jetta-2025-owners-manual>.

²¹ See 2025 Audi Q7 Owner's Manual, English North America, 01.2024, available for download at: <https://ownersmanuals2.com/audi/q7-2025-owners-manual-98520>. On information and belief, the Owner's Manuals for all other Audi models are prepared by Audi.

Defendants' affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '803 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '803 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendants to be especially made or adapted for use in the infringement of the '803 Patent. Defendants perform these affirmative acts with knowledge of the '803 Patent and with intent, or willful blindness, that they cause the direct infringement of the '803 Patent.

34. LAG has suffered damages as a result of Defendants' direct and indirect infringement of the '803 Patent in an amount to be proved at trial.

35. LAG has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '803 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT II
(Infringement of the '002 Patent)

36. Paragraphs 1 through 21 are incorporated by reference as if fully set forth herein.

37. LAG has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '002 Patent.

38. Defendants have and continue to infringe the '002 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by one or more of making, using, offering to sell, selling, and/or importing into the United States and/or exporting from the United States the Accused Products that satisfy each and every limitation of one or more claims of the '002 Patent. The Accused Products include, but are not limited to, the myVW app

and myAudi app working in connection with Volkswagen Car-Net and Audi Connect, respectively, in all trims and configurations, including the Accused Products, such as the Audi A8. The Audi A8 is representative of the Accused Products.

39. For example, Defendants have and continue to directly infringe at least Claim 15 of the '002 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include the myVW app and myAudi app working in connection with Volkswagen Car-Net and Audi Connect, such as the Audi A8, among other vehicles.

40. The Audi A8 comprises a monitoring system (e.g., through the implementation of the Audi Connect System and the myAudi app):



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²² <https://media.audiusa.com/en-us/releases/509#gallery>

2022 Audi A8 Technology Features

The **2022 Audi A8** was designed with a multitude of integrated assistive technology such as the available Audi connect® intelligent navigation and the available remote vehicle services such as car finder and roadside assistance. The available head-up display in the 2022 Audi A8 projects important information about your drive and your vehicle within your field of vision on the windshield, and to stream your favorite media and access your apps and contacts, the 2022 Audi A8 has connectivity with both Apple CarPlay® and Android Auto™. For anyone looking for a truly deep and immersive audio experience while driving your new **2022 Audi A8**, there is an available Bang & Olufsen® premium sound system with 3D sound.

- Audi connect® intelligent navigation
- Remote vehicle services
- Available head-up display
- Apple CarPlay® and Android Auto™
- Available Bang & Olufsen® premium sound system

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²³ <https://www.greenaudi.com/research/new-audi-a8-interior.htm#:~:text=2022%20Audi%20A8%20Technology%20Features,car%20finder%20and%20roadside%20assistance>

Additional features



Safety services

- Stolen Vehicle Locator – Have an Audi-designated representative work with the police to recover your vehicle.¹¹
- Online Roadside Assistance – Get help with flat tires, fuel delivery, and more.¹²
- Audi Service Request – Schedule services from your smartphone.¹³
- Map Update – Keeps maps up to date for accurate navigation.¹⁴

[View key feature information >](#)



Remote services

- Car Finder – Locate your Audi remotely.¹⁵

[View key feature information >](#)



EV services

- Charging Location Finder – Find nearby charging stations.¹⁶
- Remote Charging – Monitor charging on your smartphone.¹⁷
- Driving Data – View driving data and insights on your smartphone.

[View key feature information >](#)

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myAudi app

Keep in touch with your Audi through the myAudi app. Get real-time information about your fuel level, vehicle location, and more—right at your fingertips.



Download for iOS



Download for Android



[View myAudi app FAQs](#)

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²⁴ <https://www.audiusa.com/us/web/en/inside-audi/innovation/audi-connect/audi-connect-care.html>

²⁵ <https://www.audiusa.com/us/web/en/about-myaudi.html>

Standard driver assistance features:

- Rearview camera
- Forward collision warning
- Forward automatic emergency braking
- Lane departure warning
- Automatic high-beam headlights
- Rain-sensing windshield wipers
- Surround-view parking camera system
- Front and rear parking sensors

26

Peace of mind: safety-enhancing tech and driver assistance

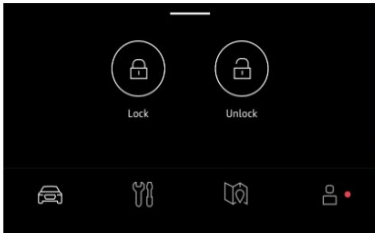
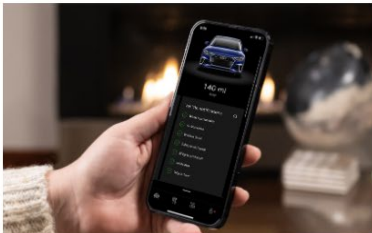
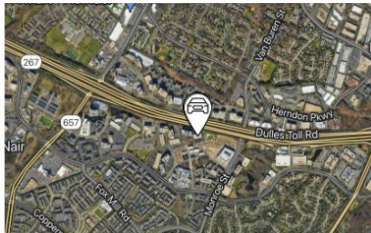
Delivering an Audi benchmark in driver assistance and convenience systems, the 2022 A8 continues to set the standard in luxury, providing increased ease of mind and operation through its comprehensive assistance functionality. The A8 comes to market with a suite of standard and available equipment to ensure complete dynamics and driving assistance. Enhancements to this standard package include the optional stress reducing adaptive cruise assist, advanced collision mitigation and cross traffic assist, through its onboard sensors, cameras and laser.

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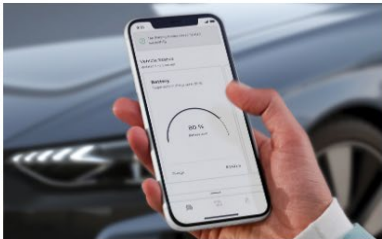
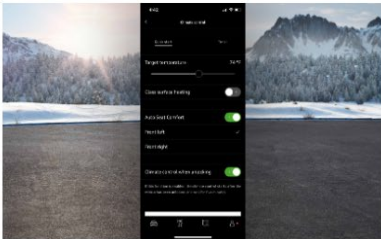
41. The Audi A8 comprises a plurality of monitoring units (e.g., the my Audi app, the Audi Connect Server Platform, and/or the Audi Multimedia Interface (MMI)) configured to communicate with at least one interface unit (e.g., the telematics control unit (TCU)) using a first protocol (e.g., a cellular network), wherein the at least one interface unit is communicably connected to a distributed control system (e.g., the vehicle's electronic control modules (ECUs), such as the Body Control Module (BCM) or Engine Control Module (ECM)), and the at least one interface unit is further configured to receive data values from the distributed control system using a second protocol (e.g., CAN communication):

²⁶ <https://cars.usnews.com/cars-trucks/audi/a8/2022>

²⁷ <https://media.audiusa.com/en-us/releases/509>

		
Remote Lock / Unlock Lock and unlock your Audi remotely. View key feature information >	Vehicle Status Report Receive maintenance reminders and alerts about vehicle concerns. View key feature information >	Car Finder Locate your Audi remotely. View key feature information >

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Static Charging Location Finder Find nearby charging stations for your EV. View key feature information >	Remote Charging Monitor charging status for your EV on your smartphone. View key feature information >	Remote Climatization Adjust the cabin temperature of your EV from anywhere. View key feature information >

29

		
Emergency Call Quickly notify authorities in the event of an emergency. View key feature information >	Stolen Vehicle Locator Contact authorities for help locating your vehicle. View key feature information >	Online Roadside Assistance Get help with flat tires, fuel delivery, and more. View key feature information >

30

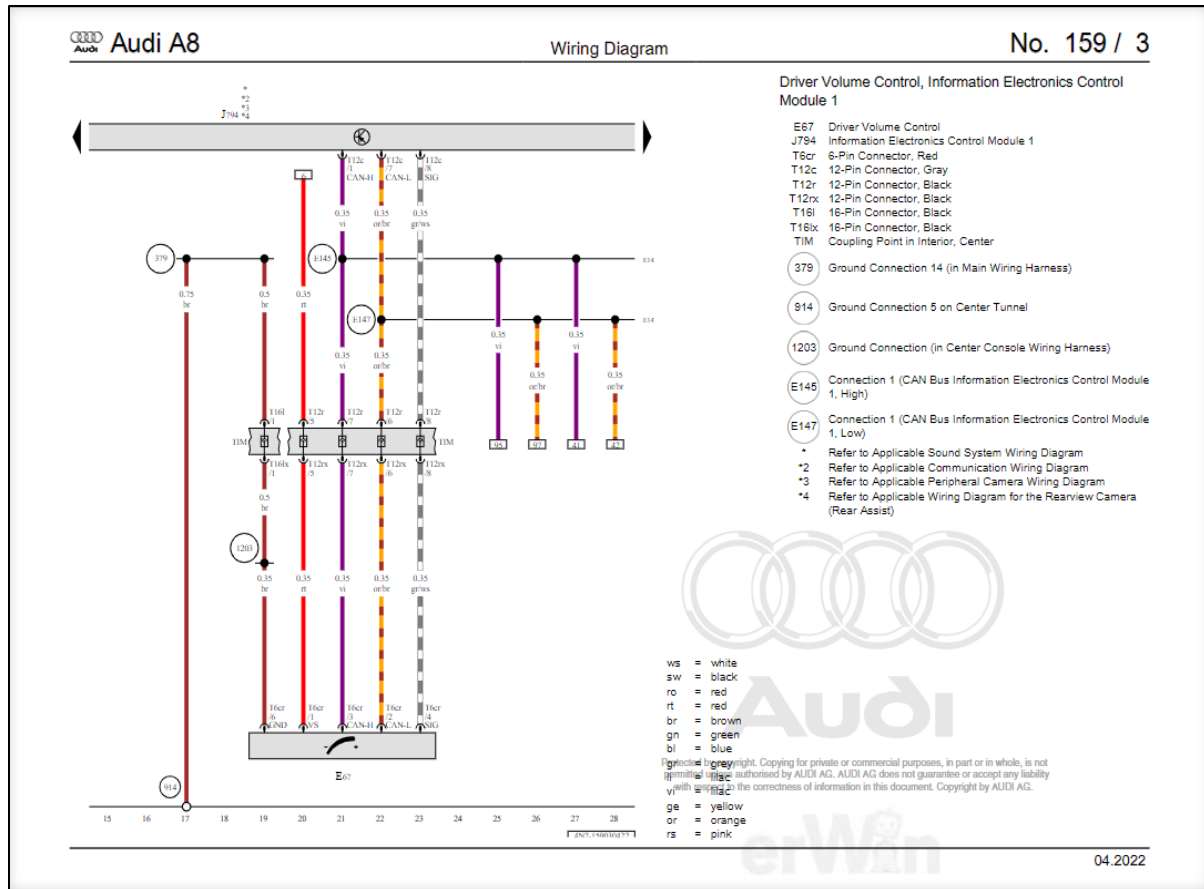
²⁸ <https://www.audiusa.com/us/web/en/inside-audi/innovation/audi-connect/audi-connect-all-features.html>

²⁹ *Id.*

³⁰ *Id.*

and control via the Audi connect® app. Using cloud-based data, Audi connect® services keep drivers informed and entertained both on and off the roads of Costa Mesa. Discover more about Audi connect® services, including Audi connect® costs and how to set up Audi connect®, with Audi Fletcher Jones!

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³¹ <https://www.audifletcherjones.com/audi-connect.htm>

³² <https://cardiagn.com/audi-a8-s8-4nl-wiring-diagram-mmi-information-electronics-1/>

Audi connect

**Audi connect
Infotainment**

Description

Applies to: vehicles with Audi connect Infotainment

With Audi connect Infotainment services, online information is transmitted directly to the vehicle.

An Internet connection is required to use Audi connect Infotainment. The Internet connection is established using the embedded SIM card (eSIM).

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42. The Audi A8 comprises a plurality of monitoring units configured to communicate with at least one interface unit using a first protocol, wherein the at least one interface unit is communicably connected to a distributed control system, and the at least one interface unit is further configured to receive data values from the distributed control system using a second protocol; wherein the plurality of monitoring units comprises at least one complex monitoring unit (e.g., the Audi Connect Server Platform) and at least one basic monitoring unit (e.g., the myAudi app with remote services):

³³ <https://ownersmanuals2.com/make/audi/a8-2022-15489>



Audi connect subscription status

With an Audi connect subscription, you can access connected features already equipped on your Audi. View your Audi connect subscription status within myAudi to see what connected packages are active and available on your vehicle.⁴

[Learn more](#)

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myAudi app

Keep in touch with your Audi through the myAudi app. Get real-time information about your fuel level, vehicle location, and more—right at your fingertips.



Download for iOS



Download for Android



View myAudi app FAQs

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43. The Audi A8 comprises a plurality of monitoring units configured to communicate with at least one interface unit using a first protocol, wherein the at least one interface unit is communicably connected to a distributed control system, and the at least one interface unit is further configured to receive data values from the distributed control system using a second protocol; wherein the at least one complex monitoring unit (e.g., the Audi Connect Server

³⁴ <https://www.audiusa.com/us/web/en/about-myaudi/vehicle-functions.html>

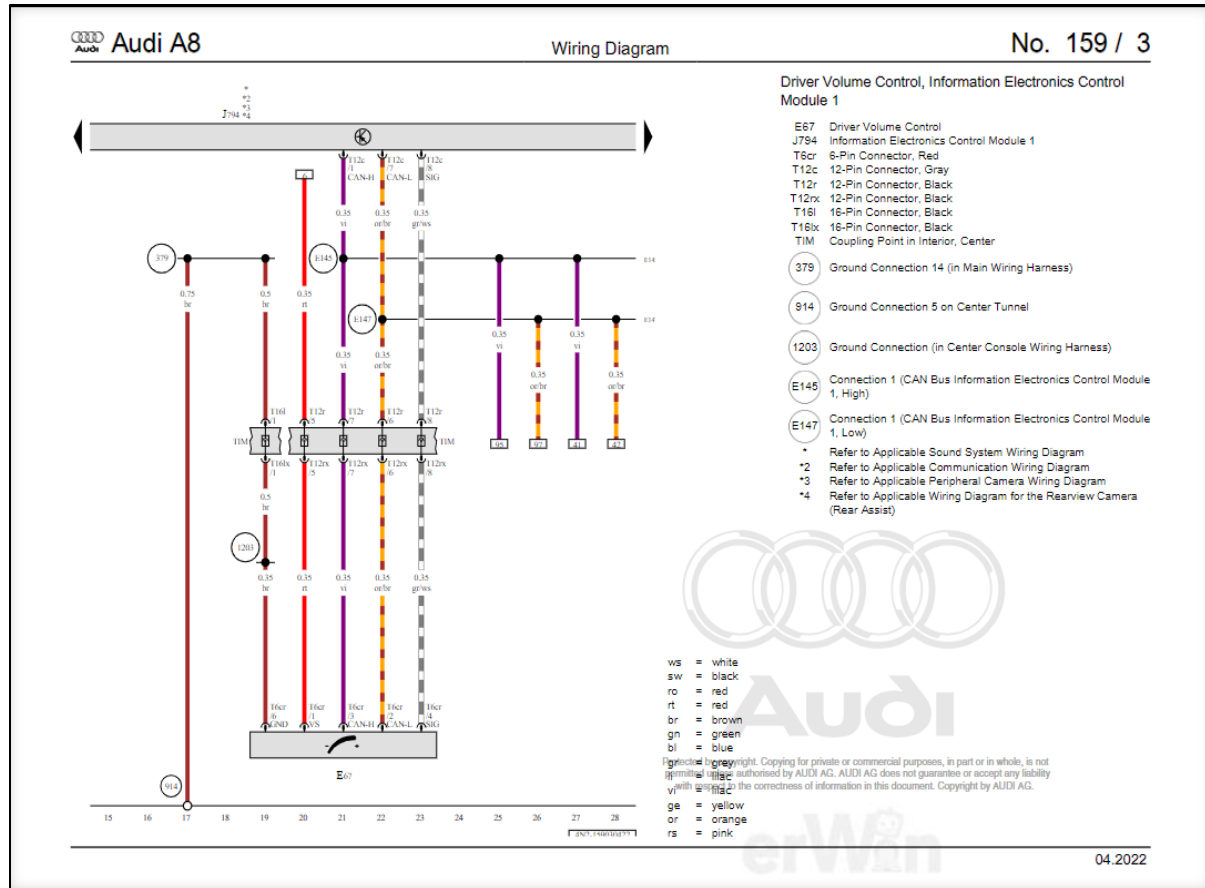
³⁵ <https://www.audiusa.com/us/web/en/about-myaudi.html>

Platform) is configured to receive a plurality of data values (e.g., engine performance, vehicle speed, and other data) from the at least one interface unit (e.g., the TCU) using the first protocol (e.g., cellular and/or Bluetooth) and to generate programmatic instructions for the at least one basic monitoring unit (e.g., the myAudi app with remote services):

#	Product Name	
 1	Control. Module. ALL WHEEL DRIVE. Control module. from 02/08/2021. to 02/08/2021. A Module in a vehicle used to monitor and Control many components of the vehicle's engine management system. Active Differential. ALL Wheel Drive. Control ModuleS. Differential Control Module. From 02/08/2021. ModuleS. To 02/08/2021. Transfer Case Control Module. CONTOUR Unit. Differential. ECC. Engine (ECM). Engine Computer. Engine Unit (ECU). General Purpose Embedded Unit. Powertrain. Transfer Case Shift.	
 2	Engine Control Module (ECM) Bracket ALL WHEEL DRIVE. Bracket. type 1.	
 2	Engine Control Module (ECM) Bracket ALL WHEEL DRIVE. Bracket. type 2.	

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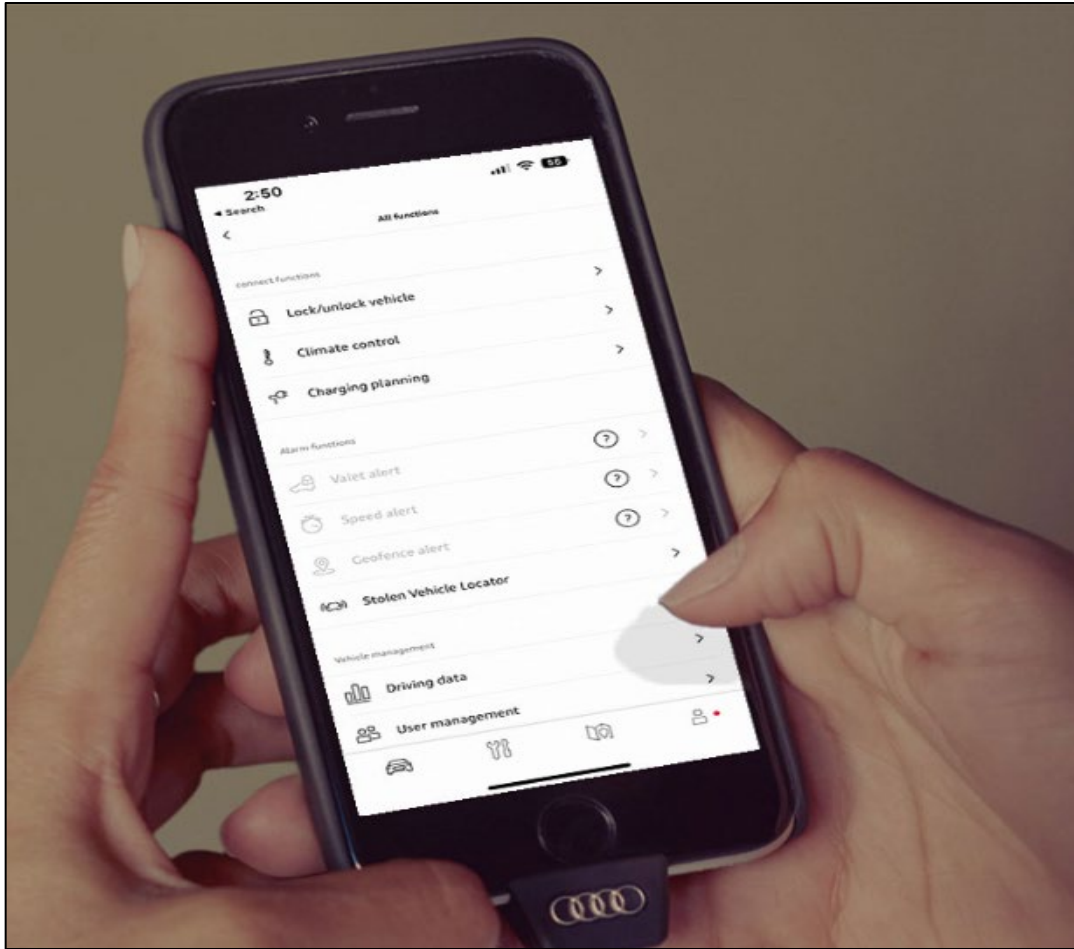
³⁶ https://parts.audiusa.com/a/Audi_2022_A8/_56655_8434302/ELECTRICAL-COMPONENTS/1363265.html?assemblySearchGuid=4CC35D51-9F32-4E0E-9F5F-A8A7DC307B29



44. The Audi A8 comprises a plurality of monitoring units configured to communicate with at least one interface unit using a first protocol, wherein the at least one interface unit is communicably connected to a distributed control system, and the at least one interface unit is further configured to receive data values from the distributed control system using a second protocol; wherein the at least one basic monitoring unit (e.g., the myAudi app with remote services) is configured to receive the programmatic instructions (e.g., vehicle status data) and in response thereto to receive a subset of the plurality of data values from the at least one interface unit (e.g., TCU) using the first protocol (e.g., cellular):

³⁷ <https://cardiagn.com/audi-a8-s8-4nl-wiring-diagram-mmi-information-electronics-1/>





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45. Defendants have and continue to indirectly infringe one or more claims of the '002 Patent by knowingly and intentionally inducing others, including VW customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

46. Defendants, with knowledge that these products, or the use thereof, infringe the '002 Patent at least as of the date of the Original Complaint, knowingly and intentionally induced, and continue to knowingly and intentionally induce, direct infringement of the '002 Patent by providing these products to customers and end-users for use in an infringing manner.

⁴⁰ <https://www.audiusa.com/us/web/en/about-myaudi.html>

Alternatively, on information and belief, Defendants have adopted a policy of not reviewing the patents of others, and instructing their officers, agents, and employees to not review the patents of others, including specifically those related to Defendants' specific industry, with the subject belief that there was a high probability that Defendants would learn of their infringing activities, thereby remaining willfully blind to the '002 Patent at least as early as the issuance of the '002 Patent. Defendants have and continue to induce infringement by others, including customers and end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '002 Patent, but while remaining willfully blind to the infringement. Defendants have and continue to induce infringement by their customers and end-users by supplying them with instructions on how to operate the infringing technology in an infringing manner, while also making publicly available information on the infringing technology via Defendants' website, product literature and packaging, and other publications.⁴¹ For example, Defendants prepare and provide customers and end-users with Owner's Manuals for their specific vehicles, as well as access to other vehicle information. On information and belief, Defendants' Owner's Manuals and other vehicle information documents are prepared by or under the direction of Defendants to instruct customers and end-users on how to use the Accused Products in an infringing manner. On information and belief, these Owner's Manuals and other vehicle information documents are prepared by Defendants.

⁴¹ See Audi A8 Owner's Manual, available with VIN Number at: <https://ownersmanual.audiusa.com/>; see also <https://www.vw.com/en/owners-and-services/about-my-vehicle/owners-manual.html>; <https://maintenance.vw.com/#/search>; <https://literature.vw.com/welcome.asp>; https://literature.vw.com/find.asp?session=69E100F528554708BC81DC9ABED8D049&c=NGN9O8SF6VVQ1FD&s=&dept_id=26.

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Owner's Manual
English North America 01.2024
4M2012721BA

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47. Because of Defendants' inducement, Defendants' customers and end-users use Accused Products in a way Defendants intend and directly infringe the '002 Patent. Defendants performs these affirmative acts with knowledge of the '002 Patent and with the intent, or willful blindness, that the induced acts directly infringe the '002 Patent.

48. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the '002 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States.

⁴² See 2025 Volkswagen Jetta Owner's Manual, Edition 2024/07, United States Version, available at: <https://ownersmanuals2.com/d/101620/volkswagen-jetta-2025-owners-manual>.

⁴³ See 2025 Audi Q7 Owner's Manual, English North America, 01.2024, available for download at: <https://ownersmanuals2.com/audi/q7-2025-owners-manual-98520>. On information and belief, the Owner's Manuals for all other Audi models are prepared by Audi.

Defendants' affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '002 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '002 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendants to be especially made or adapted for use in the infringement of the '002 Patent. Defendants perform these affirmative acts with knowledge of the '002 Patent and with intent, or willful blindness, that they cause the direct infringement of the '002 Patent.

49. LAG has suffered damages as a result of Defendants' direct and indirect infringement of the '002 Patent in an amount to be proved at trial.

50. LAG has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '002 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT III
(Infringement of the '238 Patent)

51. Paragraphs 1 through 21 are incorporated by reference as if fully set forth herein.

52. LAG has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '238 Patent.

53. Defendants have and continue to infringe the '238 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by one or more of making, using, offering to sell, selling, and/or importing into the United States and/or exporting from the United States the Accused Products that satisfy each and every limitation of one or more claims of the '238 Patent. The Accused Products comprise, but are not limited to, VW and Audi

vehicles with direct injection engines, in all trims and configurations of the Accused Products, such as Audi's FSI Direct Injection engine in the Audi Q7. Audi's FSI Direct Injection engine in the Audi Q7 is exemplary and representative of the Accused Product.

54. For example, Defendants have and continue to directly infringe at least Claim 1 of the '238 Patent by making, using, offering to sell, selling, and/or importing into the United States, and/or exporting from the United States the Accused Product that include VW and Audi vehicles with direct injection engines, in all trims and configurations, such as VW/Audi's FSI Direct Injection engine in the Audi Q7.

55. The Audi Q7 comprises a directly injecting internal combustion engine (e.g., Audi's FSI Direct Injection engine), comprising at least one cylinder which has a combustion space (e.g., combustion chamber):

The 3.2L and 3.6L V6 FSI engines are the newest representatives of the narrow V family of engines.

While the 3.2L version was first introduced in the Audi TT, the 3.6L FSI version is making its debut in the Audi Q7.

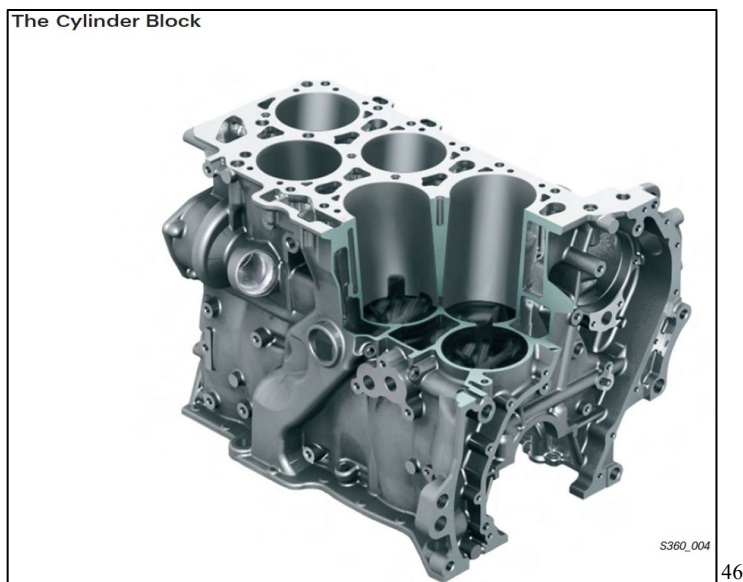
44

The use of FSI direct fuel injection technology makes it possible to meet current Low Emission Vehicle (LEV2) emission standards.

45

⁴⁴ <https://www.scribd.com/document/439225117/Vwusa-com-AUDI-3-2l-3-6l-Fsi-Engine>

⁴⁵ *Id.*



Audi FSI® Direct Injection

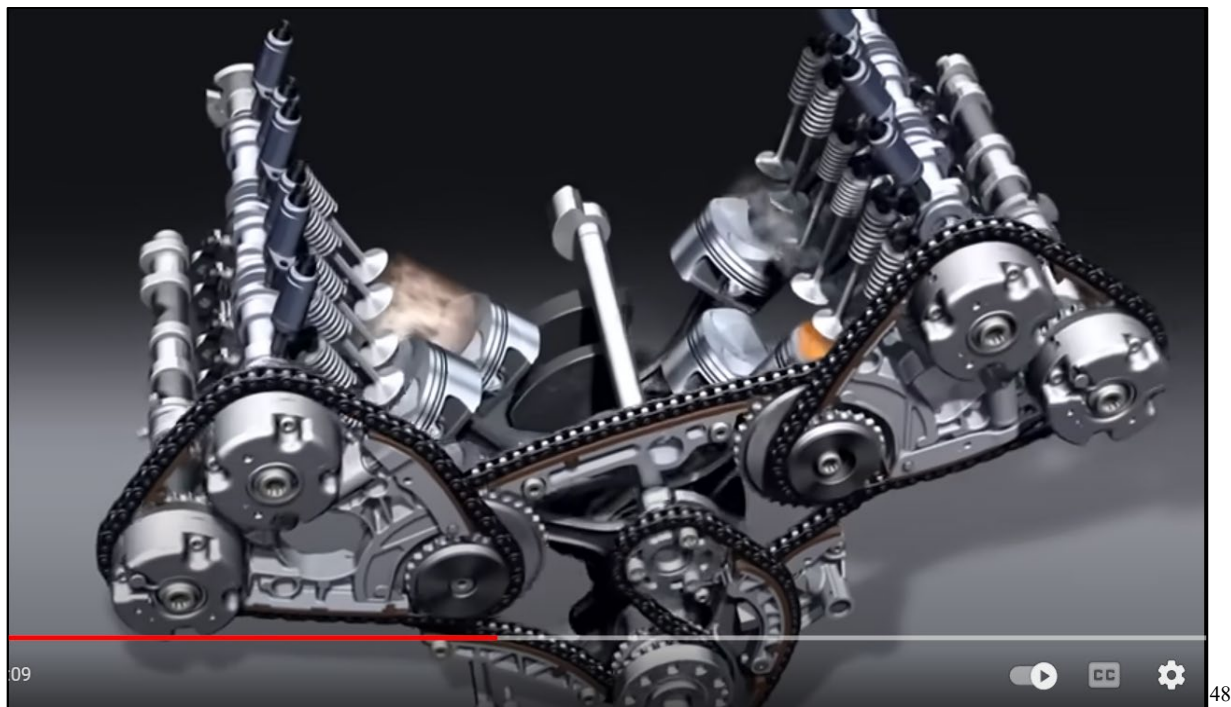
An innovation exclusive to Audi, FSI® direct injection sets a new standard for engine power, performance and efficiency.

In contrast to conventional intake manifold injection on conventional spark-ignition engines, FSI® Direct Injection engines inject fuel directly into the combustion chambers, dispensing with the throttle plate. That unthrottles the engine, reduces heat loss and thus increases output while reducing fuel consumption.

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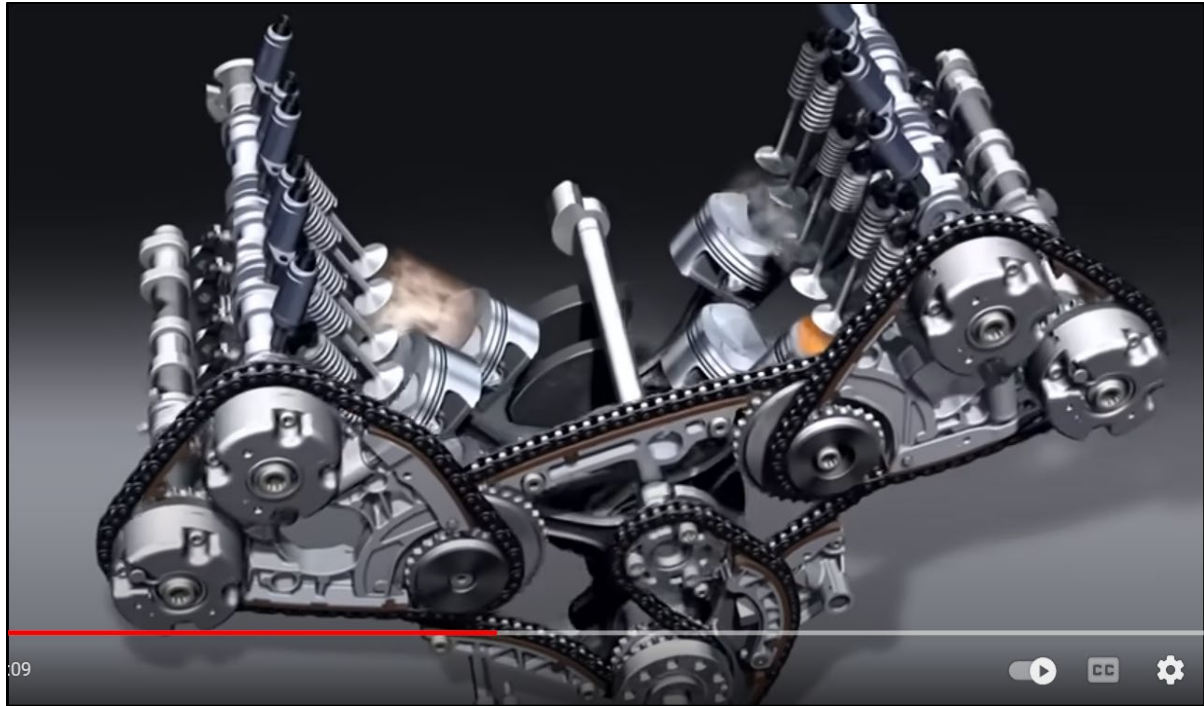
⁴⁶ <https://www.scribd.com/document/439225117/Vwusa-com-AUDI-3-2l-3-6l-Fsi-Engine>

⁴⁷ <https://www.audicolumbus.com/fsi--direct-injection.htm>



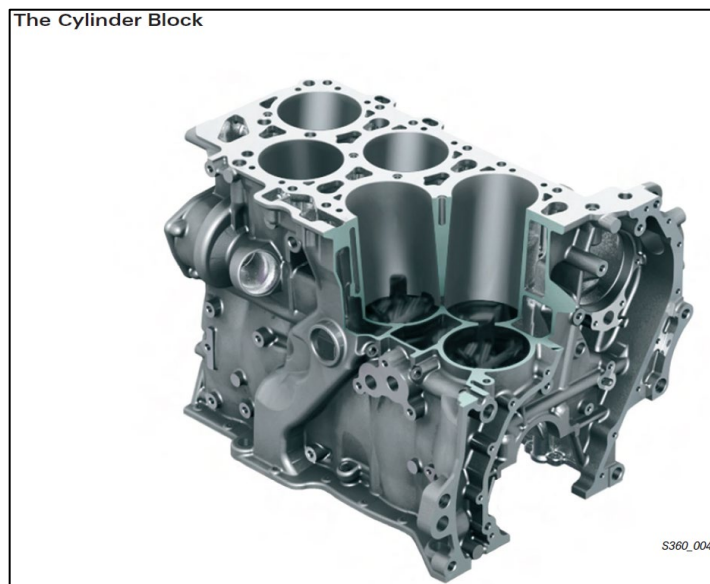
56. The Audi Q7 comprises a directly injecting internal combustion engine, comprising at least one cylinder which has a combustion space in which a piston executes an oscillating movement (e.g., piston movement is oscillatory, increasing pressure and temperature in preparation for combustion, aided by injectors to maximize the benefits of higher fuel pressure), and an injection nozzle for injection of fuel into the combustion space:

⁴⁸ <https://youtu.be/5hKKO89VbQ0?si=x1nK6-2Q-pCQqrrT&t=83>



09

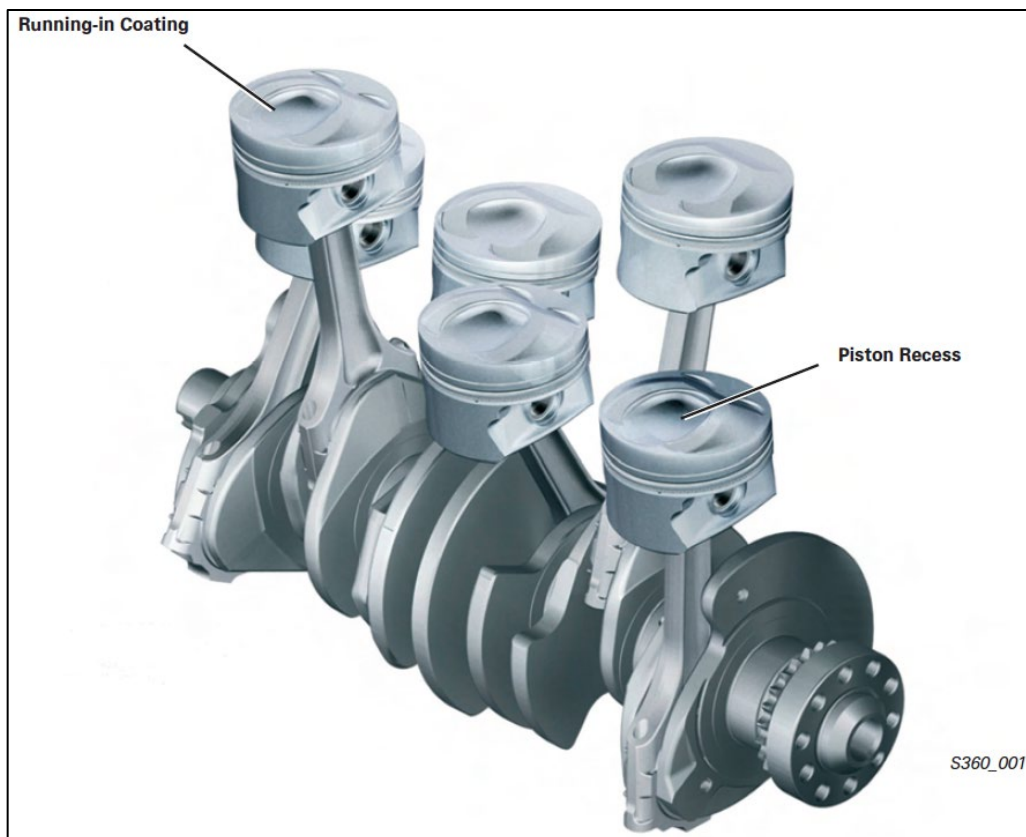
49



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⁴⁹ <https://youtu.be/5hKKO89VbQ0?si=x1nK6-2Q-pCQqrrT&t=83>

⁵⁰ <https://www.scribd.com/document/439225117/Vwusa-com-AUDI-3-2l-3-6l-Fsi-Engine>



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During the exhaust stroke, the intake and the exhaust valves are both open simultaneously. As a result of the high intake manifold vacuum, some of the combustion gases are drawn out of the combustion chamber back into the intake manifold and swirled into the combustion chamber with the next induction stroke for the next combustion cycle.

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⁵¹ *Id.*

⁵² *Id.*

Direct gasoline injection requires precise timing of the combustion process.

The factors affecting the combustion process are:

- Cylinder bore and stroke
- Shape of the recess in the piston surface
- Valve diameter and lift
- Valve timing
- Geometry on the intake ports
- Volumetric efficiency of the fresh air supplied
- Fuel injector characteristics (spray cone, spray angle, flow amount, system pressure and timing)
- Engine rpm

An essential part in the optimization of the combustion performance is the study of airflow characteristics in the combustion chamber. The mixture formation is substantially affected by the flow characteristics of the intake air and the injected fuel.

53

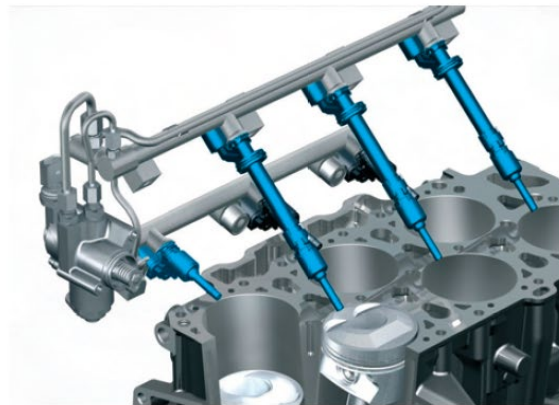
The Cylinders 1-6 Fuel Injectors N30, N31, N32, N33, N83, N84

The High-Pressure FSI Fuel Injectors are inserted into the cylinder head. They are triggered by the ECM in accordance with the firing orders. When triggered, they spray fuel directly into the cylinder.

Due to the design of the engine, injection takes place from one side. For this reason, the fuel injectors for cylinder bank 1, 3 and 5 are longer than the fuel injectors for cylinder bank 2, 4 and 6.

Effects of a Failure

A defective fuel injector is recognized by misfire detection and is no longer triggered.



S360_137

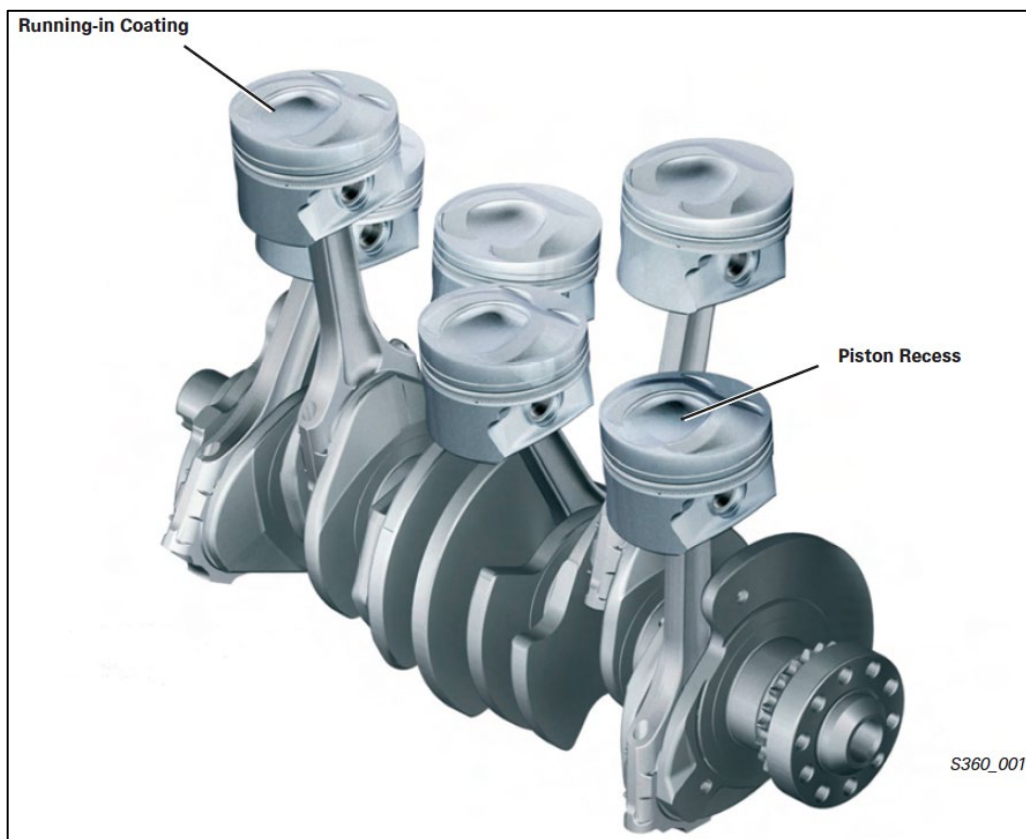
54

57. The Audi Q7 comprises a directly injecting internal combustion engine, comprising at least one cylinder which has a combustion space in which a piston executes an oscillating movement, and an injection nozzle for injection of fuel into the combustion space wherein the

⁵³ *Id.*

⁵⁴ *Id.*

piston has a piston recess, which, in a central region thereof, has an elevation extending in a cylinder head direction (e.g., the top of the cylinder with a recess shape), and a surface of the piston recess adjoining the elevation in a recess edge direction is connected to the elevation via a radius:



55

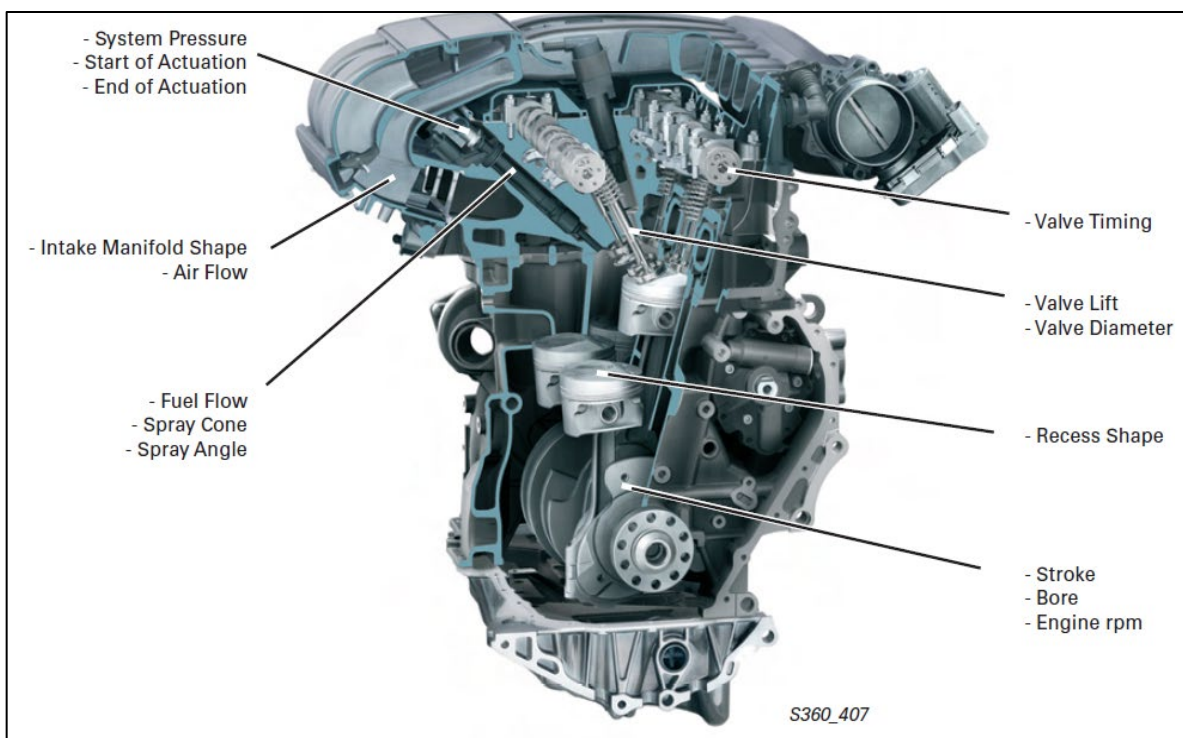
The Pistons

The pistons are of the recessed piston design and are made of aluminum alloy. In order to improve break-in characteristics, they have a graphite coating.

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⁵⁵ <https://www.scribd.com/document/439225117/Vwusa-com-AUDI-3-2l-3-6l-Fsi-Engine>

⁵⁶ *Id.*



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Direct gasoline injection requires precise timing of the combustion process.

The factors affecting the combustion process are:

- Cylinder bore and stroke
- Shape of the recess in the piston surface
- Valve diameter and lift
- Valve timing
- Geometry on the intake ports
- Volumetric efficiency of the fresh air supplied
- Fuel injector characteristics (spray cone, spray angle, flow amount, system pressure and timing)
- Engine rpm

An essential part in the optimization of the combustion performance is the study of airflow characteristics in the combustion chamber. The mixture formation is substantially affected by the flow characteristics of the intake air and the injected fuel.

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⁵⁷ *Id.*

⁵⁸ *Id.*

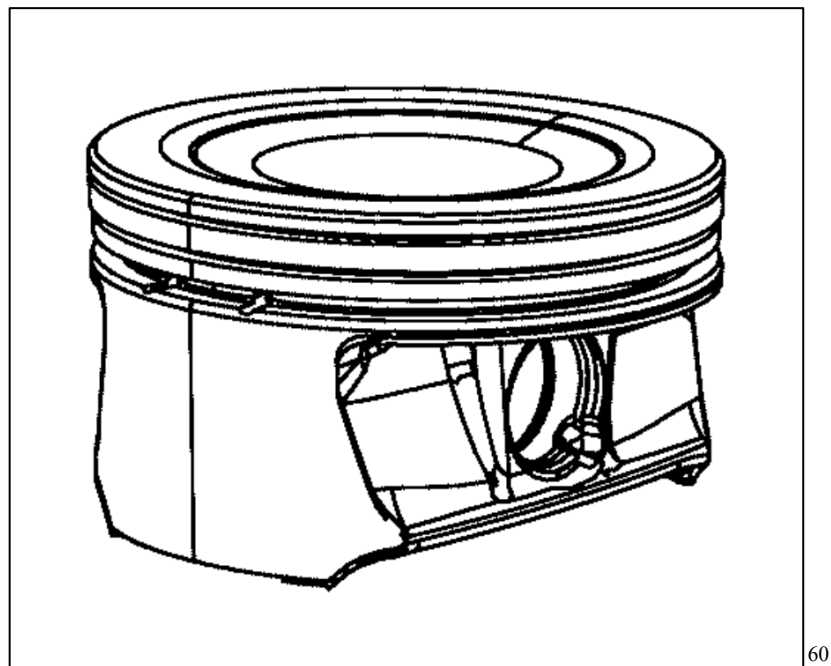
58. The Audi Q7 comprises a directly injecting internal combustion engine, comprising at least one cylinder which has a combustion space in which a piston executes an oscillating movement, and an injection nozzle for injection of fuel into the combustion space wherein the piston has a piston recess, which, in a central region thereof, has an elevation extending in a cylinder head direction, and a surface of the piston recess adjoining the elevation in a recess edge direction is connected to the elevation via a radius so that an injection jet impinging the surface and injected as early as possible is distributed both in an elevation direction and in the recess edge direction, and the surface is substantially planar and has an ascending gradient in the recess edge direction such that an injection jet injected as late as possible impinges onto the surface, the last-mentioned injection jet being distributed both in the elevation direction and in the recess edge direction:



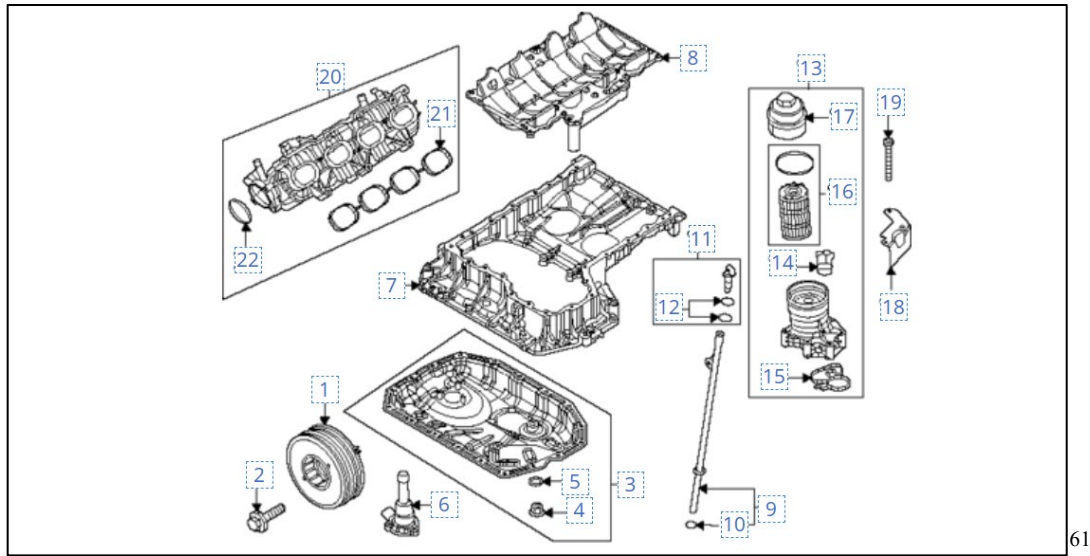
59. By way of further example, the 2023 Audi Q7 and forward models comprise a directly injecting internal combustion engine, comprising at least one cylinder which has a combustion space in which a piston executes an oscillating movement, and an injection nozzle for injection of fuel into the combustion space wherein the piston has a piston recess, which, in a

⁵⁹ https://parts.audivirginiabeach.com/p/Audi_Q7/Engine-Piston/48013946/06B107065N.html?partner=googlebase&feedLabel=cvb_make_model&srsltid=AfmBOoqzbeffyIHIDV_agti3qaGNV2Aa2YvQg_vdyurAaoogdFZdQKOuLkY&gQT=2.

central region thereof, has an elevation extending in a cylinder head direction, and a surface of the piston recess adjoining the elevation in a recess edge direction is connected to the elevation via a radius so that an injection jet impinging the surface and injected as early as possible is distributed both in an elevation direction and in the recess edge direction, and the surface is substantially planar and has an ascending gradient in the recess edge direction, such that an injection jet injected as late as possible impinges onto the surface, the last-mentioned injection jet being distributed both in the elevation direction and in the recess edge direction:



⁶⁰ <https://audi.oempartsonline.com/v-2025-audi-q7--premium-plus--2-0l-14-electric-gas/engine--engine-parts>



60. Defendants have and continue to indirectly infringe one or more claims of the '238 Patent by knowingly and intentionally inducing others, including VW customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

61. Defendants, with knowledge that these products, or the use thereof, infringe the '238 Patent at least as of the date of the Original Complaint, knowingly and intentionally induced, and continue to knowingly and intentionally induce, direct infringement of the '238 Patent by providing these products to customers and end-users for use in an infringing manner. Alternatively, on information and belief, Defendants have adopted a policy of not reviewing the patents of others, and instructing their officers, agents, and employees to not review the patents of others, including specifically those related to Defendants' specific industry, with the subject belief that there was a high probability that Defendants would learn of their infringing activities, thereby remaining willfully blind to the '238 Patent at least as early as the issuance of the '238 Patent.

⁶¹ <https://audi.oempartsonline.com/v-2025-audi-q7--premium-plus--2-0l-l4-electric-gas/engine--engine-parts>

62. Defendants have and continue to induce infringement by others, including customers and end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '238 Patent, but while remaining willfully blind to the infringement. Defendants have and continue to induce infringement by their customers and end-users by supplying them with instructions on how to operate the infringing technology in an infringing manner, while also making publicly available information on the infringing technology via Defendants' website, product literature and packaging, and other publications.⁶² For example, Defendants prepare and provide customers and end-users with Owner's Manuals for their specific vehicles, as well as access to other vehicle information. On information and belief, Defendants' Owner's Manuals and other vehicle information documents are prepared by or under the direction of Defendants to instruct customers and end-users on how to use the Accused Products in an infringing manner. On information and belief, these Owner's Manuals and other vehicle information documents are prepared by Defendants.

⁶² See Audi Q7 Owner's Manual, available with VIN Number at: <https://ownersmanual.audiusa.com/>; see also <https://www.vw.com/en/owners-and-services/about-my-vehicle/owners-manual.html>; <https://maintenance.vw.com/#/search>; <https://literature.vw.com/welcome.asp>; https://literature.vw.com/find.asp?session=69E100F528554708BC81DC9ABED8D049&c=NGN9O8SF6VVQ1FD&s=&dept_id=26.

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Owner's Manual
English North America 01.2024
4M2012721BA

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63. Because of Defendants' inducement, Defendants' customers and end-users use Accused Products in a way Defendants intend and directly infringe the '238 Patent. Defendants perform these affirmative acts with knowledge of the '238 Patent and with the intent, or willful blindness, that the induced acts directly infringe the '238 Patent.

64. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the '238 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States.

⁶³ See 2025 Volkswagen Jetta Owner's Manual, Edition 2024/07, United States Version, available at: <https://ownersmanuals2.com/d/101620/volkswagen-jetta-2025-owners-manual>.

⁶⁴ See 2025 Audi Q7 Owner's Manual, English North America, 01.2024, available for download at: <https://ownersmanuals2.com/audi/q7-2025-owners-manual-98520>. On information and belief, the Owner's Manuals for all other Audi models are prepared by Audi.

Defendants' affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '238 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '238 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendants to be especially made or adapted for use in the infringement of the '238 Patent. Defendants perform these affirmative acts with knowledge of the '238 Patent and with intent, or willful blindness, that they cause the direct infringement of the '238 Patent.

65. LAG has suffered damages as a result of Defendants' direct and indirect infringement of the '238 Patent in an amount to be proved at trial.

66. LAG has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '238 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT IV
(Infringement of the '353 Patent)

67. Paragraphs 1 through 21 are incorporated by reference as if fully set forth herein.

68. LAG has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '353 Patent.

69. Defendants have and continue to infringe the '353 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by one or more of making, using, offering to sell, selling, and/or importing into the United States, and/or exporting from the United States the Accused Products that satisfy each and every limitation of one or more claims of the '353 Patent. The Accused Products comprise, but are not limited to, Volkswagen

IQ.Drive and Audi Pre Sense, included in vehicles, in all trims and configurations, including the Accused Vehicles, such as the Audi A8, using the Central Driver Assistance Controller. The Audi A8 is exemplary and representative of the Accused Products.

70. For example, Defendants have and continue to directly infringe at least claim 1 of the '353 Patent by making, using, offering to sell, selling, and/or importing into the United States, and/or exporting from the United States the Accused Products that include Volkswagen IQ.Drive and Audi Pre Sense, such as the Audi A8, using the Central Driver Assistance Controller, among other vehicles.

71. The Audi A8, using the Central Driver Assistance Controller, performs a method of forming an image of a mobile object:

Central driver assistance controller

Conditional automated driving at level 3 is based on two innovations: a sensor set with the laser scanner and a central driver assistance controller known as zFAS, for short. The roughly tablet-sized computer constantly processes sensor signals and uses them to create a complete image of the car's surroundings. To do this, it uses processors from leading global companies – NVIDIA (Tegra K1), ALTERA (Cyclon V), Infineon (Aurix) and Mobileye with the EyeQ3 image processing engine.

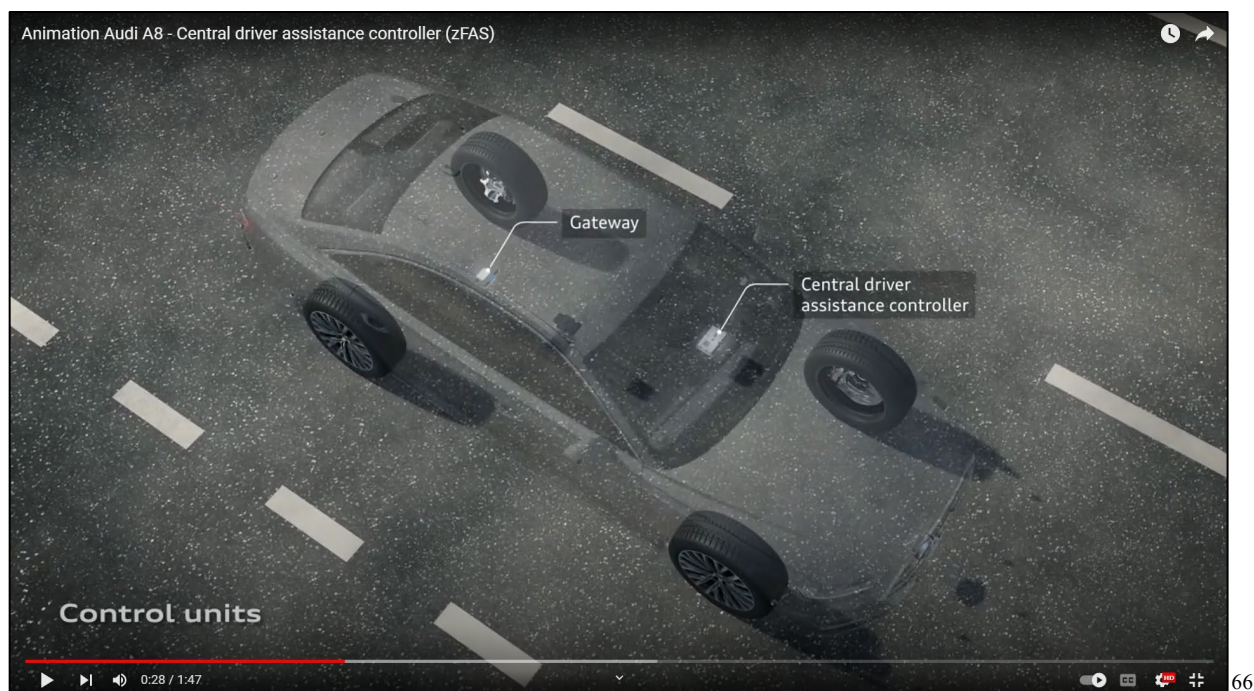
The sensor data is read into the “fusion” layer in the zFAS unit and is merged to generate a sophisticated model of the surroundings. It includes moving objects, stationary obstacles and a road model. The latter is generated from the conventional navigation map and from road markings and borders that the sensors detect. The vehicle is guided precisely within its lane in the model, and this positional information flows into the navigation map that the driver sees. This information offers the driver many benefits, such as in complex intersection situations.

The zFAS serves as the central interface for piloted driving functions and for nearly all of the assistance systems. Whether the given system is the crossing assist, the emergency braking function, adaptive driving assistant or traffic jam pilot – its functions are no longer coupled to just a specific sensor. Each system makes use of the vehicle surroundings model and can operate more effectively as a result of this model's high precision. This makes it possible for the vehicle, for example, to recognize the tail end of a traffic jam and brake appropriately.

The principle of a central fusion level based on standardized sensor interfaces gives Audi another advantage – independence from the specificity of sensors. Developers can replace individual sensors whenever better devices are market-ready.

65

⁶⁵ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>



72. The Audi A8, using the Central Driver Assistance Controller, performs a method of obtaining a plurality of first images (e.g., images the 360-degree image cameras) of the mobile object using a first imaging technique (e.g., 360-degree image camera processing) while obtaining a plurality of first measurements corresponding to movements of the mobile object using a first sensor system, the first sensor system (e.g., ultrasonic sensors) being independent from the first imaging technique:

⁶⁶ <https://www.youtube.com/watch?v=kKbS3KmjdOg>

360 degree cameras

The four 360 degree cameras on the vehicle scan the immediate vicinity and display obstacles within. Drivers can choose from different views that simplify parking and maneuvering. A virtual overhead view shown in the MMI display gives the driver an overview of the overall parking situation. The panoramic view to the front and rear covers an angle of nearly 180 degrees and provides better visibility when exiting tight parking spaces, courtyard entrances and confusing intersections. Guide lines in the reversing camera view make it easier to park in perpendicular spaces and to hitch trailers. The view from the front camera helps when maneuvering, as it detects obstacles in front of the car. The system is automatically activated when driving in reverse or by pushing a button.

An additional feature for some models is a virtual 3D view. The driver can use the touchscreen to steplessly swivel and zoom the image of the car and the actual vehicle surroundings. There is also a view of the front or rear tires so that the driver can pull the car up right next to the curb.

67

⁶⁷ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>



360 degree cameras

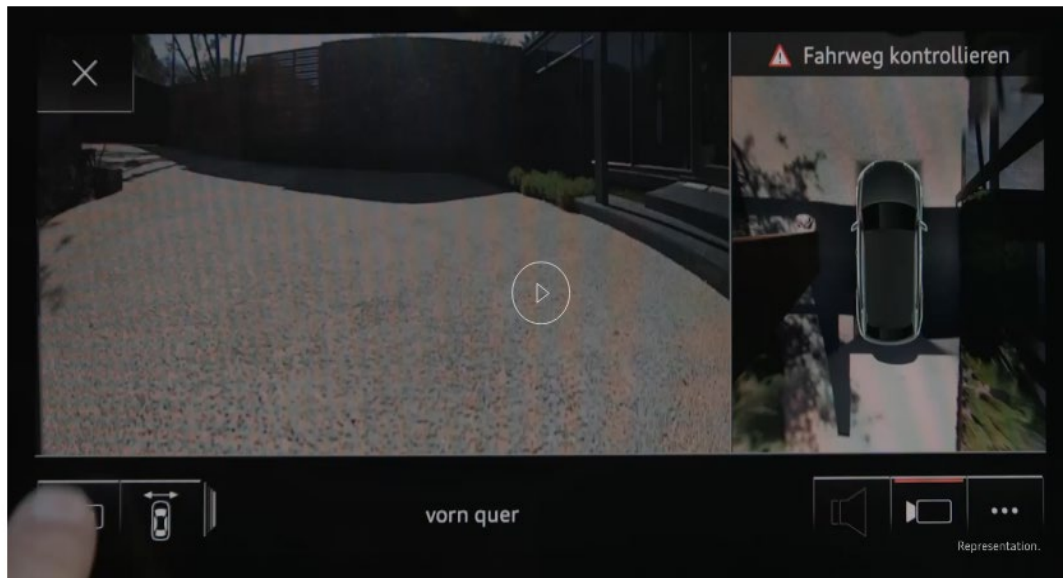
Photo — 01/01/2016

Four cameras on the vehicle scan the surroundings and display obstacles in the immediate vicinity of the vehicle.

68

⁶⁸ *Id.*

Top view camera (with virtual 360° camera)



360° Corner view

Backing up or moving in tight areas can be nerve-racking. We always worry about what we cannot see. With four available wide-angle cameras providing a 360-degree and virtual overhead view on the MMI display, you can maneuver your vehicle with precision through small parking areas or narrow multi-story parking garage entrances.

[View key feature info](#)

69

Audi pre sense 360°

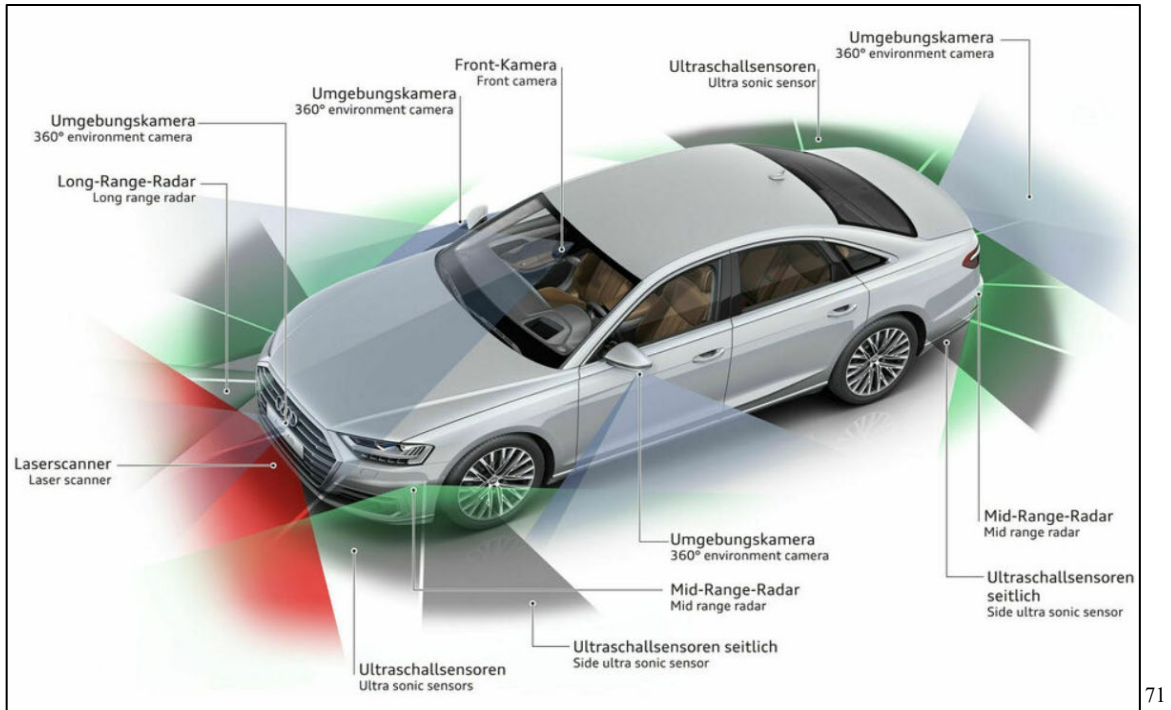
The Audi pre sense 360° detects collision hazards all around the car and initiates specific safety measures. It includes the following driver assistant systems:

- Audi pre sense front
- Audi pre sense rear
- Audi pre sense basic
- Audi pre sense side

70

⁶⁹ *Id.*

⁷⁰ *Id.*



Curb warning

The curb warning identifies curbs that pose a risk to the tires or wheels. Prerequisite: The car is moving forward or backward at up to 10 km/h (6.2 mph). If the system detects a critical situation, it alerts the driver to this in the optical parking system display on the MMI monitor. To scan the surroundings the system uses primarily the 360 degree cameras.

72

Crossing assist

Crossing assist recognizes critical cross traffic in front of the car and warns the driver of it both visually and audibly. At speeds up to 10 km/h (6.2 mph), it initiates a short braking action when needed. Crossing assist is active at vehicle speeds up to 30 km/h (18.6 mph). It uses data from the zFAS central computer, with the most important information here supplied by the mid-range radars and the laser scanner.

If the driver wants to ease into an intersection or exit with poor visibility, he or she can push the parking button. This sends the images from the 360 degree cameras to the MMI monitor. They drastically expand the field of view, and the driver can choose from among multiple views.

73

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

Maneuvering assist

Maneuvering assist recognizes moving and stationary objects larger than 10 centimeters (3.9 in), such as a pillar in a parking garage or a moving vehicle. It helps to avoid impending collisions using warning steering impulses and by autonomously braking the car to a stop, provided that the car is traveling forward or in reverse at no more than 10 km/h (6.2 mph). The system uses the optical parking system in the MMI to display its steering and parking interventions. The surroundings are scanned using at least the ultrasonic sensors and the 360 degree cameras.

74

73. The Audi A8, using the Central Driver Assistance Controller, performs a method of associating the plurality of first images (e.g., images from the 360-degree cameras) with first movement states of the mobile object using the first measurements (e.g., data from ultrasonic sensors):

⁷⁴ *Id.*

Central driver assistance controller

Conditional automated driving at level 3 is based on two innovations: a sensor set with the laser scanner and a central driver assistance controller known as zFAS, for short. The roughly tablet-sized computer constantly processes sensor signals and uses them to create a complete image of the car's surroundings. To do this, it uses processors from leading global companies – NVIDIA (Tegra K1), ALTERA (Cyclon V), Infineon (Aurix) and Mobileye with the EyeQ3 image processing engine.

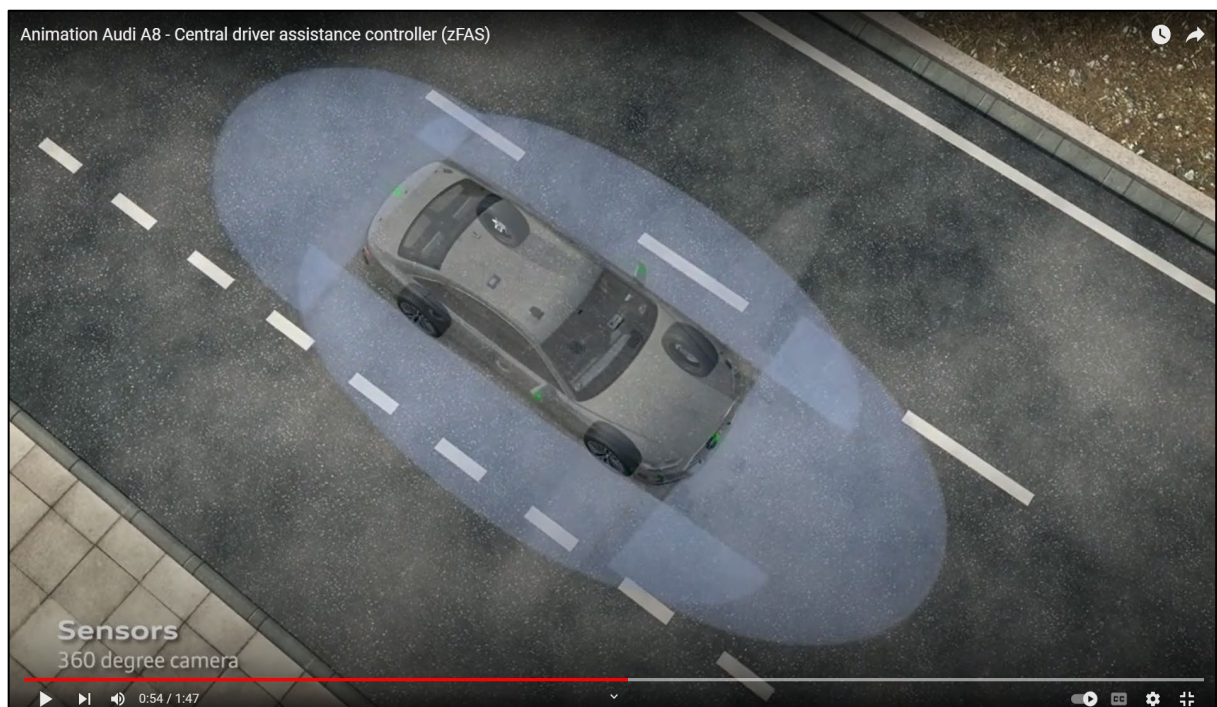
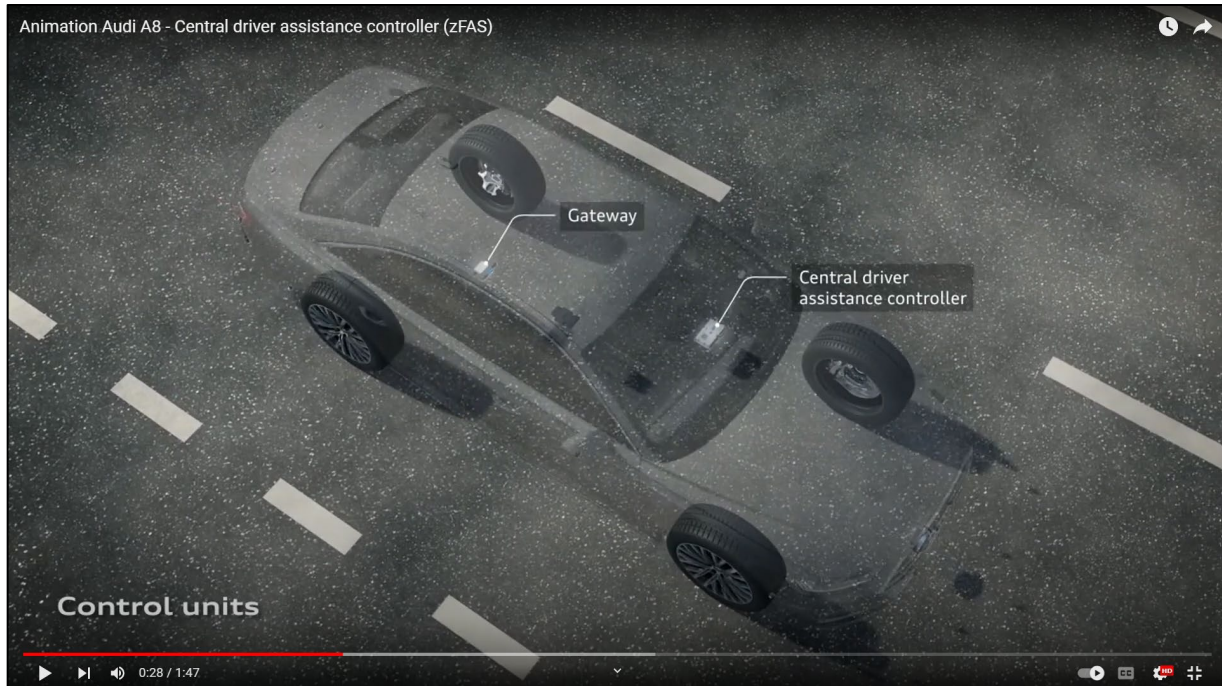
The sensor data is read into the “fusion” layer in the zFAS unit and is merged to generate a sophisticated model of the surroundings. It includes moving objects, stationary obstacles and a road model. The latter is generated from the conventional navigation map and from road markings and borders that the sensors detect. The vehicle is guided precisely within its lane in the model, and this positional information flows into the navigation map that the driver sees. This information offers the driver many benefits, such as in complex intersection situations.

The zFAS serves as the central interface for piloted driving functions and for nearly all of the assistance systems. Whether the given system is the crossing assist, the emergency braking function, adaptive driving assistant or traffic jam pilot – its functions are no longer coupled to just a specific sensor. Each system makes use of the vehicle surroundings model and can operate more effectively as a result of this model's high precision. This makes it possible for the vehicle, for example, to recognize the tail end of a traffic jam and brake appropriately.

The principle of a central fusion level based on standardized sensor interfaces gives Audi another advantage – independence from the specificity of sensors. Developers can replace individual sensors whenever better devices are market-ready.

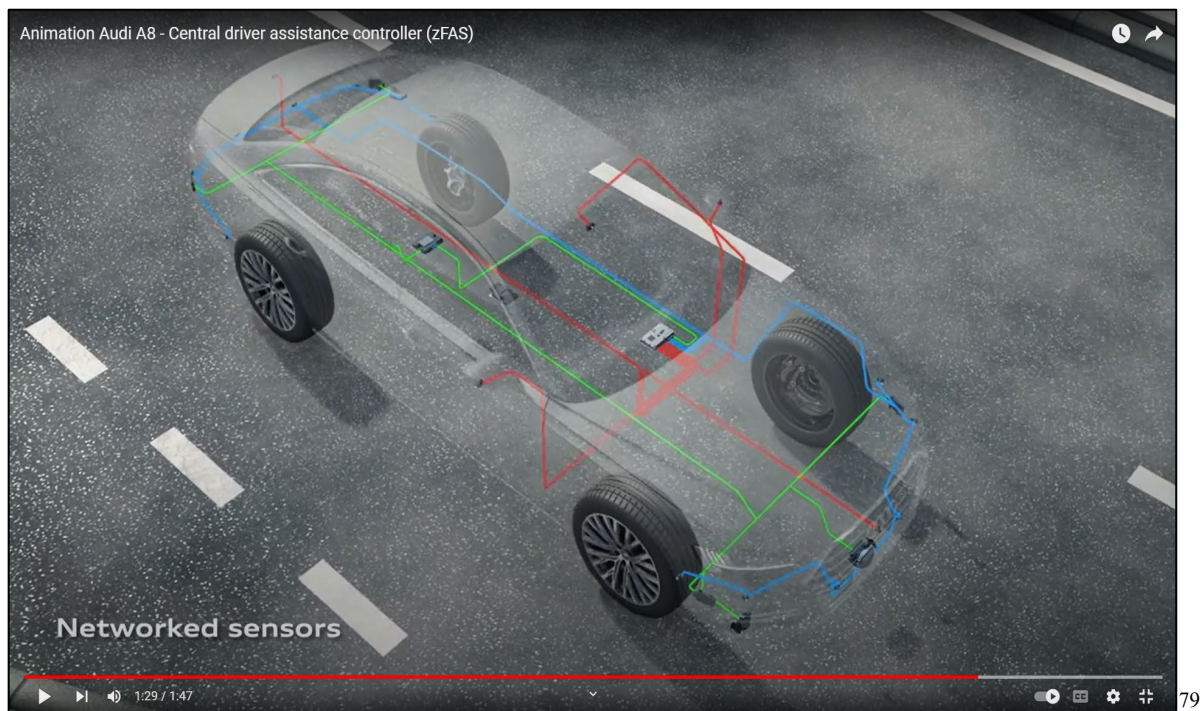
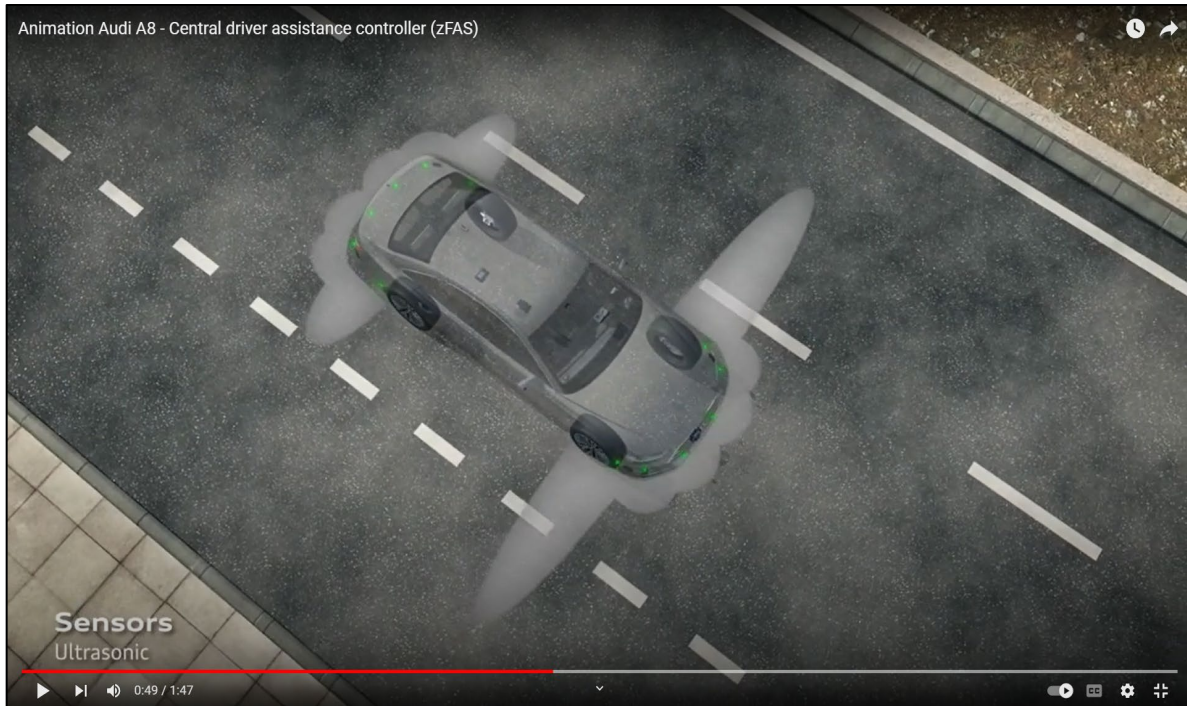
75

⁷⁵ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>



⁷⁶ <https://www.youtube.com/watch?v=kKbS3KmjDOg>

⁷⁷ *Id.*

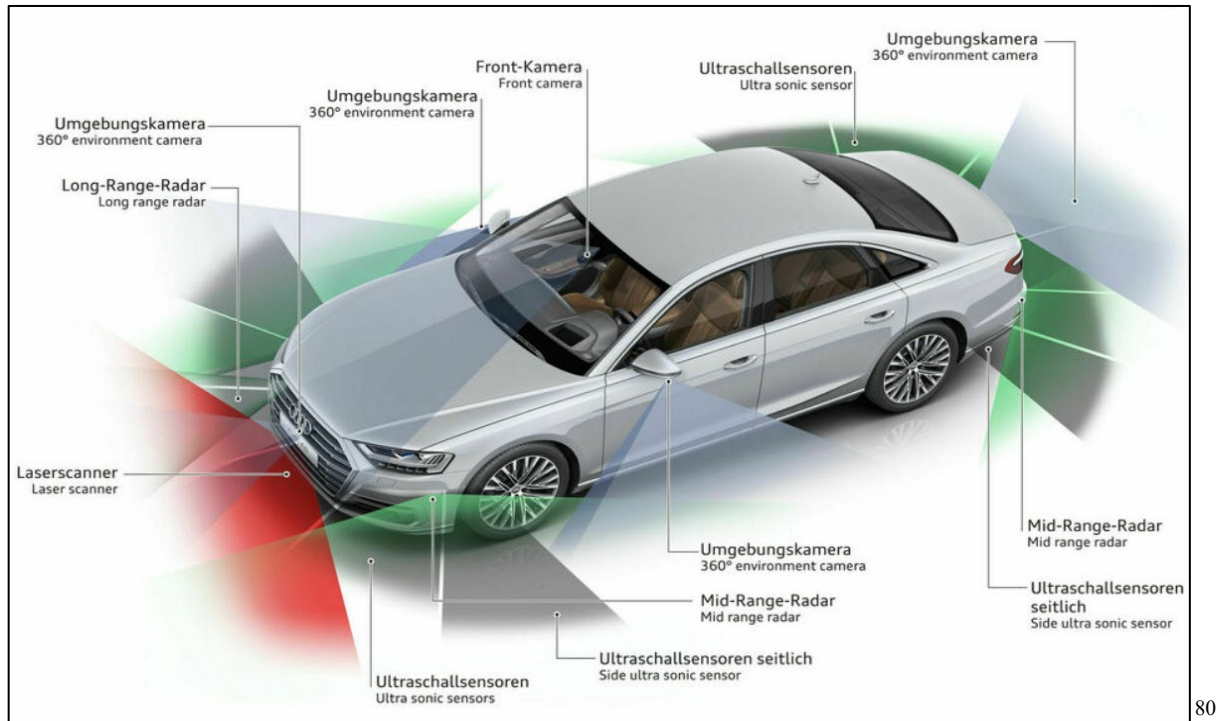


74. The Audi A8, using the Central Driver Assistance Controller, performs a method

⁷⁸ *Id.*

⁷⁹ *Id.*

of obtaining a plurality of second images of the mobile object using a second imaging technique (e.g., images from the front camera image processing) while obtaining a plurality of second measurements corresponding to movements of the mobile object using a second sensor system (e.g., radar sensors), the second sensor system being independent from the second imaging technique:



Turn assist

Turn assist monitors the road lane with oncoming traffic by means of radar sensors, the front camera and, in certain models, a laser scanner. Monitoring is initiated as soon as the driver sets the turn signal. When driving off from a stop, or during slow driving up to a speed of 10 km/h (6.2 mph), the system can intervene by applying the brakes to prevent the car from colliding with an oncoming vehicle when turning left or right (country-dependent). This brake intervention keeps the vehicle within its own driving lane. The driver is informed of the intervention by an indicator in the instrument cluster.

81

⁸⁰ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>

⁸¹ *Id.*

Adaptive cruise control (with Stop&Go function)

Adaptive cruise control (ACC) offers relief to drivers especially on long trips and in stop-and-go traffic. It maintains a preset distance to the vehicle ahead by automatically accelerating and braking. The driver can choose from five distance levels and adjust acceleration and control system dynamics with Audi drive select.

The system uses radar sensors and a front camera. They detect vehicles ahead and measure the distance to them. In interplay with S tronic or tiptronic, the system covers the entire speed range from 0 to 250 km/h (155.3 mph). With a manual transmission, it starts at 30 km/h (18.6 mph). When the system is deactivated, the distance indicator shows the distance to the car ahead and warns drivers when they are tailgating. Its operating speed range is 60 km/h (37.3 mph) and above.

82

Audi pre sense front / Audi pre sense city

Audi pre sense front and Audi pre sense city utilize the data of radar sensors and/or the front camera, depending on the car model, to compute the probability of a collision. Within the limitations of the system, it warns of collision threats and initiates braking at specific vehicle speeds. Vehicles are detected in the driving speed range of up to 250 km/h (155.3 mph), pedestrians up to around 65 km/h (40.4 mph) or 85 km/h (52.8 mph) depending on the model, as well as cyclists, depending on the system.

If a collision is imminent, the system warns the driver with visual, acoustic and haptic warnings based on a multistage warning concept. If necessary, the system provides braking assistance to reduce vehicle speed or initiates a full brake application to avoid the collision under certain circumstances. Actions are also taken to protect occupants. The hazard warning lights are activated, the seat belts are reversibly pretensioned, the seat position is optimized, and the windows and optional panoramic glass sunroof are closed.

83

⁸² *Id.*

⁸³ *Id.*

Collision avoidance assist

Collision avoidance assist helps the driver steer around an obstacle in a critical situation. The system uses data from the two radar sensors and the front camera for this purpose. In calculating a suitable evasive maneuver corridor, it takes into account the distance, width and offset of the vehicle driving ahead. Collision avoidance assist is available over a speed range from approx. 30 to 150 km/h (18.6 to 93.2 mph), and it assumes that the driver is actively steering throughout the maneuver. The driver is informed of the intervention by an indicator in the instrument cluster.

First, a jolt is produced to warn the driver of the hazard. If the driver then actively avoids the obstacle, the assistant applies a slight steering torque that helps by correcting the driver's steering input or helping to make a lane change. Models like the Audi A8 (2017) use a specific braking of individual wheels – with it the vehicle is made to follow the computed course.

84

(Predictive) efficiency assist

Efficiency assist helps the driver to drive preemptively and save fuel. The system works closely together with adaptive cruise control (ACC) or adaptive cruise assist (ACA). It accesses predictive route data from navigation and Car-to-X information. In order to detect traffic signs and other vehicles, the efficiency assist uses the front camera as well as data from the front and rear-facing radar sensors.

85

Traffic jam assist

Traffic jam assist is a subsystem of adaptive cruise control (ACC) or adaptive cruise assist (ACA). In vehicles with an automatic transmission, traffic jam assist can assume certain steering tasks over a speed range up to 65 km/h (40.4 mph) on roads that are in good condition, as long as the traffic is moving slowly. The system uses the radar sensors and the front camera. It guides the car by making gentle steering movements within system limits and orients itself to lane markings, roadside structures and other vehicles on the road. When traffic jam assist reaches its system limits – such as when the traffic thins out or there is a sharp curve ahead – the driver must assume driving tasks again. If the driver does not, the system warns the driver in several stages. As a final measure, it autonomously brings the car to a safe stop.

86

75. The Audi A8, using the Central Driver Assistance Controller, performs a method of associating the plurality of second images (e.g., images from the front camera) with second

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

movement states of the mobile object using the first measurements (e.g., the radar data with the ultrasonic sensor data):

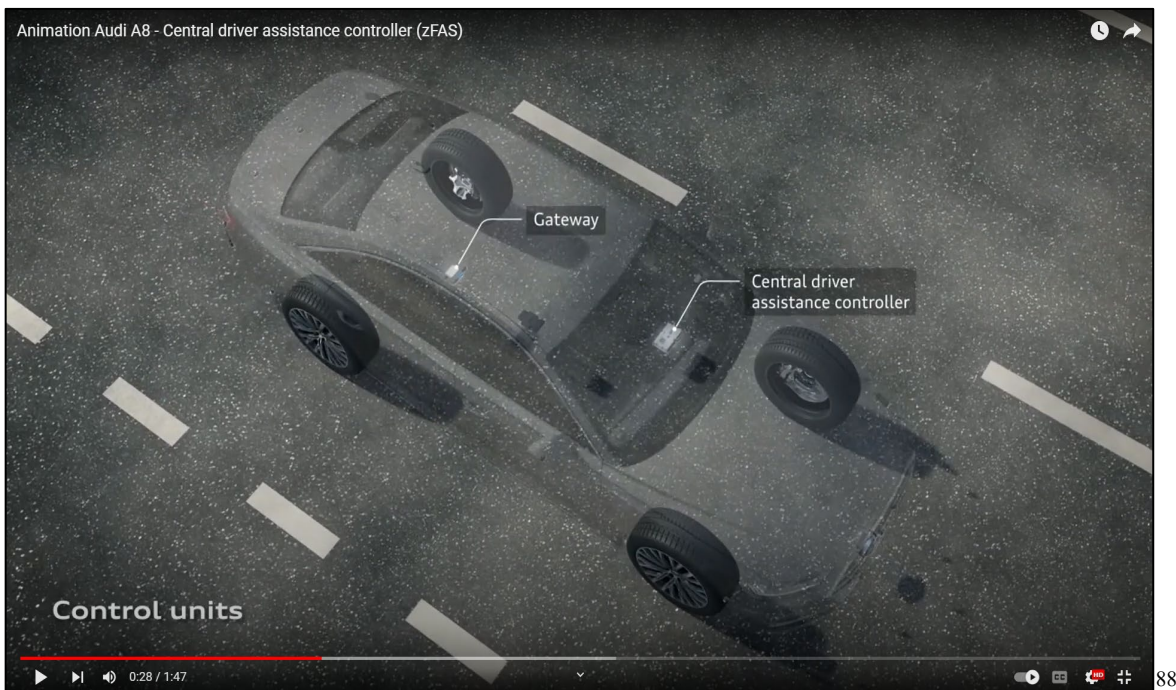
Adaptive cruise assist

The adaptive cruise assist (ACA) assists the driver with longitudinal and lateral control over the entire speed range – substantially enhancing comfort on long journeys, in particular. It incorporates the functions of adaptive cruise control, traffic jam assist and active lane assist. Depending on the model, the ACA uses the radar sensor in the nose of the vehicle, the laser scanner, the front camera and the ultrasonic sensors to permanently monitor the vehicle's surroundings.

Depending on the sensor set, the system detects lane markings, roadside structures, vehicles in adjacent lanes and vehicles driving ahead. The ACA uses this information to derive a virtual vehicle path and “guides” the vehicle within it. The system also includes helpful steering intervention so that the vehicle remains in the center of the lane. In some models based on the modular longitudinal platform, the system uses also the laser scanner: The ACA detects if the lane is too narrow to allow side-by-side driving and enables offset driving through narrow stretches.

The adaptive cruise assist maintains proper speed and following distance via targeted acceleration and braking. The car automatically adapts its speed to the traffic situation and the route, for example at curves and cross-ways. In stop-and-go traffic as well as traffic jam situations, the ACA can bring the car to a complete stop. Depending on the duration of the stop, the car can start automatically again.

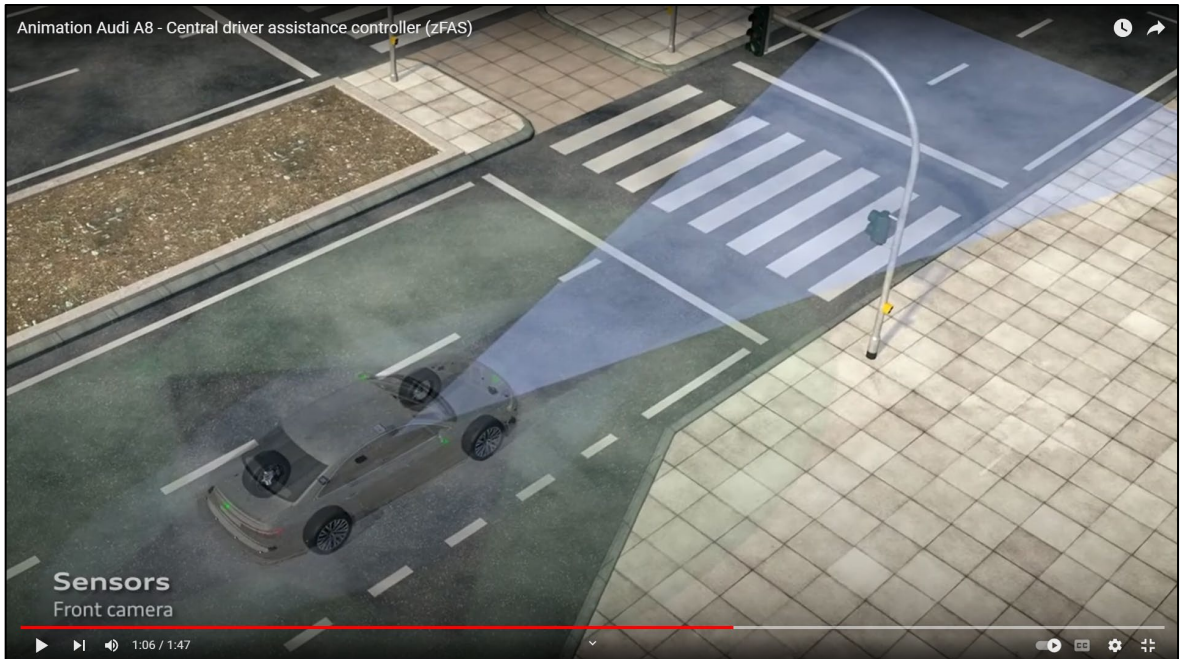
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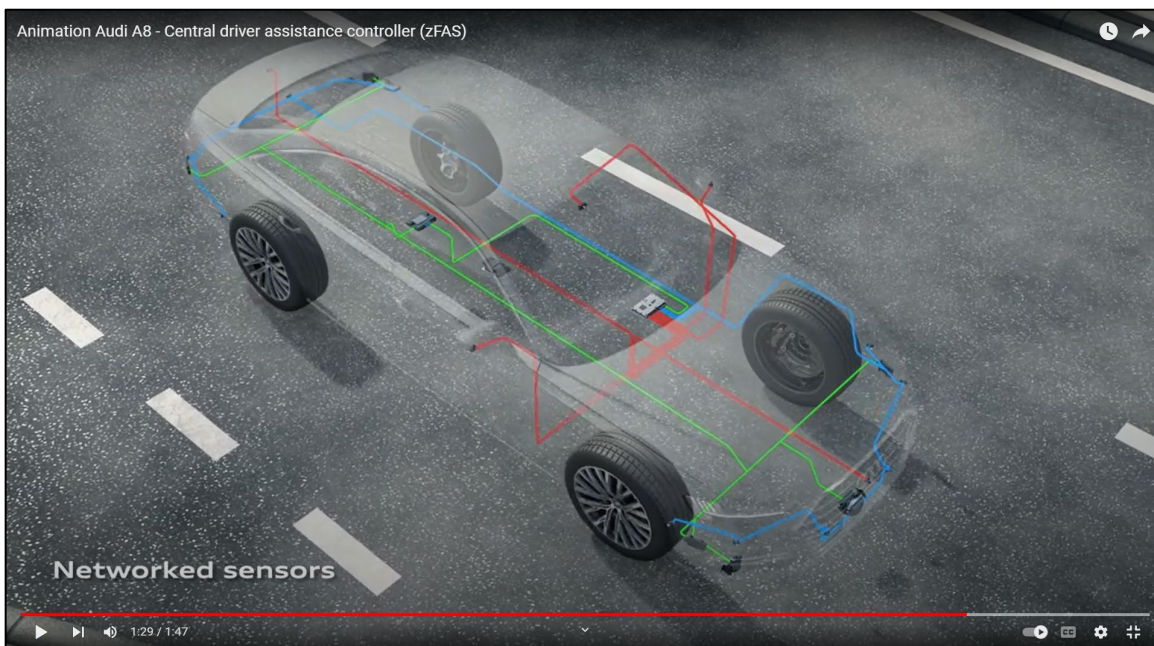
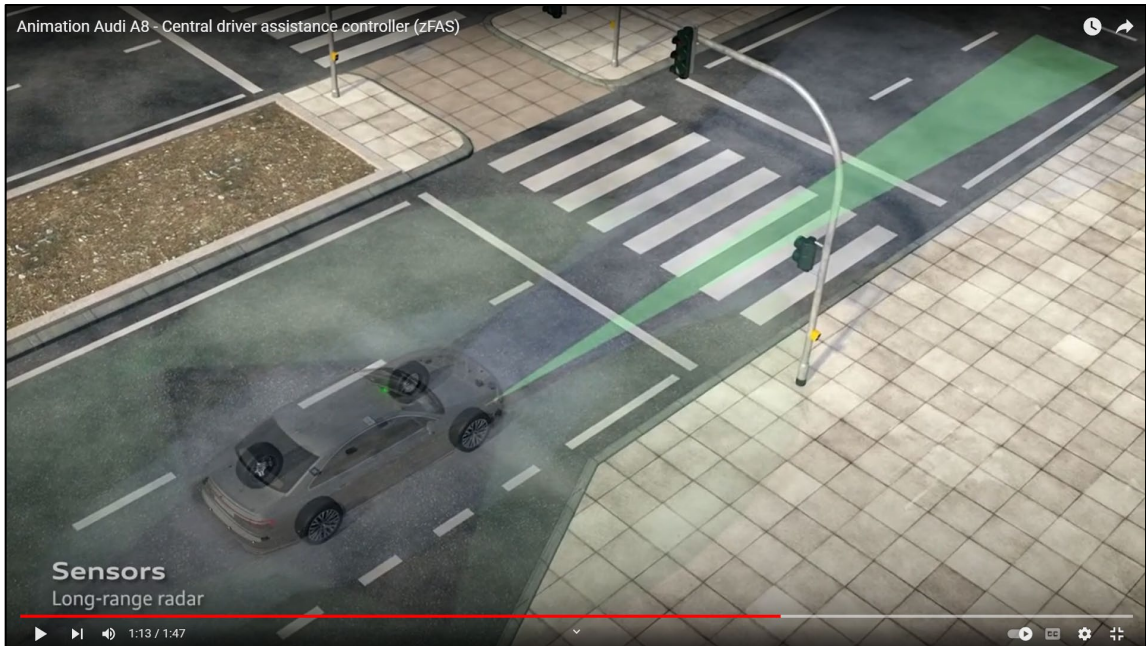
⁸⁷ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>

⁸⁸ <https://www.youtube.com/watch?v=kKbS3KmjDOg>



⁸⁹ *Id.*

⁹⁰ *Id.*



⁹¹ *Id.*

⁹² *Id.*

When combined with S tronic or tiptronic, ACC also includes the Stop&Go function. In heavy traffic, it autonomously decelerates the car to a stop. After a brief stop, it automatically resumes driving, following the vehicle ahead. After a longer stop, the driver must tap the accelerator pedal or the control stalk on the steering column. In addition to the radar sensors and front camera, ultrasonic sensors also monitor the vehicle's immediate surroundings.

93

Adaptive cruise control with Traffic jam assist

Crawling along in bottlenecked traffic can be a pain. Using radar, ultrasonic sensors and a front camera to identify surrounding vehicles, this available system can help put your mind at ease as the vehicle may do some of the heavy lifting of navigating through traffic.

[View key feature info](#)



Dramatization. European model shown.

94

76. The Audi A8, using the Central Driver Assistance Controller, performs a method of forming an image of the mobile object based on said plurality of first images (e.g., images from the 360-degree cameras), said associated plurality of first movement measurements, and said first movement states (e.g., from the ultrasonic sensors) and on said plurality of second images (e.g., from the front camera), said associated plurality of second movement measurements, and said second movement states (e.g., from the radar sensors), wherein the first imaging technique (e.g., the 360-degree cameras) is different from the second imaging technique (e.g., the front camera):

⁹³ *Id.*

⁹⁴ *Id.*

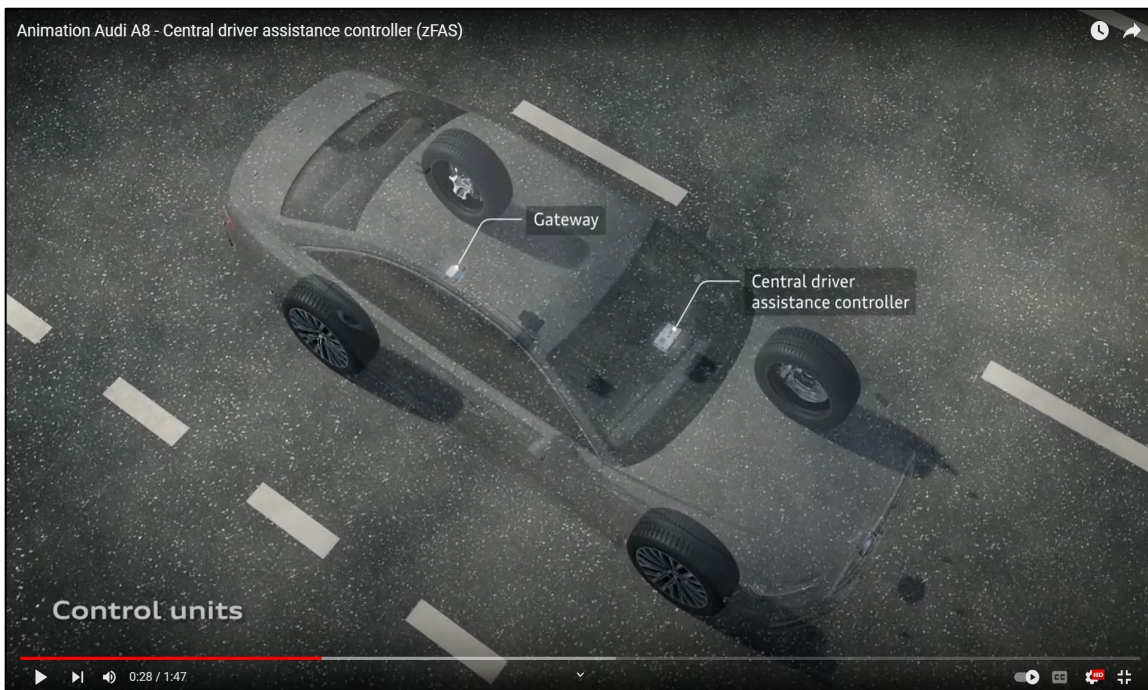
Adaptive cruise assist

The adaptive cruise assist (ACA) assists the driver with longitudinal and lateral control over the entire speed range – substantially enhancing comfort on long journeys, in particular. It incorporates the functions of adaptive cruise control, traffic jam assist and active lane assist. Depending on the model, the ACA uses the radar sensor in the nose of the vehicle, the laser scanner, the front camera and the ultrasonic sensors to permanently monitor the vehicle's surroundings.

Depending on the sensor set, the system detects lane markings, roadside structures, vehicles in adjacent lanes and vehicles driving ahead. The ACA uses this information to derive a virtual vehicle path and "guides" the vehicle within it. The system also includes helpful steering intervention so that the vehicle remains in the center of the lane. In some models based on the modular longitudinal platform, the system uses also the laser scanner: The ACA detects if the lane is too narrow to allow side-by-side driving and enables offset driving through narrow stretches.

The adaptive cruise assist maintains proper speed and following distance via targeted acceleration and braking. The car automatically adapts its speed to the traffic situation and the route, for example at curves and cross-ways. In stop-and-go traffic as well as traffic jam situations, the ACA can bring the car to a complete stop. Depending on the duration of the stop, the car can start automatically again.

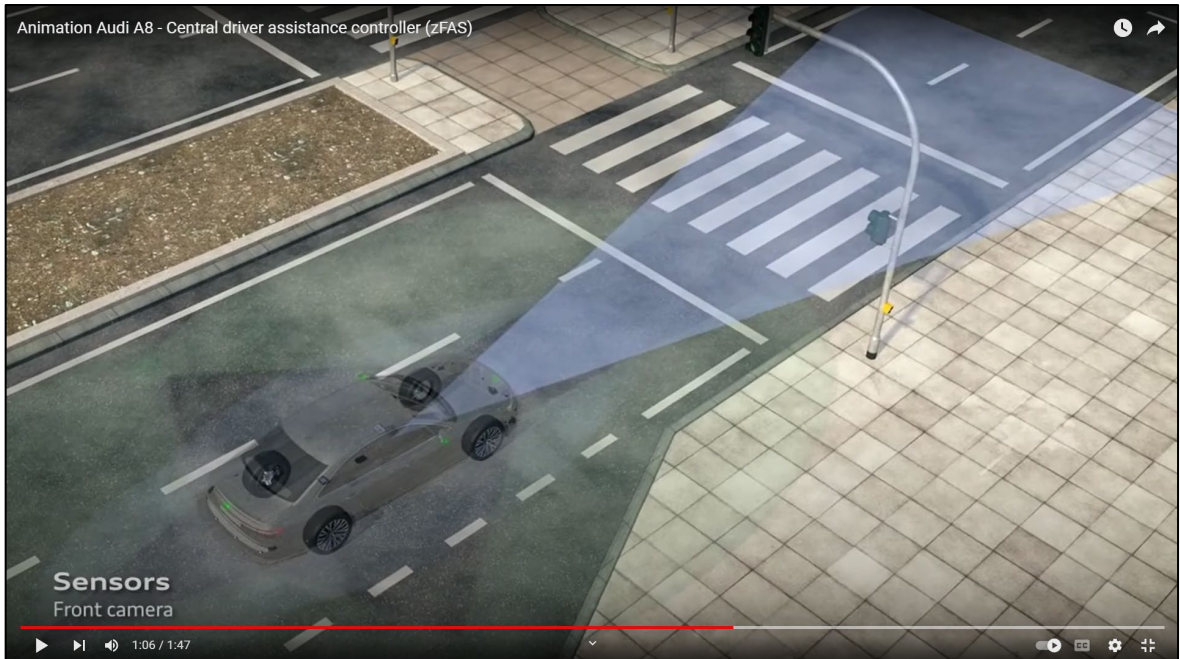
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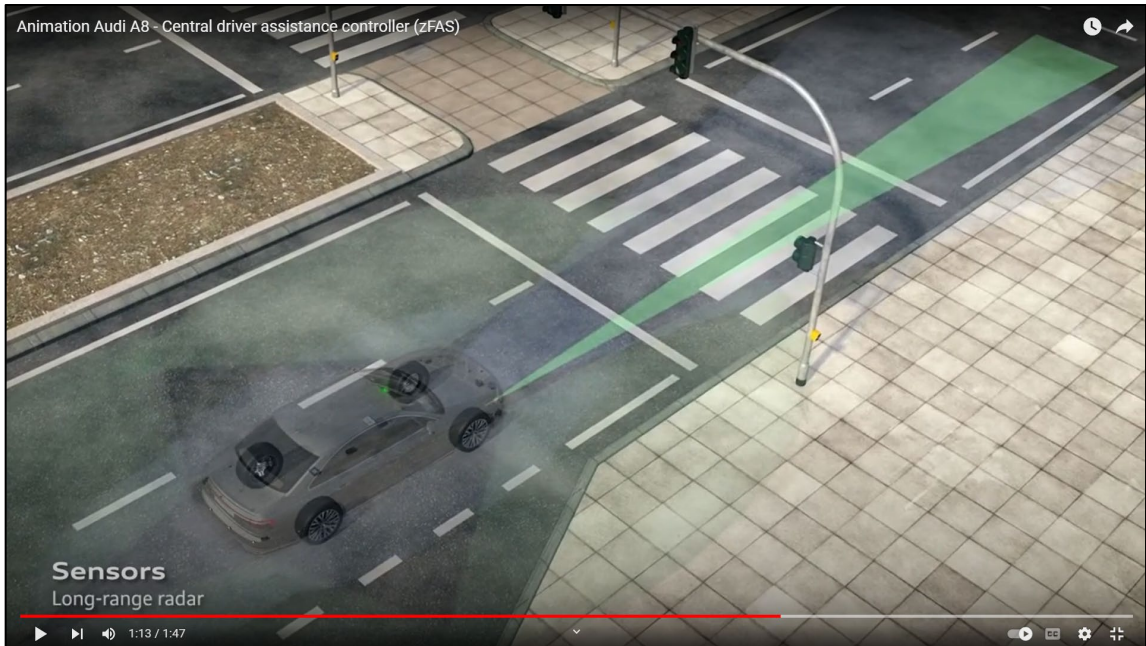
⁹⁵ <https://www.audi-mediacycenter.com/en/audi-technology-lexicon-7180/driver-assistance-systems-7184>

⁹⁶ <https://www.youtube.com/watch?v=kKbS3KmJDOg>

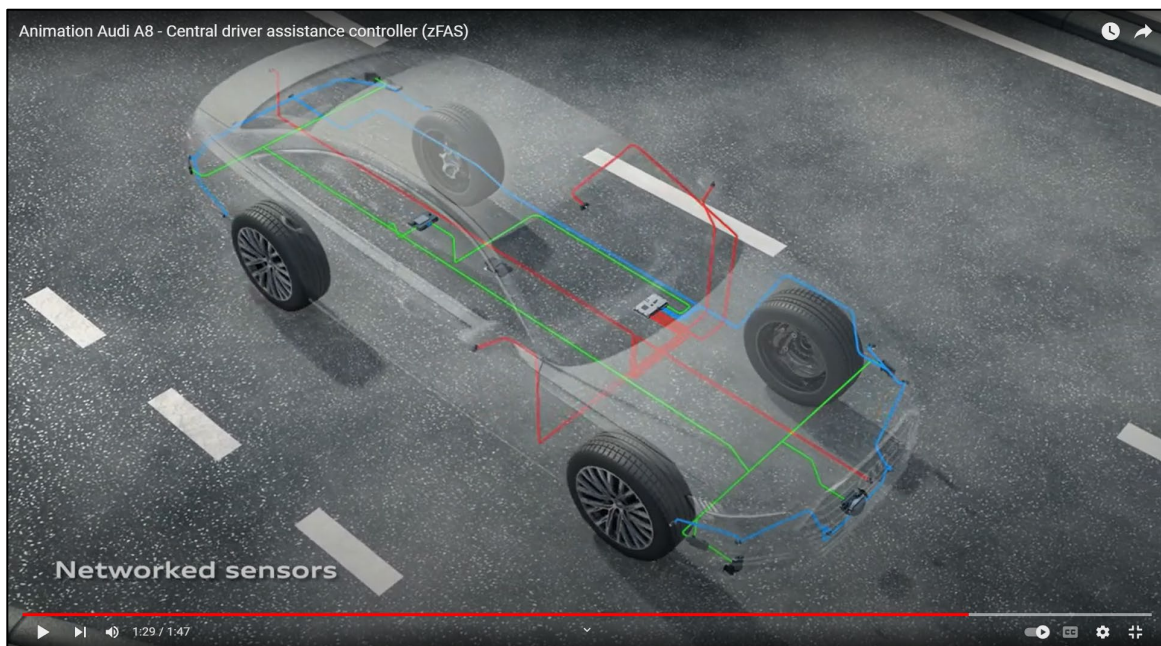


⁹⁷ *Id.*

⁹⁸ *Id.*



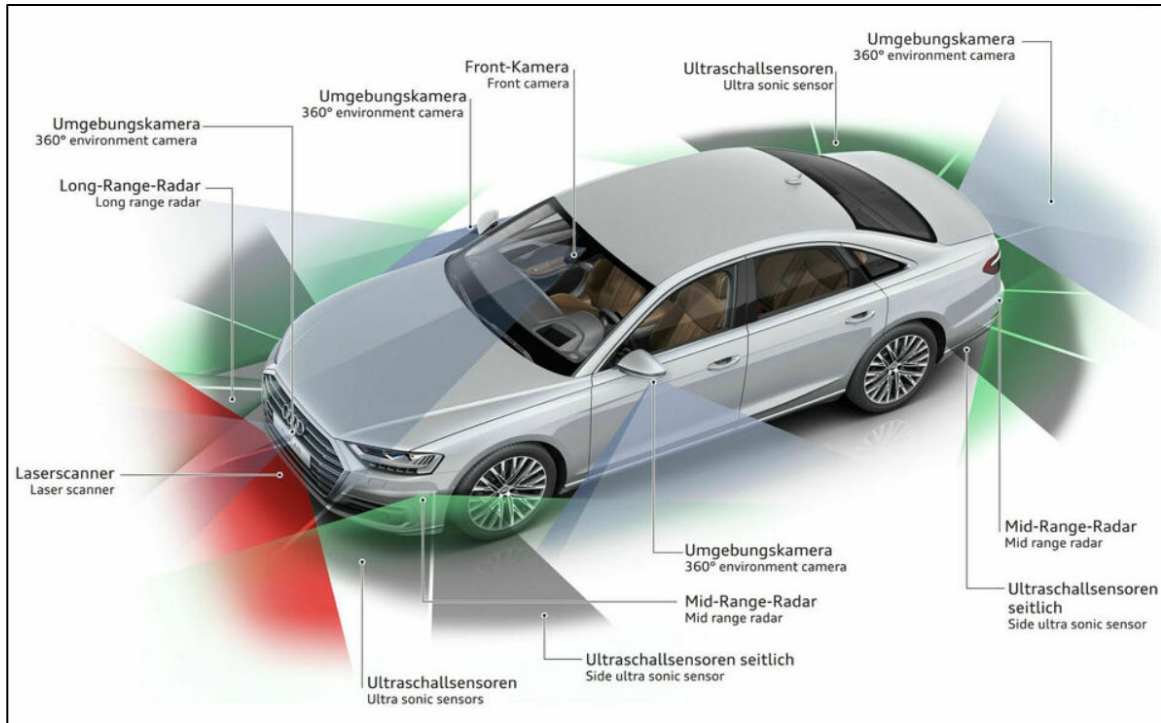
99



100

⁹⁹ *Id.*

¹⁰⁰ *Id.*



101

360 degree cameras

The four 360 degree cameras on the vehicle scan the immediate vicinity and display obstacles within. Drivers can choose from different views that simplify parking and maneuvering. A virtual overhead view shown in the MMI display gives the driver an overview of the overall parking situation. The panoramic view to the front and rear covers an angle of nearly 180 degrees and provides better visibility when exiting tight parking spaces, courtyard entrances and confusing intersections. Guide lines in the reversing camera view make it easier to park in perpendicular spaces and to hitch trailers. The view from the front camera helps when maneuvering, as it detects obstacles in front of the car. The system is automatically activated when driving in reverse or by pushing a button.

An additional feature for some models is a virtual 3D view. The driver can use the touchscreen to steplessly swivel and zoom the image of the car and the actual vehicle surroundings. There is also a view of the front or rear tires so that the driver can pull the car up right next to the curb.

102

77. VW directly infringes the '353 Patent through the use of the Audi A8 through promotional demonstration, testing, repairs, troubleshooting, and instructional guidance in the United States and Texas, performing at least steps of claim 1.

78. Defendants have and continue to indirectly infringe one or more claims of the '353

¹⁰¹ *Id.*

¹⁰² *Id.*

Patent by knowingly and intentionally inducing others, including VW customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

79. Defendants, with knowledge that these products, or the use thereof, infringe the '353 Patent at least as of the date of the Original Complaint, knowingly and intentionally induced, and continue to knowingly and intentionally induce, direct infringement of the '353 Patent by providing these products to customers and end-users for use in an infringing manner. Alternatively, on information and belief, Defendants have adopted a policy of not reviewing the patents of others, and instructing their officers, agents, and employees to not review the patents of others, including specifically those related to Defendants' specific industry, with the subject belief that there was a high probability that Defendants would learn of their infringing activities, thereby remaining willfully blind to the '353 Patent at least as early as the issuance of the '353 Patent.

80. Defendants have and continue to induce infringement by others, including customers and end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '353 Patent, but while remaining willfully blind to the infringement. Defendants have and continue to induce infringement by their customers and end-users by supplying them with instructions on how to operate the infringing technology in an infringing manner, while also making publicly available information on the infringing technology via Defendants' website, product literature and packaging, and other publications.¹⁰³ For example, Defendants prepare and provide customers

¹⁰³ See Audi A8 Owner's Manual, available with VIN Number at: <https://ownersmanual.audiusa.com/>; see also <https://www.vw.com/en/owners-and-services/about-my-vehicle/owners-manual.html>; <https://maintenance.vw.com/#/search>; <https://literature.vw.com/welcome.asp>; https://literature.vw.com/find.asp?session=69E100F528554708BC81DC9ABED8D049&c=NGN908SF6VVQ1FD&s=&dept_id=26.

and end-users with Owner's Manuals for their specific vehicles, as well as access to other vehicle information. On information and belief, Defendants' Owner's Manuals and other vehicle information documents are prepared by or under the direction of Defendants to instruct customers and end-users on how to use the Accused Products in an infringing manner. On information and belief, these Owner's Manuals and other vehicle information documents are prepared by Defendants.

Volkswagen AG works constantly to improve all of its products. Due to ongoing vehicle development, changes in design, equipment, and technology are possible at any time. The information regarding equipment, appearance, performance, dimensions, weights, standards, and functions of the vehicle is the information that was available at the time of the editorial deadline for this manual. Some of the equipment and functions may not be available until later or may be available only in certain countries. Contact your local authorized Volkswagen dealer or authorized Volkswagen Service Facility for more information.

The vehicle shown may be equipped with optional equipment for an additional price and is only offered in certain markets. An authorized Volkswagen dealer can inform you about differences in your particular country. Subject to change. No legal obligations or commitments may be derived from the information, illustrations, and descriptions in this manual.

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Owner's Manual
English North America 01.2024
4M2012721BA

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¹⁰⁴ See 2025 Volkswagen Jetta Owner's Manual, Edition 2024/07, United States Version, available at: <https://ownersmanuals2.com/d/101620/volkswagen-jetta-2025-owners-manual>.

¹⁰⁵ See 2025 Audi Q7 Owner's Manual, English North America, 01.2024, available for download at: <https://ownersmanuals2.com/audi/q7-2025-owners-manual-98520>. On information and belief, the Owner's Manuals for all other Audi models are prepared by Audi.

81. Because of Defendants' inducement, Defendants' customers and end-users use Accused Products in a way Defendants intends and directly infringe the '353 Patent. Defendants perform these affirmative acts with knowledge of the '353 Patent and with the intent, or willful blindness, that the induced acts directly infringe the '353 Patent.

82. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the '353 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendants' affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '353 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '353 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendants to be especially made or adapted for use in the infringement of the '353 Patent. Defendants perform these affirmative acts with knowledge of the '353 Patent and with intent, or willful blindness, that they cause the direct infringement of the '353 Patent.

83. LAG has suffered damages as a result of Defendants' direct and indirect infringement of the '353 Patent in an amount to be proved at trial.

84. LAG has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '353 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT V
(Infringement of the '192 Patent)

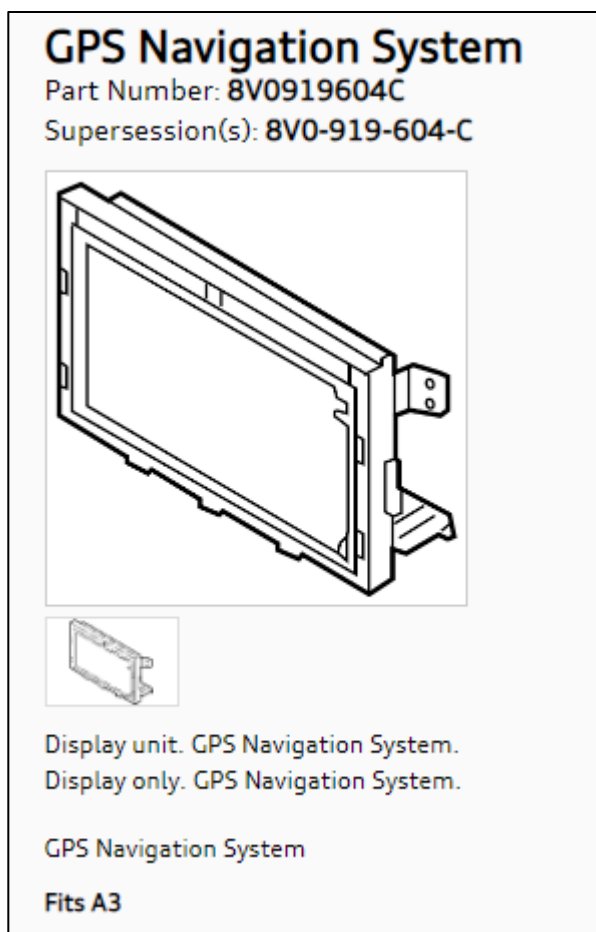
85. Paragraphs 1 through 21 are incorporated by reference as if fully set forth herein.

86. LAG has not licensed or otherwise authorized Defendants to make, use, offer for sale, sell, or import any products that embody the inventions of the '192 Patent.

87. Defendants have and continue to infringe the '192 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by one or more of making, using, offering to sell, selling, and/or importing into the United States, and/or exporting from the United States the Accused Products that satisfy each and every limitation of one or more claims of the '192 Patent. The Accused Products comprise, but are not limited to, the VW and Audi vehicles equipped with infotainment and navigations systems, such as Volkswagen and Audi Multimedia Interface (MMI) systems, currently known as MIB 3, or the equivalent thereto, , in all trims and configurations, such as in the Audi A3. The Audi A3 is exemplary and representative of the Accused Products.

88. For example, Defendants have and continue to directly infringe at least Claim 1 of the '192 Patent by making, using, offering to sell, selling, and/or importing into the United States, and/or exporting from the United States the Accused Products that include the infotainment and navigations systems, such as MIB 3, or the equivalent thereto, such as in the Audi A3, among other products.

89. The Audi A3 comprises a location information device with secure storage (e.g., SD card or similar removable storage).



106



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¹⁰⁶ https://parts.audiusa.com/p/Audi_2019_A3/GPS-Navigation-System/52385474/8V0919604C.html

¹⁰⁷ <https://www.youtube.com/watch?v=vJIlznH4F3U>

As part of the selected equipment, you can enter data into the vehicle's infotainment functions yourself. These include, depending on the equipment, e.g.,

- > Multimedia data such as music, movies or photos for playback in an integrated multimedia system,
- > Address book data for use in connection with an integrated hands-free device or an integrated navigation system,
- > Entered navigation destinations,
- > Data on the use of Internet services.

This data for convenience and infotainment functions can be stored locally in the vehicle or it can be on a device that you have connected to the vehicle (e.g., smartphone, USB flash drive or MP3 player). If you have entered data yourself, you can delete it at any time.

108

90. The Audi A3 comprises a housing (e.g., the MIB 3 system).



109

Audi MMI

The Audi MMI (Multi Media Interface) system streamlines controls for audio, vehicle settings, and navigation under a common interface, reducing the number of control buttons for you.¹ Audi models are also Bluetooth-enabled for mobile phones and audio devices—giving you hands-free access to many functions.

110

91. The Audi A3 comprises a locational information module (e.g., the GPS navigation system) for determining location information of the device, the determined location information being at least one route traveled by the device.

¹⁰⁸ <https://www.audi.com/en/privacy-audi-connect.html>

¹⁰⁹ <https://www.youtube.com/watch?v=vJIlznH4F3U>

¹¹⁰ <https://www.audiusa.com/us/web/en/models/a7/a7-sportback/2024/overview.html#Design>



Audi connect NAV ²

Audi connect NAV includes all of the helpful features of connect CARE, plus additional navigation and Traffic Light Information, that enhance your driving experience including:

- Real Time Traffic
- Satellite Imagery/Maps
- POI Search ⁸
- Traffic information
- Natural Voice Recognition ('Hey Audi...')
- Connected real time EV Charging Location stations

111



112

92. The Audi A3 comprises an encryption module (e.g., using Privacy Mode in GPS

¹¹¹ <https://www.audiusa.com/us/web/en/inside-audi/innovation/audi-connect.html>

¹¹² <https://www.youtube.com/watch?v=Kfm4xcEtuGQ>

navigation system) for encrypting the determined location information.



113

As part of the selected equipment, you can enter data into the vehicle's infotainment functions yourself. These include, depending on the equipment, e.g.,

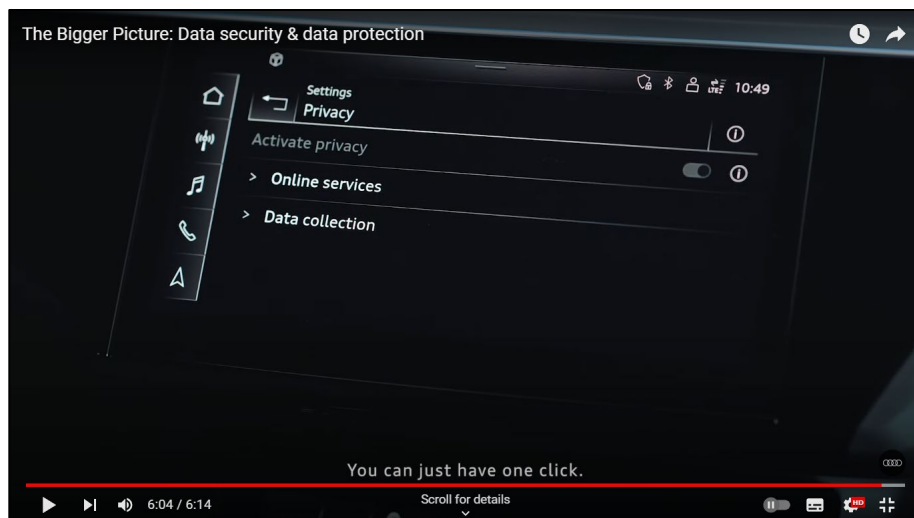
- > Multimedia data such as music, movies or photos for playback in an integrated multimedia system,
- > Address book data for use in connection with an integrated hands-free device or an integrated navigation system,
- > Entered navigation destinations,
- > Data on the use of Internet services.

This data for convenience and infotainment functions can be stored locally in the vehicle or it can be on a device that you have connected to the vehicle (e.g., smartphone, USB flash drive or MP3 player). If you have entered data yourself, you can delete it at any time.

114

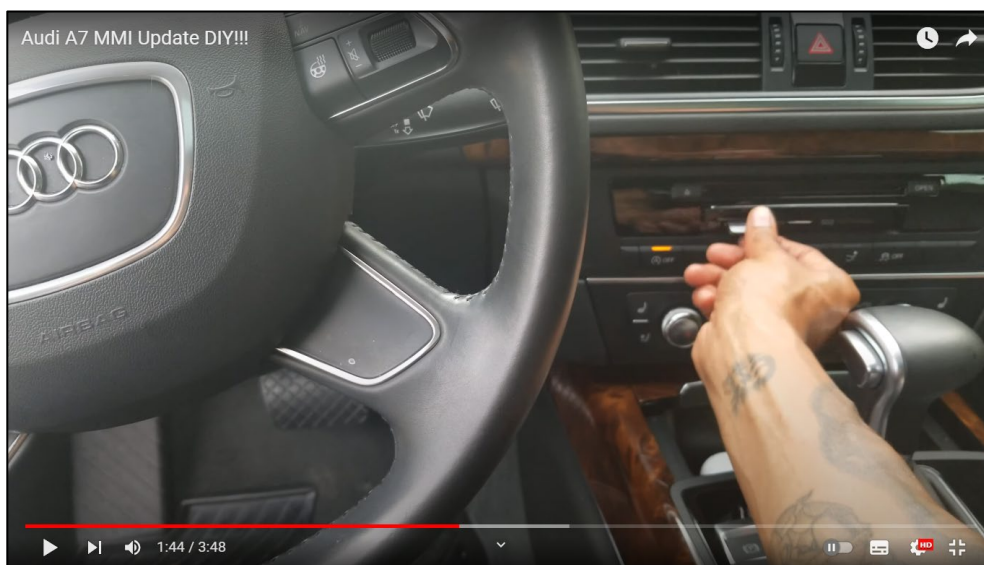
¹¹³ <https://www.youtube.com/watch?v=vJIlznH4F3U>

¹¹⁴ <https://www.audi.com/en/privacy-audi-connect.html>



115

93. The Audi A3 comprises a removable storage module (e.g., SD card or similar removable storage) for storing the encrypted location information, the removable storage module being removably disposed in the housing.



116

¹¹⁵ <https://www.youtube.com/watch?v=Aock3u4bWa8>

¹¹⁶ <https://www.youtube.com/watch?v=yTdfQTEgfUw>

The Audi connect map update service allows you to download up-to-date maps for your MMI, save these on an SD card and then transfer them to your vehicle.

117

Downloading map update

- ▶ Log into www.audi.com/myaudi with your user data.
- ▶ Click on the Audi connect service **Map update**.

118

As part of the selected equipment, you can enter data into the vehicle's infotainment functions yourself. These include, depending on the equipment, e.g.,

- › Multimedia data such as music, movies or photos for playback in an integrated multimedia system,
- › Address book data for use in connection with an integrated hands-free device or an integrated navigation system,
- › Entered navigation destinations,
- › Data on the use of Internet services.

This data for convenience and infotainment functions can be stored locally in the vehicle or it can be on a device that you have connected to the vehicle (e.g., smartphone, USB flash drive or MP3 player). If you have entered data yourself, you can delete it at any time.

119

94. The Audi A3 comprises a processing module (e.g., the MIB 3 system) for sending the encrypted location information to the removable storage module (e.g., SD card or similar removable storage) removably disposed in the housing and retrieving the encrypted location information from the removable storage module.

¹¹⁷ <https://www.audi.de/dam/nemo/models/misc/connect/PDF/operating-manual.pdf>

¹¹⁸ *Id.*

¹¹⁹ <https://www.audi.com/en/privacy-audi-connect.html>

As part of the selected equipment, you can enter data into the vehicle's infotainment functions yourself. These include, depending on the equipment, e.g.,

- › Multimedia data such as music, movies or photos for playback in an integrated multimedia system,
- › Address book data for use in connection with an integrated hands-free device or an integrated navigation system,
- › Entered navigation destinations,
- › Data on the use of Internet services.

This data for convenience and infotainment functions can be stored locally in the vehicle or it can be on a device that you have connected to the vehicle (e.g., smartphone, USB flash drive or MP3 player). If you have entered data yourself, you can delete it at any time.

120

You can search for your own special destinations (points of interest) on the Internet and transfer them to the MMI using an SD card.

121

Creating destination lists for the MMI

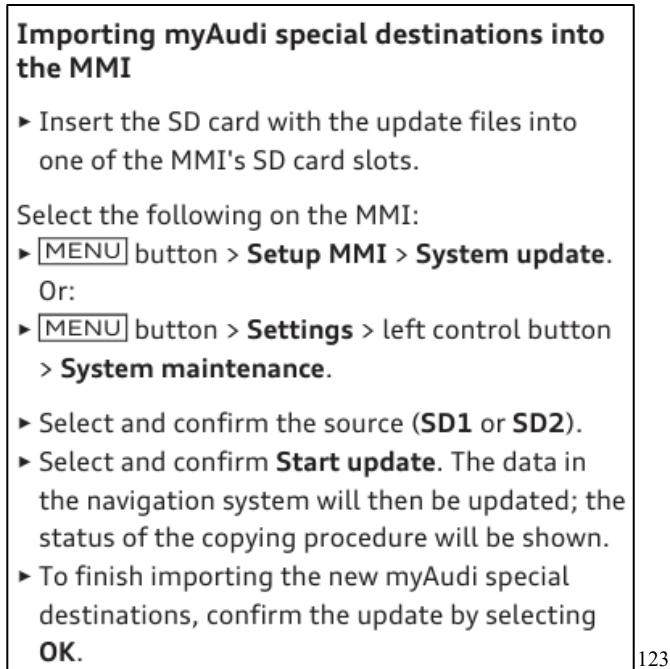
- ▶ Search the Internet for "POI downloads" (or similar) to find a destination list with the special destination of your choice (e.g. nearby golf courses) and save it on your computer.
- ▶ Log into www.audi.com/myaudi with your user data.
- ▶ Click on the Audi connect service **myAudi special destinations**.
- ▶ Click on ① **Add personal POI** ⇒ page 7, Fig. 2.

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¹²⁰ <https://www.audi.com/en/privacy-audi-connect.html>

¹²¹ <https://www.audi.de/dam/nemo/models/misc/connect/PDF/operating-manual.pdf>

¹²² *Id.*



95. Defendants have and continue to indirectly infringe one or more claims of the '192 Patent by knowingly and intentionally inducing others, including VW customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology.

96. Defendants, with knowledge that these products, or the use thereof, infringe the '192 Patent at least as of the date of the Original Complaint, knowingly and intentionally induced, and continue to knowingly and intentionally induce, direct infringement of the '192 Patent by providing these products to customers and end-users for use in an infringing manner. Alternatively, on information and belief, Defendants have adopted a policy of not reviewing the patents of others, and instructing their officers, agents, and employees to not review the patents of others, including specifically those related to Defendants' specific industry, with the subject belief that there was a high probability that Defendants would learn of their infringing activities, thereby

¹²³ *Id.*

remaining willfully blind to the '192 Patent at least as early as the issuance of the '192 Patent.

97. Defendants have and continue to induce infringement by others, including customers and end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '192 Patent, but while remaining willfully blind to the infringement. Defendants have and continue to induce infringement by their customers and end-users by supplying them with instructions on how to operate the infringing technology in an infringing manner, while also making publicly available information on the infringing technology via Defendants' website, product literature and packaging, and other publications.¹²⁴ For example, Defendants prepare and provide customers and end-users with Owner's Manuals for their specific vehicles, as well as access to other vehicle information. On information and belief, Defendants' Owner's Manuals and other vehicle information documents are prepared by or under the direction of Defendants to instruct customers and end-users on how to use the Accused Products in an infringing manner. On information and belief, these Owner's Manuals and other vehicle information documents are prepared by Defendants.

¹²⁴ See Audi A3 Owner's Manual, available with VIN Number at: <https://ownersmanual.audiusa.com/>; see also <https://www.vw.com/en/owners-and-services/about-my-vehicle/owners-manual.html>; <https://maintenance.vw.com/#/search>; <https://literature.vw.com/welcome.asp>; https://literature.vw.com/find.asp?session=69E100F528554708BC81DC9ABED8D049&c=NGN9O8SF6VVQ1FD&s=&dept_id=26.

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Owner's Manual
English North America 01.2024
4M2012721BA

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98. Because of Defendants' inducement, Defendants' customers and end-users use Accused Products in a way Defendants intends and directly infringe the '192 Patent. Defendants perform these affirmative acts with knowledge of the '192 Patent and with the intent, or willful blindness, that the induced acts directly infringe the '192 Patent.

99. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the '192 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States.

¹²⁵ See 2025 Volkswagen Jetta Owner's Manual, Edition 2024/07, United States Version, available at: <https://ownersmanuals2.com/d/101620/volkswagen-jetta-2025-owners-manual>.

¹²⁶ See 2025 Audi Q7 Owner's Manual, English North America, 01.2024, available for download at: <https://ownersmanuals2.com/audi/q7-2025-owners-manual-98520>. On information and belief, the Owner's Manuals for all other Audi models are prepared by Audi.

Defendants' affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '192 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '192 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendants to be especially made or adapted for use in the infringement of the '192 Patent. Defendants performs these affirmative acts with knowledge of the '192 Patent and with intent, or willful blindness, that they cause the direct infringement of the '192 Patent.

100. LAG has suffered damages as a result of Defendants' direct and indirect infringement of the '192 Patent in an amount to be proved at trial.

101. LAG has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '192 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, LAG prays for relief against Defendants as follows:

- a. Entry of judgment declaring that Defendants have directly and/or indirectly infringed one or more claims of the Patents-in-Suit;
- b. An order pursuant to 35 U.S.C. § 283 permanently enjoining Defendants, their officers, agents, servants, employees, attorneys, and those persons in active concert or participation with them, from further acts of infringement of the Patents-in-Suit;

c. An order awarding damages sufficient to compensate LAG for Defendants' infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;

d. Entry of judgment declaring that this case is exceptional and awarding LAG its costs and reasonable attorney fees under 35 U.S.C. § 285; and

e. Such other and further relief as the Court deems just and proper.

Dated: April 18, 2025

Respectfully submitted,

/s/ Vincent J. Rubino, III

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