

Part 573 Safety Recall Report

21V-846

Manufacturer Name : Tesla, Inc.
Submission Date : DEC 22, 2021
NHTSA Recall No. : 21V-846
Manufacturer Recall No. : SB-21-00-004

**Manufacturer Information :**

Manufacturer Name : Tesla, Inc.
Address : 3500 Deer Creek Road
 Palo Alto CA 94304
Company phone : 650-413-4000

Population :

Number of potentially involved : 11,728
Estimated percentage with defect : 100 %

Vehicle Information :

Vehicle 1 : 2017-2021 Tesla Model S

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The subject population includes certain Model S, X, 3 and Y vehicles operating firmware release 2021.36.5.2, determined by a review of firmware release records.

Production Dates : AUG 24, 2017 - OCT 06, 2021

VIN Range 1 : Begin : NR **End :** NR Not sequential

Vehicle 2 : 2020-2021 Tesla Model Y

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The subject population includes certain Model S, X, 3 and Y vehicles operating firmware release 2021.36.5.2, determined by a review of firmware release records.

Production Dates : JAN 29, 2020 - SEP 02, 2021

VIN Range 1 : Begin : NR **End :** NR Not sequential

Vehicle 3 : 2017-2021 Tesla Model 3

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The subject population includes certain Model S, X, 3 and Y vehicles operating firmware release 2021.36.5.2, determined by a review of firmware release records.

Production Dates : JUL 25, 2017 - OCT 07, 2021

VIN Range 1 : Begin : NR **End :** NR Not sequential

Vehicle 4 : 2017-2021 Tesla Model X

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The subject population includes certain Model S, X, 3 and Y vehicles operating firmware release 2021.36.5.2, determined by a review of firmware release records.

Production Dates : AUG 23, 2017 - DEC 25, 2020

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Description of Defect :

Description of the Defect : A software communication error may, under a certain sequence of events, result in false forward-collision warnings (FCW) and/or automatic emergency brake (AEB) events.

FMVSS 1 : NR

FMVSS 2 : NR

Description of the Safety Risk : If the AEB system unexpectedly activates while driving, the risk of a rear-end collision from a following vehicle may increase. We are not aware of any crashes or injuries related to this condition.

Description of the Cause : On October 23, 2021, Tesla released firmware 2021.36.5.2 over-the-air (OTA), which introduced a software communication disconnect between the two on-board chips; specifically, when the vehicle is waking up from "Sentry Mode" or "Summon Standby Mode," a mode where one of the chips is in a low-power 'sleep' state. This communication disconnect can result in the video neural networks that operate on that chip to run less consistently than expected. The inconsistency can produce negative object velocity detections when other vehicles are present, which in turn can lead to false FCW and AEB events.

Identification of Any Warning that can Occur : There is a warning chime and warning message displayed in the vehicle display when the false-positive braking occurs.

Involved Components :

Component Name 1 : Vehicle Software Version 2021.36.5.2

Component Description : N/A

Component Part Number : N/A

Supplier Identification :

Component Manufacturer

Name : Tesla, Inc.

Address : 13101 Harold Green Road
Austin Texas 78725

Country : United States

Chronology :

- Late Saturday, October 23, 2021, Tesla released 2021.36.5.2 to vehicles in the limited early access Full-Self Driving (Beta) population.
- The next morning, October 24, 2021, Tesla began to receive reports of false FCW and AEB events from customers. In a matter of hours, we investigated the reports and took actions to mitigate any potential safety risk. This included cancelling 2021.36.5.2 on vehicles that had not installed it, disabling FCW and AEB on affected vehicles, and/or reverting software to the nearest available version. Contemporaneously, we worked on identifying the root cause and developing a corrective OTA solution.
- By the evening on the same day, we deterministically reproduced the condition, identified the root cause, and developed software release 2021.36.5.3 as a correction solution. Global engineering and quality assurance teams performed testing and validation on the new release throughout the night and into the next morning, and were successfully unable to produce the condition.
- On Monday morning, October 25, 2021, after completing validation, we began deploying 2021.36.5.3 OTA to the subject population and re-enabled FCW and AEB features on vehicles with 2021.36.5.3 installed.
- On Tuesday, October 26, 2021, an OTA recall determination was voluntarily made.
- As of October 27, 2021, Tesla received 39 customer reports (received between October 24, 2021 and October 25, 2021) that are related to or may relate to this topic from the owners of vehicles subject to this issue. Tesla is not aware of any warranty claims, crashes, injuries or deaths related to this topic.

Description of Remedy :

Description of Remedy Program : Tesla quickly remedied the condition OTA with firmware release 2021.36.5.3, which was released to the subject population on October 25, 2021. The OTA remedy will carry forward in firmware release 2021.36.5.3 and later. As of November 12, 2021, 100% of the subject population installed firmware release 2021.36.5.3 or a later release. No further action is necessary from owners whose vehicles are equipped with firmware release 2021.36.5.3 or a later release.

Tesla does not plan to include a statement in the Part 577 owner notification about pre-notice reimbursement to owners since all of the involved vehicles already received repair free of charge.

How Remedy Component Differs from Recalled Component : Firmware release 2021.36.5.3 corrects the communication disconnect between the two chips.

Identify How/When Recall Condition was Corrected in Production : N/A. Firmware release 2021.36.5.2 was not installed on or deployed to new vehicles in production.

Recall Schedule :

Description of Recall Schedule : All Tesla stores and service centers will be notified on or shortly after November 1, 2021. Owner notification letters will be mailed in accordance with 49 C.F.R. § 577.7.

Planned Dealer Notification Date : NOV 01, 2021 - NOV 01, 2021

Planned Owner Notification Date : DEC 28, 2021 - DEC 28, 2021

* NR - Not Reported