



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

# ODI RESUME

**Investigation:** PE 20-010  
**Date Opened:** 06/22/2020  
**Investigator:** Ajit Alkondon **Reviewer:** Jeff Quandt  
**Approver:** Stephen Ridella  
**Subject:** Loss of rear view camera display

## MANUFACTURER & PRODUCT INFORMATION

**Manufacturer:** Tesla, Inc.  
**Products:** 2012-2015 Tesla Model S  
**Population:** 63,000 (Estimated)  
**Problem Description:** Failure of the touchscreen results in loss of rear camera image display when reverse gear is selected, resulting in reduced rear visibility when backing.

## FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
<b>Complaints:</b>	11	TBD	TBD
<b>Crashes/Fires:</b>	0	TBD	TBD
<b>Injury Incidents:</b>	0	TBD	TBD
<b>Number of Injuries:</b>	0	TBD	TBD
<b>Fatality Incidents:</b>	0	TBD	TBD
<b>Number of Fatalities:</b>	0	TBD	TBD

## ACTION / SUMMARY INFORMATION

**Action:** A Preliminary Evaluation has been opened.

### Summary:

The Office of Defects Investigation (ODI) has received eleven (11) complaints (VOQs) alleging failures of the touchscreen/Media Control Unit (MCU) in 2013 through 2015 Tesla Model S vehicles. The reports have been received over the past 13 months at service intervals ranging from 3.9 to 6.3 years.

The display control unit subassembly of the subject MCU is an NVIDIA Tegra 3 processor with an integrated 8GB eMMC NAND flash memory device. EMMC NAND flash devices have a finite lifespan based upon the number of program/erase (P/E) cycles. The subject MCU allegedly fails prematurely due to memory wear-out of the eMMC NAND flash. Tesla used the same MCU with the Tegra 3 processor in approximately 159 thousand 2012-2018 Model S and 2016-2018 Model X vehicles built by Tesla through early-2018.

MCU failures resulting from eMMC memory wear-out are likely to occur after periods of progressively degraded performance (e.g., longer power-up times, more frequent touchscreen resets, intermittent loss of cellular connectivity, loss of navigation). Final MCU failure results in loss of audible and visual features provided by the touchscreen, such as infotainment, navigation, and web browsing. This includes loss of rear camera image display when reverse gear is selected, resulting in reduced rear visibility when backing. Other effects of MCU failure include climate control defaulting to Auto mode and limits on battery charging current and maximum state of charge when recharging. MCU failure does not affect vehicle control systems (e.g., braking, steering, speed control) or supplemental restraint systems.

A Preliminary Evaluation has been opened to assess the scope, frequency, and safety consequences of the alleged defect.

The following VOQs are associated with this opening resume: 11317875, 11317499, 11315374, 11312177, 11288980, 11281197, 11279959, 11257209, 11232852, 11207819, 11302674.