



Preliminary Information

PIT5473A Diagnostic Tip - Adaptive Cruise Temporarily Unavailable

Models

2015-2016 Cadillac Escalade Models
with Driver Assist Package (RPO Y66)

Supersession Statement

This PI was superseded to add additional information. Please discard PIT5473.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition / Concern

A customer may comment they receive an "ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE" message on the DIC when attempting to activate the cruise or the cruise may disengage if already set.

The active safety control module provides the adaptive cruise control system functionality. The active safety control module analyzes data from the long range radar sensor module, front short range radar sensor modules, and front view camera module to identify and classify objects in the road environment. If any of the radars or the camera becomes blocked or misaligned, an "ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE" message may be displayed and the cruise will be disabled.

Recommendations / Instructions

Note: This document is only to provide additional tips when diagnosing an "ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE" message and is not meant to be a diagnostic flow chart or replace SI. As always, refer to SI for the latest diagnostic information and procedures.

The following items should be considered when diagnosing an "ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE" message.

1. Aftermarket Equipment

Visually inspect the vehicle for any aftermarket add on equipment like bug deflectors, windshield tint/banners, grille emblems, push bars, license plates, etc. These items could block the radar / camera's view. Question the customer to see if this concern started after the installation of the aftermarket equipment. Remove any aftermarket items and retest system for proper operation.

2. GDS Diagnostics

2.1 It is imperative to use GDS and do a Complete Vehicle DTC check. There are subsystems which are used by the adaptive cruise control system that may not seem to be related, but, are in fact needed.

For example, the parking brake system is used during extended stops after the adaptive cruise control system has already brought the vehicle to a complete stop using the vehicle's service brakes. If the parking brake system has an issue or has a code set, the adaptive cruise may be unavailable. In this instance, the parking brake system's issue will need to be addressed first.

2.2 If no DTC's are found, use GDS and review the following data in the Active Safety Module and ECM:

**Active Safety Module - "Adaptive Cruise Control Inhibit History Data 1-6" and "Adaptive Cruise Control Disengage History Data 1-6"
ECM - "Cruise Control Disengage History 1-8"**

This data can be used as a tool to help pinpoint the reason why the adaptive cruise is unavailable. Follow the appropriate SI diagnostics for any of the inhibit or disengage reasons that are indicating an incorrect value and correct them first.

Diagnostic Tips for "Disengage History Data - Loss Communication With The Active Safety Control Module" showing as "Yes":

- Use GDS and go into the Long Range Radar Module -> Data Display -> view parameter "Long Range Radar Sensor Module Blocked". When the concern duplicates, if this parameter shows "Yes" it could be caused by any of the issues listed in Steps 1 or 3.

3. Radar(s) and/or front camera detecting a blockage

The radars and front camera are continuously monitoring for a blocked condition and if it determines its ability to "see" clearly is compromised, the radar/camera may become unavailable. When this occurs, the cruise will disengage and/or no cruise engagement with an "Adaptive Cruise Temporarily Unavailable" message. Since the radars cannot visually "see" they rely on a complex blockage detection algorithm to predict blockage. Also, keep in mind that the front camera cannot see through objects or debris, so the camera can become visibly blocked. It is important to understand that disabling the adaptive cruise control, as a result of sensor blockage, is a normal function of the system and is intended to protect the driver from compromised system

performance. Blockage detection is needed because if the radars/camera were/was truly blocked, the adaptive cruise control would not function properly.

A blockage can be caused by a number of reasons; following are some examples:

3.1 Environmental Reasons

3.2 Long Range Radar / Camera Improperly Mounted or Misalignment

3.3 Repair/Collision/Aftermarket/Wrong Parts

3.1 Environmental Reasons

- Foul weather such as snow, ice, heavy rain, road spray conditions may limit the sensors ability to "see". Also, a buildup of mud, snow, frost, dirt, bugs, etc on the windshield or front fascia can cause a blockage. This buildup can also occur on the back side of the fascia between the radar and back of fascia. One example, if the windshield has a buildup of frost/snow/ice which covers the front camera, the system may detect a blockage and disable the cruise. After the defroster warms the windshield and melts away the frost/snow/ice the system will become operational. This example may appear to be an intermittent issue.

Note: If driving in 4WD HI range, adaptive cruise control will be disabled, which is normal. (Adaptive cruise control will function in Auto 4WD.)

- In very dark rural areas, the front view camera may detect blockage.

- Very high ambient temperatures. (Normally only seen in areas in the Southwest United States where outside temperature may reach in excess of 100° F) See the latest version of PIC6123 for more information.

- As part of the blockage detection algorithm, the radar may conclude it is blocked if the radar does not "see" anything over a period of time. This can happen when driving in very bare environments, such as deserts and rural areas where there are no large objects to detect like other vehicles, bridges, building, trees, signs, mail boxes, guard rails, etc. Below is an example photo of an area where the radar may determine a blockage because there are no objects in the environment for the radar to "see". In these cases, if the system does not detect an object within approximately 60 seconds or 1.2 miles (2 km) the cruise will be disengaged and a "ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE" message. If there were other vehicles on the road for the radar to detect there would not be any issues. Because of this, it may appear to be an intermittent concern to the customer, and difficult for a dealership to duplicate.



If a blockage is detected by any one of the above environmental reasons, it is not a latched condition, meaning once the radar/camera viewing area is cleared and/or the environment allows the radar to "see" both moving and stationary objects, the system will become available again without cycling the ignition off and back on. The driver should attempt to reengage the system after a several minutes of driving once the viewing area is cleared or objects (other vehicles, bridges, etc.) are now in the environment.

Note: For the long range radar to unlatch and become functional again it needs to "see" both moving and stationary objects. In some very rural areas, it may be several miles (20-30miles) of driving before both types of objects are available for the radar to "see". Stationary objects like road signs, mail boxes, guard radar, need to be close enough to the side of the road to be detected. Some areas have road signs set far off the side of the road and cannot be detected.

3.2 Long Range Radar / Front Camera Improperly Mounted or Misalignment:

If the long range radar and/or front camera is improperly mounted or misaligned, they may not be able to "see" objects and determine there is a blockage, which will disable the cruise.

- **Incorrect suspension trim heights:** Inspect for aftermarket lift kits or leveling kits, air suspension or spring issues. Any of these issues may change what the radar/front camera can detect and affect the operation of the system. Refer to the latest version of PIT5403 for additional information.

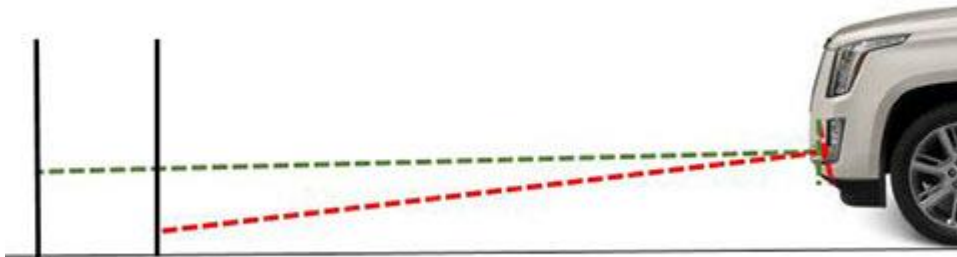
- **Inspect the front view camera sensor, on the windshield near the inside rearview mirror, to make sure it is attached properly to the windshield.**

- Inspect the long range radar for proper mounting/alignment. In most cases, a mounting/alignment issue may be caused by a front end impact/collision that may or may not be obvious. Many of the new materials that the front grilles, fascia, and lower air dams are made with are very resilient. If they are hit with mild to moderate force, they will bounce back with little, if any noticeable damage. However, the long range radar or the radar bracket behind the grille, fascia, or lower air dams may be damaged/bent/misaligned, even though no obvious damage may be seen on the outside of the vehicle. Reports of the Long Range Radar Module bracket being bent have been received and it is suspected to occur while parking and contacting a snow bank, parking curb or similar object.

The Long Range Radar Module is scanning for objects up to 656 ft (200 m) in front of the vehicle as represented by the green line in the illustration below. Even the slightest bend in the radar bracket will cause the radar not to be able to "see" objects farther out from the vehicle as represented by the red line in the illustration below. If the Long Range Radar cannot "see" objects throughout the full range of 656 ft (200 m), it will determine the radar is blocked and disable the cruise along with the GDS relearn procedure will not complete, or it may fail or error out when it is performed. DTC B101E 4B can set if the radar cannot "see" objects throughout the full range of 656 ft (200 m) when performing a learn.

GDS can be used to review the Misaligned-Angled data in the Long Range Radar Sensor Module by going into Module Diagnostic>Long Range Radar Sensor Module>Data Display (see note below). There are 4 angled parameters to review: Up, Down, Left, and Right. If any of the parameters show "Yes" this is a good indication the long range radar is misaligned and that the alignment needs to be checked / learn procedure performed.

Note: Using GDS to check the long range radar Misaligned-Angle data may not always indicate a radar that is or is not aligned properly. Always perform the physical alignment check below.

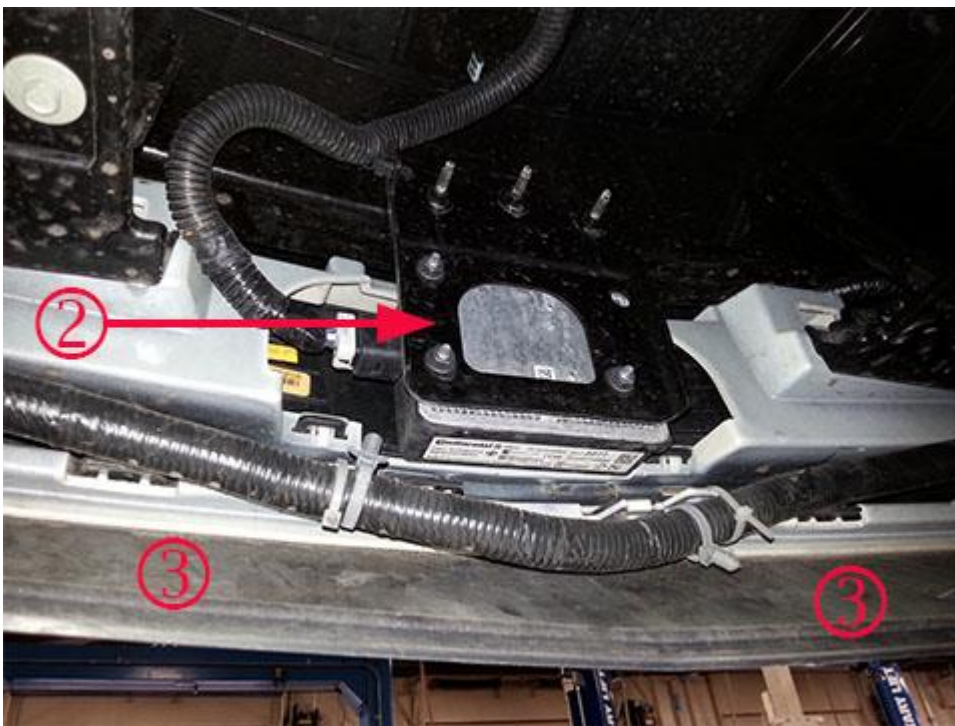


- Physically check the Long Range Radar Module bracket (2) to make sure it is in alignment. Place the truck on an alignment rack to ensure a flat, level surface. Use an angle gauge/level to make sure the bracket is mounted 90 degrees (+/- 3 degrees) to the level alignment rack. Position a digital angle gauge/level on the long range radar

bracket behind the module and check the vertical alignment, as shown below. The Long Range Radar Module must be mounted straight up and down vertically +/- 3 degrees. If misaligned, the Long Range Radar Module bracket is not adjustable and the mounting bracket is most likely bent and will need to be replaced.

After the Long Range Radar Module alignment has been checked and/or corrected, perform the Long Range Radar Learn in GDS by following the Radar Sensor Module - Long Range Programming and Setup procedure in Service Information.

NOTE: Early built 2015 models (early built 2015 models can be determined by NOT having RPO AVF) had the long range radar mounted higher, behind the Cadillac emblem in the grille (not shown).





3.3 Repair/Collision/Aftermarket/Wrong Parts

- Beware of any front end parts that may have been replaced with the wrong OEM part, aftermarket part, etc. In many cases, after a front end repair is done, if the wrong or certain aftermarket parts are used, they may block or misalign the radars or camera.

Below is an example of the wrong factory OEM front lower grille molding that was installed. The long range radar module is located behind the lower grille molding. The wrong lower grille molding (the one on the floor) had been installed on this vehicle. The long range radar module could not "see" through the molding correctly and would detect a blockage and disable the cruise. The correct lower grille molding (the one shown on the truck) was installed on the truck, which corrected the concern.



Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

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