Preliminary Information

PIT5921 Rear View Camera Coaxial Related Issues-B395A - B395B - B395C - B101E - B101D

Product Investigation Review Required

Models

Brand:	Model:	Model Years:	VIN: from	to	Engine:	Transmissions:
Buick	Enclave	2020 - 2022	All	All	All	All
Buick	Encore GX	2020 - 2022	All	All	All	All
Buick	LaCrosse	2019 - 2022	All	All	All	All
Buick	Velite	2021 - 2022	All	All	All	All
Cadillac	CT6	2019 - 2022	All	All	All	All
Cadillac	XT4	2019 - 2022	All	All	All	All
Cadillac	XT5	2020 - 2022	All	All	All	All
Cadillac	XT6	2020 - 2022	All	All	All	All
Chevrolet	Blazer	2019 - 2022	All	All	All	All
Chevrolet	Bolt EV	2019 - 2022	All	All	All	All
Chevrolet	Bolt EUV	2022	All	All	All	All
Chevrolet	Equinox	2019 - 2022	All	All	All	All
Chevrolet	Silverado 1500	2019 - 2022	All	All	All	All
Chevrolet	Silverado HD 2500/3500	2020 - 2022	All	All	All	All
Chevrolet	Traverse	2020 - 2022	All	All	All	All
GMC	Acadia	2019 - 2022	All	All	All	All
GMC	Sierra 1500	2019 - 2022	All	All	All	All
GMC	Sierra HD 2500/3500	2020 - 2022	All	All	All	All
GMC	Terrain	2019 - 2022	All	All	All	All

Involved Region or Country	North America
Additional Options (RPO)	Surround Camera System UV2 or UVS, or Trailer Camera System UVI
Condition	Some customers may comment on seeing a black screen and a triangle icon on the radio display when in reverse. Technicians may find one or more of the following DTC's B395A, B395B, B395C, B101E, B101D Note: Radios with infotainment version 3.4 will display blue screen compared to the black screen from version 3.5 onward.
Cause	Possible Causes: • Condition may be related to a camera, coaxial cable, or connector due to vibrations that are higher than the components can withstand which can cause failure. • The coaxial cable connectors to the cable may have excessive resistance that interrupts the video signal and causes the black screen. • SD Card can cause the surround view system to undergo resets resulting in intermittent black screens.

Correction:

Verify the condition by using the K157 Video Processing Module (VPM) Fail counters in GDS2 and cross reference stored DTC's with the trouble shooting table below to determine most probable cause.

Preliminary Service Procedure

      Water Intrusion

Some customers may comment on a blue or black screen with Service Rear Vision System message when shifting into Reverse. (Truck Only, Model Year 2019 to 2020). Refer to Service Bulletin# 18-NA-383 for additional steps and how to identify if this is a water intrusion issue.

VPM SPS Programming

If the A11 Radio has all three history DTC B395A Symptom Bytes 08, 72, and 3A, then refer to Service Bulletin # 19-NA-076: Blue or Black Screen and Service Rear Vision System Message on Radio Display Shifting into Reverse. Reprogramming the VPM software may reduce sensitivity of the B101D setting.

Connection Issues

Continue to procedure below if Diagnostic Trouble Codes (DTC) B395A, B395B, B395C, B101E, B101D are found in the K157 Video Processing Module

Service Procedure

The intent of this PI is to show that in most cases DTC B101E or B101D should NOT result in the replacement of the Video Processing Module (VPM) or the Radio, but instead inspect for coax and connector issues as well as the SD Card to ensure it is not corrupt.

These counters are listed in priority order from most usefulness to least. The ones outlined in red are considered the most critical and usually most helpful in root causing surround viewing issues.

Note: The VPM fail counters are not available on VIP architecture vehicles currently.

1. Connect the scan tool to the vehicle's data link connector and open GDS2 in the Techline Connect application and write down all DTCs stored in the vehicle.
2. Navigate to the VPM Module to observe the Fail Counters:

   Module Diagnostics / K157 Video Processing Module / Video Processing Module Internal Status.
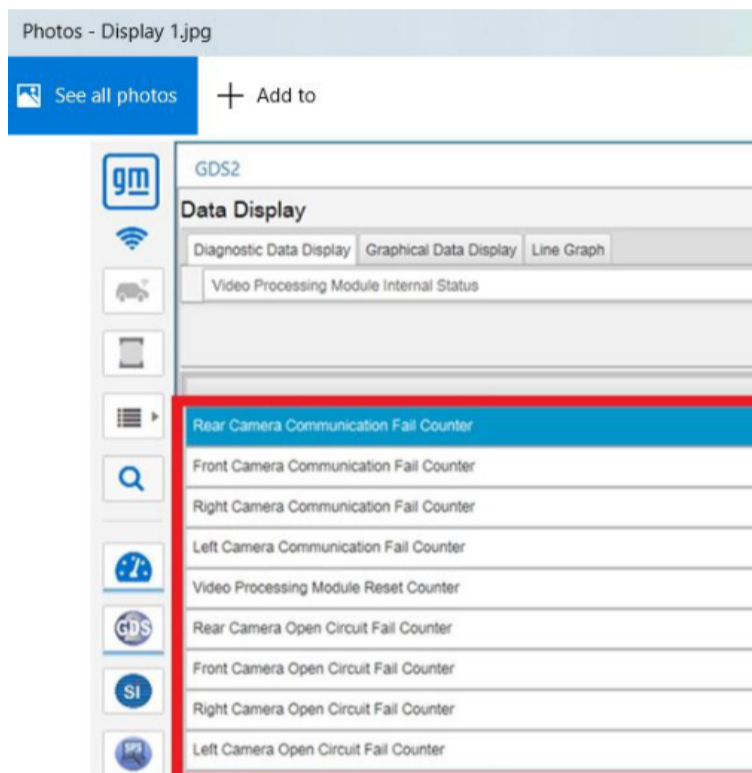
3. The three most critical parameters to look at are:
   a. Camera Communication Fail Counter
   b. Video Processing Module Reset Counter
   c. Camera Open Circuit Counter

4. Write down the counters found in the VPM using the scan tool.
5. Cross-reference the DTC's and counters with the trouble shooting table below to determine most probable cause.

Module	DTC's	Symptom Byte	DTC Description	Video Processing Module Reset Counter >20	Rear, Front, Right, or Left Camera Open Circuit Fail Counter >0
A11 Radio	B395A	08	Loss of Video Frames	-	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter
A11 Radio	B395A	72	Froze Frames	-	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter
K157 Video Processing Module	B101E	4A	Checksum Error	CHECK SD CARD / REPLACE K157 VIDEO PROCESSING MODULE	DO NOT REPLACE K157 VIDEO PROCESSING MODULE
K157 Video Processing	B101D	3C	Internal Communication	CHECK	DO NOT REPLACE

Module			Failure	SD CARD / REPLACE K157 VIDEO PROCESSING MODULE	K157 VIDEO PROCESSING MODU
K157 Video Processing Module	B390F			CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter
K157 Video Processing Module	B395B	08	Camera OPEN DTC	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter
K157 Video Processing Module	B395C			CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter
K157 Video Processing Module	B395A			CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter	CHECK COAX/CONNECTOR/CAMERA Based on Fail Counter

6. If the condition continues, power cycle the K157 Video Processing Module to see if the issue goes away.

Note: Before testing the coax cable, check the cable's exterior for being pinched, cut, damaged, or having loose connections at the components, all of which can cause reception issues.

7. If it's difficult to determine the causal component, unplug all the cameras.
   a. Leave the rear camera input and video output at VPM.
   b. Activate the Rearview Camera (RVC) using the "Cameras" touch button.
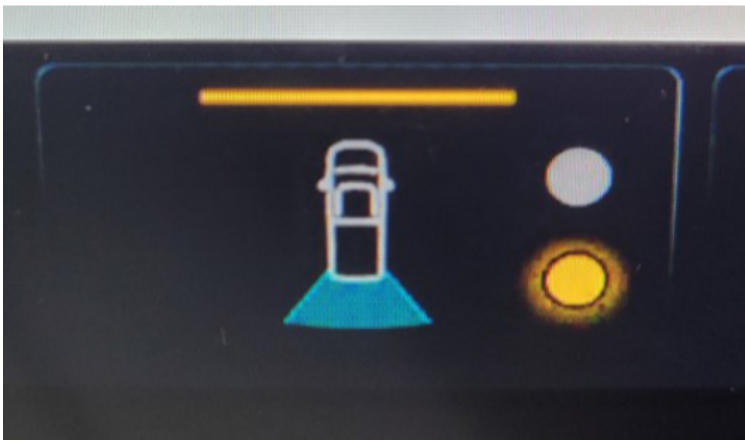
   c. If there is no image output, swap to the front, left, or right cameras into VPM rear camera input and repeat previous steps to check images again.
8. If concern(s) persist, refer to published diagnostics in SI.

Surround Vision Components

- K157 Video Processing Control Module
- A11 Radio
- B87 Rearview Camera
- B87CA Rearview Driver Information Camera- Cargo Area (RPO UVN)
- B225L Sideview Camera – Left
- B225R Sideview Camera – Right
- B174G Frontview Camera – Grille
- B174W Frontview Camera – Windshield
- Trailer Rearview Camera (if customer installed)
- Trailer Interior Camera (if customer installed)

Additional Surround Vision System Issues

Refer to published bulletins, PIs and SISI documents for further diagnostic steps on the following issues.

Pink Colored Image Issue

Pink on the screen will be most likely an intermittent Coax issues caused by damaged or frayed coax cables.

Some intermittent conditions can be caused by wire terminal fretting corrosion, which is a build-up of insulating, oxidized wear debris that can form when there is a small motion between electrical terminals.

Flicker Issue

Verify P17 Info Display Module displays infotainment system information properly. The Video Processing module controls the buttons on the touch screen.

Confirm the buttons on the touchscreen are functioning properly.

- If the "Cameras" Icon is greyed out and not working. The connection issue may be between the VPM and Radio.
- If the touch buttons are working properly, it could be an issue with the coax cable connection from the VPM to the Rear Vision Camera.

Note: Before testing the coax cable, check the cable's exterior for being pinched, cut, damaged, or having loose connections at the components, all of which can cause reception issues.
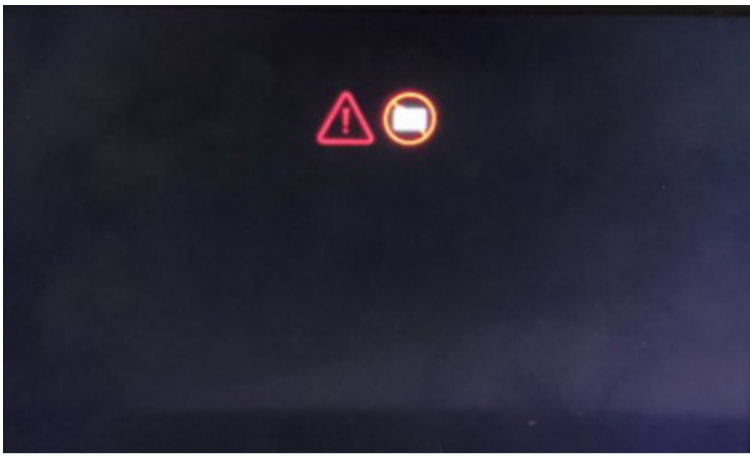
Rolling Counter Issue

The Radio requires a rolling counter to ensure a video output on the radio screen. This counter prevents a frozen image to be displayed to the vehicle owner when shifting into reverse.

This rolling counter is monitored continuously to ensure we have video signal from the rear camera. It goes from the rear camera to the VPM and from the VPM to the Radio.
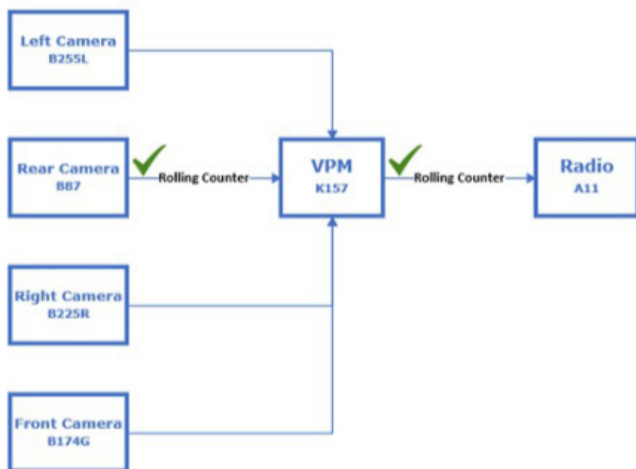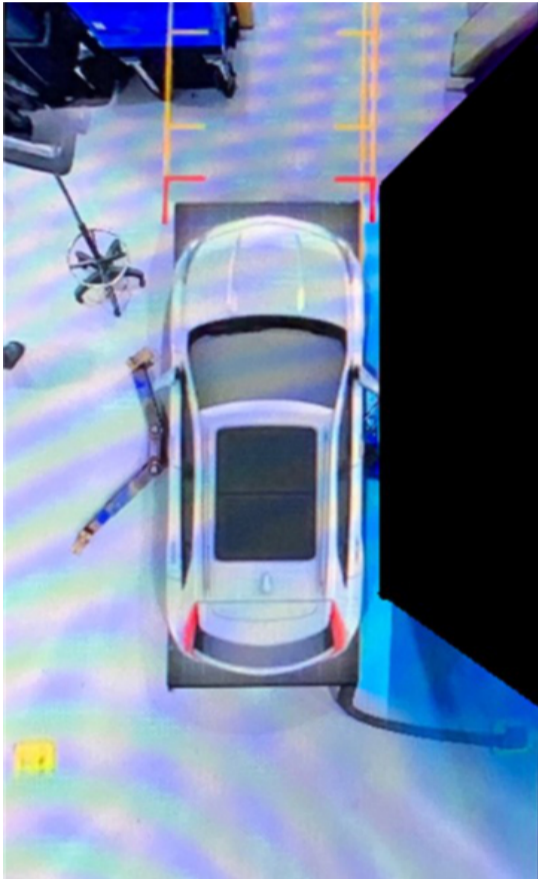

If the rear camera or the VPM do not provide the rolling counter, you will see the following black screen with an icon:

The VPM does not monitor the left, right or front cameras with a rolling counter. These camera's will display in black on their perspective side if there is an issue.

Figure below is of a right camera issue:

VPM Calibration

- If the Video Processing Control Module is not calibrated, it will display an hour-glass icon on the infotainment screen. Once calibration is attained, the hourglass will automatically disappear.
- The calibration is performed automatically by the Video Processing Control Module and is needed to have the Video Processing Control Module learn new cameras and their positions. Please follow the instruction in SI to assist in calibrating the Video Processing Control Module
- The Video Processing Control Module can disable rear camera display guidelines if it is not calibrated adequately. Once calibration is attained, the guidelines should return.

Circuit Issues

- An open in the backup lamp control circuit, defective backup lamps, or incorrect/aftermarket backup lamps may cause erratic circuit behavior, such as unwanted voltage on a circuit when vehicle is no longer in Reverse.
- The camera image display remaining active after the vehicle is shifted out of Reverse, may indicate possible backup lamp control circuit issues.

Version History

Version	1
Created	06/08/2022 - Created on.