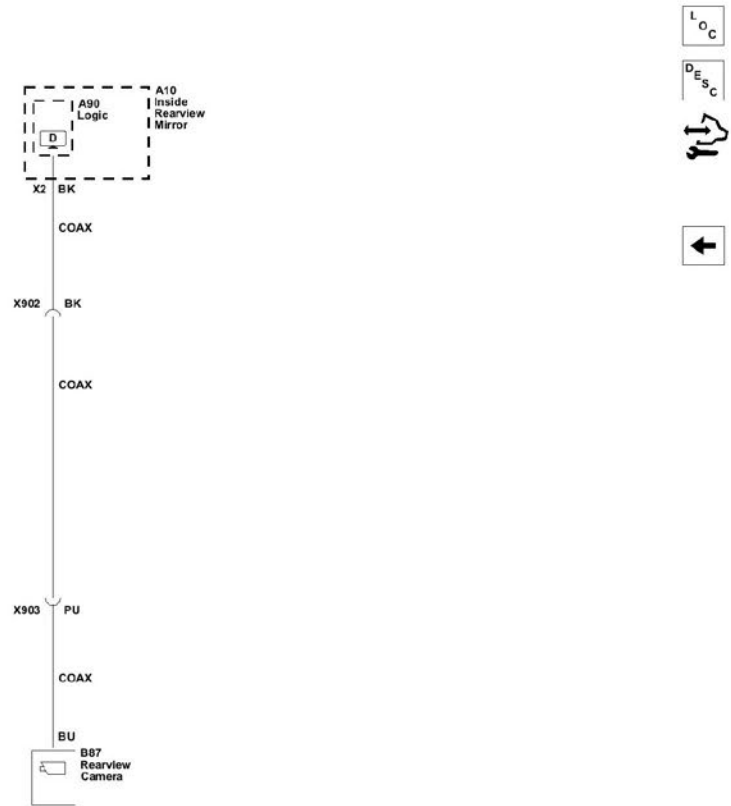
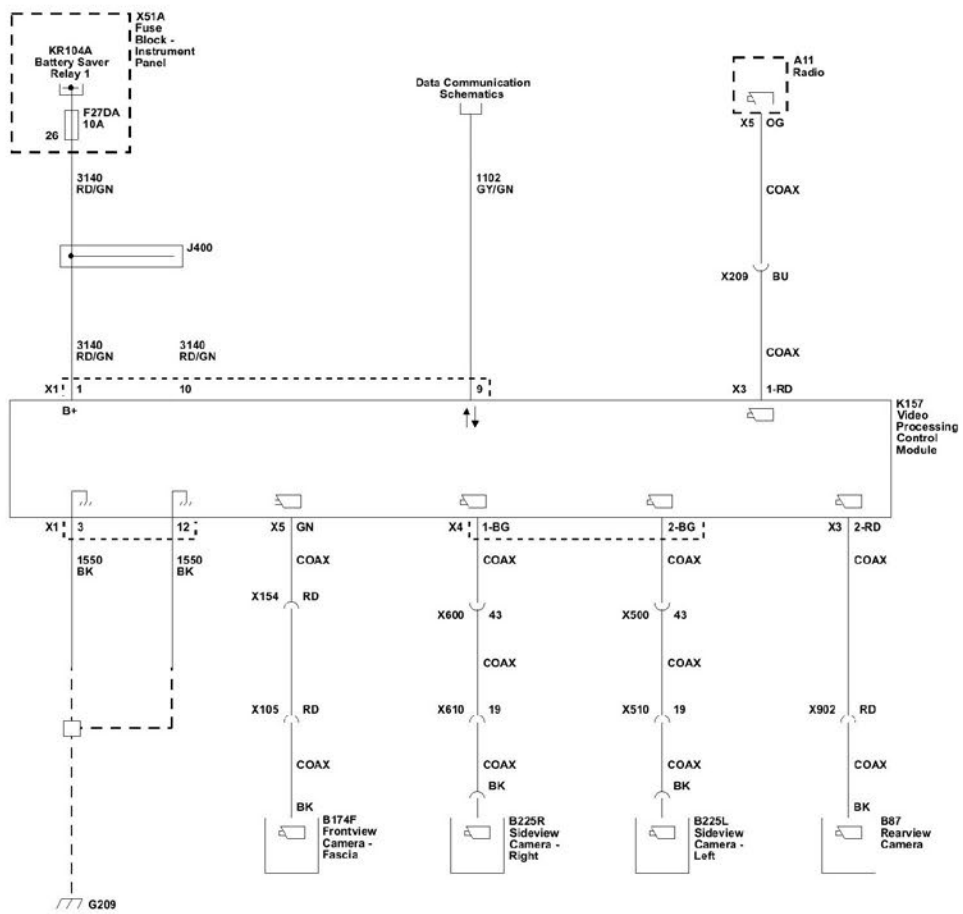


This file represents a consolidation of multiple files sent by the manufacturer. Please use the bookmarks to navigate to each file. (Each bookmark label is the name of the original file.)



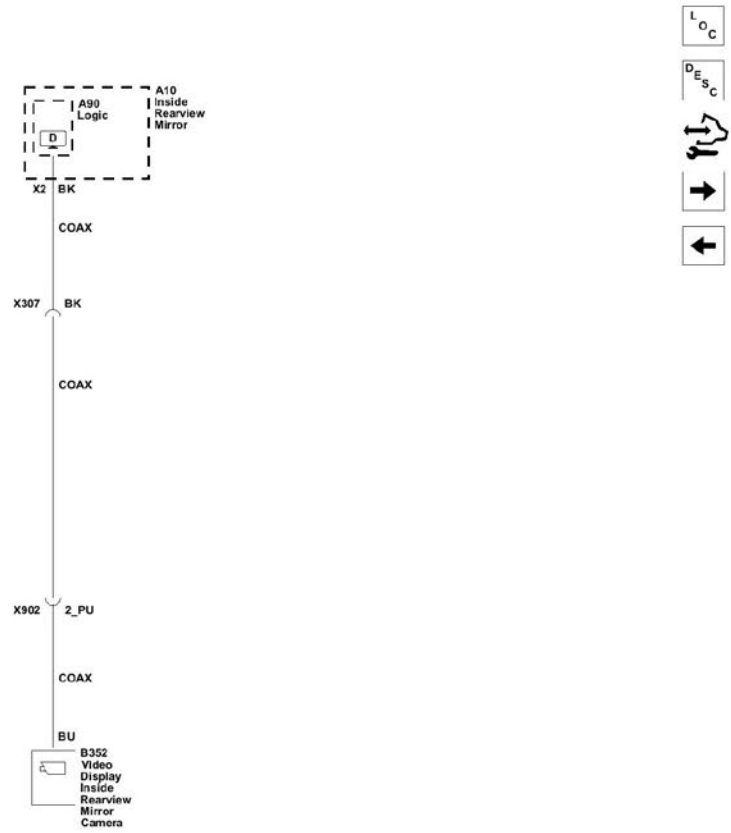
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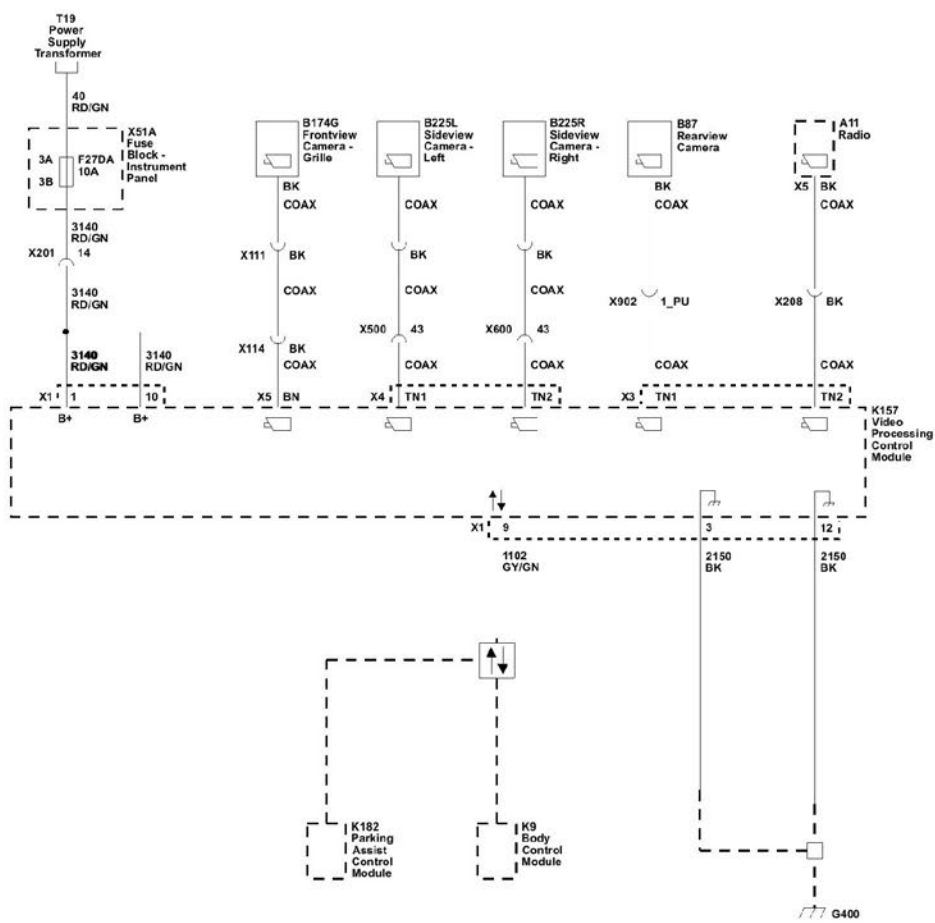
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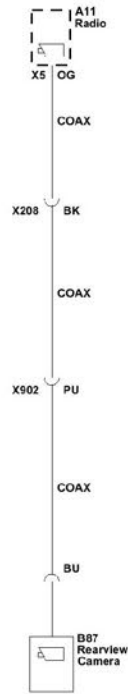
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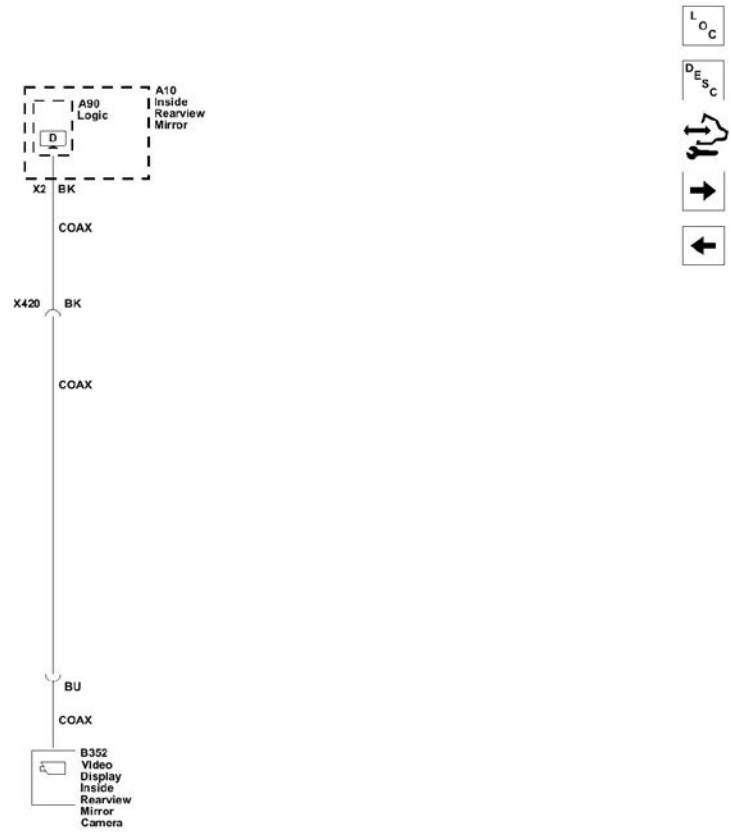
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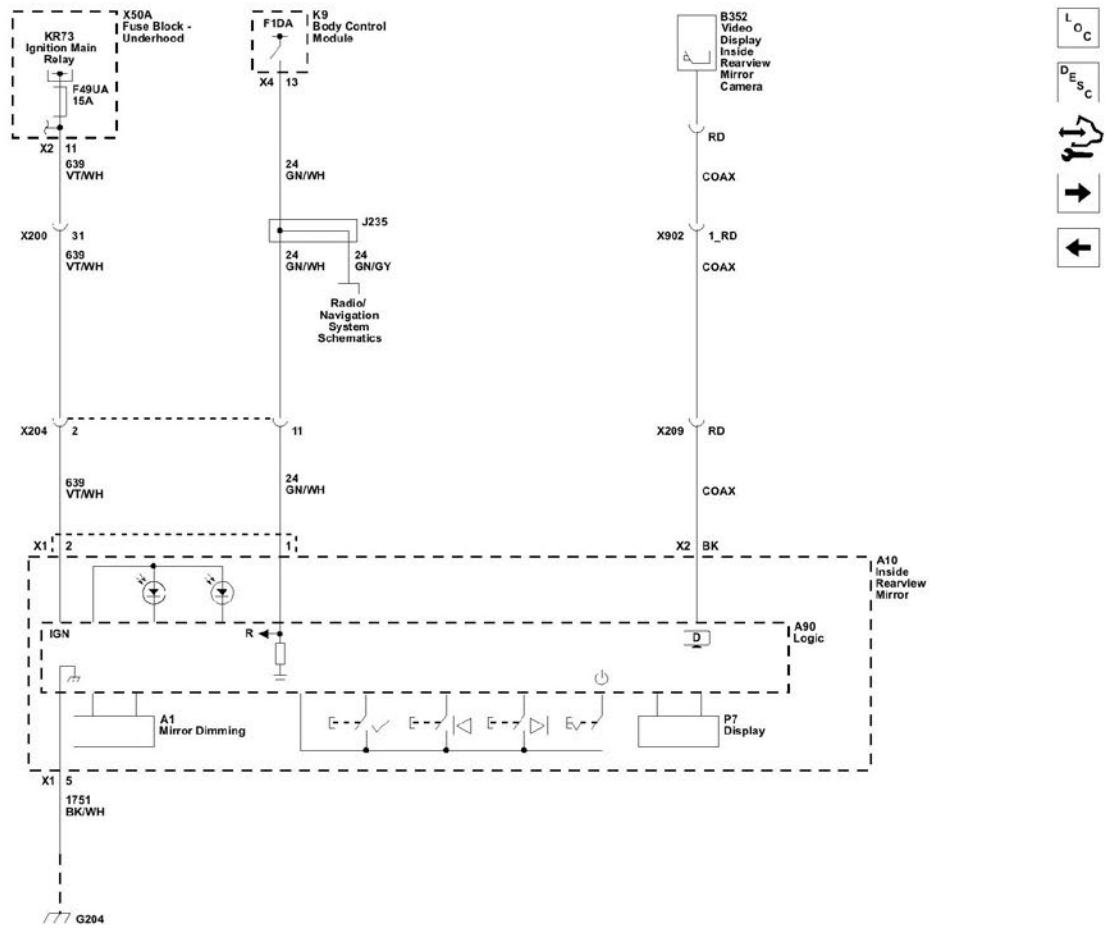
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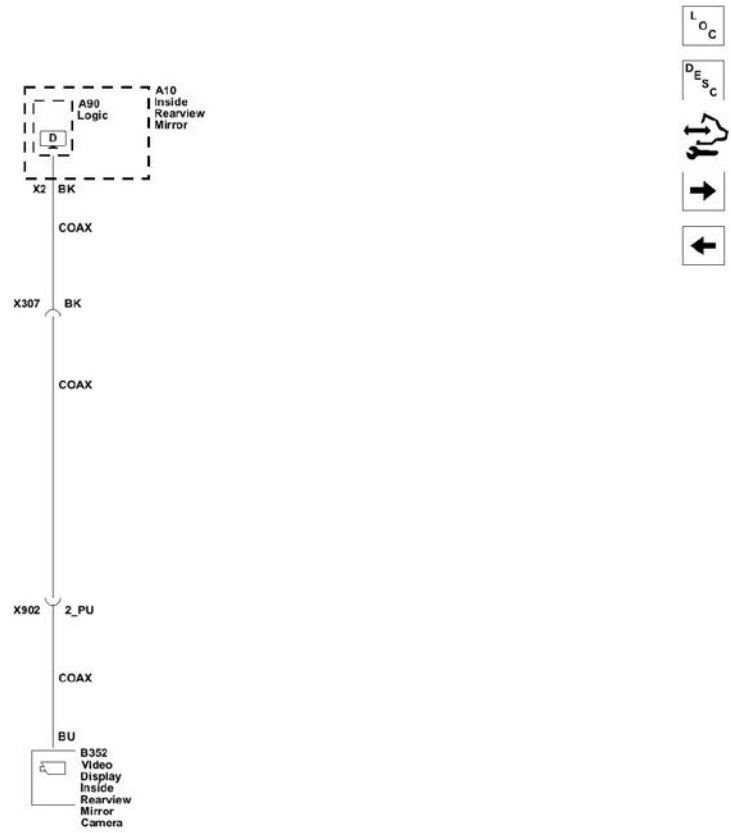
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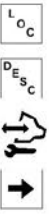
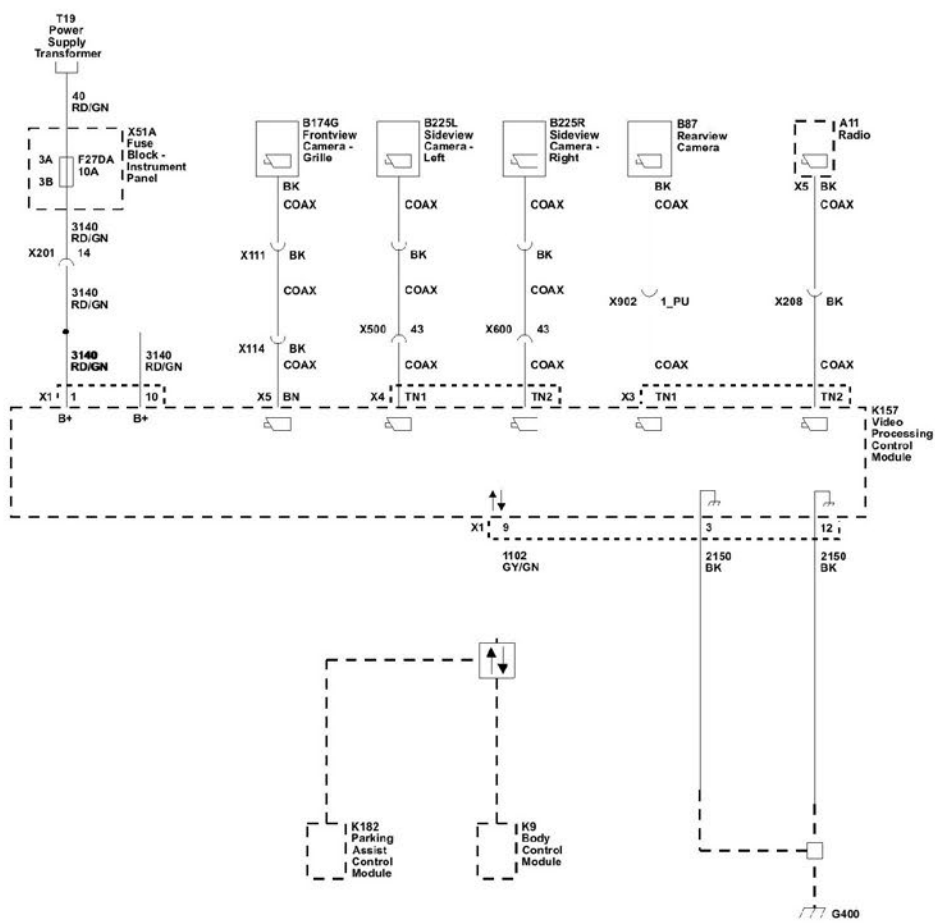
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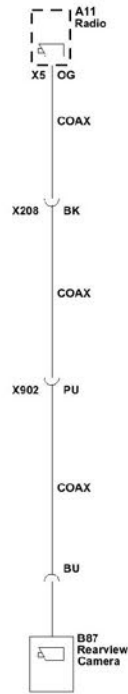
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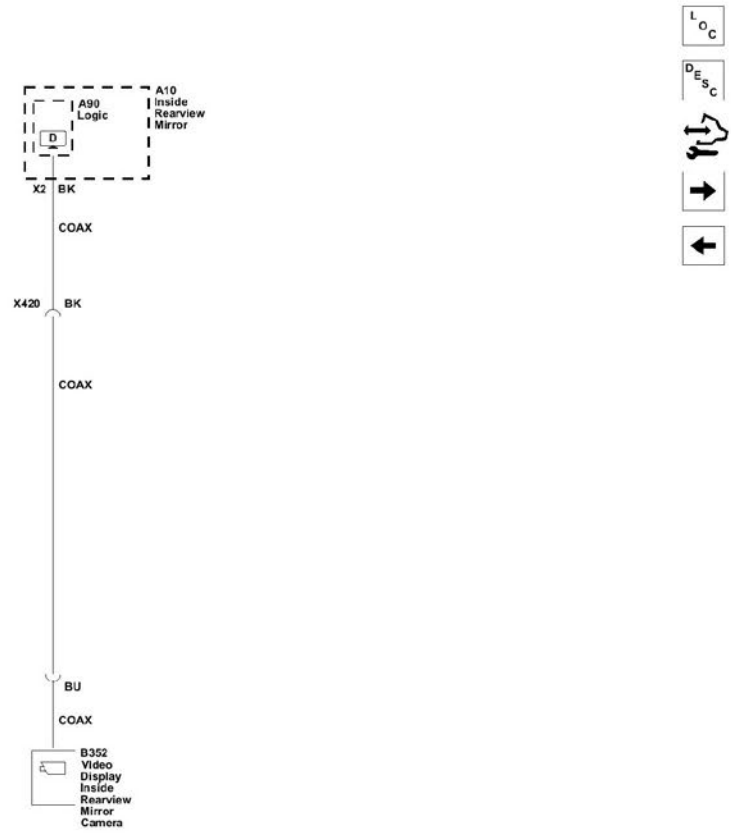
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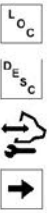
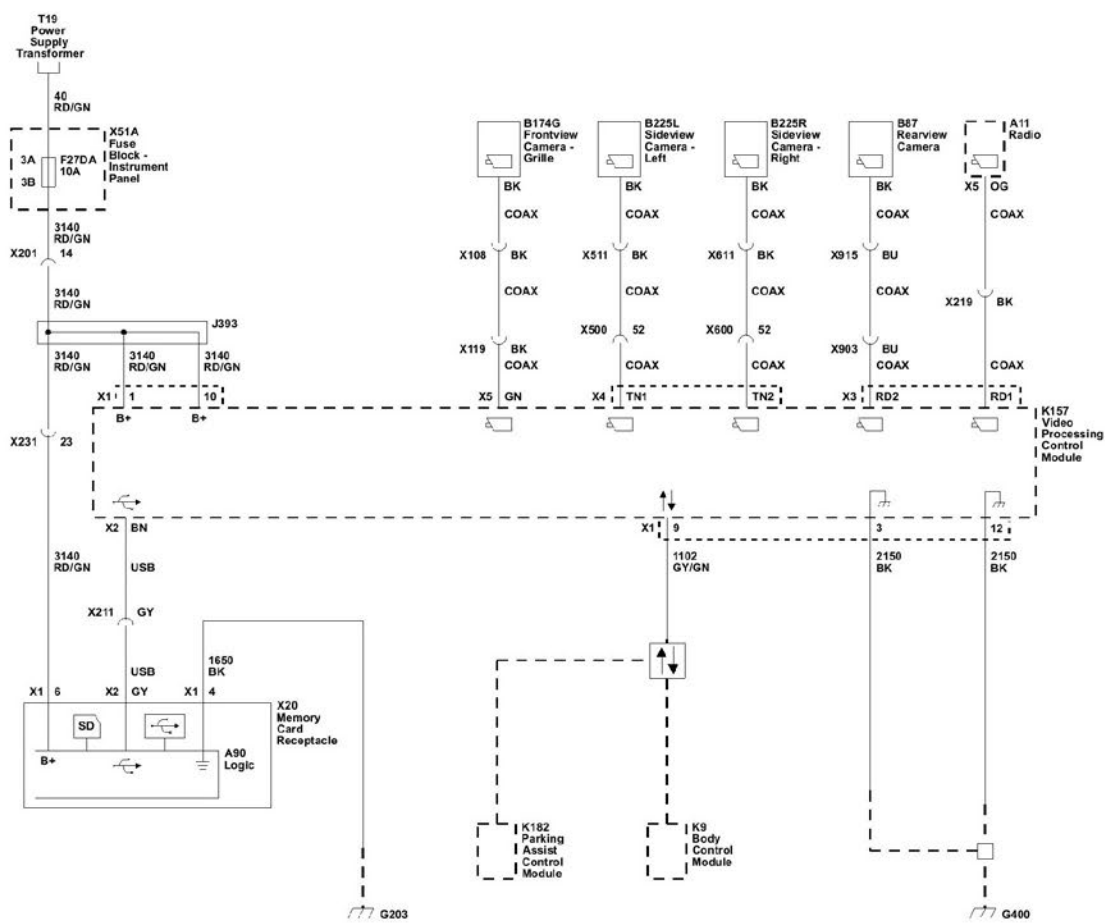
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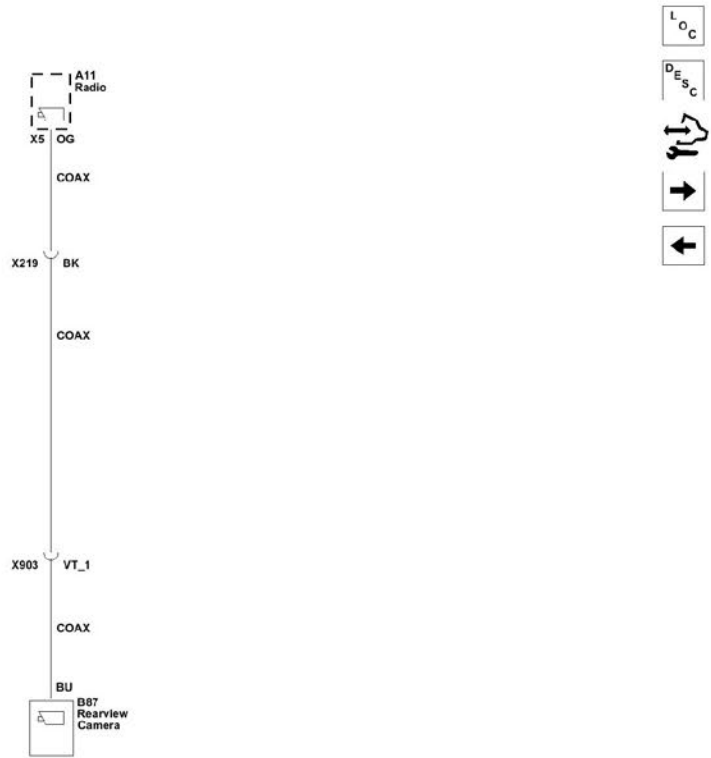
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Document ID: 5757463

#21-NA-048: Black Screen in Reverse with Red Triangle and Red Camera with A Circle and Slash Through It - (May 19, 2021)

Subject: Black Screen in Reverse with Red Triangle and Red Camera with A Circle and Slash Through It

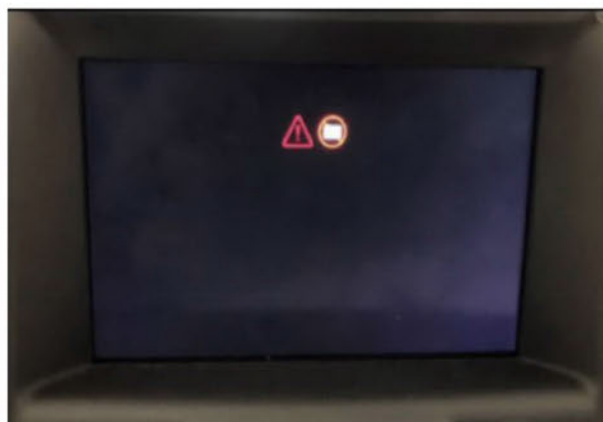


This bulletin replaces PIC6420D. Please discard PIC6420D.

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Cadillac	XT5	2020	2021	SOP	1GYKNDRS0MZ	All	All
	XT6				1GYKPHRS3MZ		
GMC	Acadia				1GKKNRL47MZ		
Holden	Acadia	2020	2020				

Involved Region or Country	North America, Israel, China, Saudi Arabia, Korea, Germany, Russia, Middle East, Palestine, Japan, S. Korea, Australia and New Zealand.
Additional Options (RPOs)	
Condition	

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Some customers may comment on seeing a black screen with red triangle and red camera with a circle and slash through it when vehicle is in Reverse. This condition may be intermittent.

<p>Cause</p>	<p>The cause of the condition may be that the crimping of the coaxial cable connectors to the cable is causing an excessive resistance that interrupts the video signal and causes the black screen.</p>
<p>Correction</p>	<p>Note: Verify the Condition, then depending on Model and Year, follow the appropriate repair in the list of Repair Procedures below.</p>

Preliminary Service Procedure

For 2020 GMC Acadia, Holden Acadia, XT5 and XT6 Model Year vehicles ONLY, do the following check:

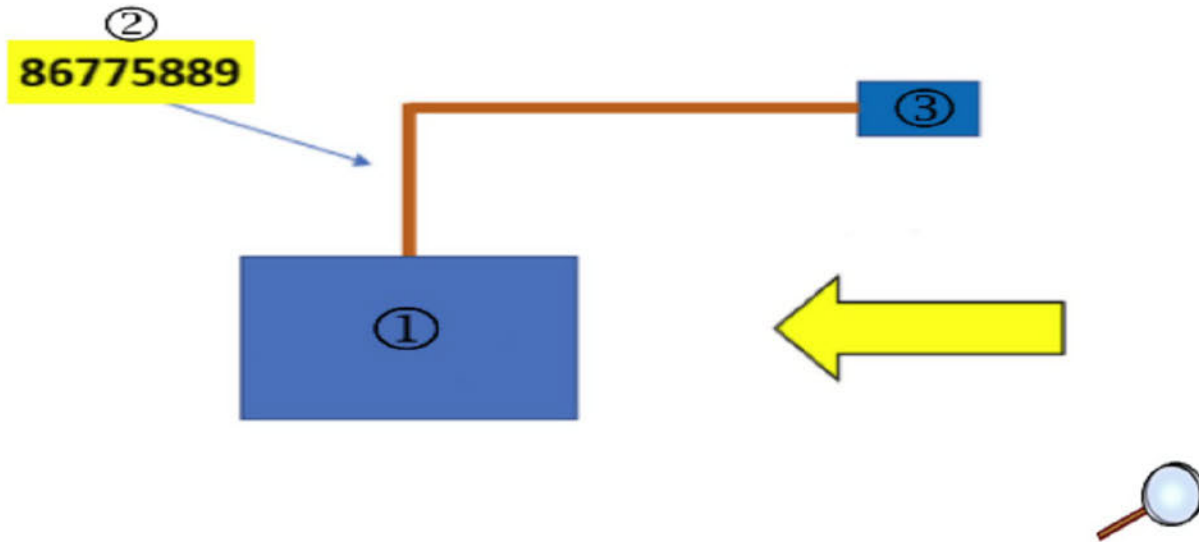
Note: This issue may be found on a small percentage of vehicles.

1. Verify that the A11 Radio header is not loose.
 - 1.1. To do this, gain access to the IP coaxial cable behind the right kick panel.
 - 1.2. Hold the cable an inch or two below the connection to the A11 Radio and while watching the screen in Reverse, gently move the cable back and forth.
 - 1.3. If you get pink lines on the screen or if it goes black, replace the A11 Radio. Refer to the appropriate *Radio Replacement*, in SI.
2. Continue to coaxial replacement as shown by model below.

Service Procedure - For 2020 and 2021 Model Year vehicles, replace the following coaxial cable(s)

XT6 Models – Replace only the (IP) coaxial cable from the in-line connector to the A11 Radio.

2020-2021 XT6 IP Coaxial Cable Routing (DRZ & UV2)



1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection

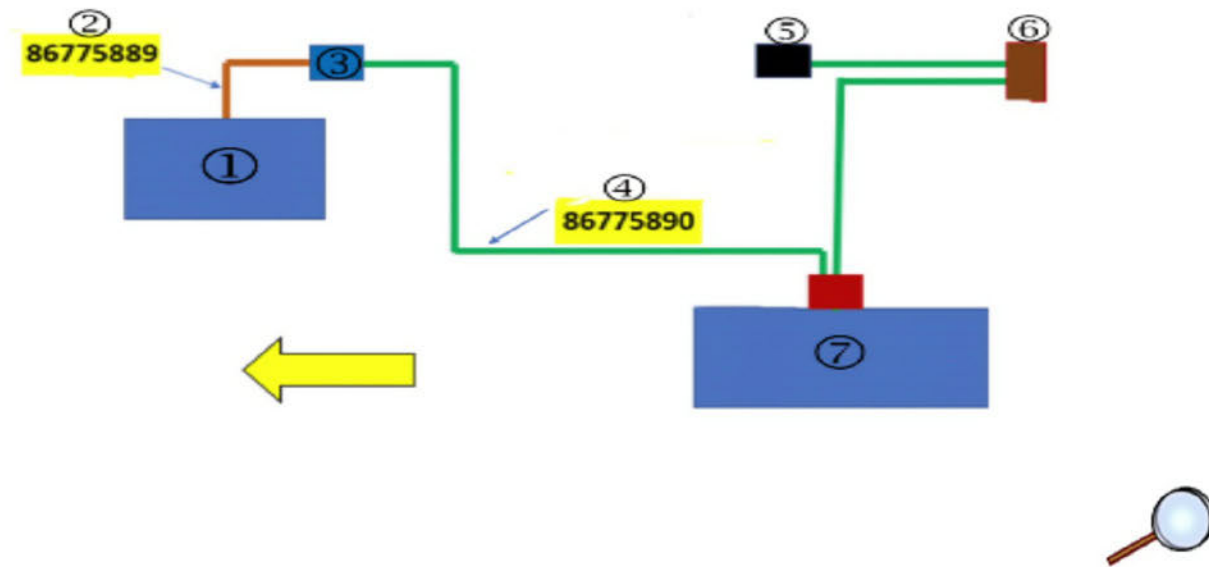
Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

For XT5 and Acadia Models, replace the (Body) coaxial cable from the Video Processing Module (VPM) to the in-line connector AND the (IP) coaxial cable from the in-line connector to the A11 Radio.

XT5

2020-2021 XT5 IP and Body Coaxial Cable Routing (DRZ & UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection
4. Body Coax
5. To Headliner
6. To Liftgate Harness
7. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

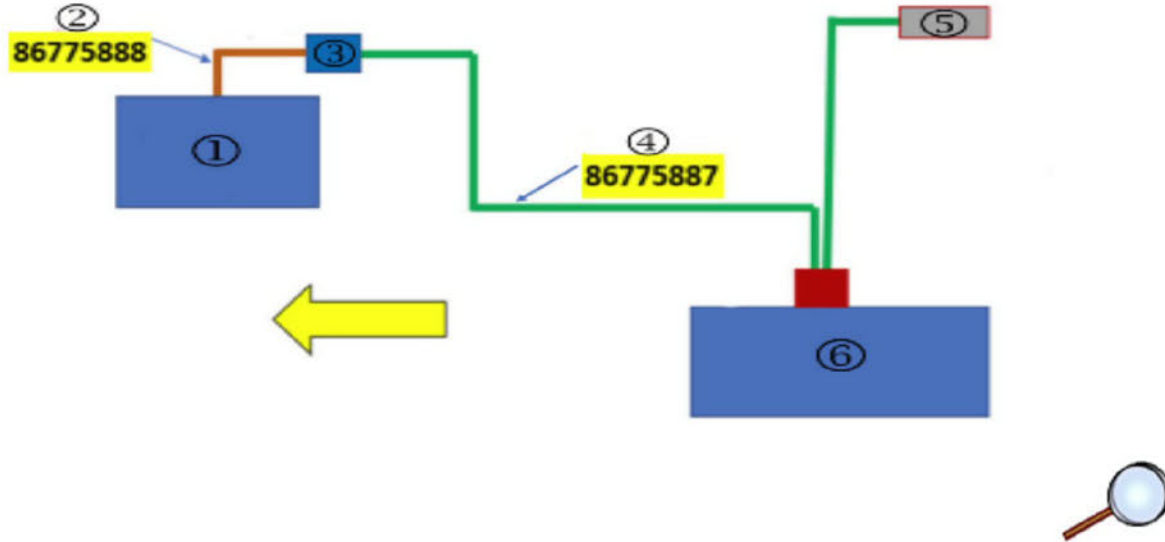
Note: On XT5, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the right kick panel. It also routes to the liftgate coaxial connector and to the coax at the top of the left "D" pillar headliner area for the rearview mirror.

1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate connector and connect to the cable to the rearview mirror in the top left "D" pillar headliner area.
2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

GMC Acadia

2020-2021 GMC Acadia IP and Body Coaxial Cable Routing (UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection
4. Body Coax
5. To Liftgate Harness
6. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

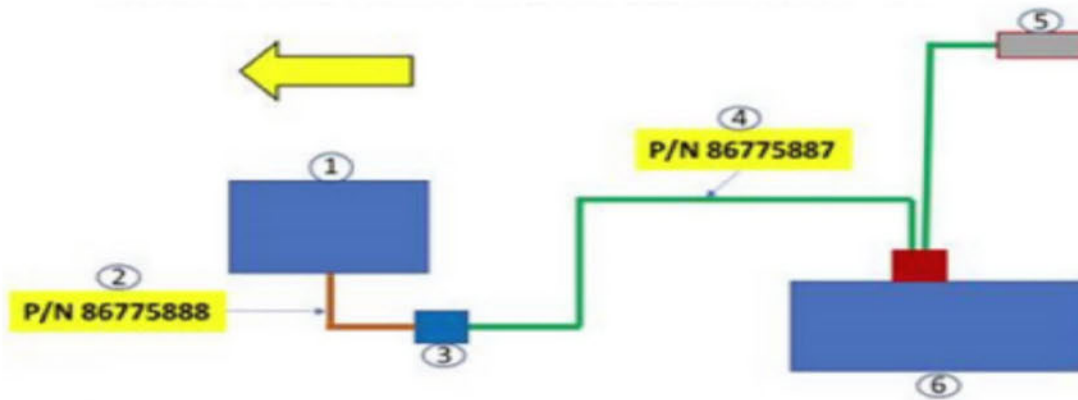
Note: On GMC Acadia, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate coaxial cable connector.

1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate coaxial cable connector.
2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

Holden Acadia

2020 Holden Acadia IP and Body Coaxial Cable Routing (UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection
4. Body Coax
5. To Liftgate Harness
6. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

Note: On Holden Acadia, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the left side of the IP near the glove box.

1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the left IP near the glove box and to the liftgate coaxial cable connector.
2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the left IP near the glove box.

Parts Information

Causal Part	Description	Part Number	Qty
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (Acadia)	86775887	1
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (Acadia)	86775888	1

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Causal Part	Description	Part Number	Qty
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (XT5 / XT6)	86775889	1
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (XT5)	86775890	1

Warranty Information

For vehicles repaired under the Bumper-to-Bumper coverage (Canada Base Warranty coverage), use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
3487258*	Replace (IP) Coax Cable from In-line Connector to the A11 Radio (XT6 Only)	0.5 hr
3487248*	Overlay Body Coax Cable from VPM to In-line Connector and Replace the IP Coax Cable to the A11 Radio	2.0 hr

*This is a unique Labor Operation for Bulletin use only.

Any additional time for component R and R to gain access, or repair time greater than 2.0 hours, must be submitted as Other Hours and requires appropriate authorization.

Version	2
Modified	Released March 05, 2021 Revised May 18, 2021 – Added 2020 Holden Acadia Model, Repair Section and Graphic, Removed Date Breakpoint and Replaced with 3 VIN Breakpoints.

Keywords: B395A

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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DTC B395A (with UV2, in Radio)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B395A

Rearview Camera

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Coax — Camera Video Signal (B87 Rearview Camera to K157 Video Processing Control Module)	K157 Video Processing Control Module = B395A 08 or B399B 02 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08 or B399B 05 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08 or B399B 05 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08, 4B, 39, 53, 54, 58, 66, 3C A11 Radio = B395A 08 or 72 or 1
Coax — Camera Video Signal (K157 Video Processing Control Module to A11 Radio)	A11 Radio = B395A 08 or 72 or 3A	A11 Radio = B395A 08 or 72 or 3A	A11 Radio = B395A 08 or 72 or 3A	—
1. Rear vision camera image distorted or blue or black screen				

Circuit/System Description

For an overview of the component/system, refer to: [Surround Vision Camera Description and Operation](#)

Circuit	Description
Camera Video Signal	Coaxial Camera Signal

Conditions for Running the DTC

Ignition » On / Vehicle » In Service Mode

Conditions for Setting the DTC

The Radio has detected a video signal circuit malfunction.

Actions Taken When the DTC Sets

Service Surround Vision Camera message = On

Conditions for Clearing the DTC

The conditions for setting the DTC no longer exist.

Diagnostic Aids

An open in the shield of the video signal circuit can cause a distorted screen.

Reference Information

Schematic Reference

[Image Display Camera Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

[Control Module References](#)

Special Tools

- EL-52552 COAX FAKRA CABLE ADAPTER KIT

DTC B395A (with UV2, in Video Processing Control Module)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B395A

Rearview Camera

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Coax — Camera Video Signal (B87 Rearview Camera to K157 Video Processing Control Module)	K157 Video Processing Control Module = B395A 08 or B399B 02 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08 or B399B 05 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08 or B399B 05 A11 Radio = B395A 08 or 72 or 1	K157 Video Processing Control Module = B395A 08, 4B, 39, 53, 54, 58, 66, 3C A11 Radio = B395A 08 or 72 or 1
Coax — Camera Video Signal (K157 Video Processing Control Module to A11 Radio)	A11 Radio = B395A 08 or 72 or 3A	A11 Radio = B395A 08 or 72 or 3A	A11 Radio = B395A 08 or 72 or 3A	—
1. Rear vision camera image distorted or blue or black screen				

Circuit/System Description

For an overview of the component/system, refer to: [Surround Vision Camera Description and Operation](#)

Circuit	Description
Camera Video Signal	Coaxial Camera Signal

Conditions for Running the DTC

Ignition » On / Vehicle » In Service Mode

Conditions for Setting the DTC

DTC B395A 39, 3C, 58

The Video Processing Control Module has detected a Rear Camera internal malfunction

DTC B395A 08

The Video Processing Control Module has detected a camera video signal circuit malfunction.

DTC B395A 66

The Video Processing Control Module has detected incorrect Rear Camera mounting.

DTC B395A 4B

The Video Processing Control Module has determined Rear Camera calibration not complete.

DTC B395A 53, 54

The Video Processing Control Module has determined the Rear Camera temperature is outside normal operating range.

Actions Taken When the DTC Sets

Service Surround Vision Camera message = On

Conditions for Clearing the DTC

The conditions for setting the DTC no longer exist.

Diagnostic Aids

The following conditions could cause component performance issues: Rearview Camera

- Ambient Light Intensity — High /Low
- Camera Blocked — Debris /Ice /Mud /Snow
- Temperature — High /Low

An open in the shield of the video signal circuit can cause a distorted screen.

Reference Information

Schematic Reference

[Image Display Camera Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Special Tools

- EL-52552 COAX FAKRA CABLE ADAPTER KIT

DTC B395A (with UVB)

Diagnostic Instructions

- Perform the [Diagnostic System Check - Vehicle](#) prior to using this diagnostic procedure.
- Review [Strategy Based Diagnosis](#) for an overview of the diagnostic approach
- [Diagnostic Procedure Instructions](#) provides an overview of each diagnostic category

DTC Descriptor

DTC B127B

Rearview Camera Input Signal Circuit

DTC B127B

Rearview Camera

DTC B395A

Rearview Camera

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Camera Video Signal	B127B 2B or B395A 08,72 or 1	B127B 2B or B395A 08,72 or 1	B127B 2B or B395A 08,72 or 1	B127B 2B or B395A 08,72,3A or 1
1. Rearview Camera = Malfunction				

Circuit/System Description

When the transmission is placed into REVERSE, a signal is sent to the Radio indicating that camera operation is requested. The rearview camera sends video information to the radio through a coax cable. The coax cable also provides power from the Radio to the rearview camera.

Conditions for Running the DTC

- Engine running
- Transmission in R

Conditions for Setting the DTC

The video signal from the rearview camera has not been received by the Radio or is frozen for 2.5 s.

Action Taken When the DTC Sets

- The Radio stores the DTC in memory.
- A service message may be displayed on the driver information center or info display module.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- A history DTC will clear once 40 malfunction-free ignition cycles have occurred.

Diagnostic Aids

A poor video image can be caused by ice, snow, and mud buildup on the lens of the rearview camera. Also, extreme lighting conditions can affect performance, such as operating in the dark or with bright sunlight shining on the camera. Extreme high or low temperatures can also affect the image quality. An open in the shield of the video signal circuit can also cause a distorted screen.

An open in the backup lamp control circuit, defective backup lamps, or incorrect/aftermarket backup lamps can cause erratic circuit behavior such as unwanted voltage on circuit when vehicle is no longer in REVERSE. The rear vision image display remaining active after the vehicle is shifted out of REVERSE can also be an indication of backup lamp control circuit issues.

Reference Information

Schematic Reference

[Image Display Camera Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Description and Operation

[Rear Vision Camera Description and Operation](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Special Tools

- EL-52552 COAX FAKRA CABLE ADAPTER KIT

Symptom Byte List

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
<p>(00–0F) General Electrical Failures This category includes standard wiring failure modes (for example, shorts and opens), direct current (DC) quantities related by Ohm’s Law and quantities related to amplitude, frequency or rate of change, and wave shape.</p>		
00	—	This sub type is used for failures that cannot be assigned to a specific sub type. No additional information is available.
01	Short to Battery	This sub type is used for failures where the Electronic Control Unit measures vehicle system (battery positive) potential for greater than a specified time period or when some other value is expected.
02	Short to Ground	This sub type is used for failures where the Electronic Control Unit measures ground (battery negative) potential for greater than a specified time period or when some other value is expected.
03	Low Voltage	This sub type is used for failures where the Electronic Control Unit measures a voltage below a specified range but not necessarily a short to ground.
04	Open	This sub type is used for failures where the Electronic Control Unit determines an open circuit via lack of bias voltage, low current flow, no change in state of an input in response to an output, etc.
05	High Voltage/Open	This sub type is used for failures where the condition detected by the Electronic Control Unit is the same for either indicated failure mode.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
06	Low Voltage/Open	This sub type is used for failures where the condition detected by the Electronic Control Unit is the same for either indicated failure mode.
07	High Voltage	This sub type is used for failures where the Electronic Control Unit measures a voltage above a specified range but not necessarily a short to battery.
08	Performance – Signal Invalid	This sub type is used for failures where the value of the signal is not plausible given the operating conditions.
09	Too Fast Transitions	This sub type is used for failures where the signal transitions more quickly than is reasonably allowed.
0A	Too Slow Transitions	This sub type is used for failures where the signal transitions more slowly than is reasonably allowed.
0B	High Current	This sub type is used for failures where the Electronic Control Unit measures current flow above a specified range.
0C	Low Current	This sub type is used for failures where the Electronic Control Unit measures current flow below a specified range.
0D	High Resistance	This sub type is used for failures where the Electronic Control Unit infers a circuit resistance above a specified range.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
0E	Low Resistance	This sub type is used for failures where the Electronic Control Unit infers a circuit resistance below a specified range.
0F	Signal Erratic	This sub type is used for failures where the signal is momentarily implausible (not long enough for Signal Invalid) or discontinuous.
(10–1F) Additional General Electrical Failures This category includes the overflow from category 0.		
10	—	Currently not used.
11	High Input	This sub type is used for failures where some circuit quantity is above a specified range.
12	Low Input	This sub type is used for failures where some circuit quantity is below a specified range.
13	Low Voltage/High Temperature	This sub type is used for failures where a temperature sensor with a negative temperature coefficient detects a voltage below a specified range.
14	High Voltage/Low Temperature	This sub type is used for failures where a temperature sensor with a negative temperature coefficient detects a voltage above a specified range.
15	Performance – Signal Rising Time Failure	This sub type is used for failures where the signal rise time is outside a specified range.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
16	Performance – Signal Falling Time Failure	This sub type is used for failures where the signal fall time is outside a specified range.
17	Performance – Signal Shape/Waveform Failure	This sub type is used for failures where the shape of the signal (plot of the amplitude with respect to time) is not correct (for example, improper circuit impedance.)
18	Low Signal Amplitude	This sub type is used for failures where the Electronic Control Unit measures a signal voltage below a specified range but not necessarily a short to ground (for example, gain too low).
19	High Signal Amplitude	This sub type is used for failures where the Electronic Control Unit measures a signal voltage above a specified range but not necessarily a short to battery (for example, gain too high).
1A	Performance – Bias Level Out of Range	This sub type is used for failures where the Electronic Control Unit applies a bias voltage to a circuit upon which is superimposed a signal voltage (for example, Oxygen Sensor Circuit.)
1B	Signal Cross Coupled	This sub type is used for failures where the Electronic Control Unit detects a circuit shorted to another circuit when both circuits are controlled by the Electronic Control Unit.
1C	—	Currently not used.
1D	—	Currently not used.
1E	—	Currently not used.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
1F	Erratic	This sub type is used for failures where the Electronic Control Unit momentarily detects one of the conditions defined above but not long enough to set a specific sub type.
(20–2F) FM / PWM Failures This category includes faults related to Frequency Modulated (FM) and Pulse Width Modulated (PWM) inputs and outputs of the Electronic Control Unit and faults where position is determined by counts.		
20	—	Currently not used.
21	Incorrect Period	This sub type is used for failures where the Electronic Control Unit measures an incorrect duration for one cycle of the output.
22	Too Short Low-Time	This sub type is used for failures where the Electronic Control Unit detects the low pulse is too narrow with respect to time.
23	Too Long Low-Time	This sub type is used for failures where the Electronic Control Unit detects the low pulse is too wide with respect to time.
24	Too Short High-Time	This sub type is used for failures where the Electronic Control Unit detects the high pulse is too narrow with respect to time.
25	Too Long High-Time	This sub type is used for failures where the Electronic Control Unit detects the high pulse is too wide with respect to time.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
26	Low Frequency	This sub type is used for failures where the Electronic Control Unit detects too few cycles in a given time period.
27	High Frequency	This sub type is used for failures where the Electronic Control Unit detects too many cycles in a given time period.
28	Incorrect Frequency	This sub type is used for failures where the Electronic Control Unit measures an incorrect number of cycles in a given time period.
29	Too Few Pulses	This sub type is used for failures where the Electronic Control Unit measures too few pulses (for example, position is calibrated in counts from one extreme to the other).
2A	Too Many Pulses	This sub type is used for failures where the Electronic Control Unit measures too many pulses (for example, position is calibrated in counts from one extreme to the other).
2B	Missing Reference	This sub type is used for failures where the Electronic Control Unit does not detect a reference for a signal circuit or a group of signal circuits.
2C	—	Currently not used.
2D	—	Currently not used.
2E	—	Currently not used.
2F	—	Currently not used.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
(30–3F) Electronic Control Unit Internal Failures This category includes faults related to memory, software, and internal electrical circuitry; requiring component replacement.		
30	—	Currently not used.
31	Internal Checksum Error	This sub type is used by the Electronic Control Unit to indicate an incorrect checksum calculation where memory type is not specified.
32	General Memory Malfunction	This sub type is used by the Electronic Control Unit to indicate a memory failure where memory type is not specified.
33	Special Memory Malfunction	This sub type is used by the Electronic Control Unit to indicate a memory failure where the specific memory type is not defined in this category.
34	RAM Malfunction	This sub type is used by the Electronic Control Unit to indicate a Random Access Memory (RAM) failure.
35	ROM Malfunction	This sub type is used by the Electronic Control Unit to indicate a Read Only Memory (ROM) failure.
36	EEPROM Performance/Malfunction	This sub type is used by the Electronic Control Unit to indicate an Electrically Erasable Programmable Read Only Memory (EEPROM) failure.
37	Software Malfunction	This sub type is used by the Electronic Control Unit to indicate a failure in the execution of operational software

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
38	Supervision Software Malfunction	This sub type is used by the Electronic Control Unit to indicate a loop time error in the execution of the operational software.
39	Internal Malfunction	This sub type is used by the Electronic Control Unit to indicate the detection of an internal circuit failure.
3A	Incorrect Component Installed	This sub type is used by the Electronic Control Unit to indicate a mismatch between the hardware connected to the Electronic Control Unit and the hardware expected by the Electronic Control Unit.
3B	Self-Test Malfunction	This sub type is used by the Electronic Control Unit to indicate a sensor self-test failure launched by an Electronic Control Unit command.
3C	Internal Communication Malfunction	This sub type is used by the Electronic Control Unit to indicate loss of an internal communication line, for example, between microprocessors in a dual microprocessor configuration.
3D	—	Currently not used.
3E	—	Currently not used.
3F	—	Currently not used.
<p>(40–4F) Electronic Control Unit Programming Failures This category includes faults related to operational software, calibrations, and options; remedied by programming the Electronic Control Unit.</p>		

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
40	—	Currently not used.
41	Not Programmed	This sub type is used to indicate that only boot software is present in the Electronic Control Unit.
42	Calibration Not Programmed	This sub type is used to indicate that operational software is present but calibration data is not.
43	EEPROM Incorrect Programming	This sub type is used to indicate an EEPROM error that may be remedied by reprogramming the module.
44	Security Access Not Activated	This sub type is used to indicate that programming was attempted without unlocking the Electronic Control Unit.
45	Variant Not Programmed	This sub type is used to indicate the need to enter (program) the sub system option content.
46	Configuration Not Programmed	This sub type is used to indicate the need to enter (program) the vehicle option content.
47	VIN Not Programmed	This sub type is used to indicate the need to enter (program) the vehicle identification number (VIN).
48	Security Code Not Programmed	This sub type is used to indicate the need to enter (program) the theft / security code.
49	RAM Incorrect Programming	This sub type is used by the Electronic Control Unit to indicate a Random Access Memory (RAM) error remedied by reprogramming.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
4A	Programming Checksum Error	This sub type is used by the Electronic Control Unit to indicate an incorrect checksum calculation where memory type is not specified.
4B	Calibration Not Learned	This sub type is used by the Electronic Control Unit to indicate that a password, operational range, etc. for a sensor or actuator must be learned by the Electronic Control Unit.
4C	DTC Memory Full	This sub type is used by the Electronic Control Unit to indicate that more DTCs have been detected than can be accommodated by the memory allocated for DTC storage.
4D	Stack Overflow	This subtype is used by the Electronic Control Unit to indicate that more memory has been used in a stack than is allocated to a program.
4E	—	Currently not used.
4F	—	Currently not used.
<p>(50–5F) Algorithm Based Failures This category includes faults based on comparing two or more input parameters for plausibility or comparing a single parameter to itself with respect to time.</p>		
50	—	Currently not used.
51	—	Currently not used.
52	—	Currently not used.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
53	Low Temperature	This sub type is used for failures where the Electronic Control Unit calculates a low temperature condition based upon the duration of certain operating parameters.
54	High Temperature	This sub type is used for failures where the Electronic Control Unit calculates a high temperature condition based upon the duration of certain operating parameters.
55	Too Few Transitions	This sub type is used for failures where the Electronic Control Unit monitors a parameter over time within specified limits and detects fewer than the expected number of transitions.
56	Too Many Transitions	This sub type is used for failures where the Electronic Control Unit monitors a parameter over time within specified limits and detects more than the expected number of transitions.
57	—	Currently not used.
58	Performance	This sub type is used for failures where the Electronic Control Unit does not see the expected change to a parameter or group of parameters in response to a particular event.
59	Protection Time-Out	This sub type is used for failures where the Electronic Control Unit detects a function is active for greater than a specified time period.
5A	Not Plausible	This sub type is used for failures where the Electronic Control Unit compares two or more input parameters for plausibility.
5B	—	Currently not used.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
5C	—	Currently not used.
5D	—	Currently not used.
5E	—	Currently not used.
5F	—	Currently not used.
<p>(60–6F) Mechanical Failures This category includes faults detected by inappropriate motion in response to an Electronic Control Unit controlled output.</p>		
60	—	Currently not used.
61	Stuck	This sub type is used for failures where the Electronic Control Unit does not detect any motion in response to energizing a motor, solenoid, relay, etc.
62	Stuck Open	This sub type is used for failures where the Electronic Control Unit does not detect any motion upon commanding the operation of a motor, solenoid, relay, etc., to close some piece of equipment.
63	Stuck Closed	This sub type is used for failures where the Electronic Control Unit does not detect any motion upon commanding the operation of a motor, solenoid, relay, etc., to open some piece of equipment.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
64	Slip Detected	This sub type is used for failures where the Electronic Control Unit detects excessive duration to command a motor, solenoid, relay, etc., to move a piece of equipment to a desired position.
65	Emergency Position Not Achievable	This sub type is used for failures where the Electronic Control Unit is unable to command a motor, solenoid, relay, etc., to move a piece of equipment to the emergency position.
66	Incorrect Mounting	This sub type is used for failures where the server detects incorrectly mounted components, for example, acceleration sensor showing a position error of 90°.
67	Incorrect Assembly	This sub type is used for failures where the control module has detected that the component has been incorrectly installed (for example, hydraulic pipes crossed over, circuits cross wired) or polarity errors.
68	—	Currently not used.
69	—	Currently not used.
6A	—	Currently not used.
6B	—	Currently not used.
6C	—	Currently not used.
6D	—	Currently not used.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
6E	—	Currently not used.
6F	—	Currently not used.
<p>(70–7F) Bus Signal / Message Failures This category includes faults related to bus hardware and signal integrity. This category is also used when the physical input for a signal is located in one Electronic Control Unit and another Electronic Control Unit diagnoses the circuit.</p>		
70	—	Currently not used.
71	Invalid Data	This sub type is used by the Electronic Control Unit to indicate a signal was received with the corresponding validity bit equal to Invalid or post processing of the signal determines it is invalid.
72	Message Counter Incorrect	This sub type is used by the Electronic Control Unit to indicate a signal was received without the corresponding rolling count value being properly updated.
73	Parity Error	This sub type is used by the Electronic Control Unit to indicate a message was processed with an incorrect parity calculation.
74	Bus Signal Checksum Error	This sub type is used by the Electronic Control Unit to indicate a message was processed with an incorrect protection (checksum) calculation.
75	Serial Data Link High Input	This sub type is used for failures where some circuit quantity, reported via serial data, is above a specified range.

Symptom Byte List

Symptom Byte	Symptom Byte Description	Symptom Byte Definition
76	Serial Data Link Low Input	This sub type is used for failures where some circuit quantity, reported via serial data, is below a specified range.
77	—	Currently not used.
78	—	Currently not used.
79	—	Currently not used.
7A	—	Currently not used.
7B	—	Currently not used.
7C	—	Currently not used.
7D	—	Currently not used.
7E	—	Currently not used.
7F	Bus Signal Erratic	This sub type is used for failures where the signal, reported via serial data, is momentarily implausible or discontinuous.
<p>(80–FF) Reserved Unique System Specific – See specific diagnostic procedures for symptom byte information if these symptom bytes are used.</p>		

Document ID: 5757463

#21-NA-048: Black Screen in Reverse with Red Triangle and Red Camera with A Circle and Slash Through It - (May 19, 2021)

Subject: Black Screen in Reverse with Red Triangle and Red Camera with A Circle and Slash Through It



This bulletin replaces PIC6420D. Please discard PIC6420D.

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Cadillac	XT5	2020	2021	SOP	1GYKNDRS0MZ	All	All
	XT6				1GYKPHRS3MZ		
GMC	Acadia				1GKKNRL47MZ		
Holden	Acadia	2020	2020				

Involved Region or Country	North America, Israel, China, Saudi Arabia, Korea, Germany, Russia, Middle East, Palestine, Japan, S. Korea, Australia and New Zealand.
Additional Options (RPOs)	
Condition	

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Some customers may comment on seeing a black screen with red triangle and red camera with a circle and slash through it when vehicle is in Reverse. This condition may be intermittent.

Cause	The cause of the condition may be that the crimping of the coaxial cable connectors to the cable is causing an excessive resistance that interrupts the video signal and causes the black screen.
Correction	Note: Verify the Condition, then depending on Model and Year, follow the appropriate repair in the list of Repair Procedures below.

Preliminary Service Procedure

For 2020 GMC Acadia, Holden Acadia, XT5 and XT6 Model Year vehicles ONLY, do the following check:

Note: This issue may be found on a small percentage of vehicles.

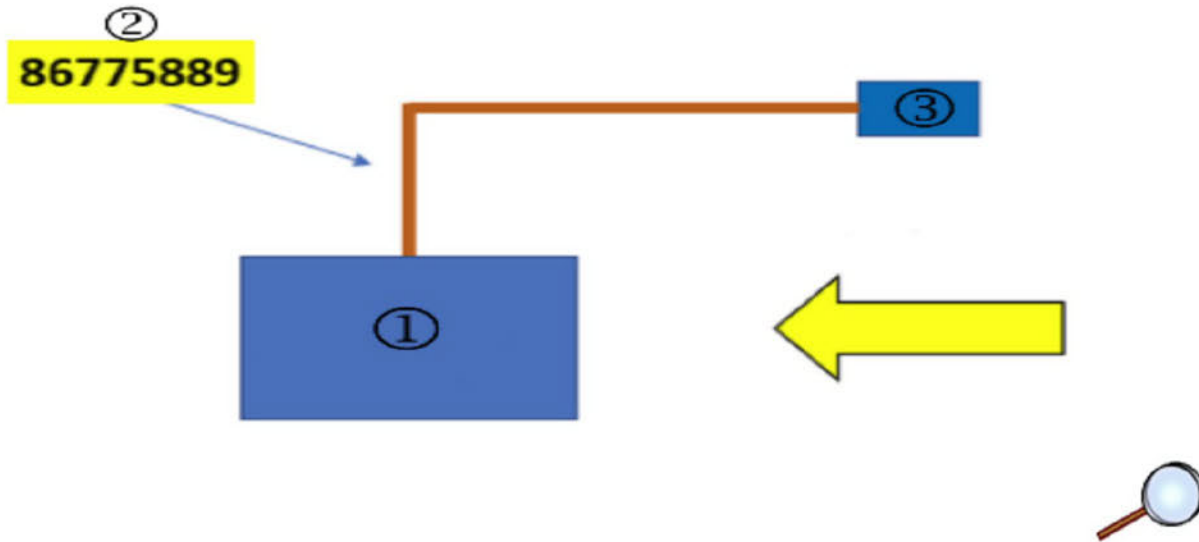
1. Verify that the A11 Radio header is not loose.
 - 1.1. To do this, gain access to the IP coaxial cable behind the right kick panel.
 - 1.2. Hold the cable an inch or two below the connection to the A11 Radio and while watching the screen in Reverse, gently move the cable back and forth.
 - 1.3. If you get pink lines on the screen or if it goes black, replace the A11 Radio. Refer to the appropriate *Radio Replacement*, in SI.
2. Continue to coaxial replacement as shown by model below.

Service Procedure - For 2020 and 2021 Model Year vehicles, replace the following coaxial cable(s)

XT6 Models – Replace only the (IP) coaxial cable from the in-line connector to the A11 Radio.

2020-2021 XT6 IP Coaxial Cable Routing (DRZ & UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection

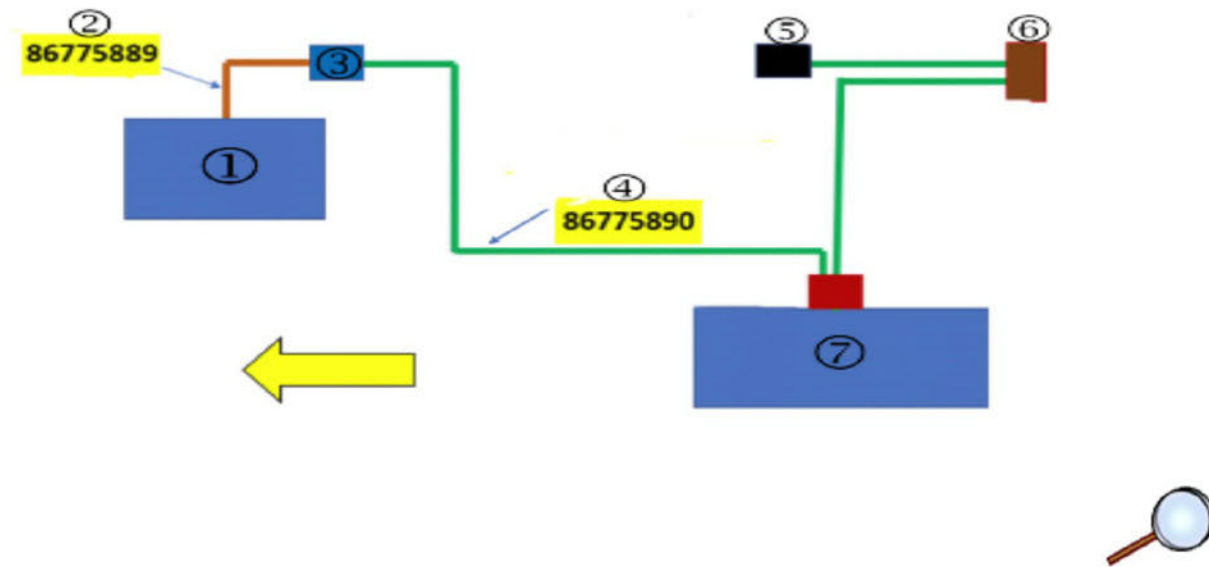
Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

For XT5 and Acadia Models, replace the (Body) coaxial cable from the Video Processing Module (VPM) to the in-line connector AND the (IP) coaxial cable from the in-line connector to the A11 Radio.

XT5

2020-2021 XT5 IP and Body Coaxial Cable Routing (DRZ & UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection
4. Body Coax
5. To Headliner
6. To Liftgate Harness
7. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

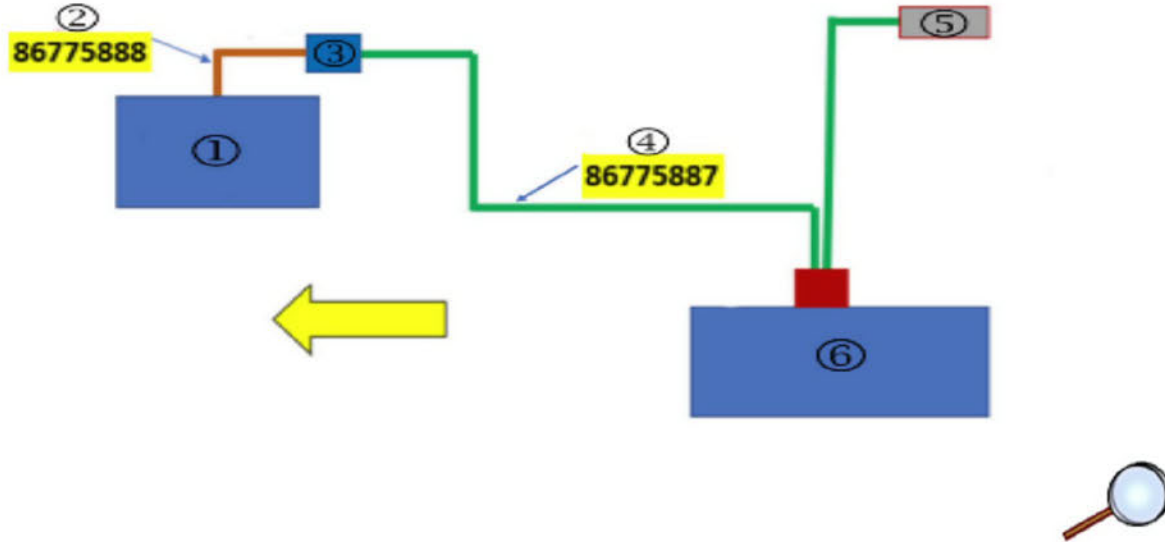
Note: On XT5, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the right kick panel. It also routes to the liftgate coaxial connector and to the coax at the top of the left "D" pillar headliner area for the rearview mirror.

1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate connector and connect to the cable to the rearview mirror in the top left "D" pillar headliner area.
2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

GMC Acadia

2020-2021 GMC Acadia IP and Body Coaxial Cable Routing (UV2)

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1. A11 Radio
2. IP Coax
3. IP to Body Coax In-line Connection
4. Body Coax
5. To Liftgate Harness
6. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

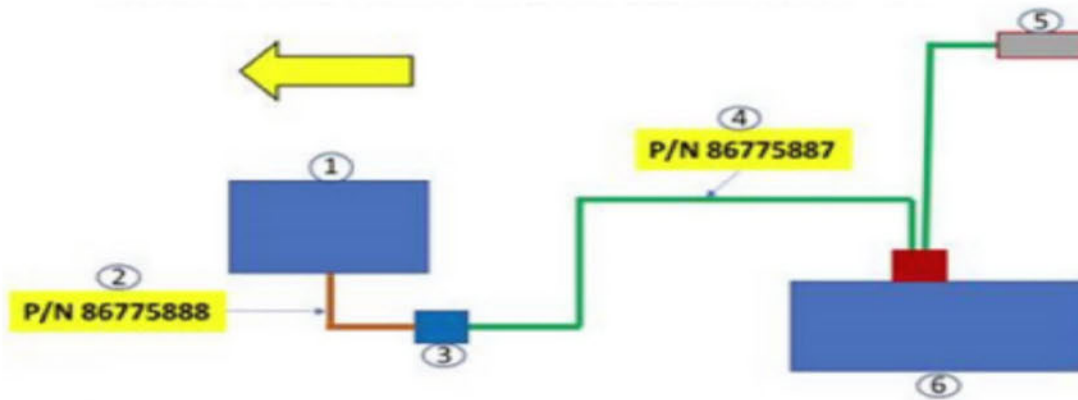
Note: On GMC Acadia, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate coaxial cable connector.

1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the right kick panel and to the liftgate coaxial cable connector.
2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the right kick panel.

Holden Acadia

2020 Holden Acadia IP and Body Coaxial Cable Routing (UV2)

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- 1. A11 Radio
- 2. IP Coax
- 3. IP to Body Coax In-line Connection
- 4. Body Coax
- 5. To Liftgate Harness
- 6. VPM

Note: The long cable will be an overlay routed with, and affixed to, the body harness. The original body coax will just need the ends off and can be abandoned in the main body wiring harness.

Note: On Holden Acadia, the (Body) cable runs from the VPM to the In-line connection to the (IP) short cable behind the left side of the IP near the glove box.

- 1. Replace the long Coaxial cable (Body) from the VPM in the left rear of the vehicle, to the In-line connection to the (IP) short cable behind the left IP near the glove box and to the liftgate coaxial cable connector.
- 2. Replace the short (IP) coaxial cable from the in-line connection to the A11 Radio, located behind the left IP near the glove box.

Parts Information

Causal Part	Description	Part Number	Qty
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (Acadia)	86775887	1
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (Acadia)	86775888	1

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Causal Part	Description	Part Number	Qty
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (XT5 / XT6)	86775889	1
X	CABLE ASM-DIGITAL RDO ANT & NAVN ANT COAX (XT5)	86775890	1

Warranty Information

For vehicles repaired under the Bumper-to-Bumper coverage (Canada Base Warranty coverage), use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
3487258*	Replace (IP) Coax Cable from In-line Connector to the A11 Radio (XT6 Only)	0.5 hr
3487248*	Overlay Body Coax Cable from VPM to In-line Connector and Replace the IP Coax Cable to the A11 Radio	2.0 hr

*This is a unique Labor Operation for Bulletin use only.
Any additional time for component R and R to gain access, or repair time greater than 2.0 hours, must be submitted as Other Hours and requires appropriate authorization.

Version	2
Modified	Released March 05, 2021 Revised May 18, 2021 – Added 2020 Holden Acadia Model, Repair Section and Graphic, Removed Date Breakpoint and Replaced with 3 VIN Breakpoints.

Keywords: B395A

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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Document ID: 5283004

#19-NA-076: Blue or Black Screen and Service Rear Vision System Message on Radio Display Shifting into Reverse - (Jun 22, 2022)

Subject: Blue or Black Screen and Service Rear Vision System Message on Radio Display Shifting into Reverse



This bulletin replaces PIE0507A. Please discard PIE0507A.

Brand:	Model:	Model Year:		Date Breakpoint:		Engine:	Transmission:
		from	to				
Buick	Enclave	2020	2022	SOP	—	All	All
	Encore GX	2020	2022		—		
	LaCrosse	2019	2019		—		
	LaCrosse (China only)	2020	2022		—		
Cadillac	CT6	2019	2020		—		
	CT6 (China only)	2021	2022		—		
	XT4	2019	2022		—		
	XT5	2020	2022		—		
	XT6						
Chevrolet	Camaro	2019	2022	—			
	Blazer	2019	2022	—			
	Bolt EV	2020	2022	—			
	Bolt EUV	2022	2022	—			
	Equinox	2019	2022	—			
	Silverado 1500 (New Model)	2019	2019	—			
	Silverado 1500	2020	2021	—			

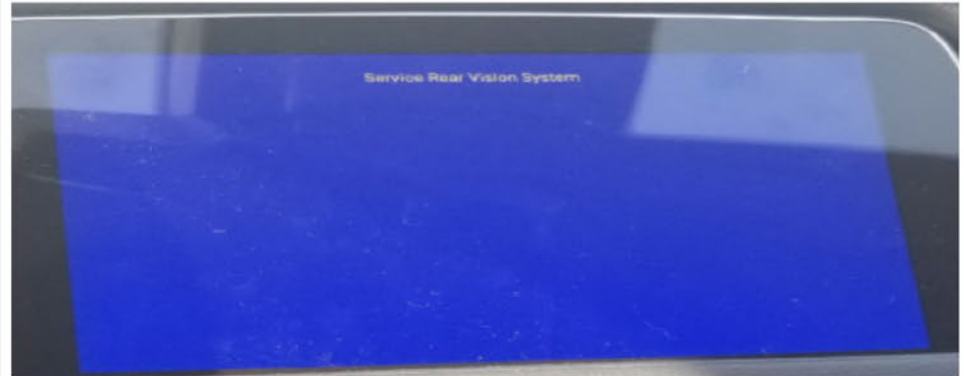
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Brand:	Model:	Model Year:		Date Breakpoint:	Engine:	Transmission:
		from	to			
	Silverado 1500 LTD (RPO J21, VIN Digit 5 = W / Y) Silverado 1500 New (RPO J22, VIN Digit 5 = A / D)	2022	2022		—	
	Traverse	2020	2022			
GMC	Acadia	2020	2022		—	
	Sierra 1500 (New Model)	2019	2019			
	Sierra 1500	2020	2021			
	Sierra 1500 Limited (RPO J21, VIN Digit 5 = 8 / 9) Sierra 1500 New (RPO J22, VIN Digit 5 = H / U)	2022	2022			
	Terrain	2019	2022			
Holden	Acadia	2019	2020		Prior to December 18, 2019	
	Equinox				—	

Involved Region or Country	North America, Europe, Uzbekistan, Russia, Middle East, Israel, Palestine, Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Japan, Cadillac Korea (South Korea), GM Korea Company, China, Thailand, Egypt, Other Africa, Australia/New Zealand
Additional Options (RPOs)	Equipped with Rear View Camera (UVB), or Surround Camera System (UV2) or (UVS), or Trailer Camera System (UVI)
Condition	Some customers may comment on a blue or black screen with Service Rear Vision System message when shifting into Reverse. Tip: (Truck only) Refer to Service Bulletin # 18-NA-383 for additional steps and how to identify if this is a water intrusion issue. Surround / Trailer Camera (UV2, UVS, or UVI) Systems

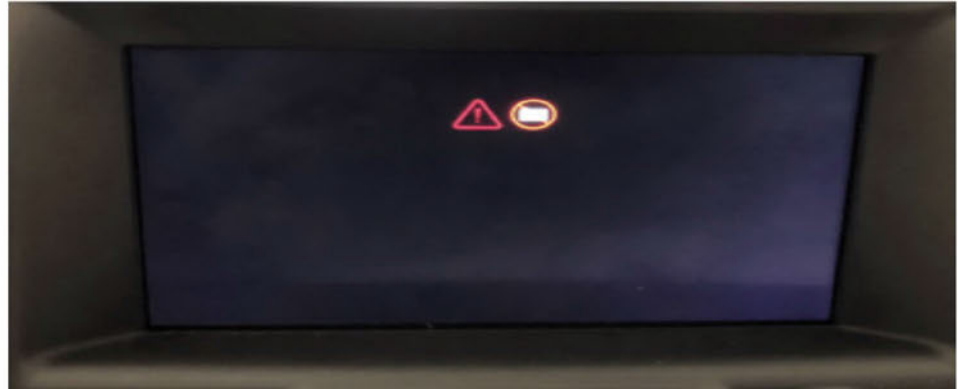
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The **blue** screen (with Service Rear Vision message), or **black** screen (with red triangle and no camera icon) condition can occur multiple times within the same power cycle and may return to normal functionality on the next power cycle. Or if this condition exists, it will occur every time the rear view is displayed to the customer within the same power cycle and may return to normal functionality on the next power cycle after the A11 radio enters and exits sleep cycle. A Diagnostic Trouble Code (DTC) B101D Symptom Byte 3C and/or 39 may be stored as a history DTC in the Video Processing Module (VPM) without any camera-related concern; If there are no DTCs setting in the VPM, and all DTCs are setting in the radio, refer to Service Bulletin # 21-NA-048.



Blue Screen

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Black Screen

Some customers with select vehicles may notice that after having vehicle in idle for an extended period of time (length of time for black screen to occur depends on ambient temperature), a black screen with a red triangle and no camera icon will appear when the vehicle is put in Reverse and the camera icon will be crossed out on the radio center screen.

Important: This condition can sometimes appear within approximately 25 minutes of starting a vehicle and is all dependent on the vehicle being in idle.

Please refer to *Rear Vision Camera System Malfunction (UV2)* in SI for any blue screen in Reverse with the message "Service Rear Vision System" situations with vehicles equipped with UV2, XVR. This particular scenario may become present when there is a B101D or B101E DTC that returns after replacing a VPM. It is advised with vehicles equipped with UV2 and XVR to remove the video recorder SD card from hub to see if this fixes this blue screen condition before further root causing.

Rear View Camera (UVB) systems

If the **blue** or **black** screen condition exists, it will occur every time the rear view is displayed to the customer within the same power cycle and may return to normal functionality on the next power cycle after the A11 radio enters and exits a sleep cycle. A DTC of B395A Symptom Byte 08, 72 and 3A will be stored as history together in the A11 Radio.

<p>Cause</p>	<p>The cause of the condition may be software anomalies in the Video Processing Module (VPM) or rear camera.</p>
<p>Correction</p>	<ul style="list-style-type: none"> • Vehicles with UV2/UVI/UVS — reprogram the Video Processing Module (VPM). • Vehicles with UVB — replace the rearview camera.

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Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

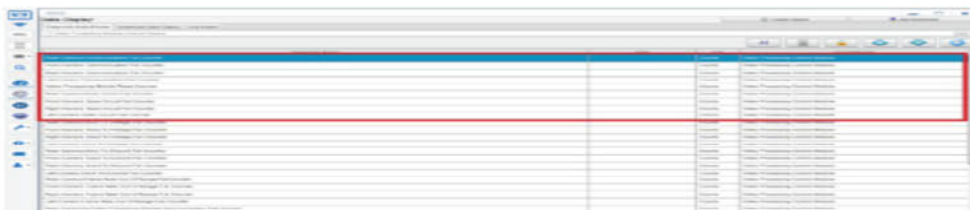
The intent of this bulletin is to show that in most cases DTC B101E or B101D should **NOT** result in the replacement of the Video Processing Module (VPM) or the Radio, but instead inspect for coax and connector issues as well as the SD Card to ensure it is not corrupt.

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:
 - o Camera Communication Fail Counter
 - o Video Processing Module Reset Counter
 - o Camera Open Circuit Counter
4. Write down the counters found in the VPM using the scan tool.
5. Cross-reference the DTCs and counters with the troubleshooting table below to determine most probable cause.

Module	DTCs	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 Based on Fail Counter

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Module	DTCs	Symptom Byte	DTC Description	Video Processing Module Reset Counter >20	Rear, Front, Right, or Left Camera Open Circuit Fail Counter >0
A11 Radio	B395A	72	Froze Frames	-	CHECK COAX/CONNECTOR 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 Module	B101D	3C	Internal Communication Failure	CHECK SD CARD / REPLACE K157 VIDEO PROCESSING MODULE	DO NOT REPLACE K157 VIDEO PROCESSING MODULE
K157 Video Processing Module	B390F	08	Camera OPEN DTC	CHECK COAX/CONNECTOR Based on Fail Counter	CHECK COAX/CONNECTOR Based on Fail Counter
K157 Video Processing Module	B395B			CHECK COAX/CONNECTOR Based on Fail Counter	CHECK COAX/CONNECTOR Based on Fail Counter
K157 Video Processing Module	B395C			CHECK COAX/CONNECTOR Based on Fail Counter	CHECK COAX/CONNECTOR Based on Fail Counter
K157 Video Processing Module	B395A			CHECK COAX/CONNECTOR Based on Fail Counter	CHECK COAX/CONNECTOR Based on Fail Counter

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

Note: Diagnostic steps vary based on the DTCs set, which module stored the DTCs, the vehicle model and camera system. Pay attention to the vehicle being diagnosed, what DTCs and symptom bytes are stored, and which module stored them to ensure the proper steps are followed.

RPO	Condition	DTCs	Repair Step
UV2, UVI, or UVS	Persistent blue screen with service rear viewing system or black screen with a red triangle and a no camera icon, throughout a power cycle.	B101D 3C and/or 39 History in VPM B395A 08, 72 and/or 3A in Radio or VPM	Step 2.1 – Reprogram VPM

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RPO	Condition	DTCs	Repair Step
UVB	Persistent blue screen with service rear viewing system and guidelines (if enabled) or a black screen with red triangle and no camera icon throughout a power cycle.	B395A 08,72 and/or 3A in VPM or Radio- Check Coax, refer to PIC6420 for specifics	Step 4.1 – Replace rearview camera

1. Verify the RPO build of the vehicle being diagnosed to determine which camera system is in use (UVB, UV2 or UVI).
2. Record all DTCs stored in the vehicle.
 - 2.1. If the Video Processing Module (VPM) stores a history B101D symptom byte 3C and/or 39; or the A11 radio stores a history B395A symptom byte 08, 72 and/or 3A, do NOT replace the VPM. Reprogramming the VPM software may reduce sensitivity of the B101D setting. Refer to *K157 Video Processing Control Module: Programming and Setup* in SI. This software does not resolve non-camera related system issues. If a condition exists that is NOT related to the camera system, then follow published diagnostics for the condition reported by the customer.
 - 2.2. Select the appropriate procedure below based on vehicle build content.
 - Proceed to step 3 for UV2 or UVI systems.
 - Proceed to step 4 for UVB systems.
3. For UV2 or UVI equipped systems:
 - 3.1. If the A11 Radio has stored DTC B395A Symptom Bytes 08, 72, and may also set 3A, then reprogram the VPM software. Refer to *K157 Video Processing Control Module: Programming and Setup* in SI.
 - 3.2. If concern(s) persist, refer to published diagnostics in SI.
4. For UVB equipped systems (excluding Holden Acadia):

Note: If the A11 Radio did not store all three history DTC B395A Symptom Bytes 08, 72, and 3A, then this bulletin does not apply. Refer to published bulletins, PIs and SI documents for further diagnostic steps.

 - 4.1. If the A11 Radio has stored all three history DTC B395A Symptom Bytes 08, 72, and 3A, and the blue screen with service rear vision system with guidelines (if enabled) is persistent throughout a power cycle, then replace the rearview camera. Refer to *Rearview Driver Information Camera Replacement* for the appropriate model in SI.
 - 4.2. If concern(s) persist, refer to published diagnostics in SI.

Caution: Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

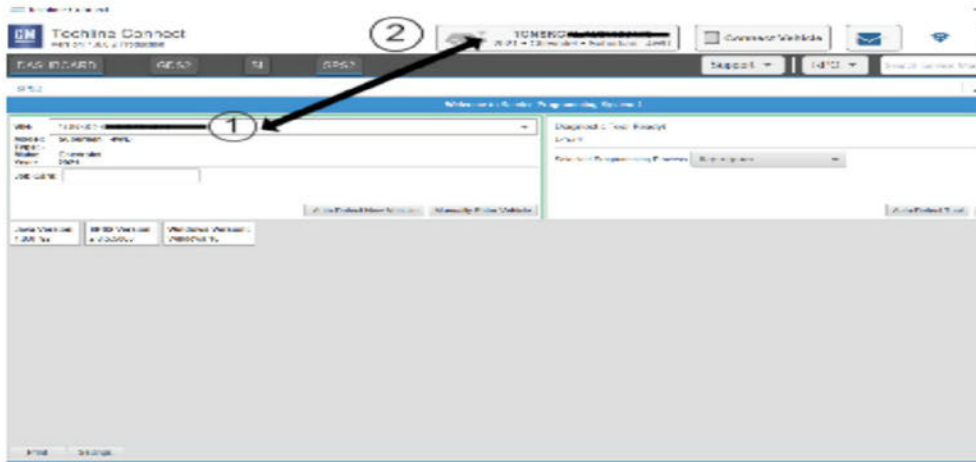
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install a GM Authorized Programming Support Tool to maintain system voltage. Refer to www.gmdesolutions.com for further information. If not available, connect a fully charged 12V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Follow the on-screen prompts regarding ignition power mode, but ensure that anything that drains excessive power (exterior lights, HVAC blower motor, etc) is off.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Important: The service technician always needs to verify that the VIN displayed in the TLC left side drop down menu and the top center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

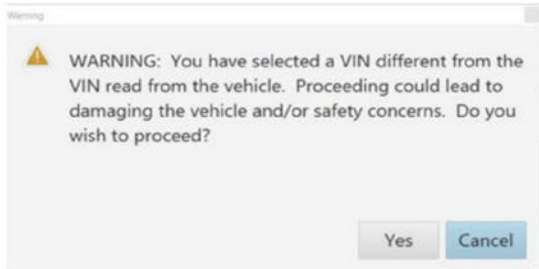
- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
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- If the VIN that shows up in the TLC top center window after correctly reading the VIN from the vehicle does not match the VIN plate of the vehicle, manually type in the VIN characters from the vehicle VIN plate into the TLC top center window and use these for programming or reprogramming the subject module with the correct vehicle VIN and software and/or calibrations.
- The Engine Control Module (ECM) is the master module (for VIP vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the ECM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.
- The Body Control Module (BCM) is the master module (for GEM vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the BCM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

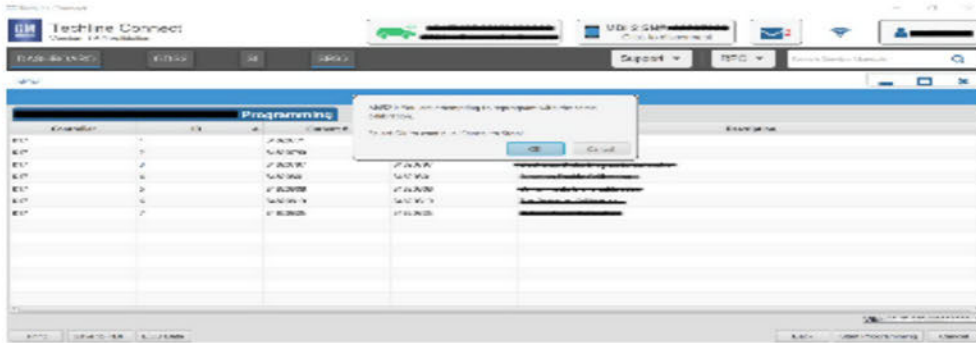
Caution: Be sure the VIN selected in the drop down menu (1) is the same as the vehicle connected (2) before beginning programming.



Important: If the vehicle VIN DOES NOT match, the message below will be shown.



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Important: Techline Connect screen shown above.

Important: If the same calibration/software warning is noted on the TLC or SPS Summary screen, select OK and follow screen instructions. After a successful programming event, the Warranty Claim Code (WCC) is located in the Service Programming System dialogue box of the SPS Summary screen. Document the WCC on the job card. No further action is required. Refer to the Warranty Information section of this bulletin.

1. Reprogram the Video Processing Control Module. Refer to *K157 Video Processing Control Module: Programming and Setup* in SI.



Note: The screenshot above is an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out. © 2022 General Motors. All rights reserved.

Important: To avoid warranty transaction rejections, you **MUST** record the warranty claim code provided on the Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the screen.

2. Record the Warranty Claim Code on the job card for warranty transaction submission.

Parts Information

Use the VIN and the Electronic Parts Catalog (EPC) to determine the proper part number for your specific application.

Causal Part	Description	Part Number	Qty
X	Video Processing Module	84809742	1

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
2810845*	Video Processing Control Module Reprogramming with SPS	Use Published Labor Operation Time
3450060	Rearview Driver Information Camera Replacement	Use Published Labor Operation Time

Important: *To avoid warranty transaction rejections, carefully read and follow the instructions below:

- The SPS Warranty Claim Code must be accurately entered in the "SPS Warranty Claim Code" field of the transaction.
- When more than one Warranty Claim Code is generated for a programming event, it is required to document all Warranty Claim Codes in the "Correction" field on the job card. Dealers must also enter one of the codes in the "SPS Warranty Claim Code" field of the transaction, otherwise the transaction will reject. It is best practice to enter the FINAL code provided by SPS/SPS2.

Warranty Claim Code Information Retrieval

If the SPS Warranty Claim Code was not recorded on the Job Card, the code can be retrieved in the SPS system as follows:

1. Open TLC/TIS on the computer used to program the vehicle.
2. Select and start SPS/SPS2.
3. Select Settings.
4. Select the Warranty Claim Code tab.

The VIN, Warranty Claim Code and Date/Time will be listed on a roster of recent programming events. If the code is retrievable, dealers should resubmit the transaction making sure to include the code in the SPS Warranty Claim Code field.

Version	9
Modified	Released April 09, 2019 November 07, 2019 – Updated the Involved Region or Country section, added a programming Note to the Correction and SPS Warranty Claim Code information to the Warranty Information. April 15, 2020 – Added the 2020 Model Year to all vehicles, added the 2020 Cadillac XT5, XT6, GMC Acadia Models, added date breakpoint © 2022 General Motors. All rights reserved.

information, added Palestine to Involved Region or Country section, and updated the Programming Template.

November 30, 2020 – Added the Buick Encore GX, Enclave, LaCrosse, Chevrolet Bolt EV, Camaro, Traverse models, updated the Involved Region or Country section, updated the Condition section with select vehicle conditions, updated the Cause and Correction sections, updated the programming procedure template and added a table to the Parts Information.

February 05, 2021 – Removed reference to Bootloader Part Numbers, added RPO UVS back into Correction section and RPO Table and updated Condition section with additional information and example graphics.

May 25, 2021 – Added the Holden Equinox model, updated the Condition section to clarify blue screen DTCs and scenarios and updated the programming information.

June 07, 2021 – Corrected a Service Bulletin reference in the Condition section.

March 25, 2022 – Added some 2021 and 2022 Model Years and models and updated programming information in Service Procedure

June 22, 2022 – Added first Important statement, steps and troubleshooting table under Service Procedure.

Additional SI Keywords: B101D

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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Document ID: 6093682

#PIT5921: Rear View Camera Coaxial Related Issues-B395A - B395B - B395C - B101E - B101D - (Jun 8, 2022)

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



Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
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

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Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
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

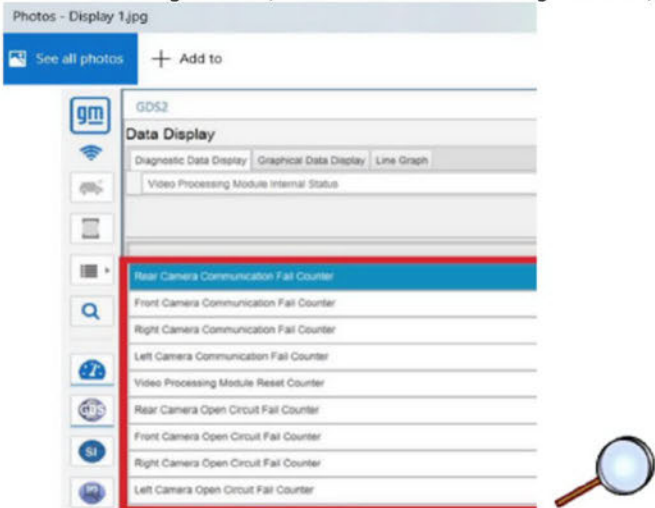
The intent of this PI is to show that in most cases DTC B101E or B101D should NOT result in the replacement of the Video Processing Module (VPM) or the Radio, but instead inspect for coax and connector issues as well as the SD Card to ensure it is not corrupt.

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.

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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	Rear, Front, Right, or Left Camera
				Reset Counter	Open Circuit Fail Counter
				>20	>0
A11 Radio	B395A	08	Loss of Video Frames	-	CHECK COAX/CONNECTOR/ Based on Fail Counter
A11 Radio	B395A	72	Frozen Frames	-	CHECK COAX/CONNECTOR/ 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

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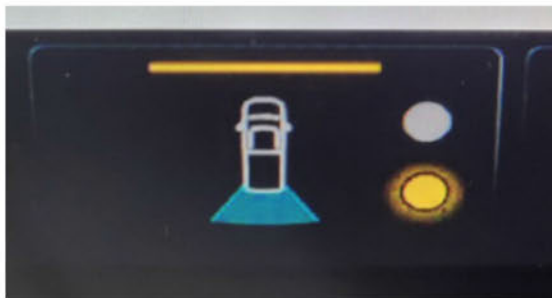
Module	DTC's	Symptom Byte	DTC Description	Video Processing Module	Rear, Front, Right, or Left Camera
K157 Video Processing Module	B101D	3C	Internal Communication Failure	CHECK SD CARD / REPLACE K157 VIDEO PROCESSING MODULE	DO NOT REPLACE K157 VIDEO PROCESSING MODULE
K157 Video Processing Module	B390F	08	Camera OPEN DTC	CHECK COAX/CONNECTOR/ Based on Fail Counter	CHECK CAMERA/CONNECTOR/ Based on Fail Counter
K157 Video Processing Module	B395B			CHECK COAX/CONNECTOR/ Based on Fail Counter	CHECK CAMERA/CONNECTOR/ Based on Fail Counter
K157 Video Processing Module	B395C			CHECK COAX/CONNECTOR/ Based on Fail Counter	CHECK CAMERA/CONNECTOR/ Based on Fail Counter
K157 Video Processing Module				CHECK COAX/CONNECTOR/ Based on Fail Counter	CHECK CAMERA/CONNECTOR/ 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.



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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.



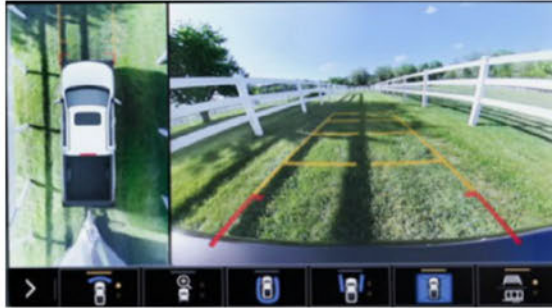
Flicker Issue

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.

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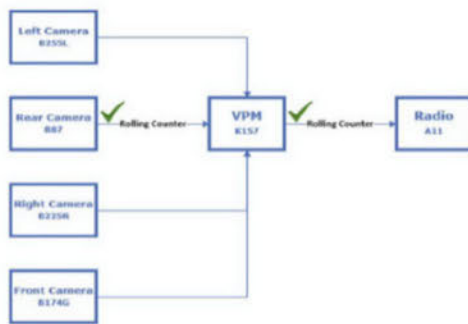


Note: Before testing the coax cable, check the cable's exterior for being pinched, cut, damaged, or having loose connections at the components, all of which can cause reception issues.

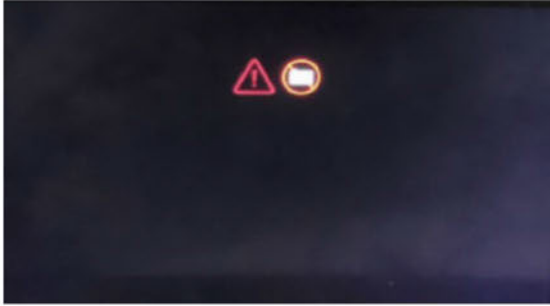
Rolling Counter Issue

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.

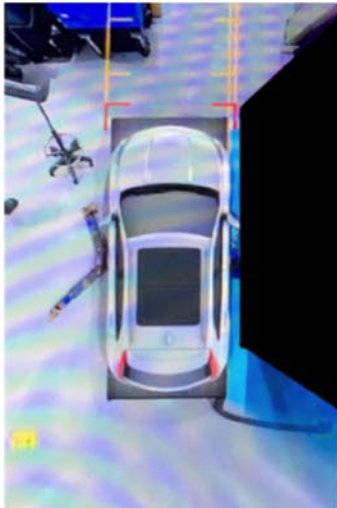


If the rear camera or the VPM do not provide the rolling counter, you will see the following black screen with an icon:



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.

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Version	1
Modified	06/08/2022 – Created on.

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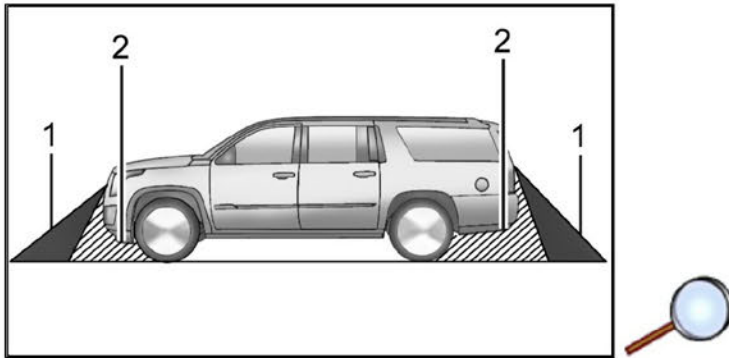


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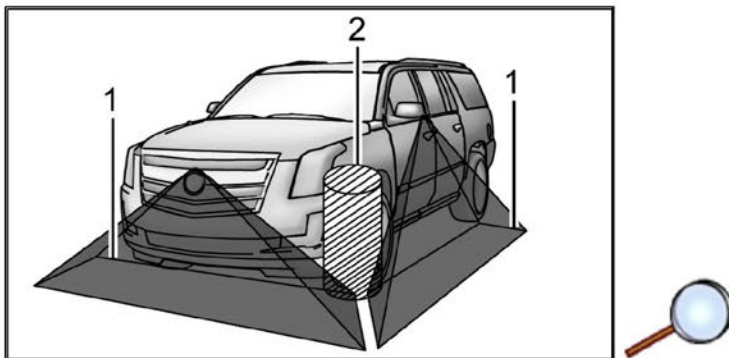
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Surround Vision Camera Description and Operation (UV2)

Warning: The Surround Vision cameras have blind spots and will not display all objects near the corners of the vehicle. Folding outside mirrors that are out of position may not display surround view correctly. Always check around the vehicle when parking or backing.



1. View Displayed by the Surround Vision Camera
2. Area Not Shown



1. View Displayed by the Surround Vision Camera
2. Area Not Shown

The surround vision camera system consists of the following components:

- B87 Rearview Camera
- B174G Frontview Camera – Grille
- K157 Video Processing Control Module
- A11 Radio **OR** K74 Human Machine Interface Module
- B225L Sideview Camera – Left
- B225R Sideview Camera – Right
- X20 Memory Card Receptacle (with XVR)

When the vehicle is traveling at speeds slower than 6 mph (10kph) the video processing control module

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The following conditions may cause a degraded surround vision camera image:

- Ice, snow, or mud has built up on the rear vision camera
- Dark conditions
- Extreme light conditions, such as glare from the sun or the headlights of another vehicle
- Damage to the rear of the vehicle
- Extreme high temperatures or extreme temperature changes

Surround Vision displays an overhead view of the area surrounding the vehicle, along with the front or rear camera views in the center stack. The front camera is in the grille or near the front emblem, the side cameras are on the bottom of the outside rearview mirrors, and the rear vision camera is above the license plate.

Note: Images from the Sideview Cameras are only displayed when both front doors are properly closed.

Features of the Surround Vision System

- Rear camera (B87 Rearview Camera) view alongside overhead view is displayed in reverse
- Front camera (B174G Frontview Camera – Grille) view alongside overhead view is displayed after shifting out of reverse to Neutral or Drive
- Will display front view when front park assist object is within trigger range calibration value (30 cm (12 in) in a forward gear
- Image is removed from display when vehicle speed exceeds speed calibration (10kph/6 mph) or button press / screen touch

System Operation

The video processing control module is connected to each camera via a shielded coaxial cable. The coaxial cable provides power for the camera and also carries the video image from the cameras to the video processing control module for processing. The video processing control module will then send the processed image output to infotainment system via another coaxial cable.

The video processing module receives various vehicle information (such as steering wheel angle, object detection, etc) from other sources such as parking assist modules and the Body Control Module via serial data. This information is used to produce the enhanced surround vision system images that include a warning triangle that may display if an object is detected nearby. This triangle changes from amber to red and increases in size as the object gets closer to the vehicle. Also, dynamic guidelines are displayed in Reverse to show the projected path of the vehicle based on steering wheel angle. Due to this use of vehicle information, any faults or DTCs in these related systems can prohibit proper surround vision operation.

If equipped, the video processing control module system may have a memory card receptacle (with XVR) located in the trunk. The memory card receptacle interfaces with the video processing control module via a USB cable. The memory card receptacle also receives fused battery voltage and ground from the video processing control module. The video processing control module uses the memory card as a mass storage device, similar to a USB storage device.

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Overview

XT6 offers an extensive array of Safety and Driver Assistance technologies.

Standard

- HD Rear Vision Camera with Remote Wash
- Forward Collision Alert
- Following Distance Indicator
- Automatic Emergency Braking
- Front Pedestrian Braking
- Front and Rear Park Assist
- Lane Change Alert with Side Blind Zone Alert
- Rear Cross Traffic Alert
- Lane Keep Assist with Lane Departure Warning
- Safety Alert Seat
- Speed Limiter

Available

- Rear Camera Mirror with Remote Wash
- Enhanced Automatic Emergency Braking
- Adaptive Cruise Control - Advanced
- Automatic Parking Assist with Braking
- Rear Pedestrian Alert
- HD Surround Vision
- Surround Vision Recorder
- Head-Up Display
- Reverse Automatic Braking
- Night Vision
- Hitch Guidance (with Hitch View)

Overview

XT6 offers an extensive array of Safety and Driver Assistance technologies.

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