

# RLink Lite/RLink J2534 Case Study

**TOPDON®**



# GM Engine Fault Detection Case

**How to Use TOPDON RLink Lite/RLink J2534 and GDS2  
to Perform GM Diagnostics**

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# Vehicle Fault Problems

01

## Vehicle Fault Problems

**Vehicle Information:** 2012 Cadillac SRX car, with a driving mileage of 145,325 kilometers.

**Customer Feedback:** The Check Engine Light suddenly comes on while driving, and the engine is shaking.



# Fault Confirmation

02

## Fault Confirmation

1. According to customer feedback, check and confirm that the Check Engine Light is on, and the Anti-skid Light is on.
2. Conduct a real-vehicle test, and no engine shaking fault is tested. It may be an occasional phenomenon.



# Devices Required for Diagnostics

03



## Devices Required for Diagnostics

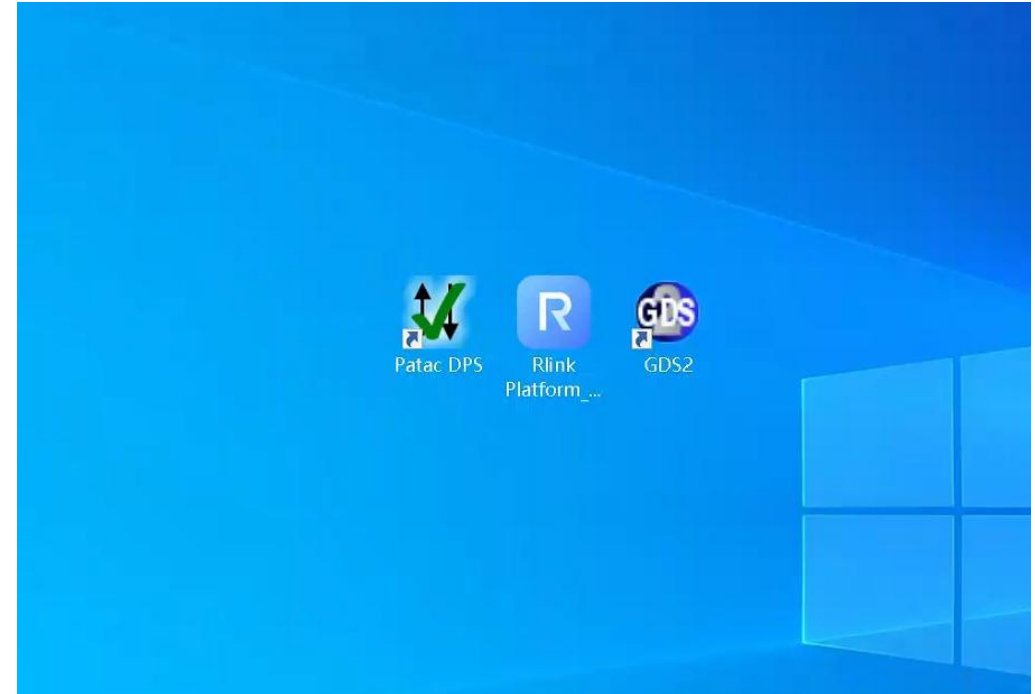


**RLink Lite**

Or



**RLink J2534**



**Computer with GM OEM Software**

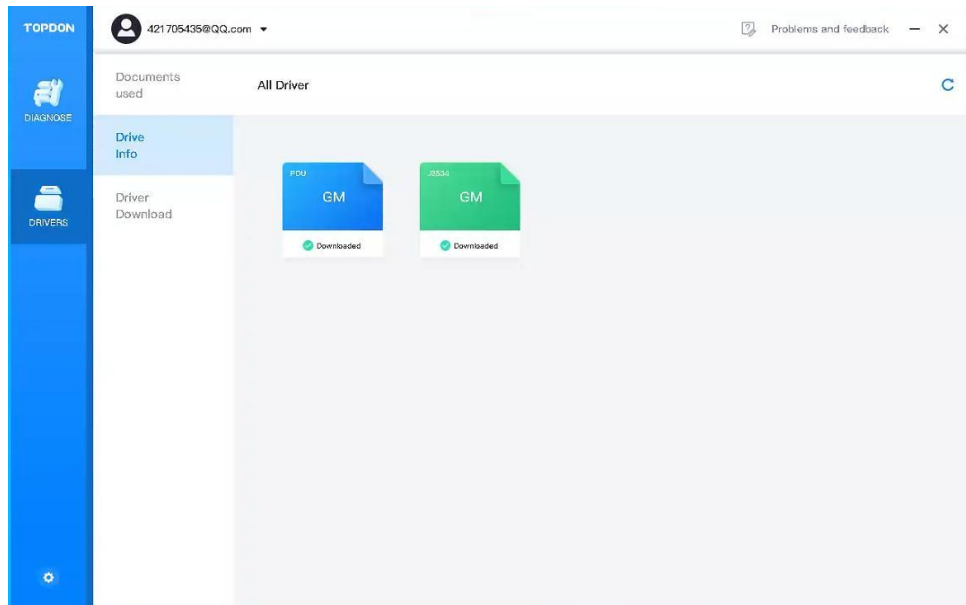
Tips: Both the RLink Lite and the RLink J2534 can be used with GM OEM software for diagnostics.

# Operations for Diagnostics

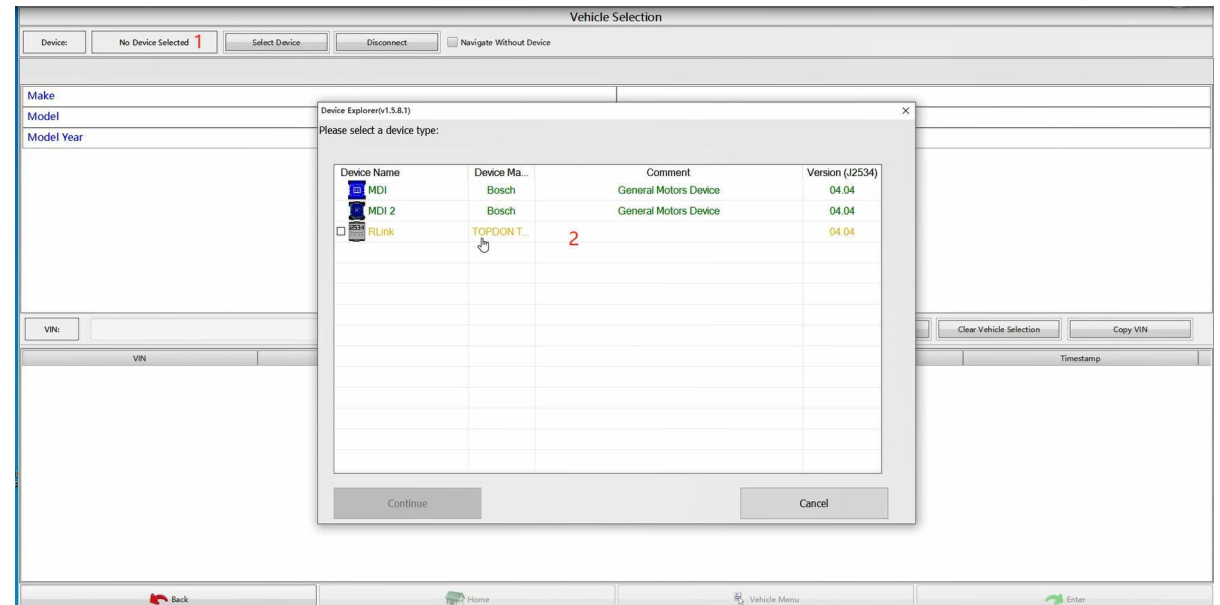
04

# Operations for Diagnostics

1. Open RLink Platform to download the GM driver.

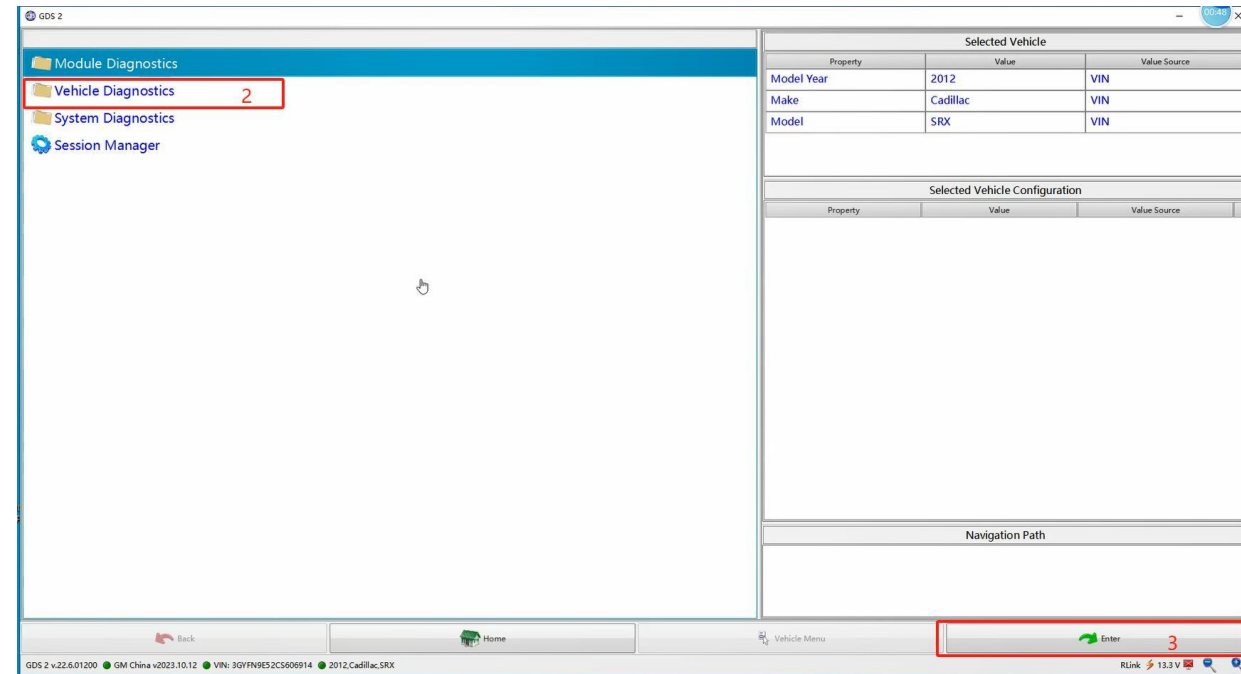
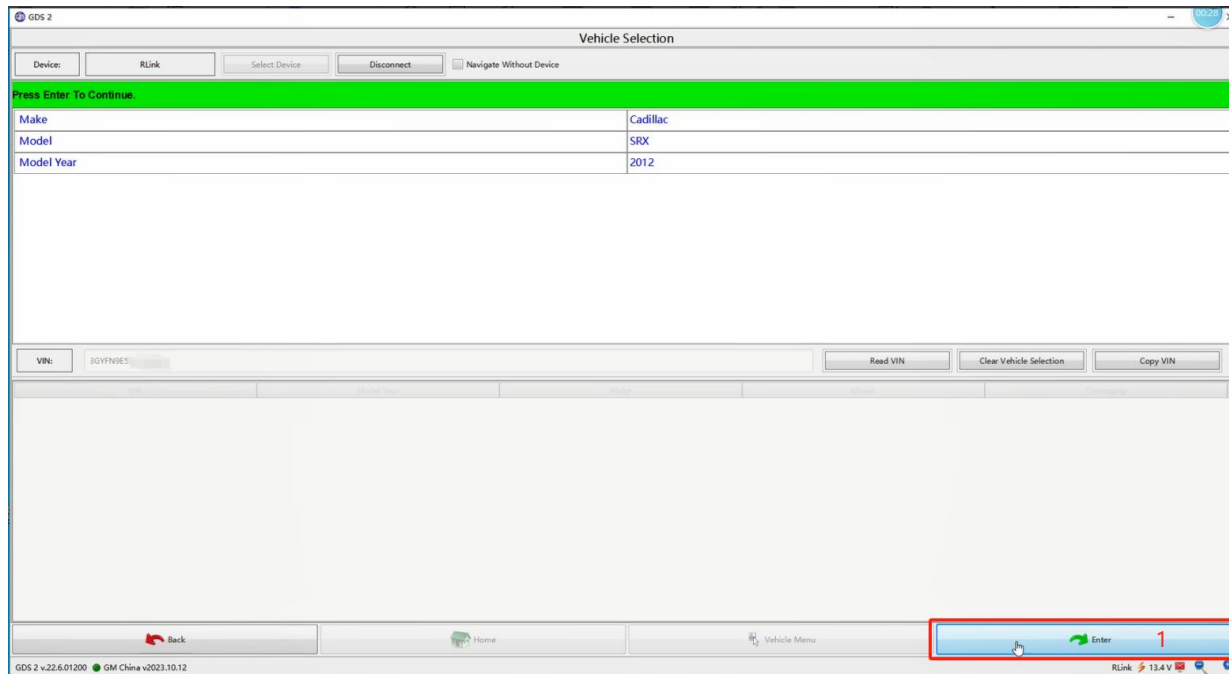


2. Open the GDS2 diagnostic software. Choose RLink for diagnostics.



Tips: The first time you use the GM OEM software, select VCI for diagnostics. Subsequently, the last VCI will be recognized automatically.

3. Connect the device. The vehicle will be automatically recognized. Follow the prompts to select the information for diagnostics.



# Troubleshooting

05

# Troubleshooting

- I. After the diagnostics are completed, an air quality sensor fault and a Cylinder 4 engine misfire fault are detected.
- II. Fault Cause Analysis

## Analysis of Air Quality Sensor Fault

- ① Air flow meter damaged
- ② Wiring damaged
- ③ Engine computer damaged

## Analysis of Misfire Fault

- ① Chain fault caused by air quality sensor fault
- ② Spark plug or ignition coil damaged
- ③ Fuel injector damaged

**Vehicle DTC Information**

Control Module	Type	DTC	Symptom Byte	Description	Symptom Description	Status
Engine Control Module		P0300	00	Engine Misfire Detected	---	Current
Engine Control Module		P0097	00	Intake Air Temperature (IAT) Sensor 2 Circuit Low Voltage	---	Passed and Failed
Engine Control Module		P0102	00	Mass Air Flow (MAF) Sensor Circuit Low Frequency	---	Passed and Failed
Engine Control Module		P0113	00	Intake Air Temperature (IAT) Sensor Circuit High Voltage	---	Passed and Failed
Engine Control Module		P0354	00	Ignition Coil 4 Control Circuit	---	Passed and Failed
Engine Control Module		P11C2	00	Intake Air Humidity Sensor Circuit Low Voltage	---	Passed and Failed
Engine Control Module		P2227	00	Barometric Pressure (BARO) Sensor Performance	---	Passed and Failed
Engine Control Module		P2228	00	Barometric Pressure (BARO) Sensor Circuit Low Voltage	---	Passed and Failed
Electronic Brake Control Module		U0401	71	Invalid Data Received From Engine Control Module	Invalid Data	History
Engine Control Module		P0304	00	Cylinder 4 Misfire Detected	Unknown DTC Symptom	---

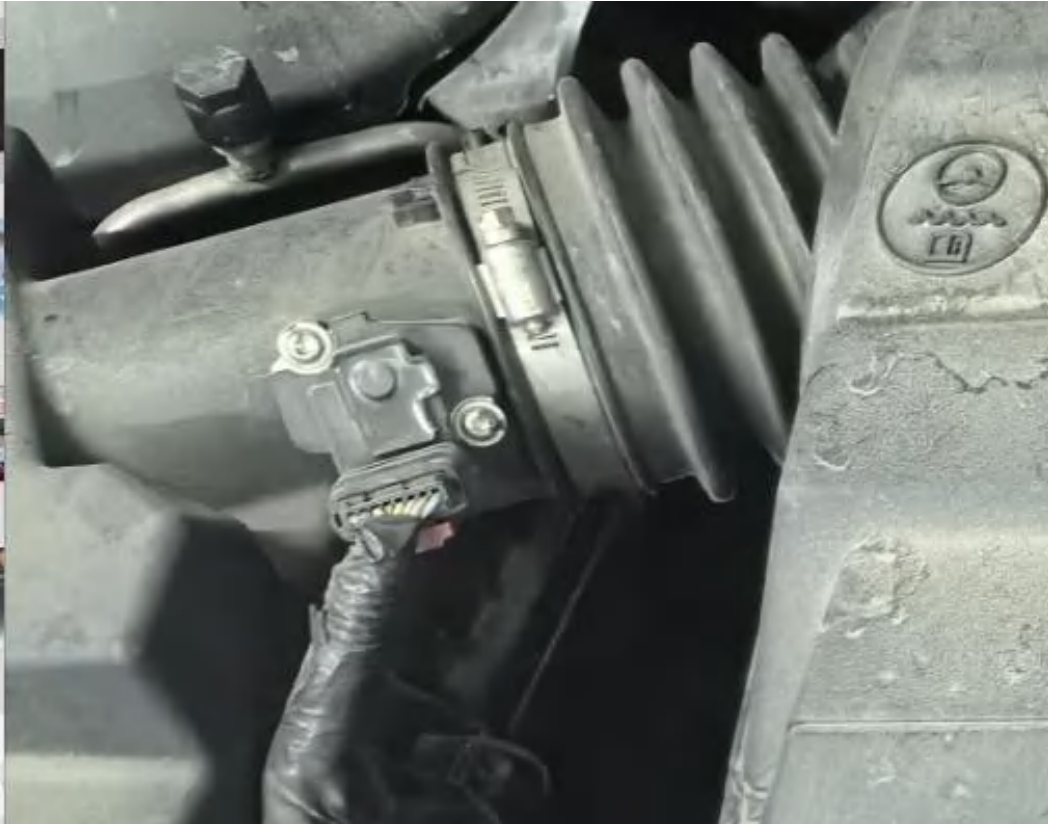
  

Category	Decoded Value
This Ignition Cycle	Not Run
Last Test	Failed Current DTC
Since DTC Clear	Passed and Failed
DTC History Status	History
MIL Status	Requested

Buttons: Clear DTCs, Refresh, Summary, Back, Home, Vehicle Menu, Enter

Footer: GDS 2 v.22.6.01200 ● GM China v2023.10.12 ● VIN: 3GYFN9E52CS606914 ● 2012,Cadillac,SRX,Vehicle Diagnostics RLink 13.4 V

- III. Check that the power supply, bond strap, and signal of the air flow meter are all normal. When checking, the pins of the air quality sensor plug are found to be loose. Simply handle the air quality sensor plug, and conduct vehicle test, the fault no longer recur. Confirm that the air quality sensor plug is an important cause of the fault.
- IV. For the four-cylinder misfire fault, the spark plug is aging. The spark plug needs to be replaced.



# Conclusion after Diagnostics

06

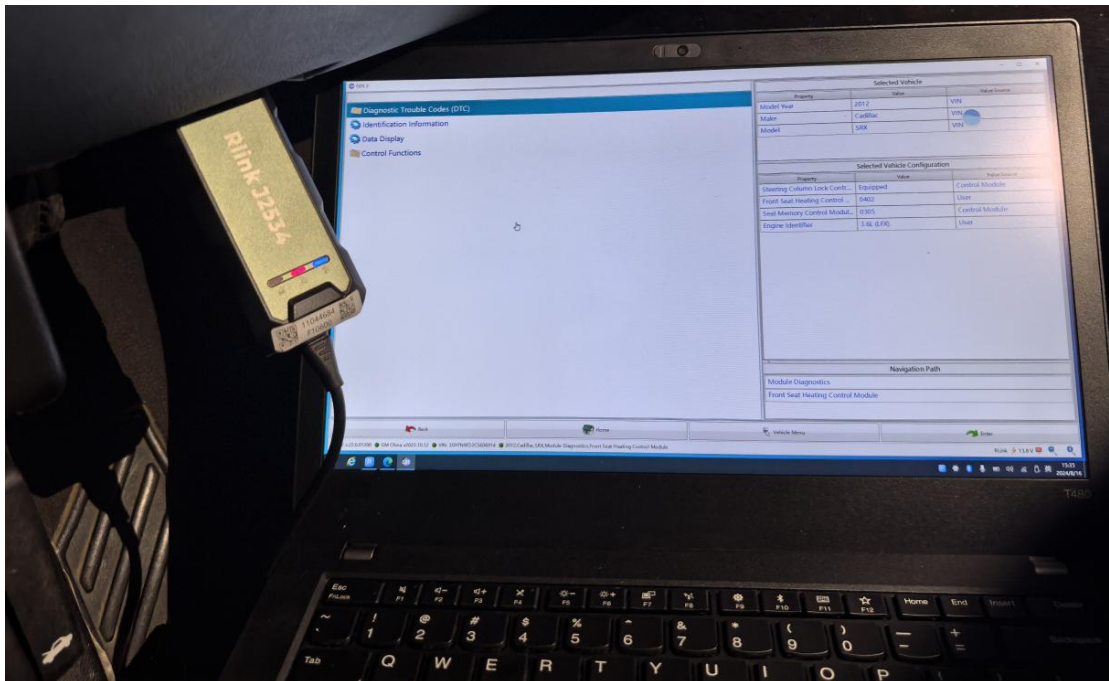


## Conclusion after Diagnostics

Replace the air quality sensor plug and pins. Clear the fault code and conduct vehicle test. The fault does not reoccur, confirming that the fault is resolved.

When disassembling and installing all plugs, be careful not to damage the plug pins. When testing the pins, it is recommended to use an adapter.

After checking the engine fault, pay attention to check whether the regular maintenance parts are aging (such as spark plugs, air filters, gasoline filters, etc.) to avoid secondary faults.



Using TOPDON RLink J2534 and Computer with GM OEM Software to Perform Diagnostics

THANKS