



## Introduction

The Tesla Model X is equipped with an event data recorder (EDR). The EDR records data related to vehicle dynamics and safety systems when the system senses a crash or a crash-like situation, such as hitting a road obstacle. This data is stored in the vehicle's Restraints Control Module (RCM).

This guide describes how to retrieve EDR data from a Tesla Model X RCM.

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This guide and other Tesla EDR information can be found at <https://edr.tesla.com>.

There are two methods for connecting to the RCM:

1. In-vehicle connection, in which you connect to the RCM using in-vehicle wiring and the Tesla In-Vehicle EDR Retrieval Cable without removing the RCM from the vehicle. An in-vehicle connection may not be possible if the vehicle has extensive damage. If an in-vehicle connection can be established, data is retrieved with less vehicle disassembly than when using a direct-to-module connection. For more information about in-vehicle retrieval, refer to “Establish an In-Vehicle Connection,” on page 2.
2. Direct-to-module connection, in which you directly access and connect to the RCM using the Tesla Model X Direct-To-Module EDR Retrieval Cable. To establish a direct-to-module connection, you must remove some vehicle components to allow direct physical access to the RCM. Once you have direct access to the RCM, you can leave the RCM in the vehicle and retrieve data or you can remove the RCM from the vehicle before retrieving data. For more information about direct-to-module retrieval, refer to “Establish a Direct-to-Module Connection,” on page 5.

## Tools Required

To retrieve the data from the RCM, you will need the following special tools:

- PCAN-USB Adapter
- A Windows computer running the Tesla EDR Retrieval Program, which you can download at <https://edr.tesla.com/download>
- An appropriate data retrieval cable:

Retrieval Method	Required Cable
In-vehicle connection	Tesla In-Vehicle EDR Retrieval Cable. Tesla part number 1131144.
Direct-to-module connection	Tesla Model X Direct-To-Module EDR Retrieval Cable. Tesla part number 1094601.

Table 1. Retrieval cable requirements

Required cables and software are available at <https://edr.tesla.com>.

## Establish an In-Vehicle Connection

1. Locate the storage pocket under the touchscreen (Figure 1).



Figure 1. Locating the storage pocket

2. Push down on inside bottom corners of the storage pocket until the clips securing it release (Figure 2).



Figure 2. Releasing the storage pocket

**⚠ CAUTION:** The storage pocket clips might require a large amount of force to release and they might release suddenly. Do not place fingers between the bottom of the pocket and the top of the center console.

3. Remove the storage pocket by pulling it towards the rear of the vehicle (Figure 3).



Figure 3. Removing the storage pocket

4. Locate the rectangular vehicle communication harness under the touchscreen, gently pull it toward you (Figure 4).

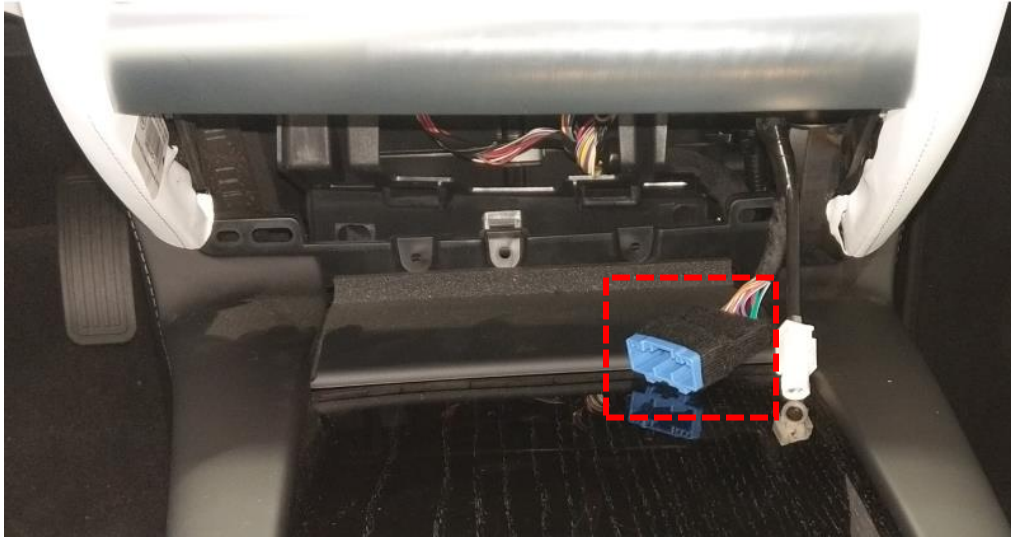


Figure 4. Moving the vehicle communication harness into position

5. Connect the In-Vehicle EDR Retrieval Cable to the connector (Figure 5). (Refer to “Table 1. Retrieval cable requirements,” on page 2 for more information about the required cable for your vehicle.)

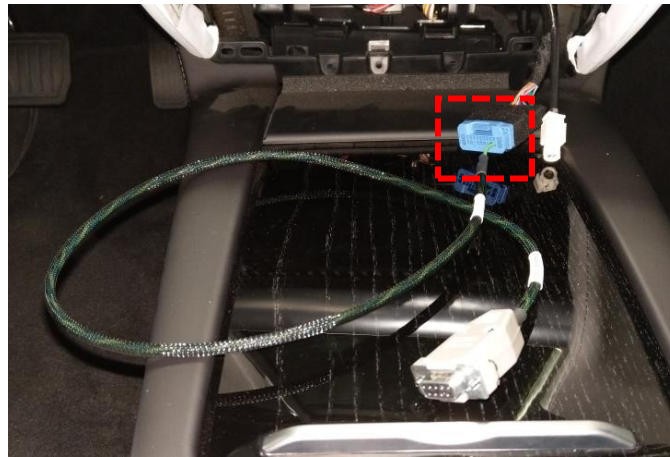


Figure 5. Moving the vehicle communication harness into position

6. Connect the other end of the In-Vehicle EDR Retrieval Cable to the PCAN-USB adapter.

7. Connect the PCAN-USB adapter to the computer used for retrieval (Figure 6).

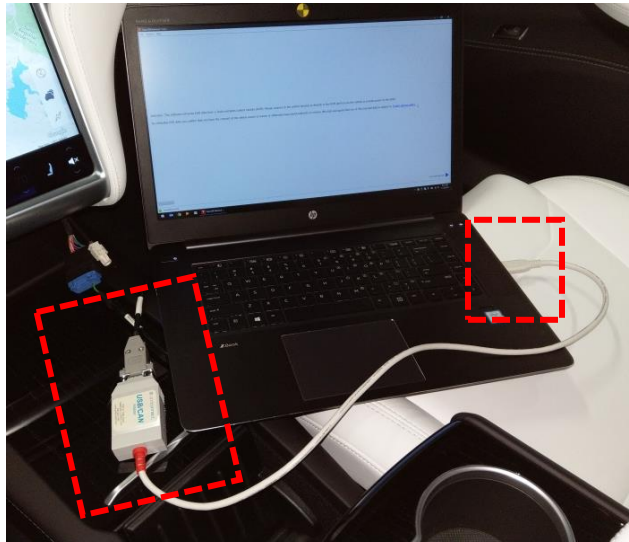


Figure 6. Computer connected to the in-vehicle EDR retrieval cable to the PCAN-USB adapter

8. Place the key-fob inside of the vehicle and press the brake pedal, which should result in the instrument cluster turning on.
  - If successful, proceed to “Retrieve Data” on page 34.
  - If the instrument cluster does not turn on, perform the procedure described in “Using External Power for the RCM” on page 31.

## Establish a Direct-to-Module Connection

If the In-Vehicle Connection procedure is unsuccessful, you might be able to connect to the RCM directly, and establish a direct-to-module connection. The RCM is located under the center console and slightly forward of where the front row seats are mounted (Figure 7).

**NOTE:** In Figure 7 (below) components have been removed to aid clarity.

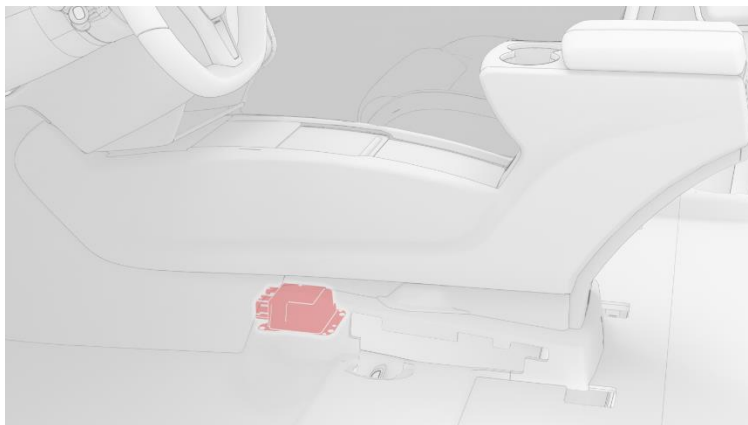


Figure 7. Model X RCM location

The RCM can be left in the vehicle, but if necessary it can be removed from the vehicle:

- For information on making a direct connection with the RCM while it is still in the Model X, see “RCM Direct Connection (RCM In Model X),” on page 6.
- For information on making a direct connection with the RCM after it has been removed from the Model X, see “RCM Direct Connection (RCM Removed From Model X),” on page 25.

### RCM Direct Connection (RCM In Model X)

To connect to the RCM while it is still in the Model X:

1. Prepare to remove the front seats:
  - a. Move the driver’s seat fully toward the rear of the vehicle.
  - b. Slide both seat track covers towards the front of the vehicle and remove them from the seat tracks (Figure 8).

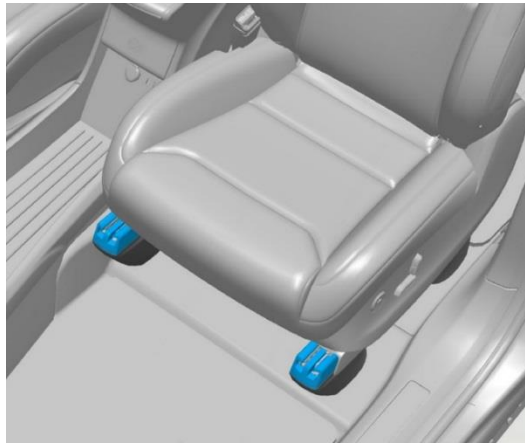


Figure 8. Front seat track covers

- c. Remove and discard the front bolts (x2) (Figure 9) that secure the seat to the riser (torque 34 Nm).

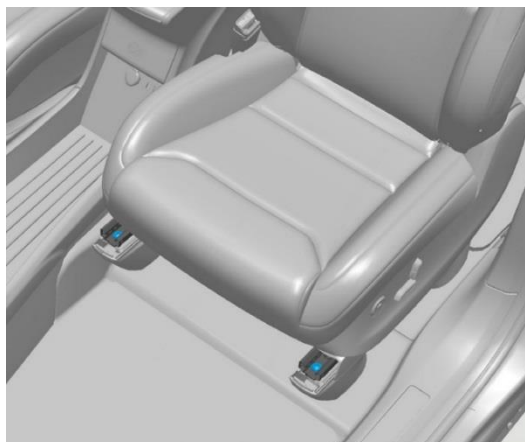


Figure 9. Front seat rail bolts



- d. Move the seat fully toward the rear of the vehicle.
- e. Slide both seat track covers toward the rear of the vehicle and remove them from the seat tracks (Figure 10).

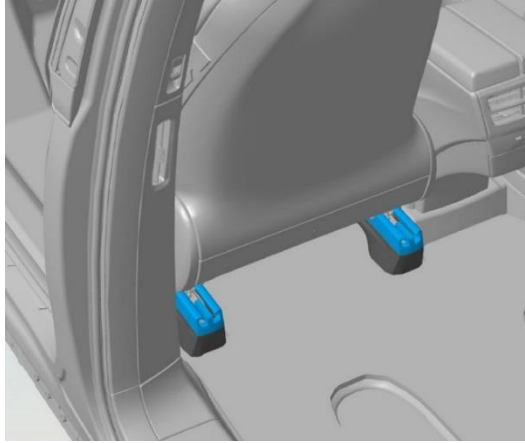


Figure 10. Rear seat track covers

- f. Remove and discard the rear bolts (x2) (Figure 11) that secure the seat to the riser (torque 34 Nm).

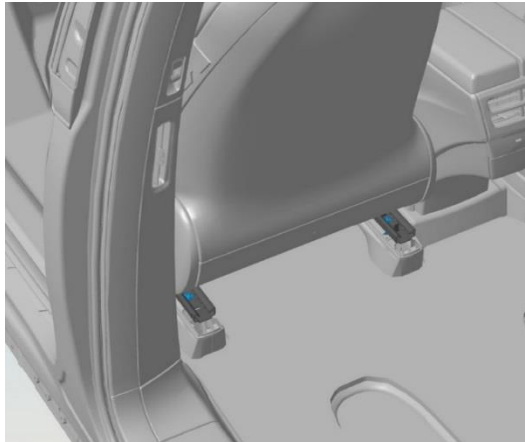


Figure 11. Rear seat track bolts

- g. Make sure that both front door windows are fully open.
2. Disconnect the 12V power.

**NOTE:** After disconnecting 12V power, the rear doors and liftgate are inoperable. Open any necessary closures before proceeding.

**WARNING:** If the 12V power supply is disconnected, do not attempt to open the front doors with door glass in closed position. Failure to follow this instruction could result in door glass shatter.

- a. If the vehicle is charging, remove the charge cable.
- b. Turn off vehicle power from the touchscreen by touching **Controls > E-brake & Power Off > Power off**.
- c. Open the front trunk.

d. Remove the underhood aprons.

1. Gently pull forward on the rear center underhood apron (Figure 12) to release it from the retention clips, and remove it from the vehicle.



Figure 12. Rear center underhood apron

2. Gently pull up on the LH underhood apron to release the clips that secure it to the vehicle.

**⚠ CAUTION:** Take care not to damage component(s).

3. Remove the LH underhood apron (Figure 13) from the vehicle.



Figure 13. LH underhood apron

4. Gently pull up on the RH underhood apron to release the clips that secure it to the vehicle.

**⚠ CAUTION:** Take care not to damage component(s).

5. Remove the RH underhood apron from the vehicle.

- e. Gently pull up on the front underhood apron assembly (Figure 14) to release it from the clips, and then remove it from the vehicle.



Figure 14. Front underhood apron assembly

- f. Carefully fold back the trunk seal and release the front of the underhood storage carpet.



- g. Disconnect the underhood storage carpet lamp electrical connectors (Figure 15).

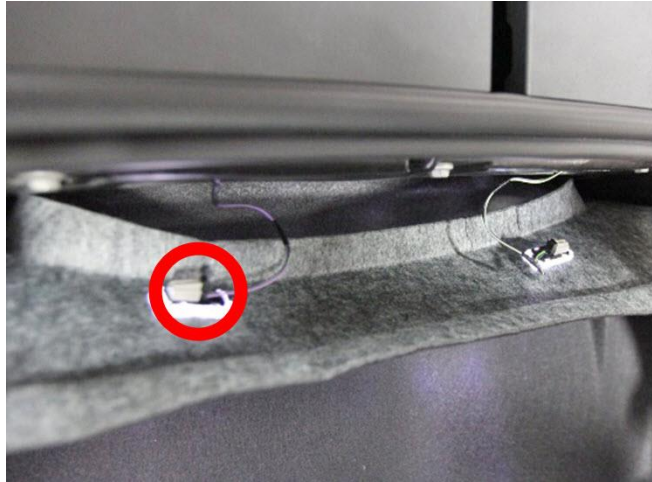


Figure 15. Underhood storage unit carpet lamp electrical connector

- h. Use a trim tool to release the lamps from the underhood storage carpet, and then remove the lamps from the vehicle.
- i. Release the underhood storage carpet from underneath the seal and then remove it from the vehicle.
- j. Remove the fasteners (x20) that secure the underhood storage unit:
- 10 fasteners as shown (Figure 16).

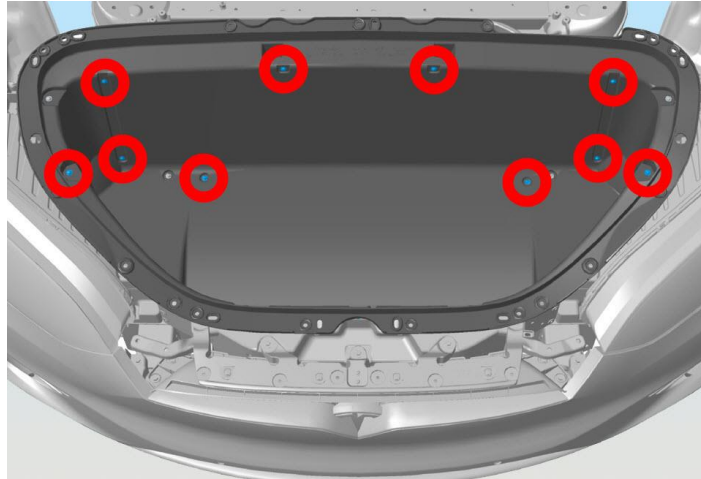


Figure 16. Underhood storage unit fasteners (1/3)

- 4 fasteners as shown (Figure 17).

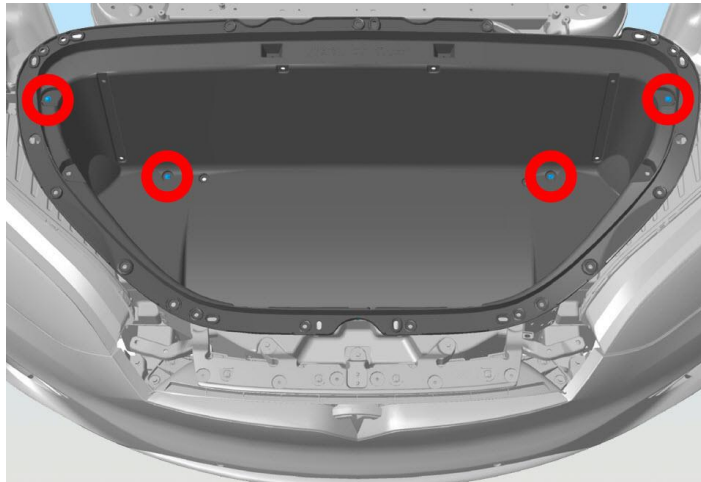


Figure 17. Underhood storage unit fasteners (2/3)

- 6 fasteners as shown (Figure 18).

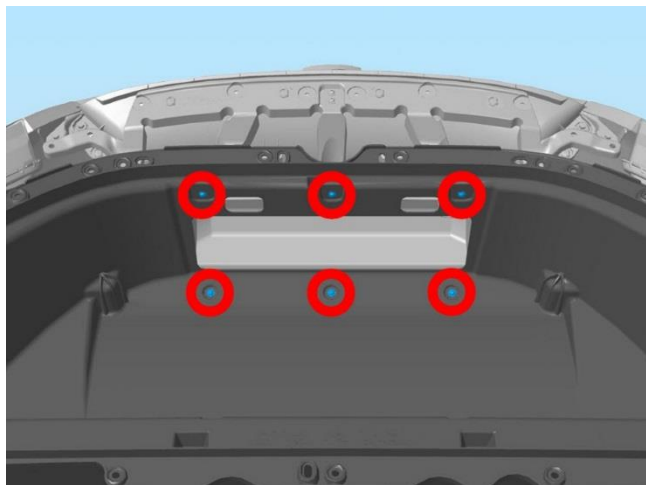


Figure 18. Underhood storage unit fasteners (3/3)

- k. Remove the underhood storage unit from the vehicle.

- I. Gently release the filter housing from the duct (Figure 19).

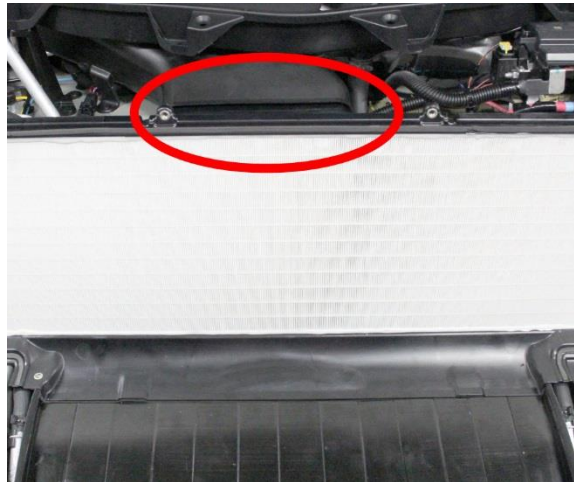


Figure 19. Releasing the filter housing

**⚠ CAUTION:** Some vehicles are equipped with a HEPA filter element that is bonded to the filter housing. If the filter housing has a HEPA filter element, set the filter with the plastic trim side facing down. Do not damage the filter.

- m. Disconnect the 12V battery negative terminal clamp (Figure 20).

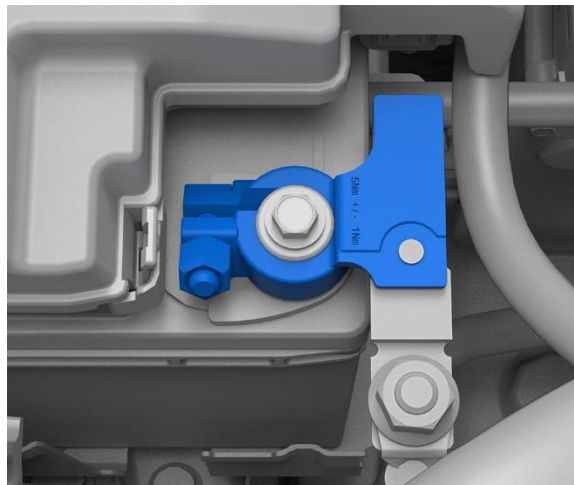


Figure 20. 12V battery negative terminal

- n. Disconnect, but do not cut, the first responder loop (Figure 21).

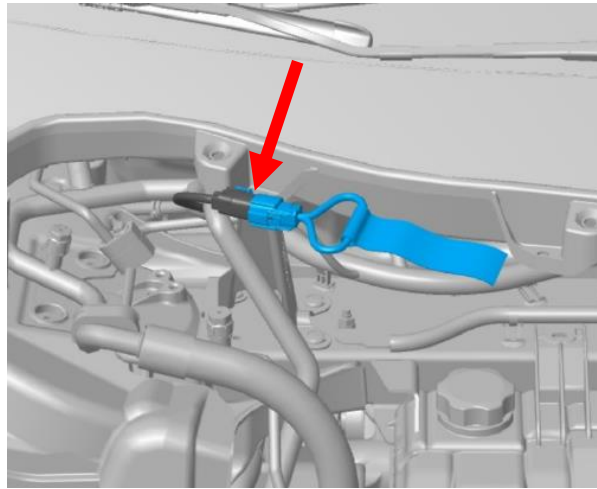


Figure 21. First responder loop

**! CAUTION:** Do not cut the first responder loop.

- o. Wait at least 2 minutes for all electrical circuits to fully discharge.

**! CAUTION:** Ensure that the first responder loop has been disconnected for at least 2 minutes.

3. Remove the seats from the vehicle:

**NOTE:** The following steps require an assistant.

- a. Apply protective tape around the lower LH B-pillar trim panel and the RH B-pillar trim panel to protect them from damage.
- b. Carefully lean the LH seat back and disconnect the electrical connectors from the bottom of the seat (Figure 22).

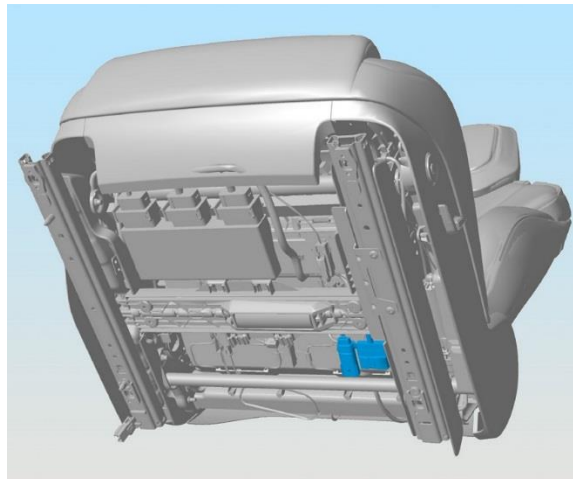


Figure 22. Seat electrical connectors

- c. Remove the LH seat from the vehicle.

**! CAUTION:** Take care not to damage component(s).

- d. Carefully lean the RH seat back and disconnect the electrical connectors from the bottom of the seat.
- e. Remove the RH seat from the vehicle.

**⚠ CAUTION:** Take care not to damage component(s).

4. Remove the center console assembly from the vehicle.

- a. Open the rear cup holder.
- b. Release the clips that secure the rear air outlet trim panel.

**TIP:** Gently pull outboard on the center console side trim panels when removing the rear air outlet trim panel.

- c. Disconnect the USB ports from the trim panel (Figure 23.).

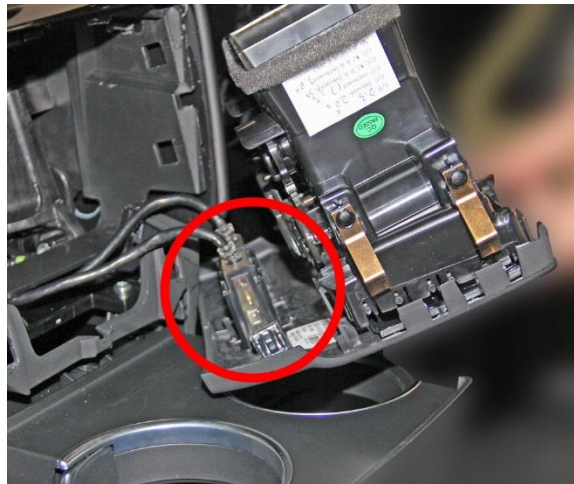


Figure 23. Center console rear USB ports

- d. Disconnect the USB ports from the trim panel
- e. Remove the air outlet from the vehicle.
- f. Open the rear cupholder.
- g. Remove the rear cupholder trim panel (Figure 24), then close the rear cupholder.

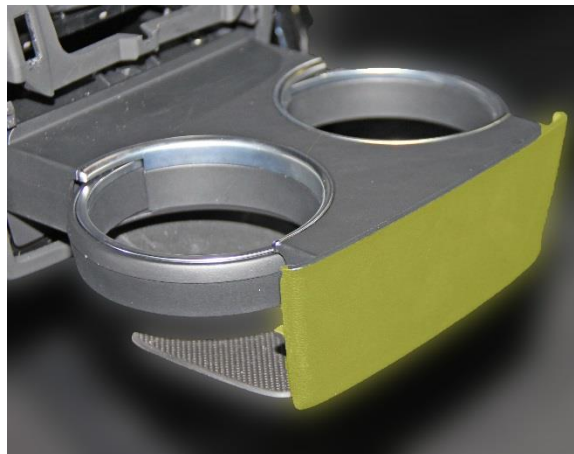


Figure 24. Rear cupholder trim panel



- h. Release the clips that secure the rear center console trim, then disconnect the harnesses from the trim panel (Figure 25).

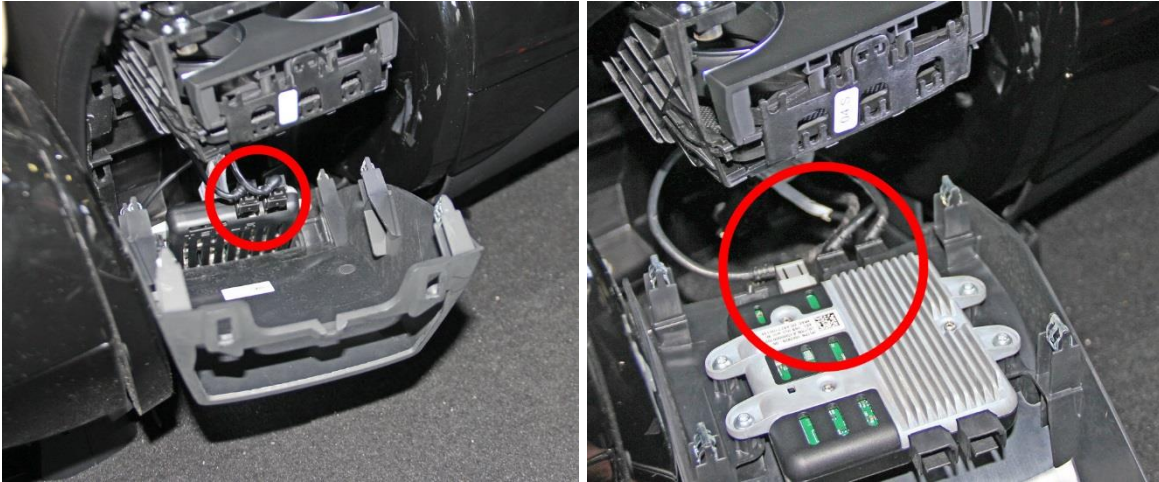


Figure 25. Disconnecting the harnesses from the trim panel

- i. Release the screws (x4) that secure the USB hub to the center console rear trim panel.
- j. Release the front clips that secure the LH and RH center console side trim panels.
- k. Release the clips (x6) that secure the LH and RH closeout extension (Figure 41).

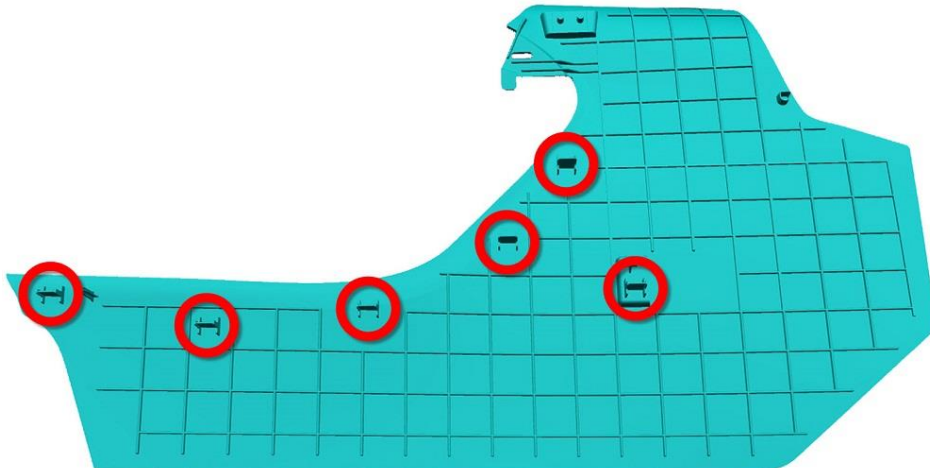


Figure 26. Center console closeout extension

- l. Release the clips (x6) that secure the LH and RH closeout extension (Figure 41).
- m. Release the front clips that secure closeout extension.



- n. Pull down on the center storage compartment to release the clips (Figure 27).

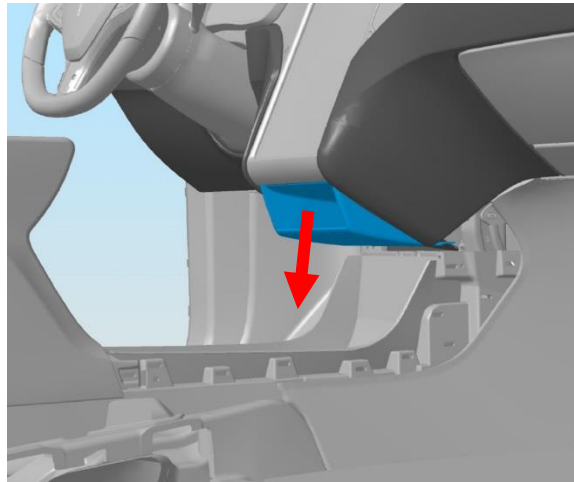


Figure 27. Center storage compartment

**⚠ CAUTION:** Take care not to damage component(s), and replace any broken clips before reassembly.

- o. Remove the center storage compartment from the vehicle.
- p. Remove the screw that secures the front of the center console (Figure 28).

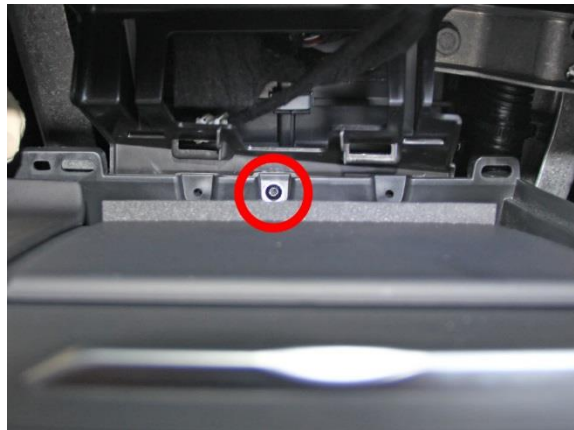


Figure 28. Screw securing the front of the center console

- q. Remove the front cup holder dividers, then remove the rubber mat at the base of the console.

- r. Remove the front bolts that secure the base of the center console (Figure 29).

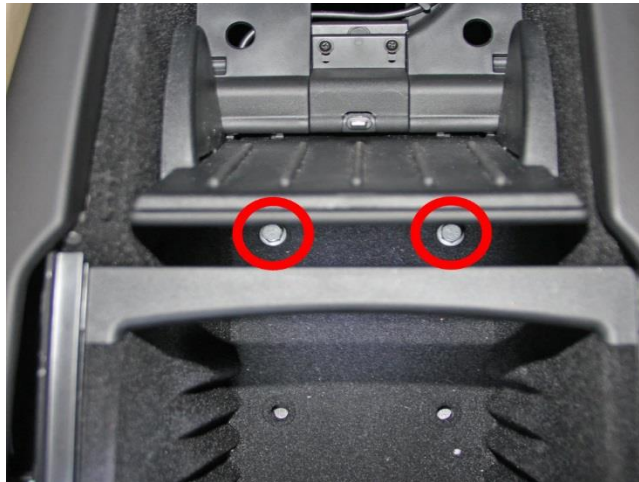


Figure 29. Bolts securing the front base of the center console

- s. Working in the footwell areas, remove the LH and RH bolt that secures each side of the center console to the instrument panel carrier (Figure 30).



Figure 30. Bolt securing the front LH side of the center console

- t. Remove the bolts that secure the rear of the center console to the vehicle (Figure 31).

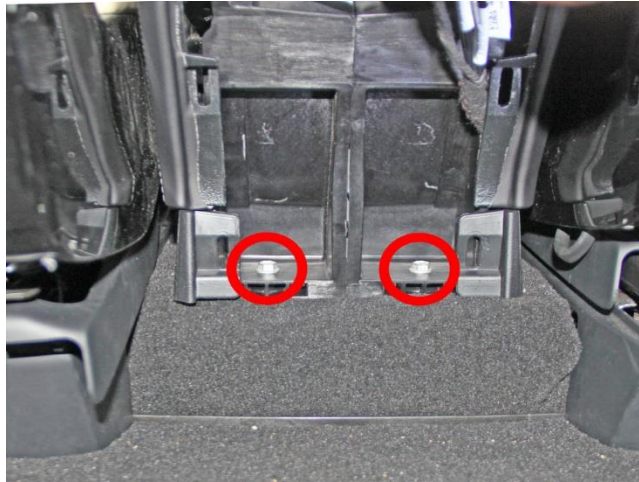


Figure 31. Bolts securing the rear base of the center console

- u. Working from the RH footwell, disconnect the USB electrical connector (Figure 32).



Figure 32. Disconnecting the center console front USB electrical connector

- v. Release the fir tree clip that secures the 12V electrical connector to the center console (Figure 33).

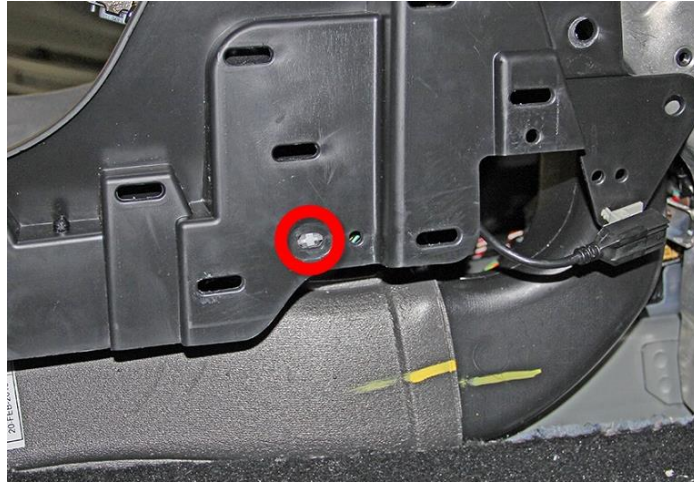


Figure 33. Releasing the 12V electrical connector from the center console

- w. Disconnect the 12V electrical connector (Figure 34).

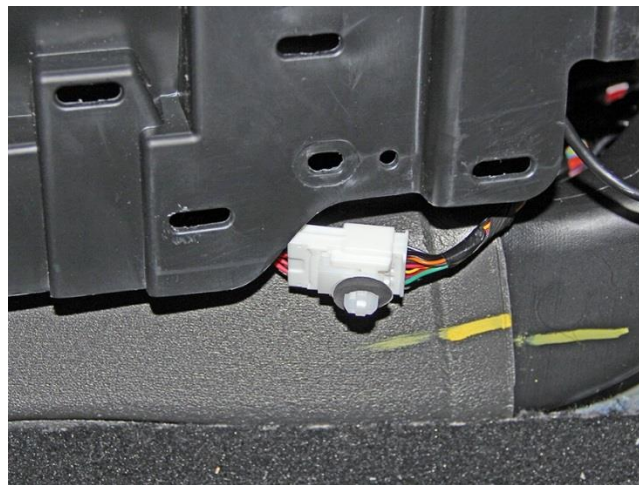


Figure 34. Disconnecting the 12V electrical connector

- x. Position the LH front seat all the way forward and the RH front seat all the way back.
- y. Slide the center console upwards and towards the rear of the vehicle to remove it.
- z. Set the console onto a padded surface.

5. Remove the front seat risers.
  - a. Use a trim tool to release the clips that secure the inboard and outboard covers to the RH side of the inner seat riser.

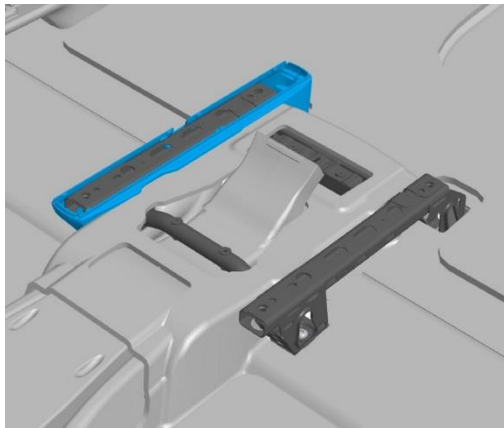


Figure 35. RH inner seat riser cover

- b. Use a trim tool to release the clips that secure the inboard and outboard covers to the LH side of the inner seat riser.

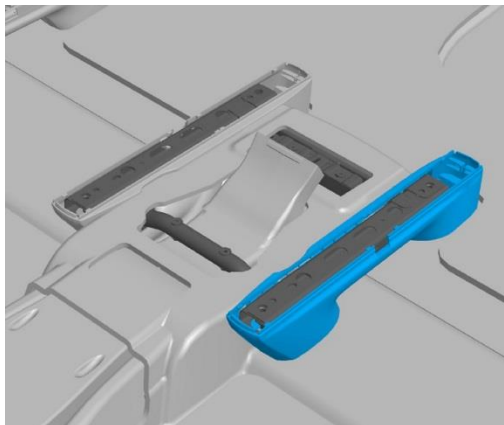


Figure 36. LH inner seat riser cover

- c. Remove and discard the bolts (x4) that secure the inner seat riser to the body of the vehicle (torque 34 Nm). Remove the washers (x2).

**NOTE:** If the bolts are difficult to remove, use the heat inductor tool to heat each bolt for 20 seconds, and let the bolt sit for 2 minutes before removal.

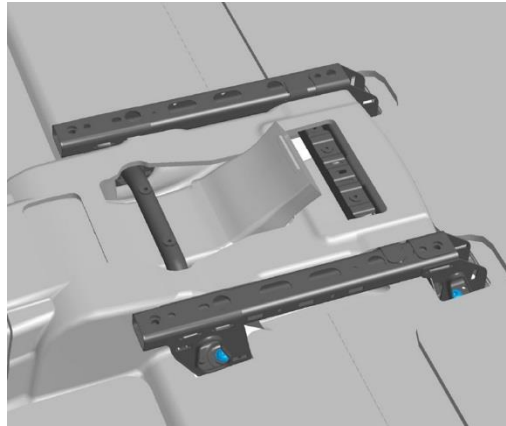


Figure 37. Inner seat riser bolts

- d. Release the push clips that secure the harnesses to the inner seat riser.
- e. Remove the inner riser from the vehicle.

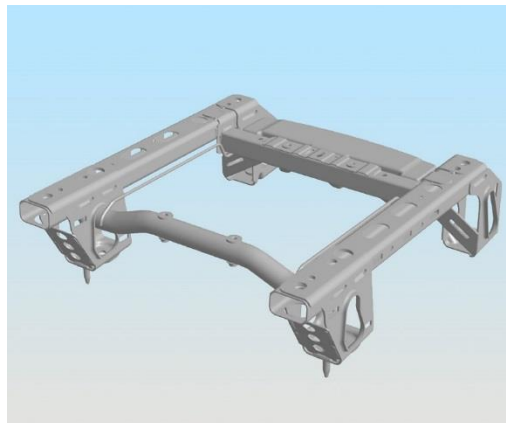


Figure 38. Inner seat riser

**⚠ CAUTION:** Take care not to damage component(s).

- f. Repeat steps 5a through 5e for the other seat riser.



6. Remove the front HVAC outlet duct.

**NOTE:** Components have been removed in this graphic to aid clarity.

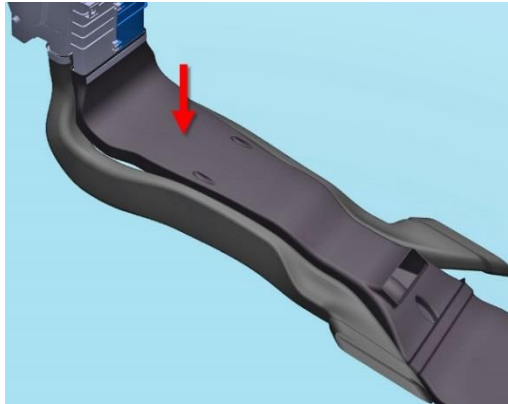


Figure 39. Front HVAC outlet duct

7. Disconnect the RCM harness connectors (x2). For each harness connector:

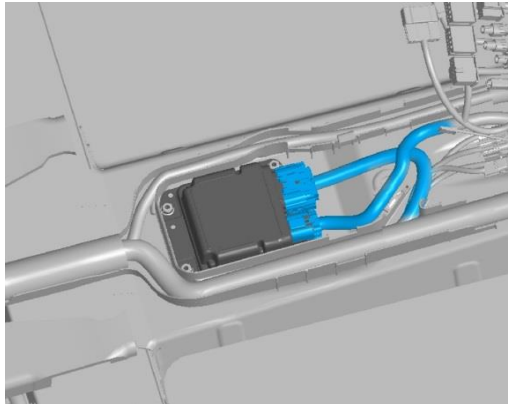


Figure 40. RCM harness connectors

- a. Push the black tab down.



Figure 41. Disconnect the RCM connectors 1/3

- b. Move the retaining lever toward the rear of the vehicle.

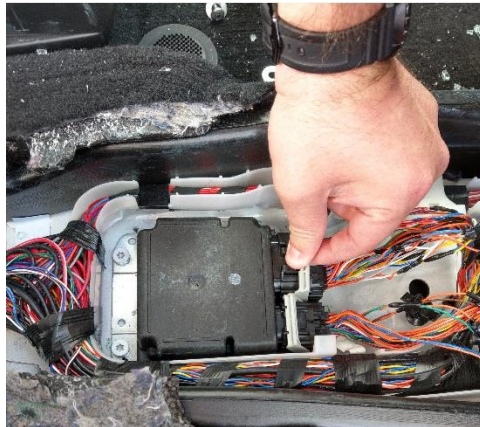


Figure 42. Disconnect the RCM connectors 2/3

- c. Unlatch the connector and move it away from the RCM.

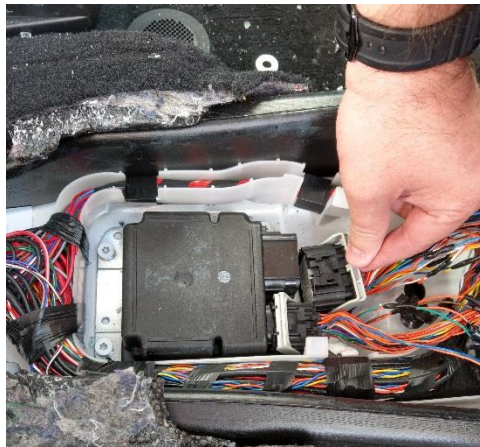


Figure 43. Disconnecting the RCM connectors 3/3

- d. Remove the connector from the RCM.
- e. Repeat steps 7a through 7d for the second RCM connector.

8. Connect the Tesla Model X Direct-To-Module EDR Retrieval Cable to the RCM.
  - a. Attach the data connector to the RCM.

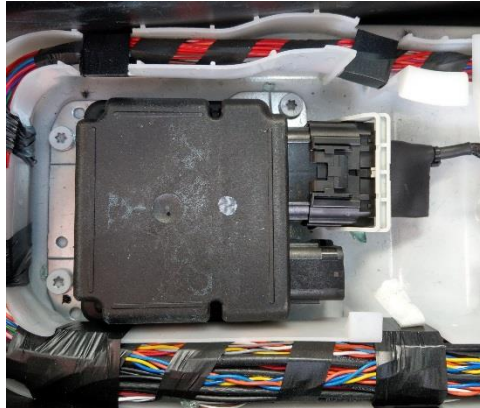


Figure 44. Connecting the EDR Retrieval Cable to the RCM 1/4

- b. Move the retaining latch toward the front of the vehicle until it is fully seated.



Figure 45. Connecting the EDR Retrieval Cable to the RCM 2/4

- c. Attach the power connector to the RCM.



Figure 46. Connecting the EDR Retrieval Cable to the RCM 3/4

- d. Move the retaining latch toward the front of the vehicle until it is fully seated.

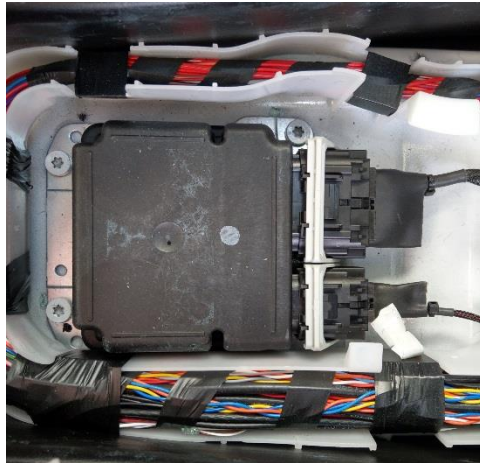


Figure 47. Connecting the EDR Retrieval Cable to the RCM 4/4

9. Connect the Tesla Model X Direct-To-Module EDR Retrieval Cable to the PCAN-USB adapter.

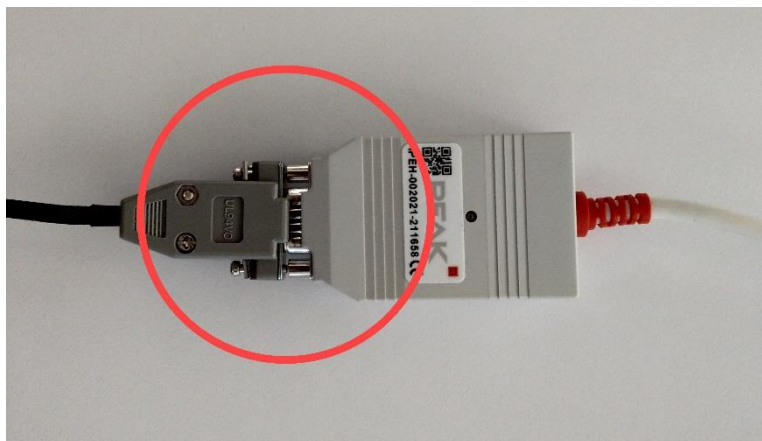


Figure 48. Connecting the EDR retrieval cable to the PCAN

10. Connect the PCAN-USB adapter to the computer used for data retrieval.



Figure 49. Connecting the PCAN to the computer

11. Connect 12V power to the Tesla Model X Direct-To-Module EDR Retrieval Cable.

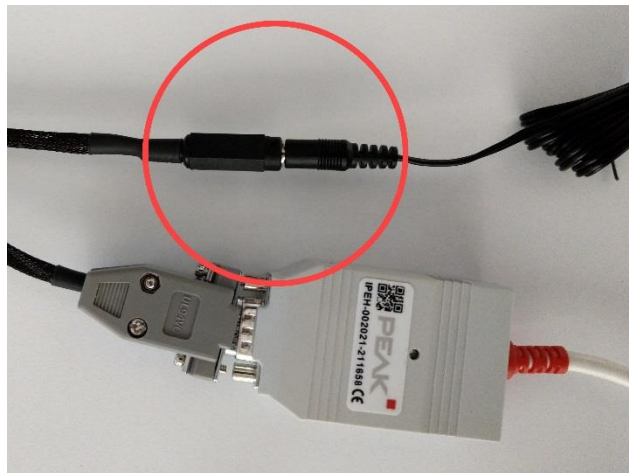


Figure 50. Connecting 12V power to the EDR retrieval cable

12. Proceed to “Retrieve Data” on page 34 to complete the data retrieval procedure.

### **RCM Direct Connection (RCM Removed From Model X)**

To make a direct connection to the RCM, complete the following steps:

1. Remove the front seats, center console, and HVAC outlet duct. See steps 1 through 6, on pages 6 through 21.



2. Disconnect the RCM.
  - a. Disconnect the harness connectors (x2) from the RCM.

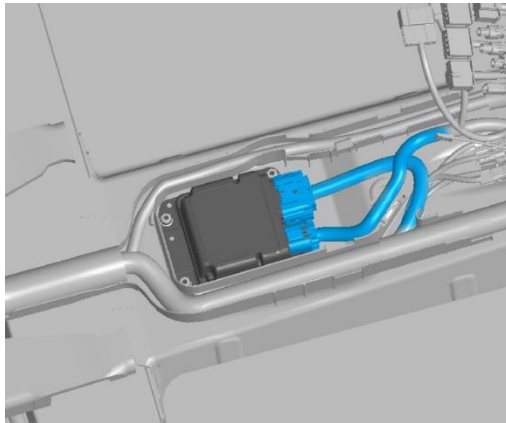


Figure 51. RCM harness connectors

- b. Push the black tab down.



Figure 52. Disconnect the RCM connectors 1/3

- c. Move the retaining lever toward the rear of the vehicle.

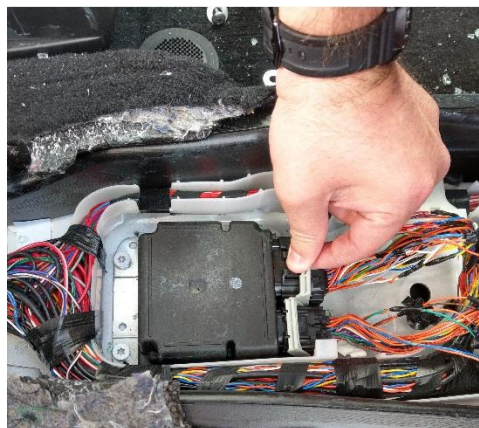


Figure 53. Disconnect the RCM connectors 2/3



- d. Unlatch the connector and move it away from the RCM.

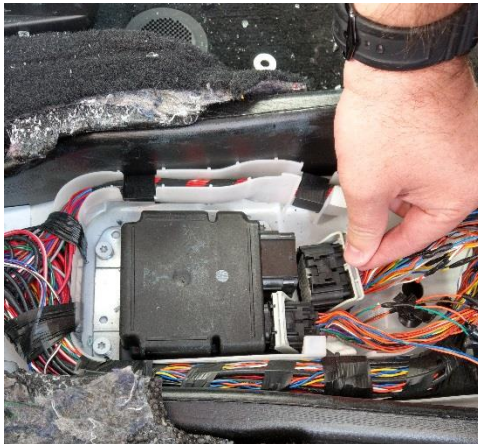


Figure 54. Disconnecting the RCM connectors 3/3

- e. Remove the connector from the RCM.
  - f. Repeat steps 2b through 2e for the second RCM connector.
3. Remove the T30 Torx bolts (3) that secure the RCM to the body (torque 8 Nm).

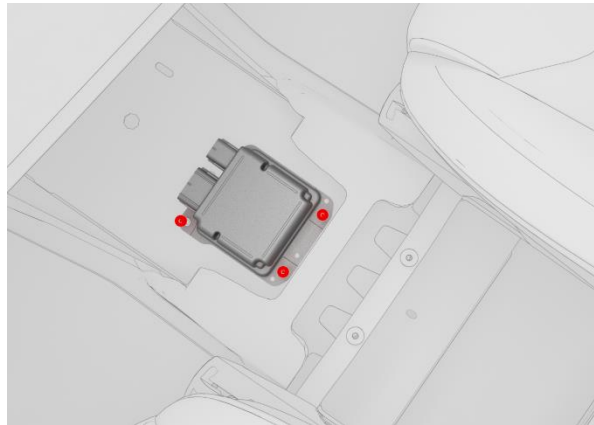


Figure 55. RCM mounting bolts

**NOTE:** If necessary, carefully peel back the carpeting to gain access to the bolts.

## Model X EDR Data Retrieval Guide

4. Remove the RCM from the Model X and place it on a stable surface.



Figure 56. RCM removed from the vehicle

5. Connect the Tesla Model X Direct-To-Module EDR Retrieval Cable to the RCM.
  - a. Attach the data connector to the RCM.



Figure 57. Connecting the EDR Retrieval Cable to the RCM 1/4

- b. Move the retaining latch toward the front of the vehicle until it is fully seated.



Figure 58. Connecting the EDR Retrieval Cable to the RCM 2/4

- c. Attach the power connector to the RCM.



Figure 59. Connecting the EDR Retrieval Cable to the RCM 3/4

- d. Move the retaining latch toward the front of the vehicle until it is fully seated.



Figure 60. Connecting the EDR Retrieval Cable to the RCM 4/4

- 6. Connect the Tesla Model X Direct-To-Module EDR Retrieval Cable to the PCAN-USB adapter.

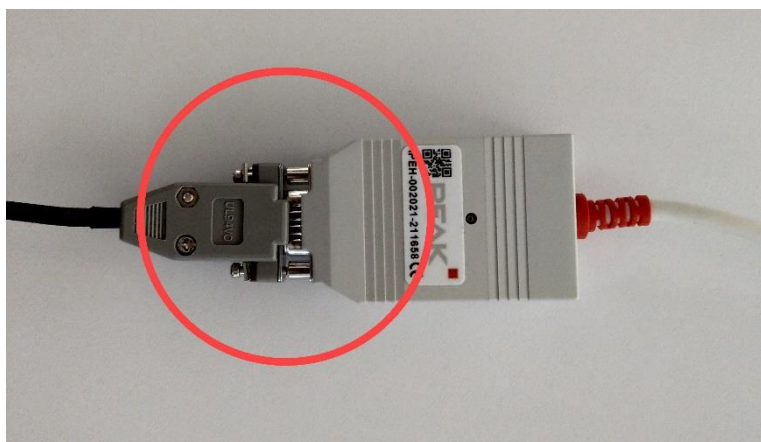


Figure 61. Connecting the EDR retrieval cable to the PCAN

7. Connect the PCAN-USB adapter to the computer used for data retrieval.

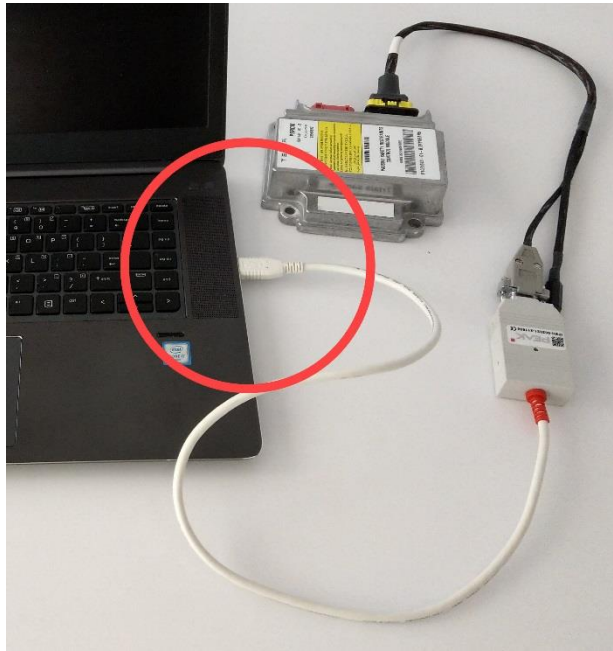


Figure 62. Connecting the PCAN to the computer

8. Connect 12V power to the Tesla Model X Direct-To-Module EDR Retrieval Cable.

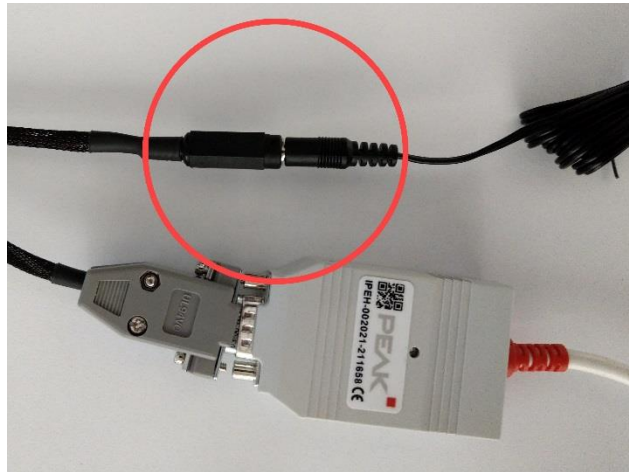


Figure 63. Connecting 12V power to the EDR retrieval cable

9. Proceed to “Retrieve Data” on page 34 to complete the data retrieval procedure.

## Using External Power for the RCM

Externally powering the RCM refers to applying power to the RCM via the vehicle's "first responder's loop," located in the front trunk. This procedure can be used if a key-fob is not available, 12V DC power is not available to the vehicle system, or the vehicle is otherwise unable to turn on.

**NOTE:** This procedure requires an external source of 12V power.

**WARNING:** Follow all manufacturer's instructions for safe use of the external 12V power source.

1. Open the front trunk by using one of the following methods:
  - The touchscreen: touch **Controls > Front Trunk**.



Figure 64. Opening the front trunk using the touchscreen

- The key fob: double click the front trunk button on the key fob.

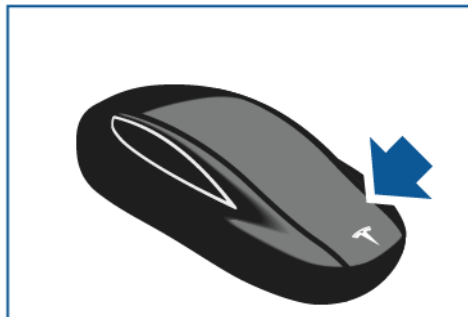


Figure 65. Opening the front trunk using the key fob



- The manual release straps (only needed if the Model X does not have 12V power):
  - a. Locate the tow eye cover.

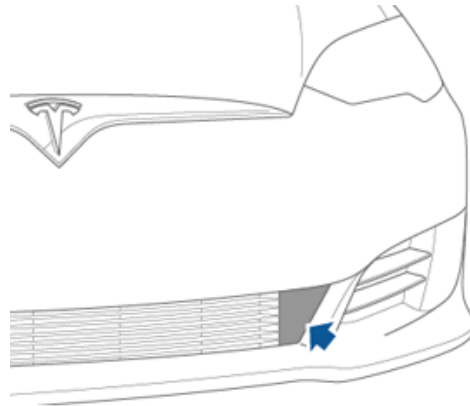


Figure 66. Tow eye cover location

- b. Insert a small flat screwdriver into the slot along the top of the cover, then pry gently to release the cover from the top snap.

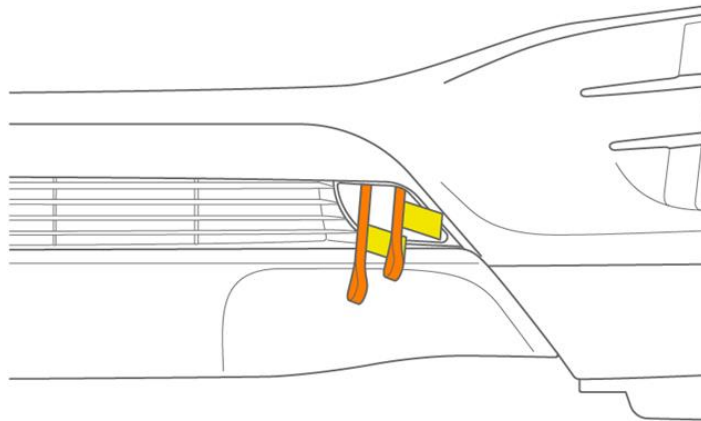


Figure 67. Primary and secondary latch cables location

Once the tow eye cover has been removed, the latch release straps are accessible. These straps are labeled A for the primary latch and B for the secondary latch.

- c. Pull strap A to open the primary latch, then strap B to open the secondary latch.

2. Remove the first responder loop access panel by pulling its rear edge upward to release the clips that hold it in place. Maneuver the access panel toward the windshield to remove it from the vehicle.



Figure 68. Opening the first responder access panel

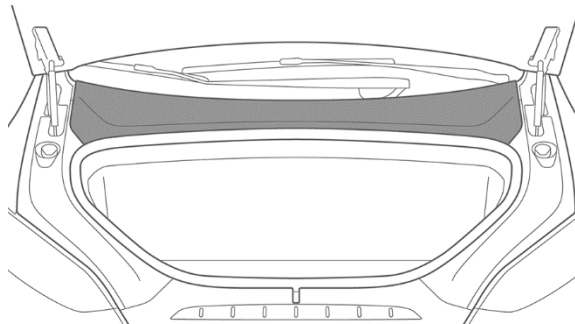


Figure 69. Removing the first responder access panel

3. Disconnect the first responder loop harness.



Figure 70. Disconnecting the first responder loop harness

**⚠ WARNING:** Wait at least 2 minutes for all electrical circuits to fully discharge.

4. Connect the negative terminal of the external 12V power source to the vehicle chassis.

5. Connect the positive terminal of the 12V source to pin 3 of the first responder harness. See the diagram below to identify pin 3.

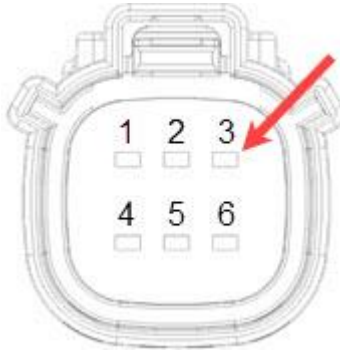


Figure 71. Connector pin layout

6. Proceed to the “Retrieve Data” section of this document to complete data retrieval.

## Retrieve Data

1. Open the Tesla EDR Retrieval Program. The program automatically attempts to connect to the RCM.
  - When connected properly, a green circle and the message “Connected to RCM” displays on the bottom left corner of the window (see Figure 72. EDR program successful connection).



Figure 72. EDR program successful connection

- If the Tesla EDR Retrieval Program is not communicating with the PCAN-USB adapter, a message displays “Not Connected to PCAN”

Check the connection to the PCAN-USB adapter.

- If the Tesla EDR Retrieval Program is communicating with the PCAN-USB adapter, but is not communicating with the RCM, a message displays “Not Connected to RCM.”

Check the connection to the vehicle harness and the vehicle power. If a successful connection through the vehicle communication system cannot be achieved, connect to the RCM using the procedure described in “Establish a Direct-to-Module Connection” on page 5.

2. Once connected to the EDR, click “Run EDR Retrieval” and follow the on-screen prompts to retrieve and save EDR data.



Figure 73. Retrieving data using the Tesla EDR retrieval program

The retrieved \*.edr data file can be used to generate a Tesla EDR Report at <https://edr.tesla.com>.

## For Further Assistance

For technical support, please contact the exclusive Tesla EDR hardware distributor, Crash Data Group:

Email: [crash@crashdatagroup.com](mailto:crash@crashdatagroup.com)

Phone: (951) 252-9254

Toll Free: (800) 280-7940