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2003 Jeep LIBERTY Service Manual

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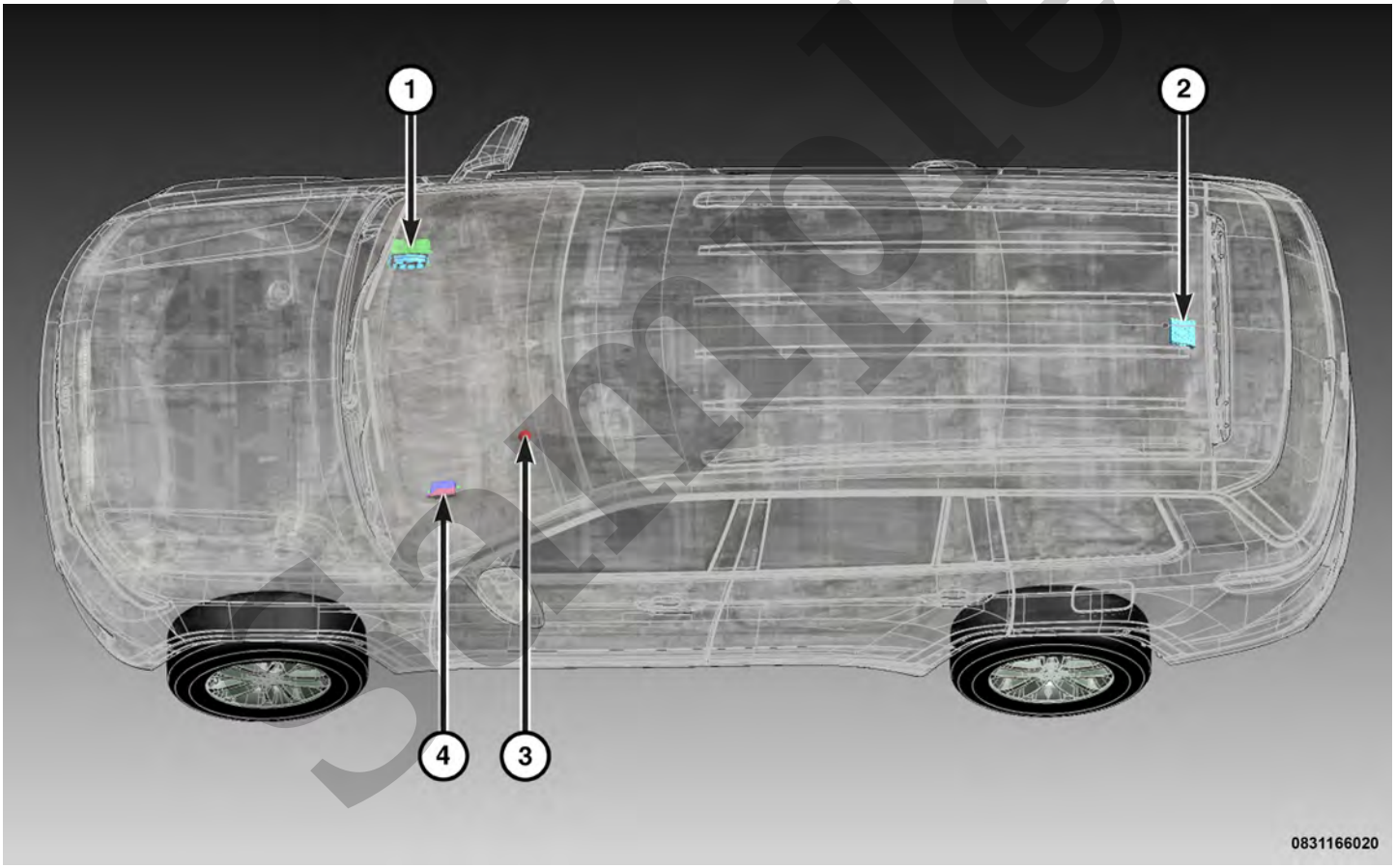
Electronic Steering Lock Module

ELECTRONIC STEERING LOCK MODULE

DESCRIPTION



The Electronic Steering Lock (ESL) system consists of the following components:

Component Index

1.	Body Control Module (BCM)
2.	Radio Frequency Hub (RFH) Module
3.	Keyless Ignition Node (KIN)

Electronic Steering Lock Module

ELECTRONIC STEERING LOCK MODULE

WARNING

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

REMOVAL

1. Remove the steering column (Refer to Steering/Column/Removal and Installation).

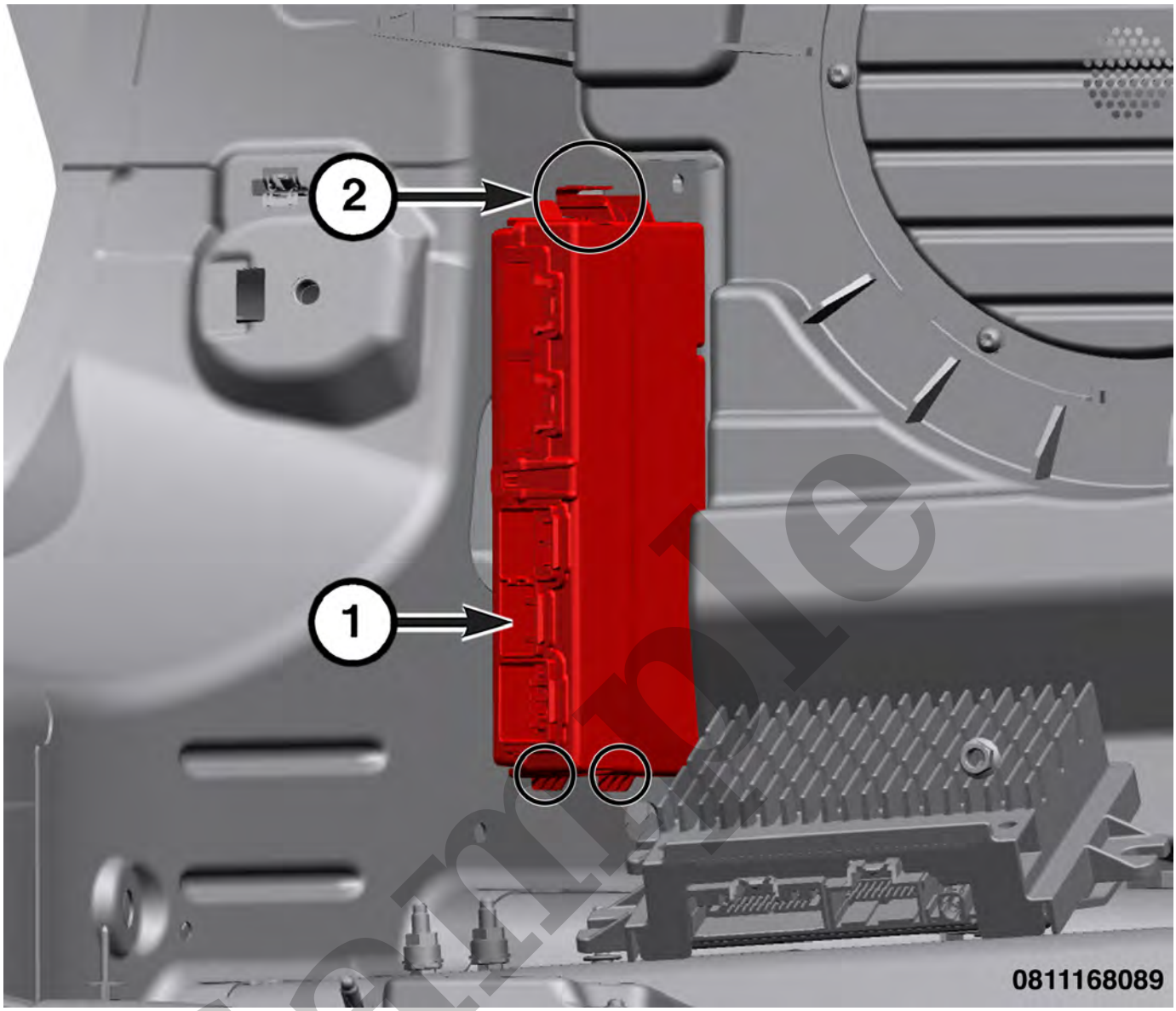
Folding Seat Module

FOLDING SEAT MODULE

DESCRIPTION

1 - FSM

The Folding Seat Module (FSM) controls the position of the third row seats and releases the second row seat backs so that they can be folded flat using the folding seat switch bank, located on the right rear upper quarter trim panel or the third row seat switches located on the lower C-pillar trim panels. When commanded



1 - Folding Seat Module Wire Harness Connectors
2 - Locking Tabs

3. Disconnect the wire harness connectors to the Folding Seat Module (FSM).
4. Press the locking tabs while pulling out to remove the FSM.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

When the seat is replaced or the module is updated or replaced, perform the following calibration procedures using the scan tool:

- Calibrate Full Recline

TBM2 system. The severity of the crash will determine if an eCall is sent or not. This will include direction of the impact, whether frontal, side, rear or rollover.

The TBM2 system can be manually triggered using the SOS button by the vehicle driver or a passenger. The TBM2 will actuate the system in the same manner as if it had been triggered automatically by the ORC. When eCall is in operation, the radio audio will be muted and eCall audio will be heard through the eCall speaker.

In the event that the vehicle battery connection is compromised, a backup battery is mounted within the TBM2 to ensure the integrity of the system and a continuation of an eCall if the vehicle battery becomes disconnected while a call is in progress. If the backup battery becomes discharged, a message will be indicated in the Instrument Panel Cluster (IPC) and a diagnostic code set in the TBM2.

The TBM2 microcontroller continuously monitors all of the TBM2 system electrical circuits to determine the system readiness. If the TBM2 detects a monitored system fault, it sets an active and stored Diagnostic Trouble Code (DTC) and sends electronic messages to the IPC and BCM over the CAN data bus to turn ON the TBM2 indicator. An active fault only remains for the duration of the fault, or in some cases for the duration of the current ignition cycle, while a stored fault causes a DTC to be stored in memory by the TBM2.

The SGW is in the audio and telematics CAN systems to provide security against certain types of attacks and threats from the scan tool, telematics and entertainment buses, which can put the rest of the vehicle's buses at risk of intrusion. The SGW lies electrically between the vehicle on one side, and the DLC, telematics and entertainment systems on the other side. The main function is to gate messages from one bus to another. The SGW monitors the B(+) Feed, switched ignition feed, CAN circuits, software and hardware for any concerns.

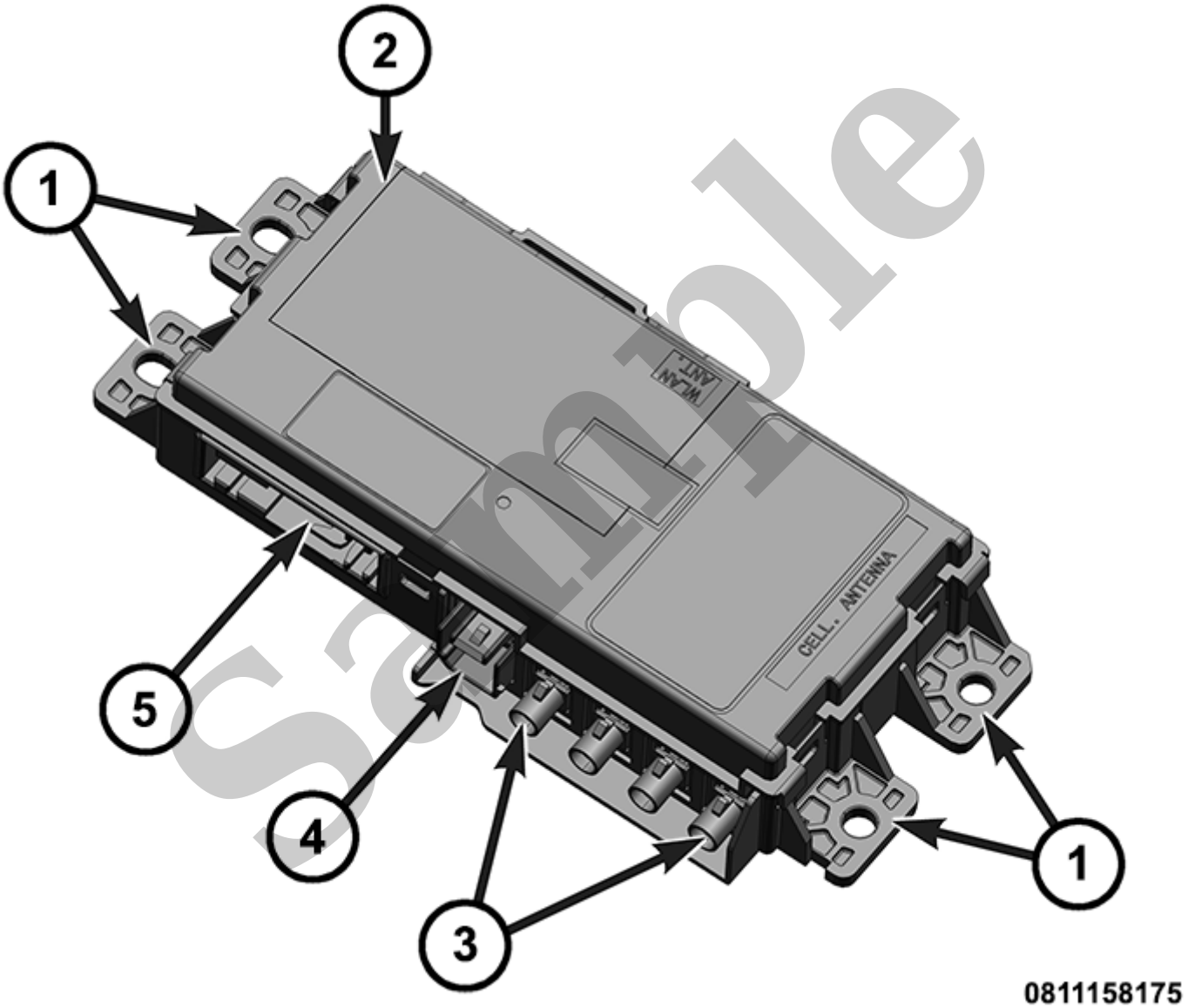
The hardwired inputs and outputs for the TBM2 may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate wiring information. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the TBM2 or the electronic controls and communication between other modules and devices that provide some features of the TBM2 system. The most reliable, efficient and accurate means to diagnose the TBM2 or the electronic controls and communication related to TBM2 system operation requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

Modes of Operation

- **ON Mode**
  - Ignition switch status is not considered if ignition OFF timer has not ended
  - Assist/SOS buttons are armed
  - CAN is active
  - All TBM2 systems are active

  ON Mode deactivated and mode changes to Power OFF Mode under the following conditions:
  - Battery is disconnected
  - Monitoring time expires - TBM2 stores the previous state
- **Sleep Mode**
  - Ignition switch is OFF

- Phone communication to the eCall speaker
- Global positioning information to the cell phone module
- Vehicle data to the BCM
- eCall status to the BCM
- Audio mute
- Illumination of the SOS button Light Emitting Diode (LED)
- Power and ground to the SOS button



1 - Mounting Bosses
2 - TBM2
3 - Antenna Connectors

will be heard through the eCall speaker, in markets where the TBM2 system is required, or through the audio system speakers in markets where the TBM2 system is optional. The microphone data is sent to the TBM2 for broadcast to the PSAP.

1 - Fasteners
2 - Antenna and Wire Harness Connectors
3 - Global Telematics Box Module (TBM2)

2. Through the glove box opening, disconnect the antenna and wire harness connectors from the Global Telematics Box Module (TBM2).
3. Remove the fasteners (1) from the TBM2 (3) and remove the TBM2 through the glove box opening.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Tighten the fasteners securely.
- Using the scan tool, navigate to the TBM2 Misc Functions menu.
- Select and perform TBM2 Replacement.
- Select and perform TBM2 VIN Lock
- Perform a PROXI Alignment.

the HVAC module to the other modules in the vehicle as well as circuits for the controls on the HVAC housing and the A/C heater control. The 8-pin connector contains the in-car temperature sensor signal circuits.

The HVAC module receives broadcast messages from the Body Control Module (BCM) containing the ambient temperature sensor data and the Humidity Rain Light Sensor Module (HRLSM) data.

The HVAC module is mounted to the lower side of the HVAC housing, between the HVAC distribution housing and the blower motor.

The HVAC module in this vehicle controls the Local Interface Network (LIN) communication for the Rear Climate Seat Switch Module, Comfort Seat Module Front Left, Comfort Seat Module Front Right, Comfort Seat Module Rear Left, Comfort Seat Module Rear Right and Comfort Steering Wheel Surface Module. For information about these heated/cooled systems, refer to the applicable heated/cooled system in Section 8G-Heated/Cooled Systems.

OPERATION

The HVAC module utilizes integrated circuitry and information carried over the CAN-IHS data bus to monitor many sensors and switch inputs throughout the vehicle. In response to those inputs, the internal circuitry and programming of the HVAC module allows it to control electronic functions and features of the heating and A/C system.

For additional information about the HVAC module and its inputs and outputs, (Refer to Heating and Air Conditioning/Controls/Description and Operation)(Refer To List 1).

The HVAC module is diagnosed using a diagnostic scan tool. Prior to replacing an HVAC module, run the calibration procedure to verify that the concern is not an air door calibration issue (Refer to DTC-Based Diagnostics/HVAC - Standard Procedure).

The HVAC module cannot be adjusted or repaired and must be replaced if inoperative or damaged.

Refer To List:

List 1

- 24 - Heating and Air Conditioning / Controls, Front / Description and Operation
- 24 - Heating and Air Conditioning / Controls, Rear / Description and Operation