



Continental TPMS Retrofit

Classification	Repair Bulletin	Section/Group	17 - Electrical	Country/Region	All
Year	2012-2014	Model	Model S	Version	Baolong TPMS

Bulletin Classification: This repair bulletin provides instructions and guidelines for a noted condition or a customer concern. The information provided can address a broad range of known or perceived issues with the operation of Tesla vehicles. This bulletin might not be VIN-specific. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.

This Service Bulletin supersedes SB-15-17-003 R1, dated 29-Feb-16. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Condition

It is now possible to retrofit the Continental Tire Pressure Monitoring System (TPMS) onto vehicles that were originally equipped with a Baolong TPMS.

Correction

Only perform this procedure when performing a customer-pay retrofit, or when instructed to do so by another document.

Correction Description	Correction	Time
SB-15-17-003 Not Applicable	S011517003	0.00
Retrofit Continental TPMS Module Only	S021517003	1.35
Retrofit Continental TPMS Module And Harness	S031517003	1.65

Required Part(s):	Part Number	Description	Quantity
		To replace module only:	
	1039955-00-A	HOMELINK CONNECTOR CAP	1
	1034601-00-A	TPMS, ECU, RECEIVER	1
	1034602-00-A	TPMS,WHEEL_SENSOR,SILVER	4
		To replace module and ECU:	
	1056262-00-A	ASY,HRN,ADAPT,CONTI TPMS	1
	1004969-00-A	BUTYL FOIL, 300X150, 2MM THICK	1
	1034601-00-B	TPMS, ECU, RECEIVER	1
	1034602-00-A	TPMS,WHEEL_SENSOR,SILVER	4
	1008246-00-B	DUAL LOCK 25MM X 20MM	2
		Shop supplies:	
		Electrical tape (1061317-00-B or equivalent)	
		Cable tie (Qty. 9)	
		These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual.	
Special Tool(s):	1050759-00-A	ATEQ TPMS SERVICE TOOL MODEL VT30	
	1050454-00-A	ULTRA HEAT GUN MATCO HG300 (or equivalent)	
	1060842-00-A	WIRE CRIMPERS, SERVICE (or equivalent)	

Inspection

1. Disconnect 12V power (refer to Service Manual procedure 17010100).
2. Remove the RH sill trim panel (refer to Service Manual procedure 15184802).
3. Inspect the RH main harness:
 - If there is a 4-pin connector secured to the harness with white tape (Figure 1), continue to the “Retrofit Module Only” section.

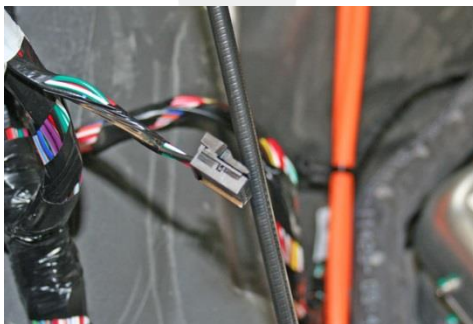


Figure 1

- If there is no 4-pin connector, skip to the “Retrofit Module and Harness” section.

Retrofit Module Only

1. Install the Continental TPMS ECU:
 - a. Remove the backing from one side of each piece of Dual Lock. Affix the pieces to the rear of the ECU.
 - b. Remove the remaining backing from each piece of Dual Lock.
 - c. Secure the ECU to the C-Pillar body between the upper trim clip and body clip (Figure 2).

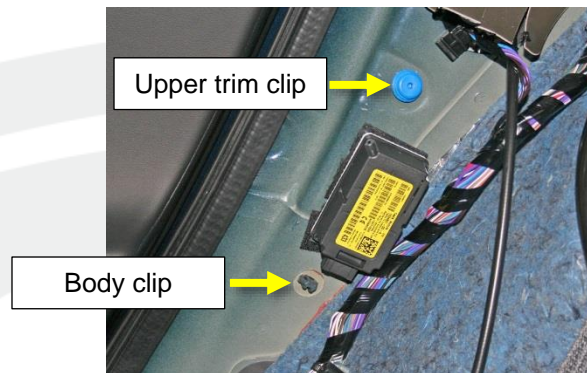


Figure 2

2. Remove the rear aero shield (refer to Service Manual procedure 12030502).
3. Disconnect the harness connector from the Baolong TPMS ECU.
4. Install the connector cap onto the free connector (Figure 3). Use a cable tie to secure the connector out of the way; remove any excess tie.

⚠ CAUTION: Ensure that the connector cap is secure to protect the active CAN communication circuits.

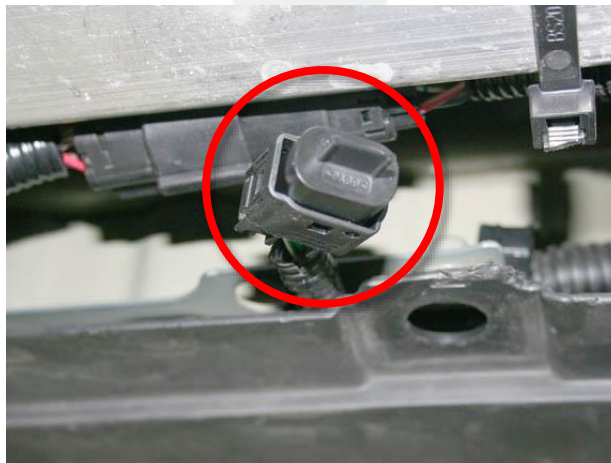


Figure 3

5. If equipped, tightly roll up the TPMS antenna; use a cable tie to secure it to the body.
6. Reinstall the mid aeroshield.
7. Lower the vehicle to provide access to the wheels.

8. Replace all 4 Baolong TPMS sensors with the Continental sensors (refer to Service Manual procedure 34040202).

NOTE: Perform the ID Learn procedure for all 4 sensors before continuing this procedure.

9. Perform a road test to ensure that there are no TPMS alerts.

Retrofit Module and Harness

1. Pull the RH rear trunk trim towards the rear of the vehicle. Tuck the trim underneath the RH garnish trim to hold it in place (Figure 4).



Figure 4

2. Remove the RH lower B-Pillar trim panel (refer to Service Manual procedure 15184401).

3. Working in the RH sill area, peel the carpet inboard to expose the RH main harness (Figure 5).

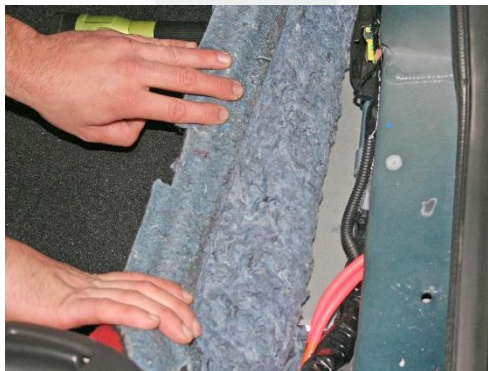


Figure 5

4. Wrap the 2nd row seat belt around the center console to provide better access to the working area (Figure 6).



Figure 6

5. Install the Continental TPMS ECU:
 - a. Remove the backing from one side of each piece of Dual Lock. Affix the pieces to the rear of the ECU.
 - b. Remove the remaining backing from each piece of Dual Lock.
 - c. Secure the ECU to the C-Pillar body between the upper trim clip and body clip (Figure 7).

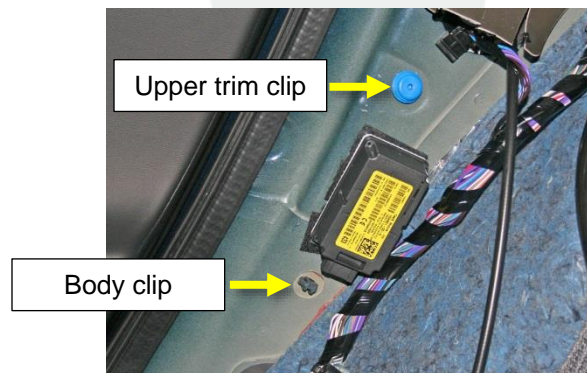


Figure 7

NOTE: Steps 6–26 describe how to connect the new TPMS harness. The harness is routed along the RH main harness from the B-Pillar to the trunk area (Figure 8).

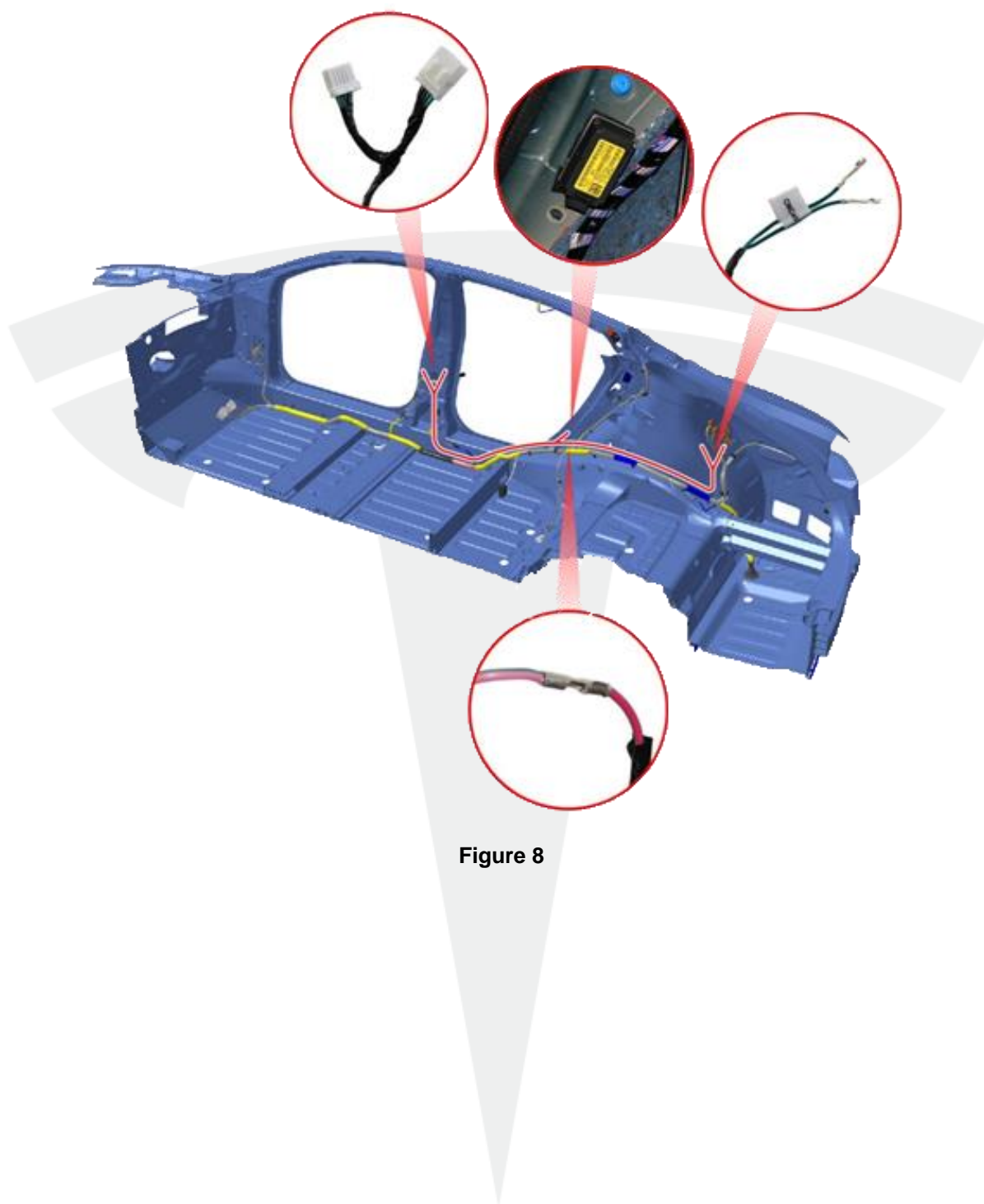


Figure 8

6. Working near the sill area, route the end of the harness with 2 connectors underneath the HV cables toward the B-Pillar (Figure 9).

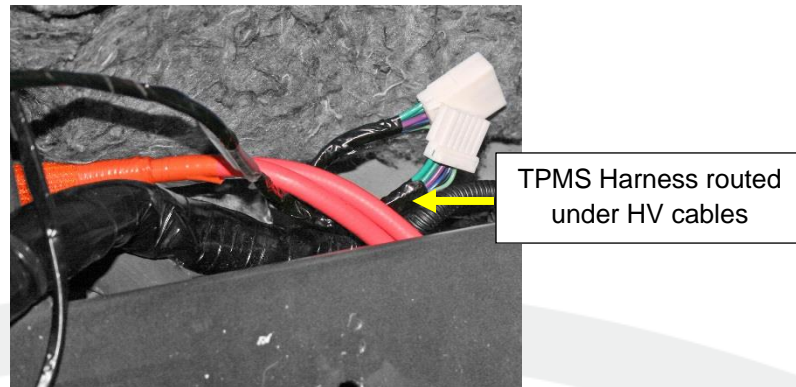


Figure 9

7. Pull the harness forward and route it under the pretensioner.
8. Reach inside the B-Pillar and gently pull out the door harness (Figure 10). If equipped, remove the edge clip.



Figure 10

⚠ CAUTION: Do not disconnect the smaller (16-pin) connector.

9. Disconnect the larger (6-pin) of the 2 harness connectors (Figure 11).



Figure 11

10. Plug the 2 connectors on the TPMS harness into the newly-exposed door harness connectors (Figure 12).



Figure 12 (TPMS harness highlighted)

11. Move the connectors and harness back inside the B-Pillar (Figure 13). Resecure the edge clip, if equipped.



Figure 13

12. Pull the harness towards the rear of the vehicle and connect the electrical connector to the TPMS ECU (Figure 14).

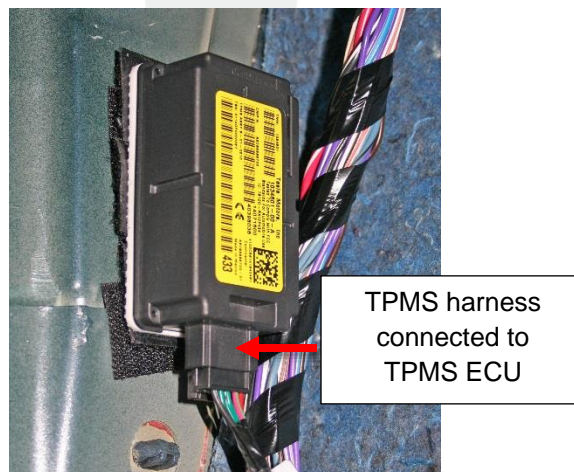


Figure 14

13. Route the 2 CAN wires on the TPMS harness under the door latch cable and pull them toward the rear of the vehicle (Figure 15).

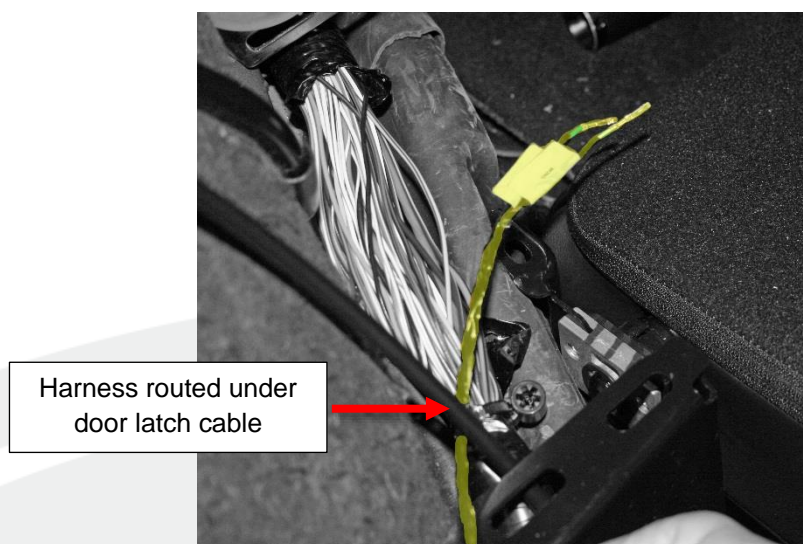


Figure 15 (TPMS harness highlighted)

14. Remove the tape from the exposed section of the RH main harness, working forward from the seat belt reel to the harness clip (Figures 16 and 17).

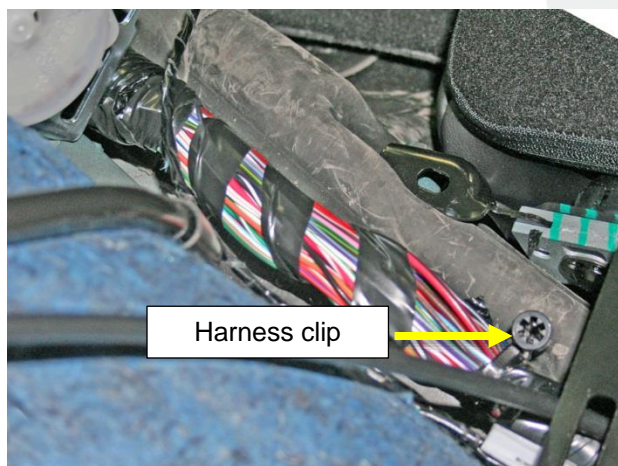


Figure 16 (Before)

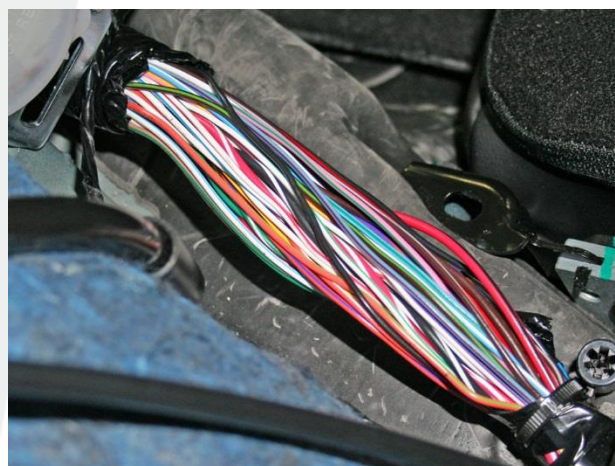


Figure 17 (After)

15. Identify the pink wire with a green stripe (Figure 18).

⚠ CAUTION: The RH main harness has other pink wires. Ensure that the correct wire is selected.

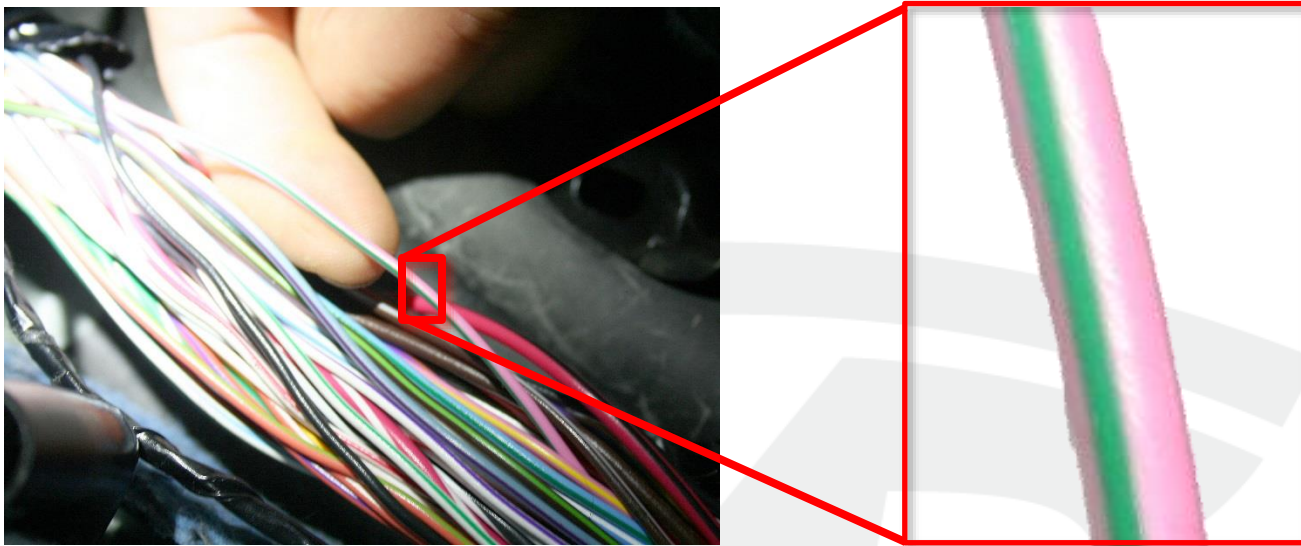


Figure 18

16. Cut the middle of the pink wire with the green stripe.

17. Use a wire stripper to remove approximately 5 mm of insulation from the end of the wire that is closest to the front of the vehicle.

18. Place the heat shrink tubing over the exposed harness wire. Slide the tubing away from the exposed end of the wire.

19. Twist the exposed copper wires together and insert them into the splice terminal on the TPMS harness. Use a hand crimp tool to crimp the wires inside the terminal (Figure 19).

NOTE: Ensure that the crimp is tight by gently pulling on the wires. If there is any movement, re-crimp the terminal. If there is any doubt whether the connection is secure, apply solder to the terminal. Typically no solder is required.



Figure 19

20. Move the heat shrink tubing over the terminal (Figure 20).

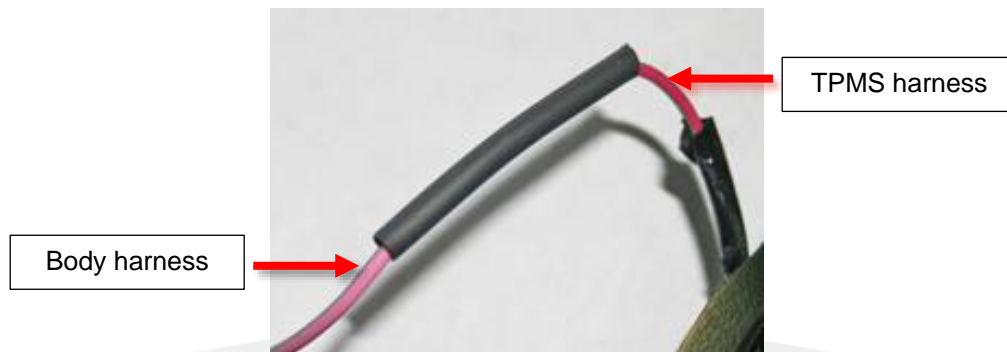


Figure 20

21. Use a heat gun to shrink the shrink tube. The shrink tube contracts as heat is applied.

NOTE: A small amount of adhesive might drip out of the sides of the tube while heating. The adhesive provides a water tight seal.

22. In the RH trunk area beneath the electric park brake ECU, remove the tape to expose the 2 white harness connectors that are taped to the RH main harness (Figure 21).

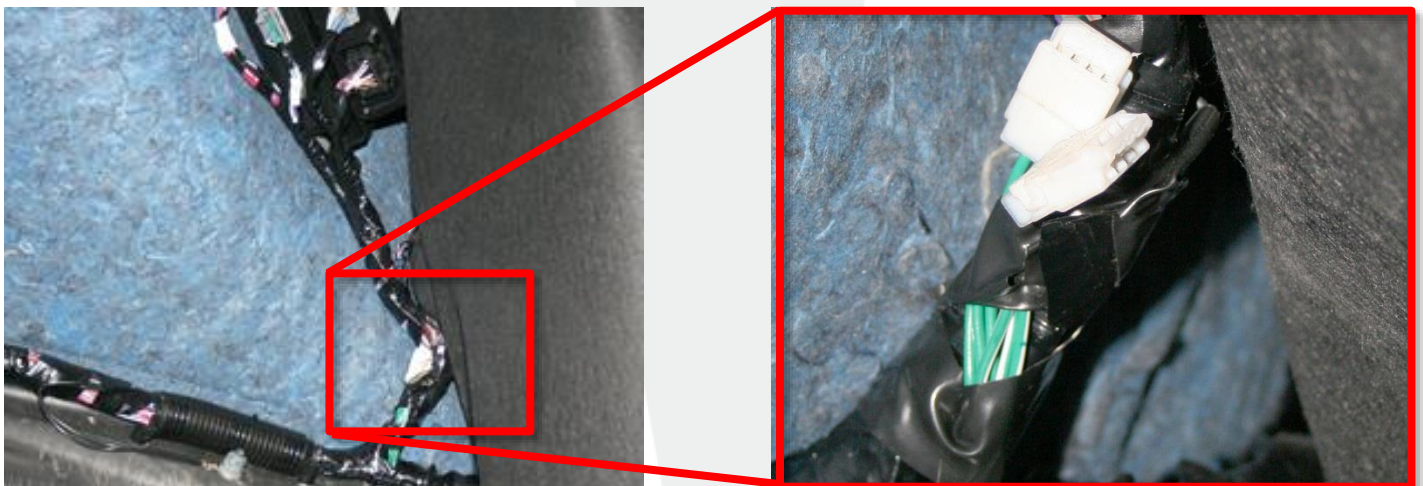


Figure 21

NOTE: The wire colors for the white connectors on the RH main harness are the same as the wire colors on the TPMS harness:

- Solid green (no stripe)
- Green with a white stripe

23. Match the colors to insert the free ends on the TPMS harness into cavity 4 on the correct connector.

24. Perform a push-pull-push test on both wires.

25. Tape the green and green/white wires together.

26. Tape the green and green/white wires to the RH main harness (Figure 21).

NOTE: Steps 27–39 describe how to secure the TPMS harness, working from the rear of the vehicle toward the front. Pull the harness taut before each step.

⚠ CAUTION: Secure that harness so that it will not contact anything that might damage the wires.

27. Use a cable tie to secure the TPMS harness to the corrugated section of the RH main harness, behind the section of exposed wire (Figure 22). Remove any excess tie.

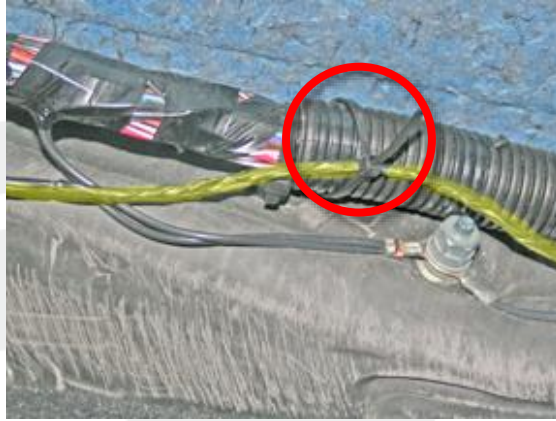


Figure 22 (TPMS harness highlighted)

28. Wrap the TPMS harness and the exposed wires on the RH main harness together using electrical tape in a spiral pattern (Figure 23).



Figure 23 (TPMS harness highlighted)

29. Use a cable tie to secure the TPMS harness to the corrugated section of the RH main body harness, in front of the section of exposed wire (Figure 24). Remove any excess tie.



Figure 24 (TPMS harness highlighted)

30. Working near the rear sill area, apply a spiral pattern of electrical tape to secure the TPMS harness and the exposed wires on the RH main harness.
31. Near the rear of the 2nd row seat frame, use a cable tie to secure the TPMS harness to the taped section of the main RH main harness (Figure 25). Remove any excess tie.

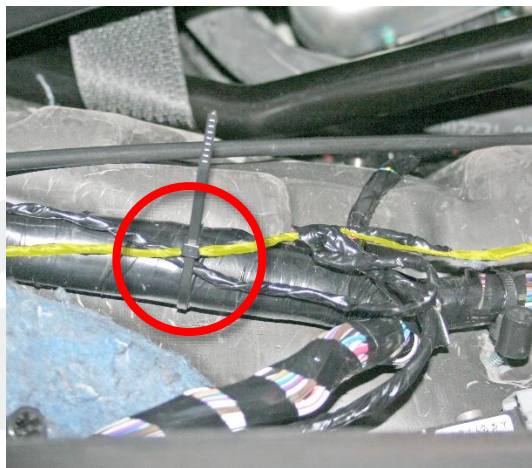


Figure 25 (TPMS harness highlighted)

32. Use electrical tape to secure the section of the TPMS harness that leads to the TPMS ECU to the section of the main RH main harness that routes upward along the C-Pillar (Figure 26).



Figure 26 (TPMS harness highlighted)

33. At the base of the C-Pillar, use electrical tape to secure the TPMS harness to the main RH main harness (Figure 27).

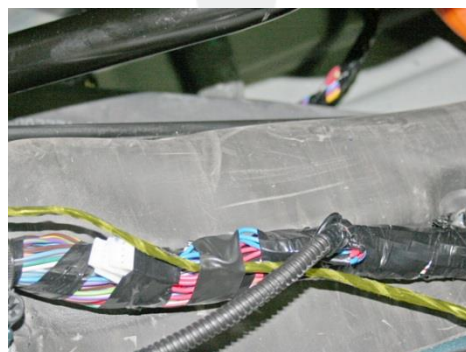


Figure 27 (TPMS harness highlighted)

34. At the rear of the charger bay, use a cable tie to secure the TPMS harness to the main RH main harness (Figure 28). Remove any excess tie.

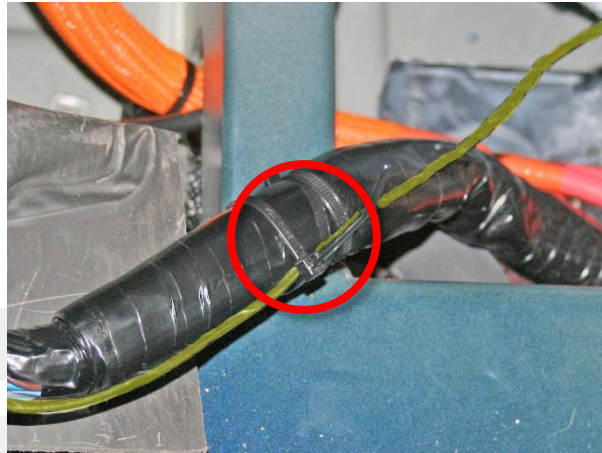


Figure 28 (TPMS harness highlighted)

35. At the base of the sill panel between the HV cables and coolant hose, use a cable tie to secure the TPMS harness to the main RH main harness (Figure 29). Remove any excess tie.

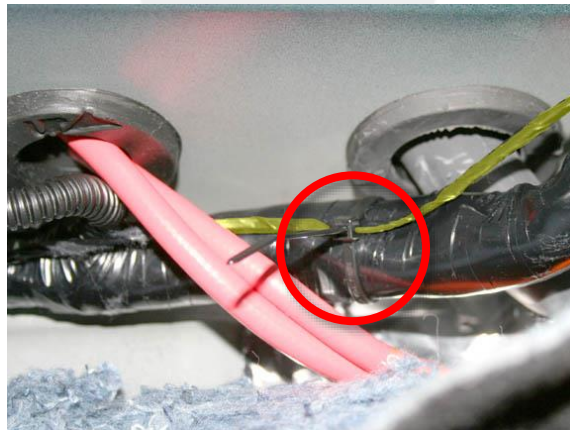


Figure 29 (TPMS harness highlighted)

36. Directly behind the RH front row seat pretensioner, use a cable tie to secure the TPMS harness to the RH main harness. Remove and excess tie.
37. Directly in front of the RH front row seat pretensioner, use a cable tie to secure the TPMS harness to the RH main harness. Remove and excess tie.
38. Use electrical tape to secure the TPMS harness to the harnesses inside the B-Pillar.
39. Push the harnesses completely inside the B-Pillar and cover the hole with the butyl patch.
40. Install all components that were removed for access and reconnect electrical power.
41. Remove the mid aero shield (refer to Service Manual procedure 12030502).
42. Disconnect the harness connector from the Baolong TPMS ECU.

43. Install the connector cap onto the free connector (Figure 30). Use a cable tie to secure the connector out of the way.

⚠ CAUTION: Ensure that the connector cap is secure to protect the active CAN communication circuits.

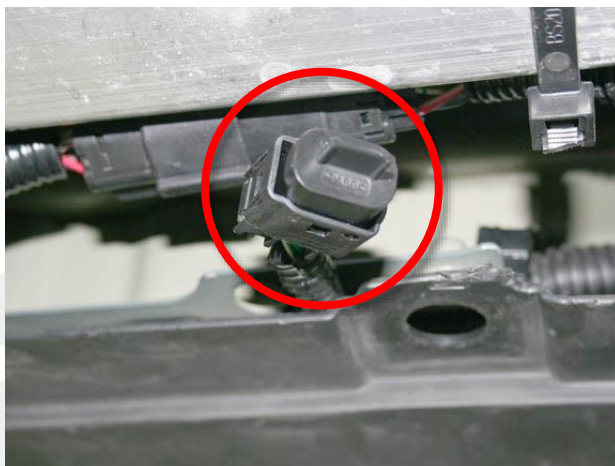


Figure 30

44. If equipped, tightly roll up the TPMS antenna; use a cable tie to secure it to the body.

45. Reinstall the mid aeroshield.

46. Lower the vehicle to provide access to the wheels.

47. Replace all 4 Baolong TPMS sensors with the Continental sensors (refer to Service Manual procedure 34040202).

48. Use Toolbox to update the “TPMS Type” configuration variable to **Continental 2**.

NOTE: Perform the ID Learn procedure for all 4 sensors before continuing this procedure.

49. Perform a road test to ensure that there are no TPMS alerts.

Affected VIN(s) Affected Model S vehicles built before September 17, 2014.

NOTE: This is a simplified summary of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.

For feedback on the accuracy of this document, email ServiceBulletinFeedback@tesla.com.