

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Service Category Engine/Hybrid System

Section Hybrid/Battery Control System

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2019 - 2021	RAV4 HV	VDS(s): BWRFBV, D6RFBV, DWRFBV, E6RFBV, EWRFBV, L6RFBV, LWRFBV, M6RFBV, MWRFBV, R6RFBV, RWRFBV

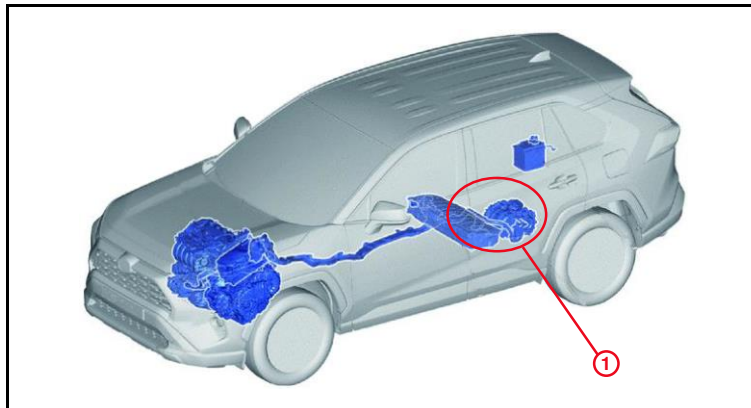
Introduction

Some 2019 – 2021 model year RAV4 Hybrid vehicles may exhibit a MIL ON condition with one or both of the following Diagnostic Trouble Codes (DTCs) stored:

- P0AA649 (Hybrid/EV Battery Voltage System Isolation Internal Electronic Failure)
- P1C8049 (Hybrid/EV Battery Voltage System Isolation [Rear Motor Area] Internal Electronic Failure)

The vehicle may also exhibit static or distortion when listening to AM radio. These conditions may be caused by corrosion on the high-voltage wire harness below the vehicle at connector Y6 at Motor Generator Rear (MGR) or dirt and debris inside the connector. Follow the Repair Procedure in this bulletin to address these conditions.

Figure 1. Image of HV Floor Under Wire Pathway Through Vehicle



1	Area of Concern
----------	------------------------

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Introduction (continued)

Figure 2.



1	Dirt, Corrosion, and Debris Build-up
2	Corrosion

Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VINs shown below.

MODEL	PLANT	BATTERY TYPE	PRODUCTION CHANGE EFFECTIVE VIN
RAV4 HV	Takaoka	NiMH	JTMDWRFV#MJ052960
			JTMEWRFV#MJ052960
			JTMRWRFV#MJ052960
			JTMMWRFV#MJ052960
			JTMLWRFV#MJ052960
	Takaoka	Li-Ion	JTMD6RFV#MJ003713
			JTME6RFV#MJ003713
			JTMR6RFV#MJ003713
			JTMM6RFV#MJ003713
	Nagakusa 301	NiMH	JTMDWRFV#MD095893
			JTMEWRFV#MD095893
			JTMRWRFV#MD095893
			JTMMWRFV#MD095893
			JTMLWRFV#MD095893

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Production Change Information (continued)

MODEL	PLANT	BATTERY TYPE	PRODUCTION CHANGE EFFECTIVE VIN
RAV4 HV	Nagakusa 301	Li-Ion	JTMD6RFV#MD018624 JTME6RFV#MD018624 JTMR6RFV#MD018624 JTMM6RFV#MD018624 JTML6RFV#MD018624
			JTMD6RFV#MD018624 JTME6RFV#MD018624 JTMR6RFV#MD018624 JTMM6RFV#MD018624 JTML6RFV#MD018624
	Nagakusa 302	NiMH	JTMDWRFV#MD558409 JTMEWRFV#MD558409 JTMRWRFV#MD558409 JTMMWRFV#MD558409 JTMLWRFV#MD558409
		Li-Ion	JTMD6RFV#MD510362 JTME6RFV#MD510362 JTMR6RFV#MD510362 JTMM6RFV#MD510362 JTML6RFV#MD510362
	TMMC	NiMH	2T3DWRFV#MW107554 2T3EWRFV#MW107554 2T3BWRV#MW107554 2T3RWRFV#MW107554 2T3MWRV#MW107554 2T3LWRFV#MW107554
		Li-Ion	2T3D6RFV#MW016091 2T3E6RFV#MW016091 2T3R6RFV#MW016091 2T3M6RFV#MW016091 2T3L6RFV#MW016091
	TMMK	NiMH	4T3DWRFV#MU012238 4T3EWRFV#MU012238 4T3RWRFV#MU012238 4T3MWRV#MU012238 4T3LWRFV#MU012238
		Li-Ion	4T3D6RFV#MU031367 4T3E6RFV#MU031367 4T3R6RFV#MU031367 4T3M6RFV#MU031367 4T3L6RFV#MU031367

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
EL9065	R & R HV Floor Under Wire	4.7	821H1-XXXXX*	8A	73
Combo A	R & R Cable, Motor, No. 2	4.2			

*Warranty claim MUST be submitted with the correct 10-digit OFP. Choose the correct OFP for the vehicle being repaired by searching for the parts in the Electronic Parts Catalog using the VIN filter.

APPLICABLE WARRANTY

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

Parts Information

PART NUMBER			PART NAME	QTY
PRODUCTION REGION	PREVIOUS	NEW		
NAP – North America	821H10R010	821H1-0R011	Wire, HV Floor Under	1
CBU – Japan	821H1-42020	821H1-42021		
G1149-42010			Cable, Motor, No. 2	1

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVI*	ADE	TSADVUNIT	1
Techstream 2.0		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

*Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 16.30.011 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Insulated Glove Set, Rubber With Leather Protectors*	01413-00072 (Medium)	1
	01413-00073 (Large)	
	01413-00074 (Extra Large)	

*Essential SST.

CAUTION

ALWAYS inspect the insulated gloves before use for cracks, ruptures, tears, pinholes, or damage. Do NOT wear if damaged.

NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Repair Procedure

1. Confirm the condition exists.
 - A. Using Techstream, run a Health Check and confirm one or both of the following DTCs are present:
 - P0AA649 (Hybrid/EV Battery Voltage System Isolation Internal Electronic Failure).
 - P1C8049 (Hybrid/EV Battery Voltage System Isolation [Rear Motor Area] Internal Electronic Failure).

Are either or both DTCs listed above present or is there AM radio static/distortion?

- **YES** — Continue to substep B.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

CAUTION

Orange wire harnesses and connectors indicate high-voltage circuits. To prevent electric shock, always follow the procedure described in the repair manual to disable the high-voltage system.

To prevent electric shock, wear insulated gloves when working on wire harnesses and components of the high-voltage system.

- B. Disconnect the Y6 connector at the MGR and inspect for corrosion, dirt, or debris. Is dirt, debris, or corrosion present?
 - **YES** — Continue to step 2.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Repair Procedure (continued)

2. Check connector housing of the MGR.
Is the chamfer or a further inner part corroded as shown?
 - **YES** — Continue to step 3.
 - **NO** — Go to step 4.

Figure 3.



1	Chamfer
2	Corrosion

3. Replace the Cable, Motor, No. 2.
 - A. Remove Cable, Motor, No. 2 rear traction motor.
Refer to TIS, applicable model and model year Repair Manual:
 - [2019](#) / [2020](#) / [2021](#) RAV4 HV:

Drivetrain – Hybrid Transmission/Transaxle – “Q610 (Hybrid Transmission / Transaxle): Rear Traction Motor: Removal”

NOTE

ONLY steps 1 – 17.

- B. Install NEW Cable, Motor, No. 2 from rear traction motor.
Refer to TIS, applicable model and model year Repair Manual:
 - [2019](#) / [2020](#) / [2021](#) RAV4 HV:

Drivetrain – Hybrid Transmission/Transaxle – “Q610 (Hybrid Transmission / Transaxle): Rear Traction Motor: Installation”

NOTE

ONLY steps 4 – 18.

MIL ON With DTCs P0AA649 and/or P1C8049 or AM Radio Static/Distortion

Repair Procedure (continued)

4. Replace the HV Floor Under Wire.

A. Remove the HV Floor Under Wire.

Refer to TIS, applicable model and model year Repair Manual:

- [2019](#) / [2020](#) / [2021](#) RAV4 HV:

Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Frame Wire: Removal”

B. Install the HV Floor Under Wire.

Refer to TIS, applicable model and model year Repair Manual:

- [2019](#) / [2020](#) / [2021](#) RAV4 HV:

Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Frame Wire: Installation”

NOTE

As shown in Figure 5, the HV Floor Under Wire may have a different appearance than the original part, shown in Figure 4. This is a normal condition.

Figure 4. Original Part Installed



Figure 5. New Part Installed



5. Using Techstream, run a Health Check to verify DTCs P0AA649 and P1C8049 are no longer present.

6. Test-drive the vehicle to ensure the condition no longer exists and the vehicle exhibits proper operation.