

DETERMINING OPEN CIRCUIT LOCATION (MS-CAN) [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (L.H.D.)]

id100208000500

Caution

- Perform the following malfunction diagnosis only when it is diagnosed with a open circuit by **CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (L.H.D.)]**.
- If the malfunctioning part is detected in the communication line, before disconnecting the related connector for inspection, press the connector in the connection direction to verify that there is no looseness or disconnection.
- When disconnecting the connector, verify that there is no damage, deformation, or corrosion of the connector terminals.

1. Verify DTCs of the modules related to the CAN system.
2. Apply the communication error DTC and the failed module to DTC output pattern and malfunctioning location, and select the possible cause for the diagnostic result and the reference for the inspection item.

Note

- The open circuit location can be determined by the DTC indicated in the DTC output pattern and malfunctioning location chart. DTCs not listed in the chart are not used for the determination of the open circuit location.

3. Inspect the possible cause and inspection item of the applicable malfunctioning part.
4. After repairs, return to **CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (L.H.D.)]**, and verify that the repairs have been completed.

DTC output pattern and malfunctioning location

Cross (×): Displayed

M-MDS display		DTC output pattern and malfunctioning location							
DTC output module	DTC								
R_BCM (Rear body control module (RBCM))	U0155:00							×	
RVM*1 (Rear vehicle monitoring control module (RH))	U0100:00							×	
	U0121:00							×	
	U0155:00							×	
	U0214:00							×	
EATC*2 (Climate control unit)	U0155:00							×	
ACU*3 (Audio unit)	U0155:00							×	
IC (Instrument cluster)	U0142:00	×	×		×				
	U0232:00			×	×				
M-MDS display module		[Fail] display pattern							
R_BCM		×	×		×				
RVM*1				×	×				
EATC*2						×			
ACU*3							×		
IC								×	
Diagnostic result									
Possible cause and inspection item		A	B	C	D	E	F	G	H

*1 : With rear vehicle monitoring system

*2 : With full-auto air conditioner

*3 : With audio unit

A

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Rear body control module (RBCM) malfunction

The diagram illustrates the wiring for the rear harness system, centered around **CONNECTOR C-34**. The connections are as follows:

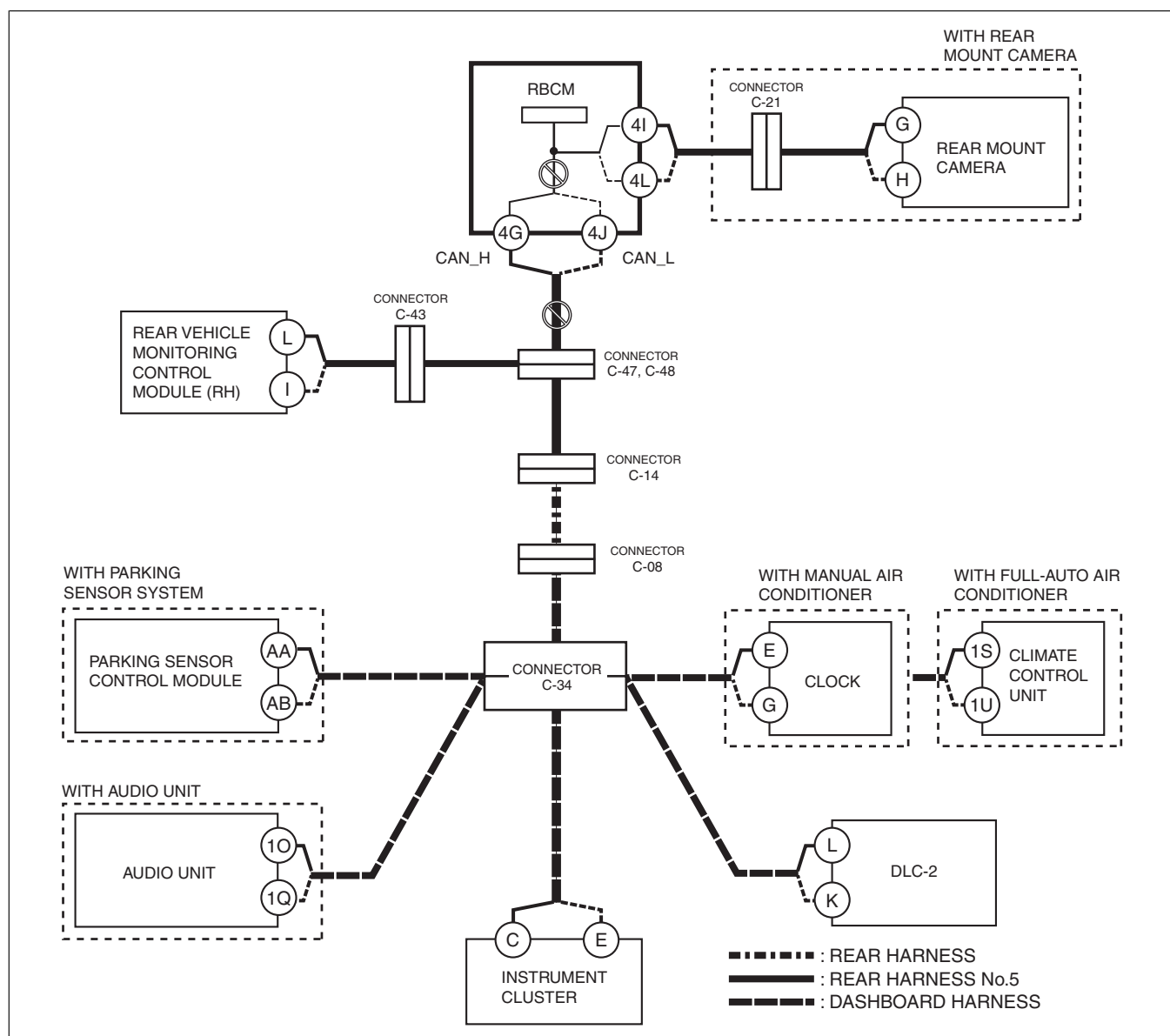
- WITH REAR VEHICLE MONITORING SYSTEM:**
 - RBCM:** Connected to **4I**, **4L**, **4G**, and **4J**. **4I** and **4L** connect to **CONNECTOR C-21**, which leads to the **REAR MOUNT CAMERA** (**G**, **H**).
 - CAN_H** and **CAN_L** lines connect to **CONNECTOR C-47, C-48**.
 - REAR VEHICLE MONITORING CONTROL MODULE (RH):** Connected via **CONNECTOR C-43** to terminals **L** and **I**.
- WITH PARKING SENSOR SYSTEM:**
 - PARKING SENSOR CONTROL MODULE:** Connected via dashed lines to terminals **AA** and **AB**.
- WITH AUDIO UNIT:**
 - AUDIO UNIT:** Connected via dashed lines to terminals **1O** and **1Q**.
- WITH INSTRUMENT CLUSTER:**
 - INSTRUMENT CLUSTER:** Connected to terminals **C** and **E**.
- WITH MANUAL AIR CONDITIONER:**
 - CLOCK:** Connected via dashed lines to terminals **E** and **G**.
- WITH FULL-AUTO AIR CONDITIONER:**
 - CLIMATE CONTROL UNIT:** Connected via dashed lines to terminals **1S** and **1U**.
- WITH DLC-2:**
 - DLC-2:** Connected via dash-dot lines to terminals **L** and **K**.

Legend:

- : REAR HARNESS
- : REAR HARNESS No.5
- · - : DASHBOARD HARNESS

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between rear body control module (RBCM) and connectors C-47, C-48
- Connector C-47, C-48 malfunction
- CAN circuit in rear body control module (RBCM) malfunction

System wiring diagram



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Inspection item

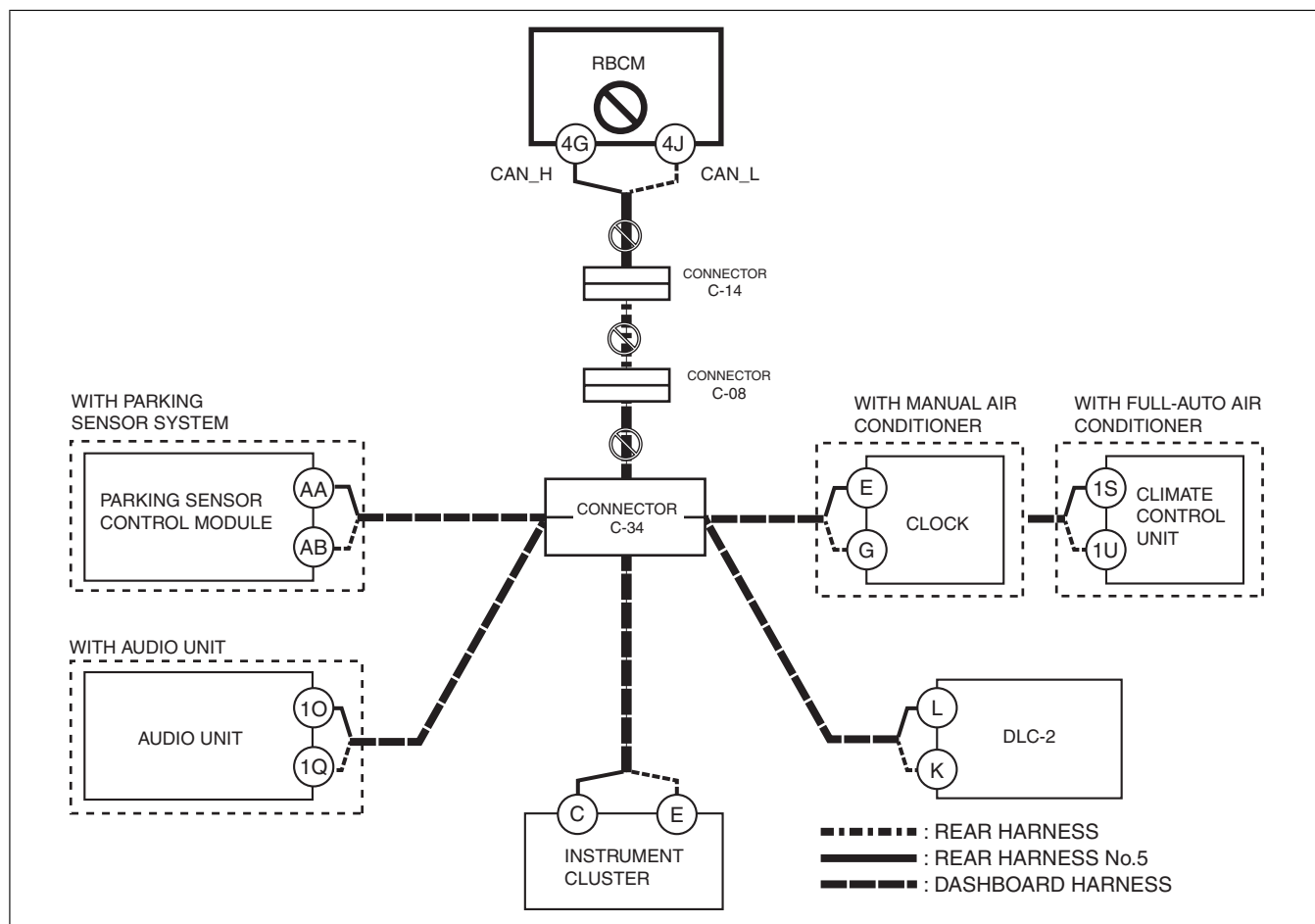
- Rear body control module (RBCM) connector
- Connectors C-47, C-48
- Wiring harness between rear body control module (RBCM) terminal 4G and connectors C-47
- Wiring harness between rear body control module (RBCM) terminal 4J and connectors C-48
- Rear body control module (RBCM)
 - Wiring harness between rear body control module (RBCM) terminal 4G and rear body control module (RBCM) terminal 4I
 - Wiring harness between rear body control module (RBCM) terminal 4J and rear body control module (RBCM) terminal 4L

Without rear vehicle monitoring system

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between rear body control module (RBCM) and connector C-14
- Open circuit in wiring harness between connector C-14 and connector C-08
- Open circuit in wiring harness between connector C-08 and connector C-34
- Connector C-14 malfunction
- Connector C-08 malfunction
- Connector C-34 malfunction
- Rear body control module (RBCM) malfunction

System wiring diagram



ac5wzw00003558

Inspection item

- Rear body control module (RBCM) connector
- Connector C-14
- Connector C-08
- Connector C-34
- Wiring harness between rear body control module (RBCM) terminal 4G and connector C-14
- Wiring harness between rear body control module (RBCM) terminal 4J and connector C-14
- Wiring harness between connector C-14 and connector C-08
- Wiring harness between connector C-08 and connector C-34
- Rear body control module (RBCM)

C

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between rear vehicle monitoring (RH) and connectors C-43
- Open circuit in wiring harness between connectors C-43 and connectors C-47, C-48
- Connector C-43 malfunction
- Connector C-47, C-48 malfunction
- Rear vehicle monitoring control module (RH) malfunction

The diagram illustrates the wiring for the REAR VEHICLE MONITORING CONTROL MODULE (RH). It shows the following components and their connections:

- REAR VEHICLE MONITORING CONTROL MODULE (RH)**: Connected to the RBCM via connectors C-43 and C-47, C-48. It also has a ground connection (G) and a power connection (H).
- RBCM**: Rear Body Control Module, connected to the RH and the rear mount camera.
- WITH REAR MOUNT CAMERA**: A dashed box indicating an optional configuration. It includes a REAR MOUNT CAMERA connected to the RBCM via connector C-21.
- CONNECTOR C-43**: Connects the RH to the RBCM.
- CONNECTOR C-47, C-48**: Connects the RH to the RBCM.
- CONNECTOR C-14**: Connects the RH to the RBCM.
- CONNECTOR C-08**: Connects the RH to the RBCM.
- WITH PARKING SENSOR SYSTEM**: A dashed box indicating an optional configuration. It includes a PARKING SENSOR CONTROL MODULE connected to the RH via connectors AA and AB.
- WITH AUDIO UNIT**: A dashed box indicating an optional configuration. It includes an AUDIO UNIT connected to the RH via connectors 1Q and 1R.
- WITH MANUAL AIR CONDITIONER**: A dashed box indicating an optional configuration. It includes a CLOCK connected to the RH via connectors E and G.
- WITH FULL-AUTO AIR CONDITIONER**: A dashed box indicating an optional configuration. It includes a CLIMATE CONTROL UNIT connected to the RH via connectors 1S and 1U.
- INSTRUMENT CLUSTER**: Connected to the RH via connectors C and E.
- DLC-2**: Connected to the RH via connectors L and K.

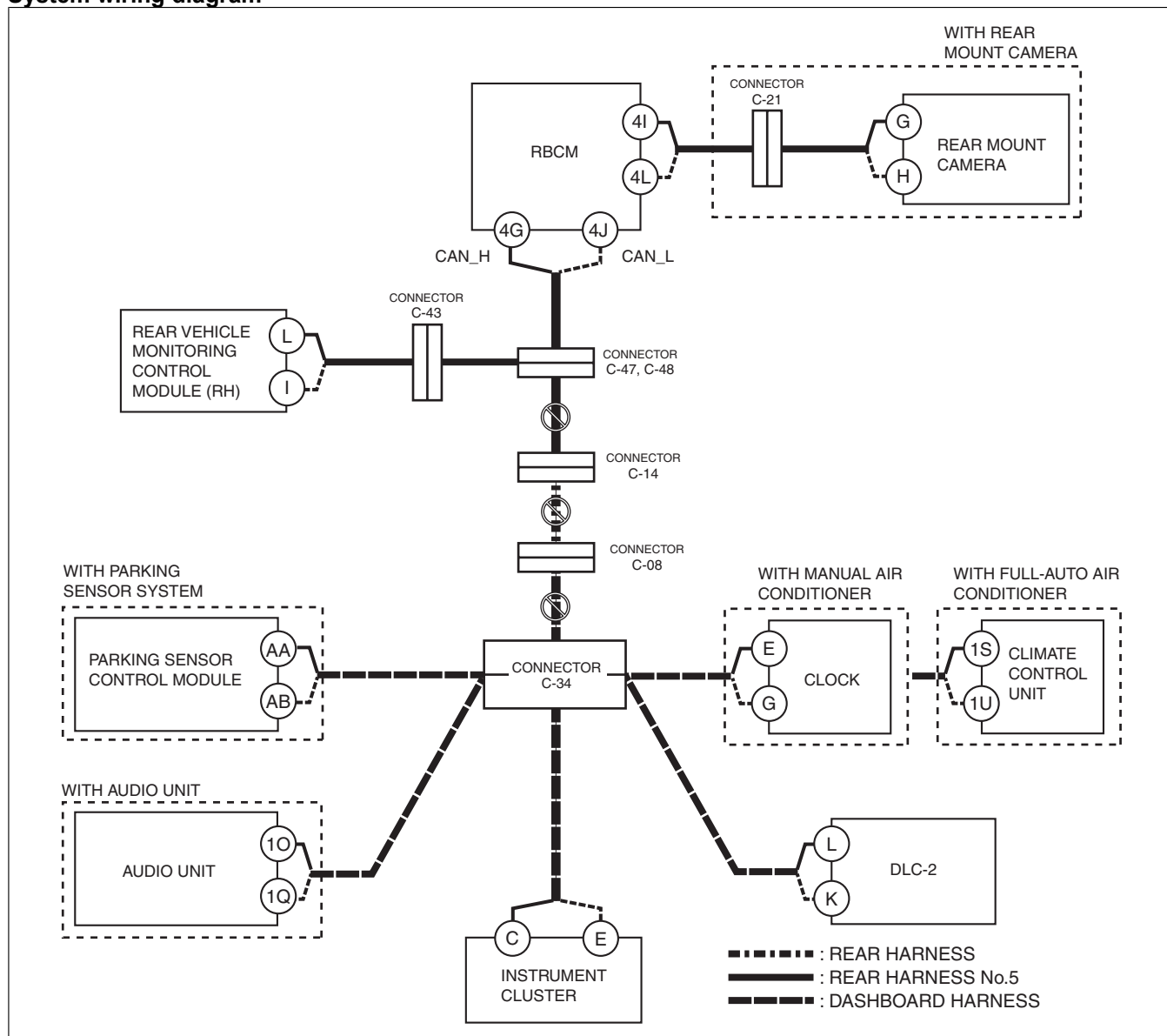
Legend:

- : REAR HARNESS
- : REAR HARNESS No.5
- - - : DASHBOARD HARNESS

- Rear vehicle monitoring control module (RH) connector
- Connectors C-43
- Connectors C-47, C-48
- Wiring harness between Rear vehicle monitoring control module (RH) terminal L and connector C-43
- Wiring harness between Rear vehicle monitoring control module (RH) terminal I and connector C-43
- Wiring harness between connector C-43 and connector C-47, C-48
- Rear vehicle monitoring control module (RH)

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between connectors C-47, C-48 and connector C-14
- Open circuit in wiring harness between connector C-14 and C-08
- Open circuit in wiring harness between connectors C-08 and C-34
- Connectors C-47, C-48 malfunction
- Connector C-14 malfunction
- Connector C-08 malfunction
- Connector C-34 malfunction

System wiring diagram



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Inspection item

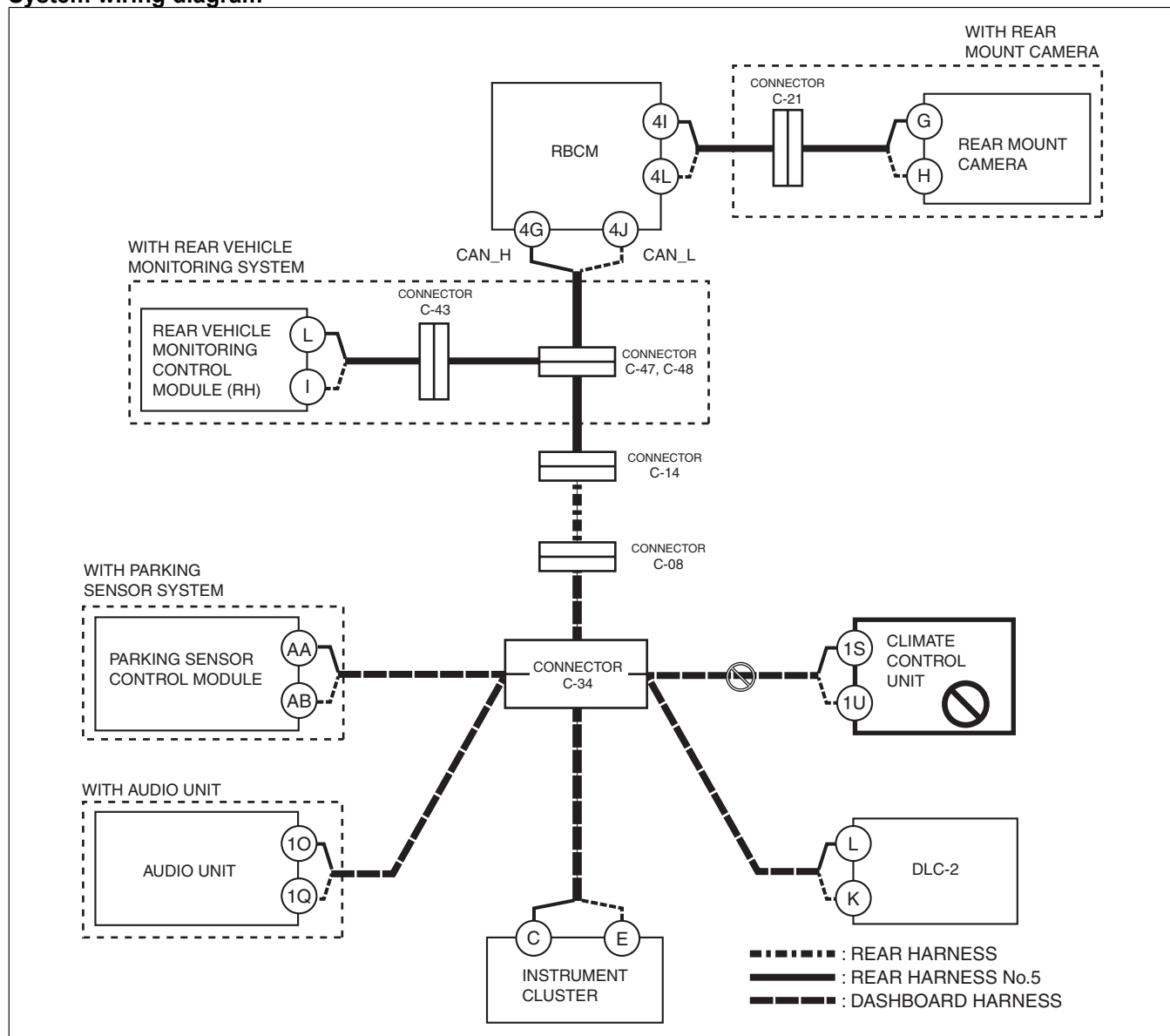
- Connectors C-47, C-48
- Connector C-14
- Connector C-08
- Connector C-34
- Wiring harness between connectors C-47, C-48 and connector C-14
- Wiring harness between connector C-14 and connector C-08
- Wiring harness between connector C-08 and connector C-34

E

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between climate control unit and connector C-34
- Connector C-34 malfunction
- Climate control unit malfunction

System wiring diagram



ac5wzw00003561

Inspection item

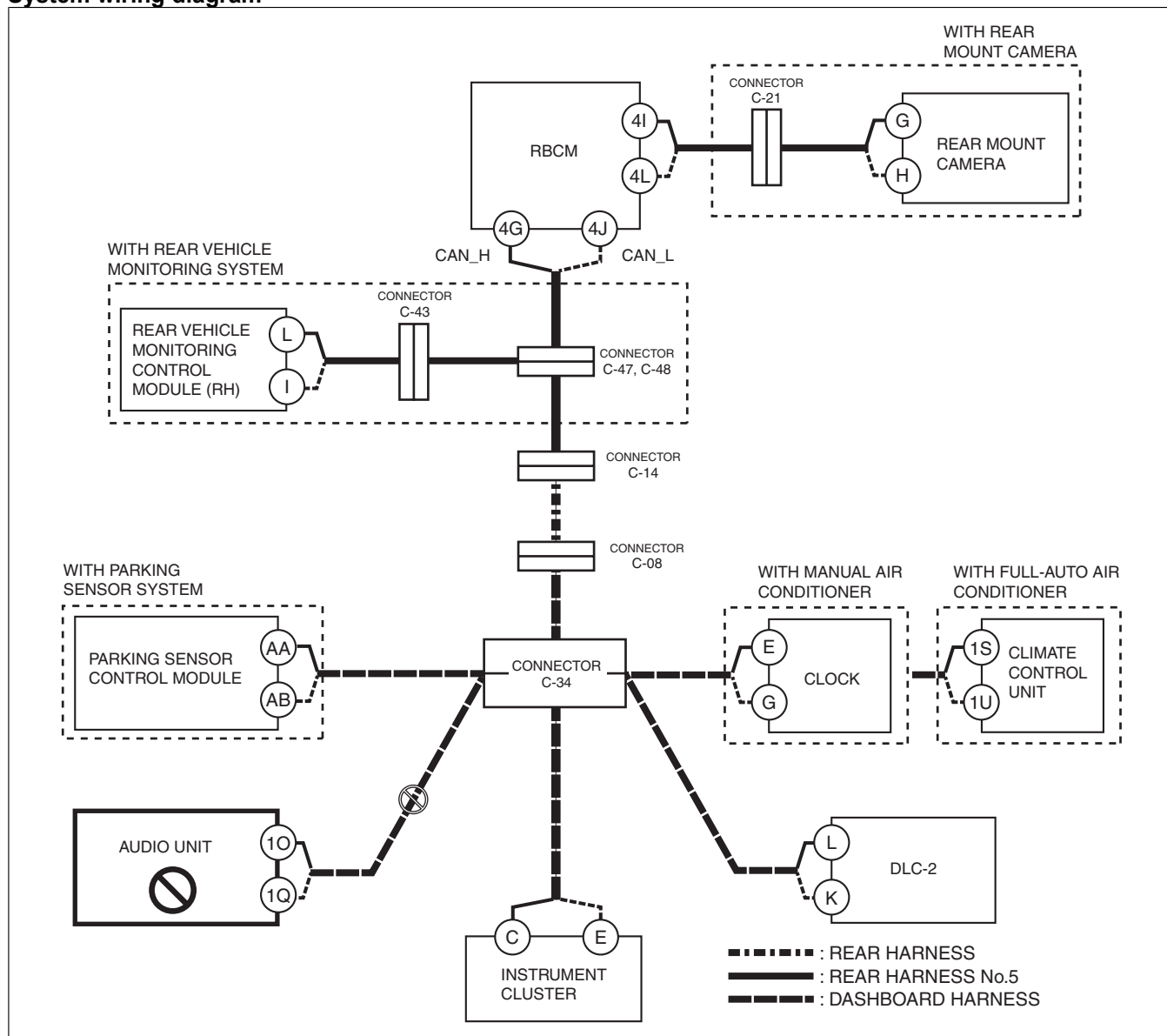
- Climate control unit connector
- Connector C-34
- Wiring harness between climate control unit terminal 1S and connector C-34
- Wiring harness between climate control unit terminal 1U and connector C-34
- Climate control unit

F

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between vehicle with audio unit and connector C-34
- Connector C-34 malfunction
- Audio unit malfunction

System wiring diagram



ac5wzw00003562

Inspection item

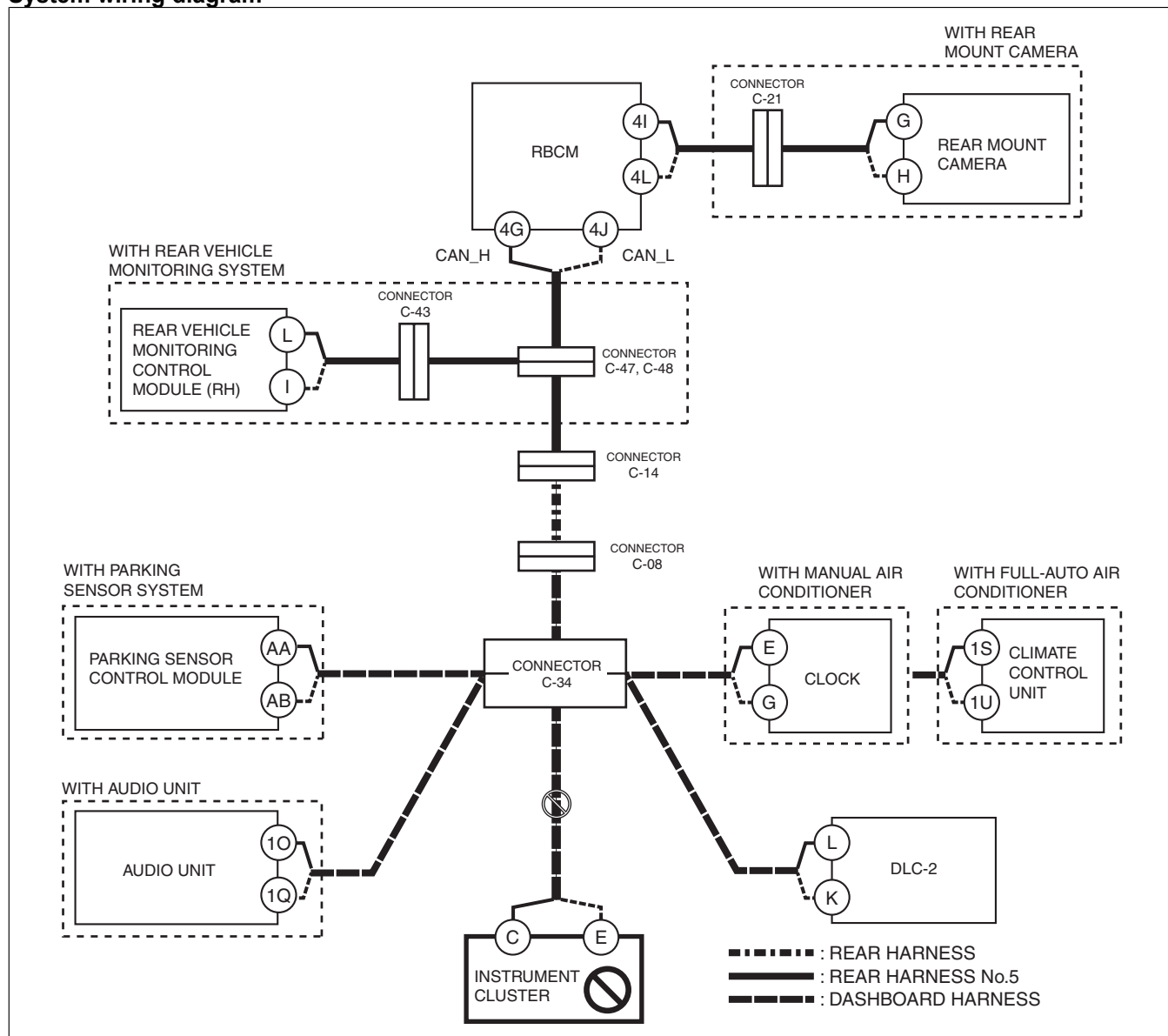
- Audio unit connector
- Connector C-34
- Wiring harness between audio unit terminal 1O and connector C-34
- Wiring harness between audio unit terminal 1Q and connector C-34
- Audio unit

G

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between instrument cluster and connector C-34
- Connector C-34 malfunction
- Instrument cluster malfunction

System wiring diagram



ac5wzw00003563

Inspection item

- Instrument cluster connector
- Connector C-34
- Wiring harness between instrument cluster terminal C and connector C-34
- Wiring harness between instrument cluster terminal E and connector C-34
- Instrument cluster

H

1. Perform the clock input/output check mode. (See CLOCK INPUT/OUTPUT CHECK MODE.)
 - If "2:00" is displayed, go to the next step.
 - "2:Er" is displayed, inspect the inspection items in the possible causes for Clock Circuit Malfunction.
2. Shift the selector lever (ATX) or shift lever (MTX) to the R position.
 - If images from the rear mount camera appear in the audio unit, inspect the inspection items in the possible causes for the Parking Sensor Control Module Circuit Malfunction.
 - If images from the rear mount camera do not appear in the audio unit, inspect the inspection items in the possible causes for Rear Mount Camera Circuit Malfunction.

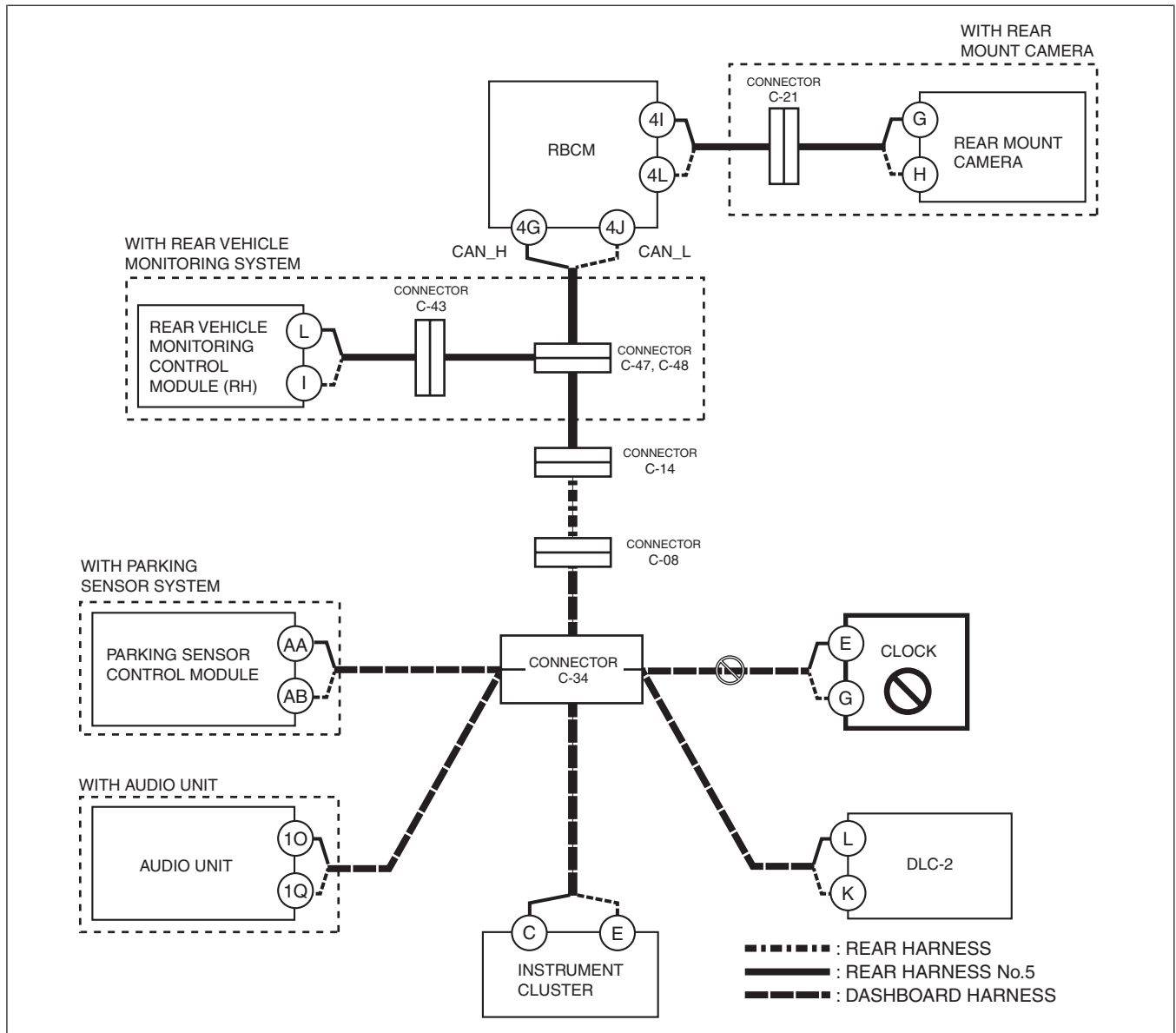
Clock Circuit Malfunction

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between clock component and connector C-34

- Connector C-34 malfunction
- Clock component malfunction

System wiring diagram



ac5wzw00003564

Inspection item

- Clock component connector
- Connector C-34
- Wiring harness between clock component terminal E and connector C-34
- Wiring harness between clock component terminal G and connector C-34
- Clock component

Parking Sensor Control Module Circuit Malfunction

Possible cause

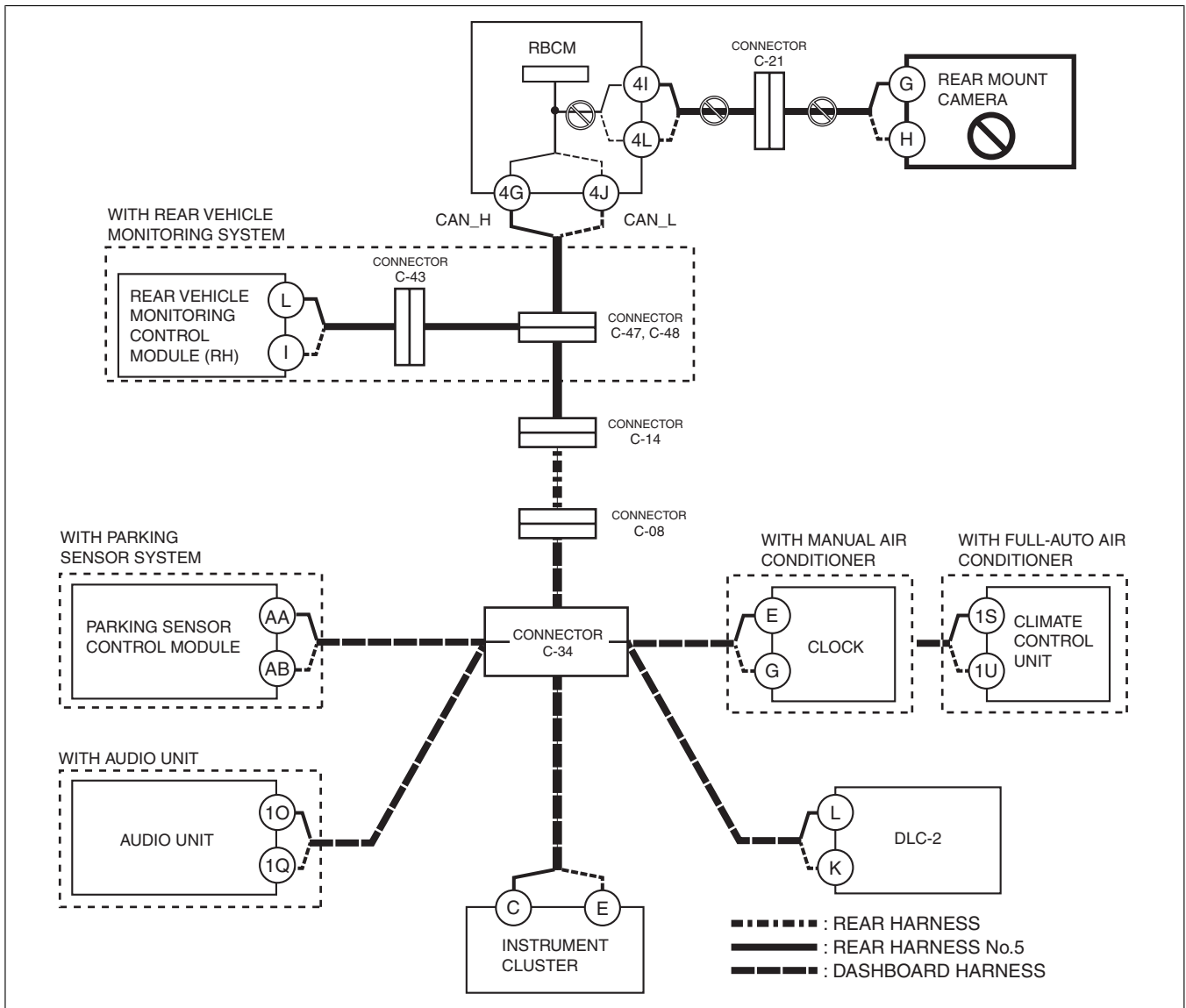
- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between parking sensor control module and connector C-34
- Connector C-34 malfunction
- Parking sensor control module malfunction

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- Parking sensor control module connector
- Connector C-34
- Wiring harness between parking sensor control module terminal AA and connector C-34
- Wiring harness between parking sensor control module terminal AB and connector C-34
- Parking sensor control module

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between rear mount camera and connector C-21
- Open circuit in wiring harness between connector C-21 and RCBM
- Connector C-21 malfunction
- Rear mount camera malfunction
- CAN circuit in rear body control module (RCBM) malfunction

System wiring diagram



ac5wzw00003566

Inspection item

- Rear mount camera connector
- Connector C-21
- Wiring harness between rear mount camera terminal G and connector C-21.
- Wiring harness between rear mount camera terminal H and connector C-21.
- Wiring harness between rear body control module (RBCM) terminal 4I and connector C-21
- Wiring harness between rear body control module (RBCM) terminal 4L and connector C-21
- Rear mount camera
- Rear body control module (RBCM)
 - Between rear body control module (RBCM) terminal 4G and rear body control module (RBCM) terminal 4I
 - Between rear body control module (RBCM) terminal 4J and rear body control module (RBCM) terminal 4L