

DETERMINING OPEN CIRCUIT LOCATION (MS-CAN) [SKYACTIV-D 2.2 (L.H.D.)]

id100205000500

Caution

- Perform the following malfunction diagnosis only when it is diagnosed with a open circuit by **CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-D 2.2 (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-D 2.2 (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)	U0142:00	×	×		×				
	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

WITH REAR MOUNT CAMERA

WITH REAR VEHICLE MONITORING SYSTEM

WITH PARKING SENSOR SYSTEM

WITH AUDIO UNIT

WITH MANUAL AIR CONDITIONER

WITH FULL-AUTO AIR CONDITIONER

RBCM

CONNECTOR C-21

CONNECTOR C-43

CONNECTOR C-47, C-48

CONNECTOR C-14

CONNECTOR C-08

CONNECTOR C-34

REAR MOUNT CAMERA

REAR VEHICLE MONITORING CONTROL MODULE (RH)

PARKING SENSOR CONTROL MODULE

AUDIO UNIT

INSTRUMENT CLUSTER

DLC-2

CLOCK

CLIMATE CONTROL UNIT

4I

4L

4G

4J

CAN_H

CAN_L

L

I

AA

AB

1O

1Q

C

E

L

K

E

G

1S

1U

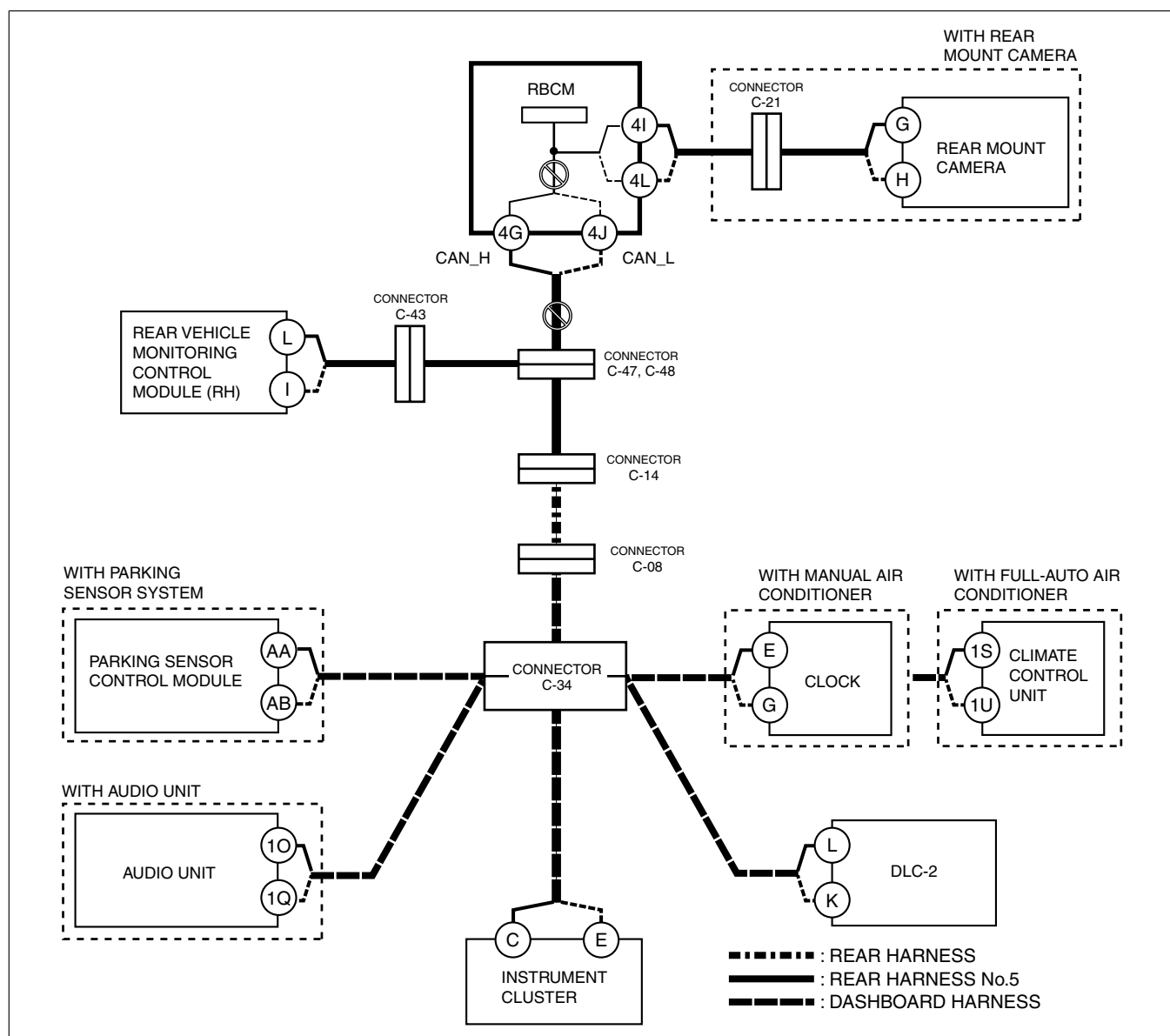
..... : REAR HARNESS

———— : 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



ac5wzw00000635

Inspection item

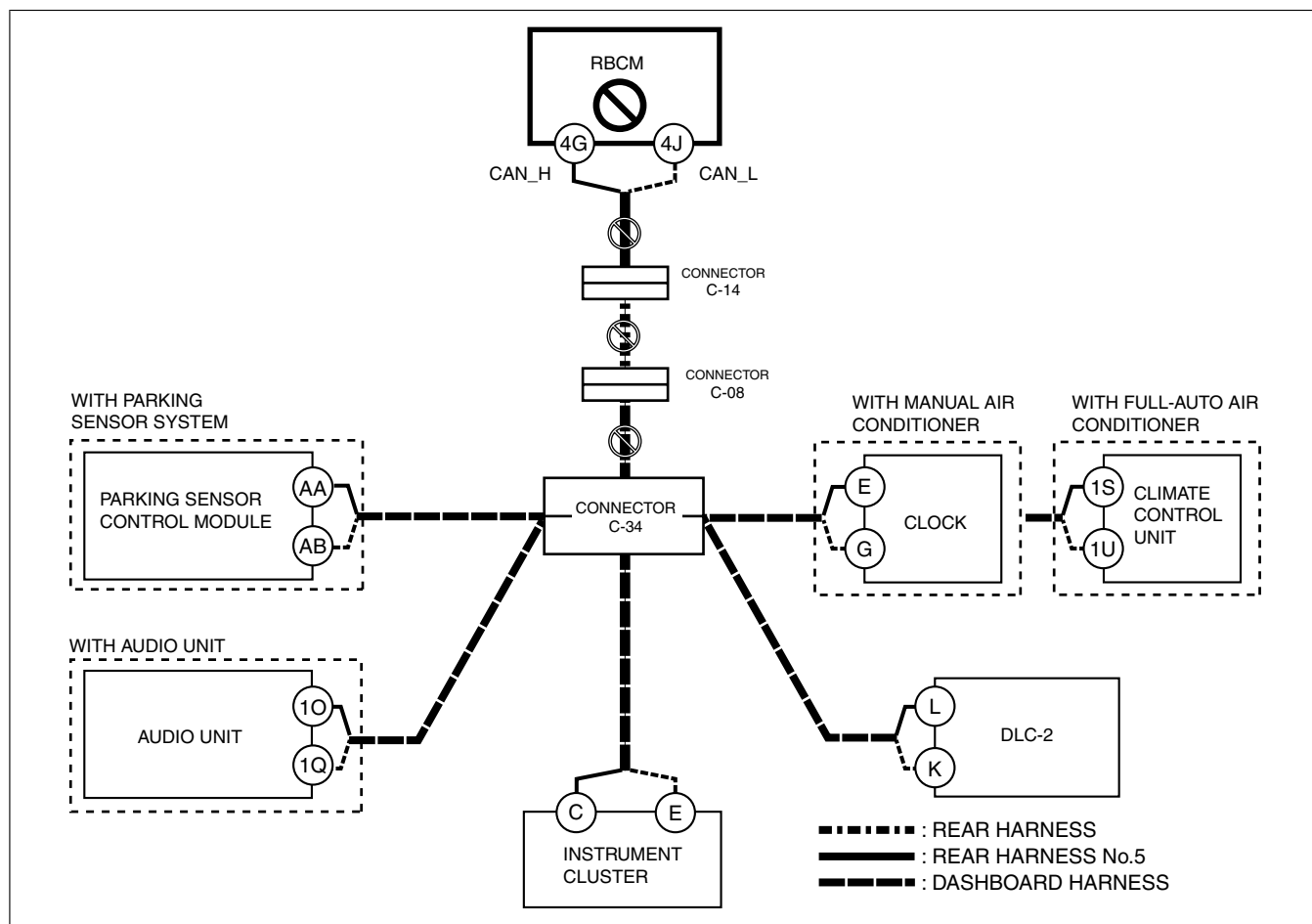
- Rear body control module (RBCM) connector
- Connectors C-47, C-48
- Wiring harness between rear body control module (RBCM) terminal 4G and connectors C-47
- Wiring harness between rear body control module (RBCM) terminal 4J and connectors C-48
- Rear body control module (RBCM)
 - Wiring harness between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



ac5wzw00000636

Inspection item

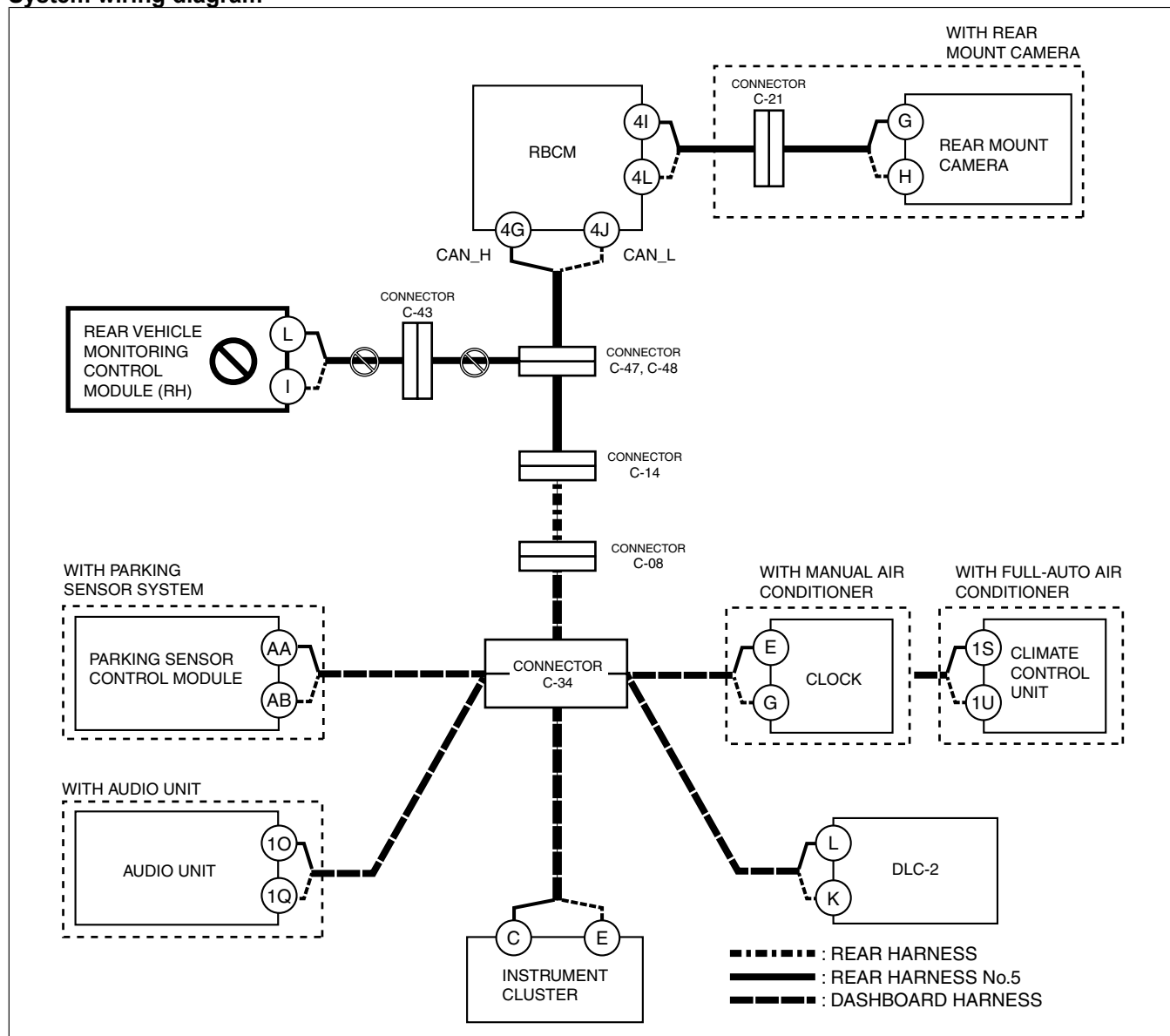
- Rear body control module (RBCM) connector
- Connector C-14
- Connector C-08
- Connector C-34
- Wiring harness between rear body control module (RBCM) terminal 4G and connector C-14
- Wiring harness between rear body control module (RBCM) terminal 4J and connector C-14
- Wiring harness between connector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

System wiring diagram



ac5wzw00000637

Inspection item

- 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)

D

Possible cause

- 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

The diagram illustrates the electrical connections for the Rear Vehicle Monitoring Control Module (RH). The central component is the RBCM (Rear Body Control Module), which is connected to the RH via connectors C-43 and C-47/C-48. The RH is also connected to the rear mount camera via connector C-21. The RBCM is connected to the CAN bus (CAN_H, CAN_L) and the instrument cluster via connectors C-14 and C-08. The RH is connected to the parking sensor control module via connector C-34. The RH is also connected to the audio unit via connector C-34. The RH is connected to the instrument cluster via connector C-34. The RH is connected to the climate control unit via connector C-34. The RH is connected to the DLC-2 via connector C-34. The diagram includes a legend for line types: dashed for rear harness, solid for rear harness No.5, and dash-dot for dashboard harness.

WITH REAR MOUNT CAMERA

CONNECTOR C-21

REAR MOUNT CAMERA

RBCM

4I, 4L, 4G, 4J

CAN_H, CAN_L

CONNECTOR C-43

REAR VEHICLE MONITORING CONTROL MODULE (RH)

L, I

CONNECTOR C-47, C-48

CONNECTOR C-14

CONNECTOR C-08

WITH PARKING SENSOR SYSTEM

PARKING SENSOR CONTROL MODULE

AA, AB

WITH AUDIO UNIT

AUDIO UNIT

1O, 1Q

WITH MANUAL AIR CONDITIONER

CLOCK

E, G

WITH FULL-AUTO AIR CONDITIONER

CLIMATE CONTROL UNIT

1S, 1U

DLC-2

L, K

INSTRUMENT CLUSTER

C, E

CONNECTOR C-34

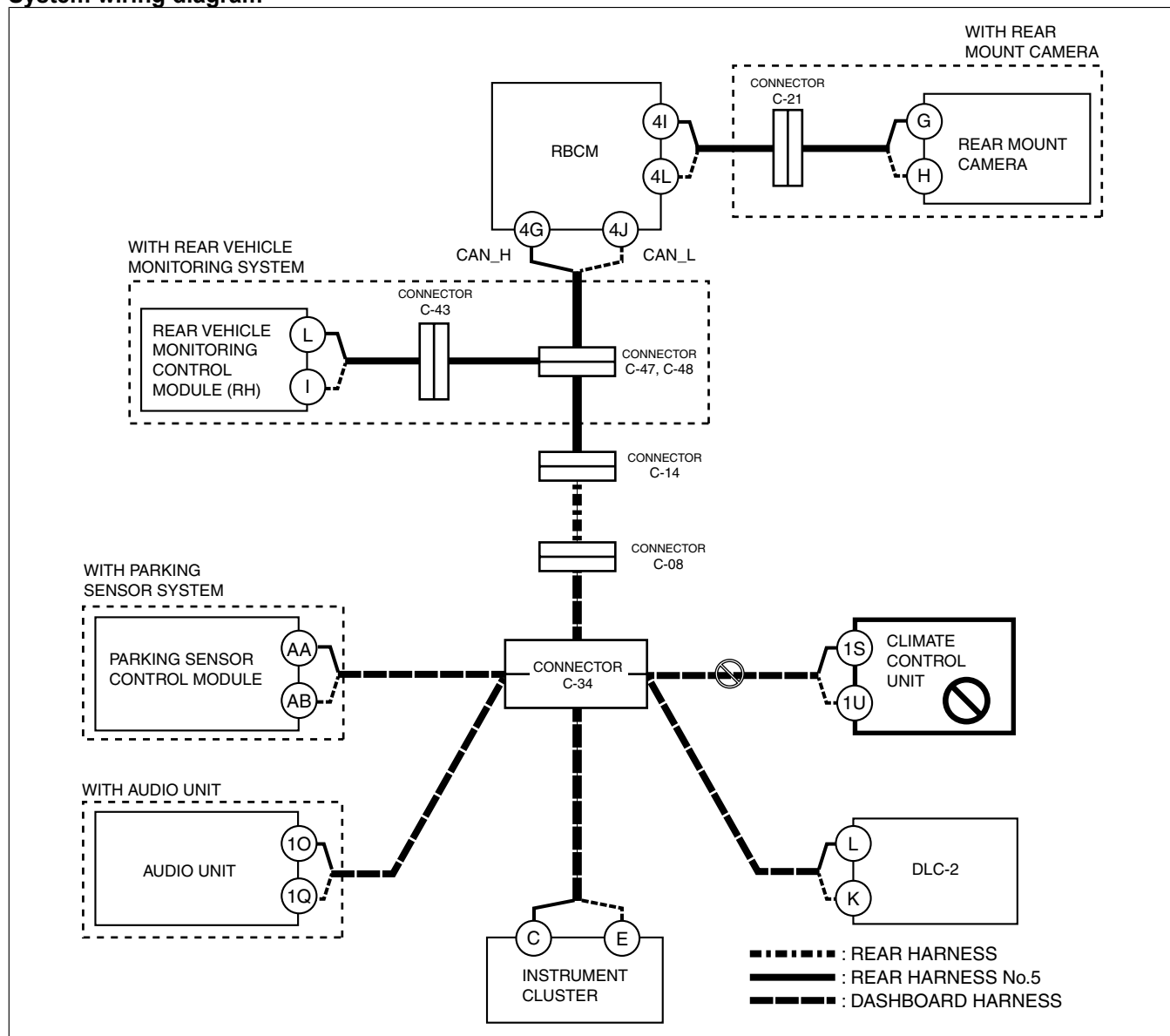
--- : REAR HARNESS
 — : REAR HARNESS No.5
 - · - : DASHBOARD HARNESS

Inspection item

- E**

- 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



ac5wzw00000640

Inspection item

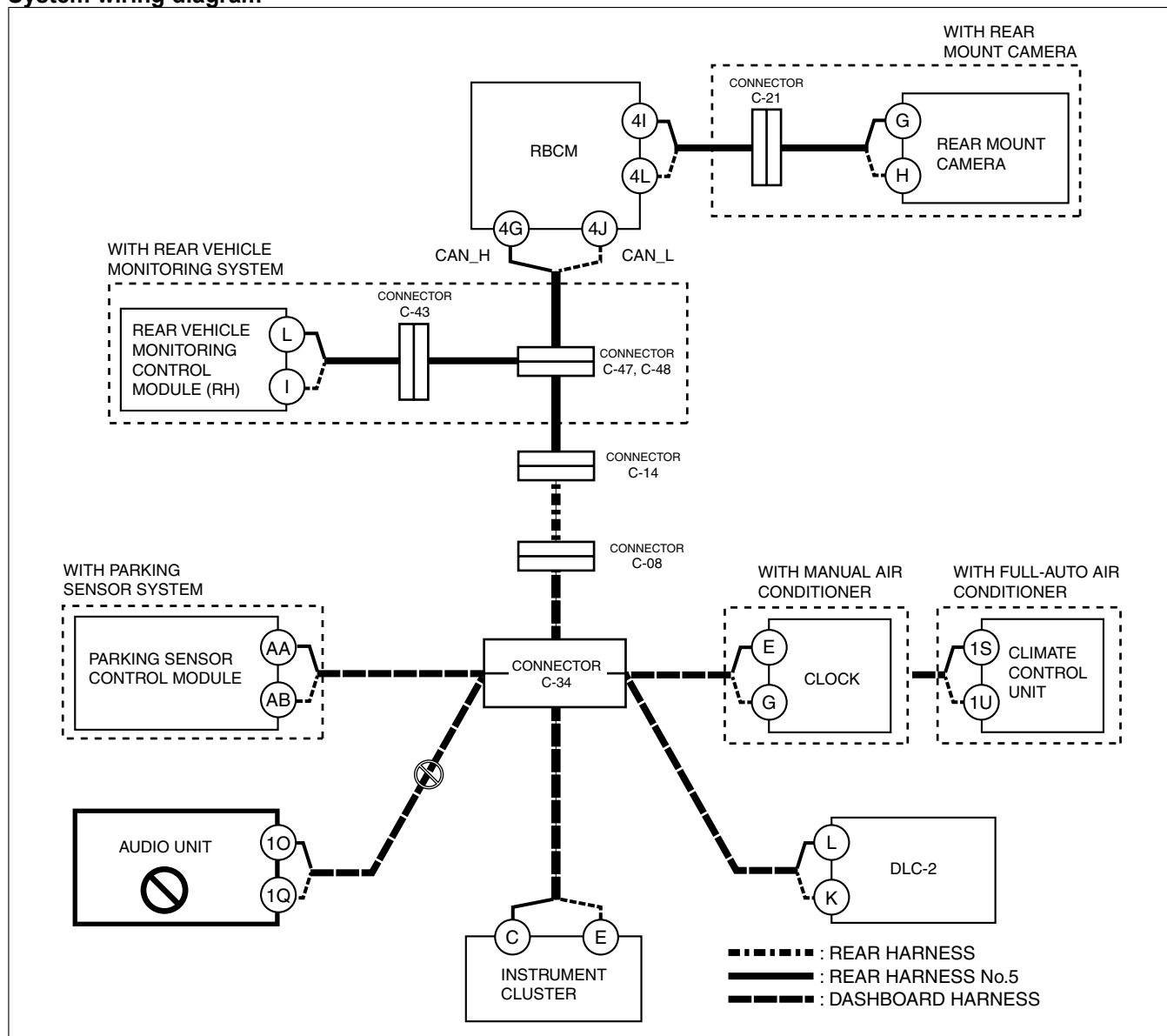
- Climate control unit connector
- Connector C-34
- Wiring harness between climate control unit terminal 1S and connector C-34
- Wiring harness between climate control unit terminal 1U and connector C-34
- Climate control unit

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



ac5wzw00000641

Inspection item

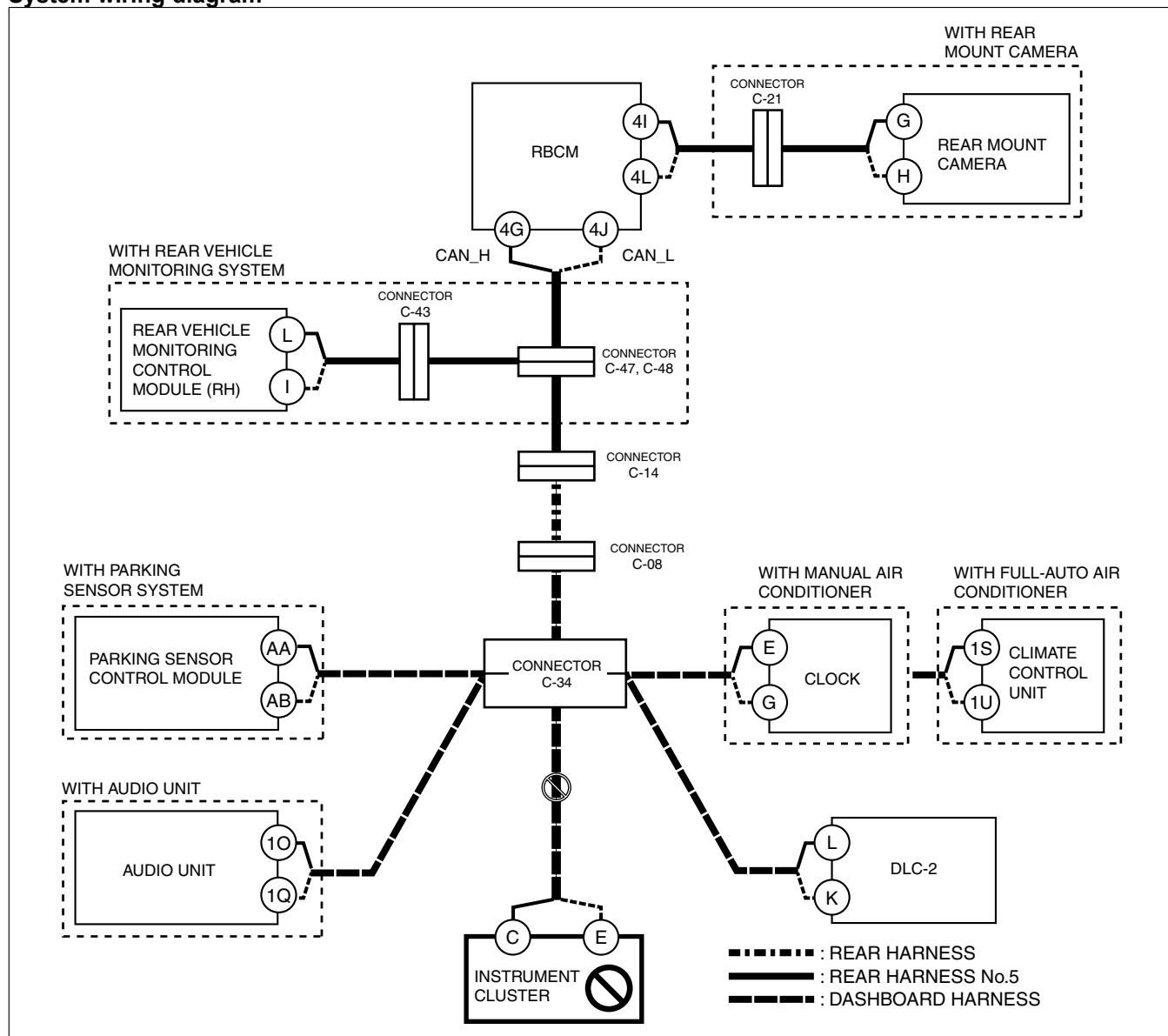
- Audio unit connector
- Connector C-34
- Wiring harness between audio unit terminal 1O and connector C-34
- Wiring harness between audio unit terminal 1Q and connector C-34
- Audio unit

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



ac5wzw00000642

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.

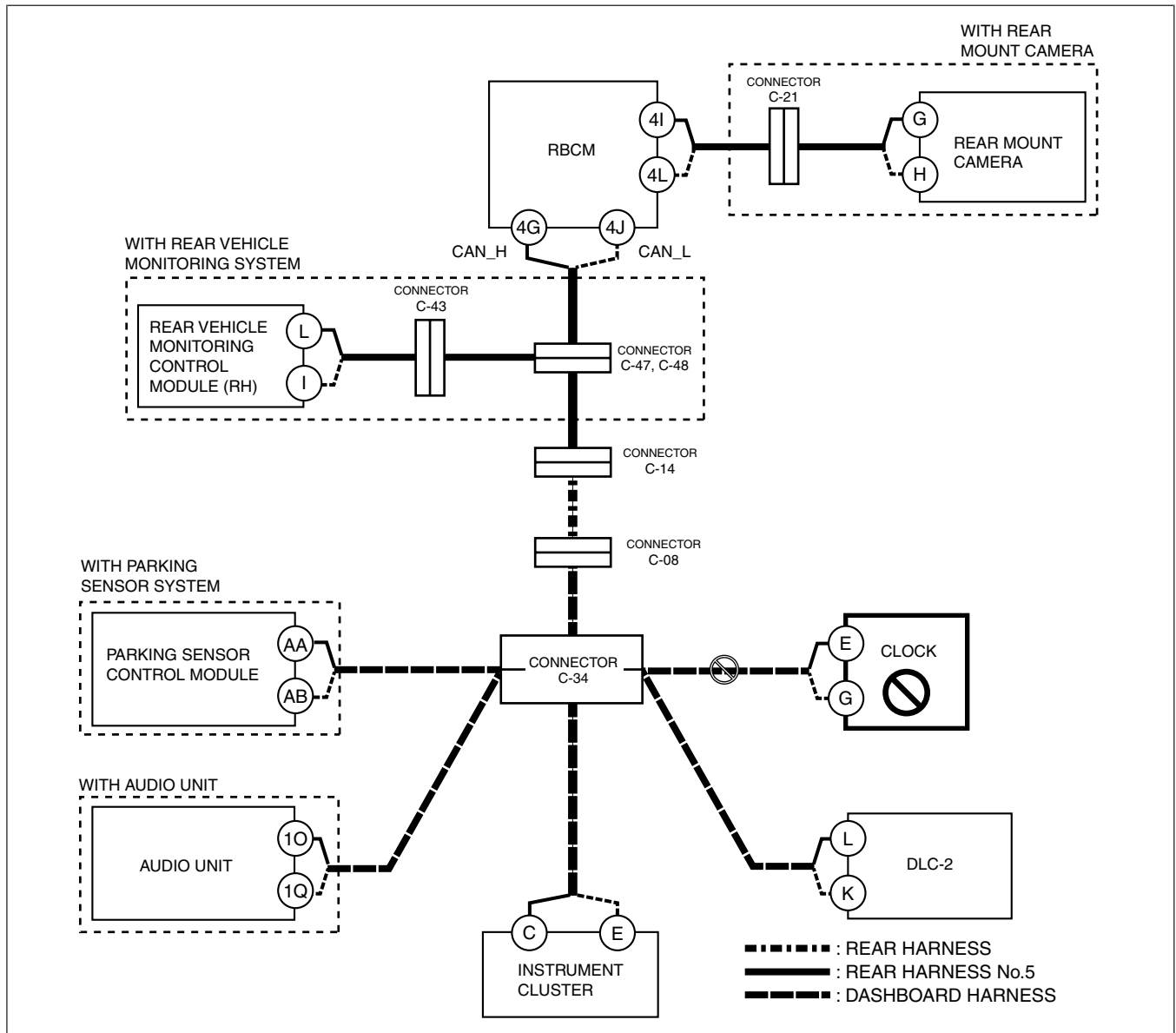
Clock Circuit Malfunction

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



ac5wzw00002444

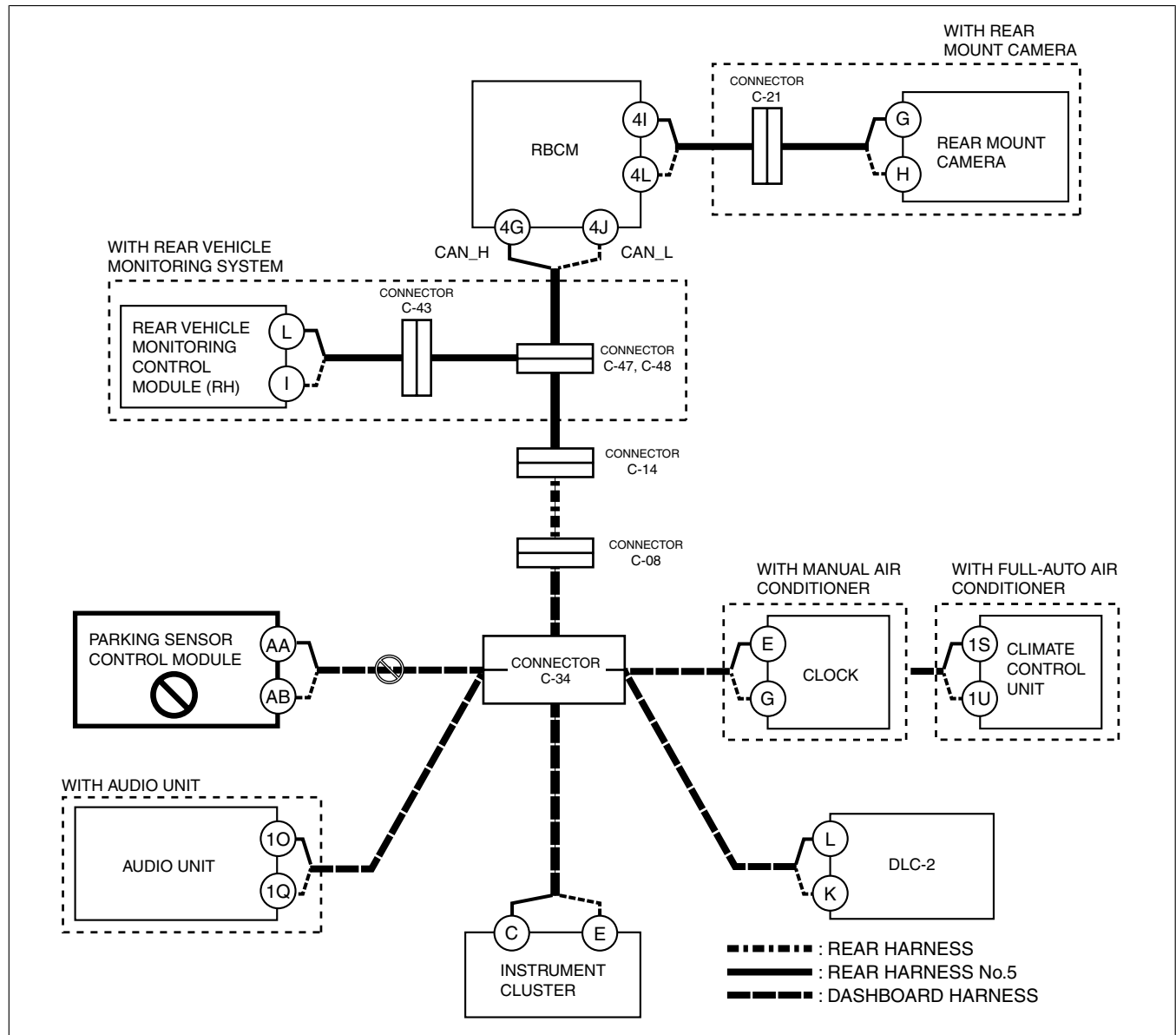
Inspection item

- 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



ac5wzw00000639

Inspection item

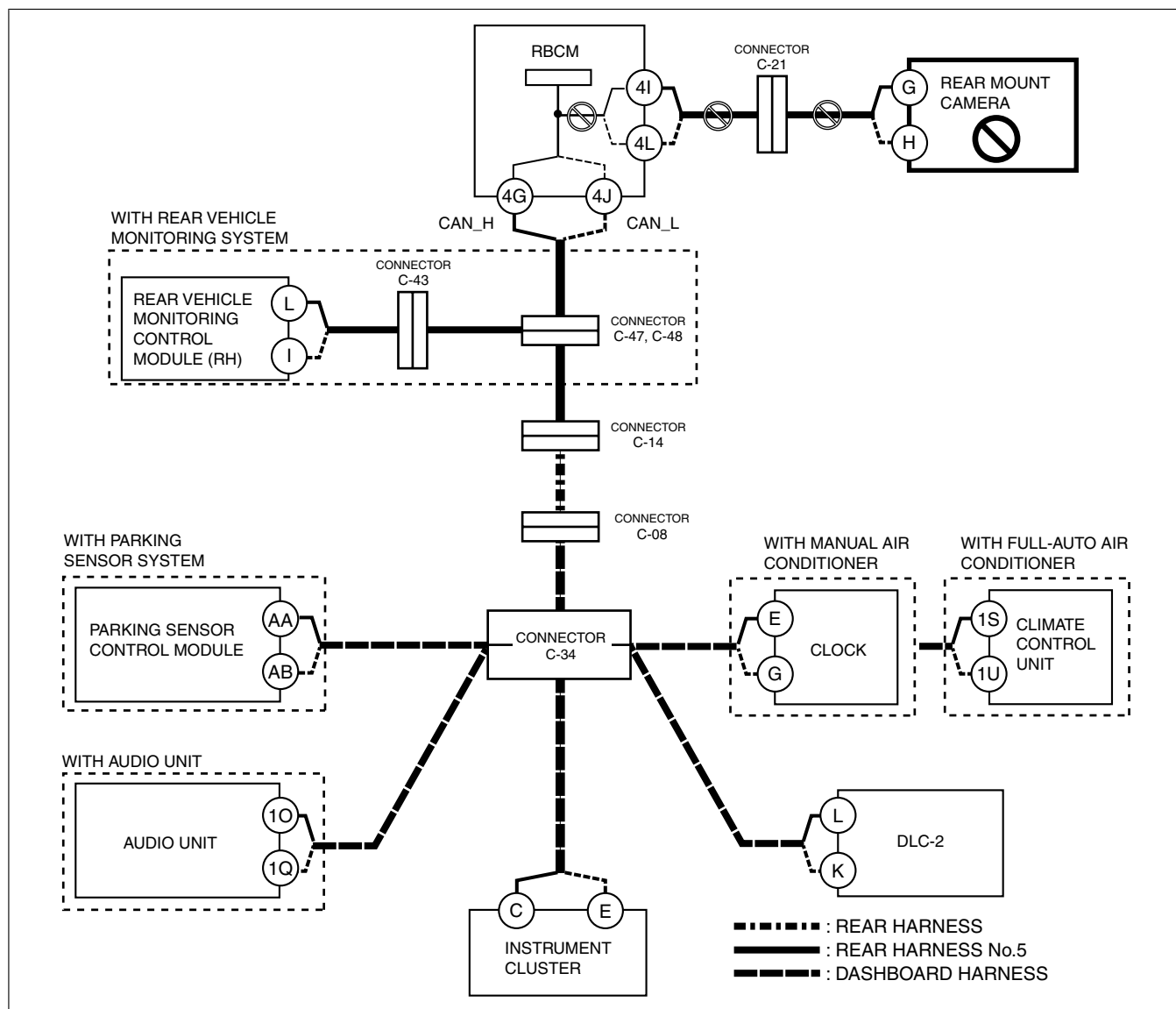
- Parking sensor control module connector
- Connector C-34
- Wiring harness between parking sensor control module terminal AA and connector C-34
- Wiring harness between parking sensor control module terminal AB and connector C-34
- Parking sensor control module

Rear Mount Camera Circuit Malfunction

Possible cause

- 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



ac5wzw00001132

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