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

id100206000500

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 (R.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 (R.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									×	
BSML*1 (BSM control module (LH))	U0100:00									×	
	U0131:00									×	
	U0155:00									×	
	U0214:00									×	
	U0233:00					×					
BSMR*1 (BSM control module (RH))	U0100:00									×	
	U0131:00									×	
	U0155:00									×	
	U0214:00									×	
	U0232:00	×									
RVM*2 (Rear vehicle monitoring control module (RH))	U0100:00									×	
	U0121:00									×	
	U0155:00									×	
	U0214:00									×	
EATC*3 (Climate control unit)	U0155:00									×	
ACU*4 (Audio unit)	U0142:00		×	×			×				
	U0155:00									×	
IC (Instrument cluster)	U0142:00		×	×			×				
	U0232:00	×		×			×				
	U0233:00					×	×				
M-MDS display module		**[Fail] display pattern**									
R_BCM			×	×			×				
BSML*1		×		×			×				
BSMR*1						×	×				
RVM*2					×		×				
EATC*3								×			
ACU*4									×		

M-MDS display		DTC output pattern and malfunctioning location									
DTC output module	DTC										
IC										×	
Diagnostic result											
Possible cause and inspection item		A	B	C	D	E	F	G	H	I	J

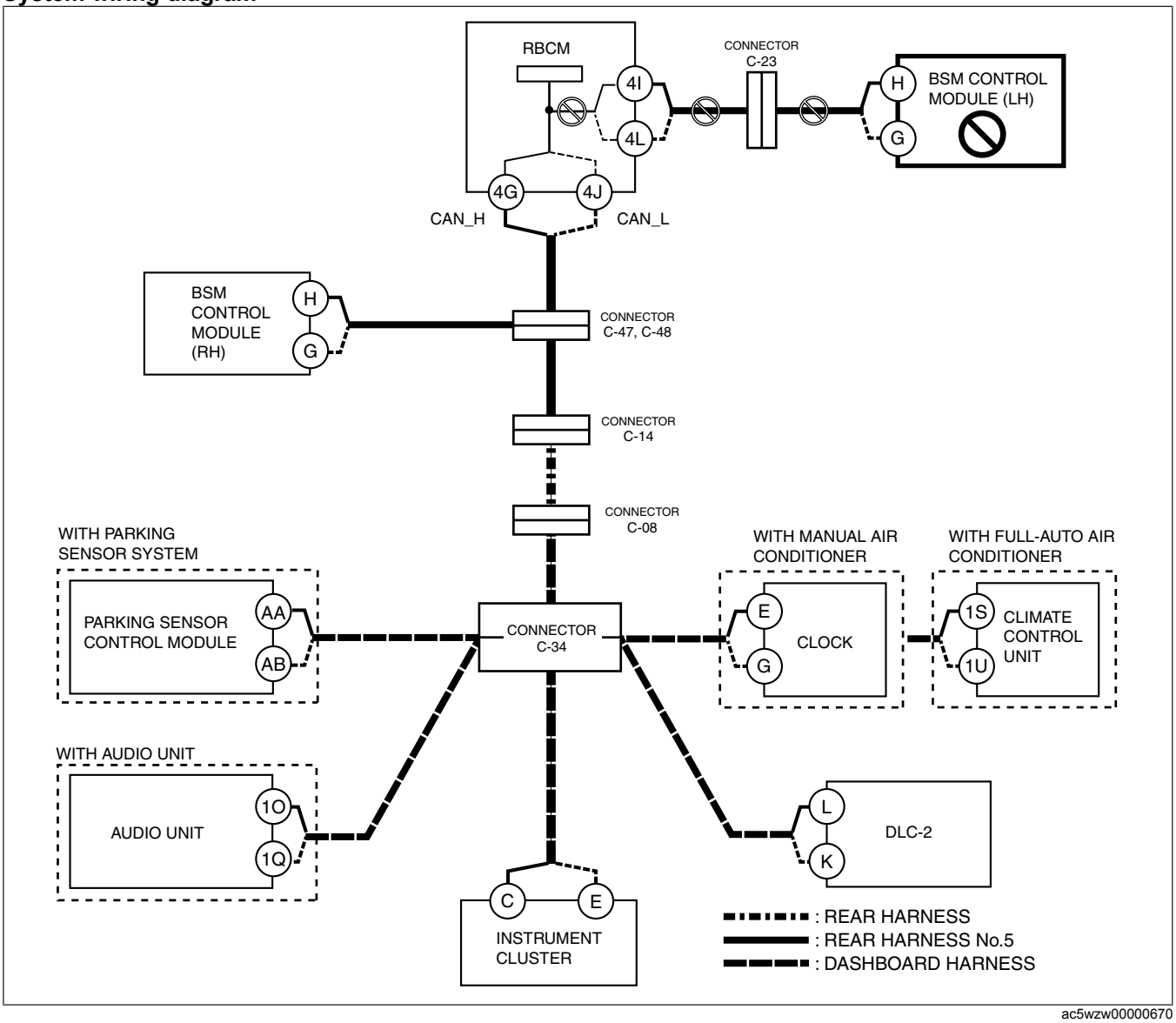
*1 : With BSM
*2 : With rear vehicle monitoring system
*3 : With full-auto air conditioner
*4 : With audio unit

A

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between BSM control module (LH) and connector C-23
- Open circuit in wiring harness between connector C-23 and RCBM
- Connector C-23 malfunction
- BSM control module (LH) malfunction
- CAN circuit in rear body control module (RBCM) malfunction

System wiring diagram



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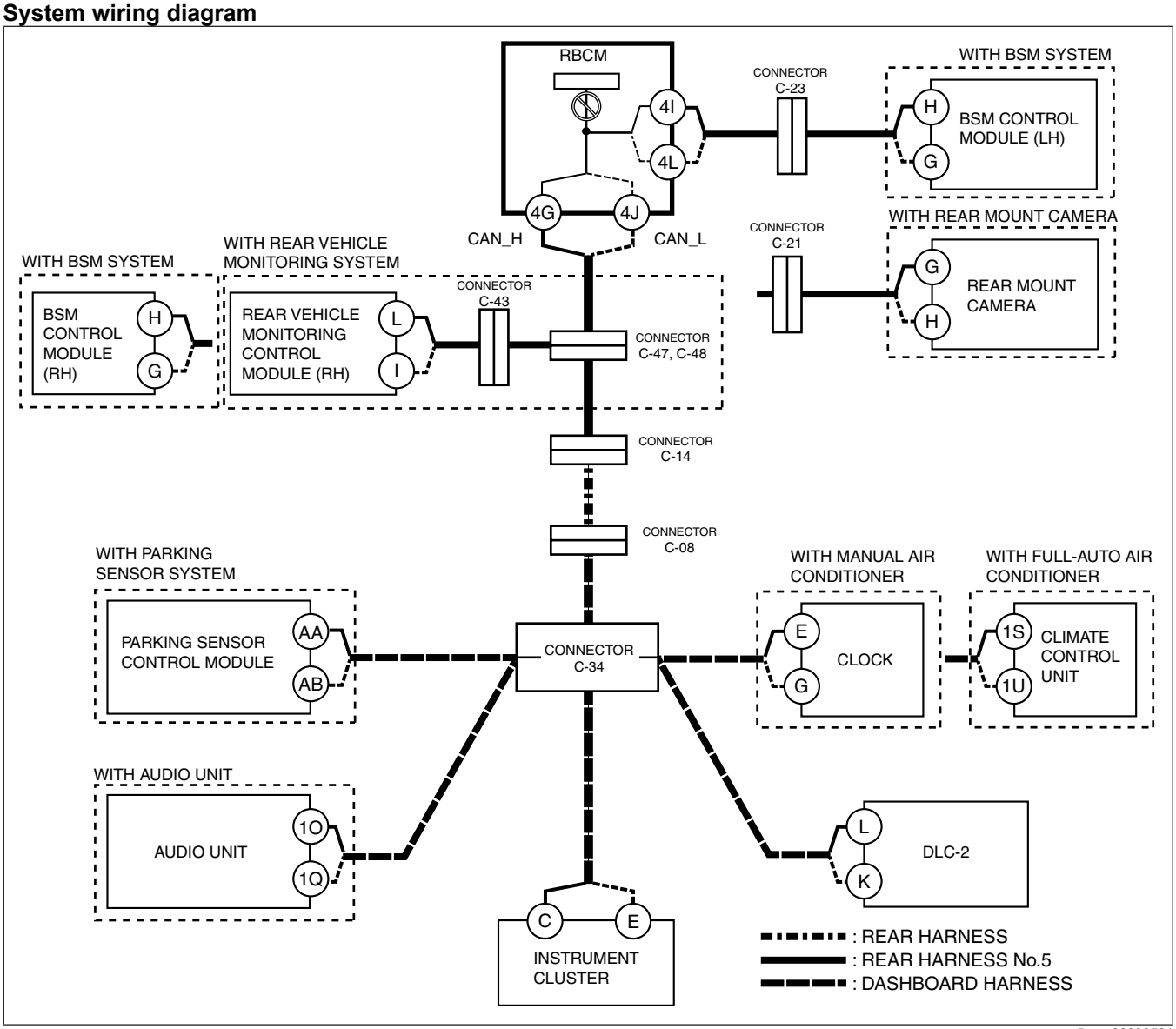
Inspection item

- BSM control module (LH) connector
- Rear body control module (RBCM) connector

- Connector C-23
- Wiring harness between BSM control module (LH) terminal H and connector C-23.
- Wiring harness between BSM control module (LH) terminal G and connector C-23
- Wiring harness between rear body control module (RBCM) terminal 4I and connector C-23
- Wiring harness between rear body control module (RBCM) terminal 4L and connector C-23
- BSM control module (LH)
- 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

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

System wiring diagram



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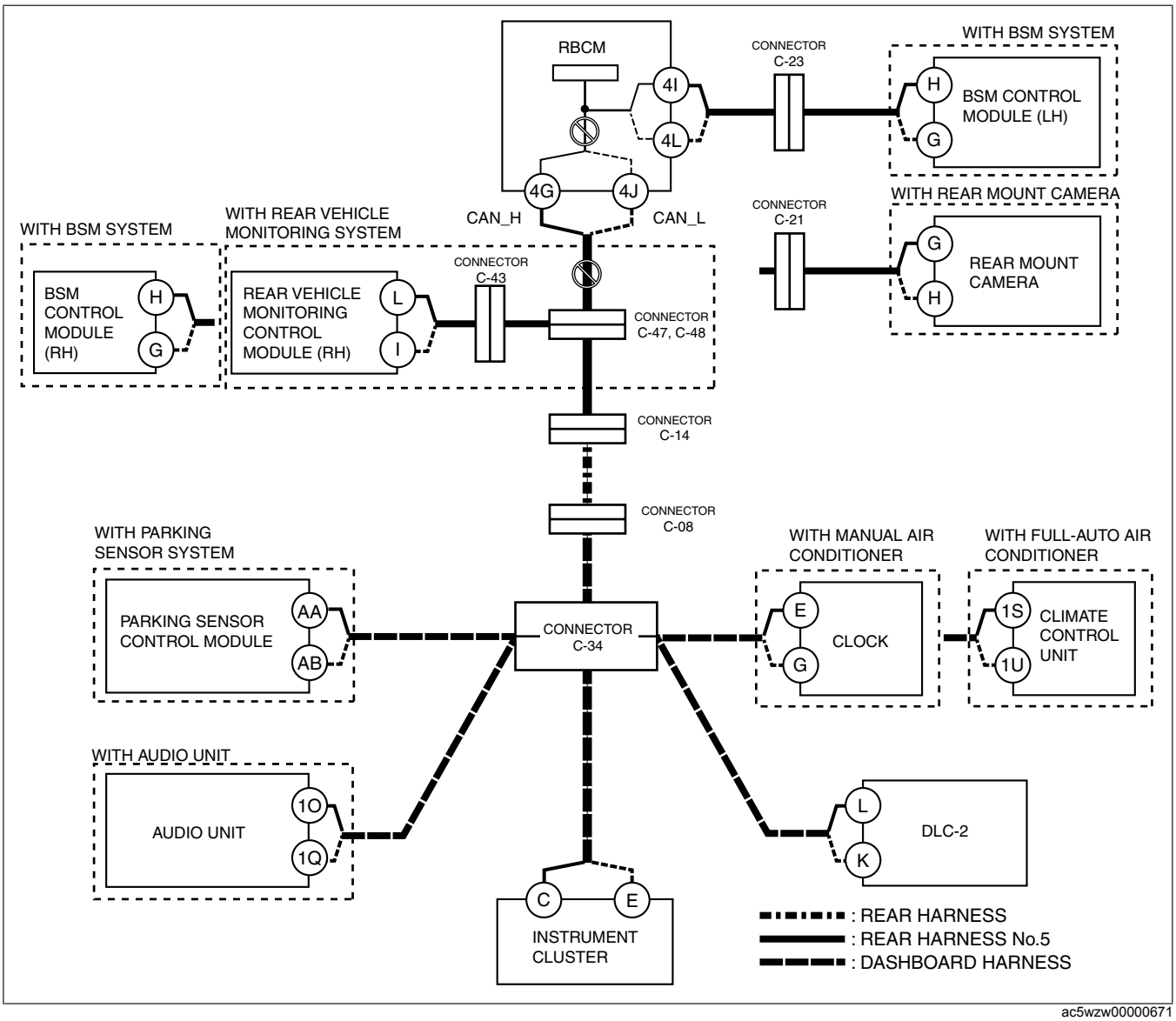
Inspection item
- Rear body control module (RBCM)

C
With rear vehicle monitoring system or BSM system
Possible cause
- 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

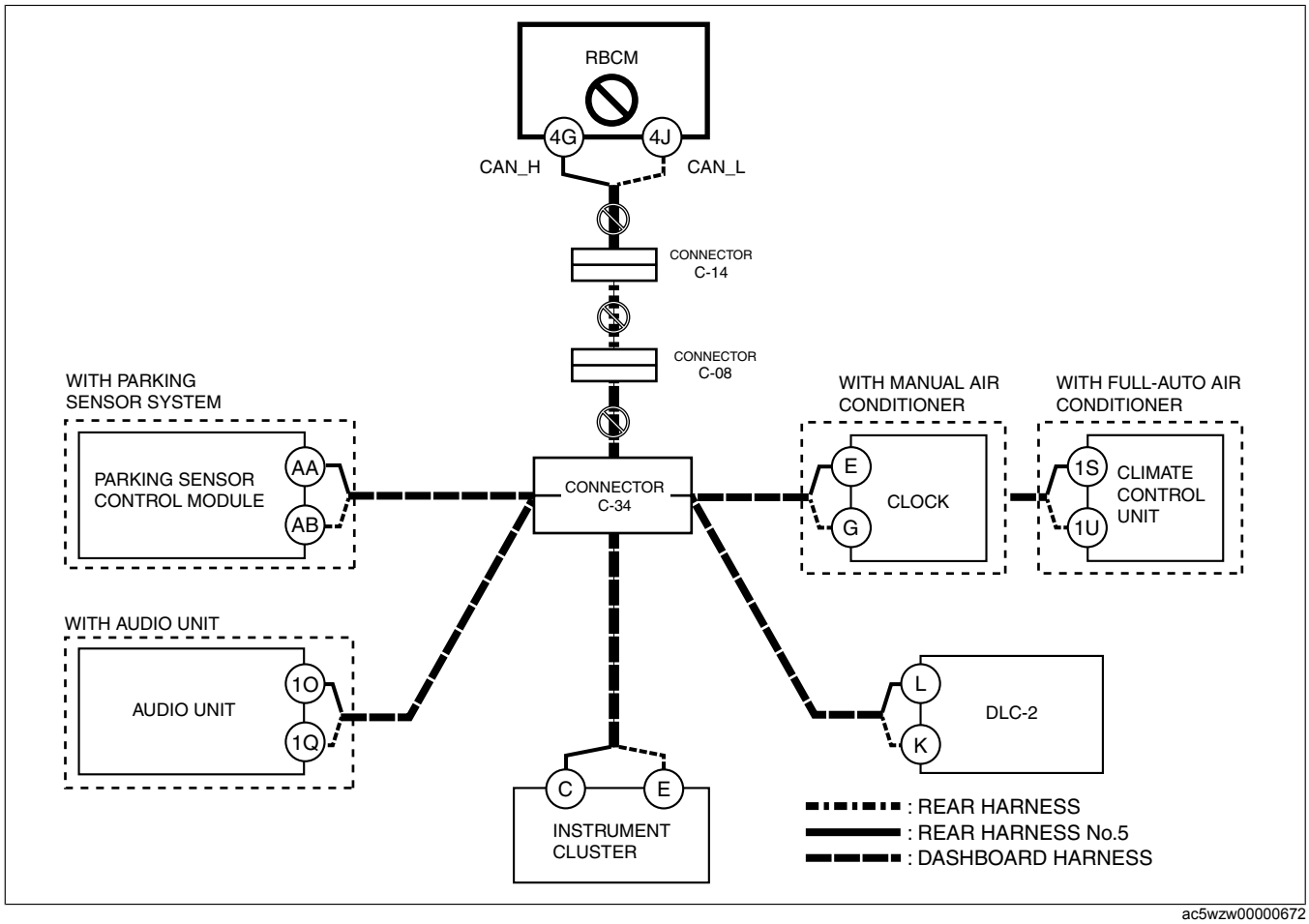
- Rear body control module (RBCM) connector
- Connectors C-47, C-48
- Wiring harness between rear body control module (RBCM) terminal 4G and connectors C-47
- Wiring harness between rear body control module (RBCM) terminal 4J and connectors C-48
- Rear body control module (RBCM)
  - — Between rear body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

Without rear vehicle monitoring system or BSM 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



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Inspection item

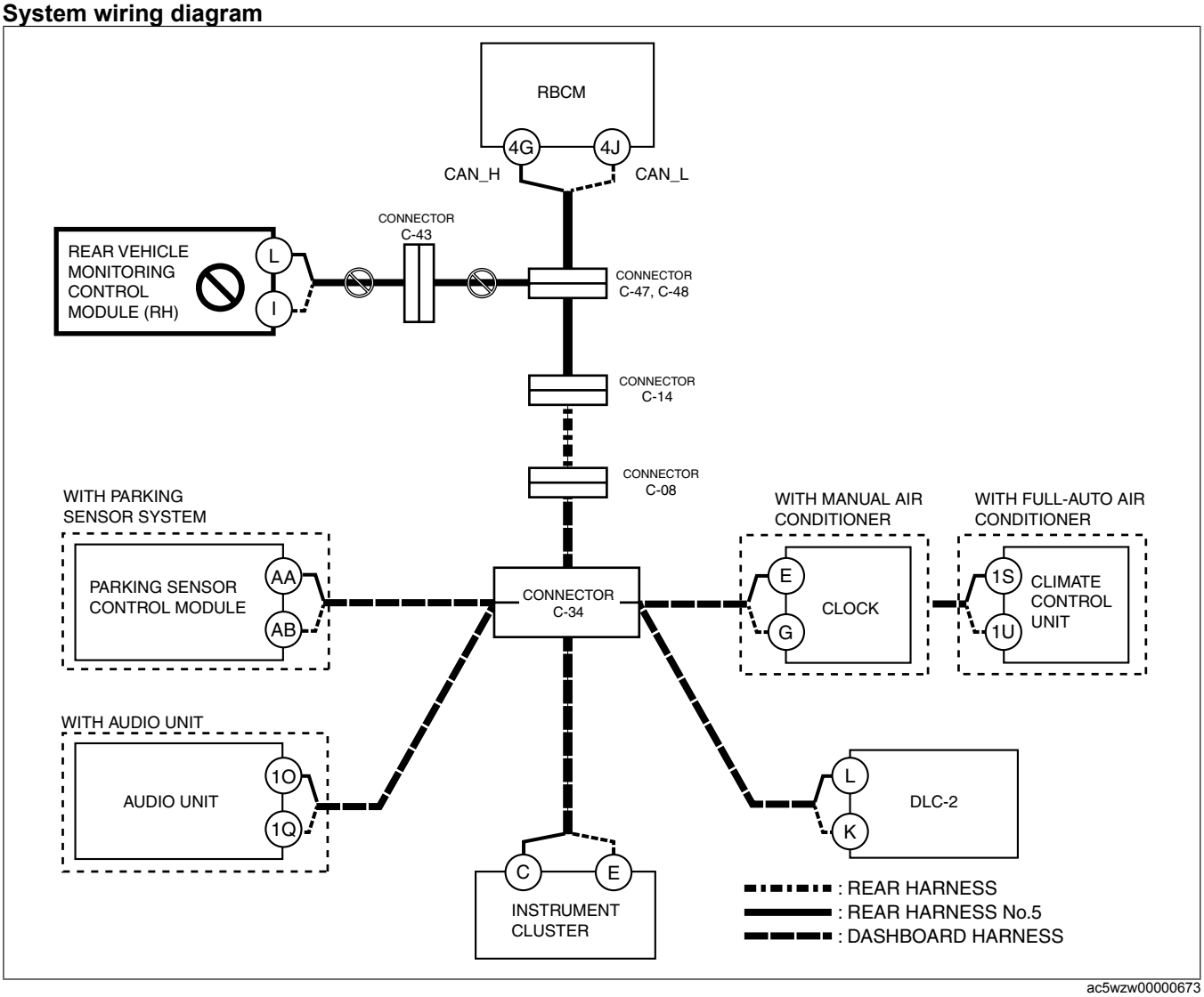
- Rear body control module (RBCM) connector
- Connector C-14
- Connector C-08
- Connector C-34
- Wiring harness between rear body control module (RBCM) terminal 4G and connector C-14
- Wiring harness between rear body control module (RBCM) terminal 4J and connector C-14
- Wiring harness between connector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

D

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



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Inspection item

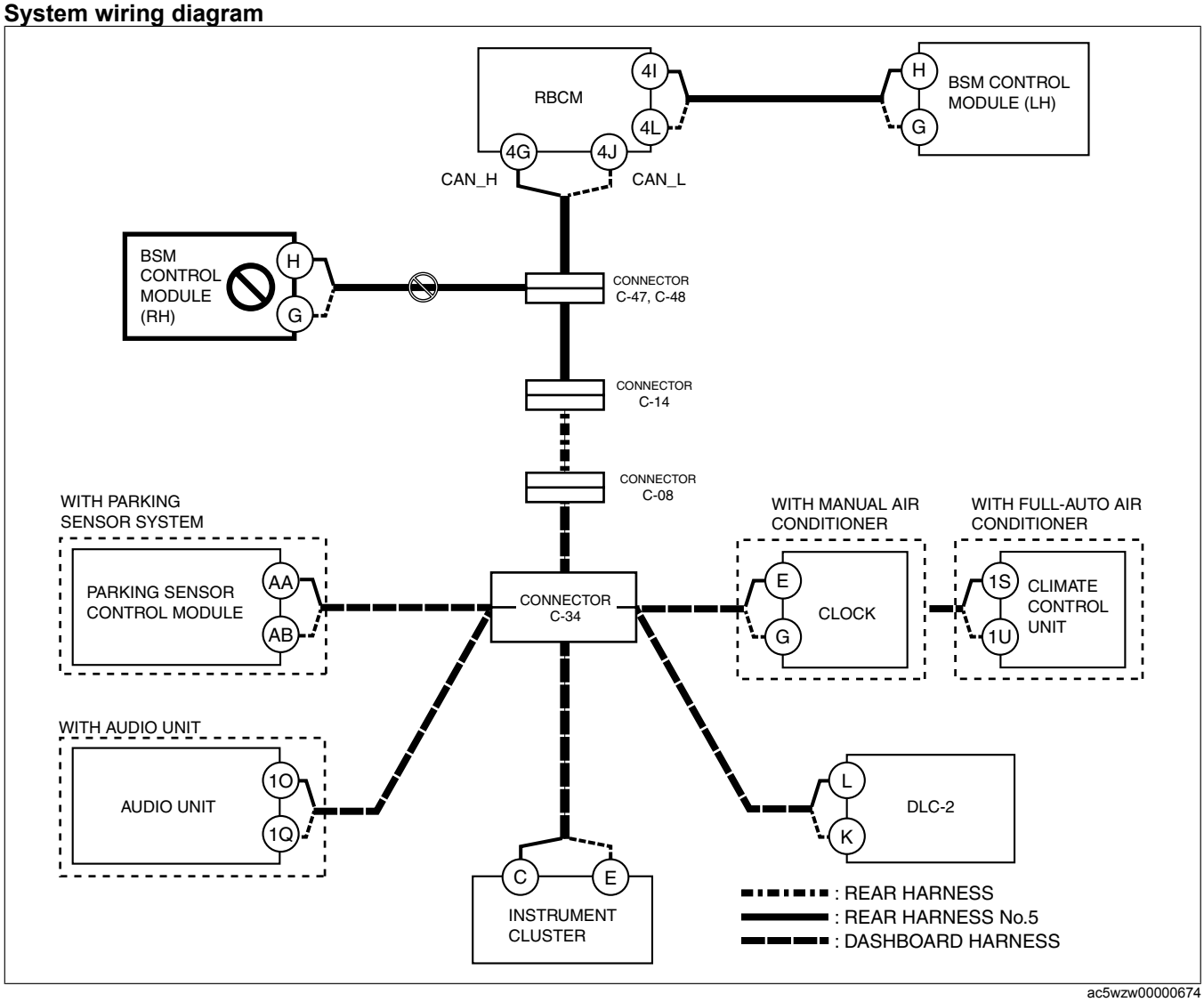
- Rear vehicle monitoring control module (RH) connector
- Connectors C-43
- Connectors C-47, C-48
- Wiring harness between Rear vehicle monitoring control module (RH) terminal L and connector C-43
- Wiring harness between Rear vehicle monitoring control module (RH) terminal I and connector C-43
- Wiring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

E

Possible cause

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

System wiring diagram



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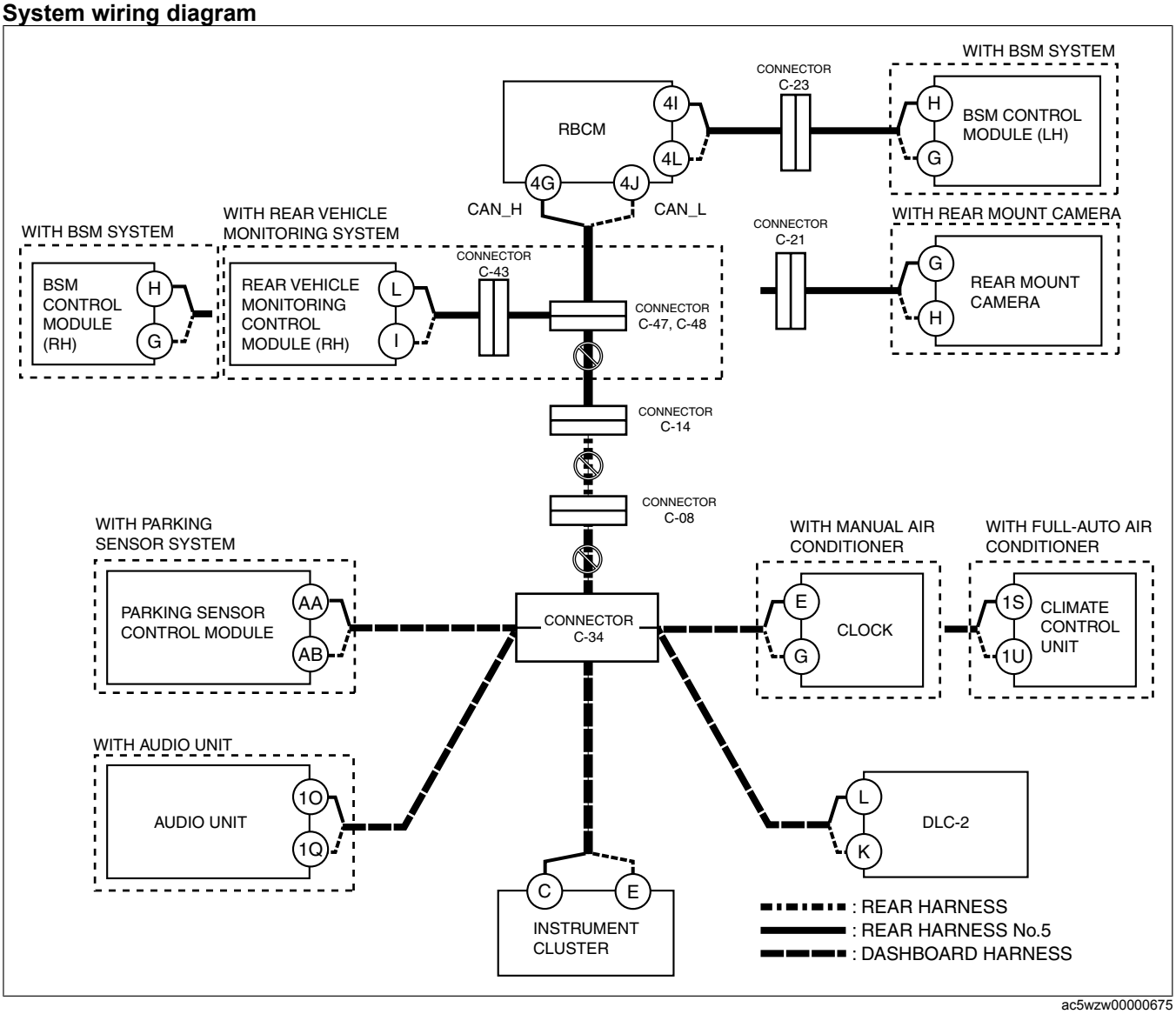
Inspection item
- BSM control module (RH) connector
- Connectors C-47, C-48
- Wiring harness between BSM control module (RH) terminal H and connector C-47
- Wiring harness between BSM control module (RH) terminal G and connector C-48
- BSM control module (RH)

F
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

System wiring diagram



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Inspection item

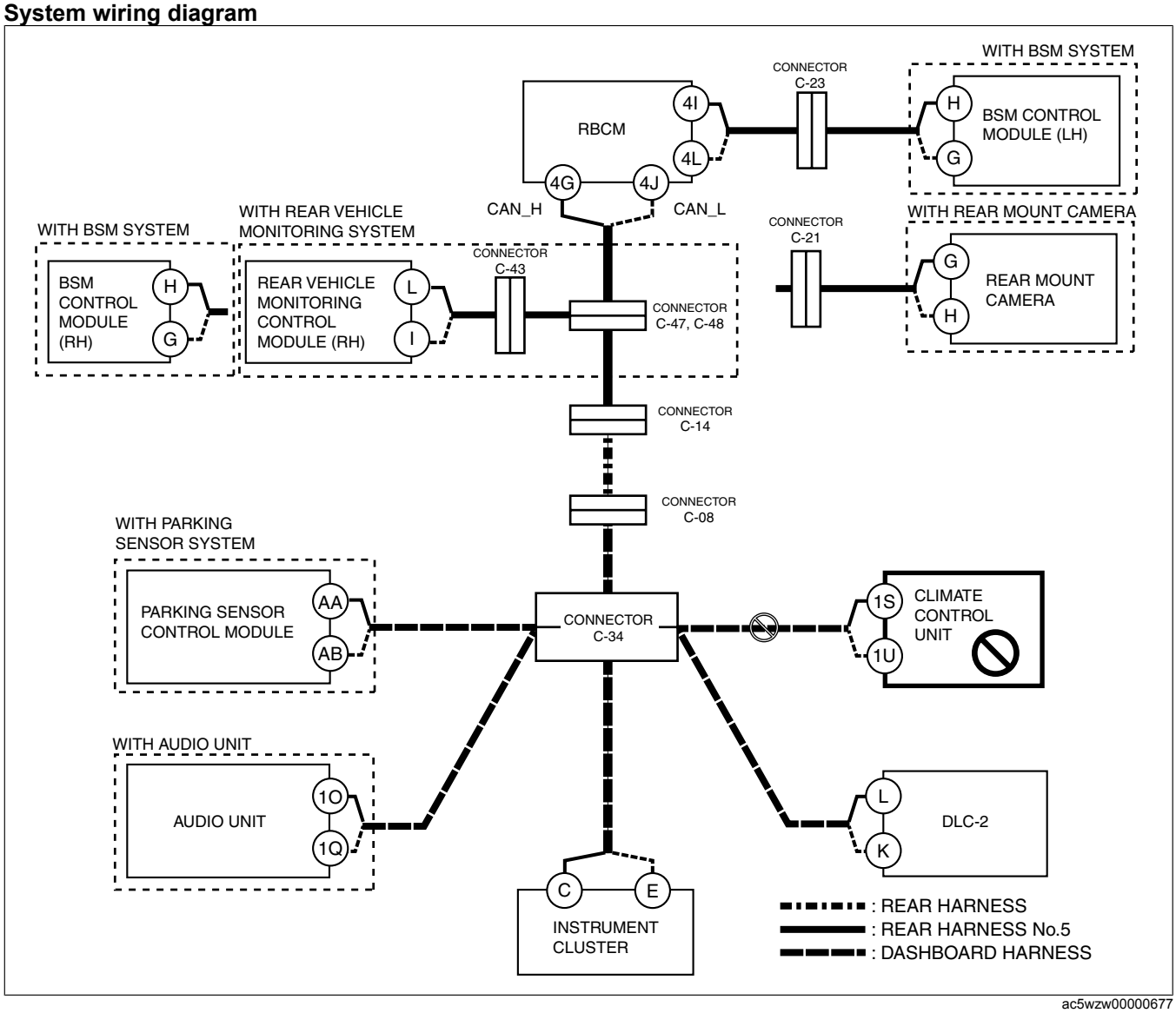
- Connectors C-47, C-48
- Connector C-14
- Connector C-08
- Connector C-34
- Wiring harness between connectors C-47, C-48 and connector C-14
- Wiring harness between connector C-14 and connector C-08
- Wiring harness between connector C-08 and connector C-34

G

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



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Possible cause

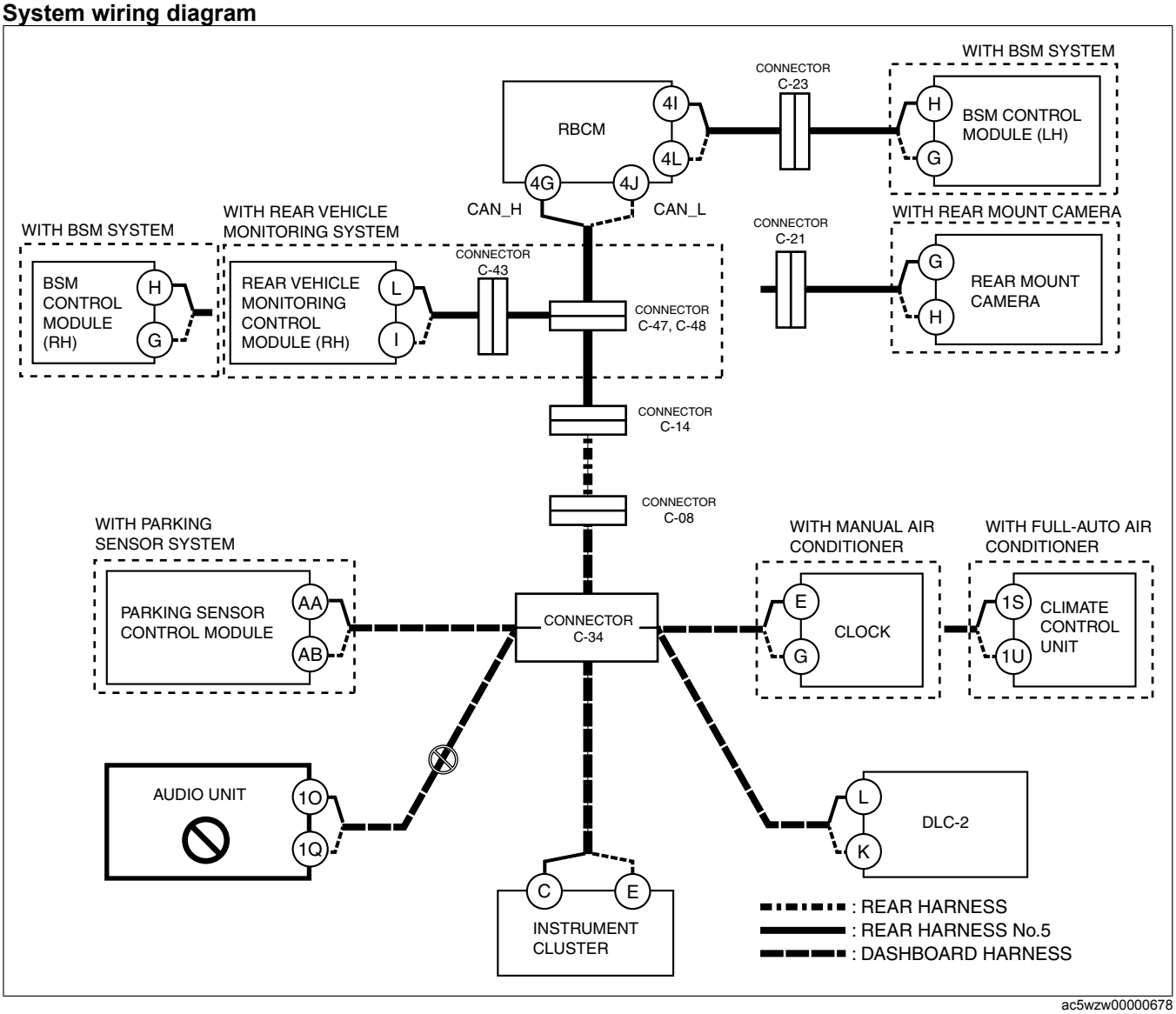
- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Open circuit in wiring harness between climate control unit and connector C-34
- Connector C-34 malfunction
- Climate control unit malfunction

H

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



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Inspection item

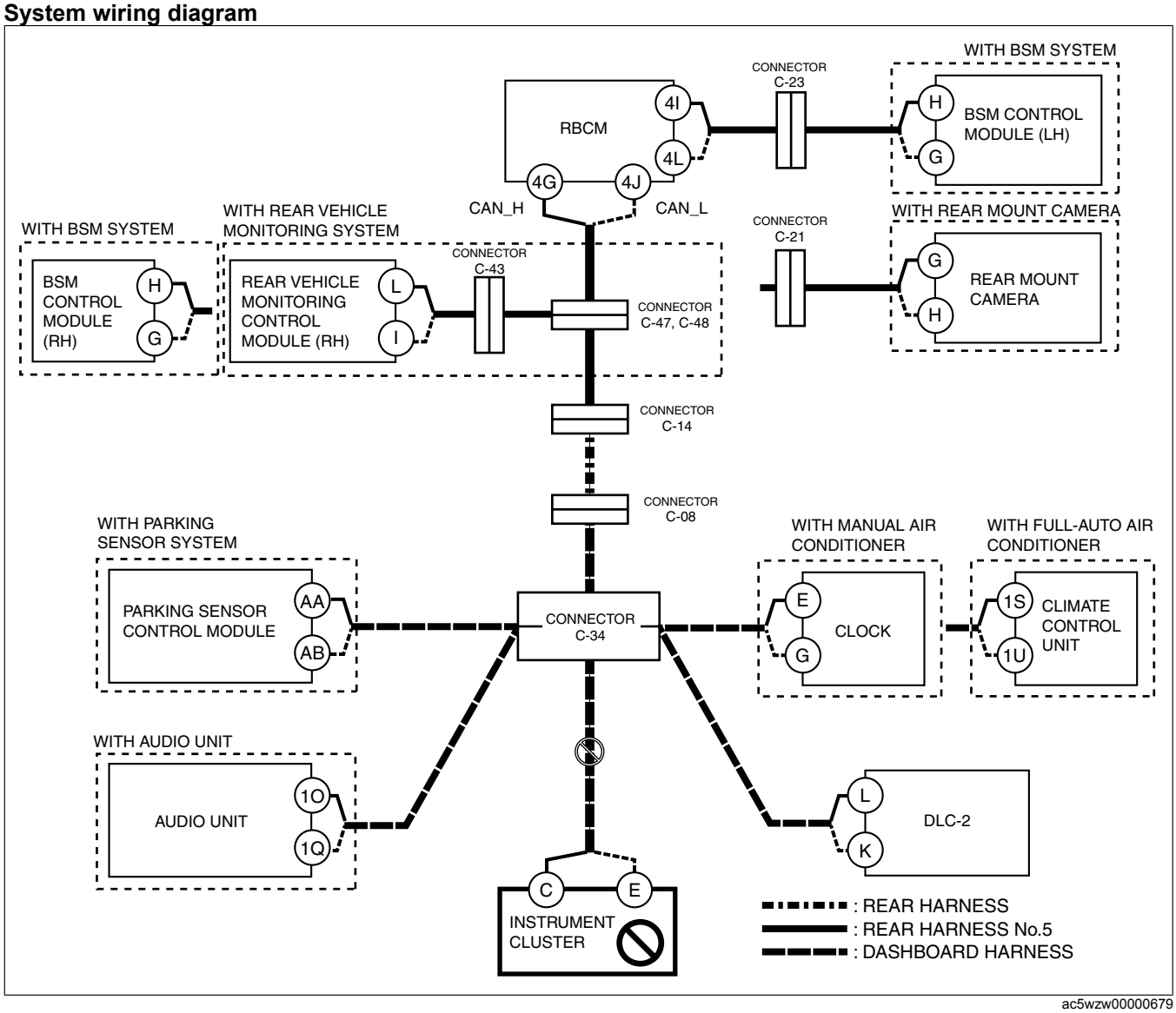
- Audio unit connector
- Connector C-34
- Wiring harness between audio unit terminal 1O and connector C-34
- Wiring harness between audio unit terminal 1Q and connector C-34
- Audio unit

I

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



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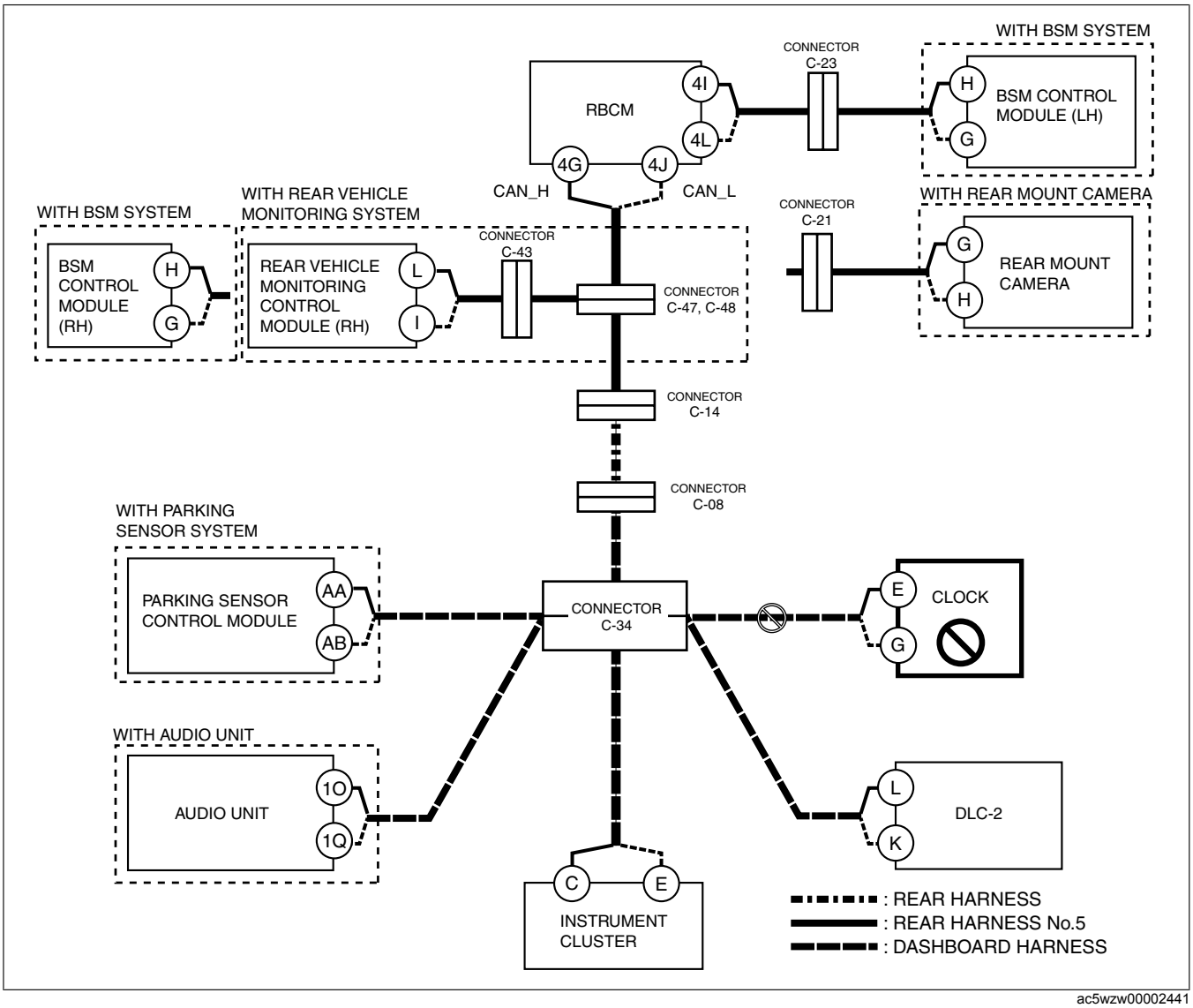
Inspection item
- Instrument cluster connector
- Connector C-34
- Wiring harness between instrument cluster terminal C and connector C-34
- Wiring harness between instrument cluster terminal E and connector C-34
- Instrument cluster

J
1. Perform the clock input/output check mode. (See CLOCK INPUT/OUTPUT CHECK MODE.)
   - If "2:00" is displayed, go to the next step.
   - If "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



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Inspection item

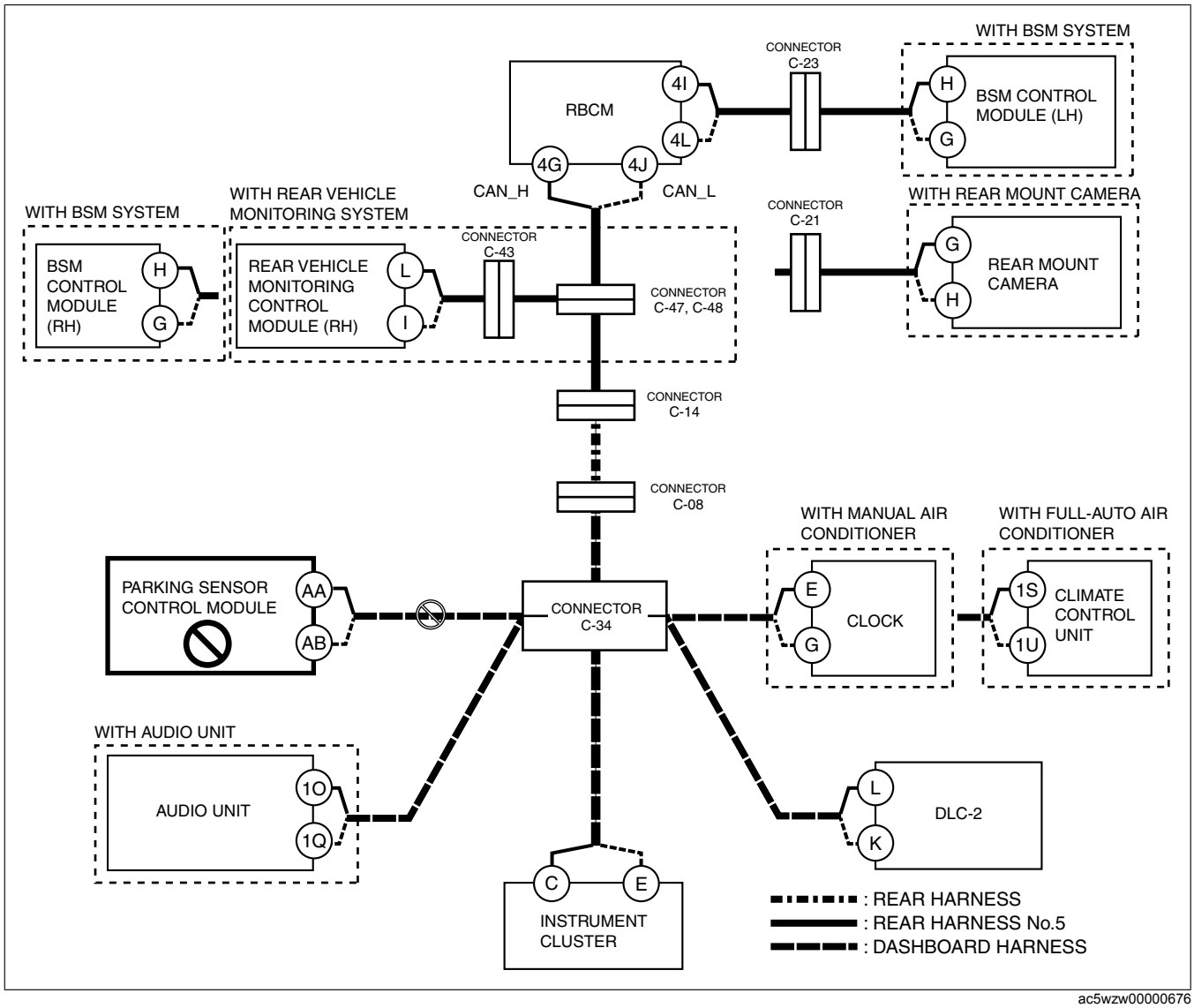
- Clock component connector
- Connector C-34
- Wiring harness between clock component terminal E and connector C-34
- Wiring harness between clock component terminal G and connector C-34
- Clock component

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

System wiring diagram



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Inspection item

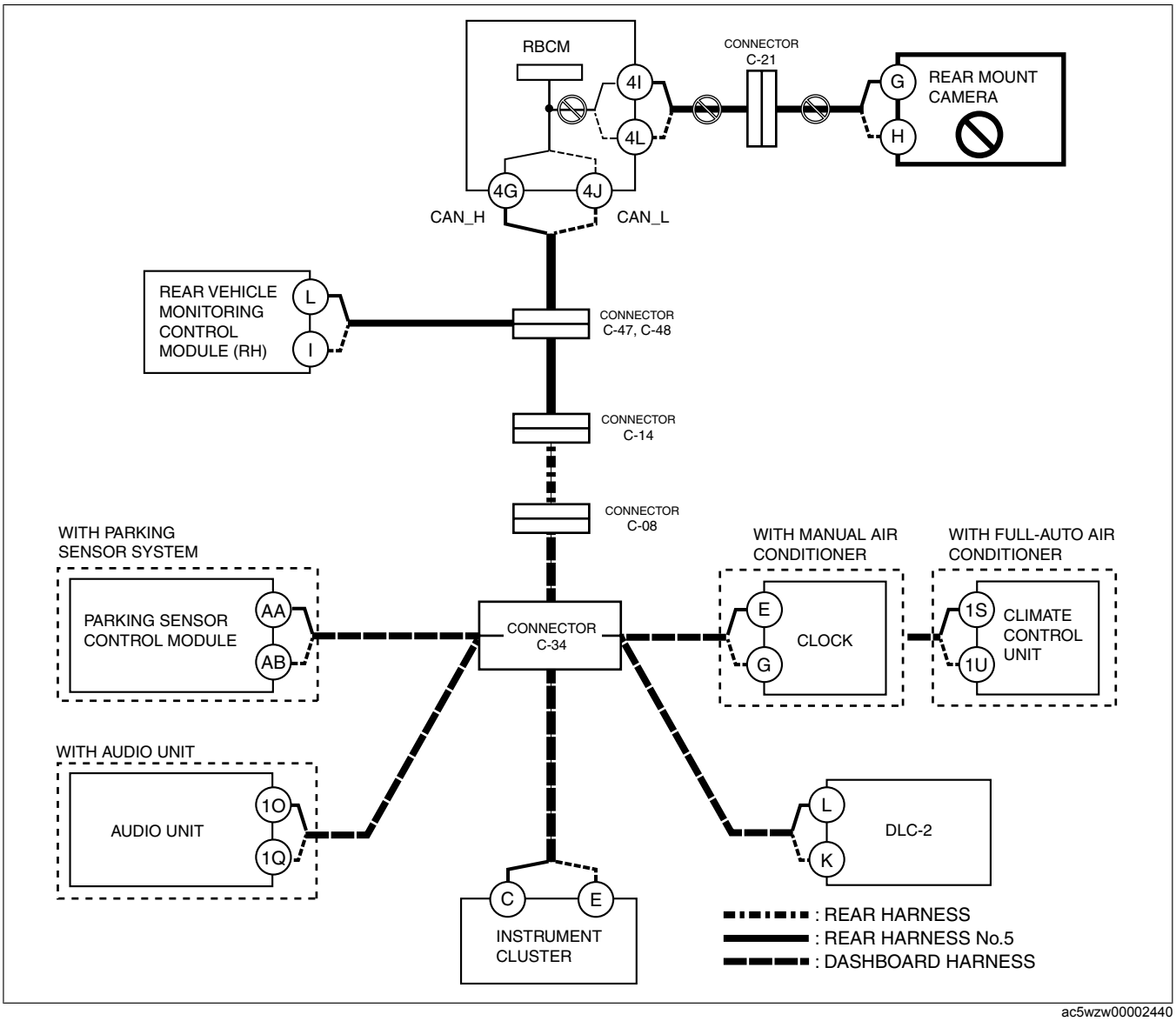
- Parking sensor control module connector
- Connector C-34
- Wiring harness between parking sensor control module terminal AA and connector C-34
- Wiring harness between parking sensor control module terminal AB and connector C-34
- Parking sensor control module

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 (RBCM) malfunction

System wiring diagram



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Inspection item

- Rear mount camera connector
- Rear body control module (RBCM) 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