LAN SECTION LAN SYSTEM o

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< PRECAUTION > PRECAUTION А PRECAUTIONS **Precautions for Trouble Diagnosis** INFOID:000000007377742 В **CAUTION:** • Never apply 7.0 V or more to the measurement terminal. • Use a tester with open terminal voltage of 7.0 V or less. Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness. D Precautions for Harness Repair INFOID:000000007377743 • Solder the repaired area and wrap tape around the soldered area. NOTE: Ε A fray of twisted lines must be within 110 mm (4.33 in). F OK: Soldered and taped SKIB8766E Н Bypass connection is never allowed at the repaired area. NOTE: Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted NG: Bypass connection line are lost. X

 Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

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< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : System Description

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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network transmit signals using the CAN communication control circuit. They receive only necessary signals from other control units to operate various functions.
- CAN communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

CAN COMMUNICATION SYSTEM : System Diagram



Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

Component	Description	
Main line	CAN communication line between splices	
Branch line	CAN communication line between splice and a control unit	
Splice	A point connecting a branch line with a main line	
Termination circuit	Refer to LAN-9, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit".	

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]



DIAG ON CAN

DIAG ON CAN : Description

"Diag on CAN" is a diagnosis using CAN communication instead of previous DDL1 and DDL2 communication lines, between control units and diagnosis unit.

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< SYSTEM DESCRIPTION >



Name	Harness	Description
DDL1	Tx Rx	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)
DDL2	K-LINE	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)
Diag on CAN	CAN-H CAN-L	It is used for trouble diagnosis and control.

[CAN FUNDAMENTAL]

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< SYSTEM DESCRIPTION >

TROUBLE DIAGNOSIS

Condition of Error Detection

DTC (e.g. U1000 and U1001) of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT if a CAN communication signal is not transmitted or received between units for 2 seconds or more.

CAN COMMUNICATION SYSTEM ERROR

- CAN communication line open (CAN-H, CAN-L, or both)
- CAN communication line short (ground, between CAN communication lines, other harnesses)
- · Error of CAN communication control circuit of the unit connected to CAN communication line

WHEN DTC OF CAN COMMUNICATION IS INDICATED EVEN THOUGH CAN COMMUNICATION D SYSTEM IS NORMAL

- Removal/installation of parts: Error may be detected when removing and installing CAN communication unit and related parts while turning the ignition switch ON. (A DTC except for CAN communication may be detected.)
- Fuse blown out (removed): CAN communication of the unit may cease.
- Voltage drop: Error may be detected if voltage drops due to discharged battery when turning the ignition switch ON (Depending on the control unit which carries out CAN communication).
- Error may be detected if the power supply circuit of the control unit, which carries out CAN communication, malfunctions (Depending on the control unit which carries out CAN communication).
- Error may be detected if reprogramming is not completed normally.

CAUTION:

CAN communication system is normal if DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-22, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.

LAN-11

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Major symptom
EPS control unit	Normal operation.
Combination meter	Shift position indicator and OD OFF indicator turn OFF.Warning lamps turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
ТСМ	No impact on operation.
IPDM E/R	Normal operation.

Example: Data link connector branch line open circuit



Major symptom
Normal operation.

NOTE:

- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with CONSULT if the following error occurs. The error is judged by the symptom.

Error	Difference of symptom	
Data link connector branch line open circuit	Normal operation.	
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.	

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



Unit name	Major symptom	
ECM	Engine torque limiting is affected, and shift harshness increases.	G
BCM	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. 	Н
EPS control unit	The steering effort increases.	
Combination meter	 The shift position indicator and OD OFF indicator turn OFF. The speedometer is inoperative. The odo/trip meter stops. 	I
ABS actuator and electric unit (control unit)	Normal operation.	
ТСМ	No impact on operation.	J
IPDM E/R	When the ignition switch is ON,The headlamps (Lo) turn ON.The cooling fan continues to rotate.	K

Example: CAN-H, CAN-L Harness Short Circuit



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< SYSTEM DESCRIPTION >

Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.Engine speed drops.
BCM	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. The room lamp does not turn ON. The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.) The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.)
EPS control unit	The steering effort increases.
Combination meter	The tachometer and the speedometer do not move.Warning lamps turn ON.Indicator lamps do not turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
ТСМ	No impact on operation.
IPDM E/R	When the ignition switch is ON,The headlamps (Lo) turn ON.The cooling fan continues to rotate.

CAN Diagnosis with CONSULT

INFOID:000000007377751

CAN diagnosis on CONSULT extracts the root cause by receiving the following information.

- Response to the system call
- Control unit diagnosis information
- Self-diagnosis
- CAN diagnostic support monitor

Self-Diagnosis

INFOID:000000007748099

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "Self Diagnostic Result" screen. **NOTE:**

The following table shows examples of CAN communication-related DTC. For other DTC, refer to the applicable sections.

DTC	Self-diagnosis item (CONSULT indication)		DTC detection condition	Inspection/Action	
		ECM When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.			
	Except for ECM When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.		Start the inspection. Re- fer to the applicable sec-		
U1001	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communi- cation signal other than OBD (emission-related diagnosis) for 2 seconds or more.		control unit.	
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.			
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of each control unit.		Replace the control unit indicating "U1010".	

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT)

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< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Withou	t PAST		With	PAST		
ЕСМ		EC	M			
	PRSNT	PAST		PRSNT	PAST	
INITIAL DIAG	OK		TRANSMIT DIAG	¦OK	¦OK	
TRANSMIT DIAG	l OK		VDC/TCS/ABS]-	
ТСМ	OK		METER/M&A	¦OK	¦OK	
VDC/TCS/ABS	UNKWN		BCM/SEC	ОК	OK	
METER/M&A	¦ OK		ICC	¦-		
ICC	UNKWN		HVAC			
BCM/SEC	¦ OK		ТСМ	lок	lок	
IPDM E/R	OK		EPS	 ¦-		
			IPDM E/R	OK	OK	
			e4WD			
			AWD/4WD	ГОК	Ток	

Without PAST

Item	PRSNT	Description	G
Initial diagnosis	OK	Normal at present	
initial diagnosis	NG	Control unit error (Except for some control units)	—
	OK	Normal at present	
Transmission diagnosis		Unable to transmit signals for 2 seconds or more.	
	UNKVIN	Diagnosis not performed	
	OK	Normal at present	
Control unit name		Unable to receive signals for 2 seconds or more.	
(Reception diagnosis)	UNKWN	Diagnosis not performed	J
		No control unit for receiving signals. (No applicable optional parts)	

With PAST

Item	PRSNT	PAST	Description
		OK	Normal at present and in the past
Transmission diagnosis	ОК	1 – 39	Normal at present, but unable to transmit signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to transmit signals for 2 seconds or more at present.
		OK	Normal at present and in the past
Control unit name (Reception diagnosis)	ОК	1 – 39	Normal at present, but unable to receive signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to receive signals for 2 seconds or more at present.
			Diagnosis not performed.
	-	_	No control unit for receiving signals. (No applicable optional parts)

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

For some models, CAN communication diagnosis result is received from the vehicle monitor.

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< SYSTEM DESCRIPTION >

Example: Vehicle Display

Item	Result indi- cated	Error counter	Description
	OK	0	Normal at present
CAN_COMM (Initial diagnosis)	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)
	OK	0	Normal at present
CAN_CIRC_1 (Transmission diagnosis)	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
	OK	0	Normal at present
CAN_CIRC_2 – 9 (Recention diagnosis of each unit)		1 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
	UNKWN	1 – 50	Diagnosis not performed.
			No control unit for receiving signals. (No applicable optional parts)

How to Use CAN Communication Signal Chart

INFOID:000000007377754

The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



< BASIC INSPECTION >

[CAN FUNDAMENTAL]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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Trouble Diagnosis Procedure

INTERVIEW WITH CUSTOMER

Ν Interview with the customer is important to detect the root cause of CAN communication system errors and to understand vehicle condition and symptoms for proper trouble diagnosis.

Points in interview

- What: Parts name, system name
- When: Date, Frequency
- Where: Road condition, Place
- In what condition: Driving condition/environment
- Result: Symptom

NOTE:

- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into failsafe mode.

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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

• Indication of the combination meter is important to detect the root cause because it is the most obvious to the customer, and it performs CAN communication with many units.



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

Do not turn the ignition switch OFF or disconnect the battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

CHECK OF CAN SYSTEM TYPE (HOW TO USE CAN SYSTEM TYPE SPECIFICATION CHART) Determine CAN system type based on vehicle equipment.

NOTE:

- This chart is used if CONSULT does not automatically recognize CAN system type.
- There are two styles for CAN system type specification charts. Depending on the number of available system types, either style A or style B may be used.

CAN System Type Specification Chart (Style A) **NOTE:**

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



CAN System Type Specification Chart (Style **NOTE:**

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< BASIC INSPECTION >



CREATE INTERVIEW SHEET

Fill out the symptom described by the customer, vehicle condition, and CAN system type on the interview sheet.

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN Communication System Diagnosis Interview Sheet A Date received: 3, Feb. 2006 B Type: DBA-KG11 VIN No: KG11-005040 Model: BDRARG2397EDA-E-J- Mileage: 62,140 First registration: 10, Jan. 2001 Mileage: 62,140 CAN system type: Type 19 B Symptom (Results from interview with customer) B - Headamps suddenly turn ON while driving the vehicle. First registration of the vehicle. - The engine does not restart after stopping the vehicle and turning the ignition switch ON. B Condition at inspection B Condition at inspection B The engine does not start. B While turning the ignition switch ON. B - The cooling fan continues rotating while turning the ignition switch ON. B - The cooling fan continues rotating while turning the ignition switch ON. B - The cooling fan continues rotating the ignition switch ON. B - The interior lamp does not start. B - The interior lamp does not turn ON. B - The interior lamp does not turn ON. B	Interview Sheet (Example)	
Date received: 3, Feb. 2006 E Type: DBA-KG11 VIN No: KG11-005040 Model: BDRARG2397EDA-E-J- First registration: 10, Jan. 2001 Mileage: 62,140 CAN system type: Type 19 E Symptom (Results from interview with customer) Headlamps suddenly turn ON while driving the vehicle. First registration: - Headlamps suddenly turn ON while driving the vehicle and turning the ignition switch OFF. E - The oroging tan continues rotating while turning the ignition switch ON. E Error Symptom: Error Symptom: Past The ending the ignition switch ON. E Imagine does not start. Mile cooling fan continues rotating. The interfor lamp does not turn ON. E	CAN Communication System Diagnosis Interview She	et A
Type: DBA-KG11 VIN No.: KG11-005040 C Model: BDRARGZ397EDA-E-J- D First registration: 10, Jan. 2001 Mileage: 62,140 CAN system type: Type 19 D Symptom (Results from interview with customer) E •Headlamps suddenly turn ON while driving the vehicle. F •The engine does not restart after stopping the vehicle and turning the ignition switch OFF. G •The cooling fan continues rotating while turning the ignition switch ON. H Condition at inspection E Error Symptom: Cessen) Past J The engine does not start. J While turning the ignition switch ON, H Image: Condition at inspection J Error Symptom: Cessen) Past J The engine does not start. J J While turning the ignition switch ON, H Image: Image: Image: <td>Date received: 3, Feb. 2006</td> <td>В</td>	Date received: 3, Feb. 2006	В
Model: BDRARGZ397EDA-E-J- First registration: 10, Jan. 2001 Mileage: 62,140 CAN system type: Type 19 E Symptom (Results from interview with customer) Headlamps suddenly turn ON while driving the vehicle. F • Headlamps suddenly turn ON while driving the vehicle and turning the ignition switch OFF. G • The cooling fan continues rotating while turning the ignition switch ON. F Condition at inspection E The engine does not tart. While turning the ignition switch ON. While turning the ignition switch ON. F The engine does not tart. While turning the ignition switch ON. Image: Description start and the cooling fan continues rotating. F The engine does not tart. Mile cooling fan continues rotating. • The interior lamp does not turn ON. F	Type: DBA-KG11 VIN No.: KG11-005040	С
First registration: 10, Jan. 2001 Mileage: 62,140 CAN system type: Type 19 E Symptom (Results from interview with customer) F •Headlamps suddenly turn ON while driving the vehicle. F •The engine does not restart after stopping the vehicle and turning the ignition switch OFF. G •The cooling fan continues rotating while turning the ignition switch ON. F Condition at inspection F Error Symptom: Present Under turning the ignition switch ON, F •The engine does not start. While turning the ignition switch ON, •The interior lamp does not turn ON. K	Model: BDRARGZ397EDA-E-J-	D
CAN system type: Type 19 Symptom (Results from interview with customer) ·Headlamps suddenly turn ON while driving the vehicle. ·The engine does not restart after stopping the vehicle and turning the ignition switch OFF. ·The cooling fan continues rotating while turning the ignition switch ON. Condition at inspection Error Symptom: resent/ Past The engine does not start. While turning the ignition switch ON, ·The headlamps (L) turn ON, and the cooling fan continues rotating. ·The interior lamp does not turn ON.	First registration: 10, Jan. 2001 Mileage: 62,140	
Symptom (Results from interview with customer) F •Headlamps suddenly turn ON while driving the vehicle and turning the ignition switch OFF. G •The cooling fan continues rotating while turning the ignition switch ON. F Condition at inspection F Error Symptom: Past G The engine does not start. While turning the ignition switch ON, •The headlamps (Lo) turn ON, and the cooling fan continues rotating. F •The interior lamp does not turn ON. F	CAN system type: Type 19	E
 The engine does not restart after stopping the vehicle and turning the ignition switch OFF. The cooling fan continues rotating while turning the ignition switch ON. 	Symptom (Results from interview with customer) Headlamps suddenly turn ON while driving the vehicle.	F
Condition at inspection Error Symptom: Present/ Past The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	 The engine does not restart after stopping the vehicle and turning the ignition switch OFF. The cooling fan continues rotating while turning the ignition switch ON. 	G
Condition at inspection Error Symptom: Present / Past The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.		Н
Error Symptom: Present/ Past The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	Condition at inspection	I
The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	Error Symptom: Present / Past	J
	The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	К

DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

INFOID:000000007377757

• This section describes information peculiar to a vehicle and inspection procedures.

• For trouble diagnosis procedure, refer to LAN-17, "Trouble Diagnosis Procedure".

Abbreviation List

INFOID:000000007377758

Unit name abbreviations in CONSULT CAN diagnosis and in this section are as per the following list.

Abbreviation	Unit name
4WD	Transfer control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AFS	AFS control unit
APA	Accelerator pedal actuator
AV	AV control unit
BCM	BCM
CGW	CAN gateway
DLC	Data link connector
E-SUS	Air levelizer control module
ECM	ECM
HVAC	A/C auto amp.
ICC	ADAS control unit
IPDM-E	IPDM E/R
LANE	Lane camera unit
LASER	ICC sensor
M&A	Combination meter
PSB	Pre-crash seat belt control unit (driver side)
PWBD	Automatic back door control module
RDR-L	Side radar LH
RDR-R	Side radar RH
STRG	Steering angle sensor
ТСМ	TCM
TPMS	Low tire pressure warning control unit

< PRECAUTION > PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Trouble Diagnosis

CAUTION:

- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

Precautions for Harness Repair

• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

A fray of twisted lines must be within 110 mm (4.33 in).



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PRECAUTIONS

< PRECAUTION >

Bypass connection is never allowed at the repaired area.
 NOTE:
 Bypass connection may cause CAN communication error

Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



• Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION **COMPONENT PARTS**

Component Parts Location

INFOID:000000007377762 В

[CAN]

А



23. Automatic back door control module 24. Side radar LH

- 7.
- 10. A/C auto amp.
- 13. BCM

1. 4.

- 16. Data link connector
- 19. Driver seat control unit
- 22. ADAS control unit
- 25. Side radar RH

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L

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er side)

SYSTEM CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:000000007377763

Determine CAN system type from the following specification chart.

NOTE:

Refer to LAN-17. "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type		Wagon									
Axle	2	ND	4\	WD							
Engine		VK	56VD								
Transmission		A	/T								
Brake control		V	DC								
ICC system		×		×							
CAN system type	1	2	3	4							
	CAN commu	inication unit									
ECM	×	×	×	×							
Transfer control unit			×	×							
ABS actuator and electric unit (control unit)	×	×	×	×							
ТСМ	×	×	×	×							
Air bag diagnosis sensor unit	×	×	×	×							
AFS control unit		×		×							
AV control unit	×	×	×	×							
BCM	×	×	×	×							
CAN gateway		×		×							
Data link connector	×	×	×	×							
A/C auto amp.	×	×	×	×							
Combination meter	×	×	×	×							
Steering angle sensor	×	×	×	×							
Low tire pressure warning control unit	×	×	×	×							
IPDM E/R	×	×	×	×							
Driver seat control unit	×	×	×	×							
Pre-crash seat belt control unit (driver side)		×		×							
Air levelizer control module	×	×	×	×							
ADAS control unit		×		×							
Automatic back door control module	×	×	×	×							
	ITS commu	nication unit									
ADAS control unit		×		×							
Side radar RH		×		×							
Side radar LH		×		×							
Lane camera unit		×		×							
Accelerator pedal actuator		×		×							
ICC sensor		×		×							

 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION NOTE:

< SYSTEM DESCRIPTION >

Check CAN system type from the vehicle shape and equipment.



- 1. ICC sensor
- A. With ICC system

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

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[CAN]

Refer to <u>LAN-16. "How to Use CAN Communication Signal Chart"</u> for how to use CAN communication signal chart.

																n: mar	ISMIL	R: R6	eceive	
Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HVAC	M&A	STRG	TPMS	IPDM-E	ADP	PSB	E-SUS	ICC	PWBD	G
A/C compressor request signal	т													R						Н
Accelerator pedal position signal	т	R	R	R														R		I
ASCD OD cancel request signal	т			R																I
ASCD operation signal	Т			R																J
ASCD status signal	Т										R									
Closed throttle position sig- nal	т			R														R		K
Cooling fan speed request signal	т													R						
Engine and A/T integrated	Т			R																L
control signal	R			Т																
Engine coolant temperature signal	т									R	R									LAN
Engine restart request sig-	Т							R						R						
nal								Т						R						NI
Engine speed signal	Т	R	R	R		R					R						R	R		IN
Engine status signal	Т						R	R			R									
Engine torque signal	Т	R																		0
Fuel consumption monitor signal	т						R				R									
ICC brake switch signal	Т																	R		Ρ
ICC prohibition signal	Т																	R		
ICC steering switch signal	Т																	R		
Malfunctioning indicator lamp signal	т										R									
N idle instruction signal	Т			R																
	R			Т																

< SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HVAC	M&A	STRG	TPMS	IPDM-E	ADP	PSB	E-SUS	ICC	PWBD
Power generation com- mand value signal	т													R					
Snow mode switch signal	Т																	R	
	Т																	R	
Stop lamp switch signal		R	Т	R				Т										R	
Wide open throttle position signal	т			R															
4WD malfunction signal		Т	R																
4WD mode indicator signal		Т									R								
4WD warning lamp signal		Т									R								
ATP warning lamp signal		Т									R								
Current 4WD mode signal		Т	R															R	
A/T shift schedule change demand signal			т	R															
ABS malfunction signal		R	Т															R	
ABS operation signal		R	Т	R												R		R	
ABS warning lamp signal			Т								R							R	
Brake warning lamp signal			Т								R								
Decel G sensor signal			Т	R															
Pressure sensor signal			Т	R															
Side G sensor signal			Т	R														R	
Target throttle position sig- nal	R		т																
TCS malfunction signal		R	Т															R	
TCS operation signal		R	Т															R	
VDC malfunction signal		R	Т															R	
VDC OFF indicator lamp signal			т								R								
VDC OFF switch signal			Т															R	
VDC operation signal		R	Т															R	
VDC warning lamp signal			Т								R								
Vahiala apaed signal	R			R		R	R	R		R	Т			R	R	R			R
venicie speed signal	R	R	Т					R			R		R		R		R	R	R
Yaw rate signal			Т															R	
A/T CHECK indicator lamp signal				т		R					R								
Current gear position signal		R	R	Т														R	
Input speed signal	R			Т														R	
Manual mode shift refusal signal				т							R								
N range signal				Т				R							R				
Next gear position signal		R		Т															
Output shaft revolution sig- nal	R	R		т														R	

< SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HVAC	M&A	STRG	TPMS	IPDM-E	ADP	PSB	E-SUS	ICC	PWBD	A
P range signal				Т				R							R					
R range signal				Т				R							R					В
Shift position signal		R	R	Т		R		R			R							R	R	
Tow mode indicator lamp signal				т							R									С
Pre-roll over signal					Т											R				
Pre-tensioner operation signal					т											R				D
AFS OFF indicator lamp signal						Т					R									Е
A/C switch operation signal							Т			R										
Rear window defogger switch signal							т	R												F
System selection signal							Т											R		
Custom cotting signal							Т	R												
System setting signal							R	Т												G
Automatic back door re- quest signal								т											R	
Back door lock status signal								Т											R	Н
Buzzor output signal								Т			R									
Buzzer output signal											R							Т		
Buzzer request signal								T R			R		Т							
Dimmer signal								Т			R							R		J
Door switch signal								Т			R			R	R	R				
Door unlock signal								Т							R					K
Front fog light request sig- nal								т						R						TX.
Front wiper request signal								Т						R				R		L
Handle position signal								Т							R					
Headlamp washer request signal								т						R						LA
High beam request signal								Т			R			R						
Horn reminder signal								Т						R						
Ignition switch ON signal								T R						R T	R	R				N
Ignition switch signal								Т							R					0
								Т						R						0
Interlock/PNP switch signal								R						Т						
Key ID signal								Т		R					R					Р
Key switch signal								Т							R					
Key warning lamp signal								Т			R									
Low beam request signal								Т						R						
Meter display signal								Т			R									
1 - 9 - 9	1	1	1				1				R		1		1			Т		

[CAN]

< SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HVAC	M&A	STRG	TPMS	IPDM-E	ADP	PSB	E-SUS	ICC	PWBD
Oil pressure switch signal								Т			R								
								R						Т					
Position light request signal								Т			R			R					
Rear fog light status signal								Т			R								
Rear window defogger con-							_	Т						R					
	R						R	-	-		-				-	-			
Sleep wake up signal								 	R		к			R	к	R			ĸ
Starter control relay signal														R					
Starter relay status signal								R R			R			R T					
Starting mode signal								т							R				
								Т						R	R				
Steering lock relay signal								R						Т					
Theft warning horn request signal								т						R					
Turn indicator signal				R				Т			R							R	
A/C display signal							R			Т									
A/C ON signal	R									Т									
Ambient temperature signal										Т								R	
Blower fan ON signal	R									Т									
Distance to empty signal							R				Т								
Fuel level low warning sig- nal							R				т								
Fuel level sensor signal	R										Т								
Manual mode shift down signal				R							т								
Manual mode shift up sig- nal				R							т								
Manual mode signal				R							Т								
Non-manual mode signal				R							Т								
Odometer signal								R			Т								
Parking brake switch signal			R					R			Т				R			R	
Seat belt buckle switch sig- nal (driver side)								R			т								
								R											Т
Sleep-ready signal								R			Т								
								R						Т					
Tow mode switch signal				R							Т								
Wake up signal								R			т								Т
Steering angle sensor mal- function signal		R	R					r\ I			1	т				R		R	
Steering angle sensor sig-		R	R			R	R					Т				R		R	
Steering angle speed signal			R									Т				R		R	

< SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HVAC	M&A	STRG	TPMS	IPDM-E	ADP	PSB	E-SUS	ICC	PWBD	A
Steering calibration signal			R									Т				R				5
Hazard request signal								R					Т							В
								R											Т	
Horn request signal	-							R					Т							С
Low tire pressure warning lamp signal							R	R T			R R		Т							
Tire pressure data signal							R						Т							D
A/C compressor feedback signal	R									R				Т						
Detention switch signal								R						Т	R					E
Engine restart control sig- nal								R						т						_
Front wiper stop position signal								R						т						F
High beam status signal	R													Т						0
Hood switch signal								R						Т						G
Low beam status signal	R					R								Т						
Push-button ignition switch status signal								R						Т						Н
Starter control relay signal								R						Т						
Steering lock unit status signal								R						т						I
CK SUSP indicator lamp signal											R						т			J
Blind Spot Intervention ON indicator signal											R							т		
Blind Spot Warning/Blind Spot Intervention warning lamp signal											R							т		K
Brake fluid pressure control signal			R															т		L
IBA OFF indicator lamp sig- nal											R							т		
IBA operation signal																R		Т		
ICC operation signal	R																	Т		
ICC warning lamp signal											R							Т		Ν
Lane departure warning lamp signal											R							т		
LDP ON indicator lamp sig- nal											R							т		0
Target yaw moment signal			R															Т		P

[CAN]

WIRING DIAGRAM CAN SYSTEM (WITH ICC)

Wiring Diagram

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For connector terminal arrangements, harness layouts, and alphabets in a \bigcirc (option abbreviation; if not described in wiring diagram), refer to <u>GI-12, "Connector Information"</u>.



CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >





< WIRING DIAGRAM >

CAN SYSTEM (WITHOUT ICC)

Wiring Diagram

4WD models

For connector terminal arrangements, harness layouts, and alphabets in a 🔿 (option abbreviation; if not В



CAN SYSTEM (WITHOUT ICC)

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CAN SYSTEM (WITHOUT ICC)
DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

lew Sneet	INFOID:000000007377767	В
CAN Communication System Diagnosis Interview Sheet		
Date received:		С
Type: VIN No.:		D
Model:		E
First registration: Mileage:		F
CAN system type:		G
Symptom (Results from interview with customer)		Н
		I
		J
		K
		I
Condition at inspection		
Error symptom : Present / Past		LA
		Ν
		0
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DTC/CIRCUIT DIAGNOSIS MALFUNCTION AREA CHART

System Diagram



CAN Communication Circuit

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MAIN LINE

Malfunction area	Reference
Main line between ABS actuator and electric unit (control unit) and data link connector	LAN-41, "Diagnosis Procedure"
Main line between data link connector and air levelizer control module	LAN-42, "Diagnosis Procedure"
Main line between air levelizer control module and driver seat control unit (Without ICC system)	LAN-43, "Diagnosis Procedure"
Main line between data link connector and driver seat control unit (With ICC system)	LAN-44, "Diagnosis Procedure"
Main line between driver seat control unit and automatic back door control module (With ICC system)	LAN-45. "Diagnosis Procedure"

BRANCH LINE

Revision: 2012 September

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
ECM branch line circuit	LAN-50, "Diagnosis Procedure"
Transfer control unit branch line circuit	LAN-51, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-52, "Diagnosis Procedure"
TCM branch line circuit	LAN-53, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-54. "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-55, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-56, "Diagnosis Procedure"
BCM branch line circuit	LAN-57, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-58. "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-59, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-60, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-61, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-62, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-63, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-64, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-65, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-66. "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-67, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-68, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-69, "Diagnosis Procedure"
Air levelizer control module branch line circuit	LAN-70, "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-71, "Diagnosis Procedure"
Automatic back door control module branch line circuit	LAN-72, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference	
CAN communication circuit (Without ICC system)	LAN-78. "Diagnosis Procedure"	L
CAN communication circuit 1 (With ICC system)	LAN-80, "Diagnosis Procedure"	
CAN communication circuit 2 (With ICC system)	LAN-82. "Diagnosis Procedure"	LAN

ITS Communication Circuit

MAIN LINE

Malfunction area	Reference	
Main line between side radar RH and side radar LH	LAN-46, "Diagnosis Procedure"	С
Main line between side radar LH and lane camera unit	LAN-47, "Diagnosis Procedure"	
Main line between lane camera unit and accelerator pedal actuator	LAN-49, "Diagnosis Procedure"	Ρ

BRANCH LINE

Malfunction area	Reference	
Side radar RH branch line circuit	LAN-73, "Diagnosis Procedure"	
Side radar LH branch line circuit	LAN-74, "Diagnosis Procedure"	

LAN-39

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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
Lane camera unit branch line circuit	LAN-75, "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-76, "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-77, "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference	
ITS communication circuit	LAN-84, "Diagnosis Procedure"	

		WEEN ABS AND	DLC CIRCUIT	
DTC/CIRCUIT DIAC	SNOSIS >			[CAN]
MAIN LINE BET	WEEN ABS A	ND DLC CIRCL	ЛТ	
Diagnosis Proced	ure			INFOID:000000007377771
	OR			
Turn the ignition sv Disconnect the bat Check the followir and harness side). Harness connecto Harness connecto	vitch OFF. Itery cable from the ne og terminals and con r E107 r M82	egative terminal. nectors for damage, b	end and loose conn	ection (connector side
s the inspection result YES >> GO TO 2. NO >> Repair the	normal? terminal and connect	or.		
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
 Disconnect the foll ABS actuator and Harness connecto Check the continu harness connector 	owing harness conne electric unit (control u rs E107 and M82 ity between the ABS a	ctors. nit) actuator and electric u	nit (control unit) harr	less connector and the
ABS actuator and ele harness	ctric unit (control unit) connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
	41	E107	1	Existed
F36		1 111/		

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

Harness connector		Data link connector		Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	L
Mgg	1	N44	6	Existed	_
IVIOZ	6	1014	14	Existed	LA

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

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MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT

Diagnosis Procedure

INFOID:000000007377772

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M19
- Harness connector B2

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M19 and B2.

2. Check the continuity between the data link connector and the harness connector.

Data link connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
N44	6	M10	29	Existed	
1014	14	10119	30	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of air levelizer control module.
- Check the continuity between the harness connector and the air levelizer control module harness connector.

Harness connector		Air levelizer control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
PO	29	B84 -	16	Existed	
DZ	30		7	Existed	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the air levelizer control module.

NO >> Repair the main line between the harness connector B2 and the air levelizer control module.

0	seat control unit. >> Repair the main line between the air levelizer

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air levelizer control module and the driver

N control module and the harness connector B24.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

- 3. Disconnect the following harness connectors.
- ECM -
- Air levelizer control module _
- Harness connectors B24 and B460
- 4. Check the continuity between the air levelizer control module harness connector and the harness connector.

Air levelizer control mo	dule harness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
D01	16	P24	13	
D04	7	D24	12	
a ' a la	10			

Diagnosis Procedure

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

Revision: 2012 September

[CAN]

INFOID:000000007377773

Continuity

Existed

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000007742313

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M19
- Harness connector B2

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M19 and B2.

2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
N44	13	M10	71	Existed
1014	12	10119	72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B24 and B460.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B0	71	B24	13	Existed
DZ	72	D24	12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

Tidifiess	ha	
Connector No.	Terminal No.	Connector No
	13	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway -
- Harness connectors B460 and B24 -
- Automatic back door control module
- D 4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.			
P24	13	P26	7	Existed	
D24	12	B20	6	Existed	

- INFOID:000000007377774

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MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT

Diagnosis Procedure

INFOID:000000007377775

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B239
- Harness connector B63

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar RH
- Harness connectors B239 and B63
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH h	Continuity			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R2/2	4	P220	7	Existed
B243	3	6239	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

${\it 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar LH.
- 2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness	connector	Side radar LH ha	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R62	7	R7/	4	Existed
	3	674	3	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

DTC/CIRCUIT DIA	GNOSIS >			[CAN
AIN LINE BE	TWEEN RDR-L	AND LANE CIF	RCUIT	
agnosis Proced	dure			INFOID:0000000073777
CHECK CONNEC	TOR			
Turn the ignition s Disconnect the ba Check the followin and harness side Harness connector Harness connector Harness connector Harness connector ES >> GO TO 2 O >> Repair the CHECK HARNESS Disconnect the for Side radar LH Harness connector	witch OFF. attery cable from the ne ng terminals and com or B2 or M19 or M23 or R1 t normal? e terminal and connect S CONTINUITY (OPEN llowing harness connectors B2 and M19	egative terminal. nectors for damage, b tor. N CIRCUIT) octors.	end and loose conn	ection (connector sid
Check the continu	uity between the side r	adar LH harness conn Harness c	ector and the harnes	s connector.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	4		27	Existed
B74	3	B2 -	28	Existed
ES >> GO TO 3. O >> Repair the CHECK HARNESS Disconnect the ha Check the continu	e main line between th S CONTINUITY (OPE) arness connectors M23 uity between the harne	e side radar LH and th N CIRCUIT) 3 and R1. ss connectors. Harness c	e harness connector	B2.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	27		26	Existed
M19	28	M23	23	Existed
ne inspection result ES >> GO TO 4 O >> Repair the CHECK HARNESS Disconnect the co Check the continu	t normal? e main line between th CONTINUITY (OPEN onnector of lane camen uity between the harne	e harness connectors N CIRCUIT) a unit. ss connector and the I	M19 and M23.	ness connector.
		1 ***		
Harness Connector No.	Terminal No.	Lane camera unit r Connector No.	Terminal No.	Continuity
D1	26	Do	4	Existed
R I		<u>по</u>		

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

23

YES (Past error)>>Error was detected in the main line between the side radar LH and the lane camera unit.

8

Existed

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector R1 and the lane camera unit.

I	MAIN LINE BET	WEEN LANE A	ND APA CIRC	UIT
DTC/CIRCUIT DIA	GNOSIS >			[CAN]
AIN LINE BE	WEEN LANE	AND APA CIR	CUIT	
Diagnosis Proced	lure			INFOID:00000007377777
	OR			
 Turn the ignition s Disconnect the ba Check the followin and harness side) Harness connector Harness connector Harness connector Sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	witch OFF. ttery cable from the n ng terminals and con r R1 m M23 m M77 fr E105 <u>t normal?</u> e terminal and connec 5 CONTINUITY (OPEI	egative terminal. nectors for damage tor. N CIRCUIT)	e, bend and loose	connection (connector side
Disconnect the ha	rness connectors R1 ity between the harne	and M23. ess connector termin	nals.	
Connector No.		Terminal No.		Continuity
R1	26		29	Existed
the inspection result YES >> GO TO 3.	t normal?			
NO >> Repair the CHECK HARNESS	e main line between th CONTINUITY (OPE	e lane camera unit N CIRCUIT)	and the harness co	onnector R1.
Disconnect the haCheck the continu	rness connectors M7 ity between the harne	7 and E105. ess connectors.		
Harness	connector	Harne	ss connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M23	29	M77	22	Existed
	28		23	EXISTED
YES >> GO TO 4. NO >> Repair the CHECK HARNESS	e main line between th CONTINUITY (OPE)	e harness connecto N CIRCUIT) r pedal actuator.	ors M23 and M77.	
2. Check the continu tor.	ity between the harne	ess connector and th	ne accelerator peda	al actuator harness connec-
Harness	connector	Accelerator pedal a	ctuator harness connec	tor

Continuity	ator harness connector	Accelerator pedal actu	connector	Harness
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
Existed	5	Fee	22	E105
Existed	4	E00	23	ETUS

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

	Posistanco (O)		
Connector No.	Termi		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VK56VD FOR USA AND CANADA: <u>EC-172</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-712</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VK56VD FOR USA AND CANADA: EC-567, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1018</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the ECM branch line.
- NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN]
4WD BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INF01D:000000007377779
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and (unit side and connector) Is the inspection result norm 	OFF. able from the negative term d connectors of the transfe side). al?	ninal. r control unit for damage, l	pend and loose connection
YES >> GO TO 2. NO >> Repair the termi 2. CHECK HARNESS FOR	nal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of transfer control unit. tween the transfer control ι	init harness connector term	ninals.
Tra	nsfer control unit harness connec	tor	Resistance (O)
Connector No.	Termin	al No.	
E59	12	13	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the trans 3. CHECK POWER SUPPL	fer control unit branch line. Y AND GROUND CIRCUIT		
Check the power supply and <u>dure"</u> . Is the inspection result norm	the ground circuit of the tra	insfer control unit. Refer to	DLN-91, "Diagnosis Proce-
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	ace the transfer control unit as detected in the transfer c or supply and the ground cir	. Refer to <u>DLN-106, "Remo</u> ontrol unit branch line. cuit.	val and Installation".

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Posistanco (O)
Connector No.	Terminal No.		1(63)3(8)106 (22)
E36	41 27		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

$\mathbf{3}$. Check power supply and ground circuit

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-118, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-142, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	\$>		[CAN]
FCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000007377781
1 .CHECK CONNECTOR			
 Turn the ignition switch OI Disconnect the battery cal Check the following termir nector side). A/T assembly Harness connector F1 Harness connector E7 s the inspection result normal 	F. ble from the negative ter als and connectors for o	minal. damage, bend and loose co	nnection (unit side and con-
YES >> GO TO 2. NO >> Repair the termina CHECK HARNESS FOR O	al and connector.		
 Disconnect the connector Check the resistance betw 	of A/T assembly. veen the A/T assembly h	arness connector terminals	S.
A/	T assembly harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
	3	ŏ	Approx. 54 – 66
 NO >> Repair the TCM b CHECK HARNESS FOR O Remove the joint connector Check the continuity betw side of the joint connector 	ranch line. PEN CIRCUIT or. Refer to <u>TM-178, "Re</u> een the A/T assembly h	<u>moval and Installation"</u> . arness connector side and	the TCM harness connector
A/T assembly harness connector	r side TCM harness	connector side	
Terminal No.	Termi	nal No.	Continuity
3		3	Existed
8 5 the inspection result normal YES >> GO TO 4. NO >> Replace the joint of Incheck the power supply and the inspection result normal YES (Present error)>>Replace YES (Present error)>>Replace YES (Past error)>>Error was NO >> Repair the power	2 connector. AND GROUND CIRCUI he ground circuit of the 1 ? ce the control valve & TC detected in the TCM bra supply and the ground c	[◦] T CM. Refer to <u>TM-147, "Dia</u> CM. Refer to <u>TM-178, "Rem</u> anch line. ircuit.	Ignosis Procedure".
YES (Present error)>>Replace YES (Past error)>>Error was NO >> Repair the power	- ce the control valve & TC detected in the TCM bra supply and the ground c	CM. Refer to <u>TM-178, "Rem</u> anch line. ircuit.	oval and Installation

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007377782

[CAN]

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-29, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness.
- NO >> Replace parts whose air bag system has a malfunction.

AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSI	S>		[CAN]
AFS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF0ID:00000007377783
1. CHECK CONNECTOR			
 Turn the ignition switch O Disconnect the battery ca Check the terminals and side and connector side). 	FF. ble from the negative termina connectors of the AFS contro	al. I unit for damage, bend	and loose connection (unit
Is the inspection result normal YES >> GO TO 2. NO >> Repair the termin	? al and connector.		
 Disconnect the connector Check the resistance betw 	of AFS control unit. veen the AFS control unit ha	rness connector termina	als.
AF	S control unit harness connector		
Connector No.	Terminal N	0.	Resistance (Ω)
M135	30	7	Approx. 54 – 66
Is the measurement value wit YES >> GO TO 3. NO >> Repair the AFS c 3. CHECK POWER SUPPLY	<u>in the specification?</u> ontrol unit branch line. AND GROUND CIRCUIT		
Check the power supply and UNIT : Diagnosis Procedure". Is the inspection result norma	the ground circuit of the AF	S control unit. Refer to	EXL-71, "AFS CONTROL
YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power	ce the AFS control unit. Refe detected in the AFS control supply and the ground circui	r to <u>EXL-119, "Removal</u> unit branch line. t.	and Installation".

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M222
- Harness connector M119

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

AV control unit harness connector			Posistanco (O)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to <u>AV-157, "AV CONTROL UNIT :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to AV-209, "Removal and Installation".

YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS :	>		[CAN]
BCM BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:00000007377785
1.CHECK CONNECTOR			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and co connector side). 	from the negative termin nnectors of the BCM for	nal. damage, bend and loos	se connection (unit side and
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal2.CHECK HARNESS FOR OP	and connector. EN CIRCUIT		
 Disconnect the connector of Check the resistance betwe 	BCM. en the BCM harness con	nector terminals.	
	3CM harness connector		Resistance (Ω)
Connector No.	Terminal	No.	
M68	39	40	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra 3. CHECK POWER SUPPLY A	the specification? nch line. ND GROUND CIRCUIT		
Check the power supply and the Is the inspection result normal?	ground circuit of the BCN	M. Refer to <u>BCS-75, "Dia</u>	ignosis Procedure".
YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	the BCM. Refer to <u>BCS-</u> etected in the BCM branc pply and the ground circu	82, "Removal and Install ch line. uit.	<u>ation"</u> .

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000007377786

[CAN]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of CAN gateway.

2. Check the resistance between the CAN gateway harness connector terminals.

CAN gateway harness connector			Resistance (O)
Connector No.	Terminal No.		
M125	1 7		Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to <u>LAN-38, "Sys-</u> tem Diagram".

CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-98</u>, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-99, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to <u>LAN-38, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

А Diagnosis Procedure INFOID:000000007377787 1.CHECK DTC Check DTC of the CAN gateway with CONSULT. Is U1010 or B2600 indicated? YES >> Perform a diagnosis of the indicated DTC. NO >> GO TO 2. 2. CHECK CONNECTOR D Turn the ignition switch OFF. 1. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors of the CAN gateway for damage, bend and loose connec-3. E tion (unit side and connector side). Is the inspection result normal? YES >> GO TO 3. F NO >> Repair the terminal and connector. **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. 2. CAN gateway harness connector Н Continuity Connector No. Terminal No. 4 6 Existed M125 12 10 Existed Is the inspection result normal? YES >> GO TO 4. >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-38, "Sys-NO tem Diagram". ${f 4}$. CHECK POWER SUPPLY AND GROUND CIRCUIT Κ Check the power supply and the ground circuit of the CAN gateway. Refer to LAN-98, "Diagnosis Procedure". Is the inspection result normal? L YES (Present error)>>Replace the CAN gateway. Refer to LAN-99, "Removal and Installation". YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-38. "System Diagram". NO >> Repair the power supply and the ground circuit. LAN

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Posistanco (O)
Connector No.	Termi		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> Repair the data link connector branch line.

INFOID:000000007377788

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000007742315

[CAN]

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1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the data link connector for damage, bend and loose connection C (connector side and harness side).
- Is the inspection result normal?
- YES >> GO TO 2.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector		Posistance (O)		
Connector No.	Terminal No.			
M4	6	14	Approx. 54 – 66	_
				_

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 1 side). Refer to LAN-38, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to <u>LAN-38.</u> "System Diagram".

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000007742316

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Posistanco (O)
Connector No.	Termi		
M4	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-38, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to <u>LAN-38</u>. "System Diagram".

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
HVAC BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:00000007377789
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and side and connector side Is the inspection result norm YES >> GO TO 2. NO >> Repair the terminal 	OFF. able from the negative term d connectors of the A/C au). <u>al?</u> inal and connector.	ninal. to amp. for damage, bend	and loose connection (unit
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of A/C auto amp. tween the A/C auto amp. h	arness connector terminals	5.
Connector No		al No	Resistance (Ω)
	1	21	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the A/C a 3.CHECK POWER SUPPL	<u>ithin the specification?</u> auto amp. branch line. Y AND GROUND CIRCUIT		
Check the power supply an Diagnosis Procedure".	d the ground circuit of the	A/C auto amp. Refer to <u>H/</u>	AC-105, "A/C AUTO AMP. :
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	ace the A/C auto amp. Refe as detected in the A/C auto ar supply and the ground cir	er to <u>HAC-142, "Removal a</u> amp. branch line. cuit.	and Installation".

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the combination meter for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Posistanco (O)		
Connector No.	Termi		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-58, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-79, "Removal and Installation".

YES (Past error)>>Error was detected in the combination meter branch line.

NO >> Repair the power supply and the ground circuit.

INFOID:000000007377790

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >			[CAN]
STRG BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000007377791
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the terminals and con (unit side and connector side 	from the negative termin nectors of the steering a e).	nal. Ingle sensor for damage,	bend and loose connection
Is the inspection result normal?			
YES >> GO TO 2.	and connector		
 Check the resistance betwee 	in the steering angle ser	nsor harness connector te	rminals.
Steering a	ingle sensor harness connect	or	Resistance (Ω)
Connector No.	Terminal	No.	. ,
M30	5	2	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the steering a 3. CHECK POWER SUPPLY AN	the specification? Ingle sensor branch line ID GROUND CIRCUIT		
Check the power supply and the gram ["] .	ground circuit of the st	eering angle sensor. Ref	er to <u>BRC-52, "Wiring Dia-</u>
Is the inspection result normal?			
YES (Present error)>>Replace to YES (Past error)>>Error was de NO >> Repair the power sup	the steering angle sense etected in the steering ar oply and the ground circ	or. Refer to <u>BRC-144, "Re</u> Ingle sensor branch line. uit.	moval and Installation".

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the low tire pressure warning control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of low tire pressure warning control unit.

2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pressure warning control unit harness connector			Posistanco (O)
Connector No.	Termi		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the low tire pressure warning control unit branch line.

$\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-45</u>, <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-59</u>, "Removal and <u>Installation</u>".

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN]	
IPDM-E BRANCH L	INE CIRCUIT			٨
Diagnosis Procedure			INFOID:000000007377793	A
1.CHECK CONNECTOR			I	В
 Turn the ignition switch Disconnect the battery of Check the following term nector side). IPDM E/R 	OFF. able from the negative terr ninals and connectors for d	ninal. amage, bend and loose co	nnection (unit side and con-	С
 Harness connector E10 Harness connector M77 Harness connector M19 	5 (Without ICC system)		[D
- Harness connector B2 (Is the inspection result norm	Without ICC system) ´ <u>al?</u>		I	E
YES >> GO TO 2. NO >> Repair the termi 2. CHECK HARNESS FOR	nal and connector. OPEN CIRCUIT			F
 Disconnect the connect Check the resistance be 	or of IPDM E/R. etween the IPDM E/R harn	ess connector terminals.	(G
	IPDM E/R harness connector		Desistance (O)	
Connector No.	Termir	nal No.		Н
E13	27	26	Approx. 108 – 132	
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDN 3. CHECK POWER SUPPL	ithin the specification? 1 E/R branch line. Y AND GROUND CIRCUIT	-		I
Check the power supply and	I the ground circuit of the IF	PDM E/R. Refer to PCS-29	, "Diagnosis Procedure".	J
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	al? ace the IPDM E/R. Refer t as detected in the IPDM E ar supply and the ground ci	o <u>PCS-30, "Removal and I</u> /R branch line. rcuit.	nstallation".	K

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007377794

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B24
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
IVI 123	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38, "System Diagram"</u>.

$\mathbf{3}$. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (O)
Connector No.	Terminal No.		
B451	1 17		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-60, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-128. "Removal and Installation".

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

[CAN]

PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			- NFOID:00000007377795
1. CHECK CONNECTOR			E
 Turn the ignition switch 0 Disconnect the battery c Check the following term nector side). Pre-crash seat belt control CAN gateway Is the inspection result normative yes >> GO TO 2. NO >> Repair the terminative years that the terminative years that the terminative years are set of the connect of the conn	DFF. able from the negative terr ninals and connectors for d rol unit (driver side) al? nal and connector. TINUITY (OPEN CIRCUIT) or of CAN gateway.	ninal. amage, bend and loose col	nnection (unit side and con-
2. Check the continuity bet	ween the CAN gateway ha	arness connector terminals.	
Connector No	CAN gateway harness connector	nal No	Continuity
	4	6	Existed
M125	10	12	Existed
38, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connector 3. Check the resistance be nals.	gram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co otween the pre-crash seat	ntrol unit (driver side). belt control unit (driver side	e) harness connector termi-
Pre-crash seat	belt control unit (driver side) har	ness connector	Resistance (O)
Connector No.	Termir	nal No.	
B9	14	4	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the pre-c 4.CHECK POWER SUPPLY Check the power supply and SBC-44. "Diagnosis Procedu Is the inspection result normal YES (Present error)>>Repline RETRACTOR : In YES (Past error)>>Error was	rash seat belt control unit (Y AND GROUND CIRCUIT d the ground circuit of the <u>ire"</u> . al? ace the seat belt pre-tens Removal and Installation". as detected in the pre-cras	(driver side) branch line. pre-crash seat belt contro ioner retractor (LH side). F h seat belt control unit (drive	I unit (driver side). Refer to Refer to <u>SB-6, "SEAT BELT</u> er side) branch line.

E-SUS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007377796

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air levelizer control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		Continuity
M125	4 6		Existed
WIZ5	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of air levelizer control module.
- 3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector			Posistanco (O)
Connector No.	Terminal No.		
B84	16	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the air levelizer control module. Refer to <u>SCS-85,</u> "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to SCS-90, "Removal and Installation".

YES (Past error)>>Error was detected in the air levelizer control module branch line.

NO >> Repair the power supply and the ground circuit.

ICC BRANCH LINE CIRCUIT

ICC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000007377797
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). ADAS control unit CAN gateway Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS CON 	OFF. cable from the negative tern ninals and connectors for danal? inal and connector. ITINUITY (OPEN CIRCUIT)	ninal. amage, bend and loose cor	nnection (unit side and con-
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termin	al No.	Continuity
M125	4	6	Existed
s the inspection result norm	al?		
YES >> GO TO 3. NO >> Check the harn <u>38, "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control ur	se (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>
A	DAS control unit harness connect	or	
Connector No.	Termin	al No.	Resistance (Ω)
B61	14	15	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Repair the ADA 4.CHECK POWER SUPPL	vithin the specification? S control unit branch line. Y AND GROUND CIRCUIT	DAS control unit. Refer to	DAS-54 "Diagnosis Proce-
dure". Is the inspection result norm	a the ground circuit of the A		<u>ило-04, Diagnosis F1008-</u>

- YES (Present error)>>Replace the ADAS control unit. Refer to DAS-55, "Removal and Installation".
- YES (Past error)>>Error was detected in the ADAS control unit branch line.
- NO >> Repair the power supply and the ground circuit.

< DTC/CIRCUIT DIAGNOSIS >

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[CAN]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007377798

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Automatic back door control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M125	4 6		Existed
WIZ3	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u><u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of automatic back door control module.
- 3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector			Resistance (O)
Connector No.	Terminal No.		
B26	7 6		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the automatic back door control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control module. Refer to <u>DLK-98</u>, <u>"AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to <u>DLK-245</u>, "Removal and <u>Installation</u>".
- YES (Past error)>>Error was detected in the automatic back door control module branch line.
- NO >> Repair the power supply and the ground circuit.
RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSI	3>		[CAN]
RDR-R BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:00000007377799
1.CHECK CONNECTOR			
1. Turn the ignition switch O	FF.		
 Disconnect the battery ca Check the terminals and side and connector side). 	ble from the negative term connectors of the side ra-	inal. dar RH for damage, bend	and loose connection (unit
Is the inspection result norma	<u>?</u>		
YES >> GO TO 2.	al and connector		
2 CHECK RIGHT/I FET SWI	TCHING SIGNAL CIRCUI	т	
Check the right/left switching	signal circuit of the side ra	dar PH_Pefer to DAS-510	"Diagnosis Procedure"
Is the inspection result norma			. Diagnosis i locedure.
YES >> GO TO 3.	-		
NO >> Repair the root ca	use.		
3. CHECK HARNESS FOR C	PEN CIRCUIT		
 Disconnect the connector Check the resistance bety 	of side radar RH. veen the side radar RH ha	rness connector terminals	5.
Si	de radar RH harness connector		Resistance (Ω)
Connector No.	Termina	al No.	
B243	4	3	Approx. 54 – 66
VES >> GO TO 4	<u>iin the specification?</u>		
NO >> Repair the side ra	dar RH branch line.		
4. CHECK POWER SUPPLY	AND GROUND CIRCUIT		
Check the power supply and Diagnosis Procedure".	the ground circuit of the s	ide radar RH. Refer to <u>DA</u>	S-508. "SIDE RADAR RH :
YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power		er to <u>DAS-524, "Removal a</u> r RH branch line. cuit.	and Installation".
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RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Posistanco (O)
Connector No.	Terminal No.		
B74	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-507, "SIDE RADAR LH :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-524, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

NO >> Repair the power supply and the ground circuit.

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LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	1		[CAN]
LANE BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:000000007377801
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the terminals and conside and connector side). 	from the negative term nectors of the lane can	ninal. nera unit for damage, bend	and loose connection (unit
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal a	and connector.		
2. CHECK HARNESS FOR OPE	IN CIRCUIT		
 Disconnect the connector of Check the resistance between 	lane camera unit. In the lane camera unit	harness connector termina	als.
Lane ca	amera unit harness connecto	n	Resistance (Ω)
Connector No.	Termina	al No.	
R8	4	8	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the lane cam 3. CHECK POWER SUPPLY AN	<u>the specification?</u> era unit branch line. ID GROUND CIRCUIT		
Check the power supply and the UNIT : Diagnosis Procedure".	ground circuit of the la	ane camera unit. Refer to <u>I</u>	DAS-353, "LANE CAMERA
Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de NO >> Repair the power su	the lane camera unit. R etected in the lane cam oply and the ground cir	Refer to <u>DAS-369, "Remova</u> era unit branch line. cuit.	al and Installation".

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APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the accelerator pedal actuator for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accel	Posistanco (O)		
Connector No.	Terminal No.		
E66	5	4	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

$\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-178, "ACCEL-ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4</u>, "MODELS WITH DIS-<u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation</u>".

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.

NO >> Repair the power supply and the ground circuit.

LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
LASER BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000007377803
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and and connector side). 	OFF. able from the negative terr d connectors of the ICC se	ninal. nsor for damage, bend and	loose connection (unit side
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2. CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of ICC sensor. Stween the ICC sensor harr	ness connector terminals.	
	ICC sensor harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
E65	3	6	Approx. 108 – 132
Is the measurement value we YES >> GO TO 3. NO >> Repair the ICC 3. CHECK POWER SUPPL	ithin the specification? sensor branch line. Y AND GROUND CIRCUIT	-	
Check the power supply and sis Procedure".	I the ground circuit of the IC	CC sensor. Refer to CCS-15	52, "ICC SENSOR : Diagno-
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the power	<u>al?</u> ace the ICC sensor. Refer as detected in the ICC senser ar supply and the ground ci	to <u>CCS-170, "Removal and</u> sor branch line. rcuit.	Installation".

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit.
- 4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		Continuity
M4	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	6	Ground	Not existed
	14	_	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

ECM		- Resistance (Ω)	
Terminal No.			
146 151		Approx. 108 – 132	

3. Check the resistance between the IPDM E/R terminals.

IPDM E/R		Resistance (Ω)	
Terminal No.			
27 26		Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is	А
detected.	
O. CHECK UNIT REPRODUCTION	В
Perform the reproduction test as per the following procedure for each unit.	
1. Turn the ignition switch OFF.	-
2. Disconnect the battery cable from the negative terminal.	С
3. Disconnect one of the unit connectors of CAN communication circuit.	
NOTE:	
ECM and IPDM E/R have a termination circuit. Check other units first.	D
 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 	
NOTE:	
Although unit-related error symptoms occur, do not confuse them with other symptoms.	Е
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above procedure.	
Non-reproduced>>Replace the unit whose connector was disconnected.	F
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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
 - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		Continuity
M4	6 14		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data linl	connector		Continuity	
Connector No.	Terminal No.	Cround	Continuity	
N44	6	Gibunu	Not existed	
1014	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

E	CM	Resistance (Ω)	
Terminal No.			
146	Approx. 108 – 132		

3. Check the resistance between the IPDM E/R terminals.

IPDN	- Resistance (Ω)	
Terminal No.		
27	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.



< DTC/CIRCUIT DIAGNOSIS >

5. CHECK SYMPTOM А Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Inspection result В Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. С 6. CHECK UNIT REPRODUCTION Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. D 1. Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication circuit 1. NOTE: Е ECM and IPDM E/R have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. F NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected. Н

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 2.
 - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38</u>, "System Diagram".

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Continuity	
Connector No.	Termi	Continuity
M4	13	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
N4	13	Ground	Not existed
1014	12	-	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway Terminal No.		Resistance (Ω)	
6 12		Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

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< DTC/CIRCUIT DIAGNOSIS >	[CAN]
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past detected.	error is
6. CHECK UNIT REPRODUCTION	
 Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE: CAN gateway has two termination circuits. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Sy (Results from interview with customer)" are reproduced. NOTE: 	/mptom
Although unit-related error symptoms occur, do not confuse them with other symptoms.	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000007377807

[CAN]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and CAN communication circuit 2 have no malfunction.

NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38, "System Diagram"</u>.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- Harness connector B63
- Harness connector B239

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control unit	ADAS control unit harness connector		ICC sensor harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R61	7	E65	3	Existed
DOT	8	205	6	Existed

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to <u>LAN-38</u>, <u>"System Diagram"</u>.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Side radar LH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

Α	Continuity		
Connector No.	Termi	Continuity	
B61	7 8		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) А Check the continuity between the ADAS control unit harness connector and the ground. ADAS control unit harness connector В Continuity Connector No. Terminal No. Ground 7 Not existed B61 8 Not existed Is the inspection result normal? YES >> GO TO 6. D NO >> Check the harness and repair the root cause. **6.**CHECK TERMINATION CIRCUIT Remove the ADAS control unit and the ICC sensor. 1 E 2. Check the resistance between the ADAS control unit terminals. ADAS control unit F Resistance (Ω) Terminal No. 7 8 Approx. 108 - 132 Check the resistance between the ICC sensor terminals. 3. ICC sensor Н Resistance (Ω) Terminal No. 3 6 Approx. 108 - 132 Is the inspection result normal? YES >> GO TO 7. NO >> Replace the ADAS control unit and/or the ICC sensor. 7.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Κ Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is L detected. 8. CHECK UNIT REPRODUCTION LAN Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. 1. Disconnect the battery cable from the negative terminal. 2. Disconnect one of the unit connectors of ITS communication circuit. Ν NOTE: ADAS control unit and ICC sensor have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. Ρ Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

< PRECAUTION > PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000007377809

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- 1. CAN gateway
- A. Over the glove box

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Revision: 2012 September

< SYSTEM DESCRIPTION >

SYSTEM



This system selects and transmits only necessary information.

[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

[CAN GATEWAY]

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APPLICATION ITEM

CONSULT performs the following functions via CAN communication with CAN gateway.

Diagnosis mode	Function Description	(
Ecu Identification	The CAN gateway part number is displayed.	
Self Diagnostic Result	Displays the diagnosis results judged by CAN gateway.	
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.	[
Configuration	Read and save the vehicle specification.Write the vehicle specification when replacing CAN gateway.	

SELF DIAGNOSTIC RESULT

Refer to LAN-90, "DTC Index".

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Revision: 2012 September

ECU DIAGNOSIS INFORMATION CAN GATEWAY

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

Term	Terminal No. Description			Value	
(Wire	e color)	Signal name Input/		Condition	(Approx.)
+	_	Signal name	Output		(
1		CAN-H (CAN commu-	Input/		
(L)		nication circuit 1)	Output		
3	Ground	Battery power supply	Innut	Ignition switch OFF	Battery voltage
(Y)	Oroana	Dattory power suppry	mpar		Dattory voltage
4	_	CAN-H (CAN commu-	Input/	_	_
(L)		nication circuit 2)	Output		
5	Ground	Ground	_	Ignition switch ON	0 V
(B)	oround	Croana			.
6	_	CAN-H (CAN commu-	Input/	_	_
(L)		nication circuit 2)	Output		
7	_	CAN-L (CAN commu-	Input/	_	_
(P)		nication circuit 1)	Output		
9	Ground	lanition power supply	Input	Ignition switch ON	Battery voltage
(GR)	oreand	.gon ponor ouppi)	mput		
10	_	CAN-L (CAN commu-	Input/	_	_
(R)		nication circuit 2)	Output		
11	Ground	Ground	_	Ignition switch ON	0 V
(B)	Ground	Croand			
12		CAN-L (CAN commu-	Input/	_	
(R)		nication circuit 2)	Output		

DTC Inspection Priority Chart

INFOID:000000007377813

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	 B2600: CONFIG ERROR U1010: CONTROL UNIT(CAN)
2	U1000: CAN COMM CIRCUIT

DTC Index

NOTE:

INFOID:000000007377814

INFOID:000000007377812

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CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

· The details of time display are as follows. - CRNT: A malfunction is detected now А - PAST: A malfunction was detected in the past. • IGN counter is displayed on FFD (Freeze Frame Data). - The number is 0 when is detected now В - The number increases like 1 ightarrow 2 \cdots 38 ightarrow 39 after returning to the normal condition whenever IGN OFF ightarrowON. - The number is fixed to 39 until the self-diagnosis results are erased if it is over 39. С DTC Reference No DTC is detected. Further testing may be required. D U1000: CAN COMM CIRCUIT LAN-95 U1010: CONTROL UNIT(CAN) LAN-96 Е WRONG DATA B2600: CONFIG ERROR LAN-97 NOT CONFIGURED F Н Κ L LAN Ν Ρ

[CAN GATEWAY]

WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:000000007377815

For connector terminal arrangements, harness layouts, and alphabets in a \bigcirc (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



CAN GATEWAY SYSTEM

2010/05/13

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY < BASIC INSPECTION > [CAN GATEWAY] BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description INFOID:000000007377816	В
BEFORE REPLACEMENT When replacing CAN gateway, save or print current vehicle specification with CONSULT configuration before replacement. NOTE:	С
If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.	D
AFTER REPLACEMENT	
 CAUTION: When replacing CAN gateway, you must perform "WRITE CONFIGURATION" with CONSULT. Complete the procedure of "WRITE CONFIGURATION" in order. If you get incorrect "WRITE CONFIGURATION" in order. 	E
 If you set incorrect WRITE CONFIGURATION, incidents might occur. Configuration is different for each vehicle model. Confirm configuration of each vehicle model. Never perform "WRITE CONFIGURATION" except for new CAN gateway. 	F
Work Procedure	G
1.SAVING VEHICLE SPECIFICATION	9
©CONSULT Configuration Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-94</u> , " <u>Descrip-</u> tion"	Η
NOTE: If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.	
>> GO TO 2.	J
2.REPLACE CAN GATEWAY	
Replace CAN gateway. Refer to LAN-99, "Removal and Installation".	Κ
>> GO TO 3.	
3.WRITING VEHICLE SPECIFICATION	L
CONSULT Configuration Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to <u>LAN-94, "Work Procedure"</u> .	LA
>> WORK END	Ν

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CONFIGURATION (CAN GATEWAY)

< BASIC INSPECTION >

CONFIGURATION (CAN GATEWAY)

Description

INFOID:000000007377818

[CAN GATEWAY]

Vehicle specification needs to be written with CONSULT because it is not written after replacing CAN gateway. Configuration has three functions as follows

Function	Description
READ CONFIGURATION	Reads the vehicle configuration of current CAN gateway.Saves the read vehicle configuration.
WRITE CONFIGURATION - Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

CAUTION:

- When replacing CAN gateway, you must perform "WRITE CONFIGURATION" with CONSULT.
- Complete the procedure of "WRITE CONFIGURATION" in order.
- If you set incorrect "WRITE CONFIGURATION", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform "WRITE CONFIGURATION" except for new CAN gateway.

Work Procedure

INFOID:000000007377819

1.WRITING MODE SELECTION

CONSULT Configuration Select "CONFIGURATION" of CAN gateway.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2.PERFORM "WRITE CONFIGURATION - CONFIG FILE"

(P)CONSULT Configuration

Perform "WRITE CONFIGURATION - Config file".

>> GO TO 4.

3. PERFORM "WRITE CONFIGURATION - MANUAL SELECTION"

CONSULT Configuration

- 1. Select "WRITE CONFIGURATION Manual selection".
- 2. Select "SETTING".
- 3. When "COMMAND FINISHED", select "End".

>> GO TO 4.

4.CHECK "SELF DIAGNOSTIC RESULT"

- 1. Erase all ECU self-diagnosis results using CONSULT.
- 2. Turn the ignition switch OFF.
- 3. Turn the ignition switch ON and wait for 2 seconds or more.
- 4. Perform "All DTC Reading" using CONSULT.
- 5. Check that all ECU self-diagnosis results have no DTC (e.g. U1000 and U1001) of CAN communication.

>> WORK END

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000007377820

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CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart. Refer to <u>LAN-27, "CAN COMMUNICATION SYSTEM : CAN Communica-</u> tion Signal Chart".

DTC Logic

INFOID:000000007377821

INFOID:000000007377822

DTC DETECTION LOGIC

DTC	CONSULT display descrip- tion	DTC Detection Condition	Possible cause	
U1000	CAN COMM CIRCUIT	When CAN gateway cannot communicate CAN communication signal continuously for 2 seconds or more.	CAN communication system	C

Diagnosis Procedure

1.PERFORM SELF DIAGNOSTIC

1. Turn the ignition switch ON and wait for 2 seconds or more.

2. Check "Self Diagnostic Result".

Is "U1000: CAN COMM CIRCUIT" displayed?

- YES >> Refer to LAN-17, "Trouble Diagnosis Flow Chart".
- NO >> Refer to GI-43, "Intermittent Incident".

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U1010 CONTROL UNIT (CAN)

Description

INFOID:000000007377823

[CAN GATEWAY]

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart. Refer to <u>LAN-27, "CAN COMMUNICATION SYSTEM : CAN Communica-</u> tion Signal Chart".

DTC Logic

INFOID:000000007377824

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial di- agnosis for CAN controller of CAN gateway.	CAN gateway

Diagnosis Procedure

INFOID:000000007377825

1.REPLACE CAN GATEWAY

When DTC "U1010: CONTROL UNIT(CAN)" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to <u>LAN-99. "Removal and Installation"</u>.

B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

B2600 CONFIG ERROR

Description

INFOID:000000007377826

INFOID:000000007377828

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[CAN GATEWAY]

The CAN gateway requires initial settings to judge necessary information, according to a vehicle specification.	· E
DTC Logic	7

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Probable cause	[
B2600	CONFIG ERROR WRONG DATA	When errors are detected in the configuration data stored in the CAN gateway.		
B2000	CONFIG ERROR NOT CONFIGURED	When no data are stored in the CAN gateway.	CAN galeway	I

Diagnosis Procedure

1.REPLACE CAN GATEWAY

When DTC "B2600: CONFIG ERROR" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to LAN-99, "Removal and Installation".

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000007377829

[CAN GATEWAY]

1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.
Battery power supply	11
Ignition power supply	3

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connector of CAN gateway.
- 3. Check voltage between CAN gateway harness connector and ground.

	Terminals		Condition	
(+)	(-)		Voltage
CAN g	ateway		Ignition	(Approx.)
Connector	Terminal		switch	
M125	3	Ground	OFF	Battery voltage
WIZ3	9		ON	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between CAN gateway harness connector and ground.

CAN g	ateway		
Connector	Terminal	Ground	Continuity
M125	5	Glound	Existed
101125	11		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

< REMOVAL AND INSTALLATION > [CAN GATEWAY]	
REMOVAL AND INSTALLATION	Δ
CAN GATEWAY	
Removal and Installation	В
CAUTION: Before replacing CAN gateway, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-93, "Description"</u> .	С
 REMOVAL 1. Remove glove box assembly. Refer to <u>IP-14, "Removal and Installation"</u>. 2. Disconnect CAN gateway connector. 	D
3. Remove mounting screw to remove CAN gateway. INSTALLATION Install in the reverse order of removal.	E
Be sure to perform "WRITE CONFIGURATION" when replacing CAN gateway. Refer to <u>LAN-93</u> , <u>"Description"</u> .	F
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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007747737

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E107
- Harness connector M82

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ABS actuator and electric unit (control unit)
- Harness connectors E107 and M82
- 2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E26	41	E107	1	Existed
230	27		6	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Meo	1	MA	6	Existed
IVIOZ	6	- IVI4	14	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT [CAN SYSTEM (TYPE 1)] < DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT А **Diagnosis** Procedure INFOID:000000007747738 **1.**CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Check the following terminals and connectors for damage, bend and loose connection (connector side С and harness side). Harness connector M19 Harness connector B2 D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M19 and B2.

Check the continuity between the data link connector and the harness connector. 2.

 Continuity	Harness connector		Data link connector	
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
 Existed	29	M10	6	N44
 Existed	30	W19	14	1014

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

${\it 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of air levelizer control module.

Check the continuity between the harness connector and the air levelizer control module harness connec-2. tor.

Harness connector		Air levelizer control module harness connector		Continuity	K
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
P2	29	D0/	16	Existed	
BZ	30	D04	7	Existed	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

LAN YES (Past error)>>Error was detected in the main line between the data link connector and the air levelizer control module.

NO >> Repair the main line between the harness connector B2 and the air levelizer control module. F

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000007747739

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Air levelizer control module
- Harness connectors B24 and B460
- 4. Check the continuity between the air levelizer control module harness connector and the harness connector.

Air levelizer control module harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
D0/	16	B24	13	Existed
D04	7	024	12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air levelizer control module and the driver seat control unit.

NO >> Repair the main line between the air levelizer control module and the harness connector B24.

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

ECM BRANCH LINE	ECIRCUIT			
Diagnosis Procedure			INFOID:000000007747745	
1.CHECK CONNECTOR				
 Turn the ignition switch (2) Disconnect the battery of 3. Check the terminals and connector side). 	OFF. able from the negative terr d connectors of the ECM f	ninal. or damage, bend and loose	e connection (unit side and	
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT			
 Disconnect the connector Check the resistance be 	or of ECM. tween the ECM harness co	onnector terminals.		
	ECM harness connector		Resistance (0)	
Connector No.	Connector No. Terminal No.			
E80	146	151	Approx. 108 – 132	
Is the measurement value wYES>> GO TO 3.NO>> Repair the ECM 3. CHECK POWER SUPPLY	ithin the specification? branch line. Y AND GROUND CIRCUIT	-		
Check the power supply and • VK56VD FOR USA AND C • VK56VD FOR MEXICO: <u>E</u>	the ground circuit of the E CANADA: <u>EC-172, "Diagno</u> <u>C-712, "Diagnosis Procedu</u>	CM. Refer to the following. sis Procedure" ire"		
YES (Present error)>>Repl • VK56VD FOR • VK56VD FOR	arce the ECM. Refer to the USA AND CANADA: <u>EC-5</u> MEXICO: EC-1018. "Rem	following. 67, "Removal and Installation"	on"	
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the ECM bracks of the second se	nch line. rcuit.		

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (O)
Connector No.	Terminal No.		(125)Starice (22)
E36	41	27	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

$\mathbf{3}$. Check power supply and ground circuit

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-118, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-142, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

TCM BRANCH LINE	E CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747748	A
1. CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following term nector side). A/T assembly Harness connector F1 	OFF. cable from the negative te ninals and connectors for	erminal. damage, bend and loos	e connection (unit side and con-	С
- Harness connector E7	10			D
YES >> GO TO 2. NO >> Repair the termi	inal and connector.			E
Z.CHECK HARNESS FOR				_
 Disconnect the connect Check the resistance be 	or of A/T assembly. etween the A/T assembly	harness connector termi	nals.	F
	A/T assembly harness connect	tor	Resistance (Ω)	G
Connector No.	Terr	ninal No.	America 54, 00	
F51	3	8	Approx. 54 – 66	Н
 YES >> GO TO 3. NO >> Repair the TCM 3.CHECK HARNESS FOR 1. Remove the joint conne 2. Check the continuity be side of the joint connect 	branch line. OPEN CIRCUIT ctor. Refer to <u>TM-178, "R</u> tween the A/T assembly for.	emoval and Installation". harness connector side a	and the TCM harness connector	J
A/T assembly harness connec	ctor side TCM harnes	ss connector side		1.6
Terminal No.	Terr	ninal No.	Continuity	K
3		3	Existed	
8		8	Existed	L
Is the inspection result norm YES >> GO TO 4. NO >> Replace the join 4.CHECK POWER SUPPL	nal? nt connector. Y AND GROUND CIRCU	ИТ		LAN
Check the power supply and	the ground circuit of the	TCM. Refer to TM-147,	"Diagnosis Procedure".	Ν
Is the inspection result norm	nal?			
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	lace the control valve & T as detected in the TCM b er supply and the ground	CM. Refer to <u>TM-178, "F</u> ranch line. circuit.	Removal and Installation".	0
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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure

INFOID:000000007747749

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-29, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness.
- NO >> Replace parts whose air bag system has a malfunction.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

AV BRANCH LINE (CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000007747751	A
1. CHECK CONNECTOR				В
 Turn the ignition switch 0 Disconnect the battery c Check the following term nector side). AV control unit Harness connector M222 Harness connector M119 	DFF. able from the negative terr ninals and connectors for d 2	ninal. amage, bend and loose co	nnection (unit side and con-	C
Is the inspection result normal YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	al? nal and connector. OPEN CIRCUIT			Е
 Disconnect the connector Check the resistance be 	or of AV control unit. tween the AV control unit h	narness connector terminal	S.	F
	AV control unit harness connector	1	Resistance (Ω)	G
Connector No.	Termir	nal No.		
M210	90	74	Approx. 54 – 66	Н
Is the measurement value willYES>> GO TO 3.NO>> Repair the AV col 3. CHECK POWER SUPPLY	ithin the specification? ontrol unit branch line. Y AND GROUND CIRCUIT	-		I
Check the power supply and Diagnosis Procedure".	the ground circuit of the A	V control unit. Refer to <u>AV-</u>	157, "AV CONTROL UNIT :	J
Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the AV control unit. Re as detected in the AV contr r supply and the ground ci	fer to <u>AV-209, "Removal ar</u> ol unit branch line. rcuit.	nd Installation".	K
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				LA
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< DTC/CIRCUIT DIAGNOSIS >

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747752

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

2. Check the resistance between the BCM harness connector terminals.

	Posistanco (O)		
Connector No.	Termi		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-75, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-82, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.
DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:0000000774775
.CHECK CONNECTOR			
 Turn the ignition switch 0 Disconnect the battery c Check the terminals and (connector side and harr sthe inspection result norms) YES >> GO TO 2. NO >> Repair the terminal 	DFF. able from the negative ter l connectors of the data I ness side). al? nal and connector.	minal. ink connector for damage,	bend and loose connection
heck the resistance betwee	n the data link connector	terminals.	
	Data link connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M4	6	14	Approx. 54 – 66

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747758

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

A/C auto amp. harness connector			Posistanaa (O)
Connector No.	Terminal No.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-105, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-142, "Removal and Installation".

YES (Past error)>>Error was detected in the A/C auto amp. branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE	ECIRCUIT			Λ	
Diagnosis Procedure					
1. CHECK CONNECTOR				В	
 Turn the ignition switch 0 Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi side).	ninal. nation meter for damage,	bend and loose connection	С	
Is the inspection result normYES>> GO TO 2.NO>> Repair the termination2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT			D	
 Disconnect the connect Check the resistance be 	or of combination meter. tween the combination me	ter harness connector term	inals.	E	
Co	mbination meter harness connec	tor	$Resistance\left(\mathbf{O}\right)$	F	
Connector No.	Termir	nal No.			
M34	21	22	Approx. 54 – 66	G	
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL	ithin the specification? bination meter branch line. Y AND GROUND CIRCUIT	-		Н	
Check the power supply and METER : Diagnosis Procedu Is the inspection result norm	d the ground circuit of the o <u>ire"</u> . al?	combination meter. Refer to	D MWI-58, "COMBINATION	Ι	
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the combination meter as detected in the combinater ar supply and the ground ci	. Refer to <u>MWI-79, "Remov</u> tion meter branch line. rcuit.	al and Installation".	J	
				K	
				L	
				A	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747760

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Ste	Posistanco (O)		
Connector No.	Termi		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-52, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

TPMS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

TPMS BRANCH LI	NE CIRCUIT			Δ	
Diagnosis Procedure	Diagnosis Procedure INFOLD.00000007747761				
1.CHECK CONNECTOR					
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the low tire pressure warning control unit for damage, bend and loose connection (unit side and connector side). 					
Is the inspection result norm	<u>nal?</u>				
YES >> GO TO 2.	inal and connector			D	
		in a sector la suit		Е	
 Disconnect the connect Check the resistance be 	or of low tire pressure warn etween the low tire pressure	ang control unit. Warning control unit harne	ess connector terminals.		
Low tire pre	essure warning control unit harnes	s connector	Basistanas (0)	F	
Connector No.	Termir	nal No.	Resistance (12)		
M96	2	1	Approx. 54 – 66	G	
Is the measurement value w	vithin the specification?				
YES >> GO TO 3.	ire pressure warning contro	lunit bronch line			
2 OUTOK DOWED OUDD	ire pressure warning contro	oi unit dranch line. -		Н	
J.CHECK POWER SUPPL	Y AND GROUND CIRCUIT				
Check the power supply an	d the ground circuit of the l	ow tire pressure warning c	ontrol unit. Refer to <u>WT-45,</u>	I	
Is the inspection result norm)al?				
YES (Present error)>>Rep	lace the low tire pressure	warning control unit. Refe	er to WT-59, "Removal and		
Installation".				J	
YES (Past error)>>Error w	as detected in the low tire p ar supply and the ground ci	pressure warning control un	it branch line.		
		roun.		Κ	
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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747762

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E105
- Harness connector M77
- Harness connector M19 (Without ICC system)
- Harness connector B2 (Without ICC system)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Posistanco (O)
Connector No.	Terminal No.		
E13	27 26		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

 ${
m 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-29</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-30, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

ADP BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747763	
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Driver seat control unit 	OFF. cable from the negative terr ninals and connectors for d	minal. lamage, bend and loose co	nnection (unit side and con-	С
 Harness connector B46 Harness connector B24 CAN gateway (With ICC 	0 System)			D
Is the inspection result norm YES (With ICC system)>>0 YES (Without ICC system) NO >> Repair the term 2.CHECK HARNESS CON	<u>al?</u> 30 TO 2. >>GO TO 3. inal and connector. ITINUITY (OPEN CIRCUIT)		E F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.		G
	CAN gateway harness connector	r	Continuity	
Connector No.	Termir	nal No.	Continuity	Н
M125	4	6	Existed	
Is the inspection result norm	al?	12	- Likeloa	
YES >> GO TO 3. NO >> Check the harm <u>38, "System Dia</u>	ess and repair the root cau agram".	use (CAN communication c	ircuit 2 side). Refer to <u>LAN-</u>	J
 Connect the connector of Disconnect the connect Check the resistance be 	of CAN gateway. (With ICC or of driver seat control unit tween the driver seat control er seat control unit barness control	system) t. rol unit harness connector t	erminals.	K
Connector No.	Termir	nal No.	Resistance (Ω)	
B451	1	17	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 4. NO >> Repair the drive 4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	r seat control unit branch li Y AND GROUND CIRCUIT I the ground circuit of the dr <u>s Procedure"</u> . <u>al?</u> lace the driver seat control as detected in the driver se	ne. r iver seat control unit. Refer unit. Refer to <u>ADP-128. "Re</u> eat control unit branch line.	to ADP-60. "DRIVER SEAT emoval and Installation".	N O P
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	al? lace the driver seat control as detected in the driver se or supply and the ground ci	unit. Refer to <u>ADP-128, "Re</u> at control unit branch line. rcuit.	emoval and Installation".	

E-SUS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747765

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air levelizer control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M125	4	6	Existed
WIZ5	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of air levelizer control module.
- 3. Check the resistance between the air levelizer control module harness connector terminals.

Air lev	Posistanaa (O)		
Connector No.	Termi		
B84	16 7		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the air levelizer control module. Refer to <u>SCS-85,</u> "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to SCS-90, "Removal and Installation".

YES (Past error)>>Error was detected in the air levelizer control module branch line.

PWBD BRANCH LI	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000007747767	Ч
1.CHECK CONNECTOR			I	В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Automatic back door co CAN gateway (With ICC Is the inspection result norm YES (With ICC system)>>0 YES (Without ICC system) NO >> Repair the term CHECK HARNESS CON Disconnect the connect Check the continuity be 	OFF. cable from the negative terr ninals and connectors for d ntrol module System) al? GO TO 2. >>GO TO 2. >>GO TO 3. inal and connector. TINUITY (OPEN CIRCUIT) or of CAN gateway. tween the CAN gateway ha	ninal. amage, bend and loose cor) arness connector terminals.	nection (unit side and con-	C D E
	CAN gateway harness connector			C
Connector No. Terminal No.				
	4	6	Existed	
M125	10	12	Existed	Н
YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (With ICC or of automatic back door of etween the automatic back	use (CAN communication cir system) control module. door control module harnes	rcuit 2 side). Refer to <u>LAN-</u> s connector terminals.	I J K
Automatic	back door control module harnes	s connector	Decistance (O)	
Connector No.	Termir	nal No.		L
B26	7	6	Approx. 54 – 66	
Is the measurement value wYES>> GO TO 4.NO>> Repair the auto 4. CHECK POWER SUPPL	rithin the specification? matic back door control mo Y AND GROUND CIRCUIT	dule branch line.	L	
Check the power supply an "AUTOMATIC BACK DOOR	d the ground circuit of the CONTROL UNIT : Diagno	automatic back door control sis Procedure".	module. Refer to <u>DLK-98,</u>	Ν
Is the inspection result norm YES (Present error)>>Rep Installation".	<u>ial?</u> lace the automatic back d	oor control module. Refer t	o DLK-245, "Removal and	С
YES (Past error)>>Error w NO >> Repair the powe	as detected in the automati er supply and the ground ci	c back door control module rcuit.	branch line.	Ρ

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit.
- 4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M4	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
MA	6		Not existed
1014	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

ECM		Resistance (0)
Terminal No.		
146 151		Approx. 108 – 132

3. Check the resistance between the IPDM E/R terminals.

IPDM E/R		- Resistance (Ω)	
Terminal No.			
27	26	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

LAN-118

INFOID:000000007747773

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. С 2. 3. Disconnect one of the unit connectors of CAN communication circuit. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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Revision: 2012 September

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007747780

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E107
- Harness connector M82

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ABS actuator and electric unit (control unit)
- Harness connectors E107 and M82
- 2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E36	41	E107	1	Existed	
	27		6	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

Harness connector Data link connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M82 -	1	MA	6	Existed
	6	- IVI4	14	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

DTC/CIRCUIT DIA	GNOSIS >			
			[CAN	SYSTEM (TYPE 2)]
o ano alla Dra an	TWEEN DLC A	ND ADP CIRCL	ЛТ	
agnosis Proced	Jure			INFOID:00000000774778
CHECK CONNEC	TOR			
Turn the ignition s Disconnect the ba Check the following and harness side Harness connected the inspection result (ES >> GO TO 2 IO >> Repair the CHECK HARNESS Disconnect the hard	witch OFF. attery cable from the ne ng terminals and coni). or M19 or B2 <u>t normal?</u> e terminal and connect S CONTINUITY (OPEN arness connectors M19	egative terminal. nectors for damage, b tor. N CIRCUIT) 9 and B2.	end and loose conne	ection (connector side
Check the continu	ity between the data li	ink connector and the	harness connector.	
Data link		Harness o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M4	13	M19	71	Existed
ES >> GO TO 3 IO >> Repair the CHECK HARNES: Disconnect the ha	main line between th CONTINUITY (OPEN arness connectors B24 uity between the harne	e data link connector a N CIRCUIT) and B460.	and the harness conn	ector M19.
Harpos		Harposs	connector	
1 10111030	connector	Connector No.	Terminal No.	Continuity
Connector No.	Terminal No.			
Connector No.	Terminal No. 71	D24	13	Existed
CHECK HARNESS Disconnect the ha Check the continu Harness	CONTINUITY (OPEN arness connectors B24 uity between the harne	I CIRCUIT) and B460. ss connectors. Harness c	connector Terminal No.	Continuity

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000007747784

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors B460 and B24
- Automatic back door control module
- 4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness	Harness connector		Automatic back door control module harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.		
B24	13	P26	7	Existed	
	12	020	6	Existed	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 2)] MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B239
- Harness connector B63

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Harness connectors B239 and B63
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH harness connector Harness connector		Continuity			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B243 4 3	P220	7	Existed		
	D239	3	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar LH.
- 2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector Side radar LH harness connector		arness connector			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	7	4	Existed	I	
B63	3	D/4	3	Existed	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000007747786

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B2
- Harness connector M19
- Harness connector M23
- Harness connector R1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar LH
- Harness connectors B2 and M19
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B74	4	B2	27	Existed
	3	DZ	28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M23 and R1.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M19	27	MOS	26	Existed	
	28	WZ5	23	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M19 and M23.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of lane camera unit.

2. Check the continuity between the harness connector and the lane camera unit harness connector.

Harness	connector	Lane camera unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D1	26	DQ	4	Existed
	23		8	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the lane camera unit.

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

NO	>> Repair the main line between the harness connector R1 and the lane camera unit.	
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MAIN LINE BETWEEN LANE AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN LANE AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000007747787

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector R1
- Harness connector M23
- Harness connector M77
- Harness connector E105

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors R1 and M23.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
D1	26	29	Existed
	23	28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the lane camera unit and the harness connector R1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M77 and E105.

2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M23	29	M77	22	Existed
WZ3	28		23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M23 and M77.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the continuity between the harness connector and the accelerator pedal actuator harness connector.

Harness	Harness connector Accelerator pedal a		ator harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E105	22	Ecc	5	Existed
E 105	23	E00	4	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the lane camera unit and the accelerator pedal actuator.
- NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000007747788
1. CHECK CONNECTOR			
 Turn the ignition switch (2. Disconnect the battery c Check the terminals and connector side). 	DFF. able from the negative terr d connectors of the ECM f	ninal. or damage, bend and loose	e connection (unit side and
Is the inspection result normal YES >> GO TO 2. NO >> Repair the terminal 2. CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT		
 Disconnect the connector Check the resistance be 	or of ECM. tween the ECM harness co	onnector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
E80	146	151	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL	thin the specification? branch line. Y AND GROUND CIRCUIT		
Check the power supply and • VK56VD FOR USA AND C • VK56VD FOR MEXICO: E	the ground circuit of the E ANADA: <u>EC-172, "Diagno</u> C-712, "Diagnosis Procedu	CM. Refer to the following. sis Procedure" ire"	
Is the inspection result norm	<u>al?</u>		
YES (Present error)>>Repl • VK56VD FOR • VK56VD FOR	ace the ECM. Refer to the USA AND CANADA: <u>EC-5</u> MEXICO: <u>EC-1018, "Rem</u>	following. 67, "Removal and Installati oval and Installation"	on"
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the ECM bra r supply and the ground ci	nch line. rcuit.	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator	and electric unit (control unit) har	ness connector	Resistance (O)
Connector No.	Terminal No.		
E36	41	27	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-118, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-142, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT

TCM BRANCH LIN	E CIRC	UIT				٨
Diagnosis Procedure					INFOID:000000007747791	А
1.CHECK CONNECTOR						В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F1 	OFF. cable from ninals and	the negative tern connectors for da	ninal. amage, bend and	loose con	nection (unit side and con-	C
Is the inspection result norm	al?					
YES >> GO TO 2. NO >> Repair the term 2 CHECK HARNESS FOR	inal and co	onnector.				E
 Disconnect the connect Check the resistance be 	or of A/T a etween the	issembly. A/T assembly ha	rness connector t	terminals.		F
	A/T assemb	ly harness connector			Resistance (Ω)	G
Connector No.		Termin	al No.			
F51		3	8		Approx. 54 – 66	Н
YES >> GO TO 3. NO >> Repair the TCM 3.CHECK HARNESS FOR 1. Remove the joint connect 2. Check the continuity be side of the joint connect	branch lir OPEN CII ctor. Refer tween the or.	ne. RCUIT r to <u>TM-178, "Ren</u> A/T assembly ha	noval and Installat rness connector s	<u>tion"</u> . side and th	ne TCM harness connector	 J
A/T assembly harness connect	ctor side	TCM harness of	connector side			IZ.
Terminal No.		Termin	al No.		Continuity	ĸ
3		3			Existed	
8		8			Existed	L
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nal? nt connecto Y AND GF	or. ROUND CIRCUIT				LAN
Check the power supply and	the grour	nd circuit of the T	CM. Refer to <u>TM-1</u>	147, "Diag	nosis Procedure".	Ν
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	<u>ial?</u> lace the co as detecte er supply a	ontrol valve & TCI d in the TCM brai and the ground cir	M. Refer to <u>TM-17</u> nch line. cuit.	<u>′8, "Remo</u> v	val and Installation".	0
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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747792

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-29, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness.
- NO >> Replace parts whose air bag system has a malfunction.

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

AFS BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747793	~
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals and side and connector side Is the inspection result norm 	OFF. cable from the negative terr d connectors of the AFS co e). nal?	minal. Introl unit for damage, bend	and loose connection (unit	С
YES >> GO TO 2. NO >> Repair the term	inal and connector.			D
2.CHECK HARNESS FOR	OPEN CIRCUIT			_
 Disconnect the connect Check the resistance be 	or of AFS control unit. etween the AFS control unit	t harness connector termina	ls.	E
<i>F</i>	AFS control unit harness connecto	n	Resistance (O)	F
Connector No.	Termir	nal No.		
M135	30	7	Approx. 54 – 66	G
Is the measurement value w YES >> GO TO 3.	<u>vithin the specification?</u>			
NO >> Repair the AFS	control unit branch line.			Н
3. CHECK POWER SUPPL	Y AND GROUND CIRCUIT	F		
Check the power supply an UNIT : Diagnosis Procedure	nd the ground circuit of the	AFS control unit. Refer to	EXL-71, "AFS CONTROL	
Is the inspection result norm	<u>1al?</u> Jaco the AES control unit E	Potor to EXI 110 "Pomoval	and Installation"	
YES (Past error)>>Error w NO >> Repair the powe	as detected in the AFS con er supply and the ground ci	trol unit branch line. rcuit.	and mstanation.	J
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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747794

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M222
- Harness connector M119

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

	AV control unit harness connecto	r	Posistanco (O)
Connector No.	Termi	nal No.	
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to <u>AV-157, "AV CONTROL UNIT :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to AV-209, "Removal and Installation".

YES (Past error)>>Error was detected in the AV control unit branch line.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

Diagnosis Procedure Disconcector R . Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. . Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side). s. the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. . Check the resistance between the BCM harness connector terminals. <u>BCM harness connector</u> Resistance (Ω) <u>M68</u> 39 40 Approx.54 - 66 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the BCM. Refer to <u>BCS-75, "Diagnosis Procedure", sthe inspection result normal?</u> YES (Present error)>> Replace the BCM. Refer to <u>BCS-82, "Removal and Installation".</u>	BCM BRANCH LINE	E CIRCUIT		
. CHECK CONNECTOR . Turn the ignition switch OFF. . Disconnect the battery cable from the negative terminal. . Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side). s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. . Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M68 39 40 Approx.54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT the ower supply and the ground circuit of the BCM. Refer to BCS-75, "Diagnosis Procedure". * the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".	Diagnosis Procedure			INFOID:000000007747795
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side). Sthe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of BCM. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) M68 39 40 Approx. 54 – 66 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-75, "Diagnosis Procedure". Sthe inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".	CHECK CONNECTOR			
sthe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of BCM. Check the resistance between the BCM harness connector terminals. Resistance (Ω) Disconnector No. Terminal No. M68 39 40 Approx. 54 – 66 sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT <	 Turn the ignition switch (Disconnect the battery c Check the terminals and connector side). 	DFF. able from the negative terr I connectors of the BCM f	ninal. or damage, bend and loose	e connection (unit side and
. CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. . Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M68 39 40 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-75, "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".	the inspection result norm YES >> GO TO 2. NO >> Repair the termi	al? nal and connector.		
BCM harness connector Resistance (Ω) Connector No. Terminal No. M68 39 40 Approx. 54 – 66 the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. . .CHECK POWER SUPPLY AND GROUND CIRCUIT . . the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".	CHECK HARNESS FOR Disconnect the connector Check the resistance be	open CIRCUIT or of BCM. tween the BCM barness of	onnector terminals	
Connector No. Terminal No. M68 39 40 Approx. 54 – 66 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. Sthe CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-75, "Diagnosis Procedure". Sthe inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".		BCM harness connector		
M68 39 40 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. NO >> Repair the BCM branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-75, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".	Connector No.	Termir	nal No.	Resistance (Ω)
 <u>s the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-75, "Diagnosis Procedure"</u>. <u>s the inspection result normal?</u> YES (Present error)>>Replace the BCM. Refer to <u>BCS-82, "Removal and Installation"</u>. 	M68	39	40	Approx. 54 – 66
YES (Past error)>>Error was detected in the BCM branch line.	YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL heck the power supply and the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	branch line. Y AND GROUND CIRCUIT the ground circuit of the B al? ace the BCM. Refer to <u>BC</u> as detected in the BCM bra	CM. Refer to <u>BCS-75, "Diador S-82, "Removal and Installa</u> unch line.	<u>gnosis Procedure"</u> . .tion".

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000007747796

[CAN SYSTEM (TYPE 2)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of CAN gateway.

2. Check the resistance between the CAN gateway harness connector terminals.

	CAN gateway harness connecto	r	Resistance (O)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to <u>LAN-38, "System Diagram"</u>.

CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-98</u>, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-99, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to <u>LAN-38, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure			INFOID:00000000747797	A
1.снеск отс				В
Check DTC of the CAN ga	teway with CONSULT.			
Is U1010 or B2600 indicate	ed?			
YES >> Perform a diag NO >> GO TO 2.	nosis of the indicated DTC.			С
$2. {\sf CHECK} \ {\sf CONNECTOR}$				D
 Turn the ignition switch Disconnect the battery Check the following te tion (unit side and con 	OFF. cable from the negative term rminals and connectors of th nector side).	ninal. e CAN gateway for damag	e, bend and loose connec-	E
Is the inspection result nor YES >> GO TO 3. NO >> Repair the terr 3. CHECK HARNESS CO	<u>mal?</u> ninal and connector. NTINUITY (OPEN CIRCUIT)			F
 Disconnect the connect Check the continuity b 	ctor of CAN gateway. etween the CAN gateway ha	rness connector terminals.		G
Connector No.	Termin	al No.	Continuity	
	4	6	Existed	
M125	10	12	Existed	
Is the inspection result nor YES >> GO TO 4. NO >> Repair the CA tem Diagram". 4.CHECK POWER SUPP	<u>mal?</u> N gateway branch line (CAN LY AND GROUND CIRCUIT	communication circuit 2 si	de). Refer to <u>LAN-38, "Sys-</u>	ĸ
Check the power supply an Is the inspection result nor	nd the ground circuit of the C mal?	AN gateway. Refer to <u>LAN-</u>	98, "Diagnosis Procedure".	
YES (Present error)>>Re YES (Past error)>>Error Refer to <u>LAN-3</u> NO >> Repair the pov	place the CAN gateway. Refe was detected in the CAN gat <u>38. "System Diagram"</u> . ver supply and the ground cir	er to <u>LAN-99, "Removal and</u> eway branch line (CAN col cuit.	<u>nstallation"</u> . mmunication circuit 2 side).	LAN
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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000007747799

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the terminals and connectors of the data link connector for damage, bend and loose connection 3. (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		Resistance (O)
Connector No.	Termi	nal No.	
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 1 side). Refer to LAN-38, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-38, NO "System Diagram".

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000007747800

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[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the data link connector for damage, bend and loose connection C (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Basistanaa (O)
Connector No.	Terminal No.		Resistance (52)
M4	13 12		Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-38, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to <u>LAN-38.</u> "System Diagram".

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747801

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

	Posistanco (O)		
Connector No.	Terminal No.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-105, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-142, "Removal and Installation".

YES (Past error)>>Error was detected in the A/C auto amp. branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE	ECIRCUIT			Λ
Diagnosis Procedure				
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. able from the negative terr d connectors of the combi side).	ninal. nation meter for damage,	bend and loose connection	С
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 2.	nal and connector			D
2. CHECK HARNESS FOR	OPEN CIRCUIT			
1. Disconnect the connect	or of combination meter.			Ε
2. Check the resistance be	tween the combination me	ter harness connector term	inals.	
Co	mbination meter harness connec	tor		F
Connector No.	Termir	nal No.	Resistance (Ω)	
M34	21	22	Approx. 54 – 66	G
Is the measurement value w	ithin the specification?			0
YES >> GO TO 3. NO >> Repair the comb	bination meter branch line.			Н
3. CHECK POWER SUPPLY	Y AND GROUND CIRCUIT	-		
Check the power supply and METER : Diagnosis Procedu	d the ground circuit of the o are".	combination meter. Refer to	MWI-58, "COMBINATION	
Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the combination meter as detected in the combina ar supply and the ground ci	: Refer to <u>MWI-79, "Remov</u> tion meter branch line. rcuit.	al and Installation".	J
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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747803

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Ste	Posistanco (O)		
Connector No.	Termi		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-52, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

TPMS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

TPMS BRANCH LINE CIRCUIT				
Diagnosis Procedure				A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery Check the terminals ar loose connection (unit state) 	OFF. cable from the negative term nd connectors of the low tire side and connector side).	ninal. pressure warning control	unit for damage, bend and	С
Is the inspection result normYES>> GO TO 2.NO>> Repair the term	nal? ninal and connector.			D
2.CHECK HARNESS FOR	R OPEN CIRCUIT			
 Disconnect the connect Check the resistance b 	tor of low tire pressure warni etween the low tire pressure	ng control unit. warning control unit harne	ess connector terminals.	
Low tire pro	Low tire pressure warning control unit harness connector			
Connector No.	Connector No. Terminal No.			
M96	2	1	Approx. 54 – 66	G
Is the measurement value wYESYESNO>> Repair the low 3. CHECK POWER SUPPL	<u>Is the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the low tire pressure warning control unit branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT			
Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-45</u> , <u>"Diagnosis Procedure"</u> . Is the inspection result normal?				
YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-59, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.				J
YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line. NO >> Repair the power supply and the ground circuit.				

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747805

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E105
- Harness connector M77
- Harness connector M19 (Without ICC system)
- Harness connector B2 (Without ICC system)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Posistanco (O)
Connector No.	Terminal No.		
E13	27 26		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

 ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-29</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-30, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

ADP BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747806	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery Check the following terr nector side). 	OFF. cable from the negative term ninals and connectors for da	ninal. amage, bend and loose con	nection (unit side and con-	С
 Driver seat control unit Harness connector B46 Harness connector B24 CAN gateway (With ICC) 	0 C system)			D
Is the inspection result norm YES (With ICC system)>> YES (Without ICC system) NO >> Repair the term	<u>≀al?</u> GO TO 2. >>GO TO 3. inal and connector.			E
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)			F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No. Terminal No.			Continuity	Н
M125	4 10	6	Existed	
Is the inspection result norm	nal?			
YES >> GO TO 3. NO >> Check the harn <u>38, "System Dia</u> 3. CHECK HARNESS FOR	ess and repair the root cau agram". OPEN CIRCUIT	se (CAN communication cir	cuit 2 side). Refer to <u>LAN-</u>	J
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway. (With ICC or of driver seat control unit etween the driver seat contro	system) ol unit harness connector te	erminals.	K
Driv	er seat control unit harness conne	ector	Posistance (0)	L
Connector No.	Termin	al No.		
B451	1	17	Approx. 54 – 66	A
Is the measurement value w YES >> GO TO 4. NO >> Repair the drive 4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnostic	vithin the specification? Fr seat control unit branch lin AND GROUND CIRCUIT the ground circuit of the dri S. Procedure"	ne. iver seat control unit. Refer t	O ADP-60, "DRIVER SEAT	N
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	<u>al?</u> lace the driver seat control as detected in the driver seat er supply and the ground cir	unit. Refer to <u>ADP-128, "Re</u> at control unit branch line. [.] cuit.	moval and Installation".	Ρ

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747807

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Pre-crash seat belt control unit (driver side)
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M125	4	6	Existed
WI125	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38, "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of pre-crash seat belt control unit (driver side).
- Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash sea	Posistanco (O)		
Connector No.	Termi		
В9	14	4	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-44, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (LH side). Refer to <u>SB-6, "SEAT BELT</u> <u>RETRACTOR : Removal and Installation"</u>.

YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.
E-SUS BRANCH LI			
Diagnosis Procedure			INF01D:000000007747808
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative terr ninals and connectors for d	ninal. amage, bend and loose (connection (unit side and con-
Air levelizer control mod CAN gateway (With ICC Is the inspection result norm YES (With ICC system)>>>	dule System) aal? GO TO 2		
YES (Without ICC system) NO >> Repair the term	>>GO TO 3. inal and connector.		
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector termina	ls.
	CAN gateway harness connector		Continuity
	.		
Connector No.	Termir	6	Existed
Connector No. M125 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u>	Termir 4 10 nal? ess and repair the root cau	6 12 se (CAN communication	Existed Existed
Connector No. M125 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (With ICC or of air levelizer control mo etween the air levelizer control	6 12 se (CAN communication system) odule. rol module harness conr	Existed Existed
Connector No. M125 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Air lev	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (With ICC or of air levelizer control mo etween the air levelizer control etween the air levelizer control	6 12 se (CAN communication system) odule. crol module harness conr	Existed Existed
Connector No. M125 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be <u>Air lev</u> Connector No.	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (With ICC or of air levelizer control mo etween the air levelizer control etween the air levelizer control termir	6 12 se (CAN communication system) odule. rrol module harness conr	Existed Existed n circuit 2 side). Refer to LAN-
Connector No. M125 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>38. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be <u>Air lev</u> <u>Connector No.</u> <u>B84</u>	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (With ICC or of air levelizer control mo etween the air levelizer control etween the air levelizer control the air levelizer control etween the air levelizer control the air levelizer control module harness cor	6 12 se (CAN communication system) odule. crol module harness conr inector nal No. 7	Existed Existed n circuit 2 side). Refer to LAN- nector terminals. Resistance (Ω) Approx. 54 – 66

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747809

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M125	4	6	Existed	
WITZ5	10	12	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38, "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

ADA	ADAS control unit harness connector			
Connector No.	Terminal No.		Kesisiance (32)	
B61	14	15	Approx. 54 – 66	
he measurement value with	in the enceification?			

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-54, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-55. "Removal and Installation".

YES (Past error)>>Error was detected in the ADAS control unit branch line.

PWBD BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000007747810 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). Automatic back door control module CAN gateway (With ICC system) D Is the inspection result normal? YES (With ICC system)>>GO TO 2. YES (Without ICC system)>>GO TO 3. E >> Repair the terminal and connector. NO 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. 2. CAN gateway harness connector Continuity Terminal No. Connector No. 4 6 Existed M125 Н 10 12 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to LAN-38. "System Diagram". ${f 3}.$ check harness for open circuit 1. Connect the connector of CAN gateway. (With ICC system) Disconnect the connector of automatic back door control module. 2. Check the resistance between the automatic back door control module harness connector terminals. 3. Κ Automatic back door control module harness connector Resistance (Ω) Connector No. Terminal No. B26 7 6 Approx. 54 - 66 Is the measurement value within the specification? LAN YES >> GO TO 4. NO >> Repair the automatic back door control module branch line. ${f 4}$. CHECK POWER SUPPLY AND GROUND CIRCUIT Ν Check the power supply and the ground circuit of the automatic back door control module. Refer to DLK-98, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? C YES (Present error)>>Replace the automatic back door control module. Refer to DLK-245, "Removal and Installation". YES (Past error)>>Error was detected in the automatic back door control module branch line. Ρ NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747811

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar RH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-510</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair the root cause.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

Connector No. Terminal No.	
B243 4 3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-508. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-524, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

RDR-L BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

RDR-L BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000007747812
1.CHECK CONNECTOR			
 Turn the ignition switch (2) Disconnect the battery of 3. Check the terminals and side and connector side Is the inspection result norm 	OFF. cable from the negative terr d connectors of the side r).	minal. adar LH for damage, bend	and loose connection (unit
YES >> GO TO 2.	<u>a:</u>		
2 CHECK HARNESS FOR	NAL AND CONNECTOR.		
 Disconnect the connect Check the resistance be 	or of side radar LH.	arness connector terminals.	
	Side radar LH harness connecto	r	Resistance (0)
Connector No.	Termin	nal No.	
B74	4	3	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the side 3. CHECK POWER SUPPL	<u>ithin the specification?</u> radar LH branch line. Y AND GROUND CIRCUI ⁻	r	
Check the power supply and Diagnosis Procedure".	d the ground circuit of the	side radar LH. Refer to DA	S-507, "SIDE RADAR LH :
Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	al? lace the side radar LH. Ref as detected in the side rada ar supply and the ground ci	er to <u>DAS-524, "Removal a</u> ar LH branch line. rcuit.	nd Installation".
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LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747813

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the lane camera unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.

2. Check the resistance between the lane camera unit harness connector terminals.

L	Lane camera unit harness connector			
Connector No.	Termi			
R8	4	8	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-353</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to <u>DAS-369</u>, "Removal and Installation".

YES (Past error)>>Error was detected in the lane camera unit branch line.

APA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

APA BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747814	~
1.CHECK CONNECTOR				В
 Turn the ignition switch 0 Disconnect the battery of Check the terminals and nection (unit side and content of the section) 	OFF. able from the negative terr d connectors of the accele onnector side).	minal. rator pedal actuator for dar	mage, bend and loose con-	С
Is the inspection result normYES>> GO TO 2.NO>> Repair the termi2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT			D
 Disconnect the connect Check the resistance be 	or of accelerator pedal actu tween the accelerator peda	uator. al actuator harness connect	tor terminals.	E
Accele	erator pedal actuator harness con	nnector	Resistance (Ω)	F
Connector No.	Termir	nal No.		
E66	5	4	Approx. 54 – 66	G
Is the measurement value wYESYESNO>> Repair the accel3.CHECK POWER SUPPLY	ithin the specification? lerator pedal actuator bran Y AND GROUND CIRCUIT	ch line. Г		Н
Check the power supply and ERATOR PEDAL ACTUATO	I the ground circuit of the a	accelerator pedal actuator. F	Refer to <u>DAS-178, "ACCEL-</u>	
YES (Present error)>>Repl TANCE CONTR YES (Past error)>>Error wa	are the accelerator peda OL ASSIST SYSTEM : Re as detected in the accelera	I assembly. Refer to <u>ACC</u> moval and Installation". tor pedal actuator branch lin	C-4, "MODELS WITH DIS- ne.	J
		rouit.		K
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LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747815

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ICC sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

ICC sensor harness connector			Posistance (O)
Connector No.	Terminal No.		
E65	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-152, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-170, "Removal and Installation".

YES (Past error)>>Error was detected in the ICC sensor branch line.

CAN COMMUNICATION CIRCUIT 1

[CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOSI	S >		[CAN SYSTEM (TYPE 2)]
CAN COMMUNICAT	ION CIRCUIT 1		
Diagnosis Procedure			INFOID:00000000774781;
1.CONNECTOR INSPECTIO	ON		
 Turn the ignition switch O Disconnect the battery ca Disconnect all the unit co NOTE: For identification of CAN circuit, refer to LAN-38. "S 	FF. ble from the negative t nnectors on CAN comr communication circuit System Diagram".	erminal. munication circuit 1. 1, CAN communication cir	cuit 2, and ITS communication
Check terminals and conil Is the inspection result normal	nectors for damage, be	and loose connection.	
YES $>>$ GO TO 2. NO $>>$ Repair the termin 2 CHECK HARNESS CONT	al and connector.	۱ IIT)	
Check the continuity between	the data link connecto	r terminals	
Connector No.	Data link connector	rminal No.	Continuity
M4	6	14	Not existed
3.CHECK HARNESS CONT Check the continuity between	INUITY (SHORT CIRC the data link connecto	CUIT) r and the ground.	
Connector No.	Terminal No.		Continuity
M4	6 14	Ground	Not existed Not existed
s the inspection result norma YES >> GO TO 4. NO >> Check the harnes 4.CHECK ECM AND IPDM B	<u>I?</u> ss and repair the root ca E/R TERMINATION CIF	ause. RCUIT	
 Remove the ECM and the Check the resistance betw 	e IPDM E/R. ween the ECM termina	ls.	
	ECM		Resistance (Ω)
Te	erminal No.		Approx 109 122
3. Check the resistance bet	ween the IPDM E/R ter	rminals.	Αμμιύχ. 100 - 132
I	PDM E/R		Resistance (Ω)
27			Approx. 108 – 132
Is the measurement value wit	hin the specification?		
YES >> GO TO 5. NO >> Replace the ECM	and/or the IPDM E/R.		

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 1. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

CAN COMMUNICATION CIRCUIT 2

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 2)]
CAN COMMUNICA	TION CIRCUIT 2		
Diagnosis Procedure			INFOID:0000000077478:
1.CONNECTOR INSPECT	ION		
 Turn the ignition switch (2. Disconnect the battery of 3. Disconnect all the unit c NOTE: For identification of CAN circuit, refer to LAN-38 	OFF. able from the negative terr onnectors on CAN commu I communication circuit 1, "System Diagram"	minal. nication circuit 2. CAN communication circ	cuit 2, and ITS communicatior
 Check terminals and cor 	nnectors for damage, bend	I and loose connection.	
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS CON	TINUITY (SHORT CIRCUI	Т)	
Check the continuity betwee	n the data link connector te	erminals.	
Connector No	Data link connector	nal No	Continuity
M4	13	12	Not existed
s the inspection result norm	al?	· <u> </u>	
3. CHECK HARNESS CON Check the continuity betwee	TINUITY (SHORT CIRCUI n the data link connector a	T) nd the ground.	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	
M4	13		Not existed
	12		Not existed
YES >> GO TO 4. NO >> Check the harne 1. CHECK CAN GATEWAY 1. Remove the CAN gatew 2. Check the resistance be	ess and repair the root caus TERMINATION CIRCUIT vay. etween the CAN gateway te	se. erminals.	
C	CAN gateway		
	Ferminal No.		Resistance (Ω)
4	10		Approx. 108 – 132
6	12		Approx. 108 – 132
s the measurement value w YES >> GO TO 5. NO >> Replace the CA D.CHECK SYMPTOM	ithin the specification? N gateway.		
Connect all the connectors. customer)" are reproduced. Inspection result Reproduced>>GO TO 6.	Check if the symptoms de	escribed in the "Sympton	n (Results from interview with

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 2)]

TS COMMUNI	SATION CIRCL			
Diagnosis Proced	lure			INFOID:00000000774781
1. CHECK CAN DIAG	NOSIS			
Check the CAN diagnormunication circuit 2 ha	osis results from CON	SULT to see that the	CAN communication	circuit 1 and CAN com-
For identification of C/ cuit, refer to <u>LAN-38, "</u>	AN communication cir System Diagram ["] .	cuit 1, CAN commun	ication circuit 2, and	ITS communication cir-
<u>Are the CAN communi</u> YES >> GO TO 2.	cation 1 and CAN cor	mmunication 2 circuits	s normal?	
NO >> Check and	ל repair CAN commun	nication circuit 1 and/o	or CAN communication	n circuit 2.
1. Turn the ignition s	witch OFF.			
 Disconnect the ba Check the followir nector side). ADAS control unit 	ttery cable from the ne ig terminals and conne	egative terminal. ectors for damage, be	end and loose connec	tion (unit side and con-
 Harness connector Harness connector 	ır B63 ır B239			
s the inspection result YES >> GO TO 3.	<u>: normal?</u> e terminal and connect	tor.		
NO >> Repair the				
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol	CONTINUITY (OPEN	N CIRCUIT)		
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit	CONTINUITY (OPEN lowing harness conne ity between the ADAS	N CIRCUIT) ectors. S control unit harness ICC sensor ha	connector and the IC	C sensor harness con
NO >> Repair the CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	CONTINUITY (OPEN lowing harness conne lity between the ADAS harness connector Terminal No.	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No.	connector and the IC rness connector Terminal No.	C sensor harness con-
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B61	CONTINUITY (OPEN lowing harness conne lity between the ADAS harness connector Terminal No. 7 8	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No. E65	connector and the IC mess connector Terminal No. 3 6	C sensor harness con- Continuity Existed Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the foll ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B61 <u>s the inspection result</u> YES >> GO TO 4. NO >> Repair the <u>"System E</u> 4.CHECK HARNESS	S CONTINUITY (OPEN lowing harness conne lity between the ADAS harness connector Terminal No. 7 8 t normal? ADAS control unit I <u>hagram</u> ".	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No. E65 branch line. (ITS cor RT CIRCUIT)	connector and the IC rness connector Terminal No. 3 6 nmunication circuit s	C sensor harness con- Continuity Existed Existed ide). Refer to LAN-38
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continumetror. ADAS control unit Connector No. B61 Sthe inspection result YES >> GO TO 4. NO >> Repair the "System Description of the following of the f	S CONTINUITY (OPEN lowing harness conne lity between the ADAS harness connector Terminal No. 7 8 t normal? ADAS control unit I Diagram". CONTINUITY (SHOP lowing harness conne actuator ity between the ADAS	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No. E65 branch line. (ITS cor RT CIRCUIT) ectors.	connector and the IC rness connector Terminal No. 3 6 nmunication circuit s	C sensor harness con- Continuity Existed Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continumetric ADAS control unit Connector No. B61 Sthe inspection result YES >> GO TO 4. NO >> Repair the "System Description of the fol Side radar RH Side radar LH Lane camera unit Accelerator pedal 2. Check the continu	CONTINUITY (OPEN lowing harness conne lity between the ADAS harness connector Terminal No. 7 8 1 normal? ADAS control unit I Diagram". CONTINUITY (SHOP lowing harness conne actuator ity between the ADAS	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No. E65 branch line. (ITS cor RT CIRCUIT) ectors. S control unit harness	connector and the IC rness connector Terminal No. 3 6 nmunication circuit s connector terminals.	C sensor harness con- Continuity Existed Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B61 s the inspection result YES >> GO TO 4. NO >> Repair the "System E 4.CHECK HARNESS 1. Disconnect the fol Side radar RH Side radar RH Side radar LH Lane camera unit Accelerator pedal 2. Check the continu	CONTINUITY (OPEN lowing harness conner ity between the ADAS harness connector Terminal No. 7 8 t normal? ADAS control unit har ity between the ADAS ADAS control unit har	N CIRCUIT) ectors. S control unit harness ICC sensor ha Connector No. E65 branch line. (ITS cor RT CIRCUIT) ectors. S control unit harness rness connector Terminal No.	connector and the IC rness connector Terminal No. 3 6 nmunication circuit s connector terminals.	C sensor harness con- Continuity Existed Existed ide). Refer to LAN-38

Revision: 2012 September

>> Check the harness and repair the root cause.

NO

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

ADAS control unit	ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	- Ground	Continuity
P61	7		Not existed
BOT	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair the root cause.

6. CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

ADAS co	– Resistance (Ω)	
Terminal No.		
7 8		Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		- Resistance (Ω)	
Terminal No.			
3 6		Approx. 108 – 132	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

7.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 8.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of ITS communication circuit. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

<pre>> DTC/CIRCUIT DIAC</pre>		212		
MAIN LINE BET			лт	
Diagnosis Proced				INIEOID-00000002747820
1				1141 OL2.00000000 141020
2. Disconnect the ba	ttery cable from the n	egative terminal.		
 Check the followir and harness side). Harness connecto Harness connecto 	ig terminals and coni r E107 r M82	nectors for damage, t	end and loose conn	ection (connector side
Is the inspection result	<u>normal?</u>			
YES >> GO TO 2. NO >> Repair the	terminal and connec	tor.		
2. CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
1. Disconnect the foll	owing harness conne	ctors.		
 Harness connecto Check the continu harness connector 	rs E107 and M82 ity between the ABS	actuator and electric u	init (control unit) harn	ess connector and the
ABS actuator and ele	ctric unit (control unit)	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E36	41	E107	1	Existed
E30	27	2107	6	Existed
s the inspection result YES >> GO TO 3. NO >> Repair the	normal? main line between t	he ABS actuator and	electric unit (control	unit) and the harness
3.CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
Check the continuity be	etween the harness c	onnector and the data	link connector.	
Harness	connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M82	1	M4	6	Existed
	6		14	Existed
the increation result				

MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND E-SUS CIRCUIT

Diagnosis Procedure

INFOID:000000007747821

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M19
- Harness connector B2

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M19 and B2.

2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
N44	6	M10	29	Existed
1014	14	10119	30	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of air levelizer control module.
- 2. Check the continuity between the harness connector and the air levelizer control module harness connector.

Harness	connector	Air levelizer control mo	Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
PO	29	D0/	16	Existed	
DZ	30	D04	7	Existed	

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the air levelizer control module.

NO >> Repair the main line between the harness connector B2 and the air levelizer control module.

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN E-SUS AND ADP CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Air levelizer control module
- Harness connectors B24 and B460
- Check the continuity between the air levelizer control module harness connector and the harness connector tor.

Air levelizer control module harness connector		Harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
D04	16	P24	13	Existed	
D04	7	D24	12	Existed	1

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air levelizer control module and the driver seat control unit.

NO >> Repair the main line between the air levelizer control module and the harness connector B24.

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[CAN SYSTEM (TYPE 3)]

INFOID:000000007747822

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С

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747828

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Posistanco (O)
Connector No.	Termi		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VK56VD FOR USA AND CANADA: <u>EC-172</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-712</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VK56VD FOR USA AND CANADA: EC-567. "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1018</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the ECM branch line.
- NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

4WD BRANCH LINE CIRCUIT		Λ
Diagnosis Procedure	INFOID:000000007747829	A
1.CHECK CONNECTOR		В
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the transfer control unit for damage, be (unit side and connector side). 	end and loose connection	С
<u>Is the inspection result normal?</u>		D
NO >> Repair the terminal and connector.		D
2.CHECK HARNESS FOR OPEN CIRCUIT		_
 Disconnect the connector of transfer control unit. Check the resistance between the transfer control unit harness connector termin 	nals.	
Transfor control unit barness connector		F
Connector No. Terminal No.	Resistance (Ω)	
E59 12 13	Approx. 54 – 66	G
Is the measurement value within the specification?		G
YES >> GO TO 3.		
3. CHECK POWER SUPPLY AND GROUND CIRCUIT		Η
Check the power supply and the ground circuit of the transfer control unit. Refer to <u>dure</u> ".	DLN-91, "Diagnosis Proce-	I
Is the inspection result normal?		
YES (Present error)>>Replace the transfer control unit. Refer to <u>DLN-106</u> , " <u>Remov</u> YES (Past error)>>Error was detected in the transfer control unit branch line. NO >> Repair the power supply and the ground circuit.	al and Installation".	J
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (O)
Connector No.	Termi		
E36	41 27		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-118, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-142, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT

TCM BRANCH LINI	E CIRCUI	Т			٨
Diagnosis Procedure				INFOID:000000007747831	A
1. CHECK CONNECTOR					В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F1 	OFF. cable from the ninals and co	e negative terminal. nnectors for damage, benc	d and loose con	nection (unit side and con-	C
 Harness connector E7 Is the inspection result norm 	al?				
YES >> GO TO 2. NO >> Repair the term	inal and conn	ector.			E
Z.CHECK HARNESS FOR		UIT			_
 Disconnect the connect Check the resistance be 	or of A/T asse etween the A/ ⁻	embly. T assembly harness conne	ector terminals.		F
	A/T assembly ha	arness connector		Resistance (O)	G
Connector No.		Terminal No.			
F51	:	3	8	Approx. 54 – 66	Ц
YES >> GO TO 3. NO >> Repair the TCM 3.CHECK HARNESS FOR 1. Remove the joint conne 2. Check the continuity be side of the joint connect	branch line. OPEN CIRC ctor. Refer to tween the A/T or.	UIT <u>TM-178, "Removal and In</u> assembly harness conne	<u>stallation"</u> . ector side and th	ne TCM harness connector	l
A/T assembly harness connect	tor side	TCM harness connector side			LZ.
Terminal No.		Terminal No.		Continuity	ĸ
3		3		Existed	
8		8		Existed	L
Is the inspection result normYES>> GO TO 4.NO>> Replace the join 4. CHECK POWER SUPPL	<u>ial?</u> it connector. Y AND GROL	JND CIRCUIT			LAN
Check the power supply and	the ground c	circuit of the TCM. Refer to	<u>TM-147, "Diag</u>	nosis Procedure".	Ν
Is the inspection result norm	al?		-		
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the contr as detected in er supply and	ol valve & TCM. Refer to the TCM branch line. the ground circuit.	<u> [M-178, "Remo</u>	val and Installation".	0
					Ρ

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure

INFOID:000000007747832

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-29, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness.
- NO >> Replace parts whose air bag system has a malfunction.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

AV BRANCH LINE (CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747834	~
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following term nector side). AV control unit Harness connector M22 	OFF. able from the negative terr ninals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-	С
- Harness connector M11	9			D
YES >> GO TO 2. NO >> Repair the termi	nal and connector.			Е
 2.CHECK HARNESS FOR 1. Disconnect the connect 2. Check the resistance be 	OPEN CIRCUIT	narness connector terminals		F
	AV control unit harness connecto	r	Resistance (Ω)	G
Connector No.	Termir	nal No.		
M210	90	74	Approx. 54 – 66	н
Is the measurement value wYES>> GO TO 3.NO>> Repair the AV colspan="2">NO 3. CHECK POWER SUPPL	<u>ithin the specification?</u> ontrol unit branch line. Y AND GROUND CIRCUIT	г		
Check the power supply and Diagnosis Procedure".	I the ground circuit of the A	V control unit. Refer to <u>AV-</u>	157, "AV CONTROL UNIT :	J
Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	al? ace the AV control unit. Re as detected in the AV contr or supply and the ground ci	efer to <u>AV-209, "Removal an</u> ol unit branch line. rcuit.	d Installation".	K
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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747835

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Posistanco (O)
Connector No.	Termi		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-75, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			
			INFOID:00000000774783
1 .CHECK CONNECTOR			
 Turn the ignition switch 0 Disconnect the battery c Check the terminals and (connector side and hard s the inspection result normation) YES >> GO TO 2. 	DFF. able from the negative tend d connectors of the data ness side). al?	rminal. link connector for damage	e, bend and loose connectior
NO >> Repair the termin	nal and connector.		
LICHECK HARNESS FOR	open CIRCUIT	terminals	
		terminais.	
Connector No	Data link connector	inal No	Resistance (Ω)
M4	6	14	Approx. 54 – 66
s the measurement value w	thin the specification?		

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747841

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

A/C auto amp. harness connector			Posistance (O)
Connector No.	Terminal No.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-105, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-142, "Removal and Installation".

YES (Past error)>>Error was detected in the A/C auto amp. branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

M&A BRANCH LINE	ECIRCUIT			Λ
Diagnosis Procedure			INFOID:000000007747842	A
1.CHECK CONNECTOR				В
 Turn the ignition switch of 2. Disconnect the battery of 3. Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi side).	ninal. nation meter for damage, I	bend and loose connection	С
Is the inspection result norm	<u>al?</u>			
NO >> Repair the termi	nal and connector.			D
2. Check harness for	OPEN CIRCUIT			_
 Disconnect the connect Check the resistance be 	or of combination meter. tween the combination me	ter harness connector term	inals.	E
Cc	mbination meter harness connec	tor		F
Connector No.	Termir	nal No.	Resistance (Ω)	
M34	21	22	Approx. 54 – 66	G
Is the measurement value w	ithin the specification?			
NO >> Repair the comb 3.CHECK POWER SUPPL	bination meter branch line. Y AND GROUND CIRCUIT			Н
Check the power supply and METER : Diagnosis Procedu	d the ground circuit of the our	combination meter. Refer to	MWI-58, "COMBINATION	
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the combination meter as detected in the combina er supply and the ground ci	. Refer to <u>MWI-79, "Remov</u> tion meter branch line. rcuit.	al and Installation".	J
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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747843

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Posistanco (O)
Connector No.	Terminal No.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-52, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

TPMS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

TPMS BRANCH LIN	NE CIRCUIT			Δ	
Diagnosis Procedure		INFOID:000000007747844	~		
1. CHECK CONNECTOR	1.CHECK CONNECTOR				
 Turn the ignition switch Disconnect the battery of Check the terminals an loose connection (unit state) 	OFF. cable from the negative terr d connectors of the low tire ide and connector side).	ninal. e pressure warning control	unit for damage, bend and	С	
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	ial? inal and connector.			D	
 CHECK HARNESS FOR Disconnect the connect Check the resistance be 	OPEN CIRCUIT or of low tire pressure warn	ing control unit.	ess connector terminals	Е	
				_	
Low tire pressure warning control unit harness connector			Resistance (Ω)	F	
	lermir 2	1 1	Approx 54 - 66		
Is the measurement value w	/ithin the specification?	I	Approx. 34 – 00	G	
YES >> GO TO 3. NO >> Repair the low t 3. CHECK POWER SUPPL	ire pressure warning contro	ol unit branch line.		Н	
Check the power supply an "Diagnosis Procedure".	d the ground circuit of the I	ow tire pressure warning c	control unit. Refer to <u>WT-45,</u>	I	
YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-59</u> , " <u>Removal and</u> <u>Installation</u> ".					
NO >> Repair the powe	as detected in the low tire p er supply and the ground ci	rcuit.	iit dranch line.	K	
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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747845

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E105
- Harness connector M77
- Harness connector M19 (Without ICC system)
- Harness connector B2 (Without ICC system)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Posistanco (O)
Connector No.	Terminal No.		
E13	27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

 ${
m 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-29</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-30, "Removal and Installation".

- YES (Past error)>>Error was detected in the IPDM E/R branch line.
- NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747846	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose cor	nnection (unit side and con-	С
 Driver seat control unit Harness connector B46 Harness connector B24 CAN gateway (With ICC 	0 S system)			D
Is the inspection result norm YES (With ICC system)>>0 YES (Without ICC system) NO >> Repair the term	<u>al?</u> GO TO 2. >>GO TO 3. inal and connector.			E
Z.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)			1
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No.	Termin	al No.	Continuity	Н
M125	4	6	Existed	
	10	12	Existed	1
YES >> GO TO 3. NO >> Check the harn <u>38, "System Dia</u> 3. CHECK HARNESS FOR	ess and repair the root cau agram". OPEN CIRCUIT	se (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>	J
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway. (With ICC or of driver seat control unit etween the driver seat contr	system) ol unit harness connector te	erminals.	K
Driv	er seat control unit harness conne	ector	Posistanco (O)	L
Connector No.	Termin	al No.		
B451	1	17	Approx. 54 – 66	LA
YES >> GO TO 4. NO >> Repair the drive 4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	r seat control unit branch lin Y AND GROUND CIRCUIT I the ground circuit of the dri <u>s Procedure</u> ". hal? lace the driver seat control as detected in the driver seat	ne. Ver seat control unit. Refer unit. Refer to <u>ADP-128, "Re</u> at control unit branch line.	to ADP-60, "DRIVER SEAT	N O P
NO >> Repair the powe	er supply and the ground cir	cuit.		

E-SUS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747848

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air levelizer control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M125	4	6	Existed
WIZ5	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u><u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of air levelizer control module.
- 3. Check the resistance between the air levelizer control module harness connector terminals.

Air lev	Air levelizer control module harness connector		
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the air levelizer control module. Refer to <u>SCS-85,</u> "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to SCS-90, "Removal and Installation".

YES (Past error)>>Error was detected in the air levelizer control module branch line.

PWBD BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000007747850 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). Automatic back door control module CAN gateway (With ICC system) D Is the inspection result normal? YES (With ICC system)>>GO TO 2. YES (Without ICC system)>>GO TO 3. E >> Repair the terminal and connector. NO 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. 2. CAN gateway harness connector Continuity Terminal No. Connector No. 4 6 Existed M125 Н 10 12 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to LAN-38. "System Diagram". ${f 3}.$ check harness for open circuit 1. Connect the connector of CAN gateway. (With ICC system) Disconnect the connector of automatic back door control module. 2. Check the resistance between the automatic back door control module harness connector terminals. 3. Κ Automatic back door control module harness connector Resistance (Ω) Connector No. Terminal No. B26 7 6 Approx. 54 - 66 Is the measurement value within the specification? LAN YES >> GO TO 4. NO >> Repair the automatic back door control module branch line. ${f 4}$. CHECK POWER SUPPLY AND GROUND CIRCUIT Ν Check the power supply and the ground circuit of the automatic back door control module. Refer to DLK-98, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? C YES (Present error)>>Replace the automatic back door control module. Refer to DLK-245, "Removal and Installation". YES (Past error)>>Error was detected in the automatic back door control module branch line. Ρ NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit.
- 4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
M4	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground Not exis	Continuity
M4	6		Not existed
1014	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

ECM		- Resistance (Ω)	
Terminal No.			
146	151	Approx. 108 – 132	

3. Check the resistance between the IPDM E/R terminals.

IPDM E/R		Resistance (Ω)	
Terminal No.			
27	26	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

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INFOID:000000007747856

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. 1. Disconnect the battery cable from the negative terminal. С 2. 3. Disconnect one of the unit connectors of CAN communication circuit. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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Revision: 2012 September

LAN-179

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007747864

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E107
- Harness connector M82

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ABS actuator and electric unit (control unit)
- Harness connectors E107 and M82
- 2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E26	41	E107	1	Existed
E30 -	27		6	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M82	1	M4	6	Existed
	6		14	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.
		WELLIN DEC ANL		
DTC/CIRCUIT DIA	GNOSIS >		[CAN	SYSTEM (TYPE 4)]
IAIN LINE BE	TWEEN DLC AI	ND ADP CIRCL	ЛТ	
iagnosis Procec	lure			INFOID:00000000774786
.CHECK CONNEC	TOR			
 Turn the ignition s Disconnect the ba Check the followi and harness side) Harness connector Harness connector Harness connector Harness connector CHECK HARNESS Disconnect the ha 	witch OFF. attery cable from the ne ng terminals and con or M19 or B2 <u>t normal?</u> e terminal and connect S CONTINUITY (OPEN arness connectors M19	egative terminal. hectors for damage, b for. N CIRCUIT) and B2.	pend and loose conn	ection (connector side
Check the continu	ity between the data li	nk connector and the	harness connector.	
Data link		Harness connector Con		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
			74	E viete d
M4	13 12 t normal?	M19	71 72	Existed Existed
M4 <u>the inspection resul</u> YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	t normal? e main line between th S CONTINUITY (OPEN arness connectors B24 uity between the harne	M19 e data link connector a I CIRCUIT) and B460. ss connectors.	71 72 and the harness conr	Existed Existed
M4 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Hamess	13 12 t normal? e main line between th S CONTINUITY (OPEN arness connectors B24 uity between the harne	M19 e data link connector a I CIRCUIT) and B460. ss connectors. Harness o	71 72 and the harness conr	Existed Existed
M4 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No.	13 12 t normal? e main line between th S CONTINUITY (OPEN arness connectors B24 uity between the harne connector Terminal No.	M19 e data link connector a N CIRCUIT) and B460. ss connectors. Harness o Connector No.	71 72 and the harness conr connector Terminal No.	Existed Existed nector M19. Continuity
M4 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. B2	13 12 t normal? e main line between th S CONTINUITY (OPEN arness connectors B24 uity between the harne connector Terminal No. 71	M19 e data link connector a N CIRCUIT) • and B460. ss connectors. Harness o Connector No.	71 72 and the harness conr connector Terminal No. 13	Existed Existed nector M19. Continuity Existed
M4 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. B2	13 12 t normal? e main line between th S CONTINUITY (OPEN arness connectors B24 aity between the harne connector Terminal No. 71	M19 e data link connector a N CIRCUIT) and B460. ss connectors. Harness o Connector No. B24	71 72 and the harness conr connector Terminal No. 13	Existed Existed nector M19. Continuity Existed

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000007747868

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors B460 and B24
- Automatic back door control module
- 4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness	Harness connector		Automatic back door control module harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		
R24	13	P26	7	Existed
D24	12	020	6	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)] MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT Diagnosis Procedure INFOL:00000007747865

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B239
- Harness connector B63

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar RH
- Harness connectors B239 and B63
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH I	narness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
P242	4	P220	7	Existed	
D243	3	D239	3	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar LH.
- 2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness	connector	Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
DC2	7	D74	4	Existed
B03	3	B74	3	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000007747870

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B2
- Harness connector M19
- Harness connector M23
- Harness connector R1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar LH
- Harness connectors B2 and M19
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH h	Side radar LH harness connector		connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
R74	4	PO	27	Existed	
6/4	3	- DZ	28	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M23 and R1.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M19	27	MOO	26	Existed	
	28	WZ5	23	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M19 and M23.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of lane camera unit.

2. Check the continuity between the harness connector and the lane camera unit harness connector.

Harness	connector	Lane camera unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D1	26	P8	4	Existed
	23		8	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the lane camera unit.

MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

NO >> Repair the main line between the harness connector R1 and the lane camera unit.

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MAIN LINE BETWEEN LANE AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN LANE AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000007747871

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector R1
- Harness connector M23
- Harness connector M77
- Harness connector E105

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors R1 and M23.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
R1 -	26	29	Existed
	23	28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the lane camera unit and the harness connector R1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M77 and E105.

2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M23	29	1477	22	Existed	
WZ3	28		23	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M23 and M77.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the continuity between the harness connector and the accelerator pedal actuator harness connector.

Harness	Harness connector		Accelerator pedal actuator harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E105	22	E66	5	Existed
E105	23	E00	4	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the lane camera unit and the accelerator pedal actuator.
- NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

ECM BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:000000007747872
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and connector side). 	OFF. cable from the negative terr d connectors of the ECM f	ninal. or damage, bend and loose	e connection (unit side and
Is the inspection result normYES>> GO TO 2.NO>> Repair the termination2.CHECK HARNESS FOR	al? nal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of ECM. Stween the ECM harness co	onnector terminals.	
	ECM harness connector		$Resistance\left(\Omega\right)$
Connector No.	Termir	al No.	
E80	146	151	Approx. 108 – 132
Is the measurement value wYESYESNO>> Repair the ECM3.CHECK POWER SUPPL	ithin the specification? branch line. Y AND GROUND CIRCUIT	-	
Check the power supply and • VK56VD FOR USA AND C • VK56VD FOR MEXICO: E Is the inspection result norm	I the ground circuit of the E CANADA: <u>EC-172, "Diagno</u> <u>C-712, "Diagnosis Procedu</u> al?	CM. Refer to the following. sis Procedure" ire"	
YES (Present error)>>Rep • VK56VD FOR • VK56VD FOR	lace the ECM. Refer to the USA AND CANADA: <u>EC-5</u> MEXICO: <u>EC-1018, "Rem</u>	following. 67, "Removal and Installation oval and Installation"	on"
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the ECM bra ar supply and the ground ci	nch line. rcuit.	

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< DTC/CIRCUIT DIAGNOSIS >

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747873

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the transfer control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of transfer control unit.
- 2. Check the resistance between the transfer control unit harness connector terminals.

Tra	Resistance (O)		
Connector No.	Termi		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the transfer control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the transfer control unit. Refer to <u>DLN-91, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the transfer control unit. Refer to DLN-106, "Removal and Installation".

YES (Past error)>>Error was detected in the transfer control unit branch line.

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE	E CIRCUIT			Δ		
Diagnosis Procedure	Diagnosis Procedure					
1. CHECK CONNECTOR				В		
 Turn the ignition switch Disconnect the battery of Check the terminals and and loose connection (upper connection) 	OFF. cable from the negative terr d connectors of the ABS ac nit side and connector side	ninal. stuator and electric unit (cor s).	ntrol unit) for damage, bend	С		
Is the inspection result norm	<u>al?</u>					
NO >> Repair the term	nal and connector.			D		
2. CHECK HARNESS FOR	OPEN CIRCUIT			_		
 Disconnect the connect Check the resistance be nals. 	or of ABS actuator and elected environment of ABS actuator a between the ABS actuator a	stric unit (control unit). nd electric unit (control uni	t) harness connector termi-	F		
ABS actuator a	and electric unit (control unit) harr	ness connector	Resistance (O)			
Connector No.	Termir	nal No.		0		
E36	41	27	Approx. 54 – 66	G		
YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-118. "Diagnosis Proceed Is the inspection result norm YES (Present error)>>Rep and Installation"	actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the <u>dure"</u> . <u>al?</u> ace the ABS actuator and	control unit) branch line. - ABS actuator and electric electric unit (control unit). R	unit (control unit). Refer to efer to <u>BRC-142, "Removal</u>	H I J		
YES (Past error)>>Error wants NO >> Repair the powe	as detected in the ABS actu or supply and the ground ci	uator and electric unit (conti rcuit	rol unit) branch line.			
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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747875

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F1
- Harness connector E7

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/T assembly.
- 2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector			Posistanco (O)
Connector No.	Terminal No.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Remove the joint connector. Refer to TM-178, "Removal and Installation".
- Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity	
Terminal No.	Terminal No.		
3	3	Existed	
8	8	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-147</u>. "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-178, "Removal and Installation".

YES (Past error)>>Error was detected in the TCM branch line.

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000007747876 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-29, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747877

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

2. Check the resistance between the AFS control unit harness connector terminals.

AFS control unit harness connector			Posistanco (O)
Connector No.	Termi		
M135	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-71, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-119, "Removal and Installation".

YES (Past error)>>Error was detected in the AFS control unit branch line.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

AV BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INF01D:000000007747878	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). AV control unit 	OFF. cable from the negative terr ninals and connectors for d	ninal. lamage, bend and loose co	nnection (unit side and con-	С
 Harness connector M22 Harness connector M11 	9			D
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2.CHECK HARNESS FOR	<u>⊧al?</u> inal and connector. OPEN CIRCUIT			E
 Disconnect the connect Check the resistance be 	or of AV control unit. Stween the AV control unit h	narness connector terminals	5.	F
	AV control unit harness connecto	r	Resistance (O)	G
Connector No.	Termir	nal No.		
M210	90	74	Approx. 54 – 66	Ц
Is the measurement value w YES >> GO TO 3. NO >> Repair the AV c 3.CHECK POWER SUPPL	<u>ithin the specification?</u> ontrol unit branch line. Y AND GROUND CIRCUIT	r		Γ
Check the power supply and Diagnosis Procedure".	the ground circuit of the A	V control unit. Refer to <u>AV-</u>	157, "AV CONTROL UNIT :	J
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the AV control unit. Re as detected in the AV contr er supply and the ground ci	efer to <u>AV-209, "Removal ar</u> ol unit branch line. rcuit.	nd Installation".	K
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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747879

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Posistanco (O)
Connector No.	Termi		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-75, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-82, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure	,		INFOID:000000007747880	A
1.снеск отс				В
Check DTC of the CAN gate	way with CONSULT.			
Is U1010 or B2600 indicated	<u> ?</u>			
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.			С
2.CHECK CONNECTOR				D
1. Turn the ignition switch	OFF.			D
 Disconnect the battery of 3. Check the terminals an side and connector side 	able from the negative tern d connectors of the CAN g).	ninal. Jateway for damage, bend	and loose connection (unit	Е
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 3.				F
3 OUTOK LADNEGO FOD	nai and connector.			
J.CHECK HARNESS FOR				
 Disconnect the connect Check the resistance be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.		G
	CAN gateway harness connector			Н
Connector No.	Termin	al No.	Resistance (Ω)	
M125	1	7	Approx. 54 – 66	
Is the measurement value w	ithin the specification?			I
YES >> GO TO 4. NO >> Repair the CAN tem Diagram".	gateway branch line (CAN	communication circuit 1 sid	de). Refer to <u>LAN-38, "Sys-</u>	J
4. CHECK POWER SUPPL	Y AND GROUND CIRCUIT			
Check the power supply and Is the inspection result norm	the ground circuit of the C al?	AN gateway. Refer to <u>LAN-</u>	98. "Diagnosis Procedure".	Κ
YES (Present error)>>Rep YES (Past error)>>Error wa Refer to <u>LAN-38</u> NO >> Repair the powe	ace the CAN gateway. Refe as detected in the CAN gat <u>b, "System Diagram"</u> . ar supply and the ground cil	er to <u>LAN-99, "Removal and</u> eway branch line (CAN cor ccuit.	<u>d Installation"</u> . mmunication circuit 1 side).	L
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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000007747881

[CAN SYSTEM (TYPE 4)]

1. СНЕСК DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the ČAN gateway harness connector terminals.

	Continuity		
Connector No.	Termir	Continuity	
M125	4	6	Existed
M125	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-38. "Sys-</u> tem Diagram".

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-98, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the CAN gateway. Refer to LAN-99, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-38, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000007747883

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[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the data link connector for damage, bend and loose connection C (connector side and harness side).
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Connector No. Terminal No.	
M4 6 14 /	prox. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 1 side). Refer to LAN-38, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to <u>LAN-38.</u> "System Diagram".

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000007747884

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the terminals and connectors of the data link connector for damage, bend and loose connection 3. (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		
M4	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-38, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-38, NO "System Diagram".

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

HVAC BRANCH LIN	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000007747885	A
1. CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR 	OFF. cable from the negative tern d connectors of the A/C au). <u>al?</u> inal and connector. OPEN CIRCUIT	ninal. to amp. for damage, bend	and loose connection (unit	C
1. Disconnect the connect	or of A/C auto amp.			Ε
2. Check the resistance be	etween the A/C auto amp. h	arness connector terminals	S.	
	A/C auto amp. harness connector		Resistance (Ω)	F
Connector No.	Termin	al No.		
M50	ithin the specification?	21	Approx. 54 – 66	G
YES >> GO TO 3. NO >> Repair the A/C 3.CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT			Н
Check the power supply an <u>Diagnosis Procedure</u> ".	d the ground circuit of the	A/C auto amp. Refer to <u>H/</u>	AC-105, "A/C AUTO AMP. :	I
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the A/C auto amp. Refe as detected in the A/C auto er supply and the ground cir	er to <u>HAC-142, "Removal a</u> amp. branch line. [.] cuit.	ind Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747886

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the combination meter for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Posistanco (O)
Connector No.	Terminal No.		itesistance (12)
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-58, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-79, "Removal and Installation".

YES (Past error)>>Error was detected in the combination meter branch line.

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

STRG BRANCH LIN	NE CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000007747887	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals and (unit side and connector) Is the inspection result porm 	OFF. cable from the negative terr connectors of the steering side).	ninal. I angle sensor for damage, I	bend and loose connection	С
YES >> GO TO 2. NO >> Repair the termi	nal and connector.			D
 Disconnect the connect Check the resistance be 	or of steering angle sensor.	ensor harness connector te	rminals.	Е
Stee	ering angle sensor harness conne	ctor	Posistanco (O)	F
Connector No.	Termir	al No.		
M30	5	2	Approx. 54 – 66	G
Is the measurement value wYES>> GO TO 3.NO>> Repair the steer	ithin the specification? ing angle sensor branch lir	e.		Н
3. CHECK POWER SUPPL	Y AND GROUND CIRCUIT			
Check the power supply an gram".	d the ground circuit of the	steering angle sensor. Refe	er to <u>BRC-52, "Wiring Dia-</u>	
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the steering angle sen as detected in the steering er supply and the ground ci	sor. Refer to <u>BRC-144, "Rer</u> angle sensor branch line. rcuit.	moval and Installation".	J
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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747888

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the low tire pressure warning control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of low tire pressure warning control unit.

2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pre	Posistanco (O)		
Connector No.	Termi		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the low tire pressure warning control unit branch line.

$\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-45</u>, <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-59</u>, "<u>Removal and</u> <u>Installation</u>".

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

< DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 4)]
IPDM-E BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000007747889
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the following terminals nector side). IPDM E/R Harross connector E105 	from the negative termin and connectors for dam	nal. nage, bend and loose co	onnection (unit side and con-
 Harness connector E 105 Harness connector M77 Harness connector M19 (With Harness connector B2 (Withc 	nout ICC system) out ICC system)		
Is the inspection result normal? YES >> GO TO 2.			
2.CHECK HARNESS FOR OPE	N CIRCUIT		
 Disconnect the connector of I Check the resistance betwee 	PDM E/R. n the IPDM E/R harness	s connector terminals.	
IPDN	1 E/R harness connector		Beginteneg (O)
Connector No.	Terminal	No.	
E13	27	26	Approx. 108 – 132
Is the measurement value within to YES >> GO TO 3. NO >> Repair the IPDM E/R	he specification?		
3.check power supply an	D GROUND CIRCUIT		
Check the power supply and the one of the inspection result normal?	pround circuit of the IPDI	M E/R. Refer to PCS-2	9. "Diagnosis Procedure".
YES (Present error)>>Replace to YES (Past error)>>Error was de	ne IPDM E/R. Refer to <u>F</u> tected in the IPDM E/R	PCS-30, "Removal and branch line.	Installation".
NO >> Repair the power sup	piy and the ground circu	lit.	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747890

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B24
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

CAN gateway harness connector			Continuity
Connector No.	Termi	Continuity	
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u> <u>38, "System Diagram"</u>.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	$Posistanco\left(\Omega\right)$		
Connector No.	Terminal No.		
B451	1	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-60, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-128. "Removal and Installation".

YES (Past error)>>Error was detected in the driver seat control unit branch line.

PSB BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000007747891
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following tern nector side). Pre-crash seat belt cont CAN gateway s the inspection result norm 	OFF. cable from the negative terr ninals and connectors for d rrol unit (driver side) nal?	ninal. amage, bend and loose co	nnection (unit side and con-
YES >> GO TO 2.			
NO >> Repair the termi	inal and connector.		
LICHECK HARNESS CON	OPEN CIRCUIT)	
2. Check the continuity bet	tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M125	4	6	Existed
	10	12	Existed
 CONNECT HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be nals. 	oPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat	ntrol unit (driver side). belt control unit (driver side	e) harness connector termi-
Pre-crash seat	t belt control unit (driver side) harr	ness connector	
Connector No.	Termir	nal No.	Resistance (12)
B9	14	4	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the pre-co CHECK POWER SUPPL Check the power supply an SBC-44, "Diagnosis Procedu s the inspection result norm YES (Present error)>>Rep	Annu the specification? crash seat belt control unit (Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . hal? lace the seat belt pre-tens Removal and Installation"	(driver side) branch line. - pre-crash seat belt contro ioner retractor (LH side). F	I unit (driver side). Refer to Refer to <u>SB-6, "SEAT BELT</u>
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the pre-crasl er supply and the ground ci	h seat belt control unit (driv rcuit.	er side) branch line.

E-SUS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747892

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air levelizer control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Terminal No.		Continuity	
M125	4	6	Existed	
11123	10	12	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u><u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of air levelizer control module.
- 3. Check the resistance between the air levelizer control module harness connector terminals.

Air lev	Posistanco (O)		
Connector No.	Termi		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the air levelizer control module. Refer to <u>SCS-85,</u> "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to SCS-90, "Removal and Installation".

YES (Past error)>>Error was detected in the air levelizer control module branch line.

ICC BRANCH LINE			
Diagnosis Procedure			INFOID:00000007747893
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following ter nector side). ADAS control unit CAN gateway 	OFF. cable from the negative terr minals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-
Is the inspection result norr	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
2.CHECK HARNESS COM	TINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Stween the CAN gateway ha	arness connector terminals.	
Connector No	CAN gateway harness connector		Continuity
	4	6	Existed
M125	10	12	Existed
<u>38, "System Di</u> 3. CHECK HARNESS FOR 1. Connect the connector	agram". COPEN CIRCUIT of CAN gateway.		
 Disconnect the connect Check the resistance b 	tor of ADAS control unit. etween the ADAS control unit	nit harness connector termir	nals.
/	ADAS control unit harness connec	tor	Resistance (Ω)
B61	14	nal No. 15	Approx 54 – 66
Is the measurement value v YES >> GO TO 4. NO >> Repair the ADA 4.CHECK POWER SUPP	vithin the specification? AS control unit branch line.	Γ	
Check the power supply an <u>dure</u> ".	d the ground circuit of the A	ADAS control unit. Refer to	DAS-54, "Diagnosis Proce-
Is the inspection result norr YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	nal? place the ADAS control unit. /as detected in the ADAS co er supply and the ground ci	Refer to <u>DAS-55. "Remova</u> ontrol unit branch line. rcuit.	al and Installation".

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747894

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Automatic back door control module
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
WIZ3	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to <u>LAN-</u><u>38. "System Diagram"</u>.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of automatic back door control module.
- 3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic	Automatic back door control module harness connector		
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the automatic back door control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control module. Refer to <u>DLK-98</u>, <u>"AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to <u>DLK-245</u>, "Removal and <u>Installation</u>".
- YES (Past error)>>Error was detected in the automatic back door control module branch line.
- NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

RDR-R BRANCH LI	NE CIRCUIT			^
Diagnosis Procedure			INF0/D:00000007747895	A
1.CHECK CONNECTOR				В
 Turn the ignition switch (2) Disconnect the battery of 3. Check the terminals and side and connector side 	OFF. able from the negative terr d connectors of the side ra).	ninal. adar RH for damage, be	nd and loose connection (unit	С
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2. CHECK RIGHT/LEFT SW	<u>al?</u> nal and connector. /ITCHING SIGNAL CIRCU	IT		D
Check the right/left switching Is the inspection result norm YES >> GO TO 3. NO >> Repair the root of	i signal circuit of the side ra al? cause.	adar RH. Refer to <u>DAS-5</u>	<u>10, "Diagnosis Procedure"</u> .	E
 3.CHECK HARNESS FOR 1. Disconnect the connector 2. Check the resistance be 	OPEN CIRCUIT or of side radar RH. tween the side radar RH h	arness connector termin	als.	G
	Side radar RH harness connector	ſ		Н
Connector No.	Termir	nal No.	Resistance (Ω)	
B243	4	3	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 4. NO >> Repair the side w 4.CHECK POWER SUPPLY	ithin the specification? radar RH branch line. Y AND GROUND CIRCUIT	-		J
Check the power supply and Diagnosis Procedure"	the ground circuit of the s	side radar RH. Refer to	<u>DAS-508, "SIDE RADAR RH :</u>	
Is the inspection result norm	al?			K
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the side radar RH. Ref as detected in the side rada r supply and the ground ci	er to <u>DAS-524, "Remova</u> ar RH branch line. rcuit.	al and Installation".	L
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< DTC/CIRCUIT DIAGNOSIS >

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RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007747896

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Resistance (O)
Connector No.	Terminal No.		
B74	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-507, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-524, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

LANE BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

LANE BRANCH LIN	IE CIRCUIT			А
Diagnosis Procedure			INFOID:000000007747897	1
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals and side and connector side 	OFF. cable from the negative terr d connectors of the lane car e).	ninal. mera unit for damage, bend	d and loose connection (unit	С
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2CHECK HARNESS FOR	ial? inal and connector.			D
 Disconnect the connect Check the resistance be 	or of lane camera unit. Stween the lane camera unit	t harness connector termin	als.	E
L	ane camera unit harness connect	or	Basistanas (0)	F
Connector No.	Termir	nal No.	Resistance (12)	
R8	4	8	Approx. 54 – 66	G
Is the measurement value wYESYESNO>> Repair the lane 3. CHECK POWER SUPPL	<u>ithin the specification?</u> camera unit branch line. Y AND GROUND CIRCUIT	-		Н
Check the power supply and UNIT : Diagnosis Procedure Is the inspection result norm	d the ground circuit of the I <u>"</u> . nal?	ane camera unit. Refer to	DAS-353, "LANE CAMERA	Ι
YES (Present error)>>Rep YES (Past error)>>Error wants NO >> Repair the power	lace the lane camera unit. I as detected in the lane cam ar supply and the ground ci	Refer to <u>DAS-369, "Remov</u> nera unit branch line. rcuit.	al and Installation".	J
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				LAN

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APA BRANCH LINE CIRCUIT

Diagnosis Procedure

[CAN SYSTEM (TYPE 4)]

INFOID:000000007747898

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the accelerator pedal actuator for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (O)
Connector No.	Terminal No.		
E66	5	4	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

$\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-178, "ACCEL-ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4</u>, "MODELS WITH DIS-<u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.

LASER BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

LASER BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:000000007747899
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and and connector side). 	OFF. cable from the negative terr d connectors of the ICC ser	ninal. nsor for damage, bend and	loose connection (unit side
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2 CUECK LIADNESS FOR	inal and connector.		
 Disconnect the connect Check the resistance be 	or of ICC sensor. etween the ICC sensor harr	ness connector terminals.	
	ICC sensor harness connector		
Connector No.	Termir	nal No.	
E65	3	6	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the ICC 3.CHECK POWER SUPPL	sensor branch line. Y AND GROUND CIRCUIT	-	
Check the power supply and <u>sis Procedure</u> ". Is the inspection result norm	d the ground circuit of the IC	C sensor. Refer to <u>CCS-15</u>	52, "ICC SENSOR : Diagno-
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the ICC sensor. Refer as detected in the ICC sens er supply and the ground ci	to <u>CCS-170, "Removal anc</u> sor branch line. rcuit.	I Installation".
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CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
 - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38</u>, "System Diagram".

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		Continuity
M4	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data linl	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	6	Gibunu	Not existed
1014	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

ECM		Resistance (Q)	
Terminal No.		Resistance (22)	
146	151	Approx. 108 – 132	

3. Check the resistance between the IPDM E/R terminals.

IPDM E/R		Resistance (Q)	
Terminal No.		Resistance (22)	
27	26	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

INFOID:000000007747901

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK SYMPTOM

	A
Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.	7.
Inspection result	В
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.	С
 Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 1. 	D
	Е
 4. Connect the battery cable to the negative terminal. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. 	F
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	G
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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 2.
 - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38</u>, "System Diagram".

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		Continuity
M4	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
N4	13	Ground	Not existed
1014	12	-	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway Terminal No.		- Resistance (Ω)	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

INFOID:000000007747902
CAN COMMUNICATION CIRCUIT 2					
< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]				
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis produced.	rocedure when past error is				
6. CHECK UNIT REPRODUCTION					
Perform the reproduction test as per the following procedure for each unit.					
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2. 					
 NOTE: CAN gateway has two termination circuits. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms (Results from interview with customer)" are reproduced. NOTE: 	s described in the "Symptom				
Although unit-related error symptoms occur, do not confuse them with other	symptoms.				
Inspection result Reproduced>>Connect the connector. Check other units as per the above proc Non-reproduced>>Replace the unit whose connector was disconnected.	edure.				

< DTC/CIRCUIT DIAGNOSIS >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000007747903

[CAN SYSTEM (TYPE 4)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and CAN communication circuit 2 have no malfunction.

NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-38, "System Diagram"</u>.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.connector inspection

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- Harness connector B63
- Harness connector B239

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control unit harness connector		ICC sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B61	7	E65	3	Existed
	8		6	Existed

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to <u>LAN-38</u>, <u>"System Diagram"</u>.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Side radar LH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

Α	Continuity		
Connector No.	Termi	Continuity	
B61	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) А Check the continuity between the ADAS control unit harness connector and the ground. ADAS control unit harness connector В Continuity Connector No. Terminal No. Ground 7 Not existed B61 8 Not existed Is the inspection result normal? YES >> GO TO 6. D NO >> Check the harness and repair the root cause. **6.**CHECK TERMINATION CIRCUIT Remove the ADAS control unit and the ICC sensor. 1 E 2. Check the resistance between the ADAS control unit terminals. ADAS control unit F Resistance (Ω) Terminal No. 7 8 Approx. 108 - 132 3. Check the resistance between the ICC sensor terminals. ICC sensor Н Resistance (Ω) Terminal No. 3 6 Approx. 108 - 132 Is the inspection result normal? YES >> GO TO 7. NO >> Replace the ADAS control unit and/or the ICC sensor. 7.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Κ Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is L detected. 8. CHECK UNIT REPRODUCTION LAN Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. 1. Disconnect the battery cable from the negative terminal. 2. Disconnect one of the unit connectors of ITS communication circuit. Ν NOTE: ADAS control unit and ICC sensor have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. Ρ Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

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