# SECTION LAN SYSTEM

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#### < PRECAUTION > PRECAUTION А PRECAUTIONS **Precautions for Trouble Diagnosis** INFOID:000000010261032 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:000000010261033 • 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 Κ SKIB8767E L Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line. LAN

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#### < SYSTEM DESCRIPTION >

# SYSTEM DESCRIPTION

## SYSTEM

CAN COMMUNICATION SYSTEM

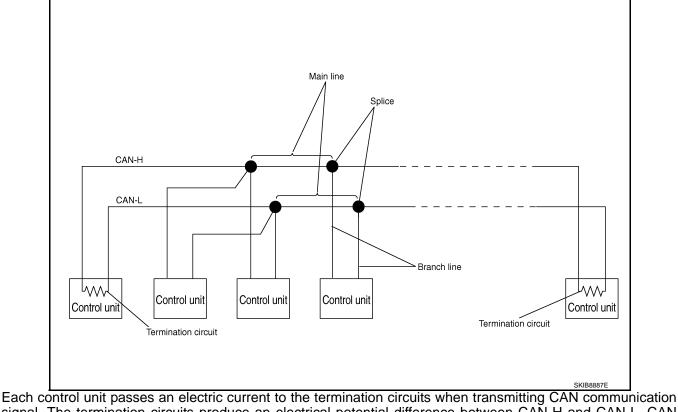
#### CAN COMMUNICATION SYSTEM : System Description

INFOID:000000010261034

INFOID:000000010261035

- 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

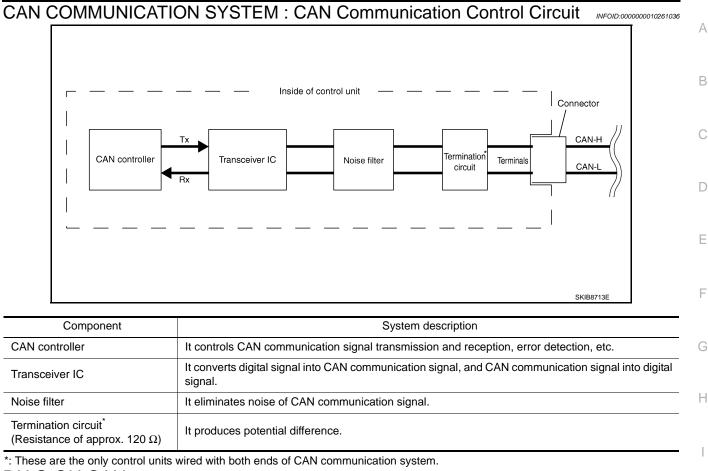


Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential 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-13, "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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#### LAN

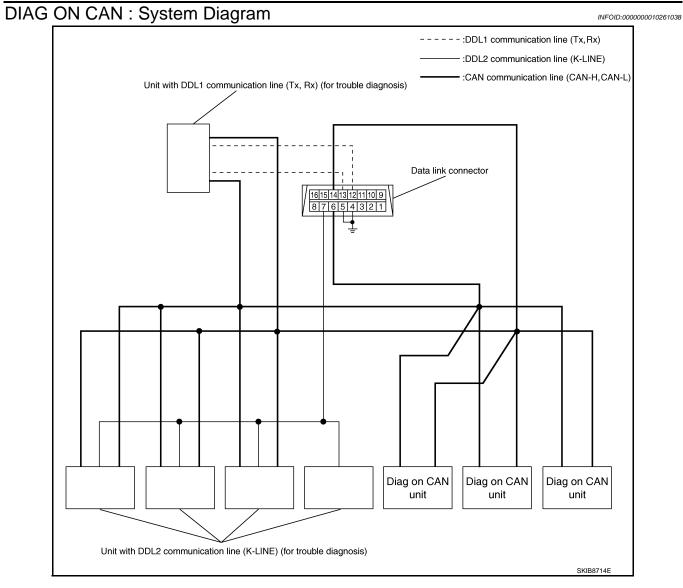
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#### [CAN FUNDAMENTAL]

# < 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

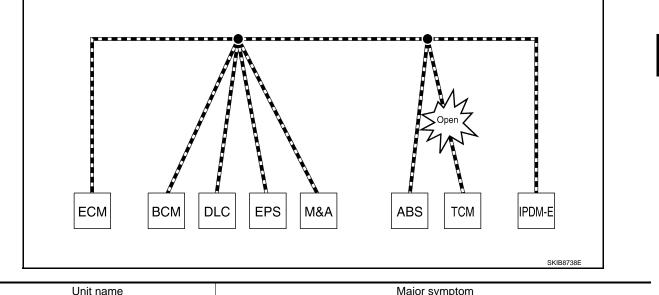
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

# ERROR EXAMPLE

#### NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to <u>LAN-26</u>, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



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

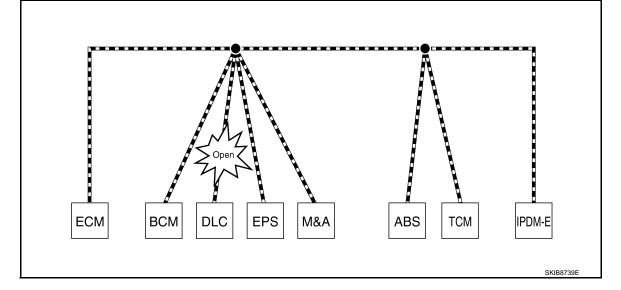
**LAN-15** 

#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]

Unit name	Major symptom
EPS control unit	Normal operation.
Combination meter	<ul><li>Shift position indicator and OD OFF indicator turn OFF.</li><li>Warning lamps turn ON.</li></ul>
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



Unit name	Major symptom
ECM	
BCM	
EPS control unit	
Combination meter	Normal operation.
ABS actuator and electric unit (control unit)	
ТСМ	
IPDM E/R	

#### NOTE:

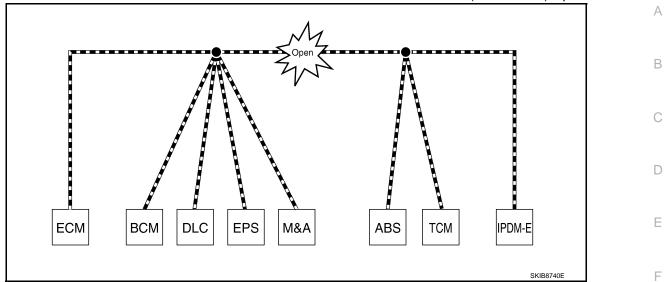
- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with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

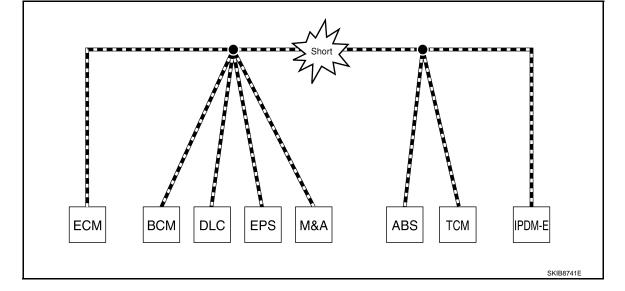
#### [CAN FUNDAMENTAL]

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.		
BCM	<ul> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> </ul>		
EPS control unit	The steering effort increases.		
Combination meter	<ul> <li>The shift position indicator and OD OFF indicator turn OFF.</li> <li>The speedometer is inoperative.</li> <li>The odo/trip meter stops.</li> </ul>		
ABS actuator and electric unit (control unit)	Normal operation.		
ТСМ	No impact on operation.		
IPDM E/R	<ul><li>When the ignition switch is ON,</li><li>The headlamps (Lo) turn ON.</li><li>The cooling fan continues to rotate.</li></ul>		

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



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#### < SYSTEM DESCRIPTION >

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

# CAN Diagnosis with CONSULT

INFOID:000000010261041

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:000000010261042

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	
111000	U1000 CAN COMM CIRCUIT	ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.		
01000			E	Except for ECM	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.
U1001	CAN COMM CIRCUIT	When FOM is not transmitting an approximit of a OAN segment with		control unit.	
U1002	SYSTEM COMM		control unit is not transmitting or receiving CAN cation 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)

INFOID:000000010261043

#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]

#### Example: CAN DIAG SUPPORT MNTR indication

Without PAST	Vithout F	AST
--------------	-----------	-----

	BCM	
MONITOR ITEM	PRESENT	PAST
INITIAL DIAG	OK	-
TRANSMIT DIAG	OK	-
ECM	OK	-
METER/M&A	OK	-
TCM	OK	-
IPDM E/R	OK	-
I-KEY	OK	-

	ENGINE	
MONITOR ITEM	PRESENT	PAST
TRANSMIT DIAG	OK	OK
VDC/TCS/ABS	OK	5
METER/M&A	Not diagnosed	-
BCM/SEC	OK	OK
ICC	Not diagnosed	-
HVAC	Not diagnosed	-
ТСМ	OK	OK
EPS	OK	OK
IPDM E/R	OK	5
e4WD	Not diagnosed	-
AWD/4WD	Not diagnosed	-

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#### Without PAST

Item	PRESENT	Description	G
Initial diagnasia	OK	Normal at present	
Initial diagnosis	NG	Control unit error (Except for some control units)	
	OK	Normal at present	11
Transmission diagnosis	UNKWN	Unable to transmit signals for 2 seconds or more.	
	UNKWIN	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	PRESENT	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	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.)
(Reception diagnosis)	UNKWN	0	Unable to receive signals for 2 seconds or more at present.
	Not dia magaine		Diagnosis not performed.
Not diagnosed	NOT diagnosed	_	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.

#### < SYSTEM DESCRIPTION >

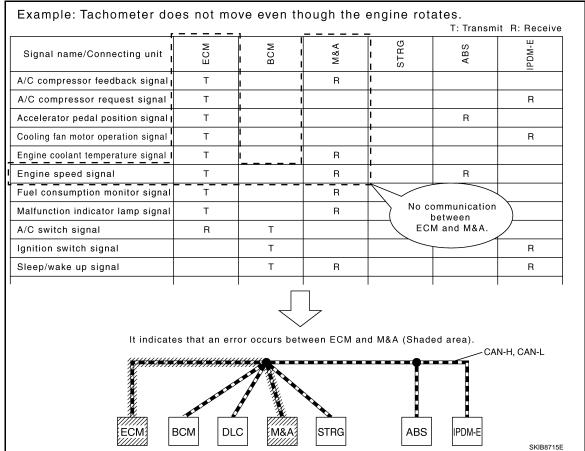
Example: Vehicle Display

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 (Reception diagnosis of each unit)	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
			Diagnosis not performed.
			No control unit for receiving signals. (No applicable optional parts)

# How to Use CAN Communication Signal Chart

INFOID:000000010261044

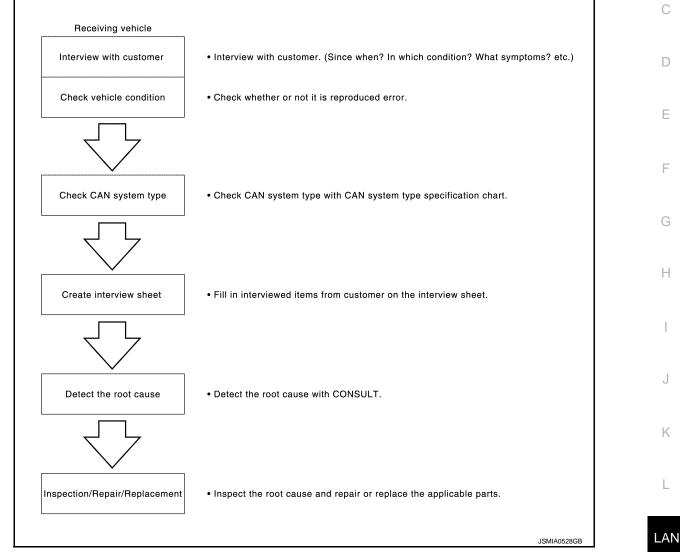
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

# Trouble Diagnosis Flow Chart

#### DESCRIPTION



# DETAIL OF TROUBLE DIAGNOSIS FLOW CHART

# **1.**INTERVIEW WITH CUSTOMER

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

Notes for checking error symptoms:

- 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.

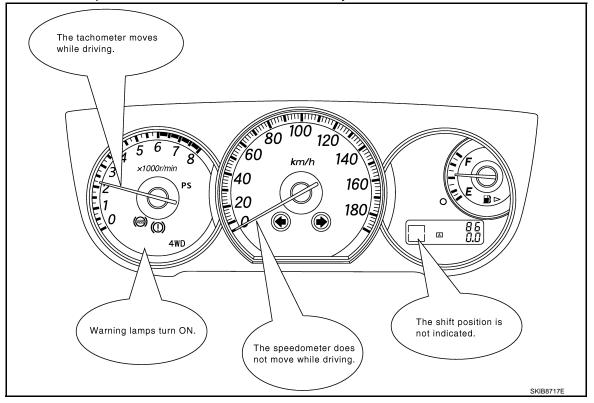
# LAN-21

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#### < BASIC INSPECTION >

- When a CAN communication system error is present, multiple control units may malfunction or go into failsafe mode.
- 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.



#### >> GO TO 2.

# 2.INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

#### NOTE:

Do not turn the ignition switch OFF or disconnect the 12V battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

#### >> GO TO 3.

# $\mathbf{3}$ .check of can system type (how to use can system type specification chart)

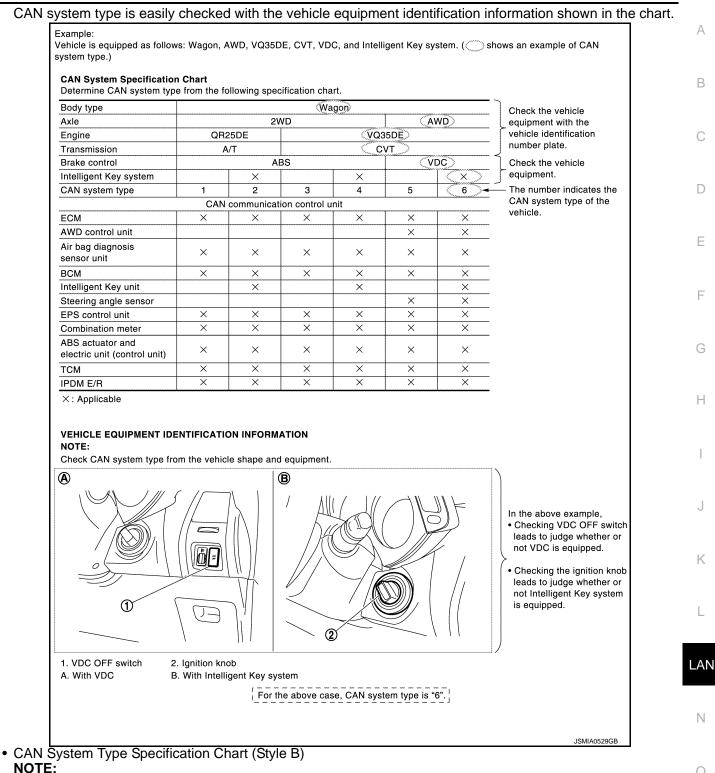
Determine CAN system type based on vehicle equipment. **NOTE:** 

- 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:

# DIAGNOSIS AND REPAIR WORKFLOW

#### < BASIC INSPECTION >

#### [CAN FUNDAMENTAL]

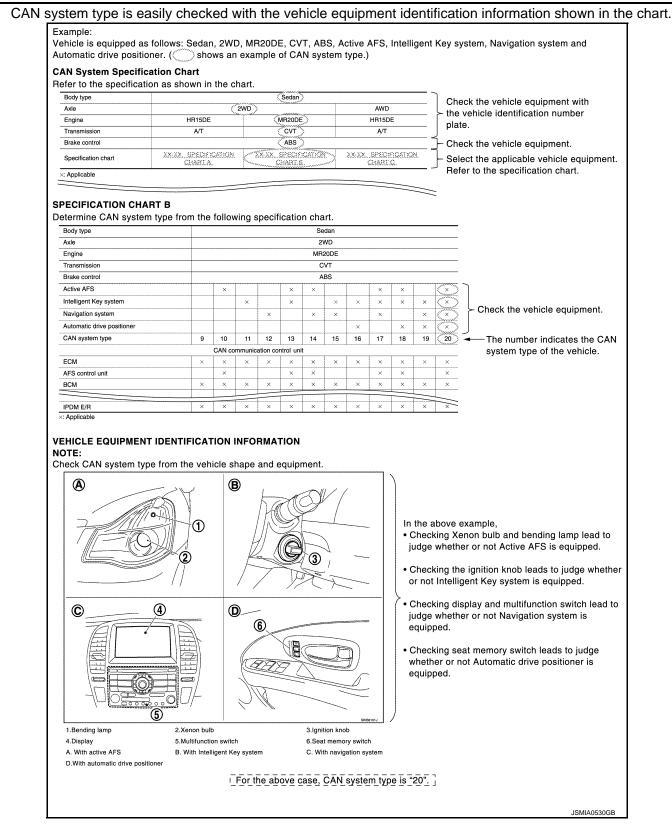


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# DIAGNOSIS AND REPAIR WORKFLOW

#### < BASIC INSPECTION >

#### [CAN FUNDAMENTAL]



>> GO TO 4.

#### **4.**CREATE INTERVIEW SHEET

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

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example) А CAN Communication System Diagnosis Interview Sheet В Date received: 3, Feb. 2006 DBA-KG11 VIN No.: KG11-005040 Type: BDRARGZG11EDA-E-J-Model: D First registration: 10, Jan. 2001 62.140 Mileage: Ε CAN system type: Type 19 Symptom (Results from interview with customer) F ·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. Н 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. Κ · The interior lamp does not turn ON. JSMIA0531GB LAN >> GO TO 5.

# 5.DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects a root cause.

#### >> GO TO 6.

**6.**REPAIR OR REPLACE MALFUNCTIONING PART

Repair or replace malfunctioning parts identified by CAN diagnosis function of CONSULT.

CAN communication circuit>> Refer to <u>LAN-65</u>, "<u>CAN Communication Circuit</u>". ITS communication circuit>> Refer to <u>LAN-66</u>, "<u>ITS Communication Circuit</u>".

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# HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

#### Caution

INFOID:000000010261047

[CAN]

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

• For trouble diagnosis procedure, refer to LAN-21, "Trouble Diagnosis Flow Chart".

## Abbreviation List

INFOID:000000010261048

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	
AVM	Around view monitor control unit	
BCM	BCM	
BSW/BUZZER	Driver assistance buzzer control module	
CGW	CAN gateway	
DLC	Data link connector	
E-SUS	Air levelizer control module	
ECM	ECM	
HBA	High beam assist control module	
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	
SONAR	Sonar control unit	
STRG	Steering angle sensor	
TCM	ТСМ	
TCU	TCU	
TPMS	Low tire pressure warning control unit	

# < PRECAUTION > PRECAUTION PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" INFOID:000000010261049

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual. D

#### 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 Removing Battery Terminal

• When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds. NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

 For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

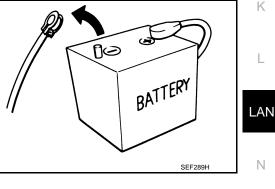
 After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC. NOTE:

The removal of 12V battery may cause a DTC detection error.

#### 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.







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INFOID:000000010261051

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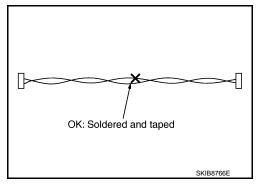
# PRECAUTIONS

#### < PRECAUTION >

# Precautions for Harness Repair

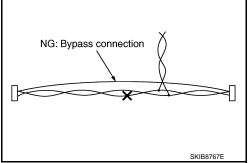
• Solder the repaired area and wrap tape around the soldered area. **NOTE:** 

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



• 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 line are lost.



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

#### < SYSTEM DESCRIPTION >

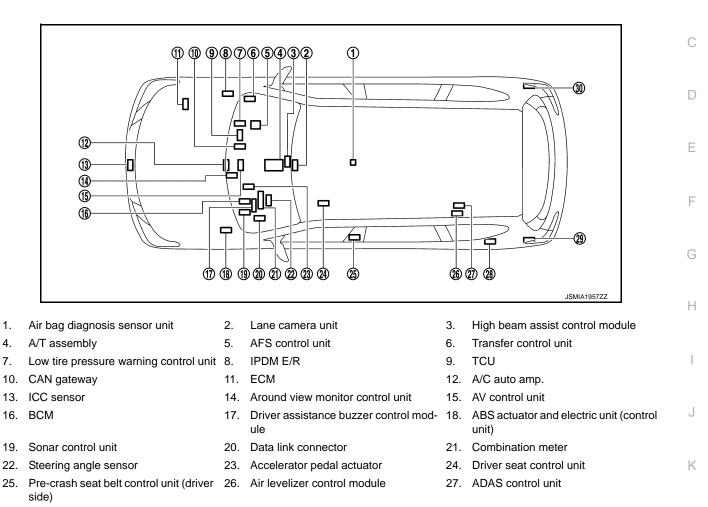
# SYSTEM DESCRIPTION **COMPONENT PARTS**

# **Component Parts Location**

1. 4.

7.

INFOID:000000010261053 В



30. Side radar RH

28. Automatic back door control module 29. Side radar LH

**LAN-29** 

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# SYSTEM CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:000000010261054

Determine CAN system type from the following specification chart.

NOTE:

Refer to LAN-21. "Trouble Diagnosis Flow Chart" for how to use CAN system specification chart.

Body type				Wagon			
Axle		2WD			4۷	VD	
Engine				VK56VD			
Transmission				A/T			
Brake control				VDC			
Telematics system	×	×	×	×	×		×
ICC system		×	×		×	×	×
Active AFS			×			×	×
CAN system type	1	2	3	4	5	6	7
	CAN co	ommunicatio	n unit	1			
ECM	×	×	×	×	×	×	×
Transfer control unit				×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×
ТСМ	×	×	×	×	×	×	×
AFS control unit			×			×	×
AV control unit	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×
CAN gateway	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×
High beam assist control module	×	×	×	×	×	×	×
A/C auto amp.	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×	×
тси	×	×	×	×	×		×
Low tire pressure warning control unit	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×	×
Around view monitor control unit	×			×			
Sonar control unit	×			×			
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 co	mmunicatio	n unit	1	•	ı	
ADAS control unit		×	×		×	×	×
Side radar RH		×	×		×	×	×
Side radar LH		×	×		×	×	×

Revision: 2014 October

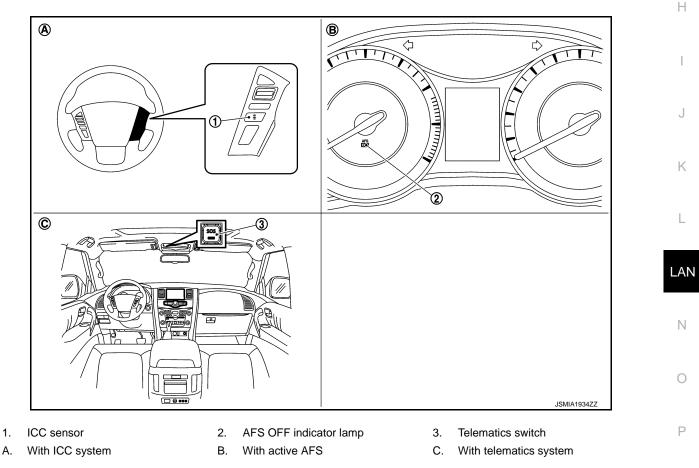
#### < SYSTEM DESCRIPTION >

Body type				Wagon				
Axle		2WD			4\	VD		-
Engine				VK56VD				-
Transmission				A/T				_
Brake control				VDC				-
Telematics system	×	×	×	×	×		×	-
ICC system		×	×		×	×	×	
Active AFS			×			×	×	-
CAN system type	1	2	3	4	5	6	7	_
Lane camera unit			×			×	×	
Driver assistance buzzer control module		×	×		×	×	×	-
Around view monitor control unit		×	×		×	×	×	_
Sonar control unit		×	×		×	×	×	-
Accelerator pedal actuator		×	×		×	×	×	-
ICC sensor		×	×		×	×	×	-

 $\times:$  Applicable

# VEHICLE EQUIPMENT IDENTIFICATION INFORMATION NOTE:

Check CAN system type from the vehicle shape and equipment.



# CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

Refer to <u>LAN-20. "How to Use CAN Communication Signal Chart"</u> for how to use CAN communication signal chart.

T: Transmit R: Receive

INFOID:000000010261055

# [CAN]

# < SYSTEM DESCRIPTION >

	001	11		12																		-	
Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	CC	PWBD	SONAR
A/C compressor request signal	т															R							
Accelerator ped- al position signal	т	R	R	R																	R		
ASCD OD cancel request signal	т			R																			
ASCD operation signal	т			R																			
ASCD status sig- nal	т											R											
Closed throttle position signal	т			R																	R		
Cooling fan speed request signal	т															R							
Engine and A/T integrated con-	Т			R																			
trol signal	R			Т																			
Engine coolant temperature sig- nal	т										R	R											
Engine restart re-	Т							R								R							
quest signal								Т								R							
Engine speed signal	Т	R	R	R		R						R								R	R		
Engine status signal	т						R	R				R		R									
Engine torque signal	т	R																					
Fuel consump- tion monitor sig- nal	т						R					R											
ICC brake switch signal	т																				R		
ICC prohibition signal	т																				R		
ICC steering switch signal	т																				R		
Malfunctioning indicator lamp signal	т											R		R									
N idle instruction	Т			R																			
signal	R			Т																			
Power genera- tion command value signal	Т															R							
Snow mode switch signal	Т																				R		
Stop lamp switch	Т			_				-													R	<u> </u>	<u> </u>
signal		R	Т	R				Т													R		

# < SYSTEM DESCRIPTION >

< SYSTEM DE	SCI	RIP	ΓΙΟΝ	< ا					31	51												[C/	AN]	
Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	A
Wide open throt- tle position signal	т			R																				В
4WD malfunction signal		т	R																					
4WD mode indi- cator signal		т										R												С
4WD warning lamp signal		т										R												D
ATP warning lamp signal		т										R												
Current 4WD mode signal		т	R																		R			E
A/T shift sched- ule change de- mand signal			т	R																				F
ABS malfunction signal		R	Т																		R			G
ABS operation signal		R	т	R															R		R			C
ABS warning lamp signal			т									R		R							R			F
Brake warning lamp signal			Т									R T		R										
Decel G sensor signal			т	R																				1
Pressure sensor signal			т	R																				J
Rear LH wheel speed signal			т															R						K
Rear RH wheel speed signal			т															R						
Side G sensor signal			т	R																	R			L
Target throttle position signal	R		т																					LA
TCS malfunction signal		R	Т																		R			
TCS operation signal		R	т																		R			Ν
VDC malfunction signal		R	Т																		R			C
VDC OFF indica- tor lamp signal			Т									R												
VDC OFF switch signal			Т																		R			Ρ
VDC operation signal		R	Т																		R			
VDC warning lamp signal			Т									R		R										
Vehicle speed signal	R R	R	Т	R		R	R	R R		R	R	T R			R	R	R R	R	R	R	R	R R	R	
5			<b>'</b>			1	1		1						11		11	11				11		

Revision: 2014 October

#### < SYSTEM DESCRIPTION >

									-		1	1	1	-	1		-			-	-		
Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	CC	PWBD	SONAR
Yaw rate signal			Т							R											R		
A/T CHECK indi- cator lamp signal				т		R						R											
Current gear po- sition signal		R	R	т																	R		
Input speed sig- nal	R			т																	R		
Manual mode shift refusal sig- nal				т								R											
N range signal				Т				R									R						
Next gear posi- tion signal		R		т																			
Output shaft rev- olution signal	R	R		т																	R		
P range signal				Т				R									R						
R range signal				Т				R									R						
Shift position sig- nal		R	R	т		R		R				R						R			R	R	R
Tow mode indica- tor lamp signal				т								R											
Pre-roll over sig- nal					т														R				
Pre-tensioner operation signal					т														R				
AFS warning lamp signal						т						R											
A/C switch oper- ation signal							т				R												
Rear window de- fogger switch sig- nal							т	R															
System selec- tion signal							т														R		
System setting							Т	R															
signal							R	Т															
Automatic back door request sig- nal								т														R	
Back door lock status signal								т														R	
Buzzer output signal								т				R											
Buzzer request signal								T R				R			Т								
Daytime running light request sig- nal								Т							1	R							
Dimmer signal					-	-	-	Т	-			R					-	-		-	R		<u> </u>

## < SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	CC	PWBD	SONAR	A
Door lock status signal								т						R										E
Door switch sig- nal								т				R				R	R	R	R					
Door unlock sig- nal								т									R							C
Front fog light re- quest signal								т								R		R						
Front wiper re- quest signal								т								R					R			
Handle position signal								т									R							E
Headlamp wash- er request signal								т								R								F
High beam assist indicator lamp signal								т				R												(
High beam re- quest signal								т				R				R		R						
Horn reminder signal								т								R								ŀ
lgnition switch ON signal								T R								R T	R		R					
Ignition switch signal								т									R							
Interlock/PNP switch signal								T R								R T								
Key ID signal								т			R						R							
Key switch signal								Т									R							
Key warning amp signal								т				R												
Low beam re- quest signal								т								R		R						
Meter display								Т				R												L
signal								_				R		_							Т			
Oil pressure switch signal								T R				R		R		Т								
Position light re- quest signal								к Т				R				г R		R						
Rear window de-								т								R								
ogger control signal	R						R									Т								
Sleep wake up signal								т	R			R		R		R	R		R			R		
Starter control re- lay signal								т								R								
Starter relay sta-								т				R				R								

[CAN]

# < SYSTEM DESCRIPTION >

	00	<b>\</b>	101	12																		_	
Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR
Starting mode signal								т									R						
Theft warning horn request sig- nal								т								R							
Turn indicator signal				R				Т				R									R		
High beam assist request signal								R		т													
High beam assist system status signal								R		т													
A/C display sig- nal							R				т												
A/C ON signal	R										Т												
Ambient temper- ature signal											т										R		
Blower fan ON signal	R										т												
Distance to emp- ty signal							R					т											
Fuel level low warning signal							R					т											
Fuel level sensor signal	R											т											
Manual mode shift down signal				R								т											
Manual mode shift up signal				R								т											
Manual mode signal				R								т											
Non-manual mode signal				R								т											
Odometer signal						R		R		R		Т											
Parking brake switch signal			R					R				т					R				R		
Seat belt buckle switch signal (driver side)								R				т											
								R				Т											 
Sleep-ready sig-								R						Т									
nal								R R								Т						Т	
Tow mode switch signal				R								Т											
								R				Т											 
								R						Т									
Wake up signal								R								Т							
								R														Т	
							1										1					•	

# SYSTEM

#### < SYSTEM DESCRIPTION >

< SYSTEM DE	SCI	RIP <sup>-</sup>		< 1					31	31												[C/	AN]	
Signal name	E C M	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	A
Steering angle sensor malfunc- tion signal		R	R			R							т						R		R			В
Steering angle sensor signal		R	R			R	R						т					R	R		R			С
Steering angle speed signal			R										т						R		R			
Steering calibra- tion signal			R			R							т						R					D
Hazard request signal								R R							Т							Т		E
Horn request sig- nal								R							т									
Low tire pressure warning lamp							R	R				R			т									F
signal Tire pressure data signal							R	Т				R			т									G
A/C compressor feedback signal	R										R					т								Н
Detention switch signal								R								т	R							
Engine restart control signal								R								т								I
Front wiper stop position signal								R								Т								I
High beam status signal	R									R						т								J
Hood switch sig- nal								R								т								K
Low beam status signal	R					R				R						т								
Push-button igni- tion switch status signal								R								т								
Starter control re- lay signal								R								т								LA
Sonar setting change signal																		т					R	Ν
CK SUSP indica- tor lamp signal												R								т				
Blind Spot Inter- vention ON indi- cator signal												R									т			0
Blind Spot Warn- ing/Blind Spot In- tervention warning lamp signal												R									т			Ρ
Brake fluid pres- sure control sig- nal			R																		т			

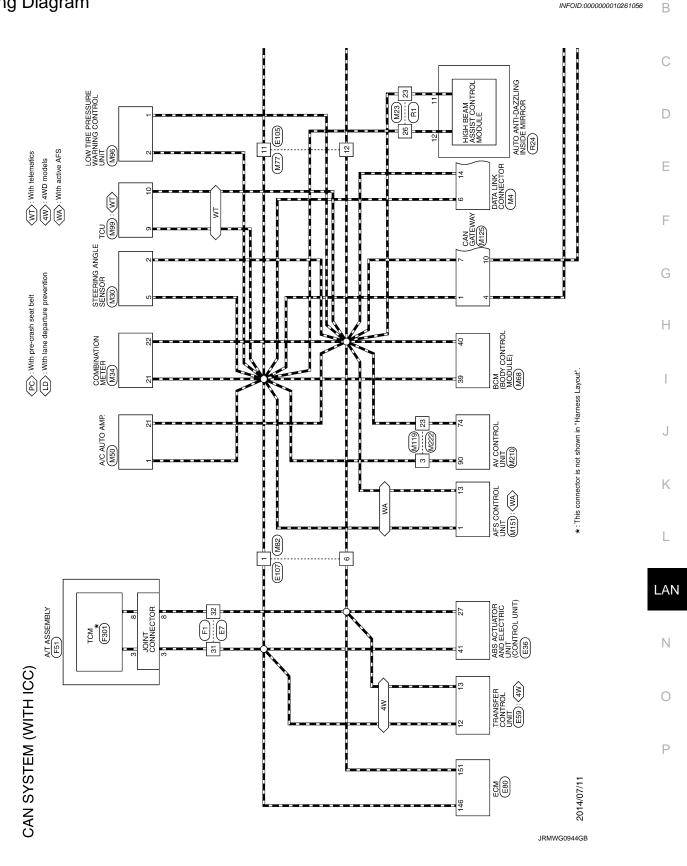
## SYSTEM

#### < SYSTEM DESCRIPTION >

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR
FEB warning lamp signal												R									т		
ICC operation signal	R																				т		
ICC warning lamp signal												R									т		
Lane departure warning lamp signal												R									т		
LDP ON indicator lamp signal												R									т		
Target yaw mo- ment signal			R																		т		
Sonar status sig- nal																		R					Т

# WIRING DIAGRAM CAN SYSTEM (WITH ICC)

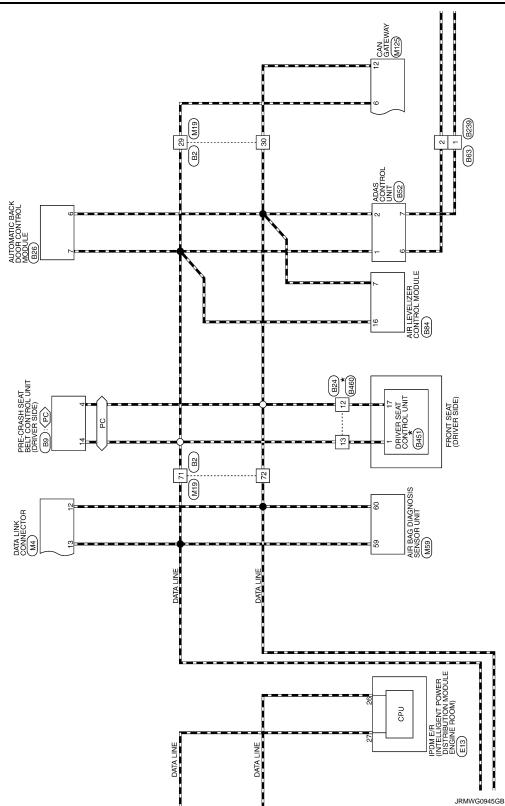
# Wiring Diagram



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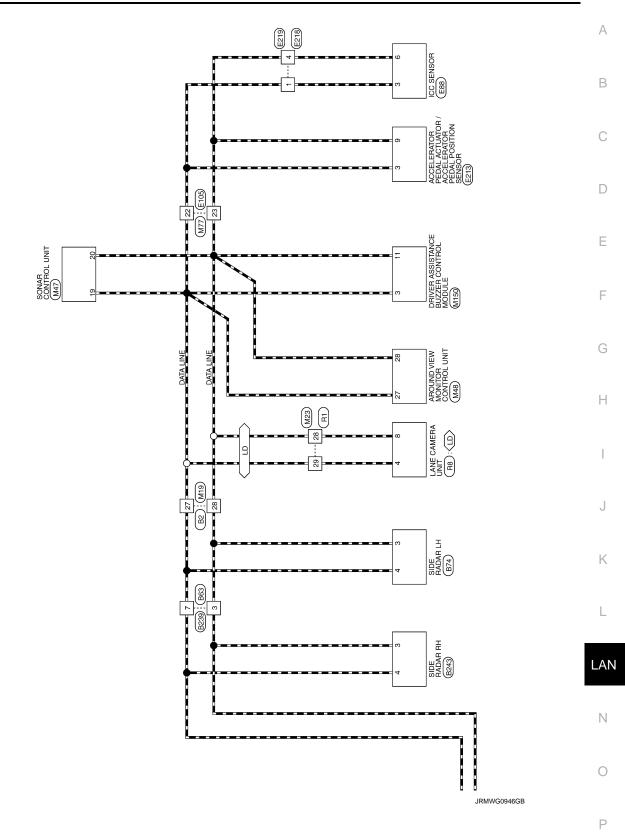
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< WIRING DIAGRAM >



< WIRING DIAGRAM >

[CAN]



CAN	2010										
Connector No.	- No. B2	12	43	W/N	1	Connector No.	B9		ß	-	
Connector Name		WIRE TO WIRE	44	LG/B	1 1	Connector Name	PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)	∞ σ	G/0		
Connecto	Type TF	Connector Type TH80MW-CS16-TM4	47	В	-	Connector Type	TH18FW-CS2	10	R/B	-	
ą	-		49	ĥ	I	ą		=	2		
ALL I		·····································	0G 12	8/X 8/X		(HMA)	K	2 2	- -		
H.S.		2 7 102 204 205 200 2 7 102 204 205 200 2 8 10 102 205 205 205 205 205 205 205 205 205 2	52	BR/Y	1	H.S.		2 7	- ^/	1	
		- 1 0 1000 2000 2000 2000 2000 2000 2000	53	0/B			1 2 4 0 8 9	15	$\vdash$	1	
		2 10 10 10 10 10 10 10 10 10 10 10 10 10	54	G/0	1		19 10 12 14 16 17 18 20				
			55	R/B	1						
			56	LG/R	-			Conne	Connector No.	B26	
a	Color Of	Signal Name [Snecification]	57	GR/R	1	nal C	Df Signal Name [Snecification]	Conne	Connector Name	ALITOMATIC RACK DOOR CONTROL MODULE	
No.	Wire		58	γ/G	-	No. Wire					
2	_	I	59	M//	I	-	SIG BAT	Conte	Connector Type	TH20FW-TB6	
e	щ	1	99	œ	1	2	0UT 1	ą			
، ع	N.N.	I	63	œ (	I	╈		Ŧ			
	-	1	64	2	1				ŝ		
-	> '	ı	65	\$		+			1		
<b>Б</b>		I	99	5	1	5		_		7 6 20 8 19 19 17 2 14 15 16	
=	8/8		67	SHELD	'	+	SENS POWER 1	_			
12	щ	1	69	LG/B	1	12 B	0UT 2				
13	G/R	I	70	P/L	-	14 L	CAN-H				
14	B/Y	1	μ	_		16 W	LOCAL COMM 1	Terminal	0	f Signal Name [Snecification]	
15	W/R	-	72	٣	-	17 W	SENS GND 1	Ň	Wire		
16	GR/R	1	11	Υ/B	1	18 B	SIG GND	-	L	BUZZER	
18	G/W	T	78	Υ/٢		19 W	MOTOR BAT	2	Y/B	ABD SW	
19	>	1	79	Y	-	20 B	MOTOR GND	4	GR	ABD CLOSE SW	
20	W/G	-	80	W/R	-			9	٩	CAN-L	
21	B/W	1	81	۲/۲	-			7	L	CAN-H	
22	>	I	84	L/0	1	Connector No.	B24	~~		HALF	
24	G	I	86	0	-	Connector Name	WIRE TO WIRE	6	GR/L		
25	0	1	87	W/R				2	+	BAT	
26	~	I	88	0	-	Connector Type	NS16FW-CS	=	_	CLOSURE MTR (CLOSE)	
27	2	I	68	W/L		ą		12	┥	CLOSURE MTR (OPEN)	
28	Y/R	1	90	GR/L	I	B		14	-		
29	_	1	91	3	-	e la		15	L/R		
30	œ	1	92	U		1.3	۲ ۲	16	ΓC	TOUCH SENS RH	
31	G/Y	1	94	W/R	-		16 15 14 13 12 11 10 9 8	17	0	MAIN SW	
32	B/SB	I	96	L/W	1			19	Ŋ	CLOSE SW	
33	LG/R	1	97	ч	-			20	G/Y	OPEN SW	
34	BR/W	1	96	>	-			22			
35	GR/R	1	66	L/W	-	Terminal Color Of	Df Simul Name [Saccification]	28	R/W		
36	SB	1	100	P/B	1	No. Wire		34	œ	GND	
37	ГG	1				1 W/R	-				
38	-	I					-				
39	٩	I				3 P/L	1				
40	W/G	1					8				
41	0	1				5 LG/B	-	_			

[CAN]

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	A
AR LIFTER) ENSIGN RENSOR RESSOR RESSOR RESSOR PD-1 D-1 C D-1 (CPWARD) S W (UPWARD) S W (UPWARD) T SW	В
PULSE (re.kn Liff.ER)       TILI SENSOR       TILI SENSOR       TILI SENSOR       BADRESS I       SLIDE SW (FORMAD)       FROULUERS W (FURWARD)       FROULUERS W (FURWARD) <td>С</td>	С
20         B/L           21         W/B           22         W/B           23         W/L           23         W/R           23         W/R           23         V/M           23         V/R           23         V/R           23         V/R           23         V/R           23         R/M           3         R/M           9         V/R           11         R/M           13         R/M           14         Gonrector Nome           15         L           16         -	D
Image: Second State     Image: Second State	E
AD AR RH FEB-WP Signal Nume (Sevec Signal Nume (Sevec Control L 1 ESEAT CONTROL U ESEAT U ESEAT CONTROL U ESEAT U ESEAT CONTROL U ESEAT U ESEAT CONTROL U ESEAT U ESEAT U ESEAT U ESEAT CONTROL U ESEAT U ESEAT CONTROL U ESEAT U ESEAT U ESEAT CONTROL U ESEAT U ESEAT U ESEAT CONTROL U ESEAT U ESEAT U ESEAT U ESEAT CONTROL U ESEAT U	F
Name         Color         Name           Party Name         Party         V           Party         V         V	G
	Н
DAR LH     3-WD-5P       3-WD-5P     3-WD-6P       5grand Name [Specification]     5grand Name [Specification]       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       12     34       13     14       14     16       15     16       16     17       17     16       18     17       19     11       11     13       12     14       13     14       14     16       15     16       16     17       17     17       18     17       19     16       10     17       11     16       12     16       12     17       13     16        14     16	Ι
В74	J
I6     W       Domestor Name     B14       Connector Name     B15 FADAR       Connector Name     SIDE FADAR       Connector Name       Connec	K
	L
EM (WITH ICC) BE2 ADAS CONTROL UNIT TH2FW-NH TH2FW-NH TH2FW-NH TH2 TH2 TH2 TH2 TH2 TH2 TH2 TH	LAN
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CAN SY Connector Nar Connector	0

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< WIRING DIAGRAM >

[CAN]

39 R./W INTERNAL SPEED SEN PWR SUPPLY     Connector No. E80     Connector Name ECM     Connector Name ECM     Connector Youe MARSEE-LAER11-14		Terminal Color Of Signal Name [Specification] No. Wire	111 R FUEL INJECTOR DRIVER POWER SUPPLY 112 SB FUEL INJECTOR DRIVER POWER SUPPLY	++	. m	120 Y EVAP CANISTER VENT CONTROL VALVE 122 BR/W ναι κατιλατοι κατία κατά το τηται μασάμε	R/R R	•	P/L	۲	131 L/W SENSOR POWER SUPPLY 133 SB SENSOR POWER SUPPLY	134 V/W FUEL TEMPERATURE SENSOR 136 W/P ACCELEDATOD DEDIAL DOSTTON SENSOR 1	M/G	138 V BATTERY CURRENT SENSOR	P ∕8	ß	R/W	143 L/Y EVAP CONTROL SYSTEM PRESSURE SENSOR	, , ,	G/Y	α	I 151 P CAN COMMUNICATION LINE
20         SB         DPFL           21         R/O         05 RR           22         V         DR-L           23         P         DR-L           33         LG         DPFR           34         G         DF           35         R         DPFR	стого конструктического конструктиче конструктического констру	e	Connector Type TH40FW-NH	E	1.5. 2011 13171 16161 141 13171 141101 9 17 16	32 31 30 29 28		Terminal Color Of Signal Name [Specification]	BR	Y TRANSF	10 Y/G INTERNAL SPEED SEN GND	11 V 4LSW 13 I CAN-H	1 œ	14 W/R AUTO SW	LG LG	M/L	BR/Y RO	20 GR TRANSFER C/U PWR SUPPLY 35 D/I HILL O DOSITION SEN 3	W MOT	LG/R	R/B	31 L/O INTERNAL SPEED SEN DIR
Connector No. E13 Connector No. E13 Connector Name Proviet betraturum McOut E Broate Room	Terminal         Color Of Ne.         Signal Repetition           No.         Signal Name (Specification)		26 P – – – – – – – – – – – – – – – – – –	28 V	H	33 R 34 G – –		Connector No. E36		Connector Type SAZ42FB-SJZ4	<u> </u>	H.S. <b>C 1 1 1 1 1 1 1 1 1 1</b>	H			nal C	-	2 BAT CND		4 W MOTOR SUPPLY	R/B	10 P/B YAW RATE / SIDE / DECEL 0 SENSOR COMMUNICATION-L
CAN SYSTEM (WITH ICC) Connector No. E1 Connector Name WIFE TO WFE Connector Type TH22MW-NH	Terminal No.         Color Of No.         Signal (Specification)           1         Signal (Specification)         Signal (Specification)	2 G	4 LG 5 W/L		8 LG/R –	14 R 16 SB		BR/Y	+	×	24 P/L -	29 P		32 P -								



	А
E213       -	В
-     -       -     -    -     -    -     -	С
49         W           50         3:HIELD           55         10.7 R           55         10.7 R           55         10.7 R           55         10.7 R           56         8.7 R           57         10.7 R           92         0.7 R           93         0.7 R           93         0.7 R           93         0.7 R           94         0.7 R           10         0.7 V           11         10           12         W/G           13         10           11         0.1 V	D
	Е
	F
	G
Commetter No.           Commetcar Name           Name           Name           Name           Name           Name           Name           Name           Same           Name           Name <t< td=""><td>Н</td></t<>	Н
	I
	J
8         8         9         1 <th1< th="">         1         <th1< th=""> <th1< th=""></th1<></th1<></th1<>	K
	I
	L
WITH ICC) ERROR SUPPLY FOR EM ERROR SUPPLY FOR EM FEMORE SUPPLY FOR EM F	LAN
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Total         CAN         SYS1           166         6R/S1         6R/S1           173         6         6/           173         w         1           173         w         0           173         w         0           173         w         0           174         B         0           173         w         0           174         B         0           175         W         0           175         W         0           174         B         0           175         W         0	0

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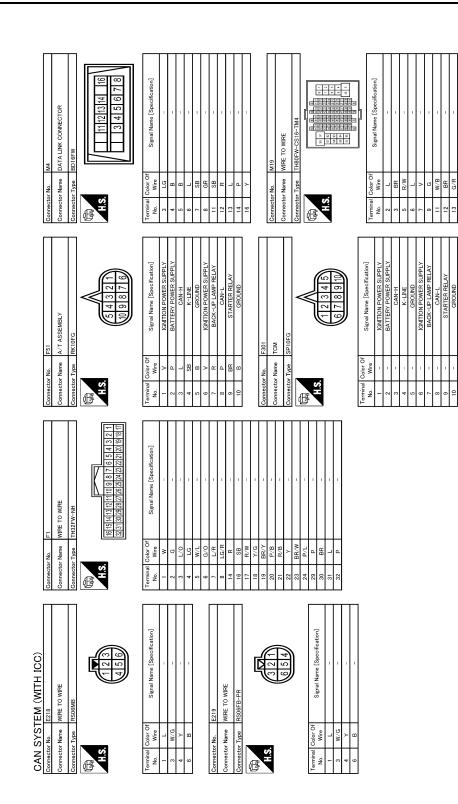
# CAN SYSTEM (WITH ICC)

# Revision: 2014 October

## **LAN-45**

#### 2015 QX80

[CAN]



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72         R         -         11         V           71         Y/LB         -         -         13         U/O           79         Y/L         -         -         20         W           79         Y/L         -         -         21         W           81         Y/L         -         -         23         SHELD           84         UO         -         -         23         P           84         V         -         -         23         P           84         UO         -         -         24         SHELD           83         W/L         -         -         26         L/G           83         W/L         -         -         27         26         L/G           83         W/L         -         -         27         Y/G         27         Y/G           83         W/L         -         -         -         27         Y/G         27         Y/G		
STEM (WTH ICC)	L     -       Y     -       R     -       R     -       CV     -       CV     -       CV     -       CV     -       CV     -       E/SB     -       B/SB     -       U/S     -       P/S     -       B/SB     -       N/G     -       B/S     -       B/S	

**LAN-47** 

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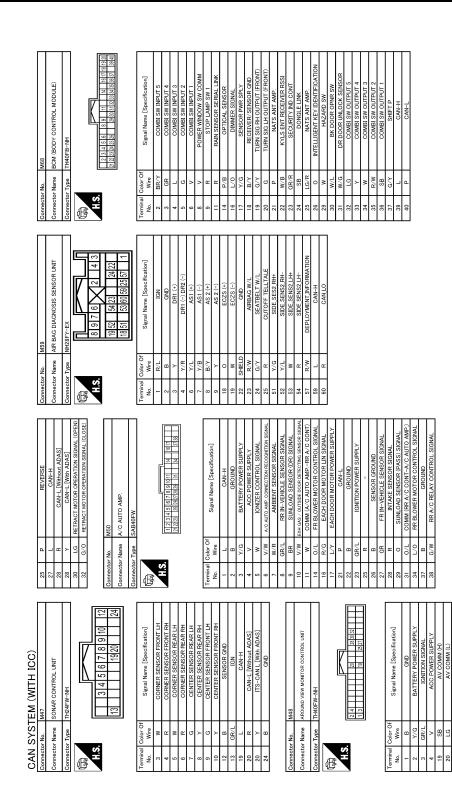
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SB GR R/W		24         R/B         RL THE PRESSURE RECEIVER GND           25         W/L         F THE PRESSURE RECEIVER GND           26         B/W         FL THE PRESSURE RECEIVER GND           32         B         GND	Connector No. M99 Connector Name TCU Connector Type TH40FW-NH	H.S. 	Terminal Color Of Signal Name [Specification] No. Wire RAT	2 B 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B A A A B A C B A B A A C B B C C B C C C C C C C C C C C C C	Z     F     MICROPHORE COC       Z     BR     SOUND SIGNAL       Z     SHIELD     MICROPHORE COC       Z     SHIELD     MICROPHORE COC       Z     SHIELD     MICROPHORE SIGNAL       J     G     SOS CALL SWITCH LED SIGNAL       J     O     SOS SWITCH LED SIGNAL
						M90 LOW THE PRESSURE MARAINO CONTROL UNIT TH32FW-NH		Signal Name [Specification] CAM-L CAM-L CAM-L Ren TIRE PRESSURE RECEIVER SIGNAL FR TIRE PRESSURE RECEIVER SIGNAL FT TIRE PRESSURE RECEIVER SIGNAL. FL TIRE PRESSURE RECEIVER SIGNAL.
	<u> </u>		55 R/G 56 B/O 66 < 88 91 G/R			Connector Name Connector Name Connector Type	EH I	Answer         Color Of More           No.         Wire           1         1           2         L           2         L           3         0/L           6         W/G
54 GR/L	94         Y/B         -           95         L/R         -           97         R         -           98         O/L         -           100         W/B         -	ector No. M82 ector Name WIRE TO WIRE ector Type TH80FW-CS16		nal Color Of Signal Name Wire L V/W G/R	9 6 R/L	UK	17 W/B	$\frac{R_{\rm N}}{M}$
	Connector Type TH90FW-CS16-TM4	Of Signal Name [Specif	LW		U/L	уча –	0	80 622 88 88 88 8 8 8 8 8 8 8 8 8 8 8 8 8

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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

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CAN SYSTEM (WITH ICC)	36 SHELD -	8 BR SPEAKER OUT(+)	Terminal Color Of	
Connector Name WIRE TO WIRE		Ш ->	-	ognal Name [opecimication]
	╡		+	PARKING BRAKE SIGNAL
Connector Lype I H40MW-NH	39 BK		0 09	
€.	1		╞	INTELLICENT VEV IDENTIFICATION SIGNAL
		Connector No. M151	+	
1.3. 	Connector No. M125		71 SHIELD	D MICROPHONE SHIELD
1 2 3 4 2 0 7 0 8 10 11 12 3 4 19 0 7 9 0 10 11 12 13 H 13 10 11 10 13 20 34 23 35 35 35 35 55 55 57 33 35 30 30 30 31 31 23 23 23 25 23 33 30 40	Connector Name CAN CATEWAY		72 Y	MICROPHONE VCC [With DCM]
		Connector Type TH24FW-NH	72 Y/G	MICROPHONE VCC [Without DCM]
	Connector Type TH12FW-NH	ą		COMM (CONT-DISP)
	4		74 P	CAN-L
le	ß		75 LG	AV COMM (L)
		<b>1</b> .2. 11 5 6 8 1112	76 LG	AV COMM (L)
1 SB -	1 3 4 5 6	2 07 2 07	┥	DIMMER SIGNAL
	> : - :		+	
+	7 9 10 11 12		+	
r 0.1171.0			82 BH/W	VEHICLE SPE
╈		I erminal Color UT Signal Name [Specification]	╈	O SHELU
- [6	I erminal Color OT Signal Name [Specification]	2114	+	
+		r v room number	8/ 8/	MICRUPHONE SIGNAL [With UCM]
╉	`	> 2	╈	MICKOPHONE
	⊥ → -	5 G	88 SHIELU	O SHELU COMMA (PEED COME)
Т		GR SWIVEL AC	28 J/L	COMM (UISP-CONT)
11 W/L	8 -	я (		CAN-H
		GR IGNIION		AV CUMM (H)
	_ (	٩.	92 SB	AV COMM (H)
5	_ بر ا	LG/B		
+	2	LG/K H	   	
+	m	SB	Connector No.	M222
	12 R CAN-L	23 B/O HEIGHI SENSOR GROUND	Connector Name	WIRE TO WIRE
		dr/ L	Total Turk	TURDENI-NH
╀	Connector No M150			
		Connector No M210	4	
- -	Connector Name DRIVER ASSISTANCE BUZZER CONTROL MODULE	Г	字 子	
23 P	Connector Type TH16FW-NH	Connector Name AV CONTROL UNIT	H.S.	
-		Connector Type TH32FW-NH		
		1	•	0 7 00 5 00
26 GR/L –		E E		
W	R E 3 1			
BR	,	1.2. FILER 62 67 68 69 70 74 75 75 75 75	Terminal C	of Simul Name [Saacification]
~	16 13 11	00 00 01 00 02	No. Wire	
		<i>i</i> 0	1 SB	-
30 Y/G -			2 SB	-
31 Y/L –	Terminal Color Of Simul Name [Canadiantion]		3 L	-
32 B –	No. Wire Orginal manue (Opecinication)		4 W/B	-
_	1 W/G IGN		5 SHIELD	-
	3 L ITS COMM-H		9 FG	
35 SHIELD -	5 B GROUND		7 V	-

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	G
7     W/G       8     Y       Connector Name       Connector Name       Connector Name       0       9       9       9       9       12       13	Н
Signal Name [Specification] Signal Name [Specification]	I
	J
Terminal No.         Color Of Wree           1         Wree           2         Wree           9         Y/L           9         Y/L           11         W/N           11         W/N           11         Y/L           11         I <td>K</td>	K
	L
EM (WITH ICC) EM (WITH ICC) Integration (1998)(19988)(1998)(1998)(1998)(1998)(1998)(1998)	LAN
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CAN SYS 9 0 0 10 0 0 11 0 0 10 0 10 0 0 10	0

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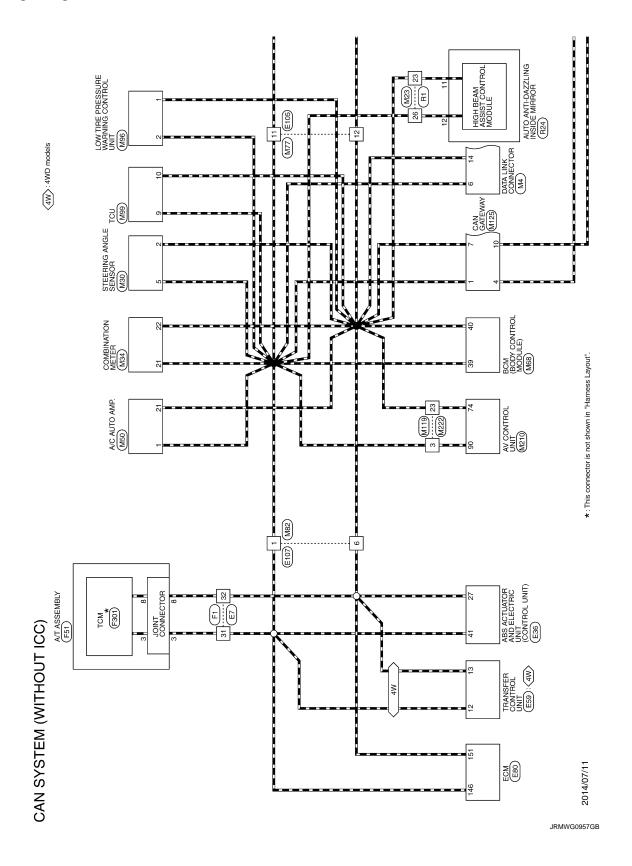
[CAN]

< WIRING DIAGRAM >

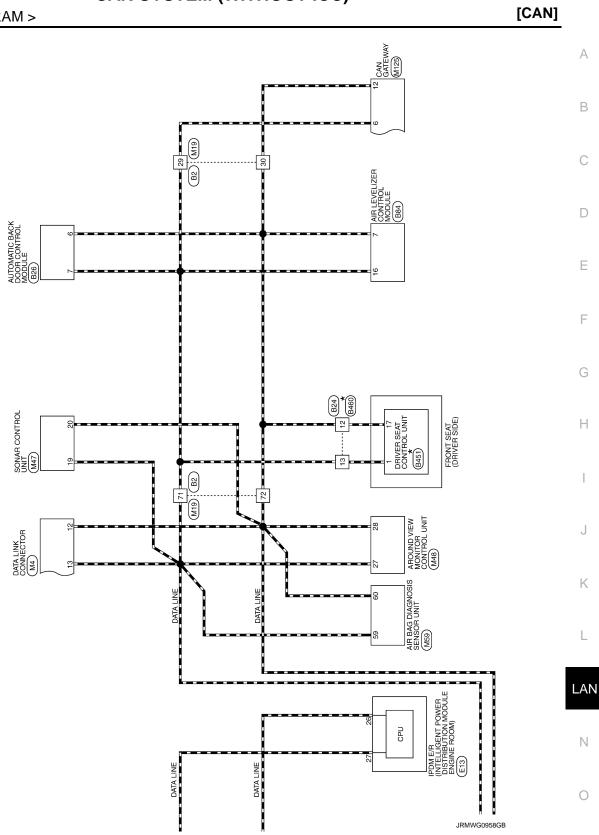
# CAN SYSTEM (WITHOUT ICC)

Wiring Diagram

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< WIRING DIAGRAM >



CAN SYSTEM (WITHOUT ICC)	5											
Connector No.	tor No.	. 82	43	~>	1	Connector No.	4o. B24		8	3	HALF LATCH SW	
Connector Name	or Nam	me WIRE TO WIRE	44	LG/B		Connector Name	Vame WIRE TO WIRE		თ	GR/L	IGN	
			46	m	1				2	>	BAT	
Connect	or Type	Connector Type TH80MW-CS16-TM4	47	В	1	Connector	Connector Type NS16FW-CS		Ξ	٣	CLOSURE MTR (CLOSE)	
ģ			49	Я	-	ģ			12	>	CLOSURE MTR (OPEN)	
ß			50	R/B	1	ľ			14	G/W	TOUCH SENS LH	
Ě		**	51	W/R	-				15	L/R	TOUCH SENS GND	
<u>6</u> .			52	BR/Y	1	<u>ю</u> н		J 3 2 1	16	P	TOUCH SENS RH	
		A         D <thd< th=""> <thd< th=""> <thd< th=""> <thd< th=""></thd<></thd<></thd<></thd<>	53	0/B	1		16 15 14 13 12 1	110 9 8	1	0	MAIN SW	
			54	G/0	1		2		19	Z	CLOSE SW	
			55	R/B	-				20	≻/S	OPEN SW	
			56	LG/R					22		GND	
Terminal	I Color Of		57	GR/R		Terminal (	Color Of 21 11 52	, ;	28	R/W	BAT	
No.		fire Signal Name [Specification]	289	//J			Wire Signal Name [Specification]	scification]	34		CND	_
¢	-	1	202	M/M	,	-	-		;			_
1 °	1	, 8	8	<u></u>	"							
u u	5 G		5 F	: a					Jonne	Connector No	P04	_
6	-		8		,	•						
- r	1>		5 8	- 3		t u			Connec	tor Name	Connector Name AIR LEVELIZER CONTROL MODULE	
-	1		3 3			, ,				-  -		-
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12	ä	BR -	69	LG/B	ı	6	۱ ۱		B		K	
13	9	G/R –	70	P/L	-	10	R/B -		S IL	e		
14	B/	B/Y -	11	-	-	11	LG/R -		Ė	5	23157	
15	W/	W/R –	72	ж	-	12	-				- - - -	
16	GR	GR/R -	11	Υ/B	,	13	- ר				9 11 13 16	
18	9	G/W -	78	7/7	1	14						
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66	>		84	0/1	,	Connector No	do R26		6	a	GND	
24			86	c						>	AIR COMPRESSOR RELAY	
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26	>		88	0	-	Connector Type	rvne TH20FW-TB6		ŝ	>	VEHICLE HEIGHT SENSOR SIGNAL	
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RING DIAGRAM >	[CAN]
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CAN SYSTEM (MITHOUT ICC)       Connector Nu.       Connector Nu.     Denvetor Nu.       Connector Nu.     Parvier Sch Control. UNIT       Connector Nu.     Denvetor Nu.       Nu.     Connector Nu.       Nu.     Connector Nu.       R.     Nu.	LAN
CAN SYSTEM (WT           Connector ho.         B451           Connector hum         Pattern           No.         Vis         Pattern           String         B.         Vis         Pattern           No.         B.         Vis         Pattern           String         String         String         String           String         String         String         String           String         String         String         String           String         String         String         String           String         String         String           String	Ν
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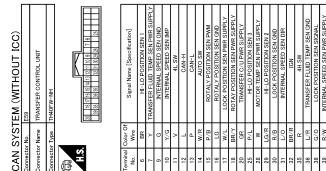
**LAN-55** 

	171	M	POWER SUPPLY FOR ECM	36	B/R		
	172	M	POWER SUPPLY FOR ECM	37	G/Y	-	
	173	0	THROTTLE CONTROL MOTOR POWER SUPPLY	38	J	-	
	174	8	ECM GROUND	40	SB	1	
	175	в	ECM GROUND	41	W/R	-	
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				43	>	Т	
	Connector No.	or No.	E105	54	GR/L	-	
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			MINE 10 MINE	92	L/W	-	
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				98	G/B	Т	
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	6	W/B	1			)	
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		4 日 14(2) 2		
			Connector No.	or No
Terminal No.	Color Of Wire	Signal Name [Specification]	Connector Nam Connector Type	or Na
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2	L/W	Т	ľ	_
3	R/B		Ň	
4	_	Т	Ю.Н	
5	Y	1		
7	D/M	1		
8	P/B	1		
9	W/B	1		
10	9	-	Terminal	Color
11	L	1	No.	Vir
12	٩	-	-	٦
13	P/B	-	4	>
14	BR	-	5	)Q
15	LЛВ	I	9	٩
16	SB	-	6	GR
18	BR	-	10	۲/
19	Y/G	1	11	Ľ
20	BR/Y		12	W/
21	Y/Y	-	13	BR
22	Г	1	14	Ľ
23	Y	1	15	BR
24	N/T	I	16	В
28	0	-	17	M
29	R/W	-	18	GR
30	L/B	-	20	W/
31	٢	1	21	
32	GR/R	1	22	R
34	Y	1	23	G/
35	۵		24	à

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Connector	Connector Type	ECM MAB55FB-MEB10-LH
HS		
Terminal No.	Color Of Wire	Signal Name [Specification]
111	н	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	IJ	1
114	m	ECM GROUND
115	в	ECM GROUND
120	≻	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	R RELAY ABORT SIGNAL (VVEL CONTROL M
123	N/R	DTTLE CONTROL MOTOR I
125	Чŋ	DL MODULE
120	, ,	IUN SENSOR
128	۲,q	ASCU/ICC STEEKING SWITCH SENSOR GROTIND
130	Ľ	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	W/V	TURE SENS
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	> (	
139	5	BATTERY TEMPERATURE SENSOR SENSOD COOLINID
141	S BS	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	ΓΛ	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	0/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASCD/ICC BRAKE SWITCH
150	ч	SENSOR GROUND
151	٩	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	TION I
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	1
166	×	NMMO
160	0/0	THORE OF THE STORE OF THE STORE



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[CAN]

	[•,
Connector Nume         FT           Connector Name         WIRE TO WIRE           Connector Name         WIRE TO WIRE           Connector Name         Mise           Connector Name         Connector Name           Connector Name         Mise           Connector Name         Mise           Connector Name         Connector Name           Connector Name         Connector Name           Connector Name         Connector Name           Connector Name         Connector Name           None         Signal (Specifical (SSE)(SAI (SSE))           None         Signal Name (Specification)           None         Signal N	
No.255         Lew (WITHOUL ICC)           R         L           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           W         C           B         C           W         C           C         C           W         C           W         C           B         C           C         C           C         C           C         C           C         C           B         C           C         C           C         C           C         C           C         C           C         C           C         C           C         C           C	
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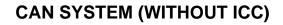
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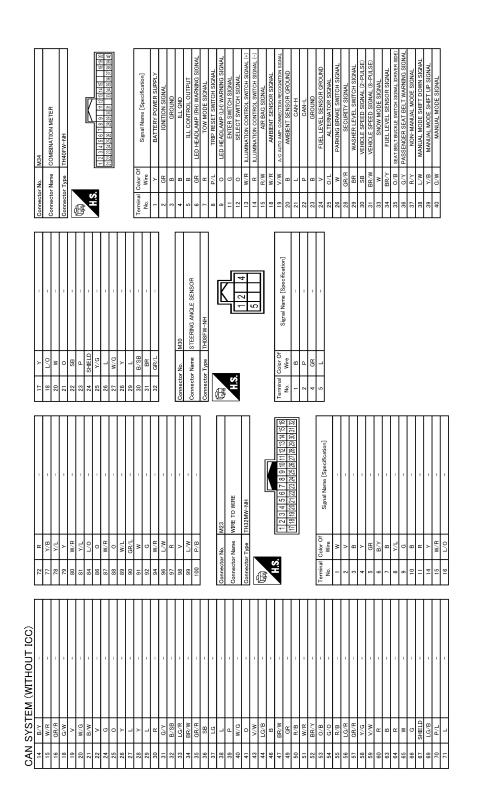
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IGODY CONTROL MODULE)         IGODY CONTROL MODULE)         OFE-MH         Signal Name [Specification]         2[4]5[6] []]         Signal Name [Specification]         COMBI SW INPUT 3         COMBI SW INPUT 4         COMBI SW INPUT 3         COMBI SW INPUT 3         COMBI SW INPUT 3         COMBI SW INPUT 4         COMBI SW INPUT 3         COMBI SW INPUT 3         COMBI SW INPUT 1         POWER WINDOW SW COMM         MIT ANT AND         NIT SAIT AND         NAT SAIT AND         NATS SAIT AND         NATE SAIT AND         ANDORDO ONTENT 4         COMBI SW OUTPUT 4         COMBI SW OUTPUT 4         COMBI SW OUTPUT 4<	В
	С
Commetter No.         Commetter No.           Commetter Name         Commetter Name           Signa         Signa           Signa         Commetter Name           Signa         Commet	D
Sort UNIT 1.14+	E
C DAQNOSIS SENC       V-EX       Signal Nume (Same       Signal Nume (Same       DR1(-).DR3       DR1(-).DR4       OND       DR1(-).DR4       OND       DR1(-).DR4       OND       DR1(-).DR4       OND       OND       OND       DR1(-).DR4       OND       OND       OND       OND       OND       OAN LUCF       DR10       OAN LUCF	F
	G
Connector No.           Connector No.           Connector Namial           Connector Namial           Connector Namial           Connector Namial           No.           Similar	Н
FEVERSE       CAN-H         CAN-H       CAN-H         CAN-L (Infiniout ADAS)       CAN-L (Infiniout ADAS)         CAN-L (Infiniout ADAS)       CAN-L (Infiniout ADAS)         MS0       CAN-L (Infiniout ADAS)         MS0       AVE CANTO AND         MS0       V.C. AUTO AND.         MS0       V.C. AUTO AND.         Signal Name (Specification)       Signal Name (Specification)         CAN-H       CAN-H         MS0       CANTO AMP.         MS0       CANTO AMP.         Signal Name (Specification)       CAN-H         CAN-H       CAN	I
F     CAN-L       CAN-L     Signal Jajjajajajajajajajajajajajajajajajajaja	J
25         P           23         L           28         R           29         L           29         L           20         L           21         L           22         L           23         L           24         V           25         L           26         V/W           1         L           1         L           1         V           23         L           23         R           23         R           23         R           23         R           23         R           34         L           33         L           33         R           33         R	K
	L
EM (WITHOUT ICC) M47 SonAR CONTROL LWIT TR24FW-MH TR24FW-MH TR24FW-MH Signal Nume [Specification] Signal Nume [Specification] Signal Nume [Specification] Signal Nume [Specification] Signal Nume [Specification] Signal Nume [Specification] M88 M88 M88 M88 M88 M88 M88 M8	LAN
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CAN SYS Connector Name Connector Name	0

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# **CAN SYSTEM (WITHOUT ICC)**

[CAN]

7 SR Do Trac paceviac acretives private vision v	T	8 GR RL TIRE PRESSURE RECEIVER POWER SUPPLY	9 R/W FR TIRE PRESSURE RECEIVER POWER SUPPLY	10 LG FL TIRE PRESSURE RECEIVER POWER SUPPLY	æ	5	L/K	۹.	21 G/R FR TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)	22 BR/Y FL TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)	W/V	R/B	25 W/L FR TIRE PRESSURE RECEIVER GND	RR/W	- 	2			Connector No. M99	Connector Name TCU		Connector Type TH40FW-NH	4						I		Terminal Color Of		1 Y/R BAT	2 B GND	3 BR ACC	4 GR/L IGN	5 V ACC OUT	6 BR -	7 B GND	T P-CANH	20 P V-CAN L	MICROPHONE VCC	۷ ۸/۲	20 SHIELD MICROPHONE GND	7	BR	SHIELD	G SO	35 0			Ţ
30	╉	39 0 -	40 W -	41 R -		╞	t	5	46 B –	47 W -	48 SHIELD -	49 W -	50 SHIELD -	t	+	┢	╉	+	B/0	-	- v 99	91 G/R –	92 GR –	93 0 -	95 SB –	96 G/R –	97 GR/L -	98 G/W -		100 L -			Connector No. M96	Connector Name 1 OW TIDE DECOUDE WARNING CONTROL INIT		Connector Type TH32FW-NH			K	<b>1.3.</b>					Terminal Color Of		1 P CAN-L	2 L CAN-H	3 0/L RR TIRE PRESSURE RECEIVER SIGNAL	_	5 R/I FR TIRE PRESSURE RECEIVER SIGNAL	1 2.
	╈	-	92 L/W -	94 Y/B -		╀	×	┥	100 W/B -			Connector No. M82		Connector Name WIRE 10 WIRE	Connector Tyme TH80FW-CS16-TM4	1				24 XX	200 200 200 200 201 202 202 200	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			[erminal Color Of cimeration of cimeration]	No. Wire olgnar Name Lopecincation		4 V/W -	5 G/R -		9 GR/I -	┢	11 L/R - 0	12 W/G -	13 BR/Y -	14 LG – C	15 BR/W -	16 B/Y - 10	17 W/B -	18 GR/R	20 W/R -	21 B -	22 R/L -	23 G/R -	R/W -	- T/M	26 R -	27 L -	28 B/SB -	$\vdash$		┦
CAN SYSTEM (WITHOUT ICC)	MI//	Connector Name WIRE TO WIRE		Connector Type TH80FW-CS16-TM4					12 日本		10 35 10 10 10 10 10 10 10 10 10 10 10 10 10			,	Wire Signal Name [Specification]						5 Y	- D/M	8 P/B -	9 W/B -	10 G – Ten	11 L	12 P -	13 P/B -		- T/0	-	BR	19   Y/G   -   1		21 V - 1		X	24 L/W 1 1	- 0	29 R/W - 1	30 0/F - 2	31 Y = _		-	-	B/0 -	G/Y -		88		- -	:

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#### Revision: 2014 October

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WIRE	В
Bit	С
13         P           14         SHELD           15         0           19         V           19         V           21         LG           22         LG           23         LG           23         LG           23         LG           33         V/L           33         SHELD           33         SHELD           34         R/M           40         SHELD           33         SHELD           34         R           40         SHELD           33         SHELD           34         R           40         SHELD           33         SHELD           34         R           40         SHELD           35         SHELD           36         SHELD           37         SHELD           38         SHELD           39         SHELD           31         V/L           40         SHELD           5         V           6         B/Y	D
DEMTFICATION SIGNAL HORE SHELD VOG [Wein DeM] VOG [VOG [Wein DeM] VOG [VOG [Wein DeM] VOG [VOG [Wein DeM] VOG [VOG [VOG [VOG [VOG [VOG [VOG [VOG [	E
	F
SHEED         CUC	G
	Н
a TEWAY     a TEWAY       c ATEWAY     a TEWAY       c ATEWAY     a TEWAY       FW-hH     Signal Name [Specification]       Signal Name [Specification]     CAN+H       C AN+H     C AN+H       C	I
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36     StatELD       37     StatELD       38     StatELD       39     StatELD       39     StatELD       30     StatELD       40     StatELD       1     1	K
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CAN SYS         CAN SYS           Connector Num- Connector Num- Connector Num- Connector Num- Denter Type         Connector Num- Connector Num- Connector Num- Num- Denter Type           Terminal Color O         Terminal Color O         Num- Connector Num- Sing         Num- Sing           P         V         Num- Sing         Num- Sing         Num- Sing           P         V         Num- Sing         Num- Sing         Num- Sing           P         V         V         V         V           P         V         V         V         V           P         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V         V         V           P         V         V         V <td>0</td>	0

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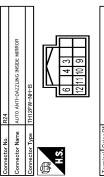


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SHIELD Y/G B/SB W/G L B/SB BR B/R



**LAN-62** 

Signal Name [Specification]	GROUND	AUTO ANTI-DAZZLING OUTSIDE MIRROR CONTROL SIGNAL	IGNITION POWER SUPPLY	AUTO ANTI-DAZZLING OUTSIDE MIRROR GROUND	BATTERY POWER SUPPLY	CAN-L	CAN-H	
Color Of Wire	в	B/R /	B/R	B/Y	B/Y	в	B/SB	
Terminal Color Of No. Wire	3	4	9	9	10	11	12	

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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:0000000010261057	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
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Condition at inspection	,	
Error symptom : Present / Past		LA
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#### < DTC/CIRCUIT DIAGNOSIS >

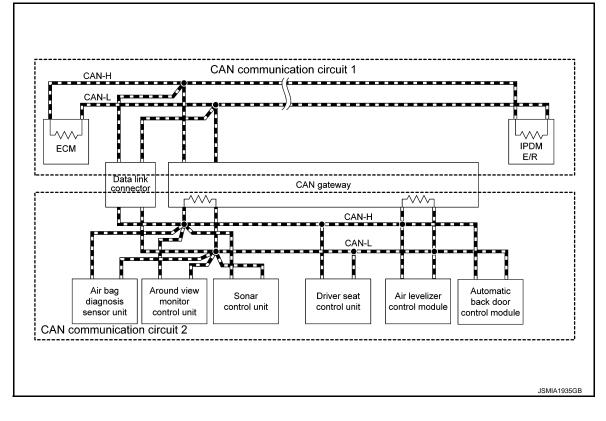
DTC/CIRCUIT DIAGNOSIS MALFUNCTION AREA CHART

# System Diagram

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[CAN]

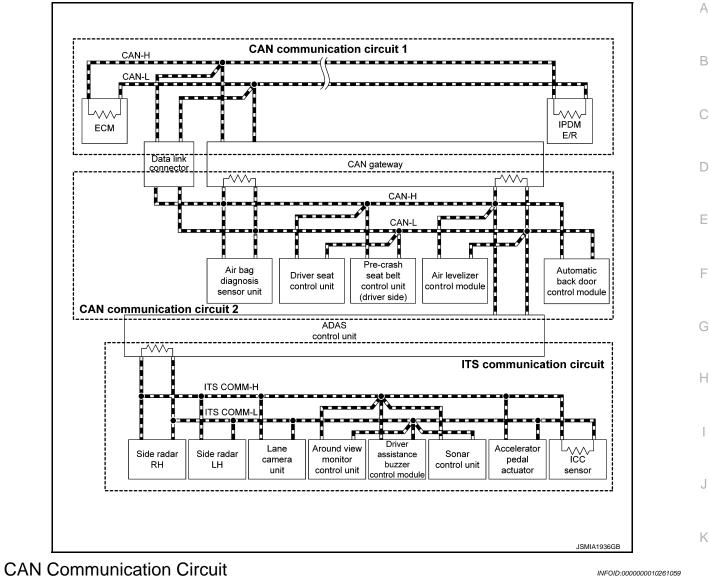
#### WITHOUT ICC SYSTEM



## **MALFUNCTION AREA CHART**

< DTC/CIRCUIT DIAGNOSIS >

#### WITH ICC SYSTEM



MAIN LINE

Malfunction area	Reference	LA
Main line between ABS actuator and electric unit (control unit) and data link connector	LAN-68, "Diagnosis Procedure"	
Main line between data link connector and driver seat control unit	LAN-69, "Diagnosis Procedure"	N
Main line between driver seat control unit and automatic back door control module	LAN-70, "Diagnosis Procedure"	
		0

#### **BRANCH LINE**

Malfunction area	Reference	
ECM branch line circuit	LAN-76. "Diagnosis Procedure"	
Transfer control unit branch line circuit	LAN-77, "Diagnosis Procedure"	
ABS actuator and electric unit (control unit) branch line circuit	LAN-78, "Diagnosis Procedure"	
TCM branch line circuit	LAN-79, "Diagnosis Procedure"	
AFS control unit branch line circuit	LAN-80, "Diagnosis Procedure"	
AV control unit branch line circuit	LAN-81, "Diagnosis Procedure"	

Revision: 2014 October



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# MALFUNCTION AREA CHART

#### < DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
BCM branch line circuit	LAN-82, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-83. "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-84, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-85. "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-86, "Diagnosis Procedure"
High beam assist control module branch line circuit	LAN-87, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-88, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-89. "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-90, "Diagnosis Procedure"
TCU branch line circuit	LAN-91, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-92, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-93, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-94, "Diagnosis Procedure"
Around view monitor control unit	LAN-95, "Diagnosis Procedure"
Sonar control unit	LAN-96. "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-97, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-98. "Diagnosis Procedure"
Air levelizer control module branch line circuit	LAN-99, "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-100, "Diagnosis Procedure"
Automatic back door control module branch line circuit	LAN-101, "Diagnosis Procedure"

#### SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit 1	LAN-108, "Diagnosis Procedure"
CAN communication circuit 2	LAN-110, "Diagnosis Procedure"

# **ITS Communication Circuit**

INFOID:000000010261060

## MAIN LINE

Malfunction area	Reference
Main line between side radar RH and side radar LH	LAN-71, "Diagnosis Procedure"
Main line between side radar LH and around view monitor control unit	LAN-72, "Diagnosis Procedure"
Main line between side radar LH and lane camera unit	LAN-73, "Diagnosis Procedure"
Main line between lane camera unit and around view monitor control unit	LAN-74. "Diagnosis Procedure"
Main line between around view monitor control unit and acceler- ator pedal actuator	LAN-75, "Diagnosis Procedure"

#### **BRANCH LINE**

Malfunction area	Reference
Side radar RH branch line circuit	LAN-102, "Diagnosis Procedure"
Side radar LH branch line circuit	LAN-103, "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-104, "Diagnosis Procedure"

# MALFUNCTION AREA CHART

#### < DTC/CIRCUIT DIAGNOSIS >

LAN-105, "Diagnosis Procedure"	
LAN-95, "Diagnosis Procedure"	
LAN-96, "Diagnosis Procedure"	
LAN-106, "Diagnosis Procedure"	
LAN-107, "Diagnosis Procedure"	
-	LAN-95. "Diagnosis Procedure"         LAN-96. "Diagnosis Procedure"         LAN-106. "Diagnosis Procedure"

## SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference	D
ITS communication circuit	LAN-112, "Diagnosis Procedure"	

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## MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000010261061

[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 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	
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	
IVIOZ	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.

IFE DR itch OFF. ery cable from the ne g terminals and conn M19 B2 normal? cerminal and connecte CONTINUITY (OPEN ness connectors M19	or. I CIRCUIT)	end and loose conne	[CAN]
IFE DR itch OFF. ery cable from the ne g terminals and conn M19 B2 normal? cerminal and connecte CONTINUITY (OPEN ness connectors M19	egative terminal. nectors for damage, be or. I CIRCUIT)	end and loose conne	ection (connector side
DR itch OFF. ery cable from the ne g terminals and conn M19 B2 normal? cerminal and connector CONTINUITY (OPEN ness connectors M19	or. I CIRCUIT) and B2.		
itch OFF. ery cable from the ne g terminals and conn M19 B2 normal? cerminal and connector CONTINUITY (OPEN ness connectors M19	or. I CIRCUIT) and B2.		ection (connector side
ery cable from the ne g terminals and conn M19 B2 hormal? cerminal and connector CONTINUITY (OPEN ness connectors M19	or. I CIRCUIT) and B2.		ection (connector side
ness connectors M19	and B2.	narness connector.	
		arness connector.	
onnector	Harness co	connector Continuity	
Terminal No.	Connector No.	Terminal No.	
13	M19	71	Existed
12 hormal?		72	Existed
main line between the CONTINUITY (OPEN ness connectors B24 y between the harnes	and B460.	nd the harness conn	ector M19.
onnector	Harness co		Continuity
Terminal No.	Connector No.	Terminal No.	
71	B24	13	Existed
		12	Existed
Check CAN system t or was detected in th	ne main line between t		or and the driver seat
C oi	r was detected in th	Check CAN system type decision again. r was detected in the main line between t	

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## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000010261063

[CAN]

# 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	B26	7	Existed
D24	12	D20	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.

		EEN RDR-R AN	D RDR-L CIRCU	IT [CAN]
< DTC/CIRCUIT DIAC		AND RDR-L		
Diagnosis Proced				INFOID:000000010261064
1.CHECK CONNECT	OR			
<ul> <li>Check the following and harness side) Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Sthe inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the fol</li> <li>Side radar RH</li> <li>Harness connector</li> </ul>	ttery cable from the ne ng terminals and conn r B239 r B63 <u>normal?</u> e terminal and connect CONTINUITY (OPEN lowing harness conne	nectors for damage, l for. I CIRCUIT) ctors.		ection (connector side
	arness connector		connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
	4		7	Existed
B243	3	B239	3	Existed
CHECK HARNESS Disconnect the co Check the continu	e main line between th CONTINUITY (OPEN nnector of side radar l ity between the harne	I CIRCUIT) _H. ss connector and the		s connector.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
- DC2	7	P74	4	Existed
D03	3	D/4	3	Existed
	3 <u>normal?</u> >Check CAN system rror was detected in th	e main line between t	3 the side radar RH and	Existed

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

#### Diagnosis Procedure

INFOID:000000011508505

[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 B2
- Harness connector M19

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	
D74	3	D2	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 connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M19	27	B48	27	Existed
	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.

AIN LINE BET	WEEN RDR-L	AND LANE CI	RCUIT	
Diagnosis Proced	ure			INFOID:000000010261065
.CHECK CONNECT	OR			
<ul> <li>Check the followir and harness side). Harness connecto Harness connecto</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul>	ttery cable from the ne ng terminals and conn r B2 r M19	nectors for damage, b or.	pend and loose conn	ection (connector side
Side radar LH Harness connecto . Check the continu	lowing harness connect rs B2 and M19 ity between the side ra arness connector	adar LH harness conn		s connector.
Connector No.	Terminal No.	Connector No.	connector Terminal No.	Continuity
Connector No.	4		27	Existed
B74	3	B2 -	28	Existed
CHECK HARNESS	main line between the CONTINUITY (OPEN rness connectors M23 ity between the harnes	I CIRCUIT) and R1.	ne harness connector	B2.
	connector	Harness	connector	
Harness	Terminal No.	Connector No.	Terminal No.	Continuity
Harness Connector No.		M22	29	Existed
Connector No.	27		28	Existed
	27 28	M23	20	

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## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### Diagnosis Procedure

INFOID:000000010261067

[CAN]

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.
- ADAS control unit
- Harness connectors R1 and M23.
- Around view monitor control unit
- 4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness	connector	Around view monitor cont	rol unit harness connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
Maa	29	M48	27	Existed
M23	28	10140	28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

		WEEN AVM ANI	D APA CIRCUIT	IC A NI
< DTC/CIRCUIT DIAC			<u>IIT</u>	[CAN]
			)	
Diagnosis Proced	ure			INFOID:000000010261068
1.CHECK CONNECT	OR			
<ul> <li>Check the followir and harness side). Harness connecto Harness connecto</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the foll Around view monit</li> <li>Harness connecto</li> </ul>	ttery cable from the ne ng terminals and conn r M77 r E105 normal? terminal and connect CONTINUITY (OPEN lowing harness conne tor control unit rs M77 and E105.	nectors for damage, k tor. N CIRCUIT) ctors.		ection (connector side
Around view mo	onitor control unit	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M48	27	M77	22	Existed
	28	W17 7	23	Existed
<u>s the inspection result</u> YES >> GO TO 3. NO >> Repair the				
M7 <sup>'</sup> 7. <b>3.</b> CHECK HARNESS 1. Disconnect the co	CONTINUITY (OPEN	I CIRCUIT)		
M77. 3.CHECK HARNESS 1. Disconnect the con 2. Check the continu tor.	CONTINUITY (OPEN	I CIRCUIT)	accelerator pedal act	the harness connector

	Harness connector		Accelerator pedal actuator harness connector		Continuity	L
_	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
_	E105	22	E213	3	Existed	LAN
	E103	23	EZIS	9	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

## 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.

	Resistance (Ω)		
Connector No.	Termi	itesistance (22)	
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1043</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	SIS >		[CAN]
<b>4WD BRANCH LIN</b>	E CIRCUIT		
Diagnosis Procedure			INFOID:000000010261070
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> </ol>	OFF. cable from the negative terr	minal	
<u> </u>			bend and loose connection
(unit side and connecto	r side).	C ·	
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the term	inal and connector		
2.CHECK HARNESS FOR			
	or of transfer control unit.	unit harness connector terr	ninale
2. Check the resistance be			1111/015.
Tr	ansfer control unit harness connec	ctor	Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
E59	12	13	Approx. 54 – 66
Is the measurement value w	vithin the specification?		
YES >> GO TO 3. NO >> Repair the trans	for control with some hime		
3.CHECK POWER SUPPL	sfer control unit branch line.		
Check the power supply and <u>dure</u> ".	I the ground circuit of the tra	ansfer control unit. Refer to	<u>DLN-97, "Diagnosis Proce-</u>
	al?		
Is the inspection result norm		it Refer to DI N-112 "Rem	oval and Installation"
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the transfer control uni as detected in the transfer (	control unit branch line.	oval and Installation".
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the transfer control uni	control unit branch line.	oval and Installation".
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the transfer control uni as detected in the transfer (	control unit branch line.	oval and Installation".
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the transfer control uni as detected in the transfer (	control unit branch line.	oval and Installation".
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the transfer control uni as detected in the transfer (	control unit branch line.	oval 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 a	Resistance ( $\Omega$ )		
Connector No.	Terminal No.		1(63)3(2)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.

## **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-122, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-146, "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 DIAGNOS				
		<u></u>		[CAN]
TCM BRANCH LIN	E CIRC	UII		
Diagnosis Procedure				INFOID:000000010261072
1.CHECK CONNECTOR				
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> <li>Check the following terr nector side).</li> <li>A/T assembly</li> <li>Harness connector F1</li> <li>Harness connector E7</li> <li>s the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> </ul>	cable from minals and <u>nal?</u> ninal and co	connectors for d		se connection (unit side and con-
. Disconnect the connect				
2. Check the resistance be	etween the	A/T assembly h	arness connector term	inals.
	A/T assemb	ly harness connector	r	
Connector No.		Termir	nal No.	Resistance (Ω)
F51		3	8	Approx. 54 – 66
<ul> <li>CHECK HARNESS FOR</li> <li>Remove the joint connect</li> <li>Check the continuity be side of the joint connect</li> </ul>	ector. Referenter	r to <u>TM-190, "Re</u> i		 and the TCM harness connector
-				
A/T assembly harness conne	ctor side	TCM harness	connector side	
A/T assembly harness conne Terminal No.	ctor side		connector side nal No.	Continuity
	ctor side	Termir		Continuity Existed
Terminal No.		Termir	nal No.	

## **AFS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

## AFS 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 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.

	Resistance ( $\Omega$ )		
Connector No.	Termi	itesistance (22)	
M151	1	13	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 <u>EXL-111, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-163, "Removal and Installation".

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

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

INFOID:000000010261074

## **AV BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
AV BRANCH LINE CI	RCUIT		
Diagnosis Procedure			INFOID:000000010261075
1.CHECK CONNECTOR			
<ul> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cab</li> <li>Check the following termination nector side).</li> <li>AV control unit</li> <li>Harness connector M222</li> <li>Harness connector M119</li> <li>the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal</li> <li>CHECK HARNESS FOR OF</li> </ul>	le from the negative terr als and connectors for d		nnection (unit side and con-
Disconnect the connector of Check the resistance betwee		1	<u>.</u>
Connector No.		nal No.	Resistance (Ω)
M210	90	74	Approx. 54 – 66
s the measurement value withi         YES       >> GO TO 3.         NO       >> Repair the AV cont         CHECK POWER SUPPLY A	rol unit branch line.	r	
heck the power supply and th iagnosis Procedure". the inspection result normal?	-	V control unit. Refer to <u>AV-</u>	232, "AV CONTROL UNIT :
YES (Present error)>>Replace YES (Past error)>>Error was on NO >> Repair the power s	detected in the AV contr	ol unit branch line.	<u>₀d Installation"</u> .

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## BCM 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 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			
Connector No.	Termi	Resistance (Ω)		
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95. "Removal and Installation".

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

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

### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN]

## < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

	E CIRCUIT (CAN	COMMUNICATION	CIRCUIT I)
Diagnosis Procedure			INFOID:000000010261077
1. СНЕСК ДТС			
Check DTC of the CAN gate	eway with CONSULT.		
Is U1010 or B2600 indicated	<u>1?</u>		
YES >> Perform a diagr NO >> GO TO 2.	osis of the indicated DTC.		
2. CHECK CONNECTOR			
	cable from the negative term d connectors of the CAN		and loose connection (unit
Is the inspection result norm	al?		
YES >> GO TO 3. NO >> Repair the term	inal and connector		
3.CHECK HARNESS FOR			
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>		arness connector terminals	
	CAN gateway harness connector	r	
Connector No.		nal No.	Resistance ( $\Omega$ )
M125	1	7	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL			de). Refer to <u>LAN-64, "Sys-</u>
Check the power supply ar dure".			AN-127, "Diagnosis Proce-
Is the inspection result norm	al?		
YES (Present error)>>Rep YES (Past error)>>Error w	lace the CAN gateway. Ref as detected in the CAN ga	er to <u>LAN-128, "Removal a</u> tewav branch line (CAN co	nd Installation". mmunication circuit 1 side).
Refer to LAN-64	1. "System Diagram".		
NO >> Repair the powe	er supply and the ground ci	rcuit.	

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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:000000010261078

[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 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.

CAN gateway harness connector			Continuity
Connector No.	Termi	Continuity	
M125	4 6		Existed
1123	10	10 12	

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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "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:000000010261079

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## 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.

	Data link connector		Posistance (O)	_
Connector No.	Terminal No.		Resistance (Ω)	F
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-64. "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to <u>LAN-64.</u> <u>"System Diagram"</u>.

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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:000000010261080

[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.	Terminal No.		Resistance (Ω)
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 <u>LAN-64</u>, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to <u>LAN-64.</u> "System Diagram".

## **HBA BRANCH LINE CIRCUIT**

TC/CIRCUIT DIAGNOS	S >		[CAN]
BA BRANCH LINE	CIRCUIT		
agnosis Procedure			INFOID:00000001140179
CHECK CONNECTOR			
Check the following term nector side).	able from the negative termir	nage, bend and loose co	onnection (unit side and con-
he inspection result norma ES >> GO TO 2. O >> Repair the termir	al and connector.		
CHECK HARNESS FOR			
CHECK HARNESS FOR Disconnect the connecto Check the resistance bet ness connector terminals	r of auto anti - dazzling insid ween the auto anti - dazzling s. g inside mirror (high beam assist co	g inside mirror (high bear	sist control module). m assist control module) har-
CHECK HARNESS FOR Disconnect the connecto Check the resistance bet ness connector terminals Auto anti - dazzlir	r of auto anti - dazzling insid ween the auto anti - dazzling g inside mirror (high beam assist co harness connector	g inside mirror (high bear ontrol module)	
CHECK HARNESS FOR Disconnect the connecto Check the resistance bet ness connector terminals	r of auto anti - dazzling insid ween the auto anti - dazzling s. g inside mirror (high beam assist co	g inside mirror (high bear ontrol module)	m assist control module) har-
CHECK HARNESS FOR C Disconnect the connector Check the resistance bet ness connector terminals Auto anti - dazzlin Connector No. R24 he measurement value wi ES >> GO TO 3. D >> Repair the high b	r of auto anti - dazzling insid ween the auto anti - dazzling a. g inside mirror (high beam assist co harness connector Terminal 12	g inside mirror (high bear ontrol module) No. 11	m assist control module) har-

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## **HVAC BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## HVAC 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 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		
Connector No.	Termi	Resistance ( $\Omega$ )	
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-116, "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-153, "Removal and Installation".

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

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

INFOID:000000010261081

## **M&A BRANCH LINE CIRCUIT**

	MGA DIANON		
< DTC/CIRCUIT DIAGNOSIS >			[CAN]
M&A BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000010261082
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable</li> <li>Check the terminals and co (unit side and connector side</li> </ol>	from the negative terr nnectors of the combi		bend and loose connection
Is the inspection result normal?			
YES >> GO TO 2. NO >> Repair the terminal a	and connector		
2.CHECK HARNESS FOR OPE			
<ol> <li>Disconnect the connector of</li> <li>Check the resistance between</li> </ol>		ter harness connector term	inals.
Combina	ation meter harness connec	tor	Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
M34	21	22	Approx. 54 – 66
Is the measurement value within	the specification?		
YES >> GO TO 3. NO >> Repair the combinati	on meter branch line		
3.CHECK POWER SUPPLY AN		-	
Check the power supply and the METER : Diagnosis Procedure".	ground circuit of the	combination meter. Refer to	5 IVIVI-67, COMBINATION
Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was de NO >> Repair the power su	etected in the combination	tion meter branch line.	al and Installation".
		ioun.	

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## STRG BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## STRG 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 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	Steering angle sensor harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
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-148, "Removal and Installation"</u>.

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

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

Revision: 2014 October

## **TCU BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSI	S>		[CAN]
TCU BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000010261084
1.CHECK CONNECTOR			
	FF. ble from the negative termina connectors of the TCU for d		e connection (unit side and
Is the inspection result norma	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector		
2.CHECK HARNESS FOR C			
<ol> <li>Disconnect the connector</li> <li>Check the resistance bety</li> </ol>	veen the TCU harness connector	ector terminals.	
Connector No.	Terminal N	0	Resistance ( $\Omega$ )
M99	9	10	Approx. 54 – 66
Is the measurement value with	nin the specification?		
YES >> GO TO 3. NO >> Repair the TCU b			
3.CHECK POWER SUPPLY			
Check the power supply and t		Refer to AV-381, "TCU	: Diagnosis Procedure".
Is the inspection result norma			
YES (Past error)>>Error was	ce the TCU. Refer to <u>AV-390</u> detected in the TCU branch supply and the ground circuit	line.	<u>ion"</u> .

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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 pre	Low tire pressure warning control unit harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
M96	2	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-50</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-63</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**

	LINE CIRCUIT		
Diagnosis Procedure			INFOID:000000010261086
.CHECK CONNECTOR			
<ul> <li>Check the following tern nector side).</li> <li>IPDM E/R</li> <li>Harness connector E10 Harness connector M7</li> <li>the inspection result norr</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connector</li> </ul>	cable from the negative te minals and connectors for 7 <u>mal?</u> ninal and connector. R OPEN CIRCUIT tor of IPDM E/R.	erminal. damage, bend and loose co	nnection (unit side and con-
	IPDM E/R harness connecto	r	
Connector No.	Tern	ninal No.	Resistance ( $\Omega$ )
E13	27	26	Approx. 108 – 132
CHECK POWER SUPP	M E/R branch line. LY AND GROUND CIRCU	IIT IPDM E/R. Refer to <u>PCS-33</u>	"Diagnosis Procedure"

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< DTC/CIRCUIT DIAGNOSIS >

## A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000010261073

[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-37, "Work Flow".

Is the inspection result normal?

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

## AVM BRANCH LINE CIRCUIT

		LINE CIRCUIT	
< DTC/CIRCUIT DIAGNO	SIS >		[CAN]
AVM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:0000000102610
1.CHECK CONNECTOR			
<ol> <li>Check the following ternector side).</li> <li>Around view monitor concerned of the concerne</li></ol>	cable from the negative terr minals and connectors for d ontrol unit without ICC) <u>nal?</u> ICC: GO TO 2. C: GO TO 3. ninal and connector.	lamage, bend and loose co	onnection (unit side and cor
	etween the CAN gateway ha	arness connector terminals	
	CAN gateway harness connector		Continuity
Connector No.	Termiı	nal No.	,
M125	4	6	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-64. "System Diagram".

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- Disconnect the connector of around view monitor control unit. 2.
- Check the resistance between the around view monitor control unit harness connector terminals. 3.

Around v	Around view monitor control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M48	27	27 28	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

#### ${f 4}$ . CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-236, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-304, "Removal and Installation".

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

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

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## SONAR BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000010261088

[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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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
101123	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-64. "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Sonar control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M47	19 20		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

## **ADP BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS			[CAN]
ADP BRANCH LINI	= CIRCUIT		
Diagnosis Procedure			INFOID:000000010261089
1.CHECK CONNECTOR			
	cable from the negative tern ninals and connectors for d		onnection (unit side and con-
Is the inspection result norm	<u>)al?</u>		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS CON		)	
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termin		-
M125	4	6 12	Existed
s the inspection result norm	-	12	Existed
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	agram". OPEN CIRCUIT		terminals.
Driv	ver seat control unit harness conne	ector	Posistance (0)
Connector No.	Termin	al No.	Resistance (Ω)
B451 Is the measurement value v	1	17	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the drive 4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosi Is the inspection result norm YES (Present error)>>Rep	er seat control unit branch lin LY AND GROUND CIRCUIT If the ground circuit of the drives and the ground circuit of the drives seat control	- iver seat control unit. Refer unit. Refer to <u>ADP-135, "R</u>	to ADP-67, "DRIVER SEAT emoval and Installation".
4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosi Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the dri <u>s Procedure"</u> . <u>nal?</u>	- iver seat control unit. Refer unit. Refer to <u>ADP-135, "R</u> at control unit branch line.	

## **PSB BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000010261090

[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).
- 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.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
WIT25	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-64, "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).
- 3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-	Pre-crash seat belt control unit (driver side)		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-54, "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 sonar control unit branch line.

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

## **E-SUS BRANCH LINE CIRCUIT**

	E-303 BRANCH		50.1.1
DTC/CIRCUIT DIAGNO			[CAN
-SUS BRANCH L	INE CIRCUIT		
iagnosis Procedure			INFOID:0000000102610
.CHECK CONNECTOR			
Check the following term nector side). Air levelizer control mod CAN gateway the inspection result norm	cable from the negative tern minals and connectors for da dule		onnection (unit side and cor
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
	NTINUITY (OPEN CIRCUIT)		
Disconnect the connect	tor of CAN gateway. Stween the CAN gateway ha	rness connector terminals	
Connector No.	CAN gateway harness connector		- Continuity
Connector No.			
	4	6	Existed
<u>64, "System Di</u>	ness and repair the root cau agram".	6 12 use (CAN communication of	Existed Existed circuit 2 side). Refer to LAN
the inspection result norm YES >> GO TO 3. NO >> Check the harr <u>64, "System Dis</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	10 nal? ness and repair the root cau agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control mo etween the air levelizer cont	12 ose (CAN communication of odule. trol module harness conne	Existed
the inspection result norm YES >> GO TO 3. NO >> Check the harr <u>64, "System Dis</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	10 nal? ness and repair the root cau agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control mo etween the air levelizer cont velizer control module harness con	12 Ise (CAN communication of odule. trol module harness conne	Existed
the inspection result norm YES >> GO TO 3. NO >> Check the harr <u>64, "System Dis</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	10 nal? ness and repair the root cau agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control mo etween the air levelizer cont	12 Ise (CAN communication of odule. trol module harness conne	Existed

## ICC BRANCH LINE CIRCUIT

## **Diagnosis** Procedure

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

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
101123	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-64, "System Diagram".

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

ADAS control unit harness connector			Posistanaa (O)
Connector No.	Terminal No.		Resistance (Ω)
B52	1 2		Approx. 54 – 66
asuromont value within th		L	Approx. C

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 DAS-158. "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-159, "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.

## **PWBD BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS			
			[CAN]
PWBD BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000010261093
1.CHECK CONNECTOR			
<ol> <li>Check the following terr nector side).</li> <li>Automatic back door co CAN gateway</li> <li><u>s the inspection result norm</u> YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> </ol>	cable from the negative term ninals and connectors for da ntrol module <u>nal?</u> inal and connector. ITINUITY (OPEN CIRCUIT)		onnection (unit side and con-
	tween the CAN gateway ha	rness connector terminals	S
Connector No.	CAN gateway harness connector Termin	al No	Continuity
	4	6	Existed
M125			
s the inspection result norm YES >> GO TO 3.		12	Existed
Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	nal? ess and repair the root cau agram". OPEN CIRCUIT	se (CAN communication	circuit 2 side). Refer to <u>LAN-</u>
s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	nal? ess and repair the root caus agram". OPEN CIRCUIT of CAN gateway. or of automatic back door ca	se (CAN communication ontrol module. loor control module harne	circuit 2 side). Refer to <u>LAN-</u> ess connector terminals.
s the inspection result norm         YES       >> GO TO 3.         NO       >> Check the harn <u>64. "System Dia</u> <b>3.</b> CHECK HARNESS FOR         1. Connect the connector         2. Disconnect the connect         3. Check the resistance be	nal? ess and repair the root causagram". OPEN CIRCUIT of CAN gateway. or of automatic back door co	se (CAN communication ontrol module. loor control module harne	circuit 2 side). Refer to <u>LAN-</u>
Is the inspection result norm         YES       >> GO TO 3.         NO       >> Check the harn         64, "System Dia         3.CHECK HARNESS FOR         1. Connect the connector         2. Disconnect the connector         3. Check the resistance be         Automatic	nal? ess and repair the root caus agram". OPEN CIRCUIT of CAN gateway. or of automatic back door ca etween the automatic back door back door control module harness Termin 7	se (CAN communication ontrol module. loor control module harne	circuit 2 side). Refer to <u>LAN-</u> ess connector terminals.

## **RDR-R BRANCH LINE CIRCUIT**

## Diagnosis Procedure

1.CHECK CONNECTOR

- 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-341, "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.

	Resistance (Ω)
Terminal No.	
4 3	
	3

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-339. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-384, "Removal and Installation".

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

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

## **RDR-L BRANCH LINE CIRCUIT**

			[CAN]
< DTC/CIRCUIT DIAGNOS RDR-L BRANCH LI			
Diagnosis Procedure			INFOID:000000010261095
<b>1.</b> CHECK CONNECTOR			
<ol> <li>Check the terminals an side and connector side</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termination</li> </ol>	cable from the negative terr d connectors of the side ra ). al? nal and connector.	ninal. adar LH for damage, bend :	and loose connection (unit
2.CHECK HARNESS FOR			
		arness connector terminals.	
Connector No.		nal No.	Resistance ( $\Omega$ )
B74	4	3	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the side <b>3.</b> CHECK POWER SUPPL	radar LH branch line.	T	
Check the power supply an Diagnosis Procedure".	-	side radar LH. Refer to <u>DAS</u>	<u>3-338, "SIDE RADAR LH :</u>
YES (Past error)>>Error wa	lace the side radar LH. Ref		<u>nd Installation"</u> .

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## LANE 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).
- Lane camera unit
- Harness connector R1
- Harness connector M23

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.

Lane camera unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
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-337</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-383, "Removal and Installation".

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

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

INFOID:000000010261096

E	BSW/BUZZER BRA	NCH LINE CIRCUIT	
< DTC/CIRCUIT DIAGNOS	IS >		[CAN]
BSW/BUZZER BRA	NCH LINE CIRCU	IT	
Diagnosis Procedure			INFOID:000000011401800
1.CHECK CONNECTOR			
	able from the negative terr connectors of the drive as de and connector side). al? nal and connector.	ninal. ssistance buzzer control mo	dule for damage, bend and
2. Check the resistance bet	or of drive assistance buzz tween the drive assistance	buzzer control module har	ness connector terminals.
Connector No.		nal No.	Resistance ( $\Omega$ )
M150	3	11	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and 339, "DRIVER ASSISTANCE Is the inspection result norma YES (Present error)>>Repla Installation" YES (Past error)>>Error wa	assistance buzzer control ( AND GROUND CIRCUIT I the ground circuit of the of BUZZER CONTROL MO al? ace the drive assistance bu	r drive assistance buzzer con DULE : Diagnosis Procedur uzzer control module. Refer sistance buzzer control mod	e". to <u>DAS-388, "Removal and</u>

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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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E213	3	9	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-337, "ACCEL-</u> ERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to DAS-381, "Exploded View".

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

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

INFOID:000000010261097

## LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >			[CAN]
LASER BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000010261098
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable</li> <li>Check the following terminals nector side).</li> <li>ICC sensor</li> <li>Harness connector E218</li> <li>Harness connector E219</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal a</li> <li>CHECK HARNESS FOR OPE</li> <li>Disconnect the connector of</li> <li>Check the resistance betwee</li> </ol>	from the negative tern s and connectors for c and connector. N CIRCUIT ICC sensor.	lamage, bend and loose	connection (unit side and con-
ICC	ICC sensor harness connector		Popietoneo (O)
Connector No.	Termin	nal No.	Resistance (Ω)
E88	3	6	Approx. 108 – 132
Is the measurement value within YES >> GO TO 3. NO >> Repair the ICC sens 3.CHECK POWER SUPPLY AN	or branch line. ID GROUND CIRCUI		
Check the power supply and the Is the inspection result normal?	ground circuit of the I	CC sensor. Refer to CCS	3-116, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-133. "Removal and Installation".

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

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

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## **CAN COMMUNICATION CIRCUIT 1**

#### < 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-64, "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 lin	Data link connector		Continuity
Connector No.	Terminal No.	- Continuity	Continuity
M4	6	- Ground	Not existed
11/14	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.

IPD	M E/R	Resistance (Ω)	
Terminal No.		Resistance (Ω)	
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.

## LAN-108

INFOID:000000010261099

### **CAN COMMUNICATION CIRCUIT 1**

#### < DTC/CIRCUIT DIAGNOSIS >

#### 5. СНЕСК ЗҮМРТОМ 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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### **CAN COMMUNICATION CIRCUIT 2**

### < 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-64, "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	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
M4	13	Giouna	Not existed
11/14	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 g	ateway	Resistance (Ω)	
Terminal No.			
4	10	Approx. 108 – 132	
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:000000010261100

## **CAN COMMUNICATION CIRCUIT 2**

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

### < DTC/CIRCUIT DIAGNOSIS >

# **ITS COMMUNICATION CIRCUIT**

### Diagnosis Procedure

INFOID:0000000010261101

[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-64, "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 uni	t harness connector	ICC sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	6	E88	3	Existed
032	7	L00	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-64</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
- Around view monitor control unit
- Driver assistance buzzer control module
- Sonar control unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

A	ADAS control unit harness connector		
Connector No.	Termi	Continuity	
B52	6	7	Not existed

# **ITS COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSI	S >		[CAN]
Is the inspection result norma	<u>?</u>		
YES >> GO TO 5.			
_	s and repair the root cause		
<b>5.</b> CHECK HARNESS CONT	INUITY (SHORT CIRCUIT)		
Check the continuity between	the ADAS control unit harn	ess connector and th	e ground.
ADAS control unit ha			Continuity
Connector No.	Terminal No.	Ground	-
B52	6		Not existed
	7		Not existed
<b>6.</b> CHECK TERMINATION CI			
	S control unit		
	rminal No.		Resistance ( $\Omega$ )
6	7		Approx. 108 – 132
-	veen the ICC sensor termin		
IC	C sensor		Desistance (O)
Те	Terminal No. Resistance (Ω)		Resistance (12)
3	6	Approx. 108 – 132	
7. снеск зумртом	S control unit and/or the ICC		
customer)" are reproduced. Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the			om (Results from interview with procedure when past error is
detected. 8.CHECK UNIT REPRODUC	CTION		
3. Disconnect one of the uni		nal.	
<ol> <li>Connect the battery cabl (Results from interview w NOTE:</li> </ol>	C sensor have a termination e to the negative terminal. (th customer)" are reproduce r symptoms occur, do not ce	Check if the sympto ed.	ms described in the "Symptom
Inspection result			
Reproduced>>Connect the c	connector. Check other units	as per the above pr	ocedure.
New way was done of the Device of the			

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

### LAN-113

# < 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. 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 Removing Battery Terminal

• When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

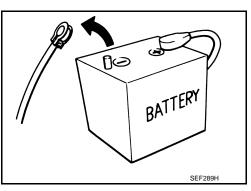
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. **NOTE:** 

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.



INFOID:000000011402135

# SYSTEM DESCRIPTION COMPONENT PARTS

**Component Parts Location** 

INFOID:000000010261103

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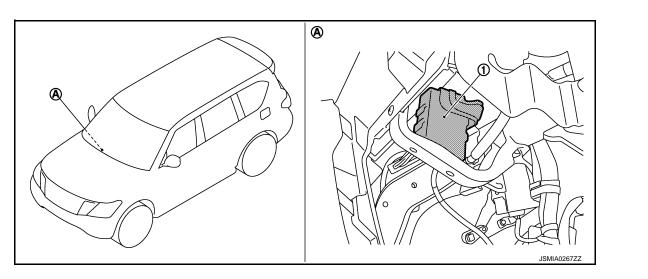
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- 1. CAN gateway
- A. Over the glove box

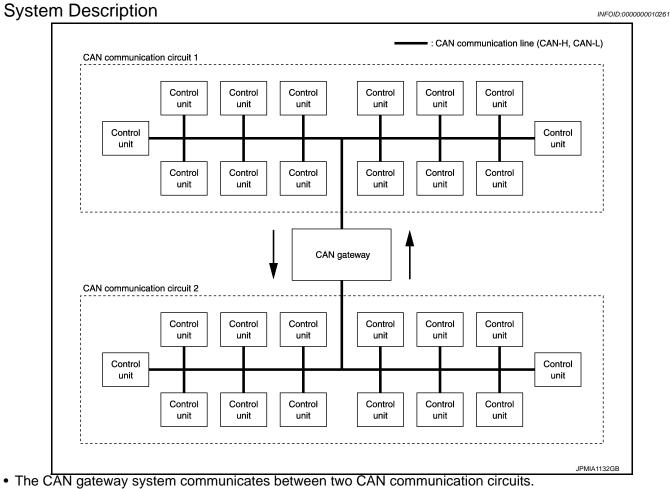
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### < SYSTEM DESCRIPTION >

# SYSTEM



This system selects and transmits only necessary information.

INFOID:000000010261104

[CAN GATEWAY]

### DIAGNOSIS SYSTEM (CAN GATEWAY)

#### < SYSTEM DESCRIPTION >

# DIAGNOSIS SYSTEM (CAN GATEWAY)

### **CONSULT** Function

[CAN GATEWAY]

INFOID:000000010261105

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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	<ul><li>Read and save the vehicle specification.</li><li>Write the vehicle specification when replacing CAN gateway.</li></ul>	

SELF DIAGNOSTIC RESULT

Refer to LAN-118, "DTC Index".

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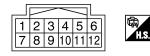
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# ECU DIAGNOSIS INFORMATION CAN GATEWAY

### Reference Value

**TERMINAL LAYOUT** 



### PHYSICAL VALUES

	inal No.	Description			Value
(Wire +	e color) –	Signal name	Input/ Output	Condition	(Approx.)
1 (L)		CAN-H (CAN commu- nication circuit 1)	Input/ Output	_	_
3 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
4 (L)		CAN-H (CAN commu- nication circuit 2)	Input/ Output	_	_
5 (B)	Ground	Ground	_	Ignition switch ON	0 V
6 (L)		CAN-H (CAN commu- nication circuit 2)	Input/ Output	_	_
7 (P)		CAN-L (CAN commu- nication circuit 1)	Input/ Output	_	_
9 (GR)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
10 (R)	_	CAN-L (CAN commu- nication circuit 2)	Input/ Output	_	_
11 (B)	Ground	Ground	_	Ignition switch ON	0 V
12 (R)		CAN-L (CAN commu- nication circuit 2)	Input/ Output		_

### DTC Inspection Priority Chart

INFOID:000000010261107

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:000000010261108

JSGIA0023ZZ

INFOID:000000010261106

### **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-124 U1010: CONTROL UNIT(CAN) LAN-125 Е WRONG DATA B2600: CONFIG ERROR LAN-126 NOT CONFIGURED F Н Κ L LAN
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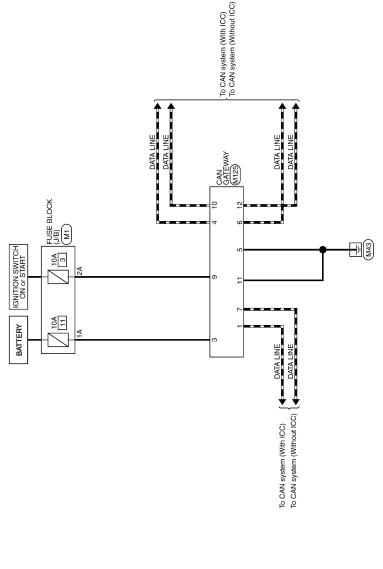
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# WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:000000010261109

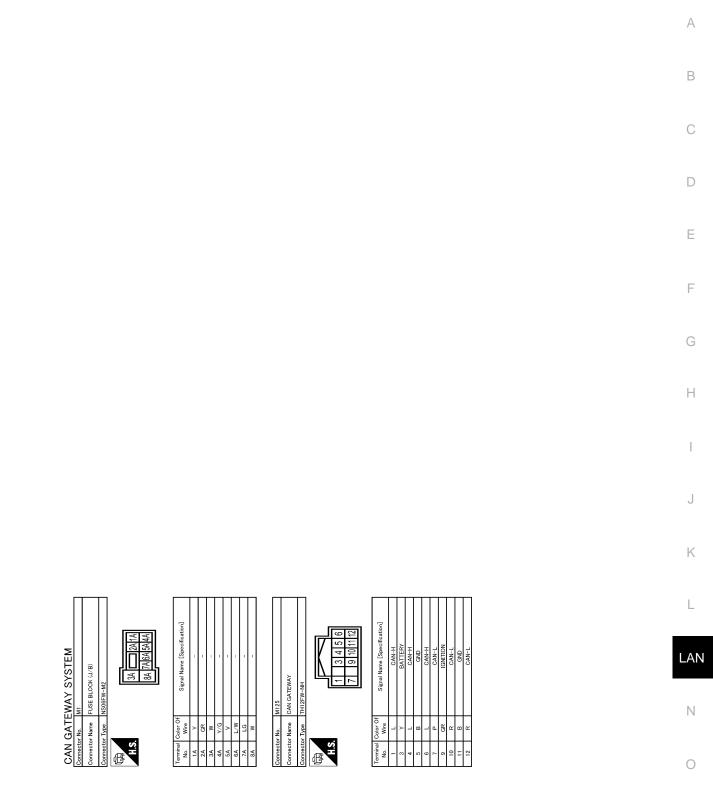
[CAN GATEWAY]



JRMWG0968GB

2014/07/11

CAN GATEWAY SYSTEM



JRMWG0969GB

### ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

< BASIC INSPECTION >

# BASIC INSPECTION

# ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

### Description

INFOID:0000000010261110

[CAN GATEWAY]

#### **BEFORE REPLACEMENT**

When replacing CAN gateway, save or print current vehicle specification with CONSULT configuration before replacement.

#### NOTE:

If "Before Replace ECU" of "Read / Write Configuration" Can not be used, use the "Manual Configuration" after replacing CAN gateway.

#### AFTER REPLACEMENT

#### **CAUTION:**

Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.:

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

### Work Procedure

INFOID:0000000010261111

### **1.**SAVING VEHICLE SPECIFICATION

#### CONSULT Configuration

Perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to <u>LAN-123</u>, "Description".

#### NOTE:

If "Before Replace ECU" of "Read / Write Configuration" can not be used, use the "Manual Configuration" after replacing CAN gateway.

>> GO TO 2.

### 2.REPLACE CAN GATEWAY

Replace CAN gateway. Refer to LAN-128, "Removal and Installation".

>> GO TO 3.

**3.**WRITING VEHICLE SPECIFICATION

#### CONSULT Configuration

Perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" to write vehicle specification. Refer to <u>LAN-123, "Work Procedure"</u>.

>> WORK END

### **CONFIGURATION (CAN GATEWAY)**

#### < BASIC INSPECTION >

# CONFIGURATION (CAN GATEWAY)

### Description

INFOID:000000010261112

А

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

Function		Description	
Read / Write Configuration Before replace ECU		<ul><li>Reads the vehicle configuration of current CAN gateway.</li><li>Saves the read vehicle configuration.</li></ul>	
	After replace ECU	Writes the vehicle configuration with saved data.	
Manual Configuration		Writes the vehicle configuration with manual selection.	
When replacing CAN ga tion" with CONSULT. Complete the procedur If you set incorrect "Re Configuration is differe	ateway, you must po e of "Read / Write C ad / Write Configur nt for each vehicle	to do this may cause malfunctions to the CAN gateway.: erform "Read / Write Configuration" or "Manual Configura Configuration" or "Manual Configuration" in order. ation" or "Manual Configuration", incidents might occur. model. Confirm configuration of each vehicle model. " or "Manual Configuration" except for new CAN gateway.	
Vork Procedure		INFOID:00000001026111	
.WRITING MODE SELE	CTION		
CONSULT Configuration			
Select "Re/programming, C	Configuration" of CAN	I gateway.	
When writing saved data:	>GO TO 2.		
When writing manually>>	GO TO 3.		
PERFORM "AFTER RE	PLACE ECU" OF "R	EAD / WRITE CONFIGURATION"	
CONSULT Configuration		Configuration"	
Perform "After Replace EC		Soninguration .	
>> GO TO 4.			
$\mathbf{B}_{\mathbf{P}}$ PERFORM "MANUAL (	CONFIGURATION"		
CONSULT Configuration			
. Select "Manual Config . Touch "Next".	uration".		
. Touch "OK".			
. Check that the configu	ration has been suc	cessfully written and touch "End".	
>> GO TO 4.			
CHECK ALL ECU SELF			
. Erase all ECU self-dia	anosis results usina	CONSULT.	
Turn the ignition ewited			
<ul> <li>Turn the ignition switch</li> <li>Turn the ignition switch</li> </ul>	n OFF.	econds or more.	

>> WORK END

# U1000 CAN COMM CIRCUIT

### Description

INFOID:000000010261114

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-31, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u>.

### DTC Logic

INFOID:000000010261115

### 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

### **Diagnosis Procedure**

INFOID:0000000010261116

### **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-21, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-43, "Intermittent Incident"</u>.

#### < DTC/CIRCUIT DIAGNOSIS >

# U1010 CONTROL UNIT (CAN)

### Description

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 LAN-31, "CAN COMMUNICATION SYSTEM : CAN Communication in the selection of the s

### DTC Logic

#### DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause	F
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of CAN gateway.	CAN gateway	_
				0

### Diagnosis Procedure

**1.**REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to LAN-128, "Removal and Installation".

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INFOID:000000010261119

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### < DTC/CIRCUIT DIAGNOSIS >

# B2600 CONFIG ERROR

### Description

INFOID:000000010261120

[CAN GATEWAY]

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

### 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.		
62000	B2600 CONFIG ERROR NOT CONFIGURED	When no data are stored in the CAN gateway.	CAN gateway	

### **Diagnosis Procedure**

INFOID:0000000010261122

# **1.**REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to LAN-128, "Removal and Installation".

### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# POWER SUPPLY AND GROUND CIRCUIT

### **Diagnosis Procedure**

# 1.CHECK FUSE

Check that the following fuse are not blown.

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

#### 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	
-)	(-)	Condition	Voltage
ateway		Ignition	(Approx.)
Terminal		switch	
3	Ground	OFF	Battery voltage
9		ON	Battery voltage
	e) ateway Terminal 3	r) (-) ateway Terminal 3 Ground	Condition       o)     (-)       ateway     Ignition       Terminal     switch       3     Ground

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	jateway		Continuity
Connector	Terminal	Ground	Continuity
M125	5	Ground	Existed
WI125	11		LAISted

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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INFOID:000000010261123

[CAN GATEWAY]

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# REMOVAL AND INSTALLATION CAN GATEWAY

### Removal and Installation

INFOID:0000000010261124

[CAN GATEWAY]

#### CAUTION:

Before replacing CAN gateway, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to <u>LAN-122</u>, "<u>Description</u>".

#### REMOVAL

- 1. Remove glove box assembly. Refer to IP-14, "Removal and Installation".
- 2. Disconnect CAN gateway connector.
- 3. Remove mounting screw to remove CAN gateway.

#### INSTALLATION

Install in the reverse order of removal.

#### CAUTION:

To prevent malfunction, Be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing CAN gateway. Refer to <u>LAN-122, "Description"</u>.

DIC/CIRCU	T DIAGNO	SIS		
MAIN LINE BET			ЛТ	
Diagnosis Procedu				INF0ID:00000001140214
1. CHECK CONNECTO				
1. Turn the ignition sw	-			
<ol> <li>Check the following and harness side). Harness connector Harness connector sthe inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the 2.CHECK HARNESS</li> <li>Disconnect the following ABS actuator and e Harness connector 2. Check the continuit</li> </ol>	E107 M82 normal? terminal and connect CONTINUITY (OPEN owing harness conne electric unit (control u s E107 and M82 ty between the ABS a	nectors for damage, b for. N CIRCUIT) ctors. nit)		ection (connector side
harness connector.	-			
ABS actuator and elect harness c		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed
CHECK HARNESS	E107. CONTINUITY (OPEN	I CIRCUIT)	link connector.	unit) and the harness
	Terminal No.	Connector No.	Terminal No.	Continuity
	1		6	Existed
Connector No.				Existed
	6	M4	14	Existed

### MAIN LINE BETWEEN DLC AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402151

[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 (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
M4	13	M19	71	Existed
1014	12		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 connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B2	71	B24	13	Existed
52	72	624	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.

### 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
- Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness	connector		oor control module connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.		
B24	13	B26	7	Existed	F
DZ4	12	620	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.

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[CAN SYSTEM (TYPE 1)]

INFOID:000000011402152

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### ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402158

[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 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.

	Resistance (Ω)		
Connector No.	Termi	Resistance (12)	
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1043</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the ECM branch line.
- NO >> Repair the power supply and the ground circuit.

### **ABS BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011402160
1.CHECK CONNECTOR			
<ol> <li>Check the terminals and and loose connection (u ls the inspection result norm</li> </ol>	able from the negative term I connectors of the ABS act nit side and connector side)	uator and electric unit (c	control unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
2. CHECK HARNESS FOR			
<ol> <li>Check the resistance be nals.</li> </ol>		nd electric unit (control u	init) harness connector termi-
	and electric unit (control unit) harne		Resistance (Ω)
Connector No. E36	41	27	Approx. 54 – 66
s the measurement value w		21	7,pprox. 04 00
<b>3.</b> CHECK POWER SUPPL' Check the power supply and <u>BRC-122, "Diagnosis Procee</u> s the inspection result norm	d the ground circuit of the <i>dure</i> ". al?	ABS actuator and electr	ic unit (control unit). Refer to
and Installation" YES (Past error)>>Error wa		ator and electric unit (co	Refer to <u>BRC-146, "Removal</u> ntrol unit) branch line.

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< DTC/CIRCUIT DIAGNOSIS >

### TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402161

[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).
- 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.

	Resistance (Ω)		
Connector No.	Termi	(22)	
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-190, "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.	Continuity
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-153</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-190, "Removal and Installation".

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

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

### **AV BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 1)]

	CIRCUIT		
Diagnosis Procedure			INFOID:000000011402164
.CHECK CONNECTOR			
	able from the negative terr inals and connectors for d al? nal and connector. OPEN CIRCUIT	ninal. amage, bend and loose cor	nection (unit side and con-
Check the resistance be		narness connector terminals	
Connector No.		nal No.	Resistance ( $\Omega$ )
M210	90	74	Approx. 54 – 66
CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normative YES (Present error)>>Replative YES (Past error)>>Error wat	the ground circuit of the A al? ace the AV control unit. Re	V control unit. Refer to <u>AV-2</u> fer to <u>AV-282, "Removal an</u> ol unit branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

### BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402165

[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.

	BCM harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "Removal and Installation".

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

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

### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 1)]

### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

	Υ.			А
Diagnosis Procedure			INFOID:000000011402166	
1.снеск отс				В
Check DTC of the CAN gate	•			
Is U1010 or B2600 indicated				С
YES >> Perform a diagno NO >> GO TO 2.	osis of the indicated DTC.			
2. CHECK CONNECTOR				D
3. Check the terminals and side and connector side)	able from the negative termi I connectors of the CAN ga		and loose connection (unit	E
Is the inspection result norma YES >> GO TO 3.	<u>41 ?</u>			
NO >> Repair the termin	nal and connector.			F
3.CHECK HARNESS FOR	OPEN CIRCUIT			
<ol> <li>Disconnect the connector</li> <li>Check the resistance between the connector</li> </ol>	r of CAN gateway. tween the CAN gateway har	ness connector terminals		G
(	CAN gateway harness connector		Posistance (0)	Н
Connector No.	Terminal	No.	Resistance ( $\Omega$ )	
M125	1	7	Approx. 54 – 66	
Is the measurement value wi	thin the specification?			I
YES >> GO TO 4. NO >> Repair the CAN <u>tem Diagram"</u> .	gateway branch line (CAN c	communication circuit 1 si	de). Refer to <u>LAN-64, "Sys-</u>	
Α				J
4.CHECK POWER SUPPLY	AND GROUND CIRCUIT			J
Check the power supply and <u>dure</u> ".	d the ground circuit of the C	CAN gateway. Refer to <u>L</u>	AN-127, "Diagnosis Proce-	J K
Check the power supply and <u>dure"</u> . Is the inspection result norma	d the ground circuit of the (		-	J
Check the power supply and dure". Is the inspection result norma YES (Present error)>>Repla	d the ground circuit of the ( al? ace the CAN gateway. Refer	to <u>LAN-128, "Removal a</u>	nd Installation".	J K L
Check the power supply and dure". Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa Refer to LAN-64	d the ground circuit of the ( al? ace the CAN gateway. Refer is detected in the CAN gate . "System Diagram".	to <u>LAN-128, "Removal a</u> way branch line (CAN co	nd Installation".	J K L
Check the power supply and dure". Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa Refer to LAN-64	d the ground circuit of the ( al? ace the CAN gateway. Refer is detected in the CAN gate	to <u>LAN-128, "Removal a</u> way branch line (CAN co	nd Installation". mmunication circuit 1 side).	J K L
Check the power supply and dure". Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa Refer to LAN-64	d the ground circuit of the ( al? ace the CAN gateway. Refer is detected in the CAN gate . "System Diagram".	to <u>LAN-128, "Removal a</u> way branch line (CAN co	nd Installation". mmunication circuit 1 side).	L
Check the power supply and dure". Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa Refer to LAN-64	d the ground circuit of the ( al? ace the CAN gateway. Refer is detected in the CAN gate . "System Diagram".	to <u>LAN-128, "Removal a</u> way branch line (CAN co	nd Installation". 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:000000011402167

[CAN SYSTEM (TYPE 1)]

### 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 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.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
INIT25	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 1)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

### **Diagnosis** Procedure

INFOID:000000011402168

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### 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. С (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 (Ω)	_	
C	onnector No.	Terminal No.			F
	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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, "System Diagram".

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#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 1)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### **Diagnosis** Procedure

INFOID:000000011402169

### 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 (Ω)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

### **HBA BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure CHECK CONNECTOR			INFOID:000000011402170
. Turn the ignition switch			
<ol> <li>Disconnect the battery</li> <li>Check the following tennector side).</li> <li>Auto anti- dazzling insi Harness connector R1 Harness connector M2</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> </ol>	cable from the negative tern minals and connectors for c de mirror (high beam assist 3 <u>mal?</u> ninal and connector.	damage, bend and loose c	onnection (unit side and con-
. Disconnect the connect	tor of auto anti - dazzling in etween the auto anti - dazzl		sist control module). m assist control module) har-
Auto anti - dazz	ling inside mirror (high beam assis harness connector	st control module)	Resistance (Ω)
Connector No.	Termi	nal No.	
R24	12	11	Approx. 54 – 66
CHECK POWER SUPP heck the power supply a HIGH BEAM ASSIST COM the inspection result norm YES (Present error)>>Re <u>34, "Removal a</u> YES (Past error)>>Error v	NTROL MODULE : Diagnosi mal?	T e high beam assist contro i <u>s Procedure"</u> . embly (high beam assist co am assist control module b	I module. Refer to <u>EXL-111,</u> ontrol module). Refer to <u>MIR-</u> ranch line.

< DTC/CIRCUIT DIAGNOSIS >

### HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402171

[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			Resistance (Ω)
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-116, "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-153, "Removal and Installation".

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

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

### **M&A BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:000000011402172	
1.CHECK CONNECTOR				
<ol> <li>Turn the ignition switch (</li> <li>Disconnect the battery c</li> <li>Check the terminals and (unit side and connector)</li> </ol>	able from the negative termined connectors of the combination	nal. Ition meter for damage, l	pend and loose connection	
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.			
2.CHECK HARNESS FOR I. Disconnect the connect				
	tween the combination meter	r harness connector term	nals.	
Cc	mbination meter harness connector		Resistance (Ω)	
Connector No.	Terminal	No.		
M34 s the measurement value w	21 ithin the specification?	22	Approx. 54 – 66	
s the measurement value w YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu	ithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the co			
Is the measurement value w YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the co	mbination meter. Refer to Refer to <u>MWI-88, "Remov</u> n meter branch line.	MWI-67, "COMBINATION	

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< DTC/CIRCUIT DIAGNOSIS >

### STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402173

[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.

Steering angle sensor harness connector			Resistance (Ω)
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-148, "Removal and Installation"</u>.

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

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

### **TCU BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:000000011402174	
1. CHECK CONNECTOR				
<ol> <li>Check the terminals and connector side).</li> </ol>	able from the negative term I connectors of the TCU fo		e connection (unit side and	
s the inspection result norma YES >> GO TO 2. NO >> Repair the termir				
2. CHECK HARNESS FOR	OPEN CIRCUIT			
<ol> <li>Disconnect the connector</li> <li>Check the resistance bet</li> </ol>	tween the TCU harness co	nnector terminals.		
	TCU harness connector		Resistance (Ω)	
Connector No.	Termina	al No.		
1400	â	10		
M99 s the measurement value wi	9 thin the specification?	10	Approx. 54 – 66	
s the measurement value wi YES >> GO TO 3. NO >> Repair the TCU I CHECK POWER SUPPLY Check the power supply and s the inspection result norma YES (Present error)>>Repla	thin the specification? branch line. AND GROUND CIRCUIT the ground circuit of the TC al? ace the TCU. Refer to <u>AV-3</u>	CU. Refer to <u>AV-381, "TCU</u> 90, "Removal and Installa	I : Diagnosis Procedure".	
s the measurement value wi YES >> GO TO 3. NO >> Repair the TCU I CHECK POWER SUPPLY Check the power supply and s the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa	thin the specification? branch line. AND GROUND CIRCUIT the ground circuit of the TC al? ace the TCU. Refer to <u>AV-3</u>	CU. Refer to <u>AV-381, "TCU</u> 90, "Removal and Installa ich line.	I : Diagnosis Procedure".	

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## TPMS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402175

[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 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	Resistance ( $\Omega$ )		
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-50</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-63</u>, "<u>Removal and</u> <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.

Diagnosis Procedure			INFOID:00000001140217
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OFI</li> <li>Disconnect the battery cabl</li> <li>Check the following termination nector side).</li> <li>IPDM E/R</li> <li>Harness connector E105</li> <li>Harness connector M77</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal</li> <li>CHECK HARNESS FOR OP</li> <li>Disconnect the connector of</li> <li>Check the resistance betwee</li> </ol>	e from the negative terminals and connectors for dar and connector. EN CIRCUIT f IPDM E/R.	mage, bend and loose	connection (unit side and con
	DM E/R harness connector		
Connector No.	Terminal	No.	Resistance ( $\Omega$ )
E13	27	26	Approx. 108 – 132
<u>ls the measurement value within</u> YES >> GO TO 3.	n the specification? /R branch line.		

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< DTC/CIRCUIT DIAGNOSIS >

## A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402162

[CAN SYSTEM (TYPE 1)]

#### 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-37, "Work Flow".

Is the inspection result normal?

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

agnosis Procedure			INFOID:000000011402177
CHECK CONNECTOR			
Turn the ignition switch Disconnect the battery of Check the following tern nector side). Around view monitor co CAN gateway (Models w he inspection result norm ES-1 >> Models without ES-2 >> Models with ICC O >> Repair the term	cable from the negative terr ninals and connectors for d ntrol unit vithout ICC) <u>al?</u> ICC: GO TO 2. C: GO TO 3.	amage, bend and loose c	connection (unit side and con-
Disconnect the connect			S.
Connector No.	CAN gateway harness connector Termir		- Continuity
Connector No.	Terrini		
	4	6	Existed
ES >> GO TO 3. D >> Check the harne	10 al? ess and repair the root cau	12	Existed Existed circuit 2 side). Refer to LAN-
he inspection result norm ES >> GO TO 3. O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector	10 <u>al?</u> ess and repair the root cau gram".	12 use (CAN communication vithout ICC) ontrol unit.	Existed
he inspection result norm ES >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 al? ess and repair the root cau gram". OPEN CIRCUIT of CAN gateway. (Models w or of around view monitor c	12 use (CAN communication vithout ICC) ontrol unit. nitor control unit harness	Existed circuit 2 side). Refer to LAN-
he inspection result norm ES >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 al? ess and repair the root cau ogram". OPEN CIRCUIT of CAN gateway. (Models w or of around view monitor o etween the around view mo	12 use (CAN communication vithout ICC) ontrol unit. nitor control unit harness	Existed
he inspection result norm ES >> GO TO 3. O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Around v	10 al? ess and repair the root cau gram". OPEN CIRCUIT of CAN gateway. (Models w or of around view monitor c etween the around view mo iew monitor control unit harness of Termir 27	12 use (CAN communication vithout ICC) ontrol unit. nitor control unit harness	Existed circuit 2 side). Refer to LAN-

## SONAR BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402178

[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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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	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-64, "System Diagram"</u>.

### **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Sonar control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

### ADP BRANCH LINE CIRCUIT

### [CAN SYSTEM (TYPE 1)]

ADP BRANCH LINE	ECIRCUIT			٨	
Diagnosis Procedure			INFOID:000000011402179	А	
1. CHECK CONNECTOR				В	
	cable from the negative terr ninals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-	С	
<ul> <li>Harness connector B40</li> <li>CAN gateway</li> </ul>				D	
Is the inspection result norm         YES       >> GO TO 2.         NO       >> Repair the term         2.CHECK HARNESS CON	inal and connector.	)		E	
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		F	
				G	
Connector No.	CAN gateway harness connector Connector No. Continuity				
M125	4	6	Existed	Н	
	10	12	Existed		
Is the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> <b>3.</b> CHECK HARNESS FOR	ess and repair the root cau agram".	use (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>	 J	
	or of driver seat control uni	t. rol unit harness connector te	erminals.	K	
Driv	er seat control unit harness conne	ector	Resistance (Ω)	L	
Connector No.	-	nal No.			
B451	1	17	Approx. 54 – 66		
Is the measurement value wYESYESNO>> Repair the drive <b>4.</b> CHECK POWER SUPPL	r seat control unit branch li			LAN N	
Check the power supply and CONTROL UNIT : Diagnosis	s Procedure".	iver seat control unit. Refer	to <u>ADP-67, "DRIVER SEAT</u>	0	
YES (Past error)>>Error w	lace the driver seat control		emoval and Installation".	P	

## **E-SUS BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011402181

[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

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	Existed	
101125	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-64, "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

Air leveliz	Posistance (O)		
Connector No.	Termir	Resistance (Ω)	
B84	16	Approx. 54 – 66	
a magguramant value with	in the end of the other of		

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-89.</u> "Diagnosis Procedure".

#### Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to <u>SCS-94. "Removal and Installation"</u>. YES (Past error)>>Error was detected in the air levelizer control module branch line.
- NO >> Repair the power supply and the ground circuit.

PWBD BRANCH LI	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000011402183	А
1. CHECK CONNECTOR				В
	cable from the negative terr minals and connectors for d ontrol module <u>nal?</u> inal and connector.	lamage, bend and loose	connection (unit side and con-	C D E
1. Disconnect the connect			ls.	F
	CAN gateway harness connector	r	Ocartinuitu	
Connector No.	Termir	nal No.	Continuity	G
M125	4	6	Existed	
	10	12	Existed	Н
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	agram". OPEN CIRCUIT of CAN gateway. or of automatic back door c etween the automatic back	control module. door control module harr	n circuit 2 side). Refer to <u>LAN-</u>	l J K
Automatic Connector No.	back door control module harness		Resistance (Ω)	
B26	7	nal No. 6	Approx. 54 – 66	L
Is the measurement value v YES >> GO TO 4. NO >> Repair the auto 4.CHECK POWER SUPPL	matic back door control mo Y AND GROUND CIRCUIT d the ground circuit of the a CONTROL UNIT : Diagno nal?	r automatic back door contr <u>sis Procedure"</u> .	rol module. Refer to <u>DLK-120.</u>	LAN

## **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-64, "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		
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 lin	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	6	Giouna	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.

ECM		Resistance (O)	
Terminal No.		Resistance ( $\Omega$ )	
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.

INFOID:0000000011402190

### **CAN COMMUNICATION CIRCUIT 1**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 1)]

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
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 1.</li> </ul>
<ul> <li>NOTE: ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE:</li> </ul>
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.

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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-64, "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.

	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
M4	13	Giouna	Not existed
11/14	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		Posistance (O)	
Terminal No.		Resistance (Ω)	
4	10	Approx. 108 – 132	
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:0000000011402191

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

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### **Diagnosis Procedure**

INFOID:0000000011402252

## 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	Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
E30	27	EIU	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           Connector No.         Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M82	1	M4	6	Existed
ΙνιοΖ	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 DIAC			[CAN	SYSTEM (TYPE 2)]
MAIN LINE BET		ND ADP CIRCU	-	
Diagnosis Proced	lure			INFOID:000000011402254
1.CHECK CONNECT	OR			
<ol> <li>Check the followin and harness side) Harness connecto Harness connecto s the inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the CHECK HARNESS</li> </ol>	ttery cable from the ne ng terminals and con or M19 or B2 <u>t normal?</u>	nectors for damage, b tor. N CIRCUIT)	end and loose conne	ection (connector side
	ity between the data l	ink connector and the		
Connector No.	Terminal No.	Harness c Connector No.	Terminal No.	Continuity
	13		71	Existed
M4	12	M19	72	Existed
-	t normal?			
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th	and B460.	and the harness conn	ector M19.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	e main line between th CONTINUITY (OPEN rness connectors B24	NCIRCUIT)		
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	e main line between th CONTINUITY (OPEN rness connectors B24 ity between the harne	N CIRCUIT) and B460. ss connectors.		Continuity
NO >> Repair the B.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness	e main line between th 5 CONTINUITY (OPEN rness connectors B24 ity between the harne connector Terminal No. 71	N CIRCUIT) and B460. ss connectors. Harness c	connector Terminal No. 13	Continuity Existed
YES >> GO TO 3. NO >> Repair the B.CHECK HARNESS D. Disconnect the ha Check the continu Harness Connector No.	e main line between th 5 CONTINUITY (OPEN rness connectors B24 ity between the harne connector Terminal No. 71 72	N CIRCUIT) • and B460. ss connectors. Harness c Connector No.	connector Terminal No.	Continuity

### MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### **Diagnosis** Procedure

INFOID:0000000011402255

[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 connector		Automatic back door control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
B24 -	13	B26	7	Existed	
	12	D20	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

Diagnosis Procedure	)011402256
1.CHECK CONNECTOR	В
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the following terminals and connectors for damage, bend and loose connection (connecto and harness side).</li> </ol>	r side C
<ul> <li>Harness connector B239</li> <li>Harness connector B63</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> </ul>	D
NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)	E
<ol> <li>Disconnect the following harness connectors.</li> <li>Side radar RH</li> <li>Harness connectors B239 and B63</li> <li>Check the continuity between the side radar RH harness connector and the harness connector.</li> </ol>	F

Continuity	connector	Harness of	arness connector	Side radar RH ha
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
 Existed	7	B239	4	B243
 Existed	3	D239	3	D243

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.

						K
	Harness	connector	Side radar LH h	arness connector	Continuity	
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	B63	7	B74	4	Existed	L
_	603	3	074	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 AVM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011508700

[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

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
D74	3	D2	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 connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		connector Around view monitor control unit harness conr		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M19	27	B48	27	Existed		
10119	28	D40	28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.

1AIN LINE BET	GNOSIS > WEEN AVM A	ND APA CIRCU	-	SYSTEM (TYPE 2)]
iagnosis Proced	ure			INFOID:00000001140226
CHECK CONNECT				
Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	ttery cable from the ne ng terminals and con- r M77 r E105 <u>normal?</u> terminal and connect CONTINUITY (OPEN lowing harness connector control unit	nectors for damage, b tor. N CIRCUIT) ectors.		
Around view moni Harness connecto	ity between the arou	nd view monitor contr	of unit harness conne	ector and the harnes
Around view moni Harness connecto Check the continu connector.		nd view monitor contr Harness c		
Around view moni Harness connecto Check the continu connector.	ity between the arou			Continuity
Around view moni Harness connecto Check the continu connector.	ity between the arou	Harness o	connector	

## 3. 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	connector	Accelerator pedal actu	ator harness connector	Continuity	-
 Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
 E105	22	E213	3	Existed	LAN
E103	23	EZIS	9	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

#### Diagnosis Procedure

INFOID:000000011402261

[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 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			Resistance ( $\Omega$ )
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1043</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the ECM branch line.
- NO >> Repair the power supply and the ground circuit.

### **ABS BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:000000011402263
.CHECK CONNECTOR			
<ul> <li>Check the terminals and and loose connection (us the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminals</li> </ul>	able from the negative termin I connectors of the ABS actunit side and connector side). al? nal and connector.		ntrol unit) for damage, bend
CHECK HARNESS FOR			
	or of ABS actuator and electr etween the ABS actuator and		it) harness connector termi-
. Check the resistance be nals.			
nals.	and electric unit (control unit) harnes	s connector	Resistance (Q)
nals.			Resistance (Ω)
nals. ABS actuator a Connector No. E36 s the measurement value w	and electric unit (control unit) harnes Terminal 41		Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E36 S the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an RC-122, "Diagnosis Proceed S the inspection result norm YES (Present error)>>Repl and Installation"	and electric unit (control unit) harnes Terminal 41 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A dure". al? ace the ABS actuator and electric	No. 27 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). F	Approx. 54 – 66 a unit (control unit). Refer to Refer to <u>BRC-146, "Removal</u>

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## TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402264

[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).
- 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		
Connector No.	Termi	nal No.	Resistance ( $\Omega$ )
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-190, "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.	Continuity
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-153</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-190, "Removal and Installation".

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

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

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 2)]

AV BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011402267	A
1.CHECK CONNECTOR				В
<ol> <li>Check the following terr nector side).</li> <li>AV control unit</li> <li>Harness connector M22</li> </ol>	cable from the negative terr ninals and connectors for d 22	ninal. amage, bend and loose con	nection (unit side and con-	C
<ul> <li>Harness connector M11</li> <li>Is the inspection result norm</li> </ul>				
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.			Е
1. Disconnect the connect	or of AV control unit.	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 c <b>3.</b> CHECK POWER SUPPL	ontrol unit branch line.	-		I
Check the power supply and Diagnosis Procedure". Is the inspection result norm		V control unit. Refer to <u>AV-2</u>	232, "AV CONTROL UNIT :	J
YES (Present error)>>Rep YES (Past error)>>Error w	lace the AV control unit. Re		d Installation".	K
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## BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402268

[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 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			
Connector No.	Termi	Terminal No.		
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "Removal and Installation".

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

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

#### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 2)]

#### < DTC/CIRCUIT DIAGNOSIS >

## CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

				А
Diagnosis Procedure			INFOID:000000011402269	
1.снеск отс				В
Check DTC of the CAN gate	way with CONSULT.			
Is U1010 or B2600 indicated				С
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.			0
2.CHECK CONNECTOR				D
	able from the negative termin I connectors of the CAN gate al?		and loose connection (unit	E
3.CHECK HARNESS FOR	OPEN CIRCUIT			
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>	or of CAN gateway. tween the CAN gateway harn	ness connector terminals.		G
2. Check the resistance be		ness connector terminals.	Bosistones (O)	G H
2. Check the resistance be	tween the CAN gateway harn		Resistance (Ω)	
2. Check the resistance be Connector No. M125	tween the CAN gateway harn CAN gateway harness connector Terminal I 1		Resistance (Ω) Approx. 54 – 66	
2. Check the resistance be Connector No. M125 Is the measurement value w	tween the CAN gateway harn CAN gateway harness connector Terminal I 1	No.		
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram".	tween the CAN gateway harn CAN gateway harness connector Terminal I 1 thin the specification? gateway branch line (CAN co	No. 7	Approx. 54 – 66	
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPLY Check the power supply an dure".	tween the CAN gateway harn CAN gateway harness connector Terminal I 1 thin the specification? gateway branch line (CAN co AND GROUND CIRCUIT d the ground circuit of the C	No. 7 ommunication circuit 1 sic	Approx. 54 – 66 le). Refer to <u>LAN-64, "Sys-</u>	
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL' Check the power supply an dure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	tween the CAN gateway harn CAN gateway harness connector Terminal I 1 thin the specification? gateway branch line (CAN co AND GROUND CIRCUIT d the ground circuit of the C al? ace the CAN gateway. Refer is detected in the CAN gatew	No. 7 ommunication circuit 1 sic CAN gateway. Refer to <u>L</u> to <u>LAN-128, "Removal ar</u>	Approx. 54 – 66 le). Refer to <u>LAN-64, "Sys-</u> AN-127, "Diagnosis Proce-	H
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply an dure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa Refer to LAN-64	tween the CAN gateway harn CAN gateway harness connector Terminal I 1 thin the specification? gateway branch line (CAN co AND GROUND CIRCUIT d the ground circuit of the C al? ace the CAN gateway. Refer	No. 7 ommunication circuit 1 sic CAN gateway. Refer to LA to LAN-128. "Removal an way branch line (CAN con	Approx. 54 – 66 le). Refer to <u>LAN-64, "Sys-</u> AN-127, "Diagnosis Proce- ad Installation". Inmunication circuit 1 side).	H

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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:0000000011402270

[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 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 CAN gateway harness connector terminals.

	CAN gateway harness connector	r	Continuity
Connector No.	Termi	Terminal No.	
M125	4	6	Existed
101125	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

#### **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:00000001140227

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### 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. С (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)	
Termin	nal No.		F
6	14	Approx. 54 – 66	_
		Data link connector Terminal No. 6 14	Terminal No. Resistance (Ω)

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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, "System Diagram".

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#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 2)]

#### < DTC/CIRCUIT DIAGNOSIS >

## DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

#### **Diagnosis** Procedure

INFOID:000000011402272

#### 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 (Ω)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

### **HBA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 2)]

	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011402273
1.CHECK CONNECTOR			
<ul> <li>3. Check the following terr nector side).</li> <li>Auto anti- dazzling inside</li> <li>Harness connector R1</li> <li>Harness connector M23</li> <li>Is the inspection result norm YES &gt;&gt; GO TO 2.</li> </ul>	cable from the negative terr minals and connectors for d de mirror (high beam assist 3	amage, bend and loose co	nnection (unit side and con-
2. Check the resistance be	tor of auto anti - dazzling ins etween the auto anti - dazzli	side mirror (high beam assi ing inside mirror (high bean	st control module). n assist control module) har-
	ling inside mirror (high beam assis harness connector		Resistance (Ω)
Connector No.		nal No.	<b>54_00</b>
R24 Is the measurement value v	12	11	Approx. 54 – 66
3.CHECK POWER SUPPI Check the power supply an "HIGH BEAM ASSIST CON Is the inspection result norm YES (Present error)>>Rep <u>34, "Removal a</u>	ITROL MODULE : Diagnosi nal? place the inside mirror asse and Installation".	high beam assist control <u>s Procedure"</u> .	module. Refer to <u>EXL-111,</u> ntrol module). Refer to <u>MIR-</u>
	er supply and the ground ci	!t	

## HVAC BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402274

[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.

	A/C auto amp. harness connecto	r	Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	Resistance (22)
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-116, "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-153, "Removal and Installation".

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

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

#### **M&A BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:000000011402275
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the combin		pend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of combination meter. Stween the combination meter	er harness connector term	inals.
Co	ombination meter harness connecto	or	Resistance ( $\Omega$ )
Connector No.	Termina	al No.	
M34 s the measurement value w	21	22	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL Check the power supply an METER : Diagnosis Procedu		ombination meter. Refer to	MWI-67, "COMBINATION
	10		
YES (Past error)>>Error w	<u>al?</u> lace the combination meter. as detected in the combinati er supply and the ground circ	on meter branch line.	al and Installation".
YES (Present error)>>Rep YES (Past error)>>Error w	lace the combination meter. as detected in the combinati	on meter branch line.	al and Installation".

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## STRG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402276

[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	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal 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-148, "Removal and Installation"</u>.

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

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

## **TCU BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:00000001140227
1.CHECK CONNECTOR			
	OFF. cable from the negative terr ad connectors of the TCU f		e connection (unit side and
• ·	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	tor of TCU. etween the TCU harness co	onnector terminals.	
	TCU harness connector		Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
	9 vithin the specification?	10	Approx. 54 – 66
Is the measurement value v YES >> GO TO 3. NO >> Repair the TCU <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm	vithin the specification? I branch line. _Y AND GROUND CIRCUIT d the ground circuit of the T nal?	- CU. Refer to <u>AV-381, "TCU</u>	: Diagnosis Procedure".
Is the measurement value v YES >> GO TO 3. NO >> Repair the TCU <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? I branch line. LY AND GROUND CIRCUIT d the ground circuit of the T	- CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".

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## TPMS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402278

[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 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			Resistance (Ω)
Connector No.	Termi	nal No.	
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-50</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-63</u>, "<u>Removal and</u> <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.

< DTC/CIRCUIT DIAGNOSI	S >		[CAN SYSTEM (TYPE 2)]
IPDM-E BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402279
1.CHECK CONNECTOR			
<ol> <li>Check the following term nector side).</li> <li>IPDM E/R</li> <li>Harness connector E105</li> <li>Harness connector M77</li> </ol>	able from the negative term inals and connectors for da		connection (unit side and con-
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin			
2. CHECK HARNESS FOR (	OPEN CIRCUIT		
<ol> <li>Disconnect the connecto</li> <li>Check the resistance bet</li> </ol>	r of IPDM E/R. ween the IPDM E/R harne	ess connector terminals.	
Connector No.	Termin	al No.	Resistance (Ω)
E13	27	26	Approx. 108 – 132
Is the measurement value with YES >> GO TO 3.	· -		
NO >> Repair the IPDM <b>3.</b> CHECK POWER SUPPLY Check the power supply and Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa NO >> Repair the power	AND GROUND CIRCUIT the ground circuit of the IP al? ace the IPDM E/R. Refer to	DM E/R. Refer to <u>PCS-</u> D <u>PCS-34. "Removal and</u> R branch line.	

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## **A-BAG BRANCH LINE CIRCUIT**

#### INFOID:000000011402265

#### Diagnosis Procedure

#### 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-37, "Work Flow".

Is the inspection result normal?

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

agnosis Procedure			INFOID:00000001140228
CHECK CONNECTOR			
Turn the ignition switch Disconnect the battery of	cable from the negative terr ninals and connectors for d ntrol unit without ICC) <u>al?</u> ICC: GO TO 2. C: GO TO 3.		onnection (unit side and con-
	TINUITY (OPEN CIRCUIT	)	
-	tween the CAN gateway ha		
Connector No.	CAN gateway harness connector Termin	nal No.	Continuity
M125	4	6	Existed
	10	10	<b>—</b> · · · ·
ES >> GO TO 3.		12	Existed
S >> GO TO 3. D >> Check the harnon <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector	al? ess and repair the root cau lgram".	use (CAN communication of vithout ICC) control unit.	ircuit 2 side). Refer to <u>LAN</u>
ES >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	al? ess and repair the root cau gram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c	use (CAN communication of vithout ICC) control unit. nitor control unit harness of	circuit 2 side). Refer to <u>LAN</u>
S >> GO TO 3. Check the harmond <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	aal? ess and repair the root cau gram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c etween the around view mo	use (CAN communication of vithout ICC) control unit. nitor control unit harness of	ircuit 2 side). Refer to <u>LAN</u>
ES >> GO TO 3. D >> Check the harne <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Around v Connector No. M48	aal? ess and repair the root cau ogram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c etween the around view mo iew monitor control unit harness Termin 27	use (CAN communication of vithout ICC) control unit. nitor control unit harness of connector	circuit 2 side). Refer to <u>LAN</u>
O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Around v Connector No. <u>M48</u> <u>he measurement value w</u> ES >> GO TO 4. O >> Repair the around	aal? ess and repair the root cau ogram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c etween the around view mo iew monitor control unit harness Termin 27	use (CAN communication of vithout ICC) control unit. nitor control unit harness of connector hal No. 28 t branch line.	circuit 2 side). Refer t connector terminals. Resistance (Ω)

## SONAR BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402281

[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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 Existe		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-64. "System Diagram"</u>.

#### **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Sonar control unit harness connector			
Connector No.	Termi	Terminal No.		
M47	19	20	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

#### **ADP BRANCH LINE CIRCUIT**

#### [CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE	ECIRCUIT			А
Diagnosis Procedure			INFOID:000000011402282	A
1. CHECK CONNECTOR			I	В
	cable from the negative terr ninals and connectors for d	ninal. amage, bend and loose con	·	C
<ul> <li>Harness connector B24</li> <li>CAN gateway</li> </ul>			1	D
Is the inspection result normYES>> GO TO 2.NO>> Repair the termination2.CHECK HARNESS CON	inal and connector.	)		E
<ol> <li>Disconnect the connect</li> <li>Check the continuity bet</li> </ol>		rness connector terminals.		G
Connector No.	CAN gateway harness connector	nal No.	Continuity	
	4	6	Existed	Н
M125	10	12	Existed	
64, "System Dia <b>3.</b> CHECK HARNESS FOR 1. Connect the connector of	ess and repair the root cau <u>Igram"</u> . OPEN CIRCUIT	use (CAN communication cir		J
3. Check the resistance be	etween the driver seat contr	rol unit harness connector te	rminals.	ſŇ
Driv Connector No.	er seat control unit harness conno Termir	ector	Resistance (Ω)	L
B451	1	17	Approx. 54 – 66	
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 wa	r seat control unit branch li Y AND GROUND CIRCUIT I the ground circuit of the dr <u>s Procedure"</u> . al? lace the driver seat control as detected in the driver se	iver seat control unit. Refer t unit. Refer to <u>ADP-135, "Re</u> at control unit branch line.	o ADP-67, "DRIVER SEAT	AN N O
YES >> GO TO 4. NO >> Repair the drive <b>4.</b> CHECK POWER SUPPL Check the power supply and <u>CONTROL UNIT : Diagnosis</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	r seat control unit branch li Y AND GROUND CIRCUIT I the ground circuit of the dr <u>s Procedure"</u> . al? lace the driver seat control	iver seat control unit. Refer t unit. Refer to <u>ADP-135, "Re</u> at control unit branch line.	o ADP-67, "DRIVER SEAT	N O

## **E-SUS BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011402284

[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).
- Air levelizer control module
- 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
101125	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-64, "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 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			
Connector No. Terminal 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-89.</u> "Diagnosis Procedure".

#### Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to <u>SCS-94. "Removal and Installation"</u>. YES (Past error)>>Error was detected in the air levelizer control module branch line.
- NO >> Repair the power supply and the ground circuit.

Diagnosis Procedure			INFOID:00000001140228
I.CHECK CONNECTOR			
<ol> <li>Check the following tennector side).</li> <li>ADAS control unit</li> <li>CAN gateway</li> <li><u>s the inspection result normality</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terr</li> <li>CHECK HARNESS CO</li> </ol>	cable from the negative tern minals and connectors for o <u>mal?</u> ninal and connector. NTINUITY (OPEN CIRCUIT	lamage, bend and loose o	connection (unit side and con
. Disconnect the connect. Check the continuity be	tor of CAN gateway. etween the CAN gateway ha	arness connector termina	ls.
	CAN gateway harness connecto		Continuity
	Iermi	nal No. 6	
Connector No.	4		Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the har	ness and repair the root cau	12	Existed Existed
M125 <u>s the inspection result nor</u> YES >> GO TO 3. NO >> Check the har <u>64, "System D</u> CHECK HARNESS FOI . Connect the connector . Disconnect the connector	10 mal? ness and repair the root cau agram". R OPEN CIRCUIT	12 use (CAN communication	Existed
M125 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the har <u>64, "System D</u> <b>3.</b> CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	10 mal? ness and repair the root cau agram". R OPEN CIRCUIT of CAN gateway. tor of ADAS control unit.	12 use (CAN communication	Existed
M125 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harm <u>64, "System D</u> <b>3.</b> CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance to Connector No.	10 mal? ness and repair the root cau agram". R OPEN CIRCUIT of CAN gateway. tor of ADAS control unit. between the ADAS control u ADAS control unit harness connec Termi	12 use (CAN communication nit harness connector terr tor nal No.	Existed circuit 2 side). Refer to LAN minals. Resistance (Ω)
M125 <u>s the inspection result norm</u> YES $>>$ GO TO 3. NO $>>$ Check the harmonic the connect of the connect	10         mal?         ness and repair the root cau         agram".         R OPEN CIRCUIT         of CAN gateway.         etor of ADAS control unit.         between the ADAS control unit.         ADAS control unit harness connect         Termin         1	12 use (CAN communication nit harness connector terr tor nal No. 2	Existed
$\begin{array}{r} eq:main_spectral$	10         mal?         ness and repair the root cau         agram".         R OPEN CIRCUIT         of CAN gateway.         stor of ADAS control unit.         between the ADAS control u         ADAS control unit harness connect         1         within the specification?         AS control unit branch line.         LY AND GROUND CIRCUIT	12 use (CAN communication nit harness connector terr tor nal No. 2	Existed circuit 2 side). Refer to LAN minals. Resistance (Ω)
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harm <u>64. "System D</u> 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance to 3. Check the resistance to <u>Connector No.</u> <u>B52</u> s the measurement value YES >> GO TO 4. NO >> Repair the AD. 4. CHECK POWER SUPP Check the power supply and <u>S the inspection result norm</u> YES (Present error)>>Re YES (Past error)>>Error V	10         mal?         ness and repair the root caugram".         R OPEN CIRCUIT         of CAN gateway.         tor of ADAS control unit.         between the ADAS control unit.         ADAS control unit harness connect         Terminal         1         within the specification?         AS control unit branch line.         LY AND GROUND CIRCUIT         Id the ground circuit of the A	12 use (CAN communication nit harness connector terr tor nal No. 2 T DAS control unit. Refer to DAS control unit. Refer to DAS control unit. Refer to	Existed a circuit 2 side). Refer to LAN minals. Resistance (Ω) Approx. 54 – 66 DAS-158. "Diagnosis Proce

## PWBD BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402286

[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).
- Automatic back door control module
- 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
101125	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-64, "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 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 ba	Resistance (Ω)		
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.

 ${f 4.}$ 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-120.</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-268, "Removal and</u> <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 2)]

RDR-R BRANCH L			
Diagnosis Procedure			INFOID:000000011402287
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the side ra ). al?		d and loose connection (unit
2.CHECK RIGHT/LEFT SV		ИТ	
Check the right/left switching Is the inspection result norm YES >> GO TO 3. NO >> Repair the root <b>3.</b> CHECK HARNESS FOR	al? cause.	adar RH. Refer to <u>DAS-34</u>	I, "Diagnosis Procedure".
1. Disconnect the connect			
2. Check the resistance be	etween the side radar RH h	arness connector terminal	S.
	Side radar RH harness connector	r	Resistance (Ω)
Connector No.	Termir	nal No.	
B243	4	3	Approx. 54 – 66
4. CHECK POWER SUPPL	d the ground circuit of the s		AS-339, "SIDE RADAR RH :
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe		ar RH branch line.	and Installation".

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## **RDR-L BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011402288

[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 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.

	Resistance ( $\Omega$ )		
Connector No.	Termi		
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-338, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-384, "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.

#### BSW/BUZZER BRANCH LINE CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS > BSW/BUZZER 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 drive assistance buzzer control module for damage, bend and C 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 drive assistance buzzer control module.

2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

	Drive assista	Resistance ( $\Omega$ )	F		
_	Connector No.	Terminal No.		Resistance (22)	
_	M150	3	11	Approx. 54 – 66	G

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to <u>DAS-</u> <u>339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to <u>DAS-388</u>, "Removal and <u>Installation</u>".

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YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

[CAN SYSTEM (TYPE 2)]

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## APA BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402291

[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 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 ( $\Omega$ )
Connector No.	Terminal No.		Resistance (22)
E213	3	9	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-337, "ACCEL-ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to DAS-381, "Exploded View".

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

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

iagnosis Procedure			INFOID:00000001140225
			INFOID:0000001140225
	able from the negative term ninals and connectors for da 3		connection (unit side and con
the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
.CHECK HARNESS FOR			
Check the resistance be	tween the ICC sensor harno	ess connector terminals	
Connector No.	Termina	al No.	Resistance (Ω)
E88	3	6	Approx. 108 – 132
	sensor branch line. Y AND GROUND CIRCUIT		
neck the power supply and		C sensor. Refer to <u>CCS</u>	<u>-116, "Diagnosis Procedure"</u> .
the inspection result norm	al?	o <u>CCS-133, "Removal a</u>	

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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-64, "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 link connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	6	Ground	Not existed
IVI4	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 Terminal No.		- Resistance (Ω)	

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

IPDM E/R Terminal No.		- Resistance (Ω)	

Is the measurement value within the specification?

YES >> GO TO 5.

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

#### LAN-192

INFOID:000000011402293

#### **CAN COMMUNICATION CIRCUIT 1**

#### < 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. <u>Inspection result</u> Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is
Reproduced>>GO TO 6.
detected.
6.CHECK UNIT REPRODUCTION
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 1.</li> </ul>
NOTE:
<ul> <li>ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE:</li> <li>Although unit-related error symptoms occur, do not confuse them with other symptoms.</li> </ul>
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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## **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-64, "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	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
M4	13	Giouna	Not existed
11/14	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:0000000011402294

	CAN COMMUNICATION CIRCUIT 2
< D	TC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 2)]
No	n-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.
<b>6.</b> 0	CHECK UNIT REPRODUCTION
	form 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. Disconnect one of the unit connectors of CAN communication circuit 2.
0.	NOTE:
4.	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
4.	(Results from interview with customer)" are reproduced.
	NOTE:
Incr	Although unit-related error symptoms occur, do not confuse them with other symptoms.
	<u>pection result</u> produced>>Connect the connector. Check other units as per the above procedure.
	n-reproduced>>Replace the unit whose connector was disconnected.

< DTC/CIRCUIT DIAGNOSIS >

## ITS COMMUNICATION CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402295

[CAN SYSTEM (TYPE 2)]

#### **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-64, "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 uni	ntrol unit harness connector ICC sensor harness connector		ADAS control unit harness connector ICC sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
B52	6	E88	3	Existed	
D32	7	EOO	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-64</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
- Around view monitor control unit
- Driver assistance buzzer control module
- Sonar control unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

 A	Continuity		
 Connector No.	Connector No. Terminal No.		Continuity
B52	6	7	Not existed

#### LAN-196

## ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 2)] < DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal? А YES >> GO TO 5. NO >> Check the harness and repair the root cause. **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Check the continuity between the ADAS control unit harness connector and the ground. ADAS control unit harness connector Continuity Connector No. Terminal No. Ground 6 Not existed B52 7 Not existed D Is the inspection result normal? YES >> GO TO 6. E NO >> Check the harness and repair the root cause. **6.**CHECK TERMINATION CIRCUIT 1. Remove the ADAS control unit and the ICC sensor. Check the resistance between the ADAS control unit terminals. 2. ADAS control unit Resistance  $(\Omega)$ Terminal No. 6 7 Approx. 108 - 132 Н Check the resistance between the ICC sensor terminals. ICC sensor Resistance  $(\Omega)$ 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. Κ **I**.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. L Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is LAN detected. 8.CHECK UNIT REPRODUCTION Ν 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. 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. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom Ρ (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.

#### LAN-197

## DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### **Diagnosis Procedure**

INFOID:0000000011402301

#### 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
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.

< DTC/CIRCUIT DIA			ICAN	SYSTEM (TYPE 3)]
MAIN LINE BET		ND ADP CIRCU	-	
Diagnosis Proced	lure			INFOID:000000011402303
1.CHECK CONNECT	OR			
<ol> <li>Check the followin and harness side) Harness connecto Harness connecto s the inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the CHECK HARNESS</li> <li>Disconnect the ha</li> </ol>	attery cable from the ne ng terminals and con or M19 or B2 <u>t normal?</u> e terminal and connect 5 CONTINUITY (OPEN orness connectors M19	nectors for damage, b tor. N CIRCUIT) 9 and B2.		ection (connector side
	connector	ink connector and the Harness c		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M4	13	M19	71	Existed
1014	12	1019	72	Existed
s the inspection result				
CHECK HARNESS	e main line between th CONTINUITY (OPEN Irness connectors B24 ity between the harne	and B460.	and the harness conn	ector M19.
NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness	CONTINUITY (OPEN irness connectors B24 ity between the harne	N CIRCUIT) and B460. ss connectors. Harness c	connector	
NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN irness connectors B24 ity between the harne connector Terminal No.	N CIRCUIT) and B460. ss connectors.	connector Terminal No.	Continuity
NO >> Repair the B.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness	CONTINUITY (OPEN irness connectors B24 ity between the harne connector Terminal No. 71	N CIRCUIT) and B460. ss connectors. Harness c	connector Terminal No. 13	Continuity Existed
NO >> Repair the B.CHECK HARNESS I. Disconnect the ha 2. Check the continu Harness Connector No.	CONTINUITY (OPEN irness connectors B24 ity between the harne connector Terminal No. 71 72	N CIRCUIT) and B460. ss connectors. Harness c Connector No.	connector Terminal No.	Continuity

#### MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### **Diagnosis Procedure**

INFOID:0000000011402304

[CAN SYSTEM (TYPE 3)]

## 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 connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	<b>B</b> 20	7	Existed
D24	12	B26	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 3)] MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT Diagnosis Procedure

וט	agnosis Flocec	luie			INFOID:000000011402305	
1.	CHECK CONNECT	TOR				В
1. 2. 3.	Check the followi and harness side) Harness connecto	ittery cable from the non ng terminals and con or B239		bend and loose conn	ection (connector side	С
- Ic -	Harness connecto the inspection resul					
Y N	ES >> GO TO 2. O >> Repair the	e terminal and connect CONTINUITY (OPEN				E
1. - - 2.	Side radar RH Harness connecto	lowing harness conne ors B239 and B63 ity between the side r		nector and the harnes	ss connector.	F
_	Side radar RH h	arness connector	Harness	connector	Continuity	G
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	B243	4	B239	7	Existed	ŀ
	0240	0	6253	2		

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)

3

1. Disconnect the connector of side radar LH.

2. Check the continuity between the harness connector and the side radar LH harness connector.

					K
Harness	connector	Side radar LH harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B63	7	B74	4	Existed	L
	3	074	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:0000000011402306

[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 B2
- Harness connector M19

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B74	4	B2	27	Existed
D14	3		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.

#### ${\it 3.}$ 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		connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M10	27	M23	29	Existed
M19	28		28	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.

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

#### MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### **Diagnosis Procedure**

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Disconnect the following harness connectors. 3.
- ADAS control unit \_
- Harness connectors R1 and M23. \_
- Around view monitor control unit
- D 4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector A		Around view monitor control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M23	29	M48	27	Existed	-
IVIZ3	28	10140	28	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 lane camera unit and the around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control Н unit.

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[CAN SYSTEM (TYPE 3)]

А INFOID:000000011402308

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#### MAIN LINE BETWEEN AVM AND APA CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402309

[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 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 following harness connectors.
- Around view monitor control unit
- Harness connectors M77 and E105.
- 2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M49	27	M77	22	Existed
M48	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

## **3.** CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E105	22	E213	3	Existed
E105	23		9	Existed

Is the inspection result normal?

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

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

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

#### ECM BRANCH LINE CIRCUIT

## [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000011402310
1.CHECK CONNECTOR			
	able from the negative term		se connection (unit side and
Is the inspection result normative YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connecto		onnector terminals.	
	ECM harness connector		
Connector No.	Termin	al No.	Resistance (Ω)
E80	146	151	Approx. 108 – 132
Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM <b>3.</b> CHECK POWER SUPPLY Check the power supply and	branch line. Y AND GROUND CIRCUIT the ground circuit of the E	CM. Refer to the following	J.
VK56VD FOR USA AND C     VK56VD FOR MEXICO: E	C-743, "Diagnosis Procedu		
Is the inspection result norma YES (Present error)>>Repl	ace the ECM. Refer to the USA AND CANADA: <u>EC-5</u>	81, "Removal and Installa	ation"
	M = Y ((Y) + E (Y) + 1042 = Dom(Y)		
<ul> <li>VK56VD FOR YES (Past error)&gt;&gt;Error was</li> </ul>	MEXICO: <u>EC-1043</u> , <u>"Remo</u> as detected in the ECM bra r supply and the ground cir	nch line.	

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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 a	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-122, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-146, "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.

INFOID:0000000011402312

#### **TCM BRANCH LINE CIRCUIT**

agnosis Procedure					INFOID:00000001140231
-					INFOL:00000001140231
CHECK CONNECTOR					
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> <li>Check the following terr nector side).</li> <li>A/T assembly</li> <li>Harness connector F1</li> <li>Harness connector E7</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connect</li> </ul>	cable from minals and <u>nal?</u> iinal and c	d connectors for d onnector. IRCUIT		loose con	nection (unit side and con-
Check the resistance be	etween the	e A/T assembly ha		erminals.	
Connector No.		oly harness connector Termir			Resistance ( $\Omega$ )
	1				
F51 the measurement value w YES >> GO TO 3. NO >> Repair the TCM	1 branch li	ne.	8		Approx. 54 – 66
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be	I branch lin OPEN Cl ector. Refe	specification? ne. IRCUIT er to <u>TM-190, "Rer</u>	noval and Installati		Approx. 54 – 66 ne TCM harness connector
the measurement value w         YES       >> GO TO 3.         NO       >> Repair the TCW         .CHECK HARNESS FOR         . Remove the joint connect         . Check the continuity be side of the joint connect	1 branch lin COPEN Cl ector. Refe etween the tor.	specification? ne. IRCUIT er to <u>TM-190, "Rer</u> e A/T assembly ha	noval and Installati		
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be	1 branch lin COPEN Cl ector. Refe etween the tor.	specification? ne. IRCUIT er to <u>TM-190, "Rer</u>	noval and Installati irness connector si connector side		
a the measurement value were were were were were were were we	1 branch lin COPEN Cl ector. Refe etween the tor.	specification? ne. IRCUIT er to <u>TM-190, "Rer</u> e A/T assembly ha TCM harness	noval and Installati irness connector si connector side		e TCM harness connector
the measurement value weights         YES       >> GO TO 3.         NO       >> Repair the TCM         .CHECK HARNESS FOR         . Remove the joint connect         . Check the continuity be side of the joint connect         A/T assembly harness connect         Terminal No.	1 branch lin COPEN Cl ector. Refe etween the tor.	specification? ne. IRCUIT er to <u>TM-190, "Rer</u> e A/T assembly ha TCM harness	noval and Installati rness connector si connector side al No.		e TCM harness connector

< DTC/CIRCUIT DIAGNOSIS >

## AFS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402315

[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 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		
Connector No.	Termi	Resistance ( $\Omega$ )	
M151	1 13		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 <u>EXL-111, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-163, "Removal and Installation".

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

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

#### **AV BRANCH LINE CIRCUIT**

#### [CAN SYSTEM (TYPE 3)]

AV BRANCH LINE (	CIRCUIT		
Diagnosis Procedure			INFOID:000000011402316
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 2	ninal. lamage, bend and loose cor	nnection (unit side and con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	inal and connector.		
	etween the AV control unit h	narness connector terminals	i.
Connector No.	AV control unit harness connecto	r nal No.	Resistance ( $\Omega$ )
M210	90	74	Approx. 54 – 66
<b>B.</b> CHECK POWER SUPPL	ontrol unit branch line. Y AND GROUND CIRCUIT	Γ N control unit. Refer to <u>AV-2</u>	232, "AV CONTROL UNIT :
Diagnosis Procedure".	-		
YES (Past error)>>Error wa	lace the AV control unit. Re		d Installation".

< DTC/CIRCUIT DIAGNOSIS >

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### BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402317

[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		
Connector No.	Termi	Resistance ( $\Omega$ )	
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "Removal and Installation".

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

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

#### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 3)]

#### < DTC/CIRCUIT DIAGNOSIS >

## CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

			А
Diagnosis Procedure			INFOID:000000011402318
1.снеск отс			В
Check DTC of the CAN gate	way with CONSULT.		
Is U1010 or B2600 indicated			С
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.		0
2. CHECK CONNECTOR			D
	able from the negative termi d connectors of the CAN ga		and loose connection (unit $\ge$
Is the inspection result norm	al?		
YES >> GO TO 3. NO >> Repair the termi	nal and connector		F
3.CHECK HARNESS FOR			
1. Disconnect the connect	or of CAN gateway.		G
2. Check the resistance be	tween the CAN gateway har	ness connector terminals	
2. Check the resistance be	CAN gateway harness connector		Resistance (Ω)
2. Check the resistance be Connector No.	CAN gateway harness connector Terminal	l No.	Resistance (Ω)
2. Check the resistance be Connector No. M125	CAN gateway harness connector Terminal		н
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4.	CAN gateway harness connector Terminal 1 <u>ithin the specification?</u> gateway branch line (CAN c	I No. 7	H Approx. 54 – 66
2. Check the resistance be <u>Connector No.</u> <u>M125</u> <u>Is the measurement value w</u> YES >> GO TO 4. NO >> Repair the CAN <u>tem Diagram</u> ". <b>4.</b> CHECK POWER SUPPL Check the power supply an <u>dure</u> ".	CAN gateway harness connector Terminal 1 ithin the specification? gateway branch line (CAN of Y AND GROUND CIRCUIT d the ground circuit of the 0	I No. 7 communication circuit 1 si	H Approx. 54 – 66 J de). Refer to <u>LAN-64, "Sys-</u> J
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply an dure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa Refer to LAN-64	CAN gateway harness connector Terminal 1 ithin the specification? gateway branch line (CAN of Y AND GROUND CIRCUIT d the ground circuit of the 0	TNO. 7 communication circuit 1 si CAN gateway. Refer to <u>L</u> • to <u>LAN-128. "Removal a</u> way branch line (CAN co	Resistance (Ω)       H         Approx. 54 – 66       I         de). Refer to LAN-64, "Sys-       J         AN-127, "Diagnosis Proce-       K         nd Installation".       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:0000000011402319

[CAN SYSTEM (TYPE 3)]

#### 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 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.

	CAN gateway harness connector			
Connector No.	Termiı	Continuity		
M125	4 6		Existed	
WI125	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 3)]

#### < DTC/CIRCUIT DIAGNOSIS >

## DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

#### Diagnosis Procedure

INFOID:000000011402320

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#### 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. С (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			_
Terminal No.			F
6 14		Approx. 54 – 66	-
			Terminal No. Resistance (Ω)

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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, "System Diagram".

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#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 3)]

#### < DTC/CIRCUIT DIAGNOSIS >

## DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

#### **Diagnosis** Procedure

INFOID:000000011402321

#### 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 (Ω)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

#### **HBA BRANCH LINE CIRCUIT**

#### [CAN SYSTEM (TYPE 3)]

HBA BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011402322
<b>1.</b> CHECK CONNECTOR			
<ol> <li>Check the following term nector side).</li> <li>Auto anti- dazzling insid</li> <li>Harness connector R1</li> <li>Harness connector M23</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termi</li> <li>CHECK HARNESS FOR</li> </ol>	cable from the negative tern ninals and connectors for c e mirror (high beam assist <u>al?</u> nal and connector.	lamage, bend and loose co	onnection (unit side and con-
<ol> <li>Check the resistance be ness connector terminal</li> </ol>	tween the auto anti - dazzl	ing inside mirror (high bear	n assist control module) har-
Connector No.		nal No.	
R24	12	11	Approx. 54 – 66
CHECK POWER SUPPL Check the power supply an <u>HIGH BEAM ASSIST CON</u> s the inspection result norm YES (Present error)>>Repl <u>34. "Removal ar</u>	d the ground circuit of the TROL MODULE : Diagnosi al? ace the inside mirror asse	r e high beam assist control <u>is Procedure"</u> . mbly (high beam assist co	l module. Refer to <u>EXL-111,</u> ntrol module). Refer to <u>MIR-</u>
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the high bea er supply and the ground ci		anch line.

## HVAC BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402323

[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		
Connector No.	Termi	Resistance ( $\Omega$ )	
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-116, "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-153, "Removal and Installation".

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

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

### **M&A BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000011402324
1.CHECK CONNECTOR			
	able from the negative term d connectors of the combir		, bend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of combination meter. Here the combination met	er harness connector ter	minals.
Co	mbination meter harness connect	or	Resistance (Ω)
Connector No.	Termin	al No.	
M34	21	22	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the c <u>ire"</u> . al? ace the combination meter. as detected in the combinat	Refer to <u>MWI-88, "Remo</u> on meter branch line.	to <u>MWI-67, "COMBINATION</u>
NO >> Repair the comb <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Y AND GROUND CIRCUIT d the ground circuit of the c <u>ure"</u> . al? ace the combination meter.	Refer to <u>MWI-88, "Remo</u> on meter branch line.	

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### STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402325

[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.

Ste	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal 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-148, "Removal and Installation"</u>.

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

### **TCU BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000001140232
1.CHECK CONNECTOR			
<ol> <li>Check the terminals an connector side).</li> </ol>	cable from the negative tern d connectors of the TCU f		e connection (unit side and
<u>s the inspection result norm</u> YES >> GO TO 2.	al?		
YES >> GO TO 2. NO >> Repair the term	nal and connector.		
2. CHECK HARNESS FOR			
1. Disconnect the connect			
2. Check the resistance be	etween the TCU harness co	onnector terminals.	
	TCU harness connector		Papistance (0)
Connector No.	Termi	nal No.	Resistance ( $\Omega$ )
M99	9	10	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU	ithin the specification? branch line.		Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU <b>3.</b> CHECK POWER SUPPL	ithin the specification? branch line. Y AND GROUND CIRCUIT	Γ	
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and	ithin the specification? branch line. Y AND GROUND CIRCUIT	Γ	
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep	ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u>	CU. Refer to <u>AV-381, "TCU</u> 390, "Removal and Installat	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u>	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCU <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	Г CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".

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### TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402327

[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 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	essure warning control unit harnes	ss connector	Resistance (Ω)
Connector No.	Termi	nal No.	
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-50</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-63</u>, "Removal and <u>Installation</u>".

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

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 3)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402328
1.CHECK CONNECTOR			
<ol> <li>Check the following terr nector side).</li> <li>IPDM E/R</li> <li>Harness connector E10</li> <li>Harness connector M77</li> <li>Is the inspection result norm YES &gt;&gt; GO TO 2.</li> </ol>	cable from the negative tern ninals and connectors for d 5 <u>nal?</u>		connection (unit side and con-
NO >> Repair the term 2.CHECK HARNESS FOR			
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of IPDM E/R. etween the IPDM E/R harne	ess connector terminals.	
Connector No.	Termin	al No.	Resistance (Ω)
E13	27	26	Approx. 108 – 132
YES (Past error)>>Error w	I E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IF	PDM E/R. Refer to <u>PCS-3</u> o <u>PCS-34. "Removal and</u> R branch line.	

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### **A-BAG BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011402314

#### 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-37, "Work Flow".

Is the inspection result normal?

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

			INFOID:00000001140232
CHECK CONNECTOR			
Turn the ignition switch Disconnect the battery Check the following tern nector side). Around view monitor co CAN gateway (Models <u>he inspection result norn</u> ES-1 >> Models without ES-2 >> Models with ICO O >> Repair the term CHECK HARNESS CON	cable from the negative terr minals and connectors for d without ICC) <u>nal?</u> ICC: GO TO 2. C: GO TO 3. inal and connector. ITINUITY (OPEN CIRCUIT	amage, bend and loose c	onnection (unit side and con
Disconnect the connect Check the continuity be	tween the CAN gateway. CAN gateway harness connector		
Connector No.	Termin	nal No.	- Continuity
	4	6	Eviated
S >> GO TO 3.		12	Existed Existed
ne inspection result norm S >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector	10 nal? ness and repair the root cau	12 use (CAN communication vithout ICC) control unit.	Existed
ne inspection result norm ES >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	10 mal? ess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v tor of around view monitor of etween the around view mo	12 use (CAN communication without ICC) control unit. nitor control unit harness	Existed
ne inspection result norm ES >> GO TO 3. D >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	10 mal? ess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v for of around view monitor c etween the around view mo	12 use (CAN communication without ICC) control unit. nitor control unit harness	Existed
he inspection result norn ES >> GO TO 3. D >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance both Around w	10 mal? ess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v for of around view monitor of etween the around view monitor view monitor control unit harness of Termin 27	12 use (CAN communication vithout ICC) control unit. nitor control unit harness	Existed circuit 2 side). Refer to LAN

# SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402330

[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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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	r	Continuity
Connector No.	Termi	nal No.	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-64, "System Diagram"</u>.

### **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	onar control unit harness connec	tor	Resistance (Ω)
Connector No.	Termi	nal No.	
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

### ADP BRANCH LINE CIRCUIT

### [CAN SYSTEM (TYPE 3)]

ADP BRANCH LINE	ECIRCUIT			٨
Diagnosis Procedure			INFOID:000000011402331	А
1.CHECK CONNECTOR				В
<ul><li>3. Check the following terr nector side).</li><li>Driver seat control unit</li></ul>	cable from the negative terr ninals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-	С
<ul> <li>Harness connector B46</li> <li>Harness connector B24</li> <li>CAN gateway</li> </ul>				D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term <b>2.</b> CHECK HARNESS CON	inal and connector.	)		E
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.	_	
	CAN gateway harness connector	r	Continuity	G
Connector No.		nal No.		
M125	4	6	Existed	Η
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector	ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway.	use (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>	l J
	or of driver seat control uni etween the driver seat contro	t. rol unit harness connector te	erminals.	Κ
Driv Connector No.	er seat control unit harness conne Termir	ector nal No.	Resistance ( $\Omega$ )	L
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	r seat control unit branch li Y AND GROUND CIRCUIT	Г	to ADP-67 "DRIVER SEAT	LAN N
<u>CONTROL UNIT : Diagnosis</u> Is the inspection result norm	s Procedure".		NATION, DRIVER OLAT	0
YES (Past error)>>Error w			emoval and Installation".	Ρ

### **PSB BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011402332

[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).
- 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.

	CAN gateway harness connector	r	Continuity
Connector No.	Termi	nal 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-64, "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).
- 3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-	crash seat belt control unit (driver	side)	Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	
B9	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-54, "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 sonar control unit branch line.

E-SUS BRANCH LI			
Diagnosis Procedure			INFOID:000000011402333
.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d		nnection (unit side and con-
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector		
· '	ITINUITY (OPEN CIRCUIT	)	
. Disconnect the connect			
	CAN gateway harness connector		Continuity
Connector No.	Termir 4	nal No.	Existed
M125		6	Existed
<u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR	ess and repair the root cau agram".		ircuit 2 side). Refer to LAN-
YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of air levelizer control mo	ise (CAN communication ci	ircuit 2 side). Refer to <u>LAN-</u>
YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of air levelizer control mo	use (CAN communication ci odule. trol module harness connec	ircuit 2 side). Refer to <u>LAN-</u>
YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of air levelizer control mo etween the air levelizer con relizer control module harness cor	use (CAN communication ci odule. trol module harness connec	ircuit 2 side). Refer to <u>LAN-</u>
YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be Air lev	al? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of air levelizer control mo etween the air levelizer con relizer control module harness cor Termin 16	use (CAN communication ci odule. trol module harness connec	ircuit 2 side). Refer to <u>LAN-</u>

### ICC BRANCH LINE CIRCUIT

### **Diagnosis** Procedure

INFOID:000000011402334

[CAN SYSTEM (TYPE 3)]

### 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. nector 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.
- Check the continuity between the CAN gateway harness connector terminals. 2.

CAN gateway harness connector			Continuity
Connector No.	Termi	Continuity	
M125	4 6		Existed
WIT25	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-64, "System Diagram".

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

	Resistance (Ω)
Terminal No.	
2	Approx. 54 – 66
	2

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 DAS-158. "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-159, "Removal and Installation".

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

<b>a a</b> .	NE CIRCUIT		
Diagnosis Procedure			INF0ID:000000011402335
1.CHECK CONNECTOR			
<ul> <li>3. Check the following term nector side).</li> <li>Automatic back door control - CAN gateway</li> <li><u>Is the inspection result norm</u> YES &gt;&gt; GO TO 2.</li> </ul>	cable from the negative terr minals and connectors for d ontrol module <u>nal?</u> inal and connector.	amage, bend and loose co	onnection (unit side and con-
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	or of CAN gateway. tween the CAN gateway ha	rness connector terminals	
Connector No	CAN gateway harness connector		Continuity
Connector No.	4	nal No. 6	Existed
M125	10	12	Existed
<u>64, "System Dia</u> <b>3.</b> CHECK HARNESS FOR 1. Connect the connector	OPEN CIRCUIT		
	or of automatic back door c etween the automatic back		ss connector terminals.
3. Check the resistance be	or of automatic back door o	door control module harne	
3. Check the resistance be	or of automatic back door of automatic back door of automatic back back door control module harnes	door control module harne	ss connector terminals. Resistance (Ω)
3. Check the resistance be Automatic	or of automatic back door of etween the automatic back back door control module harness	door control module harne	

### RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402336

[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 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-341, "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.

Side radar RH harness connector			Resistance (Ω)
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-339. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-384, "Removal and Installation".

- YES (Past error)>>Error was detected in the side radar RH branch line.
- NO >> Repair the power supply and the ground circuit.

### **RDR-L BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000001140233
1.CHECK CONNECTOR			
	cable from the negative te id connectors of the side a). <u>nal?</u> inal and connector.	rminal. radar LH for damage, bend	and loose connection (uni
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	etween the side radar LH	harness connector terminals.	
Connector No.	Side radar LH harness connect	tor ninal No.	Resistance ( $\Omega$ )
B74	4	3	Approx. 54 – 66
NO >> Repair the side	radar LH branch line.		
3.CHECK POWER SUPPL Check the power supply an <u>Diagnosis Procedure</u> ". <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	d the ground circuit of the nal? lace the side radar LH. Re	e side radar LH. Refer to <u>DA</u> efer to <u>DAS-384, "Removal a</u> dar LH branch line.	

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## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402338

[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).
- Lane camera unit
- Harness connector R1
- Harness connector M23

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.	Terminal No.		Resistance (Ω)
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-337</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-383, "Removal and Installation".

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

### **BSW/BUZZER BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS > **BSW/BUZZER BRANCH LINE CIRCUIT**

### **Diagnosis** Procedure

### 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 drive assistance buzzer control module for damage, bend and 3. С 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 drive assistance buzzer control module.

Check the resistance between the drive assistance buzzer control module harness connector terminals.

	Drive assistance buzzer control module harness connector Resistance (Ω)			F	
-	Connector No.	Terminal No.			
-	M150	3	11	Approx. 54 – 66	G

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to DAS-339. "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to DAS-388, "Removal and Installation".

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

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### APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402340

[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 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	Accelerator pedal actuator harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
E213	3	9	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-337, "ACCEL-</u> ERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to DAS-381, "Exploded View".

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

iagnosis Procedure			INFOID:00000001140234
CHECK CONNECTOR			
	-		
Turn the ignition switch OF Disconnect the battery cabl Check the following termina nector side). ICC sensor Harness connector E218 Harness connector E219	e from the negative term		onnection (unit side and con
the inspection result normal?			
YES >> GO TO 2. NO >> Repair the terminal	and connector.		
CHECK HARNESS FOR OF	EN CIRCUIT		
Disconnect the connector of Check the resistance betwee	f ICC sensor. een the ICC sensor harn	ess connector terminals.	
Disconnect the connector of Check the resistance betwee	f ICC sensor. een the ICC sensor harno C sensor harness connector		Resistance (Ω)
Disconnect the connector of Check the resistance betwee ICC Connector No.	f ICC sensor. een the ICC sensor harno C sensor harness connector Termina	al No.	
Disconnect the connector of Check the resistance betwee IConnector No. E88	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3		Resistance (Ω) Approx. 108 – 132
Disconnect the connector of Check the resistance between Connector No. E88 the measurement value within YES >> GO TO 3. NO >> Repair the ICC sen CHECK POWER SUPPLY A	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3 n the specification? sor branch line. ND GROUND CIRCUIT	al No. 6	Approx. 108 – 132
Disconnect the connector of Check the resistance between ICC Connector No. E88 the measurement value within YES >> GO TO 3. NO >> Repair the ICC sen CHECK POWER SUPPLY A heck the power supply and the	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3 n the specification? sor branch line. ND GROUND CIRCUIT	al No. 6	Approx. 108 – 132
Disconnect the connector of Check the resistance between the connector No.         East         Connector No.         E88         The measurement value within YES         YES         > GO TO 3.         NO         > Repair the ICC sen         CHECK POWER SUPPLY A         heck the power supply and the the inspection result normal?	f ICC sensor. een the ICC sensor harno C sensor harness connector Termina 3 In the specification? sor branch line. ND GROUND CIRCUIT e ground circuit of the IC	al No. 6 C sensor. Refer to <u>CCS-1</u>	Approx. 108 – 132
Disconnect the connector of Check the resistance between Connector No. E88 the measurement value within YES >> GO TO 3. NO >> Repair the ICC sen CHECK POWER SUPPLY A heck the power supply and the the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was of	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3 in the specification? sor branch line. ND GROUND CIRCUIT e ground circuit of the IC the ICC sensor. Refer t	al No. 6 C sensor. Refer to <u>CCS-1</u> o <u>CCS-133. "Removal an</u> or branch line.	Approx. 108 – 132
Disconnect the connector of Check the resistance between Connector No. E88 the measurement value within YES >> GO TO 3. NO >> Repair the ICC sen CHECK POWER SUPPLY A heck the power supply and the the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was of	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3 the specification? sor branch line. ND GROUND CIRCUIT e ground circuit of the IC e the ICC sensor. Refer t letected in the ICC sensor	al No. 6 C sensor. Refer to <u>CCS-1</u> o <u>CCS-133. "Removal an</u> or branch line.	Approx. 108 – 132
Disconnect the connector of Check the resistance between Connector No. E88 the measurement value within YES >> GO TO 3. NO >> Repair the ICC sen CHECK POWER SUPPLY A heck the power supply and the the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was of	f ICC sensor. een the ICC sensor harne C sensor harness connector Termina 3 the specification? sor branch line. ND GROUND CIRCUIT e ground circuit of the IC e the ICC sensor. Refer t letected in the ICC sensor	al No. 6 C sensor. Refer to <u>CCS-1</u> o <u>CCS-133. "Removal an</u> or branch line.	Approx. 108 – 132

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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-64, "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		
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 lin	Data link connector		Continuity
Connector No.	Terminal No.	- Continuity	Continuity
M4	6	- Ground	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.

ECM		Resistance (Ω)	
Termi	nal No.		
146	151	Approx. 108 – 132	

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

IPD	M E/R	Resistance (Ω)	
Termi	nal 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.

### LAN-236

INFOID:000000011402342

### **CAN COMMUNICATION CIRCUIT 1**

#### < 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
<ol> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Disconnect one of the unit connectors of CAN communication circuit 1.</li> </ol>
<ul> <li>ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms.</li> </ul>
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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# **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-64, "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	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	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	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 g	ateway	Resistance (Ω)	
Termin	nal No.	Resistance (22)	
4	10	Approx. 108 – 132	
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:0000000011402343

	CAN COMMUNICATION CIRCUIT 2
< C	DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 3)]
N	on-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.
6.	CHECK UNIT REPRODUCTION
Pe	form the reproduction test as per the following procedure for each unit.
1.	Turn the ignition switch OFF.
2. 3.	Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2.
	NOTE:
4.	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.
	<b>NOTE:</b> Although unit-related error symptoms occur, do not confuse them with other symptoms.
Ins	pection result
	eproduced>>Connect the connector. Check other units as per the above procedure. on-reproduced>>Replace the unit whose connector was disconnected.

< DTC/CIRCUIT DIAGNOSIS >

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402344

[CAN SYSTEM (TYPE 3)]

### **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-64, "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 uni	t harness connector	ICC sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	6	6 E88	3	Existed
D32	7	EOO	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-64</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
- Around view monitor control unit
- Driver assistance buzzer control module
- Sonar control unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

 ADAS control unit harness connector			Continuity
Connector No.	Termi	Continuity	
B52	6	7	Not existed

### ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 3)] < DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal? А YES >> GO TO 5. NO >> Check the harness and repair the root cause. **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Check the continuity between the ADAS control unit harness connector and the ground. ADAS control unit harness connector Continuity Connector No. Terminal No. Ground 6 Not existed B52 7 Not existed D Is the inspection result normal? YES >> GO TO 6. E NO >> Check the harness and repair the root cause. **6.**CHECK TERMINATION CIRCUIT 1. Remove the ADAS control unit and the ICC sensor. Check the resistance between the ADAS control unit terminals. 2. ADAS control unit Resistance  $(\Omega)$ Terminal No. 6 7 Approx. 108 - 132 Н Check the resistance between the ICC sensor terminals. ICC sensor Resistance  $(\Omega)$ 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. Κ **I**.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. L Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is LAN detected. 8.CHECK UNIT REPRODUCTION Ν 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. 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. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom Ρ (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.

### LAN-241

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

### **Diagnosis Procedure**

INFOID:0000000011402351

### 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.

	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	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		6	Existed
ΙνιοΖ	6	- M4	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			ICAN	SYSTEM (TYPE 4)]
MAIN LINE BET		ND ADP CIRCU	-	
Diagnosis Proced	lure			INFOID:000000011402353
1.CHECK CONNECT	OR			
<ul> <li>Check the following and harness side) Harness connectore Harness connectores connectores the inspection result YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the CHECK HARNESS</li> </ul>	ttery cable from the ne ng terminals and coni or M19 or B2 <u>t normal?</u>	nectors for damage, b tor. N CIRCUIT)	end and loose conne	ection (connector side
2. Check the continu	ity between the data li	ink connector and the h		
Connector No.	connector Terminal No.	Harness c	onnector Terminal No.	Continuity
	13		71	Existed
M4	12	M19	72	Existed
CHECK HARNESS		and B460.	and the harness conn	ector M19.
NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN	NCIRCUIT)		
NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN rness connectors B24 ity between the harne	N CIRCUIT) and B460. ss connectors.		ector M19.
NO >> Repair the S.CHECK HARNESS D. Disconnect the ha Check the continu Harness	CONTINUITY (OPEN rness connectors B24 ity between the harne	N CIRCUIT) and B460. ss connectors. Harness co	onnector	
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness	CONTINUITY (OPEN rness connectors B24 ity between the harne connector Terminal No.	N CIRCUIT) and B460. ss connectors. Harness co	onnector Terminal No.	Continuity

#### 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:000000011402354

### 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	connector	Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	Doc	7	Existed
D24	12	B26	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.

### ECM BRANCH LINE CIRCUIT

### [CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000011402360
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cabi</li> <li>Check the terminals and connector side).</li> </ol>	le from the negative term		se connection (unit side and
<u>Is the inspection result normal?</u> YES >> GO TO 2.	<u>.</u>		
NO >> Repair the terminal	and connector.		
2. CHECK HARNESS FOR OF	PEN CIRCUIT		
<ol> <li>Disconnect the connector of</li> <li>Check the resistance betwee</li> </ol>	een the ECM harness co	nnector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.	Termina		
E80	146	151	Approx. 108 – 132
	n the specification?		
Is the measurement value withi YES >> GO TO 3. NO >> Repair the ECM bra 3.CHECK POWER SUPPLY A	anch line.		
Is the measurement value within YES >> GO TO 3. NO >> Repair the ECM bra <b>3.</b> CHECK POWER SUPPLY A Check the power supply and the • VK56VD FOR USA AND CAN • VK56VD FOR MEXICO: EC-7	anch line. ND GROUND CIRCUIT e ground circuit of the EC NADA: <u>EC-190, "Diagnos</u> 743, "Diagnosis Procedu	is Procedure"	J.
Is the measurement value withi YES >> GO TO 3. NO >> Repair the ECM bra <b>3.</b> CHECK POWER SUPPLY A Check the power supply and the • VK56VD FOR USA AND CAN • VK56VD FOR MEXICO: EC-7 Is the inspection result normal?	anch line. ND GROUND CIRCUIT e ground circuit of the EC NADA: <u>EC-190, "Diagnos</u> 743, "Diagnosis Procedur	is Procedure" e"	J.
Is the measurement value withi YES >> GO TO 3. NO >> Repair the ECM bra 3.CHECK POWER SUPPLY A Check the power supply and the • VK56VD FOR USA AND CAN • VK56VD FOR MEXICO: EC-7 Is the inspection result normal? YES (Present error)>>Replace • VK56VD FOR US	anch line. ND GROUND CIRCUIT e ground circuit of the EC NADA: <u>EC-190, "Diagnos</u> 743, "Diagnosis Procedur	<u>is Procedure"</u> <u>e"</u> ollowing. 31. "Removal and Installa	
Is the measurement value withi YES >> GO TO 3. NO >> Repair the ECM bra <b>3</b> .CHECK POWER SUPPLY A Check the power supply and the • VK56VD FOR USA AND CAN • VK56VD FOR MEXICO: EC-7 Is the inspection result normal? YES (Present error)>>Replace • VK56VD FOR US • VK56VD FOR US • VK56VD FOR ME YES (Past error)>>Error was of	anch line. AND GROUND CIRCUIT e ground circuit of the EC ADA: <u>EC-190</u> , "Diagnos 743, "Diagnosis Procedur e the ECM. Refer to the f SA AND CANADA: <u>EC-58</u> EXICO: <u>EC-1043</u> , "Remo	is Procedure" e" ollowing. 31. "Removal and Installa val and Installation" nch line.	
Is the measurement value withi YES >> GO TO 3. NO >> Repair the ECM bra <b>3</b> .CHECK POWER SUPPLY A Check the power supply and the • VK56VD FOR USA AND CAN • VK56VD FOR MEXICO: EC-7 Is the inspection result normal? YES (Present error)>>Replace • VK56VD FOR US • VK56VD FOR US • VK56VD FOR ME YES (Past error)>>Error was of	anch line. ND GROUND CIRCUIT e ground circuit of the EC NADA: <u>EC-190, "Diagnos</u> 743, "Diagnosis Procedur e the ECM. Refer to the f SA AND CANADA: <u>EC-58</u> EXICO: <u>EC-1043, "Remo</u> detected in the ECM brar	is Procedure" e" ollowing. 31. "Removal and Installa val and Installation" nch line.	

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### 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402361

[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 ( $\Omega$ )		
Connector No.	Terminal No.		
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-97, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the transfer control unit. Refer to <u>DLN-112, "Removal and Installation"</u>.

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

### **ABS BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE Diagnosis Procedure				
1.CHECK CONNECTOR				
3. Check the terminals and	able from the negative termin I connectors of the ABS actunity nit side and connector side).		ntrol unit) for damage, bend	
YES >> GO TO 2.				
NO >> Repair the termi				
2.CHECK HARNESS FOR	OPEN CIRCUIT			
	or of ABS actuator and electr etween the ABS actuator and		t) harness connector termi-	
	and algorithic unit (constrait unit) have a			
	and electric unit (control unit) harnes	ss connector	Resistance ( $\Omega$ )	
Connector No.	Terminal		Resistance ( $\Omega$ )	
Connector No. E36 Is the measurement value w	Terminal 41		Resistance (Ω) Approx. 54 – 66	
Connector No. E36 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-122. "Diagnosis Proceed Is the inspection result norm YES (Present error)>>Repland Installation"	Terminal         41         ithin the specification?         actuator and electric unit (co         Y AND GROUND CIRCUIT         d the ground circuit of the A         dure".         al?         ace the ABS actuator and elected	No. 27 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-146, "Removal</u>	

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### TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402363

[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			Resistance (Ω)
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-190, "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.	Continuity	
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-153</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-190, "Removal and Installation".

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

### **AV BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 4)]

AV BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011402366	A
1. CHECK CONNECTOR				В
<ol> <li>Check the following terr nector side).</li> <li>AV control unit</li> <li>Harness connector M22</li> </ol>	cable from the negative terr ninals and connectors for d 22	ninal. amage, bend and loose cor	nnection (unit side and con-	C
<ul> <li>Harness connector M11</li> <li>Is the inspection result norm</li> </ul>				
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.			Е
1. Disconnect the connect	or of AV control unit.	narness connector terminals	).	F
	AV control unit harness connecto		Resistance (Ω)	G
Connector No.		nal No.		
M210	90	74	Approx. 54 – 66	Н
3.CHECK POWER SUPPL	ontrol unit branch line. Y AND GROUND CIRCUIT			I
Check the power supply and Diagnosis Procedure".		V control unit. Refer to <u>AV-2</u>	232, "AV CONTROL UNIT :	J
YES (Past error)>>Error w			d Installation".	K
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### BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402367

[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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "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:000000011402368
1.снеск отс			
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.		
2. CHECK CONNECTOR			
3. Check the terminals and side and connector side	able from the negative term I connectors of the CAN ga		and loose connection (unit
Is the inspection result normalYES>> GO TO 3.NO>> Repair the terminal			
3.CHECK HARNESS FOR			
1. Disconnect the connecto			(
2. Check the resistance be	tween the CAN gateway hal	rness connector terminals	
	tween the CAN gateway han	rness connector terminals	
	CAN gateway harness connector		
Connector No.	CAN gateway harness connector Termina 1	Il No.	Resistance (Ω)
Connector No. M125 Is the measurement value w YES >> GO TO 4.	CAN gateway harness connector Termina 1 thin the specification? gateway branch line (CAN o	il No. 7	Resistance (Ω) Approx. 54 – 66
Connector No. <u>M125</u> <u>Is the measurement value wi</u> YES >> GO TO 4. NO >> Repair the CAN <u>tem Diagram</u> ". <b>4.</b> CHECK POWER SUPPLY Check the power supply and <u>dure</u> ".	CAN gateway harness connector Termina 1 thin the specification? gateway branch line (CAN of AND GROUND CIRCUIT d the ground circuit of the	nl No. 7 communication circuit 1 si	Resistance (Ω) Approx. 54 – 66 de). Refer to <u>LAN-64, "Sys-</u>
Connector No.         M125         Is the measurement value with the the the measurement value with the the the measurement value with the the the the the the the the the t	CAN gateway harness connector Termina 1 thin the specification? gateway branch line (CAN of AND GROUND CIRCUIT d the ground circuit of the al? ace the CAN gateway. Refe is detected in the CAN gate	ni No. 7 communication circuit 1 sid CAN gateway. Refer to L r to LAN-128, "Removal al	Resistance (Ω) Approx. 54 – 66 de). Refer to <u>LAN-64, "Sys-</u> AN-127, "Diagnosis Proce-
Connector No. <u>M125</u> <u>Is the measurement value wi</u> YES >> GO TO 4. NO >> Repair the CAN <u>tem Diagram</u> ". <b>4.</b> CHECK POWER SUPPLY Check the power supply and <u>dure</u> ". <u>Is the inspection result normation</u> YES (Present error)>>Reply YES (Past error)>>Error war Refer to LAN-64	CAN gateway harness connector Termina 1 thin the specification? gateway branch line (CAN of AND GROUND CIRCUIT d the ground circuit of the al? ace the CAN gateway. Refe	The second secon	Resistance (Ω) Approx. 54 – 66 de). Refer to <u>LAN-64, "Sys-</u> AN-127, "Diagnosis Proce-
Connector No. <u>M125</u> <u>Is the measurement value wi</u> YES >> GO TO 4. NO >> Repair the CAN <u>tem Diagram</u> ". <b>4.</b> CHECK POWER SUPPLY Check the power supply and <u>dure</u> ". <u>Is the inspection result normation</u> YES (Present error)>>Reply YES (Past error)>>Error war Refer to LAN-64	CAN gateway harness connector Termina 1 thin the specification? gateway branch line (CAN of AND GROUND CIRCUIT d the ground circuit of the al? ace the CAN gateway. Refe is detected in the CAN gate . "System Diagram".	The second secon	Resistance (Ω) Approx. 54 – 66 de). Refer to <u>LAN-64, "Sys-</u> AN-127, "Diagnosis Proce- <u>ad Installation"</u> . mmunication circuit 1 side).

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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:0000000011402369

[CAN SYSTEM (TYPE 4)]

### 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 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.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M125	4		Existed
INIT25	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 4)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

### Diagnosis Procedure

INFOID:000000011402370

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# 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. С (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			
Terminal No.			F
6	6 14		-
			Resistance $(\Omega)$

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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, "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:000000011402371

## 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 (Ω)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

## **HBA BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

HBA BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011402372
1.CHECK CONNECTOR			
<ol> <li>Check the following term nector side).</li> <li>Auto anti- dazzling insid</li> <li>Harness connector R1</li> <li>Harness connector M23</li> <li>Is the inspection result norm YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termination of te</li></ol>	cable from the negative terr ninals and connectors for d le mirror (high beam assist al? inal and connector.	amage, bend and loose co	onnection (unit side and con-
<ol> <li>Check the resistance be ness connector terminal</li> </ol>	etween the auto anti - dazzli	ing inside mirror (high bear	Resistance (Ω)
Connector No.		nal No.	
R24	12	11	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply an <u>HIGH BEAM ASSIST CON</u> s the inspection result norm YES (Present error)>>Repl <u>34, "Removal ar</u>	nd the ground circuit of the TROL MODULE : Diagnosi al? lace the inside mirror assen ad Installation".	- e high beam assist control <u>s Procedure"</u> . mbly (high beam assist co	l module. Refer to <u>EXL-111,</u> ntrol module). Refer to <u>MIR-</u>
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the high bea er supply and the ground ci		anch line.

# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402373

[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 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			Resistance ( $\Omega$ )
Connector No.	Termi		
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-116, "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-153, "Removal and Installation".

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

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

## **M&A BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000011402374
1.CHECK CONNECTOR			
	able from the negative termin d connectors of the combina		pend and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term	nal and connector.		
2. CHECK HARNESS FOR			
	or of combination meter. Stween the combination meter	harness connector termi	nals.
Co	Combination meter harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal	No.	
M34 s the measurement value w	21	22	Approx. 54 – 66
	pination meter branch line.		
Check the power supply an IETER : Diagnosis Procedu	d the ground circuit of the cor <u>ire"</u> .	mbination meter. Refer to	MWI-67, "COMBINATION
Check the power supply an <u>METER : Diagnosis Procedu</u> <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	d the ground circuit of the cor <u>ire"</u> .	efer to <u>MWI-88, "Remova</u> n meter branch line.	
METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	d the ground circuit of the cor <u>ure"</u> . <u>al?</u> ace the combination meter. R as detected in the combination	efer to <u>MWI-88, "Remova</u> n meter branch line.	

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# STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402375

[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 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	Steering angle sensor harness connector			
Connector No.	Termi	Resistance ( $\Omega$ )		
M30	5	5 2		

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-148, "Removal and Installation"</u>.

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

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

# **TCU BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000011402376
1.CHECK CONNECTOR			
<ol> <li>Check the terminals ar connector side).</li> </ol>	cable from the negative terr id connectors of the TCU f		e connection (unit side and
Is the inspection result norn YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect		onnector terminals.	
	TCU harness connector		Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
M99 s the measurement value v	9 vithin the specification?	10	Approx. 54 – 66
Is the measurement value v YES >> GO TO 3. NO >> Repair the TCU <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm	vithin the specification? I branch line. LY AND GROUND CIRCUIT d the ground circuit of the T nal?	- CU. Refer to <u>AV-381, "TCU</u>	: Diagnosis Procedure".
Is the measurement value v YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? I branch line. LY AND GROUND CIRCUIT d the ground circuit of the T	- CU. Refer to <u>AV-381, "TCU</u> <u>390, "Removal and Installat</u> nch line.	: Diagnosis Procedure".

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# TPMS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402377

[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 pressure warning control unit harness connector			Resistance (Ω)
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-50</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-63</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.

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 4)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402378
1.CHECK CONNECTOR			
<ol> <li>Check the following terr nector side).</li> <li>IPDM E/R</li> <li>Harness connector E10</li> <li>Harness connector M77</li> <li>Is the inspection result norm</li> </ol>	cable from the negative terr ninals and connectors for d 5		connection (unit side and con-
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	etween the IPDM E/R harno	ess connector terminals.	
Connector No.	IPDM E/R harness connector Terminal No.		Resistance (Ω)
E13	27	26	Approx. 108 – 132
YES (Past error)>>Error w	I E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IF	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-34. "Removal and</u> R branch line.	

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# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402364

### 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-37, "Work Flow".

Is the inspection result normal?

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

CHECK CONNECTOR			INFOID:00000001140237
Turn the ignition switch Disconnect the battery Check the following tern nector side). Around view monitor co CAN gateway (Models <u>he inspection result norn</u> ES-1 >> Models without ES-2 >> Models with ICO O >> Repair the term	cable from the negative terr minals and connectors for d without ICC) <u>nal?</u> ICC: GO TO 2. C: GO TO 3. ninal and connector.	lamage, bend and loose co	nnection (unit side and con-
	tween the CAN gateway ha		
Connector No.		nal No.	Continuity
M125	4	6	Existed
	10	12	Existed
ES >> GO TO 3. D >> Check the harn	less and repair the root cau	use (CAN communication c	ircuit 2 side). Refer to <u>LAN</u> .
S >> GO TO 3. D >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector	ness and repair the root cau agram".	vithout ICC) control unit.	
S >> GO TO 3. D >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	ness and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v tor of around view monitor of etween the around view mo	vithout ICC) control unit. onitor control unit harness c	
S >> GO TO 3. D >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	ess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v tor of around view monitor c etween the around view mo	vithout ICC) control unit. onitor control unit harness c	
O >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be Around v	eess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. (Models v tor of around view monitor c etween the around view mo view monitor control unit harness Termin 27	vithout ICC) control unit. onitor control unit harness connector	onnector terminals.

# SONAR BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402380

[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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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
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-64, "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Sonar control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

# **ADP BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

ADP BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011402381	А
1.CHECK CONNECTOR				В
	cable from the negative terr	ninal. amage, bend and loose cor	nnection (unit side and con-	С
<ul> <li>Harness connector B46</li> <li>Harness connector B24</li> <li>CAN gateway</li> </ul>				D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term <b>2.</b> CHECK HARNESS CON	inal and connector.	)		E
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		
	CAN gateway harness connector		Continuity	G
Connector No.		nal No.		
M125	4	6	Existed	Η
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of driver seat control unit			I J K
3. Check the resistance be	etween the driver seat contr	rol unit harness connector te	erminals.	
Connector No.	er seat control unit harness conn Termir	ector nal No.	Resistance ( $\Omega$ )	L
B451	1	17	Approx. 54 – 66	
4.CHECK POWER SUPPL	er seat control unit branch li Y AND GROUND CIRCUIT	Γ		LAN N
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm	s Procedure".	iver seat control unit. Refer	to <u>ADP-67, "DRIVER SEAT</u>	0
YES (Present error)>>Rep YES (Past error)>>Error w	lace the driver seat control		emoval and Installation".	Ρ

# **E-SUS BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000011402383

[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

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			Continuity
Connector No.	Terminal No.		Continuity
M125	4	6	Existed
WIT25	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-64, "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

		Resistance (Ω)
Connector No. Terminal 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-89.</u> "Diagnosis Procedure".

#### Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to <u>SCS-94. "Removal and Installation"</u>. YES (Past error)>>Error was detected in the air levelizer control module branch line.
- NO >> Repair the power supply and the ground circuit.

PWBD BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402385
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for c ntrol module <u>nal?</u> inal and connector.	amage, bend and loose o	connection (unit side and con-
1. Disconnect the connect			S.
Connector No.	CAN gateway harness connector	nal No.	Continuity
	4	6	Existed
M125	10	12	Existed
	OPEN CIRCUIT		ess connector terminals.
Automatic	back door control module harnes	s connector	
Connector No.	Termi	nal No.	Resistance (Ω)
B26	7	6	Approx. 54 – 66
4.CHECK POWER SUPPL Check the power supply and "AUTOMATIC BACK DOOR Is the inspection result norm YES (Present error)>>Rep Installation". YES (Past error)>>Error w	matic back door control mo Y AND GROUND CIRCUIT d the ground circuit of the a CONTROL UNIT : Diagno hal? lace the automatic back d as detected in the automat	nutomatic back door contr sis Procedure". oor control module. Refe c back door control modu	rol module. Refer to <u>DLK-120,</u> er to <u>DLK-268, "Removal and</u> ule branch line.
NO >> Repair the powe	er supply and the ground ci	rcuit.	

# **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-64, "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		
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 lin	< connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M4	6	Giouna	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 (O)	
Terminal No.		Resistance (Ω)	
146	151	Approx. 108 – 132	

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

IPD	PDM E/R Besistance (0)	
Terminal No.		– Resistance (Ω)
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.

# LAN-268

INFOID:000000011402392

# **CAN COMMUNICATION CIRCUIT 1**

### < DTC/CIRCUIT DIAGNOSIS >

# 5. СНЕСК ЗУМРТОМ

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
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 1.</li> </ul>
<ul> <li>NOTE:</li> <li>ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom"</li> </ul>
(Results from interview with customer)" are reproduced. <b>NOTE:</b> 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.
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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-64, "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		
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
M4	13	Giouna	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 g	ateway	Posistance (0)	
Terminal No.		Resistance ( $\Omega$ )	
4	10	Approx. 108 – 132	
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:000000011402393

CAN COMMUNICATION CIRCUIT 2
< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)]
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.
6. CHECK UNIT REPRODUCTION
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 2.</li> <li>NOTE: CAN gateway has two termination circuits. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE:</li> </ul>
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.

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# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ABS AND DLC CIRCUIT

## **Diagnosis Procedure**

INFOID:0000000011402399

# 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		connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E26	41	E107	1	Existed	
E36	27	E107	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	M82 1 M4	MA	6	Existed
M82	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.

	SIS >		ADP CIRCUIT	SYSTEM (TYPE 5)]
		ND ADP CIRCU	-	
sis Procedure	ļ			INFOID:000000011402401
< CONNECTOR				
k the following te arness side). ess connector M1 ess connector B2 <u>bection result nor</u> >> GO TO 2. >> Repair the terr < HARNESS CO nnect the harnes	r cable from the ne erminals and conn [9 <u>mal?</u> minal and connect NTINUITY (OPEN is connectors M19	nectors for damage, b tor. N CIRCUIT) 9 and B2.		ection (connector side
k the continuity b		ink connector and the Harness c	Т	
nector No.	Terminal No.	Connector No.	Terminal No.	Continuity
N44	13	M10	71	Existed
M4	12	M19	72	Existed
K HARNESS CO	in line between th NTINUITY (OPEN is connectors B24 etween the harne	l and B460.	and the harness conn	ector M19.
	octor	Harness c	connector	Continuity
Harness conn	ector		Terminal No.	Continuity
Harness conn nector No.	Terminal No.	Connector No.		
		Connector No. B24	13 12	Existed
care containancy o				Continu

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### **Diagnosis Procedure**

INFOID:000000011402402

[CAN SYSTEM (TYPE 5)]

# 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 connector		Automatic back door control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
P24	13	B26	7	Existed	
B24	12	D20	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 [CAN SYSTEM (TYPE 5)] < DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT **Diagnosis** Procedure

1.CHECK CONNECTOR	В
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).</li> <li>Harness connector B239</li> </ol>	С
- Harness connector B63 Is the inspection result normal?	D
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)	Е
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.

Continuity	le radar RH harness connector Harness connector		ide radar RH harness connector	
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
Existed		P220	4	D040
Existed	3	B239	3	B243 -

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.

Continuity	s connector Side radar LH harness connector		Harness connector	
	Terminal No.	Connector No.	Terminal No.	Connector No.
Existed	4	4	7	B63 -
Existed	3	B74	3	

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.

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

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INFOID:000000011402403

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:0000000011508701

[CAN SYSTEM (TYPE 5)]

# 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

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	e radar LH harness connector Harness connector		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 connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness	connector	Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M19	27	B48	27	Existed
IVI 19	28	D40	28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.

	SNOSIS >	WEEN AVM ANI		I SYSTEM (TYPE 5)]
MAIN LINE BET	WEEN AVM A	ND APA CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000011402407
CHECK CONNECT	OR			
<ol> <li>Check the followin and harness side). Harness connector Harness connector</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the foll Around view monit Harness connector</li> </ol>	tery cable from the ne og terminals and conr r M77 r E105 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness conne or control unit rs M77 and E105.	nectors for damage, b tor. N CIRCUIT) ctors.		ection (connector side
Around view mo	nitor control unit	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	27	M77	22	Existed
M48				

# 3. 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 connector		Accelerator pedal actu	Accelerator pedal actuator harness connector		· L
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	_
E105	22	E213	3	Existed	LAN
ETUS	23	EZIS	9	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

## Diagnosis Procedure

INFOID:000000011402408

[CAN SYSTEM (TYPE 5)]

### **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			Resistance (Ω)
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1043</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 5)]

Diagnosis Procedure			INFOID:000000011402409
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the transfe		bend and loose connection
l <u>s the inspection result norm</u> YES >> GO TO 2.	al?		
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of transfer control unit. Stween the transfer control u	unit harness connector tern	ninals.
Tra	ansfer control unit harness connec	tor	Resistance (Ω)
Connector No.	Termin		
E59 Is the measurement value w	12	13	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL Check the power supply and dure".	the ground circuit of the tra		DLN-97, "Diagnosis Proce-
NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT I the ground circuit of the tra	ansfer control unit. Refer to t. Refer to <u>DLN-112, "Rema</u> control unit branch line.	
NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT I the ground circuit of the transler all the transfer control unit as detected in the transfer control unit	ansfer control unit. Refer to t. Refer to <u>DLN-112, "Rema</u> control unit branch line.	
NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT I the ground circuit of the transler all the transfer control unit as detected in the transfer control unit	ansfer control unit. Refer to t. Refer to <u>DLN-112, "Rema</u> control unit branch line.	

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# ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402410

[CAN SYSTEM (TYPE 5)]

## 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 (Ω)
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-122, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-146, "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**

# [CAN SYSTEM (TYPE 5)]

TCM BRANCH LINE	E CIRC	CUIT				Δ
Diagnosis Procedure					INFOID:000000011402411	A
1.CHECK CONNECTOR						В
<ol> <li>Turn the ignition switch (2)</li> <li>Disconnect the battery (2)</li> <li>Check the following term nector side).</li> <li>A/T assembly</li> <li>Harness connector F1</li> <li>Harness connector E7</li> <li>Is the inspection result norm YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the termi</li> <li>2.CHECK HARNESS FOR</li> <li>Disconnect the connector</li> </ol>	able from ninals and <u>al?</u> nal and c OPEN Cl	d connectors for d connector. IRCUIT	ninal. amage, bend and	loose connec	ction (unit side and con-	C D F
2. Check the resistance be	tween the	e A/T assembly ha		erminals.		
· · · · · · · · · · · · · · · · · · ·	A/T assemb	oly harness connector			Resistance ( $\Omega$ )	G
Connector No. F51		Termir 3	8		Approx. 54 – 66	
NO >> Repair the TCM <b>3.</b> CHECK HARNESS FOR 1. Remove the joint connect 2. Check the continuity bet side of the joint connect	OPEN C ctor. Refe ween the	IRCUIT er to <u>TM-190, "Rer</u>			CM harness connector	
A/T assembly harness connec	tor side	TCM harness	connector side			
Terminal No.		Termir			Continuity	k
3		:	3		Existed	
8		8	3		Existed	l
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPLYCheck the power supply andIs the inspection result normYES (Present error)>>ReplYES (Past error)>>Error wayNO>> Repair the power	t connect Y AND G the grou al? ace the c as detecte	ROUND CIRCUIT nd circuit of the T control valve & TC ed in the TCM bra	CM. Refer to <u>TM-1</u> M. Refer to <u>TM-19</u> nch line.	-		
						F

# AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402414

[CAN SYSTEM (TYPE 5)]

# 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			Resistance (Ω)
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-232, "AV CONTROL UNIT :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to AV-282, "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**

# [CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:00000001140241
1.CHECK CONNECTOR			
3. Check the terminals an connector side).	cable from the negative term d connectors of the BCM fo		e connection (unit side and
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	inal and connector.		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of BCM. etween the BCM harness cor	nnector terminals.	
	BCM harness connector		Resistance ( $\Omega$ )
Connector No.	Termina	l No.	
M68	39	40	Approx. 54 – 66
	ithin the specification?		
s the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL Check the power supply and s the inspection result norm	I branch line. Y AND GROUND CIRCUIT d the ground circuit of the BC nal?		gnosis Procedure".
s the measurement value w YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL Check the power supply and s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	I branch line. Y AND GROUND CIRCUIT I the ground circuit of the BC	-95, "Removal and Installa	gnosis Procedure".

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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:000000011402416

[CAN SYSTEM (TYPE 5)]

# 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 (Ω)
Connector No.	Termir		
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-64, "System Diagram"</u>.

### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

## **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 5)]

## < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

		Semmenter	
Diagnosis Procedure			INFOID:000000011402417
1.снеск отс			
Check DTC of the CAN gatew	ay with CONSULT.		
Is U1010 or B2600 indicated?			
YES >> Perform a diagnos NO >> GO TO 2.	sis of the indicated DTC.		
2. CHECK CONNECTOR			
tion (unit side and connec	ble from the negative terr nals and connectors of th tor side).		e, bend and loose connec-
Is the inspection result normalYES>> GO TO 3.NO>> Repair the terminal			
3. CHECK HARNESS CONT	NUITY (OPEN CIRCUIT)	)	
<ol> <li>Disconnect the connector</li> <li>Check the continuity betw</li> </ol>		rness connector terminals.	
C	AN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M125	4	6	Existed
	10	12	Existed
Is the inspection result normal         YES       >> GO TO 4.         NO       >> Repair the CAN g         tem Diagram".         4.CHECK POWER SUPPLY         Check the power supply and	ateway branch line (CAN AND GROUND CIRCUIT	-	de). Refer to <u>LAN-64, "Sys-</u>
dure". Is the inspection result normal		CAN galeway. Refer to <u>L</u>	AN-127, Diagnosis Floce-
		teway branch line (CAN co	
	supply and the ground of	ioun.	

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### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 5)]

### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

## **Diagnosis** Procedure

INFOID:000000011402418

## 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 (Ω)
Connector No.	Terminal No.		Resistance (22)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, 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:000000011402419

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[CAN SYSTEM (TYPE 5)]

# 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			
Connector No.	Terminal No.		Resistance (Ω)	F
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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to <u>LAN-64.</u> <u>"System Diagram"</u>.

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# HBA BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402420

[CAN SYSTEM (TYPE 5)]

### **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).
- Auto anti- dazzling inside mirror (high beam assist control module)
- Harness connector R1
- Harness connector M23

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 auto anti dazzling inside mirror (high beam assist control module).
- 2. Check the resistance between the auto anti dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Termi		
R24	12	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to <u>EXL-111,</u> "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to <u>MIR-</u> <u>34, "Removal and Installation"</u>.
- YES (Past error)>>Error was detected in the high beam assist control module branch line.

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

# **HVAC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:00000001140242
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch (2. Disconnect the battery c</li> <li>Check the terminals and side and connector side)</li> <li>the inspection result normality</li> </ol>	able from the negative I connectors of the A/	terminal. C auto amp. for damage, ben	d and loose connection (uni
YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector.		
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>		np. harness connector termina	ıls.
	VC auto amp. harness conr		Resistance (Ω)
Connector No.		erminal No.	
YES >> GO TO 3.	·	21	Approx. 54 – 66
Is the measurement value wi YES >> GO TO 3. NO >> Repair the A/C a <b>3.</b> CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normal	thin the specification? nuto amp. branch line. AND GROUND CIRC the ground circuit of al?	CUIT the A/C auto amp. Refer to <u>F</u>	HAC-116, "A/C AUTO AMP.
Is the measurement value wi YES >> GO TO 3. NO >> Repair the A/C a 3.CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	thin the specification? tuto amp. branch line. AND GROUND CIRC the ground circuit of al? ace the A/C auto amp.	CUIT the A/C auto amp. Refer to <u>H</u> Refer to <u>HAC-153, "Removal</u> auto amp. branch line.	HAC-116, "A/C AUTO AMP.
Is the measurement value wi YES >> GO TO 3. NO >> Repair the A/C a <b>3.</b> CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wat	thin the specification? tuto amp. branch line. AND GROUND CIRC the ground circuit of al? ace the A/C auto amp. ts detected in the A/C	CUIT the A/C auto amp. Refer to <u>H</u> Refer to <u>HAC-153, "Removal</u> auto amp. branch line.	HAC-116, "A/C AUTO AMP.

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# M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402422

[CAN SYSTEM (TYPE 5)]

# 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	ombination meter harness connect	ctor	Resistance (Ω)
Connector No.	Termi	nal No.	
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-67, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-88, "Removal and Installation".

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

# STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 5)]

STRG BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402423
<b>1</b> .CHECK CONNECTOR			
	cable from the negative terr d connectors of the steering side). <u>al?</u> nal and connector.		bend and loose connection
2. Check the resistance be	or of steering angle sensor tween the steering angle s ering angle sensor harness conne	ensor harness connector te	erminals.
Connector No.		nal No.	Resistance (Ω)
M30	5	2	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL	ing angle sensor branch lir Y AND GROUND CIRCUIT d the ground circuit of the	F	fer to <u>BRC-52, "Wiring Dia-</u>
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the steering angle sen	angle sensor branch line.	emoval and Installation".

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# TCU BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 5)]

# Diagnosis Procedure

INFOID:000000011402424

# 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 TCU 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 TCU.

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

	TCU harness connector		Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCU branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCU. Refer to <u>AV-381, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-390, "Removal and Installation".

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

# **TPMS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000011402425
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch (</li> <li>Disconnect the battery of</li> </ol>	able from the negative terr d connectors of the low tire		unit for damage, bend and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connect	or of low tire pressure warn	ing control unit. e warning control unit harne	ess connector terminals.
Low tire pre-	ssure warning control unit harnes	ss connector	Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
M96	2	nal No. 1	Approx. 54 – 66
M96 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the low ti <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>'Diagnosis Procedure"</u> .	2 ithin the specification? re pressure warning contro Y AND GROUND CIRCUIT d the ground circuit of the I	1 ol unit branch line.	Approx. 54 – 66
M96 Is the measurement value w YES >> GO TO 3. NO >> Repair the low ti <b>3.</b> CHECK POWER SUPPL' Check the power supply and "Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Repl Installation". YES (Past error)>>Error wa	2 ithin the specification? re pressure warning contro Y AND GROUND CIRCUIT d the ground circuit of the I al? ace the low tire pressure	1 ol unit branch line. low tire pressure warning c warning control unit. Refe pressure warning control un	Approx. 54 – 66 ontrol unit. Refer to <u>WT-50</u> , r to <u>WT-63, "Removal and</u>

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# **IPDM-E BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000011402426

[CAN SYSTEM (TYPE 5)]

# 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

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		Resistance (Ω)
Connector No.	Termi	nal 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.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-33, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

# [CAN SYSTEM (TYPE 5)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011402412 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-37, "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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# AVM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402427

[CAN SYSTEM (TYPE 5)]

### **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).
- Around view monitor control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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	r	Continuity
Connector No.	Termi	nal No.	Continuity
M125	4	6	Existed
IVI 125	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-64. "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of around view monitor control unit.
- 3. Check the resistance between the around view monitor control unit harness connector terminals.

Around v	iew monitor control unit harness	connector	Resistance (Ω)
Connector No.	Termi	nal No.	
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to <u>AV-236</u>, <u>"AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-304</u>, "<u>Removal and Installa-</u> tion".

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

SONAR BRANCH L			
Diagnosis Procedure			INF0ID:000000011402428
.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d without ICC) <u>nal?</u>		connection (unit side and con-
YES-2 >> Models with ICO NO >> Repair the term	C: GO TO 3.		
· ·	ITINUITY (OPEN CIRCUIT)	)	
<ul><li>Disconnect the connect</li><li>Check the continuity be</li></ul>	or of CAN gateway. tween the CAN gateway ha	rness connector termina	ls.
		,	Continuity
Connector No	CAN gateway harness connector	nal No	
Connector No.	CAN gateway harness connector Termir 4	nal No. 6	Existed
M125 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u>	Termir 4 10 nal? ess and repair the root cau	6 12	Existed Existed
M125 the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR . Connect the connector . Disconnect the connect	Termir 4 10 nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w	6 12 Ise (CAN communication Vithout ICC)	Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR . Connect the connector . Disconnect the connector . Check the resistance be	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit.	6 12 Ise (CAN communication /ithout ICC) it harness connector terr	Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR . Connect the connector . Disconnect the connector . Check the resistance be	Termir 4 10 nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit. etween the sonar control un onar control unit harness connect	6 12 Ise (CAN communication /ithout ICC) it harness connector terr	Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	Termir 4 10 nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit. etween the sonar control un onar control unit harness connect Termir 19	6 12 Ise (CAN communication /ithout ICC) it harness connector term	Existed

# ADP BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000011402429

[CAN SYSTEM (TYPE 5)]

### **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

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	r	Continuity
Connector No.	Termi	nal No.	Continuity
M125	4	6	Existed
IVI I Z J	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-64, "System Diagram".

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	er seat control unit harness conn	ector	Resistance (Ω)
Connector No.	Termi	nal 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-67, "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 <u>ADP-135, "Removal and Installation"</u>.

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

E-SUS BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402431
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> <li>Check the following tern nector side).</li> <li>Air levelizer control mode</li> <li>CAN gateway</li> </ol>	cable from the negative terr minals and connectors for d	minal. lamage, bend and loose col	nnection (unit side and con-
Is the inspection result norn	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
2. CHECK HARNESS CON		)	
1. Disconnect the connect			
	CAN gateway harness connector		Continuity
Connector No.	Termiı 4	nal No.	·
M125	10	6	Existed
YES >> GO TO 3. NO >> Check the harr <u>64, "System Dia</u> <b>3.</b> CHECK HARNESS FOR	agram".	use (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>
NO >> Check the harr 64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	agram". R OPEN CIRCUIT	odule.	·
NO >> Check the harr 64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance b	agram". COPEN CIRCUIT of CAN gateway. tor of air levelizer control me	odule. trol module harness connec	ctor terminals.
NO >> Check the harr 64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance b	agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control mo etween the air levelizer con velizer control module harness con	odule. trol module harness connec	·
NO >> Check the harr <u>64, "System Dia</u> <b>3.</b> CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance b	agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control me etween the air levelizer con velizer control module harness cor Termin 16	odule. trol module harness connec	ctor terminals.

# ICC BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000011402432

[CAN SYSTEM (TYPE 5)]

### 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.

	Continuity		
Connector No.	Termi	Continuity	
M125	4	6	Existed
WIT25	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-64, "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.

ADAS control unit harness connector				
Terminal No.		Resistance (Ω)		
1	2	Approx. 54 – 66		
-				

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-158. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-159, "Removal and Installation".

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

	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402433
1.CHECK CONNECTOR			
<ul> <li>3. Check the following terr nector side).</li> <li>Automatic back door co</li> <li>CAN gateway</li> <li><u>Is the inspection result norm</u> YES &gt;&gt; GO TO 2.</li> </ul>	cable from the negative terr minals and connectors for d ontrol module <u>nal?</u> ninal and connector.	amage, bend and loose c	onnection (unit side and con-
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	etween the CAN gateway ha		3.
Connector No.	CAN gateway harness connector		Continuity
	4	6	Existed
M125	10	12	Existed
	OPEN CIRCUIT		ess connector terminals.
	back door control module harnes		
Automatic	Dack door control module names	s connector	
Automatic		al No.	Resistance (Ω)
	Termir 7		Resistance (Ω) Approx. 54 – 66

# RDR-R BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402434

[CAN SYSTEM (TYPE 5)]

### **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-341, "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.

Side radar RH harness connector				
Terminal	Resistance (Ω)			
4	3	Approx. 54 – 66		
		de radar RH harness connector Terminal No. 4 3		

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-339. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-384, "Removal and Installation".

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

# **RDR-L BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 5)]

iagnosis Procedure			INFOID:00000001140243
.CHECK CONNECTOR			
<ul> <li>Turn the ignition switch O</li> <li>Disconnect the battery ca</li> <li>Check the terminals and side and connector side).</li> </ul>	ble from the negative t connectors of the side	terminal. e radar LH for damage, bend	and loose connection (uni
the inspection result norma	<u>l?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector.		
2.CHECK HARNESS FOR C			
1. Disconnect the connector	of side radar LH.		
2. Check the resistance betw	ween the side radar LH	I harness connector terminals	
S	ide radar LH harness conne	ector	Desistance (O)
Connector No.	Te	rminal No.	Resistance ( $\Omega$ )
B74	4 hin the specification?	3	Approx. 54 – 66
B74 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the side ra <b>3.</b> CHECK POWER SUPPLY	hin the specification? adar LH branch line. AND GROUND CIRC	UIT	
B74 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the side ra <b>3.</b> CHECK POWER SUPPLY	hin the specification? adar LH branch line. AND GROUND CIRC		
B74 s the measurement value wit YES >> GO TO 3. NO >> Repair the side ra 3.CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". s the inspection result norma	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of tl <u>l?</u>	UIT he side radar LH. Refer to <u>D</u> A	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the ground circuit of the ground circuit of the side radar LH. F	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the the side radar LH. For the side radar LH. For the side radar LH. For	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the the side radar LH. For the side radar LH. For the side radar LH. For	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the the side radar LH. For the side radar LH. For the side radar LH. For	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the the side radar LH. For the side radar LH. For the side radar LH. For	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH
B74         s the measurement value wit         YES       >> GO TO 3.         NO       >> Repair the side rage         B.CHECK POWER SUPPLY         Check the power supply and         Diagnosis Procedure".         s the inspection result norma         YES (Present error)>>Repla         YES (Past error)>>Error was	hin the specification? adar LH branch line. AND GROUND CIRC the ground circuit of the the side radar LH. For the side radar LH. For the side radar LH. For	UIT he side radar LH. Refer to <u>DA</u> Refer to <u>DAS-384, "Removal a</u> adar LH branch line.	AS-338, "SIDE RADAR LH

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# **BSW/BUZZER BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000011402437

[CAN SYSTEM (TYPE 5)]

## 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 drive assistance buzzer control module 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 drive assistance buzzer control module.

2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assista	Resistance ( $\Omega$ )			
Connector No.	Termi	Terminal No.		
M150	3	11	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to <u>DAS-</u> 339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to <u>DAS-388, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

# **APA BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 5)]

APA BRANCH LINE Diagnosis Procedure			INF0ID:000000011402438
1.CHECK CONNECTOR			
<ol> <li>Check the terminals an nection (unit side and control</li> </ol>	cable from the negative terr d connectors of the accele onnector side).		amage, bend and loose con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
. Disconnect the connect	or of accelerator pedal actuet etween the accelerator peda		ctor terminals.
	erator pedal actuator harness con		Resistance (Ω)
E213	Termir 3	nal No. 9	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL Check the power supply and	d the ground circuit of the a	F	Refer to DAS-337, "ACCEL-
	er supply and the ground ci		-

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# LASER BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000011402439

[CAN SYSTEM (TYPE 5)]

# 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).
- ICC sensor
- Harness connector E218
- Harness connector E219

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.

	Resistance ( $\Omega$ )		
Connector No.	Termi		
E88	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-116, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-133. "Removal and Installation".

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

## **CAN COMMUNICATION CIRCUIT 1**

[CAN SYSTEM (TYPE 5)]

	ATION CIRCUIT 1		
Diagnosis Procedure	9		INFOID:000000011402440
1.CONNECTOR INSPEC	CTION		
1. Turn the ignition swite			
2. Disconnect the batter	y cable from the negative to		
<ol> <li>Disconnect all the uni NOTE:</li> </ol>	t connectors on CAN comm	nunication circuit 1.	
		1, CAN communication circu	it 2, and ITS communication
circuit, refer to <u>LAN-6</u> 4. Check terminals and	<u>4, "System Diagram"</u> . connectors for damage, be	nd and loose connection.	
ls the inspection result no	rmal?		
YES >> GO TO 2. NO >> Repair the ter	minal and connector.		
• ·	ONTINUITY (SHORT CIRC	I IIT)	
	een the data link connector		
	Data link connector		Continuity
Connector No.		minal No.	Not evicted
Is the inspection result no	6	14	Not existed
YES >> GO TO 3.	<u></u>		
	rness and repair the root ca	ause.	
3. CHECK HARNESS CO	ONTINUITY (SHORT CIRC	UIT)	
	een the data link connector		
		C	
		Continuity	
	nk connector		Continuity
Data li Connector No.	Terminal No.	Ground	
	Terminal No.	Ground	Not existed
Connector No. M4	Terminal No. 6 14	Ground	
Connector No. M4	Terminal No. 6 14	Ground	Not existed
Connector No. M4 <u>s the inspection result no</u> YES >> GO TO 4. NO >> Check the ha	Terminal No. 6 14 rmal? rness and repair the root ca	ause.	Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha	Terminal No. 6 14 rmal?	ause.	Not existed
Connector No. M4 S the inspection result no YES >> GO TO 4. NO >> Check the ha CHECK ECM AND IPE 1. Remove the ECM and	Terminal No. 6 14 rmal? rness and repair the root ca DM E/R TERMINATION CIF d the IPDM E/R.	ause. RCUIT	Not existed
Connector No. M4 S the inspection result no YES >> GO TO 4. NO >> Check the ha CHECK ECM AND IPE 1. Remove the ECM and	Terminal No. 6 14 rmal? rness and repair the root ca DM E/R TERMINATION CIP	ause. RCUIT	Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha 4.CHECK ECM AND IPE 1. Remove the ECM and	Terminal No.         6         14         rmal?         rness and repair the root ca         DM E/R TERMINATION CIF         d the IPDM E/R.         between the ECM terminal	ause. RCUIT	Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha 4.CHECK ECM AND IPE 1. Remove the ECM and	Terminal No. 6 14 rmal? rness and repair the root ca DM E/R TERMINATION CIF d the IPDM E/R.	ause. RCUIT Is.	Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha 4.CHECK ECM AND IPE 1. Remove the ECM and	Terminal No. 6 14 rmal? rness and repair the root ca DM E/R TERMINATION CIF d the IPDM E/R. between the ECM terminal	ause. RCUIT Is.	Not existed Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha 4.CHECK ECM AND IPE 1. Remove the ECM and 2. Check the resistance 146	Terminal No. 6 14 rmal? rness and repair the root ca DM E/R TERMINATION CIF d the IPDM E/R. between the ECM terminal ECM Terminal No.	ause. RCUIT Is.	Not existed Not existed
Connector No. M4 Is the inspection result no YES >> GO TO 4. NO >> Check the ha 4.CHECK ECM AND IPE 1. Remove the ECM and 2. Check the resistance 146	Terminal No.         6         14         rmal?         rness and repair the root ca         DM E/R TERMINATION CIF         d the IPDM E/R.         between the ECM terminal         ECM         Terminal No.         151	ause. RCUIT Is.	Not existed Not existed
Connector No.         M4         Is the inspection result no         YES >> GO TO 4.         NO       >> Check the ha         4.CHECK ECM AND IPE         1. Remove the ECM and         2. Check the resistance         146	Terminal No.         6         14         rmal?         rness and repair the root ca         DM E/R TERMINATION CIF         d the IPDM E/R.         between the ECM terminal         ECM         Terminal No.         151         between the IPDM E/R terminal         IPDM E/R	ause. RCUIT Is. A minals.	Not existed       Not existed       Resistance (Ω)       pprox. 108 – 132
Connector No.         M4         Is the inspection result no         YES >> GO TO 4.         NO       >> Check the ha         4.CHECK ECM AND IPE         1. Remove the ECM and         2. Check the resistance         146	Terminal No.         6         14         rmal?         rness and repair the root ca         DM E/R TERMINATION CIF         d the IPDM E/R.         between the ECM terminal         ECM         Terminal No.         151         between the IPDM E/R terminal	ause. RCUIT Is. A minals.	Not existed Not existed

# 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**

< DTC/CIRCUIT DIAGNOS	IS >		[CAN SYSTEM (TYPE 5)]
CAN COMMUNICA	FION CIRCUIT 2		
Diagnosis Procedure			INFOID:000000011402441
1.CONNECTOR INSPECT	ON		
<ol> <li>Disconnect all the unit control of CAN circuit, refer to LAN-64.</li> </ol>	able from the negative terr onnectors on CAN commu I communication circuit 1, " <u>System Diagram"</u> . nnectors for damage, bend <u>al?</u> nal and connector. TINUITY (SHORT CIRCUI n the data link connector te	nication circuit 2. CAN communication circui I and loose connection. T)	it 2, and ITS communication
Connector No.	Data link connector	nal No.	Continuity
M4	13	12	Not existed
3.CHECK HARNESS CON Check the continuity betwee Data link	n the data link connector a		Continuity
Connector No.	Terminal No.	Ground	Not existed
M4	12		Not existed
<ul> <li>4.CHECK CAN GATEWAY</li> <li>1. Remove the CAN gatew</li> <li>2. Check the resistance be</li> </ul>		erminals.	L Resistance (Ω)
4	10	Ap	pprox. 108 – 132
6	12	Ар	pprox. 108 – 132
Is the measurement value w YES >> GO TO 5. NO >> Replace the CA <b>5.</b> CHECK SYMPTOM Connect all the connectors. customer)" are reproduced. Inspection result Reproduced>>GO TO 6.	N gateway.	escribed in the "Symptom	(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 5)]

DIC/CIRCUIT DIAC				
TS COMMUNIC	CATION CIRCU	ЛТ		
Diagnosis Proced	ure			INFOID:000000011402442
<b>1.</b> CHECK CAN DIAG	NOSIS			
Check the CAN diagnomunication circuit 2 ha		SULT to see that the	CAN communicati	on circuit 1 and CAN com-
NOTE: For identification of CA cuit, refer to <u>LAN-64, "</u>		cuit 1, CAN commun	ication circuit 2, a	nd ITS communication cir-
Are the CAN communi		nmunication 2 circuits	s normal?	
YES >> GO TO 2. NO >> Check and	d repair CAN commun	ication circuit 1 and/o	r CAN communica	ation circuit 2.
2.CONNECTOR INSI	•			
1. Turn the ignition s				
3. Check the followin	ttery cable from the ne g terminals and conne		end and loose con	nection (unit side and con-
nector side). ADAS control unit	-	_		
Harness connecto	r B63			
<ul> <li>Harness connecto s the inspection result</li> </ul>				
YES >> GO TO 3.				
NO >> Repair the	terminal and connect			
3. CHECK HARNESS				
3.CHECK HARNESS	lowing harness conne			
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor	lowing harness conne	ctors.		
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor	lowing harness conne	ctors.	connector and the	e ICC sensor harness con-
<ol> <li>CHECK HARNESS</li> <li>Disconnect the fol ADAS control unit ICC sensor</li> <li>Check the continu nector.</li> </ol>	lowing harness conne	ctors. S control unit harness		e ICC sensor harness con-
<ul> <li>CHECK HARNESS</li> <li>Disconnect the fol ADAS control unit ICC sensor</li> <li>Check the continu nector.</li> </ul>	lowing harness conne ity between the ADAS	ctors. S control unit harness ICC sensor ha	rness connector	e ICC sensor harness con-
B.CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	lowing harness conne	ctors. S control unit harness ICC sensor ha Connector No.		
<ul> <li>CHECK HARNESS</li> <li>Disconnect the fol ADAS control unit ICC sensor</li> <li>Check the continu nector.</li> </ul>	lowing harness conne- ity between the ADAS harness connector Terminal No.	ctors. S control unit harness ICC sensor ha	rness connector Terminal No.	Continuity
<ul> <li>CHECK HARNESS</li> <li>Disconnect the fol ADAS control unit ICC sensor</li> <li>Check the continu nector.</li> <li>ADAS control unit Connector No.</li> <li>B52</li> <li>S the inspection result</li> </ul>	lowing harness conne ity between the ADAS harness connector Terminal No. 6 7	ctors. S control unit harness ICC sensor ha Connector No.	rness connector Terminal No. 3	Continuity Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B52 s the inspection result YES >> GO TO 4.	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal?	ctors. S control unit harness ICC sensor ha Connector No. E88	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B52 s the inspection result YES >> GO TO 4.	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal? e ADAS control unit to	ctors. S control unit harness ICC sensor ha Connector No. E88	rness connector Terminal No. 3 6	Continuity Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B52 s the inspection result YES >> GO TO 4. NO >> Repair the	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal? e ADAS control unit to biagram".	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. ADAS control unit Connector No. B52 s the inspection result YES >> GO TO 4. NO >> Repair the <u>"System D</u> 4.CHECK HARNESS 1. Disconnect the fol	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal? e ADAS control unit to biagram".	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor	rness connector Terminal No. 3 6	Continuity Existed Existed
CHECK HARNESS     Disconnect the fol ADAS control unit ICC sensor     Check the continu nector.     ADAS control unit Connector No.     B52     s the inspection result YES >> GO TO 4. NO >> Repair the <u>"System D</u> CHECK HARNESS     Disconnect the fol Side radar RH	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal? e ADAS control unit to biagram".	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector.  ADAS control unit Connector No. B52 s the inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 1. Disconnect the fol Side radar RH Side radar LH	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 : normal? e ADAS control unit to biagram".	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 3. Disconnect the fol Side radar RH Side radar LH Lane camera unit Around view monit 3. Check the continu context the fol Side radar LH Context the context the fol Side radar LH Context the	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 conrmal? ADAS control unit to Diagram". CONTINUITY (SHOF lowing harness conne- tor control unit	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 3. Connect on No. 3. B52 3. Sthe inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 3. Disconnect the fol Side radar RH Side radar LH Lane camera unit Around view monit Driver assistance	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 c.normal? e ADAS control unit to Diagram". CONTINUITY (SHOR lowing harness conne-	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 3. ADAS control unit Connector No. 3. B52 3. Sthe inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 3. Disconnect the fol Side radar RH Side radar LH Lane camera unit Around view moni Driver assistance Sonar control unit	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 c.normal? ADAS control unit to biagram". CONTINUITY (SHOF lowing harness conne- tor control unit buzzer control module	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	rness connector Terminal No. 3 6	Continuity Existed Existed
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 3. ADAS control unit Connector No. 3. B52 3. Sthe inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 3. Disconnect the fol Side radar RH Side radar RH Side radar LH Lane camera unit Around view moni Driver assistance Sonar control unit Accelerator pedal	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 c.normal? ADAS control unit to biagram". CONTINUITY (SHOF lowing harness conne- tor control unit buzzer control module	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	rness connector Terminal No. 3 6 nmunication circu	Continuity Existed Existed it side). Refer to <u>LAN-64</u> ,
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 3. ADAS control unit Connector No. 3. B52 3. Sthe inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 3. Disconnect the fol Side radar RH Side radar RH Side radar LH Lane camera unit Around view moni Driver assistance Sonar control unit Accelerator pedal	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 c.normal? ADAS control unit to biagram". CONTINUITY (SHOF lowing harness conne- tor control unit buzzer control module actuator	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors. S control unit harness	rness connector Terminal No. 3 6 nmunication circu	Continuity Existed Existed it side). Refer to LAN-64.
3.CHECK HARNESS 1. Disconnect the fol ADAS control unit ICC sensor 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 2. Check the continu nector. 3. ADAS control unit Connector No. 3. B52 3. Sthe inspection result YES >> GO TO 4. NO >> Repair the "System D 4.CHECK HARNESS 3. Disconnect the fol Side radar RH Side radar RH Side radar LH Lane camera unit Around view moni Driver assistance Sonar control unit Accelerator pedal	lowing harness conne- ity between the ADAS harness connector Terminal No. 6 7 c.normal? ADAS control unit b Diagram". CONTINUITY (SHOF lowing harness conne- tor control unit buzzer control module actuator ity between the ADAS	ctors. S control unit harness ICC sensor ha Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors. S control unit harness	rness connector Terminal No. 3 6 nmunication circu	Continuity Existed Existed it side). Refer to <u>LAN-64</u> ,

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

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

**5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

	ADAS control unit harness connector			Continuity
	Connector No.	Terminal No.	- Ground	Continuity
_	B52	6		Not existed
	DJZ	7		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 c	ontrol unit	Resistance (Ω)
Termi	nal No.	
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC s	sensor	Resistance (Ω)
Termi	nal 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:

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.

## LAN-312

	<b>IT DIAGNO</b>	SIS		
AIN LINE BET	WEEN ABS AN	ND DLC CIRCU	ИΤ	
Diagnosis Proced	ure			INFOID:000000011402447
CHECK CONNECT	OR			
<ul> <li>Check the followin and harness side). Harness connector Harness connector</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the foll ABS actuator and Harness connector</li> </ul>	tery cable from the ne g terminals and conr E107 M82 normal? terminal and connect CONTINUITY (OPEN owing harness conne- electric unit (control units E107 and M82 ty between the ABS a	or. I CIRCUIT) ctors.		
ABS actuator and ele harness o		Harness c	ss connector Conti	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed
YES >> GO TO 3. NO >> Repair the connector	E107. CONTINUITY (OPEN	he ABS actuator and I CIRCUIT)		unit) and the harness
<b>3.</b> CHECK HARNESS		onnector and the data		
<b>3.</b> CHECK HARNESS				Continuity
CHECK HARNESS Check the continuity be Harness of Connector No.	connector	Data link c Connector No.	connector	Continuity
CHECK HARNESS Check the continuity be Harness of	connector Terminal No. 1 6	Data link c	connector Terminal No.	· · · · · · · · · · · · · · · · · · ·

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402449

[CAN SYSTEM (TYPE 6)]

# 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
M4	13	M19	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	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B2	71	B24	13	Existed
52	72	624	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.

## 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
- Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness	connector		oor control module connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.		
B24	13	B26	7	Existed	F
D24	12	D20	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.

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[CAN SYSTEM (TYPE 6)]

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INFOID:0000000011402450

# MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-R AND RDR-L CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402451

[CAN SYSTEM (TYPE 6)]

# 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	narness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B243	4	B239	7	Existed
B243	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.

# ${\it 3.}$ 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	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B63	7	B74	4	Existed
B03	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.

	GNOSIS >			SYSTEM (TYPE 6)]
IAIN LINE BE	WEEN RDR-L	AND LANE CI	RCUII	
iagnosis Procec	lure			INFOID:00000001140245
.CHECK CONNECT	OR			
Check the followi and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the	ttery cable from the ne ng terminals and conr r B2 r M19	nectors for damage, l	pend and loose conne	ection (connector side
Side radar LH Harness connecto			nector and the harness	s 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

- 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	M23	29	Existed	L
10119	28	IVIZ3	28	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.

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

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# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011402454

[CAN SYSTEM (TYPE 6)]

# 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.
- ADAS control unit
- Harness connectors R1 and M23.
- Around view monitor control unit
- 4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M23	29	M48	27	Existed
IVIZ3	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

IAIN LINE BET	WEEN AVM A	ND APA CIRCL	ЛТ	
iagnosis Proced	ure			INFOID:00000001140245
.CHECK CONNECT	OR			
Check the followin and harness side) Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol Around view moni	ttery cable from the n ng terminals and con r M77 r E105 <u>normal?</u> terminal and connec CONTINUITY (OPEN lowing harness connector control unit rs M77 and E105.	nectors for damage, b tor. N CIRCUIT)		
Check the continu connector.	pnitor control unit	Harness o	connector	
Check the continu connector.	onitor control unit Terminal No.	Harness of Connector No.	connector Terminal No.	Continuity
Check the continu connector. Around view mo				Continuity Existed

# 3. 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 connector		Accelerator pedal actuator harness connector			- L
 Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
 E105	22	E213	3	Existed	LAN
LIUS	23	LZIJ	9	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

## Diagnosis Procedure

INFOID:000000011402456

[CAN SYSTEM (TYPE 6)]

### **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			
Connector No.	Termi	Resistance ( $\Omega$ )		
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: EC-1043, "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 6)]

Diagnosis Procedure			INFOID:000000011402457	
1.CHECK CONNECTOR				
1. Turn the ignition switch	OFF			
2. Disconnect the battery of	cable from the negative tern d connectors of the transfe		bend and loose connection	
Is the inspection result norm	al?			
YES >> GO TO 2. NO >> Repair the term	inal and connector			
2.CHECK HARNESS FOR				
	or of transfer control unit.			
	etween the transfer control	unit harness connector ter	minals.	
Tra	ansfer control unit harness conne	ctor		
Connector No.	Termi	nal No.	Resistance ( $\Omega$ )	
E59	12	13	Approx. 54 – 66	
Is the measurement value w	vithin the specification?			
YES >> GO TO 3.				
YES >> GO TO 3. NO >> Repair the trans	fer control unit branch line.			
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL	fer control unit branch line		DIN 07 "Diagnosis Proco	
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and	fer control unit branch line		D DLN-97, "Diagnosis Proce-	
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and dure".	fer control unit branch line Y AND GROUND CIRCUI		D DLN-97, "Diagnosis Proce-	
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep	fer control unit branch line Y AND GROUND CIRCUI the ground circuit of the tr al? lace the transfer control un	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u>		
YES >> GO TO 3. NO >> Repair the trans 3.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	fer control unit branch line Y AND GROUND CIRCUI the ground circuit of the tr al? lace the transfer control un	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ofer control unit branch line Y AND GROUND CIRCUIT I the ground circuit of the tr nal? lace the transfer control un as detected in the transfer	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ofer control unit branch line Y AND GROUND CIRCUIT I the ground circuit of the tr nal? lace the transfer control un as detected in the transfer	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ofer control unit branch line Y AND GROUND CIRCUIT I the ground circuit of the tr nal? lace the transfer control un as detected in the transfer	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		
NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	ofer control unit branch line Y AND GROUND CIRCUIT I the ground circuit of the tr nal? lace the transfer control un as detected in the transfer	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		
YES >> GO TO 3. NO >> Repair the trans <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>dure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ofer control unit branch line Y AND GROUND CIRCUIT I the ground circuit of the tr nal? lace the transfer control un as detected in the transfer	ansfer control unit. Refer to it. Refer to <u>DLN-112, "Rem</u> control unit branch line.		

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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 a	Resistance ( $\Omega$ )		
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.

# $\mathbf{3}$ . 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-122, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-146, "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.

INFOID:0000000011402458

# **TCM BRANCH LINE CIRCUIT**

	CUIT		
			INFOID:000000011402459
minals and <u>mal?</u> ninal and c R OPEN Cl	d connectors for dama connector. IRCUIT		e connection (unit side and con-
etween the	e A/T assembly harnes	ss connector termir	nals.
A/T assemt	-		Resistance (Ω)
			Approx. 54 – 66
within the s	specification?		
ector. Refe	er to <u>TM-190, "Remova</u>		and the TCM harness connector
	TCM bornoon anno	votor cido	
ector side	TCM harness conne Terminal No		Continuity
			Continuity Existed
	Terminal No		
	cable from minals and mal? ninal and c R OPEN C tor of A/T assemt A/T assemt within the s M branch li R OPEN C ector. Refe	cable from the negative terminal minals and connectors for dama <u>mal?</u> ninal and connector. COPEN CIRCUIT tor of A/T assembly. tetween the A/T assembly harnes A/T assembly harness connector Connector A/T assembly harness connector Connector A/T assembly harness connector Conn	cable from the negative terminal. minals and connectors for damage, bend and loose mal? hinal and connector. COPEN CIRCUIT tor of A/T assembly. tetween the A/T assembly harness connector termin A/T assembly harness connector Terminal No. 3 8 within the specification? A branch line. COPEN CIRCUIT ector. Refer to TM-190, "Removal and Installation". etween the A/T assembly harness connector side a

# AFS BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000011402461

[CAN SYSTEM (TYPE 6)]

# 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			
Connector No.	Termi	Resistance ( $\Omega$ )		
M151	1	13	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 <u>EXL-111, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-163, "Removal and Installation".

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

# **AV BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000011402462
CHECK CONNECTOR			
. Turn the ignition switch OFF			
<ol> <li>Disconnect the battery cable</li> <li>Check the following terminal</li> </ol>			nnection (unit side and con-
nector side).			
AV control unit Harness connector M222			
Harness connector M119			
s the inspection result normal? YES >> GO TO 2.			
NO >> Repair the terminal a			
2. CHECK HARNESS FOR OPE	EN CIRCUIT		
. Disconnect the connector of			
2. Check the resistance betwee	en the AV control unit	namess connector terminals	5.
AV co	ntrol unit harness connected	AV control unit harness connector	
			Resistance (O)
Connector No.	Term	inal No.	Resistance ( $\Omega$ )
M210	90	inal No. 74	Resistance (Ω) Approx. 54 – 66
M210 s the measurement value within	90		
M210	90 the specification?		
M210 s the measurement value within YES >> GO TO 3.	90 the specification? I unit branch line.	74	
M210 <u>s the measurement value within</u> YES >> GO TO 3. NO >> Repair the AV contro <b>3.</b> CHECK POWER SUPPLY AN Check the power supply and the	90 <u>the specification?</u> I unit branch line. ID GROUND CIRCUI	74 T	Approx. 54 – 66
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure".	90 <u>the specification?</u> I unit branch line. ID GROUND CIRCUI	74 T	Approx. 54 – 66
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal?	90 the specification? ol unit branch line. ND GROUND CIRCUI ground circuit of the <i>i</i>	74 T AV control unit. Refer to <u>AV-</u>	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :
M210 s the measurement value within YES >> GO TO 3. NO >> Repair the AV contro CHECK POWER SUPPLY AN Check the power supply and the Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was de	90 the specification? of unit branch line. ND GROUND CIRCUI ground circuit of the a the AV control unit. Re	T AV control unit. Refer to <u>AV-</u> efer to <u>AV-282, "Removal ar</u> rol unit branch line.	Approx. 54 – 66 232, "AV CONTROL UNIT :

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# BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402463

[CAN SYSTEM (TYPE 6)]

## 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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "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 6)]

#### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure		INF0ID:000000011402464
1.снеск отс		Е
Check DTC of the CAN gate	way with CONSULT.	
Is U1010 or B2600 indicated	—	C
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.	
2.CHECK CONNECTOR		Г
	cable from the negative terminal. d connectors of the CAN gateway for a	damage, bend and loose connection (unit
Is the inspection result norm	<u>al?</u>	
YES >> GO TO 3. NO >> Repair the termi	nal and connector	F
3.CHECK HARNESS FOR		
1. Disconnect the connect		(-
	etween the CAN gateway harness connection	ector terminals.
2. Check the resistance be		
2. Check the resistance be	CAN gateway harness connector	Resistance (Ω)
2. Check the resistance be		Resistance (Ω)
2. Check the resistance be Connector No. M125	CAN gateway harness connector Terminal No.	Resistance (Ω)
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4.	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communica	Resistance (Ω)
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communica Y AND GROUND CIRCUIT	Resistance (Ω) 7 Approx. 54 – 66
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply an dure". Is the inspection result norm	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communica Y AND GROUND CIRCUIT d the ground circuit of the CAN gatew al?	Resistance (Ω)         7       Approx. 54 – 66         attion circuit 1 side). Refer to LAN-64, "Sys-         way. Refer to LAN-127, "Diagnosis Proce-
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error way	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communica Y AND GROUND CIRCUIT d the ground circuit of the CAN gatewa al? ace the CAN gateway. Refer to LAN-12 as detected in the CAN gateway branch	Resistance (Ω)         7       Approx. 54 – 66         attion circuit 1 side). Refer to LAN-64, "Sys-         way. Refer to LAN-127, "Diagnosis Proce-
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Reply YES (Past error)>>Error wa Refer to LAN-64	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communica Y AND GROUND CIRCUIT d the ground circuit of the CAN gatew al? ace the CAN gateway. Refer to LAN-12	Resistance (Ω)       Resistance (Ω)         7       Approx. 54 – 66         attion circuit 1 side). Refer to LAN-64, "Sys-         way. Refer to LAN-127, "Diagnosis Proce-         K         28, "Removal and Installation".
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Reply YES (Past error)>>Error wa Refer to LAN-64	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communical Y AND GROUND CIRCUIT d the ground circuit of the CAN gateway al? ace the CAN gateway. Refer to LAN-12 as detected in the CAN gateway branch . "System Diagram".	Resistance (Ω)         7       Approx. 54 – 66         attion circuit 1 side). Refer to LAN-64, "Sys-         way. Refer to LAN-127, "Diagnosis Proce-         Kasses         28, "Removal and Installation".         h line (CAN communication circuit 1 side).
2. Check the resistance be Connector No. M125 Is the measurement value w YES >> GO TO 4. NO >> Repair the CAN tem Diagram". 4.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Reply YES (Past error)>>Error wa Refer to LAN-64	CAN gateway harness connector Terminal No. 1 ithin the specification? gateway branch line (CAN communical Y AND GROUND CIRCUIT d the ground circuit of the CAN gateway al? ace the CAN gateway. Refer to LAN-12 as detected in the CAN gateway branch . "System Diagram".	Resistance (Ω)         7       Approx. 54 – 66         attion circuit 1 side). Refer to LAN-64, "Sys-         way. Refer to LAN-127, "Diagnosis Proce-         Kasses         28, "Removal and Installation".         h line (CAN communication circuit 1 side).

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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:000000011402465

[CAN SYSTEM (TYPE 6)]

# 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 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.

	CAN gateway harness connector	·	Continuity
Connector No.	Termir	Continuity	
M125	4 6		Existed
WI125	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "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

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[CAN SYSTEM (TYPE 6)]

## 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.

	Data link connector		Resistance (Ω)	_	
C	onnector No.	Terminal No.			F
	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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to <u>LAN-64.</u> <u>"System Diagram"</u>.

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#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 6)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### **Diagnosis** Procedure

INFOID:000000011402467

### 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 (Ω)
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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

### **HBA BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

HBA BRANCH LINE	CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000011402468	A
1. CHECK CONNECTOR				В
3. Check the following term nector side).	able from the negative terr ninals and connectors for d e mirror (high beam assist	lamage, bend and loose co	onnection (unit side and con-	C
NO >> Repair the termi				E
	or of auto anti - dazzling ins tween the auto anti - dazzl		ist control module). m assist control module) har-	F
Auto anti - dazzlir	ng inside mirror (high beam assis harness connector	st control module)	Resistance (Ω)	G
Connector No.		nal No.	-	Н
R24	12	11	Approx. 54 – 66	
Is the measurement value with the second	beam assist control module Y AND GROUND CIRCUIT	Г	I module. Refer to EXL-111.	l J
"HIGH BEAM ASSIST CONT				
Is the inspection result norma YES (Present error)>>Repl 34, "Removal ar	ace the inside mirror asse	mbly (high beam assist co	ntrol module). Refer to <u>MIR-</u>	K
YES (Past error)>>Error wa			ranch line.	L
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# HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402469

[CAN SYSTEM (TYPE 6)]

## 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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-116, "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-153, "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 6)]

M&A BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011402470
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the combi	ninal. nation meter for damage, b	pend and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	inal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
	or of combination meter. Stween the combination me	ter harness connector termi	nals.
Co	ombination meter harness connec	tor	Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
M34 s the measurement value w	21	22	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL	d the ground circuit of the	- combination meter. Refer to	MWI-67, "COMBINATION
YES (Past error)>>Error wa	lace the combination meter		al and Installation".

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# STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402471

[CAN SYSTEM (TYPE 6)]

### 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	Steering angle sensor harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
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-148, "Removal and Installation"</u>.

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

### **TPMS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000011402473
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the low tire		unit for damage, bend and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of low tire pressure warn tween the low tire pressure	ing control unit. e warning control unit harne	ess connector terminals.
Low tire pressure warning control unit harness connector		Begisteneg (O)	
	Terminal No.		Resistance (O)
Connector No.	Termir	nal No.	Resistance ( $\Omega$ )
M96	2	nal No. 1	Resistance (Ω) Approx. 54 – 66
M96 Is the measurement value w YES >> GO TO 3. NO >> Repair the low ti <b>3.</b> CHECK POWER SUPPL Check the power supply and "Diagnosis Procedure".	2 ithin the specification? re pressure warning contro Y AND GROUND CIRCUIT d the ground circuit of the I	1 ol unit branch line.	Approx. 54 – 66
M96 Is the measurement value w YES >> GO TO 3. NO >> Repair the low ti <b>3.</b> CHECK POWER SUPPL' Check the power supply and "Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Repl Installation". YES (Past error)>>Error wa	2 ithin the specification? re pressure warning contro Y AND GROUND CIRCUIT d the ground circuit of the l al? ace the low tire pressure	1 ol unit branch line. low tire pressure warning c warning control unit. Refe pressure warning control un	Approx. 54 – 66 ontrol unit. Refer to <u>WT-50,</u> er to <u>WT-63, "Removal and</u>

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# **IPDM-E BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011402474

[CAN SYSTEM (TYPE 6)]

# 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

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		
Connector No.	Terminal No.		Resistance (Ω)
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.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-33, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

## [CAN SYSTEM (TYPE 6)]

#### A-BAG BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000011402460 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-37, "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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# AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402475

[CAN SYSTEM (TYPE 6)]

#### **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).
- Around view monitor control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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
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-64. "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of around view monitor control unit.
- 3. Check the resistance between the around view monitor control unit harness connector terminals.

Around v	Around view monitor control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to <u>AV-236</u>, <u>"AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-304</u>, "<u>Removal and Installa-</u> tion".

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

SONAR BRANCH L			
Diagnosis Procedure			INFOID:000000011402476
CHECK CONNECTOR			
<ol> <li>Check the following terr nector side).</li> <li>Sonar control unit CAN gateway (Models of s the inspection result norm</li> </ol>	cable from the negative terr ninals and connectors for d without ICC) <u>nal?</u>		connection (unit side and con-
YES-1 >> Models without YES-2 >> Models with ICC NO >> Repair the term	C: GO TO 3.		
2.CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)		
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	or of CAN gateway. tween the CAN gateway ha	rness connector terminal	S.
	CAN gateway harness connector		Continuity
Connector No.	Termir		Eviptod
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u>	Termir 4 10 mal? ess and repair the root cau	6 12	Existed Existed circuit 2 side). Refer to LAN-
M125 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> <b>3.</b> CHECK HARNESS FOR . Connect the connector 2. Disconnect the connect	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit.	6 12 Ise (CAN communication Vithout ICC)	Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	Termir 4 10 nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit. etween the sonar control un	6 12 Ise (CAN communication /ithout ICC) it harness connector tern	Existed
M125 s the inspection result norm YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	Termir 4 10 hal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit. etween the sonar control un	6 12 Ise (CAN communication /ithout ICC) it harness connector tern	Existed
M125 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn <u>64. "System Dia</u> <b>3.</b> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be S	Termir 4 10 nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models w or of sonar control unit. etween the sonar control unit. etween the sonar control unit. Termir 19	6 12 Ise (CAN communication /ithout ICC) it harness connector tern	Existed circuit 2 side). Refer to LAN-

# ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402477

[CAN SYSTEM (TYPE 6)]

#### **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

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			Continuity
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-64, "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	Driver seat control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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-67, "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 <u>ADP-135, "Removal and Installation"</u>.

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

Diagnosis Procedure			INFOID:000000011402478
.CHECK CONNECTOR			
<ul> <li>Check the following terr nector side).</li> <li>Pre-crash seat belt cont CAN gateway</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> </ul>	cable from the negative tern ninals and connectors for c trol unit (driver side) <u>nal?</u> inal and connector.	lamage, bend and loose cor	nnection (unit side and con-
		)	
Disconnect the connect Check the continuity be		arness connector terminals.	
	CAN gateway harness connecto	r	Continuity
Connector No.		nal No.	· · · · · · · · · · · · · · · · · · ·
M125	4	6	Existed
YES >> GO TO 3. NO >> Check the harm	nal? ess and repair the root cau	12 use (CAN communication ci	Existed rcuit 2 side). Refer to LAN-
<ul> <li>(ES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Check the harm 64, "System Dia</li> <li>CHECK HARNESS FOR</li> <li>Connect the connector of Disconnect the connect</li> </ul>	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	use (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>
NO >> Check the harm <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be nals.	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	use (CAN communication ci ntrol unit (driver side). belt control unit (driver side	rcuit 2 side). Refer to <u>LAN-</u>
YES >> GO TO 3. NO >> Check the harm <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be nals.	nal? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat crash seat belt control unit (driver	use (CAN communication ci ntrol unit (driver side). belt control unit (driver side	rcuit 2 side). Refer to <u>LAN-</u>
YES >> GO TO 3. NO >> Check the harm <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be nals. Pre- Connector No. B9	al? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat crash seat belt control unit (driver Termin 14	use (CAN communication ci ntrol unit (driver side). belt control unit (driver side	rcuit 2 side). Refer to <u>LAN-</u> e) harness connector termi-
YES >> GO TO 3. NO >> Check the harn <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance by nals. Pre-C Connector No. B9 the measurement value w YES >> GO TO 4. NO >> Repair the pre-C CHECK POWER SUPPL heck the power supply an BC-54, "Diagnosis Proced the inspection result norm	al? ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat crash seat belt control unit (driver 14 rithin the specification? crash seat belt control unit 14 rithin the specification? crash seat belt control unit of the ground circuit of the ure". hal?	use (CAN communication ci ntrol unit (driver side). belt control unit (driver side side) nal No. 4	rcuit 2 side). Refer to <u>LAN-</u> e) harness connector termi- Resistance (Ω) Approx. 54 – 66

# **E-SUS BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011402479

[CAN SYSTEM (TYPE 6)]

#### **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

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.	Terminal No.		Continuity
M125	4 6		Existed
101125	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-64, "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 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	
Connector No. Terminal No	Terminal No.	
B84 16	16 7	

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-89.</u> "Diagnosis Procedure".

#### Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to <u>SCS-94. "Removal and Installation"</u>. YES (Past error)>>Error was detected in the air levelizer control module branch line.
- NO >> Repair the power supply and the ground circuit.

Diagnosis Procedure			INFOID:00000001140248
.CHECK CONNECTOR			
Check the following term nector side). ADAS control unit CAN gateway the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS CON Disconnect the connect	cable from the negative tern minals and connectors for c <u>mal?</u> inal and connector. ITINUITY (OPEN CIRCUIT for of CAN gateway.	damage, bend and loose (	connection (unit side and con
Check the continuity be	tween the CAN gateway ha		IS.
Connector No.	CAN gateway harness connector	r nal No.	Continuity
	4	6	Existed
YES >> GO TO 3. NO >> Check the harr	less and repair the root cau	12 use (CAN communication	Existed
the inspection result norm YES >> GO TO 3. NO >> Check the harr <u>64, "System Dis</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	hal? hess and repair the root cau agram". COPEN CIRCUIT of CAN gateway. for of ADAS control unit. etween the ADAS control u	use (CAN communication	circuit 2 side). Refer to <u>LAN</u>
<ul> <li><u>s the inspection result norm</u></li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Check the harr</li> <li><u>64, "System Dis</u></li> <li>CHECK HARNESS FOR</li> <li>Connect the connector</li> <li>Disconnect the connect</li> <li>Check the resistance b</li> </ul>	nal? ness and repair the root cau agram". OPEN CIRCUIT of CAN gateway. for of ADAS control unit. etween the ADAS control unit.	use (CAN communication	circuit 2 side). Refer to <u>LAN</u>
<u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harr <u>64, "System Dia</u> CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	nal? ness and repair the root cau agram". OPEN CIRCUIT of CAN gateway. for of ADAS control unit. etween the ADAS control unit.	use (CAN communication	n circuit 2 side). Refer to <u>LAN</u>

# PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402481

[CAN SYSTEM (TYPE 6)]

#### **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

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.	Terminal No.		Continuity
M125	4 6		Existed
101125	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-64, "System Diagram"</u>.

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 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 (Ω)	
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.

 ${f 4}$  . 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-120.</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-268, "Removal and</u> <u>Installation"</u>.
- YES (Past error)>>Error was detected in the automatic back door control module branch line.

### **RDR-R BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

RDR-R BRANCH LI	-		
Diagnosis Procedure			INFOID:000000011402482
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the side ra ). <u>al?</u>		d and loose connection (unit
2. CHECK RIGHT/LEFT SW	VITCHING SIGNAL CIRCU	ПΤ	
Check the right/left switching <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Repair the root of <b>3.</b> CHECK HARNESS FOR	<u>al?</u> cause.	adar RH. Refer to <u>DAS-34</u>	<u>1, "Diagnosis Procedure"</u> .
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of side radar RH. Stween the side radar RH h	arness connector terminal	S.
	Side radar RH harness connecto		Resistance (Ω)
Connector No. B243	Termiı 4	nal No. 3	Approx. 54 – 66
s the measurement value w	-	0	
<b>1.</b> CHECK POWER SUPPL Check the power supply and Diagnosis Procedure".	d the ground circuit of the		AS-339. "SIDE RADAR RH :
s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the side radar RH. Re	ar RH branch line.	and Installation".

# **RDR-L BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011402483

[CAN SYSTEM (TYPE 6)]

## 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 ( $\Omega$ )
Connector No.	Terminal No.		Resistance (22)
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-338, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-384, "Removal and Installation".

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

	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011402484
1. CHECK CONNECTOR			
nector side). - Lane camera unit - Harness connector R1 - Harness connector M23 Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin	able from the negativinals and connectors inals and connectors <u>I?</u> nal and connector.	ve terminal. s for damage, bend and loose c	onnection (unit side and con-
2. CHECK HARNESS FOR $\alpha$	OPEN CIRCUIT		
	ween the lane came	era unit harness connector termi	nals.
Lar	ne camera unit harness o	Lane camera unit harness connector	
Compositor No.		Terminal No.	Resistance (Ω)
Connector No. R8	4	Terminal No.	Approx. 54 – 66
R8 the measurement value with YES >> GO TO 3. NO >> Repair the lane of CHECK POWER SUPPLY	hin the specification amera unit branch l AND GROUND CII	8 n? ine. RCUIT	Approx. 54 – 66
R8 s the measurement value with YES >> GO TO 3. NO >> Repair the lane of CHECK POWER SUPPLY Check the power supply and JNIT : Diagnosis Procedure"	hin the specification amera unit branch I AND GROUND CII the ground circuit c	8 <u>1?</u> ine.	Approx. 54 – 66
R8         s the measurement value with         YES       >> GO TO 3.         NO       >> Repair the lane of         CHECK POWER SUPPLY         Check the power supply and         JNIT : Diagnosis Procedure",         s the inspection result normation         YES (Present error)>>Replation         YES (Past error)>>Error wate	hin the specification amera unit branch I AND GROUND CII the ground circuit o I? the lane camera s detected in the lan	8 <u>n?</u> ine. RCUIT of the lane camera unit. Refer to a unit. Refer to <u>DAS-383, "Remo</u> ne camera unit branch line.	Approx. 54 – 66
R8         s the measurement value with         YES       >> GO TO 3.         NO       >> Repair the lane of <b>3.</b> CHECK POWER SUPPLY         Check the power supply and         JNIT : Diagnosis Procedure",         s the inspection result normal         YES (Present error)>>Replate         YES (Past error)>>Error was	hin the specification amera unit branch I AND GROUND CII the ground circuit o I? the lane camera s detected in the lan	8 <u>n?</u> ine. RCUIT of the lane camera unit. Refer to a unit. Refer to <u>DAS-383, "Remo</u> ne camera unit branch line.	Approx. 54 – 66

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# **BSW/BUZZER BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:0000000011402485

[CAN SYSTEM (TYPE 6)]

### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.

2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Termi		
M150	3	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to <u>DAS-</u> 339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to <u>DAS-388, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

# **APA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000011402486
1.CHECK CONNECTOR			
	able from the negative termi d connectors of the accelera		amage, bend and loose con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of accelerator pedal actua etween the accelerator pedal		ector terminals.
Accele	erator pedal actuator harness conne	ector	Resistance (Ω)
Connector No.	Termina	l No.	
E213	3	9	Approx. 54 – 66
CHECK POWER SUPPL Check the power supply and RATOR PEDAL ACTUATO	R : Diagnosis Procedure".		Refer to <u>DAS-337, "ACCEL-</u>
YES (Present error)>>Repl YES (Past error)>>Error wa	lace the accelerator pedal as as detected in the accelerato	r pedal actuator branch	
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the accelerator pedal as	r pedal actuator branch	
YES (Past error)>>Error wa	lace the accelerator pedal as as detected in the accelerato	r pedal actuator branch	

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# LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402487

[CAN SYSTEM (TYPE 6)]

# 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).
- ICC sensor
- Harness connector E218
- Harness connector E219

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			Resistance (Ω)
Connector No.	Terminal No.		Resistance (12)
E88	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-116, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-133. "Removal and Installation".

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

### **CAN COMMUNICATION CIRCUIT 1**

< DTC/CIRCUIT DIAGNOS			[CAN SYSTEM (TYPE 6)]
CAN COMMUNICA	TION CIRCUIT 1		
Diagnosis Procedure			INFOID:000000011402488
1.CONNECTOR INSPECT	ION		
<ol> <li>Disconnect all the unit of NOTE: For identification of CAN circuit, refer to LAN-64.</li> </ol>	cable from the negative ter connectors on CAN communication circuit 1,	inication circuit 1. CAN communication circu	it 2, and ITS communication
Is the inspection result norm	-		
YES >> GO TO 2. NO >> Repair the termi	inal and connector		
2.CHECK HARNESS CON		IT)	
Check the continuity betwee			
Connector No.	Data link connector	nal No.	- Continuity
M4	6	14	Not existed
CHECK HARNESS CON			
Connector No.	Terminal No.	-	Continuity
M4	6 14	- Ground	Not existed Not existed
4.CHECK ECM AND IPDM 1. Remove the ECM and the	ess and repair the root cau E/R TERMINATION CIRC	CUIT	
	ECM		Resistance (Ω)
	Terminal No.		
<sup>146</sup> 3. Check the resistance be	151 etween the IPDM E/R term		pprox. 108 – 132
	IPDM E/R Terminal No.		Resistance (Ω)
27	26	Α	pprox. 108 – 132
Is the measurement value w YES >> GO TO 5.		I	

### 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**

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN SYSTEM (TYPE 6)]
CAN COMMUNICA	TION CIRCUIT 2		
Diagnosis Procedure			INFOID:000000011402489
1.CONNECTOR INSPECT	ION		
<ol> <li>Disconnect all the unit c NOTE: For identification of CAN circuit, refer to <u>LAN-64.</u></li> </ol>	able from the negative terr onnectors on CAN commu V communication circuit 1, <u>"System Diagram"</u> . nnectors for damage, bend <u>al?</u> nal and connector. TINUITY (SHORT CIRCUI	nication circuit 2. CAN communication circui and loose connection. T)	it 2, and ITS communication
	Data link connector		Continuity
Connector No. M4	13	nal No. 12	Not existed
<b>3.</b> CHECK HARNESS CON Check the continuity betwee	n the data link connector a	T)	
Data link Connector No.	connector Terminal No.		Continuity
	13	Ground	Not existed
M4	12		Not existed
<ul> <li>CHECK CAN GATEWAY</li> <li>Remove the CAN gatew</li> <li>Check the resistance be</li> </ul>		erminals.	Resistance (Ω)
4	10	Ar	oprox. 108 – 132
6	12		pprox. 108 – 132
s the measurement value w YES >> GO TO 5. NO >> Replace the CA D.CHECK SYMPTOM Connect all the connectors. customer)" are reproduced. nspection result Reproduced>>GO TO 6.	N gateway.	escribed in the "Symptom	(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 6)]

ITS COMMUNICAT	ION CIRCL			
Diagnosis Procedure				INFOID:000000011402490
1. CHECK CAN DIAGNOS	IS			
munication circuit 2 have ne <b>NOTE:</b> For identification of CAN co cuit, refer to <u>LAN-64</u> , "System <u>Are the CAN communication</u> YES >> GO TO 2.	o malfunction. ommunication cirro om Diagram". n 1 and CAN con	cuit 1, CAN commun	ication circuit 2, s normal?	tion circuit 1 and CAN com- and ITS communication cir- cation circuit 2.
2.CONNECTOR INSPEC	ΓΙΟΝ			
nector side). - ADAS control unit - Harness connector B63 - Harness connector B23 Is the inspection result norr YES >> GO TO 3.	cable from the ne minals and conne 3 39 <u>nal?</u>	ectors for damage, be	end and loose co	nnection (unit side and con-
NO >> Repair the tern				
<b>3.</b> CHECK HARNESS COI	NTINUITY (OPEN	NCIRCUIT)		
<ol> <li>Disconnect the followir</li> <li>ADAS control unit</li> <li>ICC sensor</li> <li>Check the continuity be nector.</li> </ol>	-		connector and th	ne ICC sensor harness con-
			race connector	
ADAS control unit harne	ess connector	ICC sensor ha		
ADAS control unit harne Connector No.	ess connector Terminal No.	ICC sensor ha Connector No.	Terminal No.	Continuity
Connector No.		Connector No.		Continuity Existed
Connector No. B52	Terminal No. 6 7		Terminal No.	
Connector No. B52 Is the inspection result norr YES >> GO TO 4.	Terminal No. 6 7 nal? AS control unit b am". NTINUITY (SHOF g harness conne ontrol unit er control module	Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	Terminal No. 3 6 nmunication circ	uit side). Refer to <u>LAN-64</u> , L
Connector No.         B52         Is the inspection result norr         YES         YES         >> GO TO 4.         NO         >> Repair the AD         "System Diagra"         4.CHECK HARNESS COI         1.       Disconnect the followir         -       Side radar RH         -       Side radar LH         -       Lane camera unit         -       Around view monitor co         -       Driver assistance buzz         -       Sonar control unit         -       Accelerator pedal actual         2.       Check the continuity be	Terminal No. 6 7 nal? AS control unit t am". NTINUITY (SHOF g harness conne ontrol unit er control module ator etween the ADAS	Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	Terminal No. 3 6 nmunication circ	uit side). Refer to <u>LAN-64</u> , L
Connector No.         B52         Is the inspection result norr         YES         YES         >> GO TO 4.         NO         >> Repair the AD         "System Diagra"         4.CHECK HARNESS COI         1.       Disconnect the followir         -       Side radar RH         -       Side radar LH         -       Lane camera unit         -       Around view monitor co         -       Driver assistance buzz         -       Sonar control unit         -       Accelerator pedal actual         2.       Check the continuity be	Terminal No. 6 7 nal? AS control unit b am". NTINUITY (SHOF g harness conne ontrol unit er control module	Connector No. E88 branch line. (ITS cor RT CIRCUIT) ctors.	Terminal No. 3 6 nmunication circ	uit side). Refer to <u>LAN-64</u> , L

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

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

**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
B52	6	Giouna	Not existed
DJZ	7		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 control unit		Resistance (Ω)	
Termi	nal No.	Resistance (\\\\)	
6	7	Approx. 108 – 132	

3. Check the resistance between the ICC sensor terminals.

ICC sensor		- Resistance (Ω)	
Termi	nal 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:

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.

### LAN-356

DTC/CIRCU	NOSIS >	SIS		I SYSTEM (TYPE 7)]
MAIN LINE BET			ЛТ	
Diagnosis Proced	ure			INFOID:000000011402496
1.CHECK CONNECT	OR			
<ol> <li>Check the followin and harness side). Harness connector Harness connector s the inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the CHECK HARNESS</li> <li>Disconnect the foll ABS actuator and Harness connector</li> </ol>	tery cable from the neigenergy cable from the neigenergy cable from the neigenergy of the second stand connect the second stand stand connect to the second stand	or. I CIRCUIT) ctors. nit)		ection (connector side
ABS actuator and ele		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E36	41	E107	1	Existed
s the inspection result	27		6	Existed
connector <b>3.</b> CHECK HARNESS Check the continuity be	E107. CONTINUITY (OPEN etween the harness co	I CIRCUIT)	link connector.	unit) and the harness
	connector	Data link Connector No.		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No. 6	Existed
M82	6	M4	14	Existed
	6 normal?		14	EXISTED

### MAIN LINE BETWEEN DLC AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402498

[CAN SYSTEM (TYPE 7)]

### 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	Data link connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M4	13	M19	71	Existed
1014	12		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 connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B2	71	B24	13	Existed
DZ	72		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.

### 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
- 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	E
Connector No.	Terminal No.	Connector No.	Terminal No.		
B24	13	DOC	7	Existed	F
B24	12	B26	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.

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[CAN SYSTEM (TYPE 7)]

INFOID:000000011402499

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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:0000000011402500

[CAN SYSTEM (TYPE 7)]

### 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 harness connector Harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B243	4	B239	7	Existed
	3		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 harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B63	7	B74	4	Existed
	3		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.

M DTC/CIRCUIT DIAC	AIN LINE BETW	EEN RDR-L AN		I SYSTEM (TYPE 7)]
MAIN LINE BET		AND LANE CI	RCUIT	
Diagnosis Proced	ure			INFOID:000000011402501
1.снеск соллест	OR			
	ttery cable from the ne ng terminals and coni r B2 r M19		pend and loose conn	ection (connector side
YES >> GO TO 2.	terminal and connect			
<ul> <li>Side radar LH</li> <li>Harness connecto</li> </ul>		ctors. adar LH harness conr	nector and the harness	s connector.
Side radar LH ha	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
574	4	B2	27	Existed
B74				

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	M23	29	Existed	L
10119	28	IVIZ3	28	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.

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

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## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402503

[CAN SYSTEM (TYPE 7)]

# 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.
- ADAS control unit
- Harness connectors R1 and M23.
- Around view monitor control unit
- 4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Connector No. Terminal No.		Terminal No.	Continuity
M23 -	29	M48	27	Existed
	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

< DTC/CIRCUIT DIAG		WEEN AVM ANI		N SYSTEM (TYPE 7)]
		ND APA CIRCL	ЛТ	
Diagnosis Proced	ure			INFOID:000000011402504
1.снеск соллест	OR			
<ol> <li>Check the followin and harness side)</li> <li>Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Secondary Stress</li> <li>Around view monities</li> <li>Harness connector</li> </ol>	ttery cable from the n ng terminals and con r M77 r E105 normal? terminal and connec CONTINUITY (OPE) lowing harness connec tor control unit rs M77 and E105. hity between the arou	nectors for damage, b tor. N CIRCUIT) ectors. Ind view monitor contr	ol unit harness conr	ection (connector side
		Harness	connector	
Around view mo	onitor control unit			Continuity
Around view mo	Terminal No.	Connector No.	Terminal No.	Continuity
	· · · · · · · · · · · · · · · · · · ·		Terminal No. 22	Existed

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

# **3.**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	connector	Accelerator pedal actu	ator harness connector	Continuity	
C	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	E105	22	E213	3	Existed	LAN
	E105	23	EZIS	9	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

### Diagnosis Procedure

INFOID:000000011402505

[CAN SYSTEM (TYPE 7)]

#### **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			Resistance (Ω)
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-190</u>, "Diagnosis Procedure"
- VK56VD FOR MEXICO: <u>EC-743</u>, "Diagnosis Procedure"

Is the inspection result normal?

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

- VK56VD FOR USA AND CANADA: EC-581, "Removal and Installation"
- VK56VD FOR MEXICO: <u>EC-1043</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 7)]

Diagnosis Procedure			INFOID:000000011402506	
1.CHECK CONNECTOR				
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> </ol>	cable from the negative term d connectors of the transfer		bend and loose connection	
Is the inspection result norn YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.			
	or of transfer control unit. etween the transfer control u	nit harness connector term	inals.	
Tr	ansfer control unit harness connect	or	Resistance (Ω)	
Connector No.	Termina	al No.		
E59	12	13	Approx. 54 – 66	
YES >> GO TO 3. NO >> Repair the trans	fer control unit branch line.			
Check the power supply and dure".	I the ground circuit of the tra	nsfer control unit. Refer to	DLN-97, "Diagnosis Proce-	
dure". <u>Is the inspection result norn</u> YES (Present error)>>Rep YES (Past error)>>Error w	I the ground circuit of the tra	. Refer to <u>DLN-112, "Remo</u> ontrol unit branch line.		
Check the power supply and dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	d the ground circuit of the trans <u>nal?</u> lace the transfer control unit as detected in the transfer co	. Refer to <u>DLN-112, "Remo</u> ontrol unit branch line.		

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# ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402507

[CAN SYSTEM (TYPE 7)]

## 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 (Ω)
Connector No.	Termi	itesistance (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.

### **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-122, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-146, "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**

## [CAN SYSTEM (TYPE 7)]

TCM BRANCH LINE	ECIRC	CUIT			
Diagnosis Procedure					INFCID:000000011402508
1.CHECK CONNECTOR					
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> <li>Check the following term nector side).</li> <li>A/T assembly</li> <li>Harness connector F1</li> <li>Harness connector E7</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termi</li> <li>2.CHECK HARNESS FOR</li> <li>Disconnect the connector</li> </ol>	able from ninals and <u>al?</u> nal and c OPEN C	d connectors for d connector. IRCUIT	ninal. amage, bend and	loose conr	nection (unit side and con-
2. Check the resistance be	tween the	e A/T assembly ha		terminals.	
Connector No.	A/T assembly harness connector Connector No. Terminal No. Resistance (s				Resistance ( $\Omega$ )
F51		3	8		Approx. 54 – 66
<ul> <li>3.CHECK HARNESS FOR</li> <li>1. Remove the joint conne</li> <li>2. Check the continuity be side of the joint connect</li> </ul>	ctor. Refe tween the	er to <u>TM-190, "Rer</u>			e TCM harness connector
A/T assembly harness connec	tor side	TCM harness	connector side		
Terminal No.		Termir		_	Continuity
3		;	3		Existed
8		٤	3		Existed
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPLCheck the power supply andIs the inspection result normYES (Present error)>>ReplYES (Past error)>>Error wayNO>> Repair the power	It connect Y AND G I the grou al? ace the c as detected	ROUND CIRCUIT and circuit of the T control valve & TC ed in the TCM bra	CM. Refer to <u>TM-</u> M. Refer to <u>TM-1</u> nch line.	-	

< DTC/CIRCUIT DIAGNOSIS >

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402510

[CAN SYSTEM (TYPE 7)]

## 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.

	Resistance (Ω)		
Connector No.	Termi	Resistance (22)	
M151	1	13	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 <u>EXL-111, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-163, "Removal and Installation".

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

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

AV BRANCH LINE (	CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011402511	A
1. CHECK CONNECTOR				В
	able from the negative terr ninals and connectors for d 2		nnection (unit side and con-	C
Is the inspection result norm	al?			
YES >> GO TO 2. NO >> Repair the termi	nal and connector.			Е
2. CHECK HARNESS FOR	OPEN CIRCUIT			
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>		narness connector terminals	5.	F
	AV control unit harness connector	ſ	Resistance (Ω)	G
Connector No.	Termir	nal No.		
M210	90	74	Approx. 54 – 66	Н
Is the measurement value with YES >> GO TO 3.NO >> Repair the AV conditional <b>3.</b> CHECK POWER SUPPLY	ontrol unit branch line.	-		1
Check the power supply and Diagnosis Procedure".	-	V control unit. Refer to <u>AV-</u>	232, "AV CONTROL UNIT :	J
Is the inspection result norm				
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe		ol unit branch line.	<u>id Installation"</u> .	K
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				LAN
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## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402512

[CAN SYSTEM (TYPE 7)]

## 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.

	Resistance ( $\Omega$ )		
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-88, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-95, "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 7)]

#### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure			INFOID:000000011402513
1.снеск отс			
Check DTC of the CAN gate	way with CONSULT.		
Is U1010 or B2600 indicated	<u>?</u>		
NO >> GO TO 2.	osis of the indicated DTC.		
2. CHECK CONNECTOR			
	able from the negative term I connectors of the CAN g		and loose connection (unit
YES >> GO TO 3.	<u></u>		
NO >> Repair the termin	nal and connector.		
3.CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>	or of CAN gateway. tween the CAN gateway ha	arness connector terminals	
(	CAN gateway harness connector		Desistance (0)
Connector No.	Termin	al No.	Resistance ( $\Omega$ )
M125	1	7	Approx. 54 – 66
Is the measurement value wi	thin the specification?		
tem Diagram".			de). Refer to <u>LAN-64, "Sys-</u>
4.CHECK POWER SUPPLY	AND GROUND CIRCUIT		
Check the power supply and <u>dure</u> .	Ū	CAN gateway. Refer to L	AN-127, "Diagnosis Proce-
Is the inspection result norma			
YES (Present error)>>Repla	ace the CAN gateway. Refe	er to <u>LAN-128, "Removal a</u>	nd Installation".
	is detected in the CAN gat , <u>"System Diagram"</u> .	eway branch line (CAN co	mmunication circuit 1 side).
	r supply and the ground cir	cuit.	
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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:0000000011402514

[CAN SYSTEM (TYPE 7)]

## 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 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.

	CAN gateway harness connector	·	Continuity
Connector No.	Termiı	nal No.	Continuity
M125	4	6	Existed
WI125	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-64, "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-127</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-128, "Removal and Installation".

- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to <u>LAN-64, "System Diagram"</u>.
- NO >> Repair the power supply and the ground circuit.

#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 7)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

#### **Diagnosis** Procedure

INFOID:000000011402515

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## 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. С (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.			Data link connect	or		Resistance (Ω)	
	C	onnector No.		Termi	nal No.		F
M4 6 14 Approx. 54 – 66		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-64, "System Diagram".

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to LAN-64, "System Diagram".

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#### **DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 7)]

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### **Diagnosis** Procedure

INFOID:000000011402516

### 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 (Ω)
Connector No.	Termi	nal 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-64, "System Diagram".

>> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to LAN-64, NO "System Diagram".

## **HBA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

HBA BRANCH LINE	CIRCUIT			٨
Diagnosis Procedure			INFOID:000000011402517	A
1. CHECK CONNECTOR				В
3. Check the following term nector side).	able from the negative terr ninals and connectors for d e mirror (high beam assist <u>al?</u>	amage, bend and loose co	nnection (unit side and con-	C D E
2.CHECK HARNESS FOR				
	tween the auto anti - dazzli	side mirror (high beam assi ing inside mirror (high beam	st control module). a assist control module) har-	F
Auto anti - dazzlir	ng inside mirror (high beam assis harness connector	t control module)	Resistance (Ω)	G
Connector No.	Termir	nal No.		Н
R24	12	11	Approx. 54 – 66	
Is the measurement value with YES >> GO TO 3.NO >> Repair the high I <b>3.</b> CHECK POWER SUPPLY	beam assist control module			
Check the power supply an "HIGH BEAM ASSIST CONT			module. Refer to EXL-111,	0
Is the inspection result norma YES (Present error)>>Repl 34, "Removal ar	al? ace the inside mirror assen ad Installation".	mbly (high beam assist cor	ntrol module). Refer to <u>MIR-</u>	K
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the high bea r supply and the ground ci		anch line.	L
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## HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402518

[CAN SYSTEM (TYPE 7)]

## 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 connecto	r	Resistance ( $\Omega$ )
Connector No.	Termi	nal 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-116, "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-153, "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 7)]

Diagnosis Procedure			INFOID:000000011402519
<b>1.</b> CHECK CONNECTOR			
	able from the negative tern d connectors of the combi		e, bend and loose connection
s the inspection result normative of the second sec	al?		
NO >> Repair the termin	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>	or of combination meter. tween the combination met	er harness connector te	rminals.
Со	mbination meter harness connect	or	Resistance (Ω)
Connector No.	Termin	al No.	
M34	21	22	Approx. 54 – 66
	thin the specification?		
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedu Is the inspection result normative YES (Present error)>>Replay YES (Past error)>>Error was	ination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the c re". al? ace the combination meter.	combination meter. Refe Refer to <u>MWI-88, "Rem</u> ion meter branch line.	r to <u>MWI-67, "COMBINATION</u> oval and Installation".
NO >> Repair the comb 3.CHECK POWER SUPPLY Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error wa	ination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the or re". al? ace the combination meter as detected in the combinat	combination meter. Refe Refer to <u>MWI-88, "Rem</u> ion meter branch line.	

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# STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402520

[CAN SYSTEM (TYPE 7)]

### 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	ering angle sensor harness conne	ector	Resistance ( $\Omega$ )
Connector No.	Termi	nal 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-148, "Removal and Installation"</u>.

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

## **TCU BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:000000011402521
1. CHECK CONNECTOR			
<ol> <li>Check the terminals and connector side).</li> </ol>	able from the negative termin d connectors of the TCU for o		e connection (unit side and
s the inspection result norma YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2.CHECK HARNESS FOR			
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>	or of TCU. tween the TCU harness conn	ector terminals.	
	TCU harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal N	lo.	
M99 s the measurement value w	9	10	Approx. 54 – 66
s the measurement value wi YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Repla	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the TCU al? ace the TCU. Refer to <u>AV-390</u>	. Refer to <u>AV-381, "TCL</u> , "Removal and Installa	J : Diagnosis Procedure".
s the measurement value wi YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the TCU al?	. Refer to <u>AV-381, "TCL</u> . "Removal and Installa line.	J : Diagnosis Procedure".

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## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402522

[CAN SYSTEM (TYPE 7)]

#### **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	essure warning control unit harnes	ss connector	Resistance (Ω)
Connector No.	Termi	nal No.	
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-50</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-63</u>, "Removal and <u>Installation</u>".

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

.CHECK CONNECTOR         . Turn the ignition switch OFF.         .Disconnect the battery cable from the negative terminal.         . Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).         .IPDM E/R         Harness connector T07         athe inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         .CHECK HARNESS FOR OPEN CIRCUIT         . Disconnect the connector of IPDM E/R.         . Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         .Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         Connector No.       Terminal No.         E13       27         26       Approx. 108 – 132         athe measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         .CHECK POWER SUPPLY AND GROUND CIRCUIT         the the power supply and the ground circuit of the IPDM E/R. Refer to PCS-33, "Diagnosis Procedure".         athe inspection result normal?         YES (Past error)>>Error was detected in the IPDM E/R branch line. <t< th=""><th>agnosis Procedure</th><th></th></t<>	agnosis Procedure	
Turn the ignition switch OFF.         Disconnect the battery cable from the negative terminal.         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         is the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         CHECK HARNESS FOR OPEN CIRCUIT         Disconnect the connector of IPDM E/R.         Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         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.         CHECK POWER SUPPLY AND GROUND CIRCUIT         wheak the power supply and the ground circuit of the IPDM E/R. Refer to PCS-33, "Diagnosis Procedure".         athe inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".         YES (Present error)>>Error was detected in the IPDM E/R branch line.	aynosis Fiocedule	INFOID:000000011402523
Disconnect the battery cable from the negative terminal.         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         Sthe inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         CHECK HARNESS FOR OPEN CIRCUIT         Disconnect the connector of IPDM E/R.         Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         E13       27         26       Approx. 108 – 132         Sthe measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         CHECK POWER SUPPLY AND GROUND CIRCUIT         Sheek the power supply and the ground circuit of the IPDM E/R. Refer to PCS-33, "Diagnosis Procedure".         athe inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	CHECK CONNECTOR	
IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E13       27       26       Approx. 108 – 132         a the measurement value within the specification?       YES >> GO TO 3.       NO       >> Repair the IPDM E/R branch line.         CHECK POWER SUPPLY AND GROUND CIRCUIT       CHECK POWER SUPPLY AND GROUND CIRCUIT       Ethe inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34. "Removal and Installation".       YES (Past error)>>Error was detected in the IPDM E/R branch line.	Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose nector side). IPDM E/R Harness connector E105 Harness connector M77 the inspection result normal? (ES >> GO TO 2. IO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT	connection (unit side and con-
Connector No.       Terminal No.       Resistance (Ω)         E13       27       26       Approx. 108 – 132         the measurement value within the specification?       YES >> GO TO 3.       YES >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.       -         •.CHECK POWER SUPPLY AND GROUND CIRCUIT       -       -         heck the power supply and the ground circuit of the IPDM E/R. Refer to PCS-33, "Diagnosis Procedure".       -         the inspection result normal?       -       -         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".       -         YES (Past error)>>Error was detected in the IPDM E/R branch line.       -	Check the resistance between the IPDM E/R harness connector terminals	
Connector No.       Terminal No.         E13       27       26       Approx. 108 – 132         a the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         .CHECK POWER SUPPLY AND GROUND CIRCUIT         che inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	IPDM E/R harness connector	Resistance (Q)
<ul> <li><u>s the measurement value within the specification?</u></li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the IPDM E/R branch line.</li> <li>CHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-33, "Diagnosis Procedure"</u>.</li> <li><u>s the inspection result normal?</u></li> <li>YES (Present error)&gt;&gt;Replace the IPDM E/R. Refer to <u>PCS-34, "Removal and Installation"</u>.</li> <li>YES (Past error)&gt;&gt;Error was detected in the IPDM E/R branch line.</li> </ul>	Connector No. Terminal No.	
<ul> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the IPDM E/R branch line.</li> <li>CHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-33, "Diagnosis Procedure"</u>.</li> <li>S the inspection result normal?</li> <li>YES (Present error)&gt;&gt;Replace the IPDM E/R. Refer to <u>PCS-34, "Removal and Installation"</u>.</li> <li>YES (Past error)&gt;&gt;Error was detected in the IPDM E/R branch line.</li> </ul>	E13 27 26	Approx. 108 – 132
	YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT	-33, "Diagnosis Procedure".

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# **A-BAG BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:0000000011402509

#### 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-37, "Work Flow".

Is the inspection result normal?

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

agnosis Procedure			INFOID:000000011402524
CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d ntrol unit without ICC) <u>al?</u> ICC: GO TO 2. C: GO TO 3.		nnection (unit side and con-
•	TINUITY (OPEN CIRCUIT	)	
-	tween the CAN gateway ha	arness connector terminals.	
Connector No.	CAN gateway harness connector Termin	nal No.	Continuity
ES >> GO TO 3.		6 12 use (CAN communication c	Existed Existed
he inspection result norm ES >> GO TO 3. O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector	10 hal? ess and repair the root cau tgram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c	12 use (CAN communication c	Existed
the inspection result norm ES >> GO TO 3. O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 hal? ess and repair the root cau tgram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c	12 use (CAN communication c vithout ICC) control unit. unitor control unit harness c	Existed ircuit 2 side). Refer to <u>LAN-</u> onnector terminals.
the inspection result norm ES >> GO TO 3. O >> Check the harm <u>64. "System Dia</u> CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 ess and repair the root cau agram". OPEN CIRCUIT of CAN gateway. (Models v or of around view monitor c etween the around view mo	12 use (CAN communication c vithout ICC) control unit. unitor control unit harness c	Existed

# SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402525

[CAN SYSTEM (TYPE 7)]

#### **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).
- Sonar control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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
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-64. "System Diagram"</u>.

## **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models without ICC)
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Sonar control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-237, "SONAR CONTROL</u> <u>UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-309, "Removal and Installation".

- YES (Past error)>>Error was detected in the sonar control unit branch line.
- NO >> Repair the power supply and the ground circuit.

## **ADP BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

ADP BRANCH LINE	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011402526	А
1.CHECK CONNECTOR				В
<ul> <li>3. Check the following terr nector side).</li> <li>Driver seat control unit</li> </ul>	cable from the negative terr ninals and connectors for d	ninal. amage, bend and loose cor	nnection (unit side and con-	С
<ul> <li>Harness connector B46</li> <li>Harness connector B24</li> <li>CAN gateway</li> </ul>				D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term <b>2.</b> CHECK HARNESS CON	inal and connector.	)		E
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		Г
	CAN gateway harness connector		Continuity	G
Connector No.	Termir	nal No.	Continuity	
M125	4	6	Existed	Η
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector	ess and repair the root cau agram". OPEN CIRCUIT	use (CAN communication ci	rcuit 2 side). Refer to <u>LAN-</u>	I J K
3. Check the resistance be	etween the driver seat contr	rol unit harness connector te	erminals.	1.4
Connector No.	er seat control unit harness conn Termir	ector nal No.	Resistance ( $\Omega$ )	L
B451	1	17	Approx. 54 – 66	
4.CHECK POWER SUPPL	er seat control unit branch li Y AND GROUND CIRCUIT	Γ		LAN N
Check the power supply and CONTROL UNIT : Diagnosis	s Procedure".	iver seat control unit. Refer	to <u>ADP-67, "DRIVER SEAT</u>	0
YES (Present error)>>Rep YES (Past error)>>Error w	lace the driver seat control		emoval and Installation".	Ρ

## **PSB BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:0000000011402527

[CAN SYSTEM (TYPE 7)]

#### **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.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M125	4	6	Existed
11120	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-64, "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).
- 3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-	Pre-crash seat belt control unit (driver side)		
Connector No.	Termi	Resistance ( $\Omega$ )	
B9	14	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-54, "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 sonar control unit branch line.

	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000011402528
1.CHECK CONNECTOR			
	cable from the negative tern minals and connectors for c		onnection (unit side and con-
Is the inspection result norn	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
2. CHECK HARNESS CON		)	
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	tor of CAN gateway. stween the CAN gateway ha	arness connector terminals	5.
	CAN gateway harness connector	r	Continuity
Connector No.		nal No.	
M125	4	6	Existed
64, "System Dia	agram".	use (CAN communication	circuit 2 side). Refer to <u>LAN-</u>
<u>64, "System Dia</u> <b>3.</b> CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	agram". R OPEN CIRCUIT	odule.	
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	agram". COPEN CIRCUIT of CAN gateway. tor of air levelizer control me etween the air levelizer con	odule. trol module harness conne	
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control me etween the air levelizer con velizer control module harness con	odule. trol module harness conne	
64, "System Dia 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be Air leve	agram". R OPEN CIRCUIT of CAN gateway. tor of air levelizer control me etween the air levelizer con velizer control module harness con Termin 16	odule. trol module harness conne	ector terminals.

# ICC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011402529

[CAN SYSTEM (TYPE 7)]

#### 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	
WIT25	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-64, "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.

ADAS control unit harness connector			
Terminal No.		Resistance (Ω)	
1	2	Approx. 54 – 66	
-			

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-158. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-159, "Removal and Installation".

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

PWBD BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011402530
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d ntrol module <u>nal?</u> inal and connector.	amage, bend and loose c	onnection (unit side and con-
<ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>	tween the CAN gateway ha		S.
Connector No.	CAN gateway harness connector	nal No.	Continuity
	4	6	Existed
M125	10	12	Existed
	OPEN CIRCUIT		ess connector terminals.
Automatic	back door control module harnes	s connector	Resistance (Ω)
Connector No.		nal No.	
B26 Is the measurement value w	7	6	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the auto 4.CHECK POWER SUPPL Check the power supply and "AUTOMATIC BACK DOOR Is the inspection result norm YES (Present error)>>Rep Installation". YES (Past error)>>Error w	matic back door control mo Y AND GROUND CIRCUIT d the ground circuit of the a CONTROL UNIT : Diagno nal?	- utomatic back door contro sis Procedure". oor control module. Refe c back door control modu	ol module. Refer to <u>DLK-120,</u> r to <u>DLK-268, "Removal and</u> le branch line.

# RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402531

[CAN SYSTEM (TYPE 7)]

#### **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-341, "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.

Side radar RH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B243	4	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-339. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-384, "Removal and Installation".

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

# **RDR-L BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:0000000114025
1. CHECK CONNECTOR			
side and connector side)	ble from the negative ter connectors of the side r		l and loose connection (un
<u>s the inspection result norma</u> YES >> GO TO 2.	<u>l?</u>		
NO >> Repair the termin	al and connector.		
<b>2.</b> CHECK HARNESS FOR $($	OPEN CIRCUIT		
<ol> <li>Disconnect the connecto</li> <li>Check the resistance bet</li> </ol>		arness connector terminals	i.
S	ide radar LH harness connecto	r	
			Resistance (Ω)
Connector No.	Iermi	nal No.	
B74	4	nal No. 3	Approx. 54 – 66
B74 Is the measurement value wir YES >> GO TO 3. NO >> Repair the side ra 3.CHECK POWER SUPPLY Check the power supply and	4 hin the specification? adar LH branch line. AND GROUND CIRCUI	З	Approx. 54 – 66
B74 Is the measurement value wir YES >> GO TO 3. NO >> Repair the side ra <b>3.</b> CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wa	4 hin the specification? adar LH branch line. AND GROUND CIRCUI the ground circuit of the <u>I?</u> ice the side radar LH. Re	3 Γ side radar LH. Refer to <u>DA</u> fer to <u>DAS-384, "Removal a</u> ar LH branch line.	Approx. 54 – 66 AS-338, "SIDE RADAR LH
B74 Is the measurement value wir YES >> GO TO 3. NO >> Repair the side ra <b>3.</b> CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wa	4 hin the specification? adar LH branch line. AND GROUND CIRCUI the ground circuit of the <u>I?</u> ice the side radar LH. Re s detected in the side rad	3 Γ side radar LH. Refer to <u>DA</u> fer to <u>DAS-384, "Removal a</u> ar LH branch line.	Approx. 54 – 66 AS-338, "SIDE RADAR LH
B74 Is the measurement value wir YES >> GO TO 3. NO >> Repair the side ra <b>3.</b> CHECK POWER SUPPLY Check the power supply and Diagnosis Procedure". Is the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wa	4 hin the specification? adar LH branch line. AND GROUND CIRCUI the ground circuit of the <u>I?</u> ice the side radar LH. Re s detected in the side rad	3 Γ side radar LH. Refer to <u>DA</u> fer to <u>DAS-384, "Removal a</u> ar LH branch line.	Approx. 54 – 66 AS-338, "SIDE RADAR LH

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# LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402533

[CAN SYSTEM (TYPE 7)]

## 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).
- Lane camera unit
- Harness connector R1
- Harness connector M23

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.	Terminal No.		Resistance (Ω)
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-337</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-383, "Removal and Installation".

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

#### **BSW/BUZZER BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS > **BSW/BUZZER BRANCH LINE CIRCUIT**

## **Diagnosis** Procedure

## 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 drive assistance buzzer control module for damage, bend and 3. 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 drive assistance buzzer control module.

Check the resistance between the drive assistance buzzer control module harness connector terminals.

	Drive assista	ance buzzer control module harne	ess connector	Resistance (Ω)	
-	Connector No.	Terminal No.		Resistance (52)	
-	M150	3	11	Approx. 54 – 66	G

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to DAS-339. "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to DAS-388, "Removal and Installation".

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

INFOID:000000011402534

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# APA BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011402535

[CAN SYSTEM (TYPE 7)]

## 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	erator pedal actuator harness cor	nector	Resistance (Ω)	
Connector No.	Termi	nal No.	Resistance (22)	
E213	3	9	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-337, "ACCEL-ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to DAS-381, "Exploded View".

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

	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000001140253
1.CHECK CONNECTOR			
	able from the negative terr ninals and connectors for d		connection (unit side and con-
Is the inspection result normative of the second seco	al?		
NO >> Repair the termin			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>	or of ICC sensor. tween the ICC sensor harr	ness connector terminals.	
	ICC sensor harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	Resistance (Ω)
E88	Termir 3	nal No. 6	- Resistance (Ω) Approx. 108 – 132
E88 Is the measurement value wi YES >> GO TO 3. NO >> Repair the ICC s	Termir 3 thin the specification? sensor branch line.	6	
E88 Is the measurement value wi YES >> GO TO 3.	Termir 3 thin the specification? sensor branch line.	6	

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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-64, "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 lin	< connector		Continuity
Connector No.	Terminal No.	Continuity	
M4	6	- Ground	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)	
Termi	nal No.		
146	151	Approx. 108 – 132	

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

IPD	M E/R	Resistance (Ω)	
Termi	nal 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.

## LAN-396

INFOID:000000011402537

## **CAN COMMUNICATION CIRCUIT 1**

#### < DTC/CIRCUIT DIAGNOSIS >

# 5. СНЕСК ЗУМРТОМ

	Α
Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.	1
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	
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 1.</li> </ul>	D
NOTE:	Е
<ul> <li>ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE:</li> <li>Although unit-related error symptoms occur, do not confuse them with other symptoms.</li> </ul>	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-64, "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	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.	Cround	Continuity
M4	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 g	ateway	Resistance ( $\Omega$ )	
Termiı	nal No.		
4	10	Approx. 108 – 132	
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:0000000011402538

CAN COMMUNICATION CIRCUIT 2
< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 7)]
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.
6. CHECK UNIT REPRODUCTION
<ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE: CAN gateway has two termination circuits. Check other units first.</li> <li>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:</li> </ul>
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.

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< DTC/CIRCUIT DIAGNOSIS >

# **ITS COMMUNICATION CIRCUIT**

#### Diagnosis Procedure

INFOID:0000000011402539

[CAN SYSTEM (TYPE 7)]

#### **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-64, "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
B52	6	E88	3	Existed
DJZ	7		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-64</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
- Around view monitor control unit
- Driver assistance buzzer control module
- Sonar control unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

A	Continuity		
Connector No.	Termi	Continuity	
B52	6	7	Not existed

### LAN-400

## ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 7)] < DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal? А YES >> GO TO 5. NO >> Check the harness and repair the root cause. **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Check the continuity between the ADAS control unit harness connector and the ground. ADAS control unit harness connector Continuity Connector No. Terminal No. Ground 6 Not existed B52 7 Not existed D Is the inspection result normal? YES >> GO TO 6. E NO >> Check the harness and repair the root cause. **6.**CHECK TERMINATION CIRCUIT 1. Remove the ADAS control unit and the ICC sensor. Check the resistance between the ADAS control unit terminals. 2. ADAS control unit Resistance  $(\Omega)$ Terminal No. 6 7 Approx. 108 - 132 Н Check the resistance between the ICC sensor terminals. ICC sensor Resistance  $(\Omega)$ 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. Κ **I**.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. L Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is LAN detected. 8.CHECK UNIT REPRODUCTION Ν 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. 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. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom Ρ (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.

## LAN-401