SECTION LAN SYSTEM

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ADP BRANCH LINE CIRCUIT
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ICC BRANCH LINE CIRCUIT
IPDM-E BRANCH LINE CIRCUIT
CAN COMMUNICATION CIRCUIT

< PRECAUTION > PRECAUTION А PRECAUTIONS **Precautions for Trouble Diagnosis** INFOID:000000001834771 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:000000001834772 • 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.

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SYSTEM DESCRIPTION CAN COMMUNICATION SYSTEM

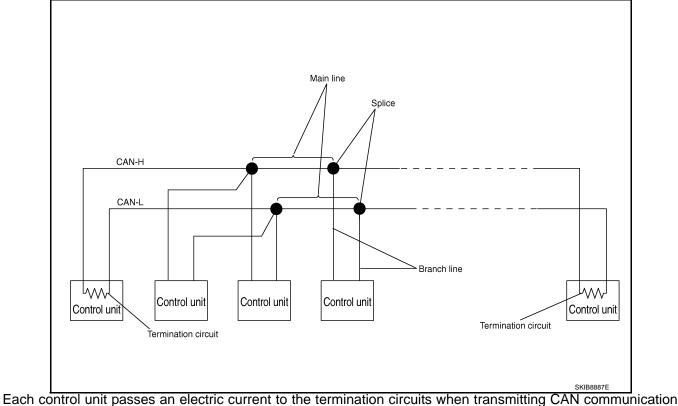
System Description

INFOID:000000001834773

INFOID-000000001834774

- 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.

System Diagram



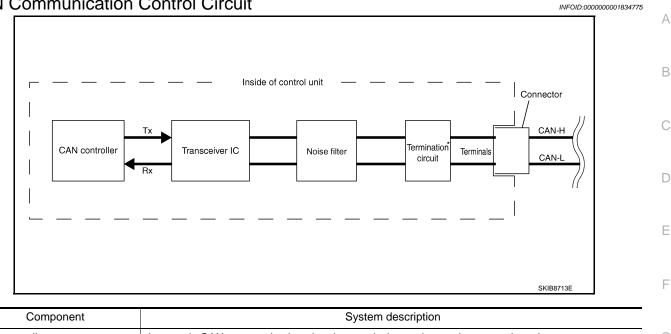
signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

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-11, "CAN Communication Control Circuit".

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit



CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.	G
Transceiver IC	It converts digital signal into CAN communication signal, and CAN communication signal into digital signal.	
Noise filter	It eliminates noise of CAN communication signal.	Н
Termination circuit [*] (Resistance of approx. 120 Ω)	It produces potential difference.	

*: These are the only control units wired with both ends of CAN communication system.

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< SYSTEM DESCRIPTION >

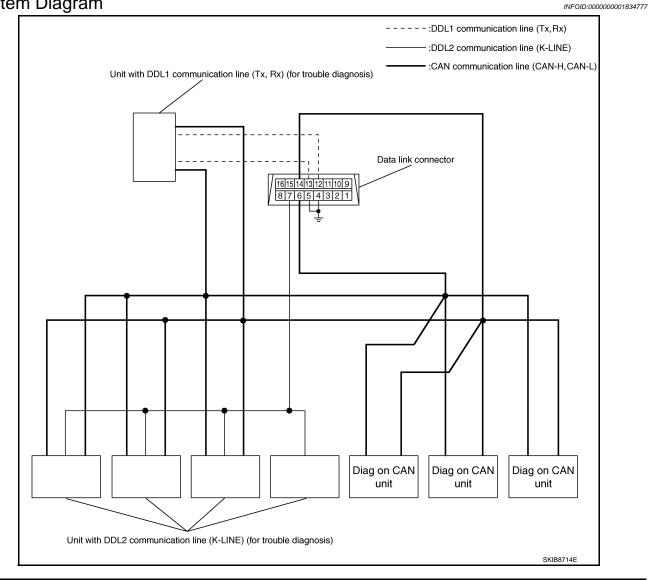
DIAG ON CAN

Description

INFOID:000000001834776

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

System Diagram



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]

[CAN FUNDAMENTAL]

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< SYSTEM DESCRIPTION >

TROUBLE DIAGNOSIS

Condition of Error Detection

"U1000" or "U1001" is indicated on SELF-DIAG RESULTS on CONSULT-III if 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 "U1000" OR "U1001" IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS D 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.

NOTE:

CAN communication system is normal if "U1000" or "U1001" is indicated on SELF-DIAG RESULTS of CON-SULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

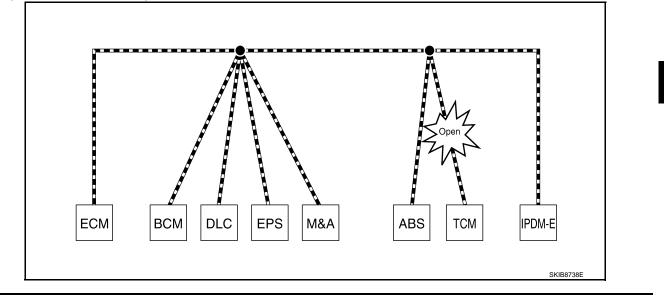
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-24, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



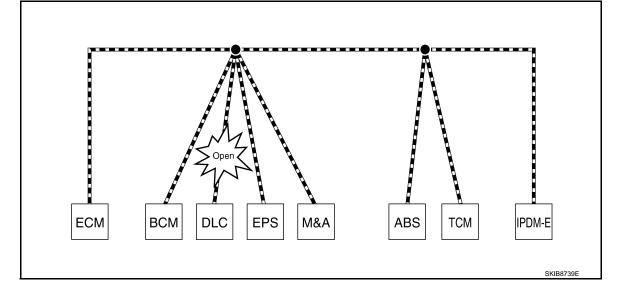
Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

Example: Data link connector branch line open circuit



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

NOTE:

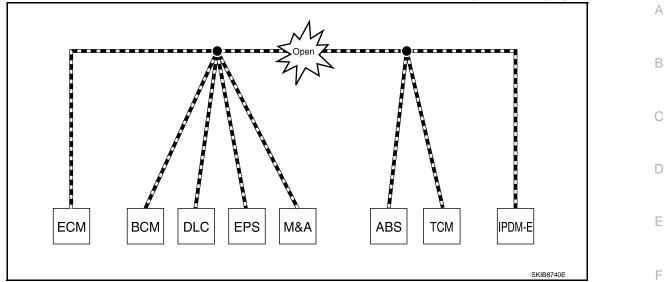
- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with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

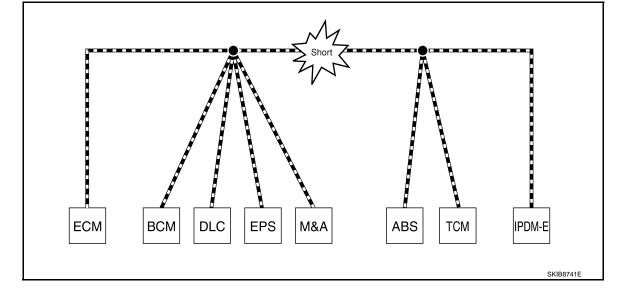
[CAN FUNDAMENTAL]

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



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

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



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< SYSTEM DESCRIPTION >

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

CAN Diagnosis with CONSULT-III

INFOID:000000001834780

CAN diagnosis on CONSULT-III 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:000000001834781

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Inspection/Action
U1000	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.	
01000		When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.	Start the inspection. Re- fer to the applicable sec-
U1001	signal f 1001 CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more.	tion of the indicated control unit.
U1002	SYSTEM COMM	When a control unit is not transmitting or receiv- ing CAN communication signal for 2 seconds or less.	
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diag- nosis for CAN controller of each control unit.	Replace the control unit indicating "U1010".

CAN Diagnostic Support Monitor

INFOID:000000001834782

MONITOR ITEM (CONSULT-III)

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Without	t PAST		With	PAST		1	
EC	Μ		EC	M			
	PRSNT PAS	т		PRSNT	PAST		
INITIAL DIAG	OK		TRANSMIT DIAG	¦OK	¦ OK		
TRANSMIT DIAG	OK		VDC/TCS/ABS	 [-]-		
ТСМ	OK	1	METER/M&A	¦OK	¦ OK		
VDC/TCS/ABS	UNKWN		BCM/SEC	OK	OK		
METER/M&A	OK		ICC	-	-		
ICC	UNKWN	1	HVAC				
BCM/SEC	OK		ТСМ	¦ΟK	¦ΟK		
IPDM E/R	OK		EPS	[-]-		
			IPDM E/R	LOK	OK		
			e4WD		j-		
			AWD/4WD	OK	OK		

Without PAST

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

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< SYSTEM DESCRIPTION >

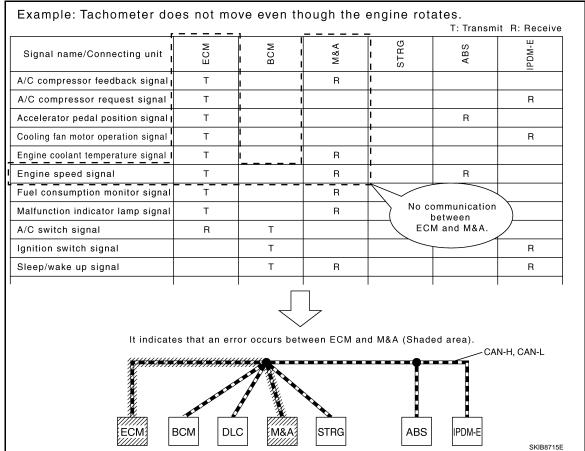
Example: Vehicle Display

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

How to Use CAN Communication Signal Chart

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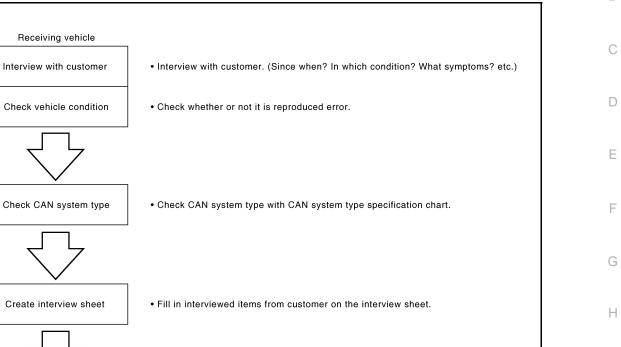
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart



Trouble Diagnosis Procedure

Detect the root cause

Inspection/Repair/Replacement

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.

· Inspect the root cause and repair or replace the applicable parts.

• Detect the root cause with CONSULT-III.

Points in interview

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

NOTE:

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

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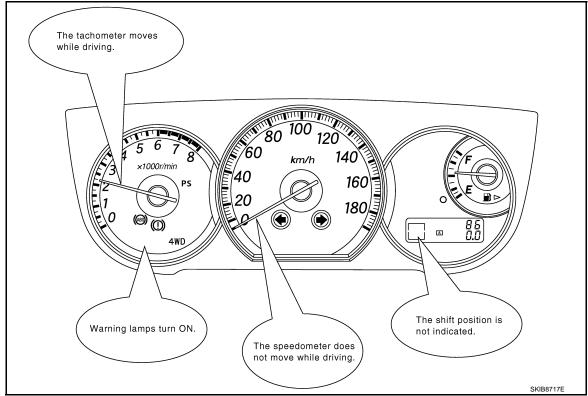
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LAN-19

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

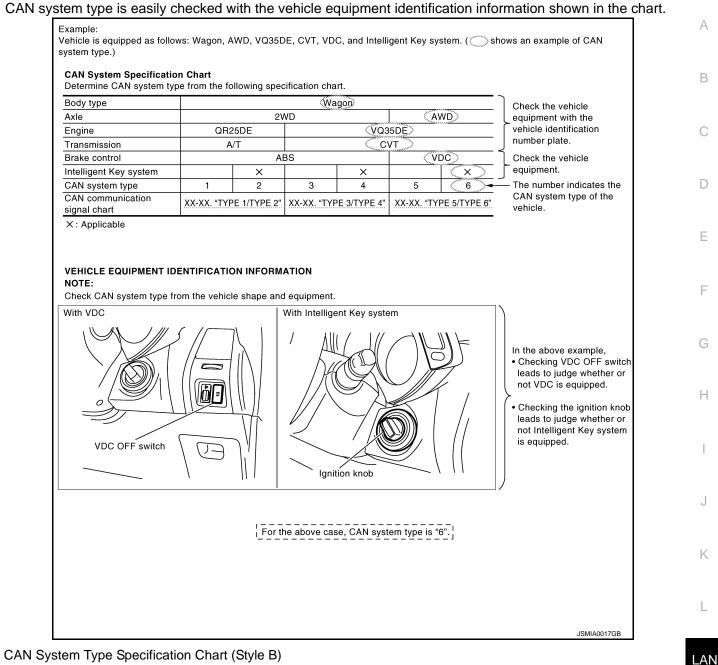
NOTE:

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

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

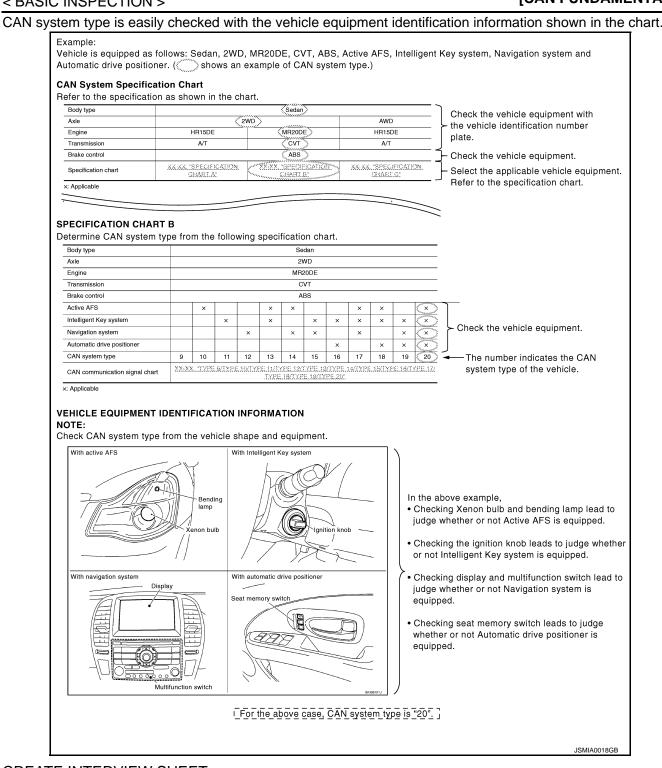


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CREATE INTERVIEW SHEET

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)	
CAN Communication System Diagnosis Interview She	et A
Date received: 3, Feb. 2006	Е
Type: DBA-KG11 VIN No.: KG11-005040	C
Model: BDRARGZ397EDA-E-J-	D
First registration: 10, Jan. 2001 Mileage: 62,140	
CAN system type: Type 19	E
Symptom (Results from interview with customer) Headlamps suddenly turn ON while driving the vehicle. 	F
 The engine does not restart after stopping the vehicle and turning the ignition switch OFF. The cooling fan continues rotating while turning the ignition switch ON. 	G
	H
Condition at inspection	I
Error Symptom: Present / Past	J
The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	к
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DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT-III detects the root cause.

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

INFOID:000000001903661

[CAN]

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

• For trouble diagnosis procedure, refer to LAN-19, "Trouble Diagnosis Procedure".

Abbreviation List

INFOID:000000001903662

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

Abbreviation	Unit name
4WD	AWD 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
AV	AV control unit
BCM	BCM
DLC	Data link connector
ECM	ECM
ICC	ICC sensor integrated unit
IPDM-E	IPDM E/R
M&A	Unified meter and A/C amp.
PSB	Pre-crash seat belt control unit
RAS	4WAS main control unit
STRG	Steering angle sensor
ТСМ	ТСМ

Revision: 2008 September

< PRECAUTION > PRECAUTION PRECAUTIONS

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

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the "SRS AIR BAG".
- Do not 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:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Trouble Diagnosis

CAUTION:

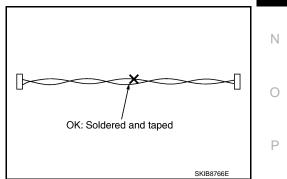
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

LAN-25

Precautions for Harness Repair

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

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



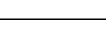
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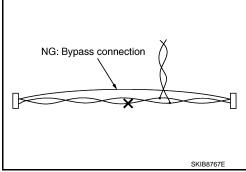
PRECAUTIONS

< PRECAUTION >

[CAN]

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.

< BASIC INSPECTION >

[CAN]

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

lew Sneet	INFOID:000000001903666	В
CAN Communication System Diagnosis Interview Sheet		
Date received:		С
Type: VIN No.:		D
Model:		E
First registration: Mileage:		F
CAN system type:		G
Symptom (Results from interview with customer)		Н
		I
		J
		K
		I
Condition at inspection		
Error symptom : Present / Past		LA
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SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

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[CAN]

Determine CAN system type from the following specification chart. **NOTE:**

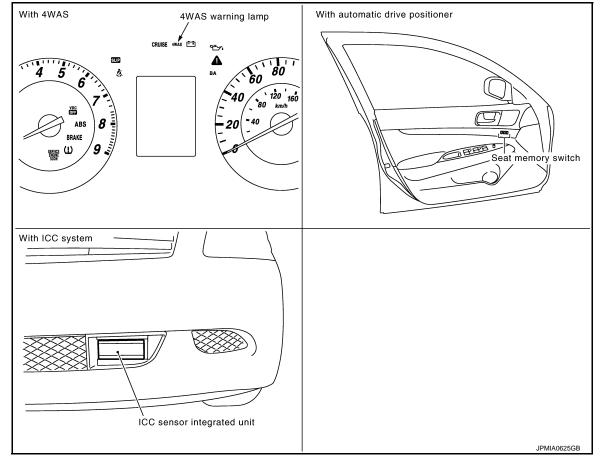
Refer to LAN-19, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type								Sedan							
Axle						2۱	ND							AWD	
Engine							١	VQ35H	R						
Transmission		M/T A/T													
Brake control		VDC													
4WAS		×		×		×		×		×		×			
Automatic drive positioner			×	×	×	×			×	×	×	×		×	×
ICC system					×	×					×	×			×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Start CAN Diagnosis (CONSULT-III)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION NOTE:

Check CAN system type from the vehicle shape and equipment.



< SYSTEM DESCRIPTION >

CAN Communication Signal Chart

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[CAN]

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Refer to <u>LAN-18, "How to Use CAN Communication Signal Chart"</u> for how to use CAN communication signal chart. NOTE:

Refer to LAN-24, "Abbreviation List" for the abbreviations of the connecting units.

T: Transmit R: Receive PDM-E STRG 4WD ADP RAS ECM PSB BCM AFS M&A ABS TCM 00 Ş Signal name/Connecting unit Т R A/C compressor request signal D т R R R R Accelerator pedal position signal т ASCD OD cancel request signal R т R ASCD operation signal Ε Т ASCD status signal R Т ASCD SET indicator signal R т Closed throttle position signal R R Т Cooling fan speed request signal R т R Engine and A/T integrated control signal R Т т Engine coolant temperature signal R Н Engine speed signal Т R R R R R R R т R R Engine status signal т R R Fuel consumption monitor signal Т ICC brake switch signal R Т R ICC clutch switch signal^{*1} ICC prohibition signal Т R ICC steering switch signal Т R Malfunctioning indicator lamp signal Т R K Т R Park/neutral position switch signal^{*1} Power generation command value signal Т R Т R R Snow mode switch signal R Т Т R LAN R Т R Stop lamp switch signal Т R Ν Т Wide open throttle position signal R Т R AWD signal т AWD warning lamp signal R Т R A/C switch/indicator signal R Т Rear window defogger switch signal Т R Т R R Т R System setting signal R Т Т R Buzzer output signal R Т

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	PSB	4WD	AV	BCM	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
Door switch signal				R	Т			R		R				R
Door unlock signal					Т					R				
Front fog light request signal					Т			R						R
Front wiper request signal					Т								R	R
High beam request signal					Т			R						R
Horn reminder signal					Т									R
Ignition switch ON signal					T R									R T
Ignition switch signal					Т					R				
Interlock/PNP switch signal					T R									R T
Key ID signal					Т					R				
Key switch signal	1				Т					R				
Key warning lamp signal	1				Т			R						
Low beam request signal					Т									R
					Т			R						
Meter display signal								R					Т	
Oil pressure switch signal					Т			R						
Position light request signal					R T			R						T R
· · · · · · · · · · · · · · · · · · ·					Т									R
Rear window defogger control signal	R			R	R									Т
Sleep wake up signal					Т			R		R				R
Starter control relay signal					Т									R
Starter relay status signal					R									Т
Clarter relay status signal					Т									R
Starting mode signal					Т					R				
Steering lock relay signal					R T									T R
Theft warning horn request signal					т									R
Tire pressure signal					Т			R						
Trunk switch signal				R	Т			R						
Turn indicator signal					Т			R						
A/T CHECK indicator lamp signal						Т	R	R						
A/T self-diagnosis signal	R					Т								
Current gear position signal						т						R	R	
Input speed signal	R					Т							R	
Manual mode indicator signal						т		R					R	
N range signal					R	т							R	
Output shaft revolution signal	R					т							R	<u> </u>
P range signal					R	Т				R		R	R	<u> </u>
R range signal						Т							R	
Shift position signal		R*2				Т	R	R				R	R	

Revision: 2008 September

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	PSB	4WD	AV	BCM	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E	А
AFS OFF indicator lamp signal							Т	R							_
A/C evaporator temperature signal	R							Т							В
A/C switch signal	R							Т							
Blower fan motor switch signal	R							Т							С
Distance to empty signal				R				Т							
Fuel level low warning signal				R				Т							
Fuel level sensor signal	R							Т							D
Manual mode shift down signal						R		Т							
Manual mode shift up signal						R		Т							Е
Manual mode signal						R		Т							
Not manual mode signal						R		Т							
Parking brake switch signal			R		R			Т							F
Seat belt buckle switch signal					R			Т							
					R			Т							
Sleep-ready signal					R									Т	G
Target A/C evaporator temperature signal	R							Т							
	R	R		R	R	R	R	Т		R				R	Н
Vehicle speed signal			R		R			R			R	Т	R		
Wake up signal					R			Т							
Steering angle sensor signal							R		Т		R	R			
4WAS signal											Т	R			
4WAS warning lamp signal								R			Т				J
A/T shift schedule change demand signal						R						Т			0
ABS malfunction signal												Т	R		
ABS operation signal						R						Т	R		Κ
ABS warning lamp signal								R				Т			
Brake pressure control signal												Т	R		
Brake warning lamp signal								R				т			
Side G sensor signal						R						т			
SLIP indicator lamp signal								R				т			LAN
TCS malfunction signal												т	R		
TCS operation signal												т	R		
VDC malfunction signal												Т	R		Ν
VDC OFF indicator lamp signal								R				т			
VDC OFF switch signal												т	R		0
VDC operation signal												т	R		
Deceleration degree commandment val- ue signal												R	т		Р
ICC operation signal	R												Т		
ICC warning lamp signal								R					T		
Detention switch signal					R								-	т	
Front wiper stop position signal					R									T	
High beam status signal	R						R							T	
- ingit boatti status sigitai														'	

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[CAN]

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	PSB	4WD	AV	BCM	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
Hood switch signal					R									Т
Low beam status signal	R						R							Т
Push-button ignition switch status signal					R									Т
Steering lock unit status signal					R									Т

*1: M/T models only

*2: Receive reverse position signal only

NOTE:

CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted.

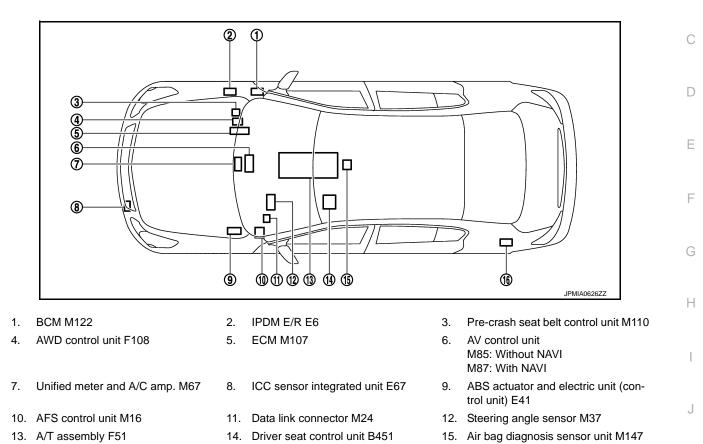
DTC/CIRCUIT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location

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16. 4WAS main control unit B54

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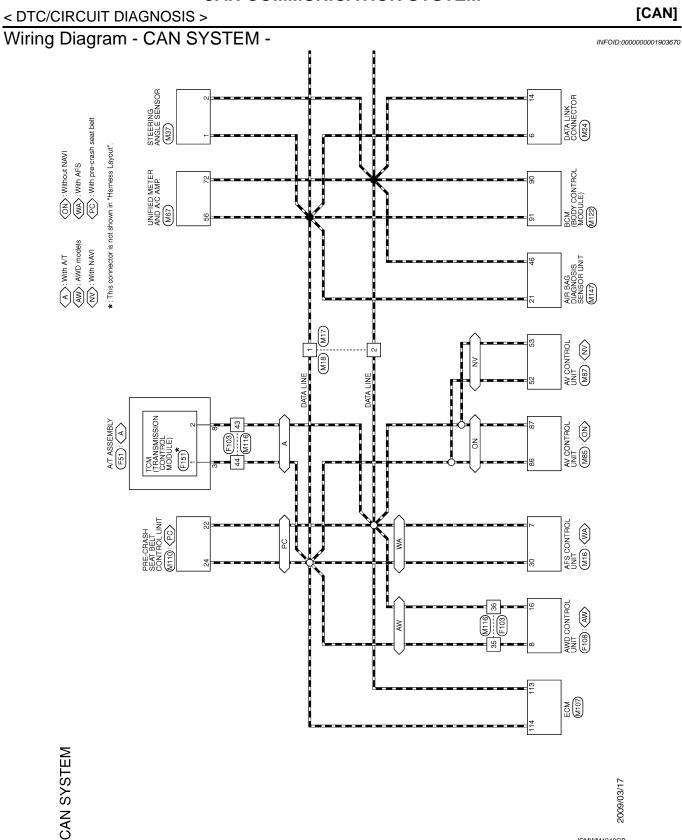
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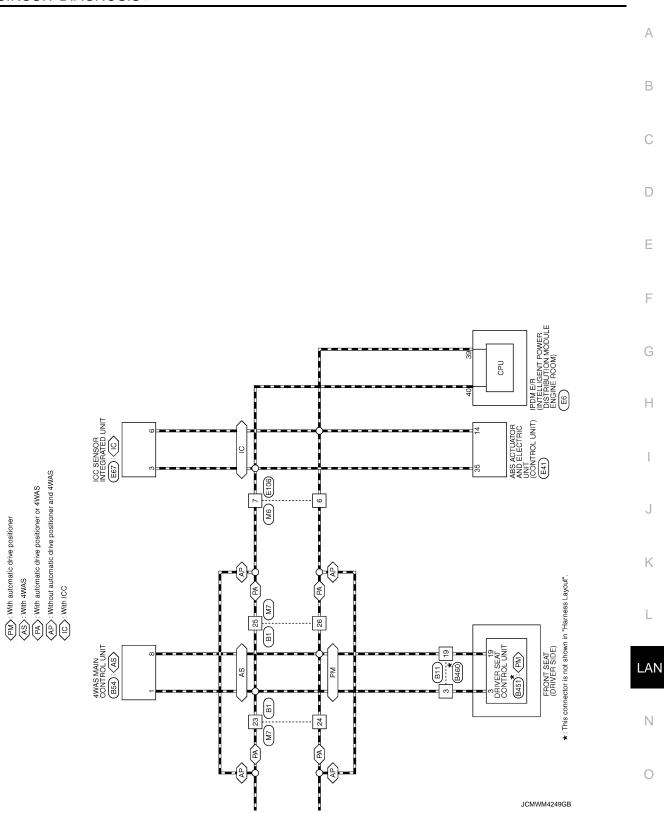
Revision: 2008 September



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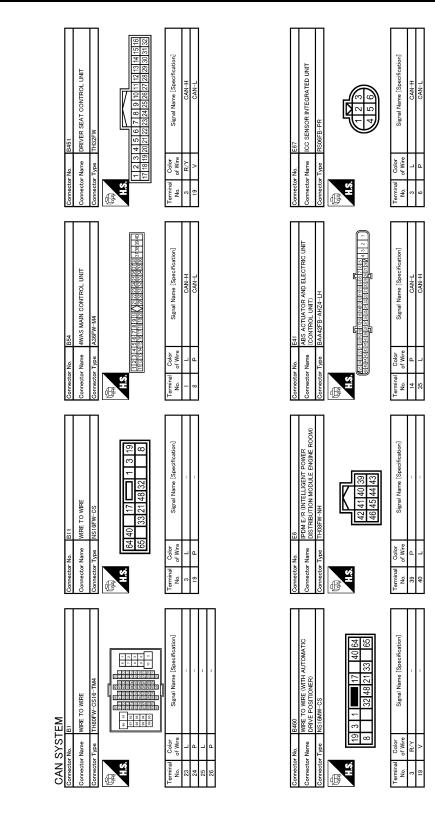
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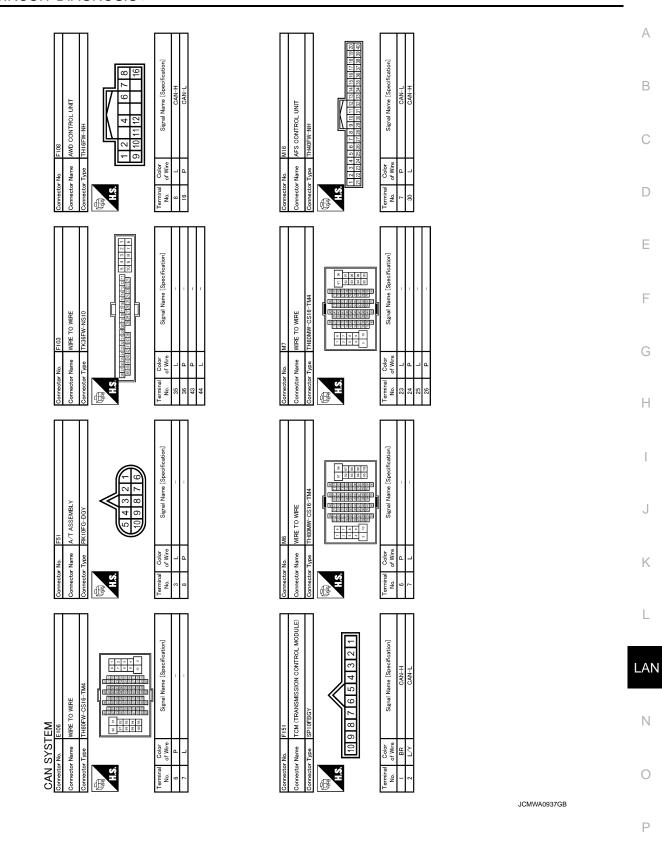


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CAN COMMUNICATION SYSTEM

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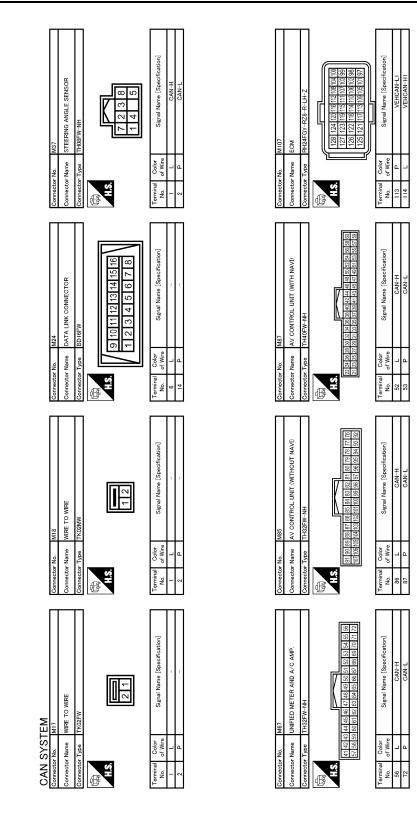


Revision: 2008 September

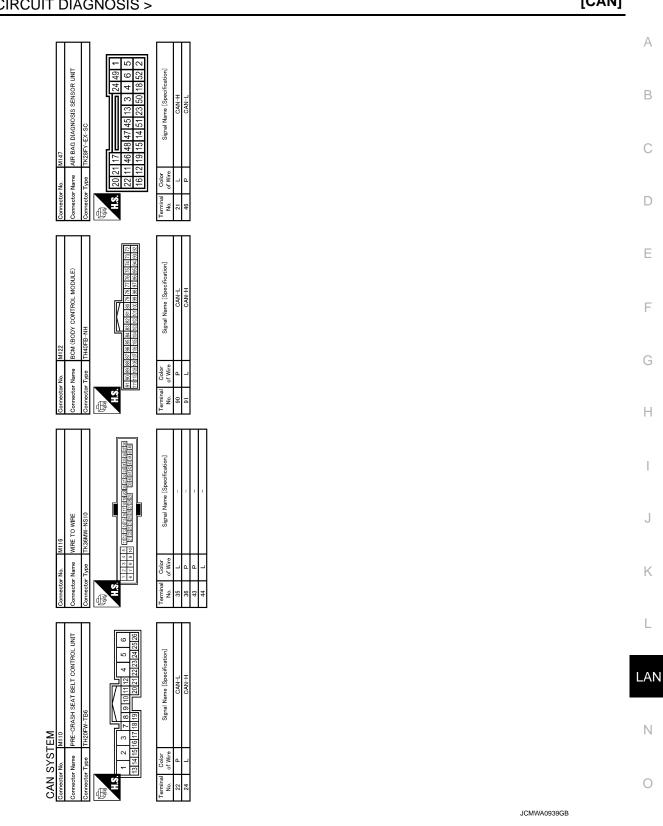
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< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

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[CAN]

Malfunction Area	Reference
Main line between AV control unit and data link connector	LAN-41, "Diagnosis Procedure"
Main line between data link connector and ABS actuator and electric unit (control unit)	LAN-42, "Diagnosis Procedure"
Main line between data link connector and driver seat control unit	LAN-43. "Diagnosis Procedure"
Main line between data link connector and 4WAS main control unit	LAN-44, "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-45, "Diagnosis Procedure"
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-47, "Diagnosis Procedure"

Branch Line

INFOID:000000001903672

Malfunction Area	Reference
ECM branch line circuit	LAN-49. "Diagnosis Procedure"
Pre-crash seat belt control unit branch line circuit	LAN-50, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-51, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-52, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-53, "Diagnosis Procedure"
BCM branch line circuit	LAN-54, "Diagnosis Procedure"
TCM branch line circuit	LAN-55, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-56, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-57, "Diagnosis Procedure"
Unified meter and A/C amp. branch line circuit	LAN-58, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-59, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-60, "Diagnosis Procedure"
4WAS main control unit branch line circuit	LAN-61, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-62, "Diagnosis Procedure"
ICC sensor integrated unit branch line circuit	LAN-63, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-64, "Diagnosis Procedure"

Short Circuit

INFOID:000000001903673

Malfunction Area	Reference	
CAN communication circuit	LAN-65, "Diagnosis Procedure"	

		TWEEN AV AND	DLC CIRCUIT	
			r	[CAN]
		D DLC CIRCUI	I	
Diagnosis Proced	ure			INFOID:000000001903675
1.снеск соллест	OR			
	ttery cable from the n ng terminals and con r M18 r M17		pend and loose conn	ection (connector side
YES >> GO TO 2.	<u>Homan</u>			
• ·	terminal and connec			
2.CHECK HARNESS	CONTINUITY (OPE)	N CIRCUIT)		
- With NAVI	ity between the AV co	ontrol unit harness con		ss connector.
	arness connector	Harness of		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Eviete d
M87	52	M18	1 2	Existed
Without NAVI	35		Z	LAIsted
AV control unit h	arness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M18	1	Existed
	87		2	Existed
- '				or M18.
J .CHECK HARNESS Check the continuity b		onnector and the data		
Check the continuity b		onnector and the data		
Check the continuity b	etween the harness c			Continuity
Check the continuity b Harness	etween the harness c	Data link o	connector	Continuity Existed

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001903676

[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 M6
- Harness connector E106

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 M6 and E106.

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

Data link	connector	Harness connector Connector No. Terminal No.				Continuity
Connector No.	Terminal No.			Continuity		
M24	6	Me	7	Existed		
11/24	M24 14 M6		6	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	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 data link connector and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

e			INFOID:00000000190367
R			
terminals and conne 17 1 ormal? rminal and connecto ONTINUITY (OPEN	ectors for damage, or. CIRCUIT)	bend and loose conn	ection (connector side
between the data lin	k connector and the		
			Continuity
	Connector No.		F 1.4.1
_	M7		Existed
ONTINUITY (OPEN	CIRCUIT)	and the harness conr	Continuity
23		25	Existed
24		26	Existed
	ry cable from the neg terminals and connector in and connector ONTINUITY (OPEN iss connectors M7 a between the data lin nector Terminal No. 6 14 immal? ain line between the ONTINUITY (OPEN veen the harness con 23	ry cable from the negative terminal. terminals and connectors for damage, 17 1 1 1 1 1 1 1 1 1 1 1 1 1	y cable from the negative terminal. terminals and connectors for damage, bend and loose conn 17 1 1 1 1 1 1 1 1 1 1 1 1 1

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MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000002979837

[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 M7
- Harness connector B1

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 M7 and B1.

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		
M24	6	N47	23	Existed		
M24 14	14	- M7	24	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	23	25	Existed
וט	24	26	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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

< DTC/CIRCUIT DIA	MAIN LINE BET	WEEN ADP A	ND ABS CIRCU	JIT [CAN]
MAIN LINE BET		ND ABS CIRC	CUIT	
Diagnosis Proced	lure			INFOID:000000001903678
1.CHECK CONNECT	OR			
 Check the followin and harness side) Harness connector Harness connector Harness connector Harness connector Harness connector Harness connector Source and the second seco	ttery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connec of CONTINUITY (OPEN rness connectors B1	nectors for damage tor. N CIRCUIT) and M7.		connection (connector side
	ity between the harne		als.	
Connector No.	23	Terminal No.	25	Continuity Existed
B1	23		26	Existed
CHECK HARNESS	e main line between th CONTINUITY (OPE) rness connectors M6 ity between the harne	N CIRCUIT) and E106.	I unit and the harne	ess connector B1.
Harness	connector	Harne	ss connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
	26		6	Existed
 CHECK HARNESS Disconnect the co Check the continut harness connecto 	r.	N CIRCUIT) tor and electric unit ess connector and t	(control unit).	d electric unit (control unit)
Harness Connector No.	connector Terminal No.		Terminal No.	Continuity
	7		35	Existed

Is the inspection result normal?

E106

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

7

6

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

E41

35

14

Existed

Existed

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

< DTC/CIRCUIT DIA(MAIN LINE BET GNOSIS >	WEEN RAS AN	D ABS CIRCU	JIT [CAN]
MAIN LINE BET	WEEN RAS A	ND ABS CIRC	UIT	
Diagnosis Proced	lure			INF01D:00000002979838
1.CHECK CONNECT	OR			
 Check the followin and harness side) Harness connector <li< td=""><td>Ittery cable from the non- ing terminals and con- or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connect s CONTINUITY (OPEN orness connectors B1</td><td>nectors for damage, tor. N CIRCUIT) and M7.</td><td></td><td>connection (connector side</td></li<>	Ittery cable from the non- ing terminals and con- or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connect s CONTINUITY (OPEN orness connectors B1	nectors for damage, tor. N CIRCUIT) and M7.		connection (connector side
	ity between the harne		als.	Orationite
Connector No.	23	Terminal No.	25	Continuity Existed
B1	24		26	Existed
3. CHECK HARNESS	e main line between th CONTINUITY (OPEN rness connectors M6 ity between the harne	N CIRCUIT) and E106.	l unit and the harn	ess connector B1.
Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
s the inspection result	26		6	Existed
LCHECK HARNESS Disconnect the co Check the continu harness connecto	r.	N CIRCUIT) tor and electric unit (ess connector and the	control unit).	d electric unit (control unit)
Harness Connector No.	connector Terminal No.		connector Terminal No.	Continuity
	7		25	Existed

Is the inspection result normal?

E106

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

7

6

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

E41

35

14

Existed

Existed

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
ECM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000001903679
1. CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cab Check the terminals and connector side). 	le from the negative ter	minal. for damage, bend and loose	connection (unit side and
Is the inspection result normal?	-		
YES >> GO TO 2. NO >> Repair the termina	l and connector.		
2.CHECK HARNESS FOR O			
 Disconnect the connector Check the resistance betw 		connector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.	Term	inal No.	
M107	114	113	Approx. 108 – 132
Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM br 3. CHECK POWER SUPPLY A	anch line.	т	
Check the power supply and the	-	ECM. Refer to <u>EC-133, "Diag</u>	nosis Procedure".
Is the inspection result normal?			
YES (Past error)>>Error was	Special Repair Require	<u>ment"</u> . anch line.	<u>/ICE WHEN REPLACING</u>

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PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB 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 pre-crash seat belt 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 pre-crash seat belt control unit.
- 2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-cras	Pre-crash seat belt control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the pre-crash seat belt control unit branch line.

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

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to the following. • Power supply: <u>SBC-25, "Component Function Check"</u>

Ground circuit: <u>SBC-26, "Component Function Check"</u>

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to SBC-38, "Exploded View".

YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.

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

4WD BRANCH LINE CIRCUIT

[CAN]		DTC/CIRCUIT DIAGNOS
JUIT	E CIRCUIT	WD BRANCH LINE
INFO/D:000000001903681		Diagnosis Procedure
		CHECK CONNECTOR
I connectors for damage, bend and loose connection (unit side and con- onnector. RCUIT	cable from the negative terminal. minals and connectors for damage, bend and loose co ector 3 6 <u>hal?</u> inal and connector. OPEN CIRCUIT or of AWD control unit.	 Check the following term nector side). AWD control unit connect Harness connector F103 Harness connector M116 the inspection result normation of the inspection result normation of the inspection result normation. YES >> GO TO 2. NO >> Repair the termination of the termination. CHECK HARNESS FOR Disconnect the connector
	etween the AWD control unit harness connector termin	
Terminal No. Resistance (Ω)		Connector No.
8 16 Approx. 54 – 66	8 16	F108
nit branch line.	vithin the specification? D control unit branch line. Y AND GROUND CIRCUIT	
ind circuit of the AWD control unit. Refer to <u>DLN-23, "Diagnosis Proce-</u>		hadi tha navyar ayanly and

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001903682

[CAN]

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	\$>		[CAN]
AV BRANCH LINE C	RCUIT		
Diagnosis Procedure			INFOID:000000001903683
1.CHECK CONNECTOR			
 Turn the ignition switch Of Disconnect the battery cal 	-F. ole from the negative termination		
			nd and loose connection (unit
side and connector side).		C /	, , , , , , , , , , , , , , , , , , ,
s the inspection result normal	<u>?</u>		
YES >> GO TO 2.			
NO >> Repair the termina			
2. CHECK HARNESS FOR O	PEN CIRCUIT		
1. Disconnect the connector			
 Check the resistance betw Models with NAVI 	veen the AV control unit harn	ess connector termina	als.
Models with NAVI			
AV	control unit harness connector		Begistange (O)
Connector No.	Terminal N	0.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
Models without NAVI			
AV	control unit harness connector		Besistance (0)
Connector No.	Terminal N	0.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
Is the measurement value with	in the specification?		
YES >> GO TO 3.			
NO >> Repair the AV con			
3. CHECK POWER SUPPLY .	AND GROUND CIRCUIT		
Check the power supply and the	ne around circuit of the AV co	ontrol unit. Refer to the	e following.
 Base audio without navigation 	n: AV-39, "AV CONTROL UI	NIT : Diagnosis Proce	dure"
 BOSE audio without navigati 	ion: <u>AV-164, "AV CONTROL</u>	UNIT : Diagnosis Pro	<u>cedure"</u>
 BOSE audio with navigation: 		III : Diagnosis Proced	<u>iure</u>
the increation result normal	2		

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
 BOSE audio with navigation: <u>AV-603, "Exploded View"</u>

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

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

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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			Resistance (Ω)
Connector No.	Terminal No.		176515ta1106 (22)
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

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

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS			
			[CAN]
TCM BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:000000001903685
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for c 3 6 <u>nal?</u> inal and connector. OPEN CIRCUIT		nnection (unit side and con-
	etween the A/T assembly h	arness connector terminals	;.
	A/T assembly harness connector		Resistance (Ω)
Connector No.		nal No.	
F51	3	8	Approx. 54 – 66
2. Disconnect the connect	ve with TCM. Refer to TM-2		connector.
A/T accombly connector	TOM hornor	se connector	
A/T assembly connector Terminal No.	TCM harnes Connector No.	ss connector Terminal No.	Continuity
-	Connector No.		Continuity Existed
Terminal No.	Connector No. F151	Terminal 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.

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		ivesistance (22)
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-61, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-196, "Exploded View".

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

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

INFOID:000000001903686

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > [CAN]	
DLC BRANCH LINE CIRCUIT	٨
Diagnosis Procedure	A
1.CHECK CONNECTOR	В
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side). 	С
Is the inspection result normal?	
YES >> GO TO 2. NO >> Repair the terminal and connector.	D
2. CHECK HARNESS FOR OPEN CIRCUIT	
Check the resistance between the data link connector terminals.	E
Data link connector	

	Data link connector Resistance (Ω)			Posistanco (O)	_
	Connector No.	Termi	nal No.		F
	M24	6	14	Approx. 54 – 66	-
<u> </u> ;	s the measurement value w	vithin the specification?			G

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

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

NO >> Repair the data link connector branch line.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	Unified meter and A/C amp. harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

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

INFOID:000000001903688

STRG BRANCH LINE CIRCUIT

	STILE BILANCI		
< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
STRG BRANCH LIN	VE CIRCUIT		
Diagnosis Procedure			INFOID:000000001903689
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the steering	ninal. g angle sensor for damage, l	pend and loose connection
Is the inspection result normYES>> GO TO 2.NO>> Repair the termination2>> Repair the termination	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor etween the steering angle s	ensor harness connector ter	minals.
Stee	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ing angle sensor branch lir Y AND GROUND CIRCUIT d the ground circuit of the <u>SYSTEM -"</u> . al? lace the steering angle sen	steering angle sensor. Refe sor. Refer to <u>BRC-106, "Exp</u> angle sensor branch line.	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001903691

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

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 driver seat control unit.
- 2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

 $\mathbf{3}$. 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 ADP-225, "Exploded View".

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

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

RAS BRANCH LINE CIRCUIT

	INAS DIVANCI		
< DTC/CIRCUIT DIAGNOS	IS >		[CAN]
RAS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000001903690
1.CHECK CONNECTOR			
1. Turn the ignition switch (
2. Disconnect the battery c	able from the negative terr	ninal. main control unit for damage	e, bend and loose connec-
Is the inspection result norma	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector		
NO >> Repair the termin 2.CHECK HARNESS FOR			
	or of 4WAS main control ur tween the 4WAS main con	it. trol unit harness connector t	erminals.
4WA	S main control unit harness conn	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
B54	1	8	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the 4WAS 3. CHECK POWER SUPPLY	S main control unit branch		
Check the power supply and Procedure (4WAS Main Con-	trol Unit)".	4WAS main control unit. Ref	er to <u>STC-135, "Diagnosis</u>
YES (Past error)>>Error wa	ace the 4WAS main contro		<u>(ploded View"</u> .

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (12)
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	IS >		[CAN]
ICC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000001903693
1. CHECK CONNECTOR			
1. Turn the ignition switch (
 Disconnect the battery of Check the terminals and 	able from the negative terr I connectors of the ICC se		mage, bend and loose con-
nection (unit side and co	,		
<u>Is the inspection result norm</u> YES >> GO TO 2.	<u>al (</u>		
NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
1. Disconnect the connect	or of ICC sensor integrated	l unit.	
		grated unit harness connec	ctor terminals.
ICC se	ensor integrated unit harness con	nector	Resistance (Ω)
Connector No.	Termir	nal No.	
E67	3	6	Approx. 54 – 66
Is the measurement value w	thin the specification?		
YES >> GO TO 3. NO >> Repair the ICC s	anaar integrated unit bran	ah lina	
•	sensor integrated unit bran		
3.CHECK POWER SUPPLY			
Check the power supply and Procedure".	the ground circuit of the IC	CC sensor integrated unit. I	Refer to <u>CCS-82, "Diagnosis</u>
Is the inspection result norm	al?		
YES (Present error)>>Repl		ated unit. Refer to CCS-112	2, "Exploded View".
YES (Past error)>>Error wa	as detected in the ICC sense	sor integrated unit branch I	
NO >> Repair the powe	r supply and the ground ci	rcuit.	

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IPDM-E 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 IPDM E/R 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 IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOS			[CAN]
CAN COMMUNICAT	ION CIRCUIT		
Diagnosis Procedure			INFOID:000000001903695
1.CONNECTOR INSPECTION	ON		
 Disconnect all the unit contained. Check terminals and contained. 	able from the negative term onnectors on CAN commur inectors for damage, bend	nication system.	
s the inspection result normative version of the second seco	<u>al (</u>		
NO >> Repair the termin			
2.CHECK HARNESS CONT	FINUITY (SHORT CIRCUIT	Г)	
Check the continuity betweer	n the data link connector te	erminals.	
	Data link connector		Continuit
Connector No.	Termin	al No.	Continuity
M24 Is the inspection result norma	6	14	Not existed
YES >> GO TO 3. NO >> Check the harne 3.CHECK HARNESS CONT Check the continuity betweer		Г)	
Data link c	onnector		
Connector No.	Terminal No.		Continuity
	6	Ground	Not existed
M24	14		Not existed
4. CHECK ECM AND IPDM 1. Remove the ECM and th	ss and repair the root caus E/R TERMINATION CIRCI		
ECM	Resistance (Ω)	ECM and IPDM E/R
Terminal No.			
114 11		//	
 Check the resistance bet 	tween the IPDM E/R termin	hals.	
IPDM E/R	Desistence (0)	<u>,</u>	y
Terminal No.	Resistance (Ω)	LKIA0037E
40 39	Approx. 108 – 13	32	
Is the measurement value wi YES >> GO TO 5. NO >> Replace the ECM 5.CHECK SYMPTOM	thin the specification? If and/or the IPDM E/R.		

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

LAN-65

< DTC/CIRCUIT DIAGNOSIS >

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 system. **NOTE:**

ECM and IPDM E/R 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.

DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 1)
DTC/CIRCU	IT DIAGNO	SIS		
1AIN LINE BET	WEEN AV AND	DLC CIRCUIT	Г	
iagnosis Proced	ure			INFOID:0000000052504
.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 foll AV control unit Harness connector	tery cable from the neig g terminals and conr M18 M17 normal? terminal and connect CONTINUITY (OPEN owing harness conneiged rs M18 and M17	nectors for damage, b or. I CIRCUIT)		
AV control unit ha	arness connector	Harness o	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
	53	-	2	Existed
Without NAVI				
AV control unit ha	arness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
	87	-	2	Existed
CHECK HARNESS	main line between the CONTINUITY (OPEN	e AV control unit and t I CIRCUIT) onnector and the data		r M18.
Harness	connector	Data link o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M17	1	M24	6	Existed
	2		14	Existed
	Check CAN system t	ype decision again. e main line between tl	he AV control unit and	d the data link connec

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904475

[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 M6
- Harness connector E106

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 M6 and E106.

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

Data link	connector Harness connector Continu		ector Harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M6	7	Existed
11/24	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector			ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E106	7	E41	35	Existed
E106 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 data link connector and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure	CIRCUIT				
.CHECK CONNECTOR					
connector side).	ble from the negative terr connectors of the ECM f		e connection (unit side and		
s the inspection result normal	<u>?</u>				
YES >> GO TO 2. NO >> Repair the termina	al and connector.				
2. CHECK HARNESS FOR O					
 Disconnect the connector Check the resistance betw 		onnector terminals.			
	ECM harness connector				
			Resistance (Ω)		
Connector No.	Termir		Resistance (Ω)		
M107	114	nal No. 113	Resistance (Ω) Approx. 108 – 132		
	114 hin the specification? ranch line.	113	· · ·		
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM b	114 hin the specification? ranch line. AND GROUND CIRCUIT he ground circuit of the E	113	Approx. 108 – 132		
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and th s the inspection result normal YES (Present error)>>Replac <u>CONTROL UNIT</u> : YES (Past error)>>Error was	114 nin the specification? ranch line. AND GROUND CIRCUIT ne ground circuit of the E ? ce the ECM. Refer to E Special Repair Requirer	113 - CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL SER</u> nent". nch line.	Approx. 108 – 132 gnosis Procedure".		
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and th s the inspection result normal YES (Present error)>>Replac <u>CONTROL UNIT</u> : YES (Past error)>>Error was	114 <u>ain the specification?</u> ranch line. AND GROUND CIRCUIT the ground circuit of the E <u>?</u> the ECM. Refer to <u>E</u> <u>Special Repair Requirer</u> detected in the ECM bra	113 - CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL SER</u> nent". nch line.	Approx. 108 – 132 gnosis Procedure".		

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904481

[CAN SYSTEM (TYPE 1)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INF01D:000000001904482
1.CHECK CONNECTOR			
 Check the terminals and side and connector side <u>Is the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR Disconnect the connector 	able from the negative terr d connectors of the AV cor). <u>al?</u> nal and connector. OPEN CIRCUIT or of AV control unit.		and loose connection (unit
	AV control unit harness connecto	r	
Connector No.		nal No.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
	AV control unit harness connecto		Resistance (Ω)
Connector No.		nal No.	
M85 s the measurement value w	86	87	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the AV co 3.CHECK POWER SUPPL Check the power supply and BOSE audio without naviga BOSE audio without navigation BOSE audio with navigation s the inspection result norm YES (Present error)>>Repl Base audio wi BOSE audio wi BOSE audio wi BOSE audio wi BOSE audio wi	ontrol unit branch line. Y AND GROUND CIRCUIT the ground circuit of the A tion: <u>AV-39, "AV CONTROL</u> ation: <u>AV-164, "AV CONTROL</u> ation: <u>AV-414, "AV CONTROL</u> al? ace the AV control unit. Re thout navigation: <u>AV-113, "</u> vithout navigation: <u>AV-603, "Ev</u>	V control unit. Refer to the f L UNIT : Diagnosis Procedu OL UNIT : Diagnosis Procedu UNIT : Diagnosis Procedu fer to the following. Exploded View" "Exploded View" ol unit branch line.	<u>ire"</u> edure"

< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904483

[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 (Ω)
M122	91 90		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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

CIRCUIT DIAGNUS	500 >		
DLC BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INF0ID:00000000190448
L.CHECK CONNECTOR			
	055		
 Turn the ignition switch Disconnect the battery of 	OFF. cable from the negative ter	minal	
3. Check the terminals an	d connectors of the data I		bend and loose connection
(connector side and har			
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR			
Check the resistance betwee		terminals	
	Data link connector		Resistance (Ω)
Connector No.		nal No.	Annual 54 00
M24	6	14	Approx. 54 – 66

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Termi	1(63/3td1106 (32)	
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

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

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:000000001904488
1.CHECK CONNECTOR			
 Check the terminals and (unit side and connecto s the inspection result norm YES >> GO TO 2. NO >> Repair the term 	cable from the negative terr d connectors of the steering r side). <u>al?</u> inal and connector.		bend and loose connection
CHECK HARNESS FOR			
	or of steering angle sensor etween the steering angle s	ensor harness connector te	erminals.
	ering angle sensor harness conne		Resistance (Ω)
Connector No. M37	Termiı 1	nal No. 2	Approx. 54 – 66
CHECK POWER SUPPL	ing angle sensor branch lir Y AND GROUND CIRCUI	Γ	
book the new or supply	d the around aircuit of the		
ram - BRAKE CONTROL S	SYSTEM -".	steering angle sensor. Re	fer to <u>BRC-83, "Wiring Dia-</u>
ram - BRAKE CONTROL S the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	<u>SYSTEM -"</u> . Jal?	sor. Refer to <u>BRC-106, "Ex</u> angle sensor branch line.	
ram - BRAKE CONTROL S the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	<u>SYSTEM -"</u> . <u>al?</u> lace the steering angle sen as detected in the steering	sor. Refer to <u>BRC-106, "Ex</u> angle sensor branch line.	
ram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	<u>SYSTEM -"</u> . <u>al?</u> lace the steering angle sen as detected in the steering	sor. Refer to <u>BRC-106, "Ex</u> angle sensor branch line.	
ram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	<u>SYSTEM -"</u> . <u>al?</u> lace the steering angle sen as detected in the steering	sor. Refer to <u>BRC-106, "Ex</u> angle sensor 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 and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		1(63)3(8)106 (22)
E41	35	14	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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH	< DTC/CIRCUIT DIAGNOSIS >		
	LINE CIRCUIT		
Diagnosis Procedure	1		INFOID:00000000190449
1. CHECK CONNECTOR			
 Check the terminals a and connector side). Is the inspection result nor YES >> GO TO 2. NO >> Repair the term 	r cable from the negative terr nd connectors of the IPDM I <u>mal?</u> ninal and connector.		nd loose connection (unit side
2.CHECK HARNESS FO	R OPEN CIRCUIT		
 Disconnect the connect Check the resistance b 	ctor of IPDM E/R. Detween the IPDM E/R harno	ess connector terminals.	
Connector No.	Termir	 al No	Resistance (Ω)
E6	40	39	Approx. 108 – 132
s the measurement value			

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	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	СМ	Resistance (Ω)	
Termi	Terminal No.		
114	113	Approx. 108 – 132	

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

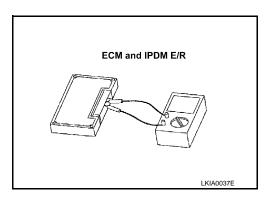
IPDI	/I E/R	Resistance (Ω)
Termi	nal No.	
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250418

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
IVIO7	53	IVITO	2	Existed

Without NAVI

AV control unit h	AV control unit harness connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M85	86		M18	1	Existed
MOS	87	IVITO	2	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

iagnosis Proced	ure			INFOID:000000002979915
CHECK CONNECT				
Turn the ignition sv				
Disconnect the bat	ttery cable from the ne ng terminals and conr r M7 r B1		end and loose con	nection (connector side
YES >> GO TO 2.	<u>normar.</u>			
NO >> Repair the	terminal and connect			
	CONTINUITY (OPEN	,		
	rness connectors M7 ity between the data li	and B1. nk connector and the	harness connector.	
Data link	connector	Harness of	connector	
Data link				
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
	6	Connector No. M7	23	Existed
Connector No. M24	6 14			
Connector No. M24 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS	6 14 normal?	M7 e data link connector a I CIRCUIT)	23 24	Existed
Connector No. M24 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS	6 14 normal? main line between th CONTINUITY (OPEN	M7 e data link connector a I CIRCUIT)	23 24	Existed
Connector No. M24 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be	6 14 normal? main line between th CONTINUITY (OPEN etween the harness co 23	M7 e data link connector a I CIRCUIT) onnector terminals.	23 24 and the harness con	Existed Existed Inector M7.
Connector No. M24 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be Connector No.	6 14 normal? main line between th CONTINUITY (OPEN etween the harness co 23 24	M7 e data link connector a I CIRCUIT) onnector terminals.	23 24 and the harness con	Existed Existed Inector M7.

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000002979916

[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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1	23	25	Existed
Ы	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.	
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
ETUO	6	E41	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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904451

[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 (Ω)
Connector No.	Terminal No.		
M107	114	113	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 EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15</u>, "ADDITIONAL SERVICE WHEN REPLACING <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000001904454
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . s the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904455

[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 AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66		Resistance (Ω)		
M87 52 53 Approx. 54 – 66	Connector No.	Termi	nal No.	
	M87	52	53	Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- 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 2)]

 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. <u>BCM harness connector</u> <u>Resistance (Ω)</u> <u>M122</u> 91 90 <u>Approx.54 - 66 </u> S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. <u>3. CHECK POWER SUPPLY AND GROUND CIRCUIT</u> Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-38, "Diagnosis Procedure"</u>. 	Diagnosis Procedure			INFOID:00000001904456
 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 terminal No. BCM harness connector M122 91 90 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 BCS-38. "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80. "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	1. CHECK CONNECTOR			
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.	 Disconnect the battery of Check the terminals and connector side). 	able from the negative term d connectors of the BCM fo		ose connection (unit side and
1. Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 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 BCS-38, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
Connector No. Terminal No. Resistance (Ω) M122 91 90 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	1 Disconnect the connect	or of BCM		
Connector No. Terminal No. M122 91 90 Approx. 54 – 66 s 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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.		tween the BCM harness co	nnector terminals.	
s 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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	2. Check the resistance be	tween the BCM harness co BCM harness connector		Resistance (Ω)
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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	2. Check the resistance be Connector No.	tween the BCM harness co BCM harness connector Termina	al No.	
<u>s the inspection result normal?</u> YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line.	2. Check the resistance be Connector No. M122	tween the BCM harness co BCM harness connector Termina 91	al No.	
YES (Past error)>>Error was detected in the BCM branch line.	2. Check the resistance be Connector No. M122 s the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL	tween the BCM harness co BCM harness connector Termina 91 ithin the specification? branch line. Y AND GROUND CIRCUIT	al No. 90	Approx. 54 – 66
	2. Check the resistance be Connector No. M122 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	tween the BCM harness co BCM harness connector 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the BC al?	al No. 90 CM. Refer to <u>BCS-38, "D</u>	Approx. 54 – 66
	2. Check the resistance be Connector No. M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	tween the BCM harness co BCM harness connector 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the BC al? ace the BCM. Refer to BCS as detected in the BCM bran	al No. 90 CM. Refer to <u>BCS-38, "D</u> 5-80, "Exploded View". Inch line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904459

[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 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			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000001904460
1.CHECK CONNECTOR			
 Check the terminals and nection (unit side and control) 	cable from the negative term d connectors of the unified r onnector side).		amage, bend and loose con-
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of unified meter and A/C at the unified meter and a the unified meter and		ector terminals.
	meter and A/C amp. harness con		- Resistance (Ω)
Connector No. M67	Termina 56	al No. 72	Approx. 54 – 66
CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia is the inspection result norm	agnosis Procedure".	ified meter and A/C amp.	Refer to <u>MWI-50, "UNIFIED</u>
YES (Past error)>>Error wa	as detected in the unified me or supply and the ground cire	eter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904461

[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	Resistance (Ω)		
Connector No.	Termi	nal No.	
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

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

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:000000001904463
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the 4WAS n		ge, bend and loose connec-
the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of 4WAS main control uni		r terminale
	S main control unit harness conne		
Connector No.	Termina	Terminal No.	
B54	1	8	Approx. 54 – 66
CHECK POWER SUPPL	<u>itrol Unit)"</u> .		efer to <u>STC-135, "Diagnosis</u>
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the 4WAS main control as detected in the 4WAS ma er supply and the ground circ	in control unit branch line	
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the 4WAS main control as detected in the 4WAS ma	in control unit branch line	
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the 4WAS main control as detected in the 4WAS ma	in 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 (Ω)		
Connector No.	Terminal No.		
E41	35	14	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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit si 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) Connector No. IPDM E/R harness connector Resistance (Ω) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure". 	 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection and connector side). S the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. 	· 	
 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit si 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. 	 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection and connector side). <u>s the inspection result normal?</u> 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. E6 40 39 Approx. 108 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	· 	
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. Image: PDM E/R harness connector Resistance (Ω) Connector No. Image: E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure".	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 Connector No. Terminal No. E6 40 39 Approx. 108 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	(0)	
. 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) Connector No. Terminal No. E6 40 39 Approx. 108 – 132 s 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 the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure".	. Disconnect the connector of IPDM E/R. . Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Connector No. Terminal No. E6 40 39 Approx. 108 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	(0)	
Connector No. Terminal No. Resistance (Ω) E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. YES >> Repair the IPDM E/R branch line. Scheck POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure".	Connector No. Terminal No. Resistance E6 40 39 Approx. 108 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	(0)	
Connector No. Terminal No. E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure".	Connector No. Terminal No. E6 40 39 Approx. 108 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.		
s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u> .	s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.		
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u> .	YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	- 132	
YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-34. "Exploded View"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	Check the power supply and the ground circuit of the IPDM_E/R. Refer to <u>PCS-19, "Diagnosis Prosite the inspection result normal?</u> YES (Present error)>>Replace the IPDM_E/R. Refer to <u>PCS-34, "Exploded View"</u> . YES (Past error)>>Error was detected in the IPDM_E/R branch line.	cedure".	

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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		
M24	6	14	Not existed	

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	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	СМ	Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

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

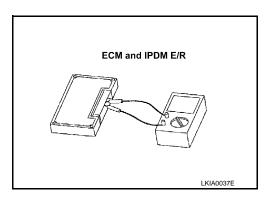
IPDM E/R		Posistanco (O)	
Terminal No.		Resistance (Ω)	
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250417

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	- M18 -	1	Existed
10107	53		2	Existed

Without NAVI

AV control unit h	AV control unit harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
NOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
	2	10124	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 AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

	WEEN DLC AI			
iagnosis Proced	ure			INFOID:000000001904422
.CHECK CONNECT	OR			
Check the followir and harness side) Harness connecto Harness connecto sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	ttery cable from the ne ng terminals and coni r M7 r B1 <u>normal?</u> terminal and connect CONTINUITY (OPEN	nectors for damage, I tor. N CIRCUIT)	pend and loose conr	nection (connector side
Check the continu	rness connectors M7 ity between the data li	ink connector and the	harness connector.	1
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	23	Existed
11/12/4	14	IVI7	24	Existed
	<u>normal?</u>			
YES >> GO TO 3. NO >> Repair the CHECK HARNESS	main line between th CONTINUITY (OPEN	N CIRCUIT)	and the harness con	nector M7.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be Connector No.	main line between th CONTINUITY (OPEN	N CIRCUIT)	and the harness con	
NO >> Repair the CHECK HARNESS Check the continuity be	main line between th CONTINUITY (OPEN etween the harness co 23 24	N CIRCUIT)		Continuity

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904423

[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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

${ m 3.check}$ harness continuity (open circuit)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26	IVIO	6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector			ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
EIUO	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904424

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

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

	ECM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 3)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000001904427
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . s the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66		AV control unit harness connecto	r	Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Terminal No.		
	M87	52	53	Approx. 54 – 66

Models without NAVI

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- 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 3)]

Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side). s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. 2.CHECK the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) M122 91 90 Approx.54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 2.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Present error)>>Error was detected in the BCM branch line.	 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loo connector side). <u>Is the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 	se connection (unit side and
 Provide the provided from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side). Sethe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of BCM. Check the resistance between the BCM harness connector terminals. BCM harness connector terminal No. Resistance (Ω) M122 91 90 Approx. 54 - 66 Sethe measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loo connector side). <u>Is the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 	se connection (unit side and
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. Image: terminal No. Resistance (Ω) Connector No. Terminal No. M122 91 90 Approx. 54 – 66 Image: terminal No. Resistance (Ω) Sthe 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 BCS-38. "Diagnosis Procedure". St the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80. "Exploded View". YES (Past error)>>Error was detected in the BCM branch line. Yes (Past error)>>Error was detected in the BCM branch line.	YES >> GO TO 2. NO >> Repair the terminal and connector.	
2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. M122 91 90 Approx. 54 – 66 s 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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.		
. Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	∠ CHECK HARNESS FOR OPEN CIRCUI	
BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.		
Connector No. Terminal No. Resistance (Ω) M122 91 90 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.		
Connector No. Terminal No. M122 91 90 Approx. 54 – 66 s 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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	BCM harness connector	Resistance (O)
s 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 BCS-38, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-80, "Exploded View". YES (Past error)>>Error was detected in the BCM branch line.	Connector No. Terminal No.	
 YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-38, "Diagnosis Procedure"</u>. <u>s the inspection result normal?</u> YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>. YES (Past error)>>Error was detected in the BCM branch line. 	M122 91 90	Approx. 54 – 66
YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line.	YES >> GO TO 3. NO >> Repair the BCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-38</u> , "Dia	agnosis Procedure".
YES (Past error)>>Error was detected in the BCM branch line.	s the inspection result normal?	
	YES (Past error)>>Error was detected in the BCM branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904432

[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 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		Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000001904433
1. CHECK CONNECTOR			
3. Check the terminals and nection (unit side and co	cable from the negative term d connectors of the unified r onnector side).		amage, bend and loose con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termination 2 OUTOR LADALSON FOR FOR	nal and connector.		
2.CHECK HARNESS FOR 1. Disconnect the connect	or of unified meter and A/C		
	etween the unified meter and		ector terminals.
Unified	meter and A/C amp. harness con	nector	Resistance (Ω)
Connector No.	Termin		
M67 s the measurement value w	56	72	Approx. 54 – 66
3. CHECK POWER SUPPL			
Check the power supply and METER AND A/C AMP. : Dia s the inspection result norm	agnosis Procedure".	nified meter and A/C amp.	. Refer to <u>MWI-50, "UNIFIED</u>
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the unified meter and A as detected in the unified m er supply and the ground cir	eter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904434

[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	Steering angle sensor harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000001904435
1.CHECK CONNECTOR			
	able from the negative termin inals and connectors for dam		nnection (unit side and con-
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector.		
	or of driver seat control unit. tween the driver seat control u	unit harness connector t	erminals.
Drive	r seat control unit harness connecto	r	Resistance (Ω)
Connector No.	Terminal N	10.	
B451	3	19	Approx. 54 – 66
3. CHECK POWER SUPPLY Check the power supply and	the ground circuit of the drive		to ADP-67, "DRIVER SEAT
CONTROL UNIT : Diagnosis Is the inspection result normative YES (Present error)>>Replay	<u>al?</u> ace the driver seat control uni	t Refer to ADP-225 "F	xploded View"

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

[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 IPDM E/R for damage, bend and loose connection (un 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. Impose E/A harness connector Resistance (Ω) Connector No. Impose E/A harness connector Resistance (Ω) S the measurement value within the specification?	< DTC/CIRCUIT DIAGNOS	ilS >		[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 IPDM E/R for damage, bend and loose connection (un 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. Impose the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	PDM-E BRANCH L	INE CIRCUIT		
I. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (un and connector side). 3. 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) E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	Diagnosis Procedure			INFOID:00000000190443
 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (un and connector side). (a) 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) E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 	1. CHECK 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. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	 Disconnect the battery of 3. Check the terminals and and connector side). Is the inspection result norm YES >> GO TO 2. 	able from the negative terr d connectors of the IPDM al?		d loose connection (unit side
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. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.				
Connector No. Terminal No. E6 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.		tween the IPDM E/R harn	ess connector terminals.	Posistance (0)
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	Connector No.	Termi	nal No.	
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	E6	40	39	Approx. 108 – 132
3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedur</u> <u>Is the inspection result normal?</u> YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-34, "Exploded View"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Reply YES (Past error)>>Error was	1 E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IF al? ace the IPDM E/R. Refer to as detected in the IPDM E	PDM E/R. Refer to <u>PCS-1</u> to <u>PCS-34, "Exploded Vie</u> /R branch line.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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	
M24	6 14		Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	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.	
114	113	Approx. 108 – 132

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

IPDM E/R		Resistance (Ω)
Termi	nal No.	
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

Revision: 2008 September

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

LAN-110

INFOID:000000001904440

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250416

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
IVIO7	53		2	Existed

Without NAVI

AV control unit h	narness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
MOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

		ND ADP CIRCL	וור	
Diagnosis Proced	ure			INFOID:000000001904395
.CHECK CONNECT	OR			
 Check the followir and harness side). Harness connecto Harness connecto <u>s the inspection result</u> YES >> GO TO 2. 	ttery cable from the ne ng terminals and conn r M7 r B1 <u>normal?</u> terminal and connect	nectors for damage, b	pend and loose conr	nection (connector side
. Check the continu	rness connectors M7 ity between the data li	ink connector and the	harness connector.	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
	6		23	Existed
1404		M7	24	Existed
	14 normal?		24	
s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	normal? main line between th CONTINUITY (OPEN			
s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be Connector No.	normal? main line between th CONTINUITY (OPEN	N CIRCUIT)		nector M7.
s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be	normal? main line between th CONTINUITY (OPEN etween the harness co 23 24	N CIRCUIT)	and the harness con	Continuity

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904396

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

${ m 3.check}$ harness continuity (open circuit)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
EIUO	6	- ⊏41	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904397

[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 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.	Terminal No.		Resistance (Ω)
M107	114	113	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 EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

	CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]
A-BA	G BRANCH LINE CIRCUIT	
Diagn	osis Procedure	INFOID:000000001904400
1.сне	CK AIR BAG DIAGNOSIS SENSOR UNIT	
	the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . Ispection result normal?	
YES NO	>> Replace the main harness. >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66	AV control unit harness connector			Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Termi	nal No.	
	M87	52 53		Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi	Terminal No.	
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

INFOID:000000001904401

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and lo connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of BCM. 	oose connection (unit side and
 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and lo connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of BCM. 	oose connection (unit side and
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of BCM.	
1. Disconnect the connector of BCM.	
 Check the resistance between the BCM harness connector terminals. 	
BCM harness connector	Resistance (Ω)
Connector No. Terminal No.	
M122 91 90	Approx. 54 – 66
s 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-38, "I</u>	Diagnosis Procedure".
Is the inspection result normal? VES (Present error) > Paplace the PCM, Refer to PCS 80, "Exploded View"	
YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line. NO >> Repair the power supply and the ground circuit.	

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904405

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (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)
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

M&A BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INFOID:000000001904406
CHECK CONNECTOR			
	cable from the negative term d connectors of the unified r		amage, bend and loose con-
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
. Disconnect the connect	or of unified meter and A/C atween the unified meter and		ector terminals.
	I meter and A/C amp. harness con		Resistance (Ω)
Connector No. M67	56	al No. 72	Approx. 54 – 66
CHECK POWER SUPPL check the power supply and IETER AND A/C AMP. : Dia the inspection result norm	agnosis Procedure".	ified meter and A/C amp.	Refer to <u>MWI-50, "UNIFIED</u> 0, "Exploded View".
	as detected in the unified mere er supply and the ground cir		line.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904407

[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	Resistance (Ω)		
Connector No.	Termi	nal No.	
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

ADP BRANCH LINE Diagnosis Procedure			INFOID:000000001904408
1.check connector			
	OFF		
	cable from the negative term ninals and connectors for da		nnection (unit side and con-
Is the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR			
	or of driver seat control unit. Stween the driver seat contro		erminals.
	er seat control unit harness conne		Resistance (Ω)
Connector No.	Termin	al No.	. ,
	Termin 3		Resistance (Ω) Approx. 54 – 66
Connector No. B451 Is the measurement value w YES >> GO TO 3. NO >> Repair the drive 3. CHECK POWER SUPPL	Termin 3 ithin the specification? r seat control unit branch lir Y AND GROUND CIRCUIT the ground circuit of the dri	al No. 19 ne.	. ,
Connector No. B451 Is the measurement value w YES >> GO TO 3. NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Termin 3 ithin the specification? r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the dri <u>s Procedure"</u> .	al No. 19 ne. ver seat control unit. Refer unit. Refer to <u>ADP-225, "E</u> at control unit branch line.	Approx. 54 – 66 to <u>ADP-67, "DRIVER SEAT</u>
Connector No. B451 Is the measurement value w YES >> GO TO 3. NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Termin 3 ithin the specification? r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the driver s Procedure". al? lace the driver seat control to as detected in the driver seat	al No. 19 ne. ver seat control unit. Refer unit. Refer to <u>ADP-225, "E</u> at control unit branch line.	Approx. 54 – 66 to <u>ADP-67, "DRIVER SEAT</u>

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904409

[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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Termi	Terminal No.	
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the 4WAS main control unit branch line.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-135, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-179, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000001904410
CHECK CONNECTOR			
Check the terminals and	able from the negative termin I connectors of the ABS actunit side and connector side). al?		ntrol unit) for damage, bend
CHECK HARNESS FOR			
. Check the resistance be nals.	or of ABS actuator and electric etween the ABS actuator and	d electric unit (control uni	t) harness connector termi-
	and electric unit (control unit) harnes		Resistance (Ω)
Connector No. E41	Terminal 35		Resistance (Ω) Approx. 54 – 66
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply and RC-37, "Diagnosis Procedu s the inspection result norm	Terminal 35 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> .	No. 14 ntrol unit) branch line. BS actuator and electric	Approx. 54 – 66 unit (control unit). Refer to
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS J.CHECK POWER SUPPLY Check the power supply and SRC-37. "Diagnosis Procedu s the inspection result norm YES (Present error)>>Repl View". YES (Past error)>>Error was	Terminal 35 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> .	No. 14 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R tor and electric unit (cont	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-103, "Exploded</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904412

[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 IPDM E/R 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 IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000001904413 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-127

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 system. **NOTE:**

ECM and IPDM E/R 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.

DTC/CIRCUIT DIAG		IWEEN AV AND		I SYSTEM (TYPE 5)]
DTC/CIRCUI	T DIAGNO	SIS		
AIN LINE BET	WEEN AV AND	D DLC CIRCUI	Г	
Diagnosis Procedu	ire			INFOID:000000005250414
	DR			
 Check the following and harness side). Harness connector Harness connector site inspection result in YES >> GO TO 2. NO >> Repair the site CHECK HARNESS CONNECT the following AV control unit Harness connectors 	ery cable from the ne g terminals and conr M18 M17 hormal? cerminal and connect CONTINUITY (OPEN owing harness conne	nectors for damage, b or. I CIRCUIT)		ection (connector side
AV control unit ha	rness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
	53	WIG	2	Existed
Without NAVI				
AV control unit ha	rness connector	Harness of	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
Wido	87	WITO	2	Existed
CHECK HARNESS	main line between the CONTINUITY (OPEN tween the harness co		link connector.	r M18.
Harness c				Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Existed
M17	2	M24	14	Existed
tor.	Check CAN system t or was detected in th			d the data link connec-

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000001904368

[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 M7
- Harness connector B1

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 M7 and B1.

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

Data link	Data link connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	23	Existed
11/124	14	1/17	24	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	23	25	Existed
DI	24	26	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 connector B1 and the driver seat control unit.

DTC/CIRCUIT DIA			ID ABS CIRCUIT	N SYSTEM (TYPE 5)
	TWEEN ADP A	ND ABS CIRC		
Diagnosis Proced	dure			INFOID:000000001904365
1.CHECK CONNECT				
1. Turn the ignition s				
2. Disconnect the ba	attery cable from the nang terminals and con). or B1 or M7 or M6 or E106		, bend and loose con	nection (connector side
YES >> GO TO 2.				
• ·	e terminal and connec			
	arness connectors B1 uity between the harne		als.	
Connector No.		Terminal No.		Continuity
B1	23		25	Existed
s the inspection result	24		26	Existed
 CHECK HARNESS Disconnect the ha Check the continu 		N CIRCUIT) and E106. ss connectors.	unit and the harness	connector B1.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	25		7	Existed
M7	26	- M6	6	Existed
 CHECK HARNESS Disconnect the co Check the continut harness connecto 	e main line between th S CONTINUITY (OPEN onnector of ABS actuation uity between the harne	N CIRCUIT) tor and electric unit ess connector and th	(control unit).	electric unit (control unit)
Harness Connector No.	connector Terminal No.		s connector Terminal No.	Continuity
	7		35	Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Is the inspection result normal?

E106

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

7

6

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

E41

35

14

Existed

Existed

[CAN SYSTEM (TYPE 5)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure	CIRCUIT		
-			INFOID:000000001904370
.CHECK CONNECTOR			
connector side).	ble from the negative terr connectors of the ECM f		e connection (unit side and
s the inspection result normal	<u> ?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector.		
CHECK HARNESS FOR O			
Disconnect the connector Check the resistance betw	veen the ECM harness co	onnector terminals.	
	ECM harness connector		
O sur setes Na		-1 N-	Resistance (Ω)
Connector No.	Termir		
M107	Termir 114	al No. 113	Resistance (Ω) Approx. 108 – 132
	Termir 114 hin the specification? branch line.	113	
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b 3. CHECK POWER SUPPLY Check the power supply and the supply of the supple supply of the supple s	Termin 114 hin the specification? oranch line. AND GROUND CIRCUIT he ground circuit of the E	113	Approx. 108 – 132
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b 3. CHECK POWER SUPPLY Check the power supply and the <u>s the inspection result normal</u> YES (Present error)>>Replace <u>CONTROL UNIT</u> YES (Past error)>>Error was	Termin 114 nin the specification? oranch line. AND GROUND CIRCUIT he ground circuit of the E 12 ce the ECM. Refer to E : Special Repair Requirer	113 CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL SER</u> <u>nent"</u> . nch line.	Approx. 108 – 132 gnosis Procedure".
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b 3. CHECK POWER SUPPLY Check the power supply and the <u>s the inspection result normal</u> YES (Present error)>>Replace <u>CONTROL UNIT</u> YES (Past error)>>Error was	Termin 114 nin the specification? oranch line. AND GROUND CIRCUIT he ground circuit of the E <u>1?</u> ce the ECM. Refer to <u>E</u> : <u>Special Repair Requiren</u> : detected in the ECM bra	113 CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL SER</u> <u>nent"</u> . nch line.	Approx. 108 – 132 gnosis Procedure".

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PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904371

[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 pre-crash seat belt 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 pre-crash seat belt control unit.
- 2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-cras	Resistance (Ω)		
Connector No.	Termi		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the pre-crash seat belt control unit branch line.

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

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to the following. • Power supply: <u>SBC-25, "Component Function Check"</u>

Ground circuit: <u>SBC-26</u>, "Component Function Check"

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-38, "Exploded View"</u>.

YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.

DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 5)]
-BAG BRANCH LINE CIRCUIT	
liagnosis Procedure	INFOID:00000000190437
.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
heck the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> .	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

	Resistance (Ω)		
Connector No.	Termi		
M87	52	53	Approx. 54 – 66

Models without NAVI

	AV control unit harness connector			
Connector No.	Terminal No.		Resistance (Ω)	
M85	86	87	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

INFOID:000000001904374

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

 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 an 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 terminal No. M122 91 90 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 BCS-38, "Diagnosis Procedure". 	Diagnosis Procedure			INFOID:00000000190437
 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 an 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 Resistance (Ω) M122 91 90 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 BCS-38, "Diagnosis Procedure". Is the inspection result normal?	1.CHECK CONNECTOR			
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.	 Disconnect the battery c Check the terminals and connector side). 	able from the negative I connectors of the B0		e connection (unit side and
1. Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 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 BCS-38, "Diagnosis Procedure". Is the inspection result normal? S.	YES >> GO TO 2.			
2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 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 BCS-38, "Diagnosis Procedure". Is the inspection result normal? Second Content of the BCM. Second Content of the BCM.				
Connector No. Terminal No. Resistance (Ω) M122 91 90 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". Is the inspection result normal?		tween the BCM harne		
M122 91 90 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. NO >> Repair the BCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-38, "Diagnosis Procedure". Is the inspection result normal?			-	Resistance (Ω)
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-38, "Diagnosis Procedure"</u> . Is the inspection result normal?	Connector No.		ierminal No.	
Is the inspection result normal?	M122	91	90	Approx. 54 – 66
YES (Past error)>>Error was detected in the BCM branch line.	M122 Is the measurement value with YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPLY	91 thin the specification? branch line. Y AND GROUND CIR(90 CUIT	

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904377

[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 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.

ŀ	Resistance (Ω)		
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-61, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-196, "Exploded View".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

CDTC/CIRCUIT DIAGNOSIS >			
OLC BRANCH LINE CI	RCUIT		
Diagnosis Procedure			INFOID:000000001904378
CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable 		al	
. Check the terminals and cor	nnectors of the data link		bend and loose connection
(connector side and harness	side).		
the inspection result normal?			
YES >> GO TO 2. NO >> Repair the terminal a	nd connector		
CHECK HARNESS FOR OPE			
heck the resistance between th		ninals	
	Data link connector		- Resistance (Ω)
Connector No.	Terminal N		
M24	6	14	Approx. 54 – 66

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	Resistance (Ω)		
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

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

INFOID:000000001904379

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904381

[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 B11

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 driver seat control unit.

2. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.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-225, "Exploded View"</u>.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure				
1. CHECK CONNECTOR				
 Check the terminals and and loose connection (u 	able from the negative term I connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ontrol unit) for damage, bend	
s the inspection result norm	<u>al?</u>			
YES >> GO TO 2. NO >> Repair the termi	nal and connector.			
2. CHECK HARNESS FOR				
nals. 	and electric unit (control unit) harr	ess connector		
Connector No.	Terminal No.		Resistance (Ω)	
E41	35	14	Approx. 54 – 66	
s the measurement value w	ithin the specification?	14	Αμριοχ. 34 – 66	
YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an <u>BRC-37, "Diagnosis Procedu</u> s the inspection result norm	actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> .	control unit) branch line.	c unit (control unit). Refer to	
NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply and <u>BRC-37</u> , "Diagnosis Procedu s the inspection result norm	actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>are</u> ". al? ace the ABS actuator and e	control unit) branch line. ABS actuator and electric electric unit (control unit). F	c unit (control unit). Refer to Refer to <u>BRC-103, "Exploded</u>	

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ICC 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 ICC sensor integrated 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 ICC sensor integrated unit.
- 2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

ICC s	Resistance (Ω)		
Connector No.	Terminal No.		116313td1106 (22)
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-82, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-112, "Exploded View".

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

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

INFOID:000000001904384

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 5)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000000190438
1.CHECK CONNECTOR			
	OFF. cable from the negative terr d connectors of the IPDM I		loose connection (unit side
Is the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of IPDM E/R. etween the IPDM E/R harno	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
E6	40	39	Approx. 108 – 132
Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT	PDM E/R. Refer to <u>PCS-19</u> o <u>PCS-34, "Exploded View</u> /R branch line.	
NO >> Repair the power	er supply and the ground ch	icuit.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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
M24	6	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	
 M24	6	Ground	Not existed	
10124	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.			
114	113	Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)	
Terminal No.			
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

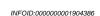
YES >> GO TO 5.

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

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



ECM and IPDM E/R
LKIA0037E



[CAN SYSTEM (TYPE 5)]

LAN-146

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250413

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness connector		ness connector Harness connector		- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M87	52	M18	1	Existed		
IVIO7	53		2	Existed		

Without NAVI

AV control unit h	harness connector Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
NOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

Diagnosis Procedure 1.check connector			
			INFOID:000000001904341
1 Turn the invition qualitate OFF			
 Turn the ignition switch OFF. Disconnect the battery cable from the negative te Check the following terminals and connectors fe and harness side). Harness connector M7 Harness connector B1 <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCU 	or damage, be	end and loose conn	ection (connector side
Disconnect the harness connectors M7 and B1.			
2. Check the continuity between the data link conne	ector and the h	arness connector.	
Data link connector	Harness connector		Continuity
Connector No. Terminal No. Con	nector No.	Terminal No.	Continuity
M24 6	M7	23	Existed
14		24	Existed
YES >> GO TO 3. NO >> Repair the main line between the data lin 3. CHECK HARNESS CONTINUITY (OPEN CIRCU	IT)	nd the harness conr	nector M7.
YES >> GO TO 3. NO >> Repair the main line between the data lin CHECK HARNESS CONTINUITY (OPEN CIRCU Check the continuity between the harness connector	IT)	nd the harness conr	Continuity
NO >> Repair the main line between the data line 3. CHECK HARNESS CONTINUITY (OPEN CIRCU) Check the continuity between the harness connector	IT) terminals.	nd the harness conr 25	

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904342

[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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

${ m 3.check}$ harness continuity (open circuit)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E106	7	E41	35	Existed
EIUO	6	- ⊏41	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904343

[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		Resistance (Ω)
Connector No.	Termi	nal No.	
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

PSB BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000001904344
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the pre-cra d connector side). <u>al?</u> nal and connector.		for damage, bend and loose
 Check the resistance be 	or of pre-crash seat belt co tween the pre-crash seat b	pelt control unit harness co	onnector terminals.
	h seat belt control unit harness c		Resistance (Ω)
Connector No.		nal No.	
M110	24	22	Approx. 54 – 66
M110 Is the measurement value w		22	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3.	ithin the specification? rash seat belt control unit b	branch line.	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the pre-c	ithin the specification? rash seat belt control unit I Y AND GROUND CIRCUIT the ground circuit of the p omponent Function Check	oranch line. - re-crash seat belt control u	
Is the measurement value w YES >> GO TO 3. NO >> Repair the pre-c 3.CHECK POWER SUPPL Check the power supply and Power supply: <u>SBC-25, "C</u> Ground circuit: <u>SBC-26, "C</u> Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? rash seat belt control unit I Y AND GROUND CIRCUIT the ground circuit of the p omponent Function Check component Function Check al? ace the pre-crash seat belt	pranch line. - re-crash seat belt control u - t control unit. Refer to <u>SBC</u> h seat belt control unit bra	unit. Refer to the following.

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904346

[CAN SYSTEM (TYPE 6)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INF0ID:000000001904347
.CHECK CONNECTOR			
 Check the terminals and side and connector side side and connector side side and connector side side and connection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR Disconnect the connector 	able from the negative tend d connectors of the AV co al? nal and connector. OPEN CIRCUIT or of AV control unit.		nd and loose connection (unit
/	AV control unit harness connect	or	Resistance (Ω)
Connector No.	Term	iinal No.	
M87	52	53	Approx. 54 – 66
Connector No.	AV control unit harness connect Term	or ninal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
the measurement value w YES >> GO TO 3. NO >> Repair the AV co CHECK POWER SUPPL heck the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigatio	ontrol unit branch line. Y AND GROUND CIRCU the ground circuit of the tion: <u>AV-39, "AV CONTRO</u> ation: <u>AV-164, "AV CONT</u>	AV control unit. Refer to th DL UNIT : Diagnosis Proce ROL UNIT : Diagnosis Pro	dure" cedure"
the inspection result norm YES (Present error)>>Repl • Base audio wi • BOSE audio w	al?	efer to the following. "Exploded View" "Exploded View"	<u></u>
YES (Past error)>>Error wa		trol unit branch line.	

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904348

[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		Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

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

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000001904350
1.CHECK CONNECTOR			
 Check the terminals an side and connector side the inspection result norm YES >> GO TO 2. NO >> Repair the term 	cable from the negative terr d connectors of the AFS co a). <u>nal?</u> inal and connector.		nd and loose connection (unit
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	etween the AFS control unit.	harness connector termi	nals.
	AFS control unit harness connecto	Dr	Pagiatango (O)
Connector No.	Termir	nal No.	Resistance (Ω)
M16	30	7	Approx. 54 – 66
YES >> GO TO 3.	control unit branch line		
NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an JNIT : Diagnosis Procedure s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	nd the ground circuit of the	AFS control unit. Refer Refer to <u>EXL-196, "Explod</u> trol unit branch line.	to <u>EXL-61, "AFS CONTROL</u> ed View".
NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an <u>UNIT : Diagnosis Procedure</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT and the ground circuit of the <u>bal?</u> blace the AFS control unit. F ras detected in the AFS con	AFS control unit. Refer Refer to <u>EXL-196, "Explod</u> trol unit branch line.	
NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an <u>UNIT : Diagnosis Procedure</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT and the ground circuit of the <u>bal?</u> blace the AFS control unit. F ras detected in the AFS con	AFS control unit. Refer Refer to <u>EXL-196, "Explod</u> trol unit branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904351

[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 (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.	
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000001904352
1.CHECK CONNECTOR			
	able from the negative tern I connectors of the unified		amage, bend and loose con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
I. Disconnect the connector	or of unified meter and A/C tween the unified meter an		ector terminals.
	meter and A/C amp. harness cor		Resistance (Ω)
Connector No. M67	Termir 56	al No. 72	Approx. 54 – 66
CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia	I the ground circuit of the un agnosis Procedure".		. Refer to <u>MWI-50, "UNIFIED</u>
s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the unified meter and A	eter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904353

[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	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000001904354
CHECK CONNECTOR			
	able from the negative termina ninals and connectors for dam) <u>al?</u>		nnection (unit side and con-
CHECK HARNESS FOR			
	br of driver seat control unit. tween the driver seat control u	init harness connector	erminals.
Drive	er seat control unit harness connector		Resistance (Ω)
Connector No.	Terminal N	ю.	Resistance (32)
B451	3	19	Approx. 54 – 66
	thin the specification?		
B. CHECK POWER SUPPLY	AND GROUND CIRCUIT the ground circuit of the driver	seat control unit. Refe	to <u>ADP-67, "DRIVER SEAT</u>
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wat	AND GROUND CIRCUIT the ground circuit of the driver	t. Refer to <u>ADP-225, "E</u> control unit branch line.	

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904355

[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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	S main control unit harness conr	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the 4WAS main control unit branch line.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-135, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-179, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000001904356
CHECK CONNECTOR			
 Check the terminals and and loose connection (u) 	cable from the negative tern d connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ontrol unit) for damage, bend
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
	or of ABS actuator and elec etween the ABS actuator a		nit) harness connector termi-
ABS actuator a	and electric unit (control unit) harn	ess connector	Resistance (O)
Connector No.	and electric unit (control unit) harn Termin		- Resistance (Ω)
Connector No. E41 s the measurement value w	Termin 35		- Resistance (Ω) Approx. 54 – 66
Connector No. E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply an <u>3RC-37. "Diagnosis Procedu</u> s the inspection result norm	Termin 35 ithin the specification? actuator and electric unit (o Y AND GROUND CIRCUIT d the ground circuit of the ure". al?	al No. 14 control unit) branch line. ABS actuator and electri	Approx. 54 – 66 c unit (control unit). Refer to
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS J.CHECK POWER SUPPL Check the power supply an 3RC-37. "Diagnosis Procedures the inspection result norm YES (Present error)>>Reploy View". YES (Past error)>>Error was	Termin 35 <u>ithin the specification?</u> actuator and electric unit (o Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . <u>al?</u> lace the ABS actuator and e	al No. 14 control unit) branch line. ABS actuator and electri electric unit (control unit). I	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-103, "Exploded</u>

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< DTC/CIRCUIT DIAGNOSIS >

ICC 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 ICC sensor integrated 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 ICC sensor integrated unit.
- 2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-82, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-112, "Exploded View".

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

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

INFOID:000000001904357

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

	SIS >		[CAN SYSTEM (TYPE 6)]
IPDM-E BRANCH I	LINE CIRCUIT		
Diagnosis Procedure			INFOID:00000000190435
1. CHECK CONNECTOR			
 Check the terminals ar and connector side). the inspection result norr YES >> GO TO 2. 	cable from the negative terr nd connectors of the IPDM I		nd loose connection (unit side
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance b 	tor of IPDM E/R. etween the IPDM E/R harne	ess connector terminals.	
Connector No.	Termir	al No.	Resistance (Ω)
E6	40	39	
Is the measurement value	-	39	Approx. 108 – 132

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6	Ground	Not existed
10124	M24 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)
114	113	Approx. 108 – 132

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

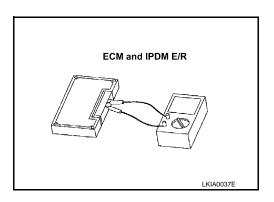
IPDM E/R Terminal No.		Resistance (Ω)
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



INFOID:000000001904359

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250412

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	AV control unit harness connector Harness connector		Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M87	52	M18	1	Existed	
	53	IVITO	2	Existed	

Without NAVI

AV control unit h	narness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M85	86	M18	1	Existed
MOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
	2	10124	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

COTC/CIRCUIT DIAC		WEEN DLC AND		SYSTEM (TYPE 7)]
MAIN LINE BET		ND ABS CIRCL	ЛТ	
Diagnosis Proced	ure			INFOID:000000001904313
	OR			
 Check the followir and harness side) Harness connecto Harness connectos the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	ttery cable from the ne ng terminals and conn r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN rness connectors M6	nectors for damage, k tor. N CIRCUIT) and E106.		ection (connector side
	ty between the data l	ink connector and the Harness		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	6		7	Existed
M24	14	M6	6	Existed
3. CHECK HARNESS	CONTINUITY (OPEN nnector of ABS actuation ity between the harne	tor and electric unit (co	ontrol unit). ABS actuator and ele	ector M6.
Harness	connector		S actuator and electric unit (control unit) harness connector Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	
			35	Existed
E106	7	E41		
	6	E41	14	Existed

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904316

[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.	Terminal No.		Resistance (22)
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

A-BAG BRANCH LINE CIRCUIT Diagnosis Procedure ************************************	
CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . <u>s the inspection result normal?</u> YES >> Replace the main harness.	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . <u>s the inspection result normal?</u> YES >> Replace the main harness.	04319
Is the inspection result normal? YES >> Replace the main harness.	
YES >> Replace the main harness.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

Connector No. Terminal No.	AV control unit harness connector			Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Terminal No.		Tresistance (22)
	M87	52 53		Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

INFOID:000000001904320

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:00000000190432
1.CHECK CONNECTOR			
 Check the terminals and connector side). Is the inspection result norm 	able from the negative term d connectors of the BCM fo		ose connection (unit side and
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connector Check the resistance be 	or of BCM. tween the BCM harness co	nnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termin		
	91	90	Approx. 54 – 66
M122	-		
M122 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	ithin the specification? branch line. Y AND GROUND CIRCUIT		

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904322

[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).
- A/T assembly
- Harness connector F103
- Harness connector M116

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 control valve with TCM. Refer to <u>TM-246, "Exploded View"</u>.
- 2. Disconnect the connector of TCM.
- 3. Check the continuity between the A/T assembly connector and TCM harness connector.

A/T assembly connector	TCM harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
3	F151	1	Existed
8	FIST	2	Existed

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the harness between the A/T assembly connector and the TCM harness connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-168</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-246, "Exploded View".

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

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

DIC/CIRCUIT DIAGNO			
DLC BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000000190432
.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery 	cable from the negative te	rminal.	
. Check the terminals a	nd connectors of the data		e, bend and loose connectior
(connector side and ha the inspection result norr	,		
YES >> GO TO 2.			
NO >> Repair the term	ninal and connector.		
CHECK HARNESS FOR	R OPEN CIRCUIT		
heck the resistance betwe	een the data link connector	terminals.	
	Data link connector		Resistance (Ω)
Connector No.		ninal No.	
M24	6	14	Approx. 54 – 66
YES (Past error)>>Error v	eck CAN system type decis vas detected in the data lin a link connector branch line	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.
YES (Past error)>>Error v	as detected in the data lin	k connector branch line cir	cuit.

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

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

INFOID:000000001904325

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Viagnocia Procedure			
iagnosis Procedure			INFOID:000000001904326
.CHECK CONNECTOR			
(unit side and connecto the inspection result norm YES >> GO TO 2.	cable from the negative d connectors of the stee r side). nal?	terminal. ering angle sensor for damage	, bend and loose connection
NO >> Repair the term			
CHECK HARNESS FOR Disconnect the connect Check the resistance be	or of steering angle sen	nsor. Je sensor harness connector t	erminals.
	ering angle sensor harness c		Resistance (Ω)
Connector No.	Terminal No.		
	1 vithin the specification?	2	Approx. 54 – 66
s the measurement value w YES >> GO TO 3.	vithin the specification?	h line.	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the stee CHECK POWER SUPPL	vithin the specification? ring angle sensor branc Y AND GROUND CIRC to the ground circuit of SYSTEM -".	h line.	
s the measurement value w YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an tram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? ring angle sensor branc Y AND GROUND CIRC of the ground circuit of SYSTEM -". nal? lace the steering angle	h line. CUIT the steering angle sensor. Re sensor. Refer to <u>BRC-106, "E</u> ing angle sensor branch line.	efer to <u>BRC-83, "Wiring Dia-</u>
s the measurement value w YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an tram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? ring angle sensor branc Y AND GROUND CIRC d the ground circuit of <u>SYSTEM -"</u> . hal? lace the steering angle as detected in the steer	h line. CUIT the steering angle sensor. Re sensor. Refer to <u>BRC-106, "E</u> ing angle sensor branch line.	efer to <u>BRC-83, "Wiring Dia-</u>
s the measurement value w YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an tram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? ring angle sensor branc Y AND GROUND CIRC d the ground circuit of <u>SYSTEM -"</u> . hal? lace the steering angle as detected in the steer	h line. CUIT the steering angle sensor. Re sensor. Refer to <u>BRC-106, "E</u> ing angle sensor branch line.	efer to <u>BRC-83, "Wiring Dia-</u>

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

[CAN SYSTEM (TYPE 7)]

INFOID:000000001904329

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

IPDM-E 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 IPDM E/R for damand 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector IPDM E/R harness connector	
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 IPDM E/R for damand 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector IPDM E/R harness connector IPDM E/R harness connector	amage, bend and loose connection (unit ector terminals.
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for dan and connector side). 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 	ector terminals.
 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damand connector side). 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 	ector terminals.
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 IPDM E/R harness connector Connector No. Terminal No.	
Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector IPDM E/R harness connector Connector No. Terminal No.	
	Resistance (Ω)
E6 40	39 Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. F is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-34.</u> YES (Past error)>>Error was detected in the IPDM E/R branch li NO >> Repair the power supply and the ground circuit.	4. "Exploded View".

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6	Giouna	Not existed
10124	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.		
114	113	Approx. 108 – 132

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

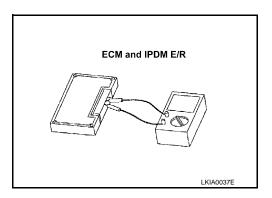
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



LAN-180

INFOID:000000001904332

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250411

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
10107	53	IVIIO	2	Existed

Without NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
NOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

iagnosis Proced	ure			INFOID:000000002979923
.CHECK CONNECT				
Turn the ignition sy Disconnect the bat Check the followir and harness side). Harness connecto Harness connecto the inspection result (ES >> GO TO 2. NO >> Repair the	vitch OFF. tery cable from the ne ig terminals and conn r M7 r B1	ectors for damage, b	end and loose conr	ection (connector side
Check the continui	ness connectors M7 a ty between the data li	nk connector and the		
Data link Connector No.	connector Terminal No.	Harness of Connector No.	Terminal No.	Continuity
Connector No.	6	Connector No.	23	Existed
M24	14	M7	24	Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be	main line between the CONTINUITY (OPEN etween the harness co	CIRCUIT)	and the harness con	
NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness co	CIRCUIT)		Continuity
YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be	CONTINUITY (OPEN etween the harness co 23 24	CIRCUIT)	and the harness conr 25 26	

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000002979924

[CAN SYSTEM (TYPE 8)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	nal No.	Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1017	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E106	7	E41	35	Existed
EIUO	6	- ⊏41	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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904289

[CAN SYSTEM (TYPE 8)]

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	nal No.	
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15</u>, "ADDITIONAL SERVICE WHEN REPLACING <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 8)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000001904292
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . s the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

Models with NAVI

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M87	52	53	Approx. 54 – 66

Models without NAVI

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

INFOID:000000001904293

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

Diagnosis Procedure			INFOID:00000000190429
1.CHECK CONNECTOR			
 Turn the ignition switch (Disconnect the battery c Check the terminals and connector side). Is the inspection result normality in the inspection result normality is the inspection result normality in the inspection result normality is the inspecting normality is the inspection	able from the negative I connectors of the BC	terminal. CM for damage, bend and loos	se connection (unit side and
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR			
 Disconnect the connector Check the resistance be 		ss connector terminals.	
	PCM barnass connecto	r	
Connector No	BCM harness connecto		Resistance (Ω)
Connector No. M122		r ierminal No. 90	- Resistance (Ω) Approx. 54 – 66
	91 thin the specification? branch line.	erminal No. 90	

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904295

[CAN SYSTEM (TYPE 8)]

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 F103
- Harness connector M116
- 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.	Termir	Resistance (Ω)	
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 control valve with TCM. Refer to TM-246, "Exploded View".
- 2. Disconnect the connector of TCM.
- 3. Check the continuity between the A/T assembly connector and TCM harness connector.

A/T assembly connector	TCM harnes	ess connector Continuity		
Terminal No.	Connector No.	Terminal No.	Continuity	
3	F151	1	Existed	
8	FIST	2	Existed	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the harness between the A/T assembly connector and the TCM harness connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-168</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-246, "Exploded View".

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

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 8)	
DLC BRANCH LINE	CIRCUIT			
iagnosis Procedure			INFOID:00000000190425	
.CHECK CONNECTOR				
 Turn the ignition switch OF Disconnect the battery cat Check the terminals and of (connector side and harned the inspection result normal YES >> GO TO 2. 	ble from the negative te connectors of the data ss side).		ge, bend and loose connectior	
NO >> Repair the termina	I and connector.			
CHECK HARNESS FOR O	PEN CIRCUIT			
Check the resistance between	the data link connector	terminals.		
	Data link connector		Resistance (Ω)	
Connector No.	Term	ninal No.		
M24	6	14	Approx. 54 – 66	
YES (Present error)>>Check YES (Past error)>>Error was	CAN system type decis detected in the data lin k connector branch line	k connector branch line c	sircuit.	
YES (Present error)>>Check YES (Past error)>>Error was	detected in the data lin	k connector branch line c	sircuit.	
YES (Present error)>>Check YES (Past error)>>Error was	detected in the data lin	k connector branch line c	sircuit.	
YES (Present error)>>Check YES (Past error)>>Error was	detected in the data lin	k connector branch line c	sircuit.	
s the measurement value with YES (Present error)>>Check YES (Past error)>>Error was NO >> Repair the data lin	detected in the data lin	k connector branch line c	sircuit.	

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Termi	Resistance (22)	
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

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

INFOID:000000001904298

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

Diagnosis Procedure			INFOID:000000001904299
.CHECK CONNECTOR			
	able from the negative termined a connectors of the steering a		e, bend and loose connection
the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor. Hetween the steering angle ser	nsor harness connector	terminals.
Stee	ering angle sensor harness connect	or	Resistance (Ω)
Connector No.	Terminal		
M37 the measurement value w	1	2	Approx. 54 – 66
CHECK POWER SUPPL	<u>SYSTEM -"</u> .		efer to <u>BRC-83, "Wiring Dia-</u>
'ES (Present error)>>Rep	lace the steering angle senso		
	as detected in the steering ar er supply and the ground circ		

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904301

[CAN SYSTEM (TYPE 8)]

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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the 4WAS main control unit branch line.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-135, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-179, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:000000001904302
.CHECK CONNECTOR			
 Check the terminals and and loose connection (u 	able from the negative terr I connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ontrol unit) for damage, bend
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR			
nals.			
ABS actuator a	and electric unit (control unit) harr	ness connector	
ABS actuator a Connector No.	and electric unit (control unit) harr Termir	ness connector nal No.	– Resistance (Ω)
	Termir 35		- Resistance (Ω) Approx. 54 – 66
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL	Termir 35 <u>ithin the specification?</u> actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> .	nal No. 14 control unit) branch line. -	
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS J.CHECK POWER SUPPLY Check the power supply and BRC-37. "Diagnosis Procedu s the inspection result norm YES (Present error)>>Repl View". YES (Past error)>>Error was	Termir 35 ithin the specification? actuator and electric unit (of Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . al? ace the ABS actuator and o	14 control unit) branch line. - ABS actuator and electri electric unit (control unit). I	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-103, "Exploded</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904304

[CAN SYSTEM (TYPE 8)]

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 IPDM E/R 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 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	Resistance (12)	
E6	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000001904305 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-197

< DTC/CIRCUIT DIAGNOSIS >

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 system. **NOTE:**

ECM and IPDM E/R 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.

DTC/CIRCUIT DIAG		IWEEN AV AND		I SYSTEM (TYPE 9)]
DTC/CIRCUI	T DIAGNO	SIS		
IAIN LINE BET	WEEN AV AND	D DLC CIRCUI	Г	
iagnosis Procedu	ire			INFOID:000000005250410
.CHECK CONNECTO	DR			
Check the following and harness side). Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the follo AV control unit Harness connector	ery cable from the ne g terminals and conr M18 M17 hormal? terminal and connect CONTINUITY (OPEN owing harness connect s M18 and M17	or. I CIRCUIT)		ection (connector side
AV control unit ha	rness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M10	1	Existed
10107	53	M18	2	Existed
Without NAVI				
AV control unit ha	rness connector	Harness of	connector	.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
1000	87	WITO	2	Existed
CHECK HARNESS	main line between the CONTINUITY (OPEN tween the harness co	e AV control unit and t I CIRCUIT) onnector and the data Data link o	link connector.	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	1		6	Existed
M17	2	M24	14	Existed
the inspection result /ES (Present error)>> /ES (Past error)>>Err tor.	normal? Check CAN system t			d the data link connec-

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000001904260

[CAN SYSTEM (TYPE 9)]

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 M7
- Harness connector B1

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 M7 and B1.

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
M24	6	M7	23	Existed
11/124	14	1017	24	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	23 25		Existed
DI	24	26	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 connector B1 and the driver seat control unit.

IAIN LINE BET	WEEN ADP A	ND ABS C	IRCUIT		
iagnosis Procec	ure				INFOID:000000001904261
.CHECK CONNECT	OR				
Check the followin and harness side) Harness connector Harness connector Harness connector Harness connector The inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	ttery cable from the r ng terminals and cor r B1 r M7 r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPE rness connectors B1	nectors for dan ctor. N CIRCUIT) and M7.	hage, bend and lo	oose connec	ction (connector side
	ity between the harne	ess connector te			Continuity
Connector No.	23	Terminal No	25		Continuity Existed
B1	24		26		Existed
CHECK HARNESS	e main line between th CONTINUITY (OPE rness connectors M6 ity between the harne	N CIRCUIT)	ntrol unit and the	harness cor	nnector B1.
Harness	connector	H	arness connector		Continuity
Connector No.	Terminal No.	Connector N	o. Termin	al No.	Continuity
M7	25	M6	7		Existed
the inspection resul	26		6		Existed
CHECK HARNESS Disconnect the co Check the continu harness connecto	e main line between th CONTINUITY (OPE nnector of ABS actua ity between the harn r.	N CIRCUIT) ator and electric ess connector a ABS actuator	unit (control unit). nd the ABS actua and electric unit (cont	tor and elec	tric unit (control unit)
Harness	CONTRECTOR		arness connector		Continuity
Connector No.	Terminal No.	Connector N	o. Termin	al No.	

Is the inspection result normal?

E106

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

7

6

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

E41

35

14

Existed

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			
			INFOID:000000001904262
.CHECK CONNECTOR			
connector side).	le from the negative te connectors of the ECM	rminal. I for damage, bend and loos	e connection (unit side and
<u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the termina CHECK HARNESS FOR OI	l and connector.		
 Disconnect the connector of Check the resistance betw 	een the ECM harness	connector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.		ninal No.	· · ·
M107			
-	114	113	Approx. 108 – 132
S the measurement value with YES >> GO TO 3. NO >> Repair the ECM br CHECK POWER SUPPLY A	in the specification? anch line.		Approx. 108 – 132
s the measurement value with YES >> GO TO 3. NO >> Repair the ECM br	in the specification? anch line. AND GROUND CIRCU a ground circuit of the	IT	
s the measurement value with YES >> GO TO 3. NO >> Repair the ECM br CHECK POWER SUPPLY A Check the power supply and the s the inspection result normal? YES (Present error)>>Replac <u>CONTROL UNIT :</u> YES (Past error)>>Error was	in the specification? anch line. AND GROUND CIRCU the ground circuit of the content of the ECM. Refer to Special Repair Require	IT ECM. Refer to <u>EC-133, "Dia</u> <u>EC-15, "ADDITIONAL SEF</u> ement". ranch line.	gnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the ECM br CHECK POWER SUPPLY A Check the power supply and the s the inspection result normal? YES (Present error)>>Replac <u>CONTROL UNIT :</u> YES (Past error)>>Error was	in the specification? ranch line. AND GROUND CIRCU re ground circuit of the ce the ECM. Refer to <u>Special Repair Require</u> detected in the ECM b	IT ECM. Refer to <u>EC-133, "Dia</u> <u>EC-15, "ADDITIONAL SEF</u> ement". ranch line.	gnosis Procedure".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904265

[CAN SYSTEM (TYPE 9)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:000000001904266
.CHECK CONNECTOR			
 Check the terminals and side and connector side side and connector side side inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR Disconnect the connector 	able from the negative terr I connectors of the AV cor al? nal and connector. OPEN CIRCUIT	ntrol unit for damage, ben	nd and loose connection (unit
	W control unit harness connecto	r	
Connector No.	Termir	nal No.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
Connector No.	V control unit harness connecto Termir		Resistance (Ω)
M85	86	87	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the AV co CHECK POWER SUPPL heck the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigatio	the ground circuit of the A tion: <u>AV-39, "AV CONTRO</u> ation: <u>AV-164, "AV CONTR</u>	V control unit. Refer to the UNIT : Diagnosis Proce OL UNIT : Diagnosis Proc	dure" cedure"
 BOSE audio w BOSE audio w YES (Past error)>>Error was 	ace the AV control unit. Re hout navigation: <u>AV-113, "</u> ithout navigation: <u>AV-322,</u> ith navigation: <u>AV-603, "Ex</u> as detected in the AV contr	Exploded View" "Exploded View" «ploded View" ol unit branch line.	
NO >> Repair the powe	r supply and the ground ci	rcuit.	

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904267

[CAN SYSTEM (TYPE 9)]

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 (Ω)
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure 1.check connector			
			INFOID:000000001904268
	cable from the negative term ninals and connectors for da 3		onnection (unit side and con-
Is the inspection result norm			
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of A/T assembly. etween the A/T assembly ha	rness connector terminals	5.
	A/T assembly harness connector		Resistance (Ω)
Connector No.	Termin		
F51	3	8	Approx. 54 – 66
NO >> Repair the TCM			
 CHECK HARNESS FOR Remove the control value Disconnect the connect 	OPEN CIRCUIT /e with TCM. Refer to <u>TM-24</u>		connector.
 CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be 	OPEN CIRCUIT /e with TCM. Refer to <u>TM-24</u> or of TCM.	nnector and TCM harness	
 CHECK HARNESS FOR Remove the control value Disconnect the connect 	OPEN CIRCUIT ve with TCM. Refer to <u>TM-24</u> or of TCM. tween the A/T assembly cor	nnector and TCM harness	connector.
 3.CHECK HARNESS FOR 1. Remove the control value 2. Disconnect the connect 3. Check the continuity be 	OPEN CIRCUIT ve with TCM. Refer to <u>TM-24</u> or of TCM. tween the A/T assembly cor TCM harness Connector No. F151	nnector and TCM harness	

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904270

[CAN SYSTEM (TYPE 9)]

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		
Connector No.	Terminal No.		Resistance (Ω)
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:000000001904271
1.CHECK CONNECTOR			
	able from the negative term connectors of the unified i		amage, bend and loose con-
<u>s the inspection result norm</u> YES >> GO TO 2.	al?		
NO >> Repair the termi			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of unified meter and A/C tween the unified meter an		ector terminals.
	meter and A/C amp. harness con		Resistance (Ω)
Connector No.	Termin		
M67 s the measurement value w	56	72	Approx. 54 – 66
3. CHECK POWER SUPPL	I the ground circuit of the ur		. Refer to <u>MWI-50, "UNIFIED</u>
s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	al? ace the unified meter and A	eter and A/C amp. brancl	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904272

[CAN SYSTEM (TYPE 9)]

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.	Terminal No.		Resistance (Ω)
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:000000001904273
.CHECK CONNECTOR			
	cable from the negative termin minals and connectors for dar 60		nnection (unit side and con-
s the inspection result norn			
YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
	or of driver seat control unit. etween the driver seat control	unit harness connector t	erminals.
	ver seat control unit harness connect	or	Resistance (Ω)
Connector No.	Terminal	No.	
B451	3	19	Approx. 54 – 66
CHECK POWER SUPPI Check the power supply and CONTROL UNIT : Diagnos	er seat control unit branch line Y AND GROUND CIRCUIT d the ground circuit of the drive s Procedure".		to <u>ADP-67, "DRIVER SEAT</u>
YES (Past error)>>Error w	nar: place the driver seat control ur as detected in the driver seat er supply and the ground circu	control unit branch line.	<u>kploded View"</u> .

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</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.

[CAN SYSTEM (TYPE 9)]

INFOID:000000001904275

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

IPDM-E BRANCH LINE CIRCUIT Diagnosis Procedure Interview of the second of th
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 IPDM E/R for damage, bend and loose connection (unit sid 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. Impose the resistance between the IPDM E/R harness connector terminals. Impose the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit sid 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit sid 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 IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
YES >> GO TO 2. NO 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. Terminal No. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
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) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
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. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
Connector No. Terminal No. Resistance (Ω) E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
Connector No. Terminal No. E6 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.
Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u> . Is the inspection result normal?
YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-34, "Exploded View"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 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
M24	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
 M24	6	Ground	Not existed
IVIZ4	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)
		Resistance (12)
114	113	Approx. 108 – 132

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

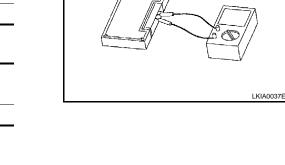
IPDN	/I E/R	Resistance (Ω)	
Terminal No.		Resistance (22)	
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



ECM and IPDM E/R

LAN-214

INFOID:000000001904278

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250409

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87 -	52	M18	1	Existed
	53		2	Existed

Without NAVI

AV control unit harness connector Harness connector		connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
MOS	87		2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

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
M17	1	M24	6	Existed
	2	11/24	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

< DTC/CIRCUIT DIA	-INCISIS S			SYSTEM (TYPE 10)]
MAIN LINE BET		ND ADP CIRC	-	
Diagnosis Proced	ure			INFOID:000000001904233
.CHECK CONNECT				
Check the followir and harness side) Harness connecto Harness connecto sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha	ttery cable from the ne ng terminals and coni r M7 r B1	nectors for damage, tor. N CIRCUIT) and B1.	bend and loose conn	ection (connector side
	-			
Connector No.	connector Terminal No.	Connector No.	s connector Terminal No.	Continuity
	6		23	Existed
M24	14	M7	24	Existed
NO >> Repair the CHECK HARNESS heck the continuity b	CONTINUITY (OPEN	N CIRCUIT) onnector terminals.	r and the harness conr	
NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness c	N CIRCUIT)		Continuity
NO >> Repair the CHECK HARNESS Check the continuity b	CONTINUITY (OPEN etween the harness co 23 24	N CIRCUIT) onnector terminals.	r and the harness conr 25 26	

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904234

[CAN SYSTEM (TYPE 10)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	25	M6	7	Existed	
1717	26		6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E 41	35	Existed
E100	6	E41	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904235

[CAN SYSTEM (TYPE 10)]

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.	Terminal No.		
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis Procedure** INFOID:000000001904238 1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT В Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? С YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. D Ε F Н J Κ L LAN Ν Ο Ρ

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904239

[CAN SYSTEM (TYPE 10)]

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

Models with NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66		Resistance (Ω)	
M87 52 53 Approx. 54 – 66	Connector No.	Termi	
	M87	52	Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnacia Dracadura			
Diagnosis Procedure			INFOID:000000001904240
1.CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cat Check the terminals and connector side). <u>s the inspection result normal</u> YES >> GO TO 2. NO >> Repair the terminal CHECK HARNESS FOR OF 	ble from the negative term connectors of the BCM fo 2 1 and connector.		se connection (unit side and
1. Disconnect the connector	of BCM.		
	een the BCM harness con BCM harness connector	nnector terminals.	
			- Resistance (Ω)
2. Check the resistance betw Connector No. M122	BCM harness connector Termina 91		Resistance (Ω) Approx. 54 – 66
2. Check the resistance betw Connector No.	BCM harness connector Termina 91 in the specification? ranch line. AND GROUND CIRCUIT he ground circuit of the BC c e the BCM. Refer to BCS	90 90 2M. Refer to <u>BCS-38, "Di</u> -80, "Exploded View".	Approx. 54 – 66

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904241

[CAN SYSTEM (TYPE 10)]

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 F103
- Harness connector M116

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 control valve with TCM. Refer to <u>TM-246, "Exploded View"</u>.
- 2. Disconnect the connector of TCM.
- 3. Check the continuity between the A/T assembly connector and TCM harness connector.

A/T assembly connector	TCM harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
3	F151	1	Existed
8	FIST	2	Existed

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the harness between the A/T assembly connector and the TCM harness connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-168</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-246, "Exploded View".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 10)]
DLC BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000001904243
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the terminals and conductor side and harness <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and solutions 	from the negative tern nnectors of the data lin side).		e, bend and loose connection
2. CHECK HARNESS FOR OPE			
Check the resistance between th		erminals.	
	Data link connector		
Connector No.	Termin	al No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
s the measurement value within YES (Present error)>>Check C YES (Past error)>>Error was de NO >> Repair the data link o	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.
YES (Present error)>>Check C YES (Past error)>>Error was de	AN system type decision etected in the data link	on again. connector branch line ci	rcuit.

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904244

[CAN SYSTEM (TYPE 10)]

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 unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	Resistance (Ω)		
Connector No.	Termi		
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 10)]
STRG BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000001904245
1. CHECK CONNECTOR			
(unit side and connector <u>Is the inspection result norm</u> YES >> GO TO 2.	able from the negative connectors of the stee side). al?		ge, bend and loose connection
NO >> Repair the term			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 		nsor. Jle sensor harness connecto	r terminals.
Stee	ering angle sensor harness c	connector	Besistance (0)
Connector No.	Ţ	erminal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPL	ing angle sensor branc Y AND GROUND CIRC	TIUT	Pofor to RPC 83 "Wiring Dia
gram - BRAKE CONTROL S	<u>SYSTEM -"</u> .	the steering angle sensor. I	Refer to <u>BRC-83, "Wiring Dia-</u>
YES (Past error)>>Error wa	ace the steering angle	sensor. Refer to <u>BRC-106, "</u> ing angle sensor branch line d circuit.	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904246

[CAN SYSTEM (TYPE 10)]

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 B11

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 driver seat control unit.

2. 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.	1(63)3(8)106 (32)
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.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-225, "Exploded View"</u>.

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

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:000000001904247
1.CHECK CONNECTOR			
	able from the negative term d connectors of the 4WAS m		age, bend and loose connec-
the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR			
	or of 4WAS main control uni tween the 4WAS main control		r terminals.
4WA	S main control unit harness conne	ctor	Resistance (Ω)
Connector No.	Termina		
B54 s the measurement value w	1	8	Approx. 54 – 66
CHECK POWER SUPPL			efer to <u>STC-135, "Diagnosis</u>
YES (Past error)>>Error wa	<u>al?</u> ace the 4WAS main control as detected in the 4WAS ma	in control unit branch line	
NO >> Repair the powe	er supply and the ground circ	cuit.	
NO >> Repair the powe		cuit.	
NO >> Repair the powe		cuit.	
NO >> Repair the powe		cuit.	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904248

[CAN SYSTEM (TYPE 10)]

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	and electric unit (control unit) har	ness connector	Resistance (Ω)
Connector No.	Termi	nal No.	
E41	35	14	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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View</u>".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS > IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000001904250 **1.**CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side 3. С and connector side). Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT Е 1. 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) Connector No. Terminal No. F6 40 39 Approx. 108 - 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. Н ${ m 3.}$ Check power supply and ground circuit Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-19, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Exploded View". YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit. Κ

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000001904251

[CAN SYSTEM (TYPE 10)]

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 system.
- 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.	Termi	nal No.	Continuity
M24	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
 M24	6	Ground	Not existed
10124	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	СМ	Resistance (Ω)
Termi	nal No.	
114	113	Approx. 108 – 132

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

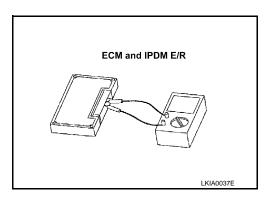
IPDN	/I E/R	Resistance (Ω)
Termi	nal No.	
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



LAN-232

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250408

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
IVIO7	53	IVITO	2	Existed

Without NAVI

AV control unit h	narness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
MOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

CAN SYSTEM (TYPE 1' MAIN LINE BETWEEN DLC AND ADP CIRCUIT Diagnosis Procedure Instruction 1. CHECK CONNECTOR Instruction 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (connector si and harness side). Harness connector M7 Harness connector B1 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 M7 and B1. 2. Check the continuity between the data link connector and the harness connector. Image: Data link connector No. Terminal No.
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 si and harness side). - Harness connector M7 - Harness connector B1 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 M7 and B1. 2. Check the continuity between the data link connector and the harness 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 (connector si and harness side). Harness connector M7 Harness connector B1 <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M7 and B1. Check the continuity between the data link connector and the harness connector.
 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (connector si and harness side). Harness connector M7 Harness connector B1 <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the harness connectors M7 and B1. 2. Check the continuity between the data link connector and the harness connector.
Data link connector Harness connector Continuity
Continuity
6 23 Existed
M24 M7 24 Existed
YES >> GO TO 3. NO >> Repair the main line between the data link connector and the harness connector M7. S.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Check the continuity between the harness connector terminals. Connector No. Terminal No. Continuity
23 25 Existed
B1 24 26 Existed

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904207

[CAN SYSTEM (TYPE 11)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E106	7	E41	35	Existed
EIUO	6	- ⊏41	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904208

[CAN SYSTEM (TYPE 11)]

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.	Terminal No.		Resistance (Ω)
M107	114	113	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 EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

PSB BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR			
3. Check the terminals an connection (unit side an	cable from the negative tern d connectors of the pre-cr d connector side).	minal. ash seat belt control unit fo	or damage, bend and loose
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the term	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of pre-crash seat belt co etween the pre-crash seat b	ntrol unit. pelt control unit harness cor	nector terminals.
	h seat belt control unit harness c	onnector	Resistance (Ω)
Connector No.		nal No.	
M110	24	nal No. 22	Approx. 54 – 66
M110 Is the measurement value w YES >> GO TO 3. NO >> Repair the pre-or 3. CHECK POWER SUPPL Check the power supply and • Power supply: <u>SBC-25, "C</u> • Ground circuit: <u>SBC-26, "C</u> Is the inspection result norm YES (Present error)>>Rep	24 ithin the specification? crash seat belt control unit I Y AND GROUND CIRCUIT I the ground circuit of the proponent Function Check Component Function Check	22 branch line. Γ re-crash seat belt control ur <u>"</u> t control unit. Refer to <u>SBC</u> -	Approx. 54 – 66 hit. Refer to the following.
M110 Is the measurement value w YES >> GO TO 3. NO >> Repair the pre-c 3. CHECK POWER SUPPL Check the power supply and • Power supply: <u>SBC-25</u> , "C • Ground circuit: <u>SBC-26</u> , "C Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	24 ithin the specification? crash seat belt control unit I Y AND GROUND CIRCUIT I the ground circuit of the proponent Function Check Component Function Check	22 branch line. Γ re-crash seat belt control ur ζ t control unit. Refer to <u>SBC-</u> h seat belt control unit bran	Approx. 54 – 66 hit. Refer to the following.
M110 Is the measurement value w YES >> GO TO 3. NO >> Repair the pre-co 3.CHECK POWER SUPPL Check the power supply and • Power supply: <u>SBC-25</u> , "C • Ground circuit: <u>SBC-26</u> , "C Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	24 ithin the specification? crash seat belt control unit I Y AND GROUND CIRCUIT I the ground circuit of the p component Function Check Component Function Check al? lace the pre-crash seat bel as detected in the pre-cras	22 branch line. Γ re-crash seat belt control ur ζ t control unit. Refer to <u>SBC-</u> h seat belt control unit bran	Approx. 54 – 66 hit. Refer to the following.

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904211

[CAN SYSTEM (TYPE 11)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000001904212
1. CHECK CONNECTOR			
	cable from the negative terr d connectors of the AV cor). al? inal and connector.		I and loose connection (unit
 Disconnect the connect Check the resistance be Models with NAVI 	or of AV control unit. Stween the AV control unit h	narness connector terminal	S.
	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termir	nal No.	
M87	52	53	Approx. 54 – 66
- Models without NAVI	AV control unit harness connecto	r nal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigation Is the inspection result norm YES (Present error)>>Repl Base audio wi BOSE audio vi BOSE audio vi BOSE audio vi BOSE audio vi	ontrol unit branch line. Y AND GROUND CIRCUIT I the ground circuit of the A tion: <u>AV-39, "AV CONTROL</u> ation: <u>AV-164, "AV CONTROL</u> on: <u>AV-414, "AV CONTROL</u> al? lace the AV control unit. Re thout navigation: <u>AV-113, "I</u> vithout navigation: <u>AV-322, vith navigation</u> : <u>AV-603, "Ev</u>	V control unit. Refer to the <u>L UNIT : Diagnosis Proced</u> OL UNIT : Diagnosis Proced UNIT : Diagnosis Procedu fer to the following. Exploded View" "Exploded View" ol unit branch line.	ure" edure"

< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904213

[CAN SYSTEM (TYPE 11)]

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 (Ω)
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

iagnosis Procedure			INFOID:000000001904214
.CHECK CONNECTOR			
	cable from the negative term ninals and connectors for da 3 6 <u>al?</u> nal and connector. OPEN CIRCUIT		onnection (unit side and con-
	tween the A/T assembly ha	rness connector terminals	3.
	A/T assembly harness connector		Resistance (Ω)
Connector No.	Termina	al No.	
YES >> GO TO 3. NO >> Repair the TCM	branch line.	8	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR . Remove the control valve . Disconnect the connected	ithin the specification? branch line. OPEN CIRCUIT /e with TCM. Refer to <u>TM-24</u>	46, "Exploded View".	
s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value. Disconnect the connected	ithin the specification? branch line. OPEN CIRCUIT re with TCM. Refer to <u>TM-24</u> or of TCM.	<u>46, "Exploded View"</u> . nnector and TCM harness	connector.
s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connected Check the continuity bet	ithin the specification? branch line. OPEN CIRCUIT re with TCM. Refer to <u>TM-24</u> or of TCM. ween the A/T assembly cor	<u>46, "Exploded View"</u> . nnector and TCM harness	
a the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control valve Disconnect the connected Check the continuity bet A/T assembly connector	ithin the specification? branch line. OPEN CIRCUIT re with TCM. Refer to <u>TM-24</u> or of TCM. ween the A/T assembly cor TCM harness Connector No.	<u>46, "Exploded View"</u> . nnector and TCM harness	connector.
s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control valv Disconnect the connector Check the continuity bet A/T assembly connector Terminal No.	ithin the specification? branch line. OPEN CIRCUIT re with TCM. Refer to TM-22 or of TCM. ween the A/T assembly cor TCM harness Connector No. F151	46, "Exploded View". Innector and TCM harness is connector Terminal No.	connector.

< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904215

[CAN SYSTEM (TYPE 11)]

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.

ŀ	AFS control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-61, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-196, "Exploded View".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

DLC BRANCH LINE	S >	ĮC	AN SYSTEM (TYPE 11)]
JLC BRAINCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000000190421
.CHECK CONNECTOR			
	able from the negative termi connectors of the data link		pend and loose connection
the inspection result norma	-		
YES >> GO TO 2. NO >> Repair the termin			
CHECK HARNESS FOR (
Check the resistance between		minals	
	Data link connector		Resistance (Ω)
Connector No. M24	Terminal 6	1 NO. 14	Approx. 54 – 66
the measurement value wit	hin the encoification?		

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904217

[CAN SYSTEM (TYPE 11)]

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 unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	Unified meter and A/C amp. harness connector		
Connector No.	Termi	Resistance (Ω)	
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:000000001904218
1.CHECK CONNECTOR			
3. Check the terminals and (unit side and connector	cable from the negative terr d connectors of the steering r side).		ge, bend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
	or of steering angle sensor. etween the steering angle s		or terminals.
Stee	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
M37	1	2	Approx. 54 – 66
3. CHECK POWER SUPPL	d the ground circuit of the	-	Refer to <u>BRC-83, "Wiring Dia-</u>
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	nal?	angle sensor branch line	
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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904219

[CAN SYSTEM (TYPE 11)]

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 B11

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 driver seat control unit.

2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.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-225, "Exploded View"</u>.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

			INFOID:00000000190422
1.CHECK CONNECTOR			
3. Check the terminals and	able from the negative termina connectors of the ABS actuat hit side and connector side).		control unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termin CHECK HARNESS FOR	nal and connector.		
 Check the resistance be nals. 	or of ABS actuator and electric tween the ABS actuator and e	electric unit (control u	nit) harness connector termi-
ABS actuator a	nd electric unit (control unit) harness	connector	Resistance (Ω)
Connector No.	Terminal N	Э.	
E41	35	14	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the ABS a 3. CHECK POWER SUPPLY	actuator and electric unit (cont (AND GROUND CIRCUIT	rol unit) branch line.	
<u>3RC-37. "Diagnosis Procedu</u> s the inspection result norm			

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< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904222

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ICC sensor integrated 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 ICC sensor integrated unit.
- 2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-82, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-112, "Exploded View".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:00000000190422
1.CHECK CONNECTOR			
 Turn the ignition switch (Disconnect the battery c 	OFF. able from the negative term d connectors of the IPDM E		loose connection (unit side
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connector		ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termina		
E6 Is the measurement value w	40	al No. 39	Approx. 108 – 132
E6 Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm	40 ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IP al?	39 DM E/R. Refer to <u>PCS-19</u>	Approx. 108 – 132
E6 Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	40 ithin the specification? 1 E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IP al? ace the IPDM E/R. Refer to	39 DM E/R. Refer to <u>PCS-19</u> D <u>PCS-34. "Exploded View</u> R branch line.	Approx. 108 – 132

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000001904224

[CAN SYSTEM (TYPE 11)]

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 system.
- 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
M24	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
M24	6	Ground	Not existed
IVIZ4	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.		
114	113	Approx. 108 – 132	

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

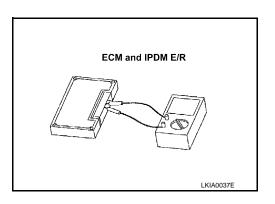
IPDI	/I E/R	Resistance (Ω)
Termi	nal No.	
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250407

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
10107	53	IVIIO	2	Existed

Without NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
NOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
1117	2	11/24	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 AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

	GNOSIS >			SYSTEM (TYPE 12)]
MAIN LINE BET	WEEN DLC A	ND ADP CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000001904179
	OR			
 Check the followir and harness side) Harness connecto Harness connecto sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	ttery cable from the ne ng terminals and conn r M7 r B1 normal? terminal and connect CONTINUITY (OPEN rness connectors M7	nectors for damage, k tor. N CIRCUIT)		ection (connector side
	-			
Connector No.	connector Terminal No.	Connector No.	connector Terminal No.	Continuity
	6		23	Existed
M24	14	M7	24	Existed
s the inspection result		e data link connector	and the harness conn	ector M7.
NO >> Repair the CHECK HARNESS Check the continuity b		N CIRCUIT)		
NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness co	N CIRCUIT)		Continuity
NO >> Repair the 3.CHECK HARNESS Check the continuity b	CONTINUITY (OPEN	N CIRCUIT)	25 26	

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904180

[CAN SYSTEM (TYPE 12)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termi	nal No.	Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

${ m 3.check}$ harness continuity (open circuit)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
E100	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904181

[CAN SYSTEM (TYPE 12)]

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	nal No.	
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

PSB BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000001904182
1. CHECK CONNECTOR			
	able from the negative terr d connectors of the pre-cra d connector side). <u>al?</u> nal and connector.		or damage, bend and loose
. Disconnect the connector. Check the resistance be	or of pre-crash seat belt co tween the pre-crash seat b h seat belt control unit harness c	elt control unit harness co	nnector terminals.
Connector No.	Termir		Resistance (Ω)
M110	24	22	Approx. 54 – 66
B. CHECK POWER SUPPL Check the power supply and Power supply: <u>SBC-25, "C</u> Ground circuit: <u>SBC-26, "C</u>	the ground circuit of the pomponent Function Check	- re-crash seat belt control ι -	init. Refer to the following.
Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the pre-crash seat belt	n seat belt control unit brai	

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904184

[CAN SYSTEM (TYPE 12)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:000000001904185
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the AV cor). <u>al?</u> nal and connector.		d and loose connection (unit
 Disconnect the connect Check the resistance be Models with NAVI 	or of AV control unit. tween the AV control unit h	arness connector termina	ls.
	AV control unit harness connector		Begistange (0)
Connector No.	Termir	al No.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
Connector No.	AV control unit harness connector Termir		- Resistance (Ω)
	86	87	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigation s the inspection result norm YES (Present error)>>Repl Base audio wi BOSE audio wi BOSE audio wi BOSE audio wi YES (Past error)>>Error wa	ontrol unit branch line. Y AND GROUND CIRCUIT the ground circuit of the A tion: <u>AV-39, "AV CONTROL</u> ation: <u>AV-164, "AV CONTROL</u> ation: <u>AV-414, "AV CONTROL</u> al? ace the AV control unit. Re thout navigation: <u>AV-113, "I</u> vithout navigation: <u>AV-603, "Ex</u>	V control unit. Refer to the <u>UNIT : Diagnosis Proced</u> OL UNIT : Diagnosis Proced UNIT : Diagnosis Procedu fer to the following. <u>Exploded View"</u> <u>"Exploded View"</u> ploded View" ol unit branch line.	ure" edure"
NO >> Repair the powe	and the ground Cl	cuit.	

< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904186

[CAN SYSTEM (TYPE 12)]

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		Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:000000001904187
.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 3 6 <u>nal?</u> inal and connector.		nnection (unit side and con-
Disconnect the connectCheck the resistance be	etween the A/T assembly h	arness connector terminals	
	A/T assembly harness connector		Resistance (Ω)
Connector No. F51	lermii 3	nal No.	Anna 54 00
the measurement value w YES >> GO TO 3.	ithin the specification?	8	Approx. 54 – 66
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect	vithin the specification? I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM.	246, "Exploded View".	
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be	vithin the specification? I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co	246, "Exploded View".	
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect	vithin the specification? I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co	246, "Exploded View".	
a the measurement value were were were were were were were we	vithin the specification? I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co TCM harnes Connector No.	246, "Exploded View". Innector and TCM harness	connector.
s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR . Remove the control value. Disconnect the connect. . Check the continuity be A/T assembly connector Terminal No.	vithin the specification? I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co <u>TCM harnes</u> Connector No. F151	246, "Exploded View". onnector and TCM harness ss connector Terminal No.	connector. Continuity

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904188

[CAN SYSTEM (TYPE 12)]

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.

ŀ	AFS control unit harness connector			
Connector No.	Terminal No.		Resistance (Ω)	
M16	30	7	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-61, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-196, "Exploded View".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

connection
connectior
connectior
(Ω)
- 66

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904190

[CAN SYSTEM (TYPE 12)]

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 unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	d meter and A/C amp. harness co	Resistance (Ω)	
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >	[C	CAN SYSTEM (TYPE 12)]
STRG BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000001904191
1.CHECK CONNECTOR			
	cable from the negative ter d connectors of the steerin r side). <u>nal?</u> inal and connector.	minal. g angle sensor for damage,	bend and loose connection
 Disconnect the connect Check the resistance be 	or of steering angle senso etween the steering angle	sensor harness connector te	erminals.
Connector No.	ering angle sensor harness conn	inal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
3. CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S	ring angle sensor branch li Y AND GROUND CIRCUI Id the ground circuit of the SYSTEM -".	Т	er to <u>BRC-83, "Wiring Dia-</u>
YES (Past error)>>Error wa	lace the steering angle se		<u>ploded View"</u> .

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904192

[CAN SYSTEM (TYPE 12)]

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 B11

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 driver seat control unit.

2. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.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-225, "Exploded View"</u>.

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

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:000000001904193
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the 4WAS n		ge, bend and loose connec-
the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
. Disconnect the connect	or of 4WAS main control uni		r terminals
	S main control unit harness conne		Resistance (Ω)
Connector No.	Termina	al No.	
B54 the measurement value w	1	8	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and rocedure (4WAS Main Cor	<u>ntrol Unit)"</u> .		efer to <u>STC-135, "Diagnosis</u>
YES (Past error)>>Error w	lace the 4WAS main control as detected in the 4WAS ma er supply and the ground cire	ain control unit branch line	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904194

[CAN SYSTEM (TYPE 12)]

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.		Resistance (12)
E41	35	14	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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

ICC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000001904195
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the ICC se onnector side). al? nal and connector.		mage, bend and loose con-
	or of ICC sensor integrated etween the ICC sensor integrated	d unit. grated unit harness connec	tor terminals.
· · · · · · · · · · · · · · · · · · ·	ensor integrated unit harness con		Resistance (Ω)
Connector No. E67	Iermir 3	nal No. 6	Approx. 54 – 66
			Refer to <u>CCS-82, "Diagnosis</u>
Procedure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	lace the ICC sensor integra	sor integrated unit branch li	

< DTC/CIRCUIT DIAGNOSIS >

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904196

[CAN SYSTEM (TYPE 12)]

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 IPDM E/R 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 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)	
E6	40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 12)]

	TION CIRCUIT		
Diagnosis Procedure			INFOID:000000001904197
CONNECTOR INSPECT	ION		
 Disconnect all the unit c Check terminals and co 	able from the negative term onnectors on CAN commun nnectors for damage, benc	inication system.	
<u>s the inspection result norm</u> YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	n the data link connector to	erminals.	
	Data link connector		
Connector No.		nal No.	Continuity
M24	6	14	Not existed
NO >> Check the harne CHECK HARNESS CON Check the continuity betwee		T)	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground Continuity	
M24	6		Not existed
s the inspection result norm	14		Not existed
YES >> GO TO 4. NO >> Check the harne CHECK ECM AND IPDM Remove the ECM and the	ess and repair the root cau E/R TERMINATION CIRC	UIT	
ECM	Desistance (ECM and IPDM E/R
Terminal No.	Resistance (2)	
	3 Approx. 108 – 1	//	
 Check the resistance be 	tween the IPDM E/R termi	nals.	
IPDM E/R	Resistance (2)	_
	Tresistance (2		LKIA0037E
Terminal No.			
40 3	9 Approx. 108 – 7	132	
40 3 s the measurement value w YES >> GO TO 5.		132	

< DTC/CIRCUIT DIAGNOSIS >

LAN-273

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 system. **NOTE:**

ECM and IPDM E/R 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.

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 and harness side). Harness connector M18 Harness connector M17 Is the inspection result normal? YES YES 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the following harness connectors. AV control unit Harness connectors M18 and M17 2. Check the continuity between the AV control unit harness connector and the harness connector. With NAVI AV control unit harness connector No. Terminal No. Continuity Connector No. Terminal No. M87 52 M18 1 Existed Without NAVI AV control unit harness connector M87 52 M18 1 Existed Without NAVI AV control unit harness connector No. Terminal No. Connector No. Terminal No. M87 52 M18 Witho	DTC/CIRCUIT DIAG		IWEEN AV AND		SYSTEM (TYPE 13)
Diagnosis Procedure Average excession I. CHECK CONNECTOR Image excession I. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. S. Check the following terminals and connectors for damage, bend and loose connection (connector and harness side). Harness connector M18 Harness connector M17 s the inspection result normal? YES > GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the following harness connectors. AV control unit Harness connectors M18 and M17 C. Check the continuity between the AV control unit harness connector and the harness connector. With NAVI AV control unit harness connector Harness connector No. AV control unit harness connector Harness connector M87 52 M18 1 Existed Without NAVI Image and the means connector No. Terminal No. Continuity M85 86 M18 1 Existed 816 M18 1 Existed Sthe inspection result normal? YES > GO TO 3. NO </td <td>TC/CIRCU</td> <td>IT DIAGNO</td> <td>SIS</td> <td></td> <td></td>	TC/CIRCU	IT DIAGNO	SIS		
•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 (connector and harness side). Harness connector M18 Harness connector M17 athe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. • CHECK HARNESS CONTINUITY (OPEN CIRCUIT) • Disconnect the following harness connectors. AV control unit Harness connectors M18 and M17 • Check the continuity between the AV control unit harness connector and the harness connector. With NAVI AV control unit harness connector Harness connector AV control unit harness connector Terminal No. Connector No. Terminal No. Continuity Vonnector No. Terminal No. Continuity M87 52 M18 1 Existed Without NAVI Imma No. Connector No. Terminal No. Continuity M87 52 M18 1 Existed M85 86 M18 2 Existed <td>AIN LINE BET</td> <td>WEEN AV AND</td> <td>D DLC CIRCUI</td> <td>Г</td> <td></td>	AIN LINE BET	WEEN AV AND	D DLC CIRCUI	Г	
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 (connector and harness side). Harness connector M18 Harness connector M17 Sthe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the following harness connectors. AV control unit Harness connectors M18 and M17 Check the continuity between the AV control unit harness connector and the harness connector. With NAVI AV control unit harness connector Harness connector No. AV control unit harness connector Continuity Connector No. Terminal No. Continuity M87 52 M18 1 Existed Without NAVI AV control unit harness connector Continuity Continuity M87 53 M18 1 Existed M85 86 M18 1 Existed M85 86 M18 2 Existed 816 M18	iagnosis Proced	ure			INFOID:0000000052504
2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (connector and harness side). Harness connector M18 Harness connector M17 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the following harness connectors. AV control unit Harness connector M17 tharness connector M18 and M17 Check the continuity between the AV control unit harness connector and the harness connector. With NAVI AV control unit harness connector AV control unit harness connector No. Terminal No. Continuity Connector No. Terminal No. Connector No. Terminal No. Continuity Connector No. Terminal No. Continuity Connector No. Terminal No. Connector No. Terminal No. Connector No. Terminal No. Connector No. Terminal No. Continuity Connector No. Terminal No. Continuity Connector No. Terminal No. Continuity No Secord No 3. NO Secord No 3. NO Secord	.CHECK CONNECT	OR			
Connector No.Terminal No.Connector No.Terminal No.ContinuityM8752M181Existed53M182ExistedWithout NAVIAV control unit harness connectorHarness connectorContinuityAV control unit harness connectorHarness connectorContinuityM8586M181Existed86M182Existed85871Existed9960 TO 3.S the inspection result normal?ExistedYES>> GO TO 3.NO>> Repair the main line between the AV control unit and the harness connector M18.M18	Disconnect the bat Check the followir and harness side). Harness connecto Harness connecto the inspection result (ES >> GO TO 2. NO >> Repair the .CHECK HARNESS Disconnect the foll AV control unit Harness connecto Check the continuit	ttery cable from the ne ng terminals and conr r M18 r M17 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness connect rs M18 and M17	or. I CIRCUIT) ctors.		
Connector No.Terminal No.Connector No.Terminal No.M8752M181Existed53532ExistedWithout NAVIAV control unit harness connectorHarness connectorContinuityAV control unit harness connectorHarness connectorContinuityM8586M181Existed86M182Existeds the inspection result normal?YES>> GO TO 3.NONO>> Repair the main line between the AV control unit and the harness connector M18.	AV control unit h	AV control unit harness connector Harness connector			
M87M182ExistedWithout NAVIAV control unit harness connectorHarness connectorContinuityAV control unit harness connectorHarness connectorContinuityConnector No.Terminal No.Connector No.Terminal No.M8586M181ExistedM8587M182ExistedSthe inspection result normal?YES>> GO TO 3.NO>> Repair the main line between the AV control unit and the harness connector M18.	Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
53 2 Existed Without NAVI AV control unit harness connector Harness connector AV control unit harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. M85 86 M18 1 Existed Sthe inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the AV control unit and the harness connector M18.	M87	52	M18	1	Existed
AV control unit harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. M85 86 M18 1 Existed 87 M18 2 Existed Sthe inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the AV control unit and the harness connector M18.		53	WITO	2	Existed
Connector No.Terminal No.Connector No.Terminal No.ContinuityM8586M181Existed87M182Existeda the inspection result normal?YES>> GO TO 3.NO>> Repair the main line between the AV control unit and the harness connector M18.	Without NAVI				
Connector No.Terminal No.Connector No.Terminal No.M8586M181Existed87M182Existeda the inspection result normal?YES>> GO TO 3.NO>> Repair the main line between the AV control unit and the harness connector M18.	AV control unit h	arness connector	Harness of	connector	
M85 M18 2 Existed a the inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the AV control unit and the harness connector M18.	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
87 2 Existed a the inspection result normal? Pressor Prestor Press	Mee	86	M10	1	Existed
YES >> GO TO 3. NO >> Repair the main line between the AV control unit and the harness connector M18.	COM	87	IVI I O	2	Existed
• CHECK HARNESS CONTINUITY (OPEN CIRCUIT) heck the continuity between the harness connector and the data link connector.	YES >> GO TO 3. NO >> Repair the CHECK HARNESS	main line between the CONTINUITY (OPEN	I CIRCUIT)		r M18.
Harness connector Data link connector Continuity					Continuity
Connector No. Terminal No. Connector No. Terminal No.	Connector No.		Connector No.		-
M17 1 M24 6 Existed	M17		M24		
2 14 Existed				14	Existed

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904151

[CAN SYSTEM (TYPE 13)]

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 M6
- Harness connector E106

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 M6 and E106.

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

Data link	Data link connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	Me	7	Existed
11/24	14	M6	6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	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 data link connector and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

Diagnosis Procedure			INFOID:00000001904154
1. CHECK CONNECTOR			
	able from the negative term I connectors of the ECM fo al? nal and connector.		ose connection (unit side and
1. Disconnect the connecto			
 Check the resistance be 	tween the ECM harness co	nnector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No. M107	ECM harness connector Termina 114		Resistance (Ω) Approx. 108 – 132
Connector No. M107 Is the measurement value wi YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPLY	ECM harness connector Termina 114 thin the specification? branch line. (AND GROUND CIRCUIT	al No. 113	Approx. 108 – 132
Connector No. M107 S the measurement value wi YES >> GO TO 3. NO >> Repair the ECM CHECK POWER SUPPLY Check the power supply and s the inspection result normatic YES (Present error)>>Repla	ECM harness connector Termina 114 thin the specification? branch line. (AND GROUND CIRCUIT the ground circuit of the EC al?	al No. 113 CM. Refer to <u>EC-133, "D</u> C-15, "ADDITIONAL SE	Approx. 108 – 132

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< DTC/CIRCUIT DIAGNOSIS >

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904156

[CAN SYSTEM (TYPE 13)]

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).
- AWD control unit connector
- Harness connector F103
- Harness connector M116

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 AWD control unit.

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

A	AWD control unit harness connector			
Connector No.	Terminal No.		Resistance (Ω)	
F108	8 16		Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-23, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-48, "Exploded View"</u>.

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis Procedure** INFOID:000000001904157 1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT В Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? С YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. D Ε F Н J Κ L LAN Ν Ο Ρ

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904158

[CAN SYSTEM (TYPE 13)]

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

Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi	nal No.	
M87	52	Approx. 54 – 66	

Models without NAVI

	AV control unit harness connector			
Connector No.	Terminal No.		Resistance (Ω)	
M85	86 87		Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-414, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

 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 loc connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 	DSe connection (unit side and
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loc connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 	ose connection (unit side and
 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the BCM for damage, bend and loc connector side). <u>Is the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 	ose connection (unit side and
YES >> GO TO 2. NO >> Repair the terminal and connector.	
-	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect the connector of BCM. Check the resistance between the BCM harness connector terminals. 	
BCM harness connector	Resistance (Ω)
Connector No. Terminal No. 90	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 $\underline{BCS-38}$, "D	iagnosis Procedure".
Is the inspection result normal?	
YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line. NO >> Repair the power supply and the ground circuit.	

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< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904160

[CAN SYSTEM (TYPE 13)]

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 F103
- Harness connector M116

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 control valve with TCM. Refer to <u>TM-246, "Exploded View"</u>.
- 2. Disconnect the connector of TCM.
- 3. Check the continuity between the A/T assembly connector and TCM harness connector.

A/T assembly connector	TCM harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
3	F151	1	Existed
8	FIST	2	Existed

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the harness between the A/T assembly connector and the TCM harness connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-168</u>, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-246, "Exploded View".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

	>		[CAN SYSTEM (TYPE 13)]
DLC BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000001904162
1. CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cab Check the terminals and c (connector side and harnes) Is the inspection result normal? YES >> GO TO 2. 	le from the negative te connectors of the data ss side).		e, bend and loose connection
NO >> Repair the termina	l and connector.		
2. CHECK HARNESS FOR OF	PEN CIRCUIT		
Check the resistance between	the data link connector	terminals.	
	Data link connector		
Connector No.	Term	inal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
YES (Present error)>>Check YES (Past error)>>Error was NO >> Repair the data link	CAN system type decis detected in the data lin < connector branch line	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.
YES (Past error)>>Error was	detected in the data lin	k connector branch line ci	rcuit.

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904163

[CAN SYSTEM (TYPE 13)]

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 unified meter and A/C 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 unified meter and A/C amp.
- 2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified	Resistance (Ω)		
Connector No.	Termi	nal No.	
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-160, "Exploded View".

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	IS >	[CAN SYSTEM (TYPE 13)]
STRG BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000001904164
1. CHECK CONNECTOR			
	able from the negative terr connectors of the steering side). al?		, bend and loose connection
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	r of steering angle sensor. ween the steering angle s		terminals.
Stee	ring angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termir		
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and gram - BRAKE CONTROL S Is the inspection result normal YES (Present error)>>Repla YES (Past error)>>Error wa	ng angle sensor branch lin AND GROUND CIRCUIT I the ground circuit of the <u>YSTEM -"</u> . al? ace the steering angle sen s detected in the steering	- steering angle sensor. Re sor. Refer to <u>BRC-106, "E</u> angle sensor branch line.	
NO >> Repair the power	r supply and the ground ci	rcuit.	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904167

[CAN SYSTEM (TYPE 13)]

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.		
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

< DTC/CIRCUIT DIAGNOS	SIS >	[C	AN SYSTEM (TYPE 13)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000000190416
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the IPDM	ninal. E/R for damage, bend and	loose connection (unit side
NO >> Repair the termi			
 Disconnect the connect Check the resistance be 	IPDM E/R harness connector	ess connector terminals.	
Connector No.	Termir	Terminal No.	
E6	40	39	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDN 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl	Y AND GROUND CIRCUIT I the ground circuit of the IF al?		
YES (Past error)>>Error wa		R branch line.	-

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000001904170

[CAN SYSTEM (TYPE 13)]

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 system.
- 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
M24	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
M24	6	Ground	Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- 1. Remove the ECM and the IPDM E/R.
- 2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
114	113	Approx. 108 – 132	

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

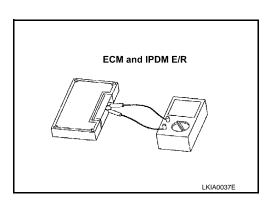
IPDM E/R		Resistance (Ω)	
Terminal No.			
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250405

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M18	1	Existed
IVIO7	53	IVITO	2	Existed

Without NAVI

AV control unit h	narness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M18	1	Existed
MOS	87	IVITO	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

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
M17	1	M24	6	Existed
	2	10124	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

	GNOSIS >		[CAN	SYSTEM (TYPE 14)]
MAIN LINE BET		ND ADP CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000001904125
1.CHECK CONNECT	OR			
 Check the followin and harness side) Harness connector Harness connectors the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	ttery cable from the ne ng terminals and conn r M7 r B1 normal? terminal and connect CONTINUITY (OPEN rness connectors M7	nectors for damage, tor. N CIRCUIT) and B1.	bend and loose conn	ection (connector side
2. Check the continu	ity between the data li	nk connector and the	e harness connector.	
	connector			Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M7	23 24	Existed
<u>s the inspection result</u> YES >> GO TO 3.		e data link connecto	r and the harness conn	ector M7.
NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness co			
NO >> Repair the CHECK HARNESS				Continuity
NO >> Repair the CHECK HARNESS Check the continuity b Connector No.		onnector terminals.	25	Continuity
NO >> Repair the CHECK HARNESS Check the continuity b	etween the harness co 23 24	onnector terminals.	25 26	

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904126

[CAN SYSTEM (TYPE 14)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termi	nal No.	Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

${ m 3.check}$ harness continuity (open circuit)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
E100	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904127

[CAN SYSTEM (TYPE 14)]

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	nal No.	
M107	114	113	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 EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

Diagnosis Procedure			INFOID:000000001904125
1.CHECK CONNECTOR			
1. Turn the ignition switch	OFF		
2. Disconnect the battery of	cable from the negative termina ninals and connectors for dama		nnection (unit side and con-
 Harness connector F103 	3		
 Harness connector M11 s the inspection result norm 			
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	inal and connector.		
 Disconnect the connect Check the resistance be 	or of AWD control unit. Stween the AWD control unit ha	rness connector termin	als.
A	WD control unit harness connector		
·			Resistance (O)
Connector No.	Terminal N	0.	Resistance (Ω)
Connector No. F108	Terminal N 8	o. 16	Resistance (Ω) Approx. 54 – 66
Connector No. F108 S the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL	Terminal N 8	16	Approx. 54 – 66
Connector No. F108 s the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and	Terminal N 8 9 0 0	16	Approx. 54 – 66
Connector No. F108 s the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and chure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Terminal N 8 9 0 0	16 D control unit. Refer to er to <u>DLN-48, "Exploded</u> unit branch line.	Approx. 54 – 66 DLN-23, "Diagnosis Proce-
Connector No. F108 s the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and chure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Terminal N 8 ithin the specification? 0 control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the AWI aal? lace the AWD control unit. Refeas detected in the AWD control	16 D control unit. Refer to er to <u>DLN-48, "Exploded</u> unit branch line.	Approx. 54 – 66 DLN-23, "Diagnosis Proce-
Connector No. F108 s the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and chure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Terminal N 8 ithin the specification? 0 control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the AWI aal? lace the AWD control unit. Refeas detected in the AWD control	16 D control unit. Refer to er to <u>DLN-48, "Exploded</u> unit branch line.	Approx. 54 – 66 DLN-23, "Diagnosis Proce-
Connector No. F108 s the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and chure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Terminal N 8 ithin the specification? 0 control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the AWI aal? lace the AWD control unit. Refeas detected in the AWD control	16 D control unit. Refer to er to <u>DLN-48, "Exploded</u> unit branch line.	Approx. 54 – 66 DLN-23, "Diagnosis Proce-

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

INFOID:000000001904130

[CAN SYSTEM (TYPE 14)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:000000001904131
1.CHECK CONNECTOR			
	able from the negative term I connectors of the AV con		nd and loose connection (unit
YES >> GO TO 2.			
NO >> Repair the termin CHECK HARNESS FOR			
 Disconnect the connector Check the resistance be Models with NAVI 	r of AV control unit. tween the AV control unit h	arness connector termina	als.
ŀ	V control unit harness connector		Resistance (Ω)
Connector No.	Termin	al No.	
M87	52	53	Approx. 54 – 66
Models without NAVI	V control unit harness connector		Resistance (Ω)
Connector No.	Termin	al No.	
M85	86	87	Approx. 54 – 66
CHECK POWER SUPPLY heck the power supply and Base audio without navigat BOSE audio without navigatio BOSE audio with navigatio	the ground circuit of the Avion the Avion (AV-39, "AV CONTROL ation: <u>AV-164, "AV CONTRO</u> n: <u>AV-414, "AV CONTROL</u>	/ control unit. Refer to the . UNIT : Diagnosis Proce OL UNIT : Diagnosis Proc	dure" cedure"
s the inspection result norma YES (Present error)>>Repla • Base audio wit	ace the AV control unit. Ref hout navigation: <u>AV-113, "E</u>	Exploded View"	
 BOSE audio w YES (Past error)>>Error wat 	ithout navigation: <u>AV-322, '</u> ith navigation: <u>AV-603, "Ex</u> s detected in the AV contro r supply and the ground cir	ploded View" I unit branch line.	
. F	, , , , , , , , <u>, , , , , , , , , , , </u>		

< DTC/CIRCUIT DIAGNOSIS >

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904132

[CAN SYSTEM (TYPE 14)]

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		Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	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-38, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "Exploded View"</u>.

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

Diagnosis Procedure			
nagriosis i locedure			INFOID:000000001904133
.CHECK CONNECTOR			
 Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 	cable from the negative tern ninals and connectors for da 3 6		onnection (unit side and con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
Disconnect the connectCheck the resistance be	or of A/T assembly. etween the A/T assembly ha	arness connector terminals	3.
N	A/T assembly harness connector		Resistance (Ω)
Connector No. F51	Termin 3	ai No. 8	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the TCM			
YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect	I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM.		connector
YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be	I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co	nnector and TCM harness	connector.
YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be	I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co TCM harnes	nnector and TCM harness	connector. Continuity
YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be	I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co TCM harnes Connector No.	nnector and TCM harness	
YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the control value Disconnect the connect Check the continuity be A/T assembly connector Terminal No.	I branch line. OPEN CIRCUIT ve with TCM. Refer to <u>TM-2</u> or of TCM. tween the A/T assembly co <u>TCM harnes</u> <u>Connector No.</u> F151	nnector and TCM harness s connector Terminal No.	Continuity

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904135

[CAN SYSTEM (TYPE 14)]

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			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

Diagnosis Procedure			INFOID:000000001904136
1. CHECK CONNECTOR			
	cable from the negative tern d connectors of the unified		mage, bend and loose con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect	or of unified meter and A/C etween the unified meter an		ctor terminals.
Unified	I meter and A/C amp. harness cor	nector	Resistance (Ω)
Connector No.	Termin	al No.	
M67 s the measurement value w	56	72	Approx. 54 – 66
NO >> Repair the unifie 3. CHECK POWER SUPPL	ed meter and A/C amp. bran Y AND GROUND CIRCUIT		
METER AND A/C AMP. : Dia	agnosis Procedure".		Refer to <u>MWI-50, "UNIFIED</u>
<u>METER AND A/C AMP. : Dia</u> s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	agnosis Procedure". lal? lace the unified meter and <i>I</i>	nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> eter and A/C amp. branch), "Exploded View".
<u>METER AND A/C AMP. : Dia</u> <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	agnosis Procedure". al? lace the unified meter and <i>l</i> as detected in the unified m	nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> eter and A/C amp. branch), "Exploded View".
<u>METER AND A/C AMP. : Dia</u> s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	agnosis Procedure". al? lace the unified meter and <i>l</i> as detected in the unified m	nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> eter and A/C amp. branch), "Exploded View".
YES (Past error)>>Error wa	agnosis Procedure". al? lace the unified meter and <i>l</i> as detected in the unified m	nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> eter and A/C amp. branch), "Exploded View".

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904137

[CAN SYSTEM (TYPE 14)]

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.		
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

ADP BRANCH LINE	CIRCUIT			
Diagnosis Procedure			INFOID:000000001904138	
1.CHECK CONNECTOR				
	able from the negative term ninals and connectors for da		nnection (unit side and con-	
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR				
	or of driver seat control unit. tween the driver seat contro		erminals.	
Driver seat control unit harness connector		Resistance (Ω)		
Connector No.	Termin	al No.		
B451	3	19	Approx. 54 – 66	
YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm	the ground circuit of the drive Procedure".		to <u>ADP-67, "DRIVER SEAT</u>	
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the driver seat control u	at control unit branch line.	<u> «ploded View"</u> .	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904140

[CAN SYSTEM (TYPE 14)]

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.		Resistance (32)
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS	\$ >	[C	AN SYSTEM (TYPE 14)]
IPDM-E BRANCH LI	VE CIRCUIT		
Diagnosis Procedure			INFOID:00000000190414
1.CHECK CONNECTOR			
and connector side). Is the inspection result normal YES >> GO TO 2.	ble from the negative terr connectors of the IPDM ?	ninal. E/R for damage, bend and l	loose connection (unit side
NO >> Repair the termina 2.CHECK HARNESS FOR O			
 Disconnect the connector Check the resistance betw 		ess connector terminals.	
	PDM E/R harness connector		
Connector No.		nal No.	Resistance (Ω)
E6	40	39	Approx. 108 – 132
s the measurement value with	in the specification?		
YES >> GO TO 3.			
NO >> Repair the IPDM		_	
3. CHECK POWER SUPPLY			_
Check the power supply and the inspection result normal		PDM_E/R. Refer to <u>PCS-19,</u>	"Diagnosis Procedure".
YES (Present error)>>Replace		n PCS-34 "Exploded View"	
YES (Past error)>>Error was	detected in the IPDM E	R branch line.	·
NO >> Repair the power	supply and the ground ci	rcuit.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000001904143

[CAN SYSTEM (TYPE 14)]

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 system.
- 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
M24	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	
M24	6		Not existed	
WZ4	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.			
114	113	Approx. 108 – 132	

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

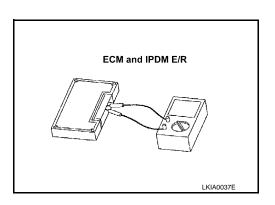
IPDM E/R		- Resistance (Ω)	
Terminal No.			
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



LAN-306

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005250404

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 M18
- Harness connector M17

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.

- AV control unit
- Harness connectors M18 and M17
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- With NAVI

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M87	52	M18	1	Existed
	53		2	Existed

Without NAVI

AV control unit harness connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.		
M85	86	M18	1	Existed
NOS	87		2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

$\mathbf{3.}$ 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
M17	1	M24	6	Existed
	2	10124	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 AV control unit and the data link connector.
- NO >> Repair the main line between the harness connector M17 and the data link connector.

< DTC/CIRCUIT DIA				SYSTEM (TYPE 15)]
MAIN LINE BET		ND ADP CIRC	-	
Diagnosis Proced	ure			INFOID:000000001904098
1.CHECK CONNECT				
Check the followir and harness side) Harness connecto Harness connecto s the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha	ttery cable from the ne ng terminals and coni r M7 r B1	nectors for damage, tor. N CIRCUIT) and B1.		ection (connector side
	connector	Γ		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	23	Existed
10124	14	1017	24	Existed
-				
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b	CONTINUITY (OPEN	N CIRCUIT) onnector terminals.	and the harness conr	
YES >> GO TO 3. NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness c	N CIRCUIT)		Continuity
NO >> Repair the CHECK HARNESS Check the continuity b	CONTINUITY (OPEN etween the harness c 23 24	N CIRCUIT) onnector terminals.	and the harness conr 25 26	

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000001904099

[CAN SYSTEM (TYPE 15)]

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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

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 B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	23	25	Existed
	24	26	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	25	M6	7	Existed
1717	26		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E 41	35	Existed
E100	6	– E41	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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904100

[CAN SYSTEM (TYPE 15)]

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.	Terminal No.		
M107	114	113	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 EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

PSB BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

Diagnosis Procedure			INFOID:00000000190410
.CHECK CONNECTOR			
	cable from the negative term d connectors of the pre-cra id connector side).		or damage, bend and loose
YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
	or of pre-crash seat belt cor etween the pre-crash seat b		nnector terminals.
Pre-cras	sh seat belt control unit harness co	onnector	
			Resistance (0)
Connector No.	Termin	al No.	Resistance (Ω)
Connector No. M110 s the measurement value w YES >> GO TO 3.	24	al No. 22	Resistance (Ω) Approx. 54 – 66

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904102

[CAN SYSTEM (TYPE 15)]

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).
- AWD control unit connector
- Harness connector F103
- Harness connector M116

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 AWD control unit.

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

AWD control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
F108	8 16		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-23, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-48, "Exploded View"</u>.

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis Procedure** INFOID:000000001904103 1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT В Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? С YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. D Ε F Н J Κ L LAN Ν Ο Ρ

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904104

[CAN SYSTEM (TYPE 15)]

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

Models with NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66	AV control unit harness connector			Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Terminal No.		
	M87	52	53	Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M85	86 87		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-39, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-164, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-414</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation: <u>AV-113, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-322, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-603</u>, "Exploded View"
- YES (Past error)>>Error was detected in the AV control unit branch line.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

Diagnosis Procedure			INFOID:000000001904105
1.CHECK CONNECTOR			
	ble from the negative term connectors of the BCM fo <u>I?</u> al and connector.		se connection (unit side and
1. Disconnect the connecto	r of BCM.		
	BCM harness connector	nnector terminals.	1
	ween the BCM harness con BCM harness connector Termina		Resistance (Ω)
2. Check the resistance bet Connector No. M122	BCM harness connector Termina 91		- Resistance (Ω) Approx. 54 – 66
2. Check the resistance bet Connector No.	BCM harness connector Termina 91 hin the specification? oranch line. AND GROUND CIRCUIT the ground circuit of the BC <u>I?</u> ce the BCM. Refer to <u>BCS</u>	al No. 90 CM. Refer to <u>BCS-38, "Di</u> -80, "Exploded View".	Approx. 54 – 66

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904106

[CAN SYSTEM (TYPE 15)]

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 F103
- Harness connector M116

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 control valve with TCM. Refer to <u>TM-246, "Exploded View"</u>.
- 2. Disconnect the connector of TCM.
- 3. Check the continuity between the A/T assembly connector and TCM harness connector.

A/T assembly connector	TCM harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
3	F151	1	Existed
8	FIST	2	Existed

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the harness between the A/T assembly connector and the TCM harness connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-168, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-246, "Exploded View".

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

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

Diagnosis Procedure			INFOID:00000001904107
1.CHECK CONNECTOR			
	able from the negative term connectors of the AFS cor		d and loose connection (unit
YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2.CHECK HARNESS FOR 1. Disconnect the connector			
2. Check the resistance be	tween the AFS control unit	harness connector termina	als.
A Connector No.	FS control unit harness connector		Resistance (Ω)
M16	Termin 30	7	Approx. 54 – 66
NO >> Repair the AFS of B.CHECK POWER SUPPLY Check the power supply and JNIT : Diagnosis Procedure' s the inspection result normal	d the ground circuit of the		D EXL-61, "AFS CONTROL
YES (Present error)>>Replayed YES (Past error)>>Error wa	ace the AFS control unit. R	rol unit branch line.	<u>d View"</u> .

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904108

[CAN SYSTEM (TYPE 15)]

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		
Connector No.	Terminal No.		Resistance (Ω)
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

Diagnosis Procedure			INFOID:000000001904109
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the unified		mage, bend and loose con-
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	tor of unified meter and A/C etween the unified meter ar		ector terminals.
	d meter and A/C amp. harness co		Resistance (Ω)
Connector No. M67	56	nal No. 72	Approx. 54 – 66
NO >> Repair the unit	eu melei anu A/C amp. Dia	nch line.	
3. CHECK POWER SUPPL	ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure".	-	Refer to <u>MWI-50, "UNIFIED</u>
3.CHECK POWER SUPPL Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure".	- nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> neter and A/C amp. branch	D, "Exploded View".
3.CHECK POWER SUPPL Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". <u>hal?</u> place the unified meter and a ras detected in the unified m	- nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> neter and A/C amp. branch	D, "Exploded View".
3.CHECK POWER SUPPL Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". <u>hal?</u> place the unified meter and a ras detected in the unified m	- nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> neter and A/C amp. branch	D, "Exploded View".
3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". <u>hal?</u> place the unified meter and a ras detected in the unified m	- nified meter and A/C amp. A/C amp. Refer to <u>MWI-160</u> neter and A/C amp. branch	D, "Exploded View".

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904110

[CAN SYSTEM (TYPE 15)]

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.	Terminal No.		Resistance (Ω)
M37	1	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-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106</u>, "Exploded View".

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

Diagnosis Procedure			INFOID:000000001904111
.CHECK CONNECTOR			
 Check the following term nector side). Driver seat control unit Harness connector B460 Harness connector B11 <u>s the inspection result norma</u> YES >> GO TO 2. NO >> Repair the termin 	able from the negative termi inals and connectors for dar <u>al?</u> nal and connector.		nnection (unit side and con-
CHECK HARNESS FOR			
	r of driver seat control unit. ween the driver seat control	l unit harness connector to	erminals.
Drive	r seat control unit harness connect	tor	Resistance (Ω)
Connector No.	Terminal	l No.	
B451	3	19	Approx. 54 – 66
the measurement value wi	min the specification:		
NO >> Repair the driver			
NO >> Repair the driver CHECK POWER SUPPLY check the power supply and CONTROL UNIT : Diagnosis	AND GROUND CIRCUIT The ground circuit of the drive <u>Procedure</u> .		to <u>ADP-67, "DRIVER SEAT</u>
NO >> Repair the driver CHECK POWER SUPPLY theck the power supply and CONTROL UNIT : Diagnosis the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure"</u> . al? ace the driver seat control up	er seat control unit. Refer nit. Refer to <u>ADP-225, "Ex</u> control unit branch line.	
NO >> Repair the driver CHECK POWER SUPPLY theck the power supply and CONTROL UNIT : Diagnosis the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure"</u> . ace the driver seat control up s detected in the driver seat	er seat control unit. Refer nit. Refer to <u>ADP-225, "Ex</u> control unit branch line.	
NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure"</u> . ace the driver seat control up s detected in the driver seat	er seat control unit. Refer nit. Refer to <u>ADP-225, "Ex</u> control unit branch line.	
NO >> Repair the driver CHECK POWER SUPPLY heck the power supply and ONTROL UNIT : Diagnosis the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wa	AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure"</u> . ace the driver seat control up s detected in the driver seat	er seat control unit. Refer nit. Refer to <u>ADP-225, "Ex</u> control unit branch line.	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904113

[CAN SYSTEM (TYPE 15)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35 14		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-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 15)]

DTC/CIRCUIT DIAGNOS	>	L -	
CC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000001904114
CHECK CONNECTOR			
 Check the terminals and nection (unit side and co 	able from the negative ter d connectors of the ICC so nnector side).	minal. ensor integrated unit for dar	nage, bend and loose con-
S the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of ICC sensor integrated tween the ICC sensor inte	d unit. egrated unit harness connec	tor terminals.
ICC se	ensor integrated unit harness co	nnector	Resistance (Ω)
Connector No.		inal No.	
E67 s the measurement value w	3	6	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and Procedure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	the ground circuit of the least	T CC sensor integrated unit. R ated unit. Refer to <u>CCS-112</u> sor integrated unit branch lin	"Exploded View".

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000001904115

[CAN SYSTEM (TYPE 15)]

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 IPDM E/R 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 IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 15)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000001904116 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-327

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 system. **NOTE:**

ECM and IPDM E/R 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.