

D

Е

# **CONTENTS**

CAN FUNDAMENTAL	HOW TO USE THIS SECTION
HOW TO USE THIS MANUAL7	InformationAbbreviation List
HOW TO USE THIS SECTION7	PRECAUTION
PRECAUTION	PRECAUTIONS  Precaution for Supplemental Restrair (SRS) "AIR BAG" and "SEAT BELT F
PRECAUTIONS	SIONER" Precautions for Trouble Diagnosis Precautions for Harness Repair
SYSTEM DESCRIPTION9	SYSTEM DESCRIPTION
SYSTEM9	COMPONENT PARTS
CAN COMMUNICATION SYSTEM9 CAN COMMUNICATION SYSTEM : System Description	Component Parts Location
DIAG ON CAN9 DIAG ON CAN : System Description9	CAN COMMUNICATION SYSTEM CAN COMMUNICATION SYSTEM : scription
TROUBLE DIAGNOSIS	CAN COMMUNICATION SYSTEM: munication Control Circuit
Self-Diagnosis	WIRING DIAGRAM
How to Use CAN Communication Signal Chart17  BASIC INSPECTION18	Wiring Diagram
DIAGNOSIS AND REPAIR WORKFLOW18	BASIC INSPECTION
Trouble Diagnosis Flow Chart	DIAGNOSIS AND REPAIR WORK Interview Sheet
CAN	DTC/CIRCUIT DIAGNOSIS
HOW TO USE THIS MANUAL23	

42	CAN COMMUNICATION CIRCUIT	
		61
	·	
43	DIC/CIRCUIT DIAGNOSIS	63
43	MAIN LINE BETWEEN IPDM-E AND DLC	60
		00
44		
45	•	0-
45		
46	•	
46		
	Diagnosis Procedure	66
47	ABS BRANCH LINE CIRCUIT	
47	Diagnosis Procedure	67
48	EPS BRANCH LINE CIRCUIT	68
48	Diagnosis Procedure	68
49	IPDM-F BRANCH LINE CIRCUIT	69
49	Diagnosis Procedure	
	TOM BRANCH LINE CIRCUIT	70
	-	
52	Diagnosis Procedure	72
53	STRG BRANCH LINE CIRCUIT	
53	Diagnosis Procedure	73
54	A-BAG BRANCH LINE CIRCUIT	74
54	Diagnosis Procedure	74
55	BCM BRANCH LINE CIRCUIT	75
55	Diagnosis Procedure	
EC	CAN COMMUNICATION CIRCUIT	76
	CAN SYSTEM (TYPE 2)	
	DTC/CIDCUIT DIACNOSIS	
	DIC/CIRCUIT DIAGNOSIS	78
	MAIN LINE BETWEEN IPDM-E AND DLC	
58		
59	Diagnosis Procedure	78
59	MAIN LINE BETWEEN DLC AND M&A CIR-	
60	CUIT	
60	Diagnosis Procedure	79
	42 42 43 43 44 45 45 46 47 48 49 49 50 51 52 51 52 53 54 55 55 55 55 55 55 56 57 57 58 59 59 59 59	Diagnosis Procedure  CAN SYSTEM (TYPE 1)  DTC/CIRCUIT DIAGNOSIS  MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT  Diagnosis Procedure  MAIN LINE BETWEEN DLC AND M&A CIRCUIT  Diagnosis Procedure  MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)  Diagnosis Procedure  MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)  Diagnosis Procedure  MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)  Diagnosis Procedure  MAIN LINE CIRCUIT  Diagnosis Procedure  CAN ABAG BRANCH LINE CIRCUIT  Diagnosis Procedure  MAIN LINE CIRCUIT  Diagnosis Procedure  CAN SYSTEM (TYPE 2)  DTC/CIRCUIT DIAGNOSIS  MAIN LINE BETWEEN DLC AND M&A CIRCUIT  Diagnosis Procedure  CAN SYSTEM (TYPE 2)  MAIN LINE BETWEEN DLC AND M&A CIRCUIT  Diagnosis Procedure  Diagnosis Procedure

MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)80	ECM BRANCH LINE CIRCUIT99  Diagnosis Procedure99
Diagnosis Procedure80	
MAIN LINE BETWEEN A-BAG AND HVAC	ABS BRANCH LINE CIRCUIT100 Diagnosis Procedure100
CIRCUIT81 Diagnosis Procedure81	
-	Diagnosis Procedure101
ECM BRANCH LINE CIRCUIT82 Diagnosis Procedure82	IDDM_E RRANCH LINE CIRCUIT 102
ABS BRANCH LINE CIRCUIT83	
Diagnosis Procedure83	Diagnosis Procedure103
EPS BRANCH LINE CIRCUIT84 Diagnosis Procedure84	DIC BRANCH LINE CIRCUIT 104
IPDM-E BRANCH LINE CIRCUIT85 Diagnosis Procedure85	M&A BRANCH LINE CIRCUIT105
	Diagnosis Procedure105
TCM BRANCH LINE CIRCUIT86 Diagnosis Procedure86	STRG BRANCH LINE CIRCUIT106
-	Diagnosis Procedure106
DLC BRANCH LINE CIRCUIT87 Diagnosis Procedure87	A BAC BBANCH I NIE CIDCIIII - 107
Diagnosis Procedure87	Diagnosis Procedure107
M&A BRANCH LINE CIRCUIT88	AV RPANCHTINE CIRCUIT 100
Diagnosis Procedure88	Diagnosis Procedure108
STRG BRANCH LINE CIRCUIT89	HVVC BDVNCH I WE CIDCIIII 100
Diagnosis Procedure89	Diagnosis Procedure109
A-BAG BRANCH LINE CIRCUIT90	•
Diagnosis Procedure90	Diagnosis Procedure110
HVAC BRANCH LINE CIRCUIT91	-
Diagnosis Procedure91	CAN COMMUNICATION CIRCUIT111 Diagnosis Procedure111
BCM BRANCH LINE CIRCUIT92	
Diagnosis Procedure92	
CAN COMMUNICATION CIRCUIT93	DTC/CIRCUIT DIAGNOSIS113
Diagnosis Procedure	MAIN I INE DETMEEN IDDM E AND DI A
OAR GIGIEM (III E 3)	Diagnosis Procedure113
DTC/CIRCUIT DIAGNOSIS95	MAIN LINE BETWEEN DLC AND M&A CIR-
MAIN LINE BETWEEN IPDM-E AND DLC	CUIT114
CIRCUIT95	•
Diagnosis Procedure95	MAIN LINE BETWEEN M&A AND A-BAG
MAIN LINE BETWEEN DLC AND M&A CIR-	CIRCUIT (WITH AUTO A/C)115
CUIT96	
Diagnosis Procedure96	MAIN LINE BETWEEN A-BAG AND HVAC
MAIN LINE BETWEEN M&A AND A-BAG	CIRCUIT116
CIRCUIT (WITH AUTO A/C)97	
Diagnosis Procedure97	ECM BRANCH LINE CIRCUIT117
MAIN LINE BETWEEN A-BAG AND HVAC	Diagnosis Procedure117
CIRCUIT98	ARS REANCH LINE CIRCUIT 119
Diagnosis Procedure98	Diagnosis Procedure118

Revision: August 2012 LAN-3 2013 Altima Sedan

EPS BRANCH LINE CIRCUIT 119 Diagnosis Procedure	TCM BRANCH LINE CIRCUIT  Diagnosis Procedure	
•	•	
IPDM-E BRANCH LINE CIRCUIT 120 Diagnosis Procedure	DLC BRANCH LINE CIRCUIT  Diagnosis Procedure	
•	· ·	
TCM BRANCH LINE CIRCUIT 121 Diagnosis Procedure	M&A BRANCH LINE CIRCUIT  Diagnosis Procedure	
DLC BRANCH LINE CIRCUIT 122	STRG BRANCH LINE CIRCUIT	142
Diagnosis Procedure122	Diagnosis Procedure	
M&A BRANCH LINE CIRCUIT123	A-BAG BRANCH LINE CIRCUIT	143
Diagnosis Procedure123	Diagnosis Procedure	
STRG BRANCH LINE CIRCUIT 124	BCM BRANCH LINE CIRCUIT	144
Diagnosis Procedure124	Diagnosis Procedure	. 144
A-BAG BRANCH LINE CIRCUIT125	CAN COMMUNICATION CIRCUIT	
Diagnosis Procedure125	Diagnosis Procedure  CAN SYSTEM (TYPE 6)	. 145
AV BRANCH LINE CIRCUIT126	·	
Diagnosis Procedure126	DTC/CIRCUIT DIAGNOSIS	147
AVM BRANCH LINE CIRCUIT 127	MAIN LINE BETWEEN IPDM-E AND DLC	
Diagnosis Procedure127	CIRCUIT	
HVAC BRANCH LINE CIRCUIT128	Diagnosis Procedure	. 147
Diagnosis Procedure128	MAIN LINE BETWEEN DLC AND M&A CIR-	
BCM BRANCH LINE CIRCUIT 129	CUIT	
Diagnosis Procedure129	Diagnosis Procedure	. 148
CAN COMMUNICATION CIRCUIT 130	MAIN LINE BETWEEN M&A AND A-BAG	4.40
Diagnosis Procedure	CIRCUIT (WITH AUTO A/C)  Diagnosis Procedure	
CAN SYSTEM (TYPE 5)	-	
DTC/CIRCUIT DIAGNOSIS132	MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT	150
MAIN LINE BETWEEN IPDM-E AND DLC	Diagnosis Procedure	
CIRCUIT 132	ECM BRANCH LINE CIRCUIT	151
Diagnosis Procedure132	Diagnosis Procedure	. 151
MAIN LINE BETWEEN DLC AND M&A CIR-	ABS BRANCH LINE CIRCUIT	152
<b>CUIT</b>	Diagnosis Procedure	
	EPS BRANCH LINE CIRCUIT	153
MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)	Diagnosis Procedure	. 153
Diagnosis Procedure134	IPDM-E BRANCH LINE CIRCUIT	154
ECM BRANCH LINE CIRCUIT135	Diagnosis Procedure	
Diagnosis Procedure135	TCM BRANCH LINE CIRCUIT	155
ABS BRANCH LINE CIRCUIT 136	Diagnosis Procedure	
Diagnosis Procedure136	DLC BRANCH LINE CIRCUIT	156
EPS BRANCH LINE CIRCUIT 137	Diagnosis Procedure	
Diagnosis Procedure137	M&A BRANCH LINE CIRCUIT	157
· ·	Diagnosis Procedure	
IPDM-E BRANCH LINE CIRCUIT 138 Diagnosis Procedure	STRG BRANCH LINE CIRCUIT	158
	Diagnosis Procedure	. 158

A-BAG BRANCH LINE CIRCUIT159	BCM BRANCH LINE CIRCUIT179	
Diagnosis Procedure159	Diagnosis Procedure179	Д
HVAC BRANCH LINE CIRCUIT160	CAN COMMUNICATION CIRCUIT 180	
Diagnosis Procedure160	Diagnosis Procedure180  CAN SYSTEM (TYPE 8)	В
BCM BRANCH LINE CIRCUIT161 Diagnosis Procedure	DTC/CIRCUIT DIAGNOSIS182	
		С
CAN COMMUNICATION CIRCUIT162 Diagnosis Procedure	MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT182	
CAN SYSTEM (TYPE 7)	Diagnosis Procedure 192	$\Box$
DTC/CIRCUIT DIAGNOSIS164	MAIN LINE BETWEEN DLC AND M&A CIR-	
MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT164	<b>CUIT</b>	Ε
Diagnosis Procedure	MAIN LINE BETWEEN M&A AND A-BAG	
MAIN LINE BETWEEN DLC AND M&A CIR-	<b>CIRCUIT (WITH AUTO A/C)</b> 184  Diagnosis Procedure	F
<b>CUIT165</b> Diagnosis Procedure	MAIN LINE BETWEEN A-BAG AND HVAC	
		G
MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)166	Diagnosis Procedure185	
Diagnosis Procedure	ECM BRANCH LINE CIRCUIT186	Н
MAIN LINE BETWEEN A-BAG AND HVAC	Diagnosis Procedure186	
CIRCUIT167	ABS BRANCH LINE CIRCUIT187	
Diagnosis Procedure167	Diagnosis Procedure187	
ECM BRANCH LINE CIRCUIT168 Diagnosis Procedure	EPS BRANCH LINE CIRCUIT188  Diagnosis Procedure188	J
ABS BRANCH LINE CIRCUIT169	IPDM-E BRANCH LINE CIRCUIT189	
Diagnosis Procedure169	Diagnosis Procedure189	/
EPS BRANCH LINE CIRCUIT170	TCM BRANCH LINE CIRCUIT190	K
Diagnosis Procedure170	Diagnosis Procedure190	
IPDM-E BRANCH LINE CIRCUIT171	DLC BRANCH LINE CIRCUIT191	L
Diagnosis Procedure171	Diagnosis Procedure191	
TCM BRANCH LINE CIRCUIT172 Diagnosis Procedure172	M&A BRANCH LINE CIRCUIT192 Diagnosis Procedure192	٩l
DLC BRANCH LINE CIRCUIT173	STRG BRANCH LINE CIRCUIT193	
Diagnosis Procedure173		N
M&A BRANCH LINE CIRCUIT174	A-BAG BRANCH LINE CIRCUIT194	
Diagnosis Procedure174	Diagnosis Procedure194	$\mathcal{C}$
STRG BRANCH LINE CIRCUIT175	AV BRANCH LINE CIRCUIT195	
Diagnosis Procedure175	Diagnosis Procedure195	
A-BAG BRANCH LINE CIRCUIT176 Diagnosis Procedure176	AVM BRANCH LINE CIRCUIT196  Diagnosis Procedure196	Ρ
AV BRANCH LINE CIRCUIT177 Diagnosis Procedure177	HVAC BRANCH LINE CIRCUIT197 Diagnosis Procedure197	
HVAC BRANCH LINE CIRCUIT178 Diagnosis Procedure	BCM BRANCH LINE CIRCUIT198 Diagnosis Procedure198	

CAN COMMUNICATION CIRCUIT 199	Diagnosis Procedure199

### **HOW TO USE THIS SECTION**

< HOW TO USE THIS MANUAL >

[CAN FUNDAMENTAL]

# HOW TO USE THIS MANUAL

# HOW TO USE THIS SECTION

Information INFOID:0000000008729091

- "CAN FUNDAMENTAL" of LAN Section describes the basic knowledge of the CAN communication system and the method of trouble diagnosis.
- For information peculiar to a vehicle and inspection procedure, refer to "CAN".

D

Α

В

С

Е

F

G

Н

1

Κ

L

LAN

Ν

0

# **PRECAUTION**

## **PRECAUTIONS**

# **Precautions for Trouble Diagnosis**

#### INFOID:0000000008729092

#### **CAUTION:**

Follow the instructions listed below. Failure to do this may cause damage to parts:

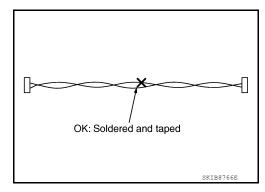
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

## Precautions for Harness Repair

INFOID:0000000008729093

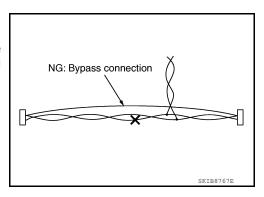
Solder the repaired area and wrap tape around the soldered area.
 NOTE:

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



Bypass connection is never allowed at the repaired area.
 NOTE:

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



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

# SYSTEM DESCRIPTION

### SYSTEM

#### CAN COMMUNICATION SYSTEM

## CAN COMMUNICATION SYSTEM: System Description

INFOID:0000000008729094

Α

D

Е

LAN

Р

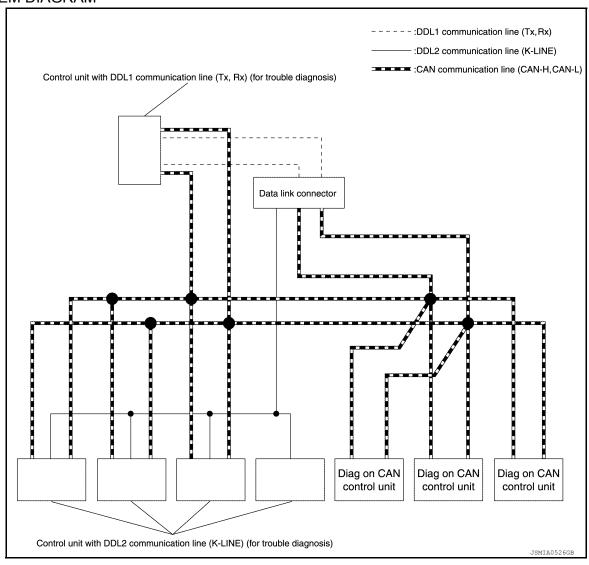
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

#### DIAG ON CAN

### **DIAG ON CAN: System Description**

INFOID:0000000008729095

#### SYSTEM DIAGRAM



## [CAN FUNDAMENTAL]

Name	Harness	Description
DDL1	Tx Rx	For communications with the diagnostic tool. (CAN-H and CAN-L are used for controlling)
DDL2	K-LINE	For communications with the diagnostic tool. (CAN-H and CAN-L are used for controlling)
Diag on CAN	CAN-H CAN-L	For communications with the diagnostic tool. (CAN-H and CAN-L are also used for control and diagnoses.)

#### **DESCRIPTION**

"Diag on CAN" is a diagnosis method which uses the CAN communication line for the communication between the control unit and the diagnostic tool.

INFOID:0000000008729096

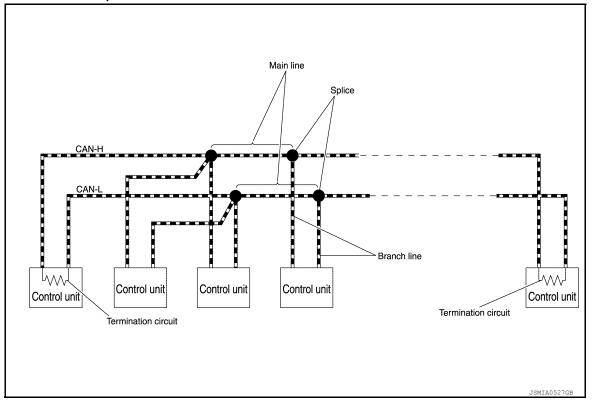
Α

D

Е

## TROUBLE DIAGNOSIS

### Component Description



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	Circuit connected across the CAN communication system. (Resistor)

#### Condition of Error Detection

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

#### CAN COMMUNICATION SYSTEM ERROR

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

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

- · Removal/installation of parts: Error may be detected when removing and installing CAN communication unit and related parts while turning the ignition switch ON. (A DTC except for CAN communication may be
- 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 DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT under the above conditions. Erase the memory of the self-diagnosis of each control unit.

**LAN-11** Revision: August 2012 2013 Altima Sedan LAN

K

INFOID:0000000008729097

# Symptom When Error Occurs in CAN Communication System

INFOID:0000000008729098

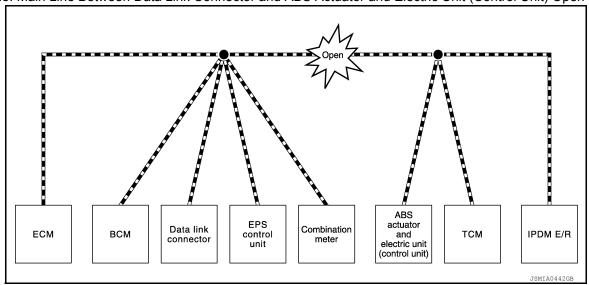
In CAN communication system, multiple control units mutually transmit and receive signals. Each control unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

#### **ERROR EXAMPLE**

#### NOTE:

Each vehicle differs in symptom of each control unit under fail-safe mode and CAN communication line wiring.

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



Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning buzzer 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	<ul> <li>The shift position indicator and OD OFF indicator turn OFF.</li> <li>The speedometer is inoperative.</li> <li>The odo/trip meter stops.</li> </ul>
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON,  The headlamps (Lo) turn ON.  The cooling fan continues to rotate.

Α

В

D

Е

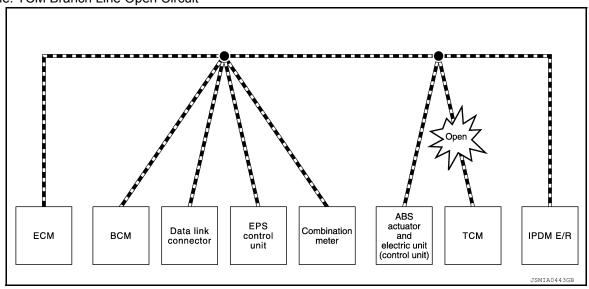
K

LAN

Ν

0

Example: TCM Branch Line Open Circuit



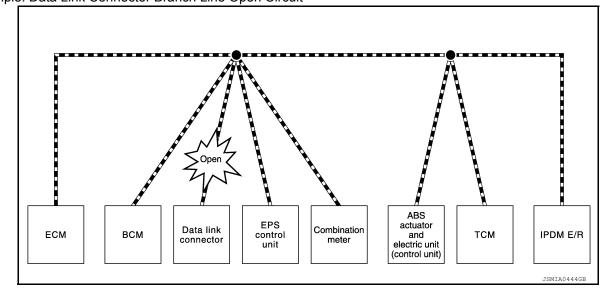
Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning buzzer does not sound.
EPS control unit	Normal operation.
Combination meter	Shift position indicator and O/D OFF indicator turn OFF.     Warning lamps turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	Normal operation.

#### NOTE:

The model (all control units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with CONSULT if the following error occurs. The error is judged by the symptom.

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

Example: Data Link Connector Branch Line Open Circuit

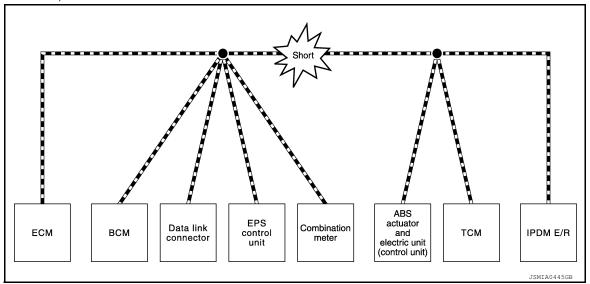


Unit name	Major symptom
ECM	
BCM	
EPS control unit	
Combination meter	Normal operation.
ABS actuator and electric unit (control unit)	
TCM	
IPDM E/R	

#### 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.

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



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

# CAN Diagnosis with CONSULT

INFOID:0000000008729099

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

#### TROUBLE DIAGNOSIS

#### < SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Α

В

D

Е

F

Н

K

LAN

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

Self-Diagnosis INFOID:000000008729100

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

#### NOTE:

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

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

# **CAN Diagnostic Support Monitor**

INFOID:0000000008729101

#### MONITOR ITEM (CONSULT)

Example: CAN DIAG SUPPORT MNTR indication

V	Vithout PAS	Τ		With PAST	
	всм			ENGINE	
MONITOR ITEM	PRESENT	PAST	MONITOR ITEM	PRESENT	PAST
NITIAL DIAG	ОК	-		ОК	ОК
RANSMIT DIAG	OK	-	VDC/TCS/ABS	ОК	5
ECM	OK	-	METER/M&A	Not diagnosed	-
/IETER/M&A	ОК	-	BCM/SEC	OK	ОК
ГСМ	OK	-	ICC	Not diagnosed	-
PDM E/R	OK	-	HVAC	Not diagnosed	-
-KEY	OK	-	TCM	OK	OK
			EPS	OK	OK
			IPDM E/R	OK	5
			e4WD	Not diagnosed	
			AWD/4WD	Not diagnosed	-

#### Without PAST

Item PRESENT		Description
Initial diagnosis	OK	Normal at present
	NG	Control unit error (Except for some control units)

## **TROUBLE DIAGNOSIS**

### < SYSTEM DESCRIPTION >

# [CAN FUNDAMENTAL]

Item	PRESENT	Description
	OK	Normal at present
Transmission diagnosis	UNKWN	Unable to transmit signals for 2 seconds or more.
		Diagnosis not performed
	OK	Normal at present
Control unit name		Unable to receive signals for 2 seconds or more.
(Reception diagnosis)		Diagnosis not performed
		No control unit for receiving signals. (No applicable optional parts)

#### With PAST

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

# How to Use CAN Communication Signal Chart

INFOID:0000000008729102

Α

В

C

D

Е

F

Н

The CAN communication signal chart lists the signals transmitted/received among control units. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.

	<del></del>			45		t R: Receive
Signal name/Connecting unit	ECM	всм	M&A	STRG	ABS	IPDM-E
A/C compressor feedback signal	Т		R			
A/C compressor request signal	Т					R
Accelerator pedal position signal	Т				R	
Cooling fan motor operation signal	Т					R
Engine coolant temperature signal I	Т		R			
Engine speed signal	Т		R		R	
Fuel consumption monitor signal	Т		R			
Malfunction indicator lamp signal	Т		R		mmunication en ECM and	
A/C switch signal	R	Т		M&A (Con	nbination met	er).
Ignition switch signal		Т				R
Sleep/wake up signal		Т	R			R
It indicates that	an error occu	irs between I	ECM and Comb	oination meter	r (Shaded are	ea). CAN-H, CA
ECM BCM	Data lin connect		Steering angle sensor	ABS actua and electric (control	tor i unit	IPDM E/R

LAN

K

Ν

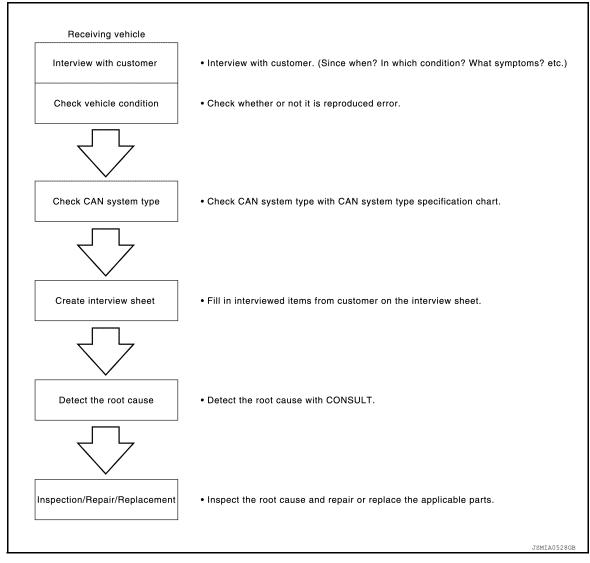
0

# **BASIC INSPECTION**

## DIAGNOSIS AND REPAIR WORKFLOW

### Trouble Diagnosis Flow Chart

INFOID:0000000008729103



# Trouble Diagnosis Procedure

INFOID:0000000008729104

#### INTERVIEW WITH CUSTOMER

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

#### Points in interview

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

#### Notes for checking error symptoms:

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

#### **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Α

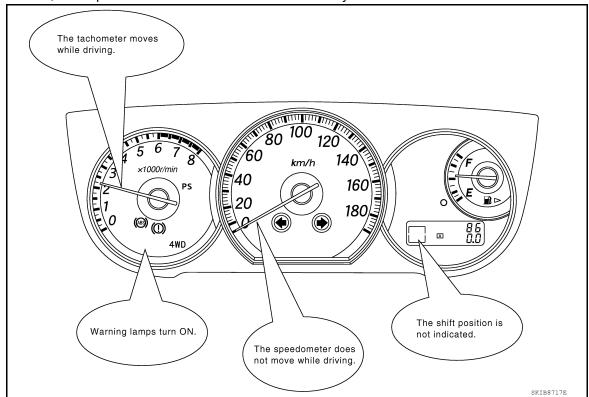
В

D

Е

Н

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



#### INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

#### NOTE:

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

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

#### NOTE:

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

CAN System Type Specification Chart (Style A)

#### NOTE:

LAN

K

Ν

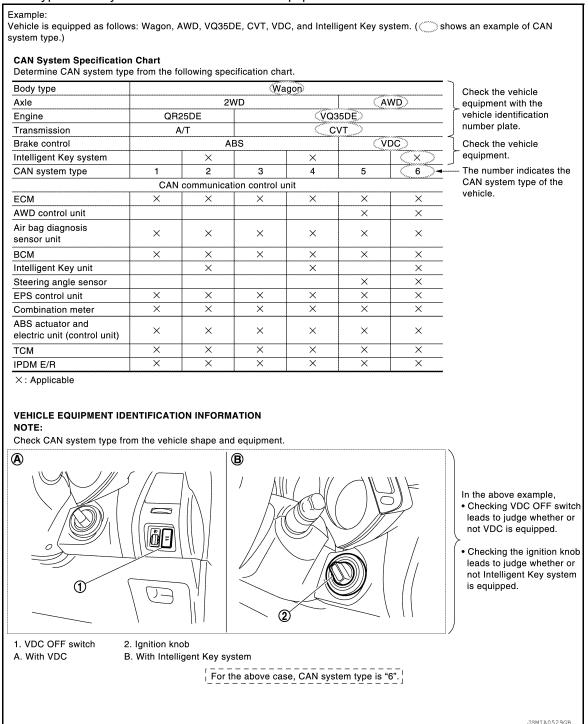
C

### **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

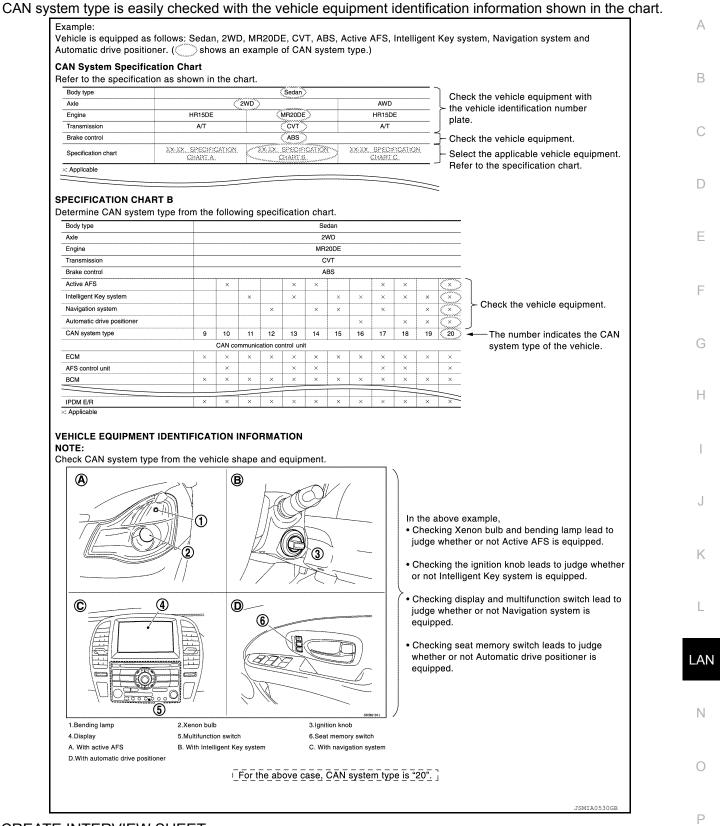


CAN System Type Specification Chart (Style B) **NOTE:** 

#### DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



### CREATE INTERVIEW SHEET

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

Interview Sheet (Example)

CAN Communication System Diagnosis Interview She	et
Date received: 3, Feb. 2006	
Type: DBA-KG11 VIN No.: KG11-005040	
Model: BDRARGZG11EDA-E-J-	
First registration: 10, Jan. 2001 Mileage: 62,140	
CAN system type: Type 19	
Symptom (Results from interview with customer)	
<ul> <li>Headlamps suddenly turn ON while driving the vehicle.</li> <li>The engine does not restart after stopping the vehicle and turning the ignition switch OFF.</li> </ul>	
•The cooling fan continues rotating while turning the ignition switch ON.	
Condition at inspection	
Error Symptom: (Present) / Past	
The engine does not start.  While turning the ignition switch ON,  The headlamps (Lo) turn ON, and the cooling fan continues rotating.  The interior lamp does not turn ON.	
	JSMIA0531GB

### DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

### **HOW TO USE THIS SECTION**

< HOW TO USE THIS MANUAL >

[CAN]

Α

В

D

# HOW TO USE THIS MANUAL

# HOW TO USE THIS SECTION

Information INFOID:0000000008729105

- "CAN" of LAN Section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to <u>LAN-18</u>, "<u>Trouble Diagnosis Flow Chart</u>" of "CAN FUNDAMENTAL".

Abbreviation List

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

	Unit name	Abbreviation
E	Air bag diagnosis sensor unit	A-BAG
	ABS actuator and electric unit (control unit)	ABS
F	AV control unit	AV
	ITS control unit	AVM
	BCM	ВСМ
G	Data link connector	DLC
	ECM	ECM
Н	Power steering control module	EPS
''	A/C auto amp.	HVAC
	IPDM E/R	IPDM-E
	Combination meter	M&A
	Steering angle sensor	STRG
	TCM	TCM

LAN

K

Ν

0

< PRECAUTION > [CAN]

# **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 SR and SB section 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 SR section.
- 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 Airbag Diagnosis Sensor Unit or other Airbag 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

INFOID:0000000008729108

#### **CAUTION:**

Follow the instructions listed below. Failure to do this may cause damage to parts:

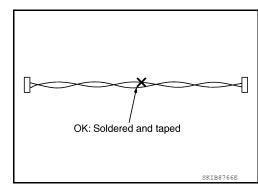
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

Precautions for Harness Repair

INFOID:0000000008729109

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).

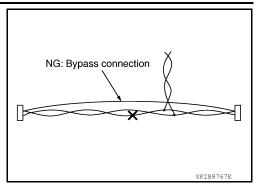


### **PRECAUTIONS**

< 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.

F

Α

В

C

D

Е

Н

Κ

L

LAN

Ν

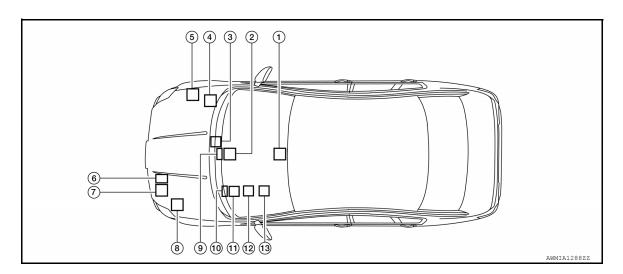
0

INFOID:0000000008729110

# SYSTEM DESCRIPTION

# **COMPONENT PARTS**

# **Component Parts Location**



- (1) Air bag diagnosis sensor unit
- (4) ABS actuator and electric unit (control unit)
- ⑦ ECM
- Data link connector
- (13) Steering angle sensor

- AV control unit
- ⑤ Power steering control module
- (8) IPDM E/R
- (11) BCM

- (3) ITS control unit
- 6 TCM
- A/C auto amp.
- (12) Combination meter

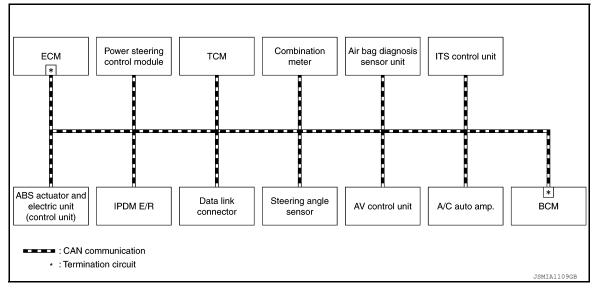
### **SYSTEM**

### CAN COMMUNICATION SYSTEM

# CAN COMMUNICATION SYSTEM: System Description

INFOID:0000000008729111

#### SYSTEM DIAGRAM

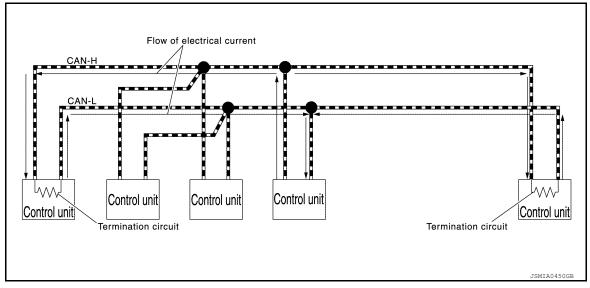


#### **DESCRIPTION**

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

#### CAN COMMUNICATION SIGNAL GENERATION

Termination circuits (resistors) are connected across the CAN communication system. When transmitting a
CAN communication signal, each control unit passes a current to the CAN-H line and the current returns to
the CAN-L line.



Revision: August 2012 LAN-27 2013 Altima Sedan

D

Α

В

\_

F

G

-

J

K

LAN

N

0

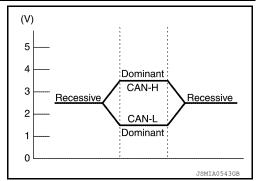
Ρ

[CAN]

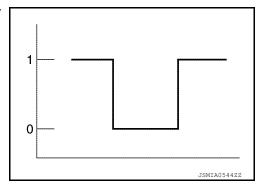
 The current flows separately into the termination circuits connected across the CAN communication system and the termination circuits drop voltage to generate a potential difference between the CAN-H line and the CAN-L line.

#### NOTE:

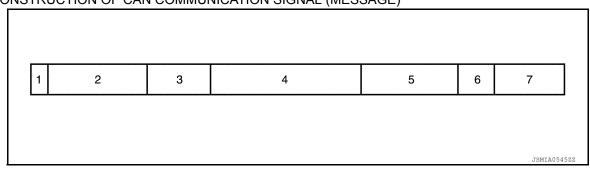
A signal with no current passage is called "Recessive" and one with current passage is called "Dominant".



• The system produces digital signals for signal communications, by using the potential difference.



THE CONSTRUCTION OF CAN COMMUNICATION SIGNAL (MESSAGE)

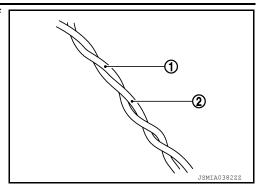


No.	Message name	Description
1	Start of frame (1 bit)	Start of message.
2	Arbitration of field (11 bit)	Priorities of message-sending are shown when there is a possibility that multiple messages are sent at the same time.
3	Control field (6 bit)	Signal quantity in data field is shown.
4	Data field (0-64 bit)	Actual signal is shown.
5	CRC field (16 bit)	<ul> <li>The transmitting control unit calculates sending data in advance and writes the calculated value in a message.</li> <li>The receiving control unit calculates received data and judges that the data reception is normal when the calculated value is the same as the value written in the sent data.</li> </ul>
6	ACK field (2 bit)	The completion of normal reception is sent to the transmitting unit.
7	End of frame (7 bit)	End of message.

**CAN Communication Line** 

[CAN]

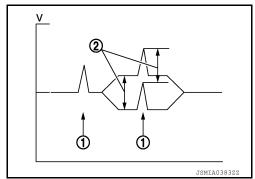
The CAN communication line is a twisted pair wire consisting of strands of CAN-L ① and CAN-L ② and has noise immunity.



#### NOTE:

The CAN communication system has the characteristics of noise-resistant because this system produces digital signals by using the potential difference between the CAN-H line and the CAN-L line and has the twisted pair wire structure.

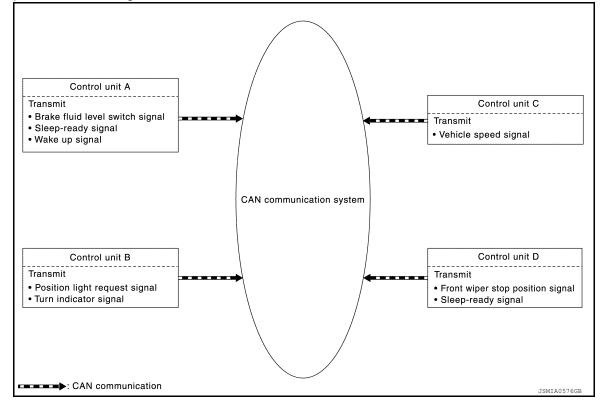
Since the CAN-H line and the CAN-L line are always adjacent to each other, the same degree of noise occurs, respectively, when a noise ① occurs. Although the noise changes the voltage, the potential difference ② between the CAN-H line and the CAN-L line is insensitive to noise. Therefore, noise-resistant signals can be obtained.



### **CAN Signal Communications**

Each control unit of the CAN communication system transmits signals through the CAN communication control circuit included in the control unit and receives only necessary signals from each control unit to perform various kinds of control.

· Example: Transmitted signals



Revision: August 2012 LAN-29 2013 Altima Sedan

D

Е

Α

В

F

G

Н

K

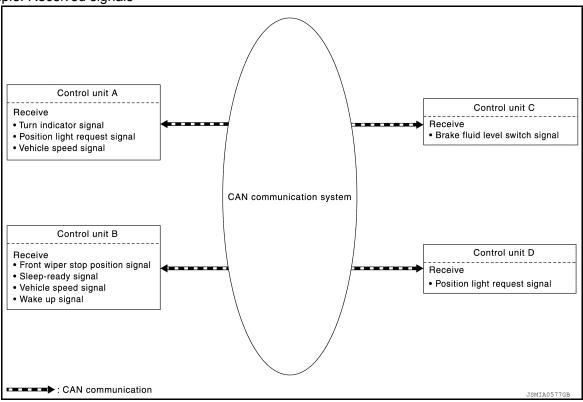
L

LAN

Ν

0

· Example: Received signals

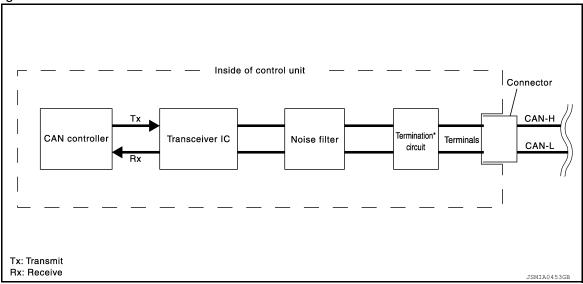


#### NOTE:

The above signal names and signal communications are provided for reference purposes. For CAN communications signals of this vehicle, refer to <u>LAN-32</u>, <u>"CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u>.

### CAN COMMUNICATION SYSTEM: CAN Communication Control Circuit INFOID:0000000

CAN communication control circuit is incorporated into the control unit and transmits/receives CAN communication signals.



Component	System description
CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.
Transceiver IC	It converts digital signal into CAN communication signal, and CAN communication signal into digital signal.

[CAN]

Α

В

D

Е

F

Н

J

K

L

Component System description		
Noise filter	It eliminates noise of CAN communication signal.	
Termination circuit <sup>*</sup> (Resistance of approx. 120 Ω)	Generates a potential difference between CAN-H and CAN-L.	

<sup>\*:</sup> These are the only control units wired with both ends of CAN communication system.

# CAN COMMUNICATION SYSTEM: CAN System Specification Chart

INFOID:0000000008729113

Determine CAN system type from the following specification chart.

NOTE:

Refer to LAN-18, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type	Sedan										
Axle	2WD										
Engine	QR25DE VQ35DE										
Transmission	CVT										
Brake control	VDC										
Navigation system			×	×			×	×			
Automatic air conditioner		×	×	×		×	×	×			
Driver assistance system				×				×			
CAN system type	1	2	3	4	5	6	7	8			
	C	AN commu	inication un	it							
ECM	×	×	×	×	×	×	×	×			
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×			
Power steering control module	×	×	×	×	×	×	×	×			
IPDM E/R	×	×	×	×	×	×	×	×			
TCM	×	×	×	×	×	×	×	×			
Data link connector	×	×	×	×	×	×	×	×			
Combination meter	×	×	×	×	×	×	×	×			
Steering angle sensor	×	×	×	×	×	×	×	×			
AV control unit			×	×			×	×			
ITS control unit				×				×			
A/C auto amp.		×	×	×		×	×	×			
BCM	×	×	×	×	×	×	×	×			

x: Applicable

#### VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

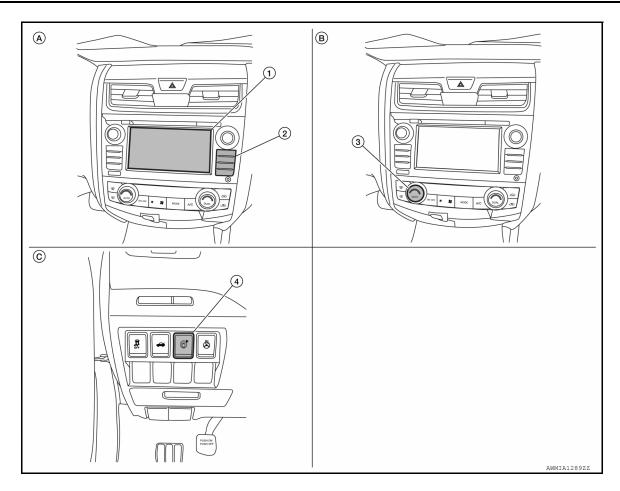
NOTE:

Check CAN system type from the vehicle shape and equipment.

Ν

0

LAN



- (1) 7 inch color display
- (2) NAVI switches

(3) Automatic temperature control dial

- (4) Warning systems switch
- (A) With Navigation system
- (B) With auto A/C

© With driver assistance system

# CAN COMMUNICATION SYSTEM: CAN Communication Signal Chart

INFOID:000000000872915

Refer to <u>LAN-17</u>, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart.

#### NOTE:

Refer to LAN-23, "Abbreviation List" for the abbreviations of the connecting units.

									T: Transmit R: Receiv				
Signal name	ECM	EPS	IPDM-E	TCM	M&A	STRG	AV	AVM	HVAC	ABS	BCM		
A/C compressor request signal	Т		R						R				
Accelerator pedal position signal	Т			R			R			R			
ASCD operation signal	Т			R									
ASCD status signal	Т				R								
Closed throttle position signal	Т			R									
Cooling fan speed request signal	Т		R						R				
Engine coolant temperature signal	Т		R	R	R			R	R				
Engine and CVT integrated control signal	Т			R									
	R			Т									
Engine speed signal	Т			R	R		R		R	R			

# **SYSTEM**

[CAN] < SYSTEM DESCRIPTION >

Signal name	ECM	EPS	IPDM-E	TCM	M&A	STRG	A	AVM	HVAC	ABS	BCM	
Engine status signal	Т	R	R				R				R	•
Fuel consumption monitor signal	Т				R		R					•
Fuel filler cap warning display signal	T				R							•
Malfunctioning indicator lamp signal	Т				R							•
Manufictioning indicator lamp signal	R			Т								
Oil pressure warning lamp signal	Т				R							
Power generation command value signal	Т		R									
Wide open throttle position signal	Т			R								•
EPS operation signal	R	Т										-
Hydraulic pump electric power steering warning lamp signal		Т			R							-
Detention switch signal			Т		R						R	-
Front wiper stop position signal			Т								R	•
High beam status signal	R		Т									•
Hood switch signal			Т								R	
Interlock/PNP switch signal			R								Т	•
THEHOCK/PINP SWITCH SIGNAL			Т		R						R	-
Low beam status signal	R		Т									•
Oil pressure switch signal					R						Т	•
			Т		R						R	
Push-button ignition switch status signal			Т								R	•
Rear window defogger control signal	R		Т									
Starter relay status signal			Т								R	
Steering lock unit status signal			Т								R	•
Steering lock relay signal			R								Т	
oteering lock relay signal			Т								R	•
Current gear position signal				Т						R		
CVT position indicator signal				Т	R					R		
Input shaft revolution signal	R			Т						R		
Manual mode indicator signal				Т	R					R		
N range signal				Т							R	_
Output shaft revolution signal	R			Т						R		_
O/D OFF indicator signal <sup>*1</sup>				Т	R			R				
P range signal				Т						R	R	•
Shift position signal				Т	R							•
Distance to empty signal					Т		R					
Fuel filler cap warning reset signal	R				Т							•
Fuel level low warning signal					Т		R					•
Fuel level sensor signal	R				Т							•
Paddle shift down signal <sup>*</sup> 2				R	Т							•
Paddle shift up signal <sup>*2</sup>				R	Т							-

**LAN-33** Revision: August 2012 2013 Altima Sedan

Signal name	ECM	EPS	IPDM-E	TCM	M&A	STRG	AV	AVM	HVAC	ABS	BCM
Manual mode signal*2				R	Т						
Market information signal					Т		R		R		
Not manual mode signal*2				R	Т						
Overdrive control switch signal <sup>*1</sup>				R	Т						
Parking brake switch signal					Т					R	R
Seat belt buckle switch signal					Т						R
Matinta and discol	R	R	R	R	Т		R				R
Vehicle speed signal	R	R	R		R		R	R		Т	R
Steering angle sensor signal		R				Т		R		R	
A/C switch signal	R								T*3		T*4
Blower fan motor switch signal	R								T*3		T*4
ABS operation signal				R						Т	
ABS warning lamp signal					R					Т	
Brake warning lamp signal					R					Т	
SLIP indicator lamp signal					R					Т	
TCS operation signal	R									Т	
VDC OFF indicator lamp signal					R					Т	
VDC operation signal	R									Т	
Buzzer output signal					R						Т
Day time running light request signal			R					R	R		Т
Door switch signal			R		R		R	R			Т
Front fog light request signal			R		R			R	R		Т
Front wiper request signal			R								Т
High beam request signal			R		R			R	R		T
Horn reminder signal			R								T
Ignition switch ON signal			R								Т
Key warning signal					R						Т
Low beam request signal			R		R			R	R		Т
Meter display signal					R						Т
Position light request signal			R		R			R	R		Т
Rear window defogger switch signal			R						R		T
Sleep wake up signal			R		R						Т
Starter control relay signal			R								Т
Theft warning horn request signal			R								Т
Tire pressure data signal					R		R				Т
Trunk switch signal					R		R	R			Т
Turn indicator signal					R		R	R			Т

<sup>\*1:</sup> QR25DE models

#### NOTE

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

<sup>\*2:</sup> VQ35DE models

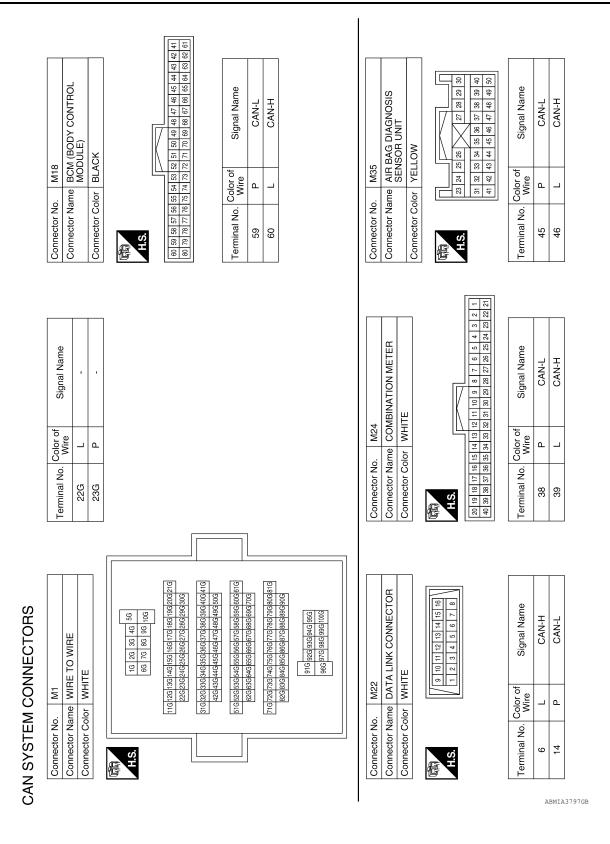
<sup>\*3:</sup> With automatic air conditioning system

<sup>\*4:</sup> With manual air conditioning system

# [CAN] < WIRING DIAGRAM > **WIRING DIAGRAM** Α **CAN SYSTEM** Wiring Diagram INFOID:0000000008729115 В (OB): GR25DE FOR CALIFORNIA (QC): GR25DE EXCEPT FOR CALIFORNIA (VQ): WITH VQ35DE \*2\QB\:99 \VQ\:113 BCM (BODY CONTROL MODULE) (M18) C D \*1 (VQ): 110 (VQ): 114 A/C AUTO AMP. (M152): (AA) ITS CONTROL UNIT (M58): <DQ> (g) Е (AA): WITH AUTO A/C (DO): WITH DRIVE ASSISTANCE SYSTEM (NN): WITH NAVIGATION SYSTEM AND BOSE (NP): WITH NAVIGATION SYSTEM WITHOUT (NP): WITH NAVIGATION SYSTEM AV CONTROL UNIT AIR BAG DIAGNOSIS SENSOR UNIT (M35) F (M96): (NN) (M151): (NN) JOINT CONNECTOR-M07 (M156) G STEERING ANGLE SENSOR (M53) COMBINATION METER (M24) Н JOINT CONNECTOR-M06 (M155) DATA LINK CONNECTOR M22 JOINT CONNECTOR-M05 (M89) J (E (E30) F2 TCM (TRANSMISSION CONTROL MODULE) (F16) K JOINT CONNECTOR-E04 (E22) POWER STEERING CONTROL MODULE (E59) IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) LAN JOINT CONNECTOR-E03 (E21) ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E54) Ν 0 **CAN SYSTEM**

**LAN-35** Revision: August 2012 2013 Altima Sedan Р

ABMWA1580GB



Α

В

С

 $\mathsf{D}$ 

Е

F

G

Н

J

Κ

**CAN SYSTEM** 

6	Connector Name JOINT CONNECTOR-M05 Connector Color WHITE	2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Signal Name	I	I	ı
M89	or WH		Solor of Wire	_	_	_
Connector No.	Connector Name JOINT C	所 H.S.	Terminal No. Wire	2	က	4
		3 2 1 1 2 2 2 2 2 1 1 2 2 2 2 2 2 2 2 2				
8	Connector Name ITS CONTROL UNIT Connector Color WHITE	12   11   10   9   8   7   6   5   4   4   13   130   29   28   27   29   25   24	Signal Name	CAN-L	CAN-H	
. M58	lor WH	15 14 13 35 34 33	Color of Wire	۵	_	
Connector No.	Connector Name ITS COI	H.S.  20 19 18 17 16 10 10 10 10 10 10 10 10 10 10 10 10 10	Terminal No. Wire	7	27	
	[m]					1
3	Connector Name STEERING ANGLE SENSOR Connector Color WHITE	4 80	Signal Name	ı	ı	
. M53	or WH	- 0	Color of Wire	۵		
Connector No.	Connector Name STEERI	画 H.S.	Terminal No. Color of Wire	2	5	

					19 20	1			
	52	Connector Name A/C AUTO AMP. (WITH AUTO A/C)	31		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 36 37 38 39 40		Signal Name	CAN-H	CAN-L
	M152	me A/C	or		6 7 8		Color of Wire	_	Д
	Connector No.	Connector Na	Connector Color WHITE	南 H.S.	1 2 3 4 5 21 22 23 24 25		Terminal No. Wire	-	21
	Connector No. M151	Connector Name NAVIGATION SYSTEM	Connector Color WHITE	2 3 4 4 5 6 7 8 9 9	19 10 11 12 13 14 15 16 17 18 20		Terminal No. Color of Signal Name Wire	8 L CAN-H	17 P CAN-L
!	J	0	JO				Г		
		Ĕ			R				

Connector No.	). M96	
Connector Name		AV CONTROL UNIT (WITH NAVIGATION SYSTEM WITHOUT BOSE)
Connector Color WHITE	olor WH	ТЕ
原 H.S.	19 10 10 10 10 10 10 10 10 10 10 10 10 10	1 2 3 4 5 6 7 8 9 0 10 11 12 13 14 15 16 17 118 20
Terminal No.	Color of Wire	Signal Name
8	٦	CAN-H
17	Ь	CAN-L

ABMIA3798GB

Revision: August 2012 LAN-37 2013 Altima Sedan

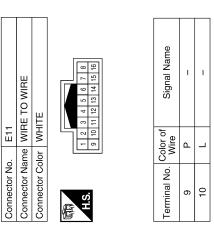
LAN

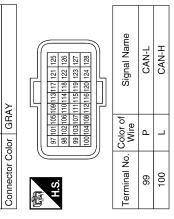
Ν

0

57	Connector Name JOINT CONNECTOR-M08 Connector Color WHITE	4 3 2 1	Signal Name	1	I	ı	I
M 15	or WH		Solor of Wire	Ь	Ь	Д	Ь
Connector No. M157	Connector Name JOINT (	infin H.S.	Terminal No. Wire	1	2	က	4
		1					
99	Connector Name JOINT CONNECTOR-M07 Connector Color WHITE	4 3 2 1	Signal Name	_	_	1	_
M156	or WH		Solor of Wire	7	٦	_	٦
Connector No.	Connector Name JOINT C	原则 H.S.	Terminal No. Wire	1	2	က	4
		7					
ð	Connector Name JOINT CONNECTOR-M06 Connector Color WHITE	4 3 2 1	Signal Name	ı	I	I	
M155	or WHI		Color of Wire	۵	۵	۵	
Connector No.	Connector Name JOINT (	京 H.S.	Terminal No. Color of Wire	2	က	4	

E21 IOINT CONNECTOR-E03	AY	2 2 1	Signal Name	I	ı	I	_	ı	-
9		9	Color of Wire	_	Τ	_	٦	_	٦
Connector No.	Connector Color	馬 H.S.	Terminal No.	F	2	ဇ	4	5	9





ABMIA3799GB

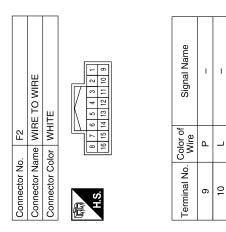
Connector Name ECM (QR25DE EXCEPT FOR CALIFORNIA)

E10

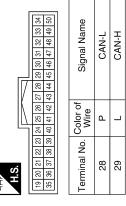
Connector No.

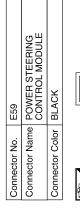
< WIRING DIAGRAM > [CAN]

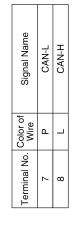
Signal Name	1	1											ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	X		35 34 33 32 31 30 29 28 27 28 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Signal Name	CAN-L	CAN-H	A B
Color of Wire	_	Ъ												-		38 37 36 38 13 24 23 13 12 11	Color of Wire	۵	_	D
Terminal No.	22G	23G										Connector No.	Connector Name	Connector Color		HS	Terminal No.	14	56	Е
																				F
O MIDE	- I		56 46 36 26 16 106 96 86 76 66	21G 20G 19G 18G 17G 18G 15G 14G 13G 12G 11G 30G 29G 28G 27G 26G 25G 24G 23G 22G	416406396386376366356346336326316	506 496 486 476 466 456 446 436 426	6166065965865765695565656556516	28467466462546246	81G80G79G78G77G76G75G74G73G72G71G	95G 94G 93G 92G 91G			ECM (WITH VQ35DE) GRAY			99 102 100 110 114 118 122 128 99 103 107 111 115 119 123 127 100 104 108 112 115 115 115 115 115 115 115 115 115	Signal Name	CAN-L	CAN-H	G
E30	Jan WHIT		56	216206196	41G40G39G	50G 49G	61G60G59G	1096961	81G80G79G	100					97 101 105	98 102106 99 103107 1000104108	Color of Wire	۵	_	I
Connector No. E30	Connector Color WHITE		H.S.									Connector No.	Connector Name Connector Color	9	H.S.		Terminal No.	113	114	J
																				K
Connector No. E22	404-CO CO ENTRE		2 1	Signal Name	ı	ı	1 1	1	ı				ECM (QR25DE FOR CALIFORNIA)		100 100 100	4118 122 126 5119 123 127 5120 124 128	Signal Name	CAN-L	CAN-H	L
E22	GRAY	5	8 8	Color of Wire	а.	<u> </u>		. 6	<u>a</u>					GHAY	201 100 H00H00H00H00H00H00H	98   102   102   122   122   123   124   128   124   124   128   124   1	Color of Wire	<u>a</u>	_	LAN
Connector No.	Connector Color			lal No. W								Connector No.	Connector Name	Connector Color			al No. Cole			Ν
Conne			雨 H.S.	Terminal No.	_	2 0	Σ 4	. 10	9			Conne	Conne	Conne	唐	д.	Terminal No.	66	100	0
											I						ABMIA	3800	GB	Р

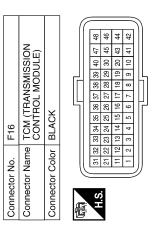












Signal Name	CAN-L	CAN-H
Color of Wire	Ь	_
Terminal No.	23	33

ABMIA3801GB

## **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION > [CAN]

# **BASIC INSPECTION**

# DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

Α

С

 $\mathsf{D}$ 

Е

F

Н

K

LAN

0

Р

SKIB8898E

INO I L	N	0	Т	Ε	
---------	---	---	---	---	--

Refer to <u>LAN-18</u>, "Trouble <u>Diagnosis Procedure"</u> for how to use interview sheet.

CAN Communication Syster	
	Date received:
Type:	VIN No.:
Model:	
irst registration:	Mileage:
CAN system type:	
Symptom (Results from interview with cus	stomer)
Condition at inspection	
Error symptom : Present / Past	

# **DTC/CIRCUIT DIAGNOSIS**

# MALFUNCTION AREA CHART

Main Line

Malfunction area	Reference
Main line between IPDM E/R and data link connector	LAN-43, "Diagnosis Procedure"
Main line between data link connector and combination meter	LAN-44, "Diagnosis Procedure"
Main line between combination meter and air bag diagnosis sensor unit (with auto A/C)	LAN-45, "Diagnosis Procedure"
Main line between combination meter and air bag diagnosis sensor unit (with manual A/C)	LAN-46, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and A/C auto amp.	LAN-47, "Diagnosis Procedure"

Branch Line

Malfunction area	Reference
ECM branch line circuit	LAN-48, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-49, "Diagnosis Procedure"
Power steering control module branch line circuit	LAN-50, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-51, "Diagnosis Procedure"
TCM branch line circuit	LAN-52, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-53, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-54, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-55, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-56, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-57, "Diagnosis Procedure"
ITS control unit branch line circuit	LAN-58, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-59, "Diagnosis Procedure"
BCM branch line circuit	LAN-60, "Diagnosis Procedure"

Short Circuit

Malfunction area	Reference				
CAN communication circuit	LAN-61, "Diagnosis Procedure"				

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

Е

F

Н

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008729120

# 1. CHECK CONNECTOR

- 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 side and harness side).
- Harness connector E30
- Harness connector M1

#### 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
L03	28		23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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.		
M1	22G	M22	6	Existed
IVI I	23G		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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

0

Ν

Р

Revision: August 2012 LAN-43 2013 Altima Sedan

LAN

K

L

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

# Diagnosis Procedure

INFOID:0000000008729152

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter	r harness connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M22	6	6 M24	39	Existed
IVIZZ	14	IVIZ4	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

Е

F

Н

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

# Diagnosis Procedure

INFOID:0000000008729154

- 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)
- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	M152	1	Existed
IVI24	38	WI 152	21	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 combination meter and the air bag diagnosis sensor unit.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

LAN

K

Ν

0

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

# Diagnosis Procedure

INFOID:0000000008748421

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- BCM
- 4. Check the continuity between the combination meter harness connector and the BCM harness connector.

Combination mete	r harness connector	BCM harne	ss connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	M18	60	Existed
IVIZ4	38	IVITO	59	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the combination meter and the air bag diagnosis sensor unit.

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

C

D

Е

F

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

# Diagnosis Procedure

INFOID:0000000008729155

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	M152	1	Existed
IVI24	38	WI 152	21	Existed

### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

Н

J

Κ

L

LAN

Ν

0

[CAN]

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008729121

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 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

- Disconnect the connector of ECM.
- Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	rtesistance (52)	
E10	100 99		Approx. 108 – 132

#### QR25DE for California

	Resistance (Ω)		
Connector No.	Termi	resistance (22)	
E31	100	99	Approx. 108 – 132

#### VQ35DE

	Resistance (Ω)	
Connector No.	Termi	Tresistance (12)
E32	114	Approx. 108 – 132

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

Н

## ABS BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008729122

## 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	Resistance (Ω)		
Connector No.	Termi	resistance (52)	
E54	26 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.

## 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 BRC-65, "Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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.

LAN

K

Ν

Р

Revision: August 2012 LAN-49 2013 Altima Sedan

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## **EPS BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000008729126

# 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 power steering control module for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Powers	Power steering control module harness connector			
Connector No.	Termi	Resistance ( $\Omega$ )		
E59	8 7		Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

## IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

F

Н

## IPDM-E BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008729123

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Termi	1\esistance (\(\frac{1}{2}\)	
E63	29	Approx. 54 – 66	

#### 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-31, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

LAN

K

Ν

[CAN]

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008729124

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
F16	33 23		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>TM-163</u>, "<u>Diagnosis Procedure</u>"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
  VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

>> Repair the power supply and the ground circuit.

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

Е

F

## DLC BRANCH LINE CIRCUIT

## **Diagnosis Procedure**

INFOID:0000000008729125

# 1. CHECK CONNECTOR

1 OID:000000000123120

- 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.		i Nesistance (12)
M22	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.

Н

Κ

-

LAN

Ν

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008729127

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	39 38		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

## STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

F

Н

## STRG BRANCH LINE CIRCUIT

# **Diagnosis Procedure**

INFOID:0000000008729128

# 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)
M53	5 2		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

#### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-55 2013 Altima Sedan

## A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008729162

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

# 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

### AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

D

Н

## AV BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008729161

## 1. CHECK CONNECTOR

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

- Disconnect the connector of AV control unit.
- Check the resistance between the AV control unit harness connector terminals.
- With navigation system without BOSE audio system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M96	8	17	Approx. 54 – 66

With navigation system and BOSE audio system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M151	8	17	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- With navigation system without BOSE audio system: AV-255, "AV CONTROL UNIT: Diagnosis Procedure"
- With navigation system and BOSE audio system: AV-357, "AV CONTROL UNIT : Diagnosis Procedure"

#### Is the inspection result normal?

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

- With navigation system without BOSE audio system: AV-282, "Removal and Installation"
- With navigation system and BOSE audio system: AV-396, "Removal and Installation"

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

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

Ν

Р

**LAN-57** Revision: August 2012 2013 Altima Sedan LAN

L

## **AVM BRANCH LINE CIRCUIT**

[CAN] < DTC/CIRCUIT DIAGNOSIS >

## AVM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008729164

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the ITS 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

- Disconnect the connector of ITS control unit.
- Check the resistance between the ITS control unit harness connector terminals.

	ITS control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M58	27	7	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ITS control unit branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ITS control unit. Refer to DAS-60, "Diagnosis Proce-

#### Is the inspection result normal?

YES (Present error)>>Replace the ITS control unit. Refer to DAS-66, "Removal and Installation - ITS Control Unit".

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

>> Repair the power supply and the ground circuit.

## **HVAC BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN]

Α

В

D

F

Н

## **HVAC BRANCH LINE CIRCUIT**

# Diagnosis Procedure

INFOID:0000000008729163

# 1. CHECK CONNECTOR

31D.0000000000123100

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

	A/C auto amp. harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M152	1	21	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP. : Diagnosis Procedure".</u>

#### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-59 2013 Altima Sedan

## **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008729129

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 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

- Disconnect the connector of BCM.
- Check the resistance between the BCM harness connector terminals.

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M18	60 59		Approx. 108 – 132

#### 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-71, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

# CAN COMMUNICATION CIRCUIT

# Diagnosis Procedure

INFOID:0000000008729130

# 1.CONNECTOR INSPECTION

Α

В

D

F

Н

- 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
M22	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	
Maa	6		Not existed
M22	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 BCM TERMINATION CIRCUIT

- Remove the ECM and the BCM.
- Check the resistance between the ECM terminals.
- QR engine models

ECM		Resistance (Ω)	
Terminal No.			
100	99	Approx. 108 – 132	
VO angina madala			

VQ engine models

ECM		Resistance (Ω)	
Terminal No.		1 (53) (52)	
114	113	Approx. 108 – 132	

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Revision: August 2012 LAN-61 2013 Altima Sedan

LAN

K

Ν

 $\circ$ 

## **CAN COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN]

#### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

## 5. CHECK SYMPTOM

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

#### Inspection result

Reproduced>>GO TO 6.

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

## 6.check unit reproduction

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

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

#### NOTE:

ECM and BCM 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.

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

INFOID:0000000008734168

Α

D

Е

Н

# DTC/CIRCUIT DIAGNOSIS

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

# Diagnosis Procedure

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E30
- Harness connector M1

#### Is 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E63	29	E30	22G	Existed
E03	28	E30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 3.check harness continuity (open circuit)

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

Harness	Harness connector		Data link connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M1	22G	M22	6	Existed
IVI I	23G	IVIZZ	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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

LAN

Ν

0

Р

Revision: August 2012 LAN-63 2013 Altima Sedan

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734169

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6 M34	M24	39	Existed
IVIZZ	14	10124	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

## Diagnosis Procedure

INFOID:0000000008748427

Α

В

D

Е

F

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- BCM
- 4. Check the continuity between the combination meter harness connector and the BCM harness connector.

Combination meter	er harness connector	BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	M34	M18	60	Existed
IVIZ4	38	IVITO	59	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the combination meter and the air bag diagnosis sensor unit.

Н

.1

Κ

L

LAN

Ν

0

## **ECM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

### ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734172

# 1. CHECK CONNECTOR

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

- Disconnect the connector of ECM.
- Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	redistance (32)	
E10	100 99		Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	110313(81100 (52)	
E31	100 99		Approx. 108 – 132

#### VQ35DE

ECM harness connector			Resistance (Ω)
Connector No.	Termi	1/63/3/4/106 (22)	
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ABS BRANCH LINE CIRCUIT

# **Diagnosis Procedure**

#### INFOID:0000000008734173

Α

В

D

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	resistance (52)	
E54	26 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.

## 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 BRC-65, "Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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.

LAN

K

Ν

Р

Revision: August 2012 LAN-67 2013 Altima Sedan

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## **EPS BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000008734174

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Powers	Power steering control module harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
E59	8 7		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# ${f 3}$ .check power supply and ground circuit

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

## **IPDM-E BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## IPDM-E BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734175

Α

В

D

F

Н

# 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	1\esistance (22)	
E63	29 28		Approx. 54 – 66

#### 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-31, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

LAN

Ν

Р

Revision: August 2012 LAN-69 2013 Altima Sedan

## TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734176

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	Resistance (Ω)		
Connector No.	Terminal No.		incesistance (22)
F16	33	23	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>TM-163</u>, "<u>Diagnosis Procedure</u>"
- VQ35DE: TM-366, "Diagnosis Procedure"

#### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
  VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

>> Repair the power supply and the ground circuit.

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## DLC BRANCH LINE CIRCUIT

# **Diagnosis Procedure**

INFOID:0000000008734177

Α

В

D

Е

F

# 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.

	Resistance (Ω)		
Connector No.	Terminal No.		resistance (52)
M22	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.

Н

K

L

LAN

Ν

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734178

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Resistance (Ω)		
Connector No.	Terminal No.		incesistance (\$2)
M24	39	38	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

### STRG BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

### STRG BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734179

Α

В

D

F

Н

## 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	1 (esistance (sz)
M53	5	Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

## ${f 3}$ .check power supply and ground circuit

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

#### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-73 2013 Altima Sedan

### A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

### A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734180

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

# 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

### **BCM BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

# BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734184

Α

В

D

F

Н

# 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

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

	Resistance (Ω)		
Connector No.	Termi	1\esistance (22)	
M18	60 59		Approx. 108 – 132

#### 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-71, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

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

LAN

Ν

Р

Revision: August 2012 LAN-75 2013 Altima Sedan

[CAN SYSTEM (TYPE 1)]

INFOID:0000000008734185

# CAN COMMUNICATION CIRCUIT

# Diagnosis Procedure

# 1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 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		
M22	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 connector			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	6	Giodila	Not existed	
IVIZZ	14		Not existed	

#### Is the inspection result normal?

YES >> GO TO 4.

IO >> Check the harness and repair the root cause.

# 4. CHECK ECM AND BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- 2. Check the resistance between the ECM terminals.
- QR engine models

ECM Terminal No.		Resistance ( $\Omega$ )	

VQ engine models

E	Resistance ( $\Omega$ )	
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the BCM terminals.

BO	Resistance (Ω)	
Terminal No.		
60 59		Approx. 108 – 132

## CAN COMMUNICATION CIRCUIT [CAN SYSTEM (TYPE 1)] < DTC/CIRCUIT DIAGNOSIS > Is the measurement value within the specification? Α >> GO TO 5. NO >> Replace the ECM and/or the BCM. 5. CHECK SYMPTOM В Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Inspection result C Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. D 6.CHECK UNIT REPRODUCTION Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. Е 2. Disconnect the battery cable from the negative terminal. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: F ECM and BCM have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 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. Н Non-reproduced>>Replace the unit whose connector was disconnected.

LAN

O

Р

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

# DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734186

## 1. 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 side and harness side).
- Harness connector E30
- Harness connector M1

#### Is 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
E03	28	E30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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	
M1	22G M22	M22	6	Existed	
IVI I	23G	IVIZZ	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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734187

Α

В

C

D

Е

F

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M24	39	Existed
IVIZZ	14	IVIZ	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

Н

J

Κ

L

LAN

Ν

0

Р

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

## Diagnosis Procedure

INFOID:0000000008734188

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M24	39	M152	1	Existed
IVI24	38	IVI 132	21	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734189

Α

В

C

D

Е

F

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M24	39	M152	1	Existed
IVIZ4	38		21	Existed

### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

LAN

K

L

Ν

0

Р

### **ECM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

#### INFOID:0000000008734190

## 1. CHECK CONNECTOR

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

- Disconnect the connector of ECM.
- Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E10	100	99	Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E31	100	Approx. 108 – 132	

#### VQ35DE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		TVESISIATICE (22)
E32	E32 114 113		

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

### **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### ABS BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734191

Α

В

D

Н

### 1. CHECK CONNECTOR

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

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	resistance (52)	
E54	26	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-65, "Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-123, "Removal and Installation".

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

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

Ν

Р

**LAN-83** Revision: August 2012 2013 Altima Sedan

LAN

K

### **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### **EPS BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:0000000008734192

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Powers	Power steering control module harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
E59	8 7		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

### IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## IPDM-E BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734193

Α

В

D

F

Н

# 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.		1\esistance (\(\frac{1}{2}\)
E63	29	Approx. 54 – 66	

#### 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-31, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

LAN

Ν

Р

Revision: August 2012 LAN-85 2013 Altima Sedan

### TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734194

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
F16	33	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>TM-163</u>, "<u>Diagnosis Procedure</u>"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
  VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

>> Repair the power supply and the ground circuit.

### **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### **DLC BRANCH LINE CIRCUIT**

## **Diagnosis Procedure**

INFOID:0000000008734195

Α

В

D

Е

F

# 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.		1\esistance (\(\frac{1}{2}\)
M22	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.

Н

J

Κ

L

LAN

Ν

(

Р

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734196

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M24	39 38		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

### STRG BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### STRG BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734197

Α

В

D

F

Н

### 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)
M53	5 2		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

#### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-89 2013 Altima Sedan

### A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734198

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

# 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

### **HVAC BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## **HVAC BRANCH LINE CIRCUIT**

# Diagnosis Procedure

#### INFOID:0000000008734201

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.check harness for open circuit

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

	A/C auto amp. harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M152	1 21		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP. : Diagnosis Procedure".</u>

#### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

LAN

K

Ν

Р

### **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734202

# 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)
M18	60	Approx. 108 – 132	

### 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-71, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

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

### **CAN COMMUNICATION CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

# **CAN COMMUNICATION CIRCUIT**

# Diagnosis Procedure

#### INFOID:0000000008734203

Α

В

D

F

Н

K

LAN

Ν

Р

# 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	Continuity	
M22	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
M22	6	Orbana	Not existed
IVIZZ	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 BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- Check the resistance between the ECM terminals.
- QR engine models

E <sub>1</sub>	CM	Resistance (Ω)	
Terminal No.		Tresistance (12)	
100 99		Approx. 108 – 132	
- VQ engine models			

ECM		Resistance (Ω)	
Terminal No.			
114	113	Approx. 108 – 132	

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Revision: August 2012 LAN-93 2013 Altima Sedan

### **CAN COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

#### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

## 5. CHECK SYMPTOM

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

#### Inspection result

Reproduced>>GO TO 6.

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

## 6.check unit reproduction

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

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

#### NOTE:

ECM and BCM 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.

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

INFOID:0000000008734204

# DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

# Diagnosis Procedure

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E30
- Harness connector M1

### Is 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.
- IPDM E/R
- Harness connectors E30 and M1
- 2. Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
E03	28	E30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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
M1	22G	M22	6	Existed
IVII	23G		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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

LAN

0

Ν

Р

Revision: August 2012 LAN-95 2013 Altima Sedan

Е

D

Α

G

Н

K

. . .

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734205

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter	r harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M24	39	Existed
IVIZZ	14	IVIZ4	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

# Diagnosis Procedure

#### INFOID:0000000008734206

Α

В

D

Е

F

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	39	M152	1	Existed	
IVIZ4	38		21	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 combination meter and the air bag diagnosis sensor unit.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

LAN

Ν

0

Р

Revision: August 2012 LAN-97 2013 Altima Sedan

K

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734207

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	39	M152	1	Existed
IVI24	38	IVI 132	21	Existed

### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

### **ECM BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### ECM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734208

Α

В

D

## 1. CHECK CONNECTOR

- 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

- Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	110313141100 (32)	
E10	100	99	Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	110313(81100 (52)	
E31	100 99		Approx. 108 – 132

#### VQ35DE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\frac{1}{2})
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

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

LAN

Ν

**LAN-99** Revision: August 2012 2013 Altima Sedan Р

### **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734209

### 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E54	26 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.

## 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 BRC-65, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="mailto:BRC-123">BRC-123</a>, "Removal and Installation".

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.

### **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### **EPS BRANCH LINE CIRCUIT**

# Diagnosis Procedure

#### INFOID:0000000008734210

Α

В

D

Е

Н

### 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.check harness for open circuit

- Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Power steering control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\(\frac{1}{2}\)
E59	8 7		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to STC-22, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to ST-38, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

Ν

Р

**LAN-101** Revision: August 2012 2013 Altima Sedan

LAN

K

### IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

INFOID:0000000008734211

# IPDM-E BRANCH LINE CIRCUIT

## Diagnosis Procedure

# 1. CHECK CONNECTOR

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

- 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.		inconstance (52)
E63	29	Approx. 54 – 66	

### 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-31, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

### TCM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734212

Α

В

D

Е

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\(\frac{1}{2}\)
F16	33	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: TM-163, "Diagnosis Procedure"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
   VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

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

LAN

Ν

Р

### **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### **DLC BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000008734213

# 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.		1\esistance (\(\frac{1}{2}\)
M22	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**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734214

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\frac{1}{2})
M24	39 38		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <a href="MWI-57">MWI-57</a>, "COMBINATION METER: Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-105 2013 Altima Sedan

### STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734215

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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)
M53	5 2		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

#### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734216

Α

В

C

D

Е

F

Н

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

## 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

LAN

Ν

Р

Revision: August 2012 LAN-107 2013 Altima Sedan

#### AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734217

### 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.
- With navigation system without BOSE audio system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Tresistance (22)
M96	8 17		Approx. 54 – 66

### With navigation system and BOSE audio system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		110313(81100 (52)
M151	8 17		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- With navigation system without BOSE audio system: AV-255, "AV CONTROL UNIT: Diagnosis Procedure"
- With navigation system and BOSE audio system: AV-357, "AV CONTROL UNIT : Diagnosis Procedure"

#### Is the inspection result normal?

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

- With navigation system without BOSE audio system: AV-282, "Removal and Installation"
- With navigation system and BOSE audio system: AV-396, "Removal and Installation"

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

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

## **HVAC BRANCH LINE CIRCUIT**

## < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## **HVAC BRANCH LINE CIRCUIT**

# Diagnosis Procedure

#### INFOID:0000000008734219

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Termi	1\esistance (22)	
M152	1	21	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP. : Diagnosis Procedure".</u>

### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-109 2013 Altima Sedan

## **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734220

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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

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

	Resistance (Ω)		
Connector No.	Termi	resistance (22)	
M18	60	59	Approx. 108 – 132

### 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-71, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

## **CAN COMMUNICATION CIRCUIT**

## < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# CAN COMMUNICATION CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734221

Α

В

D

F

Н

# 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.

	Continuity		
Connector No.	Termi	Continuity	
M22	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	
M22	6	Giodila	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 BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- Check the resistance between the ECM terminals.
- QR engine models

ECM Terminal No.		Resistance ( $\Omega$ )
		Resistance (12)
100	99	Approx. 108 – 132
- VQ engine models		

E	Resistance (Ω)	
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the BCM terminals.

В	- Resistance (Ω)	
Terminal No.		
60	59	Approx. 108 – 132

Revision: August 2012 LAN-111 2013 Altima Sedan

LAN

K

Ν

0

### **CAN COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

## 5. CHECK SYMPTOM

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

#### Inspection result

Reproduced>>GO TO 6.

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

## 6.check unit reproduction

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

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

#### NOTE:

ECM and BCM 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.

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

INFOID:0000000008734222

Α

D

Е

Н

# DTC/CIRCUIT DIAGNOSIS

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

# Diagnosis Procedure

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector E30
- Harness connector M1

### 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
E03	28	E30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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
M1	22G	M22	6	Existed
IVII	23G		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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

LAN

K

Ν

0

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734223

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M22	6	M24	39	Existed
IVIZZ	14	IVIZ4	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C) [CAN SYSTEM (TYPE 4)]

## < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

# Diagnosis Procedure

#### INFOID:0000000008734224

Α

В

D

Е

F

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	MAEO	1	Existed
IVI24	38	M152	21	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 combination meter and the air bag diagnosis sensor unit.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

LAN

K

Ν

0

Р

**LAN-115** Revision: August 2012 2013 Altima Sedan

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734225

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	M152	1	Existed
IVI24	38	IVI 132	21	Existed

### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

## **ECM BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ECM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734226

Α

В

D

## 1. CHECK CONNECTOR

- 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

- Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		110313141100 (32)
E10	100	99	Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance ( $\Omega$ )
Connector No.	Termi	110313(81100 (52)	
E31	100	99	Approx. 108 – 132

### VQ35DE

	ECM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

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

LAN

Ν

## **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734227

## 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Termi	Resistance (Ω)	
E54	26	Approx. 54 – 66	

## Is the measurement value within the specification?

YES >> GO TO 3.

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

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-65, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## **EPS BRANCH LINE CIRCUIT**

# **Diagnosis Procedure**

#### INFOID:0000000008734228

Α

В

D

Е

Н

## 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 power steering control module for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Power steering control module harness connector			Resistance (Ω)
Connector No.	Termi	1 (esistance (sz)	
E59	8	Approx. 54 – 66	

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

LAN

Ν

Р

Revision: August 2012 LAN-119 2013 Altima Sedan

I A N I

K

## IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

# IPDM-E BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734229

## 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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

- 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.	Termi	Resistance (Ω)	
E63	E63 29 28		

#### 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-31, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

## TCM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TCM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734230

Α

В

D

Е

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Termi	1 (esistance (sz)	
F16	F16 33 23		

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: TM-163, "Diagnosis Procedure"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
   VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

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

LAN

Ν

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

INFOID:0000000008734231

## **DLC BRANCH LINE CIRCUIT**

# Diagnosis Procedure

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Resistance (Ω)	
M22	6	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**

## < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## M&A BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734232

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

Co	Combination meter harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
M24	M24 39 38		

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <a href="MWI-57">MWI-57</a>, "COMBINATION METER: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

LAN

K

Ν

## STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734233

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		
Connector No.	Termi	Resistance (Ω)	
M53	M53 5 2		

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

## A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734234

Α

В

C

D

Е

F

Н

### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

## 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

LAN

Ν

Р

Revision: August 2012 LAN-125 2013 Altima Sedan

#### AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

# AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734235

## 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

- Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- With navigation system without BOSE audio system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Tredictation (22)
M96	8	Approx. 54 – 66	

### With navigation system and BOSE audio system

AV control unit harness connector			Resistance (Ω)
Connector No.	Connector No. Terminal No.		
M151	M151 8 17		

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- With navigation system without BOSE audio system: AV-255, "AV CONTROL UNIT: Diagnosis Procedure"
- With navigation system and BOSE audio system: AV-357, "AV CONTROL UNIT : Diagnosis Procedure"

#### Is the inspection result normal?

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

- With navigation system without BOSE audio system: AV-282, "Removal and Installation"
- With navigation system and BOSE audio system: AV-396, "Removal and Installation"

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

## **AVM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## AVM BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734236

## 1. CHECK CONNECTOR

Α

В

D

F

Н

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

	Resistance (Ω)	
Connector No.	Termi	1\esistance (22)
M58	27	Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ITS control unit branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ITS control unit. Refer to <u>DAS-60</u>, "<u>Diagnosis Procedure</u>".

### Is the inspection result normal?

YES (Present error)>>Replace the ITS control unit. Refer to <u>DAS-66, "Removal and Installation - ITS Control</u> Unit".

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

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

LAN

K

Ν

## **HVAC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734237

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Resistance (Ω)		
Connector No.	Termi	1/63/3/4/106 (22)	
M152	1 21		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP.</u>: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

## **BCM BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

# BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734238

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

	Resistance (Ω)		
Connector No.	Termi	1\esistance (\frac{1}{2})	
M18	60 59		Approx. 108 – 132

#### 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-71, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

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

LAN

Ν

Р

Revision: August 2012 LAN-129 2013 Altima Sedan

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

INFOID:0000000008734239

# 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		
M22	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 connector			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	6	Giodila	Not existed	
IVIZZ	14		Not existed	

#### Is the inspection result normal?

YES >> GO TO 4.

IO >> Check the harness and repair the root cause.

# 4. CHECK ECM AND BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- 2. Check the resistance between the ECM terminals.
- QR engine models

ECM		Resistance (Ω)	
Terminal No.			
100	99	Approx. 108 – 132	

VQ engine models

ECM Terminal No.		Resistance (Ω)	

3. Check the resistance between the BCM terminals.

BO	Resistance $(\Omega)$	
Terminal No.		
60	59	Approx. 108 – 132

# CAN COMMUNICATION CIRCUIT [CAN SYSTEM (TYPE 4)] < DTC/CIRCUIT DIAGNOSIS > Is the measurement value within the specification? >> GO TO 5. NO >> Replace the ECM and/or the BCM. 5. CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Inspection result Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and BCM have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 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.

Α

В

C

D

Е

F

Н

K

L

LAN

Ν

0

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# DTC/CIRCUIT DIAGNOSIS

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734240

## 1. 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 side and harness side).
- Harness connector E30
- Harness connector M1

#### 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.
- IPDM E/R
- Harness connectors E30 and M1
- 2. Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30 -	22G	Existed
L03	28		23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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	
M1	22G	M22	6	Existed	
IVI I	23G		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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734241

Α

В

D

Е

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M22	6	M24	39	Existed
IVIZZ	14		38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

K

LAN

Ν

0

Р

Revision: August 2012 LAN-133 2013 Altima Sedan

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH MANUAL A/C)

## Diagnosis Procedure

INFOID:0000000008748428

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- BCM
- 4. Check the continuity between the combination meter harness connector and the BCM harness connector.

Combination meter	er harness connector	BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	M24 39	M18	60	Existed
IVIZ- <del>1</del>	38	IVITO	59	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the combination meter and the air bag diagnosis sensor unit.

## **ECM BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ECM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734244

Α

В

D

Н

# 1. CHECK CONNECTOR

- 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

- Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector		Resistance (Ω)	
Connector No.	Terminal No.		resistance (22)
E10	100 99		Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E31	100 99		Approx. 108 – 132

### VQ35DE

ECM harness connector		Resistance (Ω)	
Connector No.	Terminal No.		1\esistance (\frac{1}{2})
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

## Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

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

LAN

Ν

## **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734245

# 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	ABS actuator and electric unit (control unit) harness connector		Resistance (Ω)
Connector No.	Terminal No.		resistance (52)
E54	26 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.

# 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 BRC-65, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## **EPS BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000008734246

Α

В

D

Е

Н

# 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 power steering control module for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Power steering control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\(\frac{1}{2}\)
E59	8 7		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-137 2013 Altima Sedan

ΛNI

## IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# IPDM-E BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734247

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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.		i Nesisiance (12)
E63	29	28	Approx. 54 – 66

#### 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-31, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

## TCM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TCM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734248

Α

В

D

Е

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		Resistance (Ω)
Connector No.	Terminal No.		1 (esistance (sz)
F16	33 23		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: TM-163, "Diagnosis Procedure"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
   VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

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

LAN

Ν

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

INFOID:0000000008734249

## **DLC BRANCH LINE CIRCUIT**

## Diagnosis Procedure

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		Resistance (Ω)
Connector No.	Terminal No.		110313(81100 (52)
M22	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**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## M&A BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734250

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.check harness for open circuit

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

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (\(\frac{1}{2}\)
M24	39 38		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <a href="MWI-57">MWI-57</a>, "COMBINATION METER: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-141 2013 Altima Sedan

### STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734251

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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)
M53	5 2		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

## 3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

## A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734252

Α

В

C

D

Е

F

Н

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

## 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

LAN

Ν

Р

Revision: August 2012 LAN-143 2013 Altima Sedan

## **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734256

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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 ( $\Omega$ )	
Connector No.	Terminal No.		resistance (22)
M18	60	59	Approx. 108 – 132

#### 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-71, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# CAN COMMUNICATION CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734257

# 1. CONNECTOR INSPECTION

Α

В

D

F

Н

K

LAN

Ν

Р

- 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	Continuity	
M22	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
M22	6	6 14	Not existed
IVIZZ	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 BCM TERMINATION CIRCUIT

- Remove the ECM and the BCM.
- Check the resistance between the ECM terminals.
- QR engine models

ECM Terminal No.		Resistance (Ω)	
VO angina models			

VQ engine models

ECM		Resistance (Ω)	
Terminal No.			
114	113	Approx. 108 – 132	

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Revision: August 2012 LAN-145 2013 Altima Sedan

## **CAN COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

# 5. CHECK SYMPTOM

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

### Inspection result

Reproduced>>GO TO 6.

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

## 6.check unit reproduction

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

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

#### NOTE:

ECM and BCM 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.

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

INFOID:0000000008734258

Α

D

Е

Н

# DTC/CIRCUIT DIAGNOSIS

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

# Diagnosis Procedure

# 1. CHECK CONNECTOR

- 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 side and harness side).
- Harness connector E30
- Harness connector M1

### 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R hai	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
E03	28		23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 3.check harness continuity (open circuit)

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

Harness	ss connector Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M1	22G	6	Existed	
IVII	23G	M22	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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

LAN

K

Ν

0

Р

Revision: August 2012 LAN-147 2013 Altima Sedan

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734259

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M24	39	Existed
IVIZZ	14	IVIZ4	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

# Diagnosis Procedure

INFOID:0000000008734260

Α

В

D

Е

F

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	39	M152	1	Existed
IVI24	38	WI 132	21	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 combination meter and the air bag diagnosis sensor unit.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

LAN

K

Ν

0

Р

**LAN-149** Revision: August 2012 2013 Altima Sedan

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734261

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	39	M152	1	Existed
IVI24	38	IVI 132	21	Existed

### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

## **ECM BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ECM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734262

Α

В

D

# 1. CHECK CONNECTOR

- 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

- Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	110313141100 (32)	
E10	100	99	Approx. 108 – 132

#### QR25DE for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi	110313(81100 (52)	
E31	100 99		Approx. 108 – 132

### VQ35DE

ECM harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		1\esistance (\(\frac{1}{2}\)
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

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

LAN

Ν

Р

**LAN-151** Revision: August 2012 2013 Altima Sedan

## **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734263

## 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	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E54	26 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.

# 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 BRC-65, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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.

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## **EPS BRANCH LINE CIRCUIT**

# **Diagnosis Procedure**

#### INFOID:0000000008734264

Α

В

D

Е

Н

## 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 power steering control module for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Power steering control module harness connector			Resistance (Ω)
Connector No.	Termi	1\esistance (\(\frac{1}{2}\)	
E59	8 7		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

LAN

Ν

Р

Revision: August 2012 LAN-153 2013 Altima Sedan

K

## **IPDM-E BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# IPDM-E BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734265

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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.		1\esistance (\(\frac{1}{2}\)
E63	29	Approx. 54 – 66	

### 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-31, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

## TCM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TCM BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734266

Α

В

D

Е

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		1\esistance (22)
F16	33	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: TM-163, "Diagnosis Procedure"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
   VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

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

LAN

Ν

Р

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## **DLC BRANCH LINE CIRCUIT**

# Diagnosis Procedure

## INFOID:0000000008734267

# 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.		1\esistance (\(\frac{1}{2}\)
M22	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**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734268

Α

В

D

F

Н

# 1. CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.check harness for open circuit

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

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	39 38		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to <a href="MWI-57">MWI-57</a>, "COMBINATION METER: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-157 2013 Altima Sedan

### STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734269

# 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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)
M53	5	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-46</u>, "Wiring Diagram".

### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

## A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# A-BAG BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734270

Α

В

C

D

Е

F

Н

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

# 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

LAN

Ν

Р

Revision: August 2012 LAN-159 2013 Altima Sedan

### **HVAC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734273

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		1/63/3/4/106 (22)
M152	1 21		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP.</u>: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

## **BCM BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# **BCM BRANCH LINE CIRCUIT**

## Diagnosis Procedure

#### INFOID:0000000008734274

Α

В

D

F

Н

# 1. CHECK CONNECTOR

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

### Is 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		
Connector No.	Terminal No.		Resistance (Ω)
M18	60	Approx. 108 – 132	

#### 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-71, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

Ν

Р

**LAN-161** Revision: August 2012 2013 Altima Sedan

LAN

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734275

# 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	Continuity	
M22	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 connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
IVIZZ	14		Not existed

#### Is the inspection result normal?

YES >> GO TO 4.

O >> Check the harness and repair the root cause.

# 4. CHECK ECM AND BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- 2. Check the resistance between the ECM terminals.
- QR engine models

ECM		Resistance (Ω)	
Terminal No.			
100 99		Approx. 108 – 132	

VQ engine models

ECM		Resistance (Ω)	
Terminal No.			
114	113	Approx. 108 – 132	

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)	
Terminal No.			
60 59		Approx. 108 – 132	

# CAN COMMUNICATION CIRCUIT [CAN SYSTEM (TYPE 6)] < DTC/CIRCUIT DIAGNOSIS > Is the measurement value within the specification? >> GO TO 5. NO >> Replace the ECM and/or the BCM. 5. CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Inspection result Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and BCM have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

LAN

Α

В

C

D

Е

F

Н

Ν

Р

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# DTC/CIRCUIT DIAGNOSIS

## MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734276

# 1. CHECK CONNECTOR

- 1. 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 side and harness side).
- Harness connector E30
- Harness connector M1

#### 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E63	29	E30	22G	Existed
E03	28	E30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

# 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
M1	22G	M22	6	Existed
IVI I	23G		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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734277

Α

В

C

D

Е

F

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link	connector	Combination meter	harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	M22	M24	39	Existed
IVIZZ	14	IVIZ	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

Н

Κ

L

LAN

Ν

0

Р

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

## Diagnosis Procedure

INFOID:0000000008734278

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	39	M152	1	Existed
IVI24	38	IVI 132	21	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

# **Diagnosis Procedure**

INFOID:0000000008734279

Α

В

C

D

Е

F

Н

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. h	arness connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	39	M152	1	Existed	
IVI24	38	WI 152	21	Existed	

## Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

LAN

K

L

Ν

0

Р

Revision: August 2012 LAN-167 2013 Altima Sedan

## **ECM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734280

# 1. CHECK CONNECTOR

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

- Disconnect the connector of ECM.
- Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

ECM harness connector			Resistance (Ω)
Connector No.	Termi		
E10	100 99		Approx. 108 – 132

#### QR25DE for California

	Resistance (Ω)	
Connector No.	Termi	110313161100 (22)
E31	100	Approx. 108 – 132

### VQ35DE

ECM harness connector			Resistance (Ω)
Connector No.	Termi	1/63/3/4/106 (22)	
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ABS BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734281

Α

В

D

Н

## 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	Resistance (Ω)	
Connector No.	Termi	resistance (52)
E54	26	Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

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

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-65, "Diagnosis Procedure".

## Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="mailto:BRC-123">BRC-123</a>, "Removal and Installation".

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.

LAN

K

Ν

Р

Revision: August 2012 LAN-169 2013 Altima Sedan

## **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## **EPS BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:0000000008734282

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Powers	Power steering control module harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
E59	8 7		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

# 3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

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

## IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# IPDM-E BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:0000000008734283

# 1. CHECK CONNECTOR

- 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 (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

- Disconnect the connector of IPDM E/R.
- Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		1\esistance (\frac{1}{2})
E63	29 28		Approx. 54 – 66

#### 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-31, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

LAN

**LAN-171** Revision: August 2012 2013 Altima Sedan В

Α

D

F

Н

Ν

Р

## TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734284

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
F16	33	Approx. 54 – 66	

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>TM-163</u>, "<u>Diagnosis Procedure</u>"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
  VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

>> Repair the power supply and the ground circuit.

## **DLC BRANCH LINE CIRCUIT**

## < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## **DLC BRANCH LINE CIRCUIT**

# **Diagnosis Procedure**

INFOID:0000000008734285

Α

В

D

Е

F

Н

# 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.		1\esistance (\(\frac{1}{2}\)
M22	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.

LAN

Ν

Р

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734286

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M24	39 38		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

# 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

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

## STRG BRANCH LINE CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## STRG BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734287

Α

В

D

F

Н

# 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)
M53	5 2		Approx. 54 – 66

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-175 2013 Altima Sedan

## A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734288

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

# 1. CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

# 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

### AV BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## AV BRANCH LINE CIRCUIT

# Diagnosis Procedure

#### INFOID:0000000008734289

Α

D

Н

## 1. CHECK CONNECTOR

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

- Disconnect the connector of AV control unit.
- Check the resistance between the AV control unit harness connector terminals.
- With navigation system without BOSE audio system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M96	8 17		Approx. 54 – 66

With navigation system and BOSE audio system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		1 (CSIStarice (S2)
M151	8	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- With navigation system without BOSE audio system: AV-255, "AV CONTROL UNIT: Diagnosis Procedure"
- With navigation system and BOSE audio system: AV-357, "AV CONTROL UNIT : Diagnosis Procedure"

#### Is the inspection result normal?

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

- With navigation system without BOSE audio system: AV-282, "Removal and Installation"
- With navigation system and BOSE audio system: AV-396, "Removal and Installation"

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

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

Ν

Р

**LAN-177** Revision: August 2012 2013 Altima Sedan LAN

L

## **HVAC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734291

# 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		1/63/3/4/106 (22)
M152	1	21	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP. :</u> Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

## **BCM BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

# **BCM BRANCH LINE CIRCUIT**

# Diagnosis Procedure

#### INFOID:0000000008734292

Α

В

D

F

Н

# 1. CHECK CONNECTOR

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

### Is 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)
Connector No.	Terminal No.		1\esistance (\frac{1}{2})
M18	60 59		Approx. 108 – 132

#### 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-71, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

>> Repair the power supply and the ground circuit.

Ν

Р

**LAN-179** Revision: August 2012 2013 Altima Sedan

LAN

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

INFOID:0000000008734293

# **CAN COMMUNICATION CIRCUIT**

## Diagnosis Procedure

# 1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 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
M22	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 connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
	14		Not existed

#### Is the inspection result normal?

YES >> GO TO 4.

>> Check the harness and repair the root cause.

# 4. CHECK ECM AND BCM TERMINATION CIRCUIT

- 1. Remove the ECM and the BCM.
- 2. Check the resistance between the ECM terminals.
- QR engine models

ECM		Resistance (Ω)
Terminal No.		
100	99	Approx. 108 – 132

VQ engine models

ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the BCM terminals.

ВСМ		Resistance (Ω)
Terminal No.		
60	59	Approx. 108 – 132

### CAN COMMUNICATION CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS > Is the measurement value within the specification? >> GO TO 5. NO >> Replace the ECM and/or the BCM.

#### [CAN SYSTEM (TYPE 7)]

Α

В

C

D

Е

F

Н

## 5. CHECK SYMPTOM

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

#### Inspection result

Reproduced>>GO TO 6.

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

## 6.CHECK UNIT REPRODUCTION

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

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

#### NOTE:

ECM and BCM have a termination circuit. Check other units first.

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

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

#### Inspection result

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

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

LAN

Ν

Р

**LAN-181** Revision: August 2012 2013 Altima Sedan

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN IPDM-E AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734294

## 1. 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 side and harness side).
- Harness connector E30
- Harness connector M1

#### 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.
- IPDM E/R
- Harness connectors E30 and M1
- Check the continuity between the IPDM E/R harness connector and the harness connector.

IPDM E/R har	ness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E63	29	E30	22G	Existed
£03	28	L30	23G	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the IPDM E/R and the harness connector E30.

## 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
M1	22G	M22	6	Existed
IVI I	23G	IVIZZ	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 IPDM E/R and the data link connector.

NO >> Repair the main line between the harness connector M1 and the data link connector.

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

## **Diagnosis Procedure**

INFOID:0000000008734295

Α

В

C

D

Е

F

Н

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- 4. Check the continuity between the data link connector and the combination meter harness connector.

Data link connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M22	6	M24	39	Existed
IVIZZ	14	10124	38	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 combination meter.

NO >> Repair the main line between the data link connector and the combination meter.

L

K

LAN

0

Ν

Р

Revision: August 2012 LAN-183 2013 Altima Sedan

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN M&A AND A-BAG CIRCUIT (WITH AUTO A/C)

## Diagnosis Procedure

INFOID:0000000008734296

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	39 M152	1	Existed	
IVI24	38	IVI 132	21	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 combination meter and the air bag diagnosis sensor unit.

NO >> Repair the main line between the air bag diagnosis sensor unit and the air bag diagnosis sensor unit.

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734297

Α

В

C

D

Е

F

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- Combination meter
- A/C auto amp.
- ECM
- 4. Check the continuity between the combination meter harness connector and the A/C auto amp. harness connector.

Combination meter	er harness connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	39	M4FO	1	Existed
IVI24	38	M152	21	Existed

### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

Н

K

L

LAN

Ν

0

Р

### **ECM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734298

## 1. CHECK CONNECTOR

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

- Disconnect the connector of ECM.
- Check the resistance between the ECM harness connector terminals.
- QR25DE except for California

	Resistance (Ω)	
Connector No.	Termi	11001010100 (22)
E10	100	Approx. 108 – 132

#### **QR25DE** for California

	Resistance (Ω)		
Connector No.	Termi	Tresistance (52)	
E31	100	99	Approx. 108 – 132

#### VQ35DE

	Resistance (Ω)		
Connector No.	Termi	116313(81106 (52)	
E32	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 the following.

- QR25DE: <u>EC-204</u>, "<u>Diagnosis Procedure</u>"
  VQ35DE: <u>EC-707</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: EC-538, "Removal and Installation".
- VQ35DE: EC-999, "Removal and Installation".

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

### **ABS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734299

Α

В

D

Н

### 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	Resistance (Ω)		
Connector No.	Termi	110000100 (32)	
E54	26	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.

## 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 BRC-65, "Diagnosis Procedure".

### Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <a href="BRC-123">BRC-123</a>, "Removal and Installation".

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.

LAN

K

Ν

Р

Revision: August 2012 LAN-187 2013 Altima Sedan

ΛNI

### **EPS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### **EPS BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:0000000008734300

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of power steering control module.
- 2. Check the resistance between the power steering control module harness connector terminals.

Powers	Resistance (Ω)		
Connector No.	Termi	1\esistance (22)	
E59	8	7	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the Power steering control module branch line.

## ${f 3}$ .check power supply and ground circuit

Check the power supply and the ground circuit of the power steering control module. Refer to <u>STC-22, "Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the power steering oil pump assembly. Refer to <u>ST-38, "Removal and Installation".</u>

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

### **IPDM-E BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## IPDM-E BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734301

Α

В

D

F

Н

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

	Resistance (Ω)	
Connector No.	Termi	1\esistance (\(\frac{1}{2}\)
E63	29	Approx. 54 – 66

#### 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-31, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Removal and Installation".

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

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

LAN

Ν

Р

Revision: August 2012 LAN-189 2013 Altima Sedan

### TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

INFOID:0000000008734302

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

# 1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F2
- Harness connector E11

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector			
Connector No.	Termi	Resistance (Ω)		
F16	33	23	Approx. 54 – 66	

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE: <u>TM-163</u>, "<u>Diagnosis Procedure</u>"
- VQ35DE: <u>TM-366</u>, "<u>Diagnosis Procedure</u>"

#### Is the inspection result normal?

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

- QR25DE: <u>TM-182</u>, "Removal and Installation"
   VQ35DE: <u>TM-384</u>, "Removal and Installation"

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

### **DLC BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734303

Α

В

D

Е

F

Н

## 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.		i Nesistance (12)
M22	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.

.

LAN

Ν

Р

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

## Diagnosis Procedure

INFOID:0000000008734304

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	39	38	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-81, "Removal and Installation".

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

### STRG BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734305

Α

В

D

F

Н

## 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)
M53	5	2	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-46</u>, "Wiring Diagram".

#### Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-127, "Removal and Installation".

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

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

LAN

K

Ν

Р

Revision: August 2012 LAN-193 2013 Altima Sedan

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000008734306

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

## 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-40, "Work Flow".

#### Is the inspection result normal?

YES >> Replace the main harness.

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

#### AV BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 8)]

### AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734307

Α

D

Н

### 1. CHECK CONNECTOR

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

- Disconnect the connector of AV control unit.
- Check the resistance between the AV control unit harness connector terminals.
- With navigation system without BOSE audio system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M96	8	17	Approx. 54 – 66

With navigation system and BOSE audio system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M151	8 17		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- With navigation system without BOSE audio system: AV-255, "AV CONTROL UNIT: Diagnosis Procedure"
- With navigation system and BOSE audio system: AV-357, "AV CONTROL UNIT : Diagnosis Procedure"

#### Is the inspection result normal?

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

- With navigation system without BOSE audio system: AV-282, "Removal and Installation"
- With navigation system and BOSE audio system: AV-396, "Removal and Installation"

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

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

Ν

Р

**LAN-195** Revision: August 2012 2013 Altima Sedan LAN

L

### **AVM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### AVM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734308

## 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 ITS 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

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

	ITS control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M58	27	7	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ITS control unit branch line.

### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ITS control unit. Refer to <u>DAS-60</u>, "<u>Diagnosis Procedure</u>".

#### Is the inspection result normal?

YES (Present error)>>Replace the ITS control unit. Refer to <u>DAS-66, "Removal and Installation - ITS Control</u> Unit".

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

### **HVAC BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## **HVAC BRANCH LINE CIRCUIT**

## Diagnosis Procedure

#### INFOID:0000000008734309

Α

В

D

F

Н

## 1. CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.check harness for open circuit

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

	A/C auto amp. harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal No.		1\esistance (22)
M152	1	21	Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

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

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-78, "A/C AUTO AMP. : Diagnosis Procedure".</u>

#### Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-102, "Removal and Installation".

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

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

LAN

K

Ν

Р

### **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

### BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000008734310

## 1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the terminals and connectors of the 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

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

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M18	60	59	Approx. 108 – 132

#### 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-71, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-77, "Removal and Installation".

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

### **CAN COMMUNICATION CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

#### INFOID:0000000008734311

Α

В

D

F

Н

## 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
M22	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
M22	6	Giodila	Not existed
IVIZZ	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 BCM TERMINATION CIRCUIT

- Remove the ECM and the BCM.
- Check the resistance between the ECM terminals.
- QR engine models

LA	N

Ν

Р

K

ECM		Resistance ( $\Omega$ )	
Terminal No.		Resistance (12)	
100	99	Approx. 108 – 132	

VQ engine models

ECM		Resistance ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

#### Check the resistance between the BCM terminals.

BCM		Resistance ( $\Omega$ )
Terminal No.		
60	59	Approx. 108 – 132

Revision: August 2012 LAN-199 2013 Altima Sedan

### **CAN COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

#### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

## 5. CHECK SYMPTOM

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

#### Inspection result

Reproduced>>GO TO 6.

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

## 6.check unit reproduction

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

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

#### NOTE:

ECM and BCM 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.