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[CAN]

PRECAUTIONS PFP:00001

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

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS 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 CONSULT-II

LIKS002FF

When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER.

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

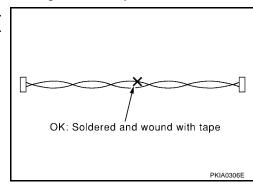
CHECK POINTS FOR USING CONSULT-II

- Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
 - If YES, GO TO 2.
 - If NO, GO TO 5.
- 2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
 - If YES, GO TO 3.
 - If NO, GO TO 4.
- Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
- Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
- Diagnose CAN communication system. Refer to <u>LAN-5, "CAN COMMUNICATION"</u>.

Precautions for CAN System

UKS002FD

- Do not apply voltage of 7.0 V or higher to terminal to be measured.
- Maximum open terminal voltage of tester in use must be less than 7.0 V.
- Before checking harnesses, turn ignition switch OFF and disconnect negative battery terminal.
- Area to be repaired must be soldered and wrapped with tape. Make sure that fraying of twisted wire is within 110 mm (4.33 in).



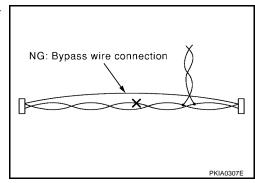
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Do not make a bypass connection to repaired area. (If the circuit is bypassed, characteristics of twisted wire will be lost.)



CAN COMMUNICATION

[CAN]

CAN COMMUNICATION

PFP:23710

System Description

UKS002EG

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 Unit

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Refer to the following table to determine CAN system type.

Axle			2WD		
Engine			VQ35DE		
Transmission	4 A/T		5 .	A/T	
Brake control	TCS	T(CS	V	DC
Navigation system			Х		Х
Automatic drive positioner				Х	Х
CAN system type	1	2	3	4	5
CAN system trouble diagnosis	<u>LAN-15</u>	LAN-42	<u>LAN-69</u>	<u>LAN-96</u>	LAN-126

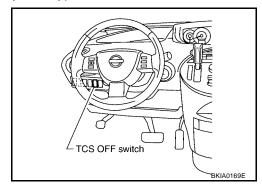
X: Applicable

NOTE:

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Confirming the presence of the following items helps to identify CAN system type.

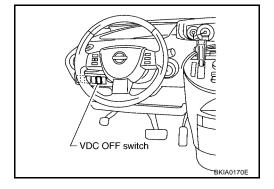
Models with TCS



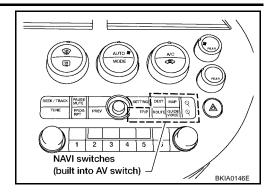
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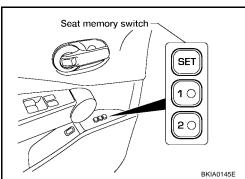
Models with VDC



Models with navigation system



Models with automatic drive positioner



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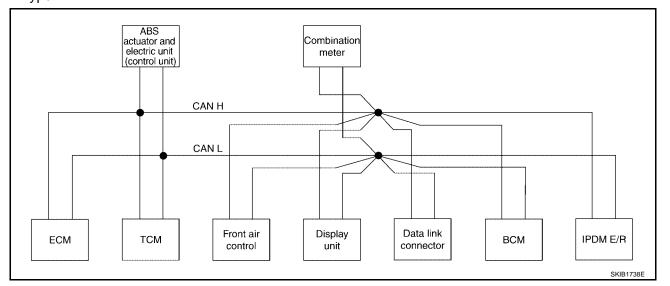
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TYPE 1 System diagram

Type 1



Input/output signal chart

T: Transmit R: Receive

							T: Transmit	R: Receive
Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Front air control	Display unit	всм	Combi- nation meter	IPDM E/ R
Engine speed signal	Т		R	R	R		R	
Engine coolant temperature signal	Т			R			R	
Ignition switch signal						Т		R
Ignition power supply confirmation signal						R		Т
Fuel consumption monitor signal	Т						R	
Fuel consumption monitor signal					R		Т	
A/C switch signal	R			R		Т		
A/C compressor request signal	Т							R
Blower fan motor switch signal	R					Т		
A/C switch/indicator signal				R	Т			
A/C switch/indicator signal				Т	R			
Cooling fan speed request signal	Т							R
Cooling fan speed signal	R							Т
Position light request signal						Т	R	R
Low beam request signal						Т		R
Low beam status signal	R							Т
High beam request signal						Т	R	R
High beam status signal	R							Т
Front fog light request signal						Т		R
Vahiala apad signal			Т	R			R	
Vehicle speed signal	R				R	R	Т	
Sleep wake up signal						Т	R	R

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								[CAN]
			ABS actuator and				Combi-	
Signals	ECM	TCM	electric unit (control unit)	Front air control	Display unit	ВСМ	nation meter	IPDM E/ R
IPDM E/R wake up sleep request signal						R		Т
IPDM E/R refuse to sleep signal						R		Т
BCM wake up request signal						R		Т
Door switch signal					R	Т	R	R
Turn indicator signal						Т	R	
Cornering lamp request signal						Т		R
Oil pressure switch signal							R	Т
Buzzer output signal						Т	R	
Fuel level sensor signal	R						Т	
ASCD SET indicator signal	Т						R	
ASCD CRUISE indicator signal	Т						R	
Malfunction indicator lamp signal	Т						R	
Front wiper request signal						Т		R
Front wiper stop position signal						R		Т
Rear window defogger switch signal				R	R	Т		R
Rear window defogger control signal	R							Т
Horn chirp signal						Т		R
ABS warning lamp signal			Т				R	
Brake warning lamp signal			Т				R	
System setting signal					T R	R T		
Distance to empty signal					R		Т	
A/T self-diagnosis signal	R	Т						
Engine and A/T integrated control signal	T R	R T						
Accelerator pedal position signal	Т	•	R					
Closed throttle position signal	Т	R						
Wide open throttle position signal	Т	R						
P range signal		Т	R					
Stop lamp switch signal		R					Т	
Input shaft revolution signal	R	Т						
Output shaft revolution signal	R	Т						
ASCD operation signal	Т	R						
ASCD OD cancel request signal	Т	R						
SLIP indicator lamp signal			Т				R	
O/D OFF indicator lamp signal		Т					R	
A/T position indicator lamp signal		Т					R	
A/T shift schedule change demand signal		R	Т					
Overdrive control switch signal		R					Т	
Tire pressure signal					<u> </u>	Т	R	

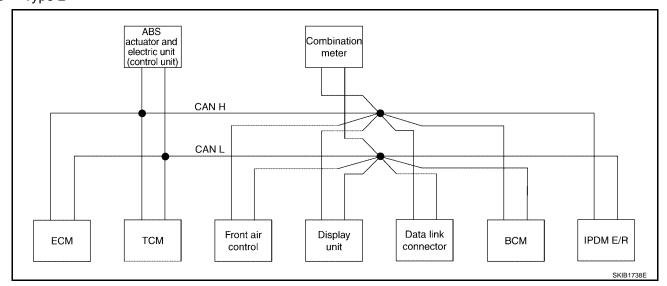
CAN COMMUNICATION

[CAN]

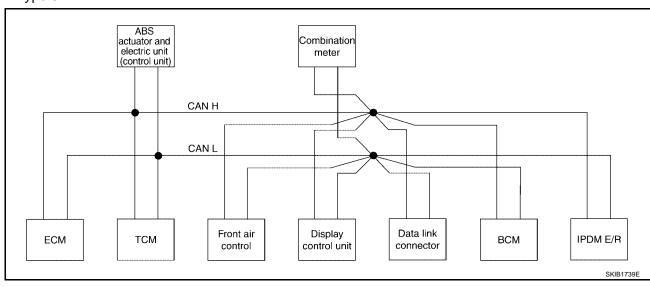
Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Front air control	Display unit	всм	Combi- nation meter	IPDM E/ R
Tire pressure data signal					R	Т		
Seat belt buckle switch signal						R	Т	

TYPE 2/TYPE 3 System diagram

• Type 2



Type 3



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Input/output signal chart

							Т	: Transmit	R: Receive
Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Front air control	Display control unit	Display unit	всм	Combi- nation meter	IPDM E/ R
Engine speed signal	Т	R	R	R	R	R		R	
Engine coolant temperature signal	Т	R		R				R	
Ignition switch signal							Т		R
Ignition power supply confirmation signal							R		Т
ABS operation signal		R	Т						
Fuel consumption monitor signal	Т				R	R		R T	
A/C switch signal	R			R			Т		
A/C compressor request signal	T								R
Blower fan motor switch signal	R						Т		
-				R	Т	Т			
A/C switch/indicator signal				Т	R	R			
Cooling fan speed request signal	Т								R
Cooling fan speed signal	R								Т
Position light request signal							Т	R	R
Low beam request signal							Т		R
Low beam status signal	R								Т
High beam request signal							Т	R	R
High beam status signal	R								Т
Front fog light request signal							Т		R
Vahiala anaad aignal			Т	R				R	
Vehicle speed signal	R	R			R	R	R	Т	
Sleep wake up signal							T	R	R
IPDM E/R wake up sleep request signal							R		Т
IPDM E/R refuse to sleep signal							R		Т
BCM wake up request signal							R		Т
Door switch signal					R	R	Т	R	R
Turn indicator signal							Т	R	
Cornering lamp request signal							Т		R
Oil pressure switch signal								R	Т
Buzzer output signal							Т	R	
Fuel level sensor signal	R							Т	
ASCD SET indicator signal	Т							R	
ASCD CRUISE indicator signal	Т							R	
Malfunction indicator lamp signal	Т							R	
Front wiper request signal							Т		R
Front wiper stop position signal							R		Т

CAN COMMUNICATION

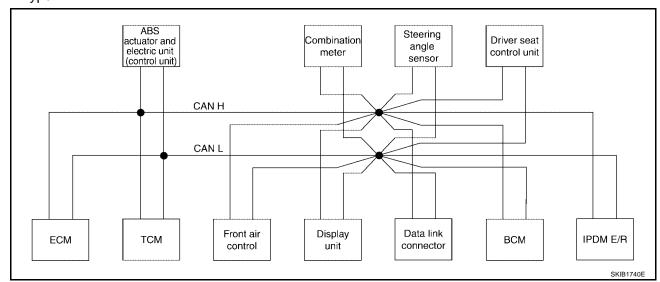
[CAN]

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Front air control	Display control unit	Display unit	всм	Combi- nation meter	IPDM E/ R	АВ
Rear window defogger switch signal				R	R	R	Т		R	С
Rear window defogger control signal	R								Т	
Horn chirp signal							Т		R	D
ABS warning lamp signal			Т					R		
Brake warning lamp signal			Т					R		Е
Custom action signal					Т	Т	R			_
System setting signal					R	R	Т			
Distance to empty signal					R	R		Т		F
A/T self-diagnosis signal	R	Т								
Engine and A/T integrated control	Т	R								
signal	R	Т								G
Accelerator pedal position signal	Т	R	R							
P range signal		Т	R							Н
Stop lamp switch signal		R						Т		
TCS operation signal		R	Т							
Input shaft revolution signal	R	Т								
Output shaft revolution signal	R	Т								
ASCD operation signal	Т	R								.J
ASCD OD cancel request signal	Т	R								
SLIP indicator lamp signal			Т					R		
O/D OFF indicator lamp signal		Т						R		LA
A/T position indicator lamp signal		Т						R		
A/T shift schedule change demand signal		R	Т							L
Tire pressure signal							Т	R		
Tire pressure data signal					R	R	Т			M
Seat belt buckle switch signal							R	Т		

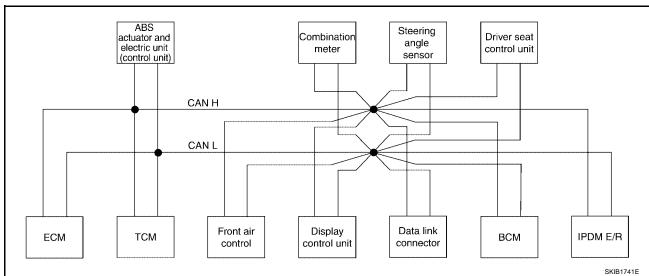
Revision: September 2005 LAN-11 2005 Quest

TYPE 4/TYPE 5 System diagram

• Type 4



Type 5



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	тсм	ABS actuator and electric unit (control unit)	Front air control	Dis- play con- trol unit	Dis- play unit	всм	Com- bina- tion meter	Steer- ing angle sensor	Driver seat con- trol unit	IPDM E/R
Engine speed signal	Т	R	R	R	R	R		R			
Engine coolant temperature signal	Т	R		R				R			
Key switch signal							Т			R	
Ignition switch signal							Т			R	R
Ignition power supply confirmation signal							R				Т

CAN COMMUNICATION

[CAN]

											CAN
Signals	ECM	тсм	ABS actuator and electric unit (control unit)	Front air control	Dis- play con- trol unit	Dis- play unit	всм	Com- bina- tion meter	Steer- ing angle sensor	Driver seat con- trol unit	IPDM E/R
ABS operation signal		R	Т								
Fuel consumption monitor signal	Т							R			
i dei consumption monitor signar					R	R		T			
A/C switch signal	R			R			Т				
A/C compressor request signal	T										R
Blower fan motor switch signal	R						T				
A/C switch/indicator signal				R	T	Т					
A/C switch/indicator signal				Т	R	R					
Cooling fan speed request signal	Т										R
Cooling fan speed signal	R										Т
Position light request signal							Т	R			R
Low beam request signal							Т				R
Low beam status signal	R										Т
High beam request signal							T	R			R
High beam status signal	R										Т
Front fog light request signal							Т				R
.,,.,			Т	R				R			
Vehicle speed signal	R	R			R	R	R	Т		R	
Sleep wake up signal							Т	R			R
IPDM E/R wake up sleep request signal							R				Т
IPDM E/R refuse to sleep signal							R				Т
BCM wake up request signal							R				Т
Door switch signal					R	R	Т	R		R	R
Turn indicator signal							Т	R			
Cornering lamp request signal							Т				R
Key fob ID signal							Т			R	
Key fob door unlock signal							T			R	
Oil pressure switch signal								R			Т
Buzzer output signal							Т	R			
Fuel level sensor signal	R							Т			
ASCD SET indicator signal	Т							R			
ASCD CRUISE indicator signal	Т							R			
Malfunction indicator lamp signal	Т							R			
Front wiper request signal							Т				R
Front wiper stop position signal							R				T
Rear window defogger switch sig- nal				R	R	R	Т				R

LAN-13 Revision: September 2005 2005 Quest

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Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Front air control	Dis- play con- trol unit	Dis- play unit	всм	Com- bina- tion meter	Steer- ing angle sensor	Driver seat con- trol unit	IPDM E/R
Rear window defogger control signal	R										Т
Horn chirp signal							Т				R
ABS warning lamp signal			Т					R			
Brake warning lamp signal			Т					R			
0 1 11					Т	T	R			R	
System setting signal					R	R	Т			Т	
Distance to empty signal					R	R		Т			
A/T self-diagnosis signal	R	Т									
Engine and A/T integrated control	Т	R									
signal	R	T									
Accelerator pedal position signal	Т	R	R								
P range signal		Т	R							R	
R range signal		Т								R	
Stop lamp switch signal		R						Т			
VDC operation signal		R	Т								
Input shaft revolution signal	R	Т									
Output shaft revolution signal	R	Т									
ASCD operation signal	Т	R									
ASCD OD cancel request signal	T	R									
Steering angle sensor signal			R						Т		
SLIP indicator lamp signal			Т					R			
O/D OFF indicator lamp signal		Т						R			
A/T position indicator lamp signal		Т						R			
A/T shift schedule change demand signal		R	Т								
Tire pressure signal							Т	R			
Tire pressure data signal					R	R	Т				
Seat belt buckle switch signal							R	Т			

[CAN]

CAN SYSTEM (TYPE 1)

PFP:23710

System Description

UKS002EI

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.

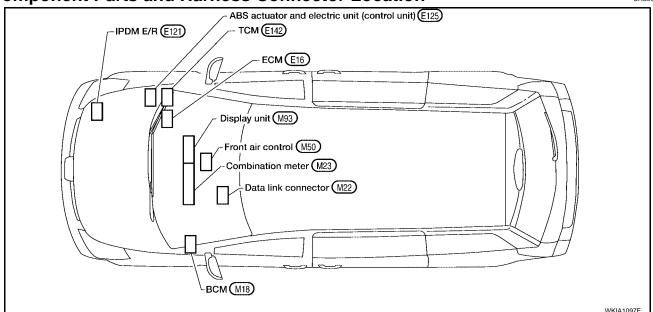
Component Parts and Harness Connector Location

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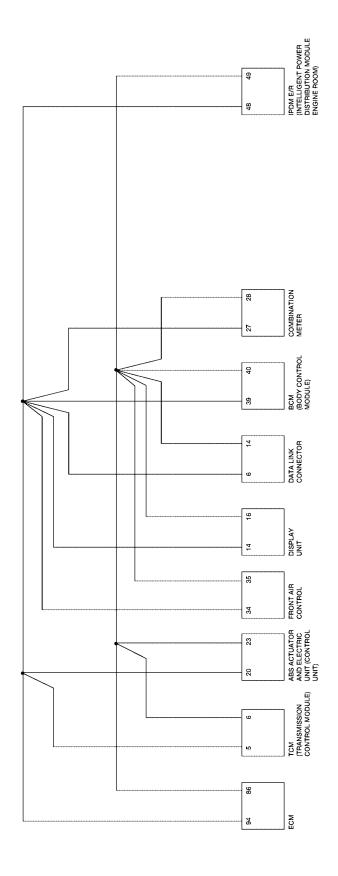
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Schematic UKS002EK



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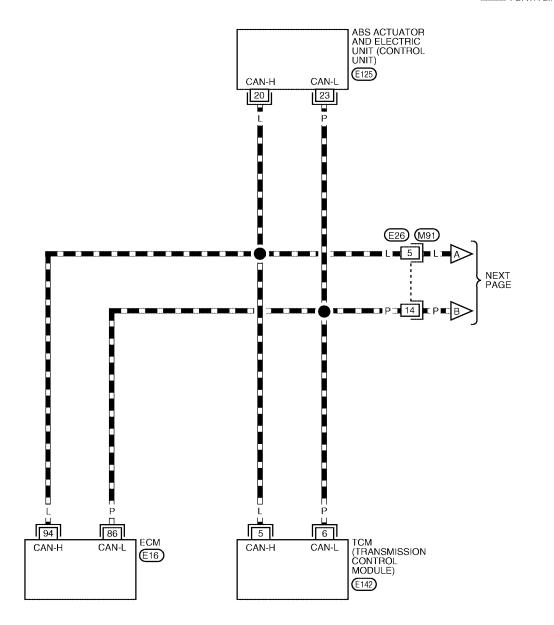
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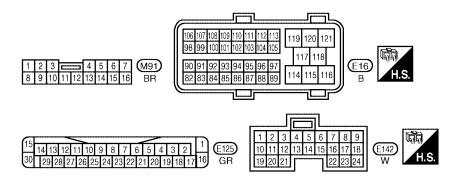
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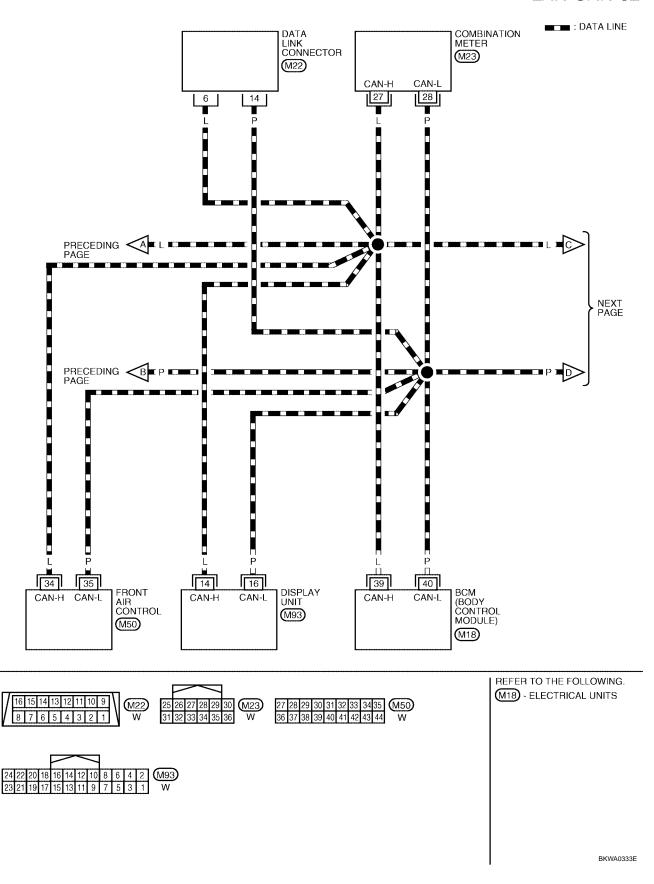
: DATA LINE





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LAN-CAN-03

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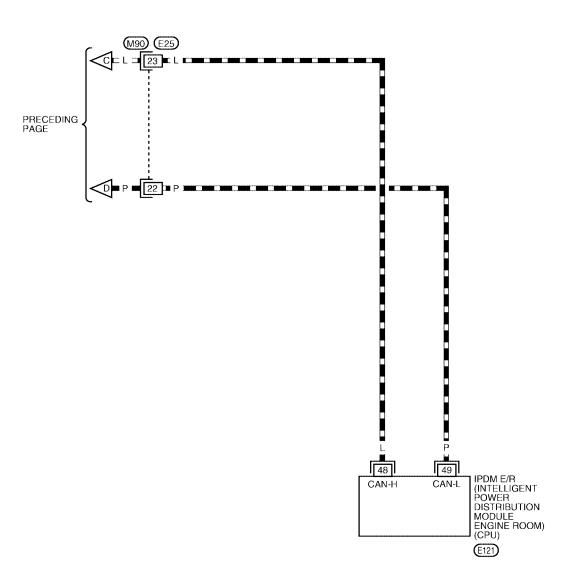
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■■ : DATA LINE



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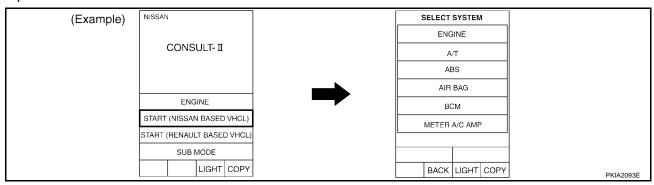
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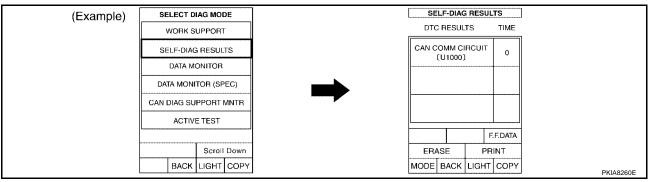
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Work Flow

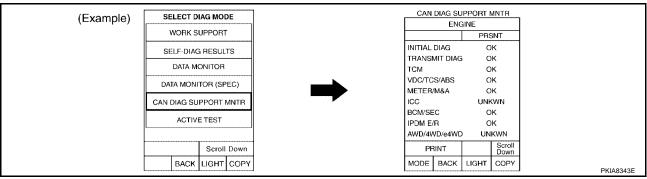
1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to LAN-22, "CHECK SHEET".
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks onto the items with "No indication", "NG" or "UNKWN" in the check sheet table.

SELECT SYSTEM screen Initial Transmit VDC/TCS/ Front air POLYPER METER/	
diagnosis diagnosis ECM TCM ABS control BCM/SEC MASA	IPDM E/R
ENGINE - NG UNKWN - UNKWN - UNKWN UNKWN - UNKWN UNKWN	UNKWN
A/T - NG UNKWN UNKWN - UNKWN - UNKWN	-
ABS - NG UNKWN UNKWN	-
Display unit - CAN CAN 1 CAN 3 - - CAN 4 CAN 2 CAN 5	CAN 7
BCM No indication NG UNKWN UNKWN - - - - - UNKWN	UNKWN
IPDM E/R No indication - UNKWN UNKWN UNKWN -	-

CAN SYSTEM (TYPE 1)

[CAN]

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items which are not in check sheet table are not related to diagnostic procedure on service manual.
 - Therefore, it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the integrated display system. Refer to AV-109, "AV Communication Line Check".
- 7. Attach the CAN DIAG MONITOR check sheet onto the check sheet. Refer to LAN-22, "CHECK SHEET" .
- 8. Mark the "NG" or "UNKWN" item of the check sheet table from the result of CAN DIAG MONITOR check sheet.

NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG MNTR" for the diagnosed control unit, replace the control unit.

9. According to the Check Sheet Results, start inspection.

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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

					CA	N DIAG SUPPOR				
SELECT S	YSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	VDC/TCS/	Receive diagnosi Front air	BCM/SEC	METER/	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	ABS UNKWN	control	UNKWN	M&A UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	-	-	_
Display unit		CAN	CAN 1	CAN 3	-	_	CAN 4	CAN 2	CAN 5	CAN 7
всм	No indication	COMM	UNKWN	UNKWN	-	_	-	_	UNKWN	UNKWN
PDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN	- UNKWIN	
FDW DA		I	UNKVVN	ONKWN	I	I		DINKWIN		I
		Attac SELEC	ch copy of CT SYSTEM	И		SI	Attach copy ELECT SYS	/ of STEM		
				CAN D	tach copy of display unit DIAG MONIT heck sheet					

Attach copy of ENGINE SELF-DIAG RESULTS Attach copy of A/T SELF-DIAG RESULTS

Attach copy of ABS SELF-DIAG RESULTS

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Attach copy of BCM SELF-DIAG RESULTS Attach copy of IPDM E/R SELF-DIAG RESULTS

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Attach copy of ENGINE CAN DIAG SUPPORT MNTR Attach copy of A/T CAN DIAG SUPPORT MNTR Attach copy of ABS CAN DIAG SUPPORT MNTR

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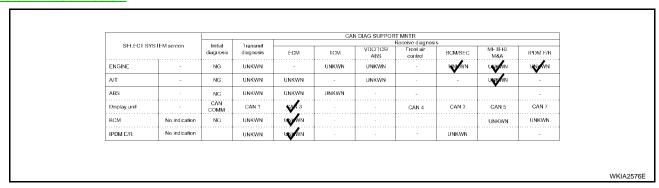
Attach copy of BCM CAN DIAG SUPPORT MNTR Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

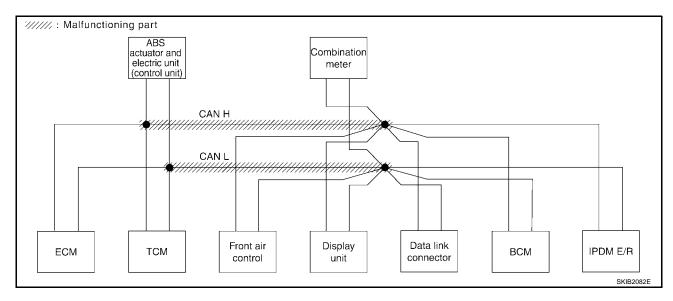
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CHECK SHEET RESULTS

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-35, "Circuit Check Between TCM and Data Link Connector"</u> .





CAN SYSTEM (TYPE 1)

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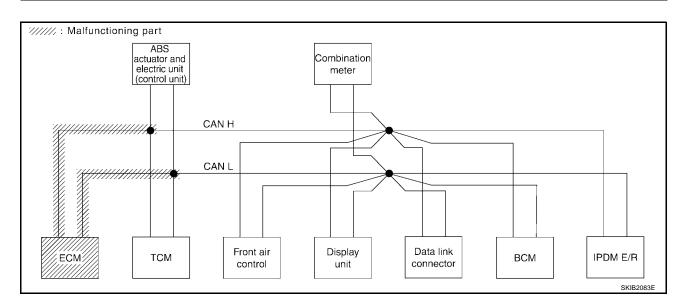
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Case 2
Check ECM circuit. Refer to <u>LAN-35</u>, "ECM Circuit Check" .

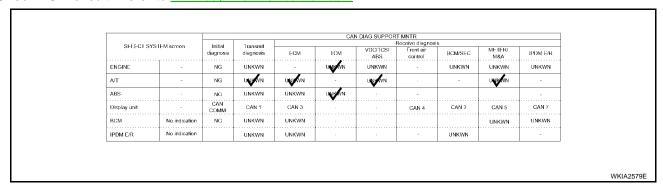
SELECT SYS	LEM scroon	Initial	Transmit				Receive diagnos	is		
011,01010		diagnosis	diagnosis	(-CM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	MFTER/ M&A	IPDM E/R
ENGINE	-	NG	UNIFWN	-	ONRAN	UNITAN	-	RMINN	UNIKAN	UNIVAN
A/T	-	NG	UNKWN	UNISAN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNIONN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	₩3			CAN 4	CAN 2	CAN 5	CAN /
всм	No indication	NG	UNKWN	UNIVN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNIVN			-	UNKWN		-

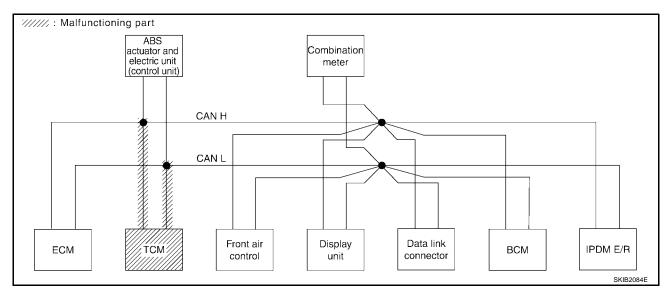


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Case 3
Check TCM circuit. Refer to <u>LAN-36</u>, "TCM Circuit Check" .





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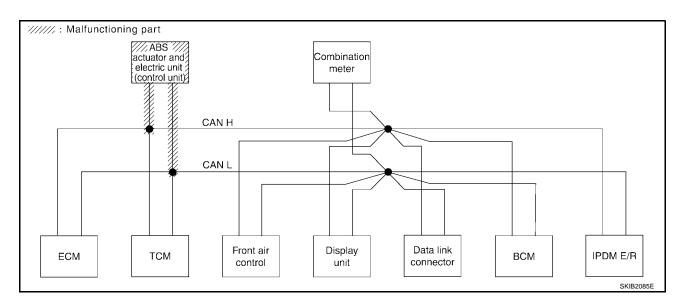
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Case 4

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-36</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".

SELECT SYS	LEM screen	Initial	Transmit				Receive diagnosi	s		
011., 01010		diagnosis	diagnosis	(-CM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	MF IER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNIFON	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNIFOVN		-	UNKWN	-
ABS		NG	DNRAM	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN 7
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

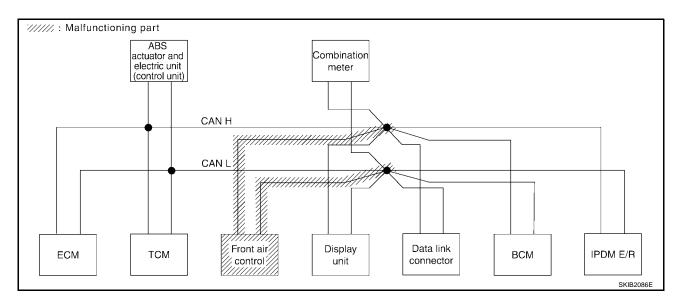


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Case 5
Check front air control circuit. Refer to <u>LAN-37</u>, "Front Air Control Circuit Check" .

SHLECT SYS	LEM screen	Initial	Transmit				Receive diagnosi	s		
		diagnosis	diagnosis	ECM.	1CM	VDC/1CS/ ABS	Front air control	BCM/S⊕C	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			₩4	CAN 2	CAN 5	CAN 7
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



CAN SYSTEM (TYPE 1)

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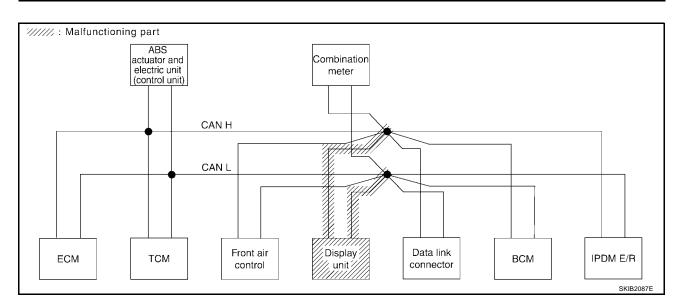
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Case 6

Check display unit circuit. Refer to LAN-37, "Display Unit Circuit Check" .

SELECT SYS	LEM cerson	Initial	Transmit		C/0		Receive diagnos	is		
311, 6131		diagnosis	diagnosis	ECM	1cM	VDC/1CS/ ABS	Front air control	BCM/S⊕C	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
Λ/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	W 1	€ ⁄/3			V /4	€ 4/2	W /s	4 /1
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

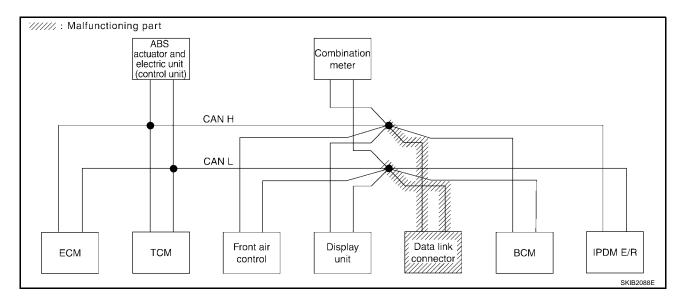


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Case 7
Check data link connector circuit. Refer to <u>LAN-38</u>, "<u>Data Link Connector Circuit Check</u>" .

SHLECT SYS	IEM screen	Initial	Transmit				Receive diagnosi	s		
		diagnosis	diagnosis	ECM.	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	MF IER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN 7
BCM	No excitation	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



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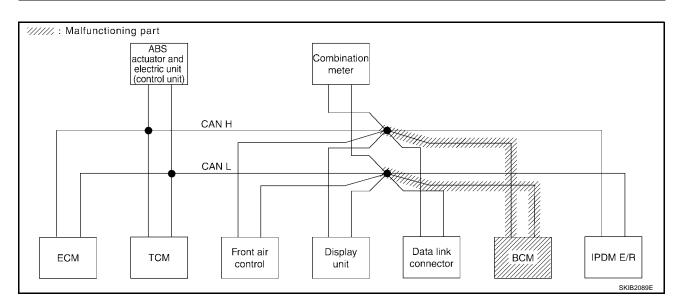
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Case 8
Check BCM circuit. Refer to <u>LAN-38</u>, "BCM Circuit Check" .

SHLECT SYS	IEM screen	Initial	Transmit		GAN		Receive diagnos	is		
		diagnosis	diagnosis	ECM	1CM	VDC/†CS/ ABS	Front air control	8CM/SEC	MFTER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNIWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	₩ 2	CAN 5	CAN 7
BCM	No to cation	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNIVIN		-

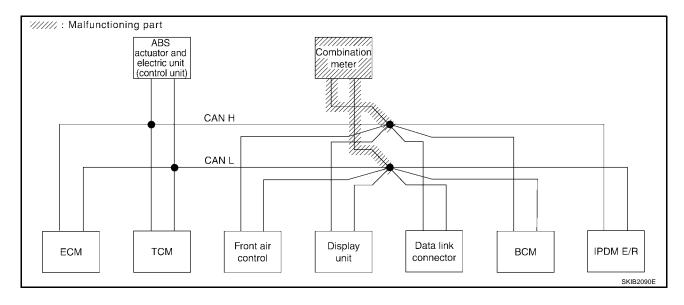


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Case 9
Check combination meter circuit. Refer to <u>LAN-39</u>, "Combination Meter Circuit Check" .

SELECT SYST	EM screen	Initial	Transmit				Receive diagnosi	s		
		diagnosis	diagnosis	ECM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNIVA	UNKWN
Λ/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNIFAN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN	CAN 1	CAN 3			CAN 4	CAN 2	₩ 5	CAN 7
всм	No indication	NG	UNKWN	UNKWN			*		UNIVAN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



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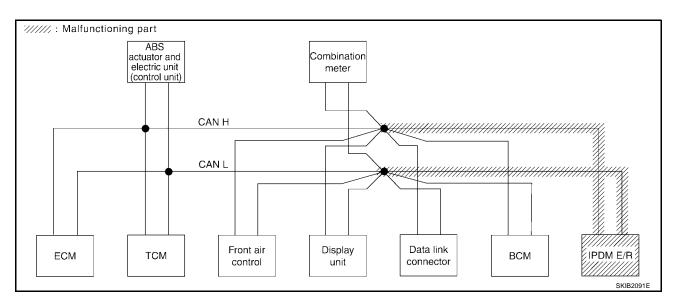
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Case 10

Check IPDM E/R circuit. Refer to LAN-39, "IPDM E/R Circuit Check" .

SELECT SYS	II Magraga	Initial	Transmit		CAU	N DIAG SUPPOR	Receive diagnos	is		
3FI,FG1 313		diagnosis	diagnosis	ECM	1cM	VDC/1CS/ ABS	Front air control	BCM/SEC	MF IER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	RANKWN
Λ/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	\$ /17
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	HIMAN
IPDM E/R	Novinalization		UNKWN	UNKWN			-	UNKWN		-



Case 11

Check CAN communication circuit. Refer to LAN-40, "CAN Communication Circuit Check".

					CAI	N DIAG SUPPOR	T MNTR Receive diagnos	is		
SHLECT SYS		Initial diagnosis	Transmit diagnosis	ECM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNIOWN	-	ONRAN	UNIVAN	-	RANKWA	ONRAN	PRINT
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNISAN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	₩/3			₩4	€ 2	₩ 5	4 /17
всм	Noving cation	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No institution		UNKWN	UNKWN			-	UNKWN		-

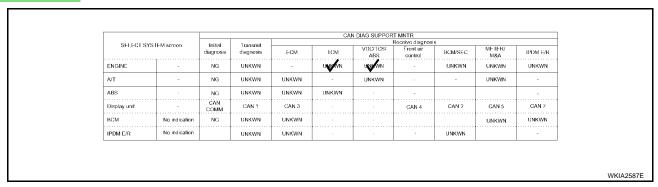
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Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to $\underline{\text{LAN-40}}$, "IPDM E/R Ignition Relay $\underline{\text{Circuit Check}}$ ".



Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-40</u>, "IPDM E/R Ignition Relay Circuit Check".

SHLECT SYS	IEM scroon	Initial	Transmit		CAI		Receive diagnos	is		
011,, 01 010		diagnosis	diagnosis	(-CM	1cM	VDC/1CS/ ABS	Front air control	8CM/S≑C	MF IER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNISWN	-	UNKWN		-	UNIFWN	-
ABS		NG	UNKWN	UNISAN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN /
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

CAN SYSTEM (TYPE 1)

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Circuit Check Between TCM and Data Link Connector

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E142 and ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector E142 terminals 5 (L), 6 (P) and data link connector M22 terminals 6 (L), 14 (P).

5 (L) - 6 (L)

: Continuity should exist.

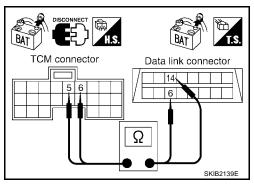
6 (P) - 14 (P)

: Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-20, "Work Flow".

NG >> Repair harness.



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ECM Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector E16 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. $108 - 132 \Omega$

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM connector E16 and TCM connector E142.

ECM connector

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TCM Circuit Check

1. CONNECTOR INSPECTION

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- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect TCM connector E142.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. check harness for open circuit

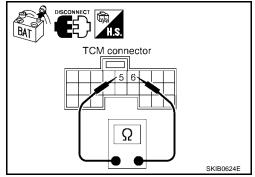
Check resistance between TCM connector E142 terminal 5 (L) and terminal 6 (P).

: Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.

NG >> Repair harness between TCM connector E142 and ECM connector E16.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

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1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect ABS actuator and electric unit (control unit) connector E125.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

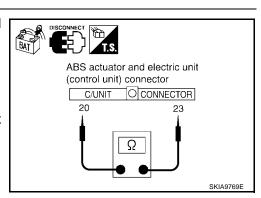
: Approx. 54 - 66 Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).

NG

>> Repair harness between ABS actuator and electric unit (control unit) connector E125 and ECM connector E16.



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Front Air Control Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect front air control connector M50.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

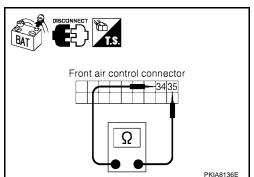
Check resistance between front air control connector M50 terminal 34 (L) and terminal 35 (P).

34 (L) - 35 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace front air control.

NG >> Repair harness between front air control connector M50 and data link connector M22.



Display Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect display unit connector M93.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

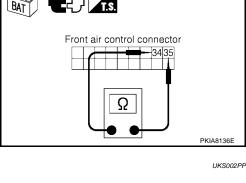
14 (L) - 16 (P) : Approx. 54 -
$$66\Omega$$

OK or NG

OK >> Replace display unit.

NG

>> Repair harness between display unit connector M93 and data link connector M22.



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Data Link Connector Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

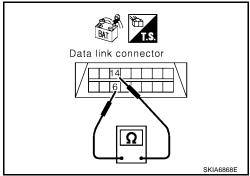
Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Diagnose again. Refer to LAN-20, "Work Flow".

NG >> Repair harness between data link connector M22 and BCM connector M18.



BCM Circuit Check

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect BCM connector M18.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

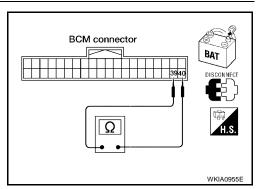
Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace BCM. NG

>> Repair harness between BCM connector M18 and data link connector M22.



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Combination Meter Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect combination meter connector M23.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

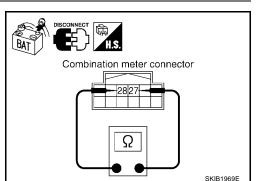
Check resistance between combination meter connector M23 terminal 27 (L) and terminal 28 (P).

27 (L) - 28 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace combination meter.

>> Repair harness between combination meter connector NG M23 and data link connector M22.



IPDM E/R Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect IPDM E/R connector E121.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

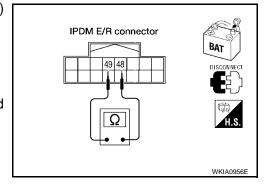
Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx.
$$108 - 132 \Omega$$

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness between IPDM E/R connector E121 and data link connector M22.



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CAN Communication Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- TCM (Transmission control module)
- ABS actuator and electric unit (control unit)
- Front air control
- Display unit
- BCM (Body control module)
- Combination meter
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

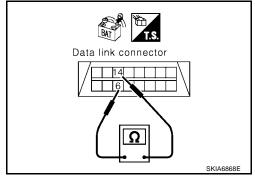
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

OK or NG

OK >> GO TO 3.

NG >> Repair the harness.



3. CHECK HARNESS FOR SHORT TO GROUND

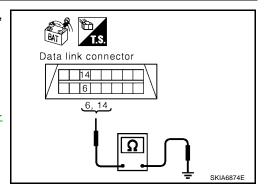
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

6 (L) - Ground : Continuity should not exist. 14 (P) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-41, "Component Inspection"</u>.

NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

UKS002PV

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-12</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START".

CAN SYSTEM (TYPE 1)

[CAN]

UKS002PW

Component Inspection ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

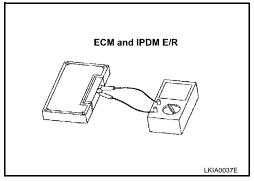
Disconnect ECM and IPDM E/R harness connectors.

Check resistance between ECM terminals 94 and 86.

94 - 86 : Approx. 108 - 132 Ω

Check resistance between IPDM E/R terminals 48 and 49.

48 - 49 : Approx. $108 - 132 \Omega$



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CAN SYSTEM (TYPE 2)

PFP:23710

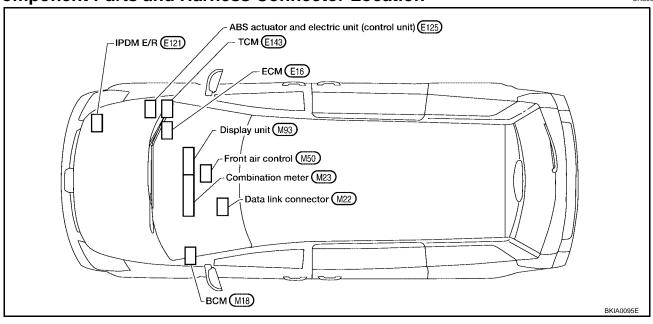
System Description

UKS002P2

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.

Component Parts and Harness Connector Location

UKS002P3



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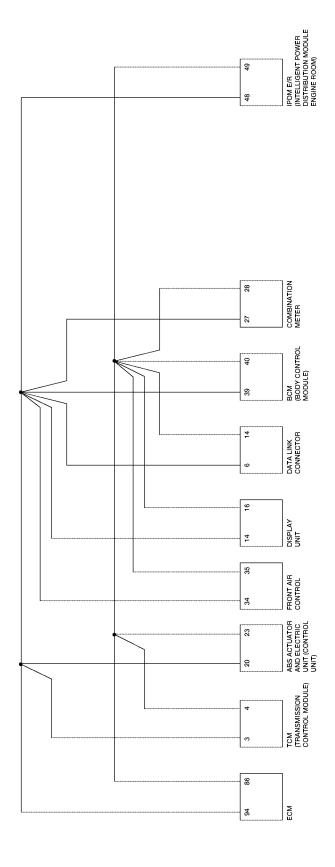
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Schematic UKS002P4



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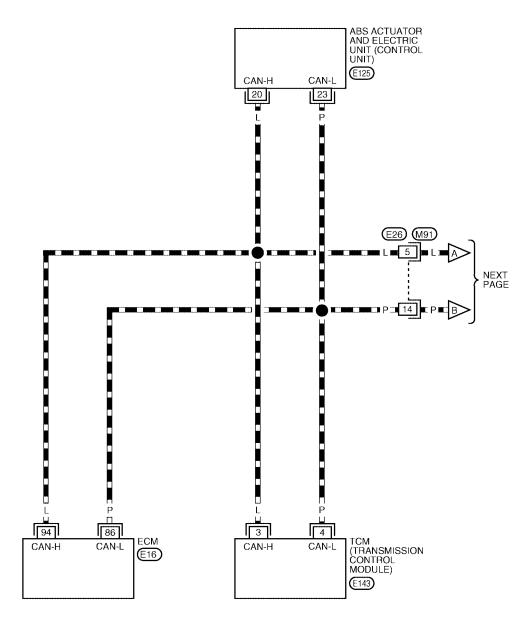
BKWA0349E

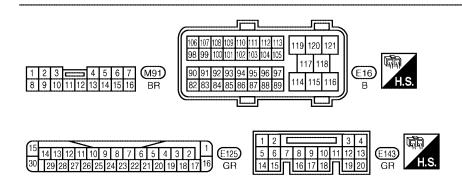
Wiring Diagram — CAN —

UKS002P5

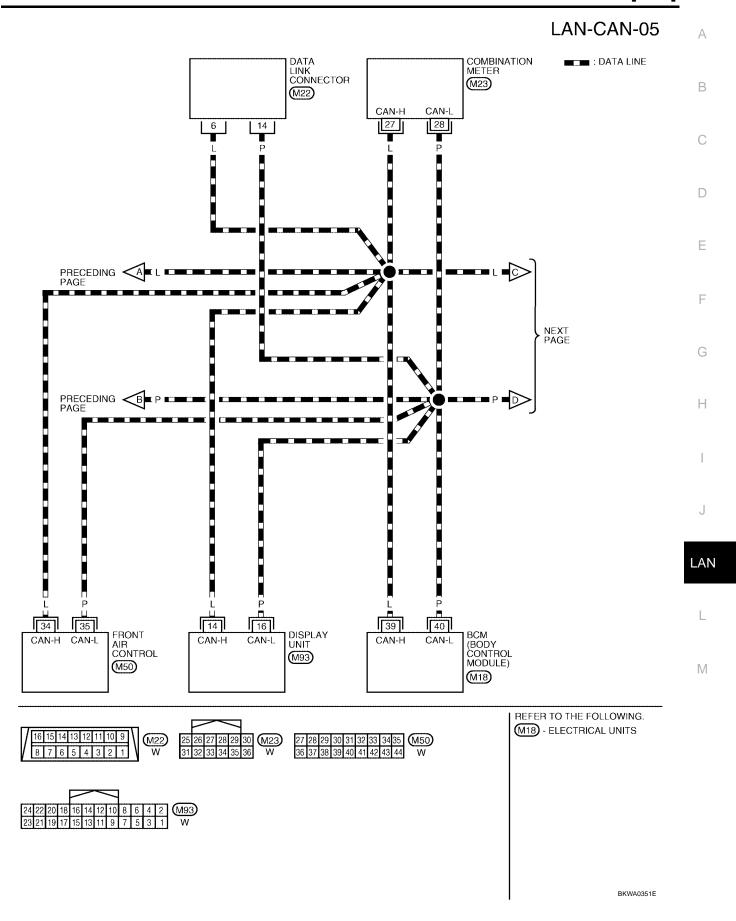
LAN-CAN-04

: DATA LINE



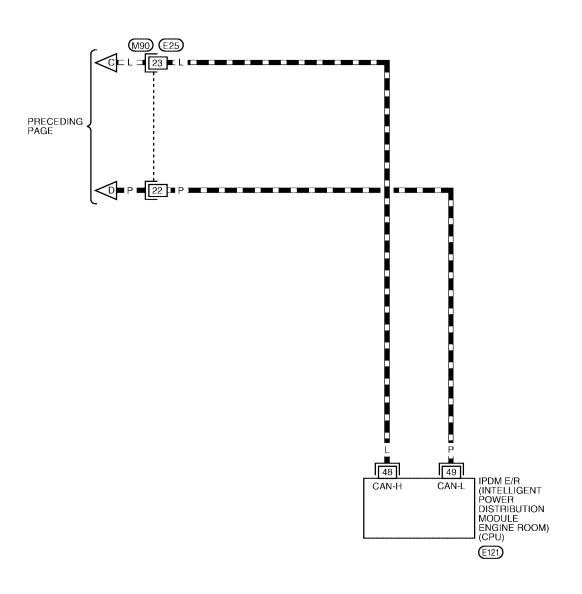


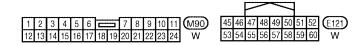
BKWA0350E



LAN-CAN-06

■■ : DATA LINE



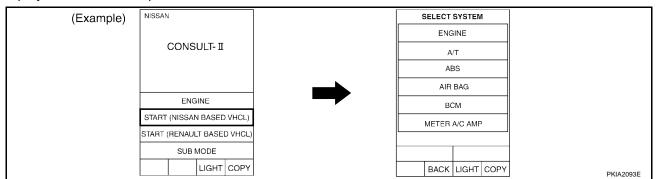


BKWA0352E

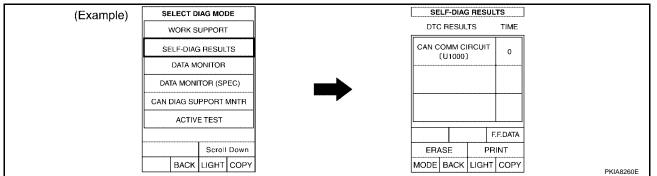
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Work Flow

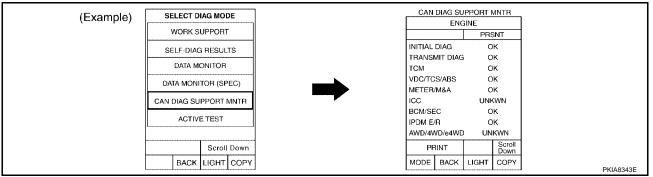
1. When there are no indications of "TRANSMISSION", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "TRANSMISSION", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "TRANSMISSION", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet.Refer to LAN-49, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks onto the items with "No indication", "NG" or "UNKWN" in the check sheet table.

					CAI	N DIAG SUPPOR	T MNTR Receive diagnosi	s		
SELECT SYS	TEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/
ENGINE		NG	UNKWN	-	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN		-	-	-	-
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 4	CAN 2	CAN 5	CAN 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	UNKWN
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items which are not in check sheet table are not related to diagnostic procedure on service manual.
 - Therefore, it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the integrated display system. Refer to AV-109, "AV Communication Line Check".
- 7. Attach the CAN DIAG MONITOR check sheet onto the check sheet. Refer to LAN-49, "CHECK SHEET".
- 8. Mark the "NG" or "UNKWN" item of the check sheet table from the result of CAN DIAG MONITOR check sheet.

NOTE:

- If "NG" is displayed on "CAN COMM" as "CAN DIAG MNTR" for the diagnosed control unit, replace the control unit.
- 9. According to the Check Sheet Results, start inspection.

CAN SYSTEM (TYPE 2)

[CAN]

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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

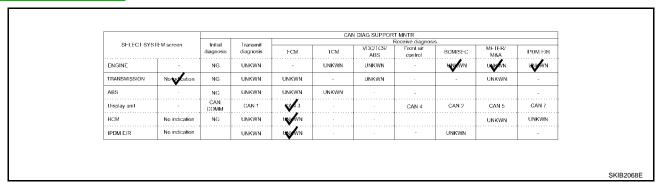
SELECT SYSTEM screen	heck sheet t	able									
Section Sect						CA	N DIAG SUPPORT	MNTR			
NG	SELECT SYST	EM screen		Transmit diagnosis	ECM	тсм	VDC/TCS/	Front air		METER/	IPDM E/R
Attach copy of Attach copy of Attach copy of	NGINE	-	NG	UNKWN	-	UNKWN			UNKWN		UNKWN
Attach copy of Attach copy of Attach copy of		No indication			UNKWN			-			-
Attach copy of Attach copy of Attach copy of						UNKWN		_	-		_
Attach copy of No indication NG UNKWN		-	CAN				-		+	CAN 5	CAN 7
Attach copy of Attach copy of Attach copy of Attach copy of		No indication									
Symptoms: Attach copy of Attach copy of											
			Atta: SELEC	ch copy of CT SYSTEM	л		SE	Attach copy	y of STEM		

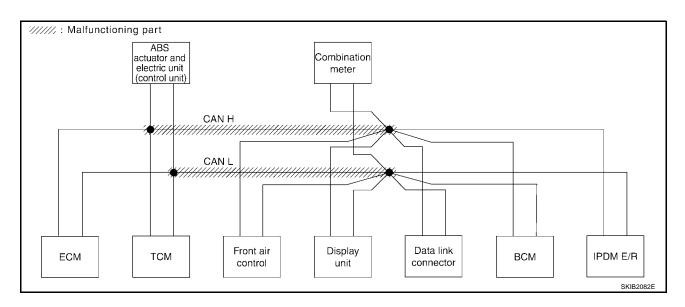
Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of TRANSMISSION SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS
Attach copy of BCM SELF-DIAG RESULTS	Attach copy of IPDM E/R SELF-DIAG RESULTS	
Attach copy of ENGINE CAN DIAG SUPPORT MNTR	Attach copy of TRANSMISSION CAN DIAG SUPPORT MNTR	Attach copy of ABS CAN DIAG SUPPORT MNTR
Attach copy of BCM CAN DIAG SUPPORT MNTR	Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR	

CHECK SHEET RESULTS

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-62</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.





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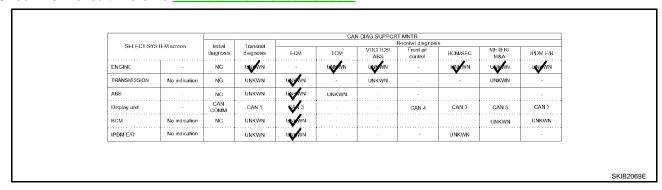
1

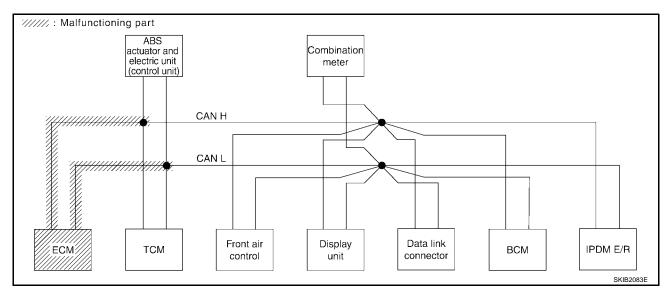
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Case 2
Check ECM circuit. Refer to <u>LAN-62</u>, "ECM Circuit Check" .





CAN SYSTEM (TYPE 2)

[CAN]

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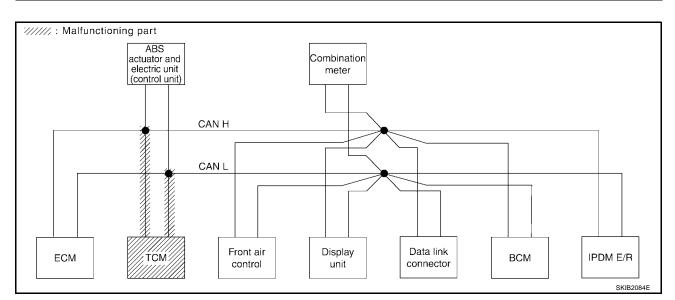
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Case 3
Check TCM circuit. Refer to <u>LAN-63</u>, "TCM Circuit Check".

SHLECT SYS		Initial	Transmit		CAL	I DIAG SUPPOR	T MNTR Receive diagnosi	s		
SFI,FGI 313		diagnosis	diagnosis	(-CM	1CM	VDC/†CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	ONRWN	UNKWN	-	UNKWN	UNKWN	UNKWN
THANSMISSION	Novaciation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	TIMENA		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

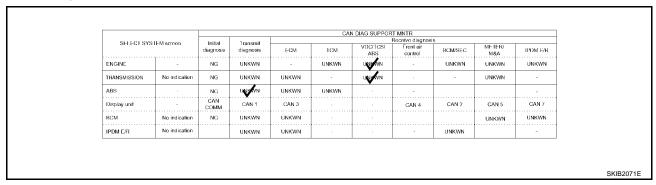


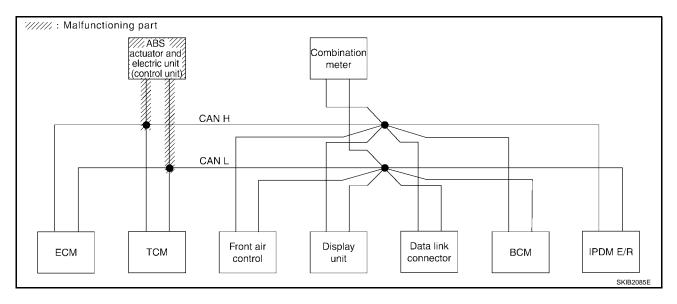
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Case 4

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-63</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".





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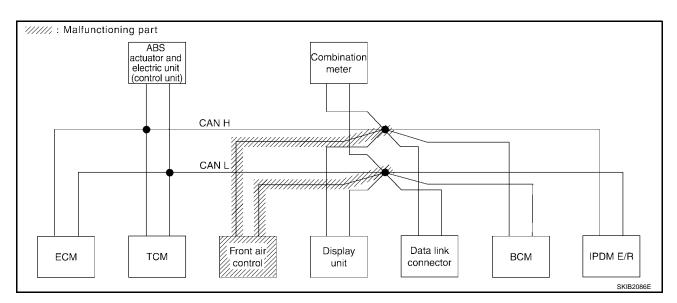
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Case 5
Check front air control circuit. Refer to <u>LAN-64</u>, "Front Air Control Circuit Check" .

					CAI	I DIAG SUPPOR	T MNTR Receive diagnosi	s		
SHIECT SYS	TEM screen	Initial diagnosis	Transmit diagnosis	ECM	1CM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			₩4	CAN 2	CAN 5	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

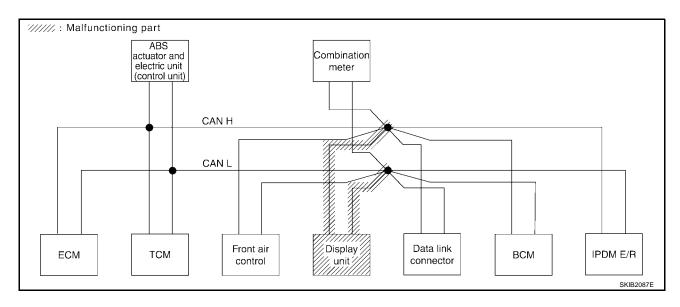


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Case 6
Check display unit circuit. Refer to <u>LAN-64, "Display Unit Circuit Check"</u>.

					CAI	N DIAG SUPPOR	Receive diagnos	is		
SHLECT SYS		Initial diagnosis	Transmit diagnosis	ECM.	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN	W 1	QA /3			V 4	€ 4/2	₩ 5	₩
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



CAN SYSTEM (TYPE 2)

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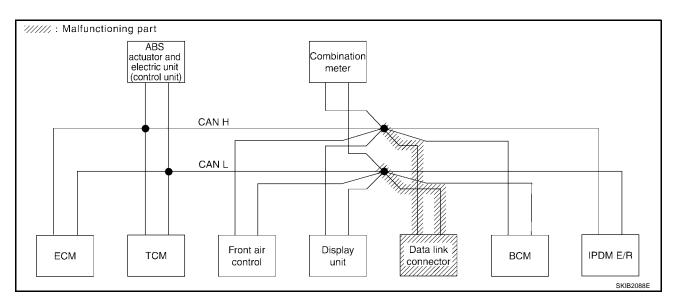
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Case 7
Check data link connector circuit. Refer to <u>LAN-65</u>, "<u>Data Link Connector Circuit Check"</u>.

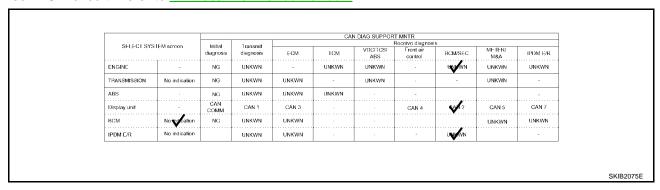
SHLECT SYS	If Magrees	Initial	Transmit		570	I DIAG SUPPOR	Receive diagnosi	s		
ori,rui oto		diagnosis	diagnosis	(-CM	1cM	VDC/1CS/ ABS	Front air control	BCM/SEC	MHTER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No tracation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN 7
всм	No no cation	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

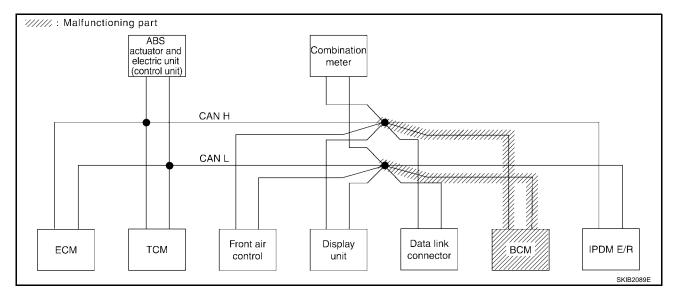


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Case 8
Check BCM circuit. Refer to <u>LAN-65</u>, "BCM Circuit Check" .





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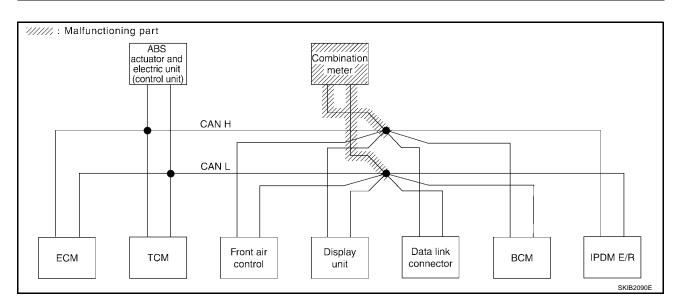
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Case 9

Check combination meter circuit. Refer to LAN-66, "Combination Meter Circuit Check" .

SELECT SYS	IEM scroon	Initial	Transmit				Receive diagnos	is		
011, 01010		diagnosis	diagnosis	ECM	1cM	VDC/1CS/ ABS	Front air control	8CM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNIVEN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNIKAN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	W 5	CAN 7
BCM	No indication	NG	UNKWN	UNKWN					UNIWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

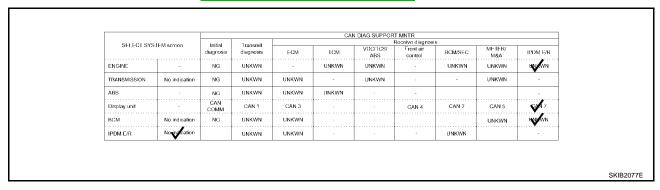


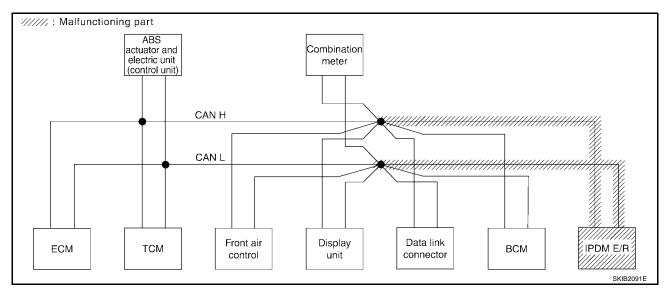
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Case 10

Check IPDM E/R circuit. Refer to LAN-66, "IPDM E/R Circuit Check".





Case 11
Check CAN communication circuit. Refer to <u>LAN-67, "CAN Communication Circuit Check"</u>.

SHLECT SYS	IEM screen	Initial	Transmit				Receive diagnos	is		
0111.01010		diagnosis	diagnosis	FCM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNIOWN	-	ONRAN	UNIVAN	-	MAKAN	UNIFOVN	BNIKWN
TRANSMISSION	Noting cation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNISAN	UNKWN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	₩/3			₩4	€ /2	₩5	4 /1
всм	No instruction	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

CAN SYSTEM (TYPE 2)

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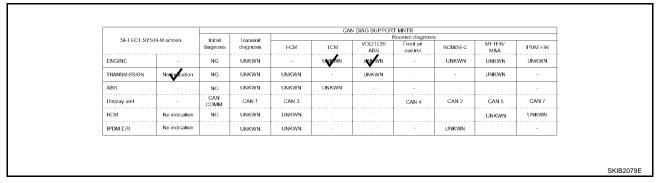
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Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to $\underline{\mathsf{LAN-67}}$, "IPDM E/R Ignition Relay $\underline{\mathsf{Circuit}\ \mathsf{Check}}$ ".



Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-67, "IPDM E/R Ignition Relay Circuit Check".

SHLECT SYS	I FM screen	Initial	Transmit				Receive diagnos	is		
011.01010		diagnosis	diagnosis	(-CM	1cM	VDC/1CS/ ABS	Front air control	8CM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNIMAN	-	UNKWN		-	UNIVVN	-
ABS		NG	UNKWN	UNISAN	UNKWN		-			-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	CAN 7
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

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Circuit Check Between TCM and Data Link Connector

1. CONNECTOR INSPECTION

UKS002P8

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect TCM connector E143 and ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector E143 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L)

: Continuity should exist.

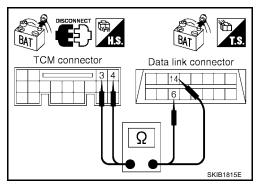
4 (P) - 14 (P)

: Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-47, "Work Flow".

NG >> Repair harness.



ECM Circuit Check

UKS002P9

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ECM connector E16 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. $108 - 132 \Omega$

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM connector E16 and TCM connector E143.

ECM CONNECTOR

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86

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TCM Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E143.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

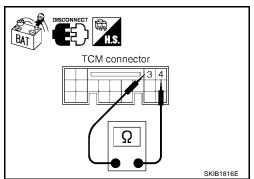
Check resistance between TCM connector E143 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace TCM.

>> Repair harness between TCM connector E143 and NG ECM connector E16.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ABS actuator and electric unit (control unit) connector E125.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

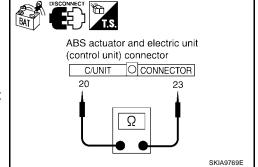
Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

20 (L) - 23 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).

NG >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and ECM connector E16.



UKS002PB

LAN

Front Air Control Circuit Check

1. CONNECTOR INSPECTION

Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect front air control connector M50.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

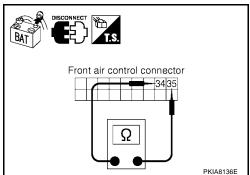
Check resistance between front air control connector M50 terminal 34 (L) and terminal 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace front air control.

NG >> Repair harness between front air control connector M50 and data link connector M22.



UKS002PD

Display Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect display unit connector M93.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

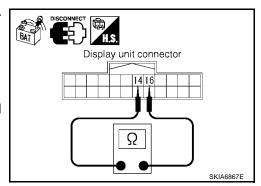
14 (L) - 16 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace display unit.

Revision: September 2005

NG >> Repair harness between display unit connector M93 and data link connector M22.



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Data Link Connector Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

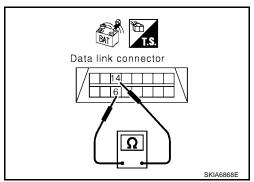
Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Diagnose again. Refer to LAN-47, "Work Flow".

NG >> Repair harness between data link connector M22 and BCM connector M18.



BCM Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect BCM connector M18.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

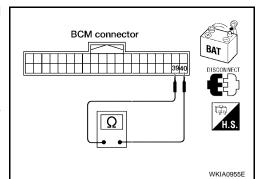
Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace BCM.

NG >> Repair harness between BCM connector M18 and data link connector M22.



UKS002PF

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Combination Meter Circuit Check

1. CONNECTOR INSPECTION

UKS002PG

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect combination meter connector M23.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between combination meter connector M23 terminal 27 (L) and terminal 28 (P).

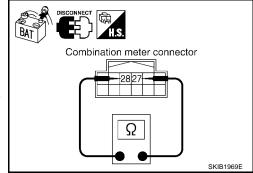
: Approx. 54 - 66 Ω

OK or NG

OK >> Replace combination meter.

NG

>> Repair harness between combination meter connector M23 and data link connector M22.



UKS002PH

IPDM E/R Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect IPDM E/R connector E121.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

: Approx. 108 - 132 Ω

OK or NG

OK

>> Replace IPDM E/R.

NG >> Repair harness between IPDM E/R connector E121 and data link connector M22.

IPDM E/R connector WKIA0956E

CAN SYSTEM (TYPE 2)

[CAN]

CAN Communication Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- TCM (Transmission control module)
- ABS actuator and electric unit (control unit)
- Front air control
- Display unit
- BCM (Body control module)
- Combination meter
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

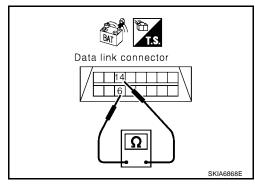
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

OK or NG

OK >> GO TO 3.

NG >> Repair the harness.



3. CHECK HARNESS FOR SHORT TO GROUND

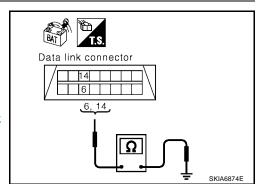
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

6 (L) - Ground : Continuity should not exist. 14 (P) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-68</u>, "Component Inspection".

NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-12, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START"</u>.

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Component Inspection ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

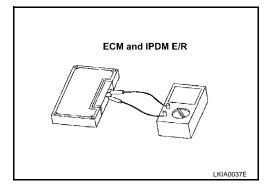
UKS002PK

- Disconnect ECM and IPDM E/R harness connectors.
- Check resistance between ECM terminals 94 and 86.

94 - 86 : Approx. 108 - 132 Ω

Check resistance between IPDM E/R terminals 48 and 49.

48 - 49 : Approx. $108 - 132 \Omega$



CAN SYSTEM (TYPE 3)

PFP:23710

System Description

UKS0020X

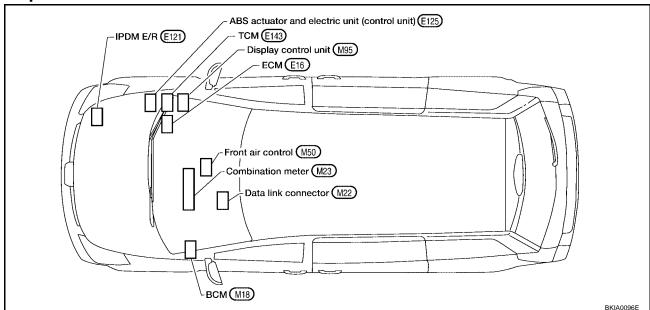
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information 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.

Component Parts and Harness Connector Location

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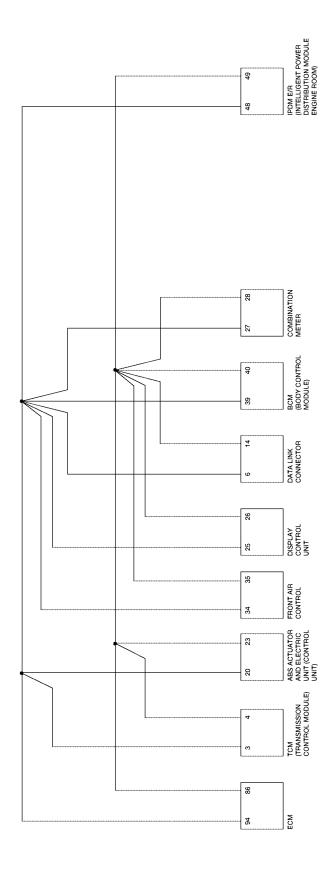
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Schematic UKS0020Z



BKWA0348E

Wiring Diagram — CAN —

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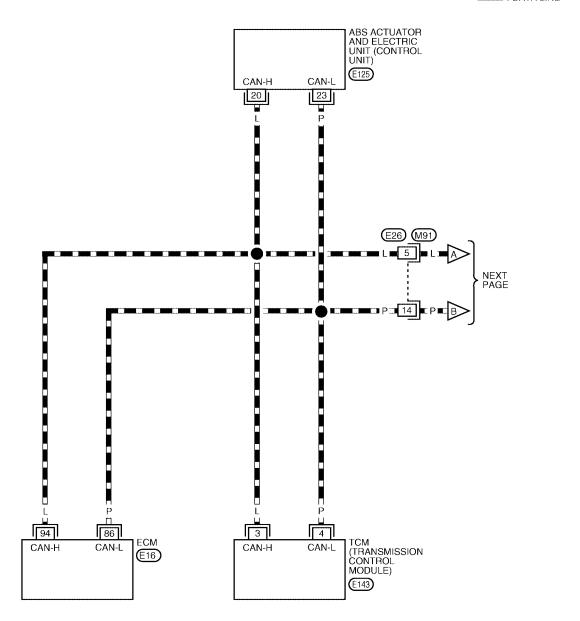
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LAN-CAN-07

: DATA LINE



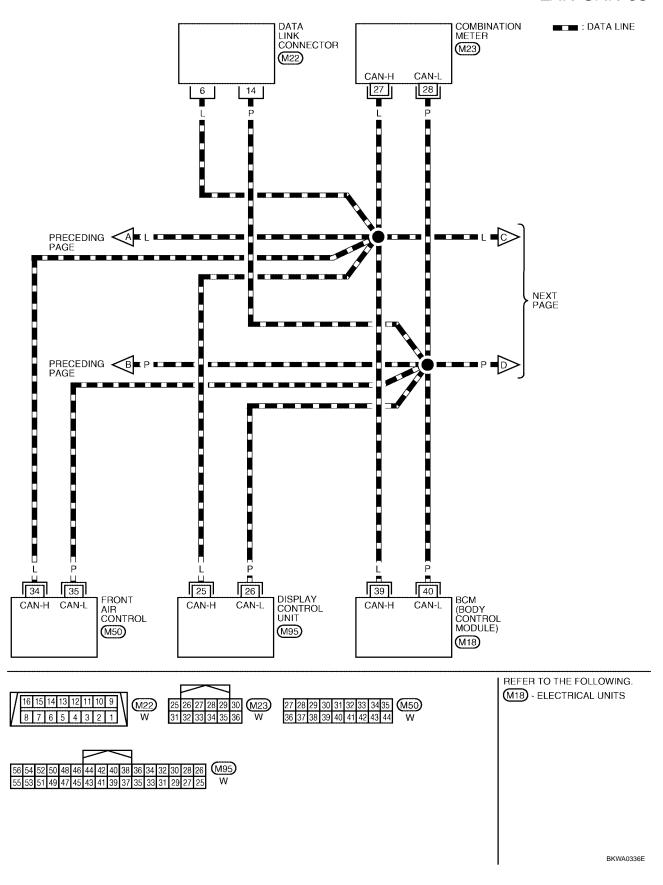
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BKWA0335E

LAN-CAN-08



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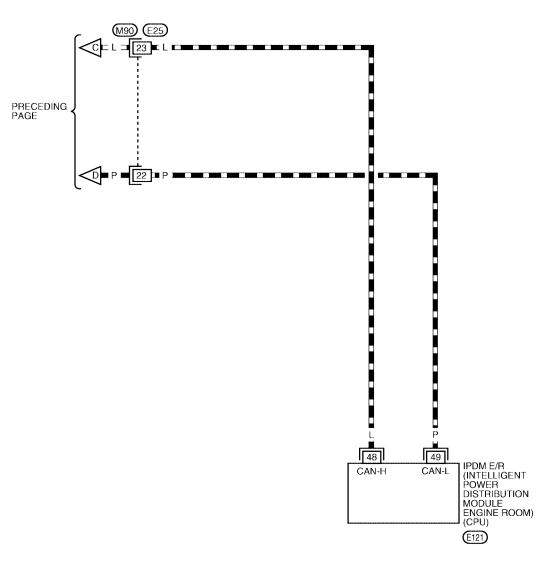
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LAN-CAN-09

■■ : DATA LINE

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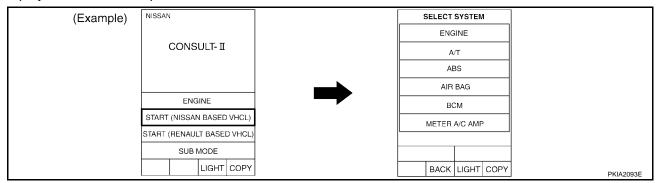
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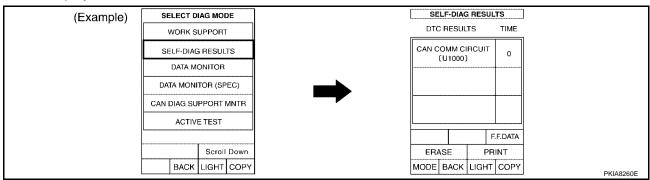
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Work Flow

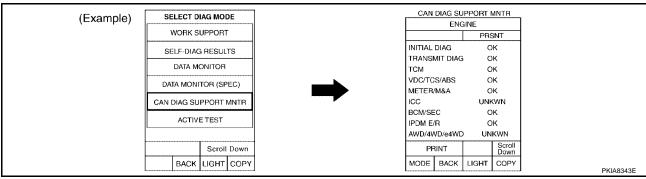
1. When there are no indications of "TRANSMISSION", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "TRANSMISSION", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "TRANSMISSION", "ABS", "BCM" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet.Refer to LAN-76, "CHECK SHEET".
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks onto the items with "No indication", "NG" or "UNKWN" in the check sheet table.

SELECT SYST	EM screen	Initial	Transmit	I	UA.	N DIAG SUPPOR	Receive diagnosi	S		
		diagnosis	diagnosis	ECM	тсм	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE		NG	UNKWN		UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	+	UNKWN	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	UNKWN
IPDM E/R	No indication	-	UNKWN	UNKWN		-	-	UNKWN	-	-

CAN SYSTEM (TYPE 3)

[CAN]

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items which are not in check sheet table are not related to diagnostic procedure on service manual.

Therefore, it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.

- 6. Check CAN communication line of the navigation system.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-133</u>, "CHECK SHEET".
- 8. Mark the "NG" or "UNKWN" item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

9. According to the Check Sheet Results, start inspection.

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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Transmit						CAN	I DIAG SUPPOR				
NOTINE - NG UNKWN - UNKWN - UNKWN UNKWN UNKWN UNKWN UNKWN - UNKWN	SELECT SYST	EM screen	Initial	Transmit	ECM	TCM	VDC/TCS/	Front air			IDDM E/D
RANSMISSION No indication NG UNKWN UNKWN - UKWN - UK	NCINE		-	-							
Symptoms: Attach copy of SELECT SYSTEM Attach copy of display control unit CAN DIAG SUPPORT MONITOR											
Isplay control unit - COMM No indication NG UNKWN UNKWN CAN CIRC 2 CAN CIRC 2 CAN CIRC 3 CAN											
Com No indeation NG UNKWN COMPANIES Symptoms: Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM Attach copy of Gisplay control unit CAN DIAG SUPPORT MONITOR											
Attach copy of SELECT SYSTEM			COMM								
Symptoms: Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM Attach copy of display control unit CAN DIAG SUPPORT MONITOR						-	-				UNKWN
Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM Attach copy of display control unit CAN DIAG SUPPORT MONITOR	DM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-
display control unit CAN DIAG SUPPORT MONITOR			Atta SELE	ach copy of CT SYSTEM	М		SE	Attach copy ELECT SYS	of TEM		
				(displ CAN DIAG S	ay control ur SUPPORT N	nit MONITOR				

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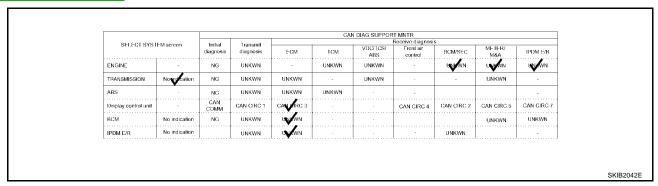
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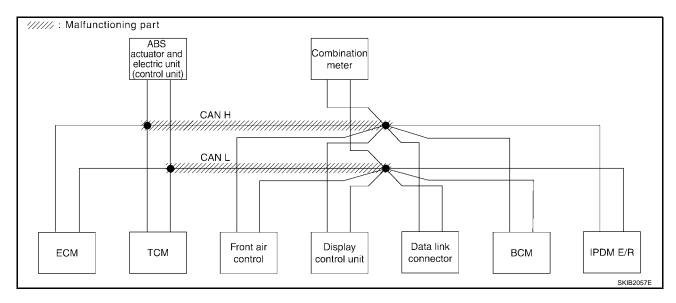
Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of TRANSMISSION SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS
Attach copy of BCM SELF-DIAG RESULTS	Attach copy of IPDM E/R SELF-DIAG RESULTS	
Attach copy of ENGINE CAN DIAG SUPPORT MNTR	Attach copy of TRANSMISSION CAN DIAG SUPPORT MNTR	Attach copy of ABS CAN DIAG SUPPORT MNTR
Attach copy of BCM CAN DIAG SUPPORT MNTR	Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR	

CHECK SHEET RESULTS

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-89</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.





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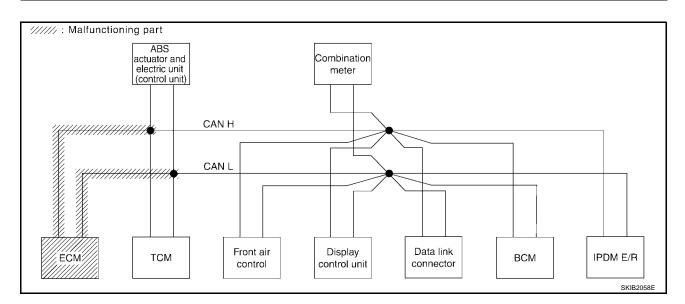
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Case 2
Check ECM circuit. Refer to <u>LAN-89</u>, "ECM Circuit Check" .

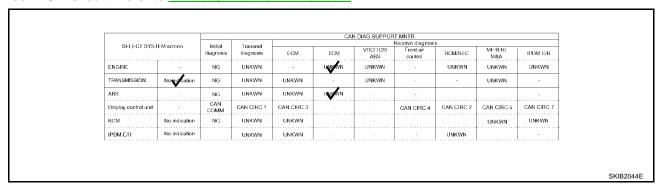
SELECT SYST	FM ceroon	Initial	Transmit		070		Receive diagnosi	s		
311, 61 3131		diagnosis	diagnosis	E-CM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNIFWN	-	CAIRAN	DAILWIN	-	UNION	UNIVAN	RAINAN
TRANSMISSION	No indication	NG	UNKWN	UNIVAN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNIVAN	UNKWN		-			-
Display control unit	-	CAN COMM	GAN CIRC 1	CAUPIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	CAN CIRC 7
всм	No indication	NG	UNKWN	UNIVERN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UWWN			-	UNKWN		-

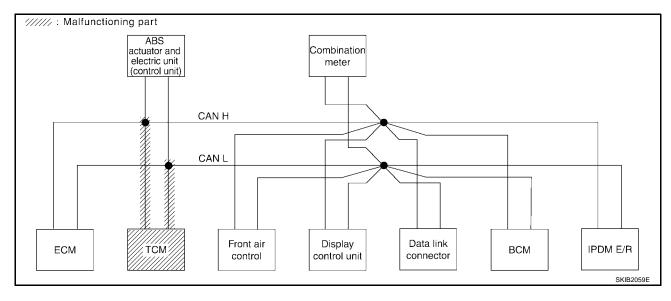


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Case 3
Check TCM circuit. Refer to <u>LAN-90</u>, "TCM Circuit Check" .





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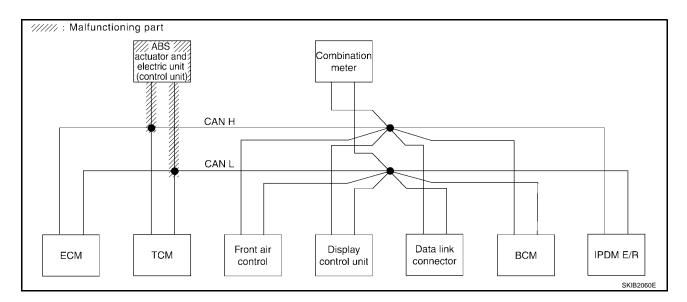
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Case 4

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-90</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".

SELECT SYS	FM screen	Initial	Transmit				Receive diagnosi	s		
011, 01010		diagnosis	diagnosis	ECM	1CM	VDC/1CS/ ABS	Front air control	BCM/S⊕C	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNIVAN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNIVAN		-	UNKWN	-
ABS		NG	DANKAN	UNKWN	UNKWN		-			-
Display control unif	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

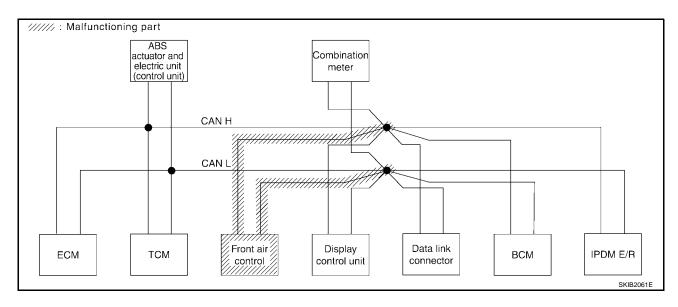


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Case 5
Check front air control circuit. Refer to <u>LAN-91</u>, "Front Air Control Circuit Check" .

SELECT SYST	FM screen	Initial	Transmit				Receive diagnosi:	8		
011,010101		diagnosis	diagnosis	(-CM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CANARC 4	CAN CIRC 2	CAN CIRC 5	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



CAN SYSTEM (TYPE 3)

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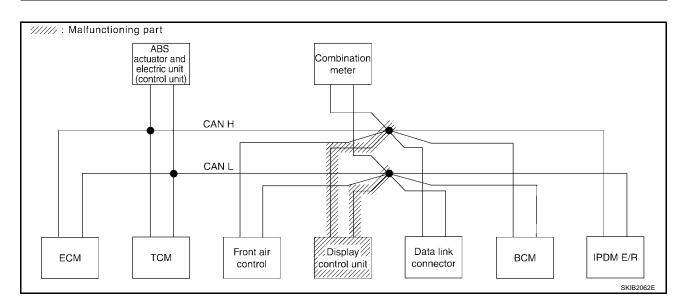
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Case 6

Check display control unit circuit. Refer to LAN-91, "Display Control Unit Circuit Check" .

SELECT SYST	FM ceroon	Initial	Transmit		C24		Receive diagnosi	s		
311, 61 3131	t w screen	diagnosis	diagnosis	FCM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display control unit	-	CAN COMM	CAN (RC 1	CAN FIRC 3			CANOTIRC 4	CAN FIRC 2	CAN PRC 5	GAN FIRC 7
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-

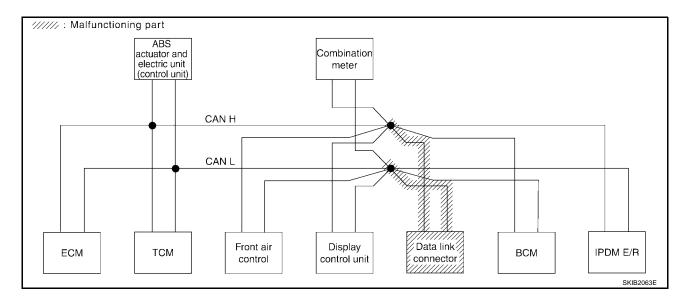


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Case 7
Check data link connector circuit. Refer to <u>LAN-92</u>, "<u>Data Link Connector Circuit Check</u>" .

SELECT SYS	IEM screen	Initial	Transmit		0.0		Receive diagnosi	s		
		diagnosis	diagnosis	ECM	1CM	VDC/†CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
TRANSMISSION	Novaciation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2		GAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No nation		UNKWN	UNKWN			-	UNKWN		-



CAN SYSTEM (TYPE 3)

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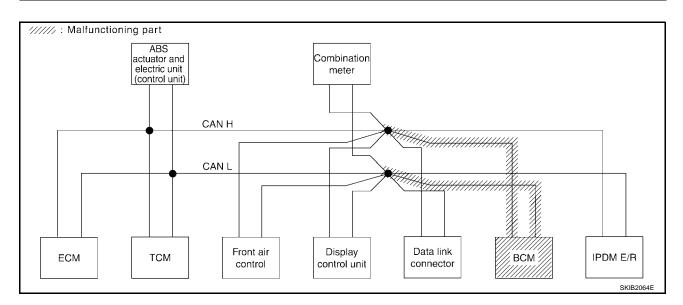
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Case 8
Check BCM circuit. Refer to <u>LAN-92</u>, "BCM Circuit Check" .

SHLECT SYS	IEM screen	Initial	Transmit				Receive diagnosi	ş		
		diagnosis	diagnosis	ECM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	MANAMA	UNKWN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display control unif		CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN FIRC 2		CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNIKWN		-

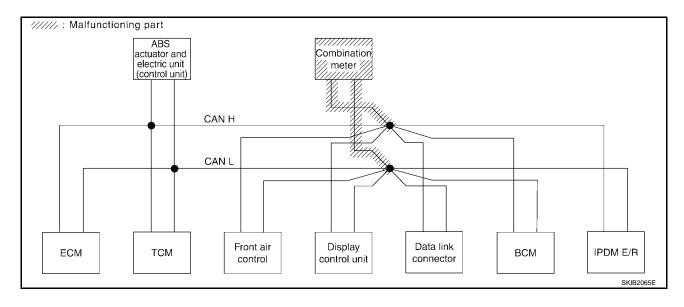


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Case 9
Check combination meter circuit. Refer to <u>LAN-93</u>, "Combination Meter Circuit Check" .

SHLECT SYS	IEM screen	Initial	Transmit		C/U		Receive diagnosi	s		
011,501010		diagnosis	diagnosis	ECM	1CM	VDC/†CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNIVIN	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	THIS AN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-		·	-
Display control unit	-	CAN	GAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN FIRC 5	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN					UWWN	UNKWN
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-



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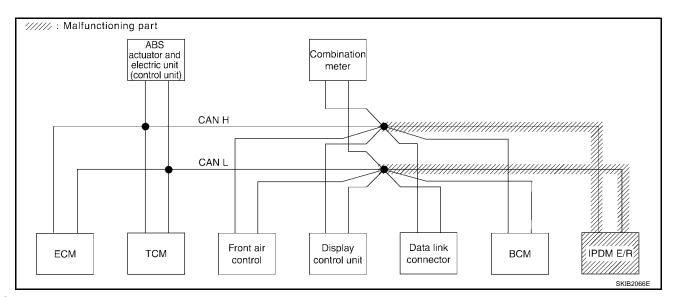
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Case 10

Check IPDM E/R circuit. Refer to LAN-93, "IPDM E/R Circuit Check" .

SELECT SYST	FM screen	Initial	Transmit		C70		Receive diagnosi	s		
011,010101		diagnosis	diagnosis	(-CM	1CM	VDC/1CS/ ABS	Front air control	BCM/S⊕C	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	RINKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2		GAN PIRC 7
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNIVER
IPDM E/R	Notice cation		UNKWN	UNKWN			-	UNKWN		-



Case 11

Check CAN communication circuit. Refer to LAN-94, "CAN Communication Circuit Check" .

SHIECT SYS	IEM screen	Initial	Transmit		0/4		Receive diagnosi:	8		
		diagnosis	diagnosis	ECM	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R
ENGINE	-	NG	UNIVAN	-	RANGON	UNIKWN	-	MANNAN	UNIVN	MANAMA
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-
ABS		NG	UNIVAN	UNKWN	UNKWN		-			-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN FIRC 3			CAN ARC 4	CAN PIRC 2	CAN PIRC 5	CAN PIRC 7
BCM	No incitation	NG	UNKWN	UNKWN					UNKWN	UNKWN
IPDM E/R	Nonecation		UNKWN	UNKWN			-	UNKWN		-

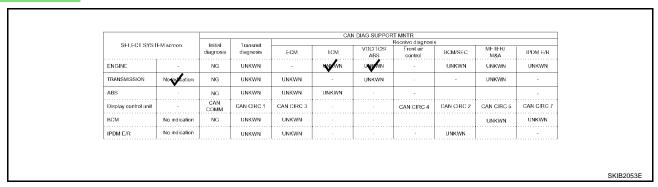
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Revision: September 2005 LAN-87 2005 Quest

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF".Refer to <u>LAN-94</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.



Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-94</u>, "IPDM E/R Ignition Relay Circuit Check".

SELECT SYSTEM screen		Initial	Transmit	CAN DIAG SUPPORT MNTR Receive diagnosis							
		diagnosis	diagnosis	ECM.	1CM	VDC/1CS/ ABS	Front air control	BCM/SEC	METER/ M&A	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN	
TRANSMISSION	No indication	NG	UNKWN	nnk v	-	UNKWN		-	DOTR AND	-	
ABS		NG	UNKWN	UNIVAN	UNKWN		-			-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	CAN CIRC 7	
всм	No indication	NG	UNKWN	UNKWN					UNKWN	UNKWN	
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	

CAN SYSTEM (TYPE 3)

[CAN]

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Circuit Check Between TCM and Data Link Connector

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E143 and ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector E143 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L)

: Continuity should exist.

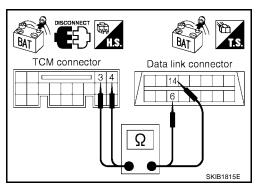
4 (P) - 14 (P)

: Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-74, "Work Flow".

NG >> Repair harness.



UKS002OK

ECM Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

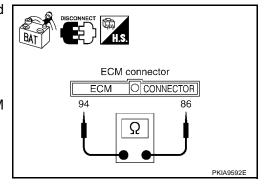
Check resistance between ECM connector E16 terminal 94 (L) and terminal 86 (P).

> 94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM connector E16 and TCM connector E143.



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UKS0020L

TCM Circuit Check

1. CONNECTOR INSPECTION

Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E143.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

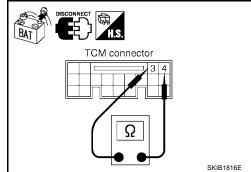
Check resistance between TCM connector E143 terminal 3 (L) and terminal 4 (P).

: Approx. 54 - 66 Ω

OK or NG

OK >> Replace TCM.

NG >> Repair harness between TCM connector E143 and ECM connector E16.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

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1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ABS actuator and electric unit (control unit) connector E125.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 20 (L) and terminal 23 (P).

: Approx. 54 - 66 Ω

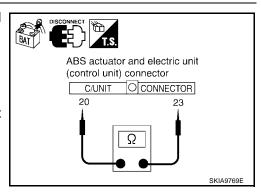
OK or NG

OK >

>> Replace ABS actuator and electric unit (control unit).

NG

>> Repair harness between ABS actuator and electric unit (control unit) connector E125 and ECM connector E16.



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Front Air Control Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect front air control connector M50.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

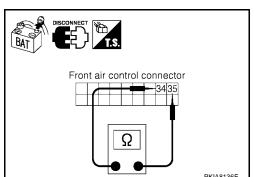
Check resistance between front air control connector M50 terminal 34 (L) and terminal 35 (P).

34 (L) - 35 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace front air control.

NG >> Repair harness between front air control connector M50 and data link connector M22.



Display Control Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect display control unit connector M95.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

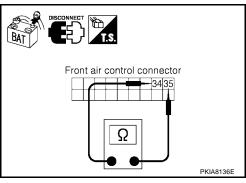
Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace display control unit.

NG >> Repair harness between display control unit connector M95 and data link connector M22.



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Data Link Connector Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

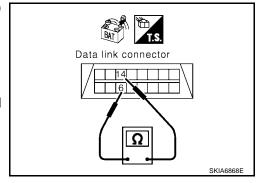
Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Diagnose again. Refer to <u>LAN-74, "Work Flow"</u>.

NG >> Repair harness between data link connector M22 and BCM connector M18.



BCM Circuit Check

1. CONNECTOR INSPECTION

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect BCM connector M18.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

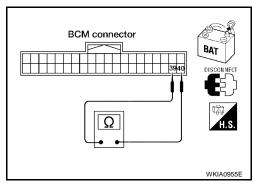
39 (L) - 40 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

NG

OK >> Replace BCM.

>> Repair harness between BCM connector M18 and data link connector M22.



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Combination Meter Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect combination meter connector M23.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

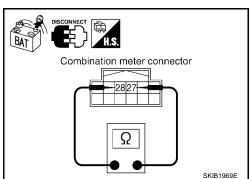
Check resistance between combination meter connector M23 terminal 27 (L) and terminal 28 (P).

27 (L) - 28 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace combination meter.

NG >> Repair harness between combination meter connector M23 and data link connector M22.



IPDM E/R Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect IPDM E/R connector E121.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx. 108 - 132
$$\Omega$$

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness between IPDM E/R connector E121 and data link connector M22.

IPDM E/R connector WKIA0956E

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CAN Communication Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- TCM (Transmission control module)
- ABS actuator and electric unit (control unit)
- Front air control
- Display control unit
- BCM (Body control module)
- Combination meter
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

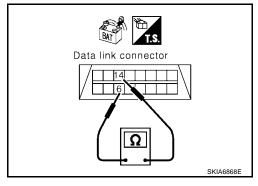
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

OK or NG

OK >> GO TO 3.

NG >> Repair the harness.



3. CHECK HARNESS FOR SHORT TO GROUND

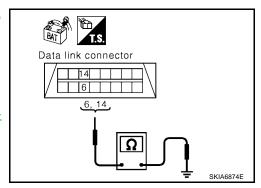
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

6 (L) - Ground : Continuity should not exist. 14 (P) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-95</u>, "Component Inspection".

NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

UKS0020V

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-12</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START".

CAN SYSTEM (TYPE 3)

[CAN]

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Component Inspection ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

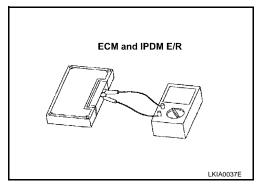
Disconnect ECM and IPDM E/R harness connectors.

Check resistance between ECM terminals 94 and 86.

94 - 86 : Approx. 108 - 132 Ω

Check resistance between IPDM E/R terminals 48 and 49.

48 - 49 : Approx. 108 - 132 Ω



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CAN SYSTEM (TYPE 4)

PFP:23710

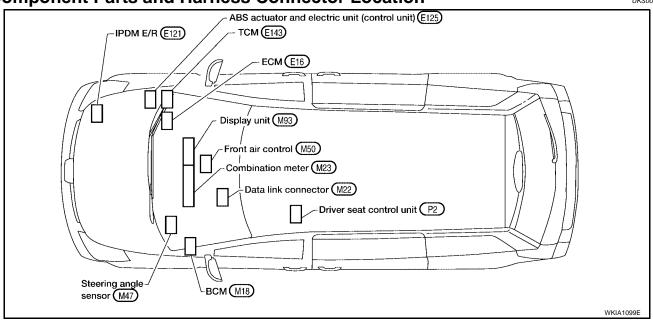
System Description

UKS002NY

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.

Component Parts and Harness Connector Location

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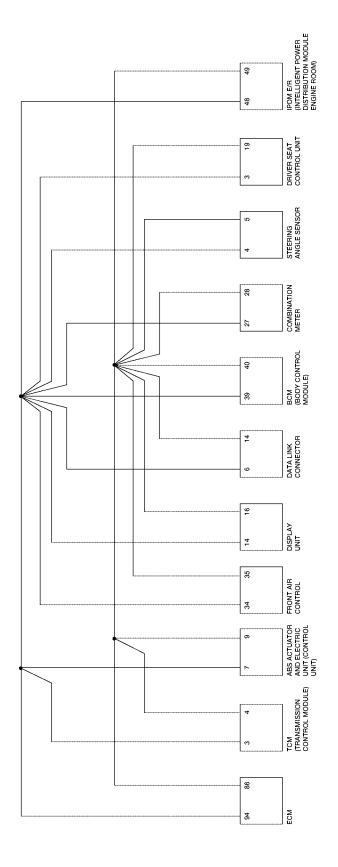
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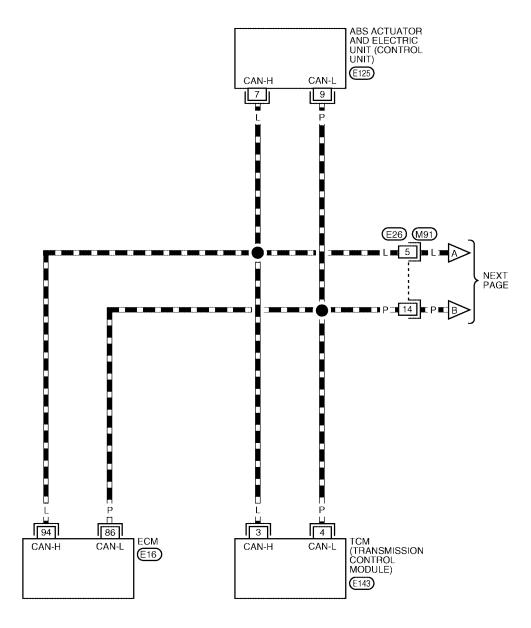
BKWA0347E

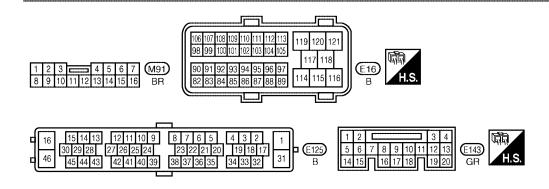
Wiring Diagram — CAN —

JKS00201

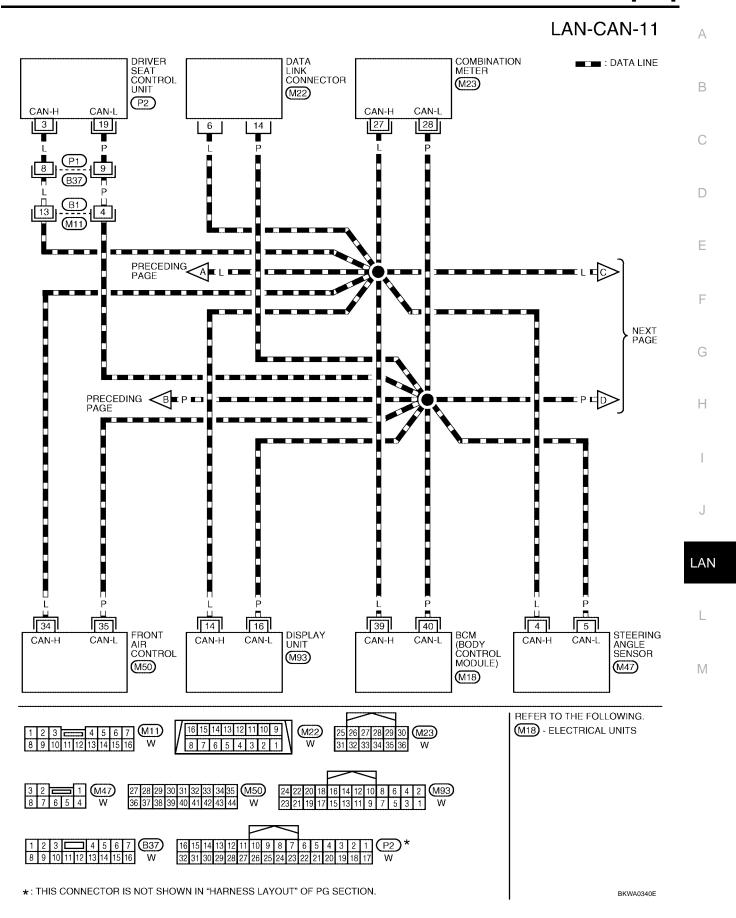
LAN-CAN-10

: DATA LINE



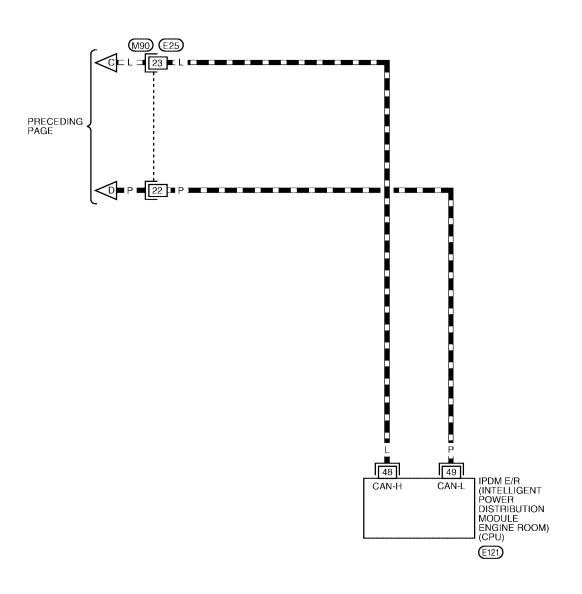


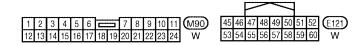
BKWA0339E



LAN-CAN-12

■■ : DATA LINE

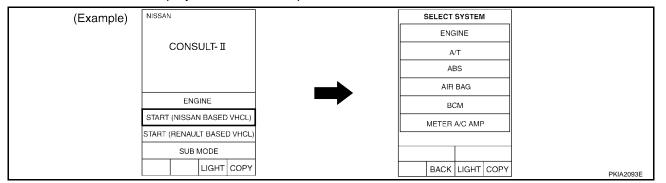




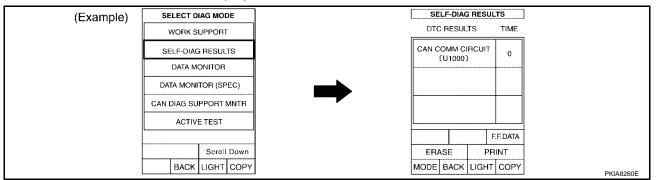
BKWA0341E

Work Flow

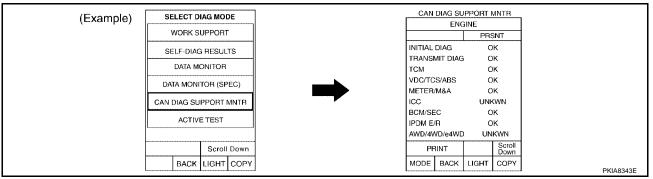
1. When there are no indications of "TRANSMISSION", "BCM", "AUTO DRIVE POS." or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "TRANSMISSION", "ABS", "BCM", "AUTO DRIVE POS." and "IPDM E/R" displayed on CONSULT-II.



3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "TRANSMISSION", "ABS", "BCM", "AUTO DRIVE POS." and "IPDM E/R" displayed on CONSULT-II.



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet.Refer to LAN-103, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks onto the items with "No indication", "NG" or "UNKWN" in the check sheet table.

					CAI	N DIAG SUPPOR					
SELECT SYS	EM screen	Initial diagnosis	Transmit diagnosis	ECM	TCM	VDC/TCS/ ABS	Receive diagnosi Front air control	BCM/SEC	METER/ M&A	STRG	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN		UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	
Display unit	-	CAN COMM	CAN 1	CAN 3	-	-	CAN 4	CAN 2	CAN 5	-	CAN 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN			-	UNKWN		-	

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items which are not in check sheet table are not related to diagnostic procedure on service manual.
 - Therefore, it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the integrated display system. Refer to <u>AV-109, "AV Communication Line Check"</u>.
- 7. Attach the CAN DIAG MONITOR check sheet onto the check sheet. Refer to <u>LAN-103</u>, "CHECK SHEET"
- Mark the "NG" or "UNKWN" item of the check sheet table from the result of CAN DIAG MONITOR check sheet.

NOTE:

- If "NG" is displayed on "CAN COMM" as "CAN DIAG MNTR" for the diagnosed control unit, replace the control unit.
- 9. According to the Check Sheet Results, start inspection.

CAN SYSTEM (TYPE 4)

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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG MNTR" for the diagnosed control unit, replace the control unit.

					CAN	N DIAG SUPPOR	T MNTR				
SELECT SYST	EM screen	Initial	Transmit		1	VDC/TCS/	Receive diagnosi Front air		METER/	l orno	1
- NOINE		diagnosis	diagnosis	ECM	TCM	ABS	control	BCM/SEC	M&A	STRG	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	-	-
ABS		NG CAN	UNKWN	UNKWN	UNKWN	-	-	-	*	UNKWN	
Display unit	*	COMM	CAN 1	CAN 3	-	-	CAN 4	CAN 2	CAN 5	*	CAN 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	-	
PDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	-	~
		A SEI	Attach copy LECT SYS	of TEM							
				c	Attach co display AN DIAG N check s	unit MONITOR					

Attach copy of Attach copy of Attach copy of TRANSMISSION ABS **ENGINE** SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of **BCM** AUTO DRIVE POS. IPDM E/R **SELF-DIAG RESULTS** SELF-DIAG RESULTS **SELF-DIAG RESULTS** Attach copy of Attach copy of Attach copy of ABS **ENGINE TRANSMISSION** CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT **MNTR MNTR MNTR**

> Attach copy of BCM CAN DIAG SUPPORT MNTR

Attach copy of AUTO DRIVE POS. CAN DIAG SUPPORT MNTR

Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

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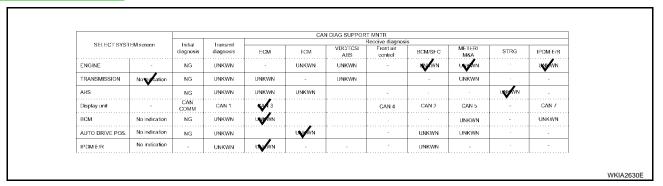
CHECK SHEET RESULTS

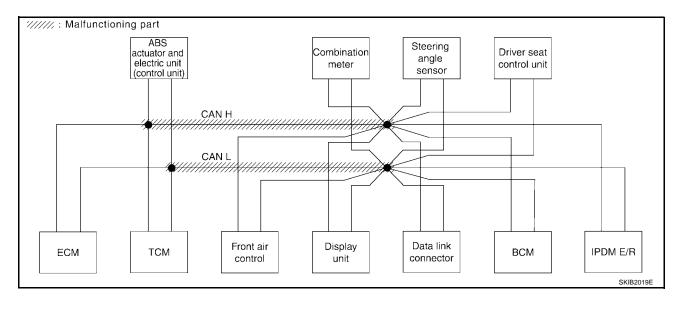
NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-118</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.





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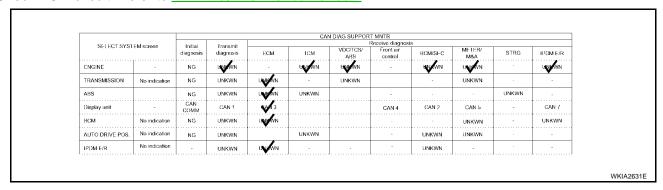
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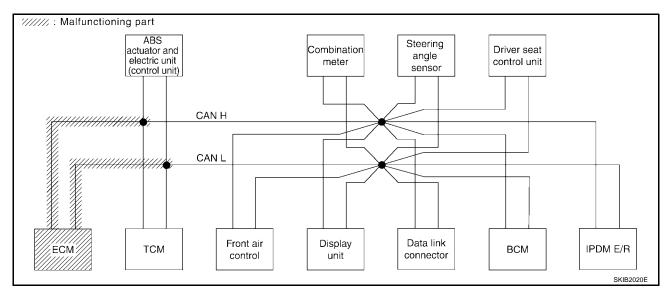
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Case 2
Check ECM circuit. Refer to <u>LAN-118</u>, "ECM Circuit Check" .





CAN SYSTEM (TYPE 4)

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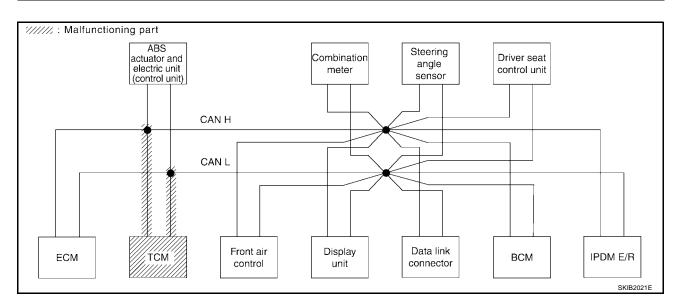
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Case 3
Check TCM circuit. Refer to <u>LAN-119</u>, "TCM Circuit Check" .

				CAN DIAG SUPPORT MNTR								
SELECT SYS	TEM screen	Initial	fransmit diagnosis		Receive diagnosis VDC/TCS/ Front air METER/ CTD0							
		diagnosis		ECM	ICM	ABS	control	BCM/SEC	METER/ M&A	STRG	IPOM E/R	
ENGINE	-	NG	UNKWN	-	UNIKAN	UNKWN	-	UNKWN	UNKWN		UNKWN	
TRANSMISSION	Notes cation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-	
ABS		NG	UNKWN	UNKWN	UNIKAN		-			UNKWN	-	
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /	
всм	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN		UNISAN		-	UNKWN	UNKWN		-	
IPDM E/R	No indication	-	UNKWN	UNKWN			-	UNKWN	-		-	

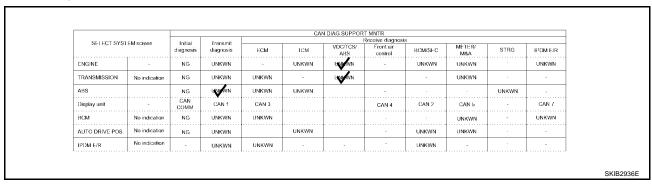


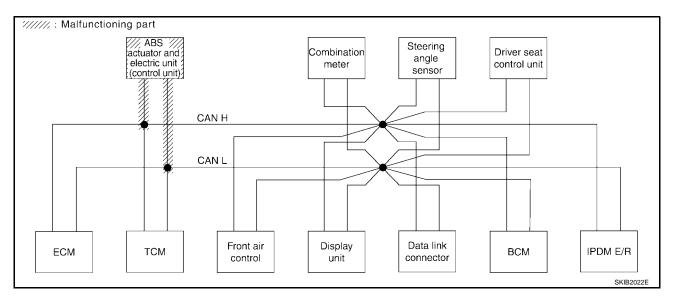
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Case 4

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-119</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".





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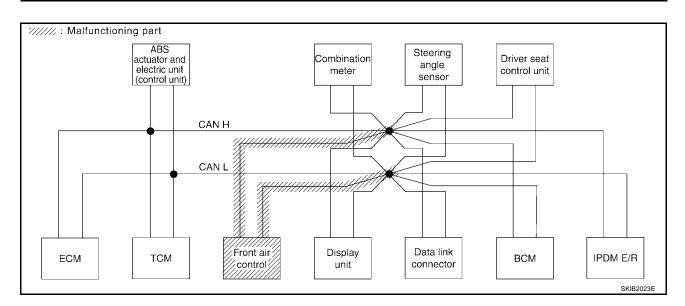
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Case 5
Check front air control circuit. Refer to <u>LAN-120</u>, "Front Air Control Circuit Check" .

		L			CAI	I DIAG SUPPOR					
SELECT SYS	I EM screen	Initial	fransmit				Receive diagnosi	is			
0.11.01.010		diagnosis NG NG NG CAN	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS			UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			₩14	CAN 2	CAN 5	-	CAN /
ВСМ	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-

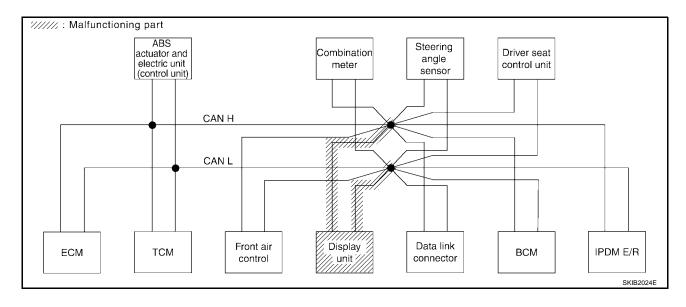


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Case 6
Check display unit circuit. Refer to <u>LAN-120</u>, "<u>Display Unit Circuit Check</u>" .

					CA	N DIAG SUPPOR	T MNTR Receive diagnosi	io			
SELECT SYS		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
AHS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	₩1	CA 13			√ /4	(A)/2	OW 5	-	W/
всм	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	• • • • • • • • • • • • • • • • • • • •	UNKWN		-	UNKWN	UNKWN		-
IPOM E/R	No indication	-	UNKWN	UNKWN			-	UNKWN	-		-



CAN SYSTEM (TYPE 4)

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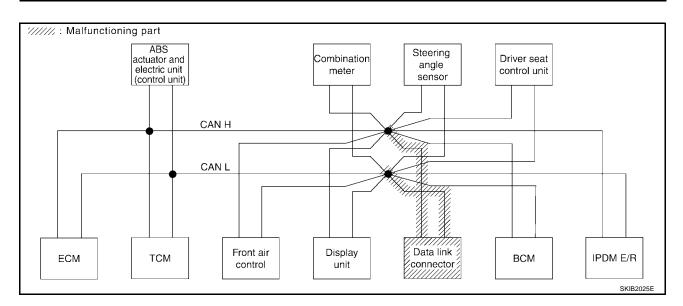
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Case 7
Check data link connector circuit. Refer to <u>LAN-121</u>, "<u>Data Link Connector Circuit Check</u>" .

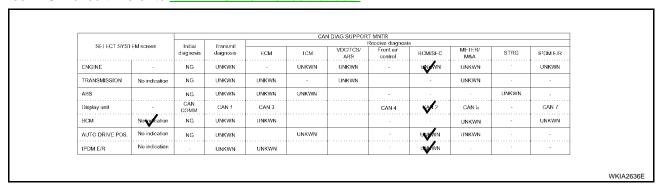
					CAI	I DIAG SUPPOR	T MNTR Receive diagnosi				
SELECT SYS		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	Notes cation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /
всм	Notoccation	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.		NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication	-	UNKWN	UNKWN			-	UNKWN	-		-

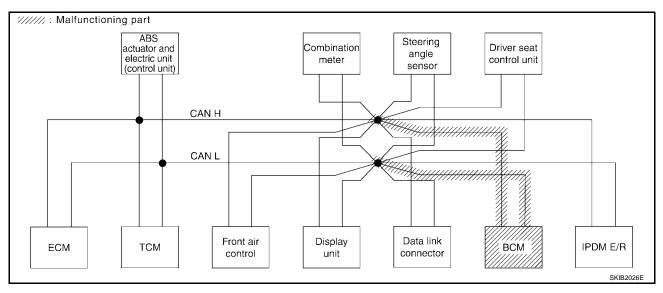


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Case 8
Check BCM circuit. Refer to <u>LAN-121</u>, "BCM Circuit Check" .





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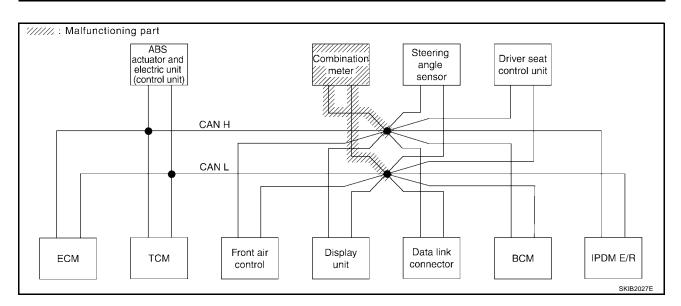
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Case 9

Check combination meter circuit. Refer to LAN-122, "Combination Meter Circuit Check" .

					CAI	I DIAG SUPPOR					
SELECT SYS	EM screen	Initial	fransmit				Receive diagnosi	is			
		diagnosis	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNIKAVN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	TANKAN		-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	₩5	-	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNIVAN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	ONIN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-



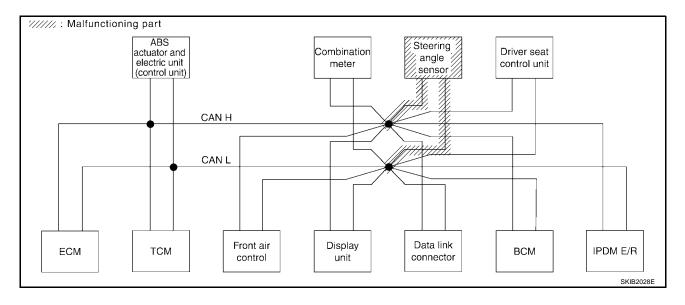
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Case 10

Check steering angle sensor circuit. Refer to LAN-122, "Steering Angle Sensor Circuit Check" .

				ı	CAI	N DIAG SUPPOR	T MNTR Receive diagnosi	2			
SELECT SYS		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS		NG	UNKWN	UNKWN	UNKWN		-			DARMA	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-



CAN SYSTEM (TYPE 4)

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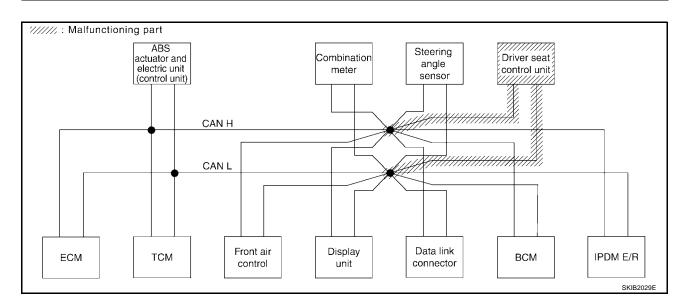
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Case 11
Check driver seat control unit circuit. Refer to <u>LAN-123</u>, "<u>Driver Seat Control Unit Circuit Check"</u>.

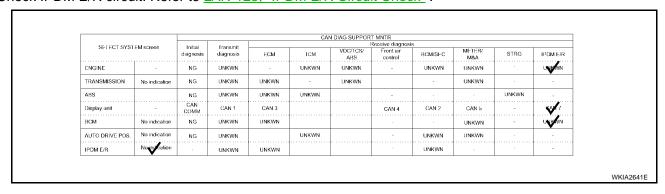
					CAI	I DIAG SUPPOR					
SELECT SYST	EM screen	Initial	fransmit				Receive diagnosi	is	T 1		
		diagnosis	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /
всм	No indication	NG	UNKWN	UNKWN			-		UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-

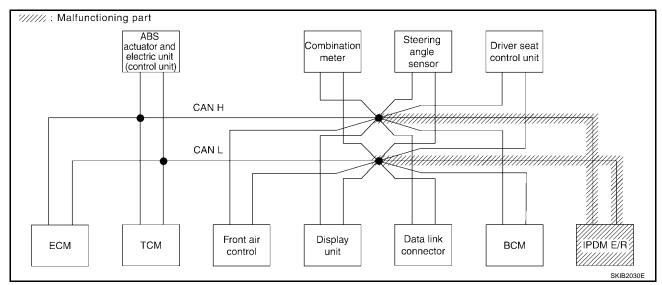


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Case 12
Check IPDM E/R circuit. Refer to <u>LAN-123</u>, "IPDM E/R Circuit Check" .





Case 13
Check CAN communication circuit. Refer to <u>LAN-124</u>, "CAN Communication Circuit Check" .

					CAI	N DIAG SUPPOR					
SELECT SYS		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Receive diagnosi Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNIKWN	-	UNIFWN	UNIVAN	-	MAKAN	ONFWN		UNISON
TRANSMISSION	Notorication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS	·	NG	UNIVAN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	QA 3			V /4	W/2	₩ 5	-	W
всм	Noting cation	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-

CAN SYSTEM (TYPE 4)

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Case 14

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to $\underline{\text{LAN-124}}$, "IPDM E/R Ignition Relay $\underline{\text{Circuit Check}}$ ".

					CAI	I DIAG SUPPOR					
SELECT SYS	LEM screen	Initial	fransmit				Receive diagnosi	s			
		diagnosis	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNIFOVN	UNIVAN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No nation	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN		-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNRWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to $\underline{\text{LAN-124}}$, "IPDM E/R Ignition Relay $\underline{\text{Circuit Check}}$ ".

					CA	N DIAG SUPPOR					
SELECT SYST		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ARS	Receive diagnosi Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN		UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNIFWN	-	UNKWN		-	UNKVN		-
AHS		NG	UNKWN	DNRAM	UNKWN		-			DAIRWN	-
Display unit	-	CAN COMM	CAN 1	CAN 3			CAN 4	CAN 2	CAN 5	-	CAN /
всм	No indication	NG	UNKWN	UNKWN					UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN			-

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UKS002O3

Circuit Check Between TCM and Data Link Connector

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect TCM connector E143 and ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

$2.\,$ check harness for open circuit

Check continuity between TCM connector E143 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L)

: Continuity should exist.

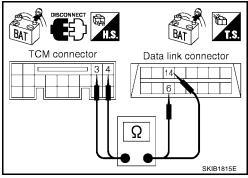
4 (P) - 14 (P)

: Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-101, "Work Flow".

NG >> Repair harness.



ECM Circuit Check

1. CONNECTOR INSPECTION

Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

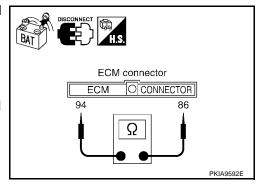
Check resistance between ECM connector E16 terminal 94 (L) and terminal 86 (P).

> 94 (L) - 86 (P) : Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM connector E16 and TCM connector E143.



UKS00204

TCM Circuit Check

1. CONNECTOR INSPECTION

Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E143.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

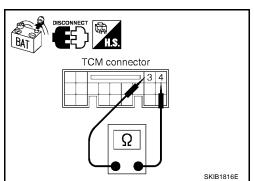
Check resistance between TCM connector E143 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace TCM.

>> Repair harness between TCM connector E143 and NG ECM connector E16.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ABS actuator and electric unit (control unit) connector E125.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

Revision: September 2005

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 7 (L) and terminal 9 (P).

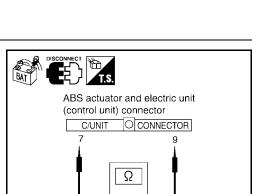
7 (L) - 9 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK

NG

>> Replace ABS actuator and electric unit (control unit). >> Repair harness between ABS actuator and electric unit (control unit) connector E125 and ECM connector E16.



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Front Air Control Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect front air control connector M50.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

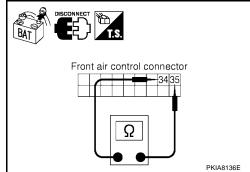
Check resistance between front air control connector M50 terminal 34 (L) and terminal 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace front air control.

NG >> Repair harness between front air control connector M50 and data link connector M22.



UKS00208

Display Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect display unit connector M93.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

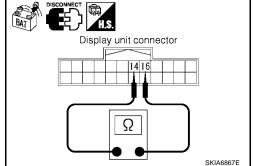
Check resistance between display unit connector M93 terminal 14 (L) and terminal 16 (P).

14 (L) - 16 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace display unit.

NG >> Repair harness between display unit connector M93 and data link connector M22.



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Data Link Connector Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

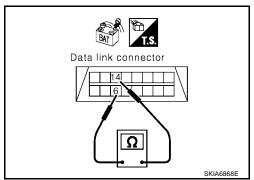
Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Diagnose again. Refer to LAN-101, "Work Flow".

NG >> Repair harness between data link connector M22 and BCM connector M18.



BCM Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect BCM connector M18.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

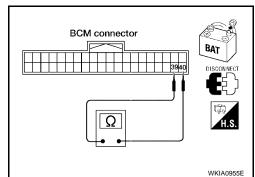
Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace BCM. NG

>> Repair harness between BCM connector M18 and data link connector M22.



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Combination Meter Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect combination meter connector M23.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. check harness for open circuit

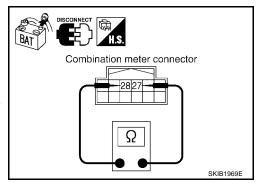
Check resistance between combination meter connector M23 terminal 27 (L) and terminal 28 (P).

27 (L) - 28 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace combination meter.

NG >> Repair harness between combination meter connector M23 and data link connector M22.



Steering Angle Sensor Circuit Check

UKS002OC

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect steering angle sensor connector M47.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between steering angle sensor connector M47 terminal 4 (L) and terminal 5 (P).

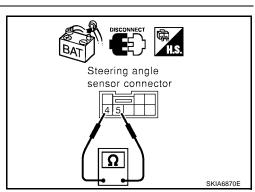
4 (L) - 5 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace steering angle sensor.

NG

>> Repair harness between steering angle sensor connector M47 and data link connector M22.



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Driver Seat Control Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect driver seat control unit connector P2.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

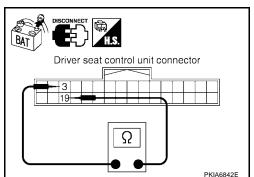
Check resistance between driver seat control unit connector P2 terminal 3 (L) and terminal 19 (P).

3 (L) - 19 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace driver seat control unit.

NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



IPDM E/R Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect IPDM E/R connector E121.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx.
$$108 - 132 \Omega$$

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness between IPDM E/R connector E121 and data link connector M22.

IPDM E/R connector

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CAN Communication Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- TCM (Transmission control module)
- ABS actuator and electric unit (control unit)
- Front air control
- Display unit
- BCM (Body control module)
- Combination meter
- Steering angle sensor
- Driver seat control unit
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

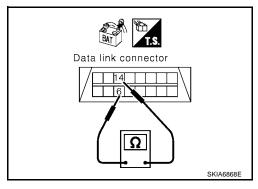
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

OK or NG

OK >> GO TO 3.

NG >> Repair the harness.



3. CHECK HARNESS FOR SHORT TO GROUND

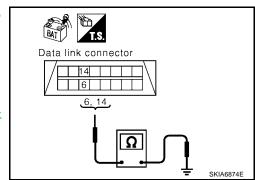
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

6 (L) - Ground : Continuity should not exist. 14 (P) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-125</u>, "Component Inspection".

NG >> Repair the harness.



UKS0020G

IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-12</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START".

CAN SYSTEM (TYPE 4)

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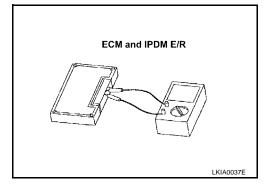
Component Inspection ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

- Disconnect ECM and IPDM E/R harness connectors.
- Check resistance between ECM terminals 94 and 86.

94 - 86 : Approx. 108 - 132 Ω

Check resistance between IPDM E/R terminals 48 and 49.

48 - 49 : Approx. $108 - 132 \Omega$



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CAN SYSTEM (TYPE 5)

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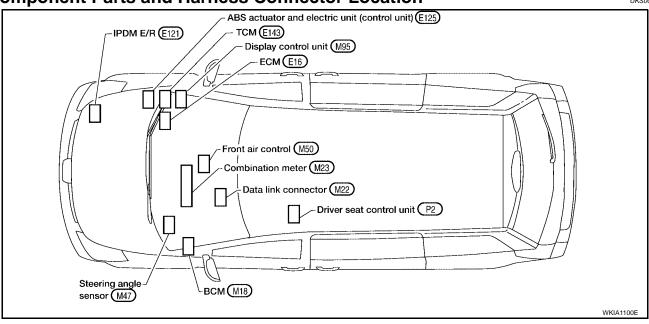
System Description

UKS002NE

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.

Component Parts and Harness Connector Location

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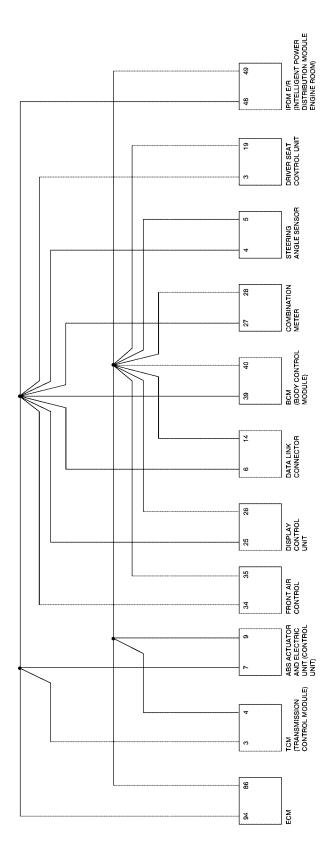
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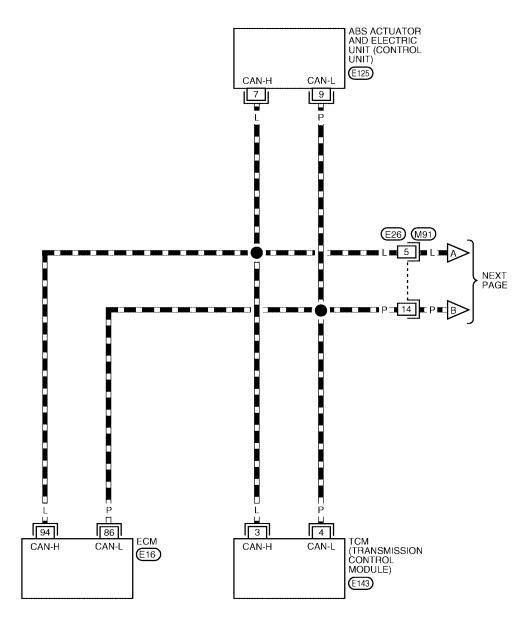
WKWA0587E

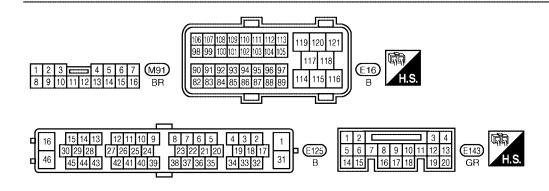
Wiring Diagram — CAN —

JKS002NH

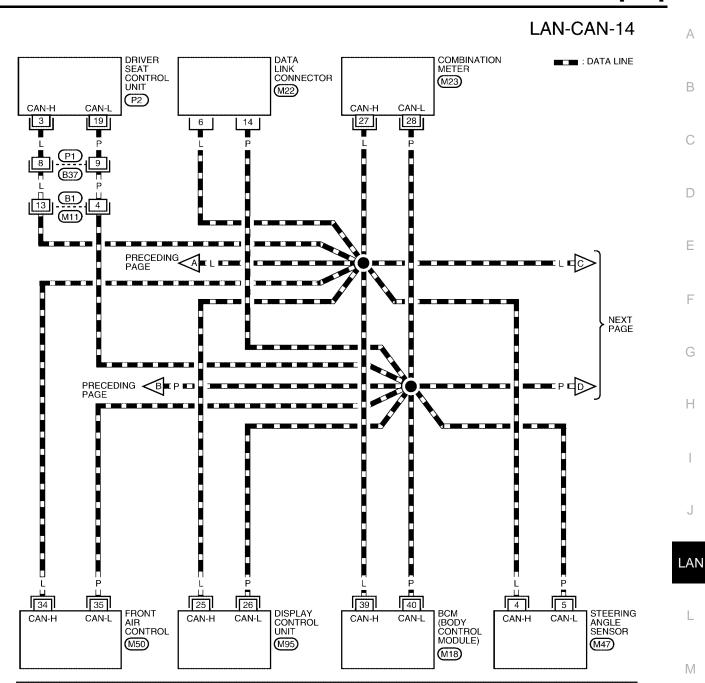
LAN-CAN-13

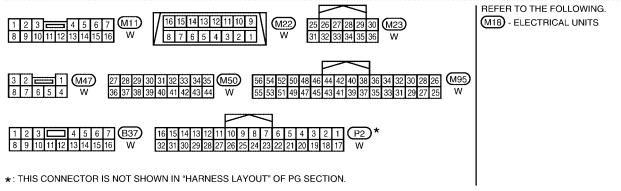
: DATA LINE





BKWA0343E

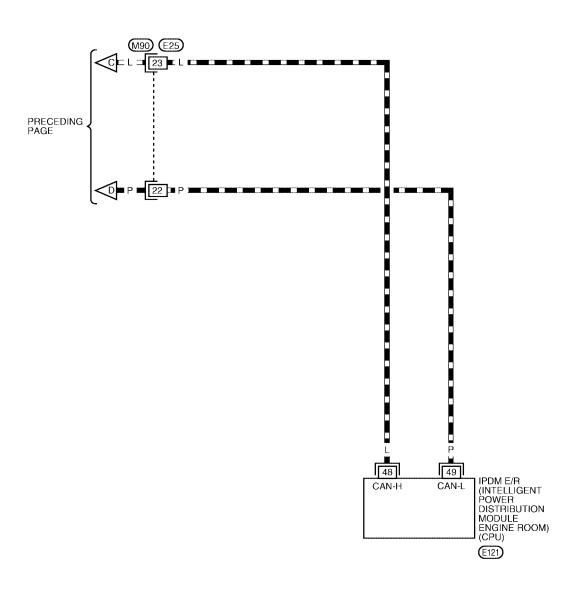


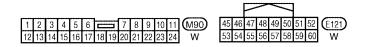


BKWA0346E

LAN-CAN-15

: DATA LINE

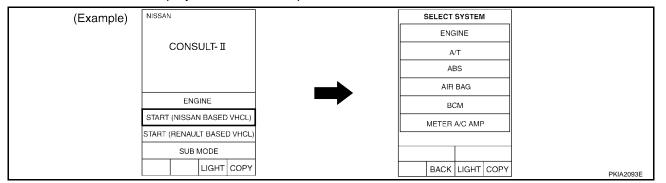




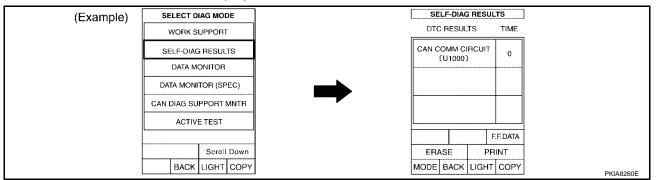
BKWA0345E

Work Flow

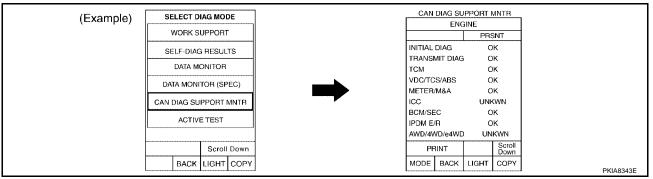
1. When there are no indications of "TRANSMISSION", "BCM", "AUTO DRIVE POS." or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "TRANSMISSION", "ABS", "BCM", "AUTO DRIVE POS." and "IPDM E/R" displayed on CONSULT-II.



3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "TRANSMISSION", "ABS", "BCM", "AUTO DRIVE POS.", and "IPDM E/R" displayed on CONSULT-II.



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to LAN-133, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks onto the items with "No indication", "NG" or "UNKWN" in the check sheet table.

					CAI	N DIAG SUPPOR					
SELECT SYS	EM screen	Initial diagnosis	Transmit diagnosis	ECM	TCM	VDC/TCS/ ABS	Receive diagnosi: Front air control	BCM/SEC	METER/ M&A	STRG	IPDM E/R
ENGINE		NG	UNKWN		UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	-	CAN CIRC
BCM	No indication	NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN	-	-	

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items which are not in check sheet table are not related to diagnostic procedure on service manual.
 - Therefore, it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-133</u>, <u>"CHECK SHEET"</u>.
- 8. Mark the "NG" or "UNKWN" item of the check sheet table from the result of CAN DIAG SUPPORT MONITOR check sheet.

NOTE:

- If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- 9. According to the Check Sheet Results, start inspection.

CAN SYSTEM (TYPE 5)

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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Check sheet tal	ole										
OF LEGT OVOTELL	-	1.20.1	Transmit		CAN	N DIAG SUPPOR	RT MNTR Receive diagnosi:	8			
SELECT SYSTEM sc		Initial agnosis	Transmit diagnosis	ECM	TCM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPDM E/R
NGINE	-	NG .	UNKWN	-	UNKWN	UNKWN		UNKWN	UNKWN	-	UNKWN
RANSMISSION No	indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	-	-
BS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	-
isplay control unit	- (C	CAN	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 4	CAN CIRC 2	CAN CIRC 5	-	CAN CIRC 7
CM No		NG	UNKWN	UNKWN	-	-	-	-	UNKWN	-	UNKWN
UTO DRIVE POS. No	indication	NG .	UNKWN		UNKWN	-	-	UNKWN	UNKWN .	-	-
PDM E/R No	indication	-	UNKWN	UNKWN	-	-		UNKWN		-	-
		A SEL	ittach copy .ECT SYS	of TEM			Attac SELEC	ch copy of OT SYSTEI	M		
				CAN DIA	Attach co display cor AG SUPPO check s	ntrol unit ORT MON	ITOR				

Attach copy of ENGINE SELF-DIAG RESULTS Attach copy of TRANSMISSION SELF-DIAG RESULTS Attach copy of ABS SELF-DIAG RESULTS

Attach copy of BCM SELF-DIAG RESULTS

Attach copy of AUTO DRIVE POS. SELF-DIAG RESULTS Attach copy of IPDM E/R SELF-DIAG RESULTS

Attach copy of ENGINE CAN DIAG SUPPORT MNTR Attach copy of TRANSMISSION CAN DIAG SUPPORT MNTR Attach copy of ABS CAN DIAG SUPPORT MNTR

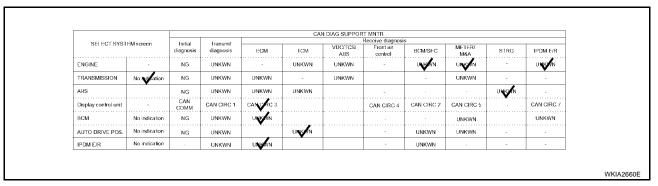
Attach copy of BCM CAN DIAG SUPPORT MNTR Attach copy of AUTO DRIVE POS. CAN DIAG SUPPORT MNTR Attach copy of IPDM E/R CAN DIAG SUPPORT MNTR

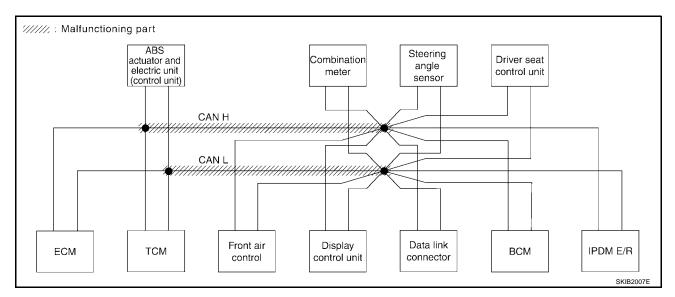
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CHECK SHEET RESULTS

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-148</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.





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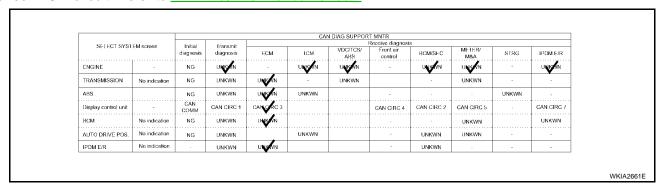
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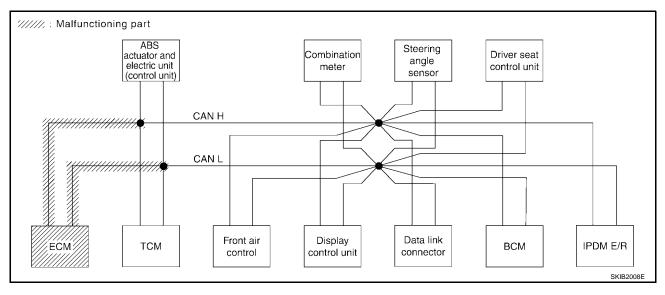
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Case 2
Check ECM circuit. Refer to <u>LAN-148</u>, "ECM Circuit Check" .





CAN SYSTEM (TYPE 5)

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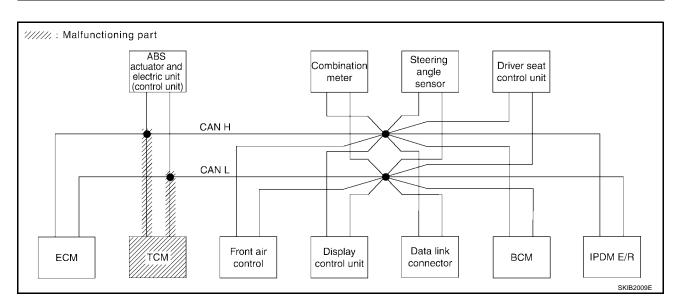
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Case 3
Check TCM circuit. Refer to <u>LAN-149</u>, "TCM Circuit Check" .

					CAI	I DIAG SUPPOR					
SELECT SYS	I EM screen	Initial	fransmit		1	VDC/TCS/	Receive diagnosi: Front air	S I	METER/	1	1
		diagnosis	diagnosis	ECM	ICM	ABS	control	BCM/SEC	M&A	SIRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	•		CAN CIRC 4	CAN CIRC 2	CAN CIRC 5		CAN CIRC /
всм	No indication	NG	UNKWN	UNKWN					UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKVN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN	,		-	UNKWN		-	-

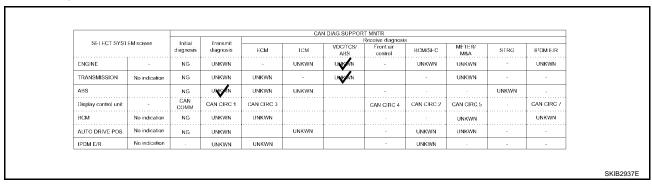


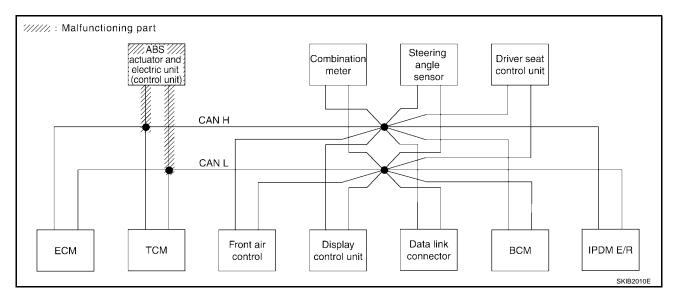
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Case 4

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-149</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".





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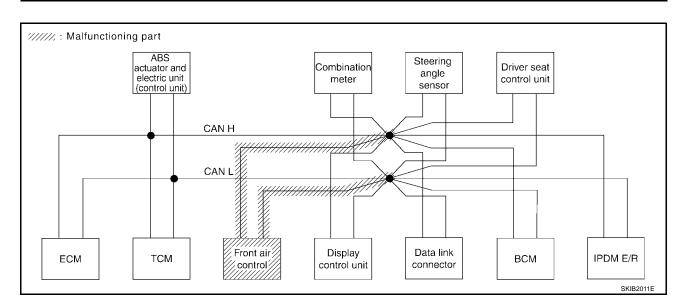
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Case 5
Check front air control circuit. Refer to <u>LAN-150</u>, "Front Air Control Circuit Check" .

					CAI	I DIAG SUPPOR					
SELECT SYS	I EM screen	Initial	fransmit				Receive diagnosi	IS .	To and to other		
		diagnosis	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	SIRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
AHS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAMORC 4	CAN CIRC 2	CAN CIRC 5		CAN CIRC /
всм	No indication	NG	UNKWN	UNKWN				,	UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	-

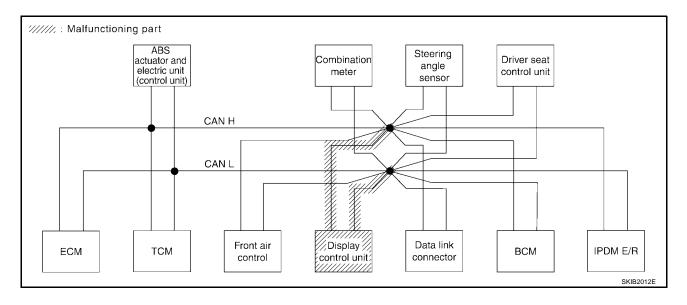


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Case 6
Check display control unit circuit. Refer to <u>LAN-150</u>, "<u>Display Control Unit Circuit Check"</u>.

SELECT SYSTEM screen					CAI	N DIAG SUPPOR	RT MNTR Receive diagnosi				
		Initial diagnosis	fransmit diagnosis	ЕСМ	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display control unit	-	CAN	CAN ORC 1	CAN ORC 3			CANACRC 4	CANORC 2	CANORC 5		CANCRC /
всм	No indication	NG	UNKWN	UNKWN					UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN		-	-



CAN SYSTEM (TYPE 5)

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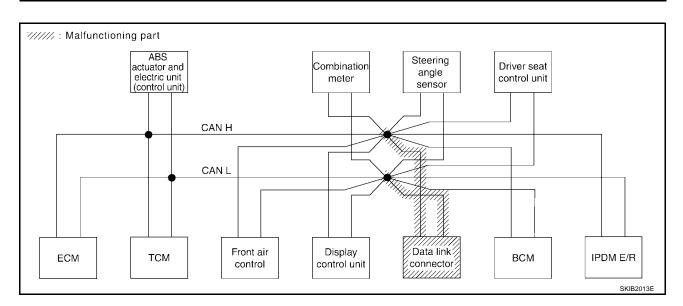
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Case 7
Check data link connector circuit. Refer to <u>LAN-151</u>, "<u>Data Link Connector Circuit Check</u>" .

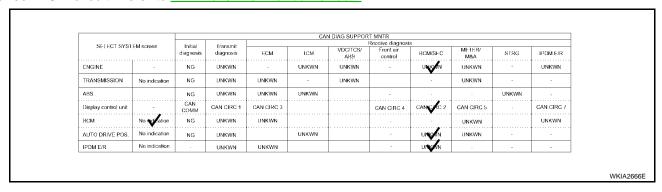
			ı	CAN DIAG SUPPORT MNTR Receive diagnosis								
SELECT SYSTEM screen		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN	
TRANSMISSION	No Adication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-	
ABS		NG	UNKWN	UNKWN	UNKWN		-	,		UNKWN	-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5		CAN CIRC /	
всм	No indication	NG	UNKWN	UNKWN					UNKWN		UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-	
IPDM E/R	No No cation		UNKWN	UNKWN			-	UNKWN		-	-	

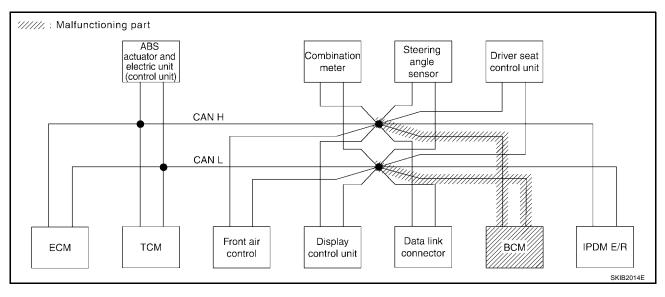


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Case 8
Check BCM circuit. Refer to <u>LAN-151</u>, "BCM Circuit Check" .





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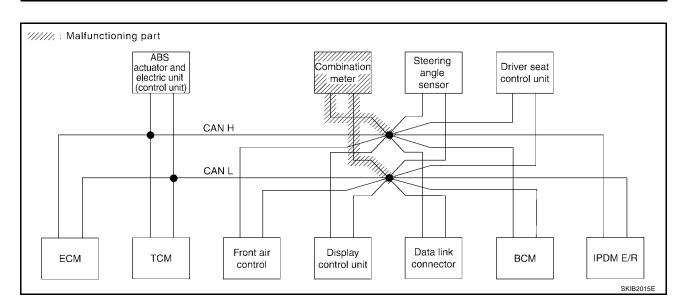
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Case 9

Check combination meter circuit. Refer to LAN-152, "Combination Meter Circuit Check" .

				CAN DIAG SUPPORT MNTR								
SELECT SYS	I EM screen	Initial	fransmit				Receive diagnosi	s				
		diagnosis	diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	SIRG	IPOM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNK/VN	-	UNKWN	
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKVN	-	-	
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CRC 5		CAN CIRC /	
всм	No indication	NG	UNKWN	UNKWN					UNKEVN		UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKKVN	-	-	
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	-	



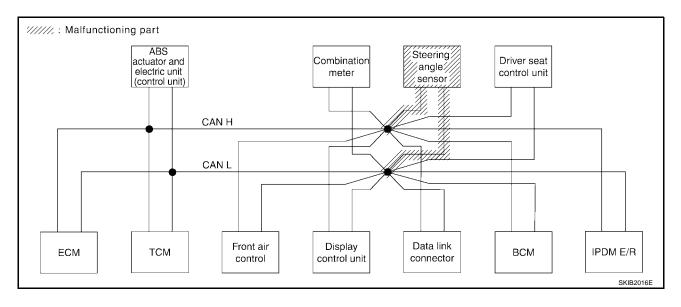
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Case 10

Check steering angle sensor circuit. Refer to LAN-152, "Steering Angle Sensor Circuit Check" .

				CAN DIAG SUPPORT MNTR Receive diagnosis								
SELECT SYSTEM screen		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN	
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-	
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNISAN	-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5		CAN CIRC /	
BCM	No indication	NG	UNKWN	UNKWN			-		UNKWN		UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-	
IPDM E/R	No indication		UNKWN	UNKWN				UNKWN		-	-	



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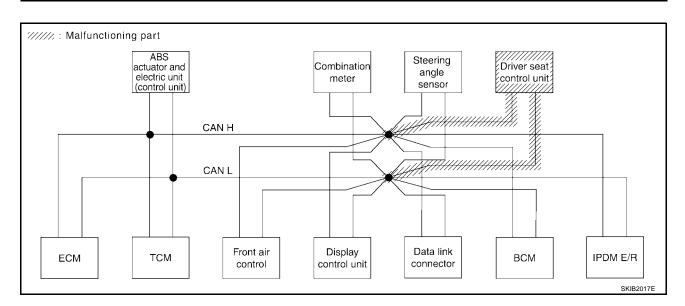
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Case 11

Check driver seat control unit circuit. Refer to LAN-153, "Driver Seat Control Unit Circuit Check" .

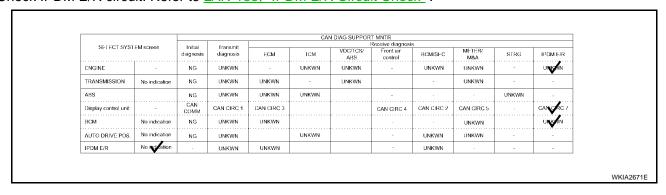
		CAN DIAG SUPPORT MNTR									
SELECT SYS	SELECT SYSTEM screen		fransmit diagnosis	Receive diagnosis							
		Initial diagnosis		ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4	CAN CIRC 2	CAN CIRC 5		CAN CIRC /
всм	No indication	NG	UNKWN	UNKWN					UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	-

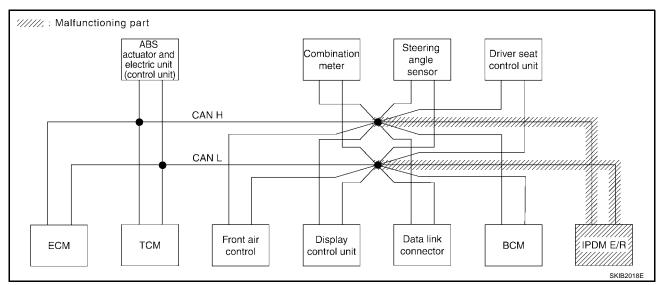


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Case 12
Check IPDM E/R circuit. Refer to <u>LAN-153</u>, "IPDM E/R Circuit Check" .





Case 13
Check CAN communication circuit. Refer to <u>LAN-154</u>, "CAN Communication Circuit Check" .

SELECT SYSTEM screen			CAN DIAG SUPPORT MNTR Receive diagnosis								
		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	SIRG	IPOM E/R
ENGINE	-	NG	UNKVN	-	UNKWN	UNIKAN	-	UNISAN	UNKVN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	UNKWN	-	-
ABS	,	NG	UNKVN	UNKWN	UNKWN		-			UNKWN	-
Display control unit	-	CAN	CAN CIRC 1	CANORC 3			CANORG 4	CAMORO 2	CANORC 5		CANCAC /
всм	No indication	NG	UNKWN	UNKWN					UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	-

CAN SYSTEM (TYPE 5)

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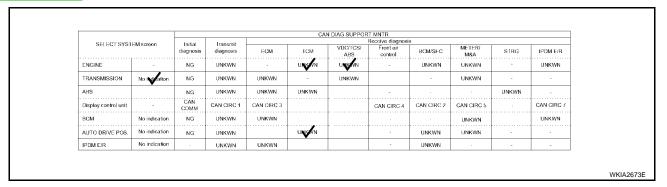
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Case 14

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-154, "IPDM E/R Ignition Relay Circuit Check"</u>.



Case 15

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-154, "IPDM E/R Ignition Relay Circuit Check".

SELECT SYSTEM screen			CAN DIAG SUPPORT MNTR Receive diagnosis								
		Initial diagnosis	fransmit diagnosis	ECM	ICM	VDC/TCS/ ABS	Front air control	BCM/SEC	METER/ M&A	STRG	IPOM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	UNKWN	-	UNKWN
TRANSMISSION	No indication	NG	UNKWN	UNKOWN	-	UNKWN		-	UNKVN	-	-
ABS		NG	UNKWN	UNKYN	UNKWN		-		·	UNKOVN	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 4		CAN CIRC 5		CAN CIRC /
BCM	No indication	NG	UNKWN	UNKWN			-		UNKWN		UNKWN
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN		-	-

LAN

Circuit Check Between TCM and Data Link Connector

UKS002NJ

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect TCM connector E143 and ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between TCM connector E143 terminals 3 (L), 4 (P) and data link connector M22 terminals 6 (L), 14 (P).

3 (L) - 6 (L)

: Continuity should exist.

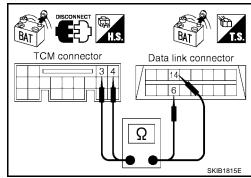
4 (P) - 14 (P)

: Continuity should exist.

OK or NG

OK >> Connect all connectors and diagnose again. Refer to LAN-131, "Work Flow".

NG >> Repair harness.



UKS002NK

ECM Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ECM connector E16.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

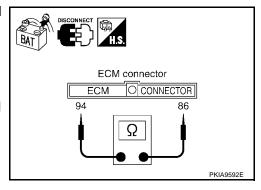
Check resistance between ECM connector E16 terminal 94 (L) and terminal 86 (P).

94 (L) - 86 (P) : Approx. $108 - 132 \Omega$

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM connector E16 and TCM connector E143.



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TCM Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect TCM connector E143.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

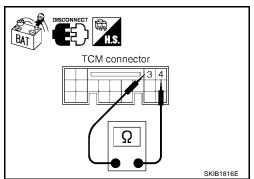
Check resistance between TCM connector E143 terminal 3 (L) and terminal 4 (P).

3 (L) - 4 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace TCM.

>> Repair harness between TCM connector E143 and NG ECM connector E16.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect ABS actuator and electric unit (control unit) connector E125.
- Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

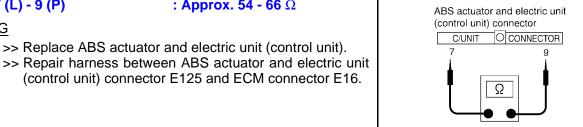
Check resistance between ABS actuator and electric unit (control unit) connector E125 terminal 7 (L) and terminal 9 (P).

7 (L) - 9 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK

NG >> Repair harness between ABS actuator and electric unit



UKS002NL

LAN

Front Air Control Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect front air control connector M50.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. check harness for open circuit

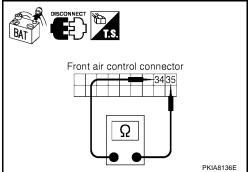
Check resistance between front air control connector M50 terminal 34 (L) and terminal 35 (P).

34 (L) - 35 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace front air control.

NG >> Repair harness between front air control connector M50 and data link connector M22.



UKS002NN

Display Control Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect display control unit connector M95.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

Revision: September 2005

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

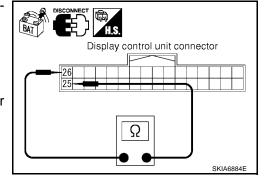
Check resistance between display control unit connector M95 terminal 25 (L) and terminal 26 (P).

25 (L) - 26 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace display control unit.

NG >> Repair harness between display control unit connector M95 and data link connector M22.



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Data Link Connector Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check data link connector M22 terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

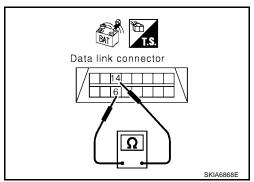
Check resistance between data link connector M22 terminal 6 (L) and terminal 14 (P).

6 (L) - 14 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Diagnose again. Refer to LAN-131, "Work Flow".

NG >> Repair harness between data link connector M22 and BCM connector M18.



BCM Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect BCM connector M18.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

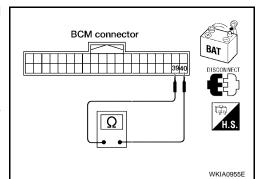
Check resistance between BCM connector M18 terminal 39 (L) and terminal 40 (P).

39 (L) - 40 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace BCM. NG

>> Repair harness between BCM connector M18 and data link connector M22.



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Combination Meter Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect combination meter connector M23.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

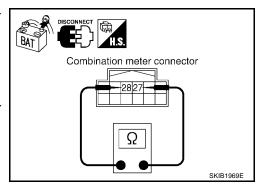
Check resistance between combination meter connector M23 terminal 27 (L) and terminal 28 (P).

27 (L) - 28 (P) : Approx. 54 - 66
$$\Omega$$

OK or NG

OK >> Replace combination meter.

NG >> Repair harness between combination meter connector M23 and data link connector M22.



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Steering Angle Sensor Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect steering angle sensor connector M47.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between steering angle sensor connector M47 terminal 4 (L) and terminal 5 (P).

4 (L) - 5 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace steering angle sensor.

NG >> Repair harness between steering angle sensor connector M47 and data link connector M22.

Steering angle sensor connector

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Driver Seat Control Unit Circuit Check

1. CONNECTOR INSPECTION

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect driver seat control unit connector P2.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

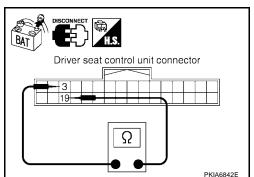
Check resistance between driver seat control unit connector P2 terminal 3 (L) and terminal 19 (P).

3 (L) - 19 (P) : Approx. **54 - 66**
$$\Omega$$

OK or NG

OK >> Replace driver seat control unit.

NG >> Repair harness between driver seat control unit connector P2 and data link connector M22.



IPDM E/R Circuit Check

1. CONNECTOR INSPECTION

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect IPDM E/R connector E121.
- 4. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR OPEN CIRCUIT

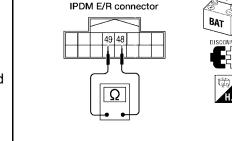
Check resistance between IPDM E/R connector E121 terminal 48 (L) and terminal 49 (P).

48 (L) - 49 (P) : Approx.
$$108 - 132 \Omega$$

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness between IPDM E/R connector E121 and data link connector M22.



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CAN Communication Circuit Check

1. CONNECTOR INSPECTION

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- TCM (Transmission control module)
- ABS actuator and electric unit (control unit)
- Front air control
- Display control unit
- BCM (Body control module)
- Combination meter
- Steering angle sensor
- Driver seat control unit
- IPDM E/R (Intelligent power distribution module engine room)

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

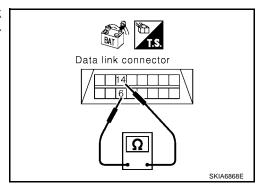
2. CHECK HARNESS FOR SHORTED CIRCUITS

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (L) and 14 (P).

OK or NG

OK >> GO TO 3.

NG >> Repair the harness.



3. CHECK HARNESS FOR SHORT TO GROUND

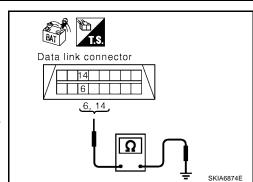
Check continuity between data link connector M22 terminals 6 (L), 14 (P) and ground.

6 (L) - Ground : Continuity should not exist. 14 (P) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-155</u>, "Component Inspection".

NG >> Repair the harness.



IPDM E/R Ignition Relay Circuit Check

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Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-12</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START".

CAN SYSTEM (TYPE 5)

[CAN]

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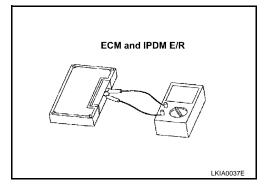
Component Inspection ECM AND IPDM E/R INTERNAL CIRCUIT INSPECTION

- Disconnect ECM and IPDM E/R harness connectors.
- Check resistance between ECM terminals 94 and 86.

94 - 86 : Approx. 108 - 132 Ω

Check resistance between IPDM E/R terminals 48 and 49.

48 - 49 : Approx. $108 - 132 \Omega$



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