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	44 0
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PRECAUTIONS

[CAN]

PRECAUTIONS PFP:00001 А Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT **BELT PRE-TENSIONER**" UKS001AE The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along В 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 Manual. D 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. Е 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. F 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 UKS001AF When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER. Н CAUTION: 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 1 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? LAN If YES, GO TO 3. _ If NO, GO TO 4. 3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection. 4. 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 LAN-7, "CAN Communication Unit" . Μ 5. Precautions For Trouble Diagnosis UKS001AG CAN SYSTEM Do not apply voltage of 7.0V or higher to the measurement terminals. Use the tester with its open terminal voltage being 7.0V or less. Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair CAN SYSTEM

• Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



• Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



UKS001AH

[CAN]

CAN COMMUNICATION

System Description

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

CAN Communication Unit

Go to CAN system, when selecting your CAN system type from the following table.

Body type		Truck												
Axle		2WD 4WD									F			
Engine		VK56DE										L		
Transmission		A/T												
Brake control	ABS	ABS ABLS VDC				DC	ABLS V					VDC	F	
Electronic locking rear differential										×	×	×		
Automatic drive positioner			×	×		×		×	×		×	×	×	
Navigation system				×		×			×			×		C
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	
CAN system trouble diagnosis	<u>LAN-</u> 24	<u>LAN-</u> <u>52</u>	<u>LAN-</u> <u>80</u>	<u>LAN-</u> <u>110</u>	<u>LAN-</u> <u>143</u>	<u>LAN-</u> <u>172</u>	<u>LAN-</u> 206	<u>LAN-</u> 235	<u>LAN-</u> <u>267</u>	<u>LAN-</u> <u>301</u>	<u>LAN-</u> <u>333</u>	<u>LAN-</u> <u>369</u>	<u>LAN-</u> <u>408</u>	ŀ

×: Applicable

NOTE:

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

Models with 4WD





Models with ABLS

[CAN]

UKS001AI

UKS001AJ

С

D

LAN

Μ

А

В

Models with VDC

[CAN]











• Models with automatic drive positioner

• Models with navigation system

TYPE 1 System diagram

• Type 1



Input/output signal chart

······································						T: Transmi	R: Receive	
Signals	ECM	ТСМ	Combina- tion meter	BCM	Front air control	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R	Н
Engine speed signal	Т	R	R		R			I
Engine status signal	Т			R	R			
Engine coolant temperature signal	Т	R	R		R			J
A/T self-diagnosis signal	R	Т						
Accelerator pedal position signal	Т	R						1 4
Closed throttle position signal	Т	R						LA
Wide open throttle position signal	Т	R						
Battery voltage signal	Т	R						L
Ignition switch signal				Т			R	
Stop lamp switch signal		R	Т					
	Т		R					M
Fuel consumption monitor signal			Т					
Turbine revolution signal	R	Т						
Output shaft revolution signal	R	Т						
A/C switch signal	R			Т	R			
A/C compressor request signal	Т						R	
Blower fan motor switch signal	R			Т	R			
Cooling fan speed request signal	Т				R		R	
Position light request signal			R	Т			R	
Low beam request signal				Т			R	
Low beam status signal	R						Т	
High beam request signal			R	Т			R	
High beam status signal	R						Т	
Front fog light request signal				Т			R	

Revision: October 2004

[CAN]

А

G

Signals	ECM	ТСМ	Combina- tion meter	BCM	Front air control	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Day time running light request signal				Т			R
Rear window defogger request signal				Т	R		R
Rear window defogger status signal				R			Т
Vahiela anad signal			R		R	Т	
venicie speed signal	R	R	Т	R	R		
Sleep wake up signal			R	Т			R
Door switch signal			R	Т			R
Turn indicator signal			R	Т			
Buzzer output signal			R	Т			
Fuel level sensor signal	R		Т				
ASCD SET lamp signal	Т		R				
ASCD CRUISE lamp signal	Т		R				
Malfunction indicator lamp signal	Т		R				
Front wiper request signal				Т			R
Front wiper stop position signal				R			Т
Theft warning horn request signal				Т			R
Horn chirp signal				Т			R
ABS warning lamp signal			R			Т	
Brake warning lamp signal			R			Т	
ASCD operation signal	Т	R					
ASCD OD cancel request	Т	R					
A/T CHECK indicator lamp signal		Т	R				
A/T position indicator lamp signal		Т	R				
Tire pressure signal			R	Т			
1st position switch signal ^{*1}		R	Т				
4th position switch signal ^{*1}		R	Т				
Manual mode switch signal ^{*2}		R	Т				
Not manual mode switch signal ^{*2}		R	Т				
Manual mode shift up signal ^{*2}		R	Т				
Manual mode shift down signal ^{*2}		R	Т				
Tow mode switch signal		R	Т				
A/T fluid temperature sensor signal		Т	R				
Seat belt buckle switch signal			Т	R			

*1: Floor shift model only.

*2: Column shift model only.

[CAN]

TYPE 2/TYPE 3/TYPE 4 System diagram



[CAN]

А

С

D

Ε

F

J

L



SKIB0575E

Input/output signal chart

Signals	ECM	тсм	Driver seat control unit	Combi- nation meter	Display control unit	BCM	Front air con- trol	ABS actua- tor and electric unit (control unit)	IPDM E/R
Engine speed signal	Т	R		R	R		R	R	
Engine status signal	Т					R	R		
Engine coolant temperature signal	Т	R		R			R		
A/T self-diagnosis signal	R	Т							
Accelerator pedal position signal	Т	R						R	
Closed throttle position signal	Т	R							
Wide open throttle position signal	Т	R							
Battery voltage signal	Т	R							
Key switch signal			R			Т			
Ignition switch signal			R			Т			R
P range signal		Т	R					R	
Stop lamp switch signal		R		Т					
	Т			R					
Fuel consumption monitor signal				Т	R				
Turbine revolution signal	R	Т							
Output shaft revolution signal	R	Т							
A/C switch signal	R					Т			
A/C compressor request signal	Т								R
Blower fan motor switch signal	R					Т	R		
					Т		R		
A/C switch/indicator signal					R		Т		
Cooling fan speed request signal	Т						R		R
Position light request signal				R		Т			R
Low beam request signal						Т			R
Low beam status signal	R								Т
High beam request signal				R		Т			R
High beam status signal	R								Т
Front fog light request signal						Т			R
Day time running light request signal						Т			R
Rear window defogger request signal						Т	R		R
Rear window defogger status signal						R			Т
				R			R	Т	
Vehicle speed signal	R	R	R	Т	R	R	R		
Sleep wake up signal			R	R		Т			R
Door switch signal			R	R	R	Т			R
Turn indicator signal				R		Т			
Key fob ID signal			R			т			
Key fob door unlock signal			R			т			
Buzzer output signal				R		Т			

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T: Transmit R: Receive

Signals	ECM	тсм	Driver seat control unit	Combi- nation meter	Display control unit	BCM	Front air con- trol	ABS actua- tor and electric unit (control unit)	IPDM E/R	A
Fuel level sensor signal	R			Т						
Fuel level low warning signal				Т	R					С
ASCD SET lamp signal	Т			R						
ASCD CRUISE lamp signal	Т			R						D
Malfunction indicator lamp signal	Т			R						
Front wiper request signal						Т			R	
Front wiper stop position signal						R			Т	E
Theft warning horn request signal						Т			R	
Horn chirp signal						Т			R	F
ABS warning lamp signal				R				Т		
Brake warning lamp signal				R				Т		
SLIP indicator lamp signal				R				Т		G
System setting signal			R		Т					-
			Т		R					н
Distance to empty signal				Т	R					
ASCD operation signal	Т	R								
ASCD OD cancel request	Т	R								
A/T CHECK indicator lamp signal		Т		R						
A/T position indicator lamp signal		Т		R						
Tire pressure signal				R		Т				J
Tire pressure data signal					R	Т				
1st position switch signal ^{*1}		R		Т						LA
4th position switch signal ^{*1}		R		Т						
Manual mode switch signal ^{*2}		R		Т						1
Not manual mode switch signal ^{*2}		R		Т						
Manual mode shift up signal ^{*2}		R		Т						
Manual mode shift down signal ^{*2}		R		Т						IVI
Tow mode switch signal		R		Т						-
A/T fluid temperature sensor signal		Т		R						-
Seat belt buckle switch signal				Т		R				

*1: Floor shift model only.

*2: Column shift model only.

[CAN]

TYPE 5/TYPE 6 System diagram

• Type 5



• Type 6



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Engine speed signal	Т	R		R	R			R	R	
Engine status signal	Т					R		R		
Engine coolant temperature signal	Т			R				R		
A/T self-diagnosis signal	R	Т								
Accelerator pedal position signal	Т	R							R	
Closed throttle position signal	Т	R								
Wide open throttle position signal	Т	R								

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Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Battery voltage signal	Т	R									С
Key switch signal			R			Т					
Ignition switch signal			R			Т				R	
P range signal		Т	R						R		D
Stop lamp switch signal		R		Т							
Fuel consumption monitor signal	Т			R T	R						E
Turbine revolution signal	R	Т									_
Output shaft revolution signal	R	Т									F
A/C switch signal	R					Т					
A/C compressor request signal	Т									R	G
Blower fan motor switch signal	R					Т		R			
A/C switch/indicator signal					T R			R T			Н
Cooling fan speed request signal	Т							R		R	
Position light request signal				R		т				R	1
Low beam request signal						т				R	I
Low beam status signal	R									Т	
High beam request signal				R		т				R	J
High beam status signal	R									Т	
Front fog light request signal						Т				R	1 4
Day time running light request signal						Т				R	LA
Rear window defogger request signall						Т		R		R	
Rear window defogger status signal						R				Т	L
Vehicle speed signal				R				R	Т		
	R	R	R	Т	R	R		R			NЛ
Sleep wake up signal			R	R		Т				R	IVI
Door switch signal			R	R	R	Т				R	
Turn indicator signal				R		Т					
Key fob ID signal			R			Т					
Key fob door unlock signal			R			Т					
Buzzer output signal				R		Т					
Fuel level sensor signal	R			Т							
Fuel level low warning signal				Т	R						
ASCD SET lamp signal	Т			R							
ASCD CRUISE lamp signal	Т			R							
Malfunction indicator lamp signal	Т			R							
Front wiper request signal						Т				R	
Front wiper stop position signal						R				T	
Theft warning horn request signal						Т				R	

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[CAN]

Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Horn chirp signal						Т				R
Steering angle sensor signal							Т		R	
ABS warning lamp signal				R					Т	
VDC OFF indicator lamp signal				R					Т	
SLIP indicator lamp signal				R					Т	
Brake warning lamp signal				R					Т	
System setting signal			R		Т					
System setting signal			Т		R					
Distance to empty signal				Т	R					
ASCD operation signal	Т	R								
ASCD OD cancel request	Т	R								
A/T CHECK indicator lamp signal		Т		R						
A/T position indicator lamp signal		Т		R						
Tire pressure signal				R		Т				
Tire pressure data signal					R	Т				
1st position switch signal ^{*1}		R		Т						
4th position switch signal ^{*1}		R		Т						
Manual mode switch signal ^{*2}		R		Т						
Not manual mode switch signal ^{*2}		R		Т						
Manual mode shift up signal ^{*2}		R		Т						
Manual mode shift down signal ^{*2}		R		Т						
Tow mode switch signal		R		Т						
A/T fluid temperature sensor signal		Т		R						
Seat belt buckle switch signal				Т		R				

*1: Floor shift model only.

*2: Column shift model only.

TYPE 7/TYPE 8/TYPE 9/TYPE 10/TYPE 11/TYPE 12

System diagram





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[CAN]

А

В

С

D

Ε

F

Н

J

L

Μ



CAN L

Driver seat

control unit

Differential

control unit

• Type 12

ECM

тсм



Combination

meter

Transfer

control unit

IPDM E/R

SKIB0583E

BCM

Input/output signal chart

									T: Tran	smit R:	Receive	A
Signals	ECM	тсм	Differ- ential lock con- trol unit	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air con- trol	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	В
A/T self-diagnosis signal	R	Т										D
Stop lamp switch signal		R			Т				R	Т		E
Battery voltage signal	Т	R										
Key switch signal				R			Т					
Ignition switch signal				R			Т				R	F
P range signal		Т		R						R		
Closed throttle position signal	Т	R										G
Wide open throttle position signal	Т	R										0
Engine speed signal	Т	R			R	R		R	R	R		
Engine status signal	Т						R	R				Н
Engine coolant temperature signal	Т				R			R				
Accelerator pedal position signal	Т	R								R		
Fuel consumption monitor signal	Т				R T	R						I
Turbine revolution signal	R	Т										J
Output shaft revolution signal	R	Т										
A/C switch signal	R						Т					
A/C compressor request signal	Т										R	LA
Blower fan motor switch signal	R						Т	R				
						Т		R				L
A/C switch/indicator signal						R		Т				
Cooling fan speed request signal	Т							R			R	
Position light request signal					R		Т				R	N
Low beam request signal							Т				R	
Low beam status signal	R										Т	
High beam request signal					R		Т				R	
High beam status signal	R										Т	
Front fog light request signal							Т				R	
Day time running light request signal							Т				R	
Rear window defogger request signal							Т	R			R	
Rear window defogger status signal							R				Т	
Vehicle speed signal	R	R	R	R	R T	R	R	R R	R	Т		
Sleep wake up signal				R	R		Т				R	
Door switch signal				R	R	R	Т				R	
Key fob ID signal				R			Т					

Signals	ECM	тсм	Differ- ential lock con- trol unit	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air con- trol	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Key fob door unlock signal				R			Т				
Buzzer output signal					R		Т				
Fuel level sensor signal	R				Т						
ASCD SET lamp signal	Т				R						
ASCD CRUISE lamp signal	Т				R						
Malfunction indicator lamp signal	Т				R						
Fuel level low warning signal					Т	R					
Front wiper request signal							Т				R
Front wiper stop position signal							R				Т
Theft warning horn request signal							Т				R
Horn chirp signal							Т				R
ABS warning lamp signal					R					Т	
SLIP indicator lamp signal					R					Т	
Brake warning lamp signal					R					Т	
System setting signal				R T		T R					
Distance to empty signal					Т	R					
ASCD operation signal	Т	R									
ASCD OD cancel request	Т	R									
A/T CHECK indicator lamp signal		Т			R						
A/T position indicator lamp signal		Т			R				R		
Tire pressure signal					R		Т				
Tire pressure data signal						R	Т				
1st position switch signal ^{*1}		R			Т						
4th position switch signal ^{*1}		R			Т						
Manual mode switch signal ^{*2}		R			Т						
Not manual mode switch signal ^{*2}		R			Т						
Manual mode shift up signal ^{*2}		R			Т						
Manual mode shift down signal ^{*2}		R			Т						
Tow mode switch signal		R			Т						
A/T fluid temperature sensor signal		Т			R						
4WD shift switch signal	R		R						Т		
Seat belt buckle switch signal					Т		R				
Differential lock switch signal			Т							R	
Differential lock indicator signal			Т							R	

*1: Floor shift model only.

*2: Column shift model only.

[CAN]

TYPE 13 System diagram

Type 13 •



Input/output signal chart

								T: Tra	ansmit R	: Receive	
Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	BCM	Steer- ing angle sensor	Front air control	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	H I J
A/T self-diagnosis signal	R	Т									
Stop lamp switch signal		R		Т				D	т		I AN
Battery voltage signal	т	R						ĸ	1		_ / (1
Key switch signal			R		Т						
Ignition switch signal			R		Т					R	L
P range signal		Т	R						R		
Closed throttle position signal	Т	R									M
Wide open throttle position signal	Т	R									
Engine speed signal	Т	R		R			R	R	R		
Engine status signal	Т				R		R				
Engine coolant temperature signal	Т			R			R				
Accelerator pedal position signal	Т	R							R		
Fuel consumption monitor signal	Т			R							
Turbine revolution signal	R	Т									
Output shaft revolution signal	R	Т									
A/C switch signal	R				Т		R				
A/C compressor request signal	Т									R	
Blower fan motor switch signal	R				Т		R				
Cooling fan speed request signal	Т						R			R	
Position light request signal				R	Т					R	

Revision: October 2004

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Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	BCM	Steer- ing angle sensor	Front air control	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Low beam request signal					Т					R
Low beam status signal	R									Т
High beam request signal				R	Т					R
High beam status signal	R									Т
Front fog light request signal					Т					R
Day time running light request signal					т					R
Rear window defogger request signal					т		R			R
Rear window defogger status signal					R					Т
				R			R	R	Т	
Vehicle speed signal	R	R	R	т	R		R			
Sleep wake up signal			R	R	Т					R
Door switch signal			R	R	Т					R
Key fob ID signal			R		т					
Key fob door unlock signal			R		Т					
Buzzer output signal				R	Т					
Fuel level sensor signal	R			Т						
ASCD SET lamp signal	Т			R						
ASCD CRUISE lamp signal	Т			R						
Malfunction indicator lamp signal	Т			R						
Fuel level low warning signal				Т						
Front wiper request signal					Т					R
Front wiper stop position signal					R					Т
Theft warning horn request signal					Т					R
Horn chirp signal					Т					R
Steering angle sensor signal						т			R	
ABS warning lamp signal				R					Т	
VDC OFF indicator lamp signal				R					Т	
SLIP indicator lamp signal				R					Т	
Brake warning lamp signal				R					Т	
ASCD operation signal	Т	R								
ASCD OD cancel request	Т	R								
A/T CHECK indicator lamp signal		Т		R						
A/T position indicator lamp signal		Т		R				R		
Tire pressure signal				R	Т					
1st position switch signal ^{*1}		R		Т						
4th position switch signal ^{*1}		R		Т						
Manual mode switch signal ^{*2}		R		Т						
Not manual mode switch signal ^{*2}	1	R		Т						

Revision: October 2004

[CAN]

Signals	ECM	тсм	Driver seat con- trol unit	Com- bina- tion meter	BCM	Steer- ing angle sensor	Front air control	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	E
Manual mode shift up signal ^{*2}		R		Т							
Manual mode shift down signal ^{*2}		R		Т							-
Tow mode switch signal		R		Т							L
A/T fluid temperature sensor signal		Т		R							
4WD shift switch signal	R							Т			E
Seat belt buckle switch signal				Т	R						

*1: Floor shift model only.

*2: Column shift model only.

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CAN SYSTEM (TYPE 1)

System Description

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

Component Parts and Harness Connector Location



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PFP:23710

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CAN SYSTEM (TYPE 1)

Schematic





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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 6 39 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) 15 Ŧ COMBINATION METER ř F BCM (BODY CONTROL MODULE) 4 39 DATA LINK CONNECTOR 14 ç 35 FRONT AIR CONTROL 34 A/T ASSEMBLY œ ო 86 ECM 94

BKWA0130E



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LAN-CAN-01





CAN SYSTEM (TYPE 1)

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BKWA0426E

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LAN-CAN-03

INC. : DATA LINE



CAN SYSTEM (TYPE 1)

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Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
()	WORK SUPPORT	DTC RESULTS TIME.	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "HVAC", "ABS" 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 <u>LAN-30</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>30, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-32</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

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

				CAN D	AG SUPPOR	T MNTR					
SELECT SY	STEM screen	Initial	Transmit		R	eceive diagno:	sis				
OLLEOT OT		diagnosis	sis diagnosis ECM TCM METER /M&A BCM/SEC VDC/TCS/ ABS IPD								
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T		NG	UNKWN	UNKWN	<u> </u>	UNKWN	_	_			
BCM	No indication	NG	UNKWN	UNKWN	<u> </u>	UNKWN		_	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN		—	UNKWN	UNKWN	—		
ABS		NG	UNKWN	UNKWN	<u></u>	_		_	—		
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN	_			

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

PKIB6627E

CAN SYSTEM (TYPE 1)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-43</u>, "Circuit Check Between TCM and <u>Data Link Connector</u>".

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial	Transmit	Receive diagnosis							
		diagnosis	agnosis diagnosis ECM Ti		тсм	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	-		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN		
HVAC	No indication		UNKWN	UNKWN	-	_	UNKWN	UNKWN	_		
ABS		NG	UNKWN	UNKWN	-	-	-	-	-		
IPDM E/R	No indication		UNKWN	UNKWN	-	_	UNKWN	_	-		



Case 2

А Check harness between data link connector and IPDM E/R. Refer to LAN-44, "Circuit Check Between Data Link Connector and IPDM E/R" .

				CAN DI	AG SUPPOR	T MNTR					
SELECT SYSTEM screen			Tranamit		Receive diagnosis						
		diagnosis	diagnosis ECM TCM METER /M&A BCM/SEC		BCM/SEC	VDC/TCS/ ABS	IPDM E/R				
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_		_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_		UNK		
HVAC	No indication		UNKWN	UNKWN	_	-	UNKWN	UNKWN	_		
ABS	-	NG	UNKWN	UNKWN				-	_		
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN				



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Case 3

Check ECM circuit. Refer to LAN-45, "ECM Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SY	SELECT SYSTEM screen		Tronomit	Receive diagnosis							
OLLEOT OT	OTEM BOICCIT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R		
ENGINE		NG	UNKWN	_	UNKIN	UNKWN	UNKWN	_			
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	_	-		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN		
HVAC	No indication		UNKWN	UNKWN	-	_	UNKWN	UNKWN	_		
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	—		
IPDM E/R	No indication		UNKWN	UNKWN	-	—	UNKWN	—	—		
				.							



CAN SYSTEM (TYPE 1)

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Case 4

Check TCM circuit. Refer to LAN-46, "TCM Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM scroop		1	Transmit	Receive diagnosis							
SELECTOR			diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-				
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_		UNKWN		
HVAC	No indication		UNKWN	UNKWN	-	—	UNKWN	UNKWN	-		
ABS	-	NG	UNKWN	UNKWN	_	-	-	—	_		
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN		-		



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Case 5

Check combination meter circuit. Refer to LAN-46, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
			Tranamit	Receive diagnosis						
	STEW Screen	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	-	NG	UNKWN	UNKWN		UNKWN	-	_	_	
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	-	_	UNKWN	
HVAC	No indication		UNKWN	UNKWN	-	_	UNKWN	UNKWN	-	
ABS		NG	UNKWN	UNKWN	_	_	-	-	-	
IPDM E/R	No indication	<u></u>	UNKWN	UNKWN		-	UNKWN	-	-	
									<u>.</u>	


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Case 6

Check BCM circuit. Refer to LAN-47, "BCM Circuit Check" .

		CAN DIAG SUPPORT MNTR							
		sis	eceive diagnos	Re		Transmit	Initial	TEM screen	SELECT SYS
IPDM E/R	VDC/TCS/ ABS	BCM/SEC	METER /M&A	ТСМ	ECM	diagnosis	diagnosis		022201010
UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	NG	1	ENGINE
	_		UNKWN	_	UNKWN	UNKWN	NG	_	A/T
UNKWN		-	UNKWN	-	UNKWN	UNKWN	NG	No indication	BCM
	UNKWN	UNKWN		_	UNKWN	UNKWN		No indication	HVAC
_	-			-	UNKWN	UNKWN	NG	-	ABS
-	-	UNKWN		-	UNKWN	UNKWN		No indication	IPDM E/R



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Case 7

Check data link connector circuit. Refer to LAN-47, "Data Link Connector Circuit Check" .

				CAN D	AG SUPPOR	T MNTR			
	STEM scroop	Lattal			R	eceive diagno:	sis		
SELECT ST		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	_	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN		_	UNKWN
HVAC	No indication		UNKWN	UNKWN	-	_	UNKWN	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	-
IPDM E/R	No indication	<u></u>	UNKWN	UNKWN		-	UNKWN	_	-
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Case 8

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Check front air control circuit. Refer to LAN-48, "Front Air Control Circuit Check" .

CAN DIAG SUPPORT MNTR														
		sis	eceive diagnos	Re		Initial Transmit		FM screen	SELECT SYST					
IPDM E/R	VDC/TCS/ ABS	BCM/SEC	METER /M&A	ТСМ	ECM	diagnosis	diagnosis	LW Screen	SELECT STO					
UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	NG	-	ENGINE					
	_		UNKWN	_	UNKWN	UNKWN	NG	—	A/T					
UNKWN	-	-	UNKWN	_	UNKWN	UNKWN	NG	No indication	BCM					
-	UNKWN	UNKWN		_	UNKWN	UNKWN		No indication	HVAC					
_	-			-	UNKWN	UNKWN	NG	-	ABS					
	-	UNKWN		_	UNKWN	UNKWN		No indication	IPDM E/R					



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Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-48</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

				CAN D	IAG SUPPOR	T MNTR			
SELECT SY	STEM scroon	Initial	Tranamit		R	eceive diagno	sis		
SELECT O		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	1	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN		_	UNKWN
HVAC	No indication		UNKWN	UNKWN	-		UNKWN	UNKWN	_
ABS	-	N	UNKWN	UNKWN	-	_	-	-	-
IPDM E/R	No indication		UNKWN	UNKWN	-		UNKWN	_	-



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Case 10

Check IPDM E/R circuit. Refer to LAN-49, "IPDM E/R Circuit Check" .

				CAN D	AG SUPPOR	T MNTR			
SELECT SV	STEM screen	Initial	Tresserit		R	eceive diagno	sis		
SELECT ST		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-		-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN
HVAC	No indication		UNKWN	UNKWN	_	-	UNKWN	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	_	-	-	-	-
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN		



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Case 11

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Check CAN communication circuit. Refer to LAN-50, "CAN Communication Circuit Check" .

				CAN D	IAG SUPPOR	T MNTR			
SELECT SY	STEM screen	Initial	Transmit		R	eceive diagno	sis		
OLLEOT OT		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN	_	
A/T	-	NG	UNKWN	UNKAVN	_	UNKWN		_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
HVAC	No indication		UNKWN	UNKWN	-	-	UNKWN	UNKWN	-
ABS		V	UNKWN	UNKWN	_	-		-	_
IPDM E/R	No indication		UNKWN	UNKWN	-	_	UNKWN	-	-

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-50</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

[CAN DI	AG SUPPOR	TMNTR			
	STEM screen	Initial	Tranamit		R	eceive diagno:	sis		
	orem screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN
A/T	—	NG	UNKWN	UNKWN		UNKWN		—	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	-	-	UNKWN	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	1	-	-	-	-
IPDM E/R	No indication	<u> </u>	UNKWN	UNKWN		-	UNKWN	—	
									PKIB6640E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-50, "IPDM E/R Ignition Relay Cir-</u><u>A</u> <u>cuit Check"</u>.

				CAN D	IAG SUPPOR	T MNTR			
	STEM screen	Initial	T		R	eceive diagno	sis		
SELECT OF	d		diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		_	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	-	-		-	-
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN		-

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

<u>OK or NG</u>

- OK >> GO TO 3. NG >> Repair harness
 - Solution >> Repair harness.



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: Continuity should exist.

: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E34.
- Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E34 terminals 24 (L), 23 (P).
 - 12 (L) 24 (L) 11 (P) - 23 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B69.
- Check continuity between harness connector B40 terminals 24 (L), 23 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 24 (L) 51J (L) 23 (P) - 52J (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 5. NG >> Repair harness.



5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L) 52J (P) - 14 (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to <u>LAN-29, "Work Flow"</u>. NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-44

2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect harness connector M31. 2. Check continuity between data link connector M22 terminals 6 В (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector : Continuity should exist. 6 (L) - 31G (L) 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. D Ω NG >> Repair harness. PKIA6835E Ε 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. Check continuity between harness connector E152 terminals 2. 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT BA nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 42G (P) - 40 (P) 4039 : Continuity should exist. SMJ CONNECTOR Н OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-29, "Work Flow" . NG >> Repair harness. PKIA8140E **ECM Circuit Check** UKS001AR 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (control module side 3. and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM connector

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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-29, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



Front Air Control Circuit Check

1. CHECK CONNECTOR

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1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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
 - >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

6 (L) - 14 (P)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to <u>LAN-51, "ECM/</u> <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>.
- NG >> Repair harness.

T.S.	
Data link connector	
	PKIA2079E

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 <u>PG-26</u>, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON</u> <u>AND/OR START"</u>.

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

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

Component Parts and Harness Connector Location



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LAN-CAN-05



BKWA0536E

LAN-CAN-06

INC. : DATA LINE



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Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG	G MODE	SELF-DIAG RESULTS]
(WORK SUP	PORT	DTC RESULTS TIME	
	SELF-DIAG RE	ESULTS		
	DATA MONI	IITOR		
	DATA MONITOR	R (SPEC)		
	CAN DIAG SUPPO	PORT MNTR		
	ACTIVE T	EST		
			F.F.DATA	
	s	Scroll Down	ERASE PRINT	
	BACK LIG	GHT COPY	MODE BACK LIGHT COPY	PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "HVAC", "ABS" 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 <u>LAN-58</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>58, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-60, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

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

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SY	STEM screen	Initial	Transmit			Receive	diagnosis		
ULLUT UT	OTEW SCIECT	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

Revision: October 2004



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-71, "Circuit Check Between TCM and Data Link Connector"</u>.

				C	AN DIAG SU	PPORT MN	TR		
	STEM screen	Initial	Transmit			Receive d	agnosis		
SELECT OF		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG UNKWN	_	UNKWN	UNK	UNK	UNK	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNK	_	UNK	_
всм	No indication	NG	UNKWN	UNKAVN	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKOVN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKVN	UNK	_	_	_	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_

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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-72, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

				CA	AN DIAG SU	PPORT MN	TR		
	EM screen	Initial	Transmit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKIVN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKIVN	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	UNKWN	—
ABS	_	NG	UNKWN		UNK	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 3

Check ECM circuit. Refer to LAN-73, "ECM Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
	TEM screen	Initial	Tranomit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNK	UNKWN		UNK	UNK
A/T	_	NG	UNKWN	UNK	_	UNKWN	-	UNKWN	_
BCM	No indication	NG	UNKWN	UNK	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNK	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNK	UNKWN	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNK	_	_	UNKWN	_	_



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Case 4

Check TCM circuit. Refer to LAN-74, "TCM Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
SELECT S		Initial	Transmit			Receive	diagnosis		
SELECT S	I OT LIN SCIEGH	diagnosis diagnos	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKAVN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNK	_	UNK	_	UNK	_
всм	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNK	_	_	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN		_



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Case 5

Check combination meter circuit. Refer to LAN-74, "Combination Meter Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SY	STEM screen	Initial	Transmit			Receive di	agnosis		
ULLUT OF	OTEM Screen	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 6

Check BCM circuit. Refer to LAN-75, "BCM Circuit Check" .

				C	AN DIAG SU	PPORT MN	TR		
	STEM screen	Initial	Transmit			Receive	diagnosis		
SELECT S		diagnosis diagnosis NG UNKWN	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-



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Case 7

Check data link connector circuit. Refer to LAN-75, "Data Link Connector Circuit Check" .

				C/	AN DIAG SU	PPORT MN	TR		
	FM screen	Initial	Tranomit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN		_	UNKWN	_	_



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Case 8

Check front air control circuit. Refer to LAN-76, "Front Air Control Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SVS	TEM screen	Initial	Transmit			Receive	diagnosis		
000000000		Minuta Marshit diagnosis diagnosis NG UNKWN NG UNKWN	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN		UNKWN		UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN
HVAC	No indication		UNKWN	UNKWN	-	-	UNKWN	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	UNKWN		—		-
IPDM E/R	No indication		UNKWN	UNKWN			UNKWN		



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Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-76, "ABS Actuator and Electric Unit</u> (<u>Control Unit</u>) <u>Circuit Check</u>".

				CA	AN DIAG SU	PPORT MN	TR		
SELECT S	VSTEM screen	Initial	Transmit			Receive	diagnosis		
ULLUT U	TOTE W Screen	Initial Iransmit diagnosis diagnosis NG UNKWN NG UNKWN	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	-	-	UNKWN	UNKWN	_
ABS	-	V	UNKWN			_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 10

Check IPDM E/R circuit. Refer to LAN-77, "IPDM E/R Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SY	STEM screen		Transmit			Receive	diagnosis		
SELECT OF	OTEM Screen	Initial Italisint diagnosis diagnosis NG UNKWN NG UNKWN	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/F	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_



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Case 11

Check CAN communication circuit. Refer to LAN-78, "CAN Communication Circuit Check" .

				C	AN DIAG SU	PPORT MN	TR		
	STEM screen	Initial	Transmit			Receive	diagnosis		
SELECT ST	STEW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	V	UNKWN	UNKWN	UNKWN	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-78</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

	TR	PPORT MN	AN DIAG SU	CA							
Receive diagnosis				Receive diagnosis			SELECT SYSTEM screen				
VDC/TCS /ABS IPDM	BCM/SEC	METER /M&A	ТСМ	ECM	osis diagnosis	diagnosis	OLLEOT OF OTEN SCIECT				
	UNKWN	UNKWN	UNKWN	_	UNKWN	NG	-	ENGINE			
UNKWN –	_	UNKWN	_	UNKWN	UNKWN	NG	-	A/T			
- UNKV	-	UNKWN	-	UNKWN	UNKWN	NG	No indication	ВСМ			
UNYWN -	UNKWN	_	_	UNKWN	UNKWN	_	No indication	HVAC			
	-	_	UNKWN	UNKWN	UNKWN	NG	_	ABS			
	UNKWN	_	-	UNKWN	UNKWN	_	No indication	IPDM E/R			

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Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-78, "IPDM E/R Ignition Relay Circuit Check".

		CAN DIAG SUPPORT MNTR							
SELECT SYSTEM screen		Initial Transmit		Receive diagnosis					
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

OK or NG

OK >> GO TO 3. NG >> Repair harness. A/T assembly connector 3 3,8 12,11 11|12 12,11 12,11

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: Continuity should exist.

: Continuity should exist.

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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E34.
- Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E34 terminals 24 (L), 23 (P).
 - 12 (L) 24 (L) 11 (P) - 23 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B69.
- Check continuity between harness connector B40 terminals 24 (L), 23 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 24 (L) 51J (L) 23 (P) - 52J (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 5. NG >> Repair harness.



5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L) 52J (P) - 14 (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to <u>LAN-57, "Work Flow"</u>. NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-72
2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect harness connector M31. 2. Check continuity between data link connector M22 terminals 6 В (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector : Continuity should exist. 6 (L) - 31G (L) 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. D Ω NG >> Repair harness. PKIA6835E Ε 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. F Check continuity between harness connector E152 terminals 2. 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT BA nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 42G (P) - 40 (P) 4039 : Continuity should exist. SMJ CONNECTOR Н OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-57, "Work Flow" . NG >> Repair harness. PKIA8140E ECM Circuit Check UKS003AV 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Combination Meter Circuit Check 1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM connector

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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "Removal and Installation of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Diagnose again. Refer to <u>LAN-57, "Work Flow"</u>.
- NG >> Repair harness between data link connector and combination meter.



Front Air Control Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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
 - >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

6 (L) - 14 (P)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to <u>LAN-79</u>, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION".
- NG >> Repair 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 <u>PG-26</u>, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON</u> <u>AND/OR START"</u>.



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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle. .
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

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

Component Parts and Harness Connector Location



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BKWA0429E

LAN-CAN-09

INC. : DATA LINE



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	ВСМ	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG MODE	SELF-DIAG RES	ULTS	
()	WORK SUPPORT	DTC RESULTS	TIME	
	SELF-DIAG RESULTS	CAN COMM CIRCUI	то	
	DATA MONITOR			
	DATA MONITOR (SPEC)			
	CAN DIAG SUPPORT MNTR			
	ACTIVE TEST	L		
			F.F.DATA	
	Scroll Down	ERASE I	PRINT	
	BACK LIGHT COPY	MODE BACK LIGH	IT COPY	PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ABS" 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 <u>LAN-86</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>86, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-88, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

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CHECK SHEET

NOTE:

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

Check sheet table	9									
				C/	AN DIAG SU	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis						
	EW Solden	Initial Transmit diagnosis diagnosis		ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

SKIB2716E



Revision: October 2004

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-101, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SVST	EM screen	Initial	Tropomit			Receive	diagnosis		
022201 0101	LIVISCIECI	Initial Transmi diagnosis diagnosi NG UNKWN		ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKVN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

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Case 2

А Check harness between driver seat control unit and data link connector. Refer to LAN-102, "Circuit Check Between Driver Seat Control Unit and Data Link Connector".

				CA	AN DIAG SU	PPORT MN	TR				
	EM screen	Initial	Transmit	Receive diagnosis							
	LIVISCICCI	Initial Transmit - diagnosis diagnosis NG UNKWN	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_		
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_		



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-103</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

				CA	AN DIAG SU	PPORT MN	TR			
	EM screen	Initial	Transmit	Receive diagnosis						
SELECT STOP	LINISCIECH	diagnosis d	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 4

Check ECM circuit. Refer to LAN-104, "ECM Circuit Check" .

				C/	AN DIAG SU	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Tronomit	Receive diagnosis						
0222010101	Livi Screen	diagnosis diagno NG UNVM	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 5

Check TCM circuit. Refer to LAN-104, "TCM Circuit Check" .

				C	AN DIAG SU	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Tropomit	Receive diagnosis						
022201 0101	LIVI SCIEGI	diagnosis	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 6

Check driver seat control unit circuit. Refer to LAN-105, "Driver Seat Control Unit Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Tronomit	Receive diagnosis						
	LIVISCICON	Initial T diagnosis di NG L	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/F	
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 7

Check combination meter circuit. Refer to LAN-105, "Combination Meter Circuit Check" .

				C	AN DIAG SL	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Tronomit	Receive diagnosis						
022201 0101	LIVI SCIEGI	diagnosis diagnosis NG UNKWN	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 8

Check BCM circuit. Refer to LAN-106, "BCM Circuit Check" .

				C/	AN DIAG SU	PPORT MN	TR			
SELECT SYST	EM screen	Initial	Tronomit		Receive diagnosis					
0222010101	Livi Screen	Initial Iransmit diagnosis diagnosis NG UNKWN	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	
HVAC	No indication		UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 9

Check data link connector circuit. Refer to LAN-106, "Data Link Connector Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		laitial	Tropomit	Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_		



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Case 10

Check front air control circuit. Refer to LAN-107, "Front Air Control Circuit Check" .

		CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial	Transmit diagnosis	Receive diagnosis								
		diagnosis		ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	-			
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	_			
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN			
HVAC	No indication		UNKWN	UNKWN	-		UNKWN	UNKWN	_			
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	_				
IPDM E/R	No indication	-	UNKWN	UNKWN			UNKWN	—				



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Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-107</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

	CAN DIAG SUPPORT MNTR									
	EM screen	Initial	Transmit			Receive	diagnosis			
SELECT STOTEM SCIEGH		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	
ABS	_	V	UNKWN	UNKWN	UNKWN	_	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	



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Case 12

Check IPDM E/R circuit. Refer to LAN-108, "IPDM E/R Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		Initial	Tropomit	Receive diagnosis							
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_		



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Case 13

Check CAN communication circuit. Refer to LAN-108, "CAN Communication Circuit Check" .

		CAN DIAG SUPPORT MNTR									
	EM screen	Initial	Transmit			Receive d	iagnosis				
		diagnosis	diagnosis	agnosis ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_		
ABS	_	V	UNKWN		UNKWN	_	-	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_		

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-109</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

		CAN DIAG SUPPORT MNTR									
SELECT SVST	EM screen	Initial	Transmit			Receive	diagnosis				
SELECT STOTEM Screen		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN		_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_		

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Case 15

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-109, "IPDM E/R Ignition Relay А Circuit Check" .

				CA	AN DIAG SU	PPORT MN	TR		
SELECT SYST	EM screen	Initial	Tronomit			Receive	diagnosis		
022201 0101	LINISCICON	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 2 (L) 15 (L)
- : Continuity should exist.
- 1 (P) 14 (P)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-85, "Work Flow" . NG >> Repair harness.

Harness connector Harness connector 1415 2 1 Ω PKIA9743E

Circuit Check Between Driver Seat Control Unit and Data Link Connector UKS003AB 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect harness connector B37 and harness connector B69. 1.
- 2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT А Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P). В : Continuity should exist. 51J (L) - 6 (L) Data link connector 52J (P) - 14 (P) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-85, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS003AC Е **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. Check continuity between data link connector M22 terminals 6 2. (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector LAN 6 (L) - 31G (L) : Continuity should exist. 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 O CONNECTOR SMJ OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. M PKIA6835E $3.\,$ check harness for open circuit Disconnect IPDM E/R connector. 1. 2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 40 39 42G (P) - 40 (P) : Continuity should exist. SMJ

OK >> Connect all the connectors and diagnose again. Refer to LAN-85, "Work Flow" .

NG >> Repair harness.



[CAN]

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Dr 1.	iver Seat Control Unit Circuit Check UKS003AF
1. 2. 3. - <u>OK</u> 0 N 2.	Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 Cor NG K >> GO TO 2. G >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT
1. 2.	Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness con- nector P2 terminals 3 (L) and 19 (P). 3 (L) - 19 (P) : Approx. 54 - 66 Ω
OK O N	. or NG K >> Replace driver seat control unit. G >> Repair harness between driver seat control unit and harness connector B69.
Сс 1.	Imbination Meter Circuit Check UKS003AG CHECK CONNECTOR UKS003AG
1. 2. 3.	Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect combination meter connector. 1.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-85, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



[CAN]

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Front Air Control Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

: Approx. 108 - 132 Ω

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

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2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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 LAN-109, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG
 - >> Repair harness.



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Data link connector

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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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 152



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System Description

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

Component Parts and Harness Connector Location



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* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

BKWA0431E

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BKWA0432E

LAN-CAN-12

INC. : DATA LINE



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	всм	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)	mererovorium	
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	_
(,	WORK SUPPORT	DTC RESULTS TIME	F
	SELF-DIAG RESULTS		
	DATA MONITOR		G
	DATA MONITOR (SPEC)		0
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		Н
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ABS" 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 <u>LAN-117, "CHECK SHEET"</u>.
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-117, "CHECK SHEET"</u>.

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.
 So 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. Refer to <u>AV-148</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-117</u>, <u>"CHECK SHEET"</u>.

LAN-115

 Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-117</u>, "CHECK SHEET".
 NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-148</u>, "CAN Communication Line Check".

9. According to the check sheet results (example), start inspection. Refer to <u>LAN-119, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

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

					CA	N DIAG SU	PPORT M	NTR			
SELECT SYST	EM screen	Initial diagnosis	Transmit diagnosis	ECM	⊤СМ	METER /M&A	Receive DISPLAY	diagnosis BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
HVAC	No indication	Ì	UNKWN	UNKWN	_	—	UNKWN	UNKWN	_	UNKWN	_
ABS	—	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	-	-
			Attach SELECT	copy of SYSTEM			Attach SELEC ⁻	COPY OF SYSTEM			
			CAN	A disp DIAG SUPF	ttach copy blay contro PORT MON	of unit ITOR chec	k sheet				

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-133</u>, "Circuit Check Between TCM and Driver Seat Control Unit".

					CA	N DIAG SU	PPORT M	NTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN		-		_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN		—	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	-	UNKWN	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN		—	_	—	UNKWN
HVAC	No indication	_	UNKWN		_		UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	_
IPDM E/R	No indication	_	UNKWN		_	-	_	UNKWN	-	_	-
IPDM E/R	No indication	_	UNKWN		_	_		UNKWN	_		_



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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-134</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

					CA	N DIAG SU	PPORT M	NTR			
SELECT SYST	FM screen	Initial	Tranamit				Receive of	diagnosis			
012201 0101	Livi borcen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	-	UNK	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		_	_	_		-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
HVAC	No indication	_	UNKWN		_	_	UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN			-	_	_	-	_	-
IPDM E/R	No indication	_	UNKWN		_	_	_	UNKWN	_	_	_



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Case 3

А Check harness between data link connector and IPDM E/R. Refer to LAN-135, "Circuit Check Between Data Link Connector and IPDM E/R".

					CA	N DIAG SUI	PPORT M	NTR			
SELECT SYST	FM screen	Initial	Tranamit				Receive	diagnosis			
0222010101	LINI BOICEIN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_		_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN ORC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN		UNK	-	_	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_



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Case 4

Check ECM circuit. Refer to LAN-136, "ECM Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagno	osis			
0222010101		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	—	NG	UNK	—	UNKWN	UNKWN	_		-		UNKWN
A/T	_	NG	UNKWN		_	UNKWN	Ì	_	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN		UNKWN	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	Ì	_	-	_	UNKWN
HVAC	No indication	_	UNKWN		_	_	UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	-	I	-	-		-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 5

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Check TCM circuit. Refer to LAN-136, "TCM Circuit Check" .

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					CAN DIA	G SUPPOF Bec	Eive diagn	osis			
SELECT SYST	EM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN		_		_	_	_	UNK	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	_	UNKWN	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN		_	_	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 6

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Check driver seat control unit circuit. Refer to LAN-137, "Driver Seat Control Unit Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagno	osis		_	
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN		UNKWN		_	—	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	—	UNKWN	—	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3		CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN		UNKWN	-	_	—	—	UNKWN
HVAC	No indication	_	UNKWN	UNKWN		_	UNKWN	UNKWN	—	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	—	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN		_	_	UNKWN	_	_	_
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Case 7

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Check combination meter circuit. Refer to LAN-137, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagno	osis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_		_	-	_	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN		-	UNKWN	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN ORC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNK	_	_	—		UNKWN
HVAC	No indication	—	UNKWN	UNKWN	_	—	UNKWN	UNKWN	—	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	-	-	_	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 8

Check display control unit circuit. Refer to LAN-138, "Display Control Unit Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	FM screen	Initial	Tranamit			Rec	eive diagn	osis			
012201 0101	Livi borcon	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	—	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	-	_	_
Display control unit	_	CAN COMM	CANORC 1	CAN RC 3	_	CANORC 5	_	CAN ORC 2	CANORC 4	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	—	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNK	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	_	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	



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Case 9

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Check BCM circuit. Refer to LAN-138, "BCM Circuit Check" .

					CA	N DIAG SU	PPORT M	NTR			
SELECT SYST	FM screen	Initial	Tranamit				Receive	diagnosis			
012201 0101		diagnosis	diagnosis	ECM TCM METER DISPLAY BC			BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CANORC 2	CAN CIRC 4	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN		-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	—	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	-



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Case 10

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Check data link connector circuit. Refer to LAN-139, "Data Link Connector Circuit Check" .

					CA	N DIAG SU	PPORT MI	NTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis	_		
012201 0101		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	-	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN		-	_	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	-	UNKWN	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN		_	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_		-	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	_	UNKWN	-	—	-



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Case 11

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Check front air control circuit. Refer to LAN-139, "Front Air Control Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagn	osis			
012201 0101		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	—	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	—	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	—	UNKWN	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CANORC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	-	-	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	—	UNKWN	UNKWN	_	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-140</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".

					CAN DIA	G SUPPOF	RT MNTR					
SELECT SYST	FM screen	Initial	Tranomit	Receive diagnosis								
022201 0101		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/F	
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	UNK	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	_	_	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	-	CAN CIRC ⁻	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	—	—	UNKWN	UNKWN	_	UNKWN	_	
ABS	_	V	UNKWN	UNKWN		—	_	_	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	



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Case 13

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Check IPDM E/R circuit. Refer to LAN-140, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	FM screen	Initial	Tranomit			Rec	eive diagn	osis			
012201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	-	UNKWN	_	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CANORC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 14

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Check CAN communication circuit. Refer to LAN-141, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagn	osis			
012201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN			_	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN		-	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	l	UNKWN	-	—	_
Display control unit	-	CAN COMM	CANORC 1	CAN ORC 3	_	CAN ORC 5	_	CANORC 2	CANORC 4	—	CANORC
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN		-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	UNKWN	UNKWN	—	UNKWN	_
ABS	-	V	UNKWN	UNKWN	UNKWN	-	-	-	-	—	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-141</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

		CAN DIAG SUPPORT MNTR											
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
012201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/P		
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	_		UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN		-	_	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	-	UNKWN	-	-	_		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN		-	-		UNKWN		
HVAC	No indication	—	UNKWN	UNKWN	_	-	UNKWN	UNKWN	-	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	Ι	-	-		-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_		

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Case 16

А Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-141, "IPDM E/R Ignition Relay Circuit Check" .

					CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	FM screen	Initial	Tranamit			Rec	eive diagn	osis			
	LIN BOICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	—	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN		_		_	-	—	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	—	CAN CIRC 2	CAN CIRC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	—		UNKWN
HVAC	No indication	—	UNKWN	UNKWN	_	_	UNKWN	UNKWN	—	UNKWN	-
ABS	_	NG	UNKWN		UNKWN	_	_	_	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 2 (L) 15 (L)
- : Continuity should exist.
- 1 (P) 14 (P)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-115, "Work Flow" . NG >> Repair harness.

Harness connector Harness connector 1415 2 1 Ω PKIA9743E

Circuit Check Between Driver Seat Control Unit and Data Link Connector

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect harness connector B37 and harness connector B69. 1.
- 2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P). В : Continuity should exist. 51J (L) - 6 (L) Data link connector 52J (P) - 14 (P) : Continuity should exist. 14 6 OK or NG SMJ harness connector OCONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-115, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS0039R Е **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. Check continuity between data link connector M22 terminals 6 2. (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector LAN 6 (L) - 31G (L) : Continuity should exist. 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 O CONNECTOR SMJ OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. M PKIA6835E $3.\,$ check harness for open circuit Disconnect IPDM E/R connector. 1. 2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 40 39 42G (P) - 40 (P) : Continuity should exist. CONNECTOR SMJ OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-115, "Work Flow" . NG >> Repair harness. PKIA8140E

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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Driver Seat Control Unit Circuit Check 1. CHECK CONNECTOR	UK\$0039U
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (control unit harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	side and
CHECK HARNESS FOR OPEN CIRCUIT Disconnect driver seat control unit connector.	
 2. Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P). 3 (L) - 19 (P) : Approx. 54 - 66 Ω OK or NG 	tor
OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and harness connector B69.	PKIA6842E
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS0039V
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection (n and harness side). 	neter side
OK or NG OK >> GO TO 2. NG >> Repair terminal or connector.	

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect combination meter connector. 1.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



Display Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect display control unit connector.
- Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

: Approx. 54 - 66 Ω

25 (L) - 26 (P)

OK or NG

- OK >> Replace display control unit.
- NG >> Repair harness between display control unit and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "Removal and Installation of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check 1. CHECK CONNECTOR

1. Turn ignition switch OFF.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



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1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Disconnect the following module and control unit connectors and check terminals for deformation, discon-3. nection, looseness or damage. ECM A/T assembly Driver seat control unit Combination meter Display control unit BCM Front air control ABS actuator and electric unit (control unit) **IPDM E/R** OK or NG

2. CHECK HARNESS FOR SHORT CIRCUIT

>> Repair or replace as necessary.

>> GO TO 2.

6 (L) - 14 (P)

>> GO TO 3.

>> Repair harness.

CAN Communication Circuit Check

3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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

: Continuity should not exist.

OK or NG

OK

NG

(P).

OK or NG

OK NG

OK >> Check ECM and IPDM E/R. Refer to LAN-142, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG

>> Repair 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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

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

Component Parts and Harness Connector Location



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Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	TS
	WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT	0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.	F.DATA
	Scroll Down	ERASE PR	INT
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

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

(Example)	SELECT DIAG MODE		CAN DIAG SUF	PORT MNTR	
(Lxample)	[]		ENGI	NE	
	WORK SUPPORT			PRSNT	
	SELF-DIAG BESULTS	IN	ITIAL DIAG	ок	
		TH	RANSMIT DIAG	ок	
	DATA MONITOR	TC	CM	ок	
	DATA MONITOR (SPEC)		DC/TCS/ABS	ок	
	B/a/filletariot(er 20)	ME	ETER/M&A	ок	
	CAN DIAG SUPPORT MNTR	IC	C	UNKWN	
		BC	CM/SEC	ок	
	ACTIVE TEST	IP	DM E/R	ок	
		AV	ND/4WD/e4WD	UNKWN	
	Scroll Down		PRINT	Scroll	
		b.40		UGHT COPY	
	BACK EIGHT COPT				

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-149</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-149, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-151, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

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

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYS	STEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	Hec METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	_		-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN		-	UNKWN	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	-		UNKWN		-	-
		Attach o SELECT	copy of SYSTEM			Attach SELECT	n copy of F SYSTEM			

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CAN SYSTEM (TYPE 5)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-163</u>, "Circuit Check Between TCM and <u>Data Link Connector</u>".

			I		CAN DIA	G SUPPO	TT MNTR			
SELECT SYS	STEM screen	Initial diagnosis	Transmit diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	UNKOVN
A/T		NG	UNKWN	UNKWN					UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	_		_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-



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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-164</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

					CAN DIA	G SUPPO	RT MNTR					
SELECT SY	STEM screen	Initial	Tranomit	Receive diagnosis								
ULLUI UI	OTEN SOLCOT	Initial diagnosis	Iransmit diagnosis		тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN		
A/T		NG	UNKWN	UNKWN		UNKWN	-		UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_		-	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN			UNKWN		UNKWN	_		
ABS		NG	UNKWN	UNKWN	UNKWN		—	UNKIN		_		
IPDM E/R	No indication		UNKWN	UNKWN	-		UNKWN		-	_		



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Case 3

Check ECM circuit. Refer to LAN-165, "ECM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
	TEM screen	Initial	Transmit			Red	ceive diagno	osis		
SELECT STO	TEW Screen	diagnosis	Transmit diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNK	_		UNKWN	UNKWN	-	UNKWN	UNKON
A/T	-	NG	UNKWN	UNKWN	—	UNKWN	-	-	UNKWN	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	_		-	UNKWN
HVAC	No indication	-	– UNKWN	UNKWN		-	UNKWN		UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-	-



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Case 4

Check TCM circuit. Refer to LAN-166, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR									
SELECT SYST	FM screen	Initial	Tranomit			Re	ceive diagno	osis								
		diagnosis (diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R						
ENGINE		NG	NG	NG	NG	NG	NG	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	-						
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	-		-	UNKWN						
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN	-	UNKWN	-						
ABS	-	NG	UNKWN	UNKWN			-	UNKWN		-						
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-						



CAN SYSTEM (TYPE 5)

Case 5

Check combination meter circuit. Refer to LAN-166, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SY	STEM screen	Initial	Transmit			Red	ceive diagno	osis		
SELECT OF	OTEN CONCON	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE		NG	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	_		UNKWN	
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	—	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN		—	UNKWN	—	—	_



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Case 6

Check BCM circuit. Refer to LAN-167, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	FM screen	Initial	Tranomit	Receive diagnosis									
	EW Solden	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	UNKWN		UNKWN	UNKWN			
A/T	-	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	_			
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	UNKWN			
HVAC	No indication		UNKWN	UNKWN			UNKWN		UNKWN	_			
ABS	_	NG	UNKWN	UNKWN	UNKWN		_	UNKWN	-	_			
IPDM E/R	No indication	-	UNKWN	UNKWN	—	-	UNKWN	-	-	_			



CAN SYSTEM (TYPE 5)

Case 7

Check data link connector circuit. Refer to LAN-167, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SY	STEM screen	Initial	Transmit	Receive diagnosis								
OLLEOT OT	OTEN SOLCOT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN			
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	—		—	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN			UNKWN		UNKWN			
ABS	-	NG	UNKWN	UNKWN	UNKWN		-	UNKWN		-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-		



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Case 8

Check steering angle sensor circuit. Refer to LAN-168, "Steering Angle Sensor Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
	TEM screen	Initial	Transmit	Receive diagnosis									
SELECT STO	TEW Screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F			
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN		UNKWN	UNKWN			
A/T		NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN				
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	UNKWN			
HVAC	No indication		UNKWN	UNKWN			UNKWN		UNKWN	-			
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	-			
IPDM E/R	No indication		UNKWN	UNKWN	—	-	UNKWN	-	-	-			



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Case 9

Check front air control circuit. Refer to LAN-168, "Front Air Control Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR						
SELECT SY	STEM screen	Initial	Transmit diagnosis	Receive diagnosis									
ULLUT U	I D TEM BOICCIT	diagnosis		ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F			
ENGINE		NG	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN			
A/T		NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	-			
ВСМ	No indication	NG	UNKWN	UNKWN		UNKWN	—		—	UNKWN			
HVAC	No indication		UNKWN	UNKWN	<u> </u>		UNKWN		UNKWN	_			
ABS		NG	UNKWN	UNKWN	UNKWN		-	UNK		-			
IPDM E/R	No indication	-	UNKWN	UNKWN			UNKWN	-	—	—			



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Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-169</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

					CAN DIA	G SUPPO	RT MNTR					
SELECT SY	STEM screen	Initial	Tranomit	Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN		UNKOWN	UNKWN		
A/T		NG	UNKWN	UNKWN	—	UNKWN	-		UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN			UNKWN		UNKWN	_		
ABS		NA	UNKWN	UNKWN	UNKWN		-	UNKWN	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN		_	UNKWN		-	_		



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Case 11

Check IPDM E/R circuit. Refer to LAN-169, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SY	STEM screen	Initial	Tranomit			Red	ceive diagno	osis		
SELEOT ST	OTEM Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	—	UNKWN	-		UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN			-	UNKWN
HVAC	No indication		UNKWN	UNKWN			UNKWN		UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN		-	UNKWN		
IPDM E/R	No indication	-	UNKWN	UNKWN	—	-	UNKWN		-	-



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Case 12

Check CAN communication circuit. Refer to LAN-170, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SY	STEM screen	Initial	Tranomit			Red	ceive diagno	osis		
SELECT S	I UTEM Scieen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE		NG		-	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	—	UNKWN	-	-	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_		-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN			UNKWN		UNKWN	_
ABS		NA	UNKWN	UNKWN	UNKWN		-	UNKWN	-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	—	-	UNKWN	-	-	-

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-171</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYS	TEM screen	Initial	Tranemit			Red	ceive diagno	osis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	-		—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-

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Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-171, "IPDM E/R Ignition Relay</u> A <u>Circuit Check"</u>.

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYS	IFM screen	Initial	Tranomit			Red	ceive diagno	osis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	-	-	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		UNKWN	-
ABS	-	NG	UNKWN		UNKWN		-	UNKWN	-	
IPDM E/R	No indication		UNKWN	UNKWN	-		UNKWN			-

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

<u>OK or NG</u>

OK >> GO TO 3. NG >> Repair harness. PKIB6656E

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: Continuity should exist.

: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B69.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 2 (L) 51J (L) 1 (P) - 52J (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 5. NG

>> Repair harness.



5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L) 52J (P) - 14 (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

- >> Connect all the connectors and diagnose again. Refer to OK LAN-148, "Work Flow" .
- NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-164

2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect harness connector M31. 2. Check continuity between data link connector M22 terminals 6 В (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector : Continuity should exist. 6 (L) - 31G (L) 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. D Ω NG >> Repair harness. PKIA6835E Ε 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. F Check continuity between harness connector E152 terminals 2. 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT BA nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 42G (P) - 40 (P) 4039 : Continuity should exist. SMJ CONNECTOR Н OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-148, "Work Flow" . NG >> Repair harness. PKIA8140E **ECM Circuit Check** UK\$00399 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



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UKS0039A

TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



UKS0039B

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM connector

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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "Removal and Installation of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

: Approx. 54 - 66 Ω

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

OK or NG

- OK >> Diagnose again. Refer to LAN-148, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

UKS0039E

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (L) and 4 (P).

3 (L) - 4 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



UKS003KP

Front Air Control Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

: Approx. 54 - 66 Ω

OK or NG OK >> Replace front air control.

M50 terminals 34 (L) and 35 (P).

2. CHECK HARNESS FOR OPEN CIRCUIT

Disconnect front air control connector.

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

Check resistance between front air control harness connector

ABS Actuator and Electric Unit (Control Unit) Circuit Check 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

34 (L) - 35 (P)

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

1.

2.

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (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) and harness connector E152.

IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

LAN-169

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

CAN SYSTEM (TYPE 5)

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: **Approx. 108 - 132** Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

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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
- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.

6 (L) - 14 (P)



3. CHECK HARNESS FOR SHORT CIRCUIT

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 LAN-171, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" .
- NG >> Repair 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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132





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CAN SYSTEM (TYPE 6)

System Description

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

Component Parts and Harness Connector Location



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CAN SYSTEM (TYPE 6)

Schematic

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 6 39 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) 15 Ŧ STEERING ANGLE SENSOR 4 ო COMBINATION METER ř F BCM (BODY CONTROL MODULE) 4 39 DATA LINK CONNECTOR 14 ç 26 DISPLAY CONTROL UNIT 25 35 FRONT AIR CONTROL 3 DRIVER SEAT CONTROL UNIT 19 ო A/T ASSEMBLY œ e 86 ECM 94

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BKWA0140E



* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

Revision: October 2004

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BKWA0440E



BKWA0441E

LAN-CAN-18



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
、 · · /		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	-
	WORK SUPPORT	DTC RESULTS TIME	F
	SELF-DIAG RESULTS		
	DATA MONITOR		G
	DATA MONITOR (SPEC)		0
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		L
		F.F.DATA	1
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ABS" 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 <u>LAN-179</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-179, "CHECK SHEET"</u>.

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.
 So 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. Refer to <u>AV-148</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-179</u>, <u>"CHECK SHEET"</u>.

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 Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-179</u>, "CHECK SHEET".
NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-148</u>, "CAN Communication Line Check".

9. According to the check sheet results (example), start inspection. Refer to <u>LAN-181, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

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

						CAN DIA	G SUPPO	RT MNTR				
SELECT SYSTE	M screen	Initial	Transmit		I	METER	Rec	eive diagn	osis	- · ·	UDOTOO	1
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	/ABS	IPDM E/R
NGINE	_	NG	UNKWN	_	UNKWN	UNKWN		UNKWN	-	_	UNKWN	UNKWN
/т	_	NG	UNKWN	UNKWN	-	UNKWN		-	-	-	UNKWN	_
UTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN		UNKWN	_	-		-
isplay control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5		CAN CIRC 2		CAN CIRC 4	_	CAN CIRC 7
СМ	No indication	NG	UNKWN	UNKWN	-	UNKWN		_	-	-	-	UNKWN
VAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	_	-	UNKWN	-
BS	_	NG	UNKWN	UNKWN	UNKWN			_	UNKWN	_	-	
'DM E/R	No indication	—	UNKWN	UNKWN	_	-	—	UNKWN	_	-	-	—
symptoms :												
						Г						
			Attach o	COPY OF			Attao SELEC	ch copy of	м			
			OLLOT	STOTEM			0111					
						L						
					Attach display o	n copy of control unit						
			C	AN DIAG	SUPPORT	MONITO	R check sh	leet				

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CAN SYSTEM (TYPE 6)

Attach copy of Attach copy of Attach copy of AUTO DRIVE POS. ENGINE A/T SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of ENGINE AUTO DRIVE POS. A/T CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR PKIA9139E
CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-196</u>, "Circuit Check Between TCM and Driver Seat Control Unit".

						CAN DIA	G SUPPOR	RT MNTR				
	Maaroon	Initial	Tranomit				Rec	eive diagn	osis			
SELECT STOLE	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN		_		_	_		
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	—	—	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-		UNKWN	-	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CINC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CIRC 7
всм	No indication	NG	UNKWN			UNKWN	—	-	_	_	—	UNKWN
HVAC	No indication	_	UNKWN		-	_	UNKWN	UNKWN		_	UNKWN	-
ABS	_	NG	UNKWN		UNKWN	-	-	-	UNKWN	_	-	-
IPDM E/R	No indication	—	UNKWN		-	-	—	UNKWN	—	—	—	—



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Check harness between driver seat control unit and data link connector. Refer to <u>LAN-197</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

						CAN DIA	G SUPPOI	RT MNTR				
	Meeroon	Initial	Tronomit				Rec	eive diagn	osis			
SELECT STOLE	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-		1	-		
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-		
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN	UNKWN	_	UNKWN	_	_	_	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CINC 3	_	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CIRC 7
всм	No indication	NG	UNKWN		-	UNKWN		—	I	-	-	UNKWN
HVAC	No indication	_	UNKWN		_	_	UNKWN	UNKWN	1	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN		_	-	-	UNKWN	-	-	-
IPDM E/R	No indication	-	UNKWN		-	—	_	UNKWN	_	-	-	—



Check harness between data link connector and IPDM E/R. Refer to <u>LAN-198, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

						CAN DIA	G SUPPO	RT MNTR				
	Mecroon	Initial	Tranomit				Rec	eive diagn	osis			
SELECT STOLE	W Scieen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1		UNKWN	
A/T	-	NG	UNKWN	UNKWN	—	UNKWN	-	-	—	_		-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN		_	_	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	1	CAN CIRC 5		CAN CIRC 2	1	CAN CIRC 4	-	CAN CINC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	I	-	-	
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	UNKWN	-	-		-
ABS	_	NG	UNKWN			_	_	-	UNKIVN	_	_	_
IPDM E/R	No inditation	-	UNKWN	UNKWN	-	-	—	UNKWN	-	-	-	-



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Check ECM circuit. Refer to LAN-199, "ECM Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR				
	Maaroon	Initial	Tranamit				Rec	eive diagn	osis			
SELECT STOLE	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG		1	UNKIN	UNK	-		1	-	UNKWN	
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CINC 3	-	CAN CIRC 5	-	CAN CIRC 2	1	CAN CIRC 4	-	CAN CIRC 7
всм	No indication	NG	UNKWN		-	UNKWN	-	-	I	-	-	UNKWN
HVAC	No indication	_	UNKWN		_	_	UNKWN	UNKWN	-	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_
IPDM E/R	No indication	-	UNKWN		-	—	_	UNKWN	-	-	-	—
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Case 5

Check TCM circuit. Refer to LAN-199, "TCM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
	Mecroon	Initial	Tranomit				Rec	eive diagn	osis			
SELECT STOLE	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	1		UNKWN	-	UNKWN	-	-	UNKWN	UNKWN
A/T	—	NG	UNKWN		-	UNKWN	-	-	—	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	-	UNKWN	-	_	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	1	CAN CIRC 5	_	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	—	—	—	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN		_	_	-	UNKWN	_	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	—	-	-	-



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Check driver seat control unit circuit. Refer to LAN-200, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
	Mecroon	Initial	Transmit				Rec	eive diagn	osis			
SELECT STOLE	W SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	1	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1	-	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN		-	I	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN		UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	-	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_		-
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	-	-	-	-



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Case 7

Check combination meter circuit. Refer to LAN-200, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR				
	Mecroon	Initial	Transmit				Rec	eive diagn	osis			
SELECT 5151E	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN		-	UNKWN	_	-	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	-	UNKWN	-	-	—	-	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		-	UNKWN		-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	1	CAN CINC 5	-	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	1		-	-	—	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN		_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	—	UNKWN	-	-	-	-



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Check display control unit circuit. Refer to LAN-201, "Display Control Unit Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
	Mecroon	Initial	Transmit				Rec	eive diagn	osis			
SELECT STOLE	W SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/P
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1	-	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	I	-	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CINC 1	CAN CINC 3	-	CAN CINC 5	-	CAN CINC 2	1	CAN CINC 4	-	CAN CIPC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	-	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_			UNKWN	_	_	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	-	UNKWN	-	_	_	—



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Case 9

Check BCM circuit. Refer to LAN-201, "BCM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
	Mecroon	Initial	Transmit				Rec	eive diagn	osis			
SELECT STOLE	W SCIECH	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN		_	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	-	UNKWN	-	-	—	—	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNK		-	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	1	CAN CIRC 5	_	CAN CINC 2		CAN CIRC 4	_	CAN CIRC 7
ВСМ	No inditation	NG	UNKWN	UNKWN	-	UNKWN	—	-	—	—	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKIN		_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	UNKWN	_	_	-
IPDM E/R	No indication	—	UNKWN	UNKWN	-	-	—	UNKIN	-	-	-	-



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Check data link connector circuit. Refer to LAN-202, "Data Link Connector Circuit Check" .

		Γ				CAN DIA	G SUPPO	RT MNTR				
	Maaroon	Initial	Tronomit				Rec	eive diagn	osis			
SELECT STSTE	W Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN		—		-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN		UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CIRC 7
всм	No indivision	NG	UNKWN	UNKWN	-	UNKWN		—	I	—	-	UNKWN
HVAC	Ny indi v ation	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	1	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	-	-
IPDM E/R	No indivation	-	UNKWN	UNKWN	-	_		UNKWN	_	-	-	
												PKIB6668E



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Case 11

Check steering angle sensor circuit. Refer to LAN-202, "Steering Angle Sensor Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR				
	Mecroon	Initial	Transmit				Rec	eive diagn	osis			
SELECT STOLE	W SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN		UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	-	—	_	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN		-	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	_	CAN CIRC 4	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	—		_	—	UNKWN
HVAC	No indication		UNKWN	UNKWN	_		UNKWN	UNKWN		_	UNKWN	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	-		_	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	—	UNKWN	-	-	-	-



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Check front air control circuit. Refer to LAN-203, "Front Air Control Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
	Meeroon	Initial	Tranamit				Rec	eive diagn	osis			
SELECT STOLE	W SCIECI	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F
ENGINE	1	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	-		UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	I	-	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CINC 4	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	-	—	—	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	UNKWN	-	_	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	-	UNKWN	-	-	-	-



Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-203</u>, "ABS Actuator and Electric Unit <u>(Control Unit) Circuit Check</u>".

						CAN DIA	g Suppor	RT MNTR					
	Mecroon	Initial	Transmit		Receive diagnosis								
SELECT STOLE	dia		diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1	1	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	—	-		-	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN		_	_	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	—	-	-	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-		-	
ABS	_	N	UNK		UNKIN	_	-	-	UNK	_	-	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	—	UNKWN	-	-	-		



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Check IPDM E/R circuit. Refer to LAN-204, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR						
	Meeroon	Initial	Tranamit		Receive diagnosis									
SELECT STOLE	diagnosis			ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	-	UNKWN	1	1	UNKWN			
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	I	-	UNKWN			
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	-	-	-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	-	CAN CIRC 4	-	CAN CINC 7		
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN		—	-	-	-			
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	_	UNKWN			
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	_	-		
IPDM E/R	No inditation	_	UNKWN	UNKWN	-	_	-	UNKWN	_	-	-	—		



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Case 15

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Check CAN communication circuit. Refer to LAN-204, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR						
SELECT SYSTE	Miscreen	Initial	Transmit		Receive diagnosis									
SELECT STOLE	diagno		diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNK	_	UNKIN	UNKWN	-	UNK	-	_		UNKWN		
A/T	_	NG	UNKWN		_			-	—	—				
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN		UNKWN		-	-			
Display control unit	_	CAN COMM	CAN CINC 1	CAN CINC 3	1	CAN CINC 5	—	CAN CINC 2	-	CAN CINC 4	_	CAN CINC 7		
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	-	—	-	-	UNKWN		
HVAC	No inditation	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN		_	UNKWN	-		
ABS	_	N				_	-	-	UNKWN	_	_	-		
IPDM E/R	No inditation		UNKWN	UNKWN	-	_	-	UNKWN		-	-			

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-205</u>, "IPDM E/R Ignition Relay <u>G</u> <u>Circuit Check</u>".

						CAN DIA	G SUPPOR	RT MNTR						
SELECT SYSTE	Mscreen	Initial	Tranemit		Receive diagnosis									
3000 01010	W SCIECT	diagnosis diagnosis		ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	—		UNKWN	_	UNKWN	_	_		UNKWN		
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN			UNKWN	-	UNKWN	_	-	_	-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	1	CAN CIRC 5	-	CAN CIRC 2	1	CAN CIRC 4	1	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	—	—	_	—	—	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	_		-		
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	-	-	-		
IPDM E/R	No indication	—	UNKWN	UNKWN	-	-	—	UNKWN	-	—	-	-		

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-205, "IPDM E/R Ignition Relay Circuit Check" .

						CAN DIA	g Suppor	RT MNTR					
	Maaroon	Initial	Tronomit	Receive diagnosis									
SELECT STOLE	W SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	-			-	_	-	UNKWN	—	
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN	UNKWN		UNKWN	_	_	_	—	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	_	CAN CIRC 4	-	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN		-	_	-	-	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-	UNKWN	—	
ABS	-	NG	UNKWN		UNKWN	_	-	-	UNKWN	_	-	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	—	UNKWN	—	-	-	—	

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

UKS0023H

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

- >> GO TO 3. OK NG
 - >> Repair harness.

A/T assembly connector Harness connector 3 1112 8 3, 8 12, 11 Ω PKIA6831E

3. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect harness connector E50. 2. Check continuity between harness connector E19 terminals 12 В (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P). : Continuity should exist. 12 (L) - 2 (L) 11 (P) - 1 (P) : Continuity should exist. Harness connector Harness connecto OK or NG 1 2 1211 12, 11 2, 1 OK >> GO TO 4. NG >> Repair harness. D Ω PKIA7668E Е 4. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect harness connector B37. F Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P). 2 (L) - 15 (L) : Continuity should exist. 1 (P) - 14 (P) : Continuity should exist. Harness connector Harness connector OK or NG 21 1415 Н OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow" . Ω NG >> Repair harness. PKIA9743E Circuit Check Between Driver Seat Control Unit and Data Link Connector UK\$0023I 1. CHECK CONNECTOR 1. Turn ignition switch OFF. LAN 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). L Harness connector B69 Harness connector M40 OK or NG Μ OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector B37 and harness connector B69. 1. 2. Check continuity between harness connector B37 terminals 15

- (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



[CAN]

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L)
- 52J (P) 14 (P)
- : Continuity should exist. : Continuity should exist.

- OK or NG
- OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow".
- NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

UKS0023J

[CAN]

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).
 - 6 (L) 31G (L) 14 (P) - 42G (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).
 - 31G (L) 39 (L) 42G (P) - 40 (P)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-177, "Work Flow".

NG >> Repair harness.



	[CAN]
ECM Circuit Check	UK\$0023K
1. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, be and harness side). ECM connector Harness connector E19 Harness connector F33 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	end and loose connection (control module side
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect ECM connector. Check resistance between ECM harness connector E16 nals 94 (L) and 86 (P). 	termi-
94 (L) - 86 (P) : Approx. 108 - 132 Ω	HS. THE BAT
OK or NG	
OK >> Replace ECM. NG >> Repair harness between ECM and A/T assembly	86 94
TCM Circuit Check 1. CHECK CONNECTOR	UKS0023L
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of A/T assembly for damagination side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	ge, bend and loose connection (control module
2. CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect A/T assembly connector.	
 Check resistance between A/T assembly harness connec terminals 3 (L) and 8 (P). 	tor F9
3 (L) - 8 (P) : Approx. 54 - 66 Ω	A/T assembly connector
OK or NG OK >> Replace A/T assembly. NG >> Repair harness between A/T assembly and ha connector F33.	arness

Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) - 19 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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Display Control Unit Circuit Check UKS0023N А 1. CHECK CONNECTOR 1. Turn ignition switch OFF. В 2. Disconnect the negative battery terminal. Check terminals and connector of display control unit for damage, bend and loose connection (control unit side and harness side). С OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. D 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect display control unit connector. 1. Ε Check resistance between display control unit harness connec-2. tor M95 terminals 25 (L) and 26 (P). BAT 25 (L) - 26 (P) : Approx. 54 - 66 Ω Display control unit connector F OK or NG

- OK >> Replace display control unit.
- NG >> Repair harness between display control unit and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "Removal and Installation of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Diagnose again. Refer to <u>LAN-177, "Work Flow"</u>.
- NG >> Repair harness between data link connector and combination meter.



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (L) and 4 (P).

3 (L) - 4 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



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Front Air Control Circuit Check

Disconnect the negative battery terminal.

1. CHECK CONNECTOR

Turn ignition switch OFF.

1.

2.

SKIA6872E

ABS actuator and electric unit (control unit) connector

O CONNECTOR

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C/UNIT

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11 (L) - 15 (P)

OK or NG

OK

NG



trol unit) harness connector E125 terminals 11 (L) and 15 (P).

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

(control unit) and harness connector E152.

>> Repair harness between ABS actuator and electric unit

: Approx. 54 - 66 Ω

LAN-203

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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

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2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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 LAN-205, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG
 - >> Repair harness.



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Data link connector

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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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 152



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System Description

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

Component Parts and Harness Connector Location



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PFP:23710

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Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METEB A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "HVAC", "ALL MODE AWD/ 4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
	WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		E.E.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	CAN DIAG SU	PPORT MNTR		J
	WORK SUPPORT	ENG	PRSNT		-
	SELF-DIAG RESULTS	INITIAL DIAG	ОК		
	DATA MONITOR	TRANSMIT DIAG	OK		
			OK		LA
	DATA MONITOR (SPEC)	METER/M&A	OK		
	CAN DIAG SUPPORT MNTR	 ICC	UNKWN		
		BCM/SEC	ок		
	ACTIVE TEST	IPDM E/R	OK		
		AWD/4WD/e4WD	UNKWN		
	Scroll Down	PRINT	Down		
	BACK LIGHT COPY	MODE BACK	LIGHT COPY	PKIA8343E	R./

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-212</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-212, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-214</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

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

	·				CAN DIA	G SUPPO	RT MNTR			
		1	Tura ya a ma it			Red	ceive diagn	osis		
SELECT STOT	LIVISCIEEII	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-
всм	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM



SKIB2750E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-226, "Circuit Check Between TCM and</u> <u>Data Link Connector"</u>.

	CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial diagnosis	Tranamit	Receive diagnosis								
			diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN	_		
BCM	No indication	NG	UNKWN		-	UNKWN	_	_	_	UNKWN		
HVAC	No indication	_	UNKWN		_	_	UNKWN	_	UNKWN	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	UNKWN	_		
ABS	_	NG	UNKWN		UNKWN	_	_	UNKWN	_	_		
IPDM E/R	No indication	_	UNKWN		—	_	UNKWN	_	_	_		

////// : Malfunctioning part ABS actuator and electric unit (control unit) Data link Front air connector control CAN H CAN L ------Transfer Combination ECM тсм BCM IPDM E/R meter control unit PKIA9511E

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Case 2

А Check harness between data link connector and IPDM E/R. Refer to LAN-227, "Circuit Check Between Data Link Connector and IPDM E/R" .

	CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_		UNK	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	UNK	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_		
ABS	_	NG	UNKWN	UNI	UNIOWN	_	-	UNKWN	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Check ECM circuit. Refer to LAN-228, "ECM Circuit Check" .

	CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNK	_	UNKWN	UNKWN	UNKWN		UNK	UNKWN	
A/T	_	NG	UNKWN		_	UNKWN	-	UNKWN	UNKWN	_	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	_	UNKWN	
HVAC	No indication	-	UNKWN		_	_	UNKWN	-	UNKWN	_	
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	-	-	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	


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Case 4

Check TCM circuit. Refer to LAN-229, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
OLLEON ONOT	LIN SCIECU	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_			_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	-	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Check combination meter circuit. Refer to LAN-229, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	—		-	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	—	UNK	-	_	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	—	_	UNKWN	-	UNKWN	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	_		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	_	_		



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Case 6

Check BCM circuit. Refer to LAN-230, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Receive diagnosis									
OLLEON ONOT	LIVISCIECIT	diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	UNKWN	_		
ABS	—	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_		_	_	_		



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Check data link connector circuit. Refer to LAN-230, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR							
	EM screen	Initial	Initial Transmit		Receive diagnosis									
	LIVISCIECT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R				
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN				
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-				
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	UNKWN				
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_				
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-				
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_				
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_				



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Case 8

Check front air control circuit. Refer to LAN-231, "Front Air Control Circuit Check" .

					CAN DIA	G SUPPO	rt Mntr			
SELECT SYST	FM screen	Initial	Tranomit			Re	ceive diagn	osis		
0000000000	LW Sorcen	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN			-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN	-	-	UNKWN	-		



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Check transfer control unit circuit. Refer to LAN-231, "Transfer Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Transmit Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNK	UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	_	UNKWN	-		
ALL MODE AWD/4WD	_	NG		UNKWN	UNKWN	-	-	_	UNK	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNK	_	—		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_		



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Case 10

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-232, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
ULLEOT OTOT		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNK	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	UNKWN			
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_		_			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_			
ABS	_	N			UNKWN	_	-	UNKWN	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



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Check IPDM E/R circuit. Refer to LAN-232, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
	EM screen	Initial	Tranamit	Receive diagnosis									
	LW SCIECH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	UNKWN	UNKWN	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN			
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-			
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



CAN SYSTEM (TYPE 7)

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Case 12

Check CAN communication circuit. Refer to LAN-233, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
	EM screen	Initial	Tranamit			Ree	ceive diagn	osis		
	LW SCIECH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG		—	UNKWN	UNKWN	UNKWN	UNKWN		UNKWN
A/T	_	NG	UNKWN		_	UNWWN	_	UNKWN		_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNK	UNKWN	UNKWN	_	_	-	UNK	_
ABS	_	N	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-234, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Re	ceive diagn	osis		
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNK	UNKWN	UNKWN	UNKWN	UNK	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-		-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	UNK	-
ABS	—	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-234</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit			Red	ceive diagn	osis		
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN				_	UNKIVN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN		_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	_	-		_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

OK or NG

OK >> GO TO 3. NG >> Repair harness. A/T assembly connector 3 3,8 12, 11 11,12 12, 11 12, 11

: Continuity should exist.

: Continuity should exist.

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- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G (P).
 - 6 (L) 31G (L) 14 (P) - 42G (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 terminals 39 (L), 40 (P).
 - 31G (L) 39 (L) 42G (P) - 40 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-211, "Work Flow".
- NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



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CAN SYSTEM (TYPE 7)

2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect ECM connector. 2. Check resistance between ECM harness connector E16 termi-В nals 94 (L) and 86 (P). E) 94 (L) - 86 (P) : Approx. 108 - 132 Ω ECM connector OK or NG **O** CONNECTOR ECM OK >> Replace ECM. NG >> Repair harness between ECM and A/T assembly. 86 94 D PKIA0816E Ε **TCM Circuit Check** UKS001FV 1. CHECK CONNECTOR F 1. Turn ignition switch OFF. Disconnect the negative battery terminal. 2. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module 3. side and harness side). OK or NG OK >> GO TO 2. Н NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect A/T assembly connector. 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P). 3 (L) - 8 (P) : Approx. 54 - 66 Ω A/T assembly connector OK or NG 3 LAN 8 OK >> Replace A/T assembly. NG >> Repair harness between A/T assembly and harness connector F33. Ω SKIA6866E Μ UKS001FW

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector. [CAN]

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



[CAN]

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BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



1. CHECK CONNECTOR

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

LAN-230

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



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- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001G1

[CAN]

1. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.

IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



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CAN SYSTEM (TYPE 7)

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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, discon-
- ECM
- A/T assembly
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



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3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

: Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to LAN-234, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" .
- NG >> Repair 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-26, "IPDM E/R Power/Ground Circuit Inspection" . •
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100-132

ECM and IPDM E/R LKIA0037E



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UKS001G4

CAN SYSTEM (TYPE 8)

System Description

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

Component Parts and Harness Connector Location



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CAN SYSTEM (TYPE 8)

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BKWA0144E

[CAN]



LAN-CAN-23



BKWA0447E

CAN SYSTEM (TYPE 8)

[CAN]



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	ВСМ	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	l.	SELF-DIAG RESUL	TS
, i ,	WORK SUPPORT	-	DTC RESULTS	TIME
	SELF-DIAG RESULTS		CAN COMM CIRCUIT	0
	DATA MONITOR	-		
	DATA MONITOR (SPEC)			
	CAN DIAG SUPPORT MNTR			
	ACTIVE TEST	L		
			F.	F.DATA
	Scroll Down	_	ERASE PR	INT
	BACK LIGHT COPY	1	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" 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 <u>LAN-241, "CHECK SHEET"</u>.
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>241, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-243</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

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

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Re	ceive diagn	osis	100	
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	_
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	—	UNKWN	—	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	—	_
IPDM E/R	No indication	_	UNKWN	UNKWN	—	-	UNKWN	-	-	-
		Attach SELECT	copy of SYSTEM			Attach SELEC	n copy of T SYSTEM			

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CAN SYSTEM (TYPE 8)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-257</u>, "Circuit Check Between TCM and Driver Seat Control Unit".

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Red	ceive diagn	osis		
	LIN SOLCON	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	UNK	UNK
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNK	UNK	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	—	_	_
BCM	No indication	NG	UNKWN	UNK	—	UNKWN	-	—	_	UNKWN
HVAC	No indication	-	UNKWN	UNKOVN	-	_	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN		UNK	-	-	—	UNKWN	-
ABS	—	NG	UNKWN	UNKWN	UNK	_	-	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_	_



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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-258</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Red	ceive diagn	osis		
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNK	UNKWN	UNKOVN	UNK	UNK
A/T	_	NG	UNKWN	UNKWN	—	UNK	_	UNKWN	UNK	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_
BCM	No indication	NG	UNKWN	UNKVN	_	UNKWN	_	_	_	UNKWN
HVAC	No indication	-	UNKWN	UNK	_	_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNK	UNK	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNK	—	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 3

А Check harness between data link connector and IPDM E/R. Refer to LAN-259, "Circuit Check Between Data Link Connector and IPDM E/R" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit			Red	ceive diagn	osis		
	Livisoreen	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	—	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	-	_	UNKWN	_
ABS	_	NG	UNKWN		UNK	_	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Check ECM circuit. Refer to LAN-260, "ECM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Re	ceive diagn	osis		
		diagnosis	diagnosis	ECM	и тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG			UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN		_	UNKWN	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	—	-
ВСМ	No indication	NG	UNKWN	UNKIVN	_	UNKWN	-	_	_	UNKWN
HVAC	No indication	-	UNKWN	UNKIVN	_	-	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	-	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 5

Check TCM circuit. Refer to LAN-260, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNK	-		UNKWN	-			
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	_	—	_			
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN			
HVAC	No indication	—	UNKWN	UNKWN	—	—	UNKWN	-	UNKWN	-			
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	-	-	UNKWN	-			
ABS	—	NG	UNKWN	UNKWN	UNK	—	-	UNKWN	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



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Check driver seat control unit circuit. Refer to LAN-261, "Driver Seat Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Re	ceive diagn	osis		
	LINISCICCI	Initial Iransmit diagnosis diagnosis NG UNKWN	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	_	-
ВСМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



CAN SYSTEM (TYPE 8)

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Case 7

Check combination meter circuit. Refer to LAN-261, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Red	ceive diagn	osis		
		diagnosis	diagnosis UNKWN	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	_	_
BCM	No indication	NG	UNKWN	UNKWN	—		-	—	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	—	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	—	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Check BCM circuit. Refer to LAN-262, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
	LIN Soreen	diagnosis	Transmit sis diagnosis UNKWN	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	UNKWN	UNKWN	_			
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	_	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN			
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_			
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_			



CAN SYSTEM (TYPE 8)

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Case 9

Check data link connector circuit. Refer to LAN-262, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
	LIN SOLCON	diagnosis	G UNKWN	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_			
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	—	-			
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN			
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	_	UNKWN	_			
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_			



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Case 10

Check front air control circuit. Refer to LAN-263, "Front Air Control Circuit Check" .

		CAN DIAG SUPPORT MNTR								
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN		UNKWN	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN	UNKWN	UNKWN	_	-	-
BCM	No indication	NG	UNKWN	UNKWN		UNKWN		_		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	
ABS		NG	UNKWN	UNKWN	UNKWN		-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN			UNKWN			


CAN SYSTEM (TYPE 8)

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Case 11

Check transfer control unit circuit. Refer to LAN-263, "Transfer Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	SELECT SYSTEM scroop		Transmit	Receive diagnosis								
		diagnosis	diagnosis			METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	UNK	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_		
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	-	-	_	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_		
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-264</u>, "<u>ABS Actuator and Electric Unit</u> (<u>Control Unit</u>) <u>Circuit Check</u>".

			CAN DIAG SUPPORT MNTR									
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNK	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	UNKWN		-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	—	_	UNKWN		
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNK	_		
ABS	_	N			UNKVN	_	-	UNKIVN	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



CAN SYSTEM (TYPE 8)

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Case 13

Check IPDM E/R circuit. Refer to LAN-264, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Receive diagnosis					
SELECT STOTEM Screen		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	UNKWN	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	—	_	UNKWN	
HVAC	No indication	—	UNKWN	UNKWN	_	-	UNKWN	-	UNKWN	-	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	-	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	—	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Check CAN communication circuit. Refer to LAN-265, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYSTEM screen		Initial	Transmit	Receive diagnosis						
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNWN	UNK	UNK	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNK	-		UNK	—
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	_	NG			UNK	_	-	-	UNK	-
ABS	_	vs		UNKWN	UNKWN	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-265</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

			CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial	Tranemit		Receive diagnosis								
		diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		UNKWN			
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN				
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_			
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	—	_	UNKWN			
HVAC	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	UNK	-			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_			
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	_	UNKWN	_	-			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	-			

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-265, "IPDM E/R Ignition Relay А Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		Initial	Tranemit			Red	ceive diagn	osis			
		diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN		_	UNK	-		UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	—	_	UNKWN	
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	UNKWN	_	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	-	UNKWN	_	
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

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- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.

2, BAT A/T assembly connector Harness connector 3 11 12 8 12, 11 3,8 Ω PKIA6831E

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 2 (L) 15 (L)
- : Continuity should exist.
- 1 (P) 14 (P)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-240, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector UKS001GC 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect harness connector B37 and harness connector B69. 1.
- 2. Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

А Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P). В : Continuity should exist. 51J (L) - 6 (L) Data link connector 52J (P) - 14 (P) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-240, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS001GD Е **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. Check continuity between data link connector M22 terminals 6 2. (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector LAN 6 (L) - 31G (L) : Continuity should exist. 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 O CONNECTOR SMJ OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. M PKIA6835E $3.\,$ check harness for open circuit Disconnect IPDM E/R connector. 1. 2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 40 39 42G (P) - 40 (P) : Continuity should exist. SMJ OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-240, "Work Flow" .

NG >> Repair harness.



[CAN]

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



CAN SYSTEM (TYPE 8)

	[CAN]
Dr 1.	iver Seat Control Unit Circuit Check UK5001GG CHECK CONNECTOR
1. 2. 3. - <u>OK</u> 0 N 2 .	Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 <u>Cor NG</u> K >> GO TO 2. G >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT
1. 2. <u>OK</u> 0 N	Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P). 3 (L) - 19 (P) : Approx. 54 - 66 Ω Cor NG K >> Replace driver seat control unit. G >> Repair harness between driver seat control unit and harness connector B69.
Сс 1.	CHECK CONNECTOR
1. 2. 3.	Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-240, "Work Flow".
- NG >> Repair harness between data link connector and combination meter.



[CAN]

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CAN SYSTEM (TYPE 8)



Front Air Control Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.
- 1.
- 2.

OK or NG



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



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[CAN]

CAN SYSTEM (TYPE 8)

1.	CHECK CONNECTOR
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, discon- nection, looseness or damage.
_	ECM
_	A/T assembly
-	Driver seat control unit
-	Combination meter
-	BCM
-	Front air control
-	Transfer control unit
-	ABS actuator and electric unit (control unit)

IPDM E/R

OK or NG

OK >> GO TO 2.

>> Repair or replace as necessary. NG

2. CHECK HARNESS FOR SHORT CIRCUIT

CAN Communication Circuit Check

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

(P).

6 (L) - 14 (P)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

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

6 (L) - Ground 14 (P) - Ground

: Continuity should not exist. : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-266, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG

>> Repair harness.



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

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .



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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)	
ECM	94 - 86	108 - 122	
IPDM E/R	39 - 40	100 - 132	



CAN SYSTEM (TYPE 9)

System Description

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

Component Parts and Harness Connector Location



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CAN SYSTEM (TYPE 9)

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[CAN]





BKWA0450E

CAN SYSTEM (TYPE 9)

[CAN]



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	ВСМ	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	TS
()	WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT	0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.	F.DATA
	Scroll Down	ERASE PR	NT
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" 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 <u>LAN-274, "CHECK SHEET"</u>.
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-274</u>, "CHECK SHEET".

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.
 So 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. Refer to <u>AV-148</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-274</u>, <u>"CHECK SHEET"</u>.

LAN-272

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CAN SYSTEM (TYPE 9)

[CAN]	
Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-274, "CHECK SHEET".	А
NOTE:	
If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-148</u> , "CAN Communication Line Check".	В
According to the check sheet results (example), start inspection, Refer to LAN-276, "CHECK SHEET	

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CHECK SHEET

NOTE:

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

					CAN			INTR				
SELECT SYST	EM screen	Initial	Transmit		0,		Receive	diagnosis				
SEECT STST		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	_	UNKWN	_	_		-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	_	CAN CIRC :
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	—	-	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	-	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	-	-	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	-	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN		_	_	UNKWN	_	_	_	_
		A	ttach copy ∟ECT SYS	y of STEM			Attach SELECT	copy of SYSTEM				
			CAI	N DIAG SU	Attach d display co JPPORT N	copy of ntrol unit AONITOR	check she	pet				
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CAN SYSTEM (TYPE 9)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-291, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

					CAN	I DIAG SU		INTR				
	EM screen	Initial	Transmit				Receive	diagnosis				
	LIVISCICCI	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN		UNKWN		-		_	UNKWN		
A/T	_	NG	UNKWN	UNKWN	-		-	_	_		UNK	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	_	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CAC 3		CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	-	-	UNKWN
HVAC	No indication	—	UNKWN	UNKWN		-	UNKWN	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		—	_	_	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKIN	UNKWN	_	_	-	—	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	_	UNKWN	_	_	—	-
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Case 2

r

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-292, "Circuit Check</u> <u>A</u><u>Between Driver Seat Control Unit and Data Link Connector"</u>.

					CAN	I DIAG SU	IPPORT N	INTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	_		_	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CAC 3		CAN CIRC 5		CAN CIRC 2	CAN CIRC 4	-	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	-	—	UNKWN
HVAC	No indication		UNKWN		-	-	UNKWN	UNKWN	_	—	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNK	UNKWN	—	_	_	—	—	UNKWN	—
ABS	_	NG	UNKWN	UNKIN	UNK	_	_	_	_	UNKWN	_	—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_	-



L

M

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-293</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

					CAN	I DIAG SU	IPPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	_		UNK	UNK
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	UNKWN	UNK	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	—	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-	-	
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	-	-	_	—	
HVAC	No indication	—	UNKWN	UNKWN	-	—	UNKWN	UNKWN	—	—	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	_	—	UNKWN	-
ABS	_	NG	UNKWN	UNK	UNK	—	-	-	_	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	—	-	—	UNKWN	—	—	_	-



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Case 4

Check ECM circuit. Refer to LAN-294, "ECM Circuit Check" .

					CAN	I DIAG SU	IPPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNK
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CAC 3	-	CAN CIRC 5		CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN		UNKWN	I	_	_	_	—	UNKWN
HVAC	No indication	—	UNKWN		—	—	UNKWN	UNKWN	_	—	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNK	UNKWN	_	_	_	—	-	UNKWN	-
ABS	_	NG	UNKWN	UNKIN	UNKWN	_	_	-	_	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_		UNKWN	_	-	_	_



Μ

Check TCM circuit. Refer to LAN-294, "TCM Circuit Check" .

					CAN	I DIAG SU	IPPORT N	1NTR				
	EM screen	Initial	Transmit				Receive	diagnosis				
OLLEON ONON	LIVISCICCI	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN		UNK	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_		UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	—	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	—	-	CAN CIRC 1
BCM	No indication	NG	UNKWN	UNKWN	Ι	UNKWN	_	_	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN			UNKWN	UNKWN	_	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	_	_	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	_	-	_	UNKWN	—	—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	_	UNKWN	_	-	_	-



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Case 6

Check driver seat control unit circuit. Refer to LAN-295, "Driver Seat Control Unit Circuit Check" .

					CAN	I DIAG SU	PPORT N	INTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	—	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	-	-	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	—	—	UNKWN	_
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	Ι	_	—	-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	_	UNKWN	_	_	_	-



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Check combination meter circuit. Refer to LAN-295, "Combination Meter Circuit Check" .

					CAN	I DIAG SL	IPPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNK	_	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CRC 5	—	CAN CIRC 2	CAN CIRC 4	—	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	_	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	_	—	UNKWN	UNKWN	-	—	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	_	—	-	—	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	_	_	_	_
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Case 8

Check display control unit circuit. Refer to LAN-296, "Display Control Unit Circuit Check" .

					CAN	I DIAG SU	PPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
OLLEON ONON	LIVISCICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	_	_	-	_
Display control unit	_	CAN COMM	CAN CRC 1	CAN CAC 3	_	CAN CRC 5	_	CANORC 2	CAN CRC 4	—	-	CAN CRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	-	—	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	-	-		UNKWN	—	—	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	_	_	—	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	-	_	_	_



M

Check BCM circuit. Refer to LAN-296, "BCM Circuit Check" .

					CAN	I DIAG SU	IPPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
SEE OF STOT		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN		UNKWN	UNKWN	-		_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	_	—	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	_	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3		CAN CIRC 5	_	CAN CRC 2	CAN CIRC 4	—	-	CAN CIRC 1
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	-	UNKWN
HVAC	No indication	—	UNKWN	UNKWN		—	UNKWN	UNKWN	—	—	UNKWN	-
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	_	_	—	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	_		_	-	_	-



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Case 10

Check data link connector circuit. Refer to LAN-297, "Data Link Connector Circuit Check" .

					CAN	I DIAG SL	PPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis				
OLLEON ONON	LINIBUICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	_	UNKWN	_	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	-	UNKWN
HVAC	No indication	—	UNKWN	UNKWN	_	_	UNKWN	UNKWN	-	_	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	_	—	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	_	_	_	UNKWN	—	—
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	—	UNKWN	_	-		-



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Check front air control circuit. Refer to LAN-297, "Front Air Control Circuit Check" .

	CAN DIAG SUPPORT MNTR												
SELECT SYSTEM screen		screen		Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F	
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	UNKWN	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	_	-	_	_	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	-	CAN CIRC 2	CAN 🖍 RC 4	_	-	CAN CIRC 1	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	-	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	—	UNKWN	_	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	-	UNKWN	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	_	-	_	UNKWN	—	—	
IPDM E/R	No indication	-	UNKWN	UNKWN	—	-	_	UNKWN	_	-	_	-	



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Case 12

Check transfer control unit circuit. Refer to LAN-298, "Transfer Control Unit Circuit Check" .

		CAN DIAG SUPPORT MNTR												
SELECT SYSTEM screen		en Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	—	UNK	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	-	UNKWN	-	-	-	-		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	—	-	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	-	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	—	-	UNKWN	UNKWN	—	-	UNKWN	—		
ALL MODE AWD/4WD	_	NG			UNKWN	_	_	-	_	-	UNKWN	-		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNK	_	_		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_		



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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-298</u>, "<u>ABS Actuator and Electric Unit</u> (<u>Control Unit</u>) <u>Circuit Check</u>".

	CAN DIAG SUPPORT MNTR													
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis										
				ECM	ТСМ	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	-	-	UNKWN	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	-	_	-	-		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	—	-	-	—	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	-	UNKWN	_		
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	_	UNKWN	-		
ABS	_	N	UNKWN	UNKIWN		_	_	_	_		_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_		


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Case 14

Check IPDM E/R circuit. Refer to LAN-299, "IPDM E/R Circuit Check" .

					CAN	I DIAG SU	PPORT N	INTR					
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F	
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	_	UNKWN	_	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	-	_	UNKWN	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	_	_	-	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	—	_	CAN CRC 7	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	-	-	_	UNKWN	
HVAC	No indication	_	UNKWN	UNKWN	_	-	UNKWN	UNKWN	-	-	UNKWN	_	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	-	UNKWN	-	
ABS	-	NG	UNKWN	UNKWN	UNKWN	—	_	-	-	UNKWN	_	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	_	_	_	_	



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Check CAN communication circuit. Refer to LAN-299, "CAN Communication Circuit Check" .

					CAN	I DIAG SL	IPPORT N	1NTR				
SELECT SYST	EM screen	Initial	Transmit				Receive diagnosis					
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	_	UNKWN	_	UNK	UNK	UNK
A/T	-	NG	UNKWN		-		-	—	-	UNKWN	UNK	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	-	_	-	-
Display control unit	_	CAN COMM	CAN CRC 1	CAN CAC 3	_	CAN CAC 5	-	CAN CRC 2	CAN CRC 4	_	-	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	_	-	UNKWI
HVAC	No indication	-	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	_	UNKWN	—
ALL MODE AWD/4WD	_	NG	UNKIN		UNKWN	—	—	Ι	_	_	UNKWN	-
ABS	_	N	UNKVN	UNKIVN	UNK	_	—	-	—		_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	_	-	-	_

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-300, "IPDM E/R Ignition Relay</u> <u>Circuit Check"</u>.

					CAN			INTR						
	EM scroon	Initial	aitial Transmit		Receive diagnosis									
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG	UNKWN	—	UNK	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKIN	UNKWN	_	UNKWN	-	-	_	-		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC 7		
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	-	_	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	-	UNKWN	-		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	-	UNKWN	-		
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	UNKWN	_	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	_	UNKWN	-	-	_	-		
												SKIB2799E		

А Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-300, "IPDM E/R Ignition Relay Circuit Check" .

					CAN	N DIAG SL	IPPORT N	INTR					
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	-	UNKWN	_	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	UNKWN	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	-	UNKWN	_	—	-	-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	_	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	—	_	-	—	UNKWN	
HVAC	No indication	-	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_	UNKWN	_	
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	UNKWN	_	
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	_	UNKWN	—	-	_	-	

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 2 (L) 15 (L)
 - 1 (P) 14 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-272, "Work Flow".

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector UKS001GX 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

А Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P). В : Continuity should exist. 51J (L) - 6 (L) Data link connector 52J (P) - 14 (P) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-272, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS001GY Е **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. 2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector LAN 6 (L) - 31G (L) : Continuity should exist. 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 O CONNECTOR SMJ OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. M PKIA6835E $3.\,$ check harness for open circuit Disconnect IPDM E/R connector. 1. 2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 40 39 42G (P) - 40 (P) : Continuity should exist. CONNECTOR SMJ OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-272, "Work Flow" .

NG >> Repair harness.



[CAN]

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



UKS001H0

TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



`	[CAN]
Driver Seat Control Unit Circuit Check 1. CHECK CONNECTOR	UKS001H1
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend an harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	nd loose connection (control unit side and
 Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P). 3 (L) - 19 (P) Approx. 54 - 66 Ω OK or NG OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and harness connector B69. 	- Disconnect Diver seat control unit connector
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS001H2
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damag and harness side). <u>OK or NG</u> OK >> GO TO 2. 	e, bend and loose connection (meter side

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect combination meter connector. 1.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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Display Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect display control unit connector.
- Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

: Approx. 54 - 66 Ω

25 (L) - 26 (P)

OK or NG

- OK >> Replace display control unit.
- NG >> Repair harness between display control unit and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "Removal and Installation of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



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34 (L) - 35 (P)



OK or NG

OK >> Replace front air control.

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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



[CAN] UKS001H5

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Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P)

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

: Approx. 54 - 66 Ω

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.



UKS001H9

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2. Disconnect the negative battery terminal.	
3. Check terminals and connector of IPDM E/R for damage, bend a and harness side).	nd loose connection (control module side
OK or NG	
OK >> GO TO 2. NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect IPDM E/R connector.	
 Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P). 	
39 (L) - 40 (P) : Approx. 108 - 132 Ω	
OK or NG	
OK >> Replace IPDM E/R.	
NG >> Repair harness between IPDM E/R and harness con- nector E152.	
CAN Communication Circuit Chook	PKIA8141E
1. CHECK CONNECTOR	UKS001HB

1. Turn ignition switch OFF.

IPDM E/R Circuit Check

1. CHECK CONNECTOR

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
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

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2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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 LAN-300, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" .
- NG >> Repair 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-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON • AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 152





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Data link connector

UKS001HC

UKS001HD

System Description

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

Component Parts and Harness Connector Location



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[CAN]



BKWA0148E



[CAN]



LAN-CAN-29



BKWA0453E

[CAN]



Work Flow

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

(Example)	NISSAN		SELECT SYSTEM				
			ENGINE				
	CONSULT- II	A/T					
			AIR BAG				
	ENGINE		BCM				
	START (NISSAN BASED VHCL)		METER A/C AMP				
	START (RENAULT BASED VHCL)		in Liter to the				
	SUB MODE						
	LIGHT COPY		BACK LIGHT COPY	PKIA2093E			

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
(=,	WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
	······	F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIA	G MODE	CAN DIAG SUPPORT MNTR
	WORK SU	PPORT	ENGINE PRSNT
	SELF-DIAG F DATA MON	RESULTS NITOR	INITIAL DIAG OK TRANSMIT DIAG OK TCM OK VDC/TCS/ABS OK
	CAN DIAG SUP	PORT MNTR	METER/M&A OK ICC UNKWN BCM/SEC OK IPDM E/R OK
	BACK	Scroll Down	AWD/4WD/e4WD UNKWN PRINT Scroll Down MODE BACK LIGHT COPY

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-307, "CHECK SHEET"</u>.
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>307, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-309</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

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

Check sheet table)										
			CAN DIAG SUPPORT MNTR								
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	_	UNKWN	UNKWN	
DIFF LOCK		NG	UNKWN	UNKWN	-		-	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	—	_	UNKWN
HVAC	No indication		UNKWN	UNKWN	_		-	UNKWN	-	UNKWN	
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-	-	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	—	UNKWN	-	
IPDM E/R	No indication		UNKWN	UNKWN	-	-	—	UNKWN	-	—	—

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-323</u>, "Circuit Check Between <u>TCM and Differential Lock Control Unit</u>".

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Tranamit				Receive	diagnosis			
SELECT STOT	LIN SCIECT	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	—					UNKAVN
A/T		NG	UNKWN	UNKWN	-			-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN		-		-	-	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	_	_	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	—	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN			-	—	_	UNKWN	_
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	_
IPDM E/R	No indication		UNKWN	UNKWN	-	-	-	UNKWN	-	_	



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Check harness between differential lock control unit and data link connector. Refer to <u>LAN-324</u>, "Circuit Check <u>Between Differential Lock Control Unit and Data Link Connector</u>".

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
SELECT STOT	EWBORCON	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN			UNKOVN
A/T	—	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN		-
DIFF LOCK		NG	UNKWN	UNKWN	-	-		-	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN		-		UNKWN	-	_	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	—	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN		-	—	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKIWN	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-		_	UNKWN	-		_



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Case 3

А Check harness between data link connector and IPDM E/R. Refer to LAN-325, "Circuit Check Between Data Link Connector and IPDM E/R" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Tranamit				Receive	diagnosis			
	LW Screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN		UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN	UNKWN	-	-	-		UNKWN	UNKWN	
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		-	-	-	-	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	UNK	-	-	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	_	UNKWN	_		-



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Check ECM circuit. Refer to LAN-326, "ECM Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
OLLEOT OTOT	LIN BOICEN	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	—	NG		_	UNKWN	-	UNKWN	UNKWN			UNKON
A/T	—	NG	UNKWN		-	—	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN		-	-		-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN		-	-	UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	—	_	UNKWN	-
ABS	-	NG	UNKWN		UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN	-			UNKWN	-		



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Case 5

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Check TCM circuit. Refer to LAN-326, "TCM Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
SELECT CTOT	LIN BOICCH	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	—	UNK	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN		-		UNKWN	_			—
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	_	-	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	-	-	_	—	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKIWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	—	-	UNKWN	-		-



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Check differential lock control unit circuit. Refer to LAN-327, "Differential Lock Control Unit Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	_	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	-	—	UNKWN		UNKWN	UNKWN	-
DIFF LOCK		NG	UNKAVN	UNKWN	-	-		-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	—	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN		-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	_	UNKWN	-		_



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Case 7

Check combination meter circuit. Refer to LAN-327, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
	LINISOICOIL	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK		NG	UNKWN	UNKWN	-		-	-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-			-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—		-	UNKWN	-	UNKWN	ł
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	-	-	-	UNKWN	-
ABS	I	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	1
IPDM E/R	No indication	_	UNKWN	UNKWN	-	—	-	UNKWN	-	_	-



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Check BCM circuit. Refer to LAN-328, "BCM Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
SELECT STOT		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/I
ENGINE	-	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-	-		-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-		-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	—	-		UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN		-
IPDM E/R	No indication	_	UNKWN	UNKWN	—		-	UNKWN	-		_



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Case 9

Check data link connector circuit. Refer to LAN-328, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	UNKWN	—
DIFF LOCK		NG	UNKWN	UNKWN	—		-	-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	—		UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	-	-	-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-		-	UNKWN	_		



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Check front air control circuit. Refer to LAN-329, "Front Air Control Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	-	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-	-		-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	_	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN	-		_	UNKWN	—		_



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Case 11

Check transfer control unit circuit. Refer to LAN-329, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
OLLEOF OTOM	LINI SOICCIT	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN		UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	—	-	UNKWN	_	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN	UNKWN	—		_	-	UNKWN	UNKWN	
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKOVN		-	-	_		
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	
IPDM E/R	No indication	_	UNKWN	UNKWN		-	-	UNKWN	_		



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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-330</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
OLLEOT OTOT	EWBORCON	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	-	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN
A/T	—	NG	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN	UNKWN	-	-		-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-		-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-			-
ABS	-	N			UNK	UNKWN	-	-	UNKWN		-
IPDM E/R	No indication		UNKWN	UNKWN	-		_	UNKWN	-		



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Case 13

Check IPDM E/R circuit. Refer to LAN-330, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR					
SELECT SYST	EM screen	Initial	Tranamit	Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	/TCS BS IPDM E/R		
ENGINE	-	NG	UNKWN	—	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	-		UNKWN	—	UNKWN	UNKWN	-		
DIFF LOCK	-	NG	UNKWN	UNKWN	-		-	-	UNKWN	UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	_		UNKWN	—	-		UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN		-	-	—	UNKWN	-		
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	—			UNKWN	_		-		



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Check CAN communication circuit. Refer to LAN-331, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR					
SELECT SYSTEM screen		Initial	Transmit diagnosis	Receive diagnosis									
		diagnosis		ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG		-		-	UNKWN	UNKWN	UNKWN		UNKWN		
A/T	—	NG	UNKWN		-	-	UNKWN	-	UNKWN	UNKWN	-		
DIFF LOCK	-	NG		UNKWN	-	-		-	UNKWN	UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-		UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	—	-	UNKWN	-	UNKWN	-		
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-		-			-		
ABS	-	N				UNKWN		-	UNKWN	-	-		
IPDM E/R	No indication		UNKWN	UNKWN			-	UNKWN			_		

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-331</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

						CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Tranemit	Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_		-	UNKWN	UNKWN	UNKWN		UNKWN		
A/T	—	NG	UNKWN	UNKWN	—	-	UNKWN	-	UNKWN	UNKWN	—		
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	—	-	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-		-		
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	-	-			-		
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	_	UNKWN	_	_		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	-	UNKWN	-				

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Case 16

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-331, "IPDM E/R Ignition Relay А Circuit Check" .

	CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial	Transmit	Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE		NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN		—	UNKWN	—	UNK	UNKWN	-	
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	_	-	UNKWN	UNKWN		
BCM	No indication	NG	UNKWN	UNKWN	_	—	UNKWN	-	—	—	UNKWN	
HVAC	No indication	—	UNKWN	UNKWN		—	1	UNKWN	-	UNKWN	I	
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	_	
ABS	-	NG	UNKWN		UNKWN	UNKWN	-	-	UNKWN	-	1	
IPDM E/R	No indication		UNKWN	UNKWN	-	-	_	UNKWN	-		_	

Circuit Check Between TCM and Differential Lock Control Unit 1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.

BAT A/T assembly connector Harness connector 3 11 12 8 12, 11 3,8 Ω PKIA6831E

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L)
 - 11 (P) 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).
 - 2 (L) 5 (L)
 - 1 (P) 4 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-306, "Work Flow" .
- NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Data Link Connector UKS001HJ

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect differential lock control unit connector and harness connector B69. 1.
- Check continuity between differential lock control unit harness 2. connector B77 terminals 5 (L), 4 (P) and harness connector B69 terminals 51J (L), 52J (P).

5 (L) - 51J (L) 4 (P) - 52J (P)

OK or NG

OK >> GO TO 3. NG >> Repair harness.



: Continuity should exist.

: Continuity should exist.

BAT BAT Differential lock control unit Harness connector connector 2 1 Ω PKIA9746E
$\overline{\mathbf{3.}}$ check harness for open circuit

Check continuity between harne 52J (P) and data link connector	ess connector M40 terminals 51J (L), M22 terminals 6 (L), 14 (P).	
51J (L) - 6 (L)	: Continuity should exist.	
52J (P) - 14 (P)	: Continuity should exist.	
OK or NG	-	SMJ harness connector
OK >> Connect all the con	nectors and diagnose again. Refer to	SMJ O CONNECTOR 6, 14
LAN-306, "Work Flo	<u>ow"</u> .	<u>51J, 52J</u>
NG >> Repair harness.		
		PKIA6834E
Circuit Check Between	Data Link Connector and I	
1. CHECK CONNECTOR		
1. Turn ignition switch OFF.		
2. Disconnect the negative bar	ttery terminal.	
 Check following terminals a harness side). 	and connectors for damage, bend ar	nd loose connection (connector side and
- Harness connector M31		
- Harness connector E152		
OK or NG		
OK >> GO TO 2.		
NG >> Repair terminal or c	connector.	
2. CHECK HARNESS FOR O		
1. Disconnect harness connect	otor M31.	
2. Check continuity between	data link connector M22 terminals 6	
(L), 14 (P) and harness cor (P).	nnector M31 terminals 31G (L), 42G	
	· Continuity should exist	Data link connector
6(L) - 31G(L)	: Continuity should exist.	
14 (P) - 42G (P)	: Continuity should exist.	
<u>OK or NG</u>		31G, 42G
OK >> GO 10 3.		Ω
NG >> Repair namess.		
		PKIA6835E
3. CHECK HARNESS FOR O	PEN CIRCUIT	
1. Disconnect IPDM E/R conn	ector.	
2. Check continuity between	harness connector E152 terminals	
31G (L), 42G (P) and IPDN nals 39 (L), 40 (P).	I E/R harness connector E122 termi-	
31G (L) - 39 (L)	: Continuity should exist.	IPDM E/R connector
42G (P) - 40 (P)	: Continuity should exist.	SMJ harness connector
OK or NG		SMJ O CONNECTOR
OK >> Connect all the con	nectors and diagnose again. Refer to	
LAN-306, "Work Flo	$\frac{1}{2}$.	

NG >> Repair harness.

PKIA8140E

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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Differential Lock Control Unit Circuit Check	UK\$0020.
1. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of differential lock control unit 	for damage, bend and loose connection
(control unit side and harness side). <u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector	
2. CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect differential lock control unit connector.	
 Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P). 	
5 (L) - 4 (P) : Approx. 54 - 66 Ω	Differential lock control unit connector
OK or NG OK >> Replace differential lock control unit. NG >> Repair harness between differential lock control unit and harness connector B75.	
	PKIA9748E
Combination Meter Circuit Check 1. CHECK CONNECTOR	PKIA9748E UKS001HN
Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF.	PKIA9748E UKS001HN
Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal.	UKS001HA
 Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage and harness side). 	PKIA9748E UKS001HM
 Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage and harness side). OK or NG 	PKIA9748E UKS001HA
 Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	e, bend and loose connection (meter side
 Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	e, bend and loose connection (meter side
 Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage and harness side). OK or NG OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect combination meter connector. 	e, bend and loose connection (meter side
 Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage and harness side). OK or NG OK or NG Son >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect combination meter connector. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P). 	e, bend and loose connection (meter side
 Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage and harness side). OK or NG OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P). 11 (L) - 12 (P) : Approx. 54 - 66 Ω 	e, bend and loose connection (meter side
 Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect combination meter connector. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P). In (L) - 12 (P) Approx. 54 - 66 Ω 	e, bend and loose connection (meter side
 Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage and harness side). OK or NG OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect combination meter connector. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P). 11 (L) - 12 (P) : Approx. 54 - 66 Ω OK or NG OK >> Replace combination meter. NG >> Repair harness between combination meter and data link connector. 	e, bend and loose connection (meter side

BCM Circuit Check

1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

1.

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-306, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



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1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect front air control connector. 1. 2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P). 34 (L) - 35 (P) : Approx. 54 - 66 Ω Front air control connector OK or NG OK >> Replace front air control. NG >> Repair harness between front air control and data link connector. Ω PKIA8136E Transfer Control Unit Circuit Check UKS001HR 1. CHECK CONNECTOR 1. Turn ignition switch OFF. Disconnect the negative battery terminal. 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side). OK or NG OK >> GO TO 2.

NG >> Repair terminal or connector.

Front Air Control Circuit Check

1. CHECK CONNECTOR

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



[CAN]

UKS001HT

ECM

1.

2.

- A/T assembly
- Differential lock control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

6 (L) - 14 (P)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-332, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG

>> Repair harness.



UKS001HV

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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .



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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 122
IPDM E/R	39 - 40	100 - 132



[CAN]

System Description

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

Component Parts and Harness Connector Location



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[CAN]



BKWA0152E

[CAN]



[CAN]

LAN-CAN-32



BKWA0456E

[CAN]



Work Flow

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[CAN]

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	TS
	WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS		0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		E.	F.DATA
	Scroll Down	ERASE PR	INT
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" 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 <u>LAN-339</u>, "CHECK SHEET".
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-339</u>, "CHECK SHEET".

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-342</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

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

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive	diagnosis			
	LINISCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	—	-	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-		—	—	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	_	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	—	-	UNKWN	_	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—		-	_	UNKWN	_
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	—	-	-

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM D E F

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-358</u>, "Circuit Check Between <u>TCM and Differential Lock Control Unit"</u>.

						CAN DIA	G SUPPOI	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN		UNKWN				UNK		
A/T	-	NG	UNKWN	UNKWN	—	—	UNKWN	—		UNKOVN	—		
DIFF LOCK	-	NG	UNKWN	UNKWN	1	—	-	-	UNKWN	UNKWN	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	-	-		
ВСМ	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-		UNKWN		
HVAC	No indication	-	UNKWN		_		-	UNKWN	-	UNKWN	-		
ALL MODE AWD/4WD		NG	UNKWN	UNKWN			-			UNKWN	-		
ABS	<u> </u>	NG	UNKWN	UNKWN	UNKWN	UNKWN	-		UNKWN	<u> </u>	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	UNKWN	-	_	-		
									······		PKIB6697E		



Check harness between differential lock control unit and driver seat control unit. Refer to <u>LAN-359</u>, "Circuit <u>A</u> <u>Check Between Differential Lock Control Unit and Driver Seat Control Unit</u>".

				CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis										
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	—	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN			UNKIVN			
A/T	_	NG	UNKWN	UNKWN	-		UNKWN		UNKWN	UNK				
DIFF LOCK	_	NG	UNKWN	UNKWN	-		-	-	UNKWN					
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	_	-			
BCM	No indication	NG	UNKWN		-	-	UNKWN	-	-	-	UNKWN			
HVAC	No indication	-	UNKWN		—		-	UNKWN	—	UNKWN	_			
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-			UNKWN				
ABS	<u> </u>	NG	UNKWN	UNKWN		UNKWN	-		UNKWN	-	<u> </u>			
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	_				



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[CAN]

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-360</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

						CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
0000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	—	NG	UNKWN	-	UNKWN	—	UNKWN		UNKWN		UNKIN		
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	-		UNK	-		
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-			-		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	-	-		
ВСМ	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	-	UNKWN		
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	1	UNKWN	-		
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-	-	-	UNKWN			
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN		-	UNKWN	-			
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	-	-		



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Case 4

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-360, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

				CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis										
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	—	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN		UNKIN			
A/T		NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNK				
DIFF LOCK	_	NG	UNKWN	UNKWN	-		-	-	UNKWN					
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN		UNKWN	UNKWN	-	_				
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	-	UNKWN			
HVAC	No indication	—	UNKWN	UNKWN			-	UNKWN	-	UNKWN				
ALL MODE AWD/4WD	<u> </u>	NG	UNKWN	UNKWN			-	-	-	UNKWN				
ABS	<u> </u>	NG	UNKWN	UNKWN		UNKWN	-	-	UNKWN	-	<u></u>			
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	-				



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Check ECM circuit. Refer to LAN-361, "ECM Circuit Check" .

			CAN DIAG SUPPORT MNTR												
SELECT SYST	FM screen	Initial	Transmit		Receive diagnosis										
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F				
ENGINE		NG	UNKWN	-	UNK	—	UNKWN			UNKWN	UNKIN				
A/T	—	NG	UNKWN	UNKWN	-	-	UNKWN	-	UNKWN	UNKWN	-				
DIFF LOCK	—	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	-				
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	-	-				
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	-	UNKWN				
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-				
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-	_	-	UNKWN					
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-		UNKWN	-	_				
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	_	-				



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Case 6

Check TCM circuit. Refer to LAN-362, "TCM Circuit Check" .

						CAN DIA	g Suppor	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit		_		Receive	diagnosis		_	
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNK	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	-		UNKWN	_	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	—	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	—
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	_		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	_	_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN					UNKWN	
ABS		NG	UNKWN	UNKWN		UNKWN		-	UNKWN		<u> </u>
IPDM E/R	No indication	-	UNKWN	UNKWN		-	-	UNKWN		-	



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Check differential lock control unit circuit. Refer to LAN-362, "Differential Lock Control Unit Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis		VDC/TCS /ABS UNKWN UNKWN UNKWN UNKWN UNKWN	
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	1	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	-	UNKWN	UNKWN	—
DIFF LOCK	I	NG	UNKWN	UNK	-	—	-	-		UNK	-
AUTO DRIVE POS.	No indication	NG	UNKWN	1	UNKWN		UNKWN	UNKWN	-	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_		-	UNKWN	-		-
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Case 8

Check driver seat control unit circuit. Refer to LAN-363, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis		-	
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-			-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-		_
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	_	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN					UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN		-	UNKWN		
IPDM E/R	No indication	-	UNKWN	UNKWN	-			UNKWN	-	-	_



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Check combination meter circuit. Refer to LAN-363, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN		UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	—	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN		UNKWN	UNKWN	-	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-			UNKWN	
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-		UNKWN	<u> </u>	
IPDM E/R	No indication	-	UNKWN	UNKWN	_		-	UNKWN	-		-
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Case 10

Check BCM circuit. Refer to LAN-364, "BCM Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK		NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	-
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	—		UNKWN
HVAC	No indication	—	UNKWN	UNKWN			_	UNKWN	_	UNKWN	_
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN			-	-	UNKWN	-
ABS	<u> </u>	NG	UNKWN	UNKWN	UNKWN	UNKWN			UNKWN		-
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-		-



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Check data link connector circuit. Refer to LAN-364, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	1	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	-
DIFF LOCK	I	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	1	UNKWN	UNKWN	-	1	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	1	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-		—	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_		-	UNKWN	-		-
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Case 12

Check front air control circuit. Refer to LAN-365, "Front Air Control Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	1	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—		-	UNKWN	_	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		—	-		UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN		-
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	_	_	_
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Check transfer control unit circuit. Refer to LAN-365, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
	LIN Soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN		UNKWN		UNKWN	UNKWN	UNK	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	—	UNKWN	-	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-	UNKOVN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN		UNKWN	UNKWN	-	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN		UNKWN		-			UNK	
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-		UNKWN	<u> </u>	
IPDM E/R	No indication	-	UNKWN	UNKWN	_		-	UNKWN	-		-
											PKIB6709E



Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-366, "ABS Actuator and Electric Unit</u> <u>(Control Unit) Circuit Check"</u>.

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	FM screen	Initial	Initial agnosis diagnosis - NG UNKWN - NG UNKWN - NG UNKWN - NG UNKWN - NG - UNKWN - UNKWN - NG - UNKWN - UNKWN - UNKWN - NG - UNKWN - UNKWN - NG - UNKWN - UNKWN - NG - UNKWN - UNKWN - UNKWN - NG - UNKWN - UNKWN -				Receive	diagnosis			
0000000000	LIN Soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-		—	-	UNKWN	UNK	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	_	_
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	-	UNKWN
HVAC	No indication		UNKWN	UNKWN			—	UNKWN	-	UNKWN	_
ALL MODE AWD/4WD	<u> </u>	NG	UNKWN	UNKWN	UNKWN		-	-	-	UNK	-
ABS		N	UNKWN	UNKWN			-	_		-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	-	-



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Check IPDM E/R circuit. Refer to LAN-366, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
01101010101		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	-	NG	UNKWN	1	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	—	UNKWN	_	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	1	UNKWN		UNKWN	UNKWN	-	-	-
BCM	No indication	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	-	UNKWI
HVAC	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN		-	_		UNKWN	_
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-		_



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Case 16

Check CAN communication circuit. Refer to LAN-367, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
000000000		diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG		-		—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		UNKWN	-	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN		-	—	-	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	1	_	UNKWN	-	-	-	UNKWN
HVAC	No indication	_	UNKWN	UNKWN	1	_	_	UNKWN	—	UNKWN	_
ALL MODE AWD/4WD		NG		UNKWN				-		UNKWN	
ABS		N/				UNKWN			UNKINN		<u> </u>
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-		UNKWN	-		

Case 17

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-368</u>, "IPDM E/R Ignition Relay <u>G</u> <u>Circuit Check</u>".

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
011101010101		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-			UNKWN	UNKWN	UNKWN		UNKWN
A/T	_	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	-	-	UNKWN		-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	-
BCM	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—		_	UNKWN	-		-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN			-	-		-
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN		_	UNKWN	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_			UNKWN	_	_	-

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-368, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	1	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		UNKWN	-	UNK	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	—	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	UNKWN	-	-	-
всм	No indication	NG	UNKWN	UNKWN	-		UNKWN	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		-	UNKWN	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN					UNKWN	
ABS	_	NG	UNKWN		UNKWN					-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-			UNKWN	_		_

Circuit Check Between TCM and Differential Lock Control Unit 1. CHECK CONNECTOR

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PKIB6714E

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

: Continuity should exist. : Continuity should exist.

OK or NG

- >> GO TO 3. OK NG
 - >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



BAT

connector

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Differential lock control unit

4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).
 - 2 (L) 5 (L)
- 1 (P) 4 (P)
- : Continuity should exist.

BAT

Harness connector

: Continuity should exist.

OK or NG

- >> Connect all the connectors and diagnose again. Refer to OK LAN-338, "Work Flow" .
- NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

- 1. CHECK HARNESS FOR OPEN CIRCUIT
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect differential lock control unit connector and harness connector B37. 3.
- 4. Check continuity between differential lock control unit harness connector B77 terminals 5 (L), 4 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 5 (L) 15 (L)
 - 4 (P) 14 (P)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow" .
- NG >> Repair harness.



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Revision: October 2004

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Circuit Check Between Driver Seat Control Unit and Data Link Connector

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L) 52J (P) - 14 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-338, "Work Flow".

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

UKS00114

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-360
2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect harness connector M31. 2. Check continuity between data link connector M22 terminals 6 (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector : Continuity should exist. 6 (L) - 31G (L) 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. PKIA6835E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. Check continuity between harness connector E152 terminals 2. 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT BA nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 42G (P) - 40 (P) 4039 : Continuity should exist. SMJ CONNECTOR OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-338, "Work Flow" . NG >> Repair harness. PKIA8140E ECM Circuit Check UK\$00115 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

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1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Differential Lock Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

- 1. Disconnect differential lock control unit connector.
- 2. Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P).

5 (L) - 4 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace differential lock control unit.
- NG >> Repair harness between differential lock control unit and harness connector B75.



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Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) - 19 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-363

- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "<u>Removal and Installa-</u> tion of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

UKS00119



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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (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) and harness connector E152.

IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: **Approx. 108 - 132** Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

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, discon-
- ECM
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT



3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

: Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to <u>LAN-368, "ECM/</u> <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>.
- NG >> Repair 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-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132

ECM and IPDM E/R

LKIA0037E

Data link connector

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UKS001IH

CAN SYSTEM (TYPE 12)

System Description

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

Component Parts and Harness Connector Location



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CAN SYSTEM (TYPE 12)

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[CAN]





BKWA0459E

CAN SYSTEM (TYPE 12)



Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)	METEROVOVAN	
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "HAVC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE		SELF-DIAG RESUL	TS
(WORK SUPPORT	_	DTC RESULTS	TIME
	SELF-DIAG RESULTS		CAN COMM CIRCUIT	0
	DATA MONITOR		(01000)	
	DATA MONITOR (SPEC)			
	CAN DIAG SUPPORT MNTR			
	ACTIVE TEST			
	······		F.	F.DATA
	Scroll Down		ERASE PRI	INT
	BACK LIGHT COPY	N	NODE BACK LIGHT	COPY PKIA826

 Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" 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 <u>LAN-376, "CHECK SHEET"</u>.
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-376, "CHECK SHEET"</u>.

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.
 So 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. Refer to <u>AV-148</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-376</u>. <u>"CHECK SHEET"</u>.

LAN-374

CAN SYSTEM (TYPE 12)

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8.	Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-376, "CHECK SHEET"</u> .	А
	If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-148</u> , "CAN Communication Line Check".	В
9.	According to the check sheet results (example), start inspection. Refer to <u>LAN-379, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u> .	0
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CHECK SHEET

NOTE:

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

Check sheet table		1				CAN							
	1.0000	L- 340 - 1	Terrer			UAN	DIAG SU	Receive	diagnosis				
SELECT SYSTEM	vi screen	Initial diagnosis	Transmit diagnosis	ECM	ТСМ	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE		NG	UNKWN	—	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN	UNKWN		_					UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	_	CAN CIRC 5		CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	_	UNKWN	-		-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	_		UNKWN	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	-	—	-	-	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-			UNKWN	-	-	_	
			Attac SELEC	th copy of T SYSTE	M			Attach c SELECT S	opy of SYSTEM				
				CAN DI	A disp AG SUPP	uttach copy blay contro PORT MOI	y of bl unit NITOR ch	eck sheet					
													PKIB6725

CAN SYSTEM (TYPE 12)



CAN SYSTEM (TYPE 12)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-396</u>, "Circuit Check Between <u>TCM and Differential Lock Control Unit</u>".

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	/ screen	Initial	Transmit					Receive of	diagnosis				
OLLEOT OTOTEL	n sereen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	-		-		—			
A/T	-	NG	UNKWN	UNKWN	-	—		-	-	-			-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	-	-	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-		-	UNKWN	-	UNKWN	—	-		-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CINC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-		CAN CIRC 7
BCM	No indication	NG	UNKWN		-	-	UNKWN	-	-	-	-	-	UNKWN
HVAC	No indication	—	UNKWN		-	-	-	UNKWN	UNKWN	—	-	UNKWN	-
ALL MODE AWD/4WD	-	NG	UNKWN			-	—	-	_	-	_	UNKWN	-
ABS	—	NG	UNKWN			UNKWN	-	-	-	—	UNKWN		—
IPDM E/R	No indication	-	UNKWN	UNKWN	-			-	UNKWN		-		



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Check harness between differential lock control unit and driver seat control unit. Refer to <u>LAN-397, "Circuit</u> <u>Check Between Differential Lock Control Unit and Driver Seat Control Unit"</u>.

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	/ screen	Initial	Transmit		_			Receive of	diagnosis		_		
SELECT STOLE	vi scieen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN			—		_	UNK		UNK
A/T	-	NG	UNKWN	UNKWN	-	-		-	-	-	UNKIVN		-
DIFF LOCK		NG	UNKWN	UNKWN	-	-		-		-	UNK		-
AUTO DRIVE POS.	No indication	NG	UNKWN	-		-	UNKWN	-	UNKWN	-	—		-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CINC 3			CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-		CAN CIRC 7
BCM	No indication	NG	UNKWN		-	—	UNKWN	-	-	-	-	—	UNKWN
HVAC	No indication		UNKWN		-	—	-	UNKWN	UNKWN	-	-	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN		UNKWN	-	-	-		-	-	UNKWN	_
ABS	-	NG	UNKWN				-	-		_	UNKWN	-	-
IPDM E/R	No indication		UNKWN	UNKWN	_	—		-	UNKWN	_	-		_



Case 3

А Check harness between driver seat control unit and data link connector. Refer to LAN-398, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

			·····			CAN	DIAG SU	PPORT N	1NTR				
SELECT SYSTEM	M screen	Initial	Transmit					Receive	diagnosis				
	W Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN		UNK	-					
A/T	-	NG	UNKWN	UNKWN	—	-		-	-	_	UNKIN		-
DIFF LOCK	-	NG	UNKWN	UNKWN			-	-		-			
AUTO DRIVE POS.	No inditation	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN		-		
Display control unit		CAN COMM	CAN CIRC 1	CAN CINC 3			CAN CIRC 5		CAN CIRC 2	CAN CIRC 4			CAN CIRC 7
ВСМ	No indication	NG	UNKWN		-	-	UNKWN	-	-	-	-	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	-	-	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN				-		_			UNKWN	
ABS	-	NG	UNKWN		UNKWN	UNKWN	-	-	—	_	UNKWN		—
IPDM E/R	No indication		UNKWN	UNKWN			-	-	UNKWN	-			



Revision: October 2004

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-398</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	/ screen	Initial	Transmit					Receive of	diagnosis				
	a sereen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN		UNKWN	—	UNKWN	—	UNK	UNK	UNKOVN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKIVN		-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	-	-	-	-	UNK		-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	-	-		_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-	-	CAN CINC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	+	-	—	—	
HVAC	No indication	-	UNKWN	UNKWN	-	—	-	UNKWN	UNKWN	-	-		—
ALL MODE AWD/4WD	-	NG	UNKWN				-	—	1	_	-	UNKWN	_
ABS	—	NG	UNKWN					—		_	UNKWN	-	_
IPDM E/R	No inditiation	-	UNKWN	UNKWN	-				UNKWN	-			



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Case 5

Check ECM circuit. Refer to LAN-399, "ECM Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	M screen	Initial	Transmit					Receive of	diagnosis				
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG		-		-		-		—			
A/T	-	NG	UNKWN			-	UNKWN	_	_		UNKWN	UNKWN	
DIFF LOCK	-	NG	UNKWN		-	-	-	-		-	UNKWN	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CINC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-		CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	-	-	—	-		UNKWN
HVAC	No indication	-	UNKWN			-	-	UNKWN	UNKWN	—	-	UNKWN	-
ALL MODE AWD/4WD	-	NG	UNKWN		UNKWN	-	—	-	_	-	-	UNKWN	-
ABS	-	NG	UNKWN		UNKWN	UNKWN	-	-	-	—	UNKWN		—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-		-	UNKWN	-	-	-	



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Check TCM circuit. Refer to LAN-400, "TCM Circuit Check" .

						CAN	DIAG SU	PPORT M	1NTR				
	/ screen	Initial	Tranemit					Receive	diagnosis				
	n screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_		-	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN		-	—		-	-	-	UNKWN		-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	—	—	-	-	-	UNKWN	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-		-	UNKWN	-	UNKWN	-	-	-	-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4			CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	1	-	—	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		-	-	-	-	-	-	UNKWN	-
ABS	—	NG	UNKWN	UNKWN		UNKWN		-	-	-	UNKWN	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—		-	UNKWN	-		—	—
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Case 7

Check differential lock control unit circuit. Refer to LAN-400, "Differential Lock Control Unit Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
	1.001000	la itial	Treesewalt					Receive of	diagnosis				
SELECT STSTEN	screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	-	-	UNKWN	-	-		UNKWN	UNKWN	-
DIFF LOCK	-	NG		UNKWN	-	-	-	-	-	-	UNKIN		-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-			-
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	—		CAN CIRC 5		CAN CIRC 2	CAN CIRC 4			CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—		UNKWN	-	—	—	-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	—	-	UNKWN	-
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN		—	_	-	-	-	UNKWN	-
ABS	—	NG	UNKWN	UNKWN	UNKWN		—	—	—	—	UNKWN		—
IPDM E/R	No indication	-	UNKWN	UNKWN	-		-	—	UNKWN	-	-	-	-



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Check driver seat control unit circuit. Refer to LAN-401, "Driver Seat Control Unit Circuit Check" .

						CAN	DIAG SU	PPORT M	INTR				
	A screen	Initial	Transmit					Receive of	diagnosis				
	a screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN		UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	-	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	—	-	—	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No inditiation	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	-	-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	_		CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	—	-	-		UNKWN
HVAC	No indication		UNKWN	UNKWN	_	-	-	UNKWN	UNKWN	-	_	UNKWN	
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN		-	-	_	_	_	UNKWN	_
ABS		NG	UNKWN	UNKWN	UNKWN	UNKWN		-		-	UNKWN		-
IPDM E/R	No indication	—	UNKWN	UNKWN	—	-	-	-	UNKWN	—	—	-	—



CAN SYSTEM (TYPE 12)

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Case 9

Check combination meter circuit. Refer to LAN-401, "Combination Meter Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	A screen	Initial	Transmit		_			Receive of	diagnosis				
	W Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	-	UNKWN	—	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-		-	-	—	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	-	-	+	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN		-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CINC 5		CAN CIRC 2	CAN CIRC 4	-		CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	-		-	-	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN		-	—	UNKWN	UNKWN		-	UNKWN	
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-		_	-	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-		UNKWN		—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	—	—	UNKWN	—	-	—	



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Check display control unit circuit. Refer to LAN-402, "Display Control Unit Circuit Check" .

SELECT SYSTEM						GAN	DIAG SU	PPORTIN	INTR				
	scroon	Initial	Transmit					Receive of	diagnosis				
	Screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	1	UNKWN	-	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	—	-	-	-	_	-	UNKWN	UNKWN	
AUTO DRIVE POS. in	No ndication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	Ι	-		-
Display control unit	-	CAN COMM	CAN CINC 1	CAM CINC 3	-	—	CAN CINC 5	-	CAN CINC 2	CAN CINC 4	_		CAN CINC 7
BCM in	No ndication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	-	-	UNKWN
HVAC in	No ndication	-	UNKWN	UNKWN	-	-	Ι		UNKWN	-	-	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-		-	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	-	-	UNKWN	-	—
IPDM E/R	No ndication	-	UNKWN	UNKWN	—	—	—	—	UNKWN	—	-	—	—



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Case 11

Check BCM circuit. Refer to LAN-402, "BCM Circuit Check" .

						CAN	DIAG SU	PPORT N	NTR				
SELECT SYSTEM	A screen	Initial	Transmit					Receive of	diagnosis				
SELECT STOLE	vi screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN		UNKWN	_		1	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	—	—	UNKWN	-	-	-	UNKWN	UNKWN	-
DIFF LOCK		NG	UNKWN	UNKWN	-	-	-	-	-	I	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNK	-	-	1	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_		CAN CIRC 5	_	CAN CINC 2	CAN CIRC 4	-		CAN CIRC 7
BCM	No inditation	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	1	-	1	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	—	—	UNKWN		-	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN			_	_		_	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	-		UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	-	UNKOVN		-	_	-



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Check data link connector circuit. Refer to LAN-403, "Data Link Connector Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
	1 ooroon	Initial	Tronomit					Receive of	diagnosis				
SELECT STOLE	n screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN		UNKWN	—	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-		-	-		-	UNKWN	UNKWN	
AUTO DRIVE POS.	No inditation	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	-	-	—	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
ВСМ	No inditation	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	—	—	UNKWN
HVAC	No inditation	-	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN		-	-	-	-		UNKWN	
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN		—		-	UNKWN		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	-	UNKWN	-	-	-	-
													DKID6727E



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Case 13

Check front air control circuit. Refer to LAN-403, "Front Air Control Circuit Check" .

						CAN	DIAG SU	PPORT N	1NTR				
SELECT SYSTEM	A screen	Initial	Transmit					Receive of	diagnosis				
	W Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	—	UNKWN		UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN		—	UNKWN	-	-	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	-	-		-	-	UNKWN	UNKWN	+
AUTO DRIVE POS.	No indication	NG	UNKWN	1	UNKWN	-	UNKWN	—	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	_	CAN CIRC 2	CAN CINC 4	-	-	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	—	-	-	-	1	UNKWN
HVAC	No inditation	-	UNKWN	UNKWN	—	—	_	UNKWN	UNKWN	—	-	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	-	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	-	—	UNKWN	_	—
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	-	-	UNKWN	-	-	-	



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Check transfer control unit circuit. Refer to LAN-404, "Transfer Control Unit Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
	/ screen	Initial	Transmit					Receive of	diagnosis				
	n screen	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	-	UNK	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	-	UNKWN	-	_	-		UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-			-		-		UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	-			-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3			CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4			CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN			UNKWN	-		—			UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		—	UNKWN	UNKWN	—	-	UNKWN	-
ALL MODE AWD/4WD		NG						—				UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-		-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	-	-	UNKWN	-	-	-	-



Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-404</u>, "<u>ABS Actuator and Electric Unit</u> <u>(Control Unit) Circuit Check</u>".

						CAN	DIAG SU	PPORT N	NTR				
SELECT SYSTEM	A screen	Initial	Transmit					Receive of	liagnosis				
OLLEOT OTOTE		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	1	UNKWN		UNKWN
A/T	-	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	-	UNKWN		-
DIFF LOCK		NG	UNKWN	UNKWN	-	-	-	-	-	-	UNKWN		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN		UNKWN		UNKWN	_	-	-	
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5		CAN CIRC 2	CAN CIRC 4			CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	_	-	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	I	-	-	UNKWN	UNKWN	I	-		—
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	-	-	1	1	1	-		-
ABS	-	N		UNKWN			-	-	-	—		-	
IPDM E/R	No indication	_	UNKWN	UNKWN	—	-		-	UNKWN			—	



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Check IPDM E/R circuit. Refer to LAN-405, "IPDM E/R Circuit Check" .

						CAN	DIAG SU	PPORT M	1NTR				
	/ screen	Initial	Tranemit					Receive	diagnosis				
SELECT STOLET	a scieen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN		UNKWN	—	UNKWN	-	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-		-	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN	UNKWN	-		—	-	ł	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	-	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-		CAN CINC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	1	-	-	—	
HVAC	No indication	—	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	-	-	UNKWN	—
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN		-	-	-	—		UNKWN	-
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN		-	_	—	UNKWN	—	-
IPDM E/R	No indition		UNKWN	UNKWN		-		-	UNKWN	-	-		_



Check CAN communication circuit. Refer to LAN-406, "CAN Communication Circuit Check" .

						CAN	DIAG SU	PPORT N	INTR				
SELECT SYSTEM	/ screen	Initial	Transmit					Receive	diagnosis				
011101010101	i corcon	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG		-		-		—	UNKIN	—			
A/T	-	NG	UNKWN		-	-		-	-				
DIFF LOCK	-	NG		UNKWN	-	-	-			-			
AUTO DRIVE POS.	No indivation	NG	UNKWN	-	UNKWN	—	UNKWN	-	UNKWN	-	-		
Display control unit		CAN COMM	CAN CINC 1	CAN CINC 3	-	-	CAN CINC 5	-	CAN CINC 2	CAN CINC 4	_		CAN CINC 7
ВСМ	No inditation	NG	UNKWN	UNKWN	—	—	UNKWN		-	—	_		UNKWN
HVAC	No inditation	-	UNKWN	UNKWN	-	-		UNKWN	UNKWN		-	UNKWN	
ALL MODE AWD/4WD	-	NG				-	-	-	-	-	-		
ABS	-	N				UNKWN	-	-	-	—			
IPDM E/R	No inditation		UNKWN	UNKWN	-			-	UNKWN				

Case 18

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-406</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

						CAN	DIAG SU	PPORT M	1NTR				
	Looroon	Initial	Tronomit					Receive	diagnosis				
	n screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_			UNKWN	—	UNKWN	_	UNKWN		UNKWN
A/T	-	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	UNKWN	UNKWN	—
DIFF LOCK	-	NG	UNKWN	UNKWN	-				-	-	UNKWN	UNK	
AUTO DRIVE POS.	No indication	NG	UNKWN	—			UNKWN	-	UNKWN	—	-		-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	-	CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	-	-	-	—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	-	UNKWN	UNKWN	—	-		—
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	_	UNK	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-			-	UNKWN	-	-	-	-
													PKIB6743E

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-406, "IPDM E/R Ignition Relay</u> <u>Circuit Check"</u>.

						CAN	DIAG SU	PPORT N	INTR				
	d screen	Initial	Transmit					Receive of	diagnosis				
	JI SCIEEN	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER /M&A	DISPLAY	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	-	UNKWN	_	UNKWN		UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	—		-	-	_		UNKWN	_
DIFF LOCK	-	NG	UNKWN	UNKWN	_	-	_	_			UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	-	UNKWN	-	UNKWN	_		—	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	-	CAN CIRC 5	-	CAN CIRC 2	CAN CIRC 4	_		CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	—	UNKWN	-	-	_		—	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	_	—		UNKWN	UNKWN	_	_	UNKWN	—
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	_	_	UNKWN	
ABS	-	NG	UNKWN		UNKWN		_	-	-	_		-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	-	-	UNKWN	_		-	_

Circuit Check Between TCM and Differential Lock Control Unit 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)

```
OK or NG
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- OK >> GO TO 3.
- NG >> Repair harness.



: Continuity should exist.

: Continuity should exist.
3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- 2. Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- Check continuity between harness connector B75 terminals 2 2. (L), 1 (P) and differential lock control unit harness connector B77 terminals 5 (L), 4 (P).
 - 2 (L) 5 (L)

1 (P) - 4 (P)

: Continuity should exist.

: Continuity should exist.

OK or NG

- >> Connect all the connectors and diagnose again. Refer to OK LAN-374, "Work Flow" .
- NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit UKS001IN

- 1. CHECK HARNESS FOR OPEN CIRCUIT
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect differential lock control unit connector and harness connector B37. 3.
- 4. Check continuity between differential lock control unit harness connector B77 terminals 5 (L), 4 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 5 (L) 15 (L)
 - 4 (P) 14 (P)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow" .
- NG >> Repair harness.





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Circuit Check Between Driver Seat Control Unit and Data Link Connector

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

```
NG >> Repair terminal or connector.
```

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.

Harness connector Harness connector 51J, 52J PKIA9744E

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (L), 52J (P) and data link connector M22 terminals 6 (L), 14 (P).

- 51J (L) 6 (L) 52J (P) - 14 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-374, "Work Flow".

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
 - 2. Disconnect the negative battery terminal.
 - 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M31
 - Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect harness connector M31. 2. Check continuity between data link connector M22 terminals 6 В (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector : Continuity should exist. 6 (L) - 31G (L) 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6,14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. D Ω NG >> Repair harness. PKIA6835E Ε 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. F Check continuity between harness connector E152 terminals 2. 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT BA nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 42G (P) - 40 (P) 4039 : Continuity should exist. SMJ CONNECTOR Н OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-374, "Work Flow" . NG >> Repair harness. PKIA8140E **ECM Circuit Check** UKS001IQ 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Differential Lock Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- 2. Check resistance between differential lock control unit harness connector B77 terminals 5 (L) and 4 (P).

5 (L) - 4 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace differential lock control unit.
- NG >> Repair harness between differential lock control unit and harness connector B75.



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Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (L) and 19 (P).

3 (L) - 19 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-401

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



Display Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect display control unit connector.
- 2. Check resistance between display control unit harness connector M95 terminals 25 (L) and 26 (P).

25 (L) - 26 (P)

: Approx. 54 - 66 Ω

OK or NG

OK >> Replace display control unit.

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



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BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

: **Approx. 54 - 66** Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19</u>, "<u>Removal and Installa-</u> tion of <u>BCM</u>".
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2. NG >> Repair terminal

G >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)



OK or NG

- OK >> Diagnose again. Refer to LAN-374, "Work Flow".
- NG >> Repair harness between data link connector and combination meter.



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Front Air Control Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (L) and 35 (P).

34 (L) - 35 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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
 - >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 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
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

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

6 (L) - 14 (P)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-407, "ECM/</u> <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>. NG >> Repair 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 <u>PG-26, "IPDM E/R Power/Ground Circuit Inspection"</u>.
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

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

Component Parts and Harness Connector Location



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Schematic



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BKWA0464E

[CAN]



BKWA0465E



BKWA0466E

Work Flow

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

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS
	WORK SUPPORT	DTC RESULTS TIME.
	SELF-DIAG RESULTS	
	DATA MONITOR	
	DATA MONITOR (SPEC)	
	CAN DIAG SUPPORT MNTR	
	ACTIVE TEST	
		F.F.DATA
	Scroll Down	ERASE PRINT
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "HVAC", "ALL MODE AWD/4WD", "ABS" 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 <u>LAN-414</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", puts a check mark onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-414, "CHECK SHEET"</u>.

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.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-416</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

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CHECK SHEET

NOTE:

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

Check sheet table											
						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
	LIN SUICON	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	-	—	—
ВСМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	-	-	-	UNKWN
HVAC	No indication		UNKWN	UNKWN		-	UNKWN		-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-		-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN		_	UNKWN	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN		-	UNKWN		-	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

PKIB6745E



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

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

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-431, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

						CAN DIA	G SUPPOF	RT MNTR			
	EM screen	Initial	Tronomit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNK	UNKIN	UNKWN
A/T	—	NG	UNKWN	UNKWN		UNKWN	—	-			—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN		-	-	-
всм	No indication	NG	UNKWN		—	UNKWN	—	-	-		UNKWN
HVAC	No indication	-	UNKWN		-	—	UNKWN	—	-	UNKWN	-
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	—			-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN			UNKWN	UNKWN		_
IPDM E/R	No indication	-	UNKWN		-		UNKWN		-		-

PKIB6746E



А Check harness between driver seat control unit and data link connector. Refer to LAN-432, "Circuit Check Between Driver Seat Control Unit and Data Link Connector".

						CAN DIA	AG SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
000000000	EW SOLCON	diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN		
A/T		NG	UNKWN	UNKWN	-	UNKWN	_		UNKWN		-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		_	-	-
BCM	No indication	NG	UNKWN		—	UNKWN	_	-		-	UNKWN
HVAC	No indication	-	UNKWN		-	-	UNKWN	_	-	UNKWN	-
ALL MODE AWD/4WD	-	NG	UNKWN		UNKWN	-	_	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKAVN		-	UNKWN	UNKWN	-	-
IPDM E/R	No indication	-	UNKWN		-	-	UNKWN	-	-	-	-



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-433</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Tranamit				Receive	diagnosis			
522201 5101	LIVI SCICCII	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	1	UNKWN	UNKWN	UNKWN				
A/T		NG	UNKWN	UNKWN	-	UNKWN	-		UNK	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-		-
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—		UNKWN		-		-
ALL MODE AWD/4WD	-	NG	UNKWN		UNKWN	-	-		-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKOVN		-		UNKWN	—	
IPDM E/R	No indication	-	UNKWN	UNKWN		-	UNKWN		-		



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Case 4

Check ECM circuit. Refer to LAN-434, "ECM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive (diagnosis			
000000000		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-		UNK		—	UNKIN		UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-	-	-
ВСМ	No indication	NG	UNKWN		_	UNKWN	—	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		-	UNKWN	
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	_	—		-	UNKWN	—
ABS		NG	UNKWN	UNKWN	UNKWN		-	UNKWN	UNKWN	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-	-



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Check TCM circuit. Refer to LAN-434, "TCM Circuit Check" .

						CAN DIA	G SUPPOF	T MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive of	diagnosis			
000000000		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN			UNK	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	UNKWN		-		_
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	—		-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—		UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN					-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN		—	UNKWN	UNKWN		_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	UNKWN		-	-	-



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Case 6

Check driver seat control unit circuit. Refer to LAN-435, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	T MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive of	diagnosis			
0000000000		diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	-	
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN	-	-	UNKWN	
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	UNKWN	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_		UNKWN	_	-	-	



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Check combination meter circuit. Refer to LAN-435, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
011101		diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-		-
BCM	No indication	NG	UNKWN	UNKWN	—	UNKVN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	—	-		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	UNKWN		-
IPDM E/R	No indication	_	UNKWN	UNKWN		-	UNKWN		-		-



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Case 8

Check BCM circuit. Refer to LAN-436, "BCM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive of	diagnosis			
000000000		diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	UNKWN			UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		-	-	
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-			-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	-	-		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-	-



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Check data link connector circuit. Refer to LAN-436, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOF	T MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-		-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	—	-		-	UNKWN	—
ABS		NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	UNKWN		_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN		-		-



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Case 10

Check steering angle sensor circuit. Refer to LAN-437, "Steering Angle Sensor Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive of	diagnosis			
0000000000			diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	I	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	-	—		-	UNKWN	_
ABS		NG	UNKWN	UNKWN	UNKWN	-	—		UNKWN		_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	-	-	_



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Check front air control circuit. Refer to LAN-437, "Front Air Control Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
01101010101			diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN		UNKWN	—	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		-	-	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	UNKWN	-	-	UNKWN	—
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	—	-		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	UNKWN		-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN		-		-



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Case 12

Check transfer control unit circuit. Refer to LAN-438, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit			_	Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	1	UNKWN	UNKWN	UNKWN		UNK	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKWN	-		UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		-	—	—
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	—	-	UNKWN	_	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN		UNKIVN	-	-		-	UNK	
ABS		NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	UNKWN	—	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN		-	-	



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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-438</u>, "ABS Actuator and Electric Unit (Control Unit) Circuit Check".

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Tronomit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		UNKWN		UNKWN
A/T		NG	UNKWN	UNKWN		UNKWN			UNKWN	UNKWN	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-		
BCM	No indication	NG	UNKWN	UNKWN		UNKWN			-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN		-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN				-	UNKWN	-
ABS		N	UNKWN	UNKWN	UNKIVN	-		UNKWN			
IPDM E/R	No indication	_	UNKWN	UNKWN		-	UNKWN		-		-



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Case 14

Check IPDM E/R circuit. Refer to LAN-439, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPOF	T MNTR			
SELECT SYST	FM screen	Initial	Tronomit				Receive of	diagnosis			
0000000000			diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	
A/T		NG	UNKWN	UNKWN		UNKWN	-	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		-		-
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	-	-	_	-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	UNKWN		_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-	-



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Check CAN communication circuit. Refer to LAN-439, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPOF	T MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/I
ENGINE	—	NG	UNKIVN	_	UNKWN	UNKWN		-		UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	-	UNKWN	-			UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-		-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-		UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD	_	NG			UNKWN		-		-	UNKWN	-
ABS	_	N		UNKWN	UNKWN		-	UNKWN			
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	-	-

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-440</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-		UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	UNKWN		-		_
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-		UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN		-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	—	-		-	UNKWN	-
ABS		NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	UNKWN		_
IPDM E/R	No indication	-	UNKWN	UNKWN			UNKWN		-		-

А Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-440, "IPDM E/R Ignition Relay Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	SELECT SYSTEM screen		Transmit				Receive	diagnosis			
000000000			diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	_	UNKIN	-		UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		-	-	-
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	_	UNKWN
HVAC	No indication	-	UNKWN	UNKWN	-	-	UNKWN	-	-	UNKWN	-
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	—
ABS		NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	UNKWN		—
IPDM E/R	No indication	_	UNKWN	UNKWN		-	UNKWN	-	_	-	-

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (L), 8 (P) and harness connector F33 terminals 12 (L), 11 (P).
 - 3 (L) 12 (L)
 - 8 (P) 11 (P)
- : Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (L), 11 (P) and harness connector E50 terminals 2 (L), 1 (P).
 - 12 (L) 2 (L) 11 (P) - 1 (P)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 (L), 1 (P) and harness connector B37 terminals 15 (L), 14 (P).
 - 2 (L) 15 (L)
- : Continuity should exist.
- 1 (P) 14 (P)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-413, "Work Flow".

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (L), 14 (P) and harness connector B69 terminals 51J (L), 52J (P).
 - 15 (L) 51J (L) 14 (P) - 52J (P)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.


: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

51J (L) - 6 (L)

Check continuity between harness connector M40 terminals 51J (L),

52J (P) and data link connector M22 terminals 6 (L), 14 (P).

Data link connector 52J (P) - 14 (P) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-413, "Work Flow" . Ω NG >> Repair harness. PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS0038O **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. Check continuity between data link connector M22 terminals 6 2. (L), 14 (P) and harness connector M31 terminals 31G (L), 42G BAT (P). TS. Data link connector 6 (L) - 31G (L) : Continuity should exist. 14 14 (P) - 42G (P) : Continuity should exist. 6 SMJ harness connector 6, 14 O CONNECTOR SMJ OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. PKIA6835E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. 2. Check continuity between harness connector E152 terminals 31G (L), 42G (P) and IPDM E/R harness connector E122 termi-BAT nals 39 (L), 40 (P). IPDM E/R connector 31G (L) - 39 (L) : Continuity should exist. SMJ harness connector 40 39 42G (P) - 40 (P) : Continuity should exist. CONNECTOR SMJ OK or NG 31G, 42G 39,40 OK >> Connect all the connectors and diagnose again. Refer to Ω LAN-413, "Work Flow" . NG >> Repair harness. PKIA8140E LAN-433 Revision: October 2004 2005 Titan

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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (L) and 86 (P).

94 (L) - 86 (P)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (L) and 8 (P).

3 (L) - 8 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



[CAN]

	[CAN]
Driver Seat Control Unit Circuit Check 1. CHECK CONNECTOR	UKS0038R
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT	l loose connection (control unit side and
 Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness con- 	
nector P2 terminals 3 (L) and 19 (P). 3 (L) - 19 (P) : Approx. 54 - 66 Ω OK or NG OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and har- ness connector B69.	Driver seat control unit connector
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS00385
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage and harness side). 	, bend and loose connection (meter side

OK or NG

>> GO TO 2. OK

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect combination meter connector. 1.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (L) and 12 (P).

11 (L) - 12 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- Check resistance between BCM harness connector M18 terminals 39 (L) and 40 (P).

39 (L) - 40 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-19, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) - 14 (P)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-413, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



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[CAN]



Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (L) and 2 (P).

1 (L) - 2 (P)

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

: Approx. 54 - 66 Ω

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (L) and 15 (P).

11 (L) - 15 (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) and harness connector E152.



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CAN SYSTEM (TYPE 13)



2. CHECK HARNESS FOR SHORT CIRCUIT

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

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

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

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-440</u>, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION".
- NG >> Repair harness.



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Data link connector

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-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



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