

SECTION

LAN

LAN SYSTEM

A

B

C

CONTENTS

E

<b>CAN</b>		
<b>PRECAUTIONS</b>	<b>5</b>	
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	5	
Precautions When Using CONSULT-II	5	
CHECK POINTS FOR USING CONSULT-II	5	
Precautions For Trouble Diagnosis	5	
CAN SYSTEM	5	
Precautions For Harness Repair	6	
CAN SYSTEM	6	
Maintenance Information	6	
RHD MODELS	6	
LHD MODELS	6	
<b>CAN COMMUNICATION</b>	<b>7</b>	
System Description	7	
CAN Communication Unit	7	
TYPE 1/TYPE 2	8	
TYPE 3/TYPE 4/TYPE 5/TYPE 6	11	
TYPE 7/TYPE 8	13	
TYPE 9/TYPE 10/TYPE 11/TYPE 12	16	
TYPE 13/TYPE 14	18	
<b>CAN SYSTEM (TYPE 1)</b>	<b>20</b>	
System Description	20	
Component Parts and Harness Connector Location	20	
Wiring Diagram — CAN —	21	
Work Flow	23	
CHECK SHEET	24	
CHECK SHEET RESULTS (EXAMPLE)	26	
Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)	37	
ECM Circuit Check	38	
Data Link Connector Circuit Check	39	
Combination Meter Circuit Check	40	
Intelligent Key Unit Circuit Check	41	
EPS Control Unit Circuit Check	42	
BCM Circuit Check	43	
ABS Actuator and Electric Unit (Control Unit) Circuit Check	44	
TCM Circuit Check	45	
IPDM E/R Circuit Check	46	
CAN Communication Circuit Check	47	
IPDM E/R Ignition Relay Circuit Check	50	
Component Inspection	50	
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	50	
<b>CAN SYSTEM (TYPE 2)</b>	<b>51</b>	
System Description	51	
Component Parts and Harness Connector Location	51	
Wiring Diagram — CAN —	52	
Work Flow	54	
CHECK SHEET	55	
CHECK SHEET RESULTS (EXAMPLE)	57	
Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)	67	
ECM Circuit Check	68	
Data Link Connector Circuit Check	69	
Combination Meter Circuit Check	70	
EPS Control Unit Circuit Check	71	
BCM Circuit Check	72	
ABS Actuator and Electric Unit (Control Unit) Circuit Check	73	
TCM Circuit Check	74	
IPDM E/R Circuit Check	75	
CAN Communication Circuit Check	76	
IPDM E/R Ignition Relay Circuit Check	79	
Component Inspection	79	
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	79	
<b>CAN SYSTEM (TYPE 3)</b>	<b>80</b>	
System Description	80	
Component Parts and Harness Connector Location	80	
Wiring Diagram — CAN —	81	
Work Flow	83	
CHECK SHEET	84	
CHECK SHEET RESULTS (EXAMPLE)	86	
Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)	96	
ECM Circuit Check	97	
Data Link Connector Circuit Check	98	

F

G

H

I

J

LAN

L

M

Combination Meter Circuit Check .....	99	Component Parts and Harness Connector Location	165
Intelligent Key Unit Circuit Check .....	100	Wiring Diagram — CAN — .....	166
EPS Control Unit Circuit Check .....	101	Work Flow .....	168
BCM Circuit Check .....	102	CHECK SHEET .....	169
ABS Actuator and Electric Unit (Control Unit) Circuit Check .....	103	CHECK SHEET RESULTS (EXAMPLE) .....	171
IPDM E/R Circuit Check .....	104	Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) .....	180
CAN Communication Circuit Check .....	105	ECM Circuit Check .....	181
IPDM E/R Ignition Relay Circuit Check .....	108	Data Link Connector Circuit Check .....	182
Component Inspection .....	108	Combination Meter Circuit Check .....	183
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION .....	108	EPS Control Unit Circuit Check .....	184
<b>CAN SYSTEM (TYPE 4) .....</b>	<b>109</b>	BCM Circuit Check .....	185
System Description .....	109	ABS Actuator and Electric Unit (Control Unit) Circuit Check .....	186
Component Parts and Harness Connector Location	109	IPDM E/R Circuit Check .....	187
Wiring Diagram — CAN — .....	110	CAN Communication Circuit Check .....	188
Work Flow .....	112	IPDM E/R Ignition Relay Circuit Check .....	191
CHECK SHEET .....	113	Component Inspection .....	191
CHECK SHEET RESULTS (EXAMPLE) .....	115	ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION .....	191
Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) .....	124	<b>CAN SYSTEM (TYPE 7) .....</b>	<b>192</b>
ECM Circuit Check .....	125	System Description .....	192
Data Link Connector Circuit Check .....	126	Component Parts and Harness Connector Location	192
Combination Meter Circuit Check .....	127	Wiring Diagram — CAN — .....	193
EPS Control Unit Circuit Check .....	128	Work Flow .....	195
BCM Circuit Check .....	129	CHECK SHEET .....	196
ABS Actuator and Electric Unit (Control Unit) Circuit Check .....	130	CHECK SHEET RESULTS (EXAMPLE) .....	198
IPDM E/R Circuit Check .....	131	Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) .....	209
CAN Communication Circuit Check .....	132	ECM Circuit Check .....	210
IPDM E/R Ignition Relay Circuit Check .....	135	Data Link Connector Circuit Check .....	211
Component Inspection .....	135	Combination Meter Circuit Check .....	212
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION .....	135	Intelligent Key Unit Circuit Check .....	213
<b>CAN SYSTEM (TYPE 5) .....</b>	<b>136</b>	EPS Control Unit Circuit Check .....	214
System Description .....	136	BCM Circuit Check .....	215
Component Parts and Harness Connector Location	136	ABS Actuator and Electric Unit (Control Unit) Circuit Check .....	216
Wiring Diagram — CAN — .....	137	TCM Circuit Check .....	217
Work Flow .....	139	IPDM E/R Circuit Check .....	218
CHECK SHEET .....	140	CAN Communication Circuit Check .....	219
CHECK SHEET RESULTS (EXAMPLE) .....	142	IPDM E/R Ignition Relay Circuit Check .....	222
Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) .....	152	Component Inspection .....	222
ECM Circuit Check .....	153	ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION .....	222
Data Link Connector Circuit Check .....	154	<b>CAN SYSTEM (TYPE 8) .....</b>	<b>223</b>
Combination Meter Circuit Check .....	155	System Description .....	223
Intelligent Key Unit Circuit Check .....	156	Component Parts and Harness Connector Location	223
EPS Control Unit Circuit Check .....	157	Wiring Diagram — CAN — .....	224
BCM Circuit Check .....	158	Work Flow .....	226
ABS Actuator and Electric Unit (Control Unit) Circuit Check .....	159	CHECK SHEET .....	227
IPDM E/R Circuit Check .....	160	CHECK SHEET RESULTS (EXAMPLE) .....	229
CAN Communication Circuit Check .....	161	Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) .....	239
IPDM E/R Ignition Relay Circuit Check .....	164	ECM Circuit Check .....	240
Component Inspection .....	164	Data Link Connector Circuit Check .....	241
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION .....	164	Combination Meter Circuit Check .....	242
<b>CAN SYSTEM (TYPE 6) .....</b>	<b>165</b>	EPS Control Unit Circuit Check .....	243
System Description .....	165	BCM Circuit Check .....	244
		ABS Actuator and Electric Unit (Control Unit) Circuit	

Check .....	245	CHECK SHEET RESULTS (EXAMPLE) .....	314
TCM Circuit Check .....	246	Circuit Check Between Data Link Connector and	
IPDM E/R Circuit Check .....	247	ABS Actuator and Electric Unit (Control Unit) .....	324
CAN Communication Circuit Check .....	248	ECM Circuit Check .....	325
IPDM E/R Ignition Relay Circuit Check .....	251	Data Link Connector Circuit Check .....	326
Component Inspection .....	251	Combination Meter Circuit Check .....	327
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-		Intelligent Key Unit Circuit Check .....	328
TION .....	251	EPS Control Unit Circuit Check .....	329
<b>CAN SYSTEM (TYPE 9) .....</b>	<b>252</b>	BCM Circuit Check .....	330
System Description .....	252	ABS Actuator and Electric Unit (Control Unit) Circuit	
Component Parts and Harness Connector Location .....	252	Check .....	331
Wiring Diagram — CAN — .....	253	IPDM E/R Circuit Check .....	332
Work Flow .....	255	CAN Communication Circuit Check .....	333
CHECK SHEET .....	256	IPDM E/R Ignition Relay Circuit Check .....	336
CHECK SHEET RESULTS (EXAMPLE) .....	258	Component Inspection .....	336
Circuit Check Between Data Link Connector and		ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-	
ABS Actuator and Electric Unit (Control Unit) .....	268	TION .....	336
ECM Circuit Check .....	269	<b>CAN SYSTEM (TYPE 12) .....</b>	<b>337</b>
Data Link Connector Circuit Check .....	270	System Description .....	337
Combination Meter Circuit Check .....	271	Component Parts and Harness Connector Location .....	337
Intelligent Key Unit Circuit Check .....	272	Wiring Diagram — CAN — .....	338
EPS Control Unit Circuit Check .....	273	Work Flow .....	340
BCM Circuit Check .....	274	CHECK SHEET .....	341
ABS Actuator and Electric Unit (Control Unit) Circuit		CHECK SHEET RESULTS (EXAMPLE) .....	343
Check .....	275	Circuit Check Between Data Link Connector and	
IPDM E/R Circuit Check .....	276	ABS Actuator and Electric Unit (Control Unit) .....	352
CAN Communication Circuit Check .....	277	ECM Circuit Check .....	353
IPDM E/R Ignition Relay Circuit Check .....	280	Data Link Connector Circuit Check .....	354
Component Inspection .....	280	Combination Meter Circuit Check .....	355
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-		EPS Control Unit Circuit Check .....	356
TION .....	280	BCM Circuit Check .....	357
<b>CAN SYSTEM (TYPE 10) .....</b>	<b>281</b>	ABS Actuator and Electric Unit (Control Unit) Circuit	
System Description .....	281	Check .....	358
Component Parts and Harness Connector Location .....	281	IPDM E/R Circuit Check .....	359
Wiring Diagram — CAN — .....	282	CAN Communication Circuit Check .....	360
Work Flow .....	284	IPDM E/R Ignition Relay Circuit Check .....	363
CHECK SHEET .....	285	Component Inspection .....	363
CHECK SHEET RESULTS (EXAMPLE) .....	287	ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-	
Circuit Check Between Data Link Connector and		TION .....	363
ABS Actuator and Electric Unit (Control Unit) .....	296	<b>CAN SYSTEM (TYPE 13) .....</b>	<b>364</b>
ECM Circuit Check .....	297	System Description .....	364
Data Link Connector Circuit Check .....	298	Component Parts and Harness Connector Location .....	364
Combination Meter Circuit Check .....	299	Wiring Diagram — CAN — .....	365
EPS Control Unit Circuit Check .....	300	Work Flow .....	367
BCM Circuit Check .....	301	CHECK SHEET .....	368
ABS Actuator and Electric Unit (Control Unit) Circuit		CHECK SHEET RESULTS (EXAMPLE) .....	370
Check .....	302	Circuit Check Between Data Link Connector and	
IPDM E/R Circuit Check .....	303	ABS Actuator and Electric Unit (Control Unit) .....	380
CAN Communication Circuit Check .....	304	ECM Circuit Check .....	381
IPDM E/R Ignition Relay Circuit Check .....	307	Data Link Connector Circuit Check .....	382
Component Inspection .....	307	Combination Meter Circuit Check .....	383
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-		Intelligent Key Unit Circuit Check .....	384
TION .....	307	EPS Control Unit Circuit Check .....	385
<b>CAN SYSTEM (TYPE 11) .....</b>	<b>308</b>	BCM Circuit Check .....	386
System Description .....	308	ABS Actuator and Electric Unit (Control Unit) Circuit	
Component Parts and Harness Connector Location .....	308	Check .....	387
Wiring Diagram — CAN — .....	309	IPDM E/R Circuit Check .....	388
Work Flow .....	311	CAN Communication Circuit Check .....	389
CHECK SHEET .....	312		

---

IPDM E/R Ignition Relay Circuit Check .....	392	ECM Circuit Check .....	409
Component Inspection .....	392	Data Link Connector Circuit Check .....	410
ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-		Combination Meter Circuit Check .....	411
TION .....	392	EPS Control Unit Circuit Check .....	412
<b>CAN SYSTEM (TYPE 14) .....</b>	<b>393</b>	BCM Circuit Check .....	413
System Description .....	393	ABS Actuator and Electric Unit (Control Unit) Circuit	
Component Parts and Harness Connector Location	393	Check .....	414
Wiring Diagram — CAN — .....	394	IPDM E/R Circuit Check .....	415
Work Flow .....	396	CAN Communication Circuit Check .....	416
CHECK SHEET .....	397	IPDM E/R Ignition Relay Circuit Check .....	419
CHECK SHEET RESULTS (EXAMPLE) .....	399	Component Inspection .....	419
Circuit Check Between Data Link Connector and		ECM/IPDM E/R INTERNAL CIRCUIT INSPEC-	
ABS Actuator and Electric Unit (Control Unit) .....	408	TION .....	419



## PRECAUTIONS

### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS0089Q

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

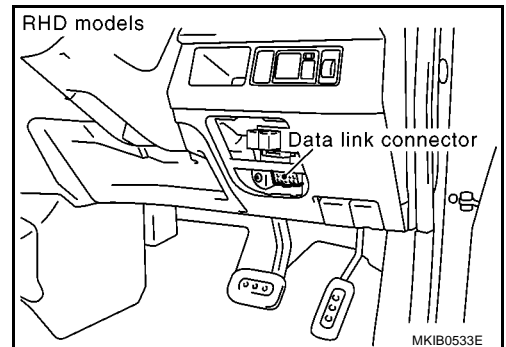
### Precautions When Using CONSULT-II

EKS0073H

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

#### **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?
  - 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.
5. Diagnose CAN communication system. Refer to [LAN-7, "CAN Communication Unit"](#).

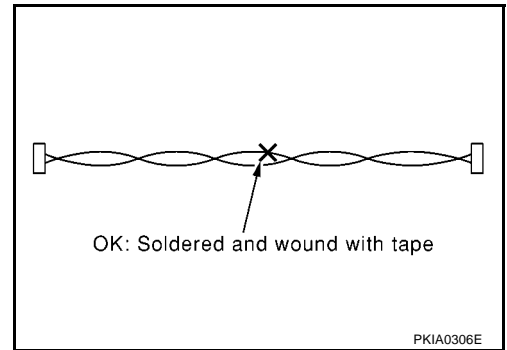
### Precautions For Trouble Diagnosis CAN SYSTEM

EKS0073I

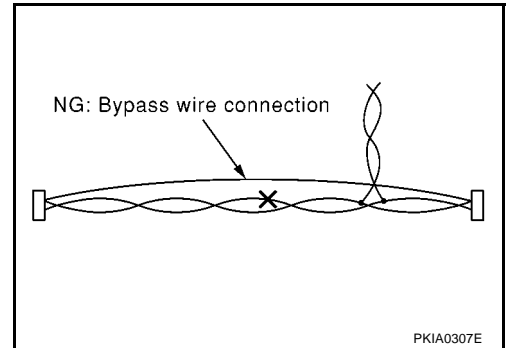
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

## 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.)



## Maintenance Information

If any of following part is replaced, always replace with new\* one.

If it's not (or fail to do so), the electrical system may not be operated properly.

\*: New one means a virgin control unit that has never been energized on-board.

### RHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM
- IPDM E/R
- Combination meter
- EPS control unit

### LHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM

# CAN COMMUNICATION

[CAN]

PF0:23710

## CAN COMMUNICATION

### System Description

EKS007UG

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

EKS007UH

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

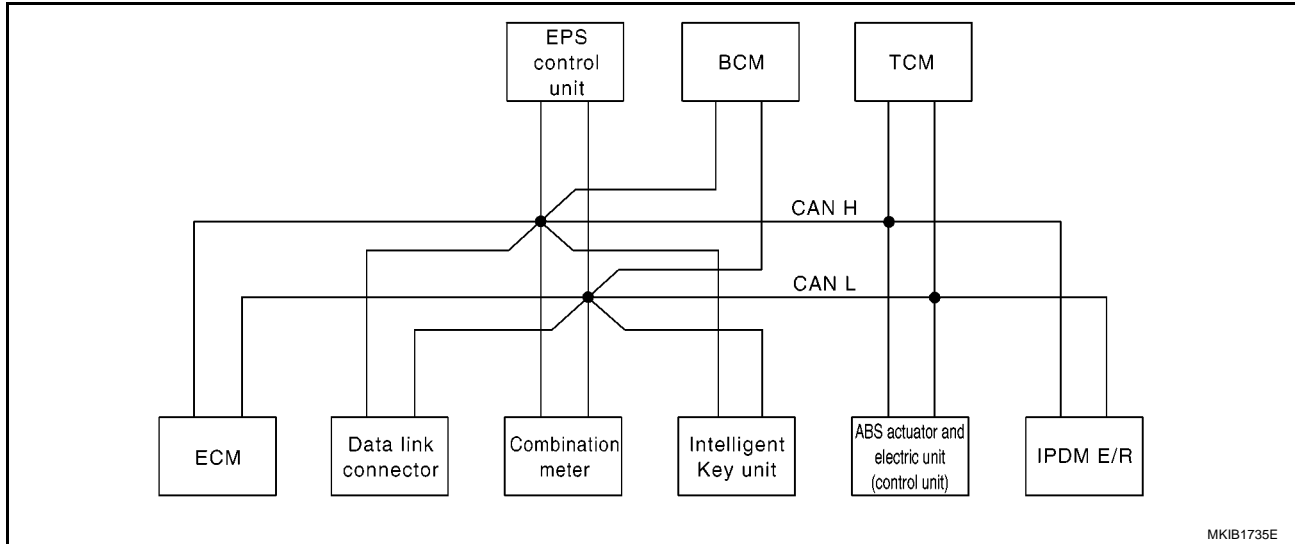
Body type	3door/5door		3door/5door/C+C				3door/5door		3door/5door/C+C				3door/5door	
Axle	2WD													
Engine	CR12DE/CR14DE				HR16DE		CR12DE/CR14DE				HR16DE		K9K	
Handle	LHD/RHD													
Brake control	ABS						ESP						ABS	
Transmission	A/T		M/T				A/T		M/T					
Intelligent Key system	×		×		×		×		×		×		×	
CAN communication unit														
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Intelligent Key unit	×		×		×		×		×		×		×	
EPS control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×					×	×						
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	<a href="#">LAN-8. "TYPE 1/TYPE 2"</a>		<a href="#">LAN-11. "TYPE 3/TYPE 4/TYPE 5/TYPE 6"</a>				<a href="#">LAN-13. "TYPE 7/TYPE 8"</a>		<a href="#">LAN-16. "TYPE 9/TYPE 10/TYPE 11/TYPE 12"</a>				<a href="#">LAN-18. "TYPE 13/TYPE 14"</a>	
CAN system trouble diagnosis	<a href="#">LAN-20. "CAN SYS-TEM (TYP E 1)"</a>	<a href="#">LAN-51. "CAN SYS-TEM (TYP E 2)"</a>	<a href="#">LAN-80. "CAN SYS-TEM (TYP E 3)"</a>	<a href="#">LAN-109. "CAN SYS-TEM (TYP E 4)"</a>	<a href="#">LAN-136. "CAN SYS-TEM (TYP E 5)"</a>	<a href="#">LAN-165. "CAN SYS-TEM (TYP E 6)"</a>	<a href="#">LAN-192. "CAN SYS-TEM (TYP E 7)"</a>	<a href="#">LAN-223. "CAN SYS-TEM (TYP E 8)"</a>	<a href="#">LAN-252. "CAN SYS-TEM (TYP E 9)"</a>	<a href="#">LAN-281. "CAN SYS-TEM (TYP E 10)"</a>	<a href="#">LAN-308. "CAN SYS-TEM (TYP E 11)"</a>	<a href="#">LAN-337. "CAN SYS-TEM (TYP E 12)"</a>	<a href="#">LAN-364. "CAN SYS-TEM (TYP E 13)"</a>	<a href="#">LAN-393. "CAN SYS-TEM (TYP E 14)"</a>

x: Applicable

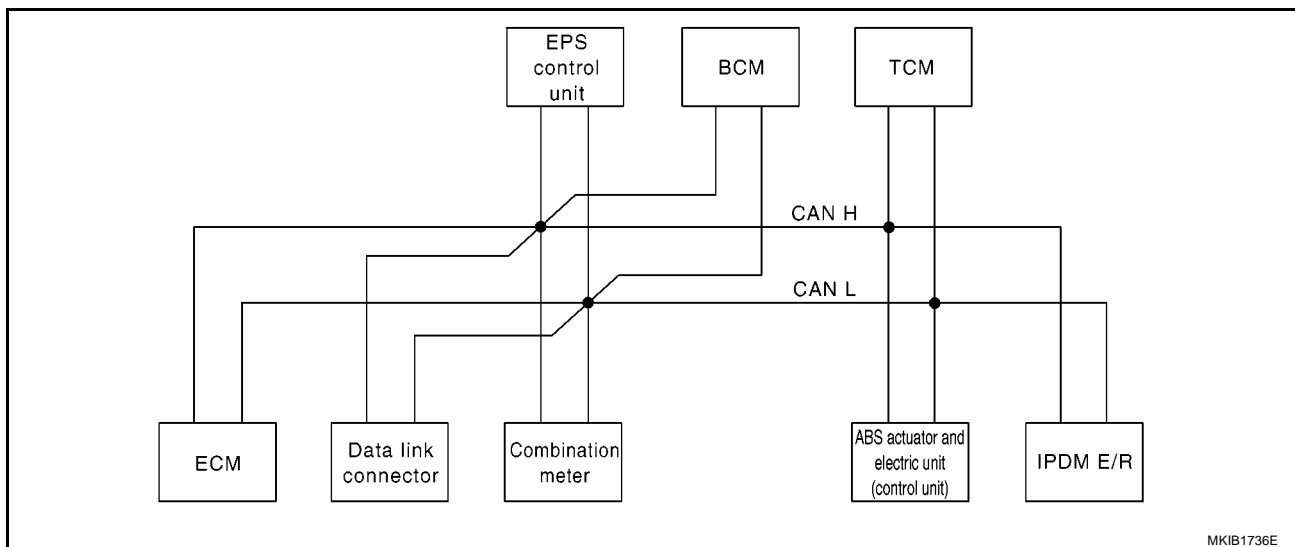
## TYPE 1/TYPE 2

### System diagram

- Type 1



- Type 2



### Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R						
Engine coolant temperature signal	T	R						
A/T self-diagnosis signal	R						T	
Output shaft revolution signal	R						T	
Accelerator pedal position signal	T						R	
Closed throttle position signal	T						R	
Wide open throttle position signal	T						R	
Overdrive control switch signal		T					R	

# CAN COMMUNICATION

[CAN]

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T position indicator signal		R					T	
Stop lamp switch signal		T					R	
O/D OFF indicator signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	R						
Front wiper request signal					T			R
Front wiper stop position signal					R			T
Rear window defogger switch signal					T			R
Rear window defogger control signal	R							T
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
Front fog lamp request signal		R			T			R
Rear fog lamp status signal		R			T			
Headlamp washer request signal					T			R
Door lock/unlock request signal			T		R			
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				

A

B

C

D

E

F

G

H

I

J

LAN

L

M

CAN COMMUNICATION

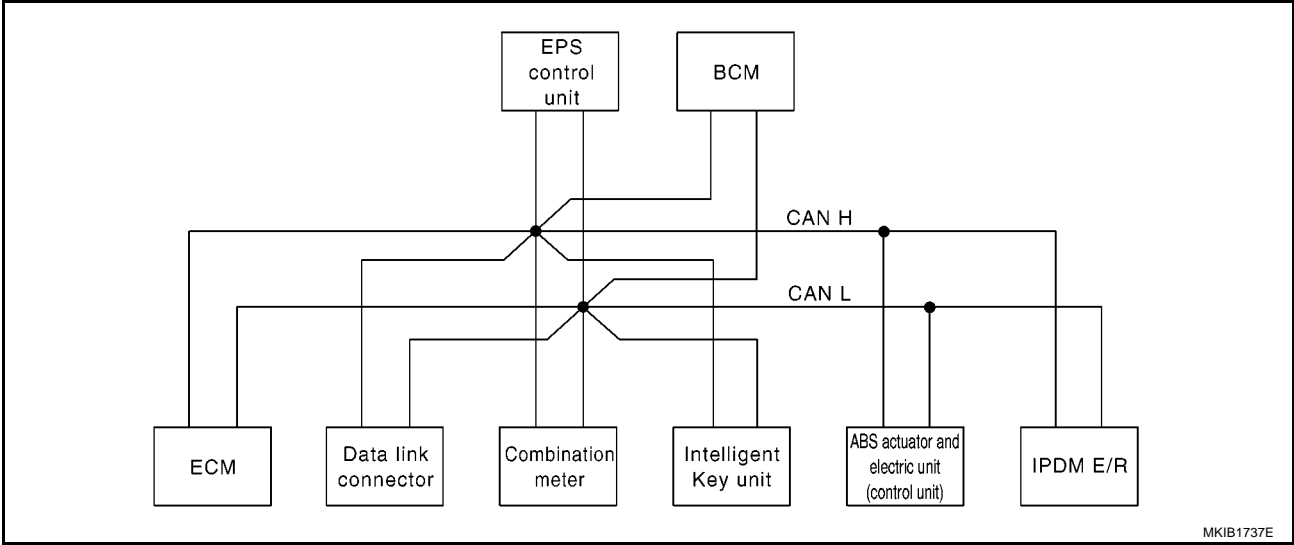
[CAN]

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/C switch signal	R				T			
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

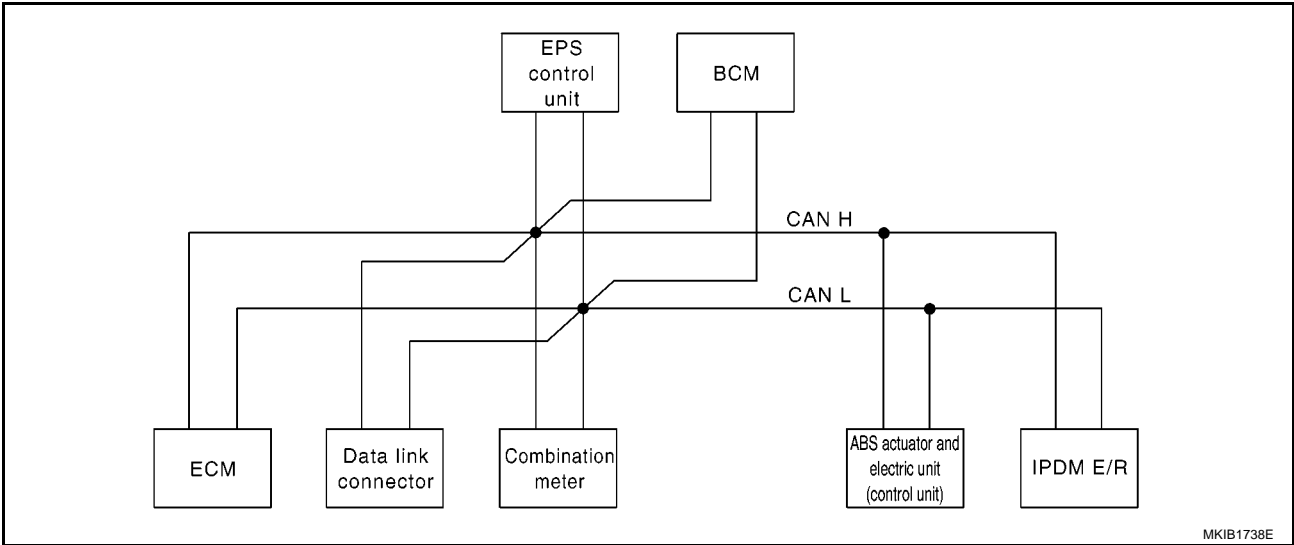
TYPE 3/TYPE 4/TYPE 5/TYPE 6

System diagram

- Type 3/TYpe 5



- Type 4/TYpe 6



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelligent Key unit	EPS con- trol unit	BCM	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Engine speed signal	T	R					
Engine coolant temperature signal	T	R					
Fuel consumption monitor signal	T	R					
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R
Low beam request signal					T		R

# CAN COMMUNICATION

[CAN]

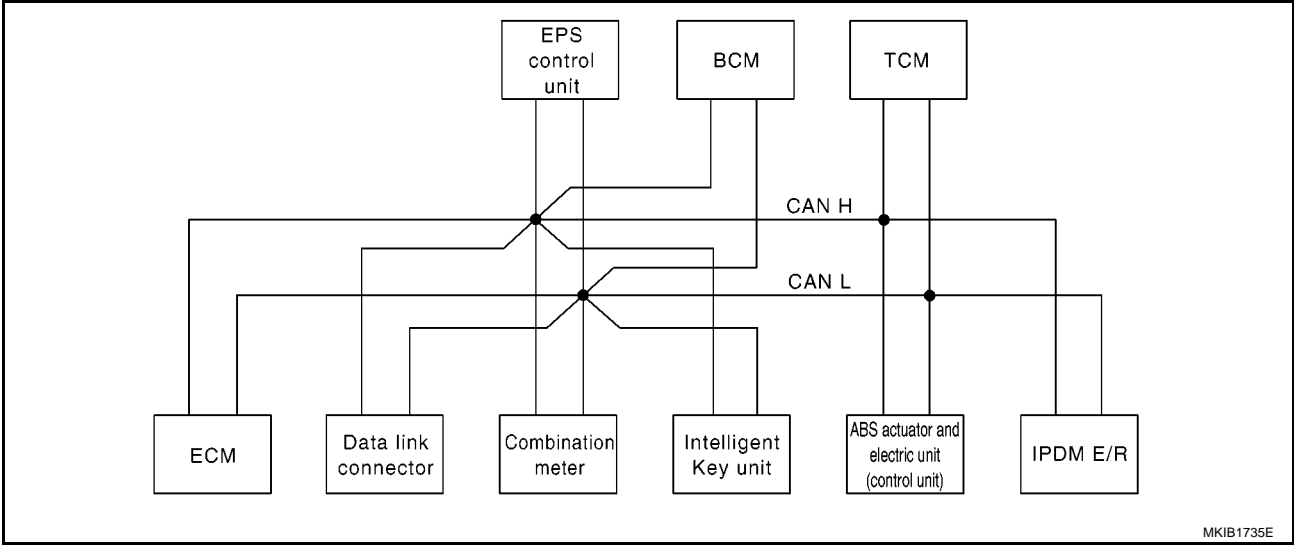
Signals	ECM	Combina- tion meter.	Intelligent Key unit	EPS con- trol unit	BCM	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
Rear window defogger control signal	R						T
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
Front fog lamp request signal		R			T		R
Rear fog lamp status signal		R			T		
Headlamp washer request signal					T		R
Door lock/unlock request signal			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

\*: C+C only

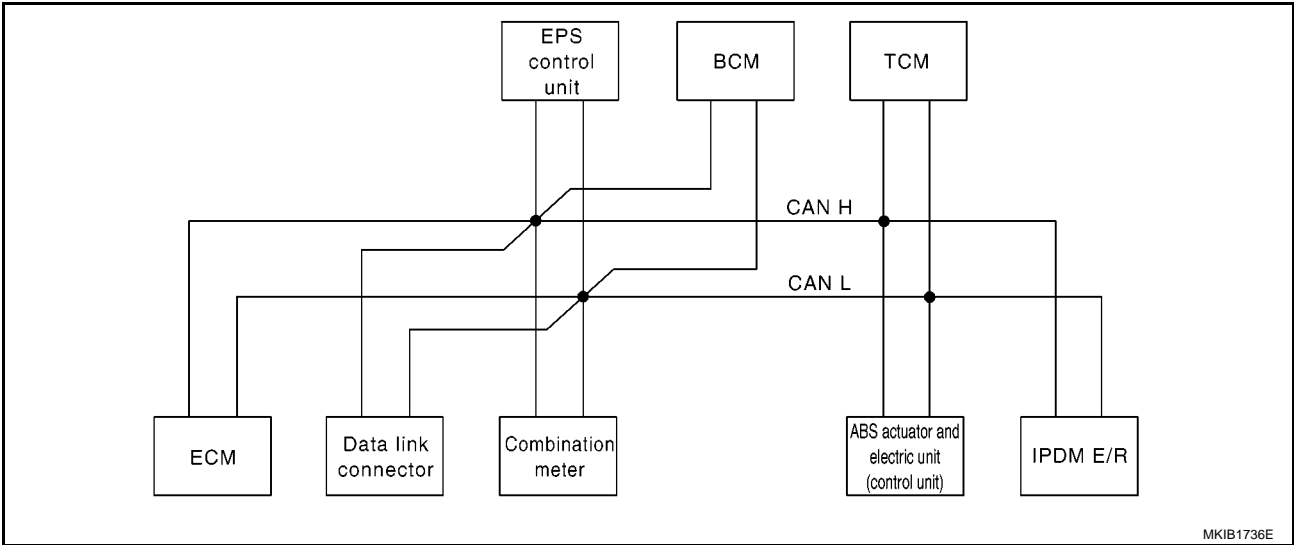


TYPE 7/TYPE 8  
System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	TCM	IPDM E/ R
Engine speed signal	T	R				R		
Engine coolant temperature signal	T	R						
A/T self-diagnosis signal	R						T	
Output shaft revolution signal	R						T	
Accelerator pedal position signal	T					R	R	
Closed throttle position signal	T						R	
Wide open throttle position signal	T						R	
Overdrive control switch signal		T					R	
A/T position indicator signal		R					T	

# CAN COMMUNICATION

[CAN]

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	TCM	IPDM E/ R
A/T shift schedule change demand signal						T	R	
Stop lamp switch signal		T					R	
O/D OFF indicator lamp signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	R						
Front wiper request signal					T			R
Front wiper stop position signal					R			T
Rear window defogger switch signal					T			R
Rear window defogger control sig- nal	R							T
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
ESP warning lamp signal		R				T		
ESP OFF indicator signal		R				T		
SLIP indicator lamp signal		R				T		
Steering angle signal				T		R		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
Front fog lamp request signal		R			T			R
Rear fog lamp status signal		R			T			
Headlamp washer request signal					T			R
Door lock/unlock request signal			T		R			

# CAN COMMUNICATION

[CAN]

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	TCM	IPDM E/ R
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				
A/C switch signal	R				T			
A/T torque signal						R	T	
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

A

B

C

D

E

F

G

H

I

J

LAN

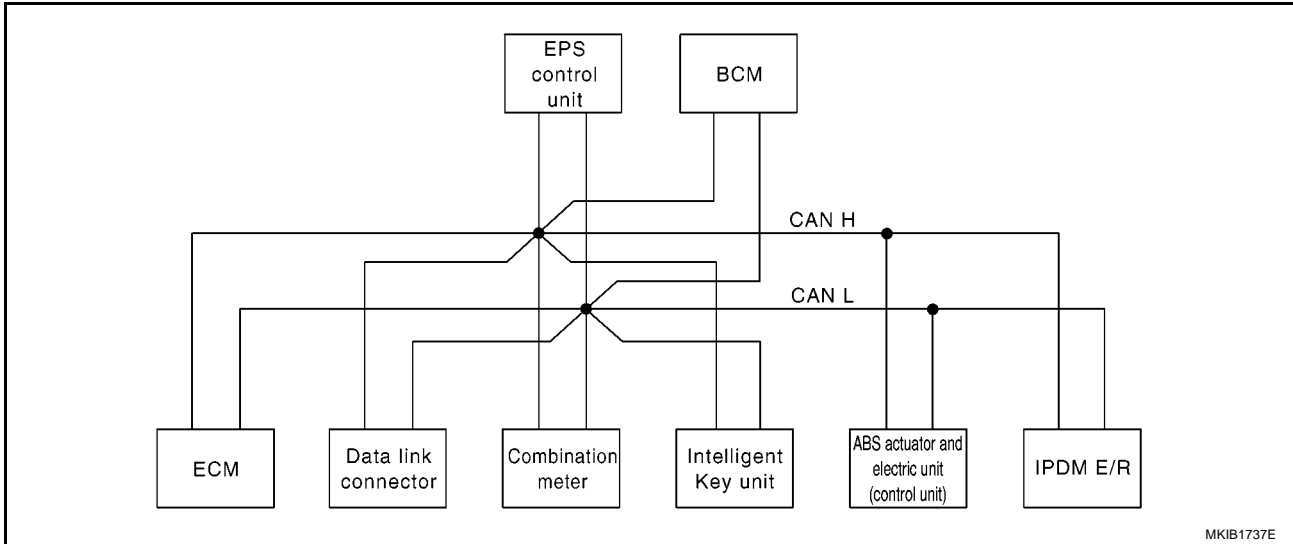
L

M

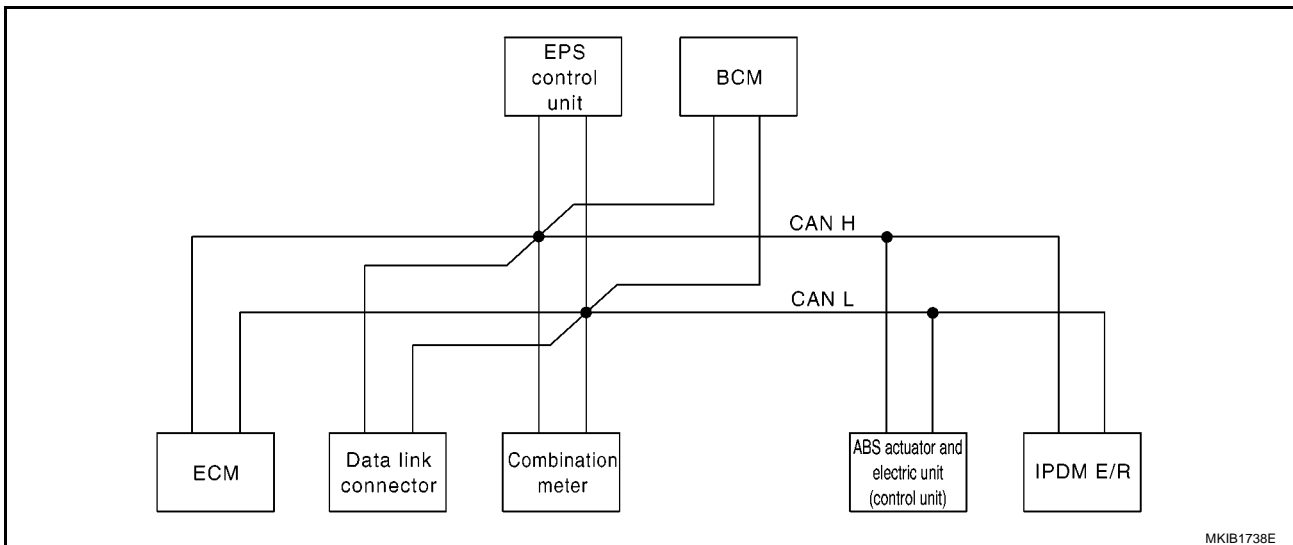
## TYPE 9/TYPE 10/TYPE 11/TYPE 12

### System diagram

- Type 9/Type 11



- Type 10/Type 12



### Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelligent Key unit	EPS con- trol unit	BCM	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Engine speed signal	T	R				R	
Engine coolant temperature signal	T	R					
Fuel consumption monitor signal	T	R					
Accelerator pedal position signal	T					R	
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R

# CAN COMMUNICATION

[CAN]

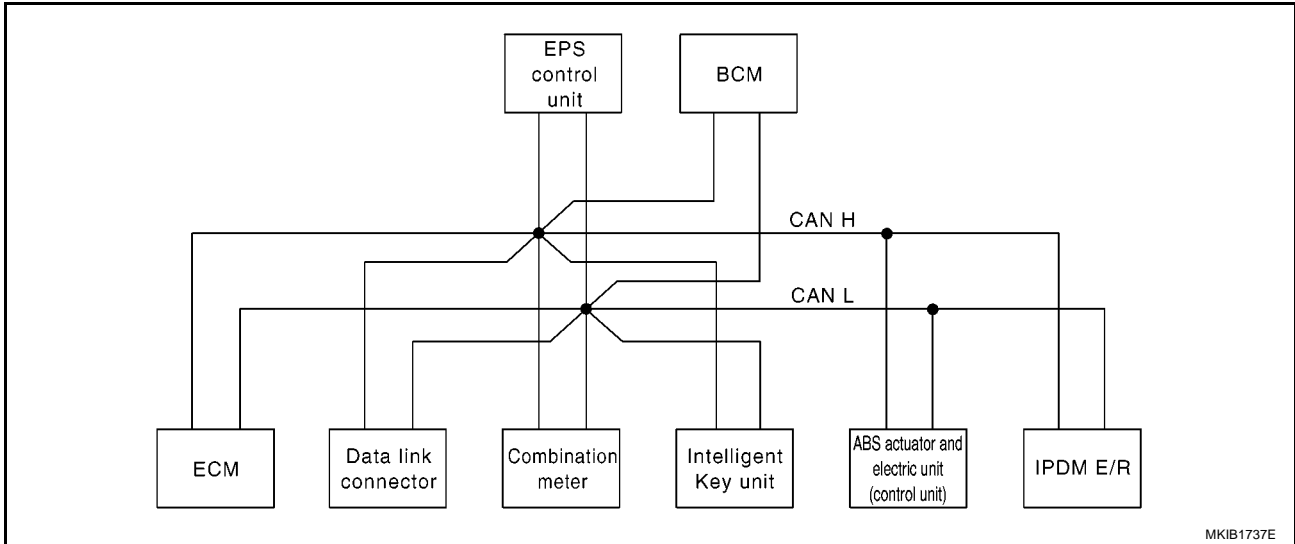
Signals	ECM	Combina- tion meter.	Intelligent Key unit	EPS con- trol unit	BCM	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Low beam request signal					T		R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
Rear window defogger control signal	R						T
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
ESP warning lamp signal		R				T	
ESP OFF indicator signal		R				T	
SLIP indicator lamp signal		R				T	
Steering angle signal				T		R	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
Front fog lamp request signal		R			T		R
Rear fog lamp status signal		R			T		
Headlamp washer request signal					T		R
Door lock/unlock request signal			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

\*: C+C only

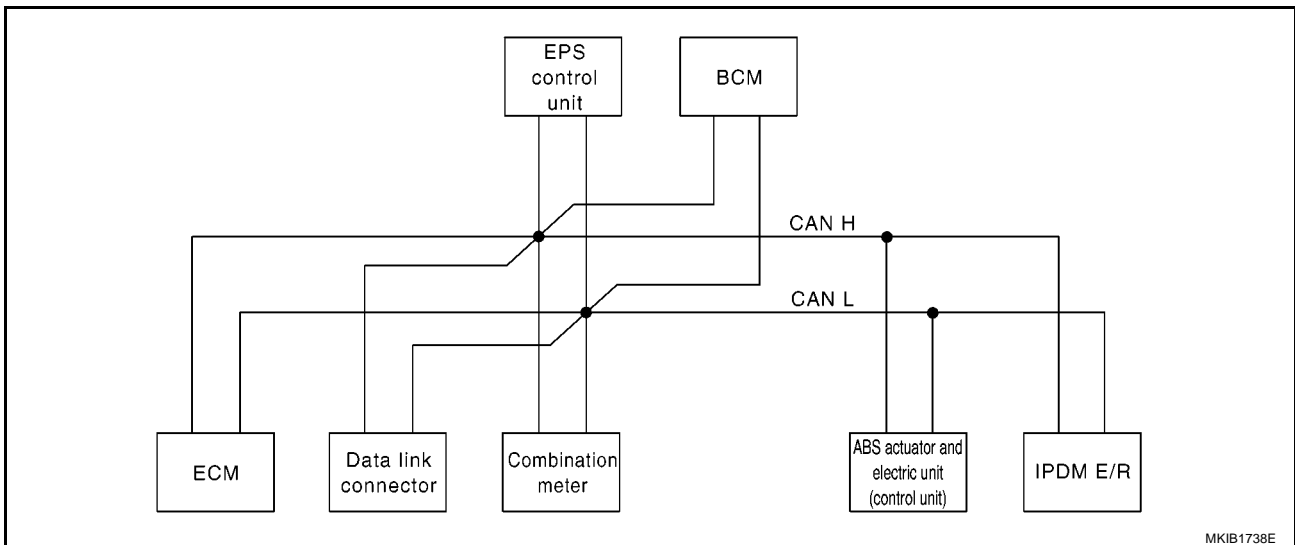
## TYPE 13/TYPE 14

### System diagram

- Type 13



- Type 14



# CAN COMMUNICATION

[CAN]

## Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelligent Key unit	EPS con- trol unit	BCM	ABS actu- ator and electric unit (con- trol unit)	IPDM E/R
Engine speed signal	T	R					
Engine coolant temperature signal	T	R			R		
Fuel consumption monitor signal	T	R					
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R
Low beam request signal					T		R
High beam request signal		R			T		R
Day time light request signal					T		R
Vehicle speed signal	R	R		R	R	T	
	R	T	R	R			
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
Front fog lamp request signal		R			T		R
Rear fog lamp status signal		R			T		
Headlamp washer request signal					T		R
Door lock/unlock request signal			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
Glow indicator signal	T	R					
R range signal					R		T

A

B

C

D

E

F

G

H

I

J

LAN

L

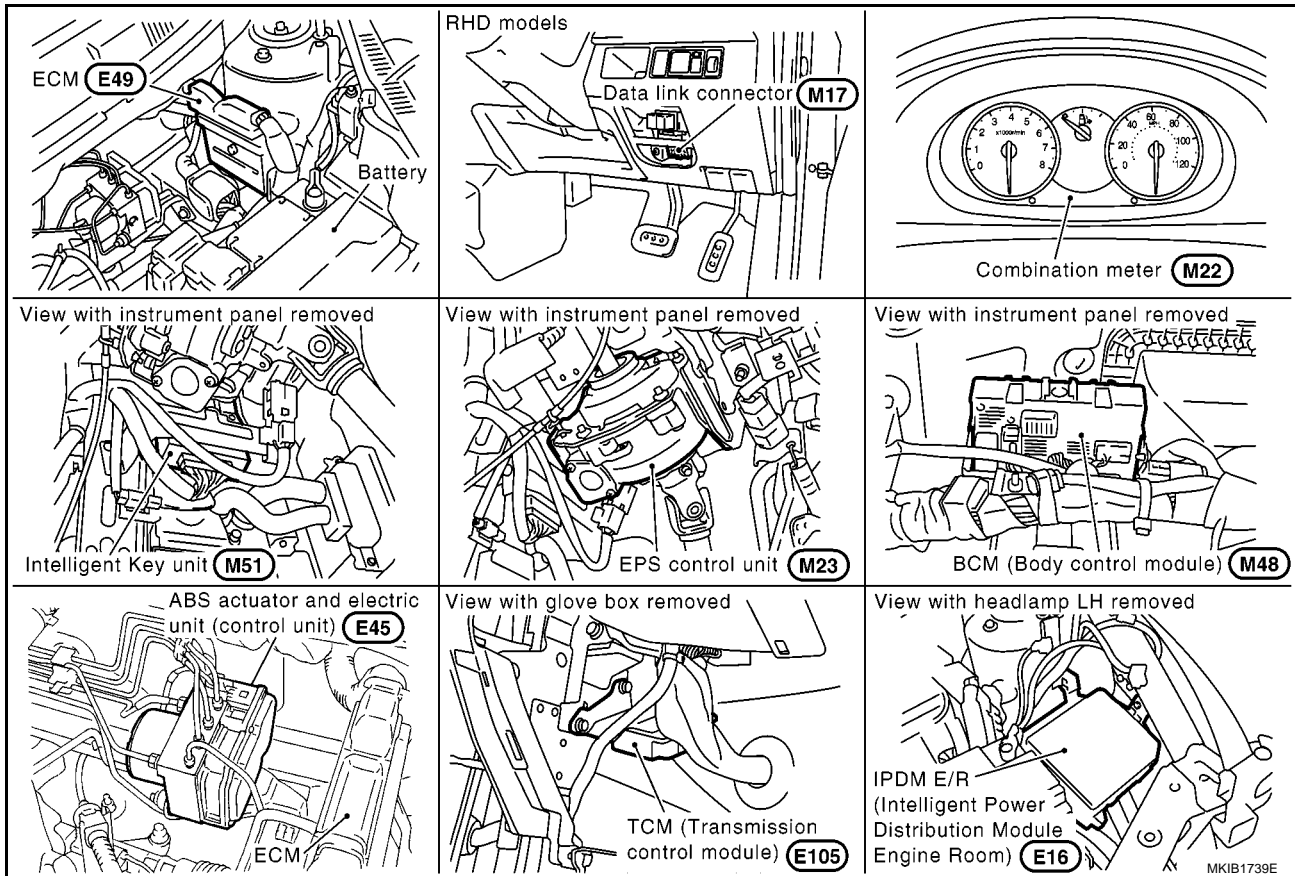
M

## 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





# CAN SYSTEM (TYPE 1)

[CAN]

## Wiring Diagram — CAN —

EKS00730

### LAN-CAN-01

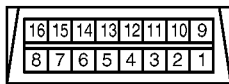
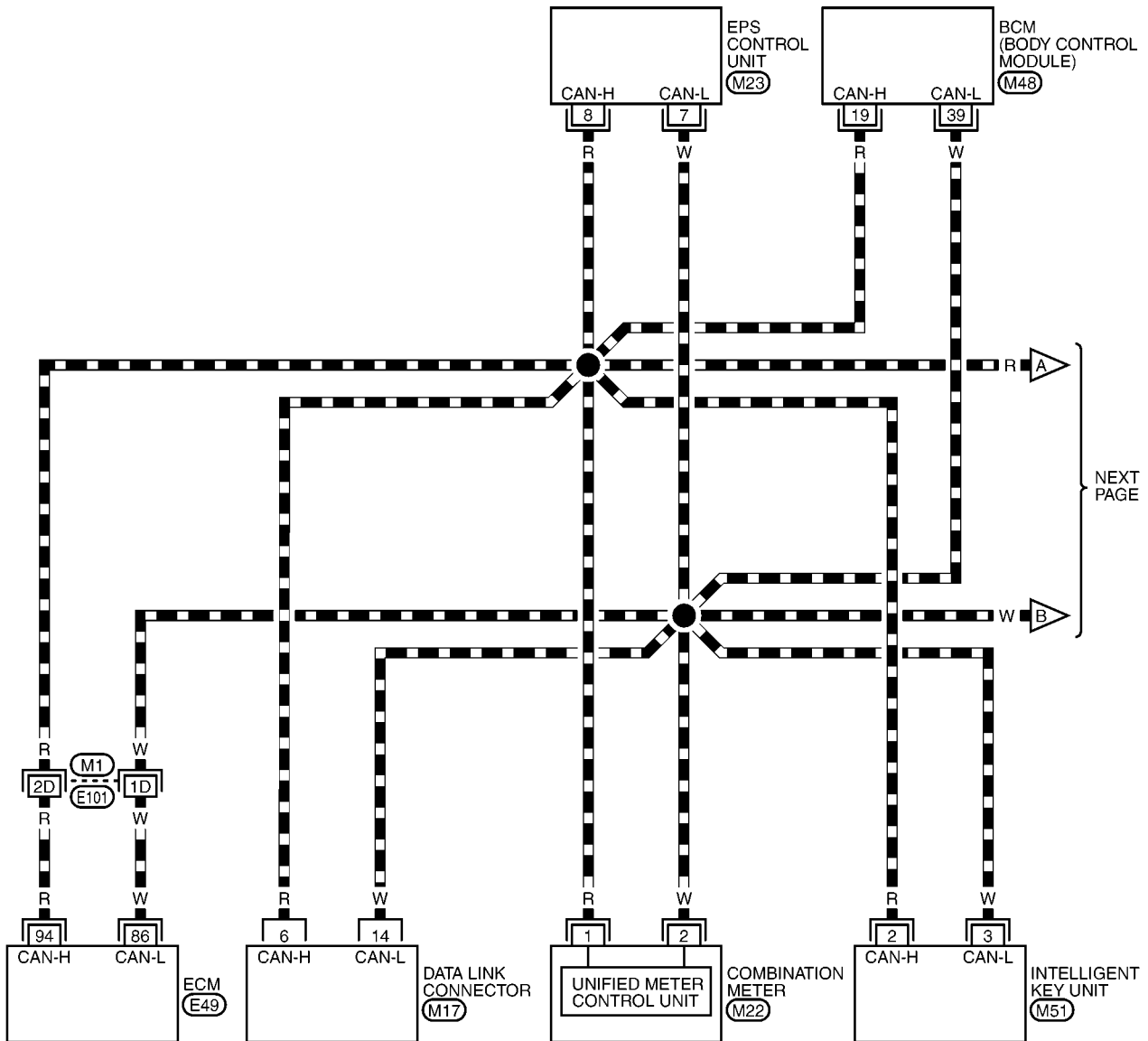
— : DATA LINE

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

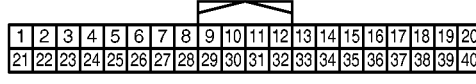
LAN

L

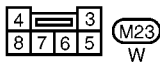
M



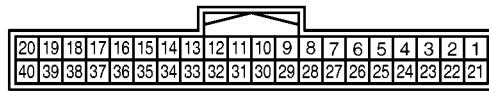
(M17)  
W



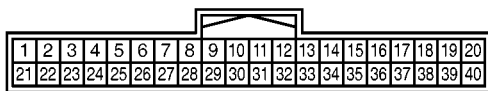
(M22)  
W



(M23)  
W



(M48)  
W



(M51)  
W



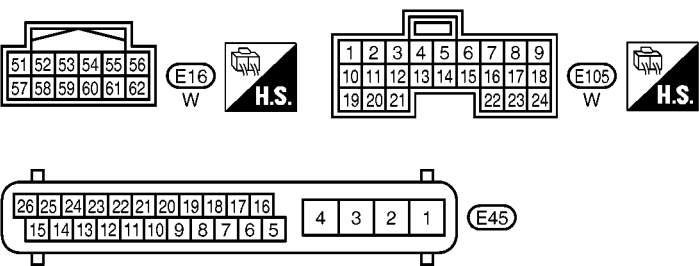
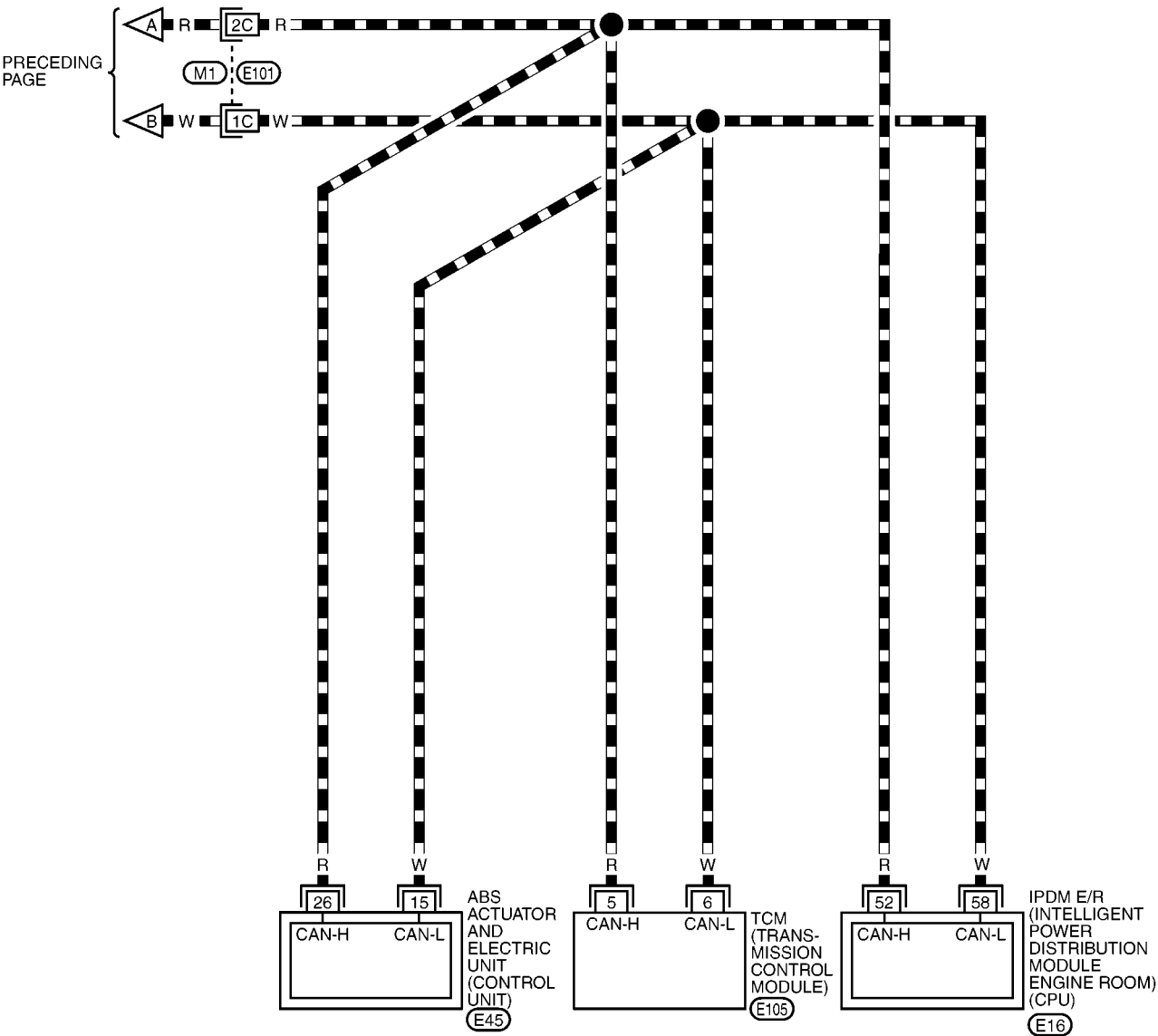
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

MKWA3495E

DATA LINE



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

**[CAN]**

## EK.S0073P

- A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LA  
L  
M

MKIR1692F

- E

PKIA8260F

- 1

PKIA8343E

- LAN

## L

- M

- M

# CAN SYSTEM (TYPE 1)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2034E

CAN SYSTEM (TYPE 1)

[CAN]

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
INTELLIGENT KEY  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
A/T  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
INTELLIGENT KEY  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
A/T  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM  
CAN DIAG SUPPORT  
MNTR

LAN

MKIB2188E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

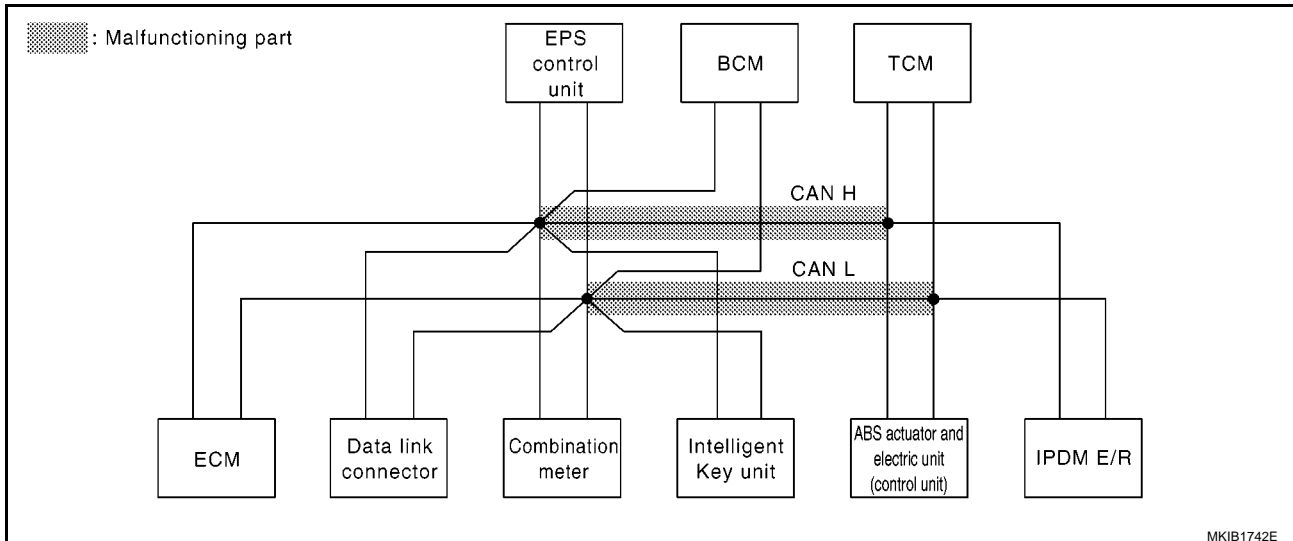
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-37, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2035E



MKIB1742E

# CAN SYSTEM (TYPE 1)

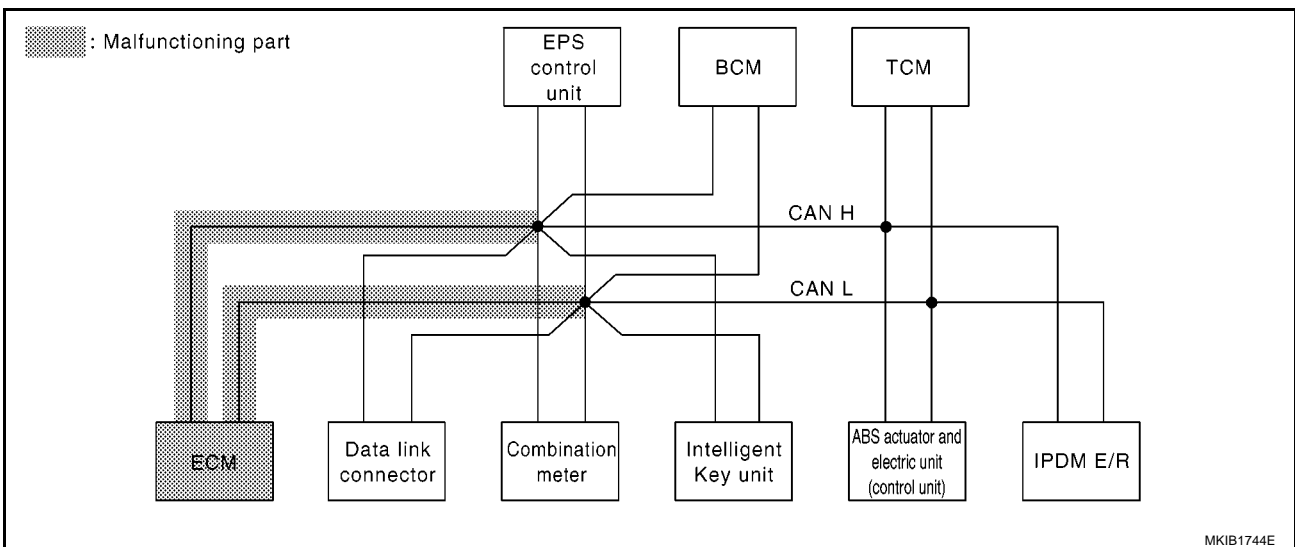
[CAN]

## Case 2

Check ECM circuit. Refer to [LAN-38, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2036E



MKIB1744E

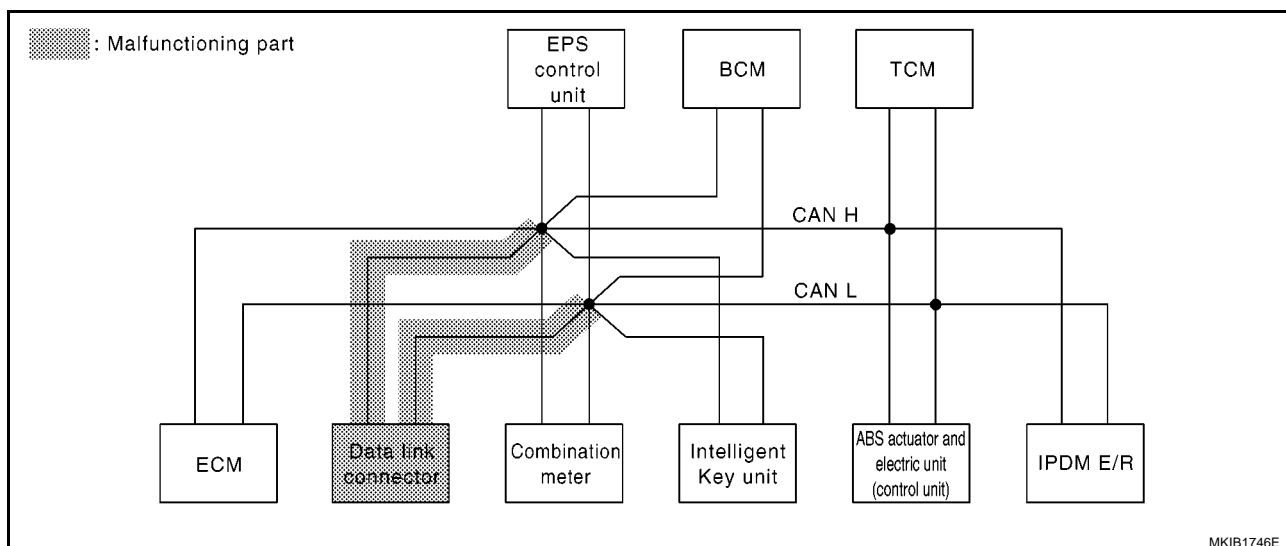
LAN

**Case 3**

Check data link connector circuit. Refer to [LAN-39, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication ✓	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2037E



MKIB1746E

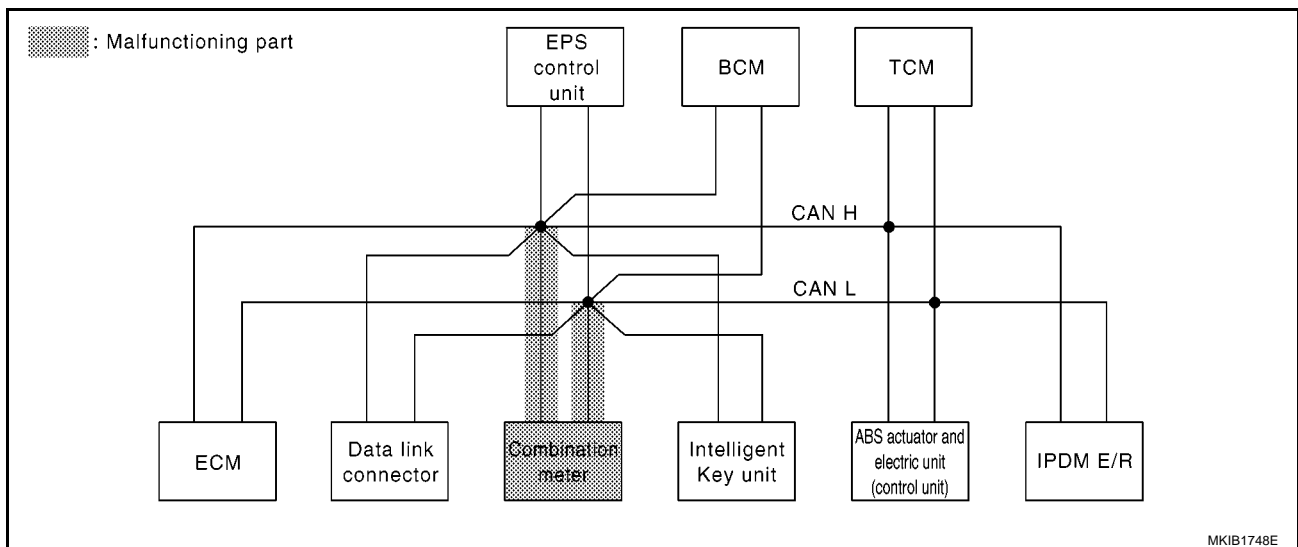


**Case 4**

Check combination meter circuit. Refer to [LAN-40, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2038E



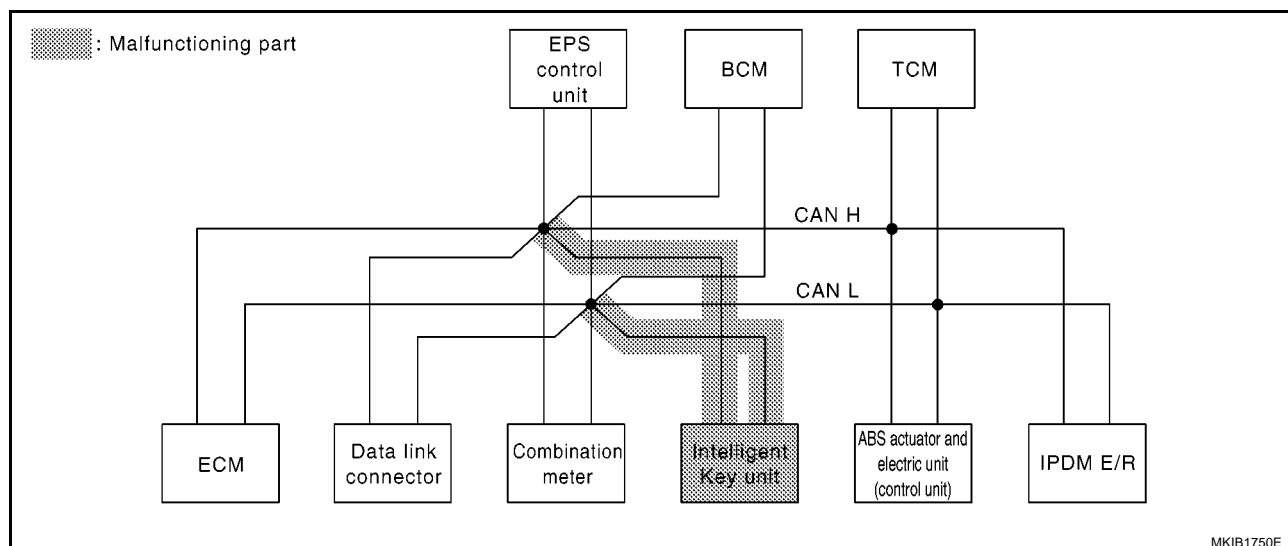
MKIB1748E

**Case 5**

Check Intelligent Key unit circuit. Refer to [LAN-41, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2039E



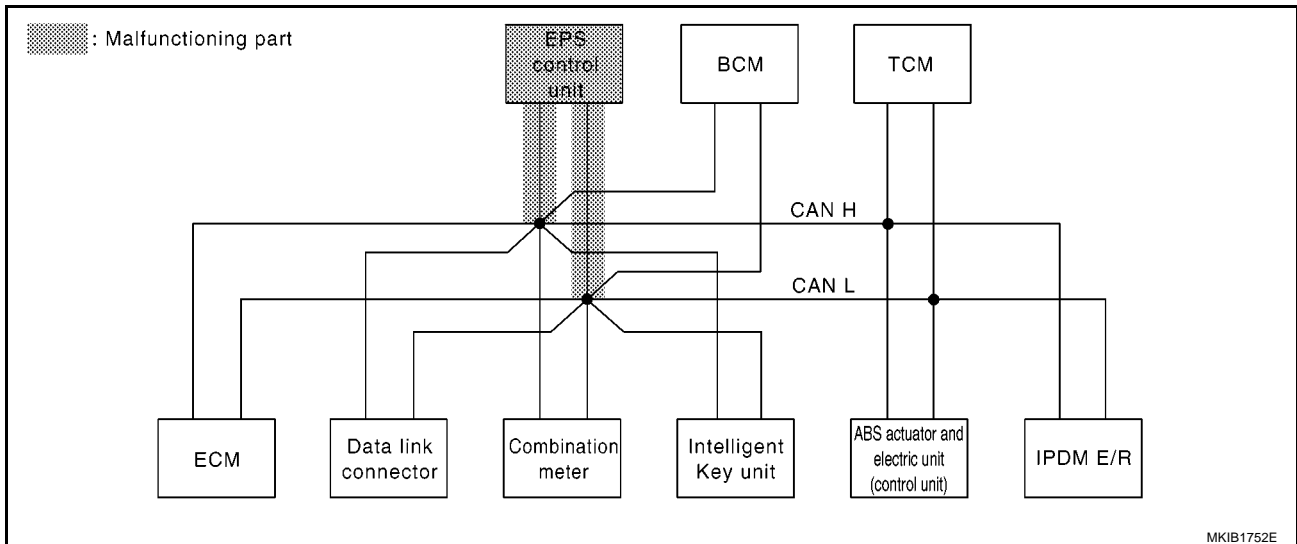
MKIB1750E

## Case 6

Check EPS control unit circuit. Refer to [LAN-42, "EPS Control Unit Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2040E



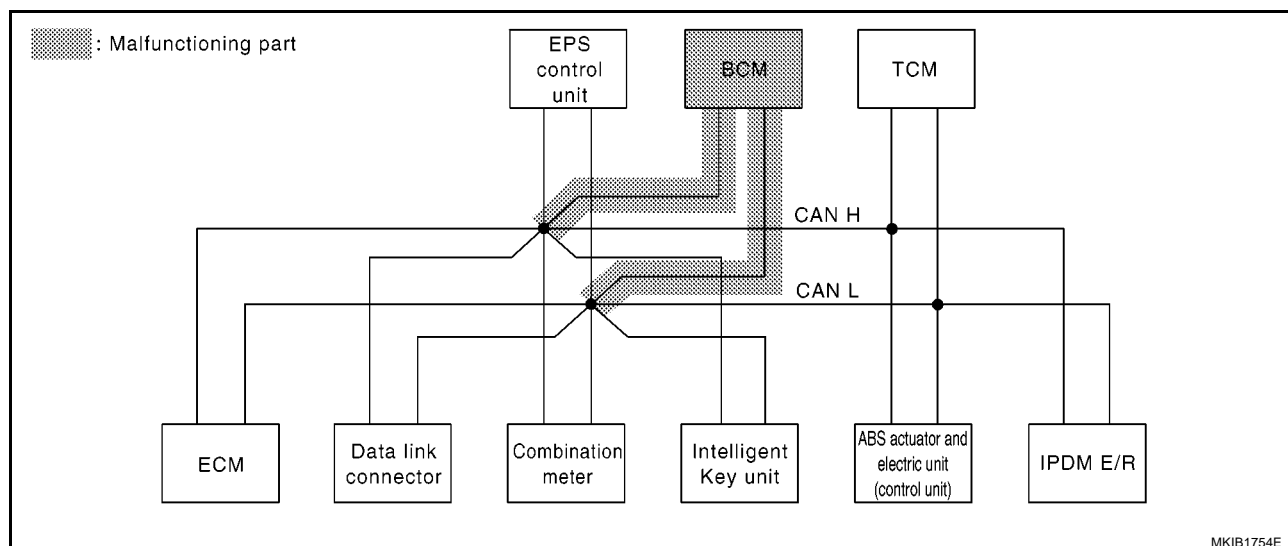
MKIB1752E

**Case 7**

Check BCM circuit. Refer to [LAN-43, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2041E



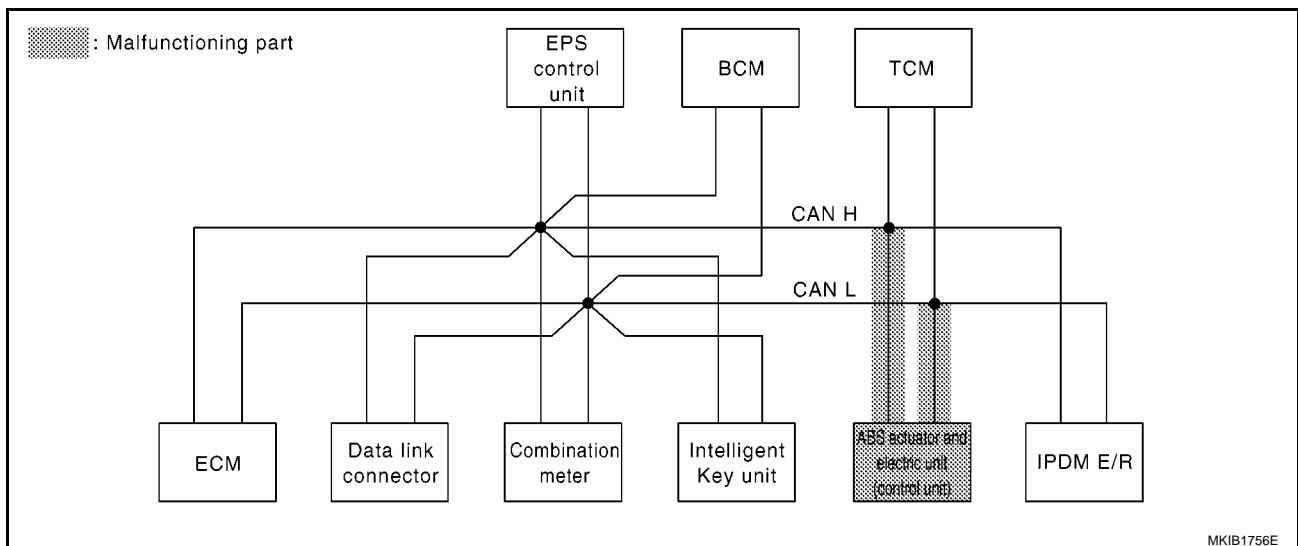
MKIB1754E

## Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-44, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2042E



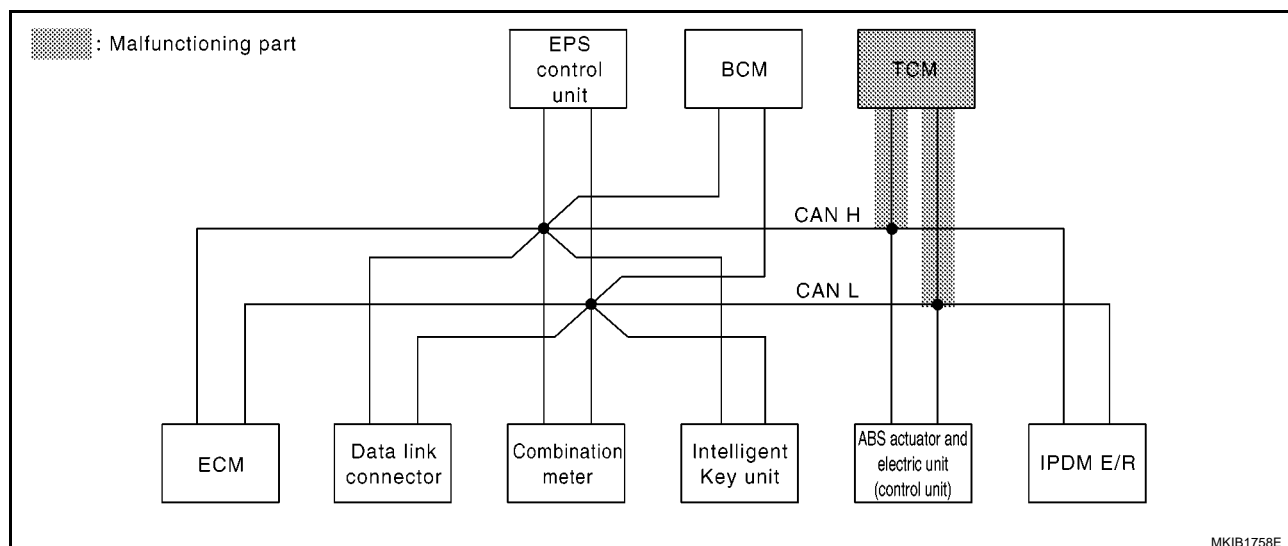
MKIB1756E

**Case 9**

Check TCM circuit. Refer to [LAN-45, "TCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2043E



MKIB1758E

# CAN SYSTEM (TYPE 1)

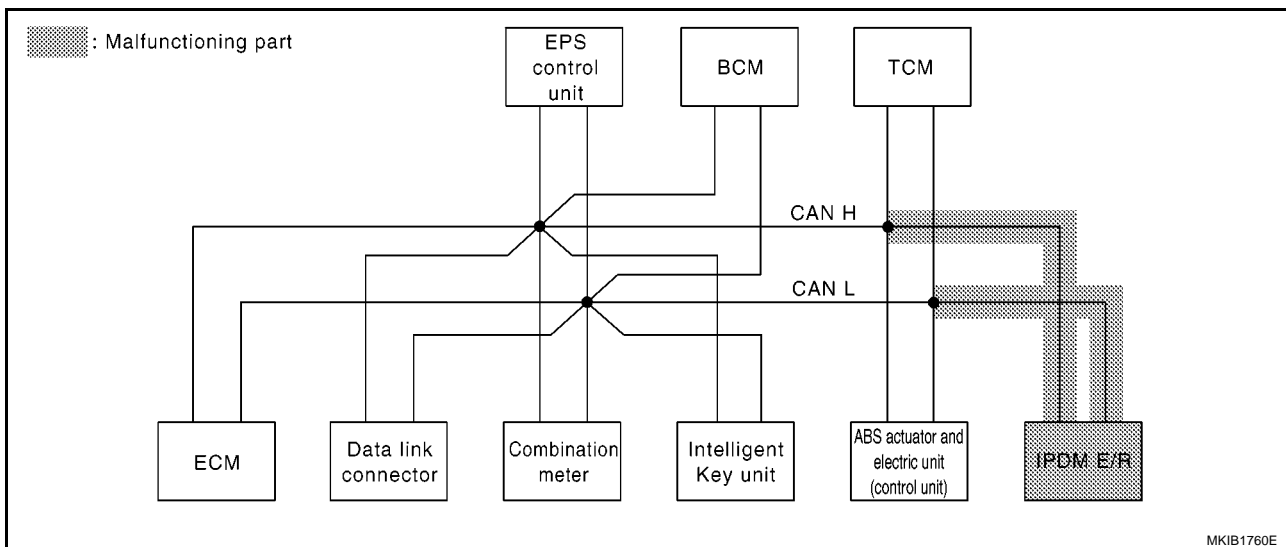
[CAN]

## Case 10

Check IPDM E/R circuit. Refer to [LAN-46. "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN ✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2044E



MKIB1760E

LAN

**Case 11**

Check CAN communication circuit. Refer to [LAN-47, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2045E

**Case 12**

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-50, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2046E

**Case 13**

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-50, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	UNKWN	—	UNKWN	—	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2047E



## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS0073Q

### 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 M1
  - Harness connector E101

#### OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

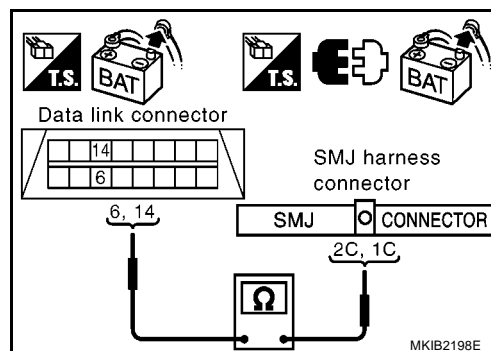
6 (R) – 2C (R) : Continuity should exist.

14 (W) – 1C (W) : Continuity should exist.

#### OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

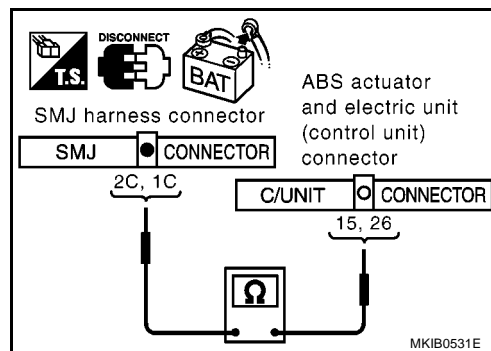
2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.

#### OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-23, "Work Flow"](#).

NG &gt;&gt; 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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

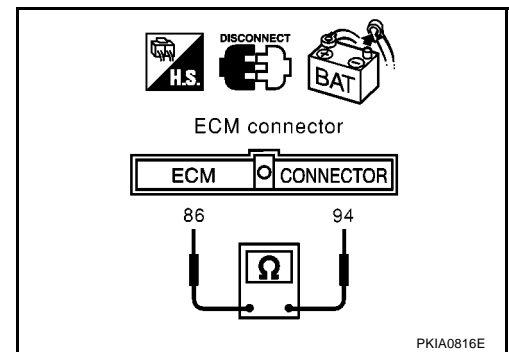
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

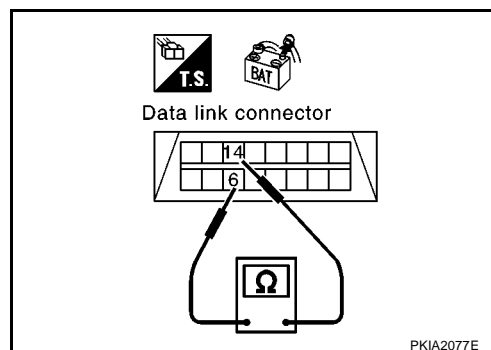
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-23, "Work Flow"](#).

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

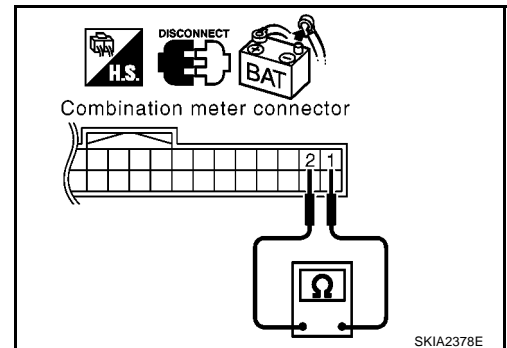
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**

OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

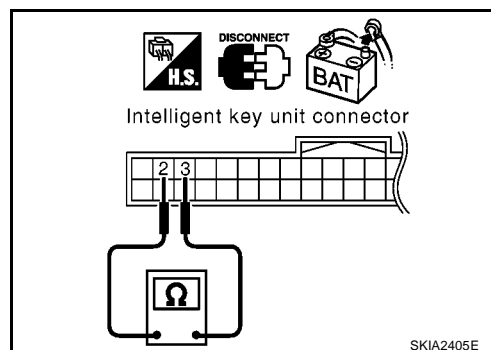
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.



**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

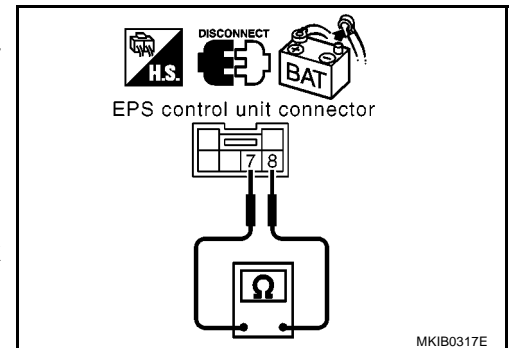
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

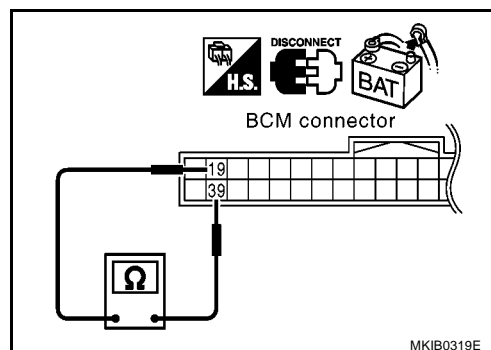
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.



**ABS Actuator and Electric Unit (Control Unit) Circuit Check**

EKS0073Z

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

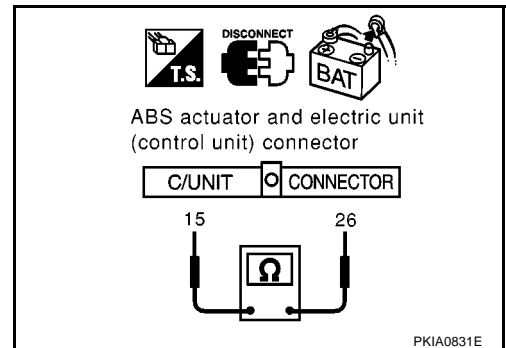
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

**26 (R) – 15 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace ABS actuator and electric unit (control unit).

NG &gt;&gt; Repair harness between ABS actuator and electric unit (control unit) and TCM.





**TCM Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

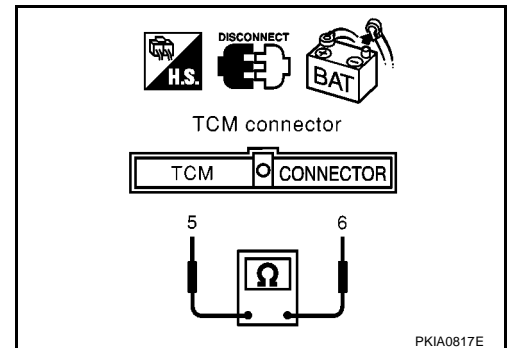
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

**5 (R) – 6 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace TCM.

NG &gt;&gt; Repair harness between TCM and IPDM E/R.



A

B

C

D

E

F

G

H

I

J

LAN

L

M

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

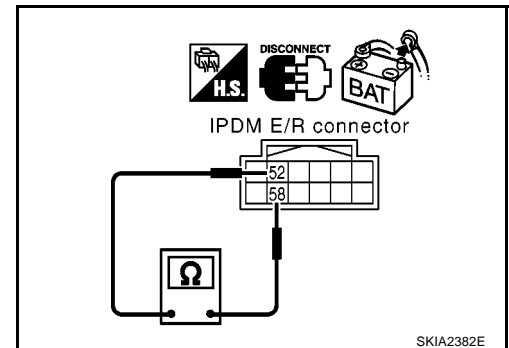
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and TCM.



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - TCM
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

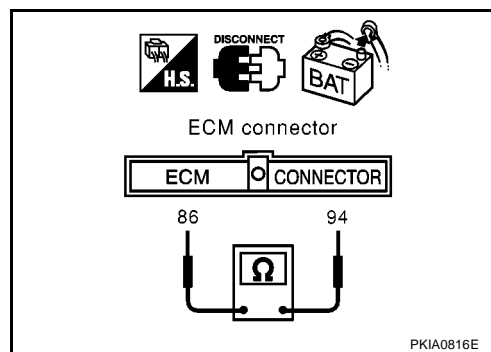
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

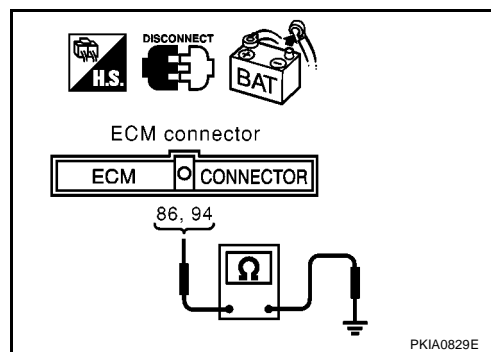
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



#### 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - TCM connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

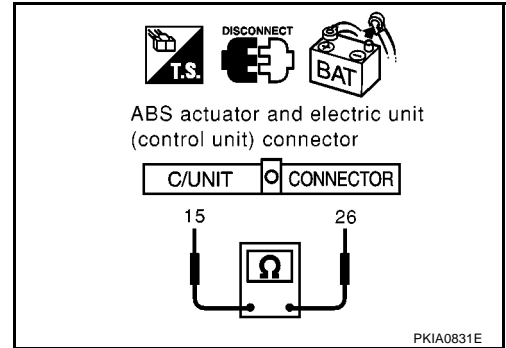
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



#### 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

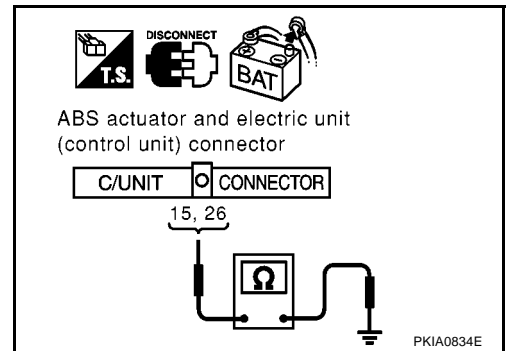
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

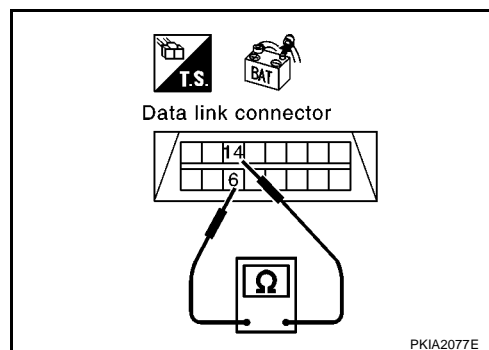
1. Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

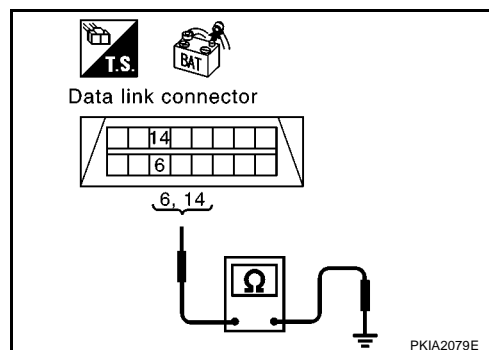
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-50, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-23, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00742

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

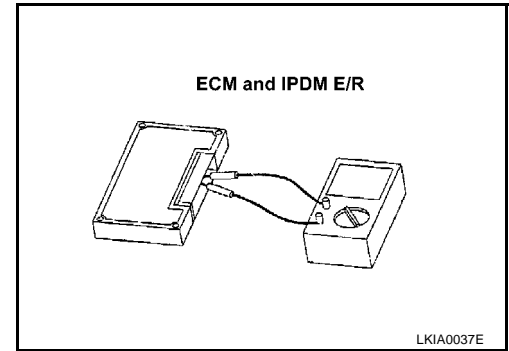
**Component Inspection**

EKS00743

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	

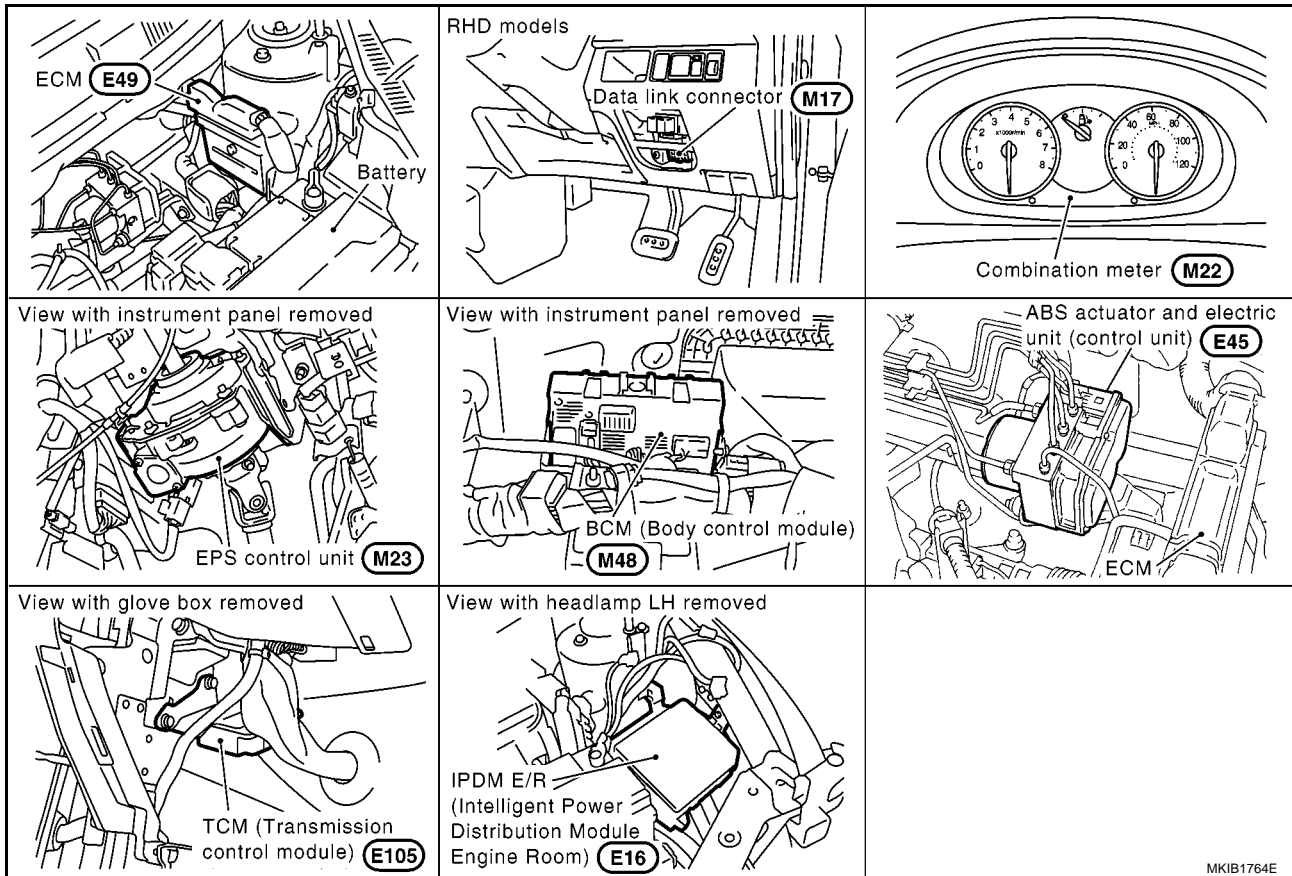


## CAN SYSTEM (TYPE 2)

## 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



# CAN SYSTEM (TYPE 2)

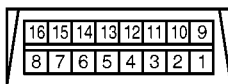
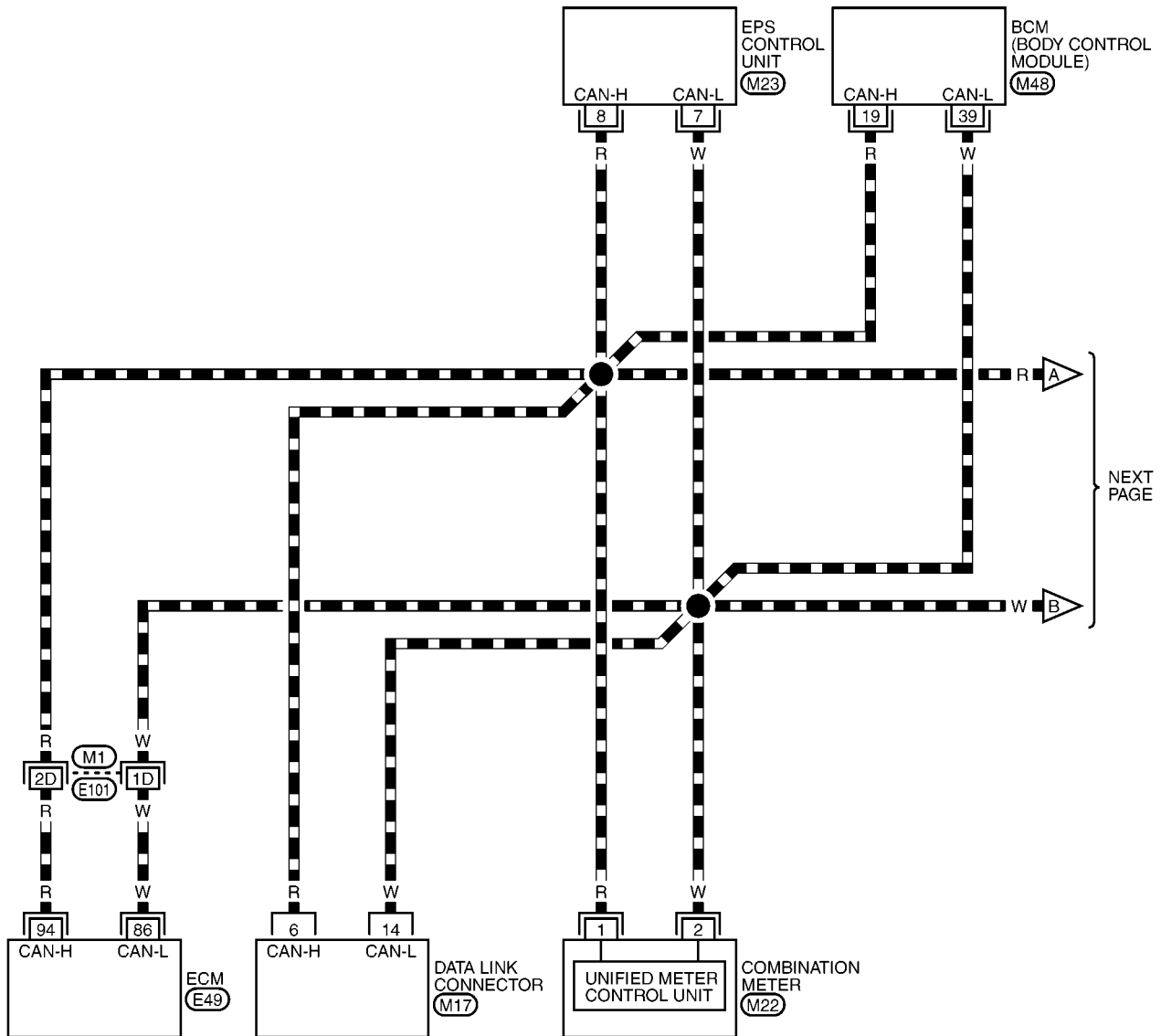
[CAN]

## Wiring Diagram — CAN —

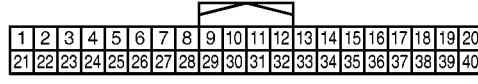
EKS007Y0

### LAN-CAN-03

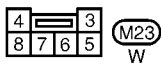
— : DATA LINE



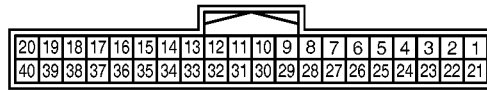
(M17)  
W



(M22)  
W



(M23)  
W



(M48)  
W



REFER TO THE FOLLOWING.

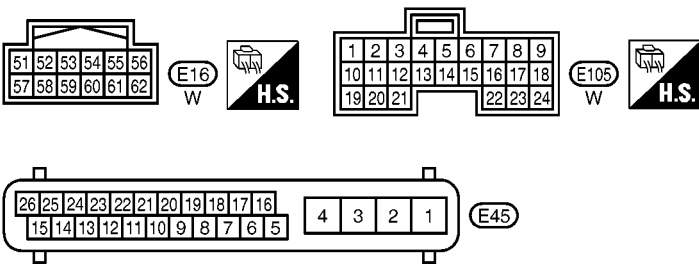
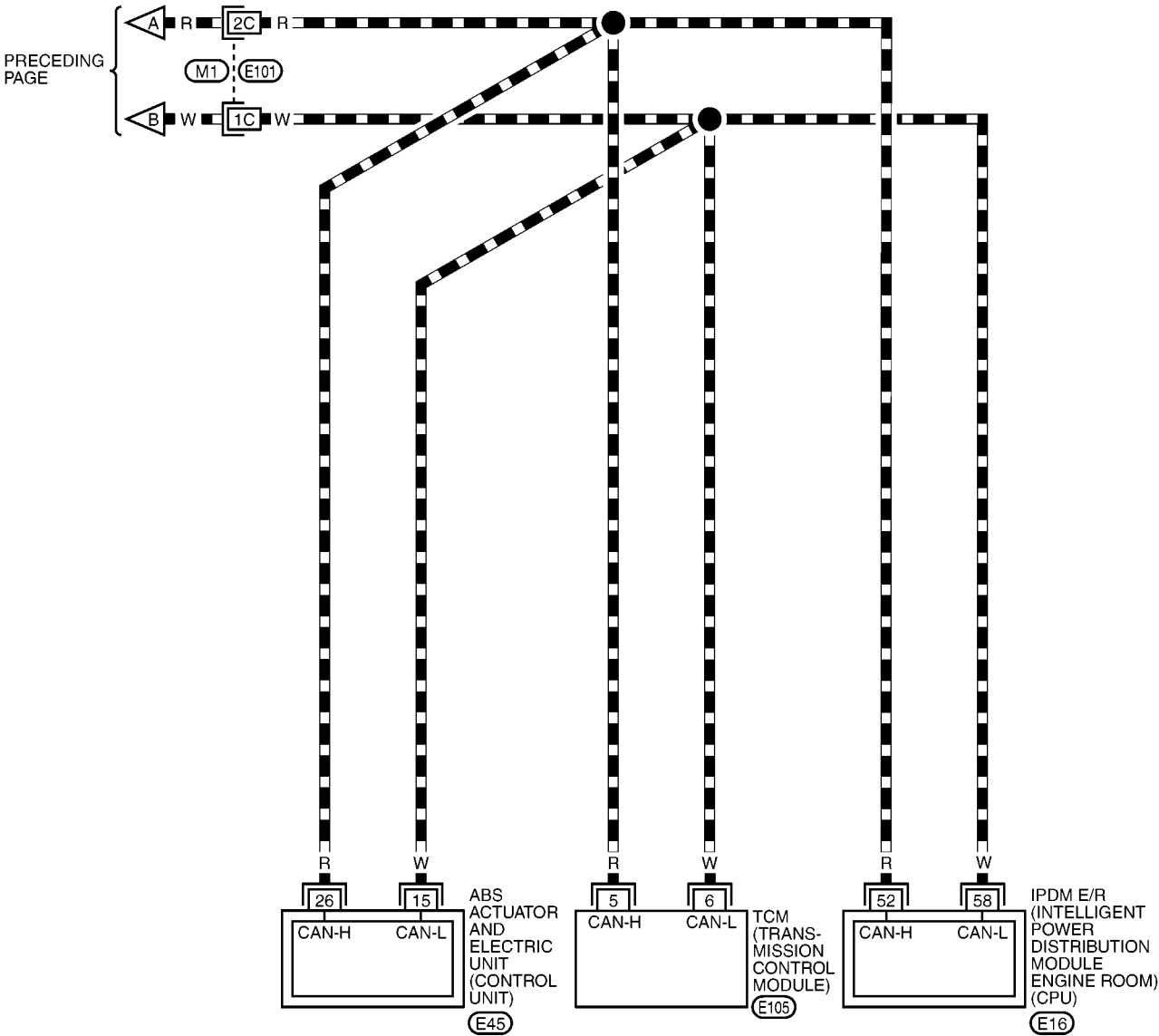
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

MKWA3496E



DATA LINE




REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRST	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-55, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-55, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-57, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 2)

[CAN]

## CHECK SHEET

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2048E

## CAN SYSTEM (TYPE 2)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
A/T  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
A/T  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2189E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

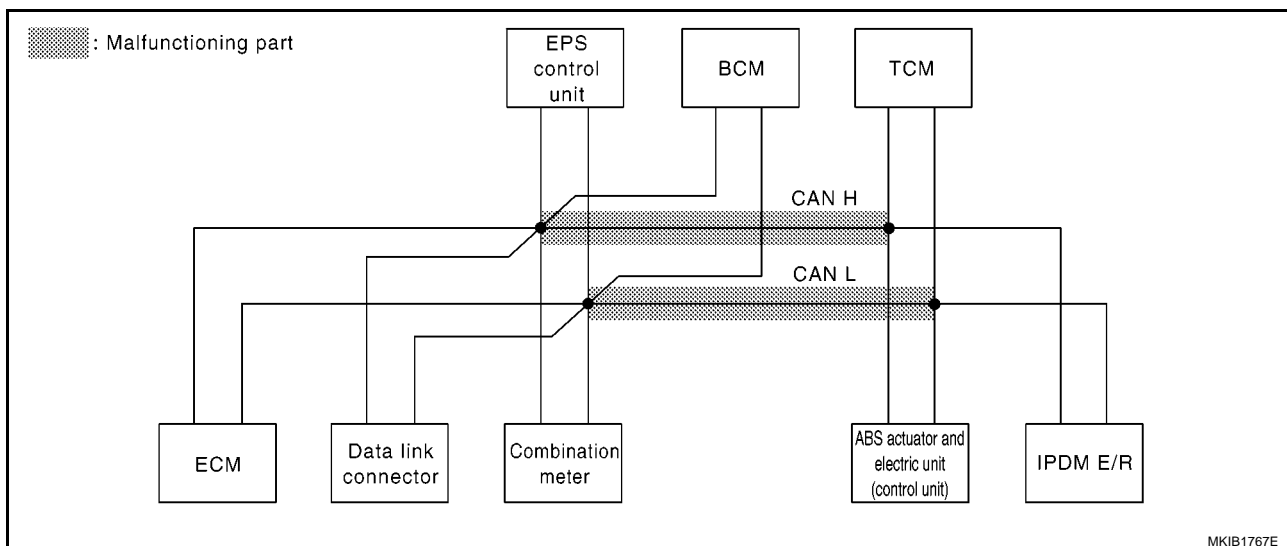
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-67, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2049E



MKIB1767E

# CAN SYSTEM (TYPE 2)

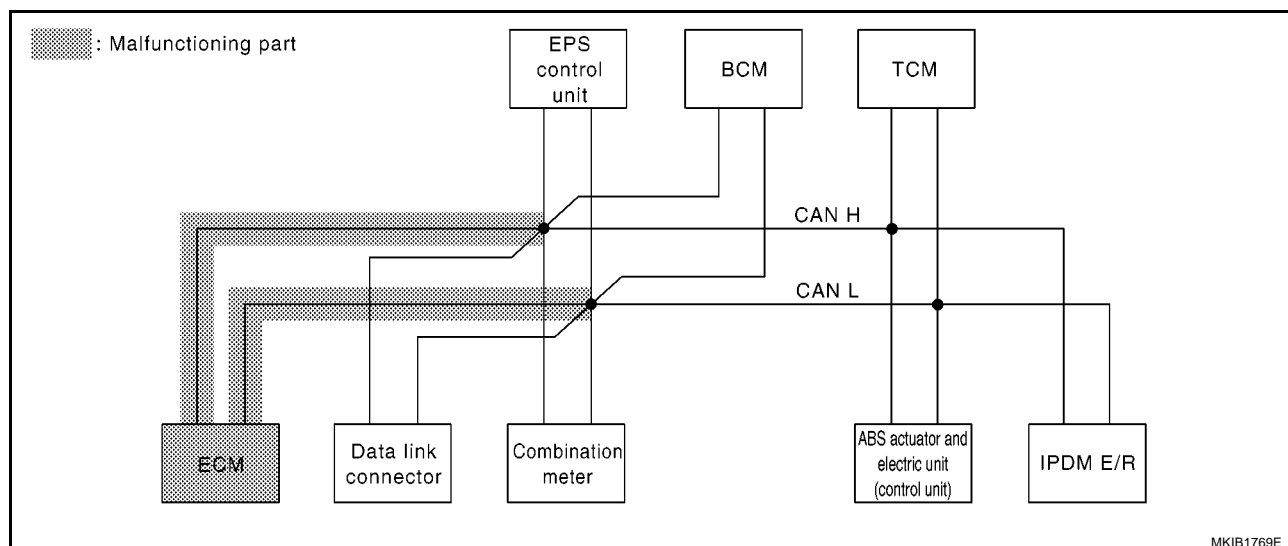
[CAN]

## Case 2

Check ECM circuit. Refer to [LAN-68, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	✓	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2050E



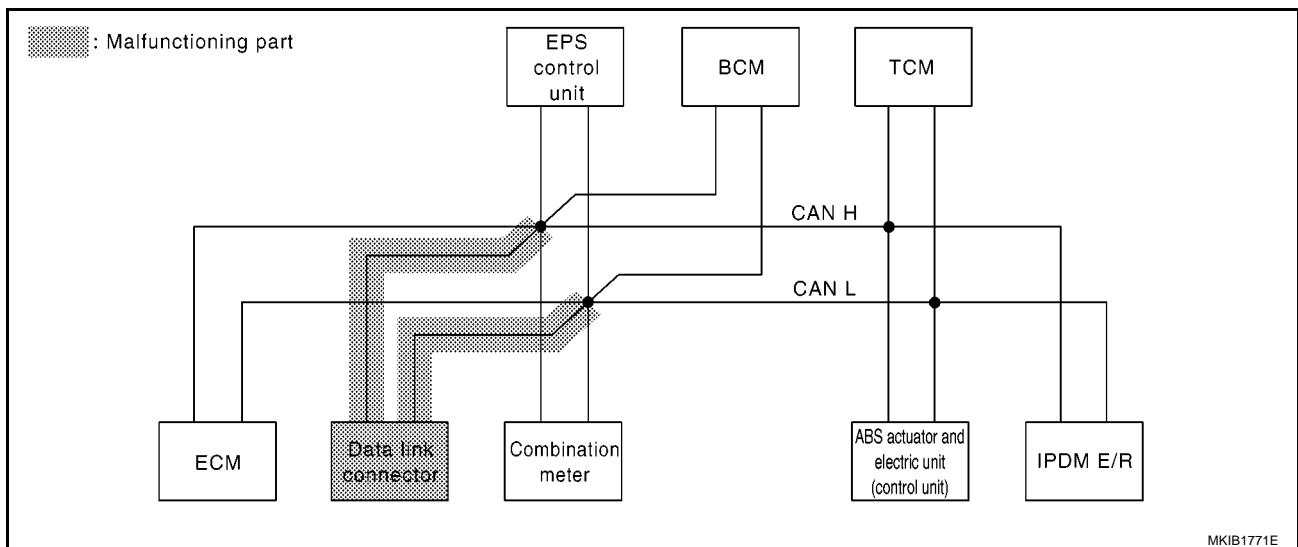
MKIB1769E

**Case 3**

Check data link connector circuit. Refer to [LAN-69, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication ✓	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2051E



MKIB1771E

## CAN SYSTEM (TYPE 2)

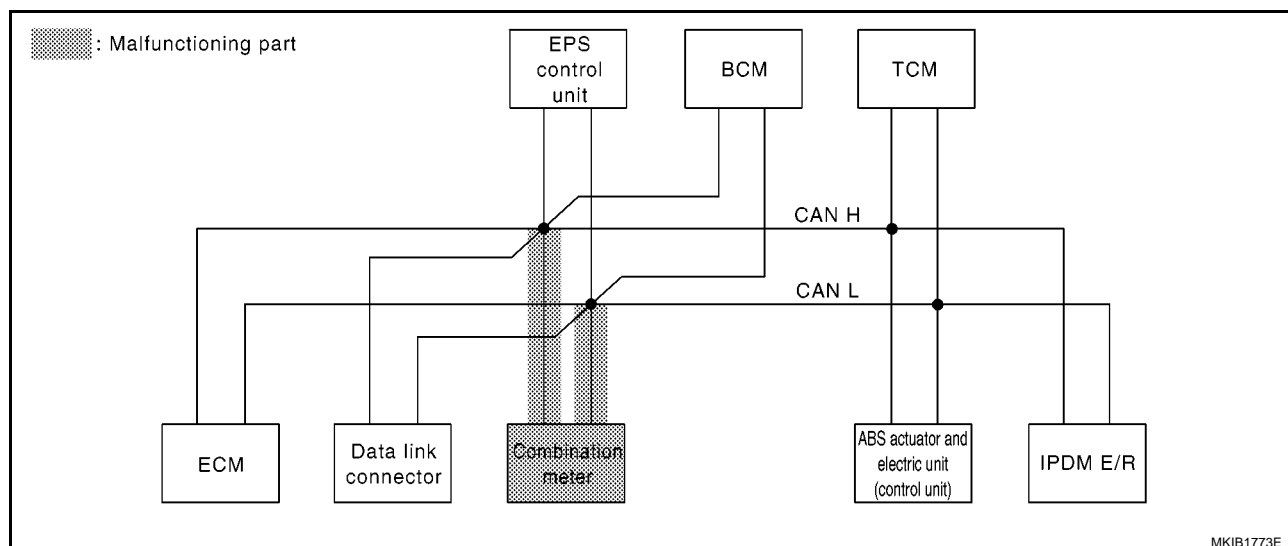
[CAN]

### Case 4

Check combination meter circuit. Refer to [LAN-70, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2052E



MKIB1773E



# CAN SYSTEM (TYPE 2)

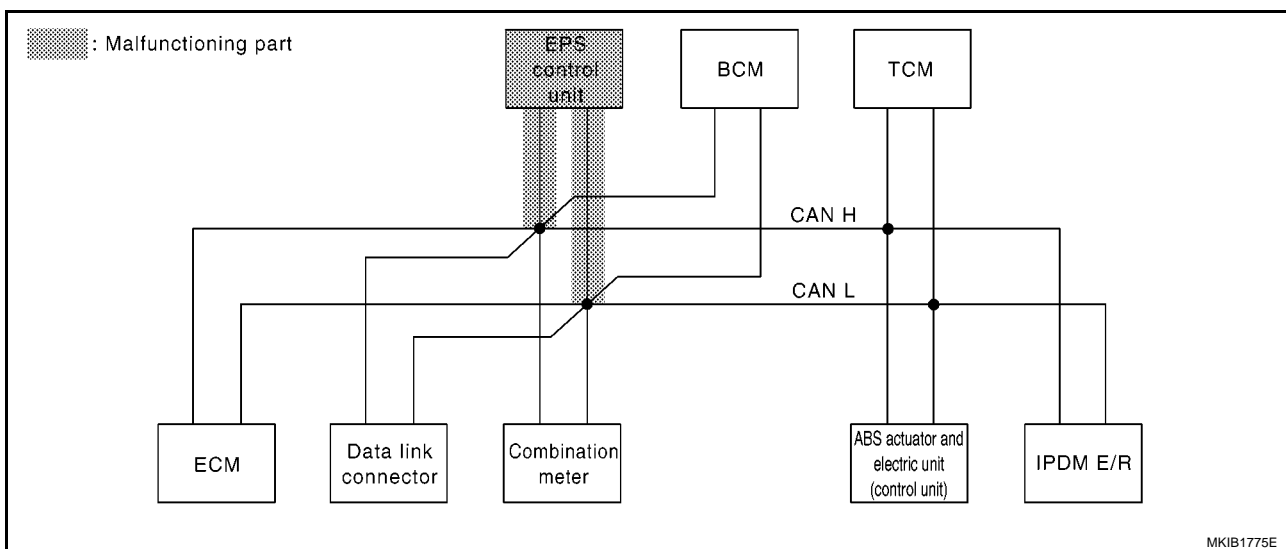
[CAN]

## Case 5

Check EPS control unit circuit. Refer to [LAN-71, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2053E



MKIB1775E

# CAN SYSTEM (TYPE 2)

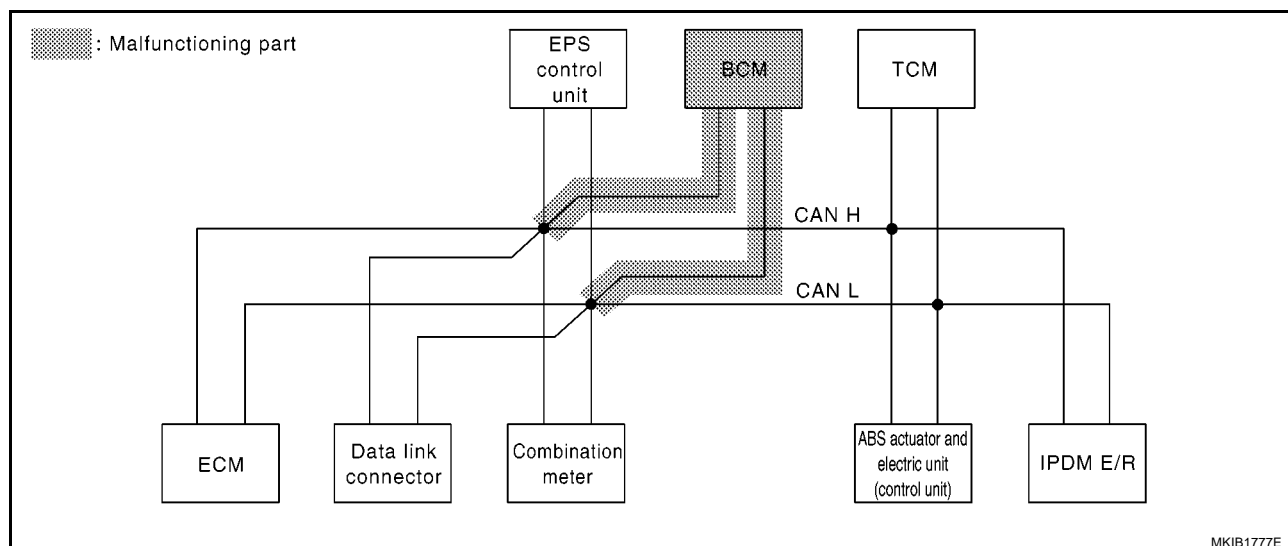
[CAN]

## Case 6

Check BCM circuit. Refer to [LAN-72, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—	
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	

MKIB2054E



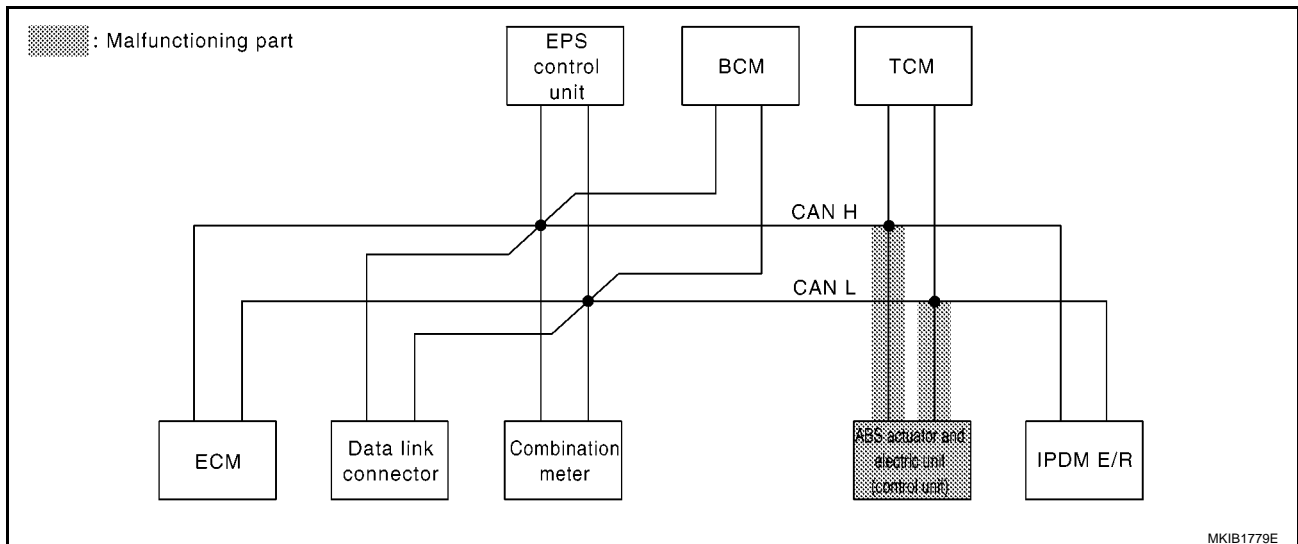
MKIB1777E

**Case 7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-73, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	UNKWN	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2055E



MKIB1779E

# CAN SYSTEM (TYPE 2)

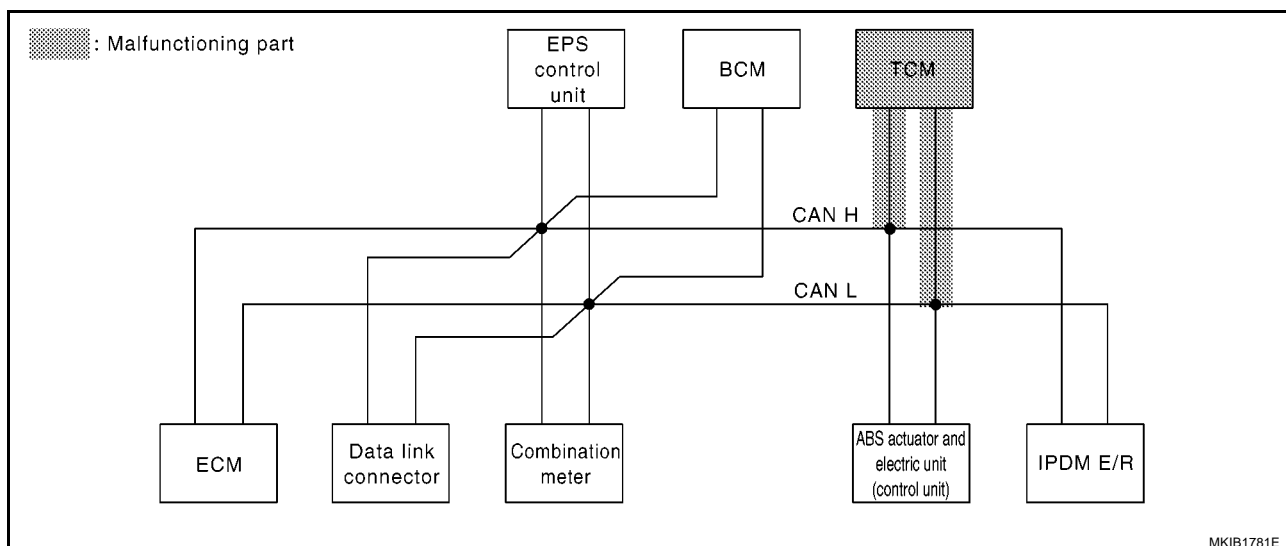
[CAN]

## Case 8

Check TCM circuit. Refer to [LAN-74, "TCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2056E



MKIB1781E

# CAN SYSTEM (TYPE 2)

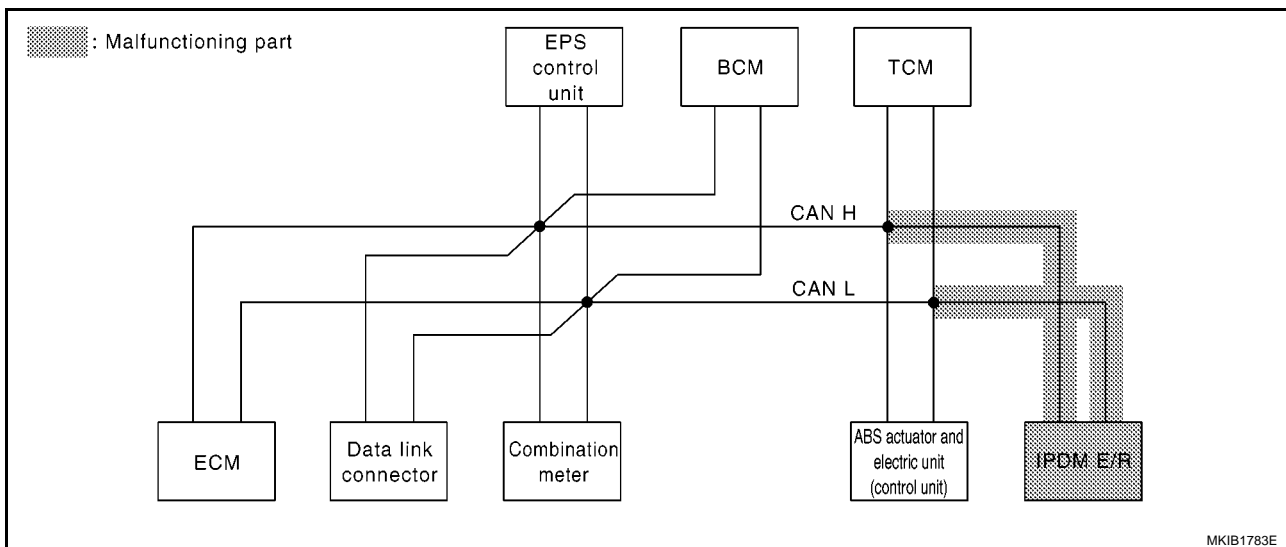
[CAN]

## Case 9

Check IPDM E/R circuit. Refer to [LAN-75, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN ✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2057E



MKIB1783E

LAN

# CAN SYSTEM (TYPE 2)

[CAN]

## Case 10

Check CAN communication circuit. Refer to [LAN-76, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2058E

## Case 11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to [LAN-79, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2059E

## Case 12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to [LAN-79, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	✓	—	UNKWN	—	—	—	—	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2060E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00811

### 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 M1
  - Harness connector E101

#### OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

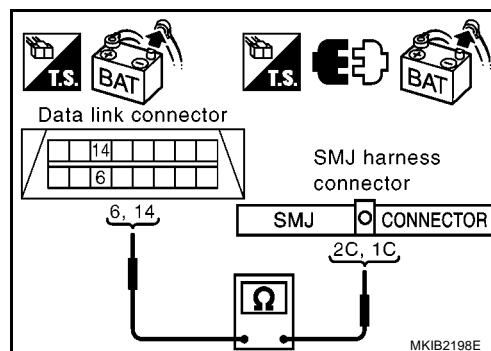
6 (R) – 2C (R) : Continuity should exist.

14 (W) – 1C (W) : Continuity should exist.

#### OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

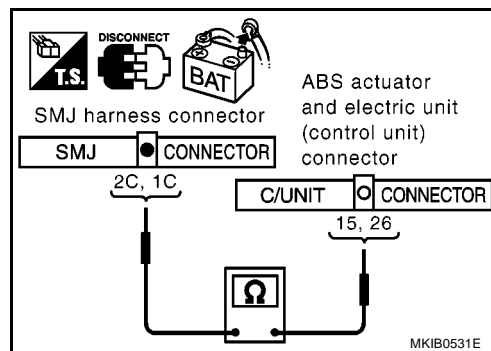
2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.

#### OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-54, "Work Flow"](#).

NG &gt;&gt; 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

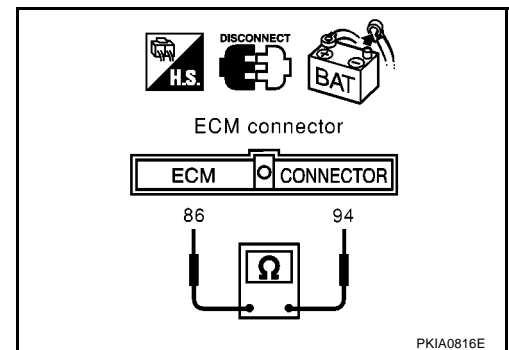
**94 (R) – 86 (W)**

**: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and data link connector.





## Data Link Connector Circuit Check

EKS00813

## 1. CHECK CONNECTOR

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

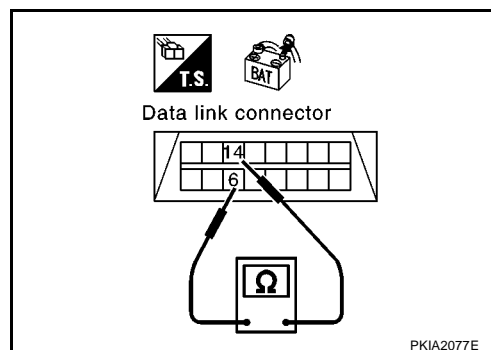
6 (R) – 14 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Diagnosis again. Refer to [LAN-54, "Work Flow"](#).

NG &gt;&gt; Repair harness between data link connector and combination meter



## 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.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

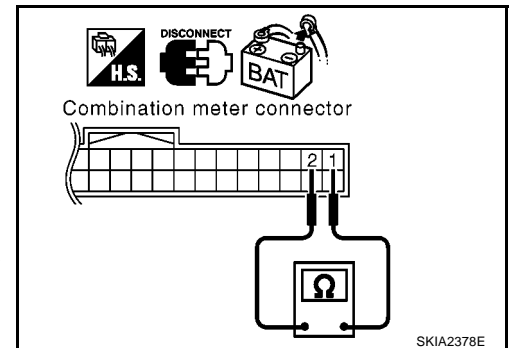
**1 (R) – 2 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace combination meter

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



**EPS Control Unit Circuit Check**

EKS00815

**1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

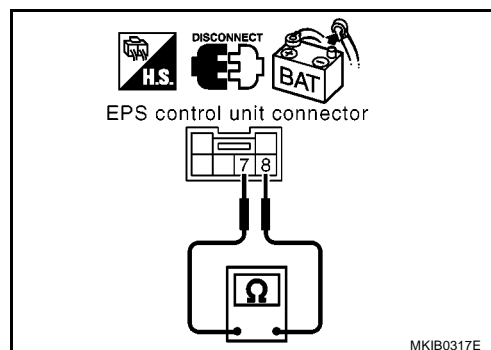
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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**

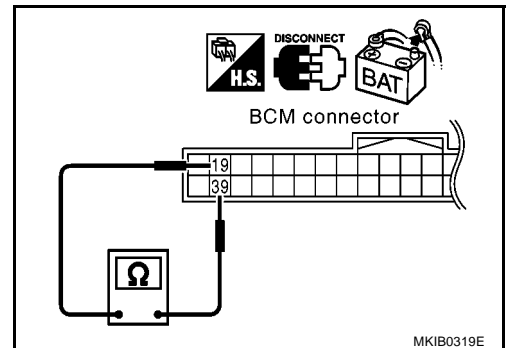
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

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



## ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00817

### 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 E45 terminals 26 (R) and 15 (W).

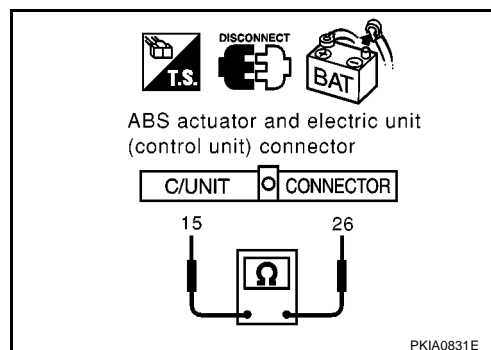
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and TCM.



**TCM Circuit Check****1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of TCM 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**

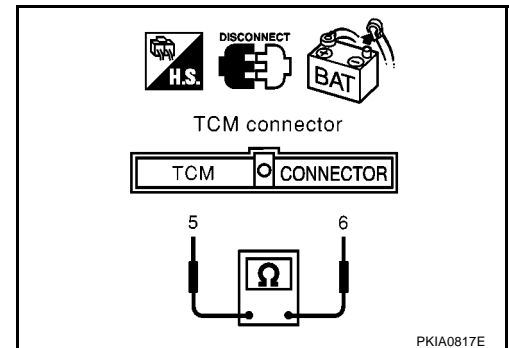
1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

**5 (R) – 6 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.

NG >> Repair harness between TCM and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

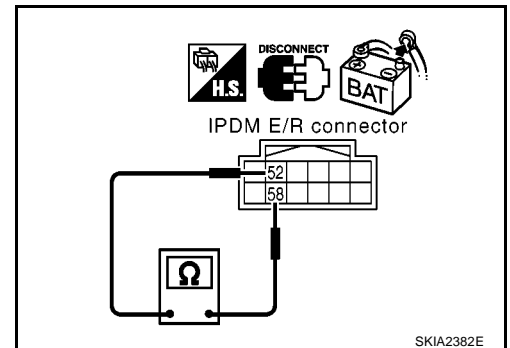
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and TCM.



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - TCM
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

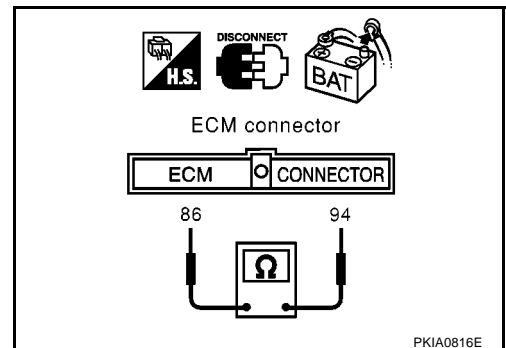
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

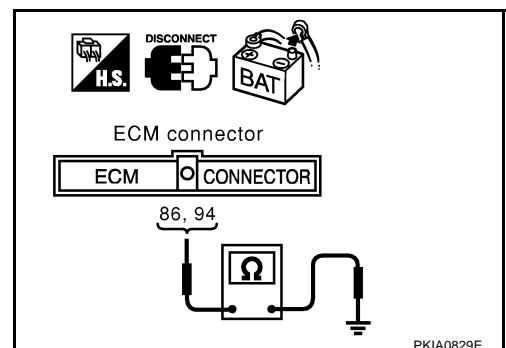
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.





## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - TCM connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

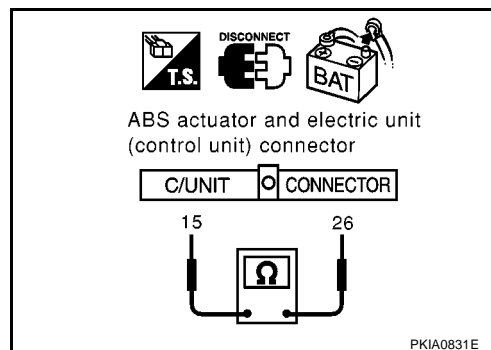
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

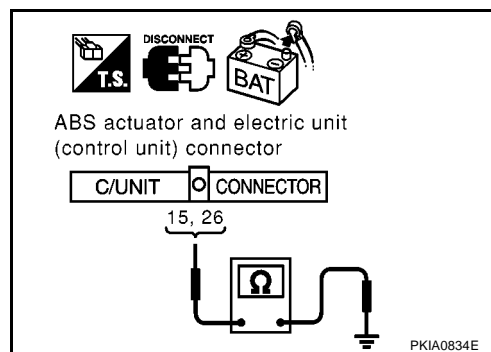
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



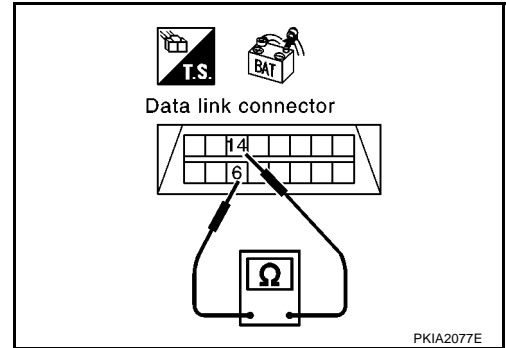
## 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

- OK >> GO TO 7.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM.



## 7. CHECK HARNESS FOR SHORT CIRCUIT

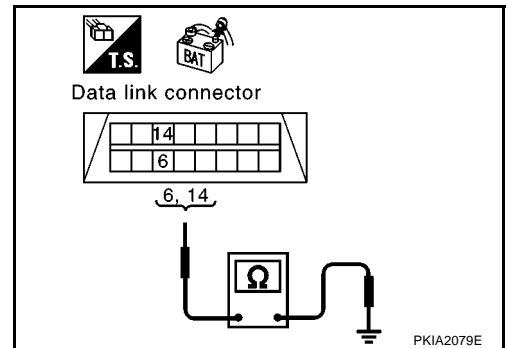
Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

- OK >> GO TO 8.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM.



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-79, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-54, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS0081B

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

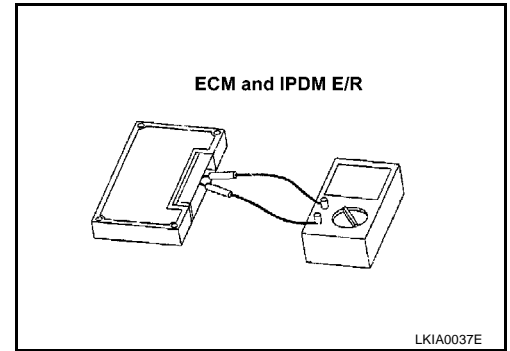
**Component Inspection**

EKS0081C

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 3)

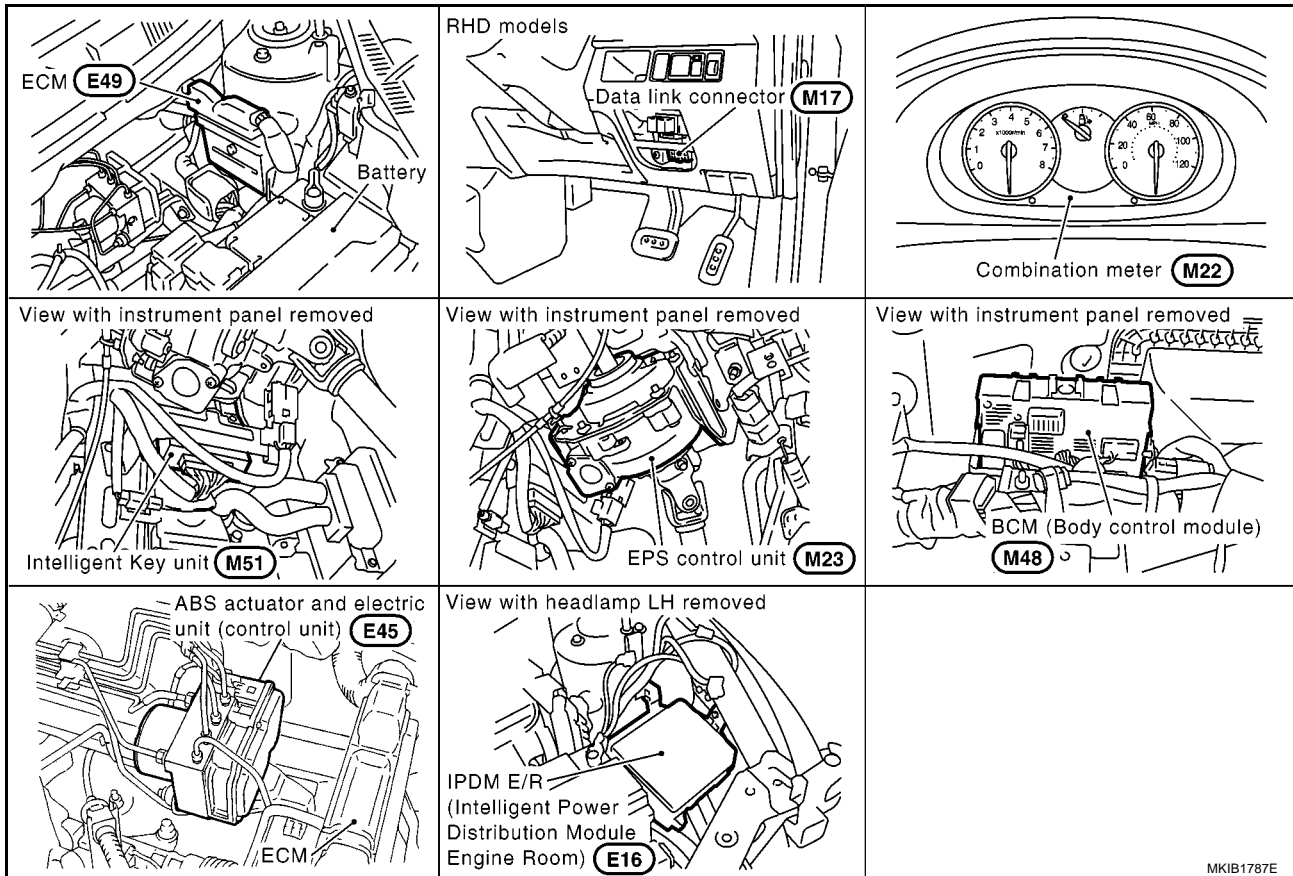
## System Description

EKS0074L

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

EKS0074M



MKIB1787E

# CAN SYSTEM (TYPE 3)

[CAN]

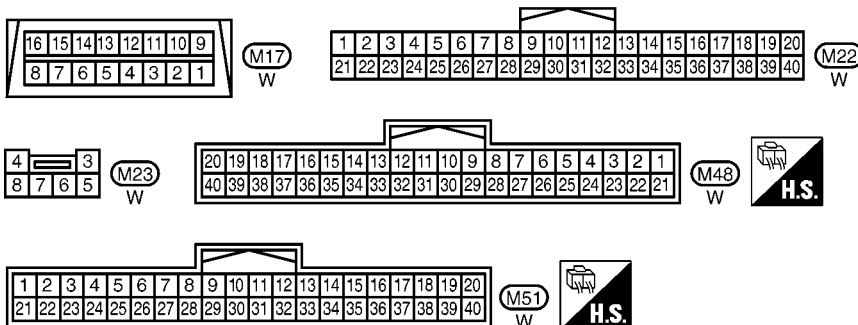
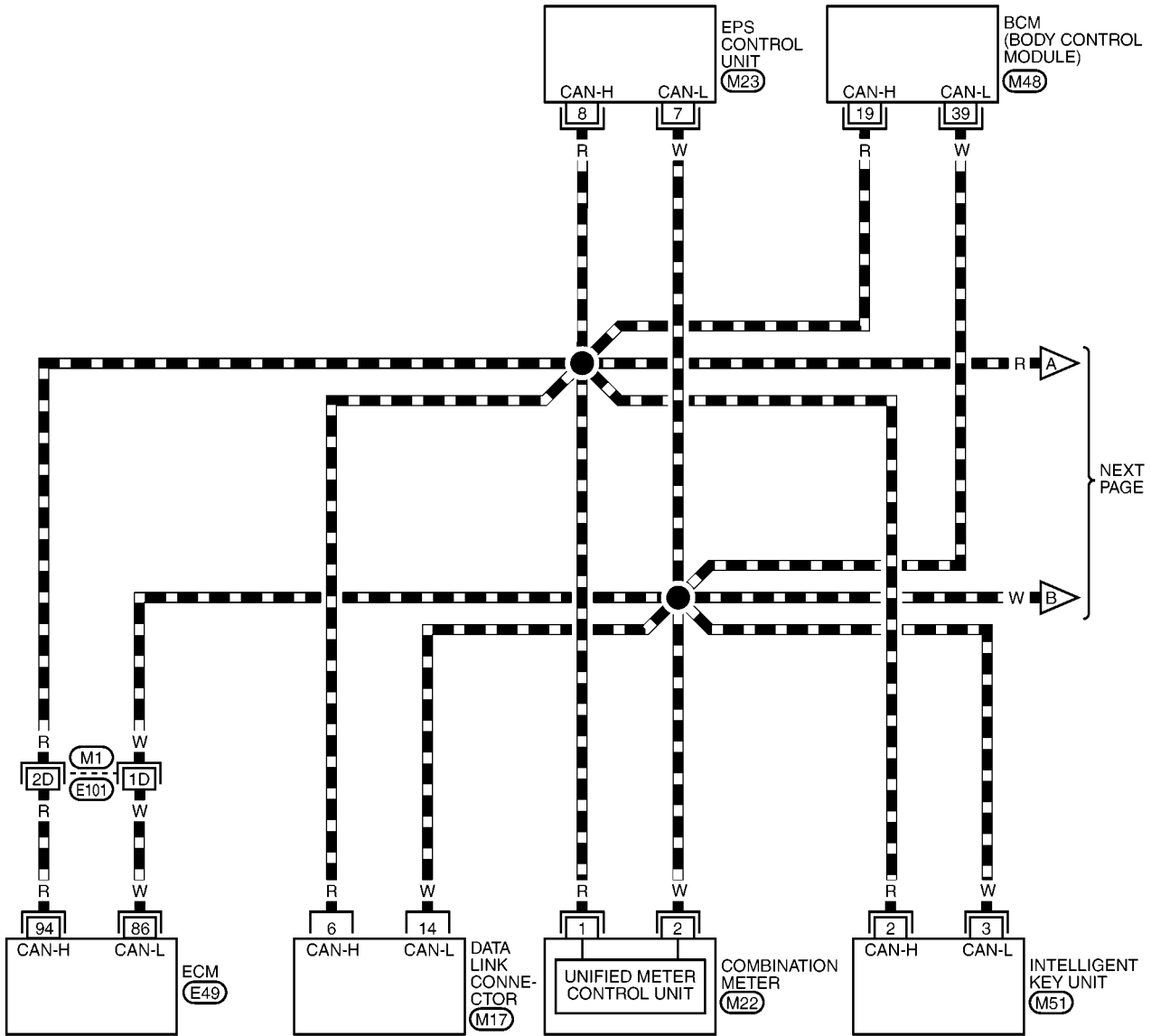
## Wiring Diagram — CAN —

EKS007YF

### LAN-CAN-05

— : DATA LINE

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M



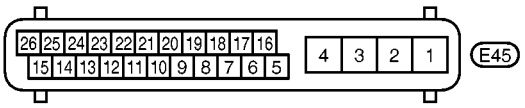
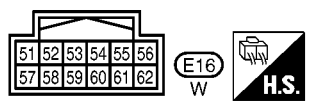
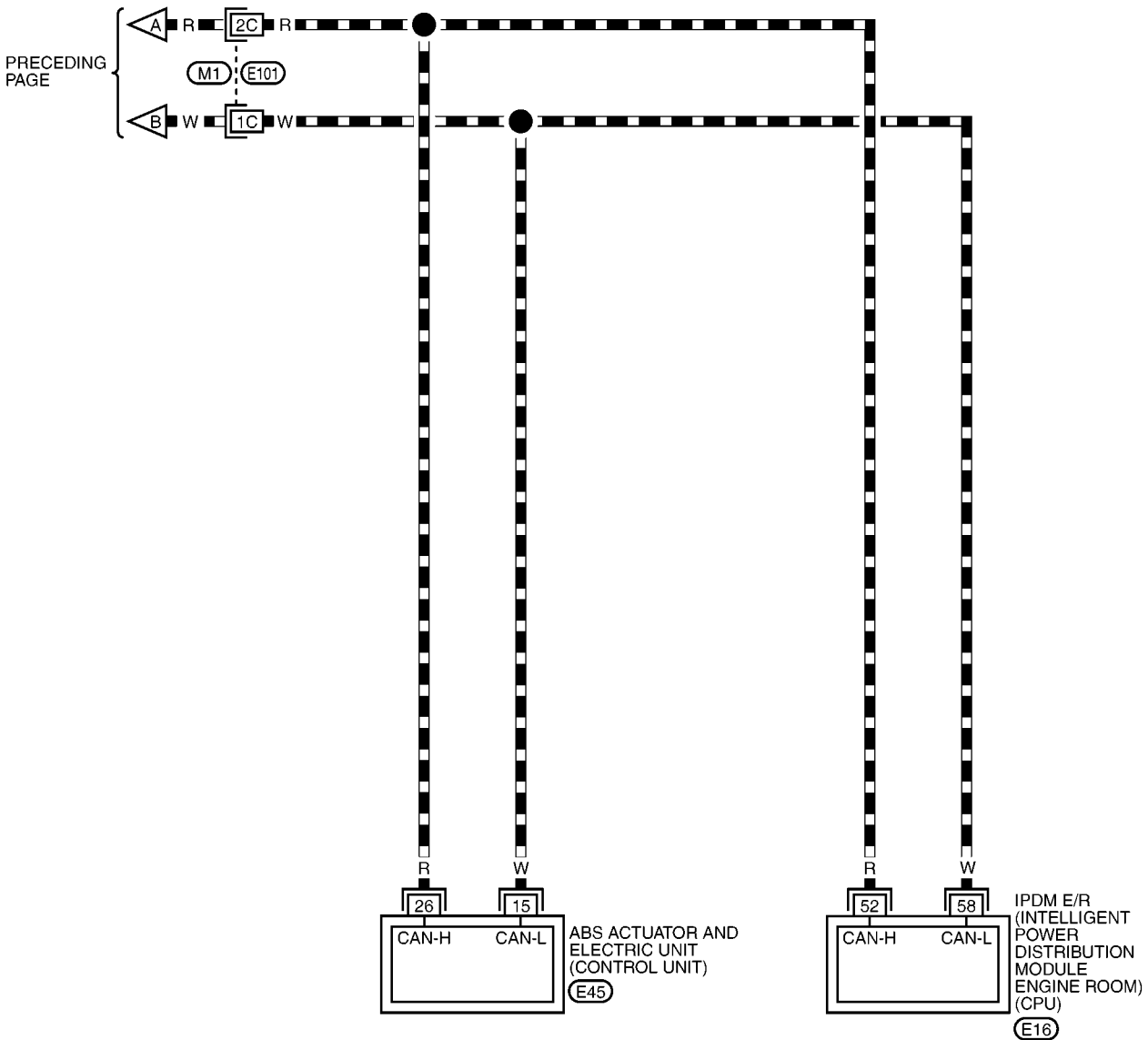
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

MKWA3784E

DATA LINE



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)


## Work Flow

EKS0081D

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSENT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-84, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-84, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-86, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 3)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2061E



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

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

MKIB2190E

## CHECK SHEET RESULTS (EXAMPLE)

### NOTE:

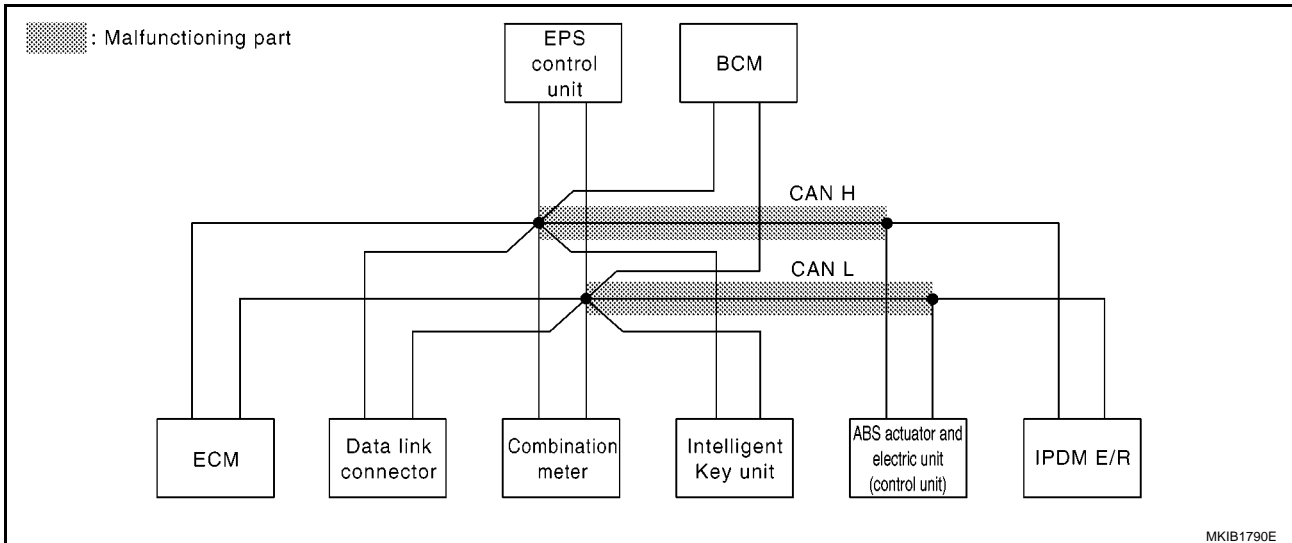
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

### Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-96, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2062E



MKIB1790E

# CAN SYSTEM (TYPE 3)

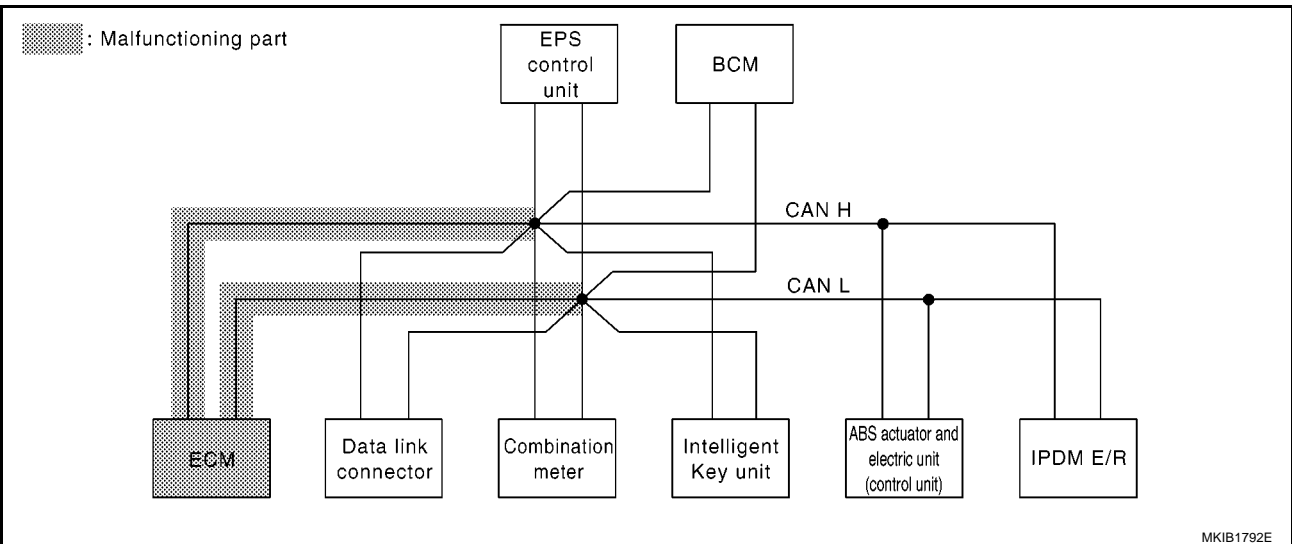
[CAN]

## Case 2

Check ECM circuit. Refer to [LAN-97, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2063E



MKIB1792E

LAN

# CAN SYSTEM (TYPE 3)

[CAN]

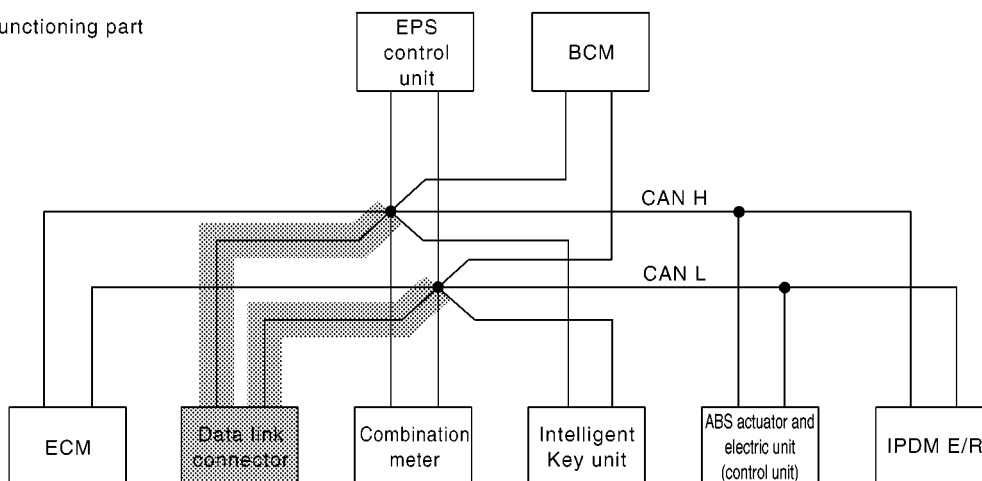
## Case 3

Check data link connector circuit. Refer to [LAN-98, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2064E

 : Malfunctioning part



MKIB1794E

# CAN SYSTEM (TYPE 3)

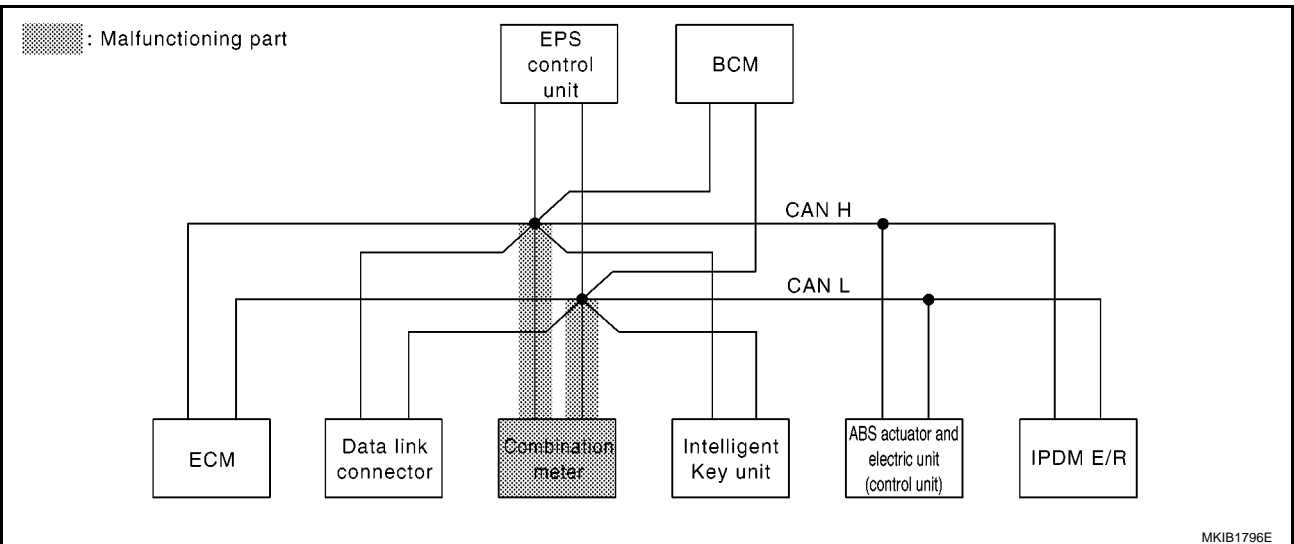
[CAN]

## Case 4

Check combination meter circuit. Refer to [LAN-99, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2065E



MKIB1796E

LAN

# CAN SYSTEM (TYPE 3)

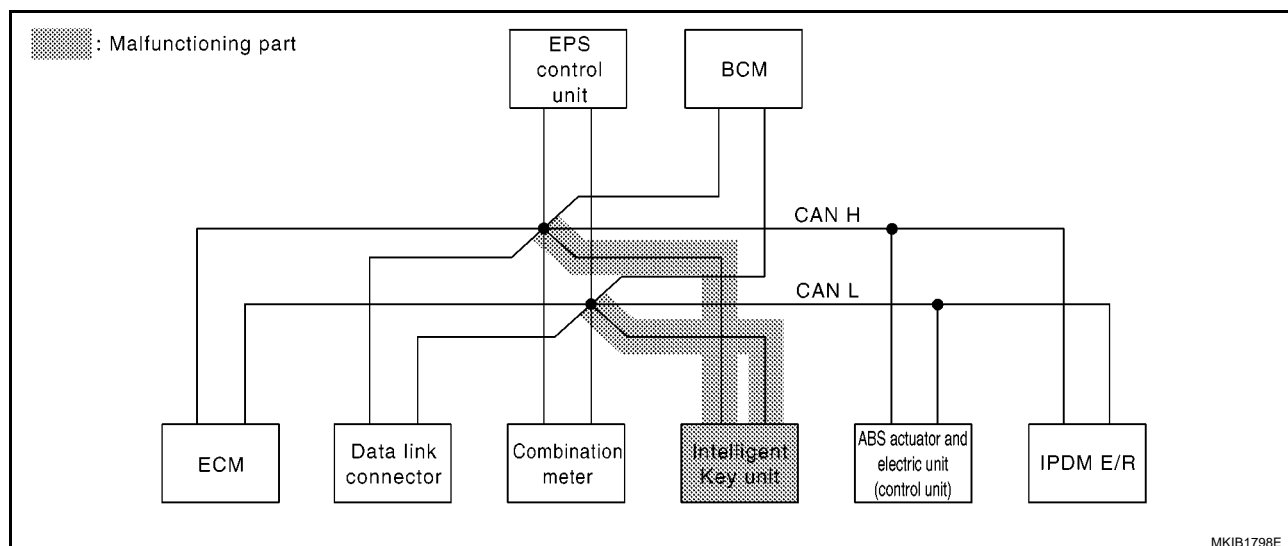
[CAN]

## Case 5

Check Intelligent Key unit circuit. Refer to [LAN-100, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2066E



MKIB1798E

# CAN SYSTEM (TYPE 3)

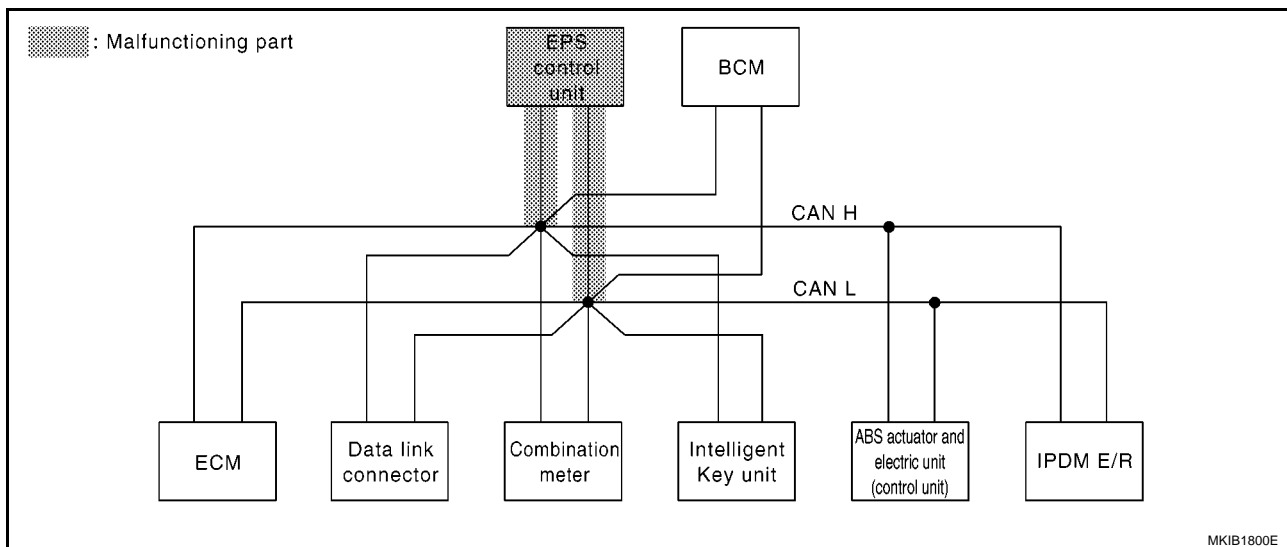
[CAN]

## Case 6

Check EPS control unit circuit. Refer to [LAN-101, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2067E



MKIB1800E

LAN

# CAN SYSTEM (TYPE 3)

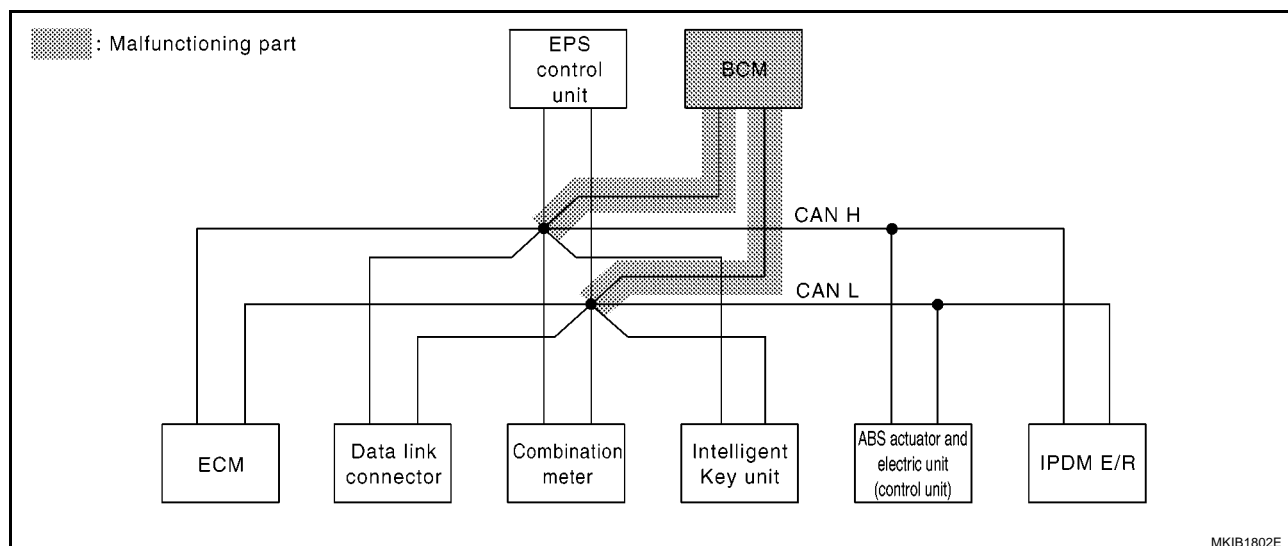
[CAN]

## Case 7

Check BCM circuit. Refer to [LAN-102, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2068E



MKIB1802E

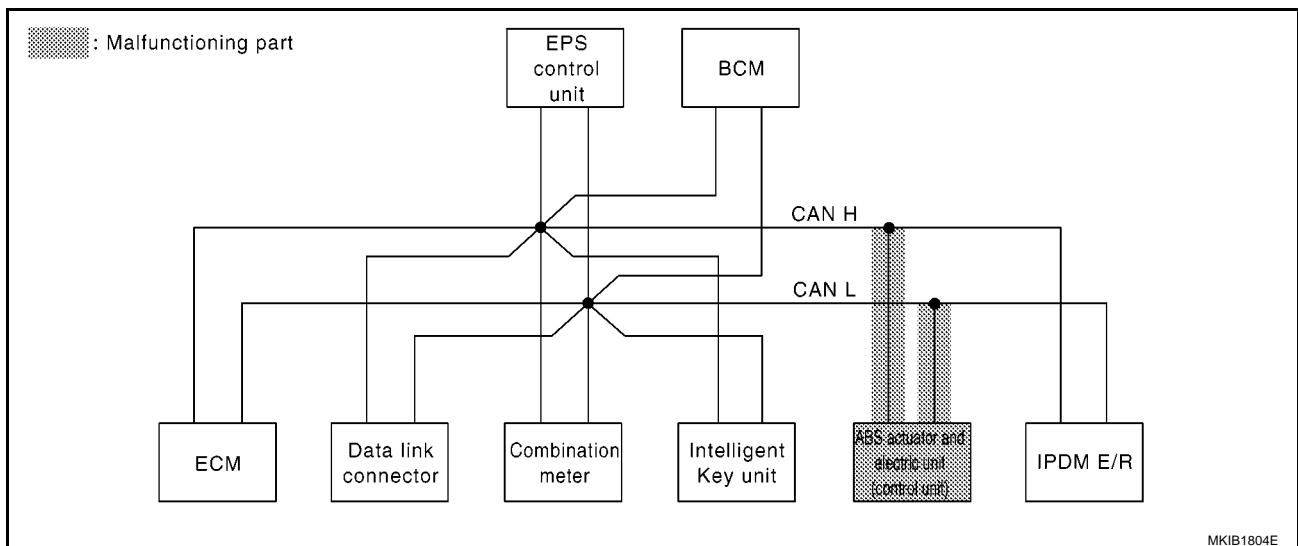


**Case 8**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-103, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2069E



MKIB1804E

# CAN SYSTEM (TYPE 3)

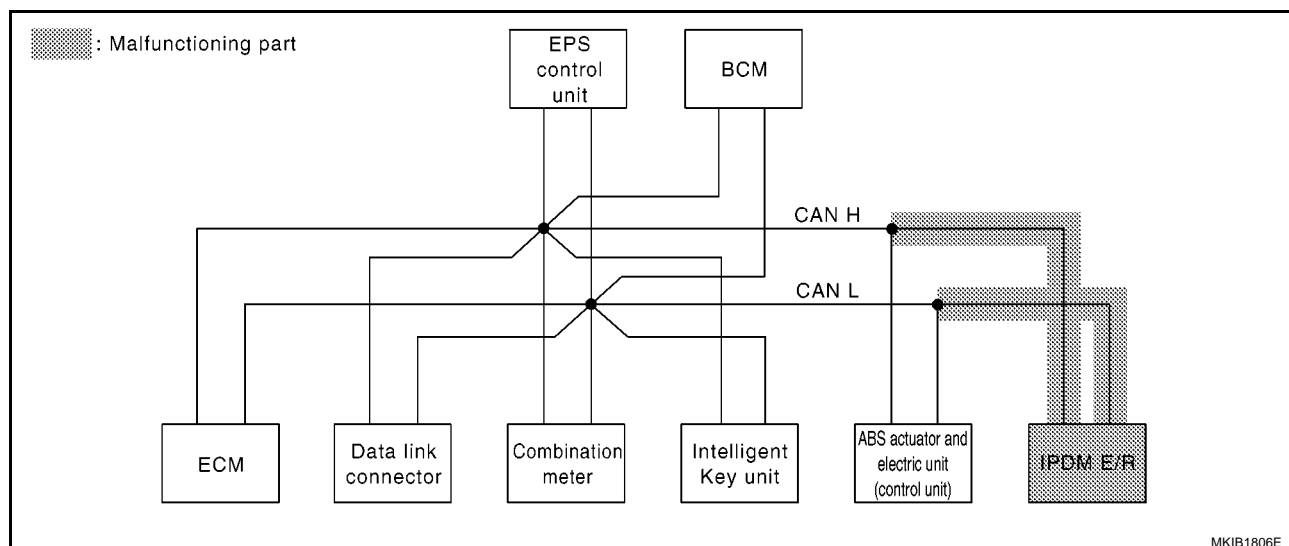
[CAN]

## Case 9

Check IPDM E/R circuit. Refer to [LAN-104, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2070E



MKIB1806E

# CAN SYSTEM (TYPE 3)

[CAN]

## Case 10

Check CAN communication circuit. Refer to [LAN-105. "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2071E

## Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-108. "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2072E

## Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-108. "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2073E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS0081E

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

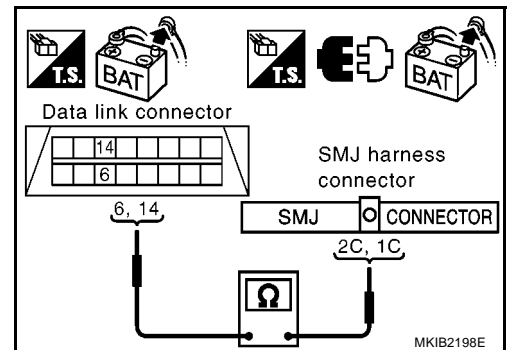
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

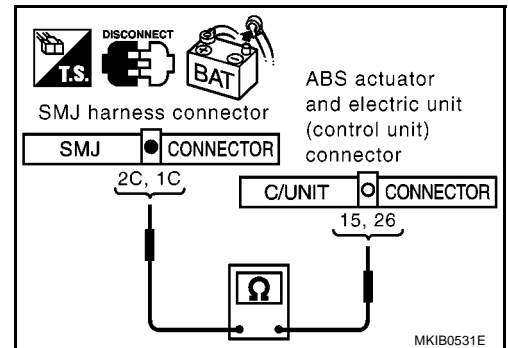
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-83, "Work Flow"](#).

NG >> Repair harness.



**ECM Circuit Check**

EKS0081F

**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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

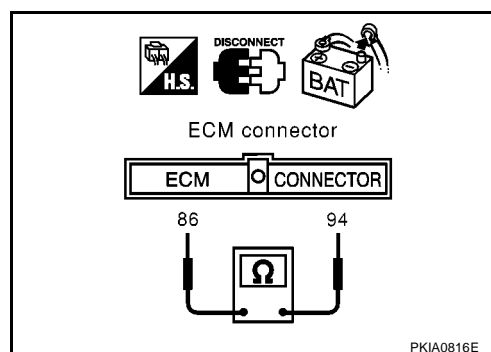
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

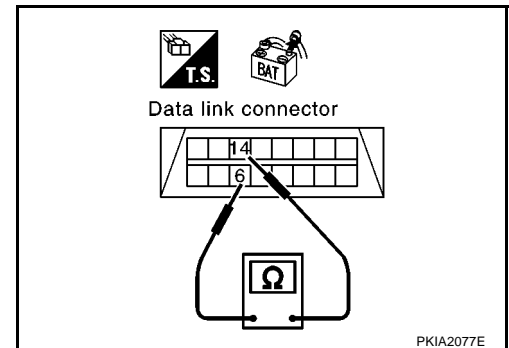
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-83, "Work Flow"](#).

NG >> Repair harness between data link connector and combination meter



**Combination Meter Circuit Check**

EKS0081H

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

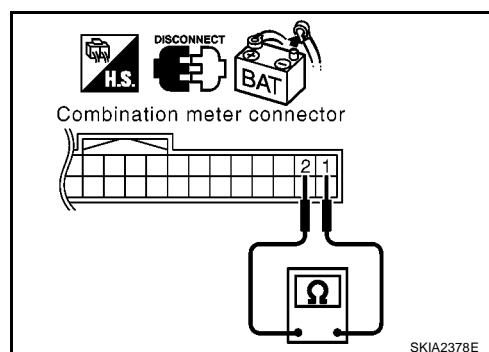
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter.

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

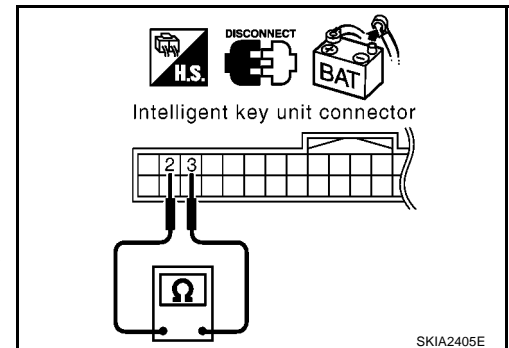
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.





**EPS Control Unit Circuit Check**

EKS0081J

**1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

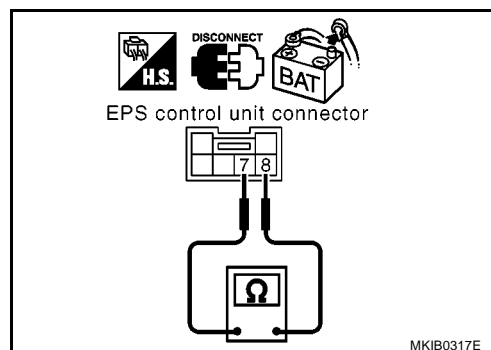
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

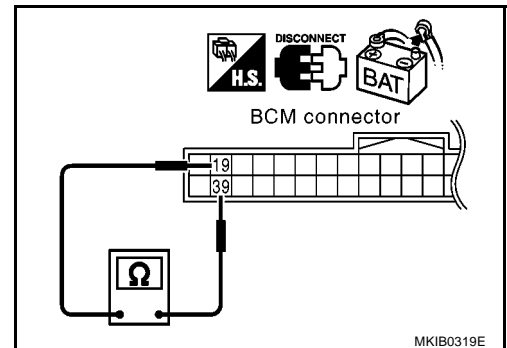
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.



## ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0081L

### 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 E45 terminals 26 (R) and 15 (W).

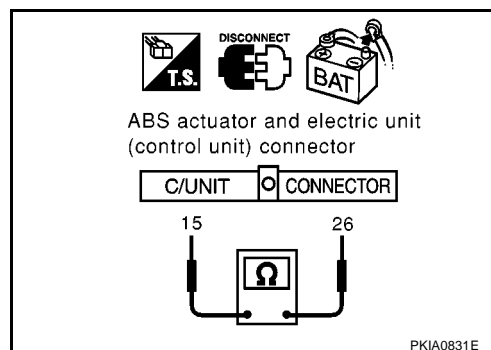
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

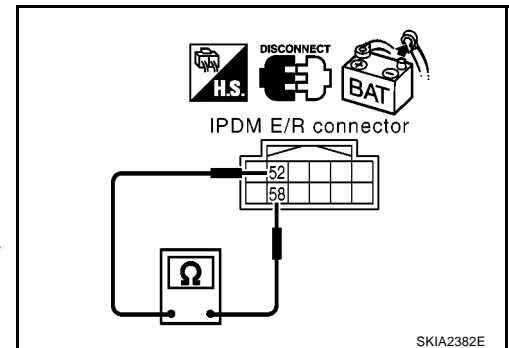
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



## CAN Communication Circuit Check

EKS0081N

## 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR SHORT CIRCUIT

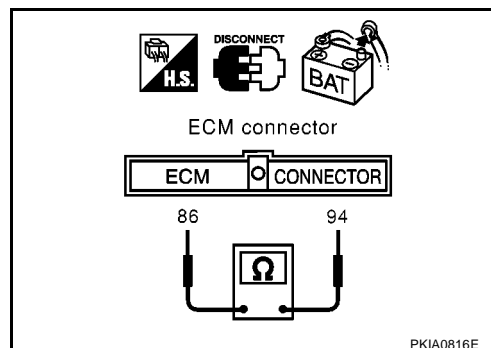
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 3. CHECK HARNESS FOR SHORT CIRCUIT

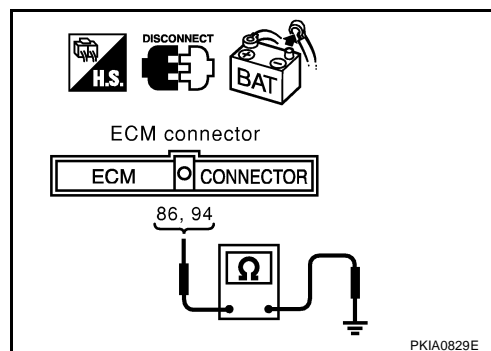
Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

**94 (R) – Ground : Continuity should not exist.****86 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

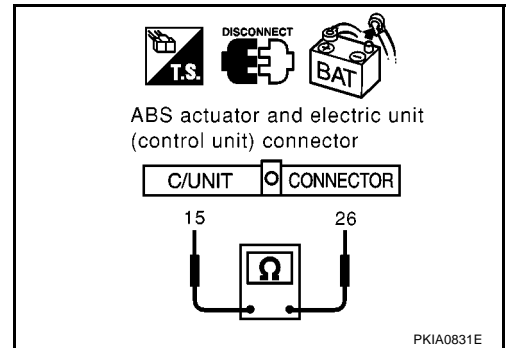
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

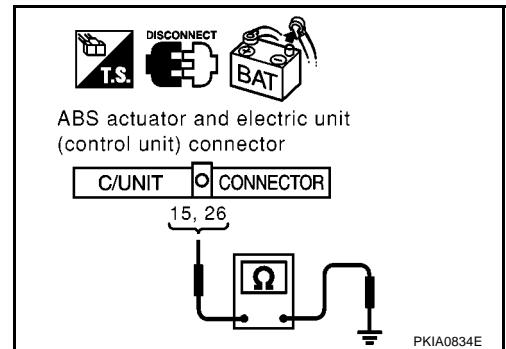
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

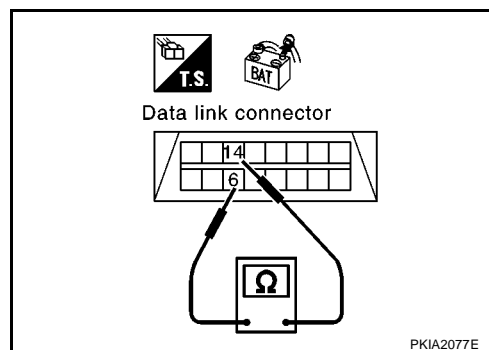
1. Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

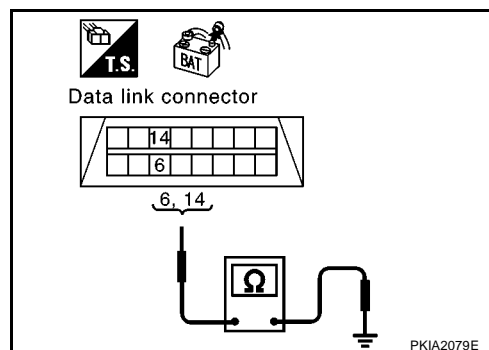
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-108, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-83, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

## IPDM E/R Ignition Relay Circuit Check

EKS0081O

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

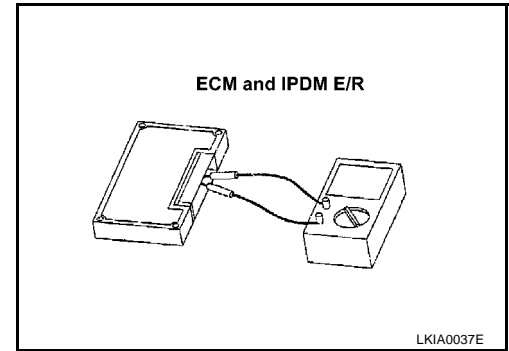
## Component Inspection

EKS0081P

### 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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



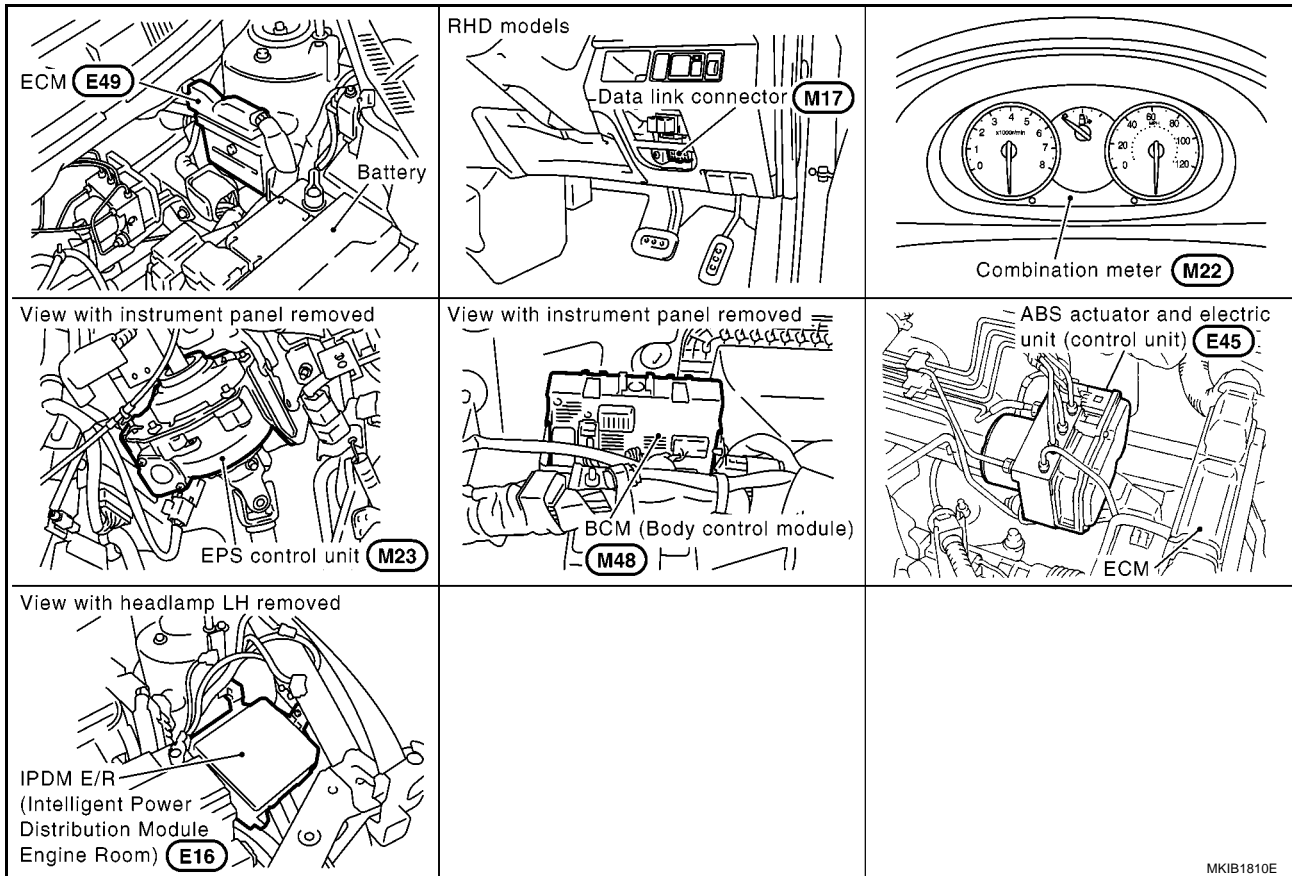


## CAN SYSTEM (TYPE 4)

## 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



# CAN SYSTEM (TYPE 4)

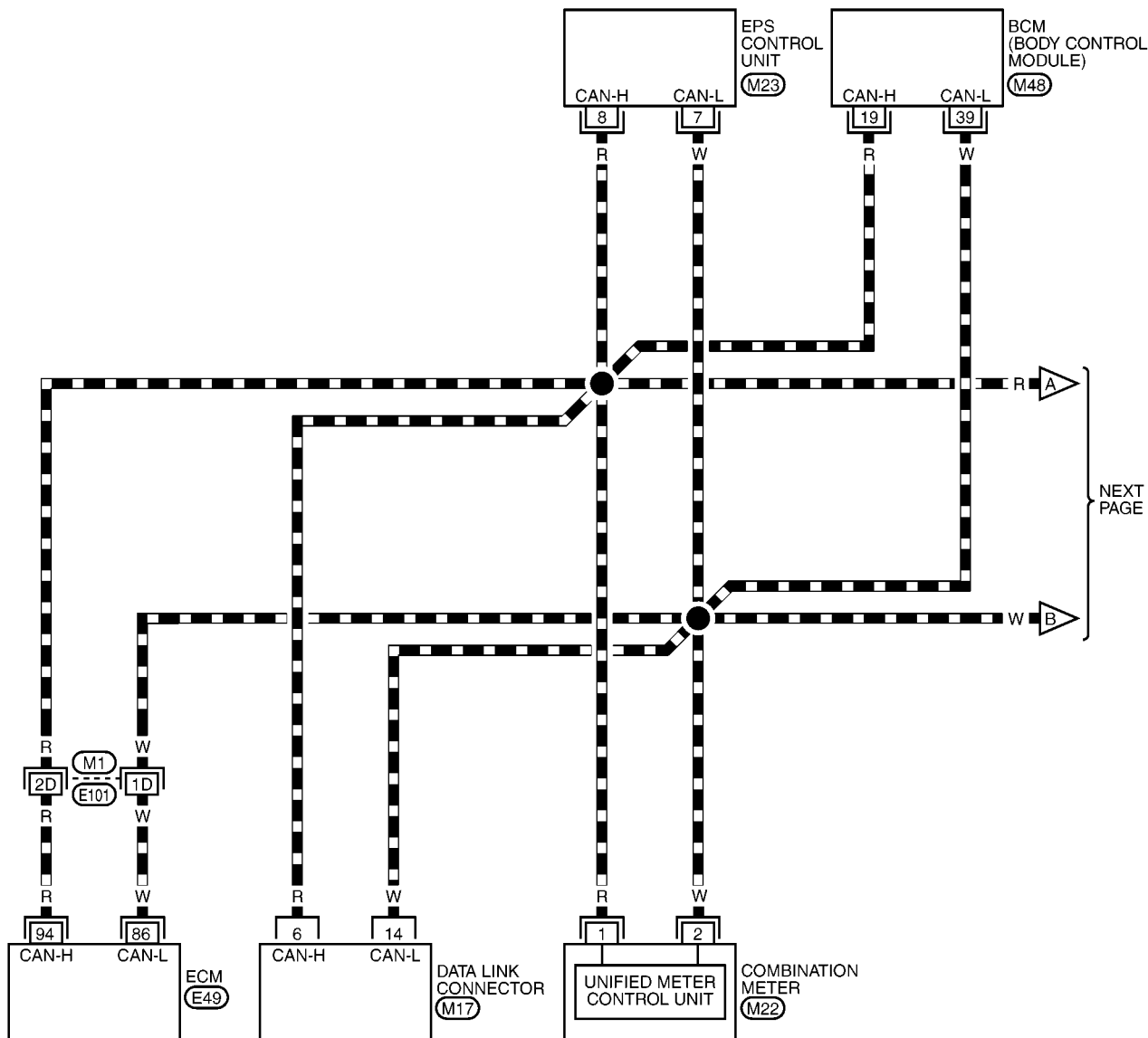
[CAN]

## Wiring Diagram — CAN —

EKS007YU

### LAN-CAN-07

— : DATA LINE



NEXT PAGE

16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

(M17)  
W

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

(M22)  
W

4	3
8	7

(M23)  
W

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

(M48)  
W



REFER TO THE FOLLOWING.

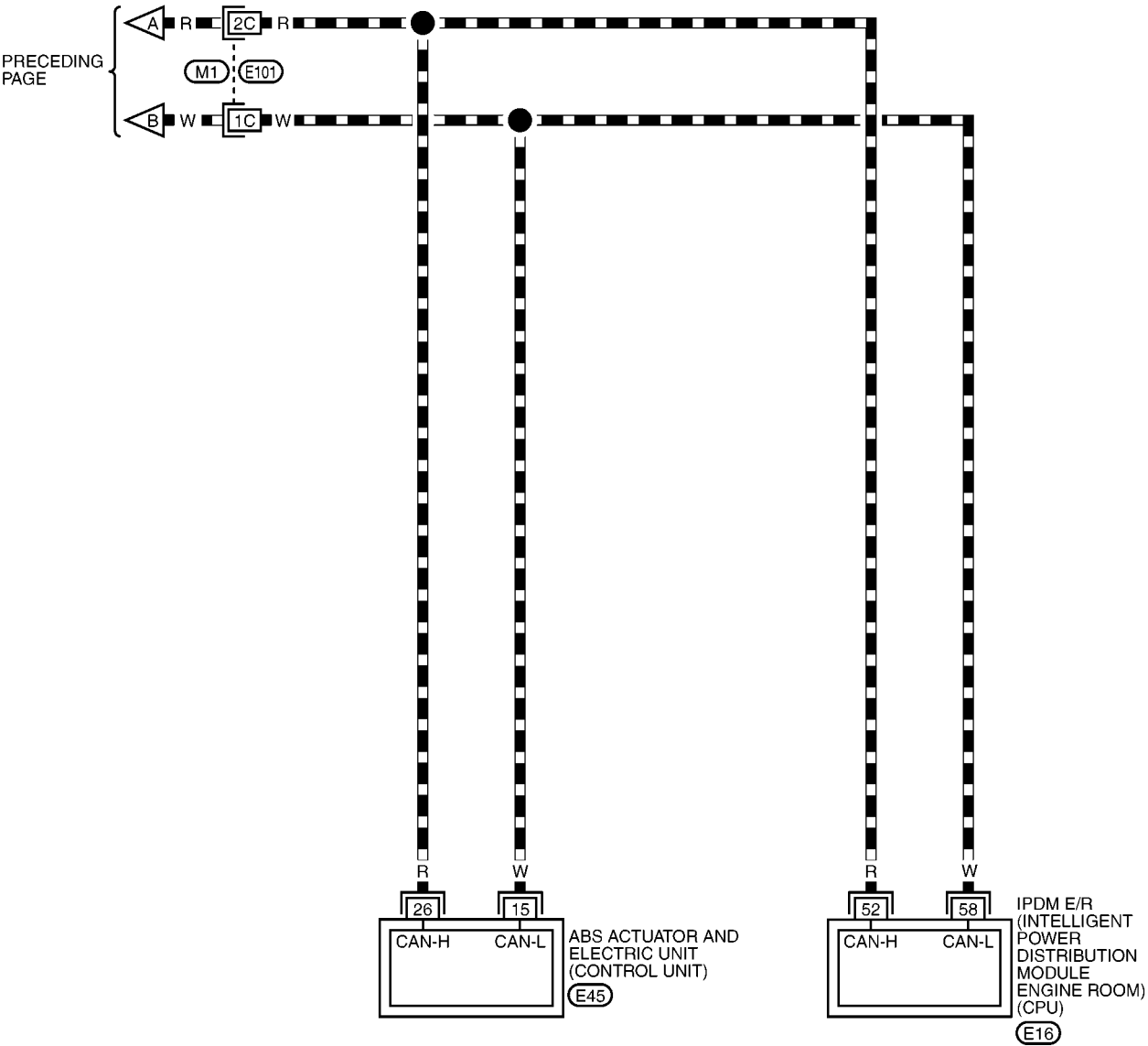
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

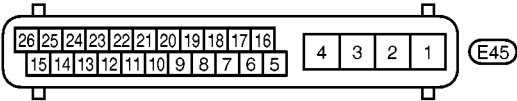
MKWA3498E

LAN-CAN-08

▬ : DATA LINE



LAN



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)


## Work Flow

EKS0081Q

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

(Example)

NISSAN	
CONSULT- II	
ENGINE	
START (NISSAN BASED VHCL)	
START (X-BADGE VHCL)	
SUB MODE	
	LIGHT COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
BACK	LIGHT	COPY	

MKIB1692E

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

(Example)

SELECT DIAG MODE	
WORK SUPPORT	
SELF-DIAG RESULTS	
DATA MONITOR	
DATA MONITOR (SPEC)	
CAN DIAG SUPPORT MNTR	
ACTIVE TEST	
Scroll Down	
BACK	LIGHT COPY




SELF-DIAG RESULTS	
DTC RESULTS	
TIME	
CAN COMM CIRCUIT [U1000]	0
F.F.DATA	
ERASE PRINT	
MODE	BACK
LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE	
WORK SUPPORT	
SELF-DIAG RESULTS	
DATA MONITOR	
DATA MONITOR (SPEC)	
CAN DIAG SUPPORT MNTR	
ACTIVE TEST	
Scroll Down	
BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR	
ENGINE	
PRST	
INITIAL DIAG	OK
TRANSMIT DIAG	OK
TCM	OK
VDC/TC/ABS	OK
METER/M&A	OK
ICC	UNKWN
BCM/SEC	OK
IPDM E/R	OK
AWD/4WD/e4WD	UNKWN
PRINT	
Scroll Down	
MODE	BACK
LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-113, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-113, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-115, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 4)

[CAN]

## CHECK SHEET

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2074E

## CAN SYSTEM (TYPE 4)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2191E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

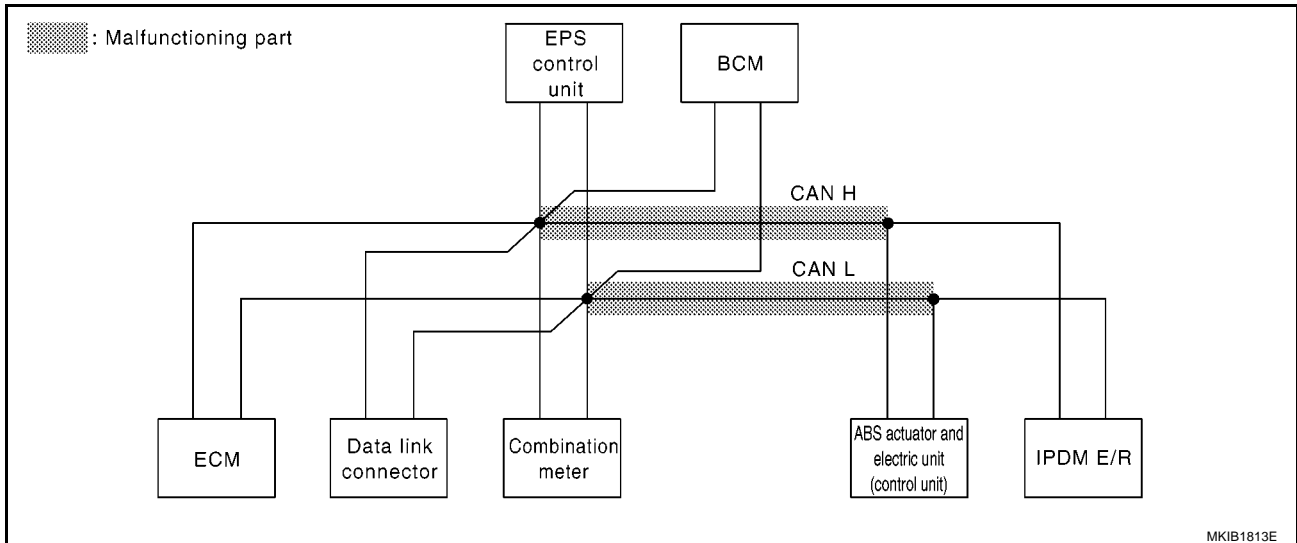
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-124, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2075E



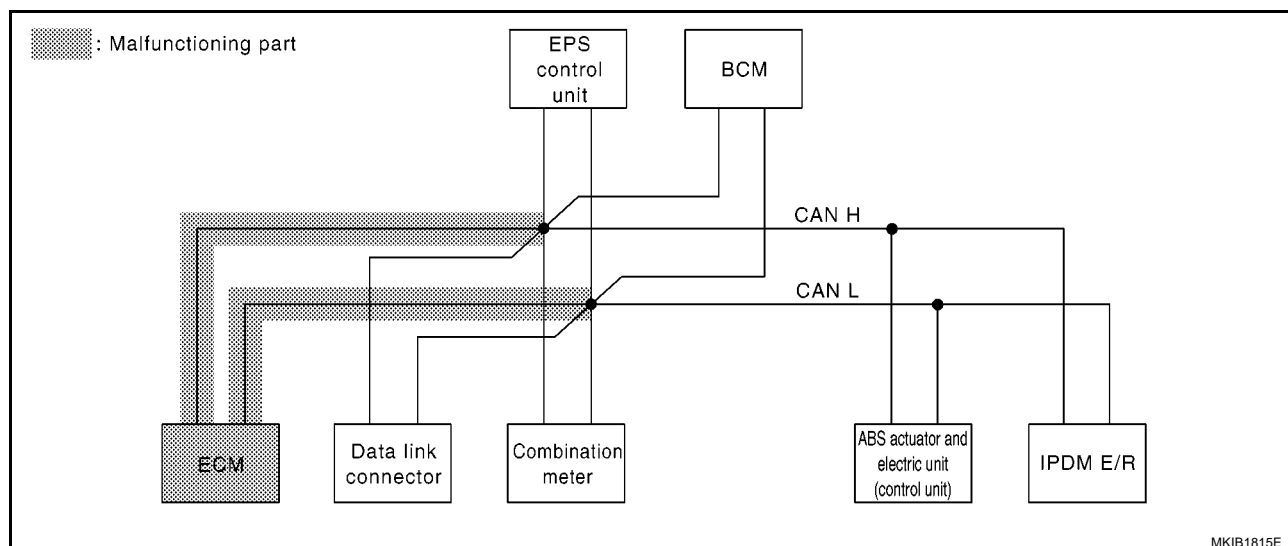
MKIB1813E

**Case 2**

Check ECM circuit. Refer to [LAN-125, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	✓	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2076E



MKIB1815E

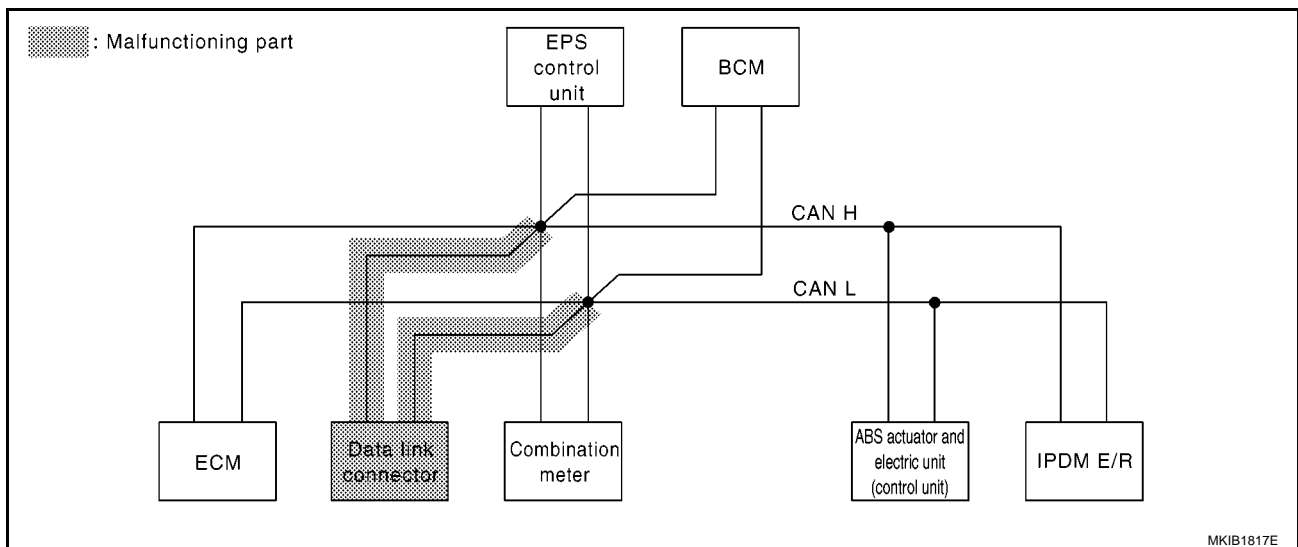


## Case 3

Check data link connector circuit. Refer to [LAN-126, "Data Link Connector Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication ✓	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2077E

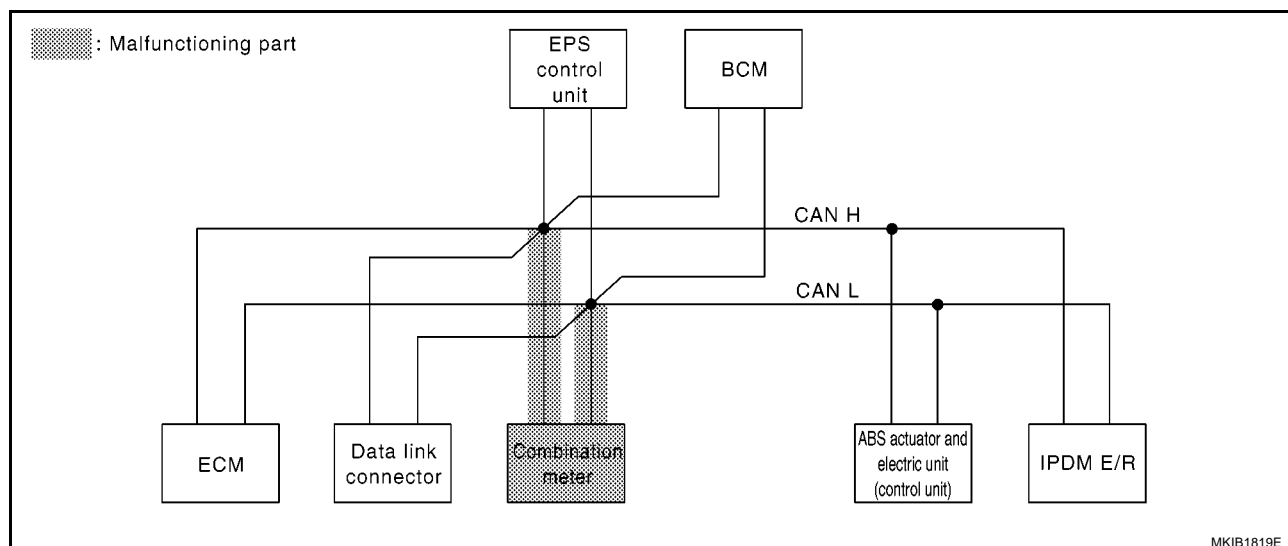


**Case 4**

Check combination meter circuit. Refer to [LAN-127, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2078E



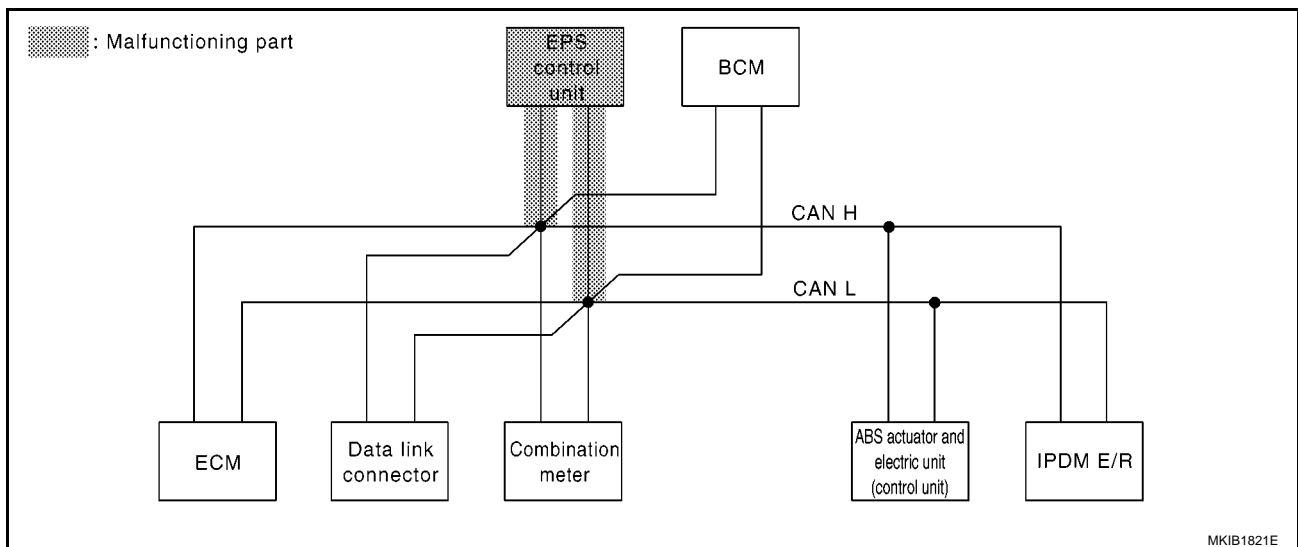
MKIB1819E

**Case 5**

Check EPS control unit circuit. Refer to [LAN-128, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2079E



MKIB1821E

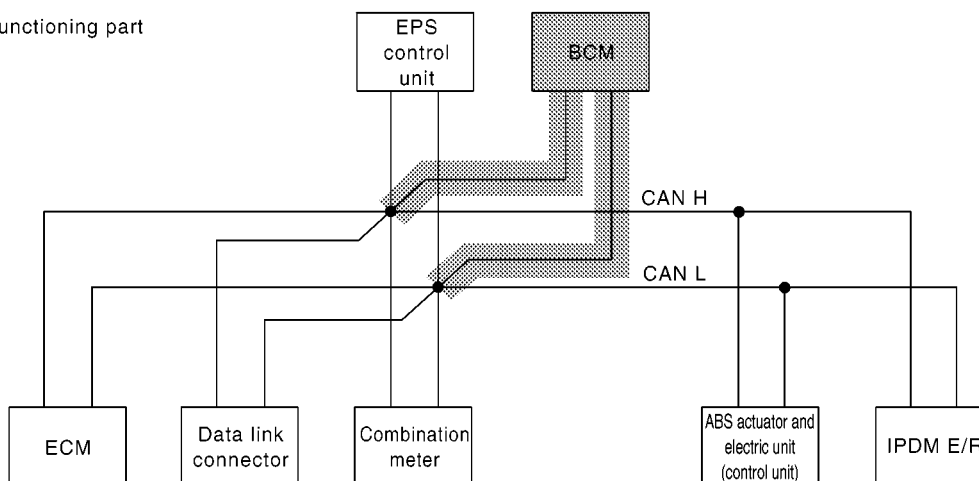
**Case 6**

Check BCM circuit. Refer to [LAN-129, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN ✓	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—

MKIB2080E

 : Malfunctioning part



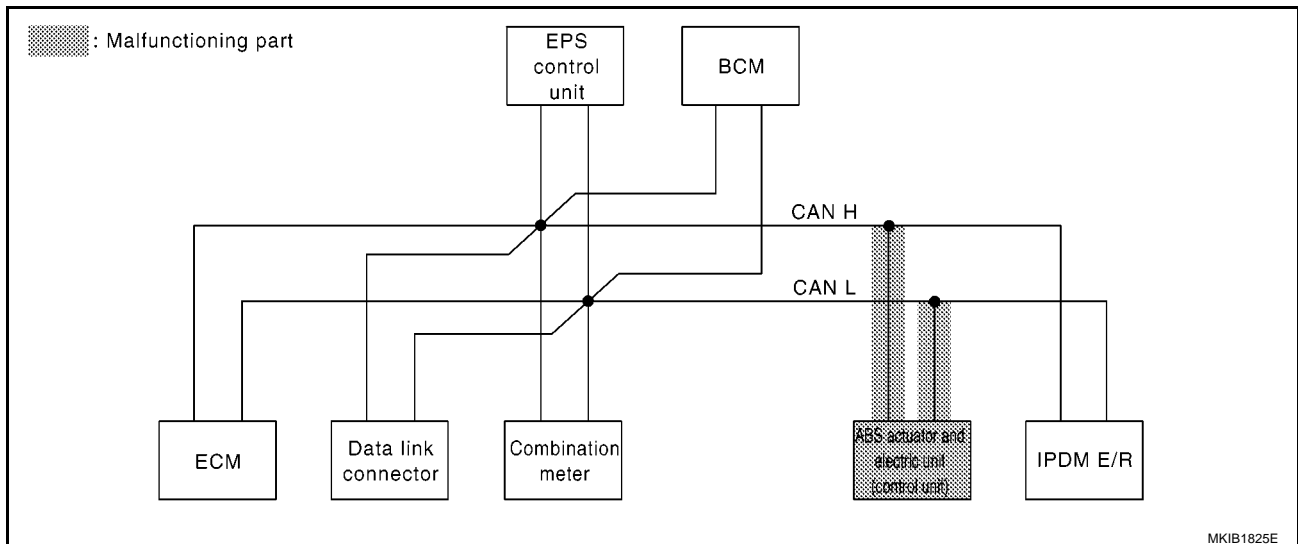
MKIB1823E

**Case 7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-130, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2081E



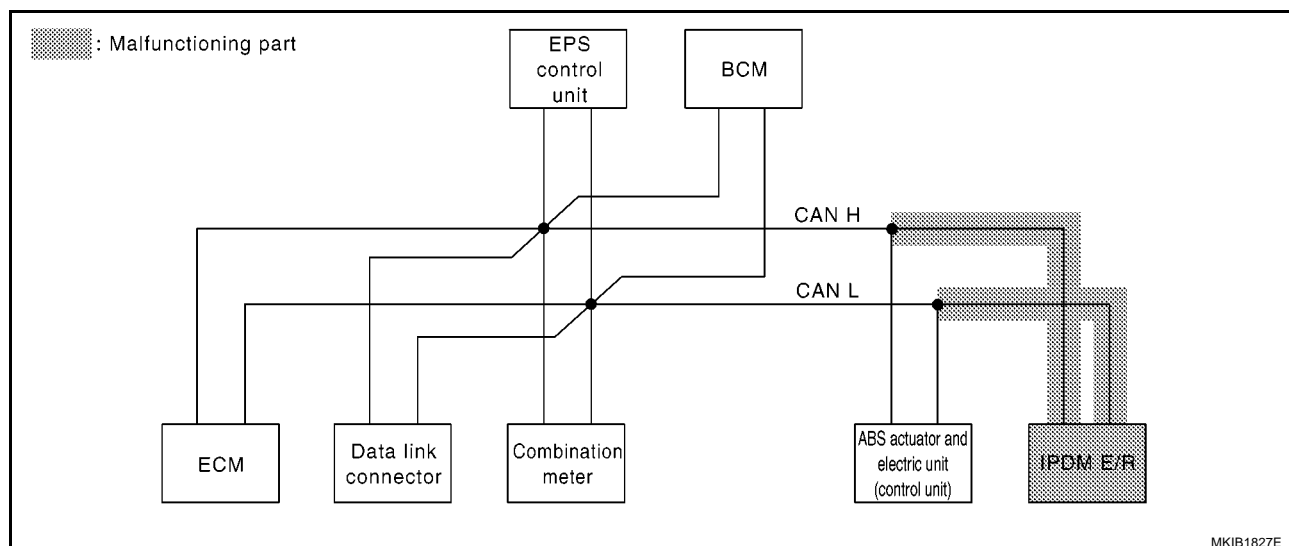
MKIB1825E

**Case 8**

Check IPDM E/R circuit. Refer to [LAN-131, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2082E



MKIB1827E

# CAN SYSTEM (TYPE 4)

[CAN]

## Case 9

Check CAN communication circuit. Refer to [LAN-132. "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2083E

## Case 10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-135. "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2084E

## Case 11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-135. "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2085E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS0081R

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

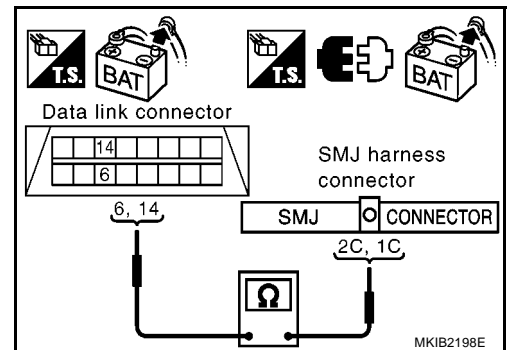
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

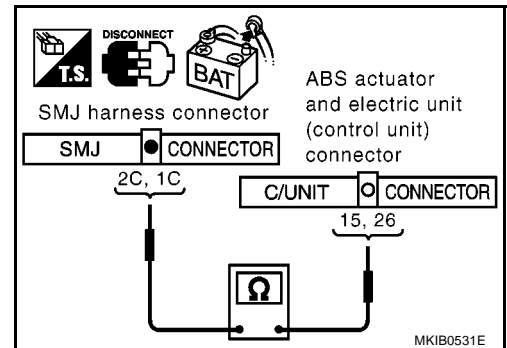
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-112, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

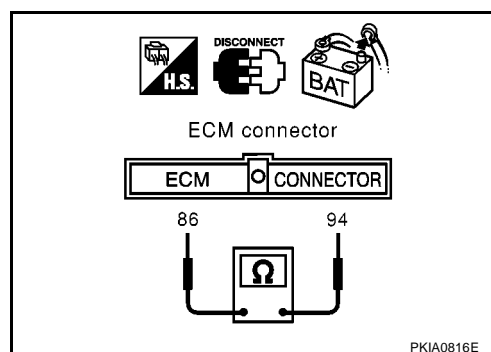
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

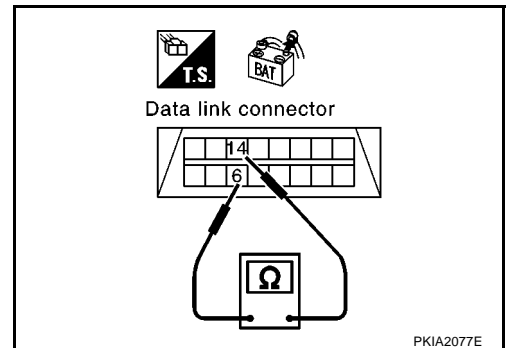
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-112, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

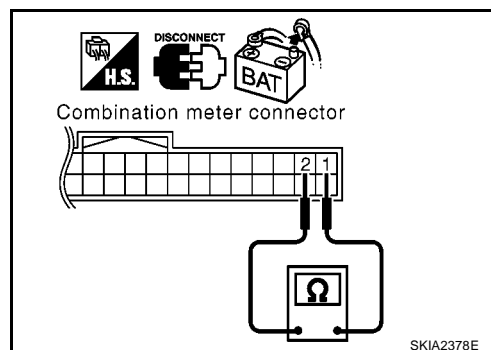
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



## EPS Control Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

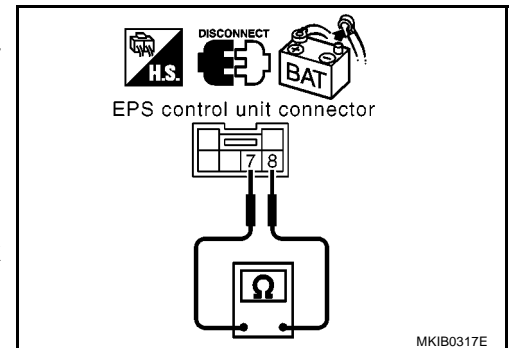
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

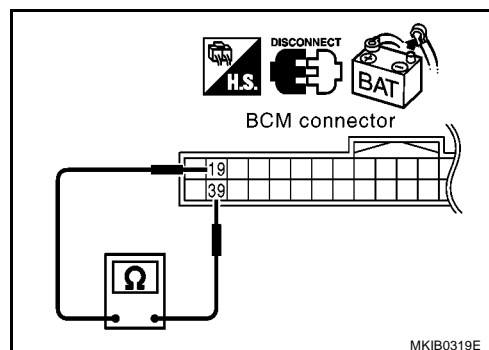
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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.

### 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 E45 terminals 26 (R) and 15 (W).

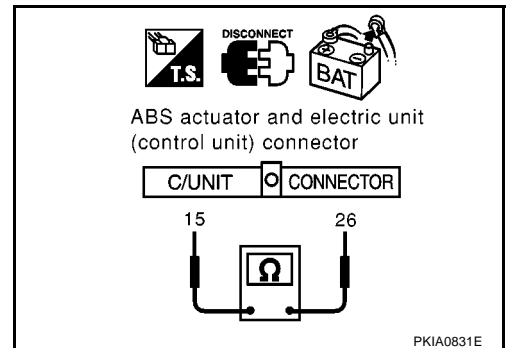
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

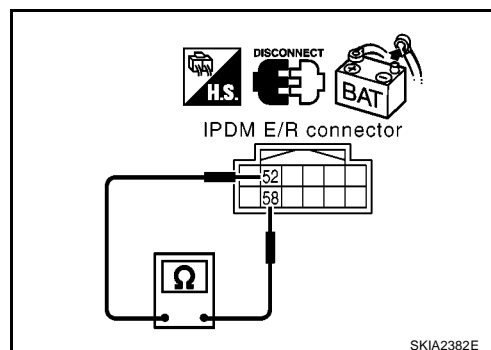
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

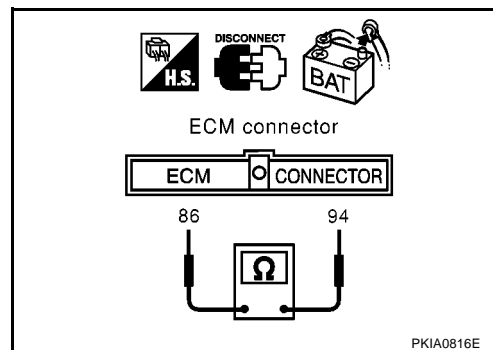
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

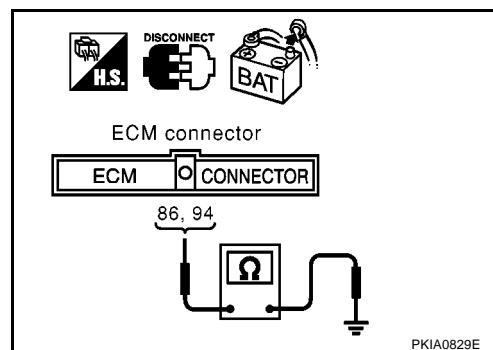
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.





## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

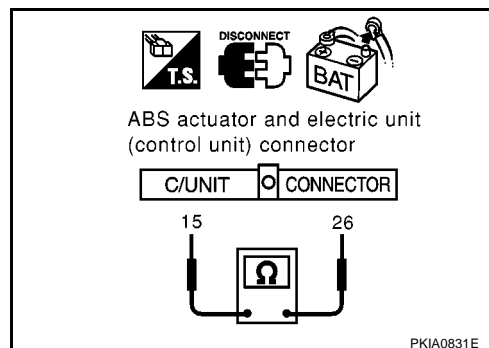
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

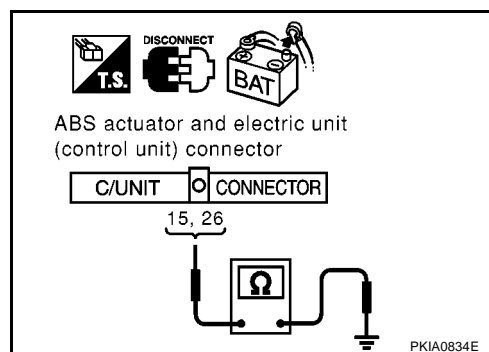
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

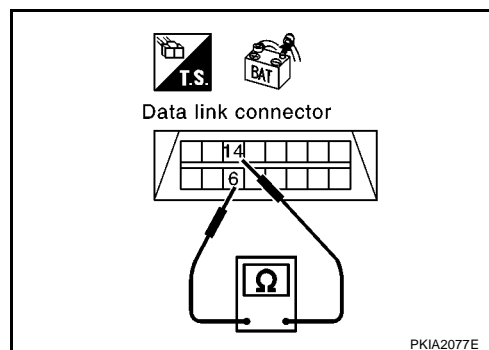
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

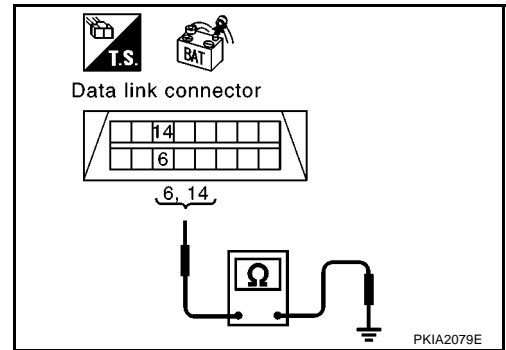
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-135, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-112, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00820

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

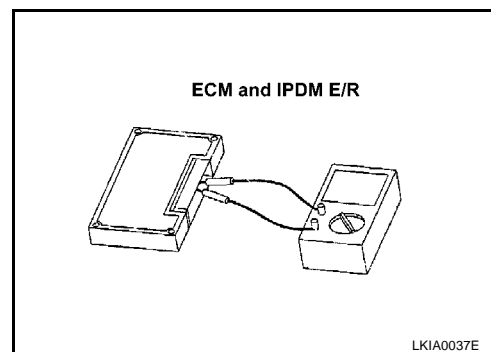
**Component Inspection**

EKS00821

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 5)

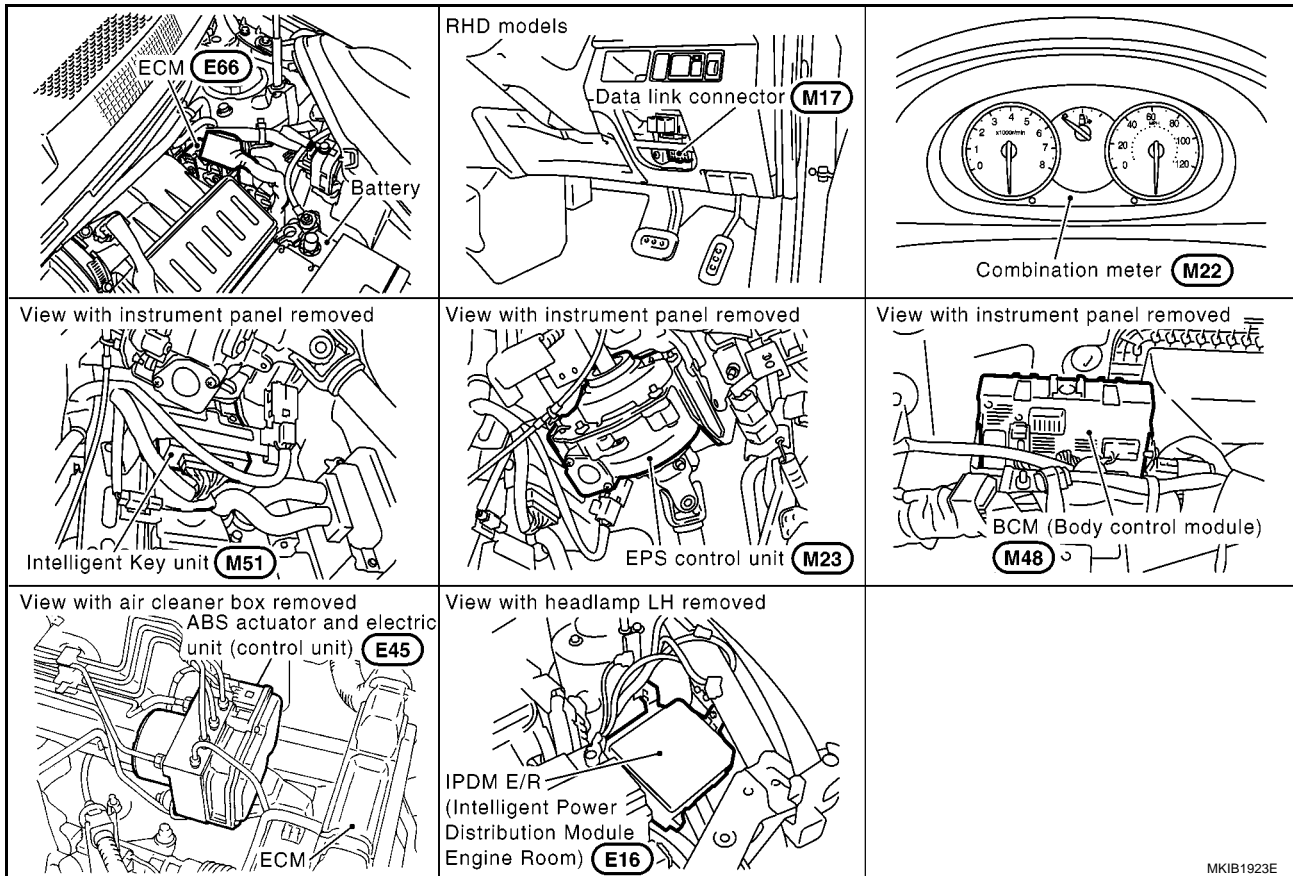
## System Description

EKS00PAR

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

EKS00PAS



MKIB1923E

# CAN SYSTEM (TYPE 5)

[CAN]

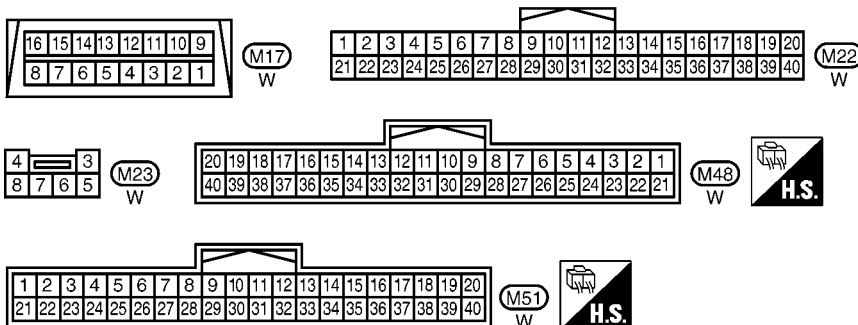
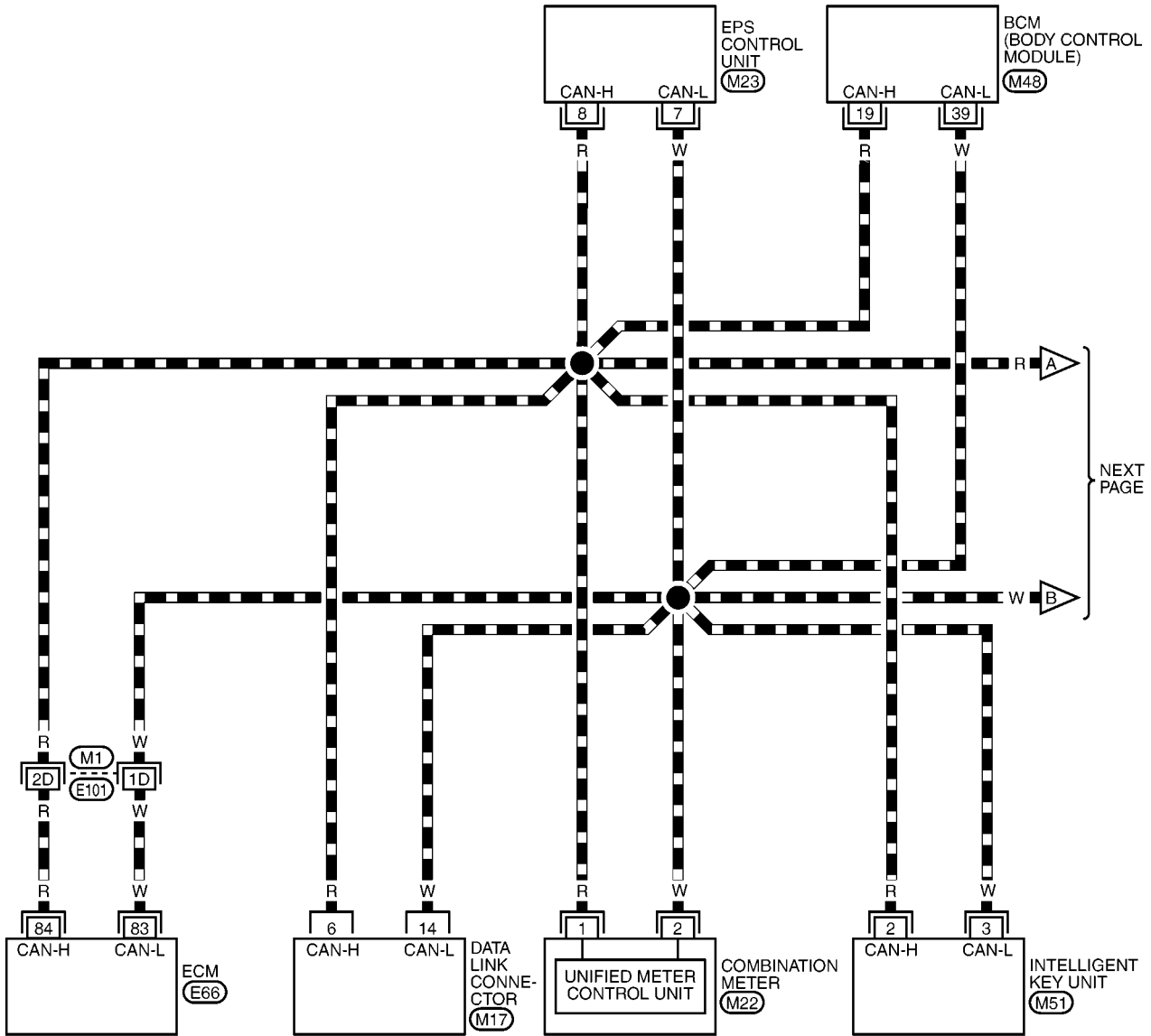
## Wiring Diagram — CAN —

EKS00PAT

LAN-CAN-09

— : DATA LINE

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M



REFER TO THE FOLLOWING.

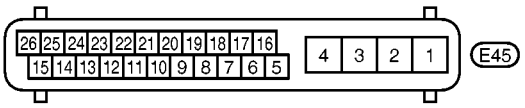
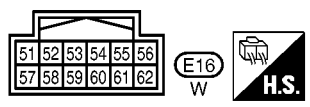
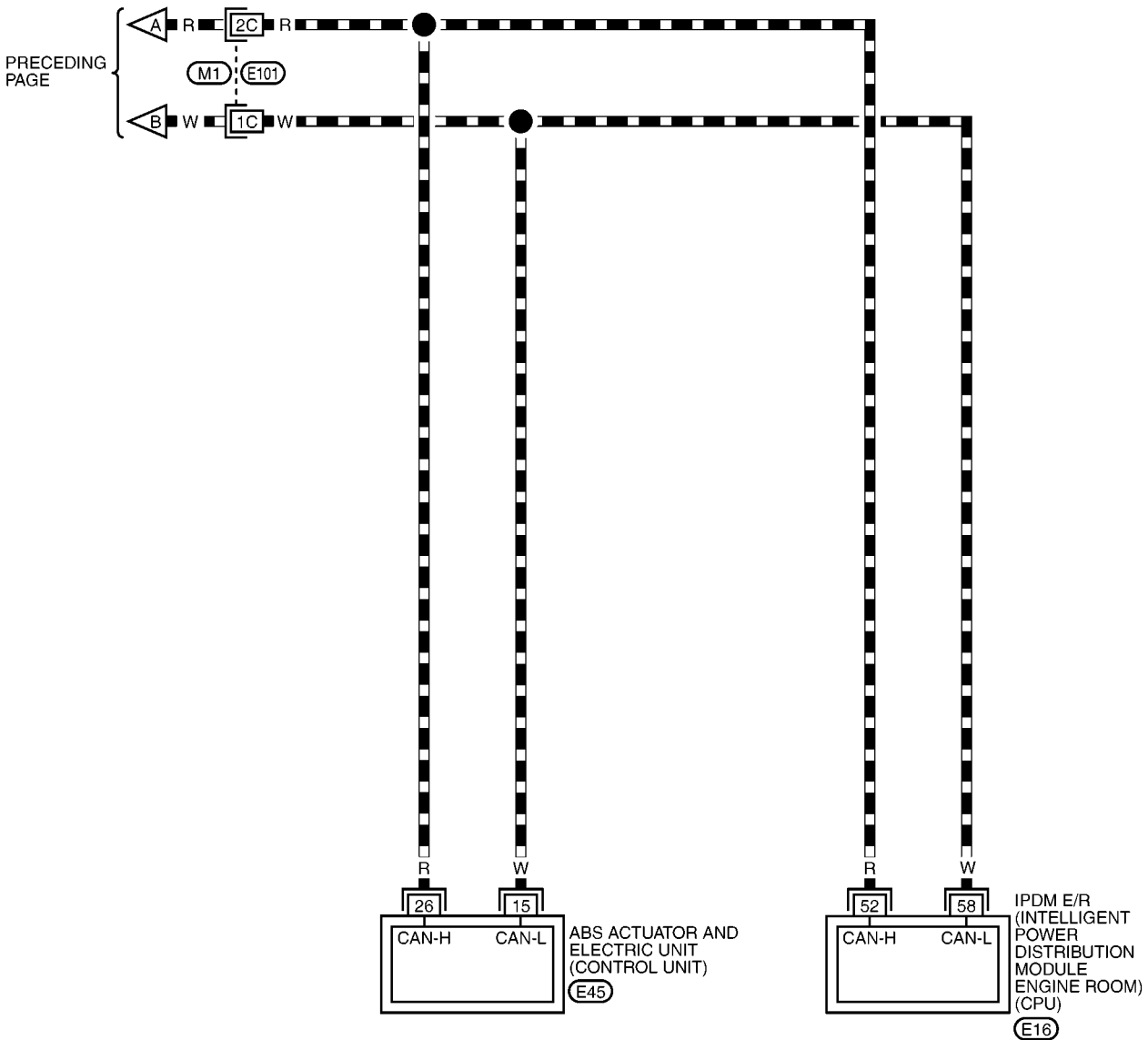
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E66) -ELECTRICAL UNITS

MKWA3785E

LAN-CAN-10

DATA LINE




REFER TO THE FOLLOWING.  
M1 -SUPER MULTIPLE  
JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSENT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-140, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-140, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-142, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 5)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2086E



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

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

MKIB2190E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

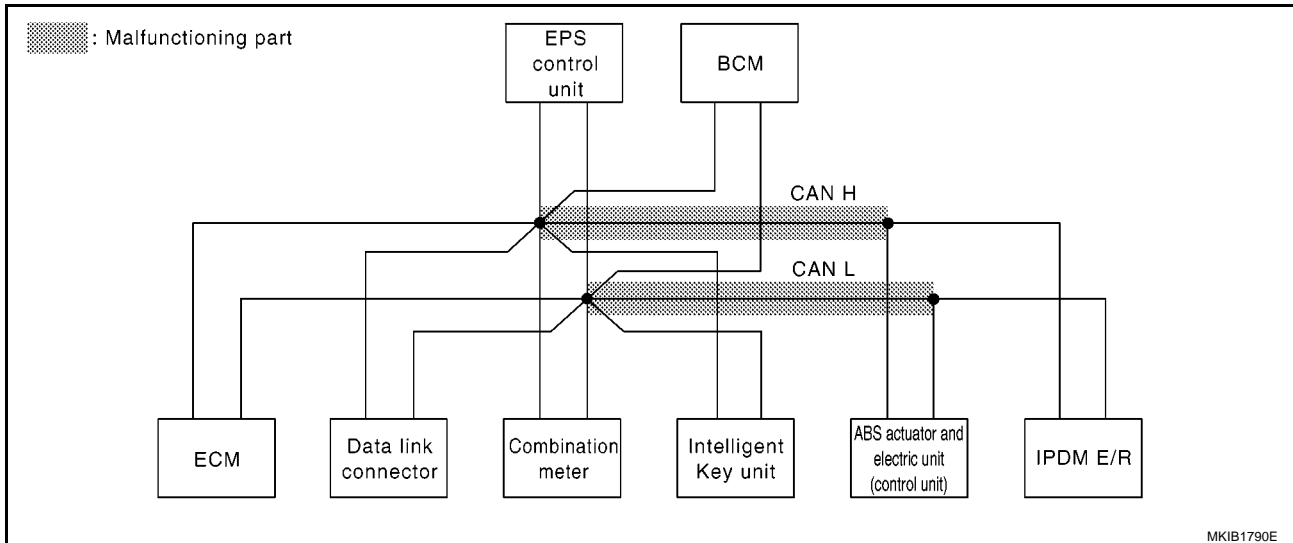
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-152, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	✓	✓
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	✓	✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2087E



MKIB1790E

# CAN SYSTEM (TYPE 5)

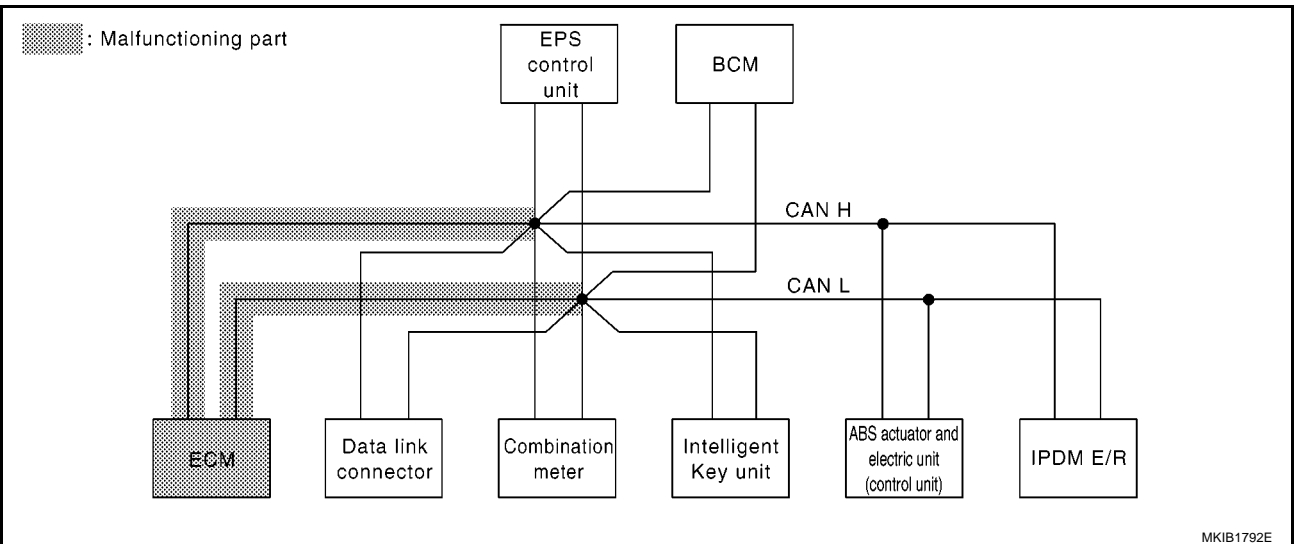
[CAN]

## Case 2

Check ECM circuit. Refer to [LAN-153, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2088E



MKIB1792E

LAN

# CAN SYSTEM (TYPE 5)

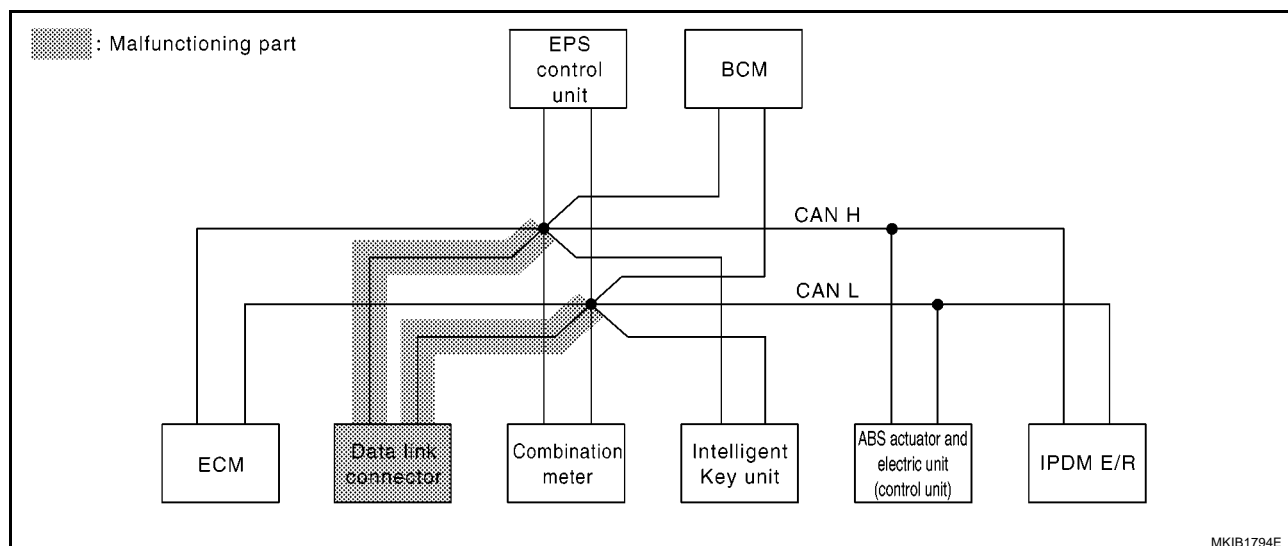
[CAN]

## Case 3

Check data link connector circuit. Refer to [LAN-154, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2089E



MKIB1794E

# CAN SYSTEM (TYPE 5)

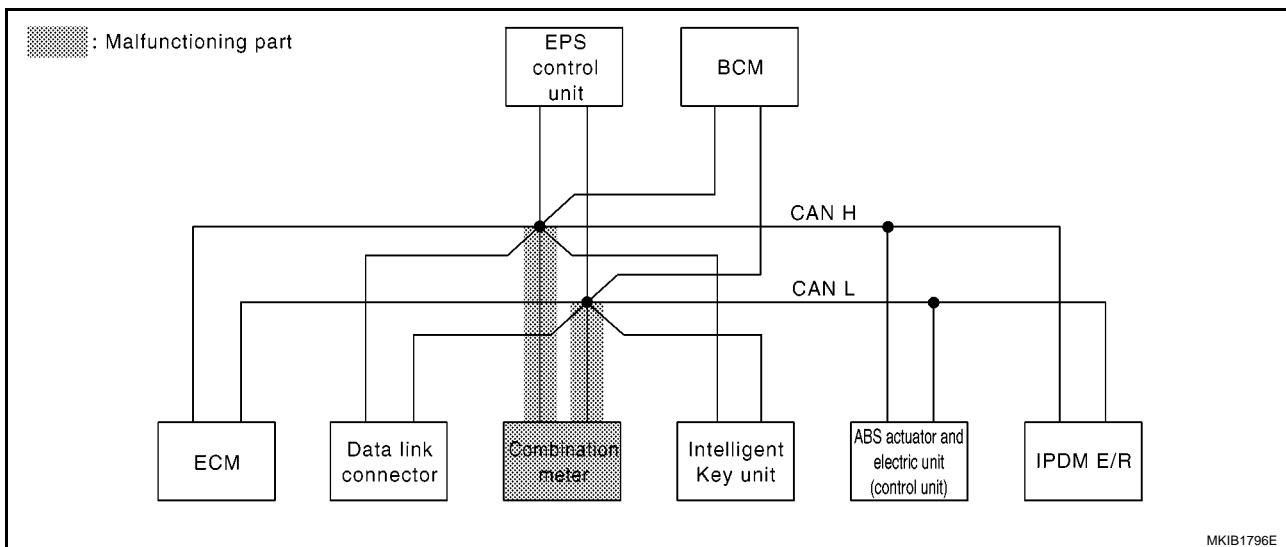
[CAN]

## Case 4

Check combination meter circuit. Refer to [LAN-155, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2090E



MKIB1796E

LAN

# CAN SYSTEM (TYPE 5)

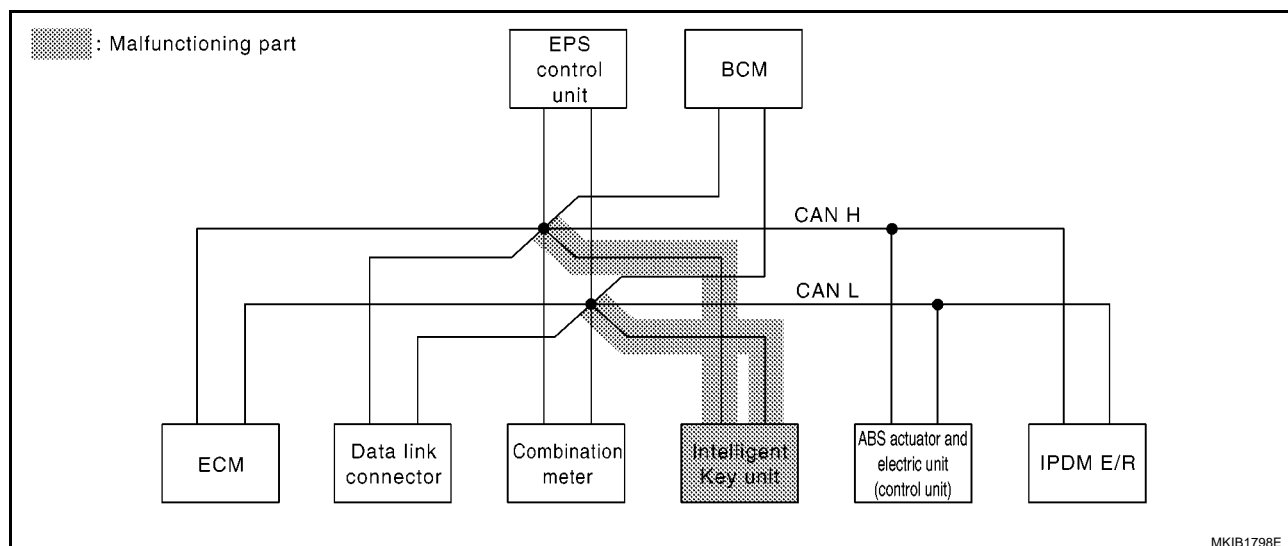
[CAN]

## Case 5

Check Intelligent Key unit circuit. Refer to [LAN-156, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2091E



MKIB1798E

# CAN SYSTEM (TYPE 5)

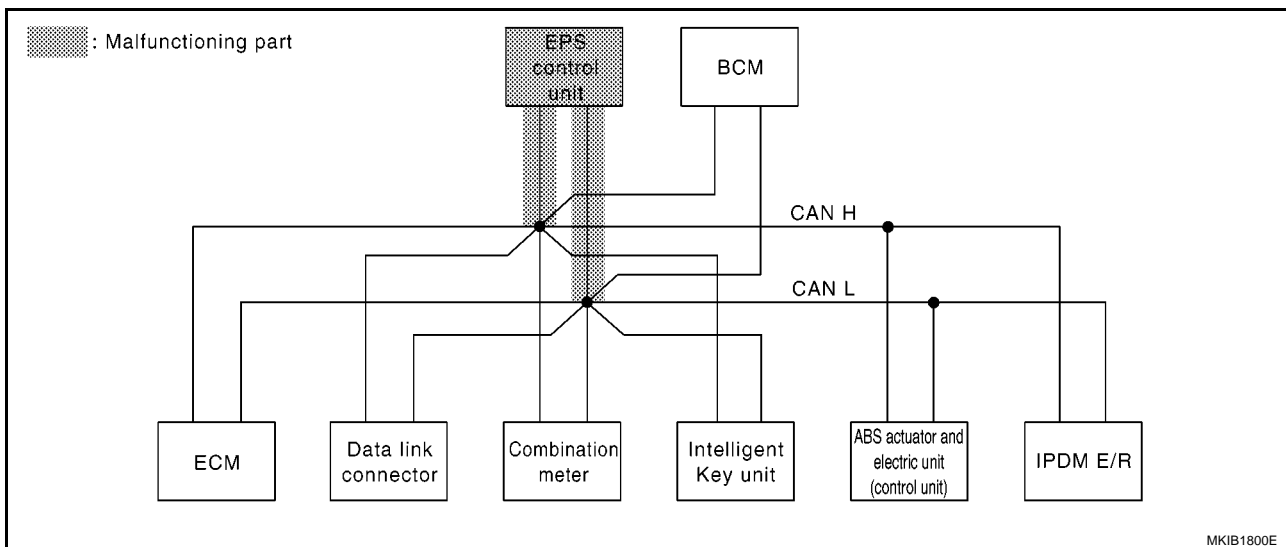
[CAN]

## Case 6

Check EPS control unit circuit. Refer to [LAN-157, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2092E



MKIB1800E

# CAN SYSTEM (TYPE 5)

[CAN]

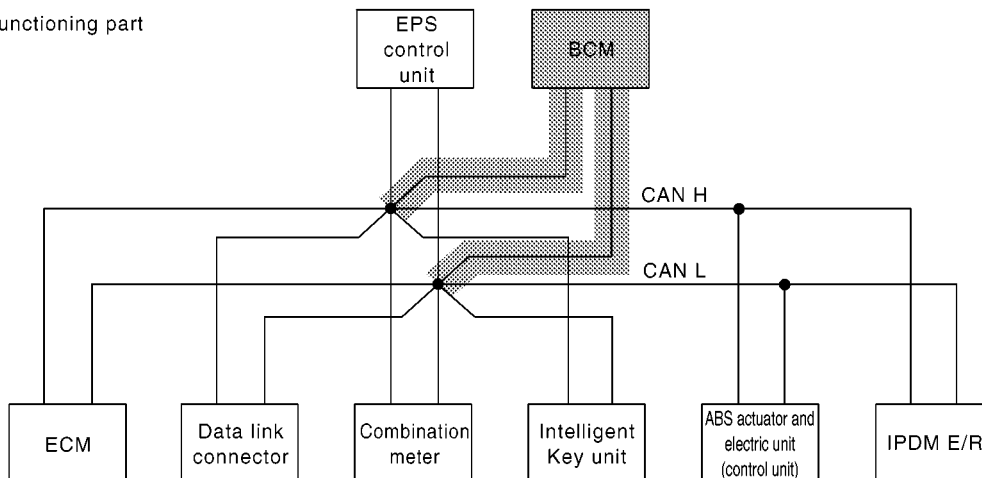
## Case 7

Check BCM circuit. Refer to [LAN-158, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2093E

 : Malfunctioning part



MKIB1802E



# CAN SYSTEM (TYPE 5)

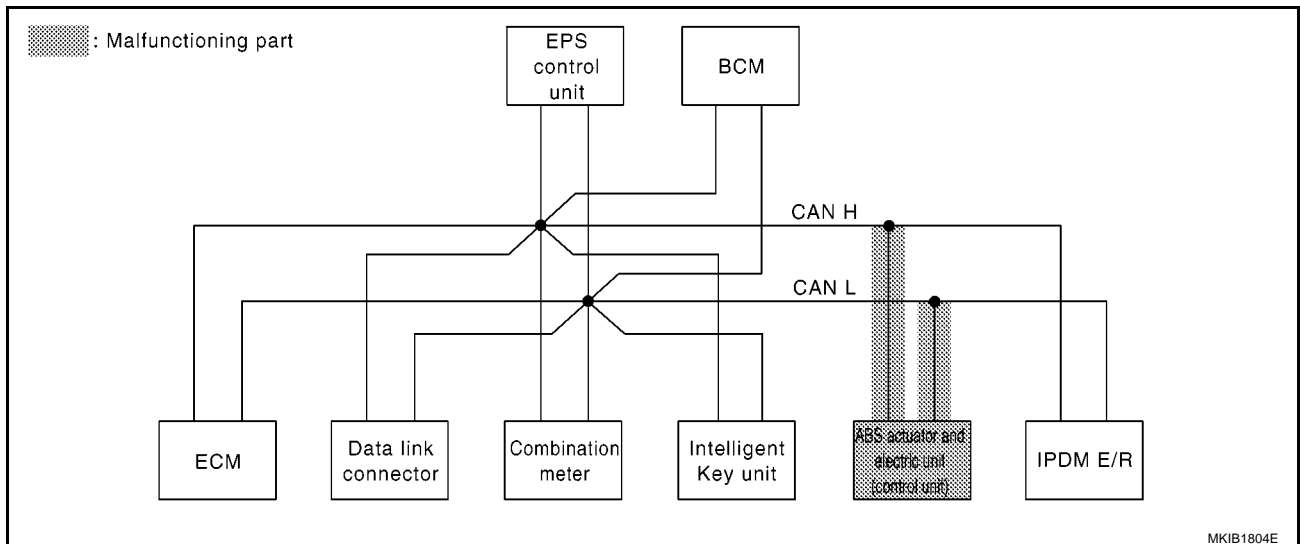
[CAN]

## Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-159, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2094E



MKIB1804E

# CAN SYSTEM (TYPE 5)

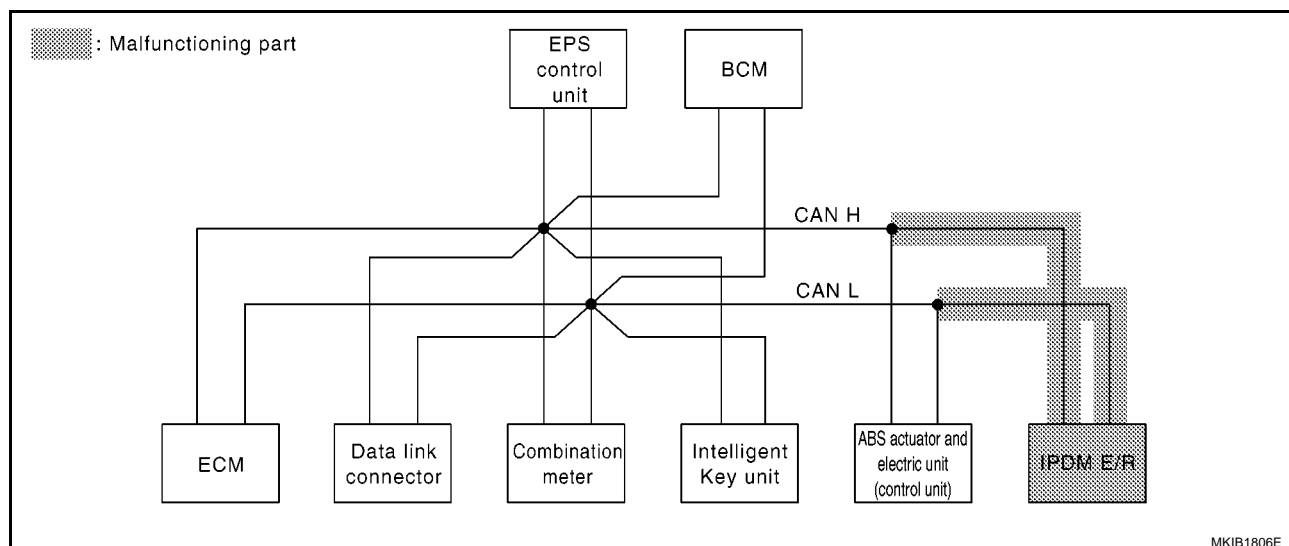
[CAN]

## Case 9

Check IPDM E/R circuit. Refer to [LAN-160, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2095E



MKIB1806E

**Case 10**

Check CAN communication circuit. Refer to [LAN-161, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2096E

**Case 11**

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-164, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2097E

**Case 12**

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-164, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2098E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00PAV

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

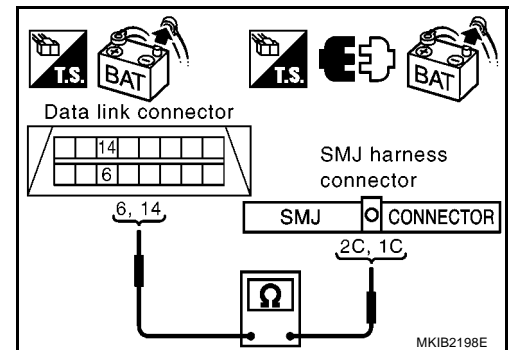
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

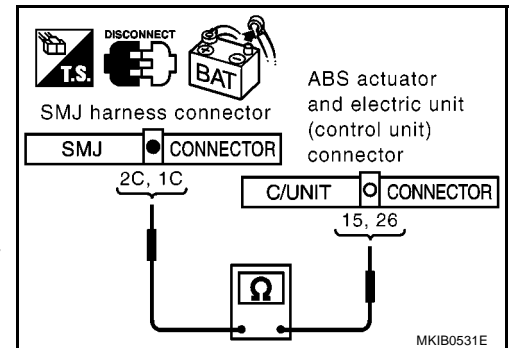
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-139. "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

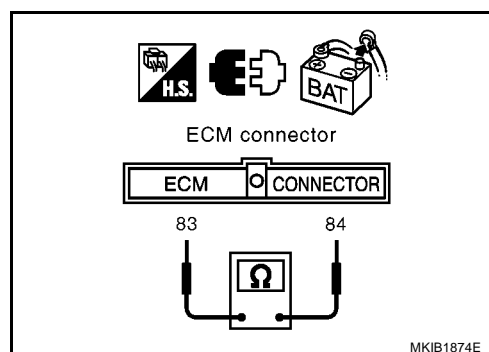
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E66 terminals 84 (R) and 83 (W).

**84 (R) – 83 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

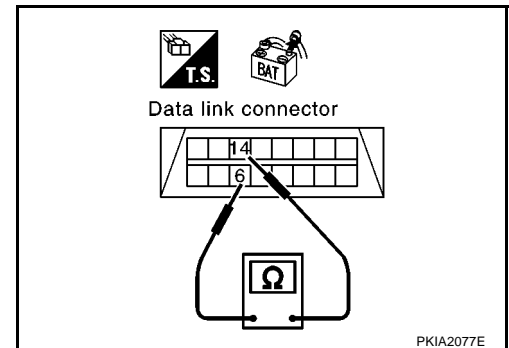
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-139, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**Combination Meter Circuit Check**

EKS00PAY

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

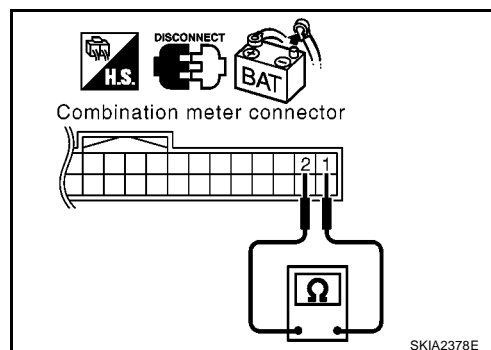
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter.

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

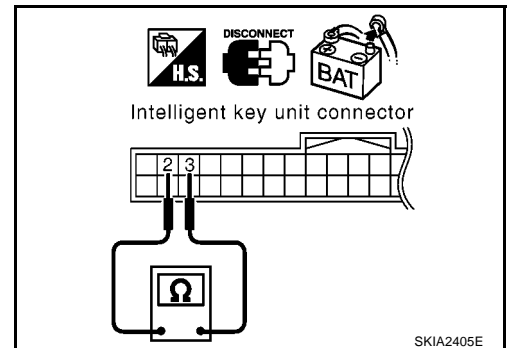
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.





**EPS Control Unit Circuit Check**

EKS00PB0

**1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

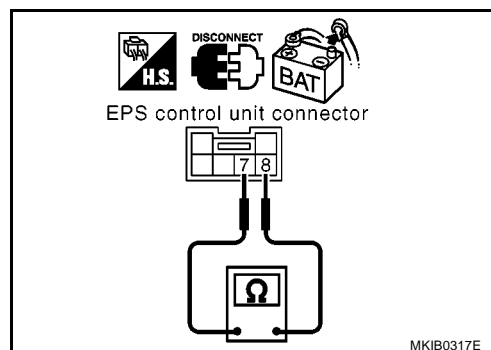
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

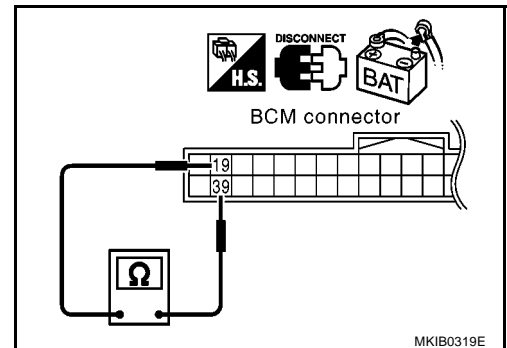
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.



## ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00PB2

### 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 E45 terminals 26 (R) and 15 (W).

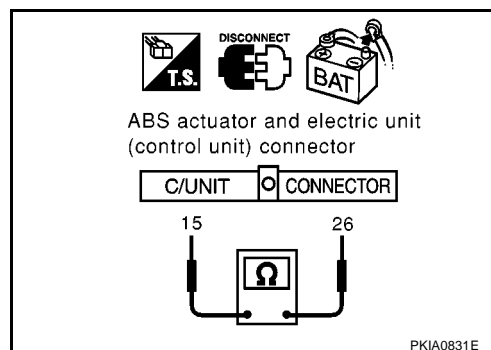
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

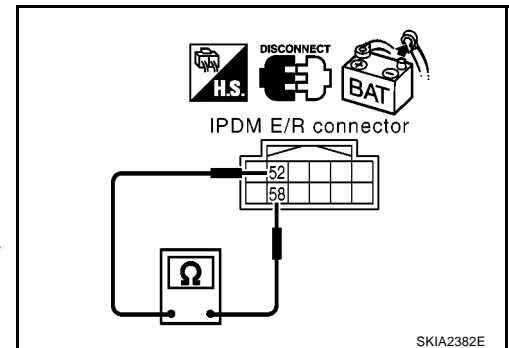
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



## CAN Communication Circuit Check

EKS00PB4

## 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR SHORT CIRCUIT

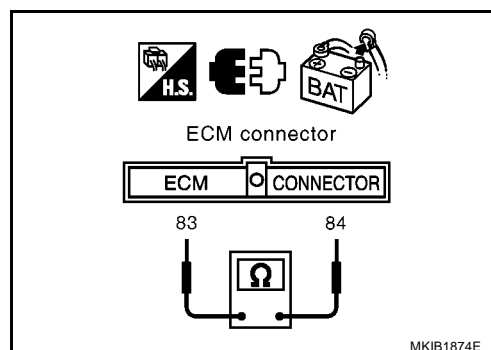
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E66 terminals 84 (R) and 83 (W).

**84 (R) – 83 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 3. CHECK HARNESS FOR SHORT CIRCUIT

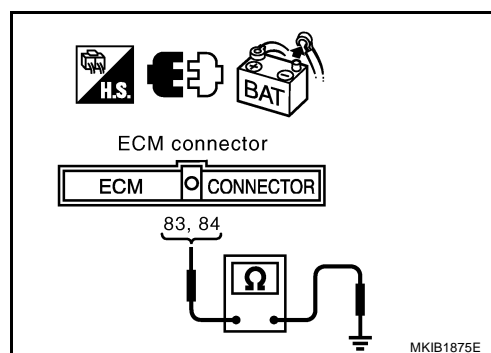
Check continuity between ECM harness connector E66 terminals 84 (R), 83 (W) and ground.

**84 (R) – Ground : Continuity should not exist.****83 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

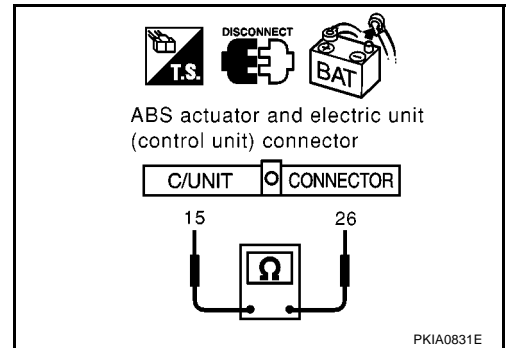
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

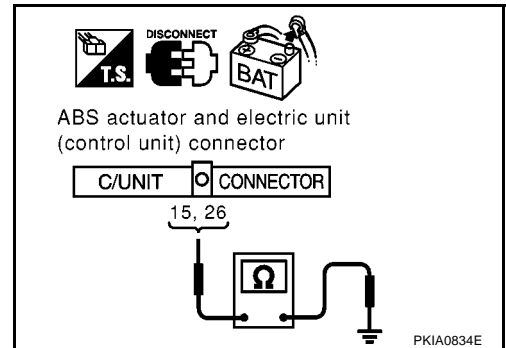
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

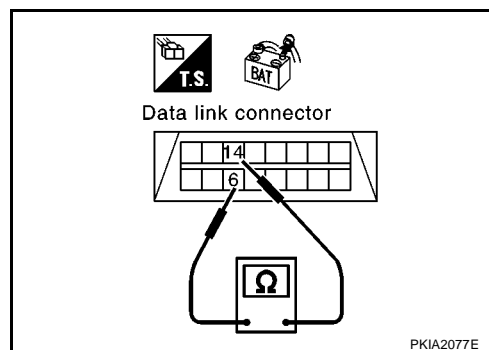
1. Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

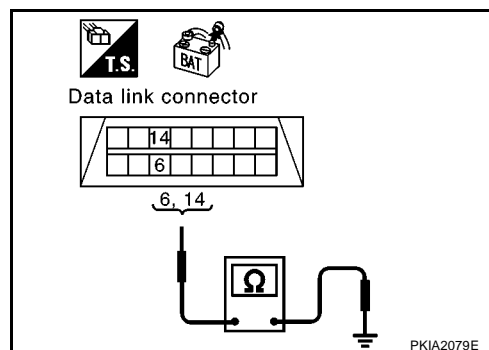
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-164, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-139, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

## IPDM E/R Ignition Relay Circuit Check

EKS00PB5

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

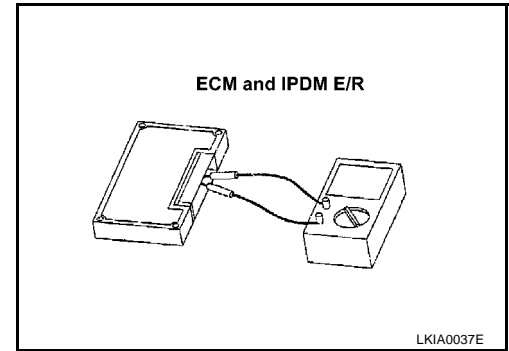
## Component Inspection

EKS00PB6

### ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 84 and 83.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	84 – 83	108 - 132
IPDM E/R	52 – 58	



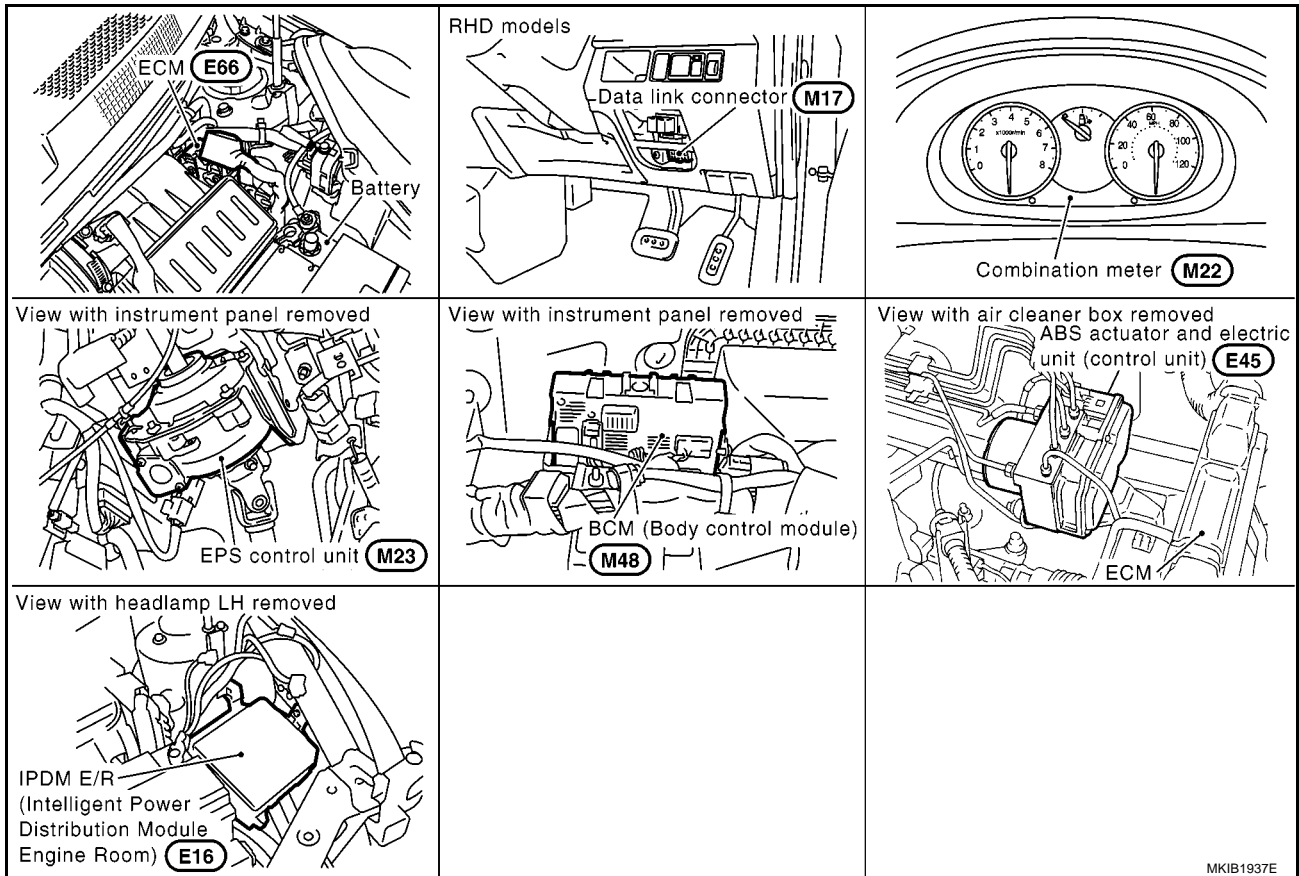


## CAN SYSTEM (TYPE 6)

## 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



# CAN SYSTEM (TYPE 6)

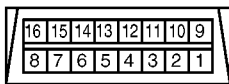
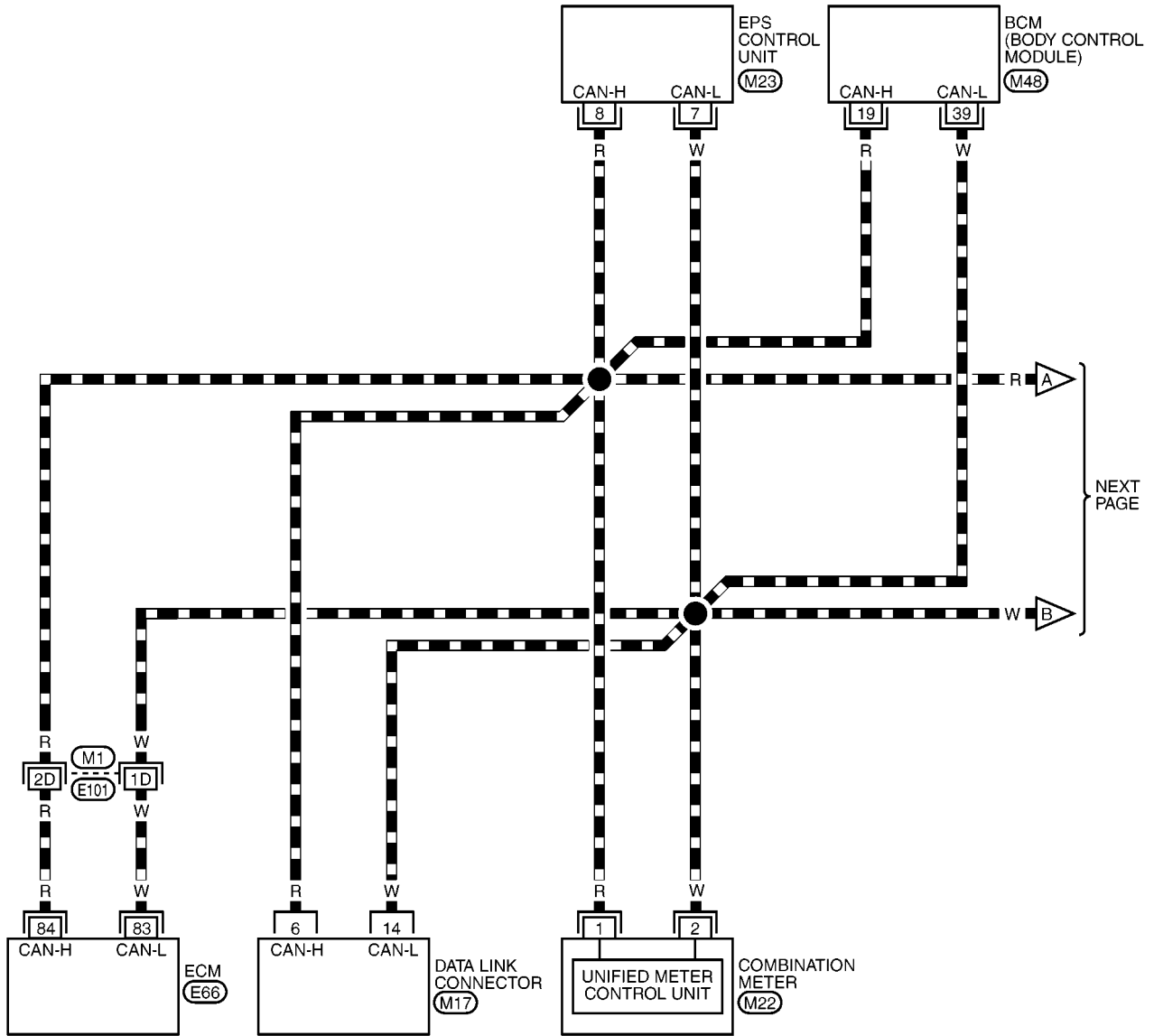
[CAN]

## Wiring Diagram — CAN —

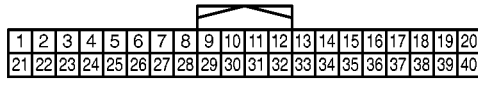
EKS00PB9

### LAN-CAN-11

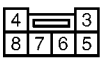
— : DATA LINE



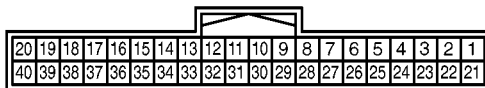
(M17)  
W



(M22)  
W



(M23)  
W



(M48)  
W



REFER TO THE FOLLOWING.

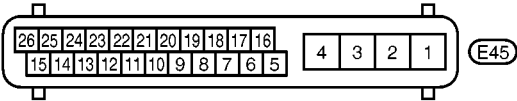
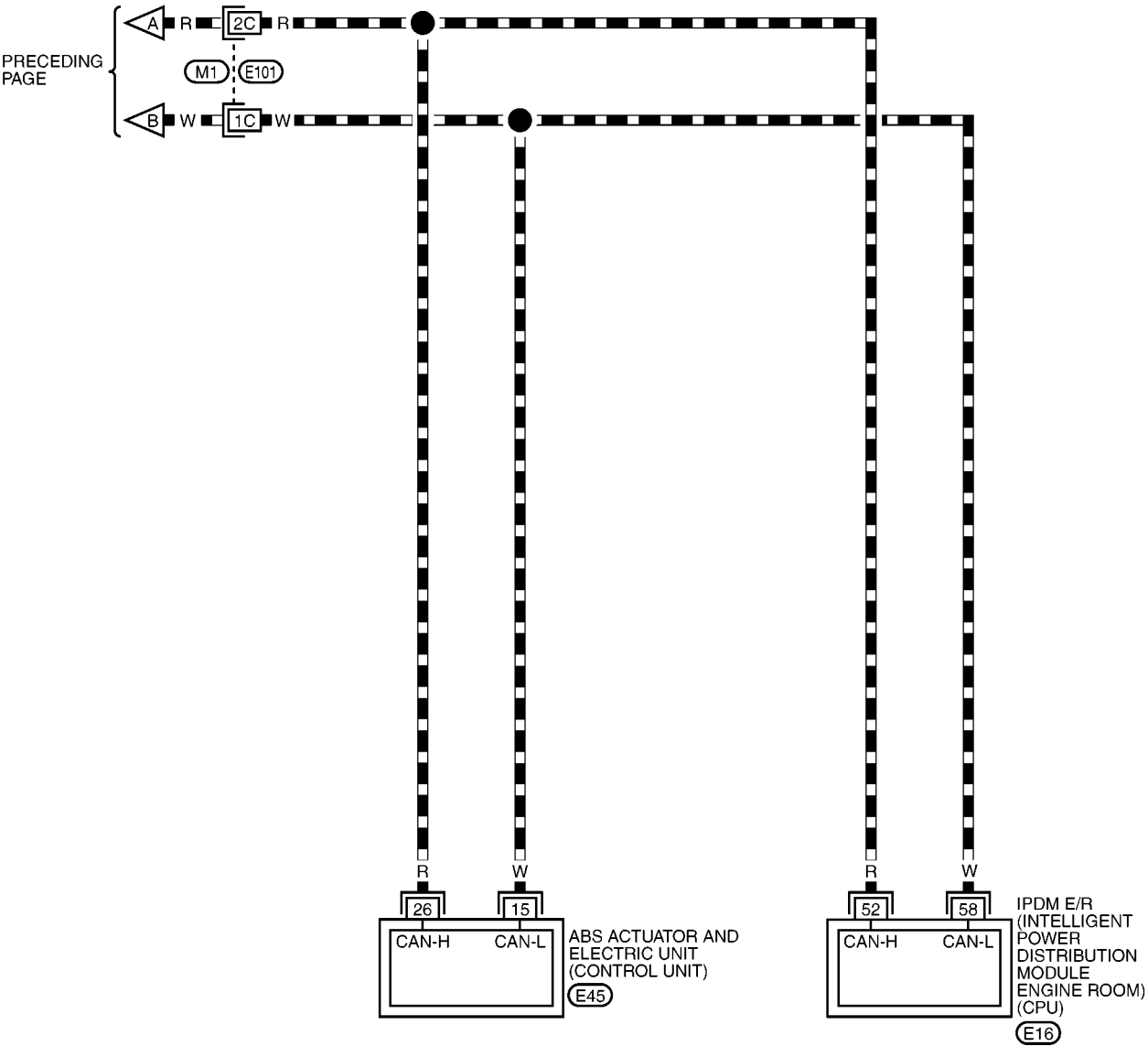
(M1) -SUPER MULTIPLE  
JUNCTION (SMJ)

(E66) -ELECTRICAL UNITS

MKWA3787E

LAN-CAN-12

DATA LINE



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)


## Work Flow

EKS00PBA

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
	BACK	LIGHT	COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
	BACK	LIGHT	COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
	BACK	LIGHT	COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRST	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-169, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-169, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-171, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 6)

[CAN]

## CHECK SHEET

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2099E

**CAN SYSTEM (TYPE 6)**

**[CAN]**

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2191E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

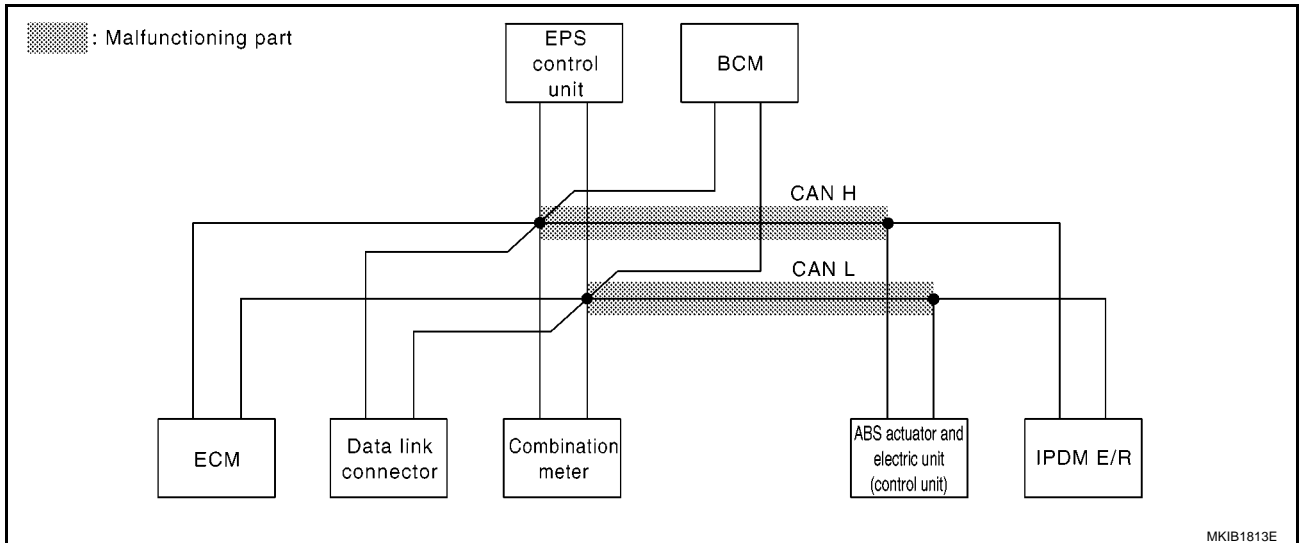
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-180, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2100E



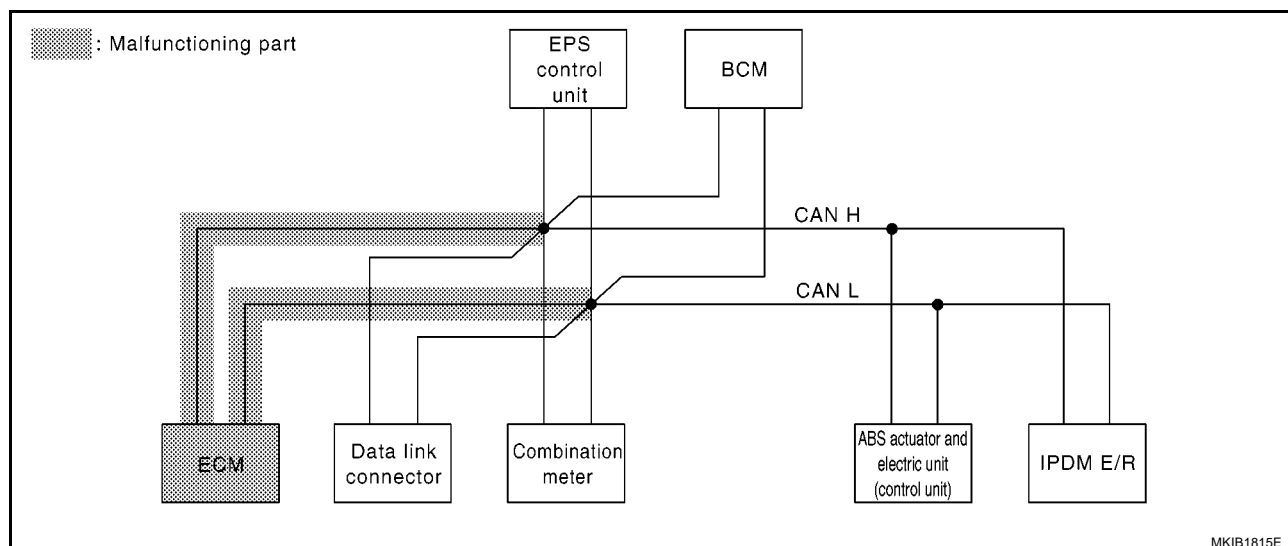
MKIB1813E

**Case 2**

Check ECM circuit. Refer to [LAN-181, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	✓	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2101E



MKIB1815E

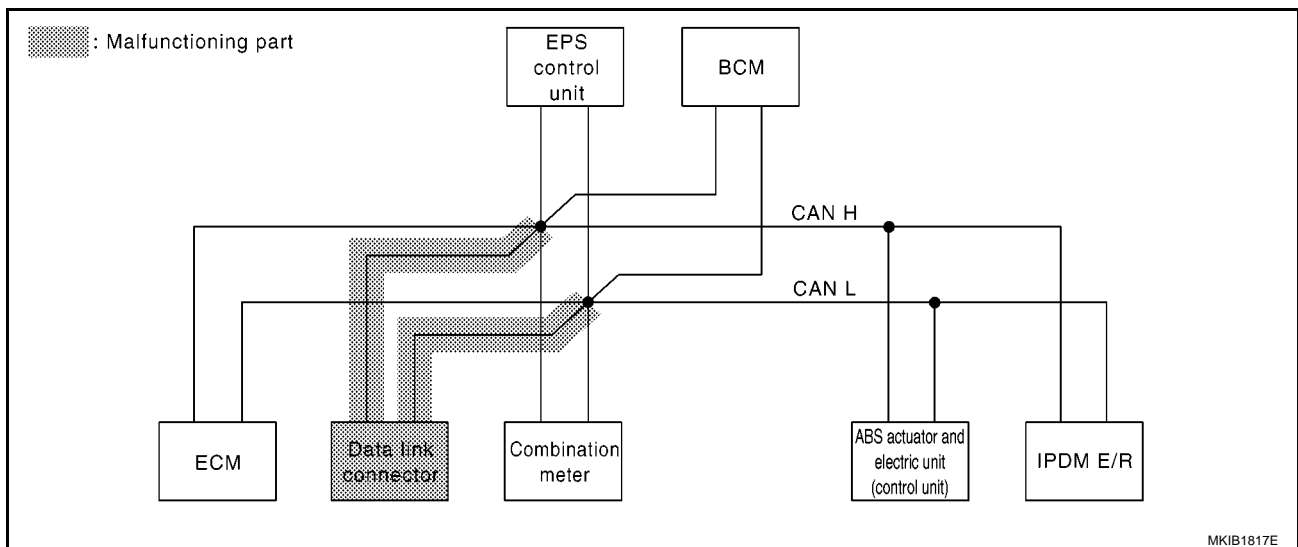


## Case 3

Check data link connector circuit. Refer to [LAN-182, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication ✓	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2102E

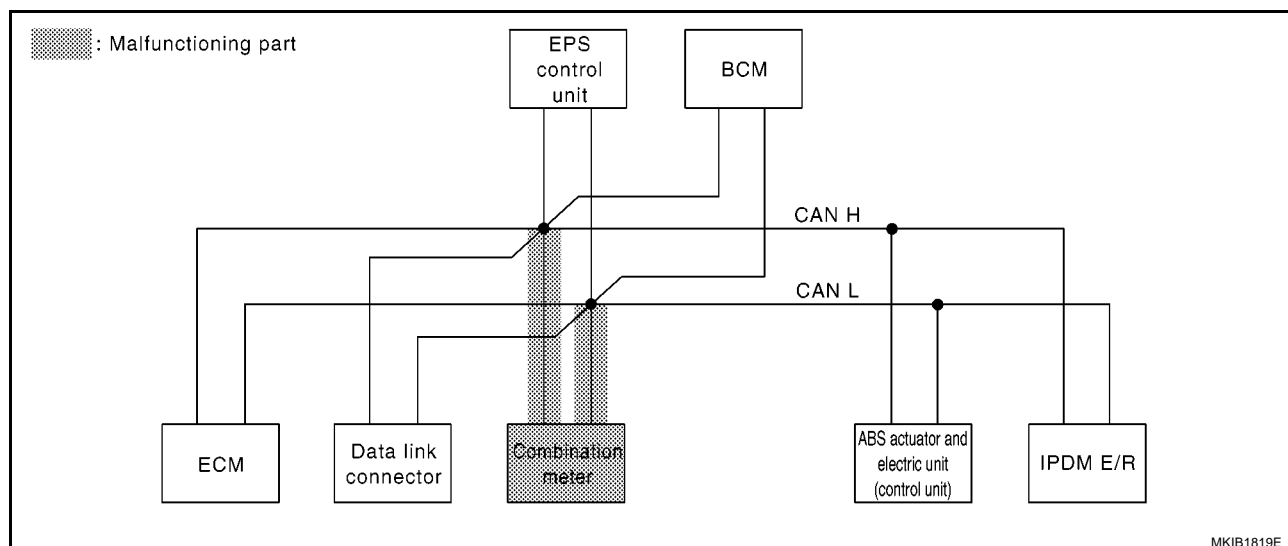


**Case 4**

Check combination meter circuit. Refer to [LAN-183, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2103E



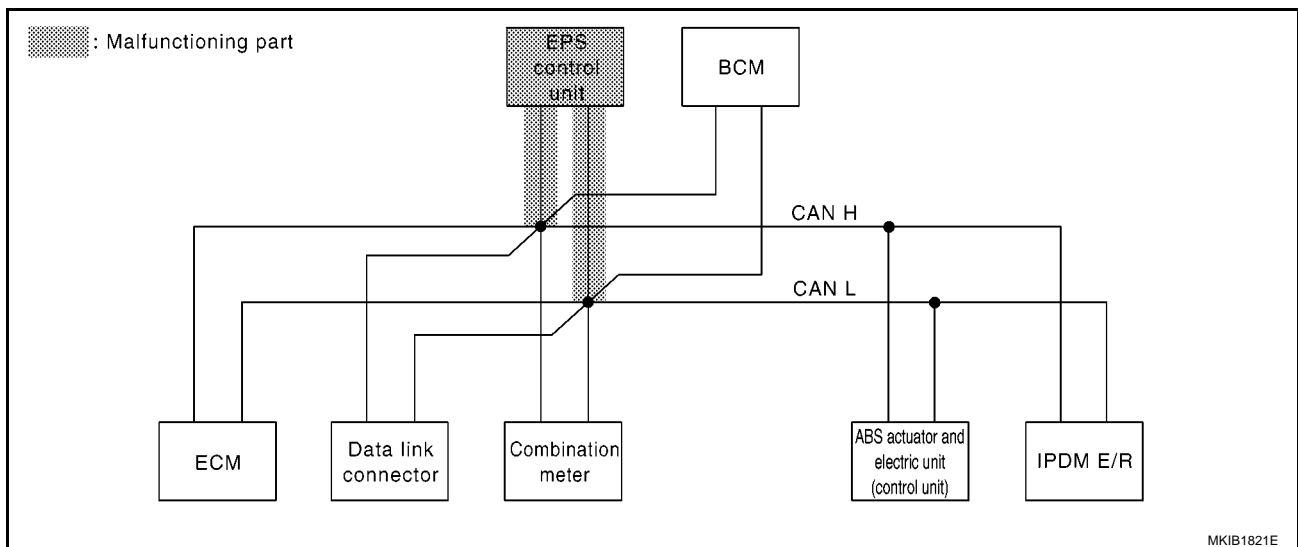
MKIB1819E

**Case 5**

Check EPS control unit circuit. Refer to [LAN-184, "EPS Control Unit Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2104E



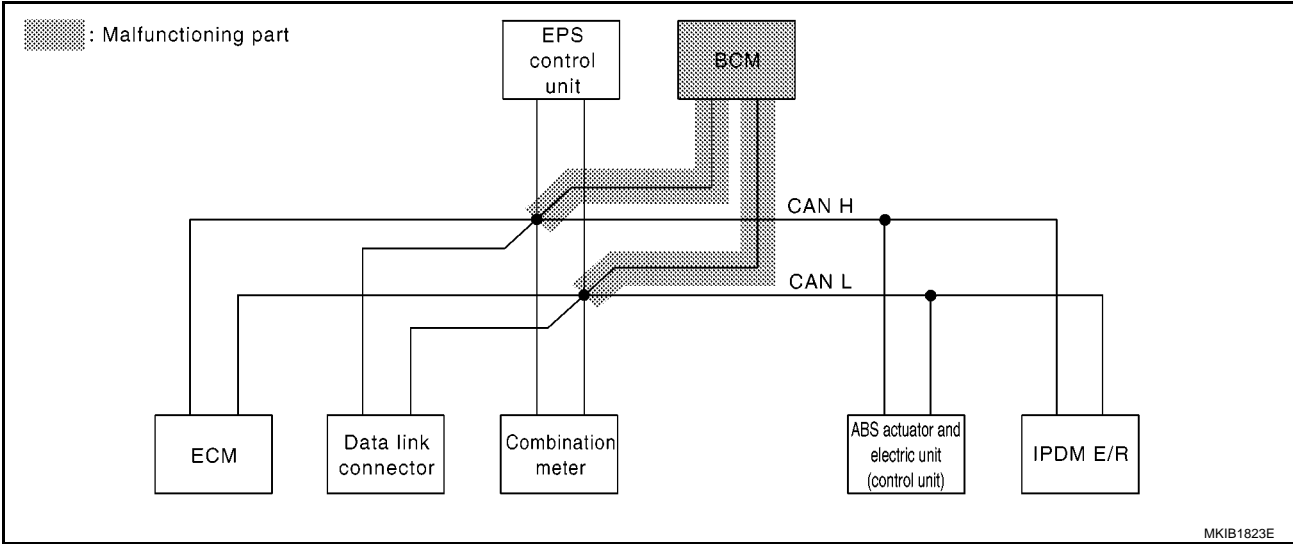
MKIB1821E

Case 6

Check BCM circuit. Refer to [LAN-185, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2105E

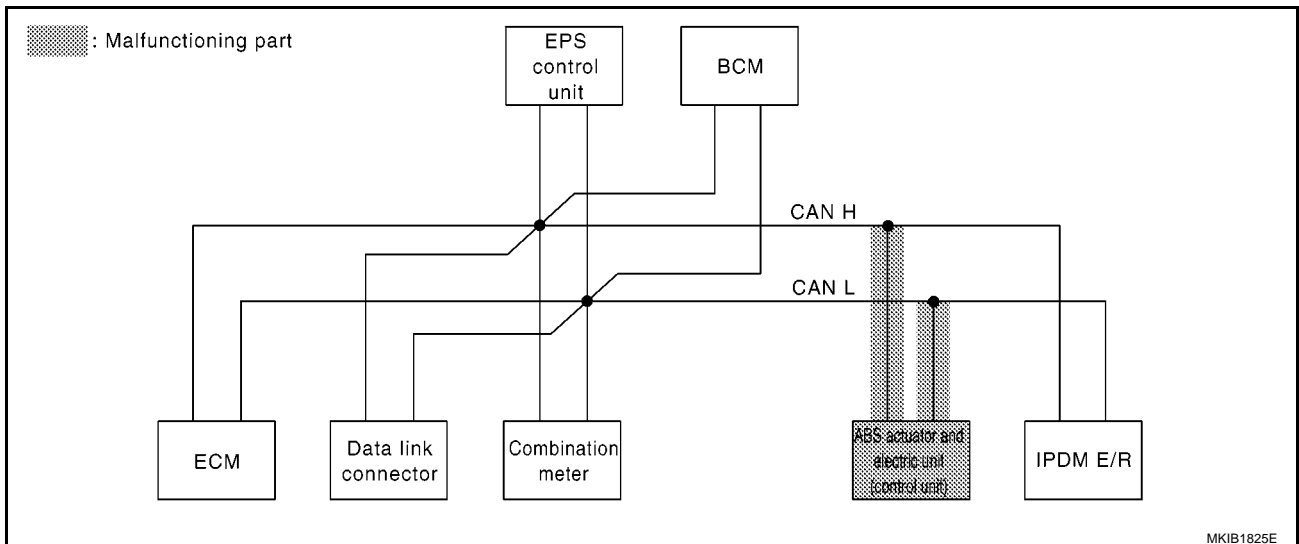


**Case 7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-186, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2106E



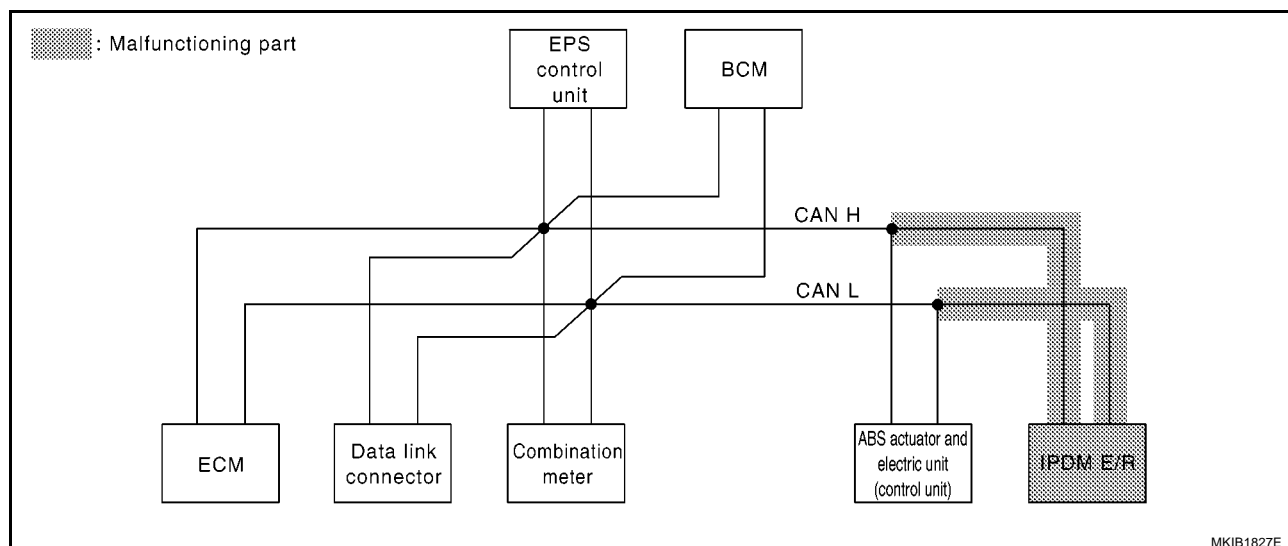
MKIB1825E

**Case 8**

Check IPDM E/R circuit. Refer to [LAN-187, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2107E



MKIB1827E

# CAN SYSTEM (TYPE 6)

[CAN]

## Case 9

Check CAN communication circuit. Refer to [LAN-188, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2108E

## Case 10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-191, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2109E

## Case 11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-191, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	✓	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2110E

LAN

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00PBB

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

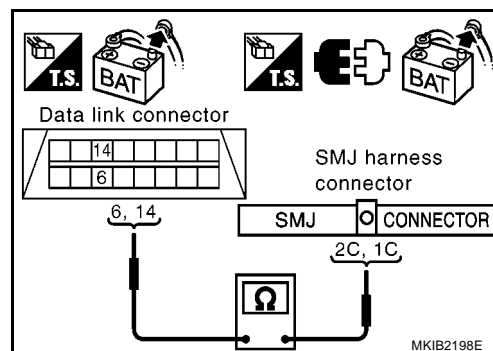
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

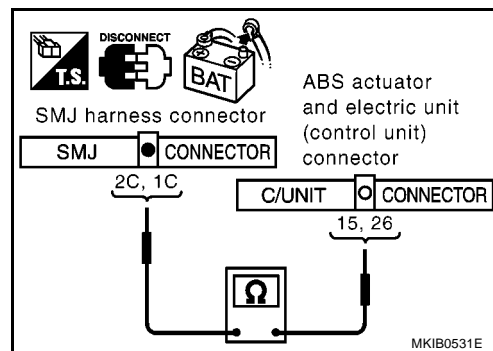
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-168, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

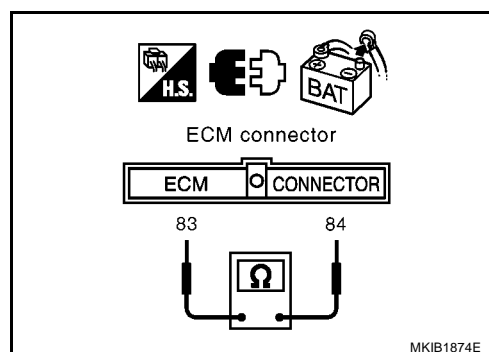
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E66 terminals 84 (R) and 83 (W).

**84 (R) – 83 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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

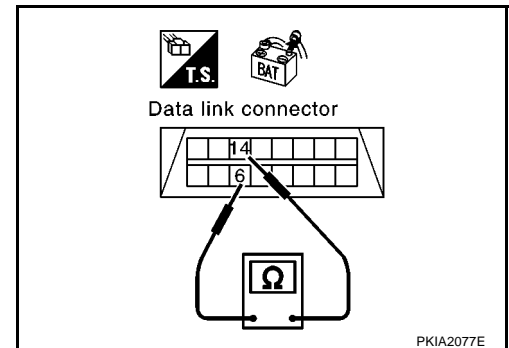
Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-168, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

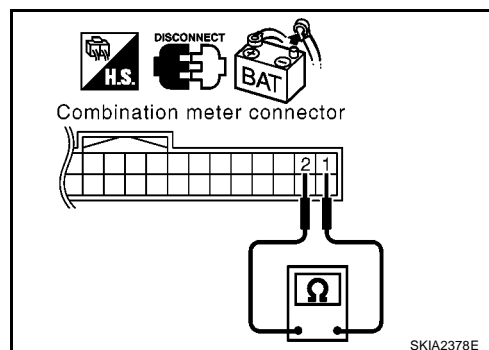
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**

OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

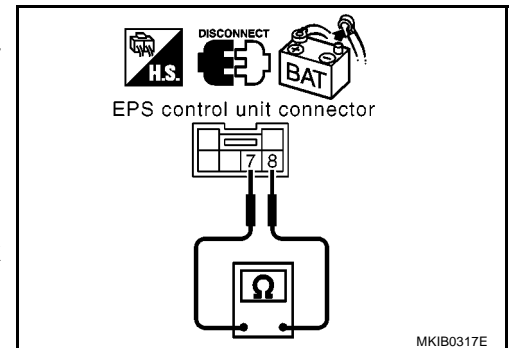
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

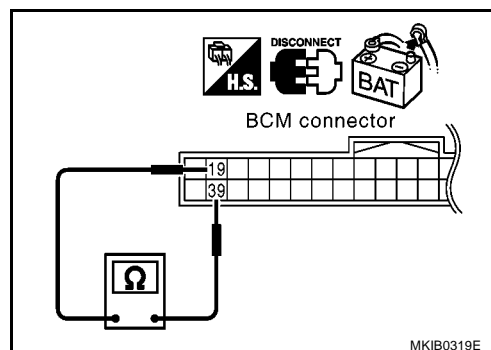
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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.

### 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 E45 terminals 26 (R) and 15 (W).

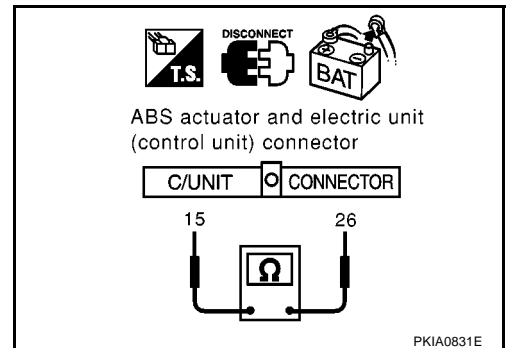
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

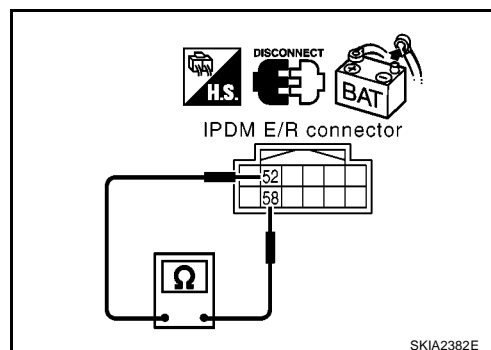
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

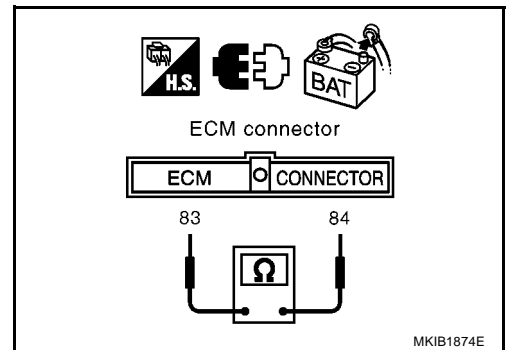
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E66 terminals 84 (R) and 83 (W).

**84 (R) – 83 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E66 terminals 84 (R), 83 (W) and ground.

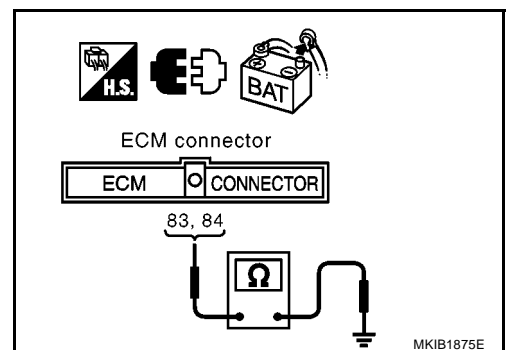
**84 (R) – Ground : Continuity should not exist.**

**83 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.





## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

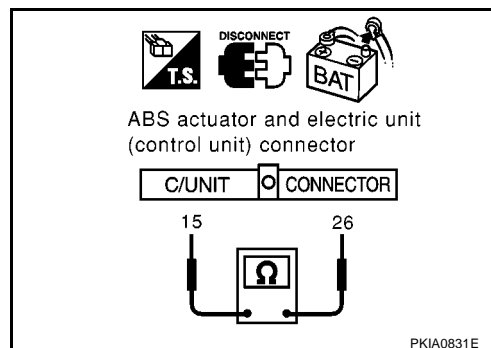
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

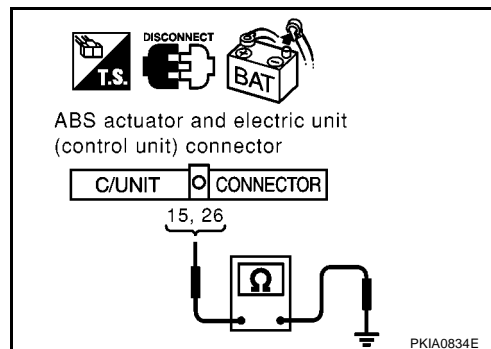
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

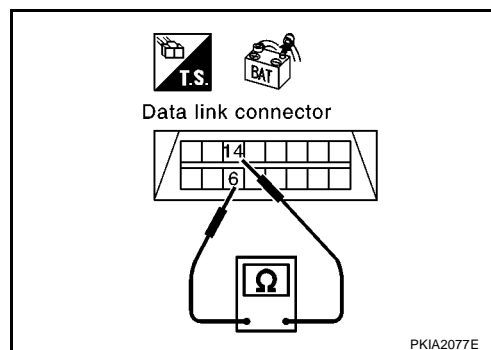
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

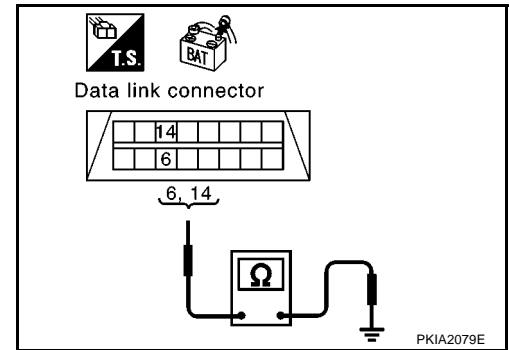
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-191, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-168, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00PBK

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

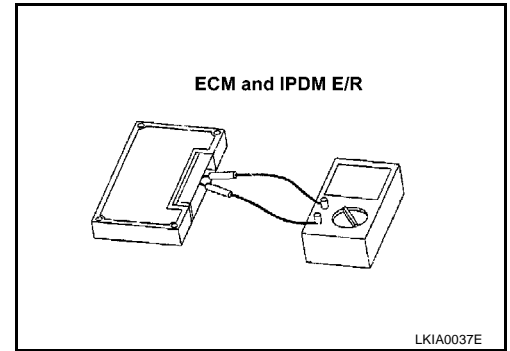
**Component Inspection**

EKS00PBL

**ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION**

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 84 and 83.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	84 – 83	108 - 132
IPDM E/R	52 – 58	

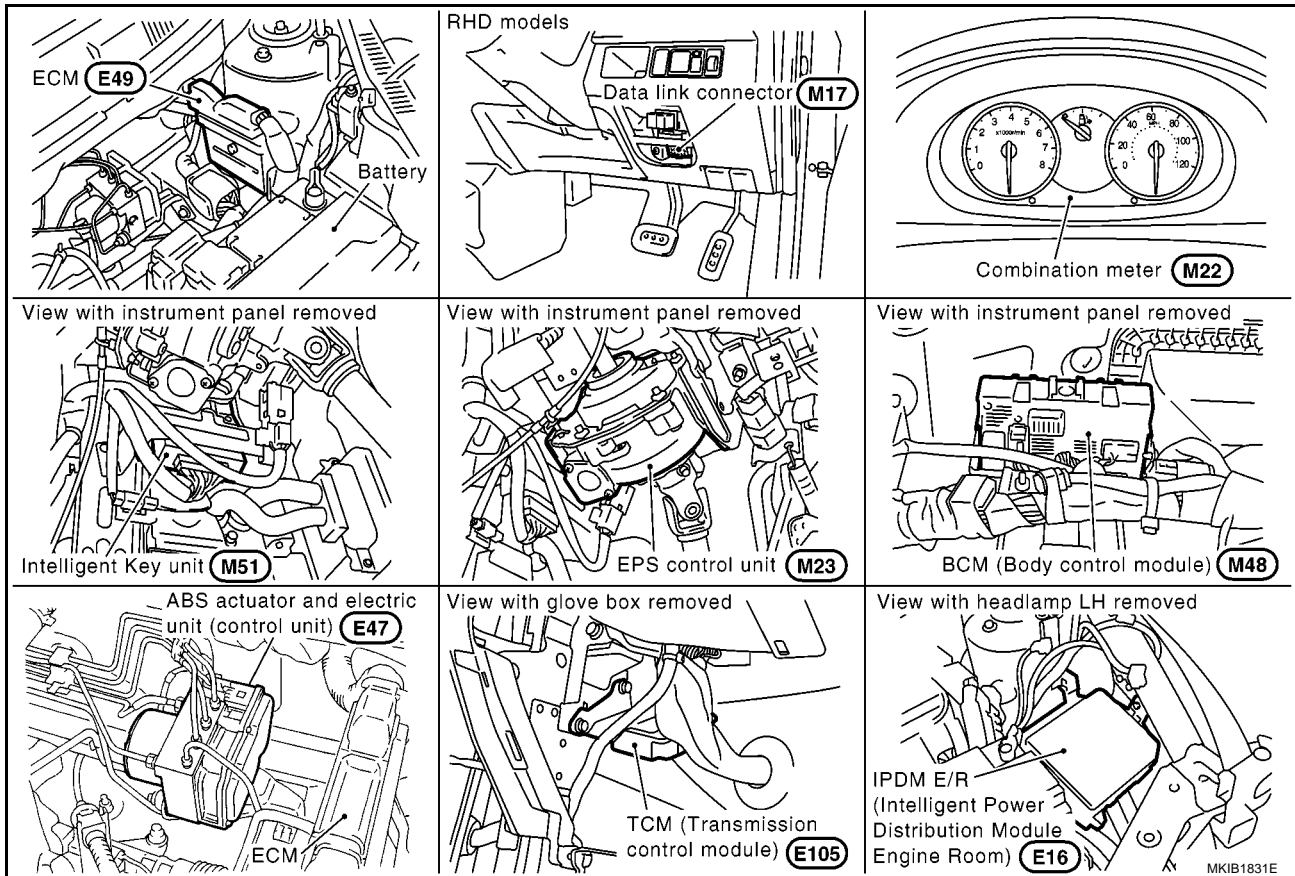


## CAN SYSTEM (TYPE 7)

## 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



MKIB1831E

# CAN SYSTEM (TYPE 7)

[CAN]

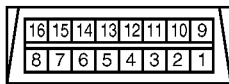
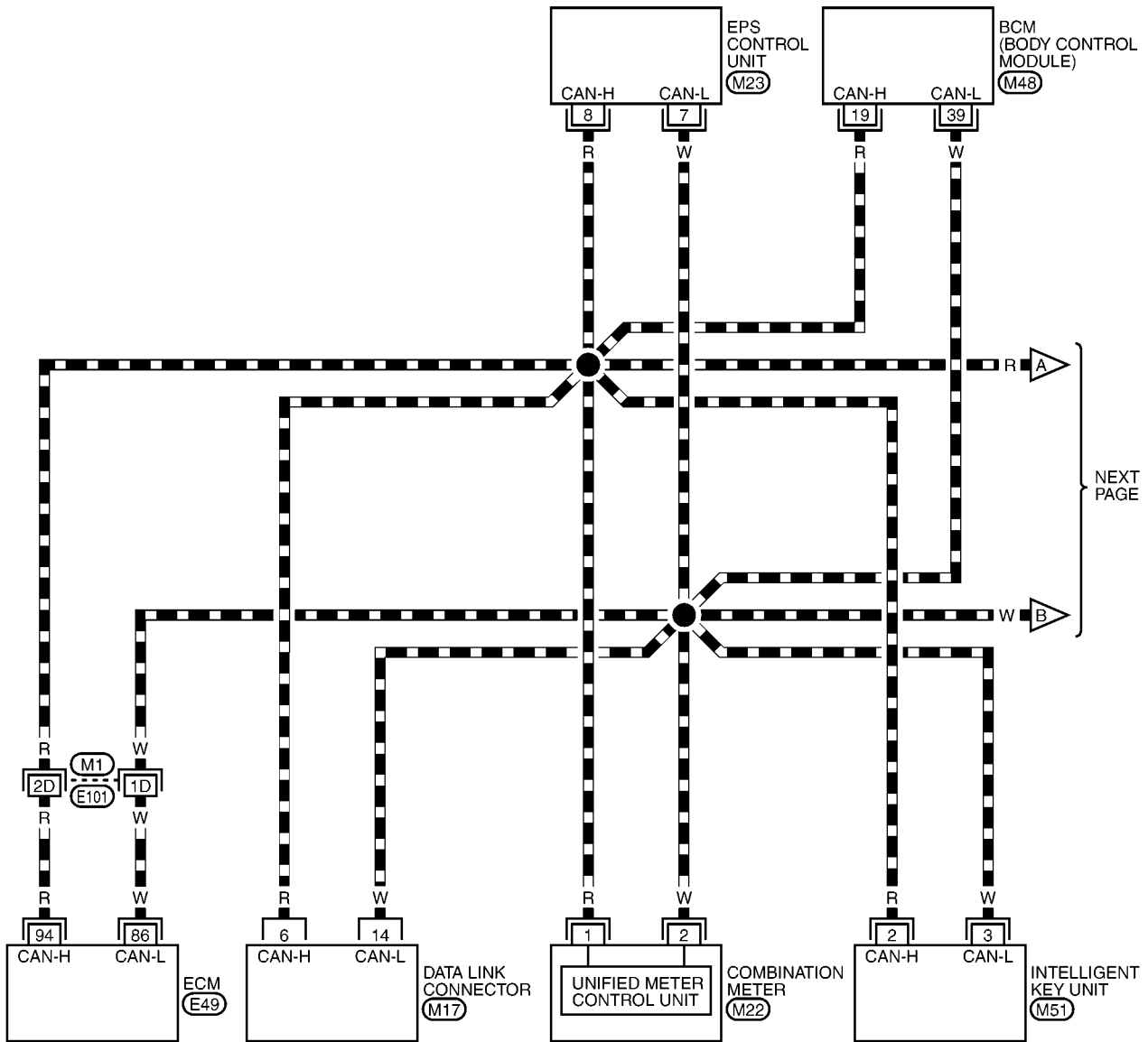
## Wiring Diagram — CAN —

EKS00J07

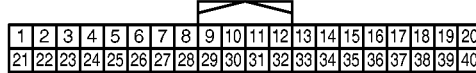
### LAN-CAN-13

— : DATA LINE

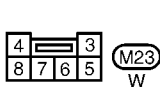
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M



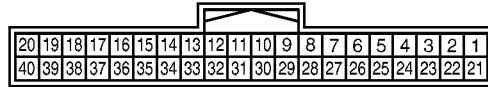
(M17)  
W



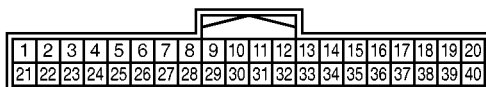
(M22)  
W



(M23)  
W



(M48)  
W



(M51)  
W



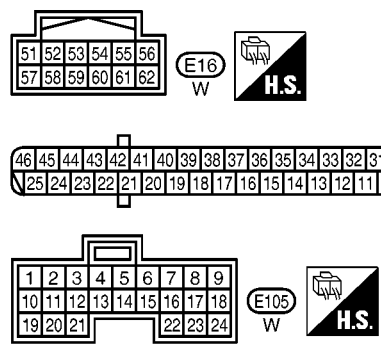
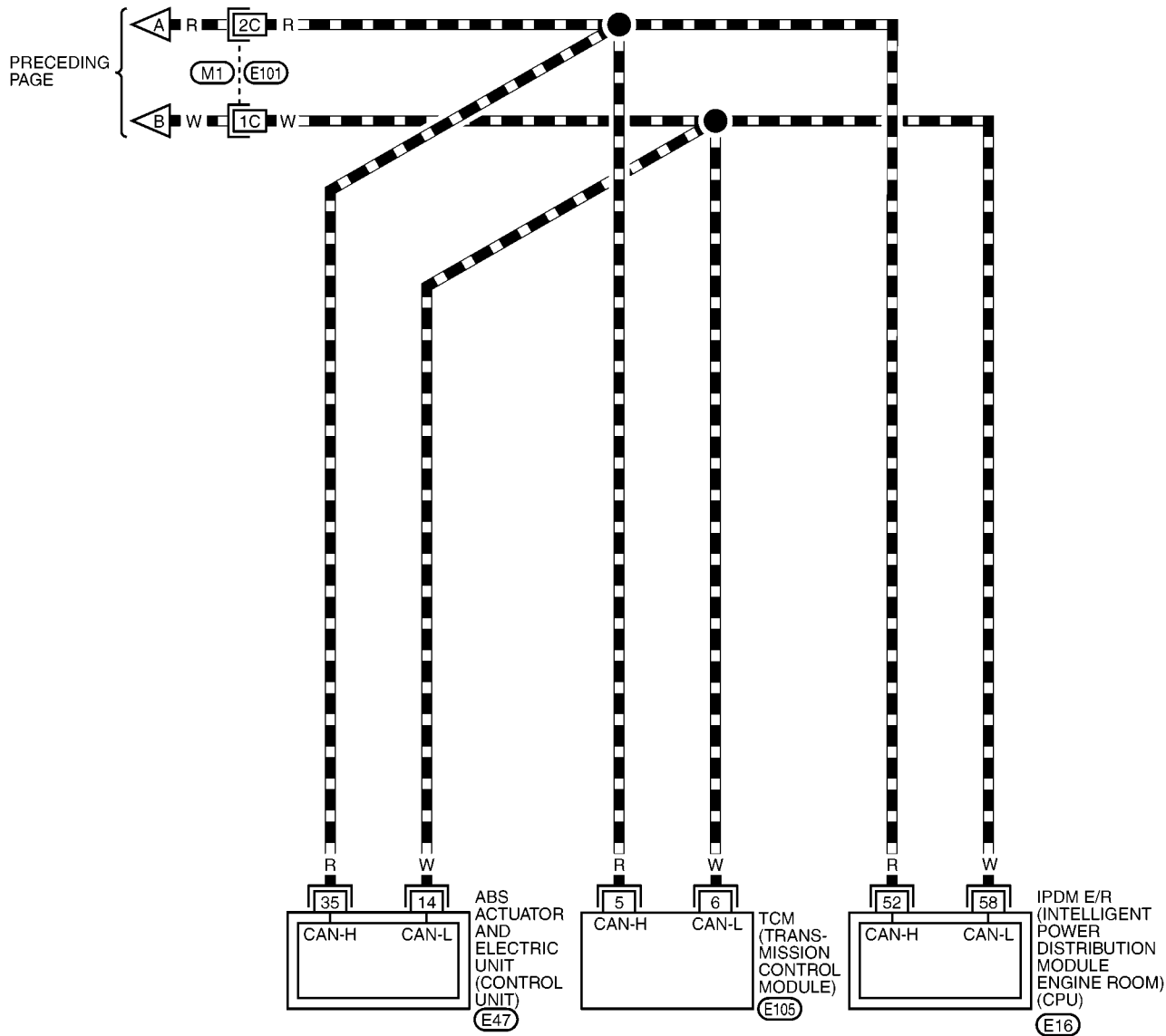
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

MKWA3789E

DATA LINE




REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSENT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-196, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-196, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-198, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 7)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2111E



# CAN SYSTEM (TYPE 7)

[CAN]

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
INTELLIGENT KEY  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
A/T  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
INTELLIGENT KEY  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
A/T  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM  
CAN DIAG SUPPORT  
MNTR

MKIB2188E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

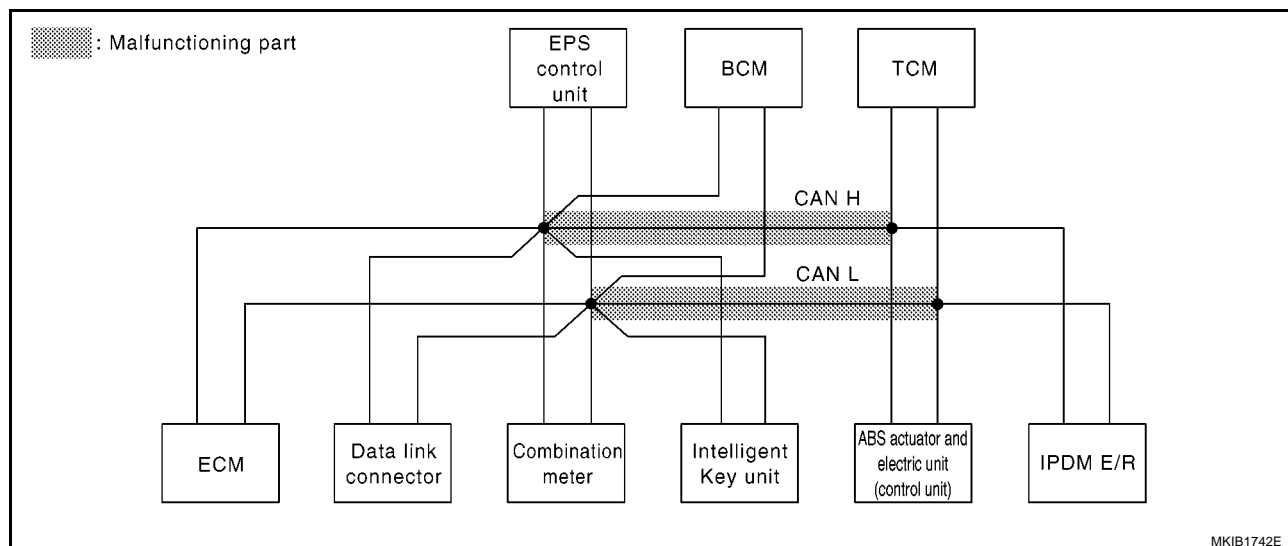
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-209, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2112E



MKIB1742E

# CAN SYSTEM (TYPE 7)

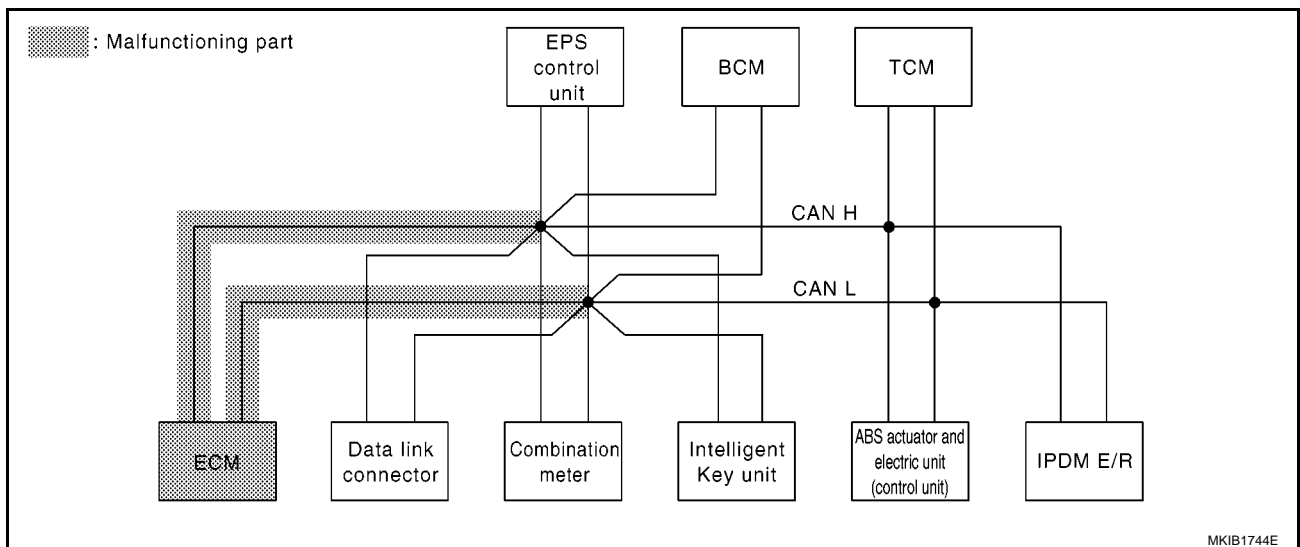
[CAN]

## Case2

Check ECM circuit. Refer to [LAN-210, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2113E



MKIB1744E

# CAN SYSTEM (TYPE 7)

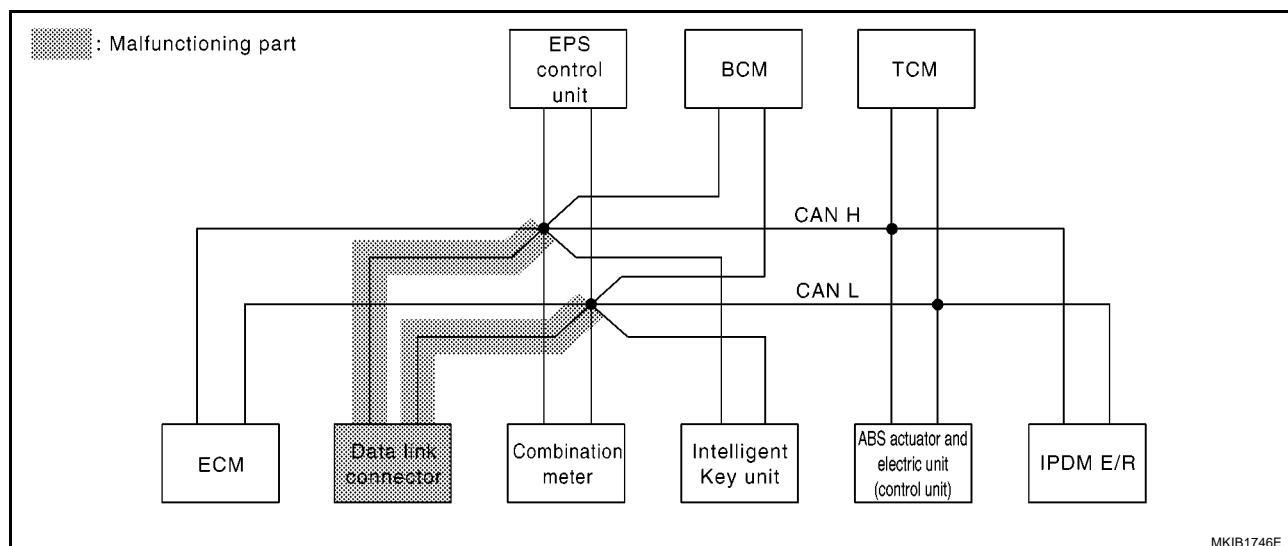
[CAN]

## Case3

Check data link connector circuit. Refer to [LAN-211, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2114E



MKIB1746E

# CAN SYSTEM (TYPE 7)

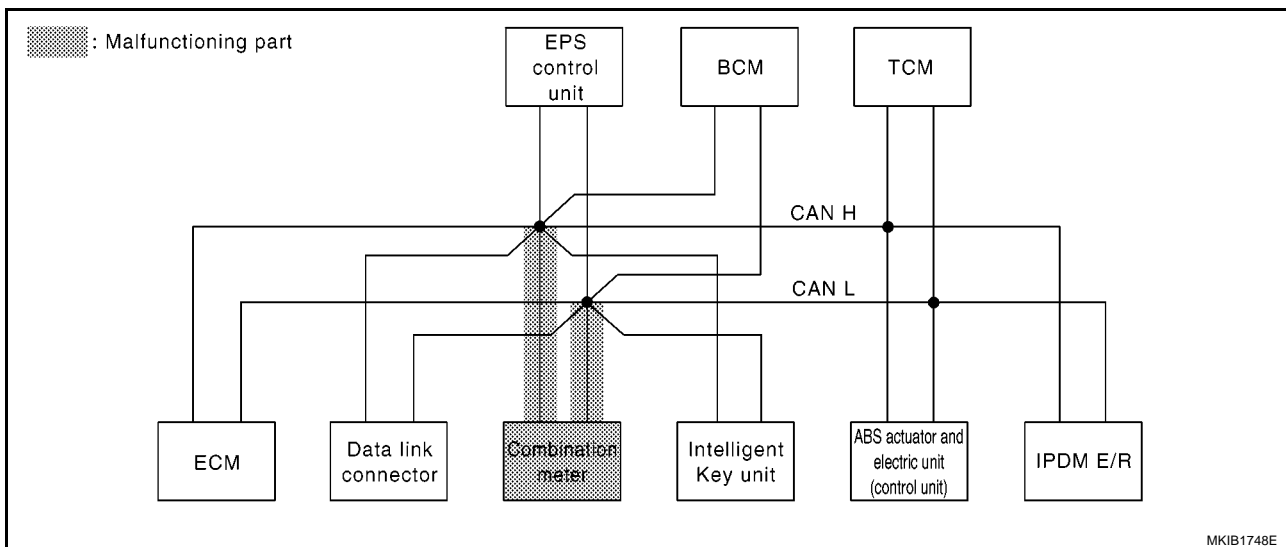
[CAN]

## Case4

Check combination meter circuit. Refer to [LAN-212, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2115E



MKIB1748E

LAN

# CAN SYSTEM (TYPE 7)

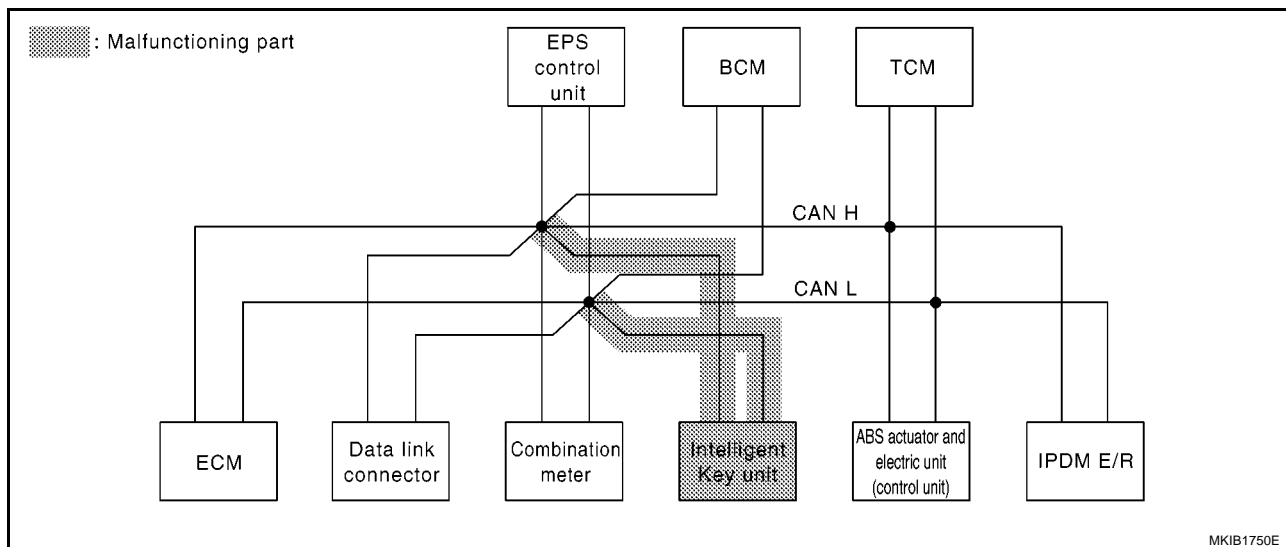
[CAN]

## Case5

Check Intelligent Key unit circuit. Refer to [LAN-213, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2116E



MKIB1750E

# CAN SYSTEM (TYPE 7)

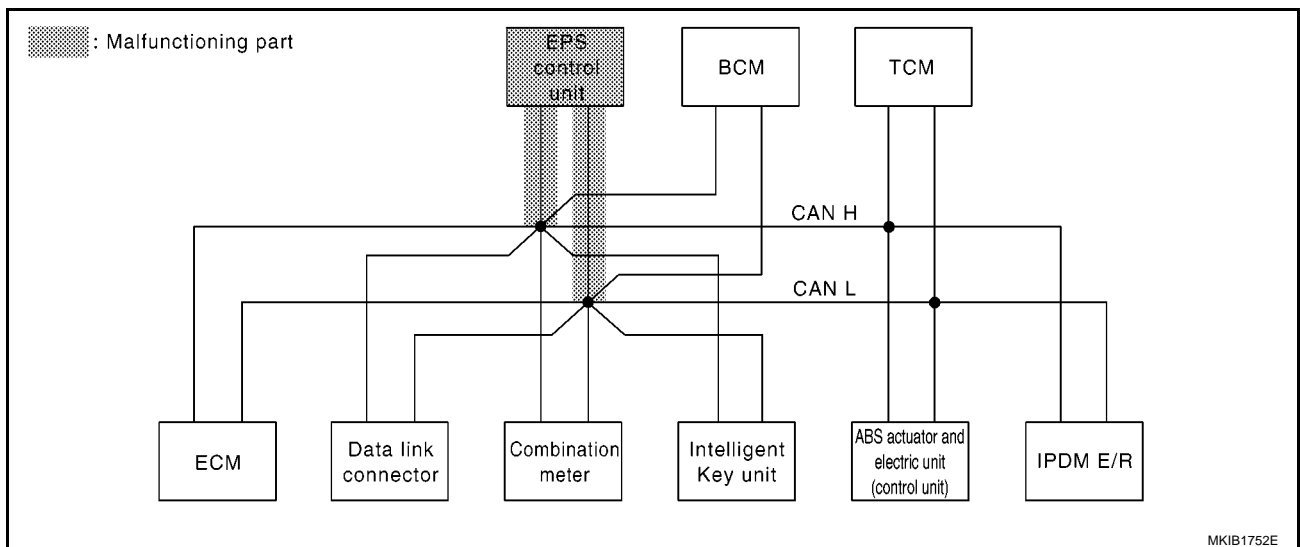
[CAN]

## Case6

Check EPS control unit circuit. Refer to [LAN-214, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2117E



MKIB1752E

# CAN SYSTEM (TYPE 7)

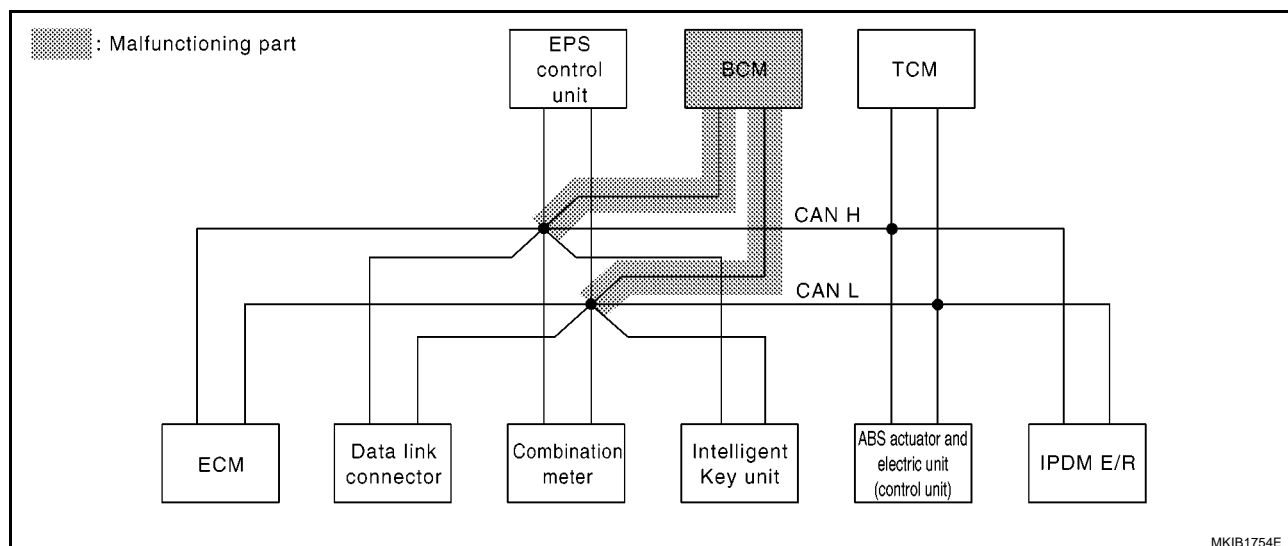
[CAN]

## Case7

Check BCM circuit. Refer to [LAN-215, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2118E



MKIB1754E

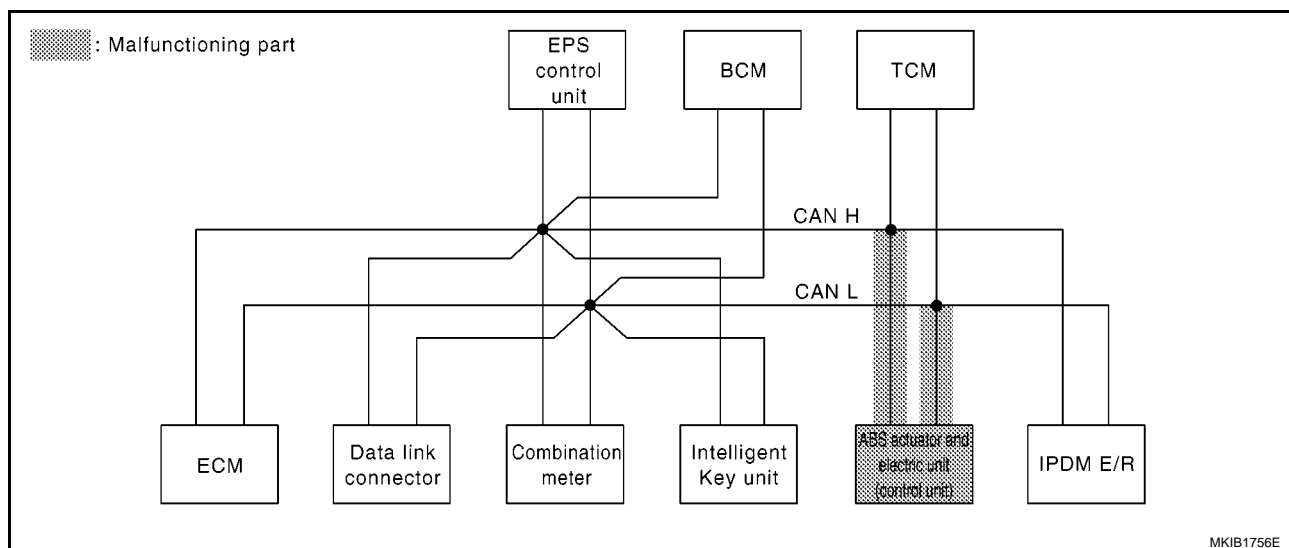


**Case8**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-216, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2119E



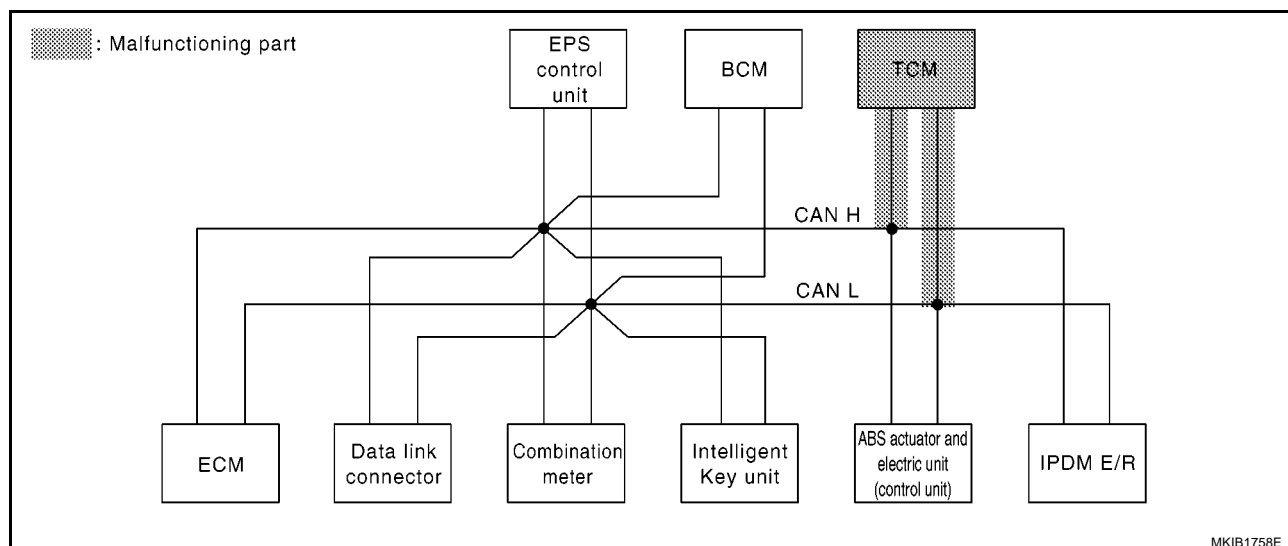
MKIB1756E

**Case9**

Check TCM circuit. Refer to [LAN-217, "TCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	—
A/T	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2120E



MKIB1758E

# CAN SYSTEM (TYPE 7)

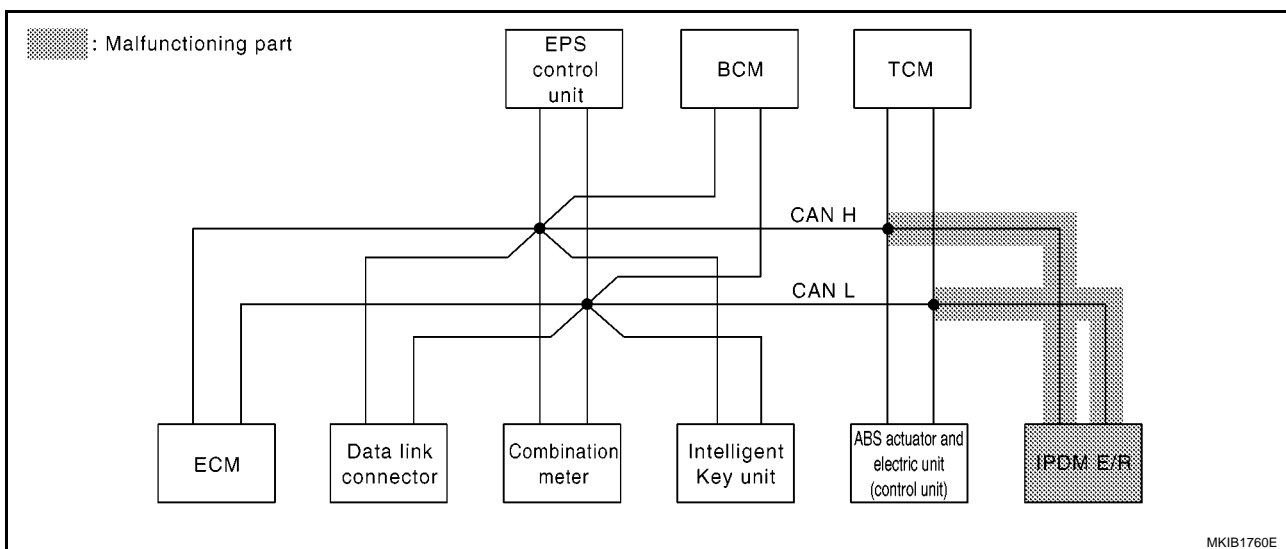
[CAN]

## Case10

Check IPDM E/R circuit. Refer to [LAN-218, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2121E



MKIB1760E

LAN

**Case11**

Check CAN communication circuit. Refer to [LAN-219, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2122E

**Case12**

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-222, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2123E

**Case13**

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-222, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

MKIB2124E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00J09

### 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 M1
  - Harness connector E101

#### OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

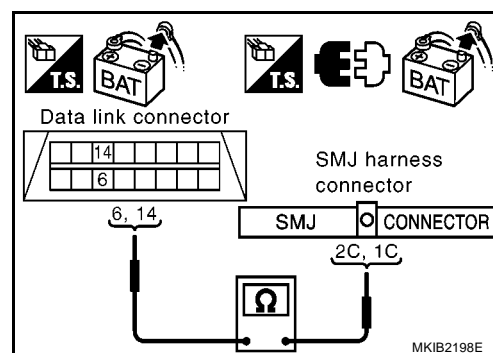
6 (R) – 2C (R) : Continuity should exist.

14 (W) – 1C (W) : Continuity should exist.

#### OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

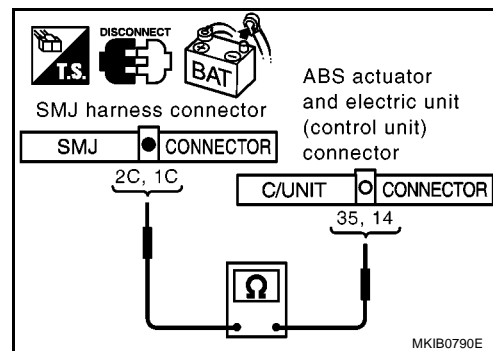
2C (R) – 35 (R) : Continuity should exist.

1C (W) – 14 (W) : Continuity should exist.

#### OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-195, "Work Flow"](#).

NG &gt;&gt; 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

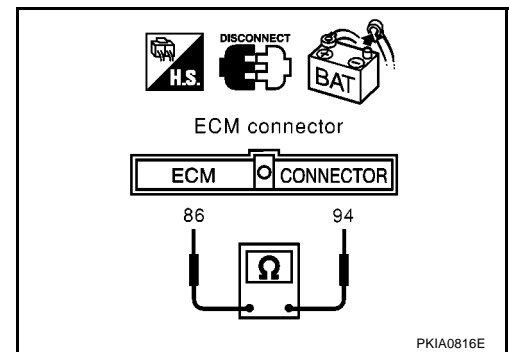
**94 (R) – 86 (W)**

**: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM 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 data link connector and terminals for damage, bend and loose connection (connector side and harness side).

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

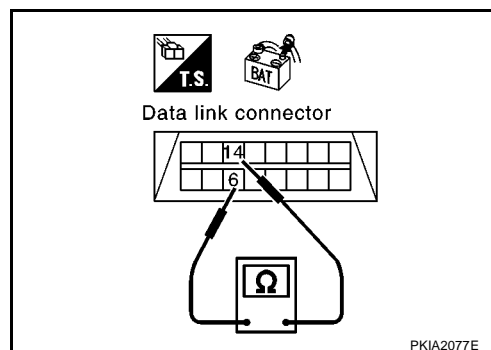
6 (R) – 14 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Diagnosis again. Refer to [LAN-195, "Work Flow"](#).

NG &gt;&gt; Repair harness between data link connector and combination meter



## 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.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

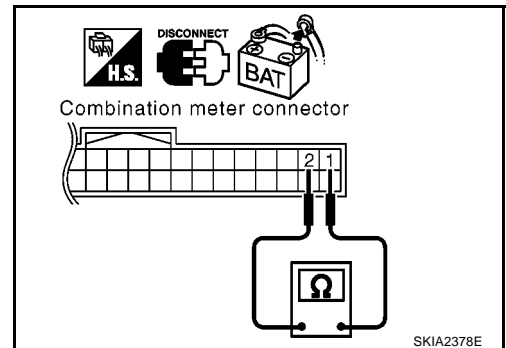
**1 (R) – 2 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace combination meter

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





## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

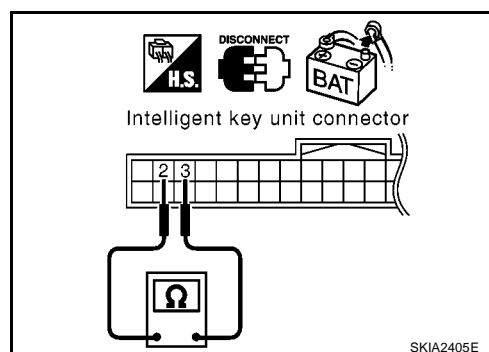
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.



## EPS Control Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

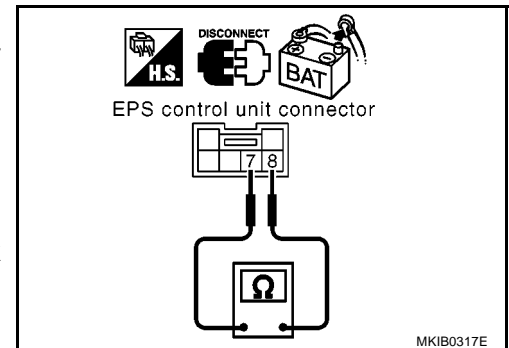
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

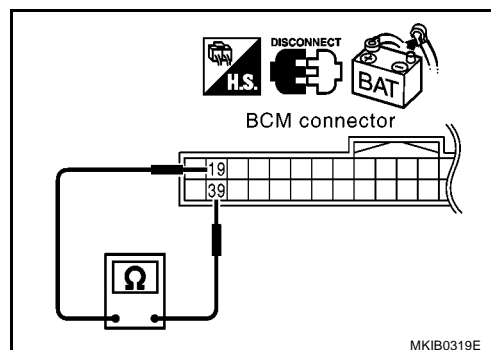
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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.

### 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 E47 terminals 35 (R) and 14 (W).

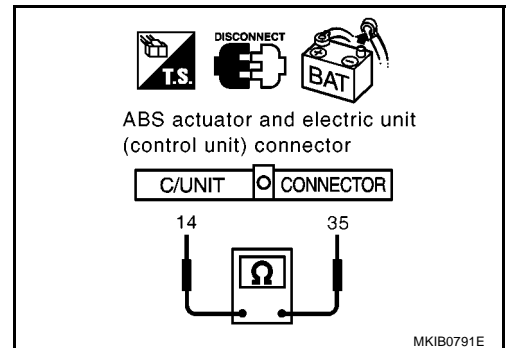
**35 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and TCM.



**TCM Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

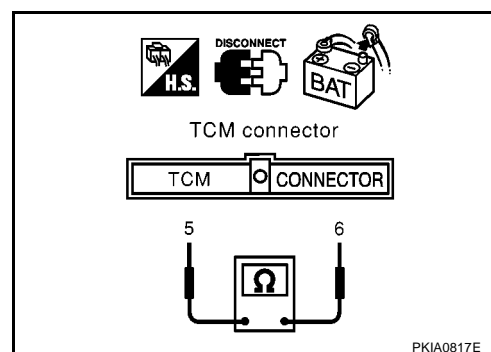
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

**5 (R) – 6 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace TCM.

NG &gt;&gt; Repair harness between TCM and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

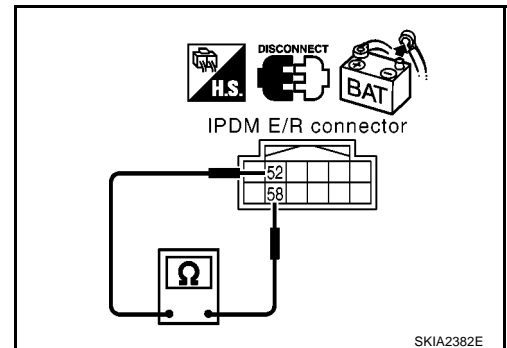
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and TCM.



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - TCM
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR SHORT CIRCUIT

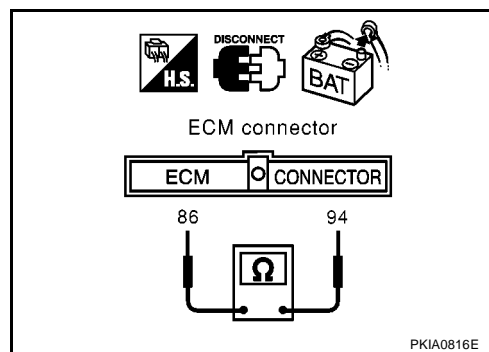
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

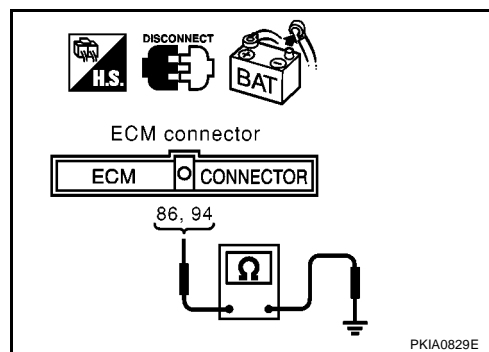
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - TCM connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

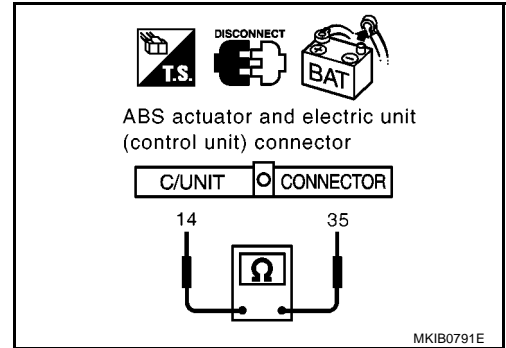
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

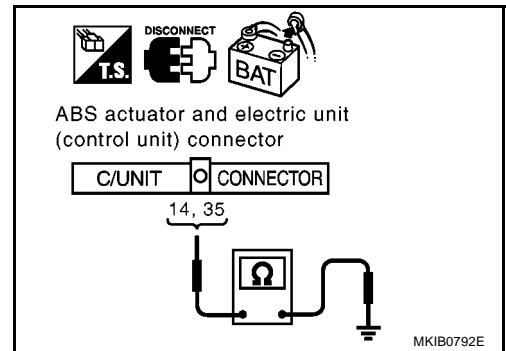
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R





## 6. CHECK HARNESS FOR SHORT CIRCUIT

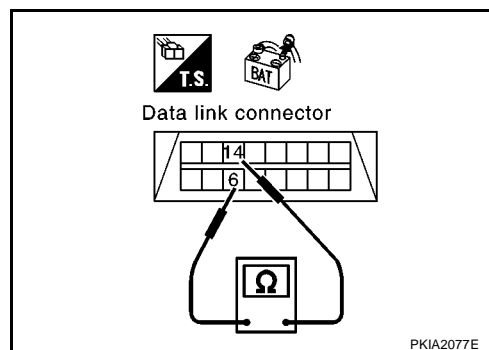
- Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

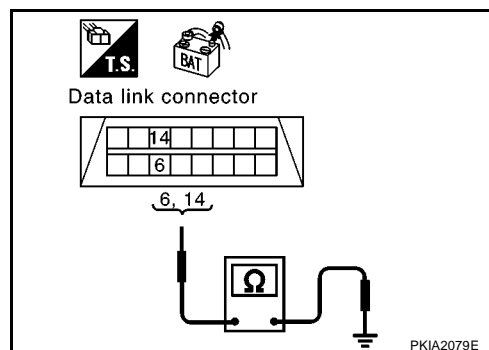
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-222, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-195, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00JOK

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

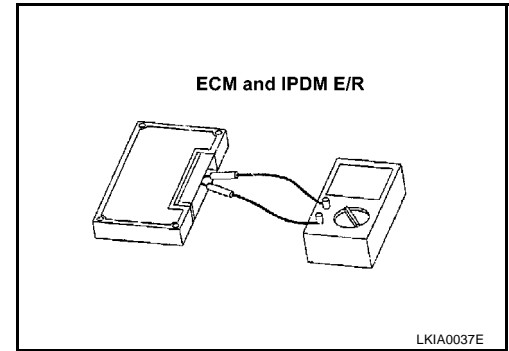
**Component Inspection**

EKS00JOL

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	

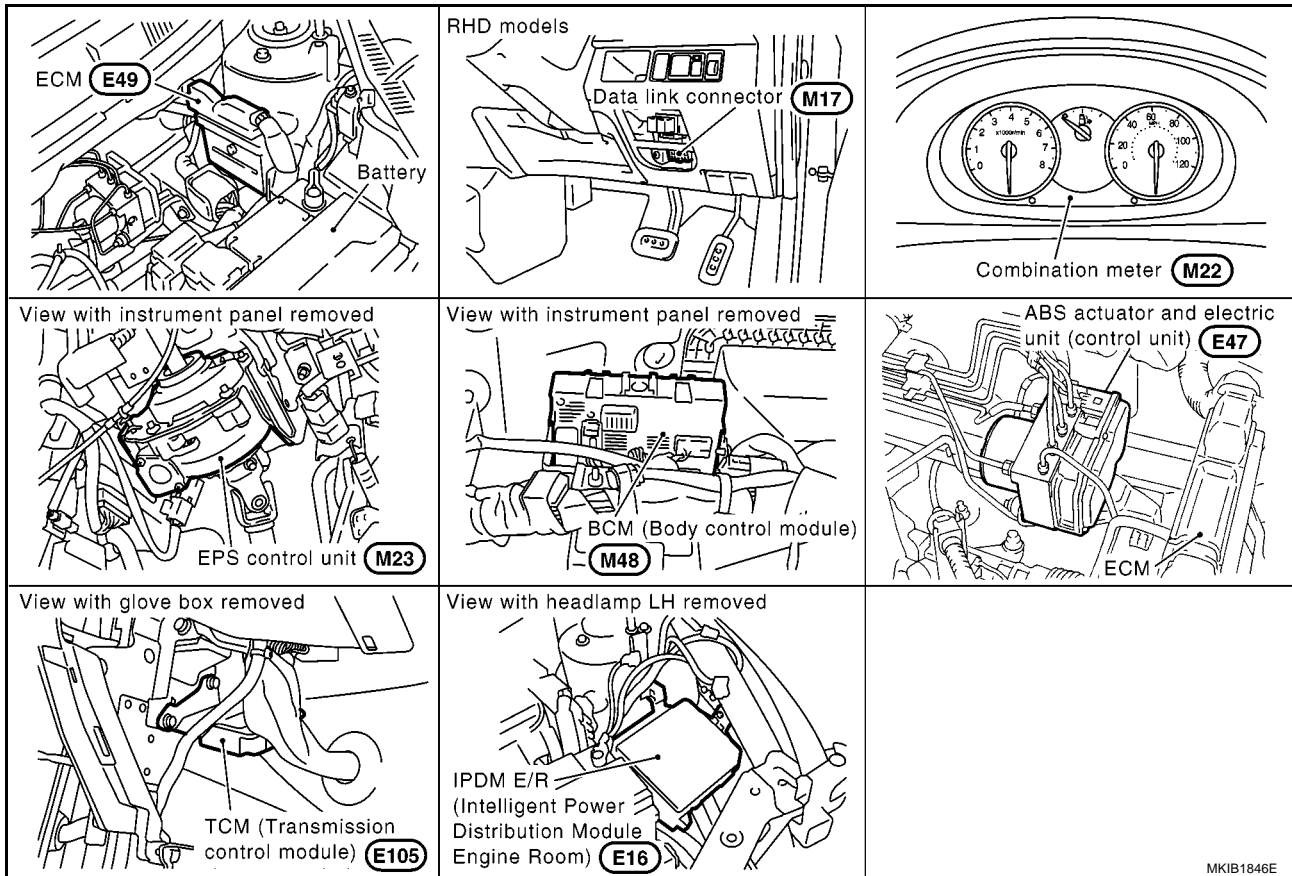


## CAN SYSTEM (TYPE 8)

## 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



# CAN SYSTEM (TYPE 8)

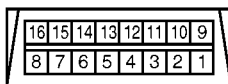
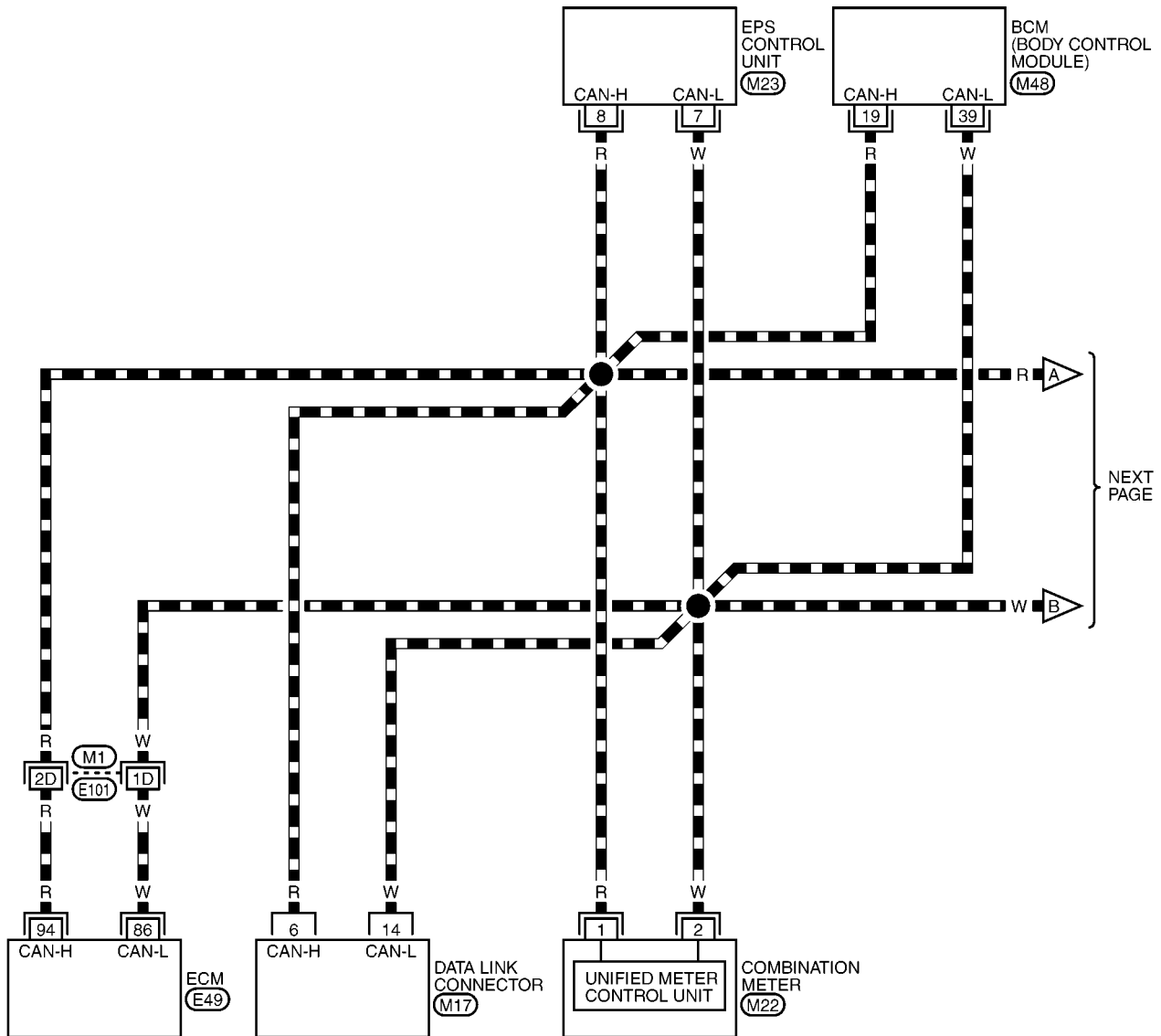
[CAN]

## Wiring Diagram — CAN —

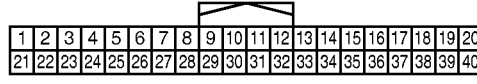
EKS00J00

### LAN-CAN-15

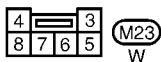
— : DATA LINE



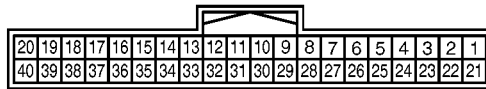
(M17)  
W



(M22)  
W



(M23)  
W



(M48)  
W



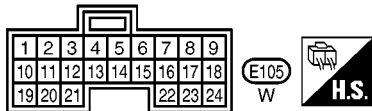
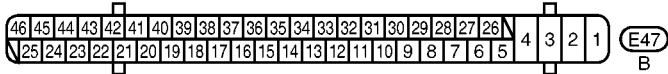
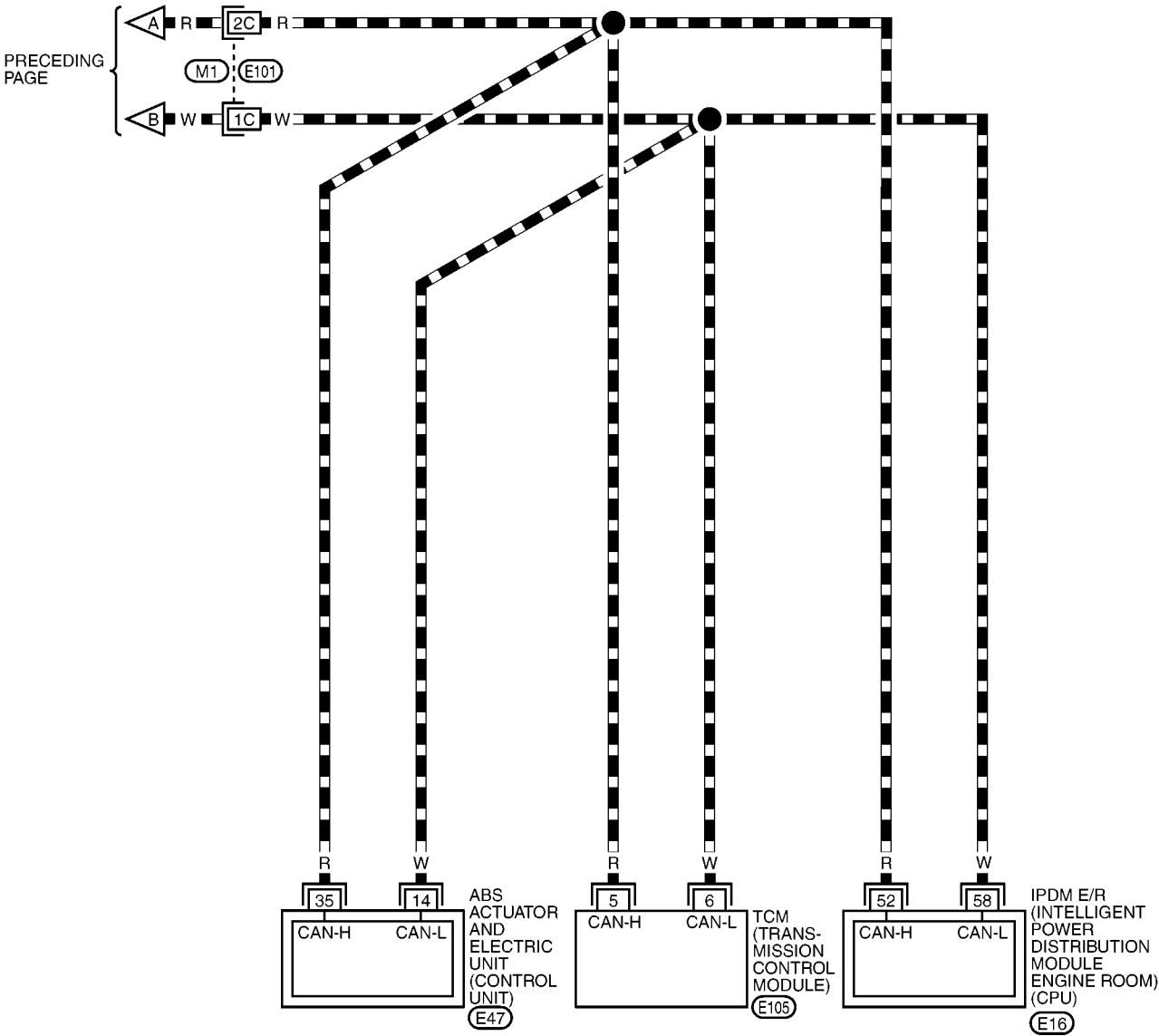
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

LAN-CAN-16

DATA LINE



REFER TO THE FOLLOWING.


(M1) -SUPER MULTIPLE JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN	
CONSULT- II	
ENGINE	
START (NISSAN BASED VHCL)	
START (X-BADGE VHCL)	
SUB MODE	
	LIGHT COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
BACK	LIGHT	COPY	

MKIB1692E

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

(Example)

SELECT DIAG MODE	
WORK SUPPORT	
SELF-DIAG RESULTS	
DATA MONITOR	
DATA MONITOR (SPEC)	
CAN DIAG SUPPORT MNTR	
ACTIVE TEST	
Scroll Down	
BACK	LIGHT COPY




SELF-DIAG RESULTS	
DTC RESULTS	
TIME	
CAN COMM CIRCUIT [U1000]	0
F.F.DATA	
ERASE	
PRINT	
MODE	BACK
LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE	
WORK SUPPORT	
SELF-DIAG RESULTS	
DATA MONITOR	
DATA MONITOR (SPEC)	
CAN DIAG SUPPORT MNTR	
ACTIVE TEST	
Scroll Down	
BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR	
ENGINE	
PRNT	
INITIAL DIAG	OK
TRANSMIT DIAG	OK
TCM	OK
VDC/TCS/ABS	OK
METER/M&A	OK
ICC	UNKWN
BCM/SEC	OK
IPDM E/R	OK
AWD/4WD/e4WD	UNKWN
PRINT	
Scroll Down	
MODE	BACK
LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-227, "CHECK SHEET"](#) .
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-227, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-229, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

# CAN SYSTEM (TYPE 8)

[CAN]

## CHECK SHEET

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2125E

## CAN SYSTEM (TYPE 8)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
A/T  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
A/T  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2189E



## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

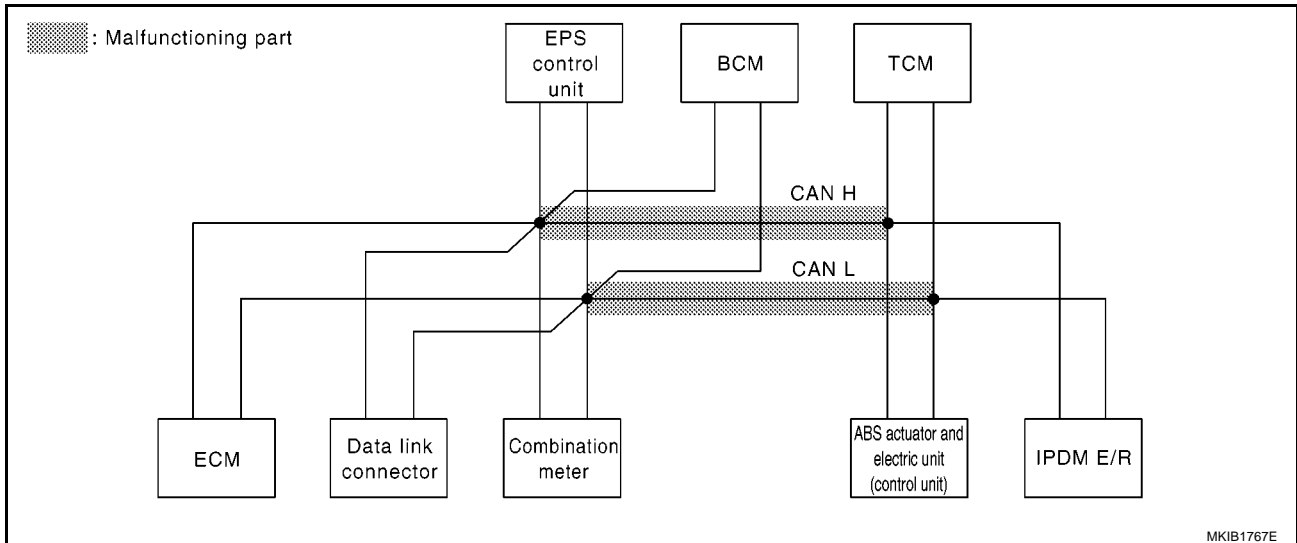
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-239, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2126E



MKIB1767E

# CAN SYSTEM (TYPE 8)

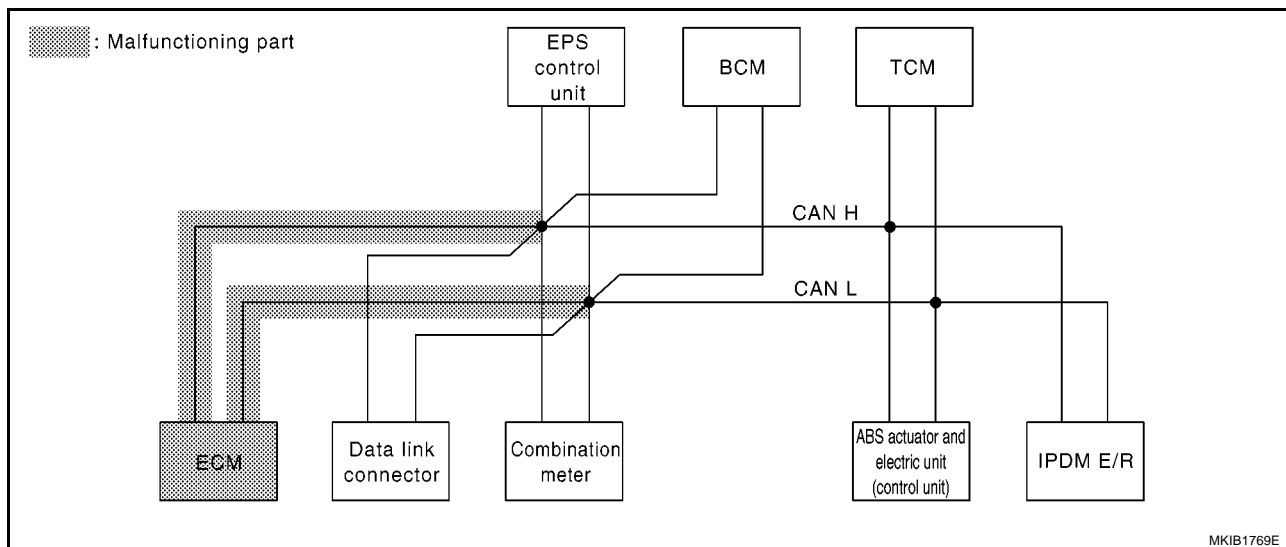
[CAN]

## Case2

Check ECM circuit. Refer to [LAN-240, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2127E



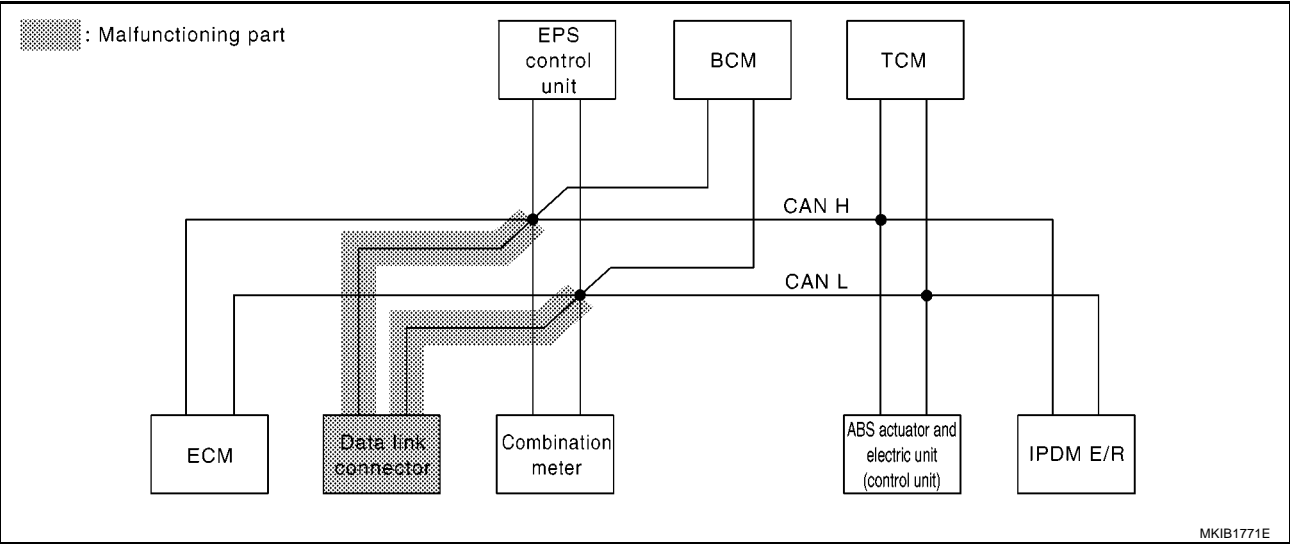
MKIB1769E

Case3

Check data link connector circuit. Refer to LAN-241, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2128E



# CAN SYSTEM (TYPE 8)

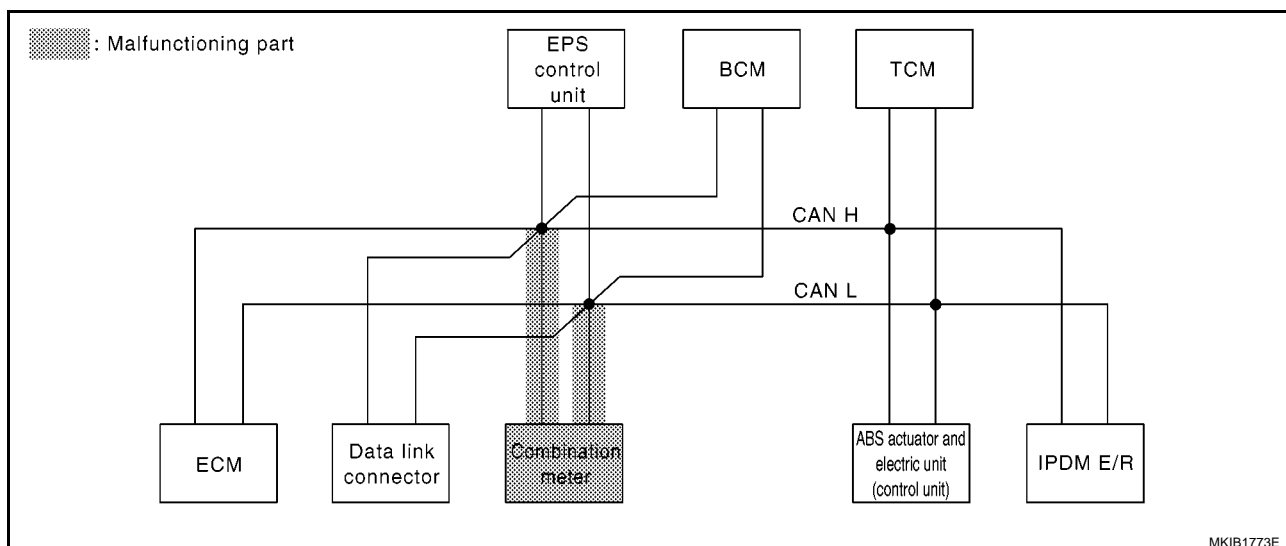
[CAN]

## Case4

Check combination meter circuit. Refer to [LAN-242, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2129E



MKIB1773E

# CAN SYSTEM (TYPE 8)

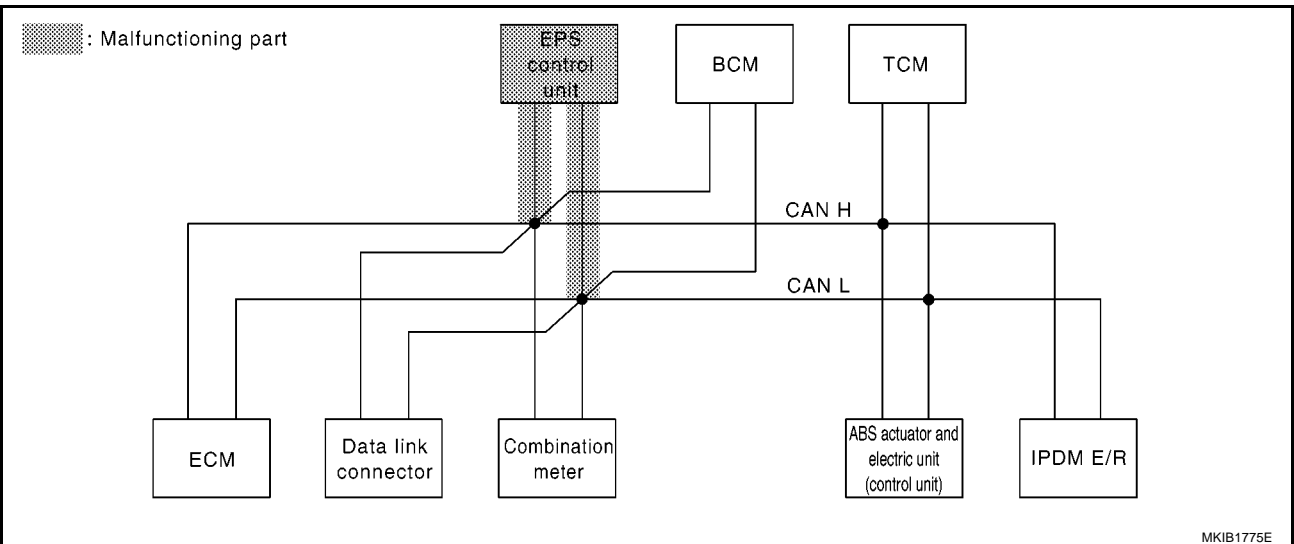
[CAN]

## Case5

Check EPS control unit circuit. Refer to [LAN-243, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2130E



MKIB1775E

LAN

# CAN SYSTEM (TYPE 8)

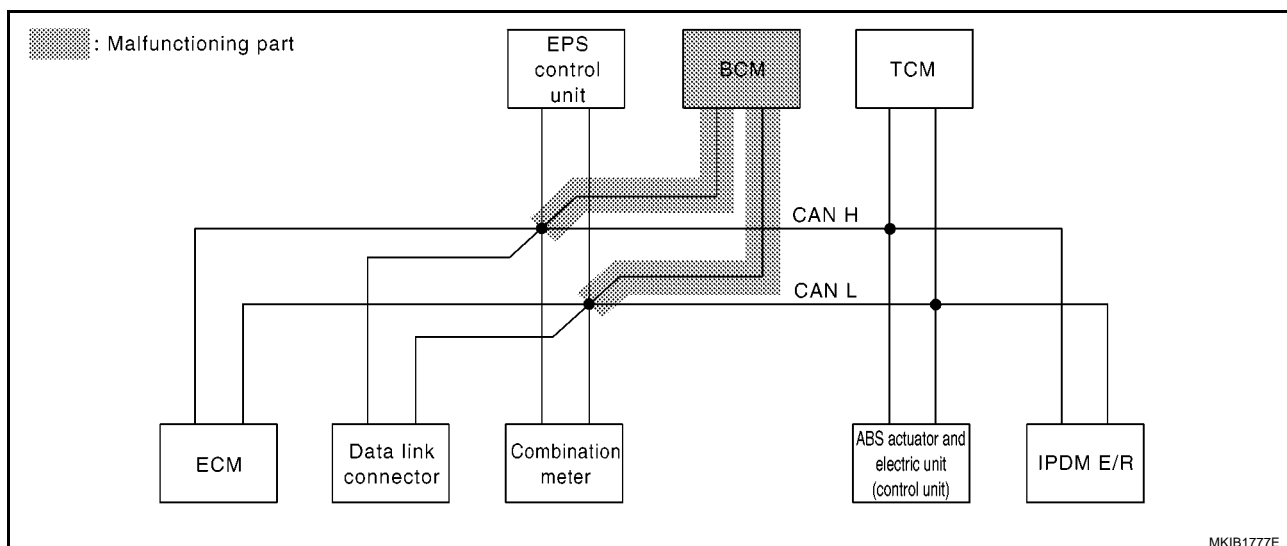
[CAN]

## Case6

Check BCM circuit. Refer to [LAN-244, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

MKIB2131E



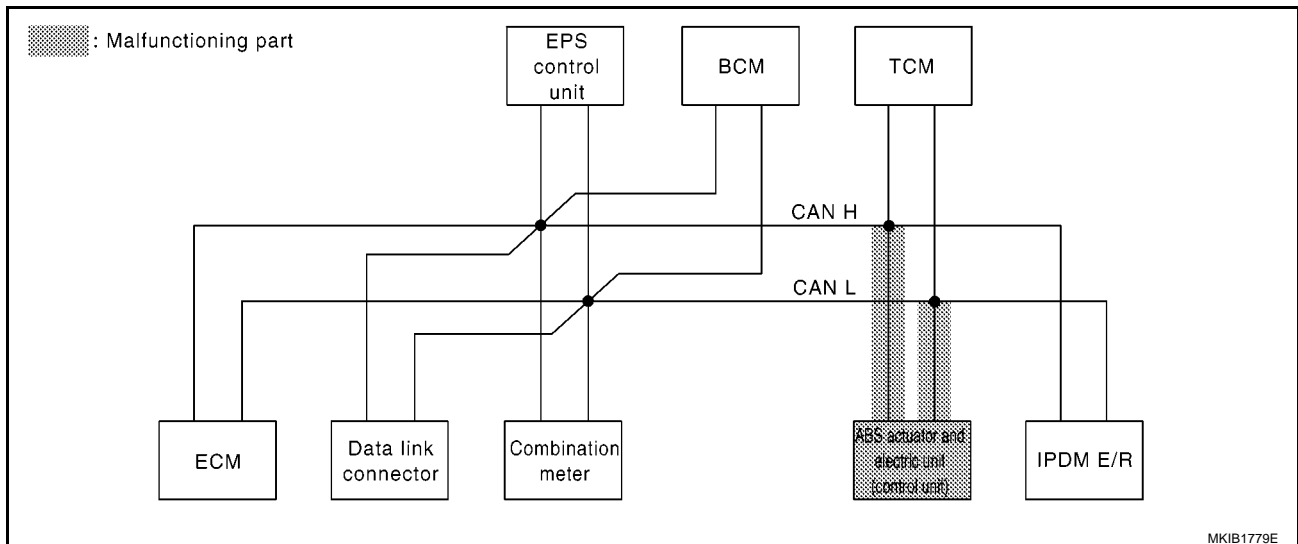
MKIB1777E

**Case7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-245, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2132E



MKIB1779E

# CAN SYSTEM (TYPE 8)

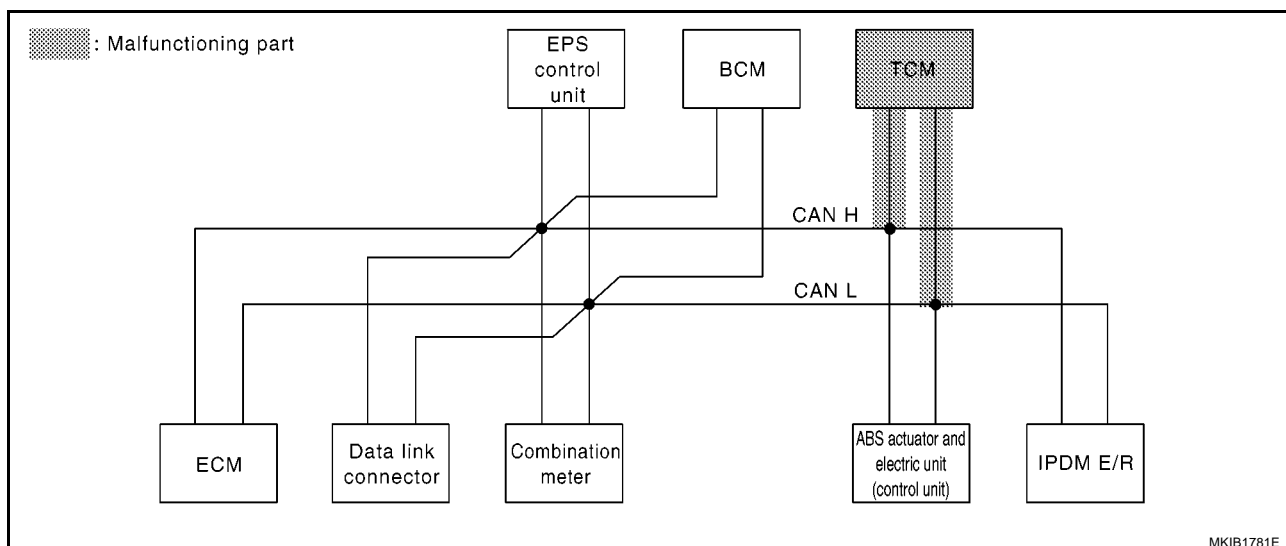
[CAN]

## Case8

Check TCM circuit. Refer to [LAN-246, "TCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2133E



MKIB1781E



# CAN SYSTEM (TYPE 8)

[CAN]

## Case9

Check IPDM E/R circuit. Refer to [LAN-247, "IPDM E/R Circuit Check"](#) .

A

B

C

D

E

F

G

H

I

J

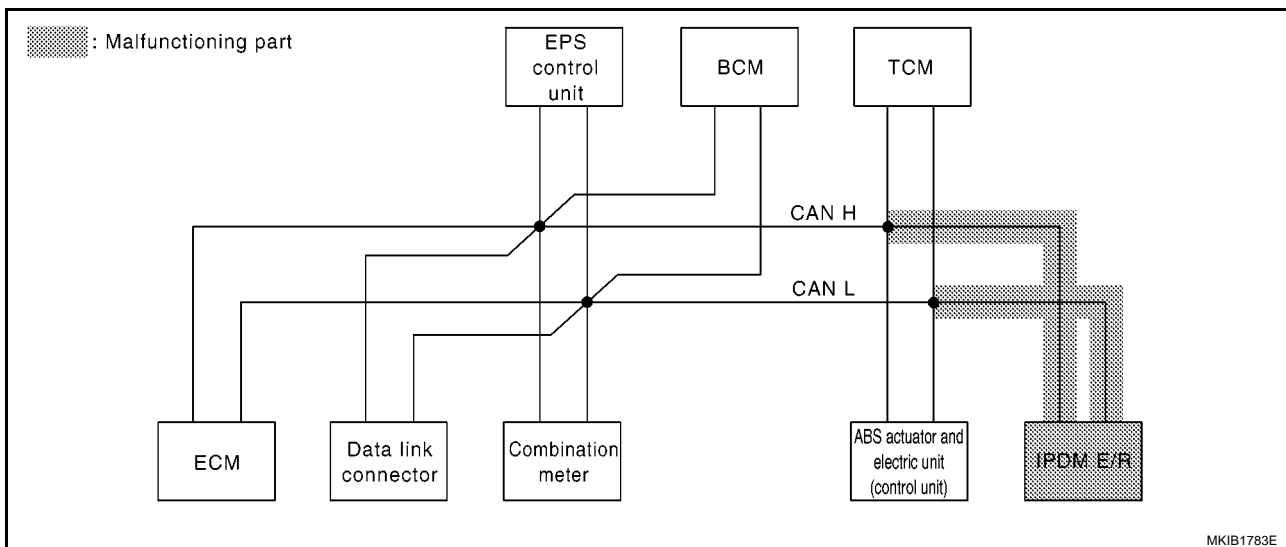
LAN

L

M

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN ✓
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

MKIB2134E



MKIB1783E

# CAN SYSTEM (TYPE 8)

[CAN]

## Case10

Check CAN communication circuit. Refer to [LAN-248, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	✓	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	✓	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2135E

## Case11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to [LAN-251, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2136E

## Case12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to [LAN-251, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	TCM	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—
A/T	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

MKIB2137E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00J0Q

### 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 M1
  - Harness connector E101

#### OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

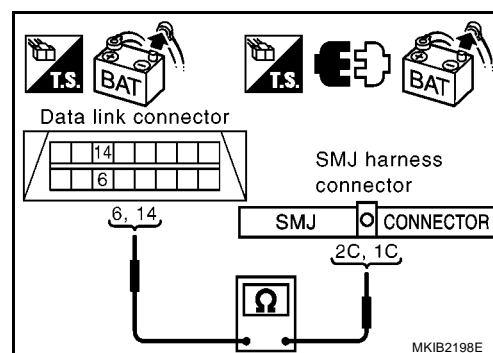
6 (R) – 2C (R) : Continuity should exist.

14 (W) – 1C (W) : Continuity should exist.

#### OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

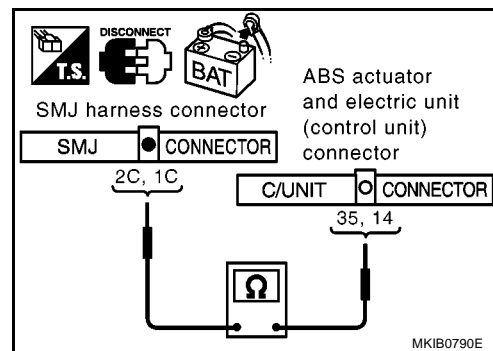
2C (R) – 35 (R) : Continuity should exist.

1C (W) – 14 (W) : Continuity should exist.

#### OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-226, "Work Flow"](#).

NG &gt;&gt; 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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

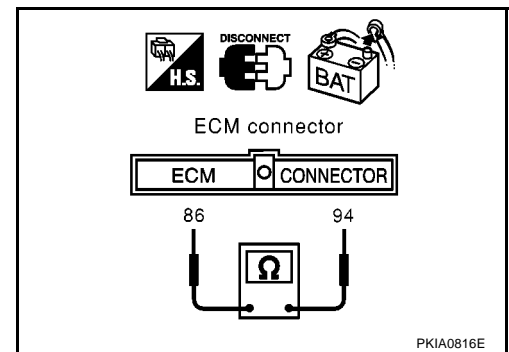
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals for damage, bend and loose connection (connector side and harness side).

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

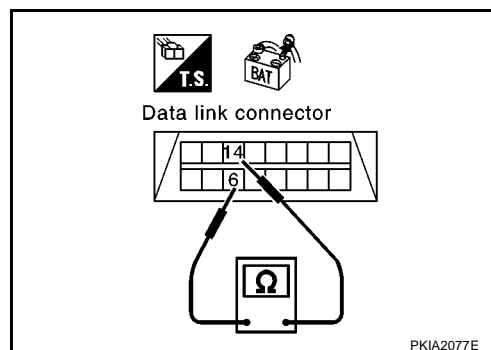
6 (R) – 14 (W)

: Approx. 54 – 66Ω

OK or NG

OK >> Diagnosis again. Refer to [LAN-226, "Work Flow"](#).

NG &gt;&gt; Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

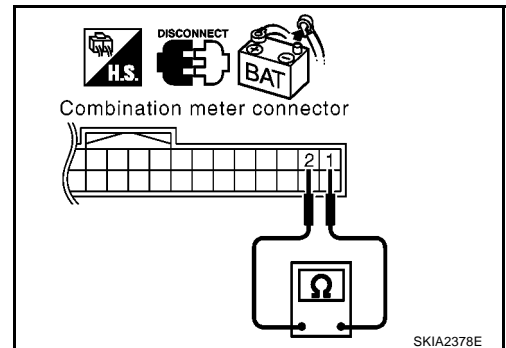
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**

OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

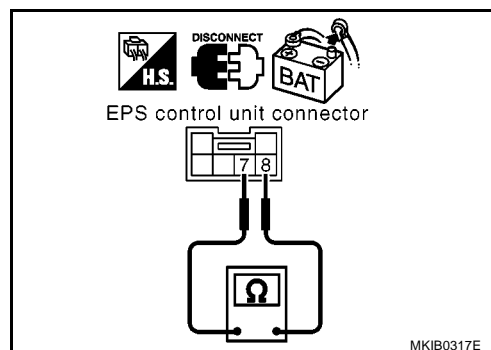
1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**

OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

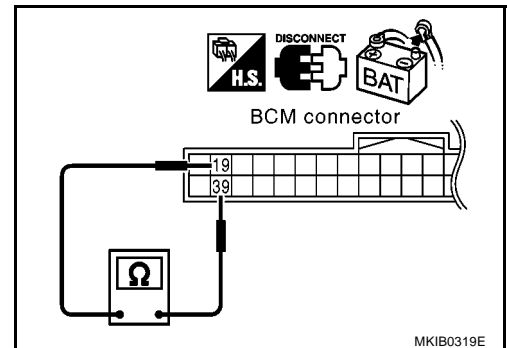
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.





**ABS Actuator and Electric Unit (Control Unit) Circuit Check**

EKS00J0W

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

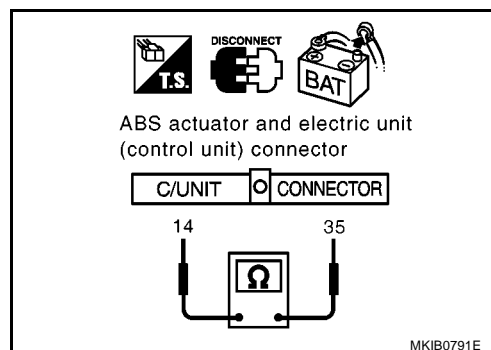
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

**35 (R) – 14 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace ABS actuator and electric unit (control unit).

NG &gt;&gt; Repair harness between ABS actuator and electric unit (control unit) and TCM.



**TCM Circuit Check****1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of TCM 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**

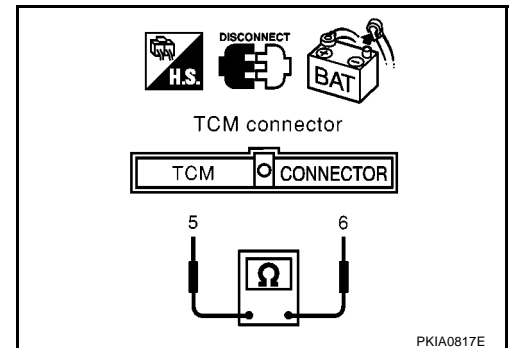
1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

**5 (R) – 6 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.

NG >> Repair harness between TCM and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

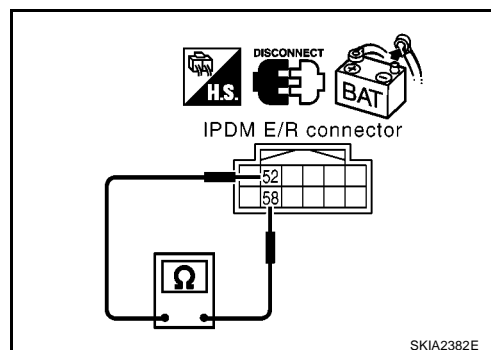
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and TCM.



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - TCM
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

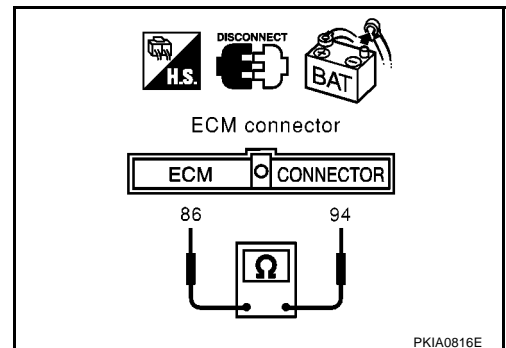
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

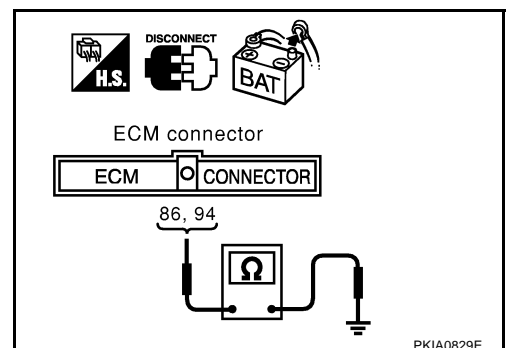
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - TCM connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

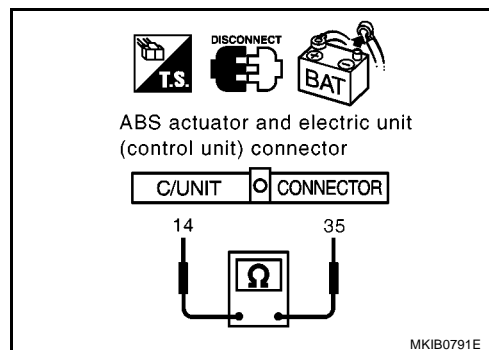
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

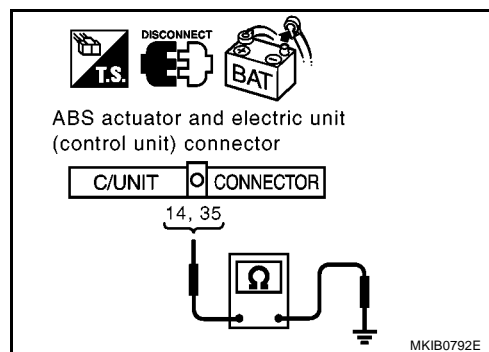
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



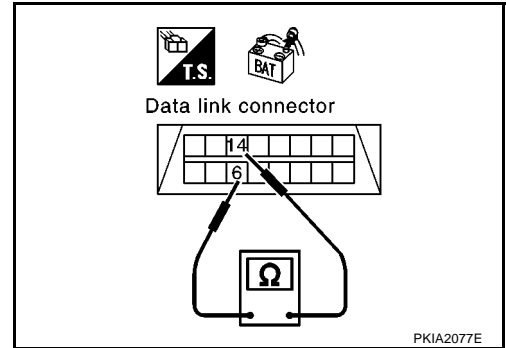
## 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

- OK >> GO TO 7.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM.



## 7. CHECK HARNESS FOR SHORT CIRCUIT

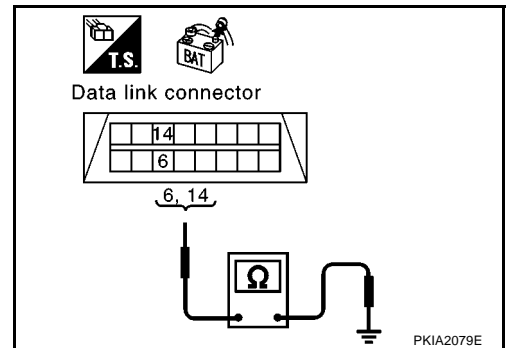
Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – ground : Continuity should not exist.**

**14 (W) – ground : Continuity should not exist.**

OK or NG

- OK >> GO TO 8.
- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM.



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-251, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-226, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00JP0

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

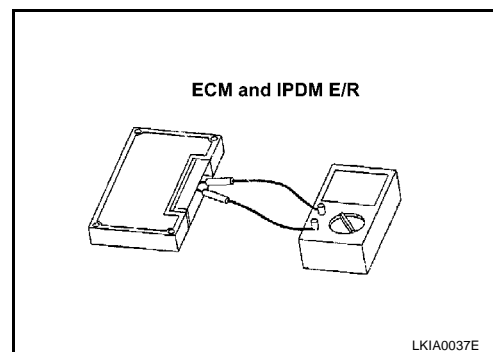
**Component Inspection**

EKS00JP1

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 9)

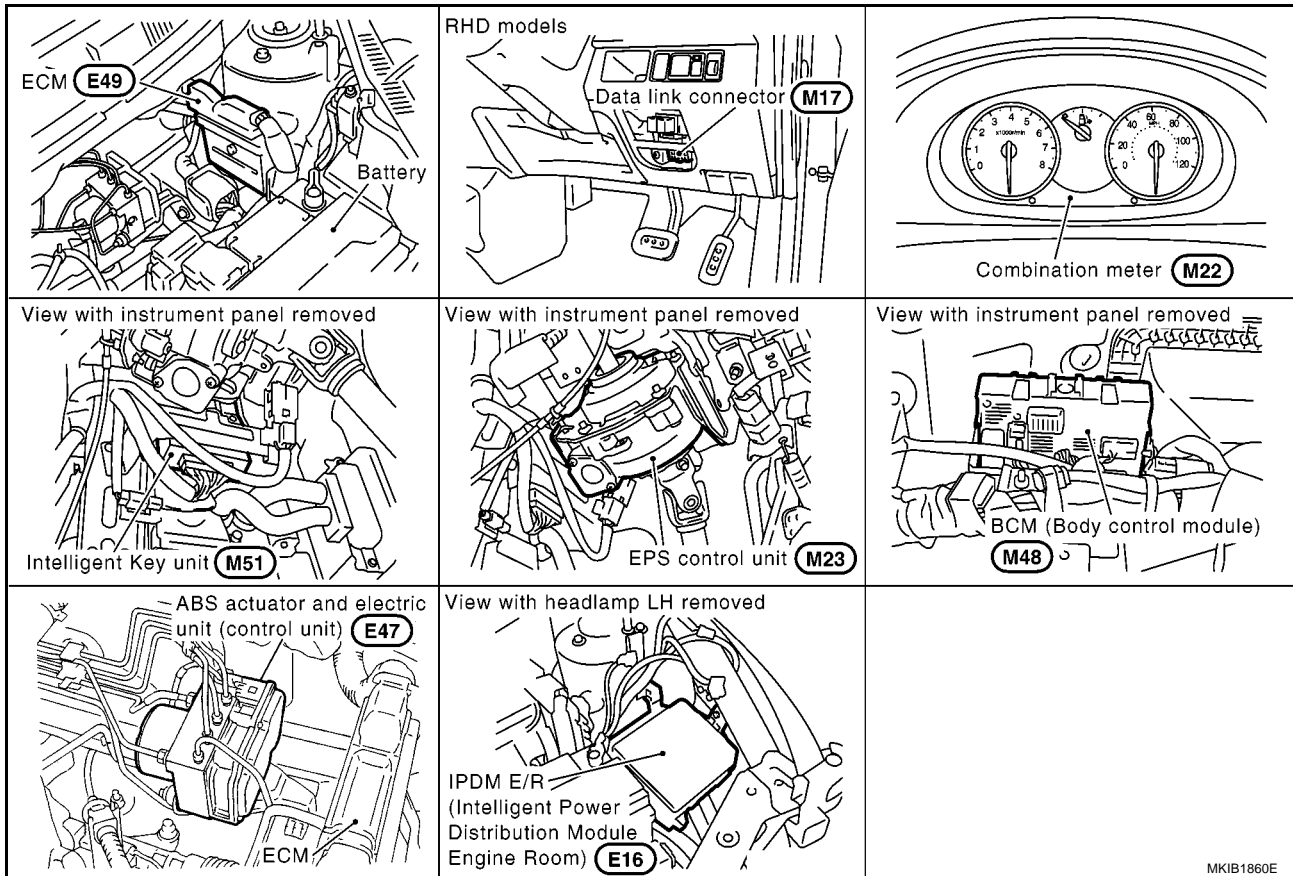
## System Description

EKS00JP2

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

EKS00JP3



MKIB1860E



# CAN SYSTEM (TYPE 9)

[CAN]

## Wiring Diagram — CAN —

EKS00JP4

### LAN-CAN-17

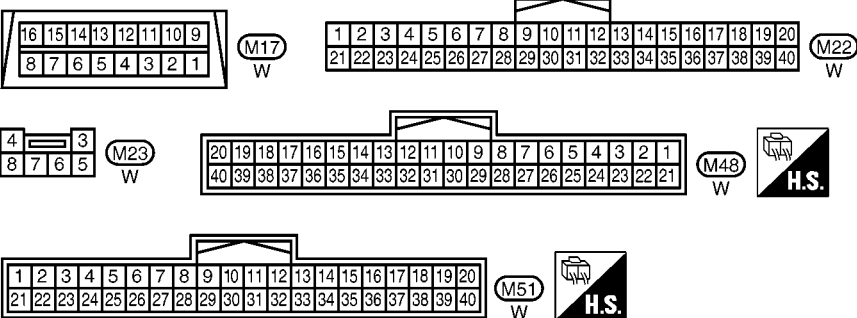
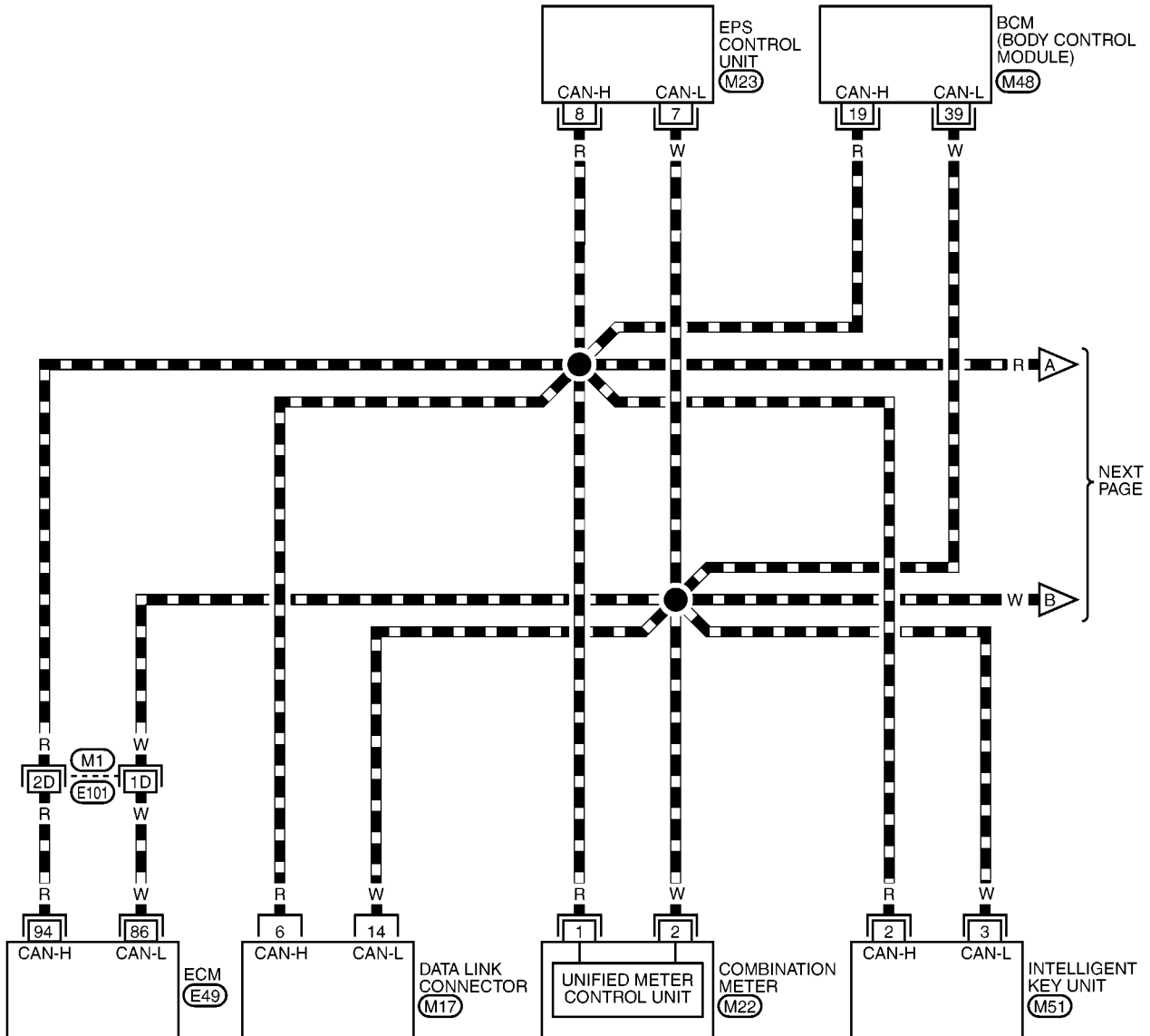
— : DATA LINE

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

LAN

L

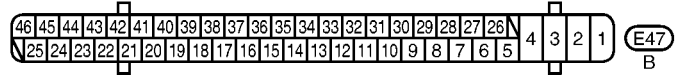
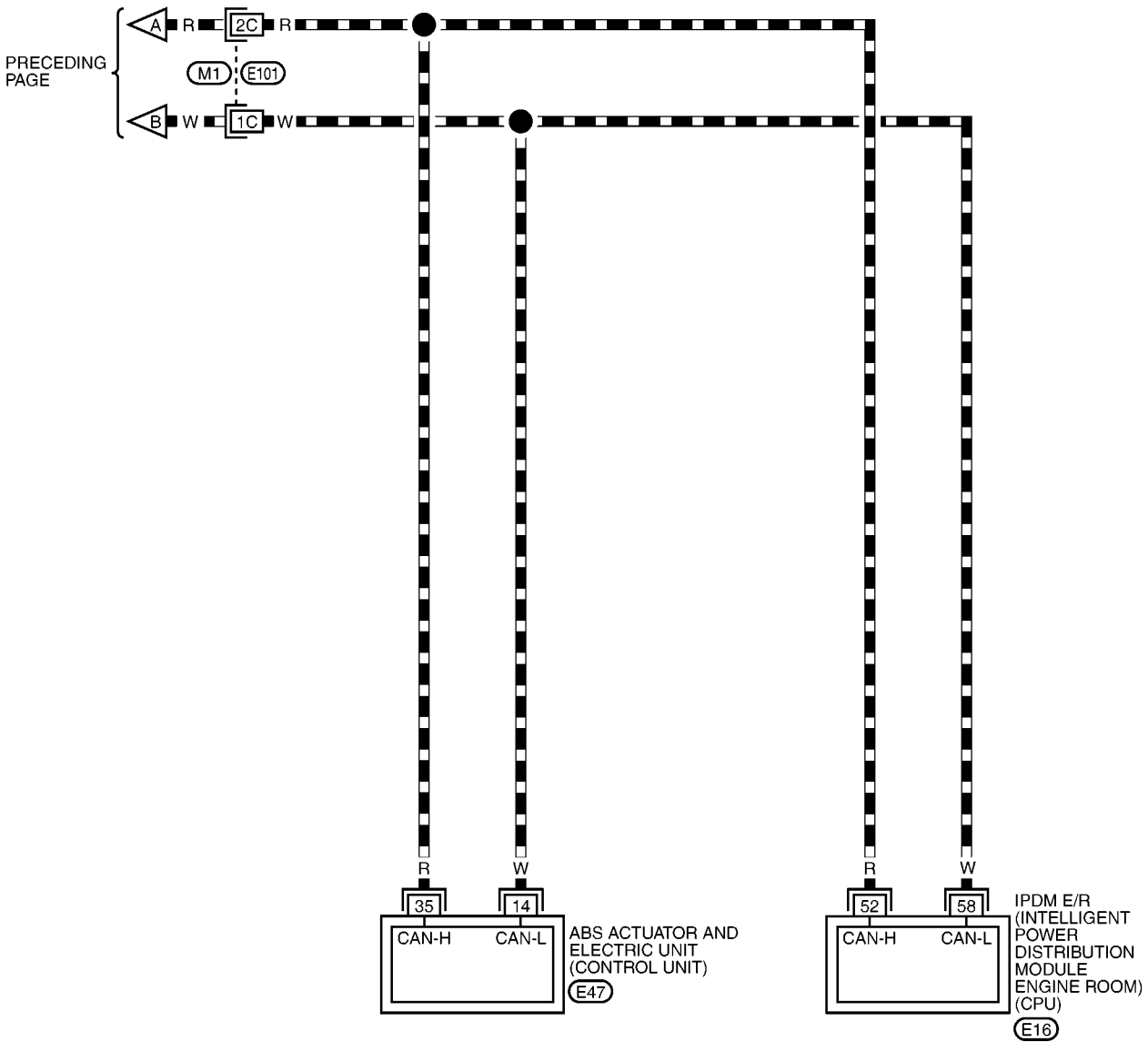
M



REFER TO THE FOLLOWING.  
 (M1) -SUPER MULTIPLE JUNCTION (SMJ)  
 (E49) -ELECTRICAL UNITS

LAN-CAN-18

▬ : DATA LINE



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE  
JUNCTION (SMJ)


## Work Flow

EKS00JP5

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

(Example)

NISSAN			
CONSULT-II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSENT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-256, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-256, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-258, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 9)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2138E

# CAN SYSTEM (TYPE 9)

[CAN]

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
INTELLIGENT KEY  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
INTELLIGENT KEY  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM  
CAN DIAG SUPPORT  
MNTR

MKIB2190E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

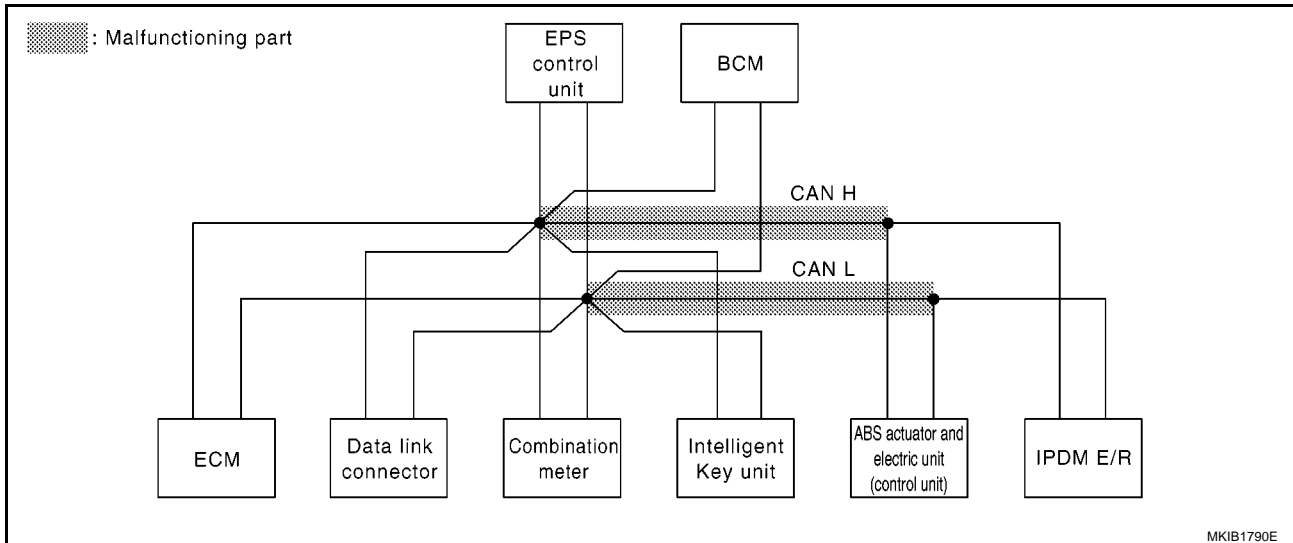
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-268, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2139E



MKIB1790E

# CAN SYSTEM (TYPE 9)

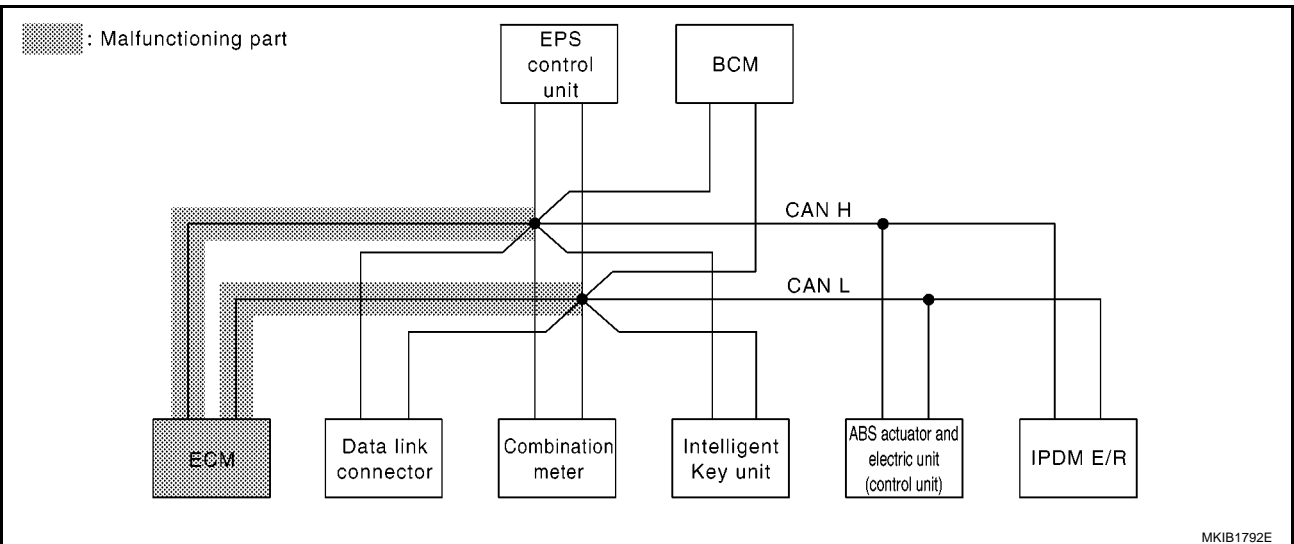
[CAN]

## Case2

Check ECM circuit. Refer to [LAN-269, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2140E



MKIB1792E

LAN

# CAN SYSTEM (TYPE 9)

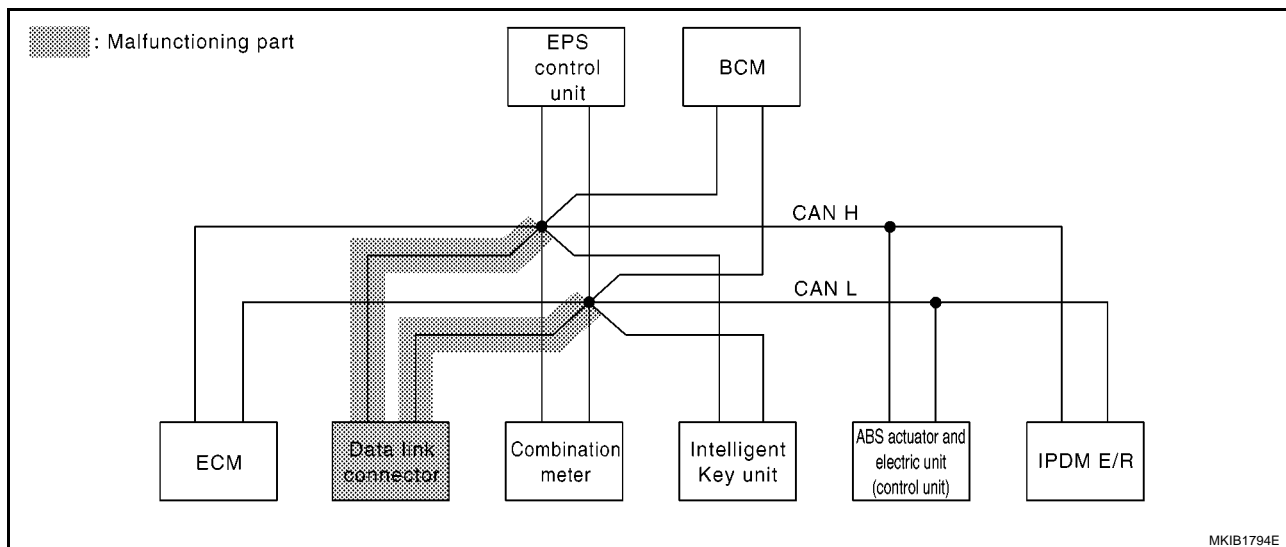
[CAN]

## Case3

Check data link connector circuit. Refer to [LAN-270, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2141E



MKIB1794E



# CAN SYSTEM (TYPE 9)

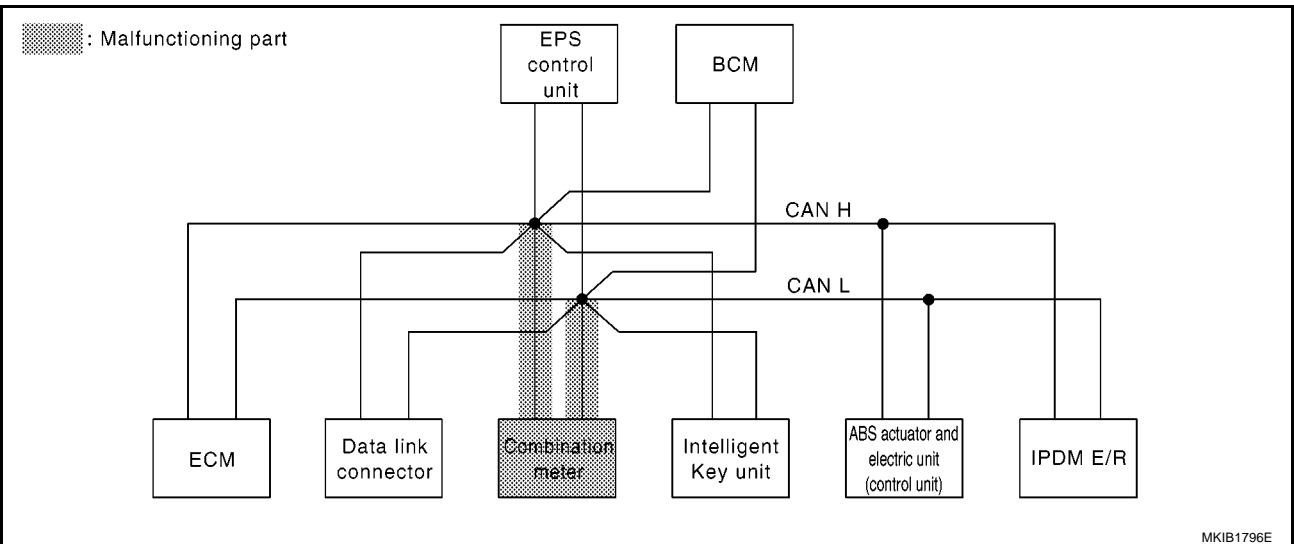
[CAN]

## Case4

Check combination meter circuit. Refer to [LAN-271, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2142E



MKIB1796E

LAN

# CAN SYSTEM (TYPE 9)

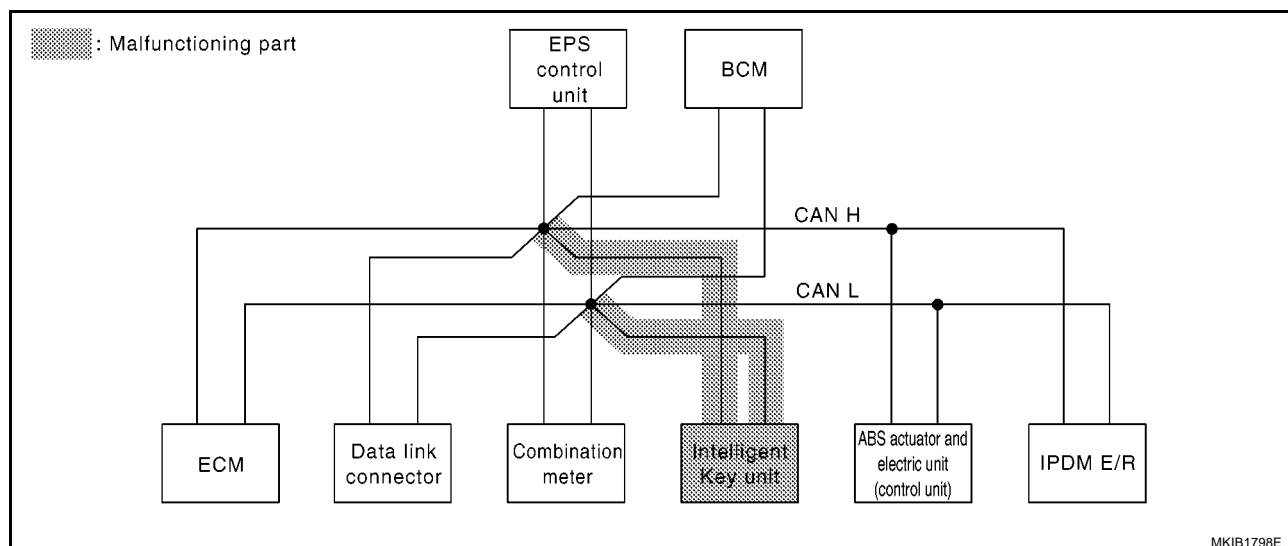
[CAN]

## Case5

Check Intelligent Key unit circuit. Refer to [LAN-272, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2143E



MKIB1798E

# CAN SYSTEM (TYPE 9)

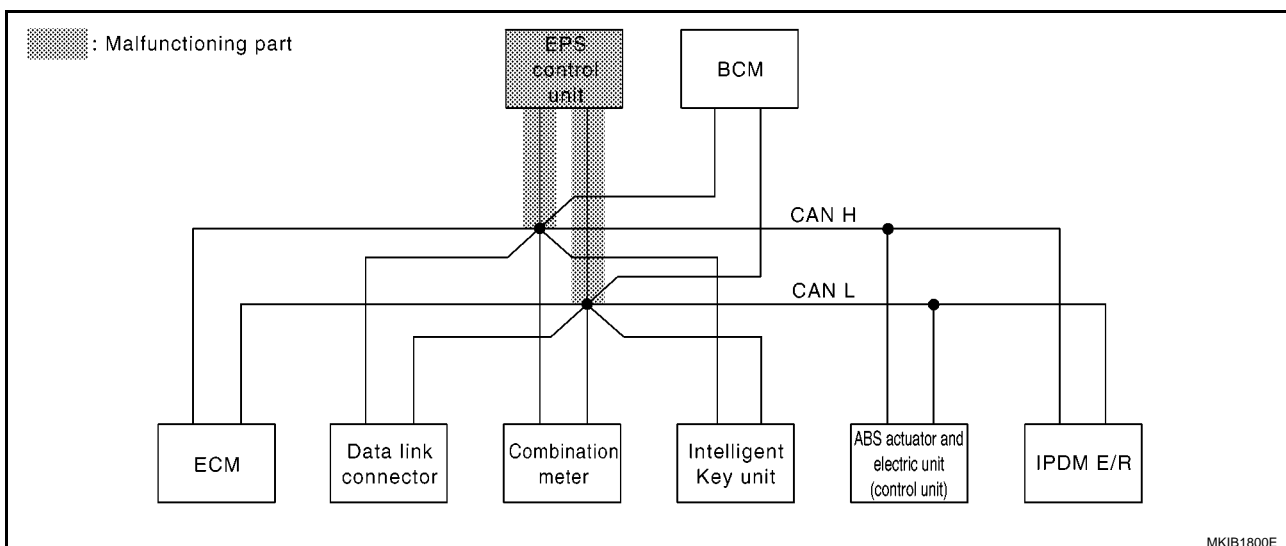
[CAN]

## Case6

Check EPS control unit circuit. Refer to [LAN-273, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2144E



MKIB1800E

# CAN SYSTEM (TYPE 9)

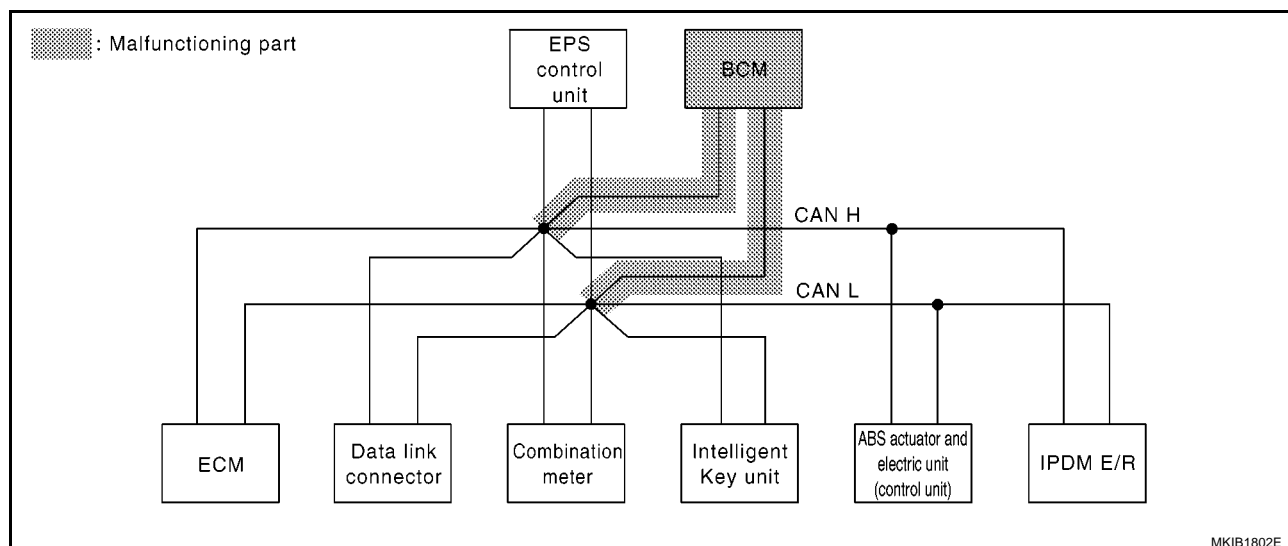
[CAN]

## Case7

Check BCM circuit. Refer to [LAN-274, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2145E



MKIB1802E

# CAN SYSTEM (TYPE 9)

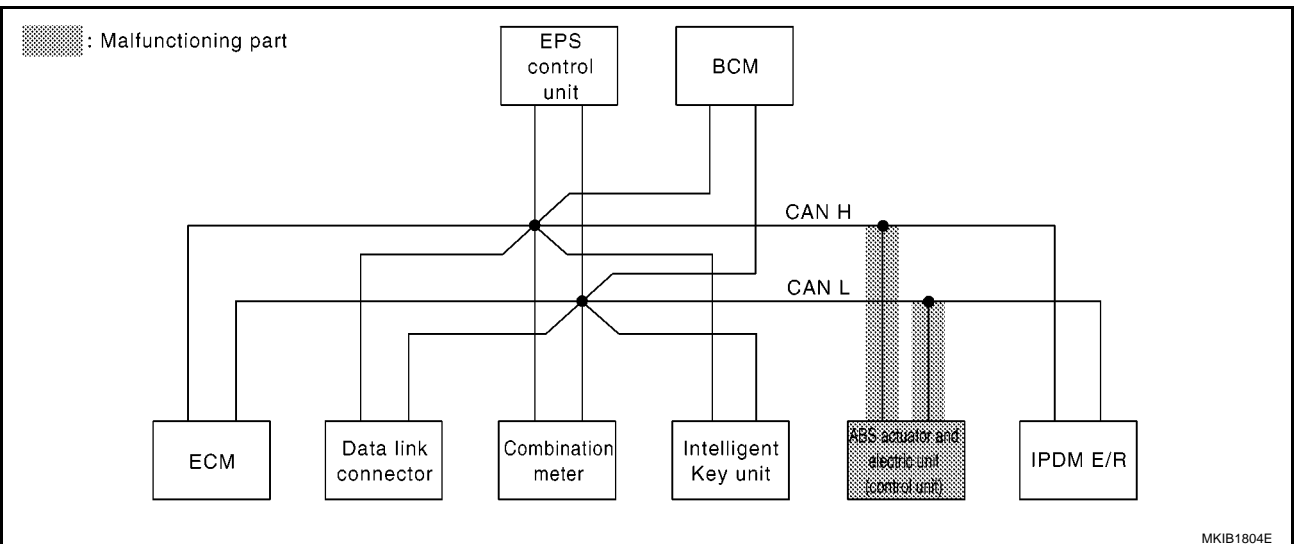
[CAN]

## Case8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-275, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2146E



MKIB1804E

LAN

# CAN SYSTEM (TYPE 9)

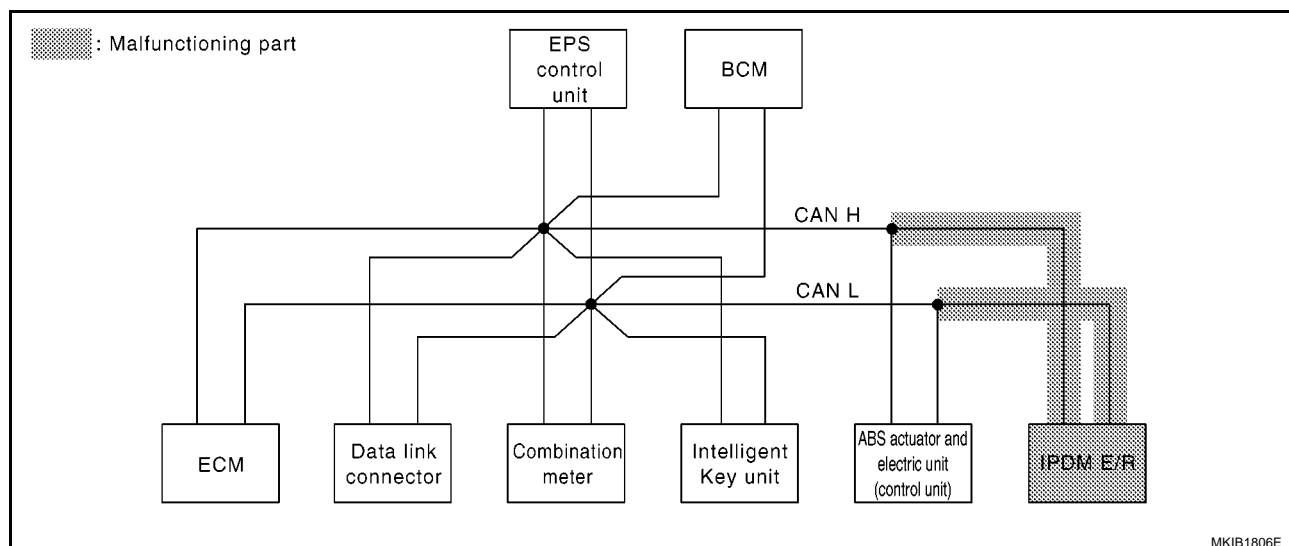
[CAN]

## Case9

Check IPDM E/R circuit. Refer to [LAN-276, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2147E



MKIB1806E

# CAN SYSTEM (TYPE 9)

[CAN]

## Case10

Check CAN communication circuit. Refer to [LAN-277, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2148E

## Case11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-280, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2149E

## Case12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-280, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2150E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00JP6

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

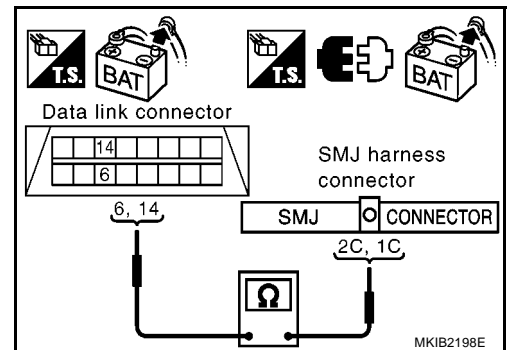
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

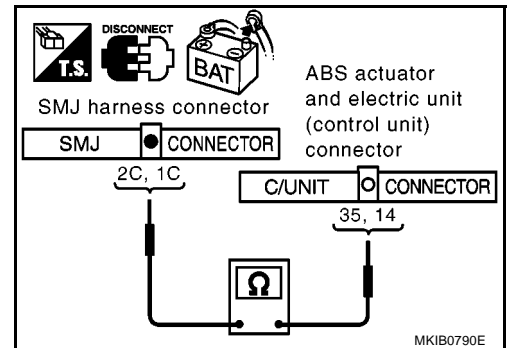
**2C (R) – 35 (R) : Continuity should exist.**

**1C (W) – 14 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-255. "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

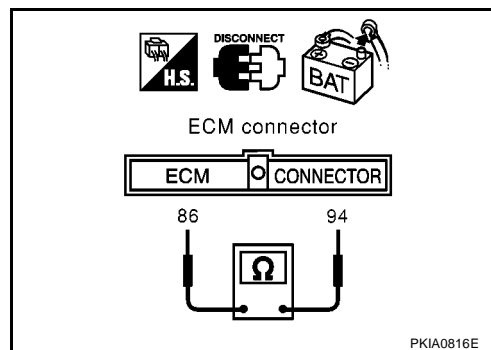
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminal 94 (R) and 86 (W)

**94 (R) – 86 (W)****: Approx. 108 – 132 Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

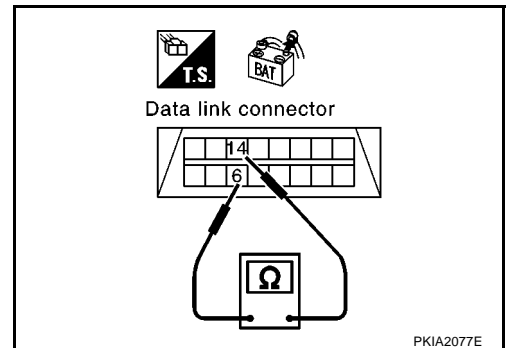
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-255, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

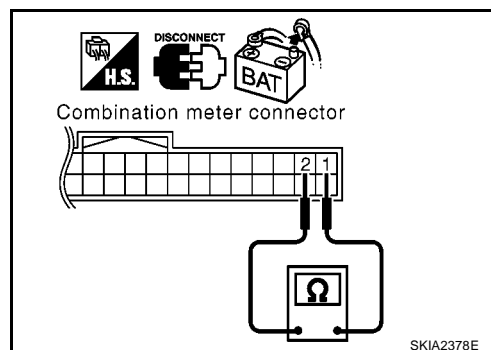
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter.

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

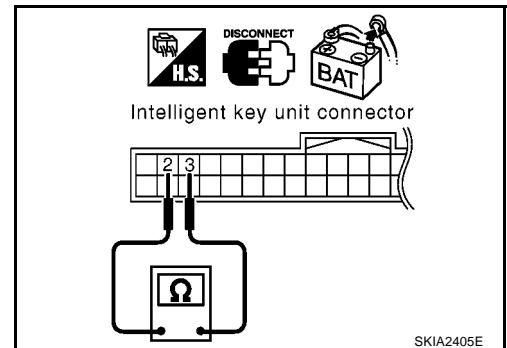
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.



**EPS Control Unit Circuit Check**

EKS00JPB

**1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

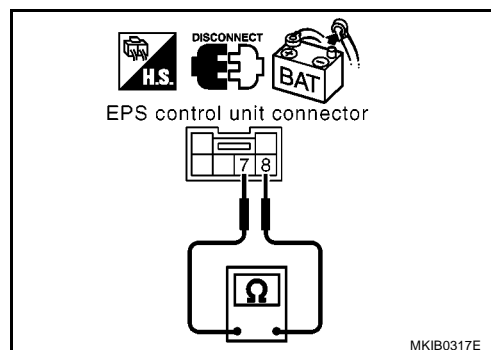
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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**

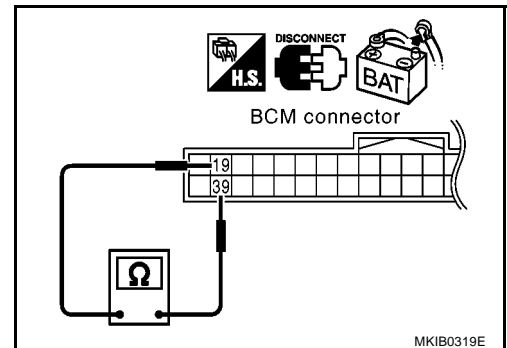
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

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



## ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00JPD

### 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 E47 terminals 35 (R) and 14 (W).

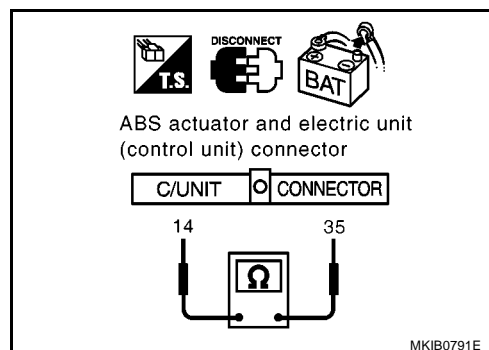
**35 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

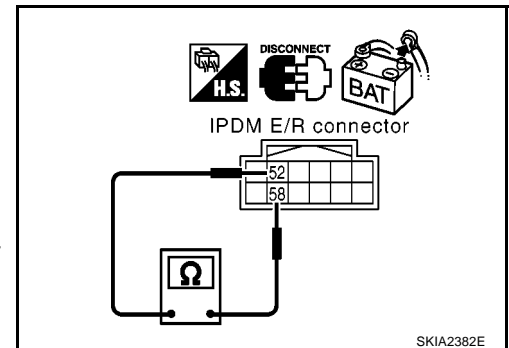
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).





## CAN Communication Circuit Check

EKS00JPF

## 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR SHORT CIRCUIT

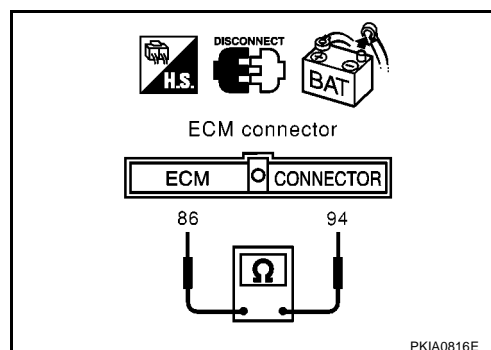
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminal 94 (R) and 86 (W)

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 3. CHECK HARNESS FOR SHORT CIRCUIT

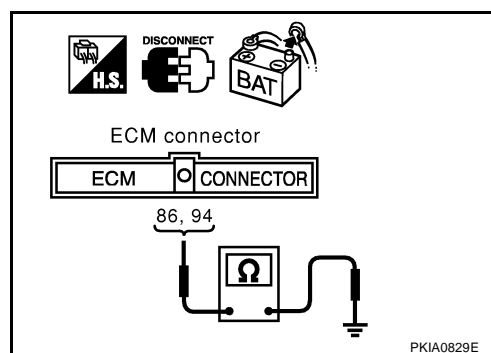
Check continuity between ECM harness connector E49 terminal 94 (R), 86 (W) and ground

**94 (R) – Ground : Continuity should not exist.****86 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

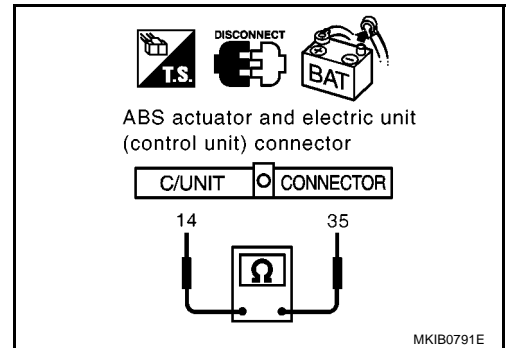
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

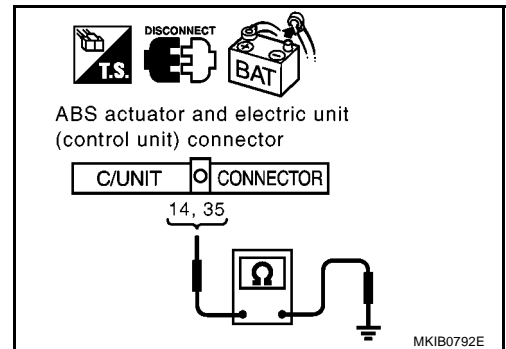
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

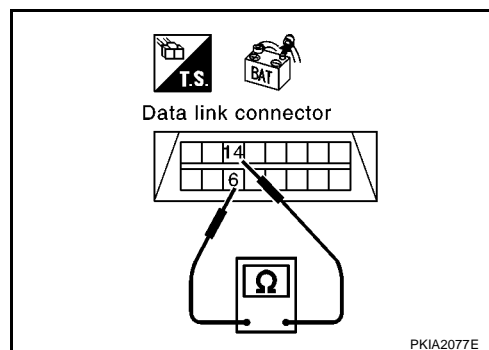
1. Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

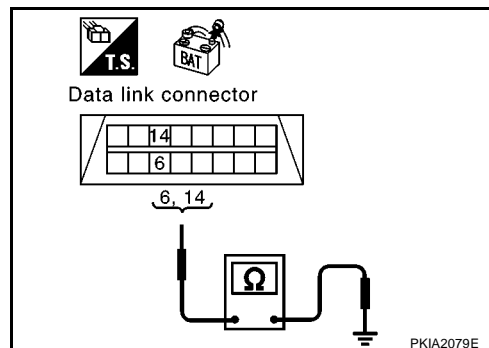
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-280, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-255, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

## IPDM E/R Ignition Relay Circuit Check

EKS00JPG

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

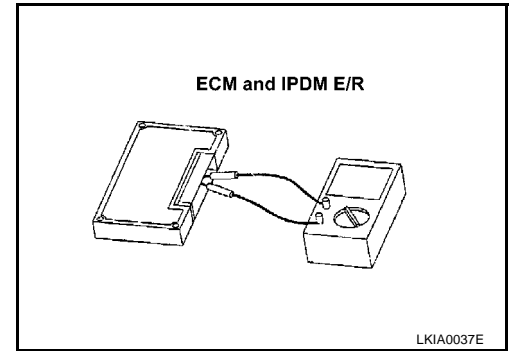
## Component Inspection

EKS00JPH

### 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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 10)

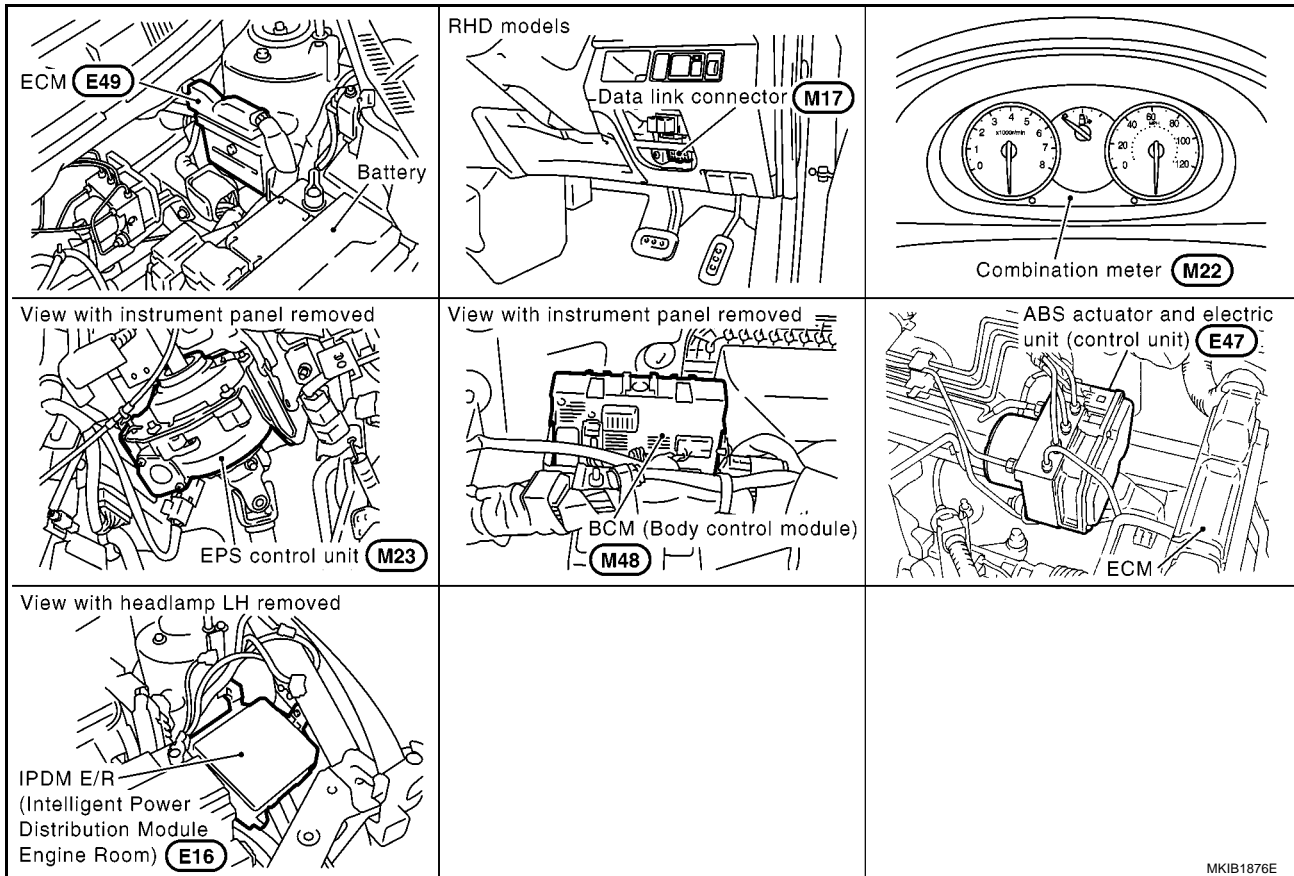
## System Description

EKS00JPI

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

EKS00JPJ



MKIB1876E

# CAN SYSTEM (TYPE 10)

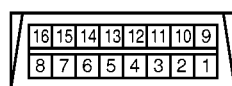
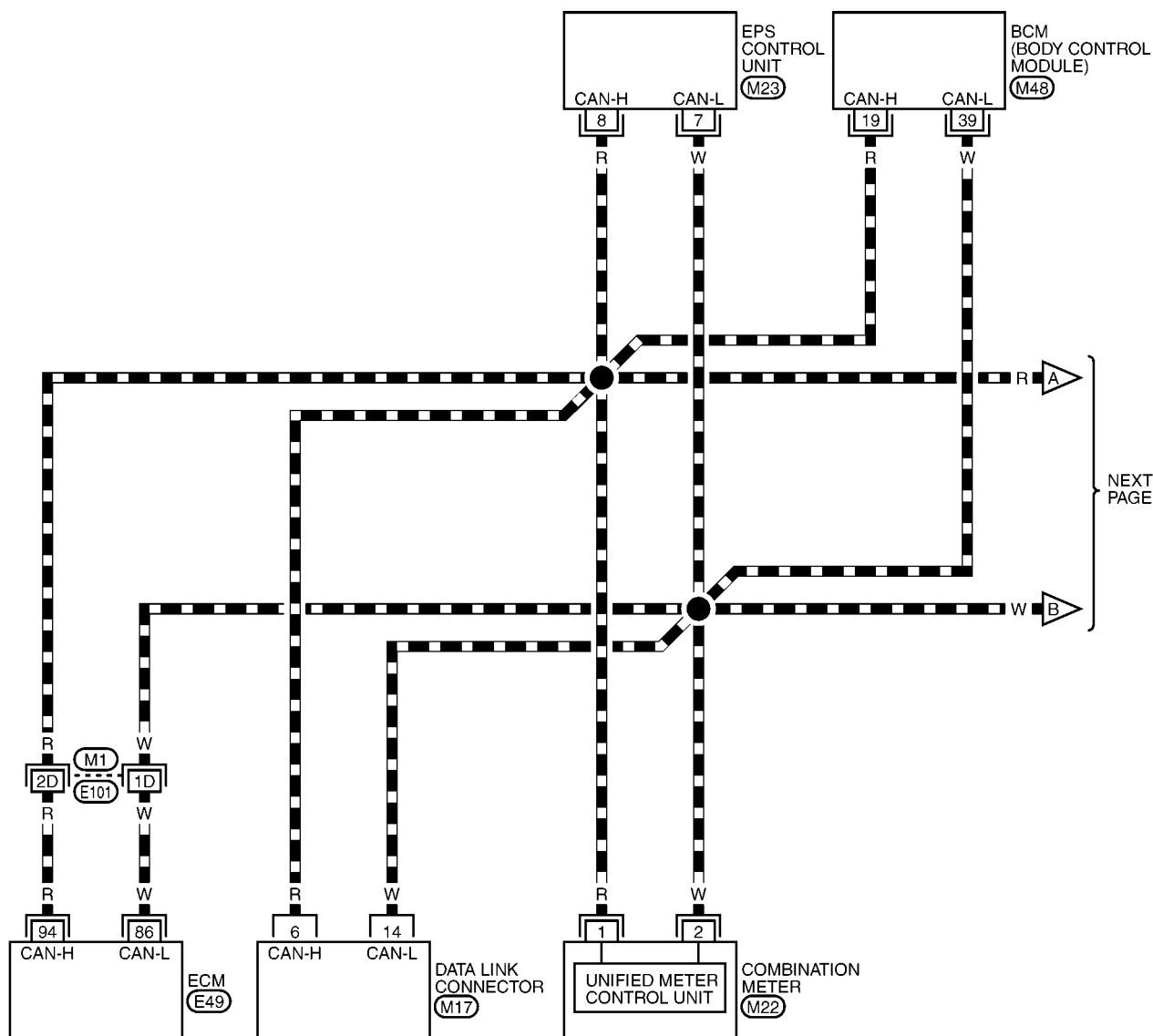
[CAN]

## Wiring Diagram — CAN —

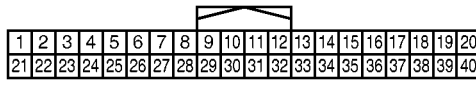
EKS00JPK

### LAN-CAN-19

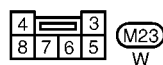
— : DATA LINE



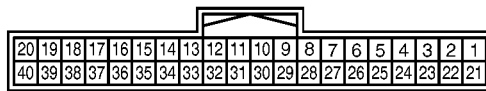
(M17)  
W



(M22)  
W



(M23)  
W



(M48)  
W



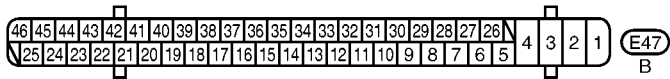
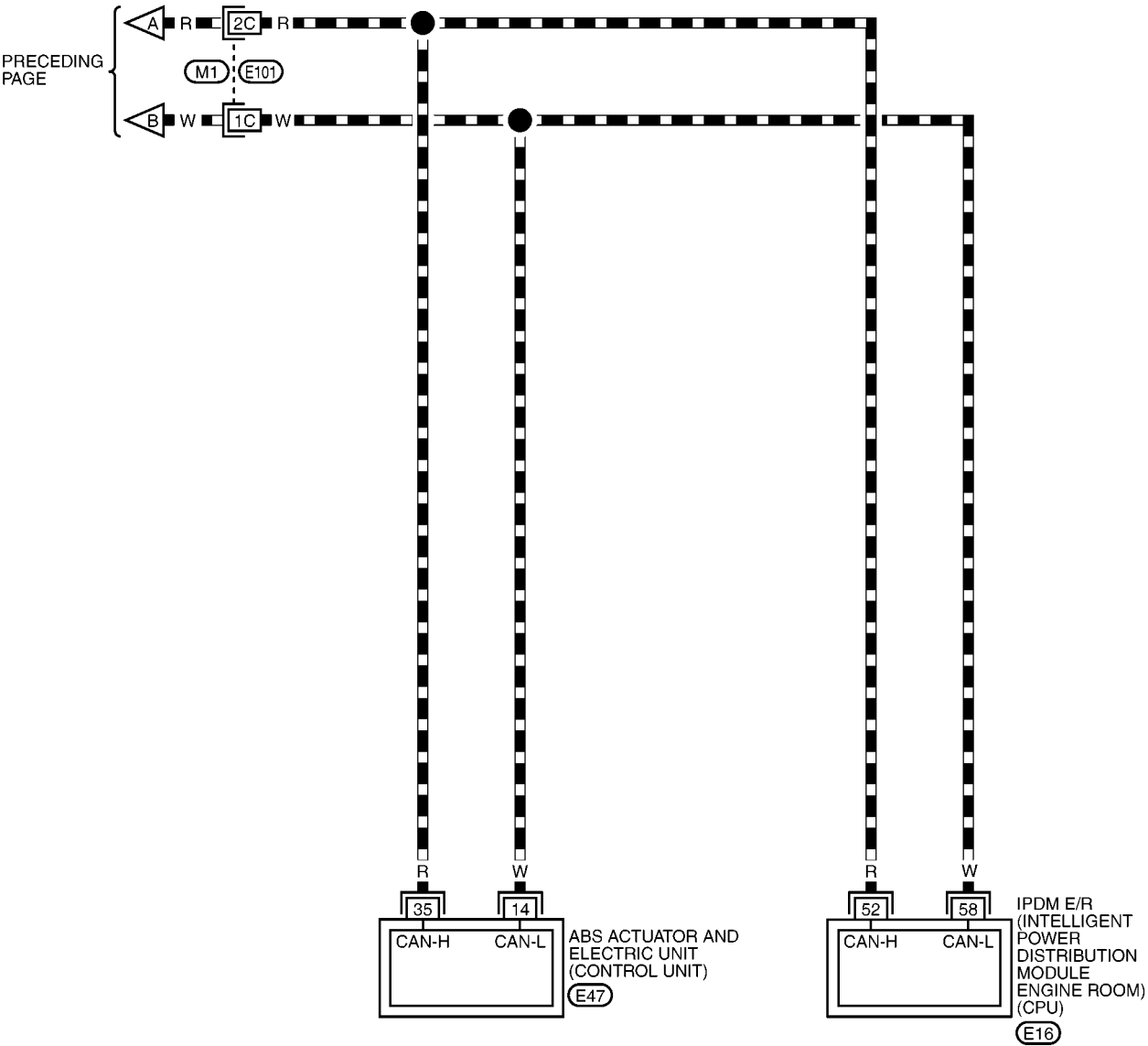
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E49) -ELECTRICAL UNITS

LAN-CAN-20

DATA LINE



REFER TO THE FOLLOWING.

M1 -SUPER MULTIPLE JUNCTION (SMJ)


## Work Flow

EKS00JPL

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRST	
INITIAL DIAG	OK		
TRANSMIT DIAG	OK		
TCM	OK		
VDC/TCS/ABS	OK		
METER/M&A	OK		
ICC	UNKWN		
BCM/SEC	OK		
IPDM E/R	OK		
AWD/4WD/e4WD	UNKWN		
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-285, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-285, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-287, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).



# CAN SYSTEM (TYPE 10)

[CAN]

## CHECK SHEET

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2151E

## CAN SYSTEM (TYPE 10)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2191E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

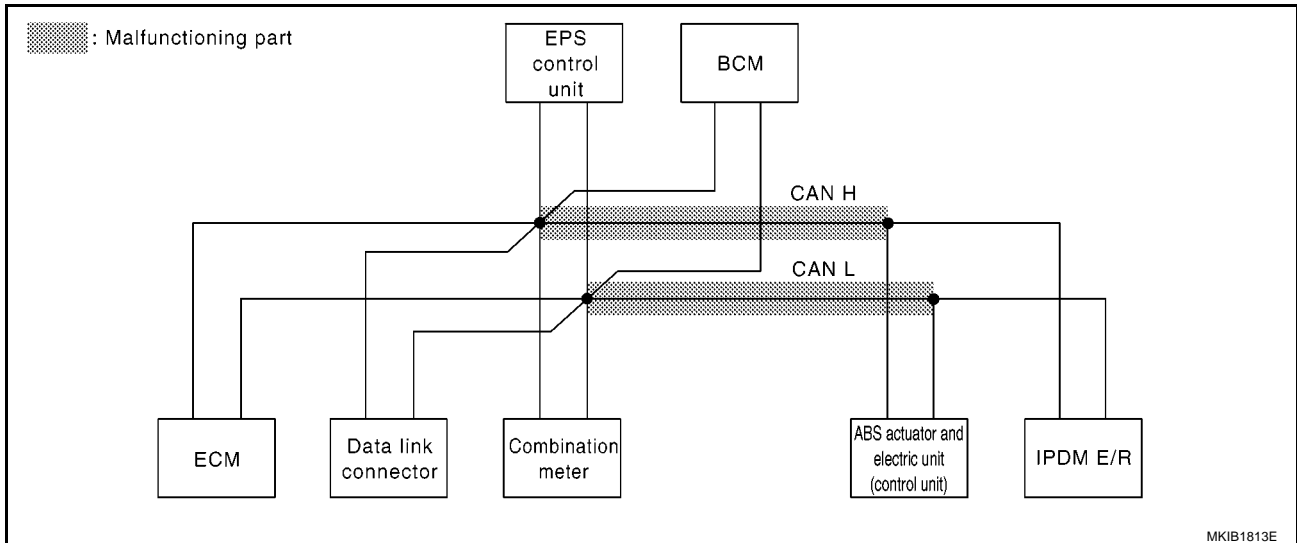
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-296, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2152E



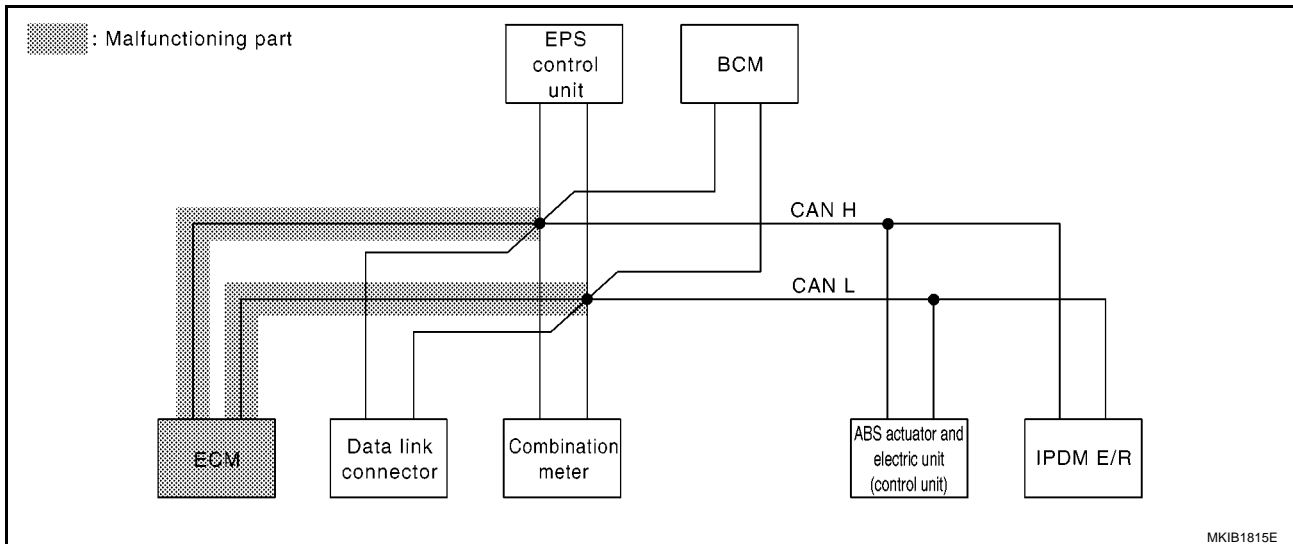
MKIB1813E

**Case2**

Check ECM circuit. Refer to [LAN-297, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2153E



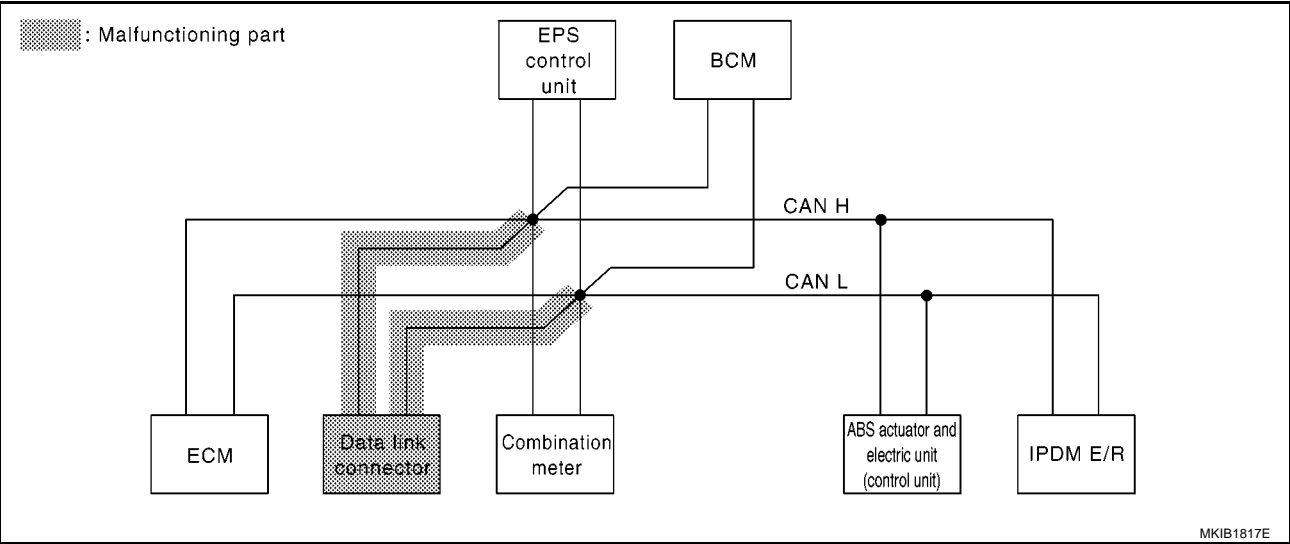
MKIB1815E

Case3

Check data link connector circuit. Refer to LAN-298, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2154E

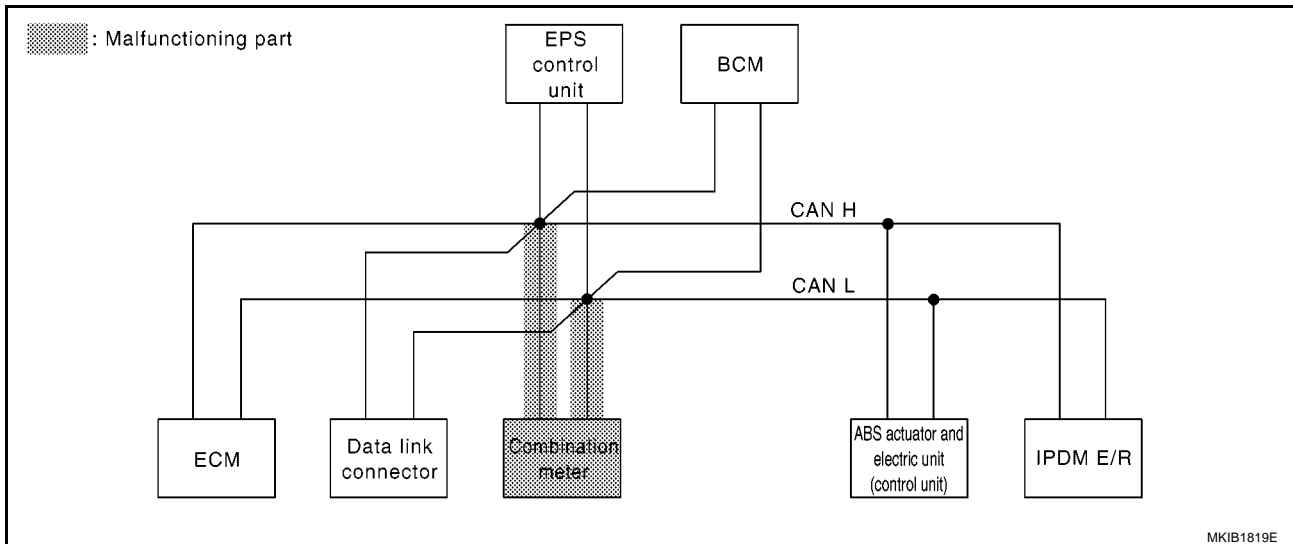


**Case4**

Check combination meter circuit. Refer to [LAN-299, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2155E



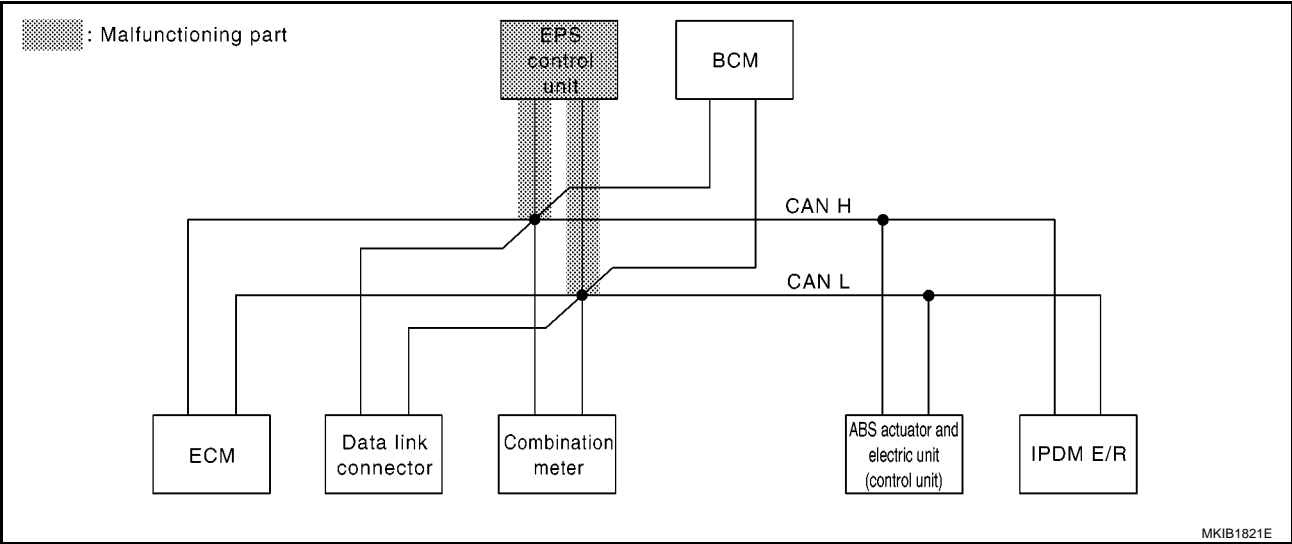
MKIB1819E

Case5

Check EPS control unit circuit. Refer to [LAN-300, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2156E



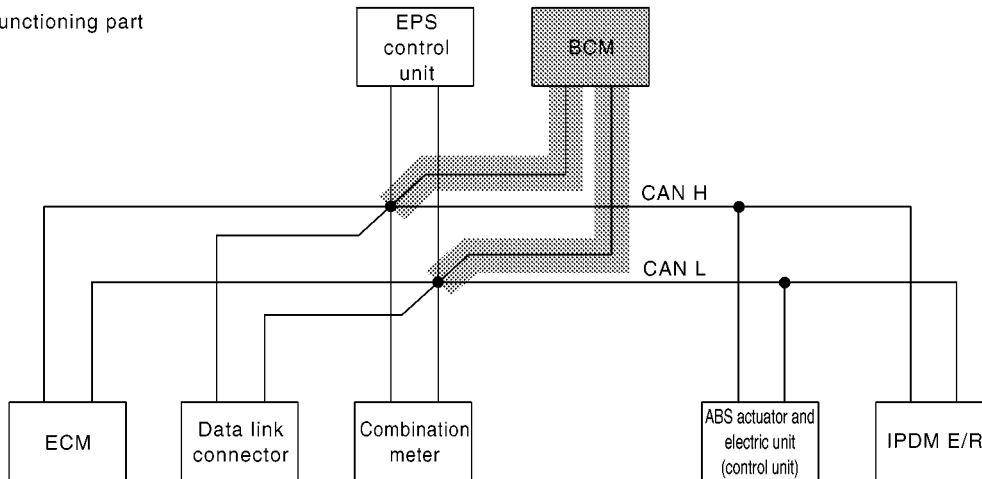
**Case6**

Check BCM circuit. Refer to [LAN-301, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—

MKIB2157E

 : Malfunctioning part



MKIB1823E

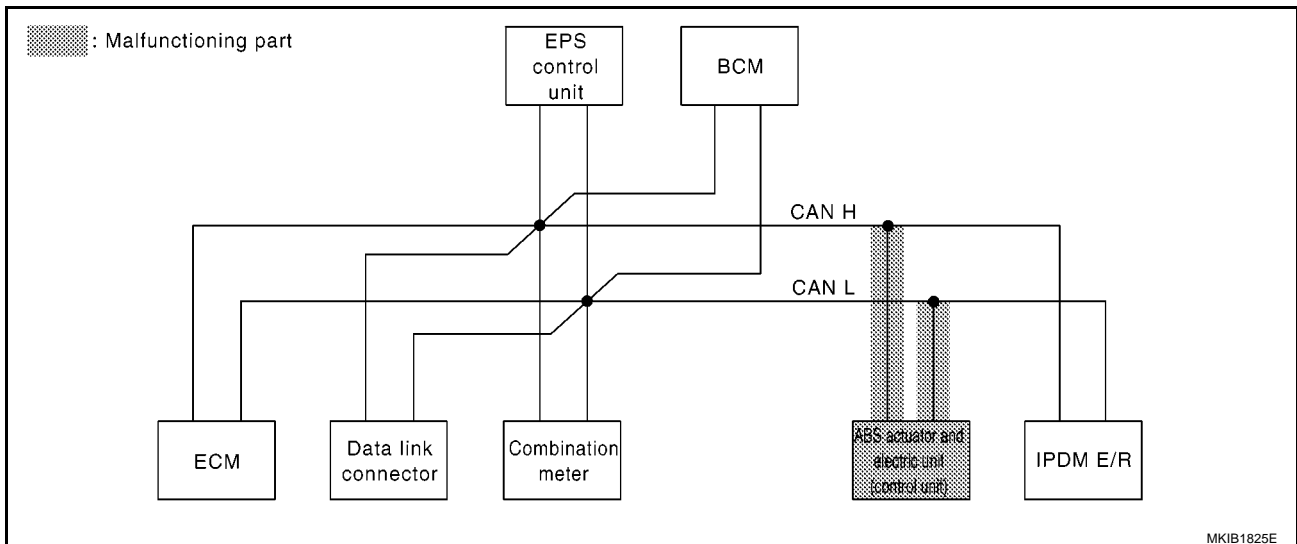


**Case7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-302, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2158E



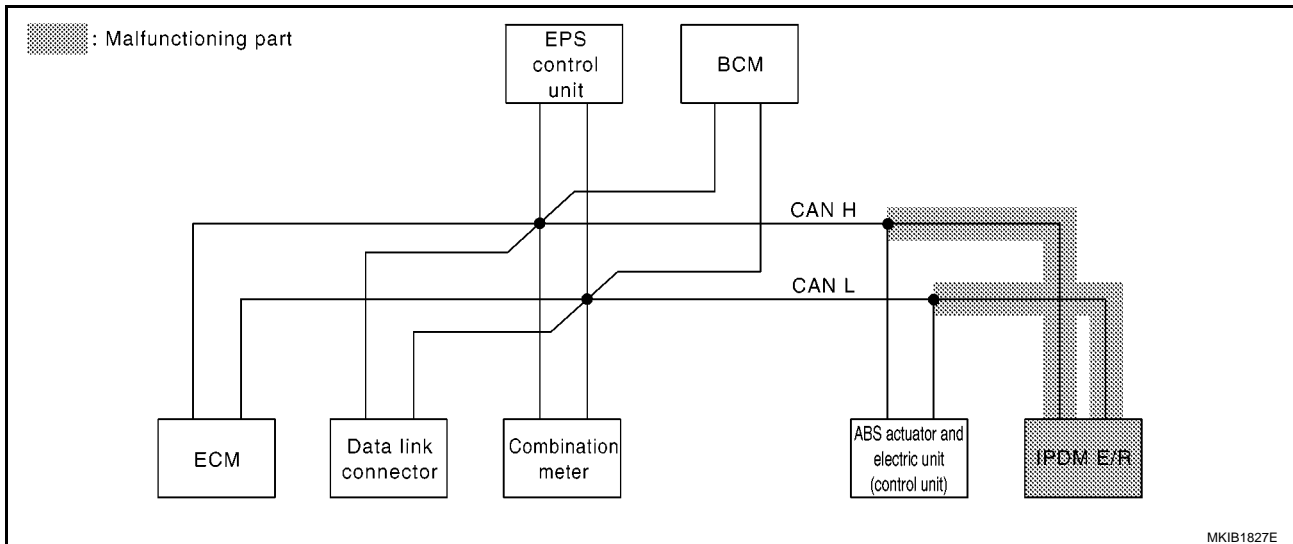
MKIB1825E

**Case8**

Check IPDM E/R circuit. Refer to [LAN-303, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2159E



MKIB1827E

# CAN SYSTEM (TYPE 10)

[CAN]

## Case9

Check CAN communication circuit. Refer to [LAN-304, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2160E

## Case10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-307, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2161E

## Case11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-307, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2162E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00JPM

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

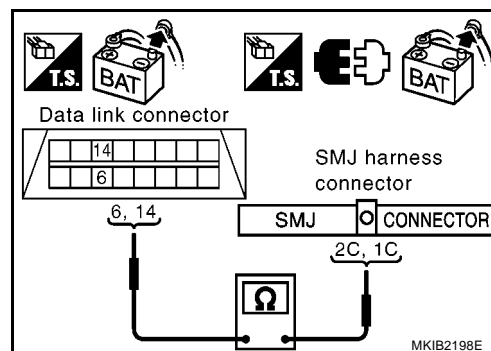
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

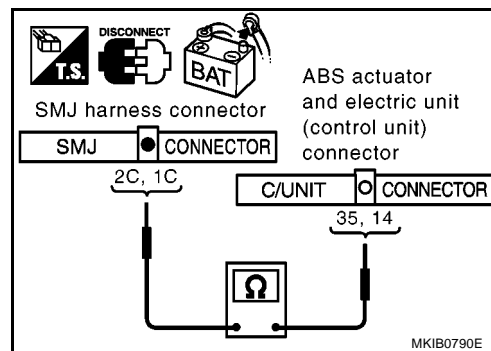
**2C (R) – 35 (R) : Continuity should exist.**

**1C (W) – 14 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-284, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

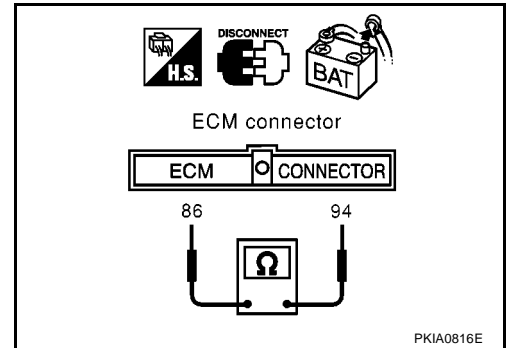
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminal 94 (R) and 86 (W)

**94 (R) – 86 (W)****: Approx. 108 – 132 Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

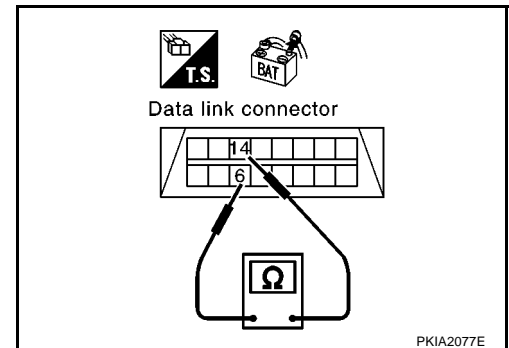
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-284, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

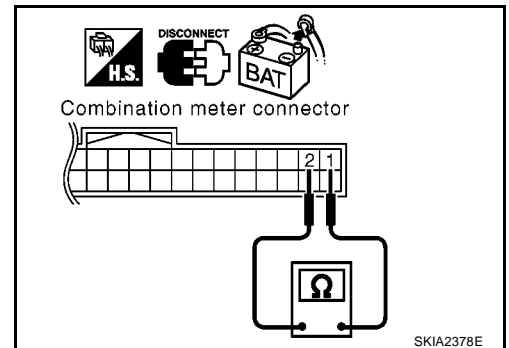
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



**EPS Control Unit Circuit Check**

EKS00JPQ

**1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

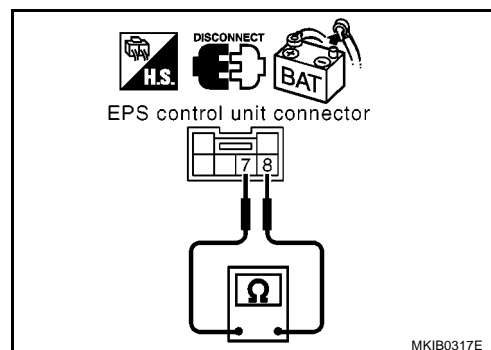
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

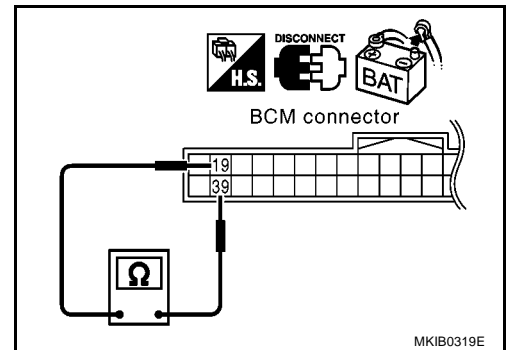
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.



**ABS Actuator and Electric Unit (Control Unit) Circuit Check**

EKS00JPS

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

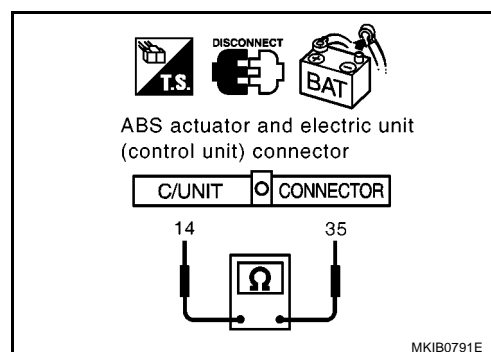
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

**35 (R) – 14 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace ABS actuator and electric unit (control unit).

NG &gt;&gt; Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

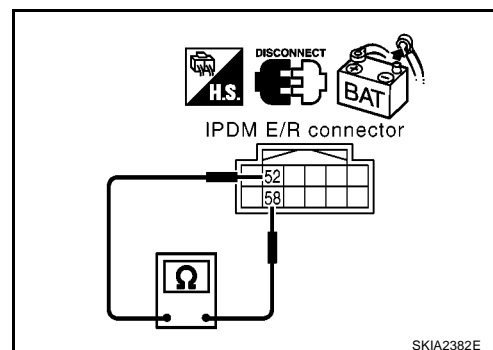
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

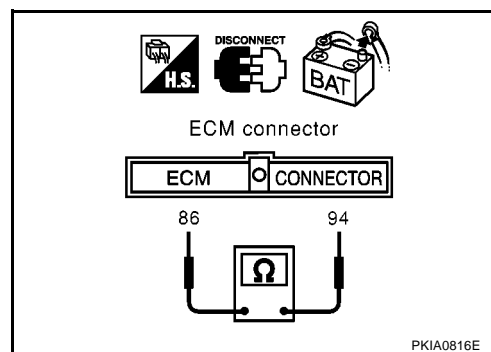
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminal 94 (R) and 86 (W)

**94 (R) – 86 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminal 94 (R), 86 (W) and ground

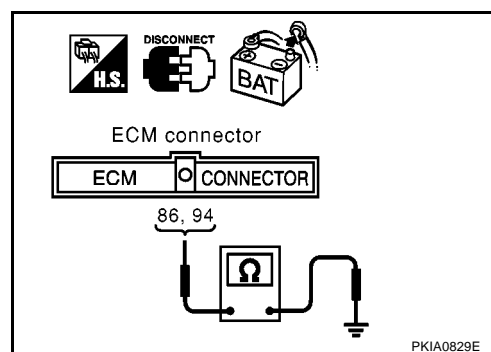
**94 (R) – Ground : Continuity should not exist.**

**86 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



#### 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

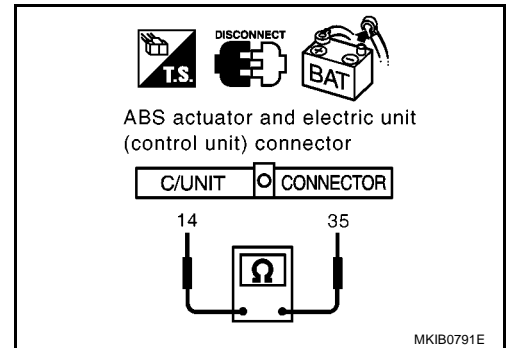
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



#### 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

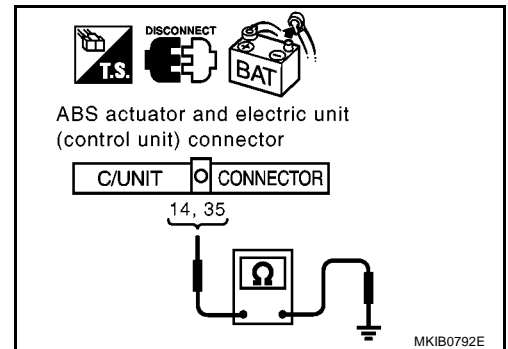
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



#### 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

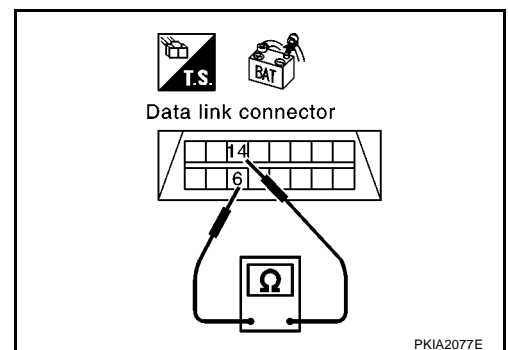
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

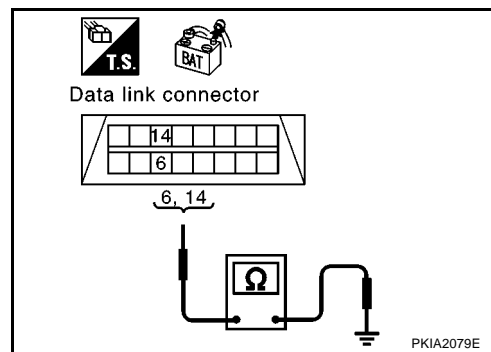
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-307, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-284, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00JPV

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

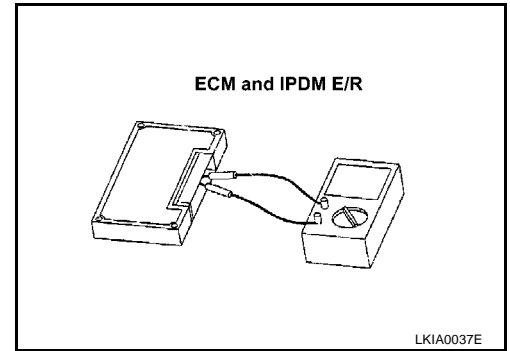
**Component Inspection**

EKS00JPW

**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 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 11)

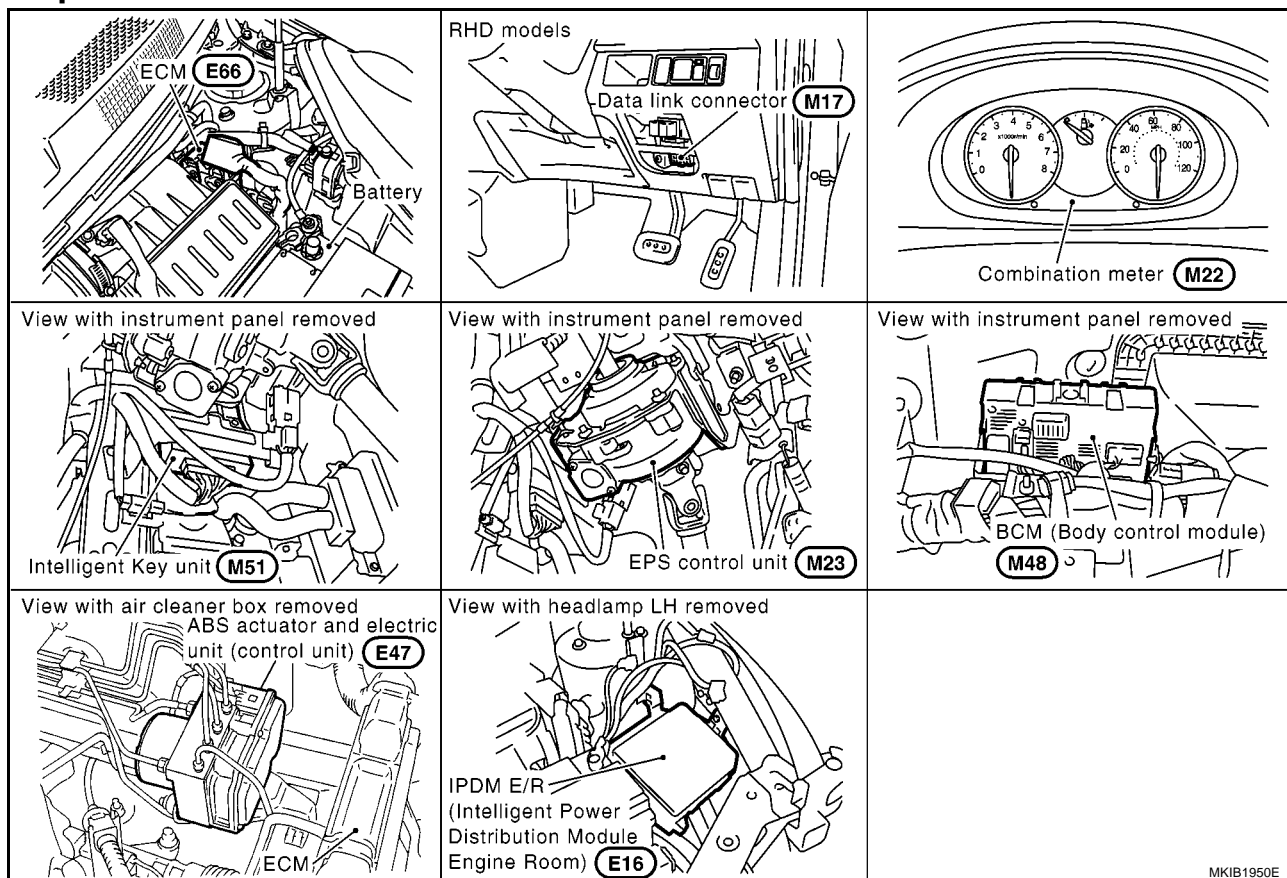
## System Description

EKS00PBM

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

EKS00PBN



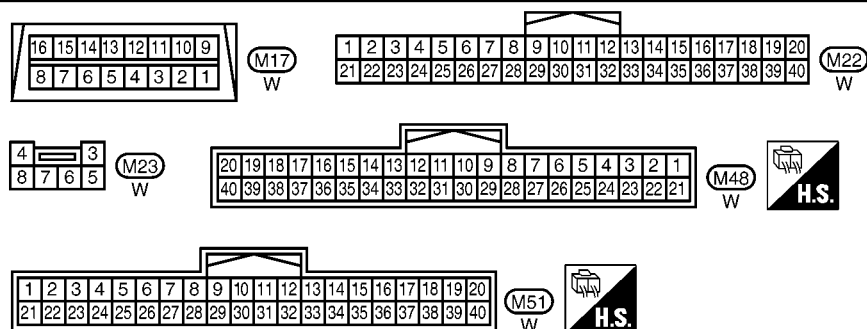
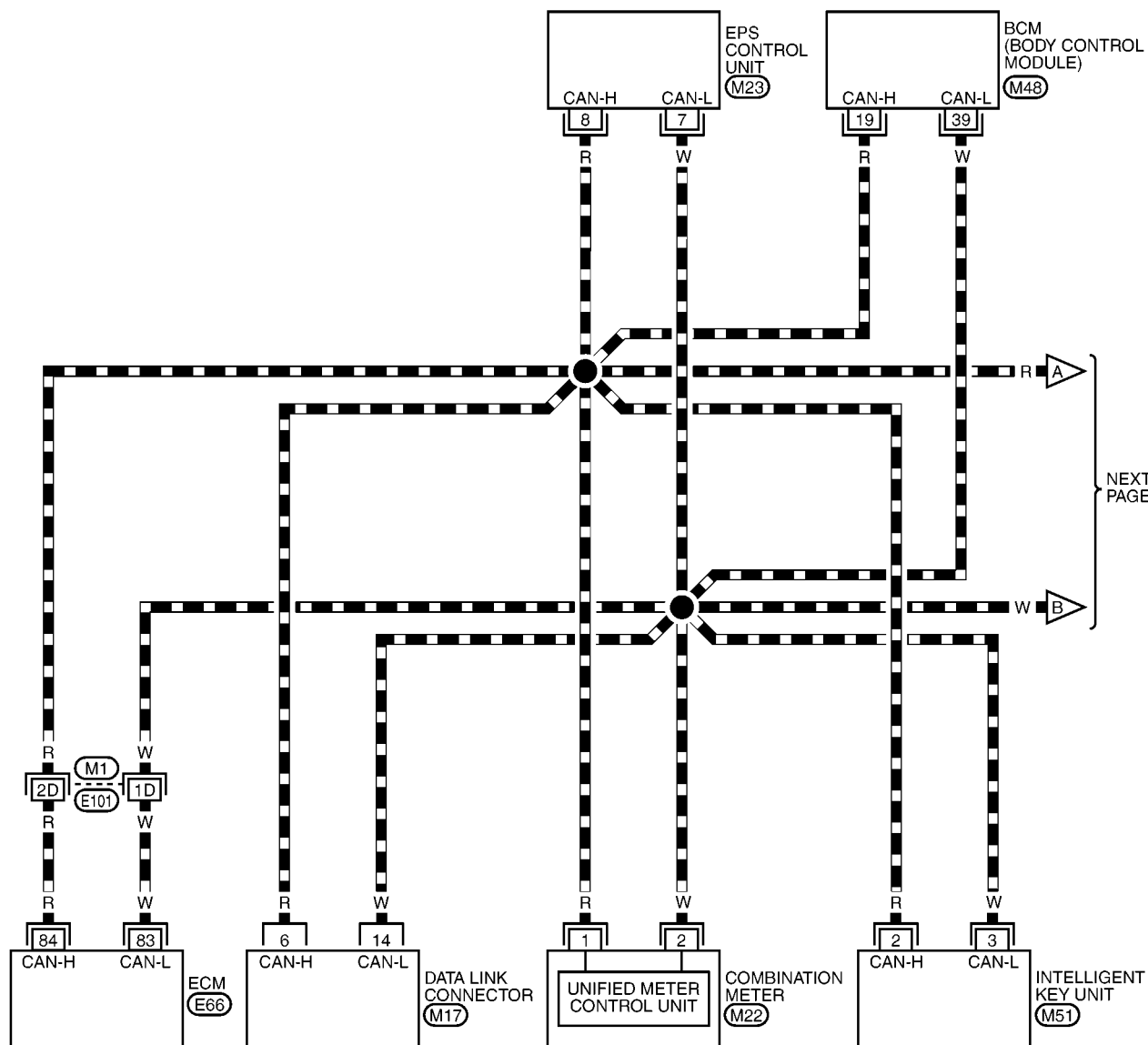
MKIB1950E



**[CAN]**

## EKS00PBO

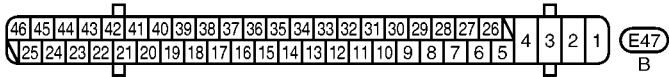
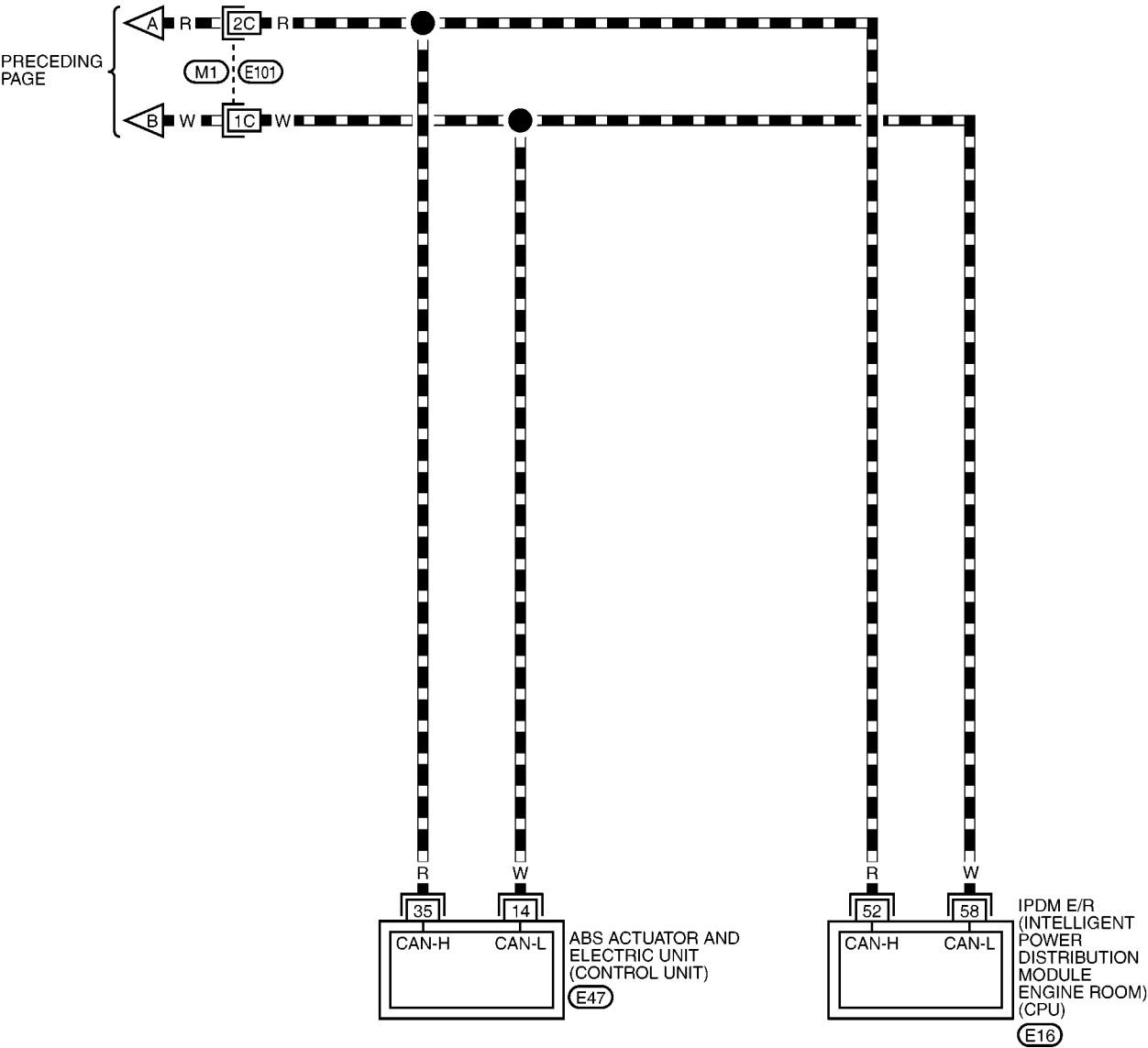
 : DATA LINE



(E66) -ELECTRICAL UNITS

LAN-CAN-22

DATA LINE




REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE  
JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN			
CONSULT-II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSN	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-312, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-312, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-314, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 11)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB2163E

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

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

MKIB2190E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

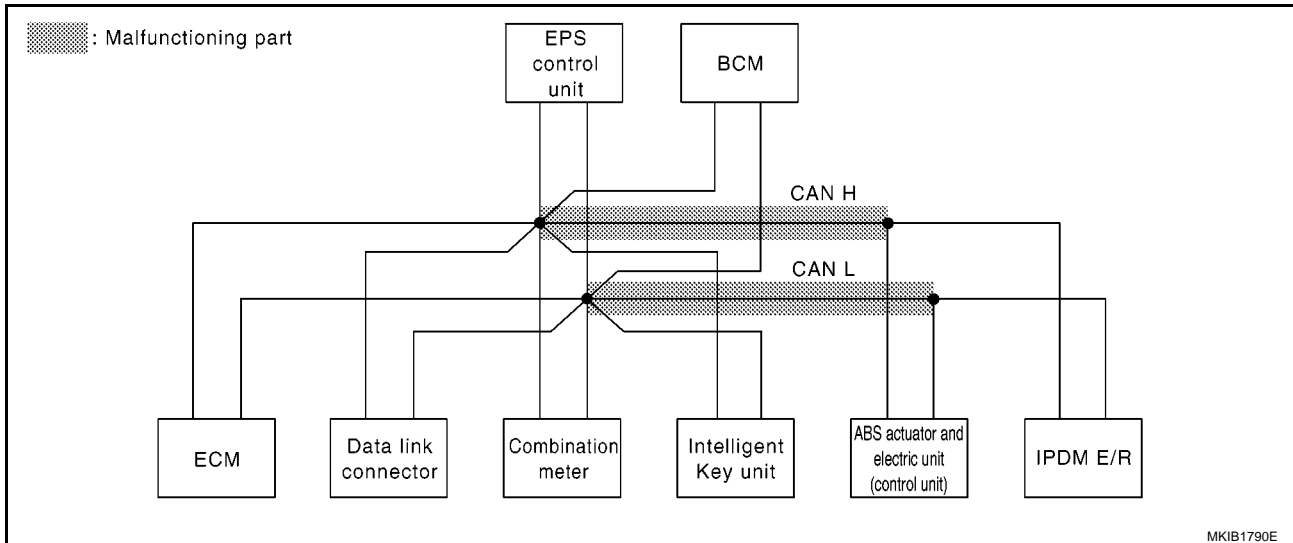
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-324, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2164E



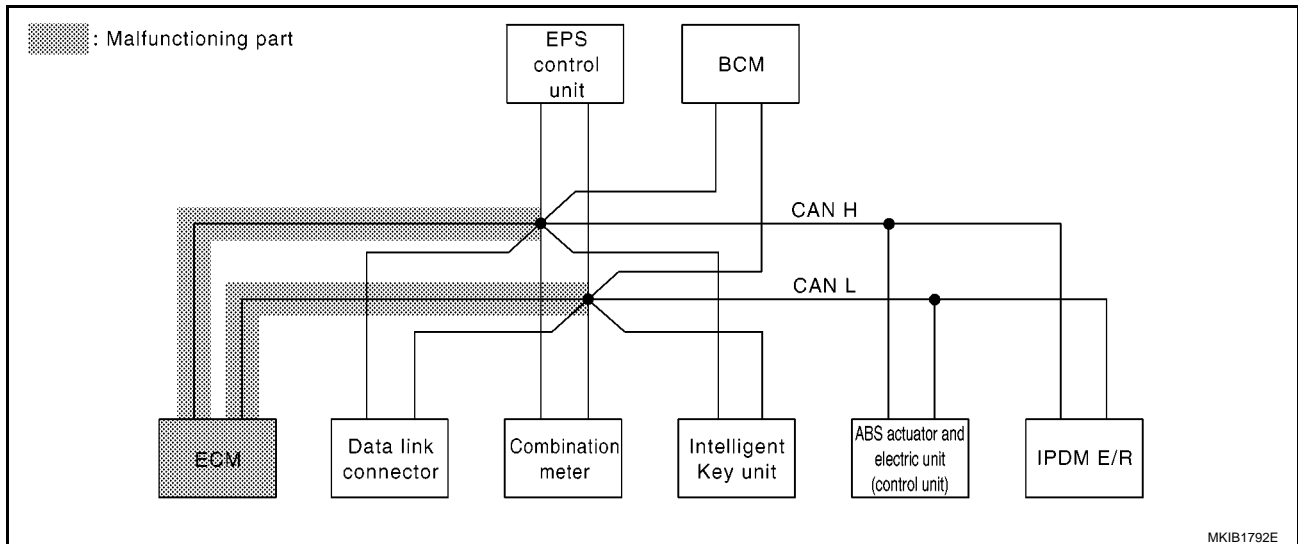
MKIB1790E

**Case2**

Check ECM circuit. Refer to [LAN-325, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2165E



MKIB1792E

# CAN SYSTEM (TYPE 11)

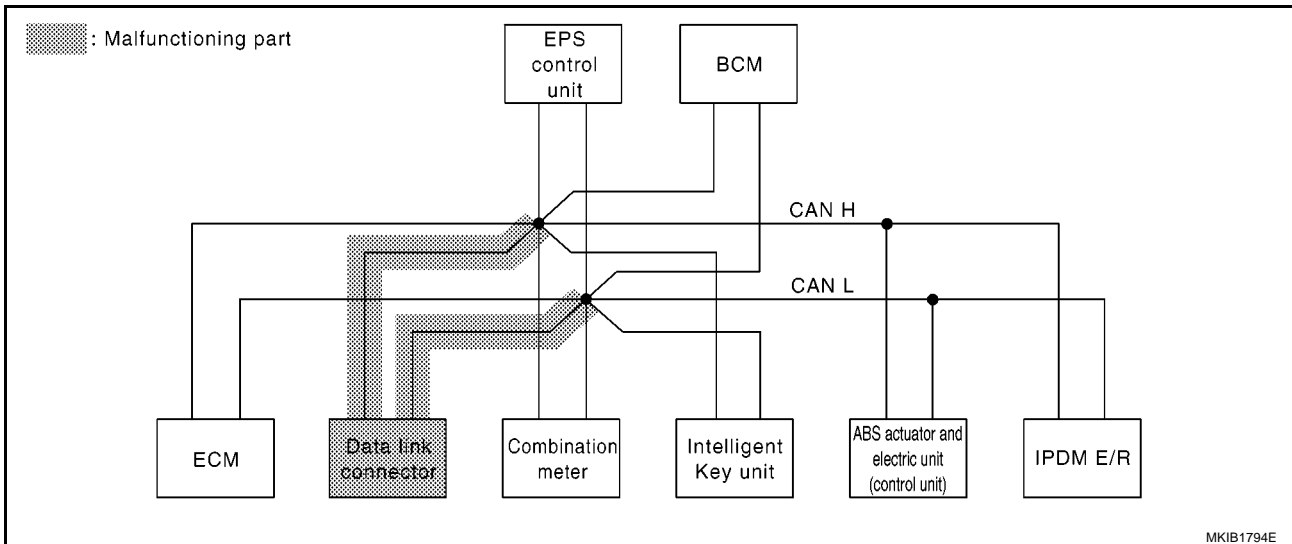
[CAN]

## Case3

Check data link connector circuit. Refer to [LAN-326, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2166E



MKIB1794E

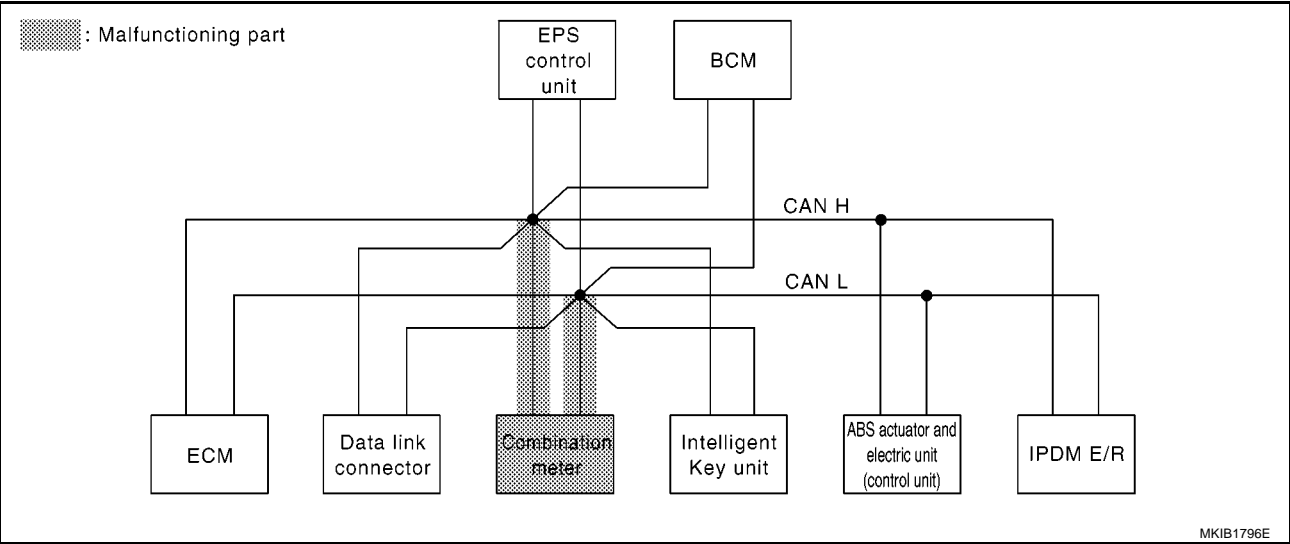


Case4

Check combination meter circuit. Refer to [LAN-327, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2167E

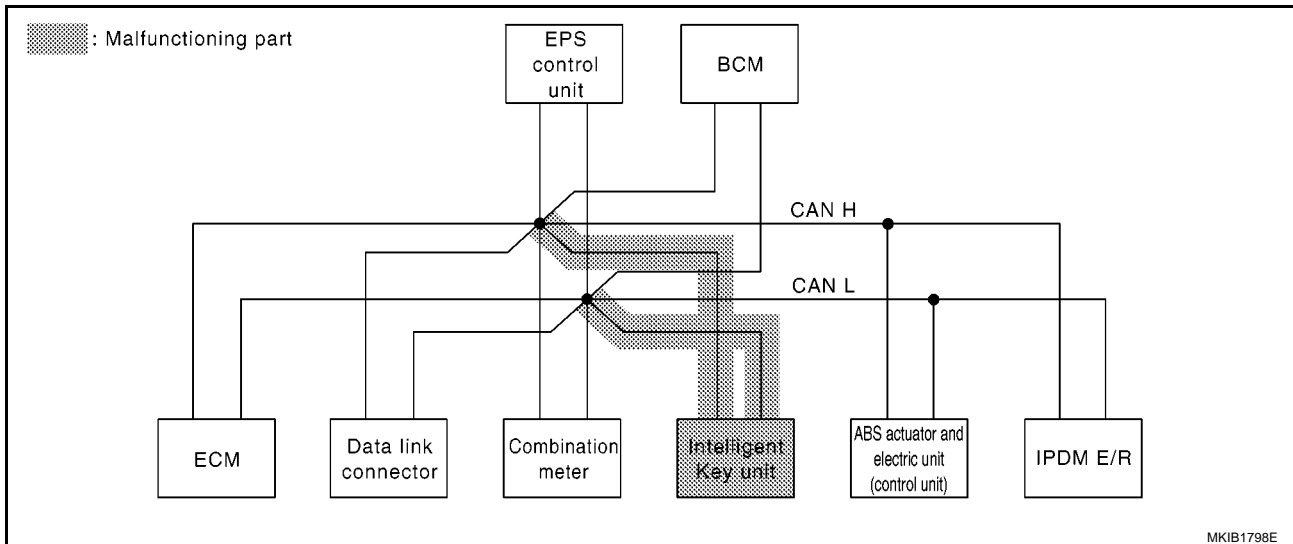


**Case5**

Check Intelligent Key unit circuit. Refer to [LAN-328, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2168E



MKIB1798E

# CAN SYSTEM (TYPE 11)

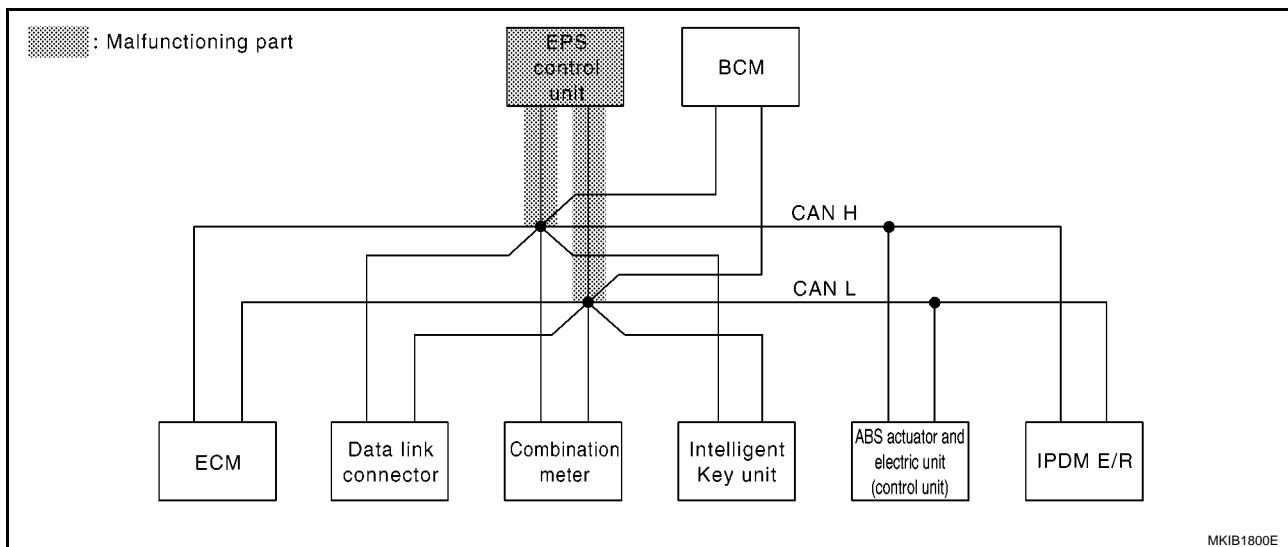
[CAN]

## Case6

Check EPS control unit circuit. Refer to [LAN-329, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2169E



MKIB1800E

# CAN SYSTEM (TYPE 11)

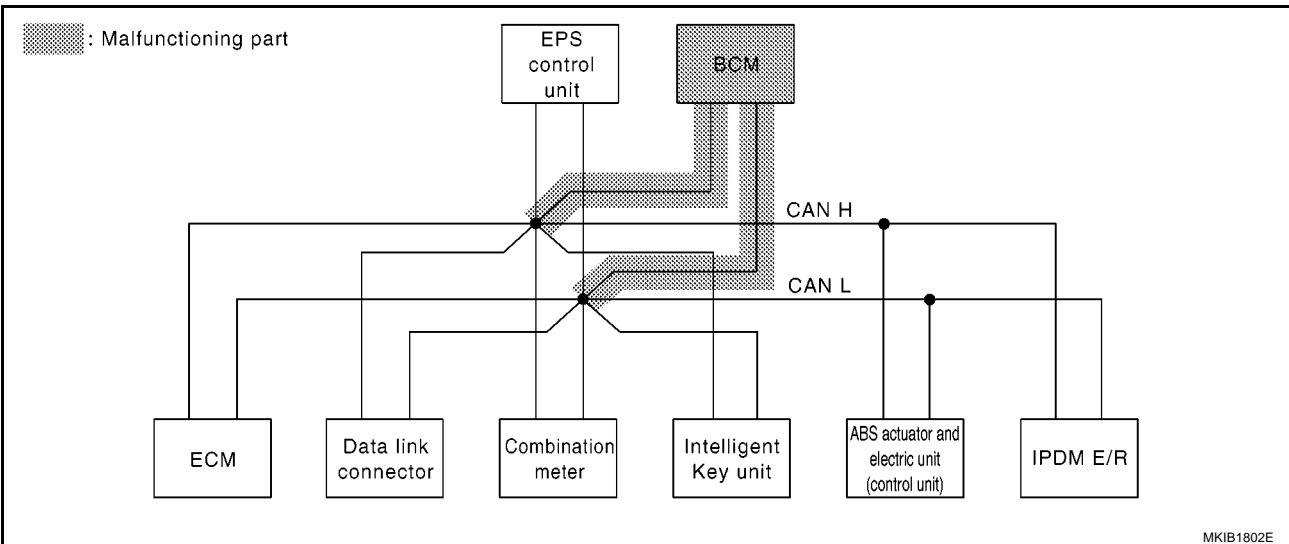
[CAN]

## Case7

Check BCM circuit. Refer to [LAN-330, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2170E



MKIB1802E

# CAN SYSTEM (TYPE 11)

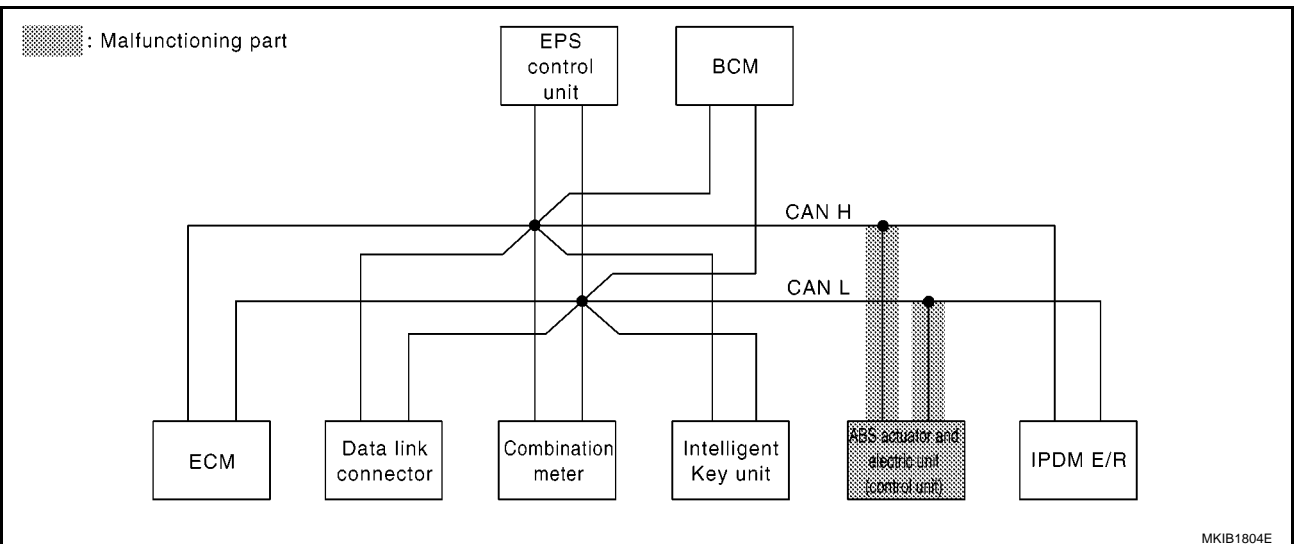
[CAN]

## Case8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-331, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2171E



MKIB1804E

LAN

# CAN SYSTEM (TYPE 11)

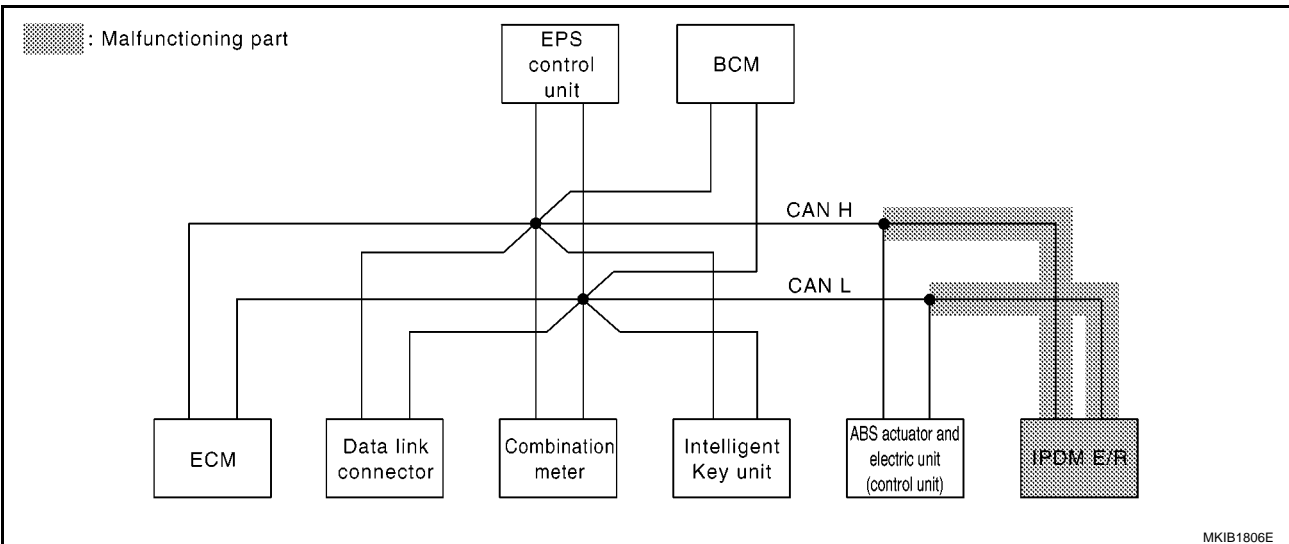
[CAN]

## Case9

Check IPDM E/R circuit. Refer to [LAN-332, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2172E



MKIB1806E

# CAN SYSTEM (TYPE 11)

[CAN]

## Case10

Check CAN communication circuit. Refer to [LAN-333. "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2173E

## Case11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-336. "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2174E

## Case12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-336. "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	METER /M&A	I-KEY	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—

MKIB2175E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00PBQ

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

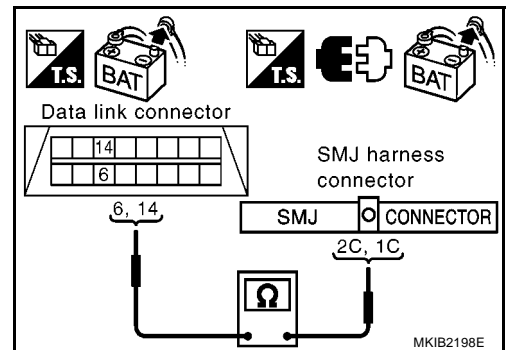
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

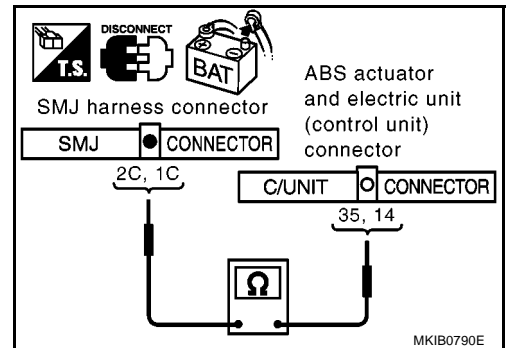
**2C (R) – 35 (R) : Continuity should exist.**

**1C (W) – 14 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-311, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

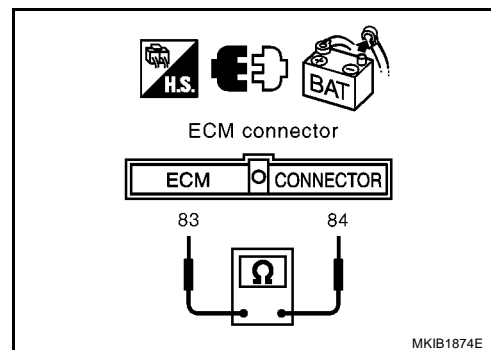
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E66 terminal 84 (R) and 83 (W)

**84 (R) – 83 (W)****: Approx. 108 – 132 Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

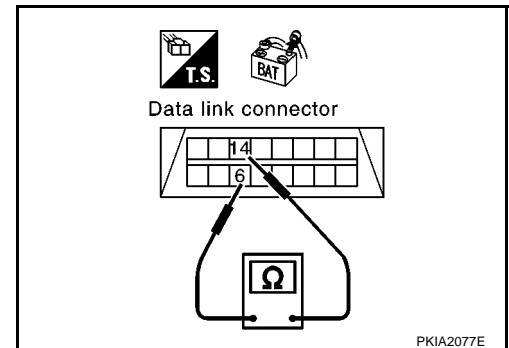
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-311, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

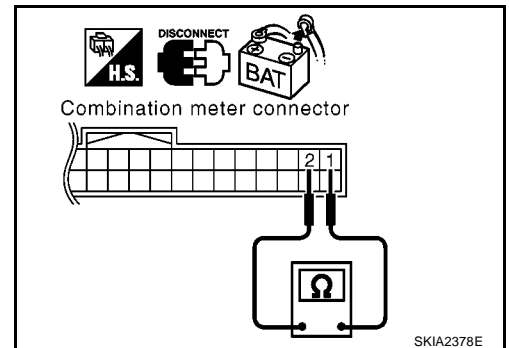
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter.

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

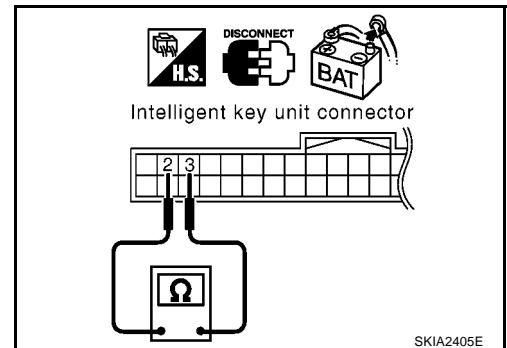
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.



**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

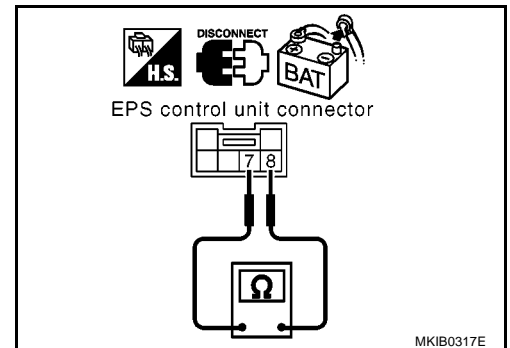
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

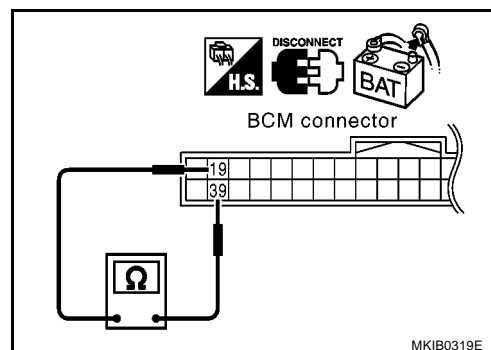
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

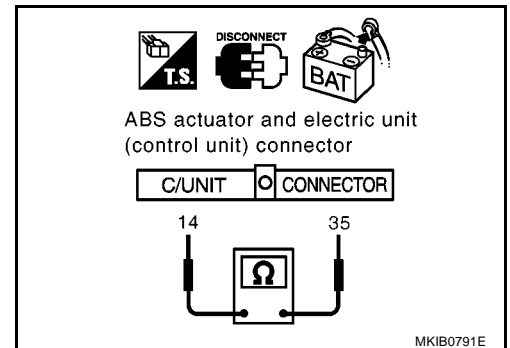
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

**35 (R) – 14 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace ABS actuator and electric unit (control unit).

NG &gt;&gt; Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

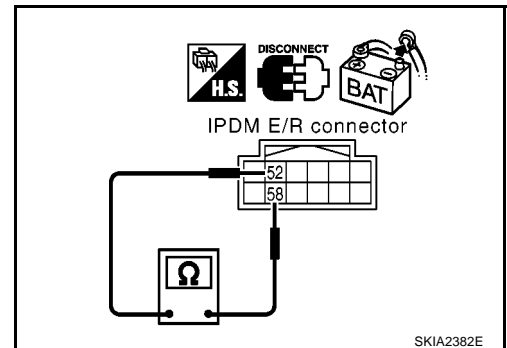
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).





## CAN Communication Circuit Check

EKS00PBZ

## 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

## 2. CHECK HARNESS FOR SHORT CIRCUIT

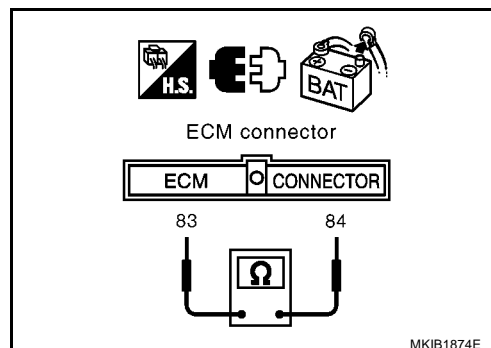
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E66 terminal 84 (R) and 83 (W)

**84 (R) – 83 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 3. CHECK HARNESS FOR SHORT CIRCUIT

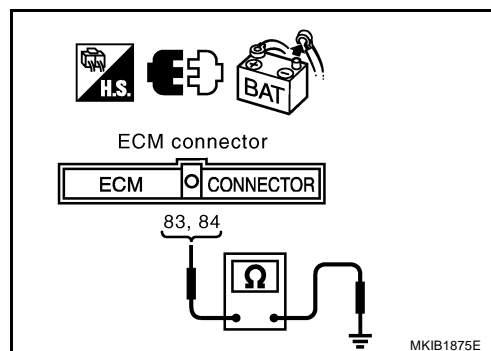
Check continuity between ECM harness connector E66 terminal 84 (R), 83 (W) and ground

**84 (R) – Ground : Continuity should not exist.****83 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

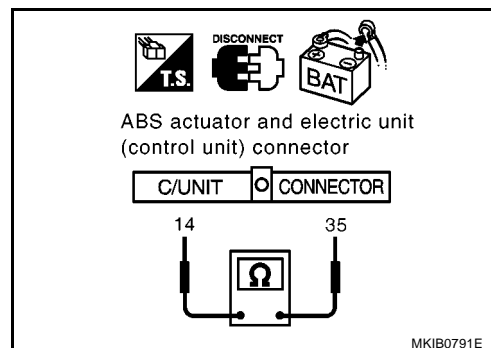
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

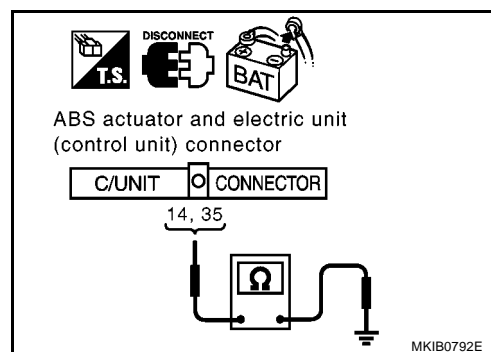
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

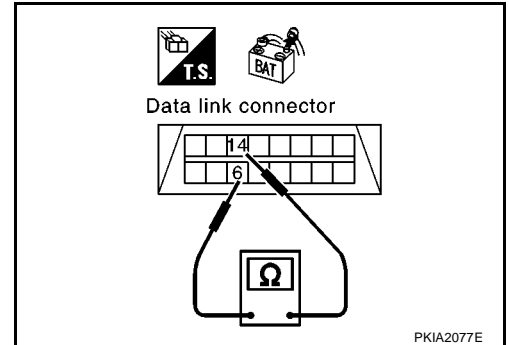
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

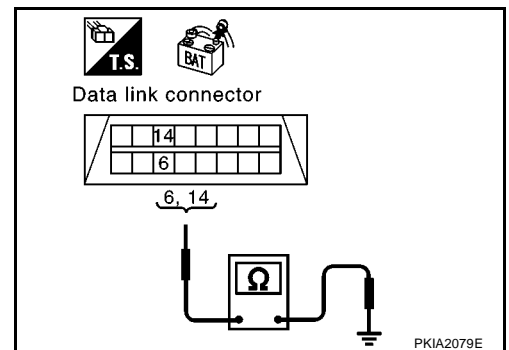
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-336, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-311, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

## IPDM E/R Ignition Relay Circuit Check

EKS00PC0

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

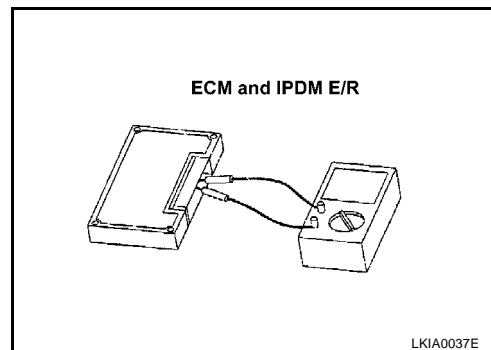
## Component Inspection

EKS00PC1

### ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 84 and 83.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	84 – 83	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 12)

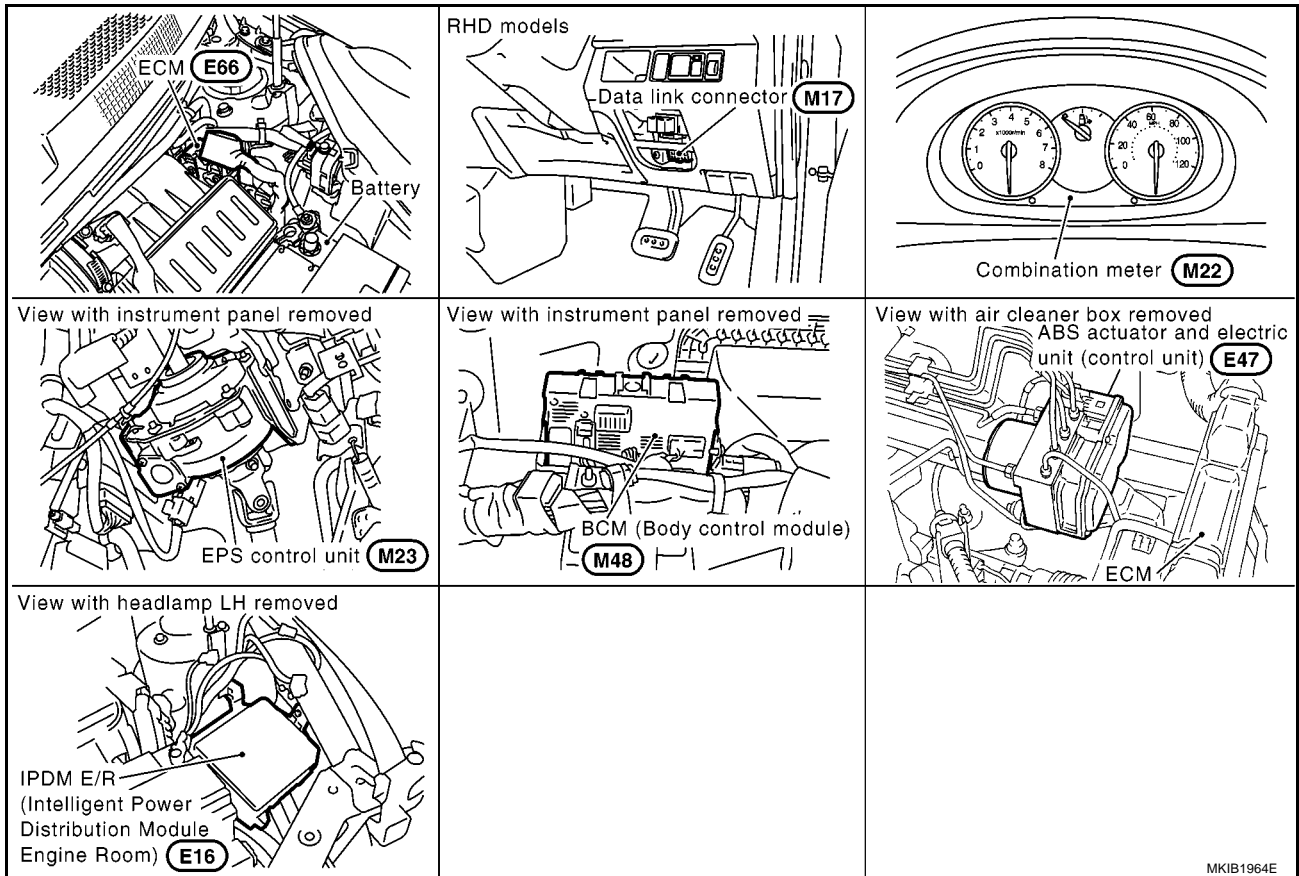
## System Description

EKS00PC2

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

EKS00PC3



MKIB1964E

# CAN SYSTEM (TYPE 12)

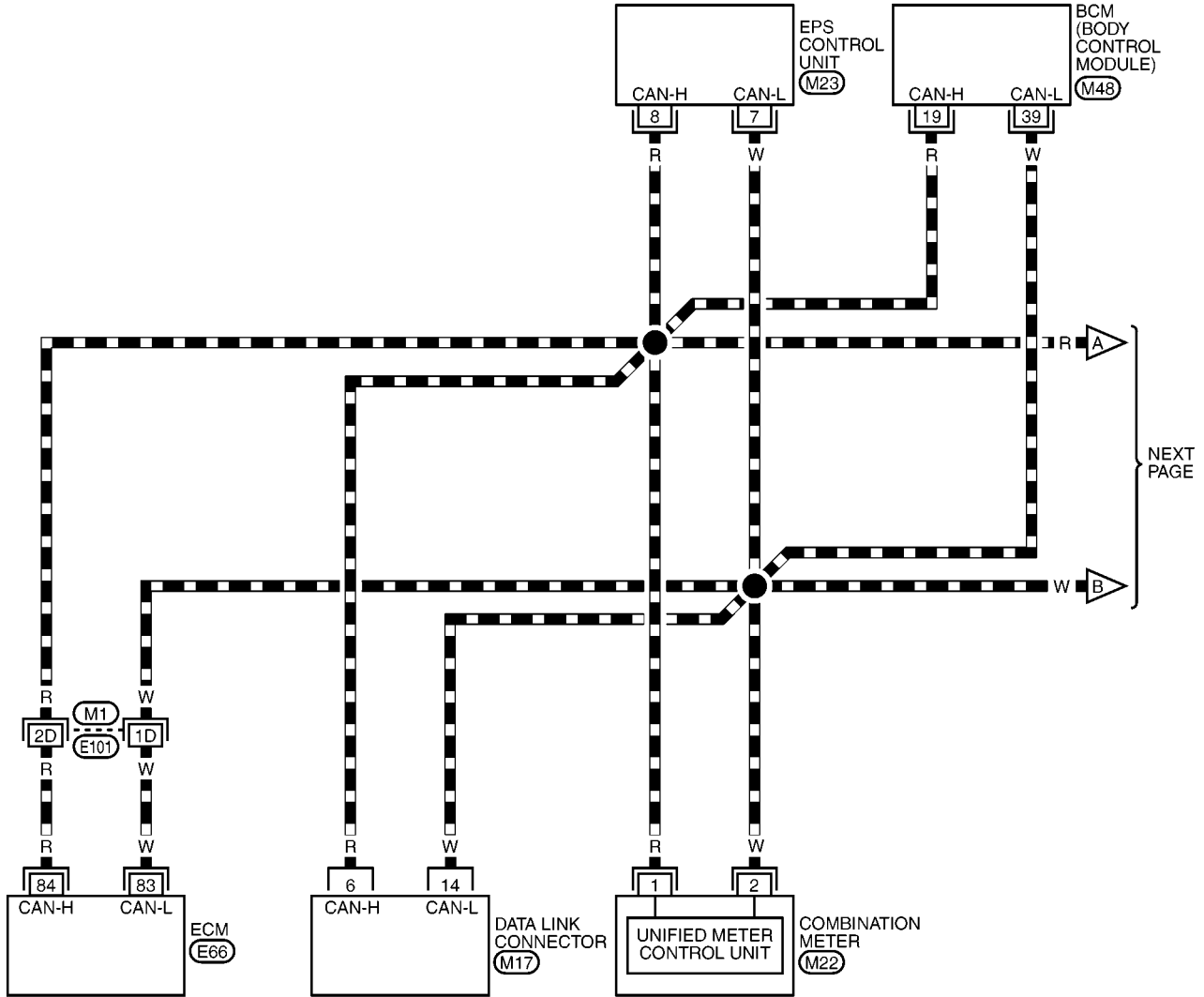
[CAN]

## Wiring Diagram — CAN —

EKS00PC4

### LAN-CAN-23

— : DATA LINE



16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

(M17)  
W

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

(M22)  
W

4	3
8	5

(M23)  
W

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

(M48)  
W



REFER TO THE FOLLOWING.

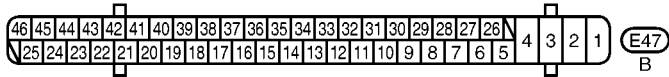
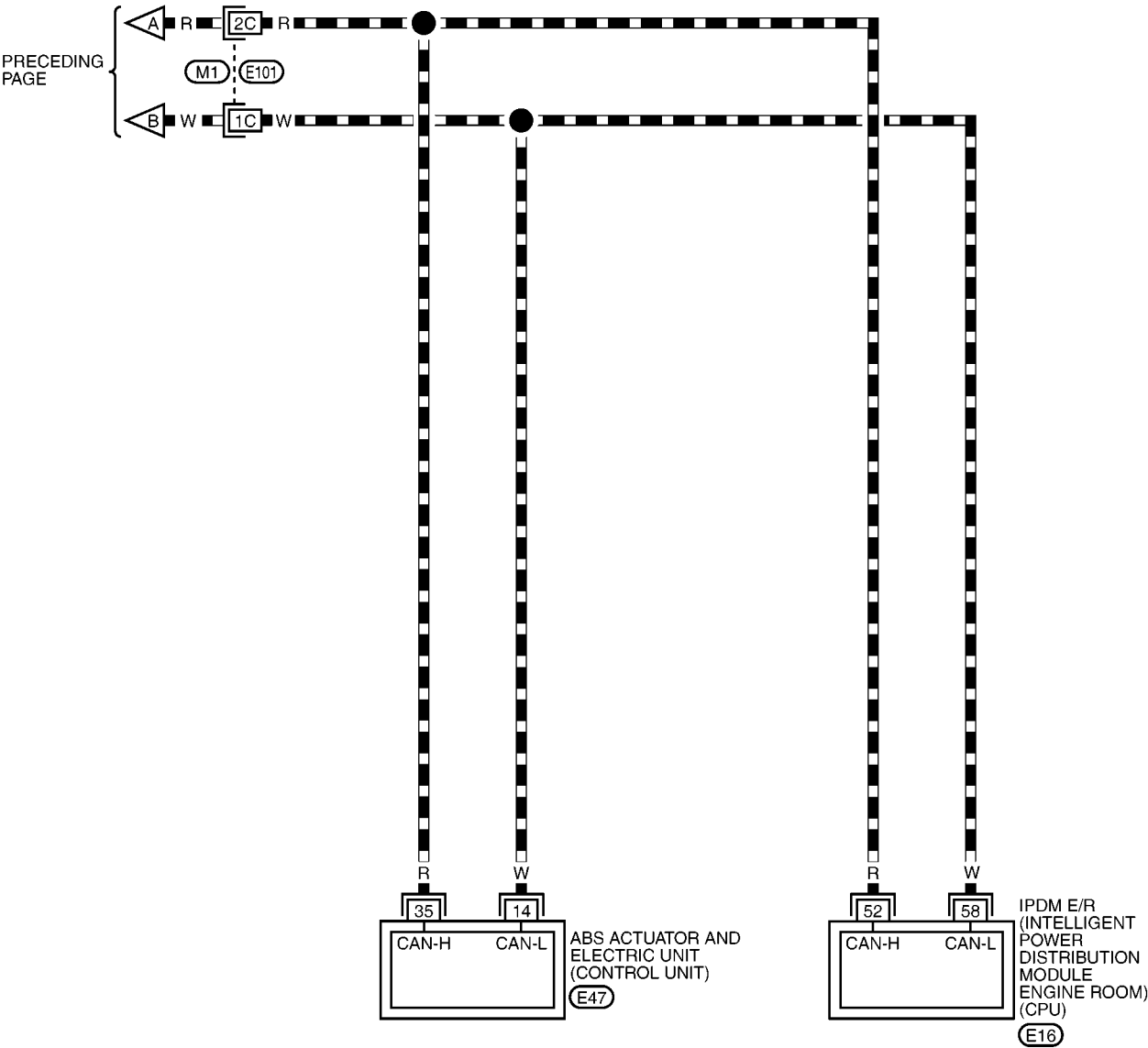
(M1) -SUPER MULTIPLE  
JUNCTION (SMJ)

(E66) -ELECTRICAL UNITS

MKWA3799E

LAN-CAN-24

DATA LINE




REFER TO THE FOLLOWING.  
M1 -SUPER MULTIPLE  
JUNCTION (SMJ)

## Work Flow

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRST	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-341, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "V" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-341, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.
- According to the check sheet results (example), start inspection. Refer to [LAN-343, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).



## CAN SYSTEM (TYPE 12)

[CAN]

## CHECK SHEET

A

B

C

D

E

F

G

H

I

J

LAN

L

M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEMAttach copy of  
SELECT SYSTEM

MKIB2176E

## CAN SYSTEM (TYPE 12)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2191E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

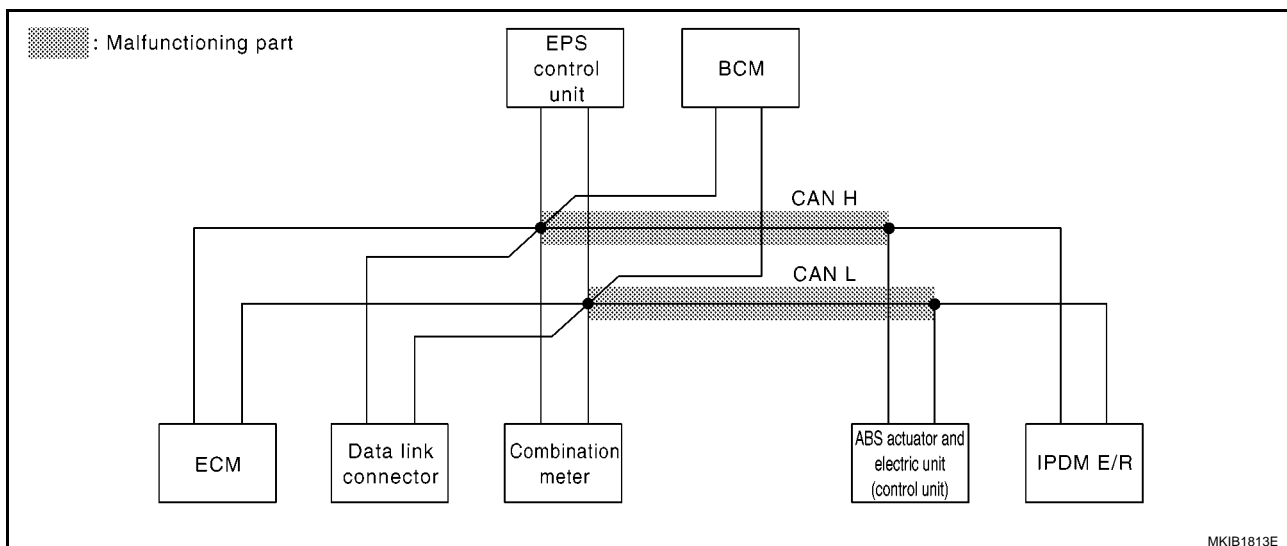
If "NG" is displayed on "CAN COMM" as "DATA MONITOR (CAN DIAG SUPPORT MNTR)" for the diagnosed control unit, replace the control unit.

## Case1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-352, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2177E



MKIB1813E

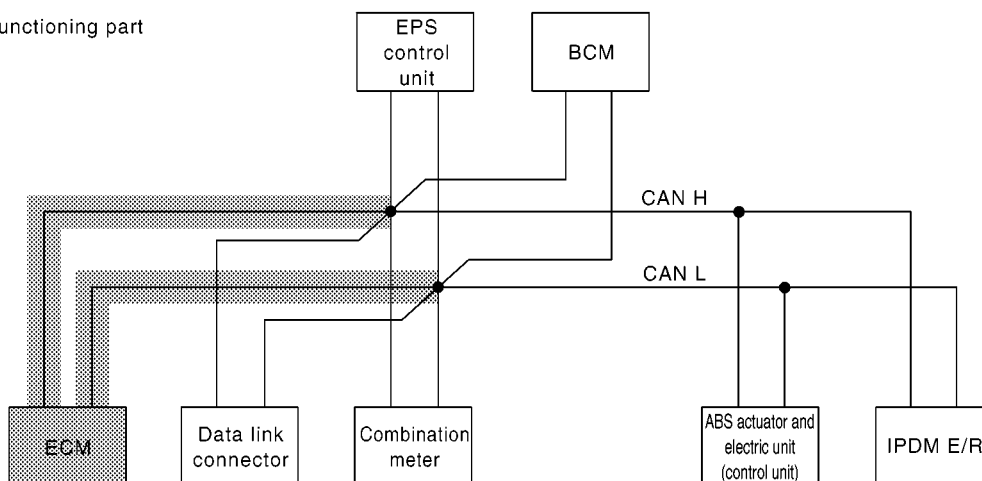
**Case2**

Check ECM circuit. Refer to [LAN-353, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2178E

 : Malfunctioning part



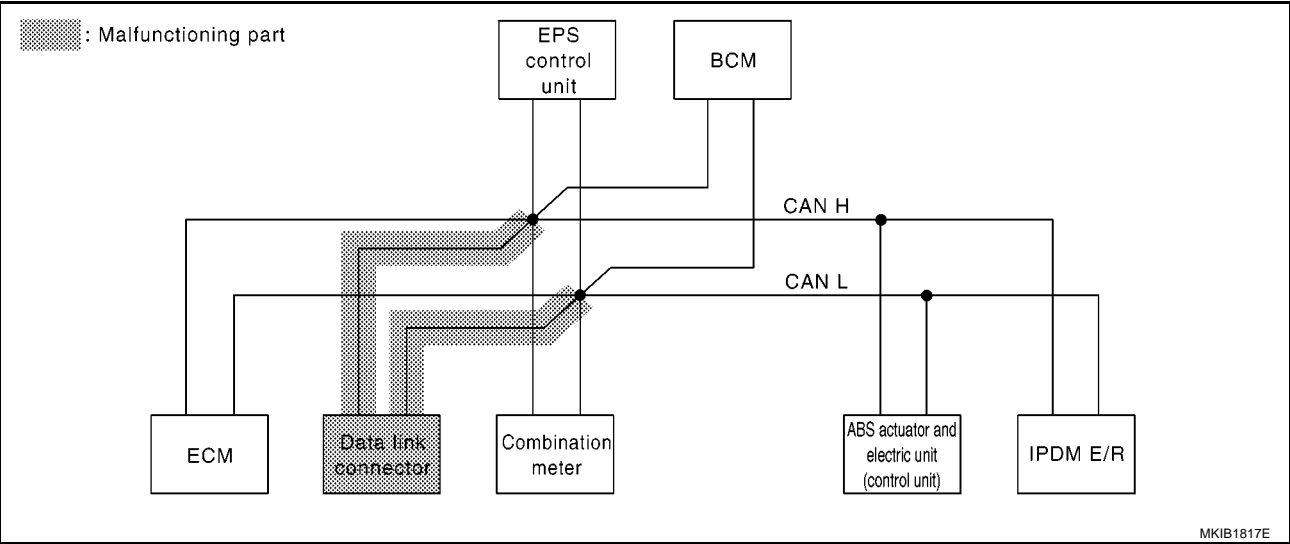
MKIB1815E

Case3

Check data link connector circuit. Refer to LAN-354, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2179E

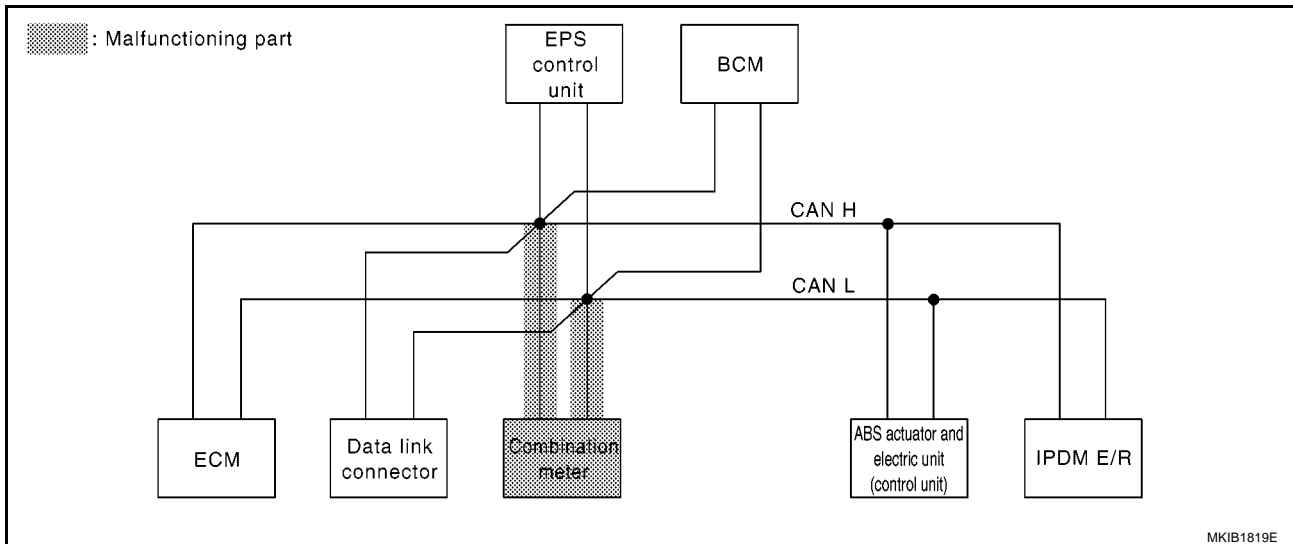


**Case4**

Check combination meter circuit. Refer to [LAN-355, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2180E



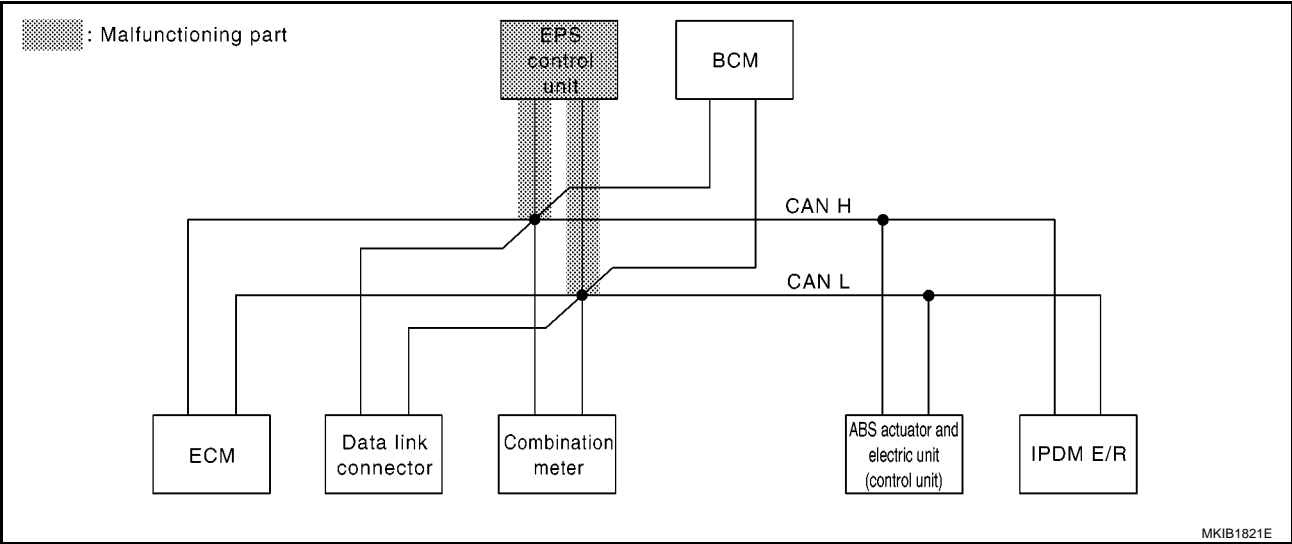
MKIB1819E

Case5

Check EPS control unit circuit. Refer to [LAN-356, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2181E



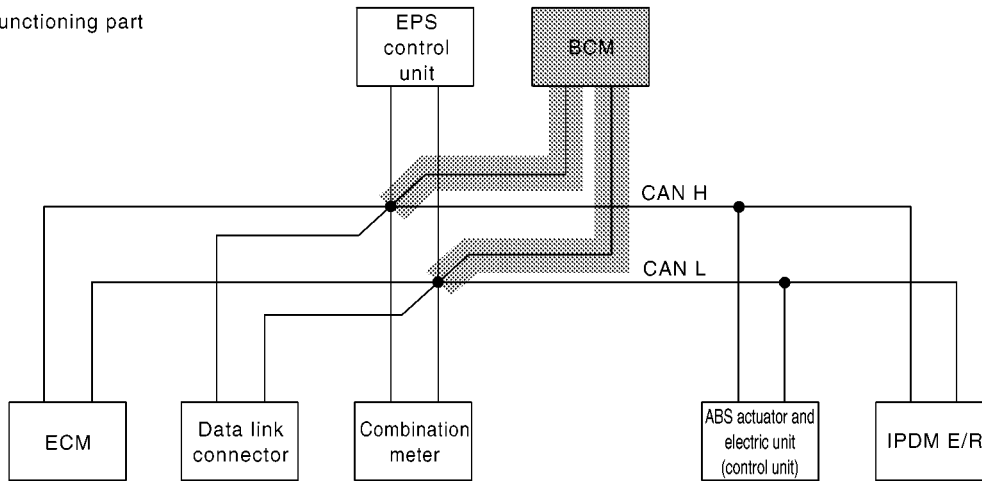
**Case6**

Check BCM circuit. Refer to [LAN-357, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2182E

 : Malfunctioning part



MKIB1823E

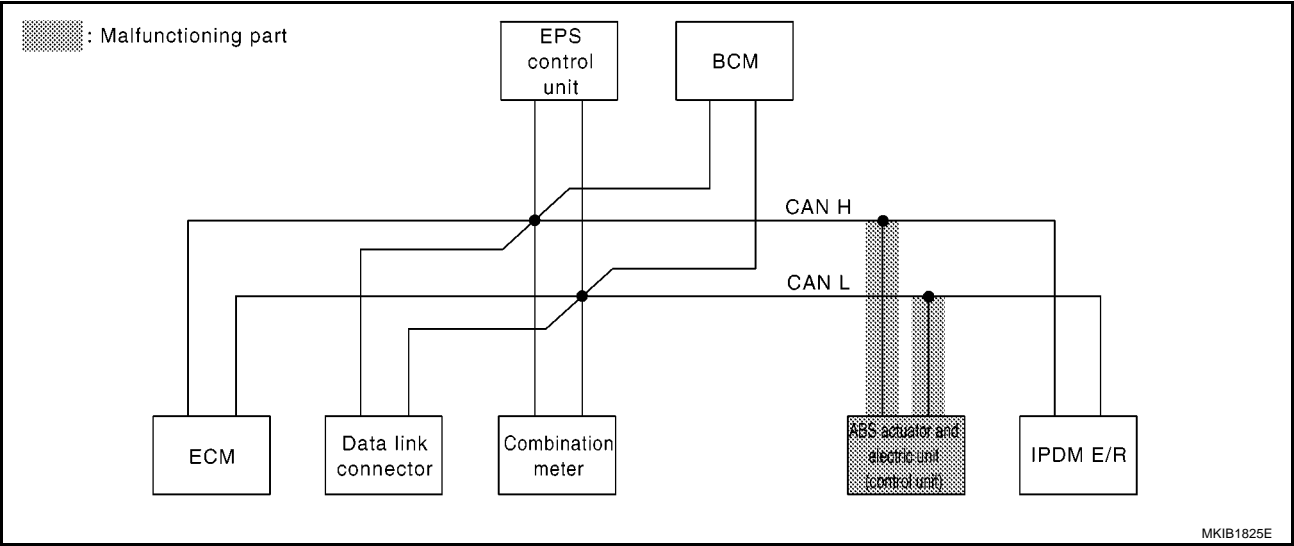


Case7

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-358, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2183E



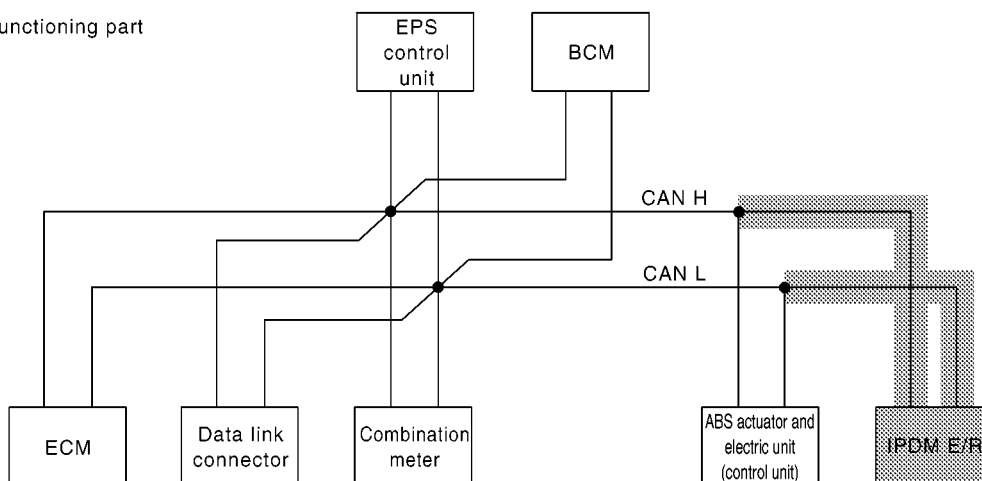
**Case8**

Check IPDM E/R circuit. Refer to [LAN-359, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2184E

 : Malfunctioning part



MKIB1827E

# CAN SYSTEM (TYPE 12)

[CAN]

## Case9

Check CAN communication circuit. Refer to [LAN-360. "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2185E

## Case10

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-363. "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2186E

## Case11

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-363. "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	EPS	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	—	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
ABS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB2187E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00PC6

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

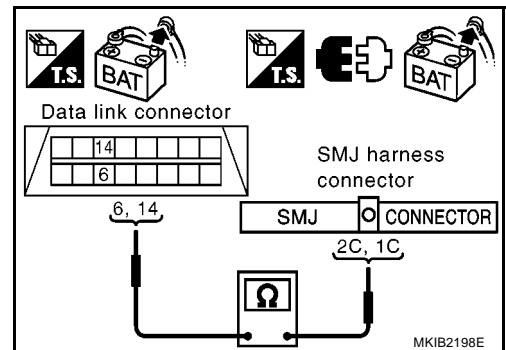
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W).

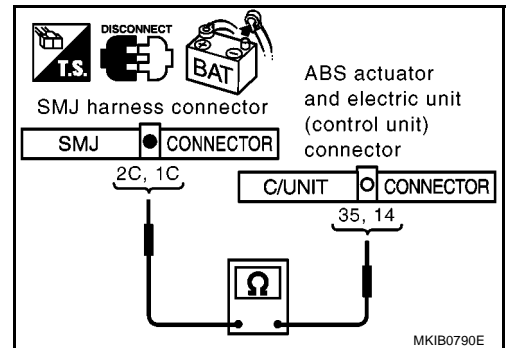
**2C (R) – 35 (R) : Continuity should exist.**

**1C (W) – 14 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-340. "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

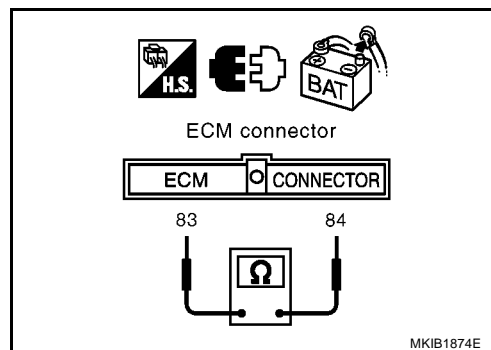
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E66 terminal 84 (R) and 83 (W)

**84 (R) – 83 (W)****: Approx. 108 – 132 Ω**

OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

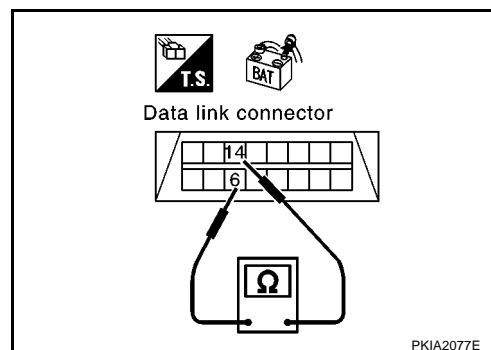
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-340, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

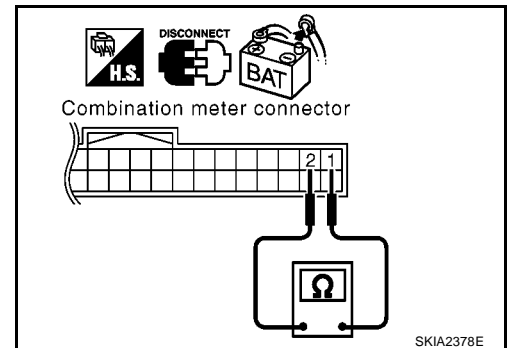
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



A

B

C

D

E

F

G

H

I

J

LAN

L

M

## EPS Control Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

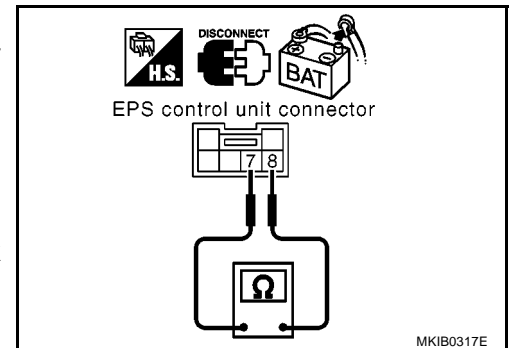
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

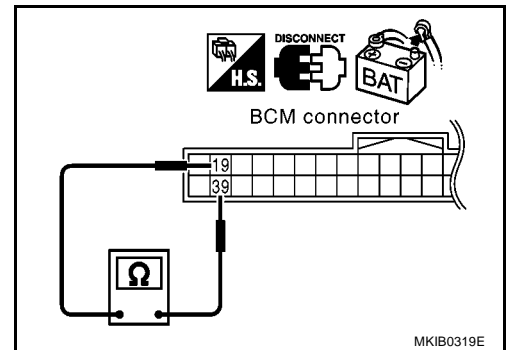
NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**OK or NGOK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM and data link connector.



**ABS Actuator and Electric Unit (Control Unit) Circuit Check**

EKS00PCC

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

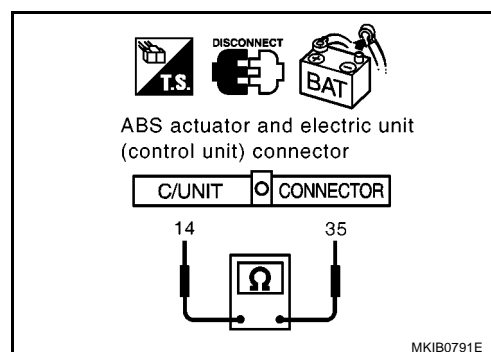
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

**35 (R) – 14 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace ABS actuator and electric unit (control unit).

NG &gt;&gt; Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

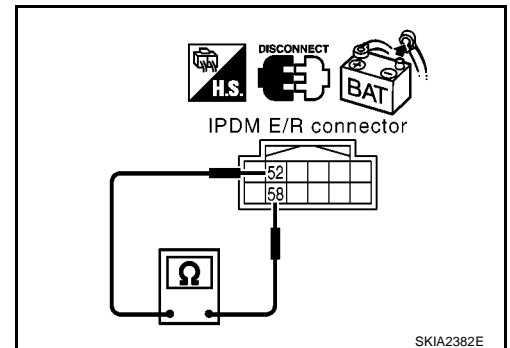
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



A

B

C

D

E

F

G

H

I

J

LAN

L

M

## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

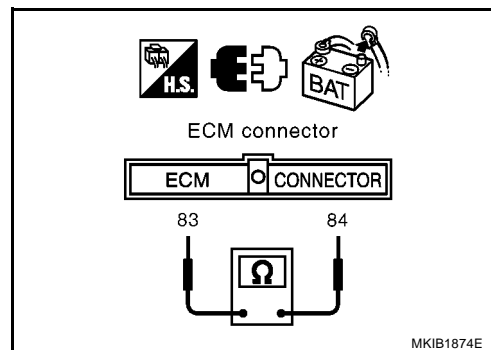
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E66 terminal 84 (R) and 83 (W)

**84 (R) – 83 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E66 terminal 84 (R), 83 (W) and ground

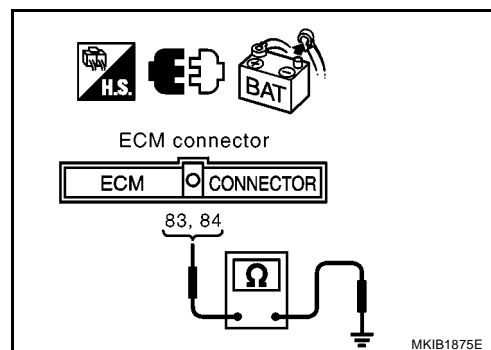
**84 (R) – Ground : Continuity should not exist.**

**83 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R) and 14 (W).

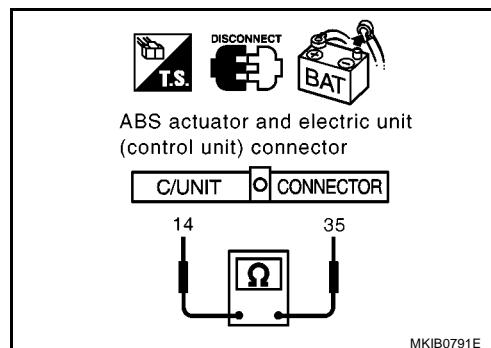
**35 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E47 terminals 35 (R), 14 (W) and ground.

**35 (R) – Ground : Continuity should not exist.**

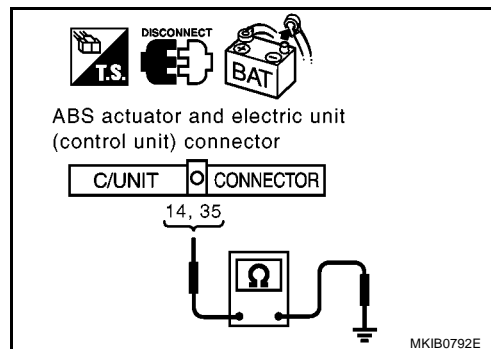
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

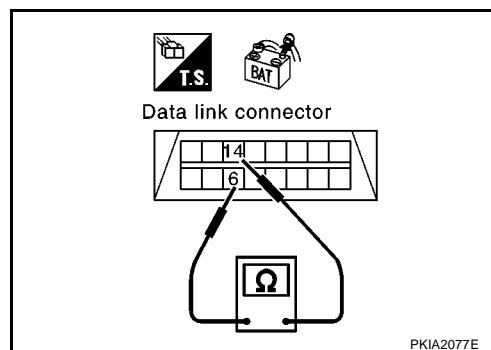
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

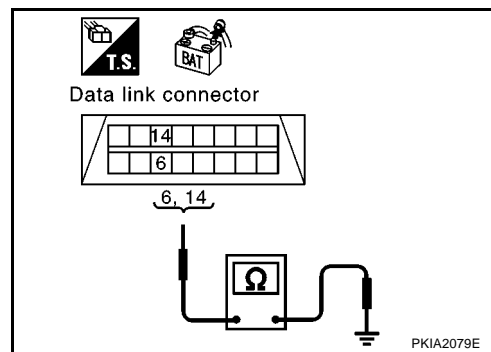
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-363, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-340, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00PCF

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

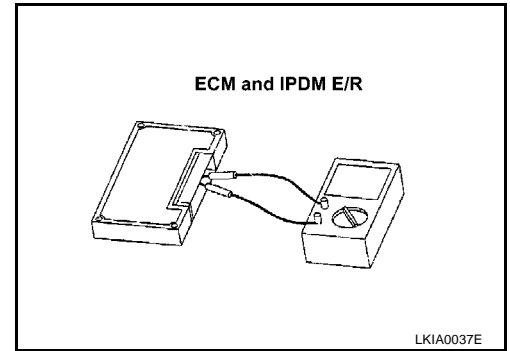
**Component Inspection**

EKS00PCG

**ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION**

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 84 and 83.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	84 – 83	108 - 132
IPDM E/R	52 – 58	



## CAN SYSTEM (TYPE 13)

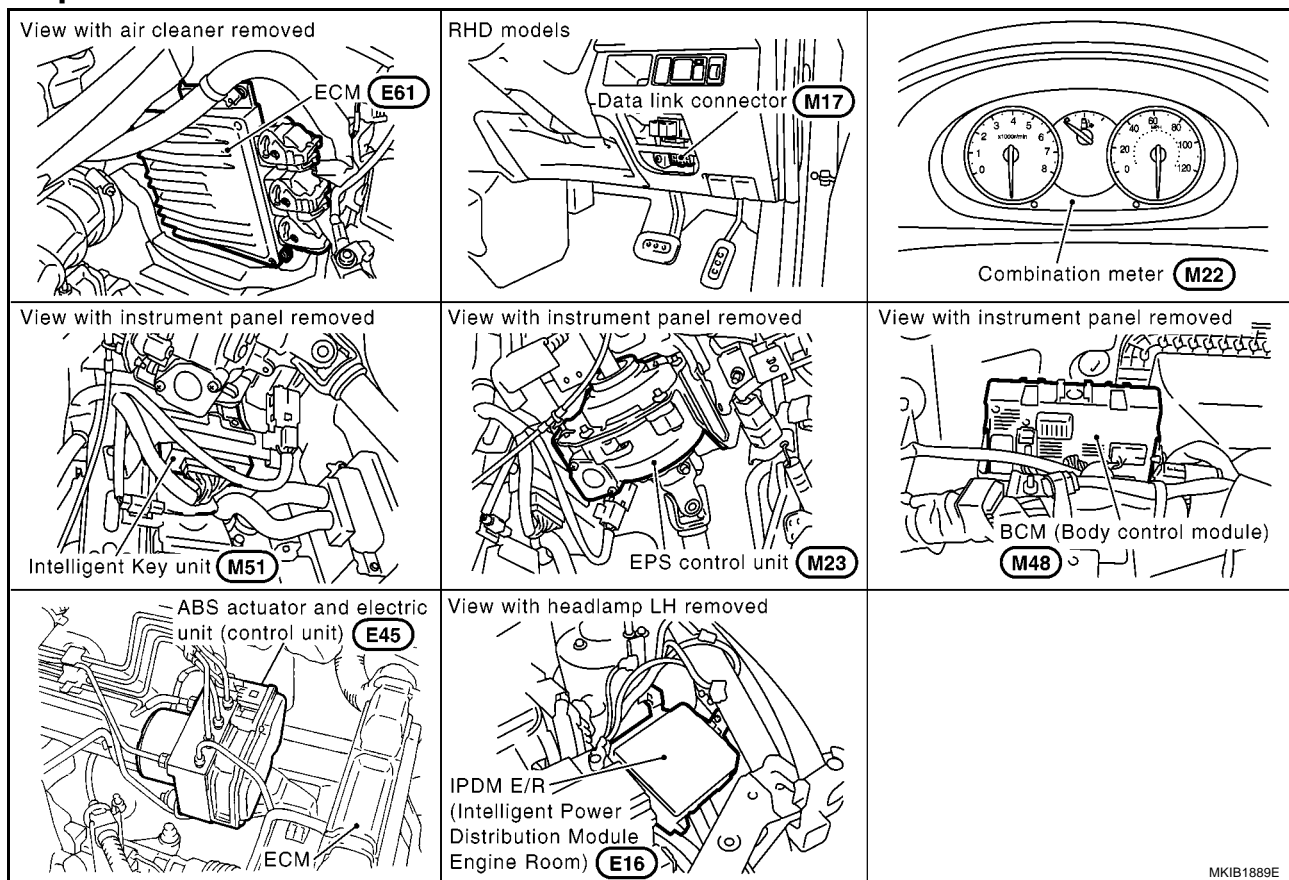
## System Description

EKS00JPX

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

EKS00JPY



MKIB1889E



# CAN SYSTEM (TYPE 13)

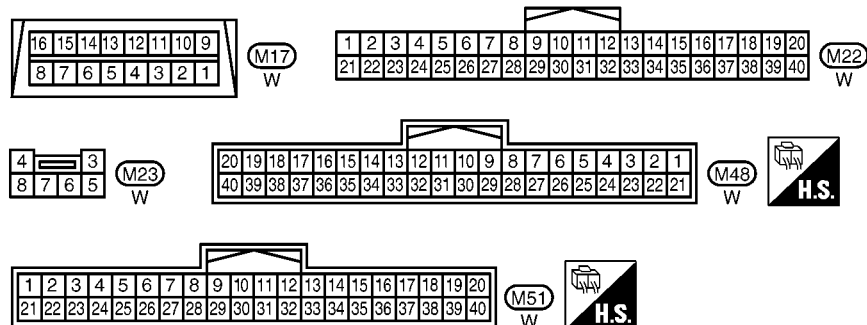
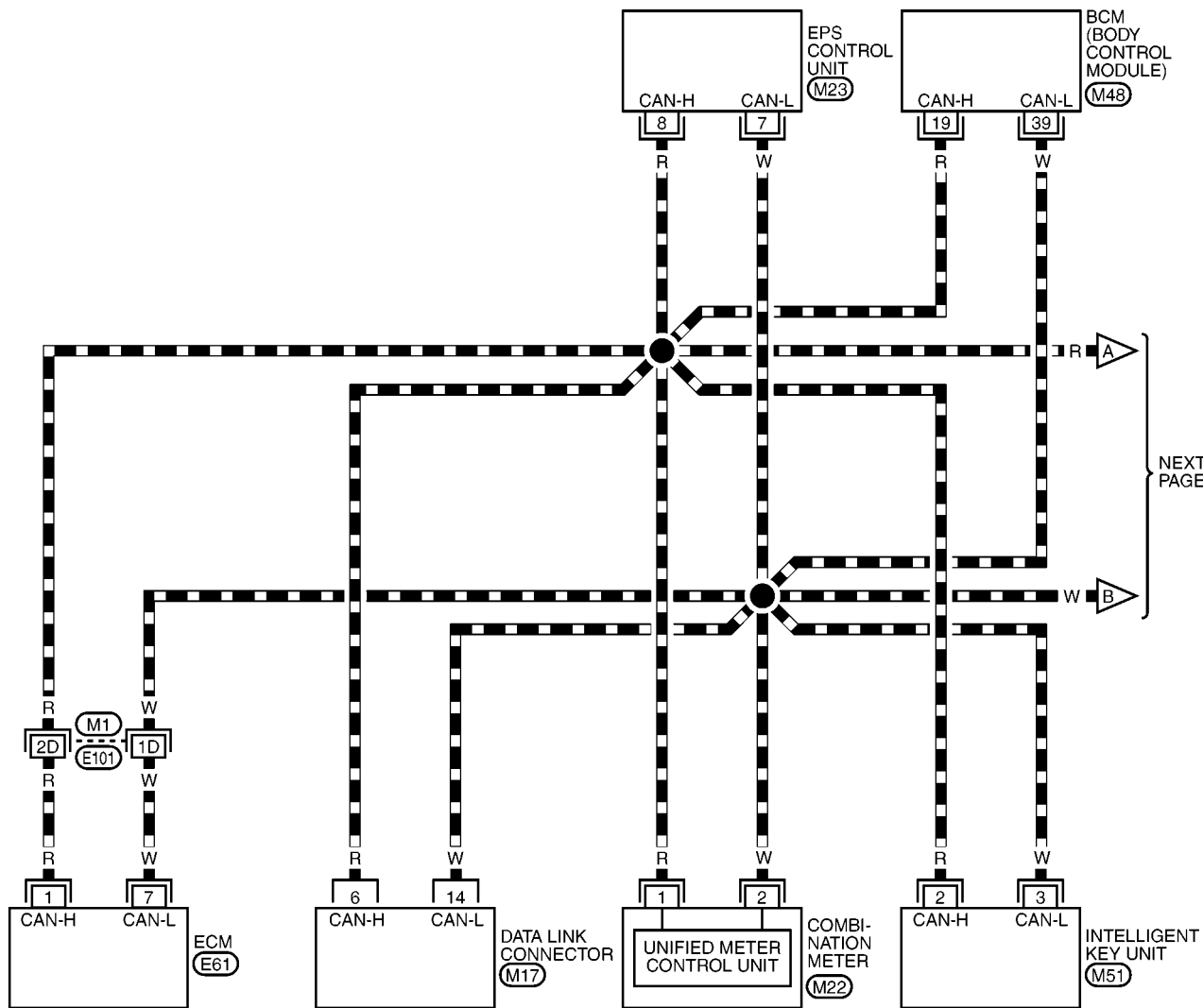
[CAN]

## Wiring Diagram — CAN —

EKS00JPZ

### LAN-CAN-25

DATA LINE



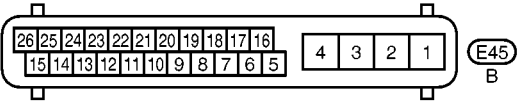
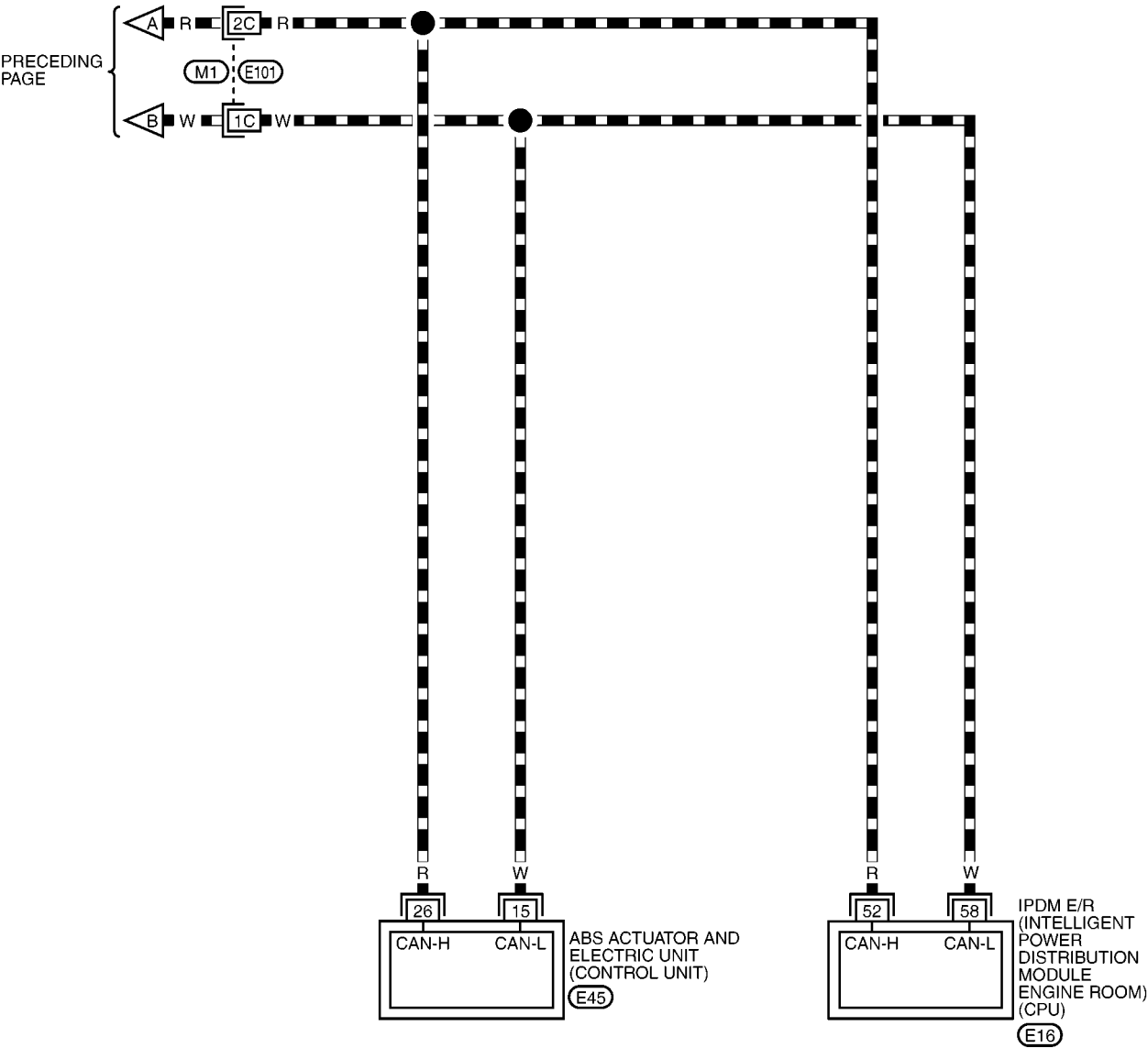
REFER TO THE FOLLOWING.

(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

MKWA3801E

▬ : DATA LINE



REFER TO THE FOLLOWING.  
(M1) -SUPER MULTIPLE  
JUNCTION (SMJ)


## Work Flow

EKS00JQ0

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

(Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY




SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
		BACK	LIGHT COPY

MKIB1692E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY




SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

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

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
		BACK	LIGHT COPY



CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSENT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-368, "CHECK SHEET"](#).
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to [LAN-368, "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 "CAN DIAG SUPPORT MNTR" items which are not indicated in check sheet table.

- According to the check sheet results (example), start inspection. Refer to [LAN-370, "CHECK SHEET RESULTS \(EXAMPLE\)"](#).

# CAN SYSTEM (TYPE 13)

[CAN]

## CHECK SHEET

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEM

Attach copy of  
SELECT SYSTEM

MKIB1890E

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
LAN  
L  
M

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

MKIB2190E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

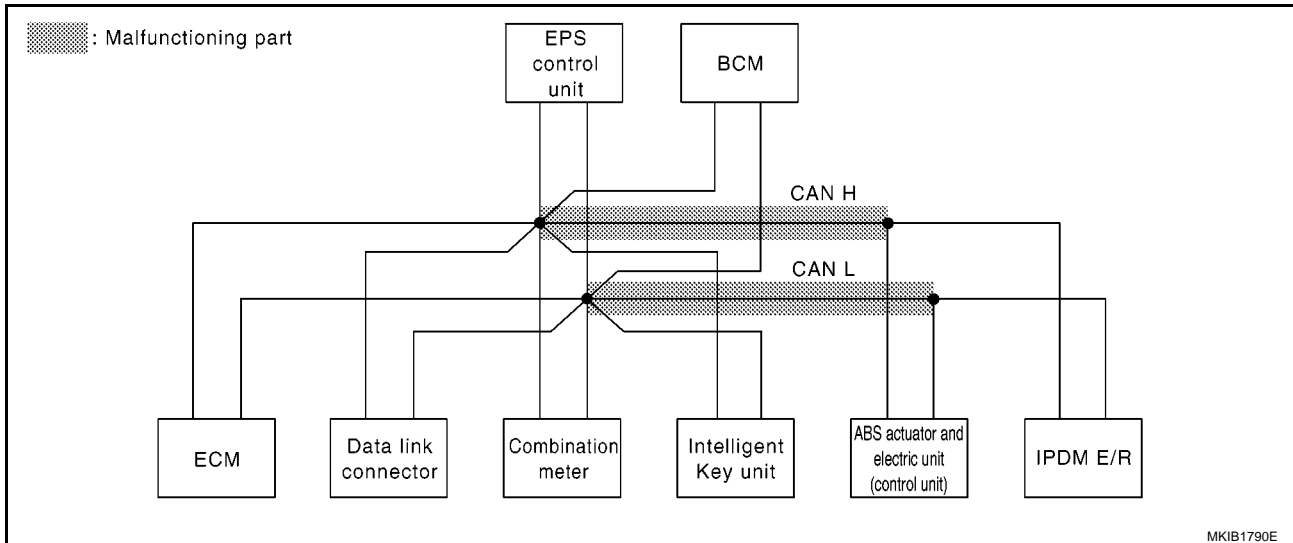
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-380, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓
ABS	—	NG	—	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1891E



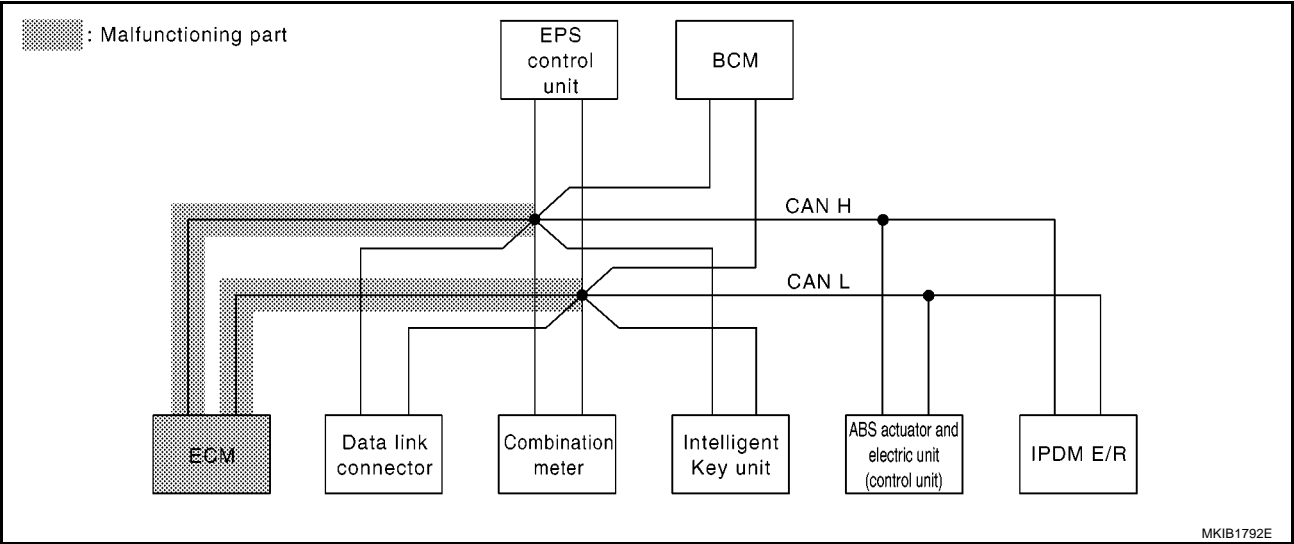
MKIB1790E

Case 2

Check ECM circuit. Refer to [LAN-381, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN ✓	—	—	UNKWN	—	—

MKIB1892E



# CAN SYSTEM (TYPE 13)

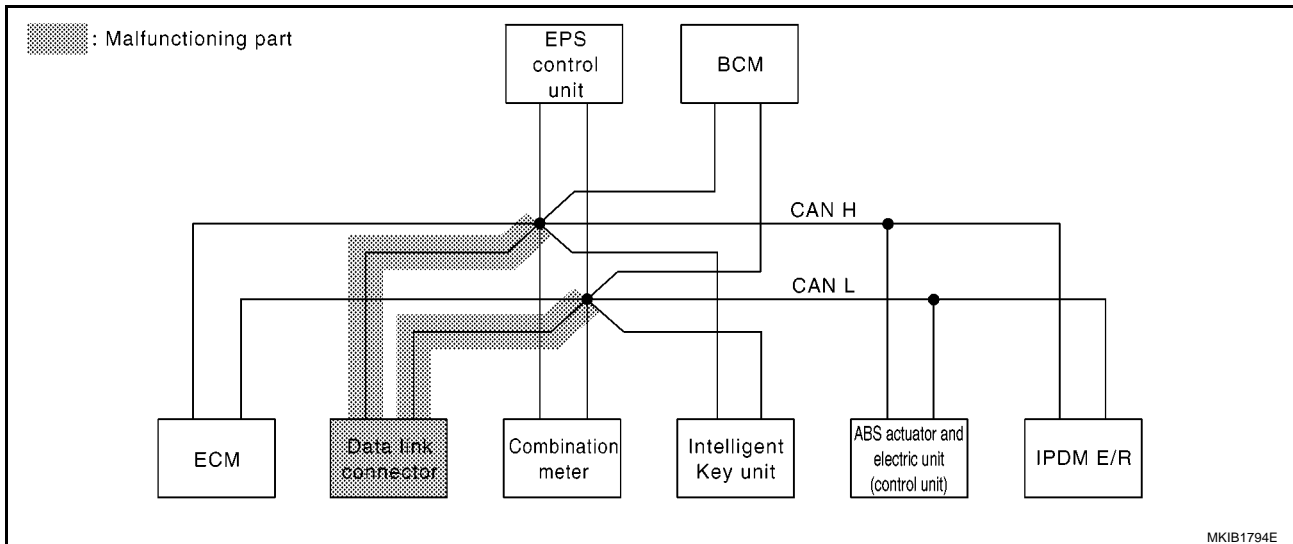
[CAN]

## Case 3

Check data link connector circuit. Refer to [LAN-382, "Data Link Connector Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1893E



MKIB1794E

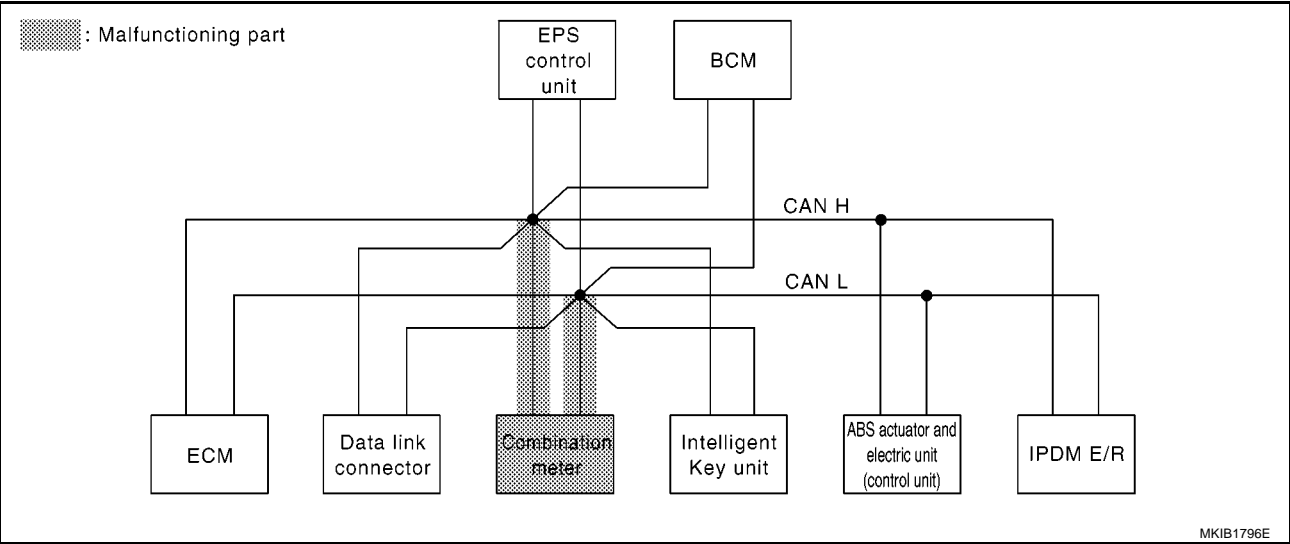


Case 4

Check combination meter circuit. Refer to LAN-383, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1894E



# CAN SYSTEM (TYPE 13)

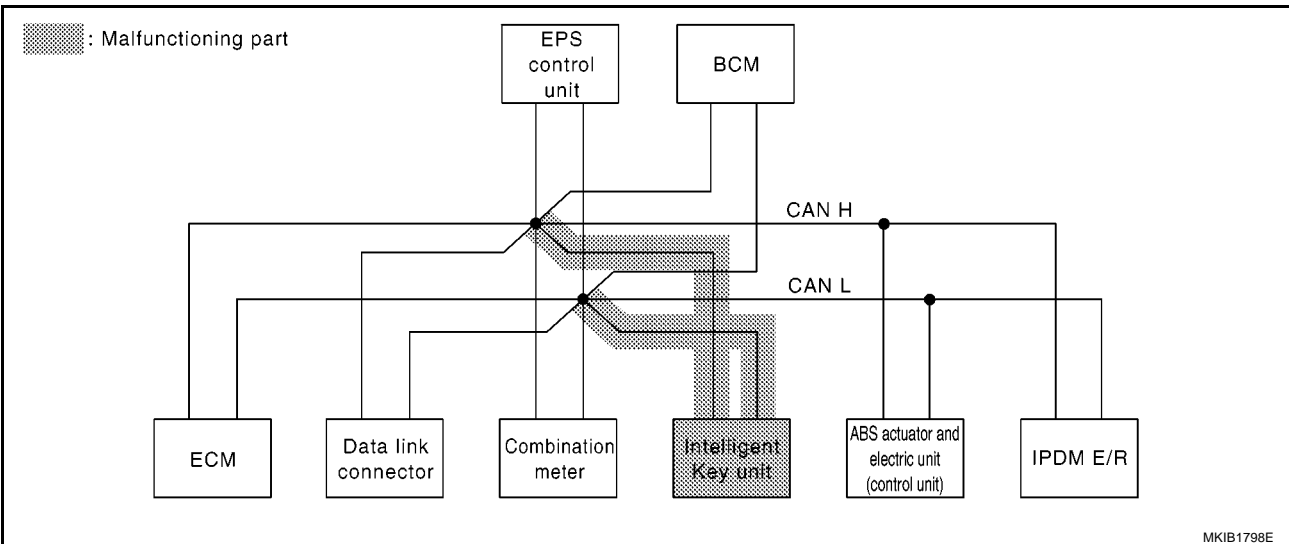
[CAN]

## Case 5

Check Intelligent Key unit circuit. Refer to [LAN-384, "Intelligent Key Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1895E



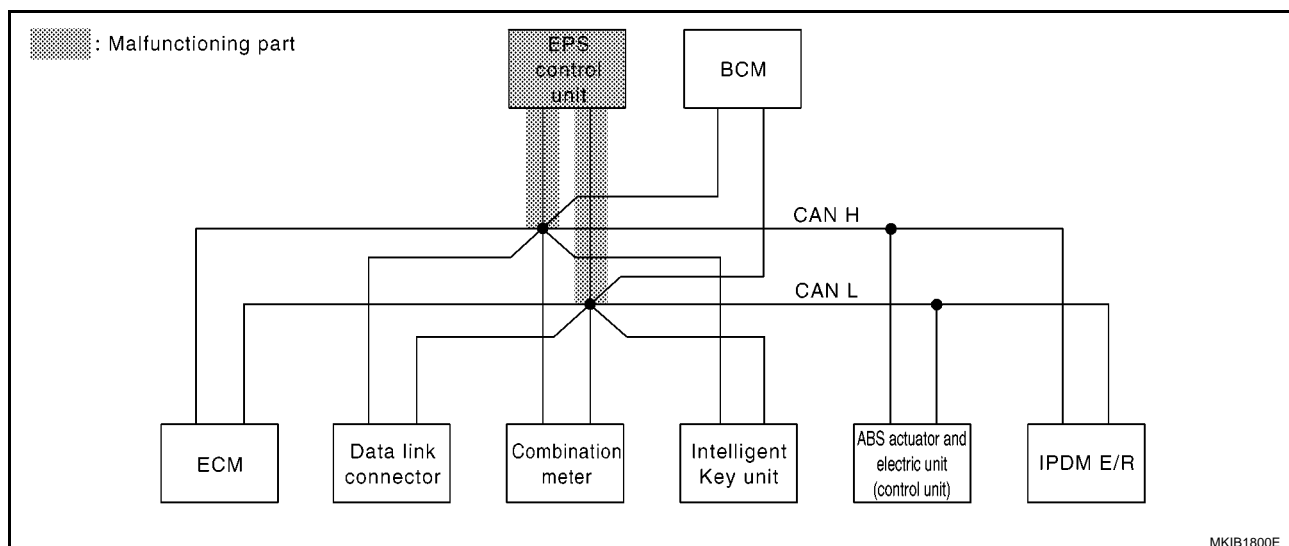
MKIB1798E

## Case 6

Check EPS control unit circuit. Refer to [LAN-385, "EPS Control Unit Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1896E



MKIB1800E

# CAN SYSTEM (TYPE 13)

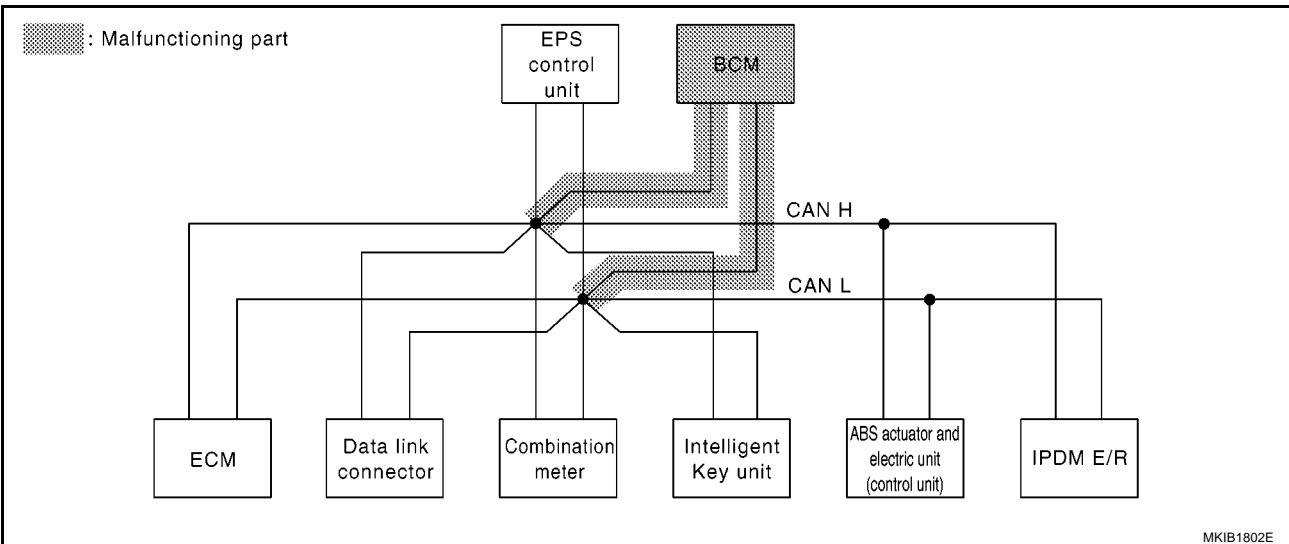
[CAN]

## Case 7

Check BCM circuit. Refer to [LAN-386, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1897E



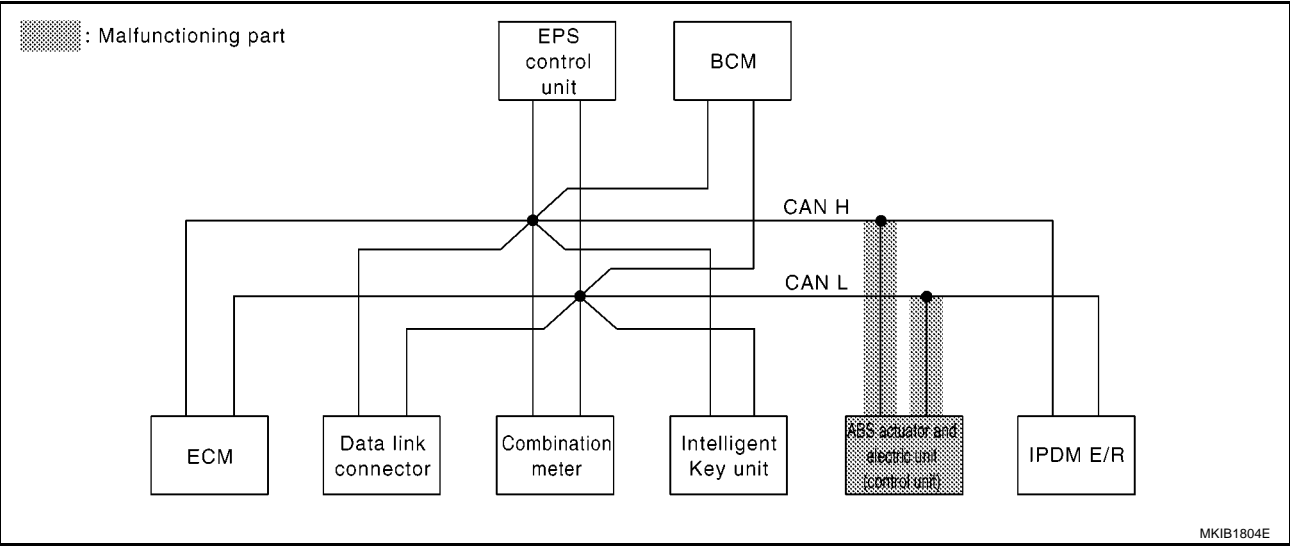
MKIB1802E

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-387, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1898E

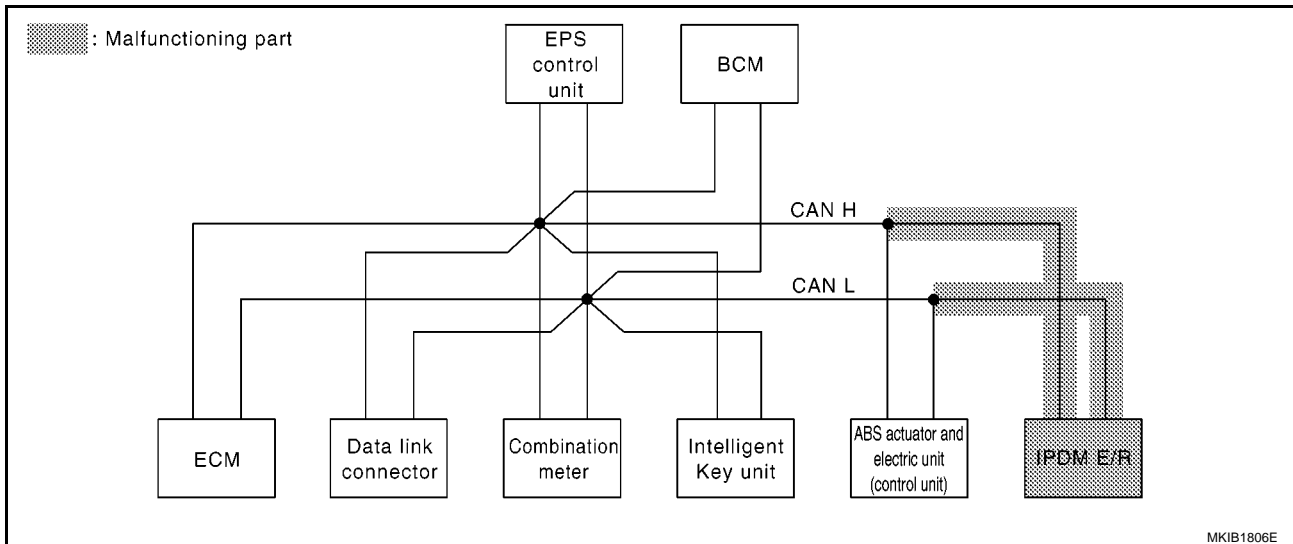


**Case 9**

Check IPDM E/R circuit. Refer to [LAN-388, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN ✓
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1899E



MKIB1806E

# CAN SYSTEM (TYPE 13)

[CAN]

## Case 10

Check CAN communication circuit. Refer to [LAN-389, "CAN Communication Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication ✓	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG ✓	—	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1900E

## Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-392, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1901E

## Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-392, "IPDM E/R Ignition Relay Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	METER /M&A	I-KEY	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN
INTELLIGENT KEY	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	—	—
EPS	No indication	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—

MKIB1902E

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00JQ1

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

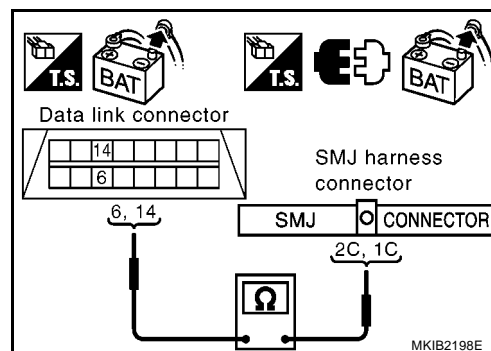
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

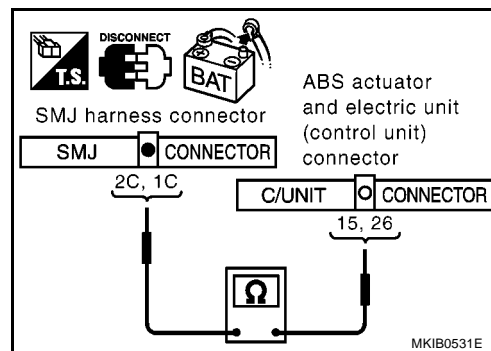
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-367, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

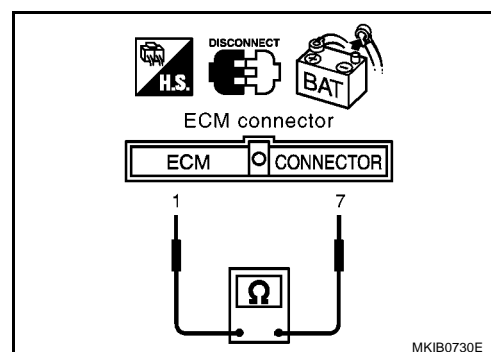
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E61 terminals 1 (R) and 7 (W).

**1 (R) – 7 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

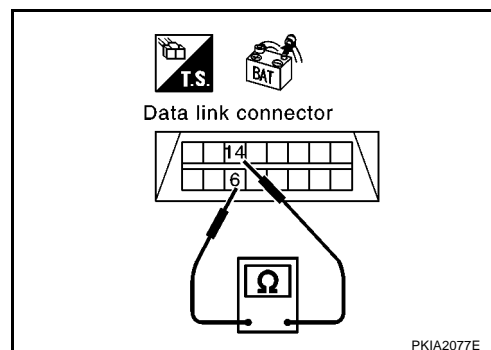
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-367, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

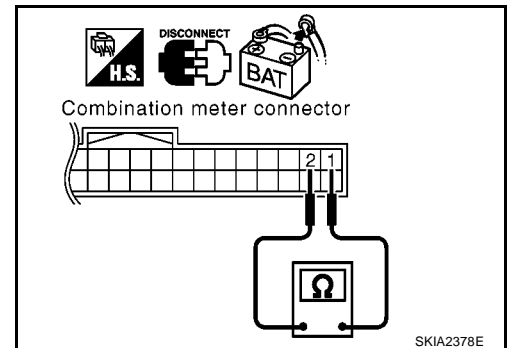
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace combination meter.

NG &gt;&gt; Repair harness between combination meter and data link connector.



## Intelligent Key Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key 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 Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

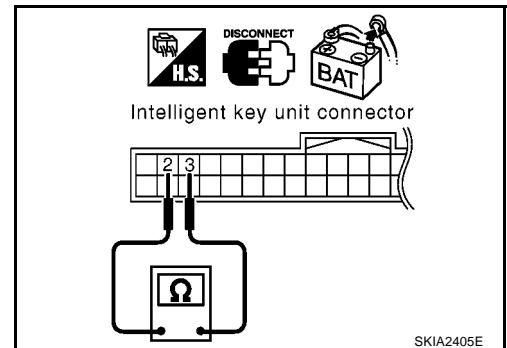
**2 (R) – 3 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace Intelligent Key unit.

NG >> Repair harness between Intelligent Key unit and data link connector.



**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

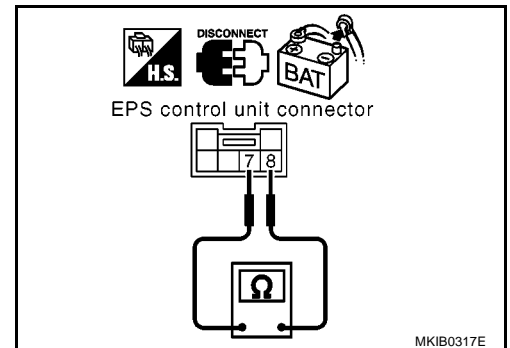
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

**8 (R) – 7 (W)****: Approx. 54 – 66Ω**OK or NG

OK &gt;&gt; Replace EPS control unit.

NG &gt;&gt; Repair harness between EPS control unit and data link connector.



A

B

C

D

E

F

G

H

I

J

LAN

L

M

**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

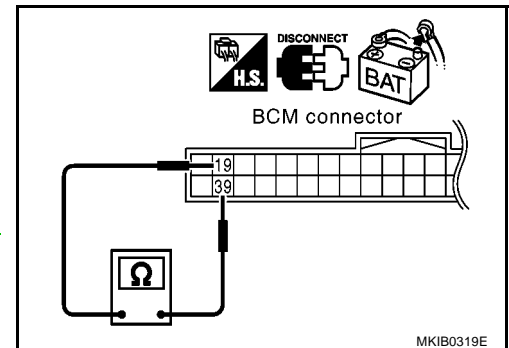
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W) : Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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.

### 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 E45 terminals 26 (R) and 15 (W).

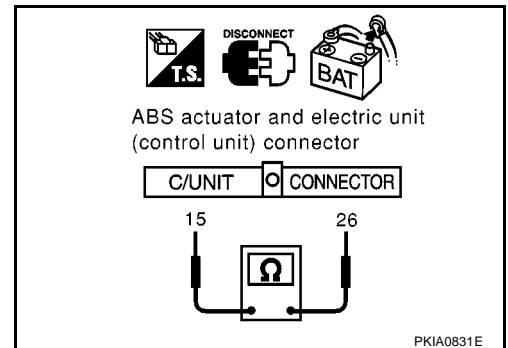
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

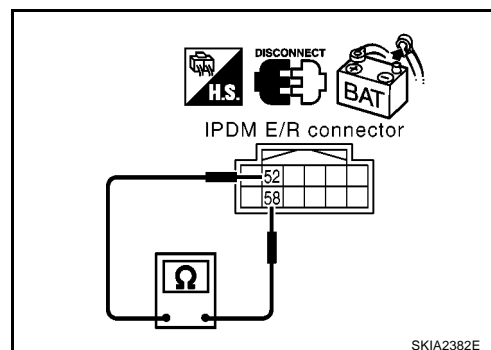
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**

OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).





**CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - Intelligent Key unit
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR SHORT CIRCUIT**

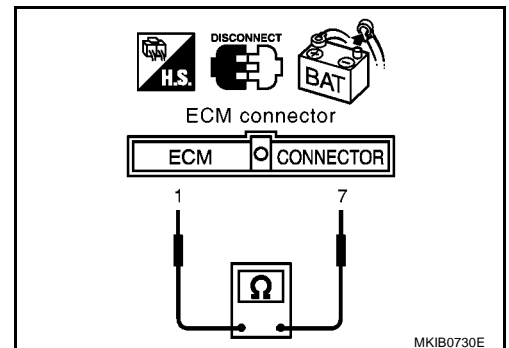
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E61 terminals 1 (R) and 7 (W).

**1 (R) – 7 (W) : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 3.

NG &gt;&gt; Repair harness between ECM and harness connector E101.

**3. CHECK HARNESS FOR SHORT CIRCUIT**

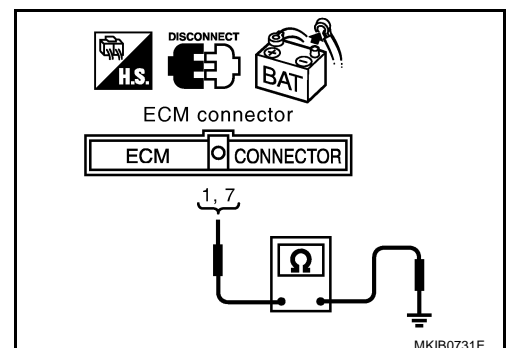
Check continuity between ECM harness connector E61 terminals 1 (R), 7 (W) and ground.

**1 (R) – Ground : Continuity should not exist.****7 (W) – Ground : Continuity should not exist.**

OK or NG

OK &gt;&gt; GO TO 4.

NG &gt;&gt; Repair harness between ECM and harness connector E101.



## 4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

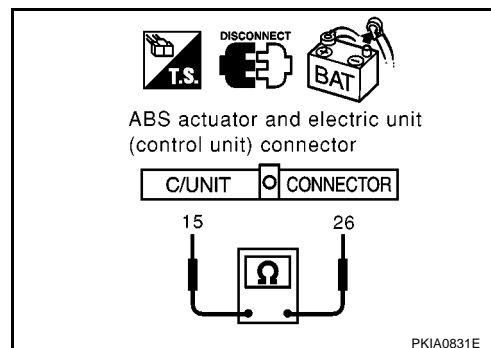
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

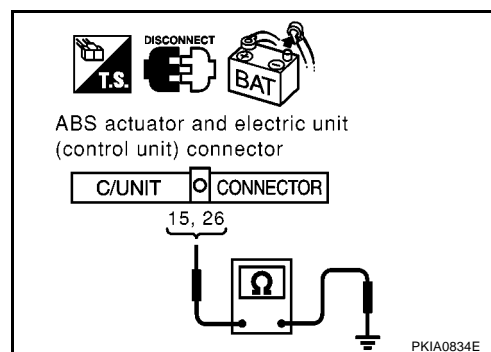
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



## 6. CHECK HARNESS FOR SHORT CIRCUIT

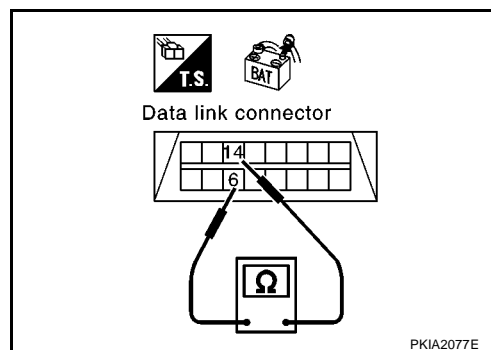
1. Disconnect following connectors.
  - Combination meter connector
  - Intelligent Key unit connector
  - EPS control unit connector
  - BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

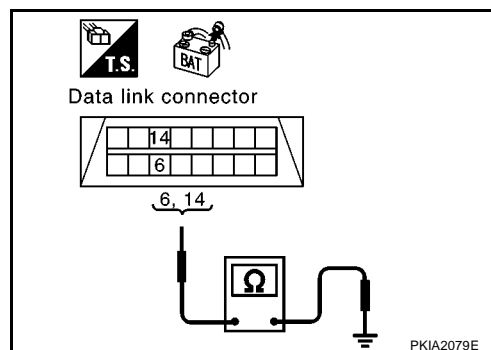
**6 (R) – Ground : Continuity should not exist.**

**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

- NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
  - Harness between data link connector and combination meter
  - Harness between data link connector and Intelligent Key unit
  - Harness between data link connector and EPS control unit
  - Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-392, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnosis again. Refer to [LAN-367, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

## IPDM E/R Ignition Relay Circuit Check

EKS00JQB

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#) .

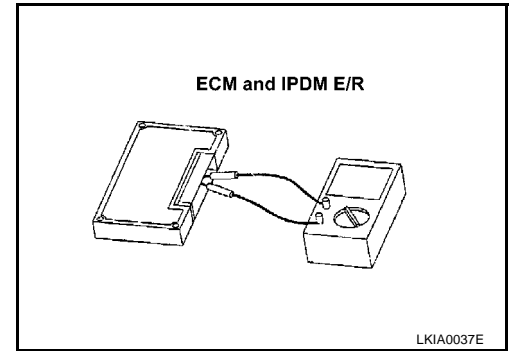
## Component Inspection

EKS00JQC

### ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 1 and 7.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	1 – 7	108 - 132
IPDM E/R	52 – 58	

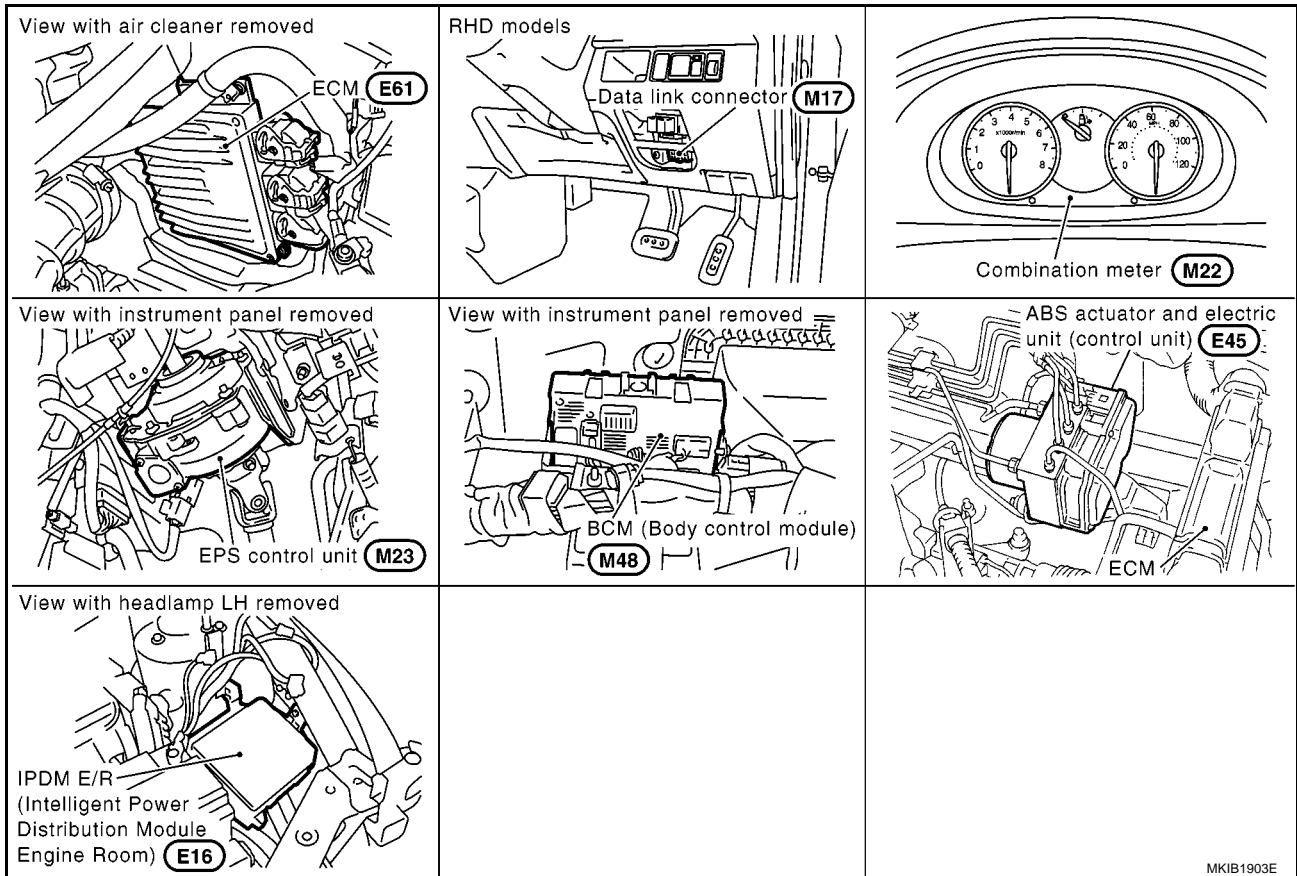


## CAN SYSTEM (TYPE 14)

## 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



# CAN SYSTEM (TYPE 14)

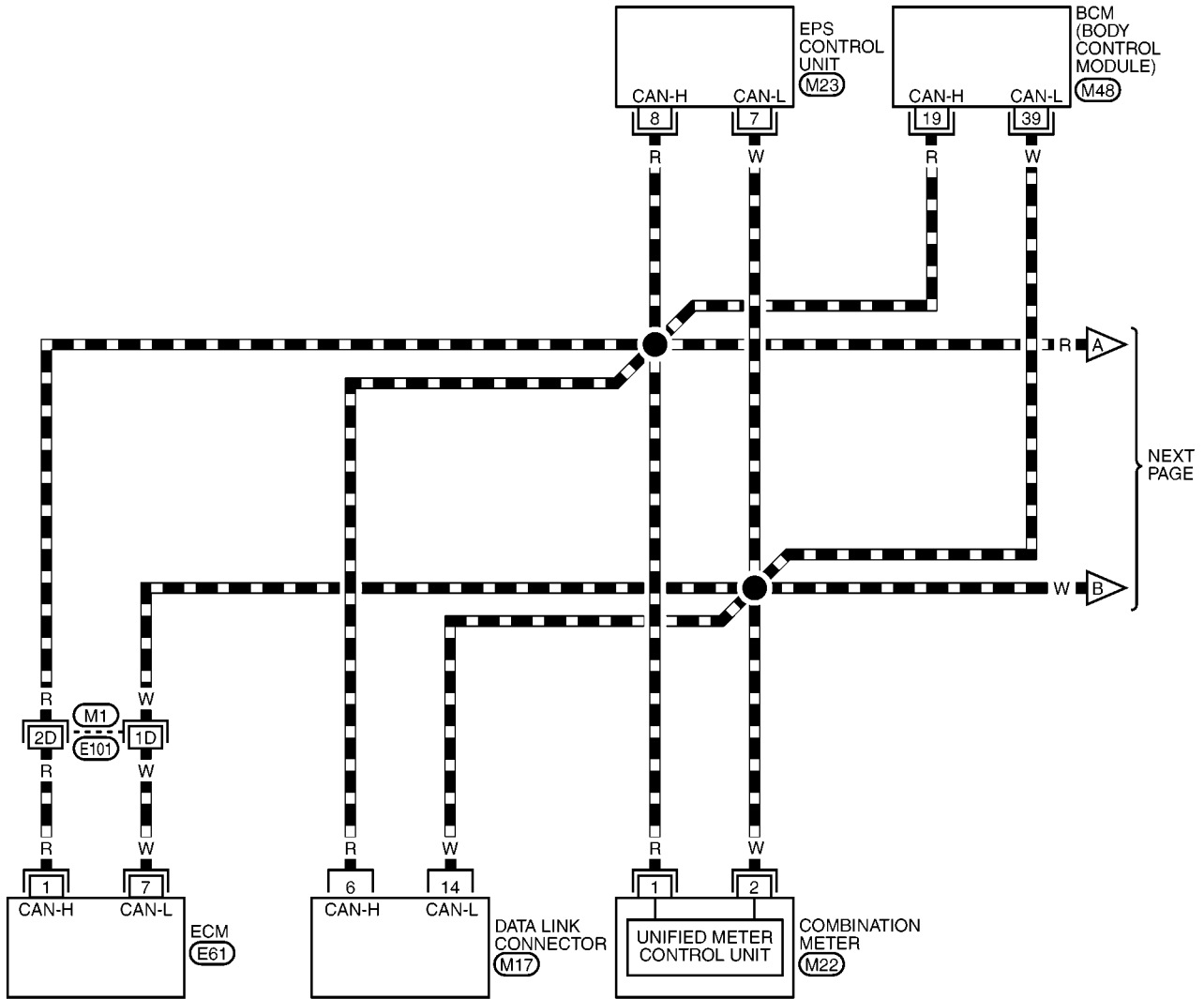
[CAN]

## Wiring Diagram — CAN —

EKS00JQF

### LAN-CAN-27

DATA LINE



NEXT PAGE

16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

(M17)  
W

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

(M22)  
W

4	3
8	5

(M23)  
W

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

(M48)  
W



REFER TO THE FOLLOWING.

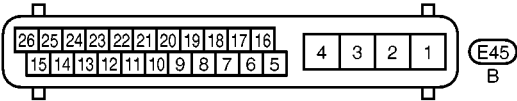
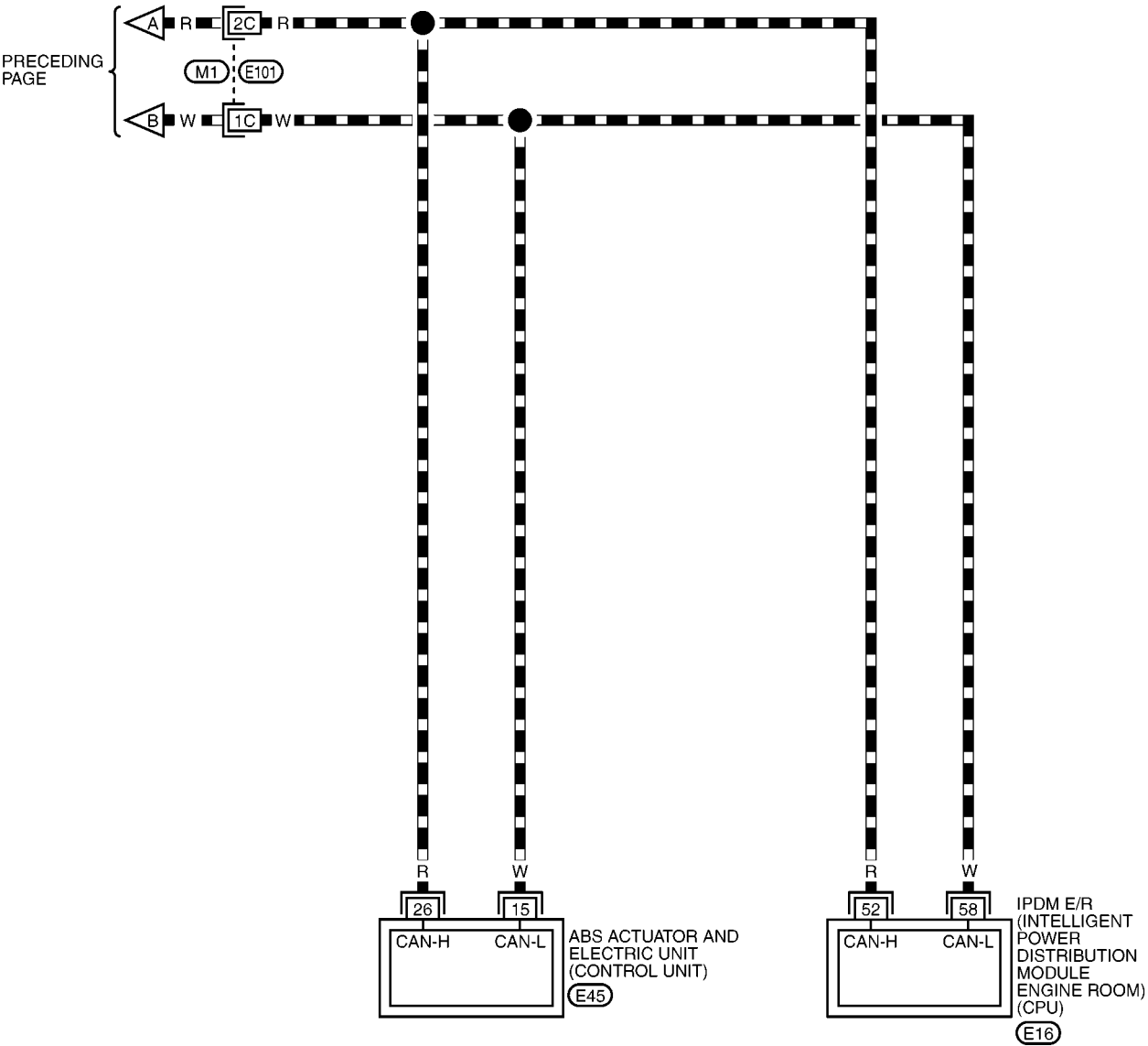
(M1) -SUPER MULTIPLE JUNCTION (SMJ)

(E61) -ELECTRICAL UNITS

MKWA3803E

LAN-CAN-28

DATA LINE



REFER TO THE FOLLOWING.  
M1 -SUPER MULTIPLE  
JUNCTION (SMJ)

**[CAN]**

## EK.S00.IQG

- (Example)

NISSAN			
CONSULT- II			
ENGINE			
START (NISSAN BASED VHCL)			
START (X-BADGE VHCL)			
SUB MODE			
		LIGHT	COPY

➔

SELECT SYSTEM			
ENGINE			
A/T			
ABS			
AIR BAG			
BCM			
METER A/C AMP			
	BACK	LIGHT	COPY

- (Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
		Scroll Down	
	BACK	LIGHT	COPY

➔

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT (U1000)		0	
		F.F.DATA	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

- (Example)

<b>SELECT DIAG MODE</b>			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
<b>CAN DIAG SUPPORT MNTR</b>			
ACTIVE TEST			
		Scroll Down	
	BACK	LIGHT	COPY

<b>CAN DIAG SUPPORT MNTR</b>			
<b>ENGINE</b>			
		PRSTNT	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
<b>PRINT</b>			Scroll Down
MODE	BACK	LIGHT	COPY

- 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 “CAN DIAG SUPPORT MNTR” items which are not indicated in check sheet table.

- ## LAN-396



## CAN SYSTEM (TYPE 14)

[CAN]

## CHECK SHEET

A

B

C

D

E

F

G

H

I

J

LAN

L

M

Check sheet table

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

Symptoms:

Attach copy of  
SELECT SYSTEMAttach copy of  
SELECT SYSTEM

MKIB1904E

## CAN SYSTEM (TYPE 14)

[CAN]

Attach copy of  
ENGINE  
SELF-DIAG RESULTS

Attach copy of  
EPS  
SELF-DIAG RESULTS

Attach copy of  
BCM  
SELF-DIAG RESULTS

Attach copy of  
ABS  
SELF-DIAG RESULTS

Attach copy of  
IPDM E/R  
SELF-DIAG RESULTS

Attach copy of  
ENGINE  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
EPS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
BCM  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
ABS  
CAN DIAG SUPPORT  
MNTR

Attach copy of  
IPDM E/R  
CAN DIAG SUPPORT  
MNTR

MKIB2191E

## CHECK SHEET RESULTS (EXAMPLE)

## NOTE:

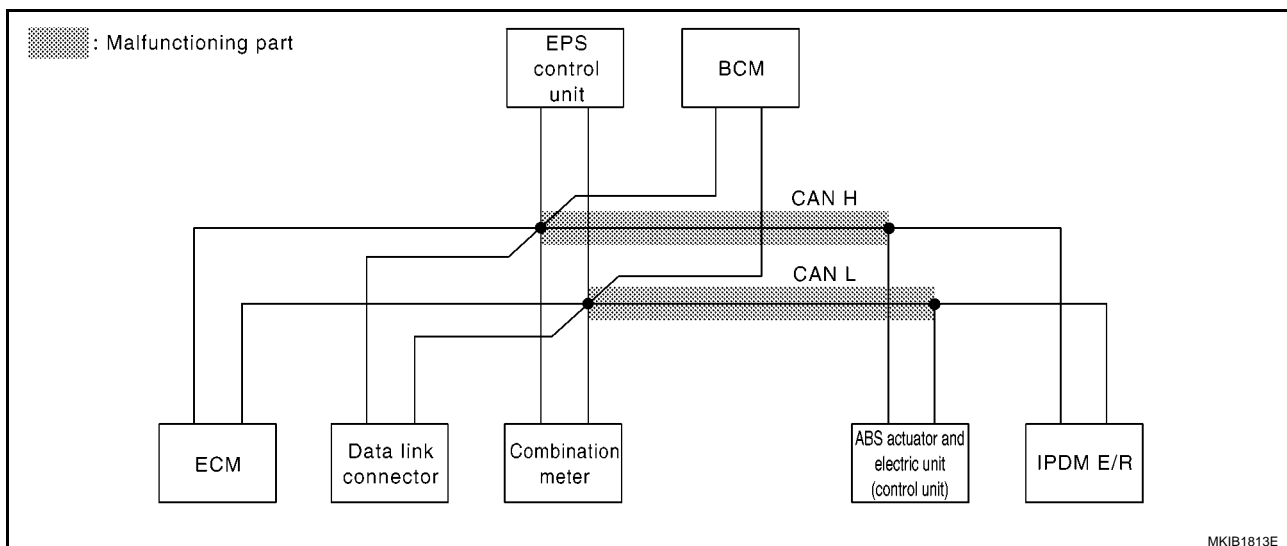
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

## Case 1

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-408, "Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit \(Control Unit\)"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1905E



MKIB1813E

# CAN SYSTEM (TYPE 14)

[CAN]

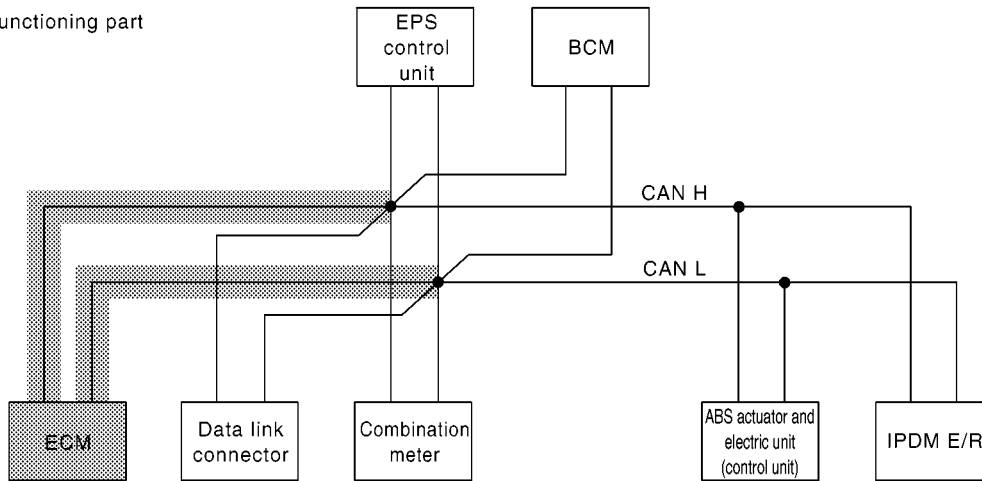
## Case 2

Check ECM circuit. Refer to [LAN-409, "ECM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—

MKIB1906E

 : Malfunctioning part



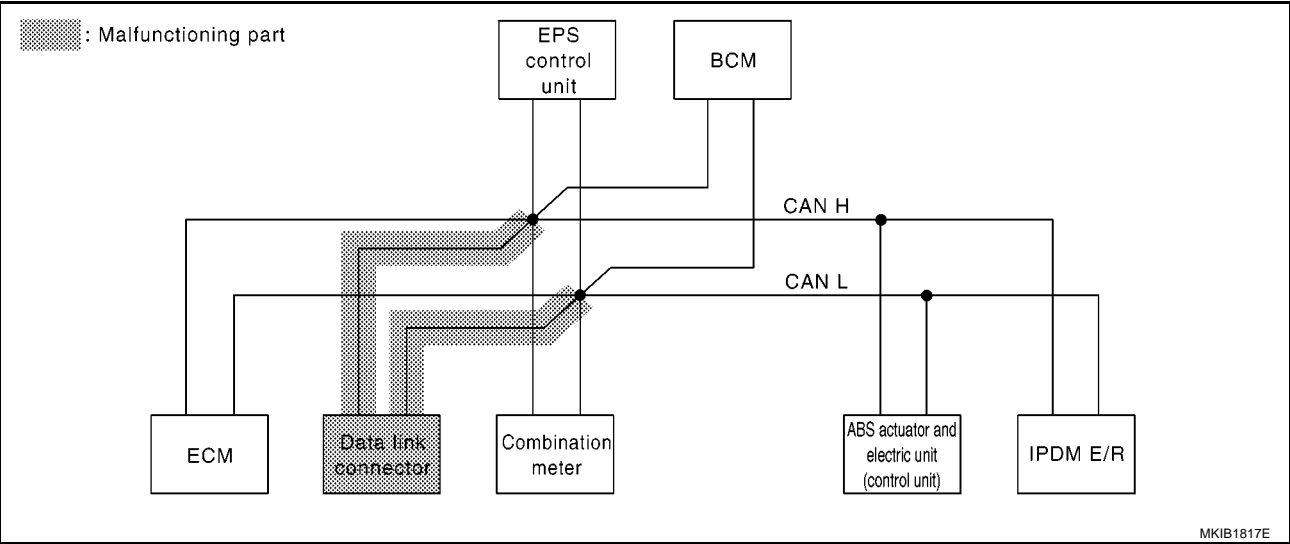
MKIB1815E

Case 3

Check data link connector circuit. Refer to LAN-410, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1907E

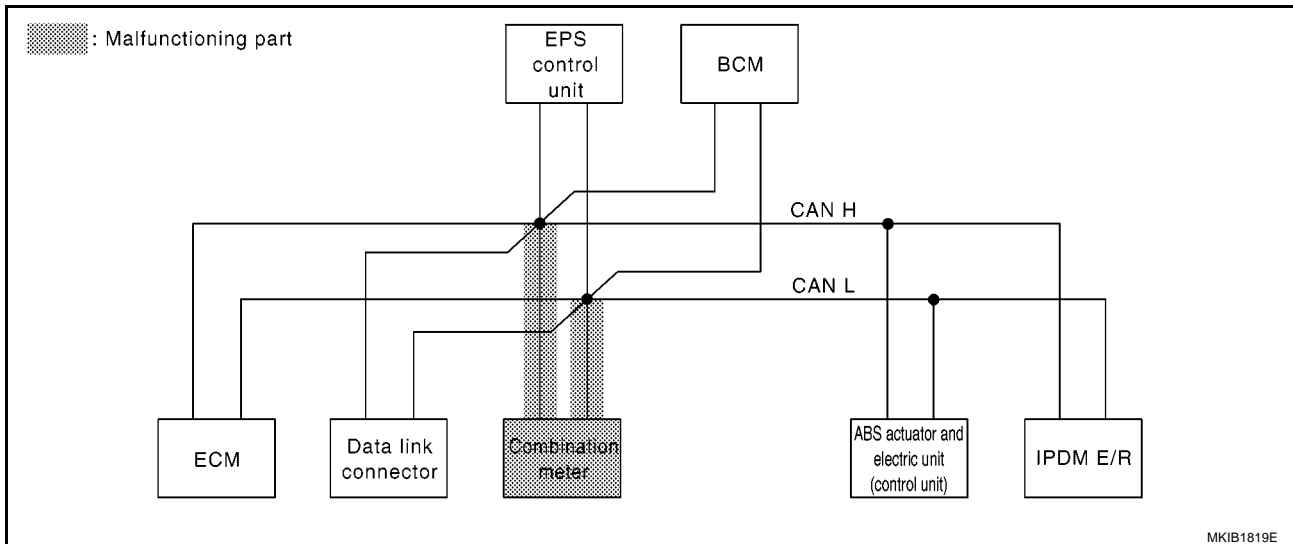


**Case 4**

Check combination meter circuit. Refer to [LAN-411, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1908E



MKIB1819E

# CAN SYSTEM (TYPE 14)

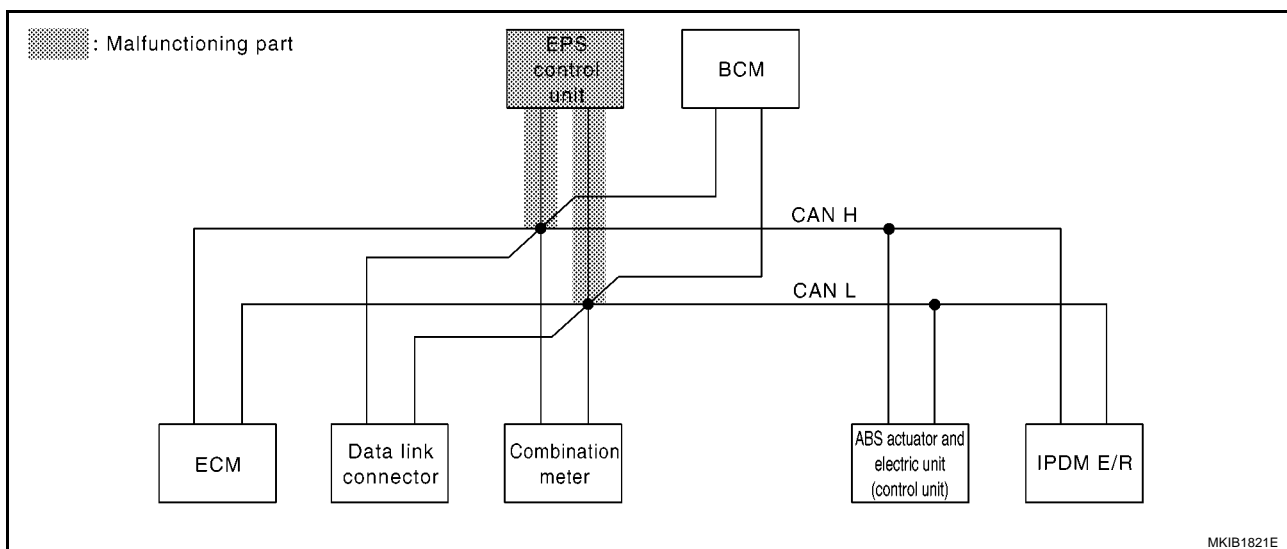
[CAN]

## Case 5

Check EPS control unit circuit. Refer to [LAN-412, "EPS Control Unit Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1909E



MKIB1821E

# CAN SYSTEM (TYPE 14)

[CAN]

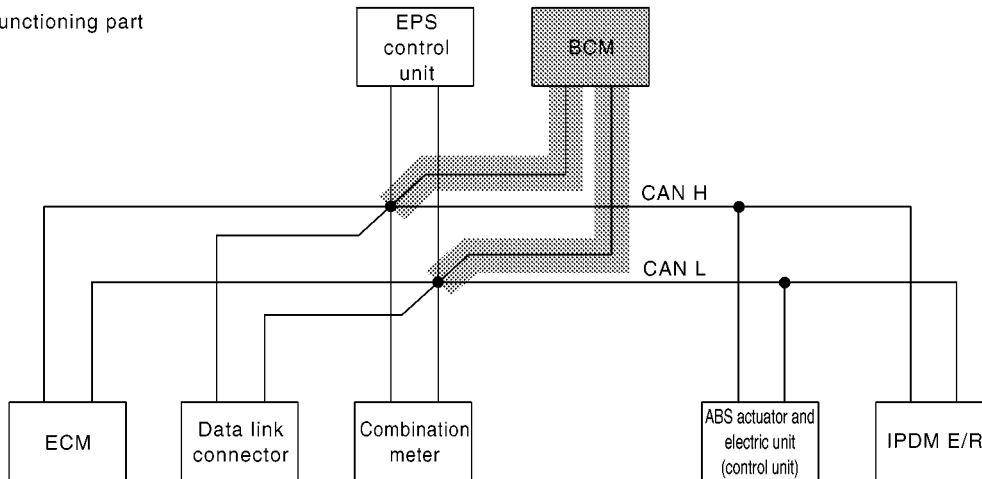
## Case 6

Check BCM circuit. Refer to [LAN-413, "BCM Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—

MKIB1910E

 : Malfunctioning part



MKIB1823E

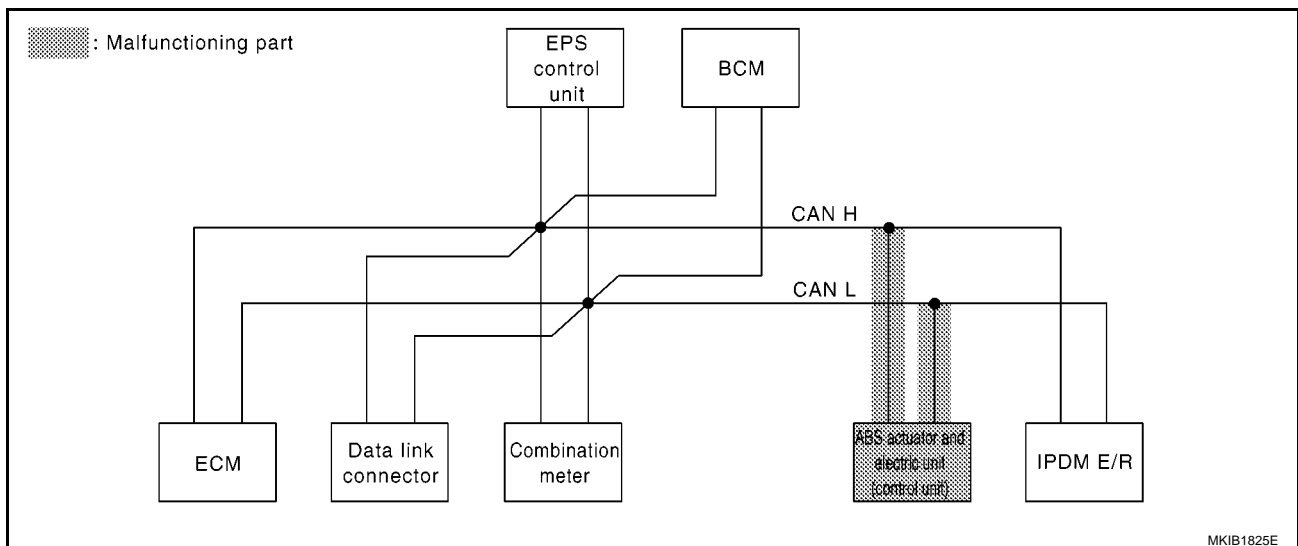


**Case 7**

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-414, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#).

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1911E




MKIB1825E

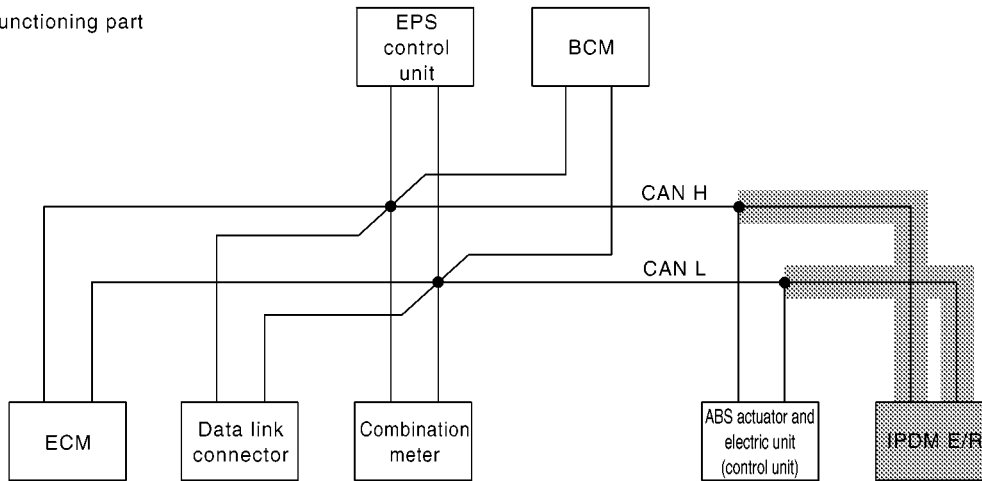
**Case 8**

Check IPDM E/R circuit. Refer to [LAN-415, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1912E

 : Malfunctioning part



MKIB1827E

**Case 9**

Check CAN communication circuit. Refer to [LAN-416, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication ✓	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication ✓	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG ✓	—	UNKWN ✓	—	—	—	—
IPDM E/R	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1913E

**Case 10**

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-419, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1914E

**Case 11**

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-419, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	METER /M&A	BCM/SEC	VDC/TCS /ABS	IPDM E/R
ENGINE	No indication	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
EPS	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—
BCM	No indication	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN
ABS	—	NG	—	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—

MKIB1915E

LAN

## Circuit Check Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit)

EKS00JQH

### 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 M1
  - Harness connector E101

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.
  - Harness connector M1
2. Check continuity between data link connector M17 terminals 6 (R), 14 (W) and harness connector M1 terminals 2C (R), 1C (W).

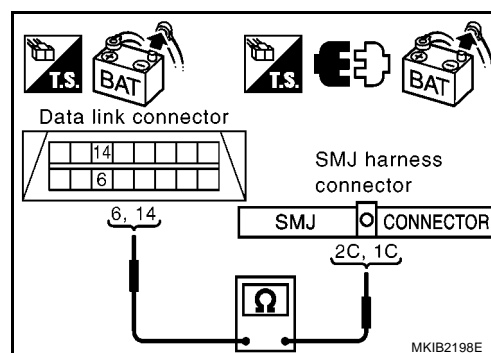
**6 (R) – 2C (R) : Continuity should exist.**

**14 (W) – 1C (W) : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

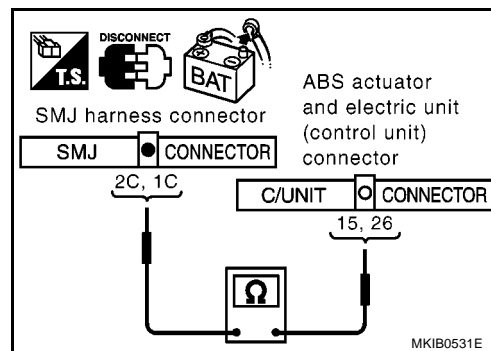
**2C (R) – 26 (R) : Continuity should exist.**

**1C (W) – 15 (W) : Continuity should exist.**

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-396, "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 M1
  - Harness connector E101

OK or NG

OK &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

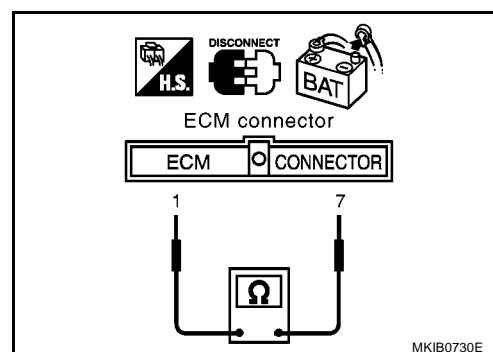
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E61 terminals 1 (R) and 7 (W).

**1 (R) – 7 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace ECM.

NG &gt;&gt; Repair harness between ECM 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 data link connector and terminals 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 M17 terminals 6 (R) and 14 (W).

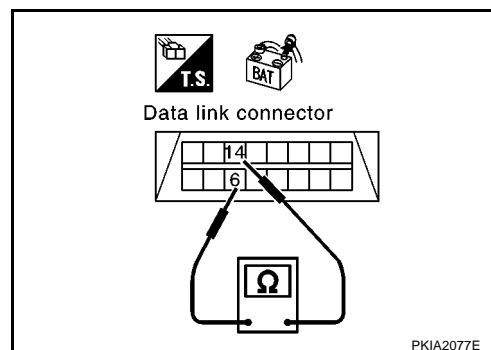
**6 (R) – 14 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Diagnosis again. Refer to [LAN-396, "Work Flow"](#) .

NG >> Repair harness between data link connector and combination meter



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

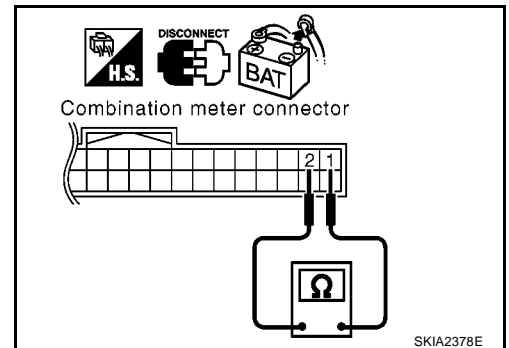
1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

**1 (R) – 2 (W)****: Approx. 54 – 66Ω**

OK or NG

OK &gt;&gt; Replace combination meter

NG &gt;&gt; Repair harness between combination meter and data link connector.



## EPS Control Unit Circuit Check

### 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS 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 EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

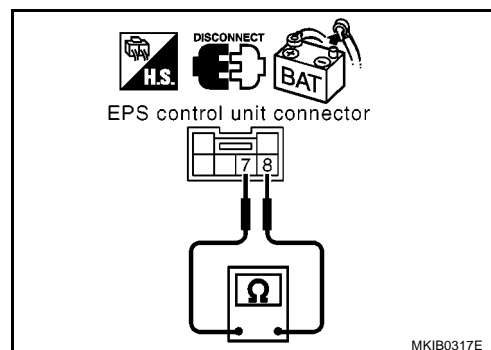
**8 (R) – 7 (W)**

**: Approx. 54 – 66Ω**

OK or NG

OK >> Replace EPS control unit.

NG >> Repair harness between EPS 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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

**2. CHECK HARNESS FOR OPEN CIRCUIT**

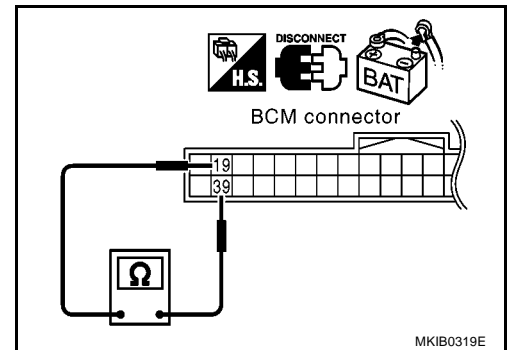
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

**19 (R) – 39 (W)****: Approx. 54 – 66Ω**

OK or NG

OK >> Replace BCM. Refer to [BCS-30, "Removal and Installation of BCM"](#).

NG &gt;&gt; Repair harness between BCM 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.

### 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 E45 terminals 26 (R) and 15 (W).

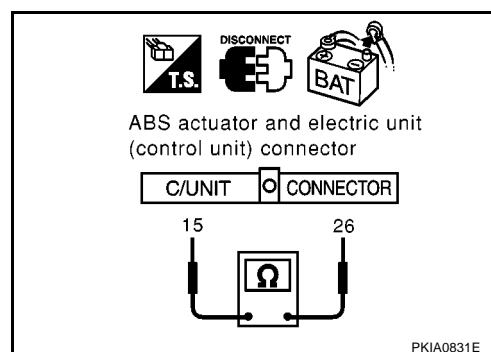
**26 (R) – 15 (W)**

**: Approx. 54 – 66Ω**

OK or NG

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

NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



**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 &gt;&gt; GO TO 2.

NG &gt;&gt; Repair terminal or connector.

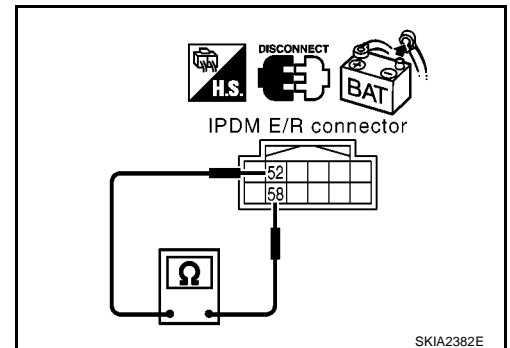
**2. CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

**52 (R) – 58 (W)****: Approx. 108 – 132Ω**OK or NG

OK &gt;&gt; Replace IPDM E/R.

NG &gt;&gt; Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).



A

B

C

D

E

F

G

H

I

J

LAN

L

M

## CAN Communication 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, meter side, control unit side and harness side).
  - ECM
  - Combination meter
  - EPS control unit
  - BCM
  - ABS actuator and electric unit (control unit)
  - IPDM E/R
  - Between ECM and IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK HARNESS FOR SHORT CIRCUIT

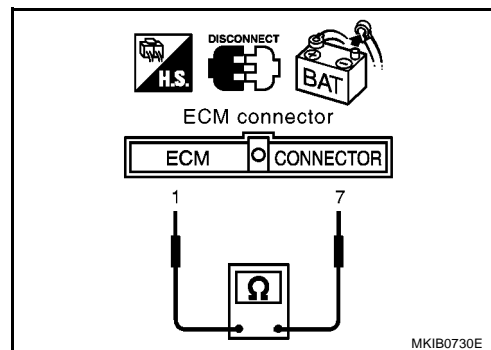
1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E61 terminals 1 (R) and 7 (W).

**1 (R) – 7 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness between ECM and harness connector E101.



### 3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E61 terminals 1 (R), 7 (W) and ground.

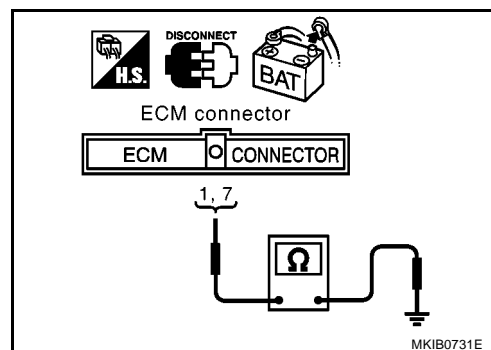
**1 (R) – Ground : Continuity should not exist.**

**7 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and harness connector E101.



#### 4. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
  - ABS actuator and electric unit (control unit) connector
  - IPDM E/R connector
- Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

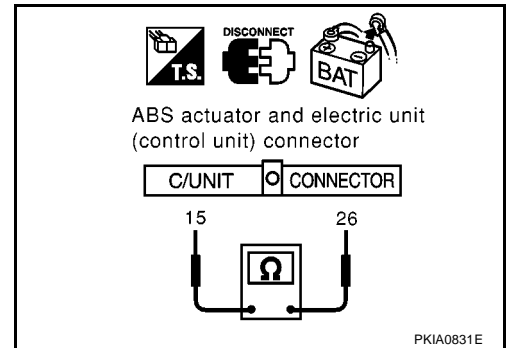
**26 (R) – 15 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



#### 5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

**26 (R) – Ground : Continuity should not exist.**

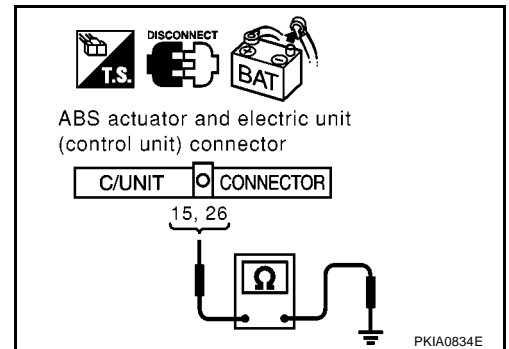
**15 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R



#### 6. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect following connectors.
  - Combination meter connector
  - EPS control unit connector
  - BCM connector
- Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

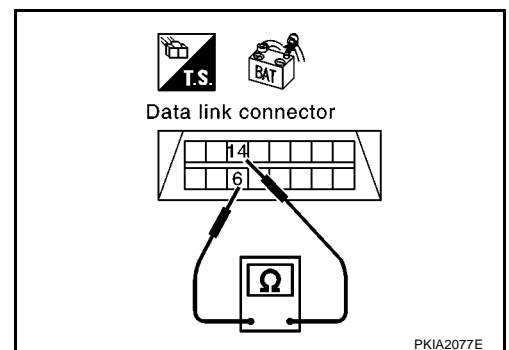
**6 (R) – 14 (W) : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

**6 (R) – Ground : Continuity should not exist.**

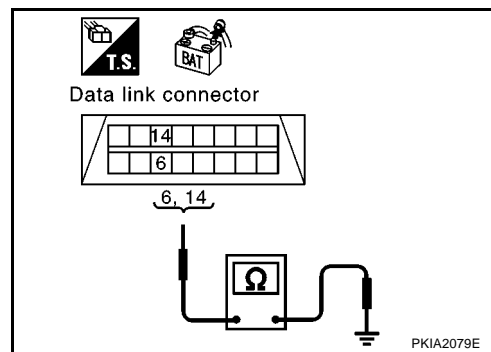
**14 (W) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.

- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM



## 8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-419, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnosis again. Refer to [LAN-396, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R.

**IPDM E/R Ignition Relay Circuit Check**

EKS00JQQ

Perform the self-diagnosis for IPDM E/R. Refer to [PG-49, "Inspection With CONSULT-II \(Self-Diagnosis\)"](#) . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to [PG-50, "IPDM E/R Power Supply and Ground Circuit Check"](#) .
- Ignition power supply circuit. Refer to [PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START" "](#) .

**Component Inspection**

EKS00JQR

**ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION**

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 1 and 7.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value ( $\Omega$ ) (Approx.)
ECM	1 – 7	108 - 132
IPDM E/R	52 – 58	

