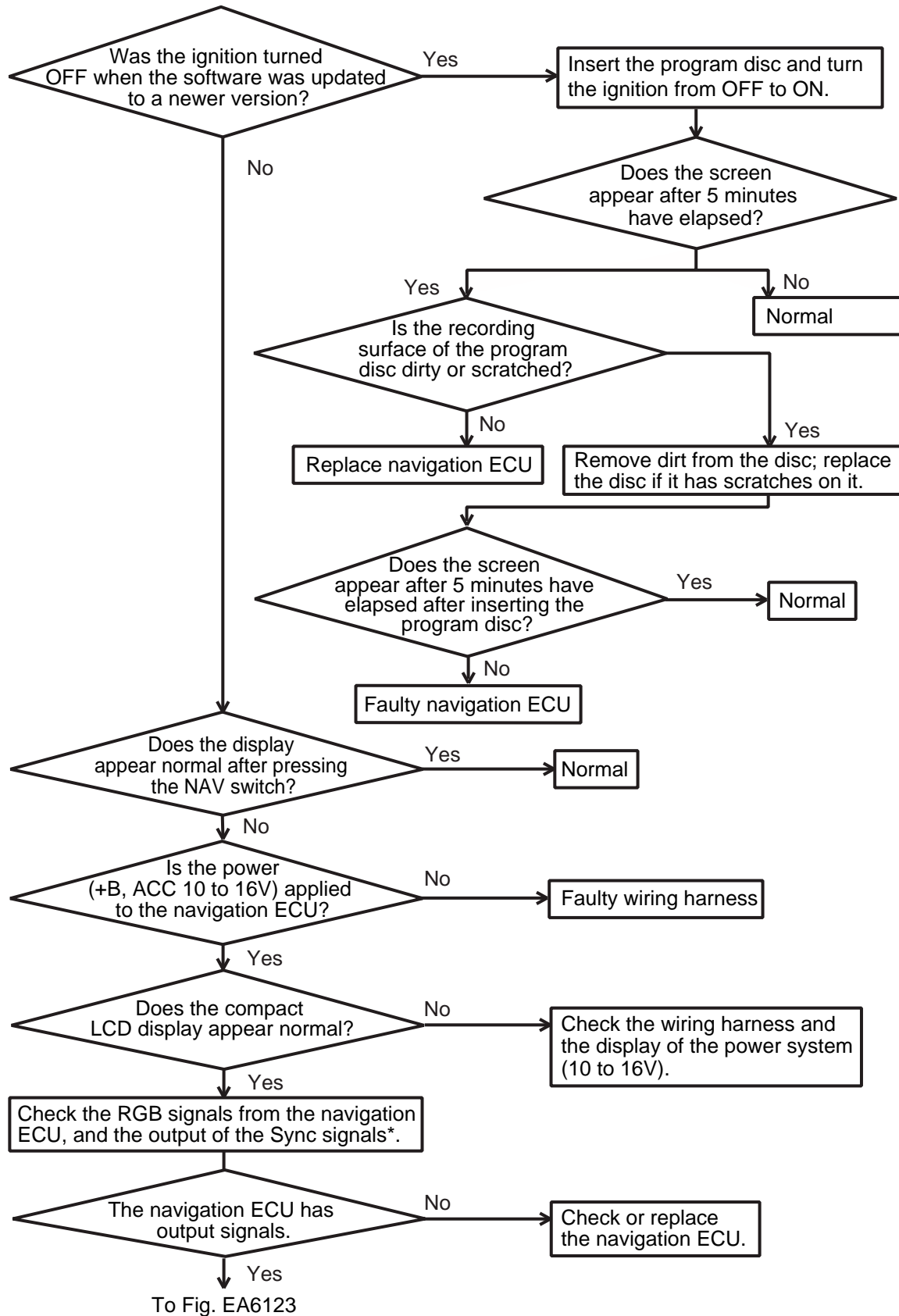
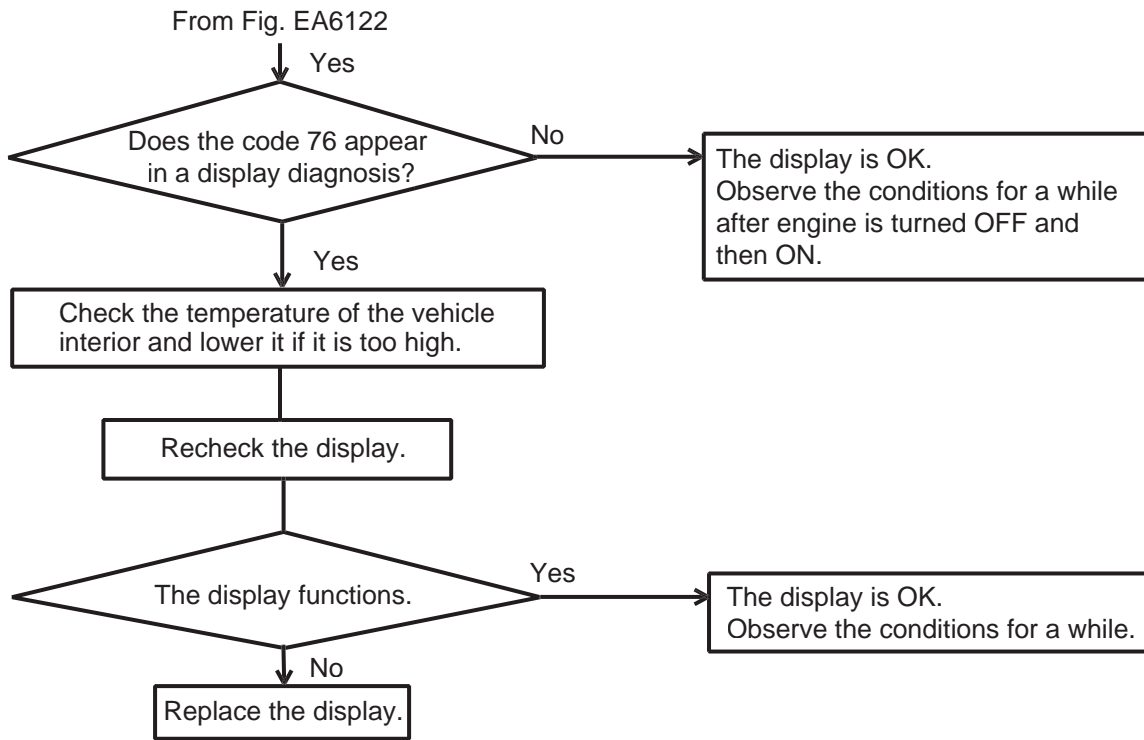
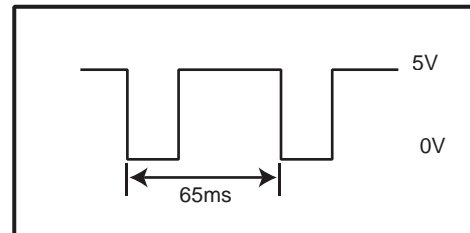


9.6 Nothing appears on the display (dark screen)





* SYNC output waveform



EX4176

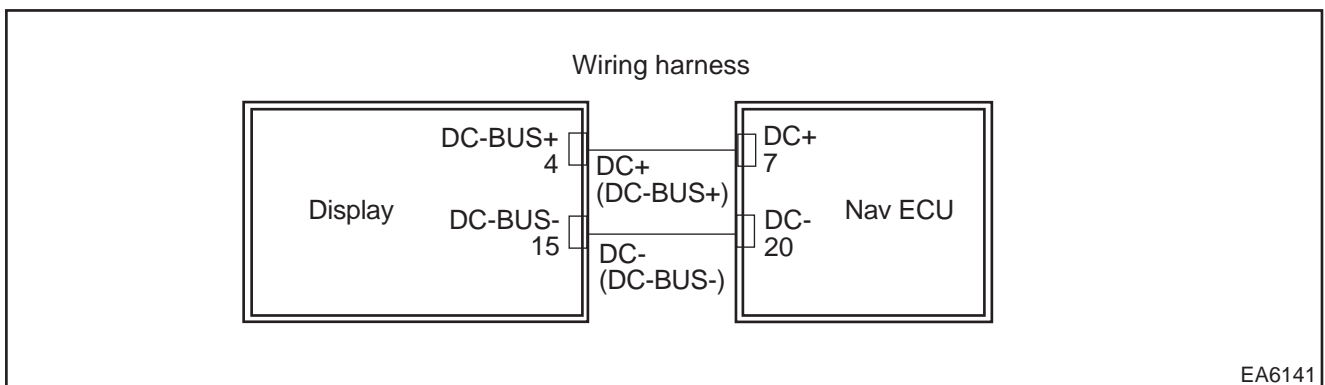
10.6 DTC: \$A208

DTC	Meaning of DTC	Area of malfunction	Detection condition
\$A208	[1] Regular communication malfunction between Nav ECU and display	<ul style="list-style-type: none"> • Nav ECU • Display • Wiring harness 	[1] Three consecutive failures in the regular communication between the Nav ECU and the display. The code is cleared when communication is resumed.
	[2] Nav ECU and display not connected		[2] Unable to establish initialization communication.

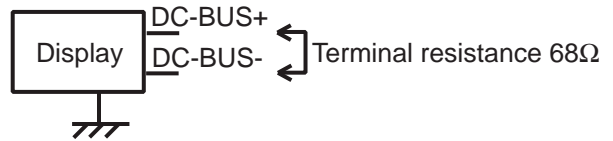
(1) Circuit description

This code appears when the communication between the Nav ECU and the display fails. Some of its symptoms are a pitch-black screen or the inability to operate the navigation system on the display. (Because the starting command is normally transmitted by the Nav ECU to the display, the screen will not turn on if the communication cannot be established.)

(2) Block diagram



Disconnect the wiring harness (at the connector), measure the resistance between DC-BUS+ and DC-BUS- at the display, and make sure that there is approximately 68Ω. (*1)



There is approximately 68Ω. No → Replace display.

Yes
Check between the navigation ECU wiring harness (DC+, DC-) and the body ground for continuity.

There is continuity to the body ground. Yes → Replace Nav ECU.

No
Check between each wiring harness (DC-BUS) and the ground for continuity.

There is continuity to the ground. Yes → Replace or repair the shorted wiring harness.

No
Check between the wiring harnesses for continuity (DC+ - DC- BUS+) (DC- - DC- BUS-)

There is continuity. No → Repair or replace the area with an open circuit.

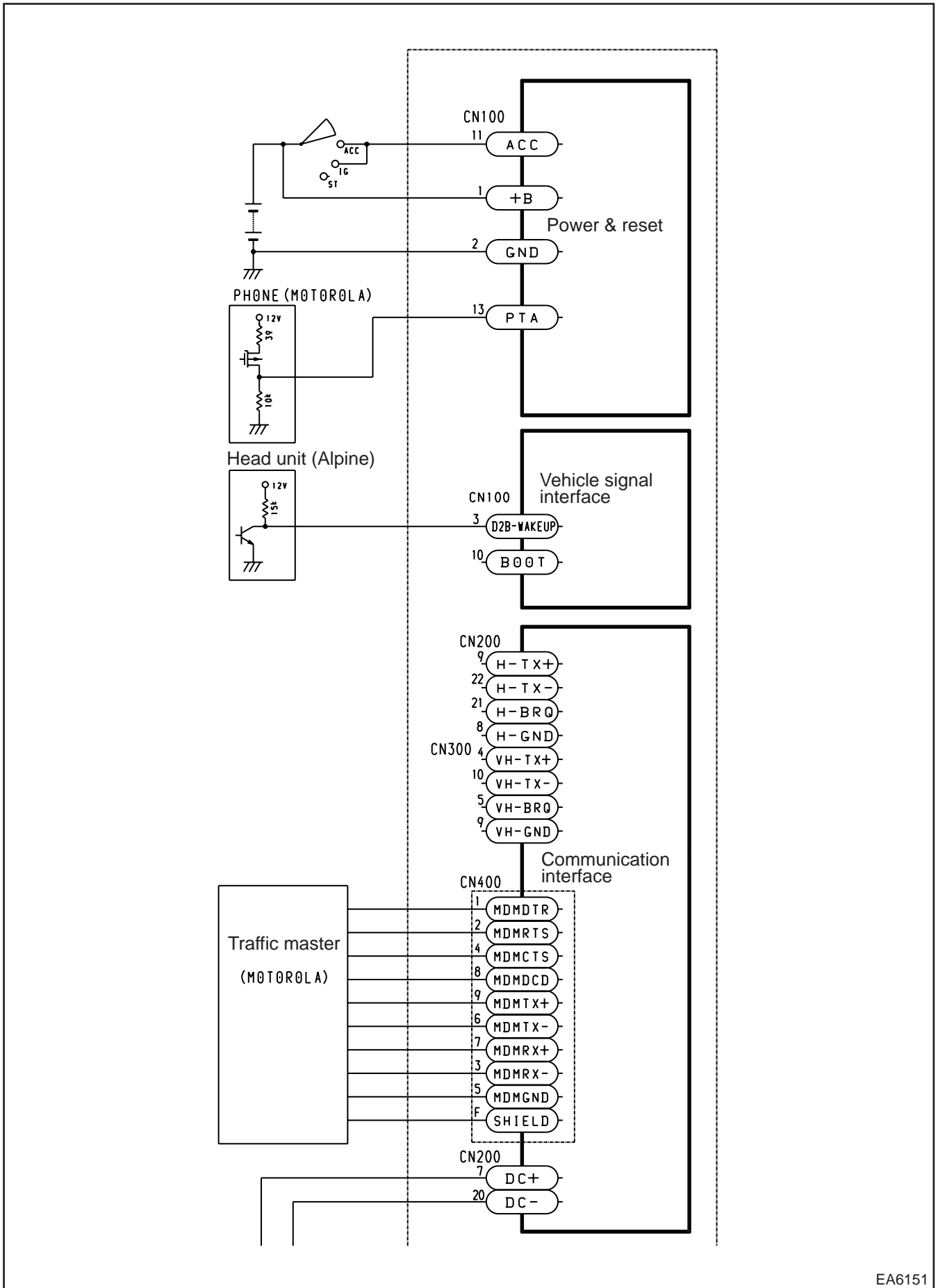
Yes
The code 50 or 51 appears on diagnosis screen of Small LCD display.

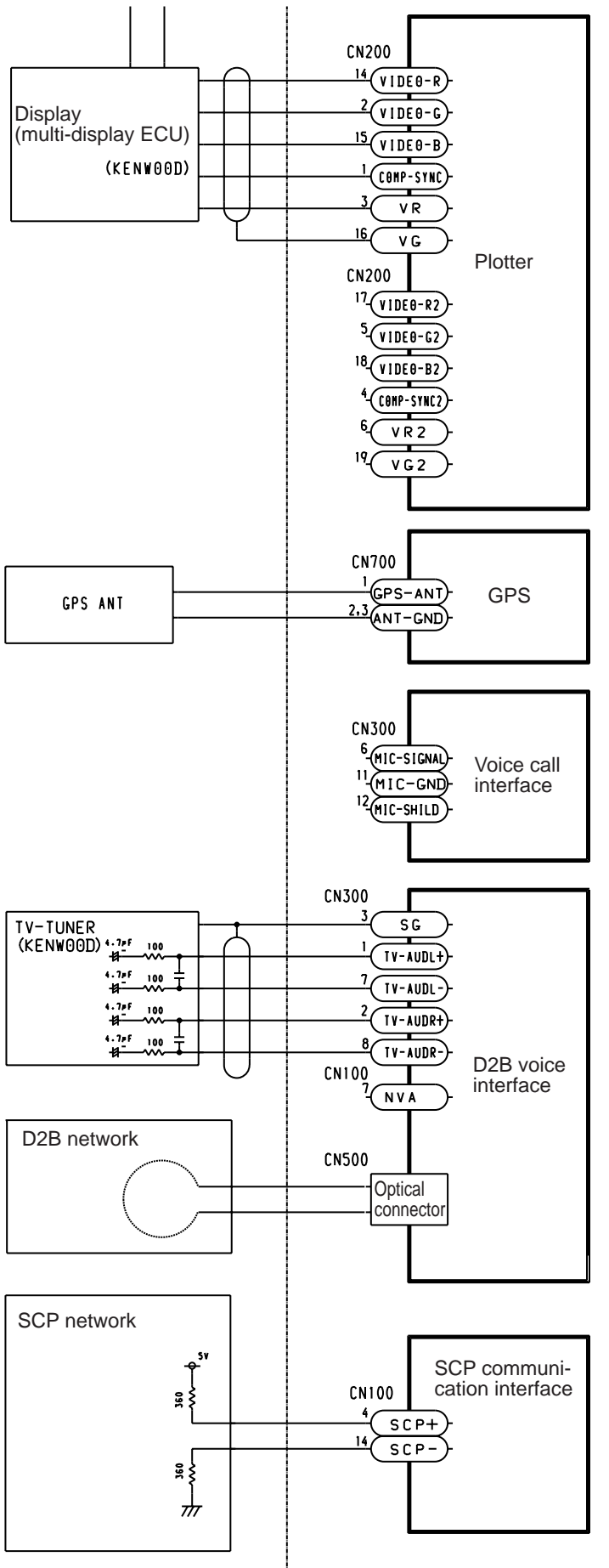
Yes → Replace Nav ECU.

No → Replace display.

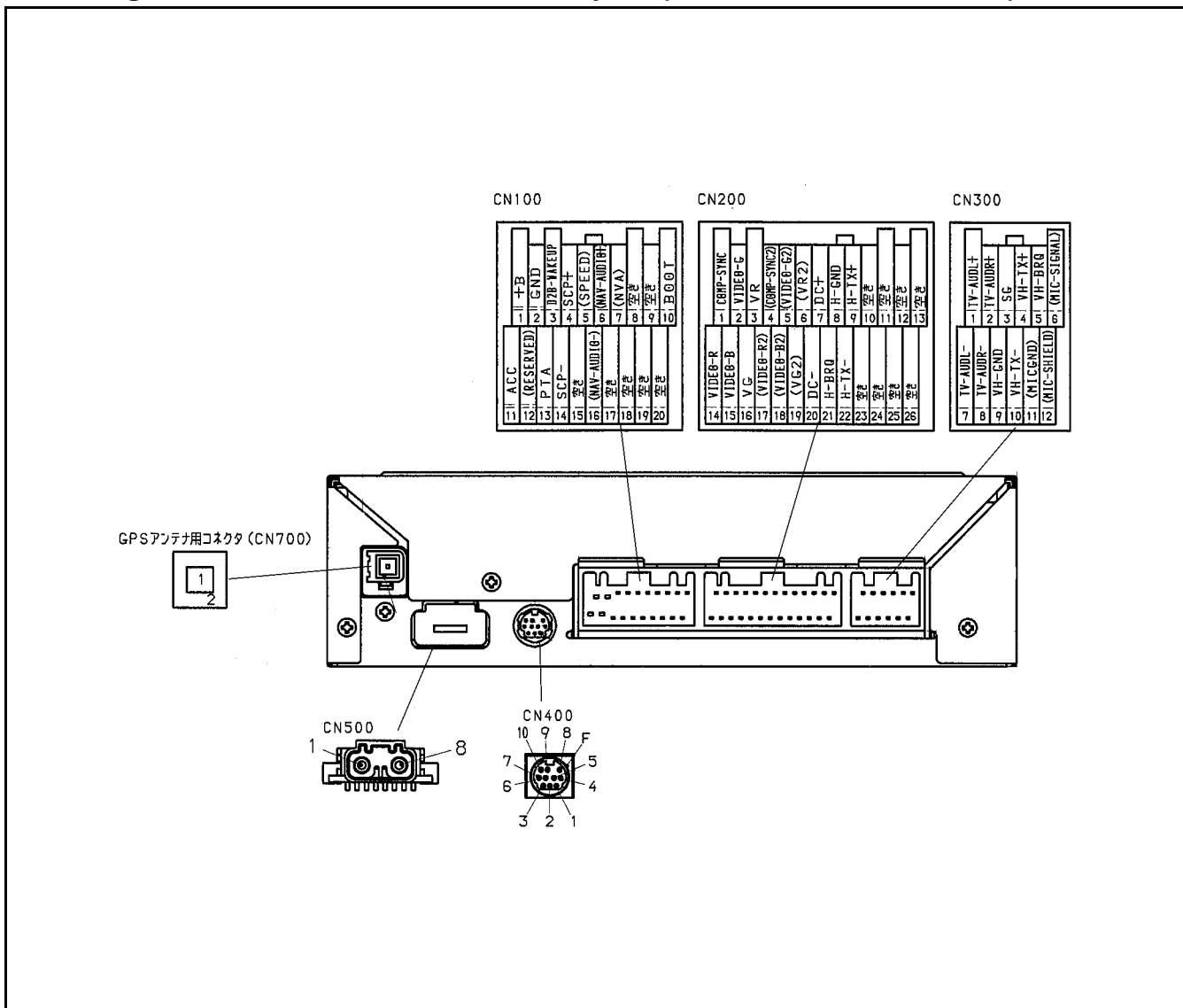
11. External Wiring Diagram

11.1 Navigation ECU External Wiring Diagram (DENSO P/N: 462100-811#)





11.2 Navigation ECU Connector Terminal Layout (DENSO P/N: 462100-811#)



Nav ECU connector (CN100)			
No.	Code	No.	Code
1	+B	11	ACC
2	GND	12	—
3	D2B WAKEUP	13	PTA
4	SCP+	14	SCP-
5	(SPEED)	15	—
6	(NAV-AUDIO+)	16	(NAV-AUDIO-)
7	(NVA)	17	—
8	—	18	—
9	—	19	—
10	BOOT	20	—

Nav ECU connector (CN300)			
No.	Code	No.	Code
1	TV-AUDL+	7	TV-AUDL-
2	TV-AUDR+	8	TV-AUDR-
3	SG	9	VH-GND
4	VH-TX+	10	VH-TX-
5	VH-BRQ	11	(MICGND)
6	(MIC-SIGNAL)	12	(MIC-SHIELD)

Nav ECU connector (CN200)			
No.	Code	No.	Code
1	COMP-SYNC	14	VIDEO-R
2	VIDEO-G	15	VIDEO-B
3	VR	16	VG
4	(COMP-SYNC2)	17	(VIDEO-R2)
5	(VIDEO-G2)	18	(VIDEO-B2)
6	(VR2)	19	(VG2)
7	DC+	20	DC-
8	H-GND	21	H-BRQ
9	H-TX+	22	H-TX-
10	—	23	—
11	—	24	—
12	—	25	—
13	—	26	—

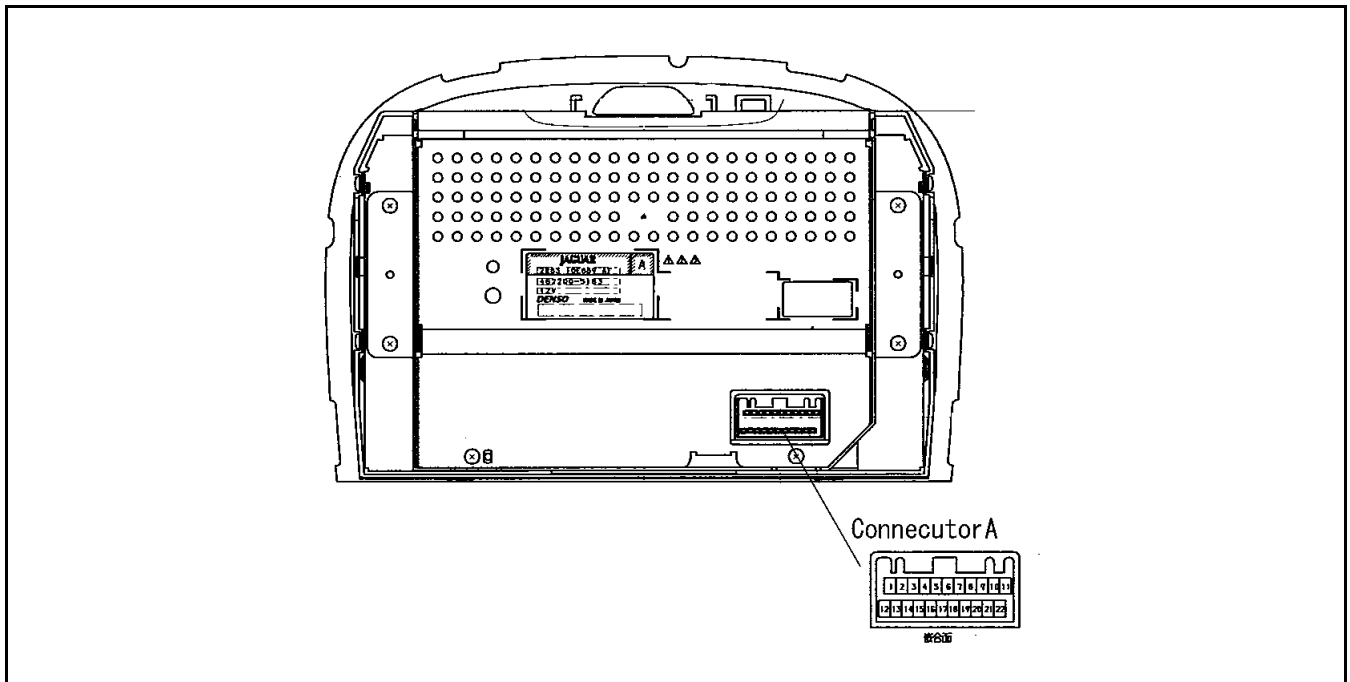
Trafficmaste connector (CN400)			
No.	Code	No.	Code
1	MDMDTR	7	MDMRX+
2	MDMRTS	8	MDMDCD
3	MDMRX-	9	MDMTX+
4	MDMCTS	10	NC
5	MDMGND	F	SHIELD
6	MDMTX-		

D2B connector (CN500)		
No.	Code	
1	TX	
2	RX	

GPS antenna connector (CN700)		
No.	Code	
1	RF+	
2	RF-	

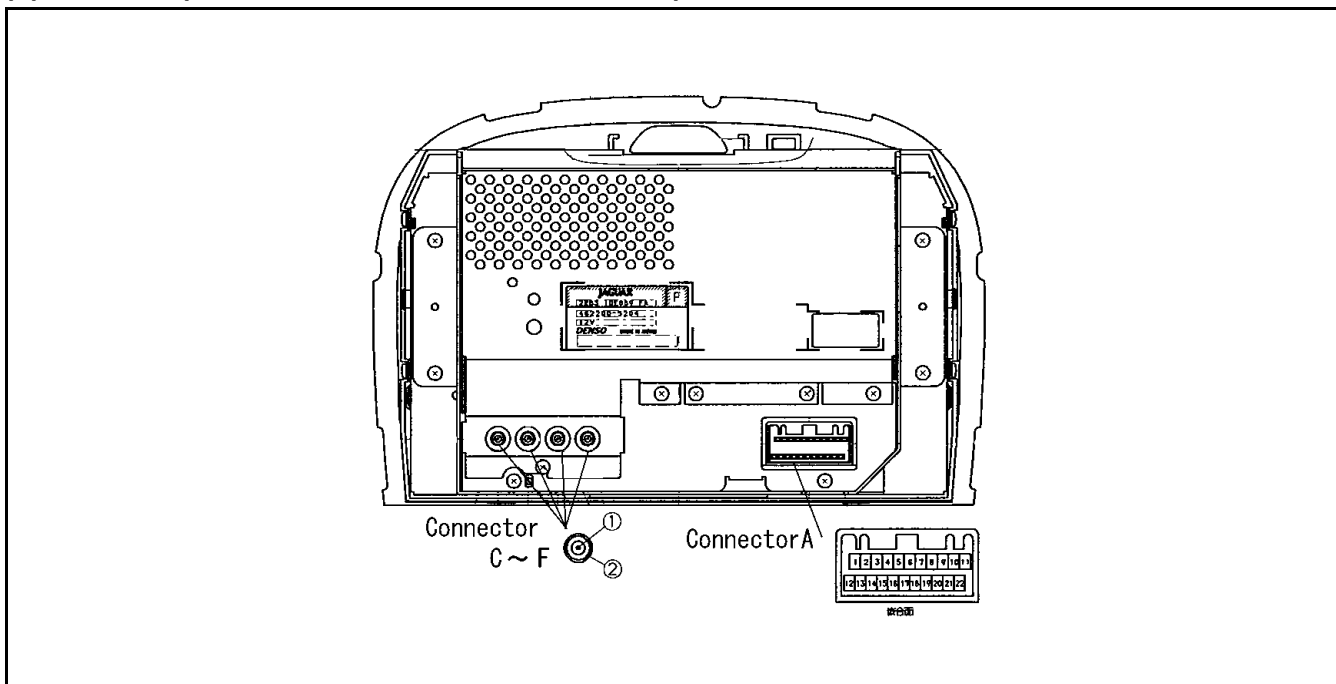
11.3 Display Connector Terminal Layout

(1) Without TV (DENSO P/N: 462200-518#, -519#)



Connector A					
No.	Code	I/O	No.	Code	I/O
1	+B	I	12	GND	—
2	ACC	I	13	GND	—
3	—		14	—	
4	NAV-DC-BUS+	I/O	15	NAV-DC-BUS-	I/O
5	NAV-VG	—	16	SECURITY	O
6	NAV-R	I	17	NAV-B	I
7	NAV-G	I	18	NAV-SYNC	I
8	V-SG	—	19	—	
9	ILL	I	20	—	
10	PTA	I	21	—	
11	(SG)	—	22	—	

(2) With TV (DENSO P/N: 462200-520#, -521#)



No.	Code	I/O
1	+B	I
2	ACC	I
3	—	—
4	NAV-DC-BUS+	I/O
5	NAV-VG	—
6	NAV-R	I
7	NAV-G	I
8	V-SG	—
9	ILL	I
10	PTA	I
11	SG	—

No.	Code	I/O
1	ANT-IN	I/O
2	ANT. IN. GND	—

12. Specifications

12.1 Navigation ECU

Item	Rating
Rated Voltage	13.2V
Operating Voltage Range	10 – 16V
Operating Temperature Range	-10 – +65°C
Consumption Current	1.8A max. (at 13.2V)
Storage Temperature Range	-40 – +80°C

12.2 Display

Item	Rating
Rated Voltage	13.2V
Operating Voltage Range	10.5 – 16V
Operating Temperature Range	-30 – +65°C
Consumption Current	4.0A (+B, ACC=13.2V)