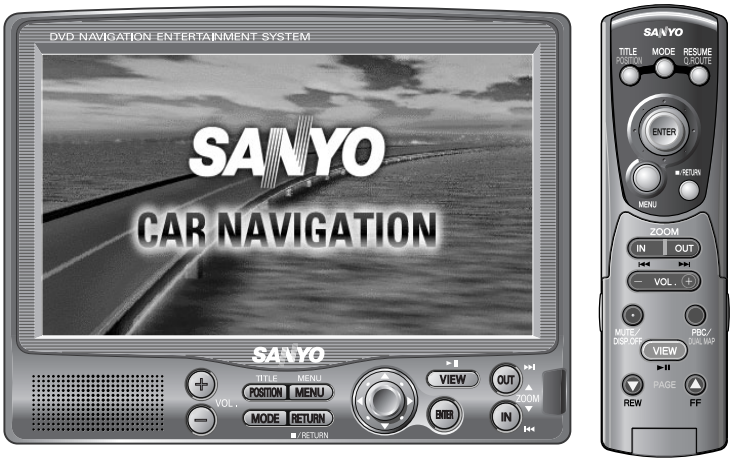
SANYO

FILE NO.

SERVICE MANUAL

Portable DVD Navigation System

NV-E7000
(U.S.A.)



DVD ROM/VIDEO COMPACT disc DIGITAL AUDIO DOLBY DIGITAL dts DIGITAL OUT MP3

PRODUCTCODENo.
949 005 03

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REFERENCE No. SM590496

MONITOR

Type Liquid crystal color monitor
Drive system TFT active matrix system
Screen size 7V type
Light source Cold cathode tube

NAVIGATION

GPS antenna Micro-strip flat antenna
Reception frequency 1575.42MHz (C/A cord)
Reception system 18 channels parallel
Reception sensitivity –130dBm
Updating Interval About 1 second
Format Original DVD format

DVD VIDEO/CD PLAYER

Made for the following disc type:
- DVD video
- Music CD (CD-DA)

5 inch (12 cm) and 3 inch (8 cm) diameter
Reading format Non-contact optical reading (using a semiconductor laser)
Frequency range 20Hz to 20kHz (+1.0dB to –2.0dB)
S/N ratio 85dB or more
High harmonic distortion 0.1% or less
Dynamic range 88dB or more
Wow and flutter Within or under the measurement limit

I/O TERMINAL

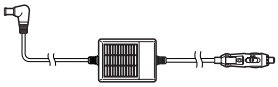
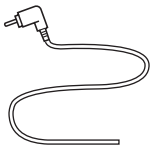
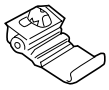
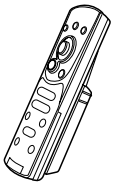
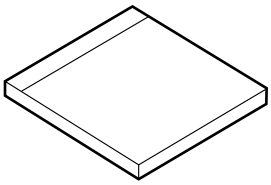
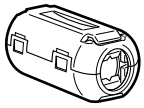
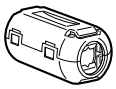
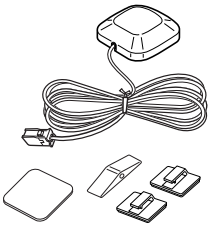
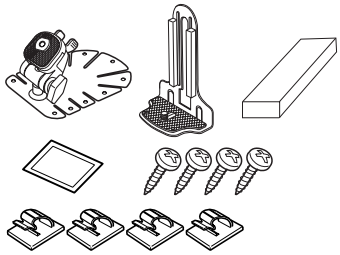
Expansion output terminal
14 pin connector
Power supply input terminal
DC 9V (EIAJ terminal)
GPS exterior antenna input terminal
GPS connector
Brake terminal Mini-jack
Headphone output terminal
Stereo mini-jack
Video I/O terminal Mini-jack
Audio I/O terminal/ optic digital audio output terminal
stereo mini-jack/optic mini-jack
S video output terminal S terminal

OTHER

Power source AC 120V, 60Hz
DC 12V
Current 2.0A (when using DC-DC)
Power consumption
18W (when using the navigation system)
Temperature range
32 to +122°F (0 to +50°C)
(when in NAVI or VIDEO mode)
41 to +95°F (+5 to +35°C)
(when in DVD mode)
Exterior dimensions
About 175X42X137mm
(width x height x depth)
*excluding projections
Weight About 800g (main unit only)

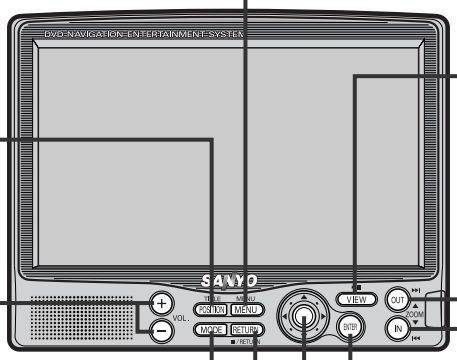
* The specifications and design of this unit are subject to change for improvements without prior notification.
* The V-type monitor screen size (7V type) is a standard based on the dimensions necessary for an effective screen.

ACCESSORIES

12V cigarette lighter connector cable	AC/DC adapter	Parking brake connector cable	Self-lock connector
			
1 cable	1 cable	2 cables	2 clips
Remote control and holder	Velcro tape	Tapping screw (M3x8)	AAA battery
			
Each 1	1 pair	2 screws	2 batterys
Map DVD-ROM	RCA cord (when in AUDIO mode)	RCA cord (when in VIDEO mode)	Core (Large)
			
1 disc	1 cable	1 cable	1 core
Core (Small)	GPS Exterior Antenna and Installation Parts	Kit for Installation	
			
1 core			

DVD VIDEO/CD OPERATION

MAIN UNIT



MENU button
- Pressing while the DVD disc is being played back will move the display to the menu screen.
- Pressing for over 1.5 seconds will switch to image adjustment mode.

PLAY/PAUSE button (►II)
- Press to start playback.
- Pressing while playing back will pause the video and sound. Press again to resume playback.

TITLE button
Pressing this button while a DVD disc is being played back will change the screen into the title menu.

VOL. button
– : reduce volume,
+ : increase volume

MODE button
Every time this button is pressed, the screen switches from the NAVI to the DVD to the VIDEO mode.

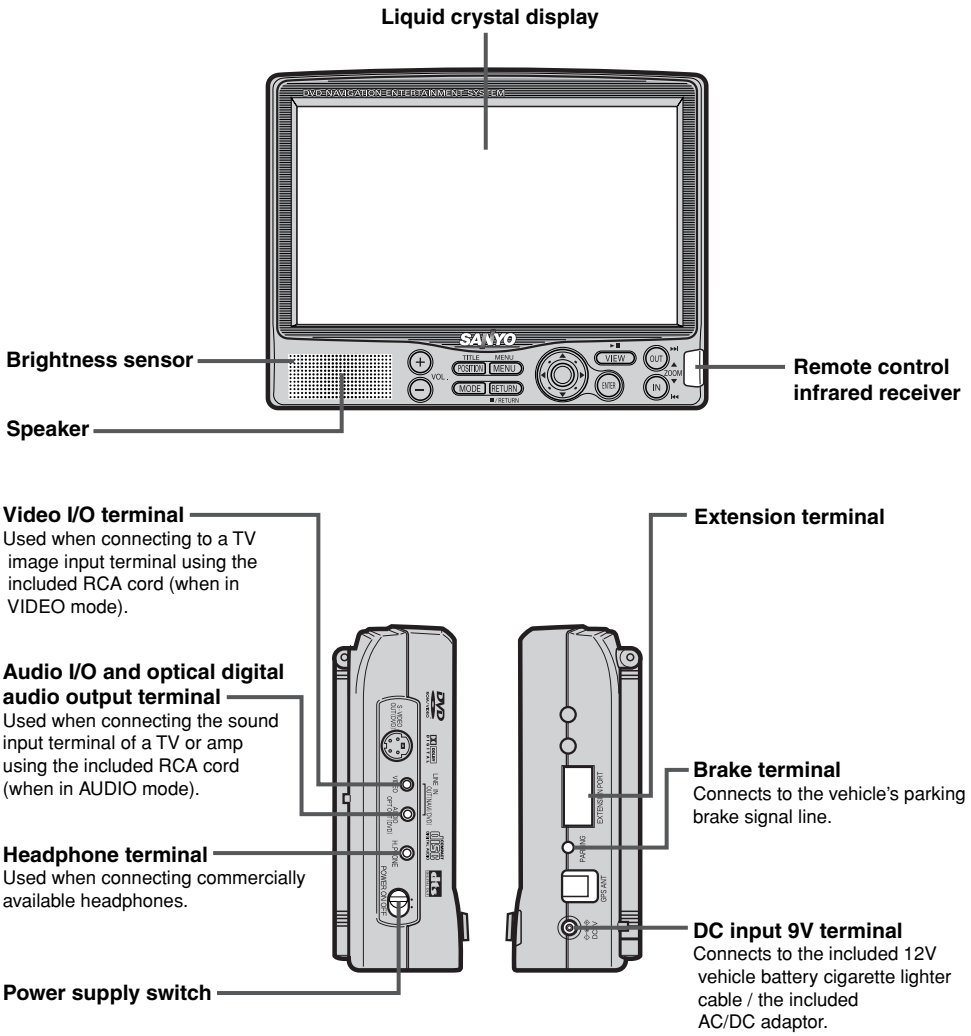
SKIP button (I◄◄/►►I)
Used for chapter/track/image back/image forward while the disc is played back.

RETURN button
- This button returns the display to the previous selection screen when effectuating initial settings.
- Pressing while in image adjustment mode will cancel that mode.

ENTER button
- This button executes the item selected on the screen.

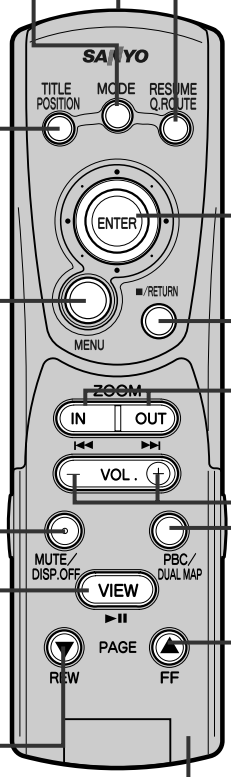
Joystick (✣)
- Used to select items on the screen.
- When in image adjustment mode, use the vertical Joystick (⇕) to select items to adjust and the lateral joystick (⇔) to perform the adjustment.

STOP button (■)
Pressing while playing back will stop playback.


Liquid crystal display
DVD NAVIGATION ENTERTAINMENT SYSTEM
SANYO
Brightness sensor
Speaker
Remote control infrared receiver
Video I/O terminal
Used when connecting to a TV image input terminal using the included RCA cord (when in VIDEO mode).
Audio I/O and optical digital audio output terminal
Used when connecting the sound input terminal of a TV or amp using the included RCA cord (when in AUDIO mode).
Headphone terminal
Used when connecting commercially available headphones.
Power supply switch
Extension terminal
Brake terminal
Connects to the vehicle's parking brake signal line.
DC input 9V terminal
Connects to the included 12V vehicle battery cigarette lighter cable / the included AC/DC adaptor.

DVD VIDEO/CD OPERATION

REMOTE CONTROL



RESUME button
After having displayed the menu screen while the DVD disc is playing back, press this button to resume playback starting at the place before the menu screen was displayed.

Remote control infrared transmitter

JOYSTICK (✣)
- Used to select items on the screen.
- When in image adjustment mode, use the vertical joystick (↕) to select items to adjust and the lateral joystick (↔) to perform the adjustment.

MODE button
Every time this button is pressed, the screen switches from the NAVI to the DVD to the VIDEO mode.

ENTER button
- This button executes the item selected on the screen.

TITLE button
Pressing this button while a DVD disc is being played back will change the screen into the title menu.

RETURN button
- This button returns the display to the previous selection screen when effectuating initial settings.
- Pressing while in image adjustment mode will cancel that mode.

MENU button
- Pressing while the DVD disc is playing back will move the display to the menu screen.
- Pressing for over 1.5 seconds will switch to the image adjustment mode.

STOP button (■)
Pressing while playing back will stop playback.

SKIP button (⏮/⏭)
Used for chapter/track/image back/image forward while the disc is played back.

MUTE button
- This cuts the sound output. Press again to return the sound.
- Press over 2 seconds to erase the screen. Press again for over 2 seconds to redisplay the screen.

VOL. button
– : reduce volume,
+ : increase volume

PBC button
For JPEG imaging, select the slideshow display format.

PLAY/PAUSE button (► II)
- Press to start playback.
- Pressing while playing back will pause the image and sound. Press again to resume playback.

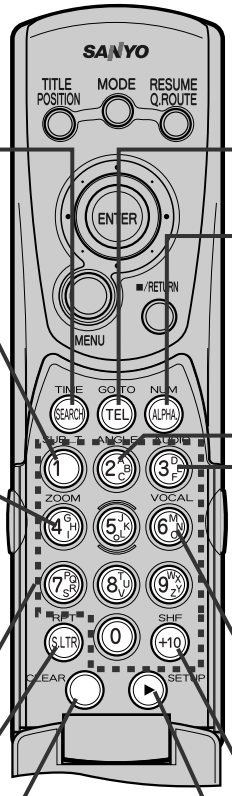
FF button
- Fast-forwards the image at certain speeds.
- Pressing while the image is paused will fast-forward slowly (when in DVD video mode only).

REW button
- Rewinds the image at certain speeds.
- Pressing while the image is paused will rewind slowly (when in DVD video mode only).

Flip-top

10-KEY

Flip-top opened



TIME button
This button displays the playback time on the top left corner of the screen.

SUB_T button
(only when playing back DVD video discs)
Every time this button is pressed, the subtitle language item is switched from the list of languages recorded in the disc.

ZOOM button
- For DVD video discs
  Every time this button is pressed, the screen zooms up 1.5, 2 and 4 times magnification.
- For JPEG imaging
  Toggles between ZOOM ON and OFF.

10-key button
Used when inputting numeric values.

RPT button
Every time this button is pressed, the repeat mode is switched.

CLEAR button
Used to correct values when inputting numbers using the 10-key buttons.

GO TO button
Displays the chapter search and time search selection screens.

NUM button
This button displays the 10-key numerical value input screen.

ANGLE button
(only when playing back DVD video discs)
Every time this button is pressed, the angle is switched.

AUDIO button
(only when playing back DVD video discs)
Every time this button is pressed, the voice language item is switched from the list of languages recorded in the disc.

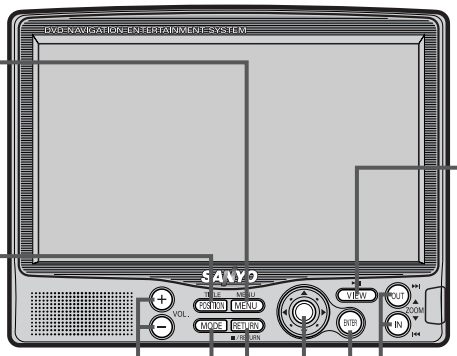
VOCAL button
(CD)
The sound output is switched every time this button is pressed.

SHF button
(only when in CD mode)
This button is to select shuffle playback.

SETUP button
Press this button to display the initial settings screen and setup key.

OPERATING THE NAVIGATION UNIT

MAIN UNIT



MENU button
- Displays the menu screen.
- Pressing for over 1.5 seconds will switch to the image adjustment mode.

POSITION button
Displays the present location map.

VOL. button
– : reduce volume, + : increase volume

MODE button
The screen will switch from the NAVI mode to the DVD mode to the VIDEO mode (only with a video deck/video camera connected) every time this button is pressed.

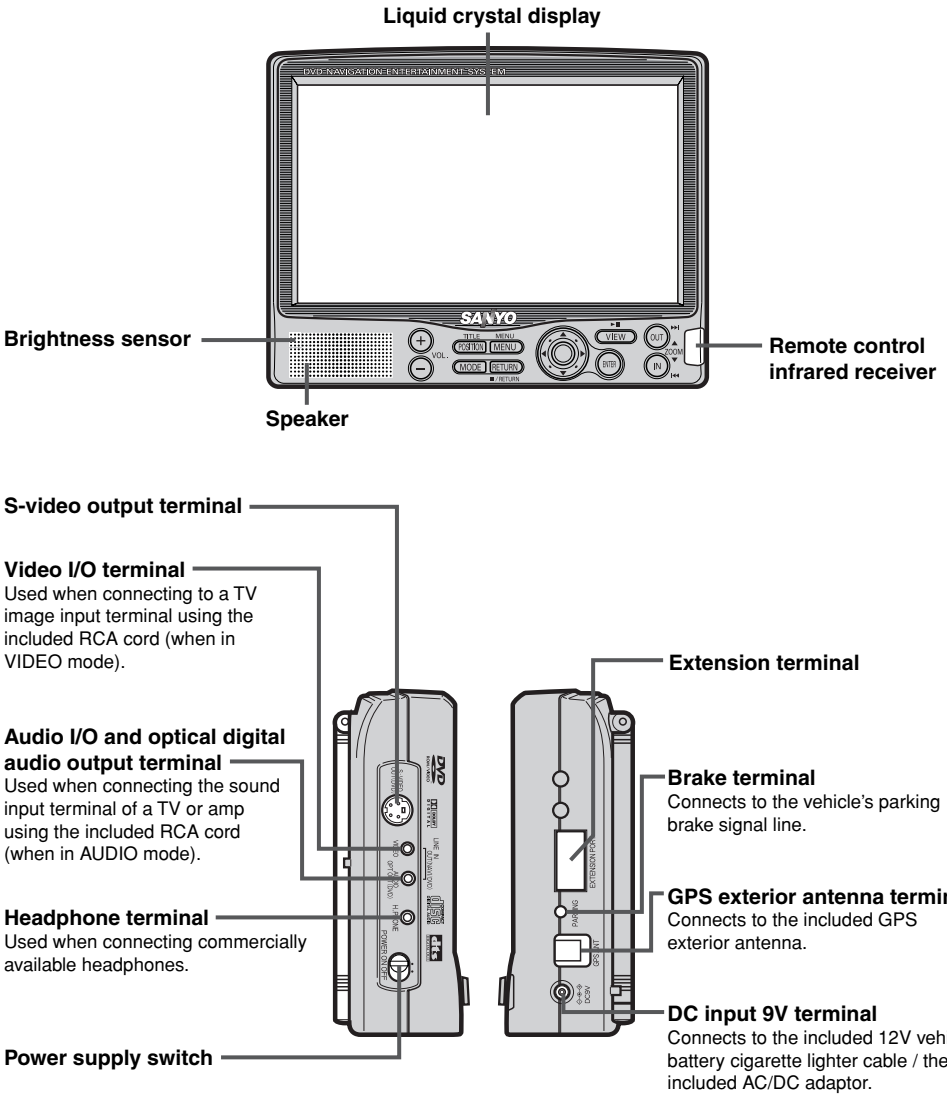
RETURN button
- Press this button to move the display back one screen when using the menu.
- Pressing while in image adjustment mode will cancel that mode.

View button
Every time this button is pressed, the map display switches from 3D view to planimetric map (North Up) to planimetric map (Heading Up).

IN button / OUT button
IN/OUT buttons
Enlarge (IN)
Reduce (OUT)

ENTER button
- This button executes the item selected on the screen.
- Press while the screen is displaying a map and a quick menu will appear.

JOYSTICK (✱)
- Used when changing the position display map and when selecting items appearing on the screen.
- When in image adjustment mode, use the vertical joystick (↕) to select items to adjust and the lateral joystick (↔) to perform the adjustment.


Liquid crystal display
DVD NAVIGATION ENTERTAINMENT SYSTEM
SANYO
Brightness sensor
Speaker
Remote control infrared receiver
S-video output terminal
Video I/O terminal
Used when connecting to a TV image input terminal using the included RCA cord (when in VIDEO mode).
Audio I/O and optical digital audio output terminal
Used when connecting the sound input terminal of a TV or amp using the included RCA cord (when in AUDIO mode).
Headphone terminal
Used when connecting commercially available headphones.
Power supply switch
Extension terminal
Brake terminal
Connects to the vehicle's parking brake signal line.
GPS exterior antenna terminal
Connects to the included GPS exterior antenna.
DC input 9V terminal
Connects to the included 12V vehicle battery cigarette lighter cable / the included AC/DC adaptor.

OPERATING THE NAVIGATION UNIT

REMOTE CONTROL

MODE button
The screen will switch from the NAVI mode to the DVD mode to the VIDEO mode (only with a video deck/video camera connected) every time this button is pressed.

POSITION button
Displays the present location map.

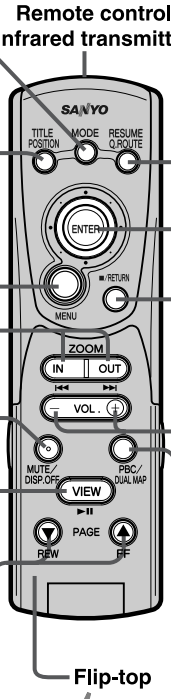
MENU button
- Displays the menu screen.
- Pressing for over 1.5 seconds will switch to the image adjustment mode.

IN button / OUT button
IN/OUT buttons Enlarge (IN) Reduce (OUT)

MUTE button
- This cuts the sound output. Press again to return the sound.
- Press over 2 seconds to erase the screen. Press again for over 2 seconds to redisplay the screen.

View button
Every time this button is pressed, the map display switches from 3D view to planimetric map (North Up) to planimetric map (Heading Up).

PAGE button
Press for the next/previous page when the display is incomplete on only one screen.



Q.ROUTE button
Used for a quick route search.

Joystick (✱)
- Used when changing the position display map and when selecting items appearing on the screen.
- When in image adjustment mode, use the vertical Joystick (⬍) to select items to adjust and the lateral Joystick (⬌) to perform the adjustment.

ENTER button
- This button executes the item selected on the screen.
- Press while the screen is displaying a map and a quick menu will appear.

RETURN button
- Press this button to move the display back one screen when using the menu.
- Pressing while in image adjustment mode will cancel that mode.

VOL. button
– : reduce volume, + : increase volume

DUAL MAP button
Every time this button is pressed, the screen toggles between double screen display and full screen display.

Flip-top opened

SEARCH button
- Pressing this button when the telephone number input screen is displayed will show the map that corresponds with the inputted number.
- Pressing when the ABC input screen is displayed will start a search for the inputted point of interest or geographic name.

TEL button
This button displays the telephone number input screen when searching for a destination by telephone number.

ALPHA button

10-key and editing button
Used when inputting alphanumerically.

How to remove the PCB - ML,MAIN, DVD MECHANISM,MDVC07 and PCB - ML,DVD.
[Refer to figures 1,2,3]

1.Remove 4 screws A which fasten the REAR CABINET ASSY, and the Hook.
Remove FFC,28P which is connected to the PCB - ML,MAIN and PCB - W,LCD.

2.Remove 6 screws B which fasten the PCB - ML,MAIN.
Remove the LEAD WIRES placed on the PCB - ML,DVD side, and FPC.
The PCB - ML,MAIN can be removed.

3.Remove the 3 SPECIAL SCREWS C which fasten the DVD MECHANISM,MDVC07.
Remove FFC,50P which is connected to the DVD MECHANISM,MDVC07 and PCB - ML,DVD.
The DVD MECHANISM,MDVC07 can be removed.

4.Remove 8 screws D which fasten the PCB- ML,DVD.
Remove the solder of 2 LEAD WIRES placed on the FAN,MOTOR,DC side.
The PCB - ML,DVD can be removed.

How to remove the PCB- W,LCD [Refer to figures 2]

1.Remove the 2 screws E which fasten the BRACKET, LCD.
2.Remove the solder of 2 LEAD WIRES placed on the SPEAKER side.
The PCB- W,LCD can be removed.

How to remove the PCB - W,KEY. [Refer to figures 2,4]

1.Remove the BUTTON, SCROLL.
2.Remove the 2 screws F which fasten the BRACKET, LCD.
3.Remove FFC,6P.
4.Remove the solder of 3 LEAD WIRES placed on the PCB- W,SENSOR side.
5.Remove the 5 screws G which fasten the PCB - W,KEY.
The PCB- W,KEY can be removed.

How to remove the PCB- W,SENSOR. [Refer to figure 4]

1.Remove SPECIAL SCREW H which fasten the PCB- W,SENSOR.
2.Remove the solder of 3 LEAD WIRES placed on the PCB- W,KEY side.
The PCB- W,SENSOR can be removed.

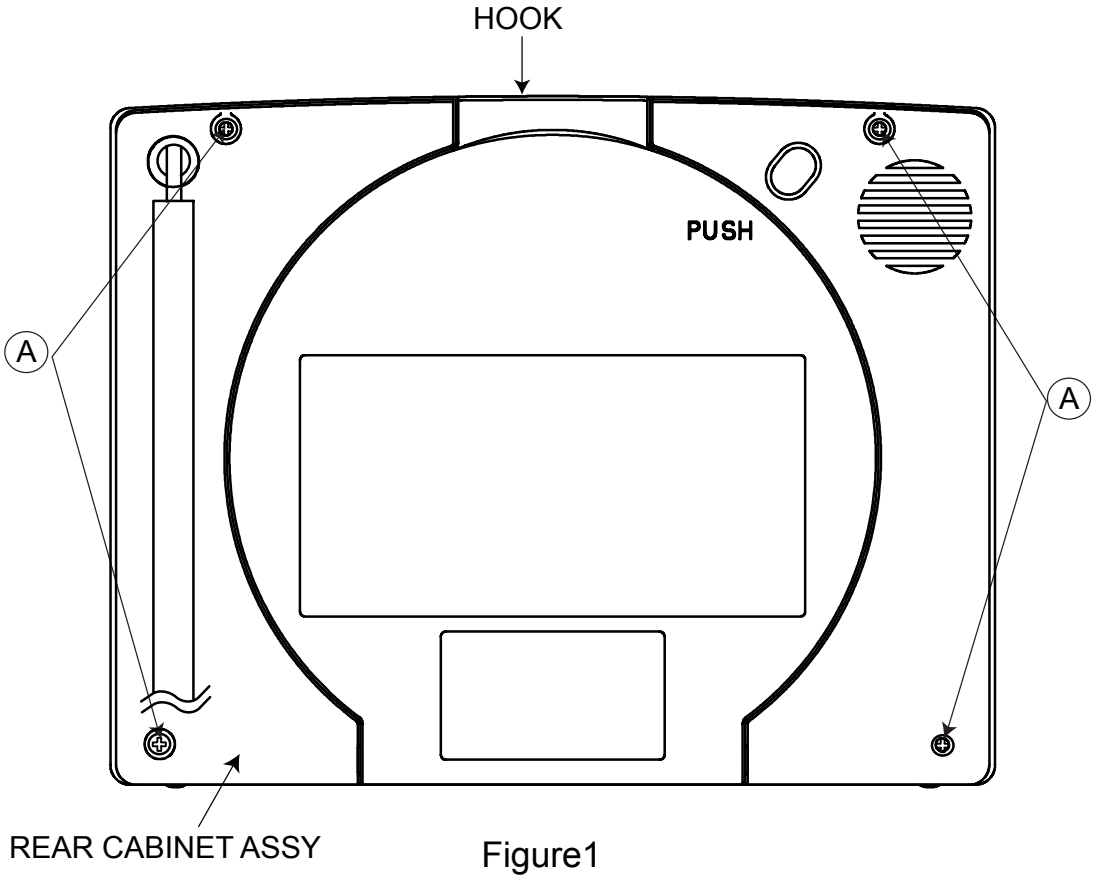


Figure1

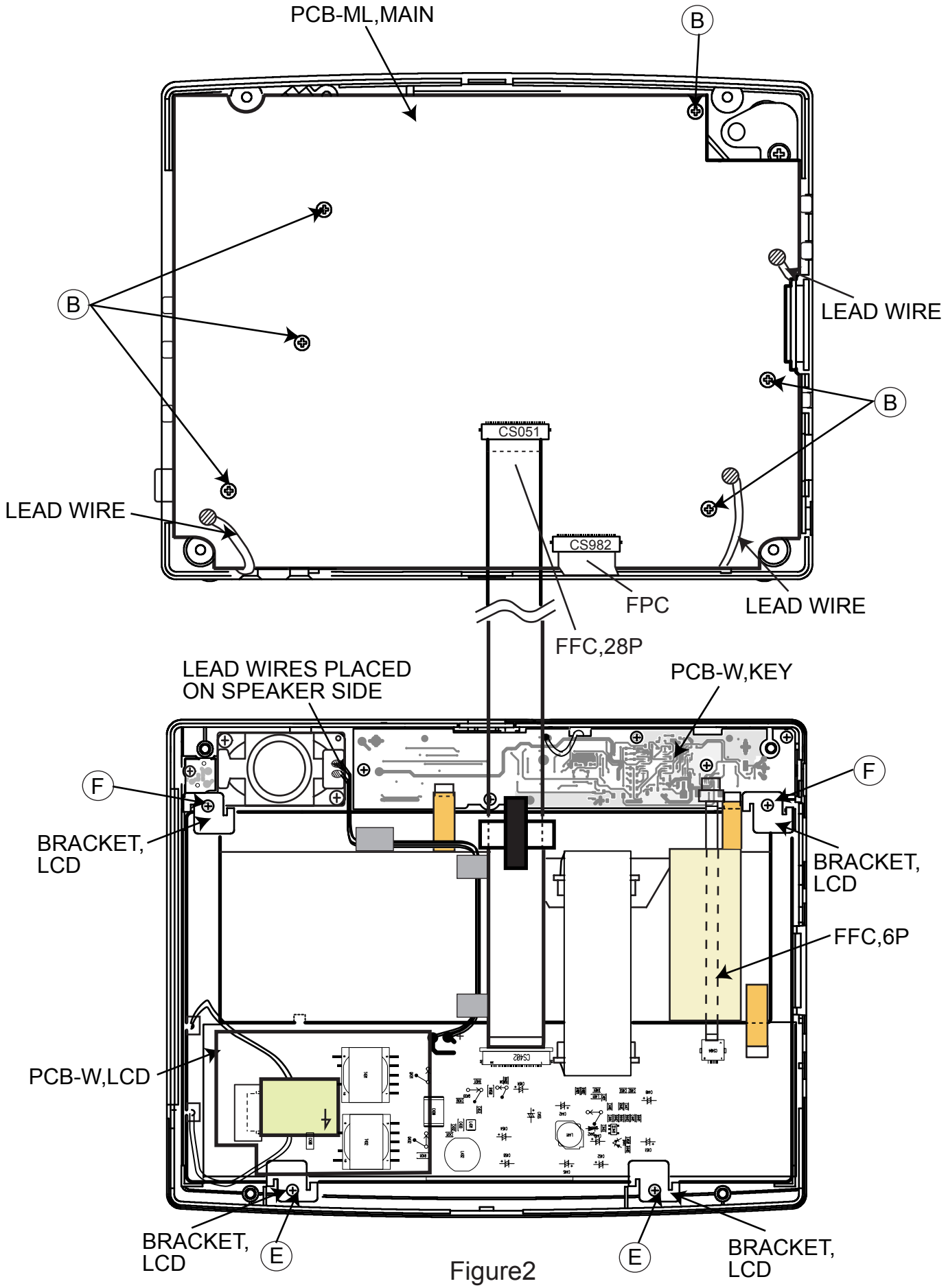

PCB-ML,MAIN
B
B
LEAD WIRE
B
CS051
LEAD WIRE
CS982
FPC
LEAD WIRE
FFC,28P
LEAD WIRES PLACED
ON SPEAKER SIDE
PCB-W,KEY
F
F
BRACKET,
LCD
BRACKET,
LCD
FFC,6P
PCB-W,LCD
BRACKET,
LCD
E
E
BRACKET,
LCD

Figure2

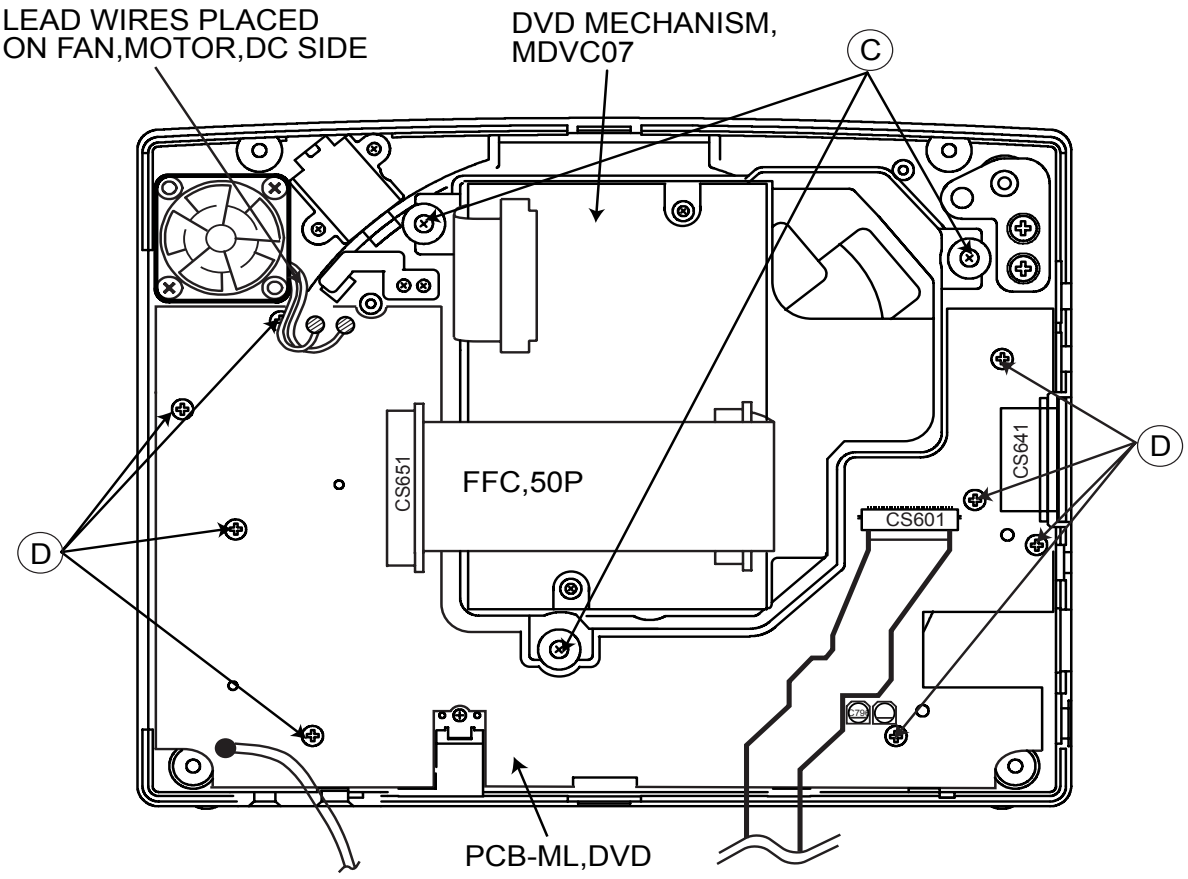


Figure3

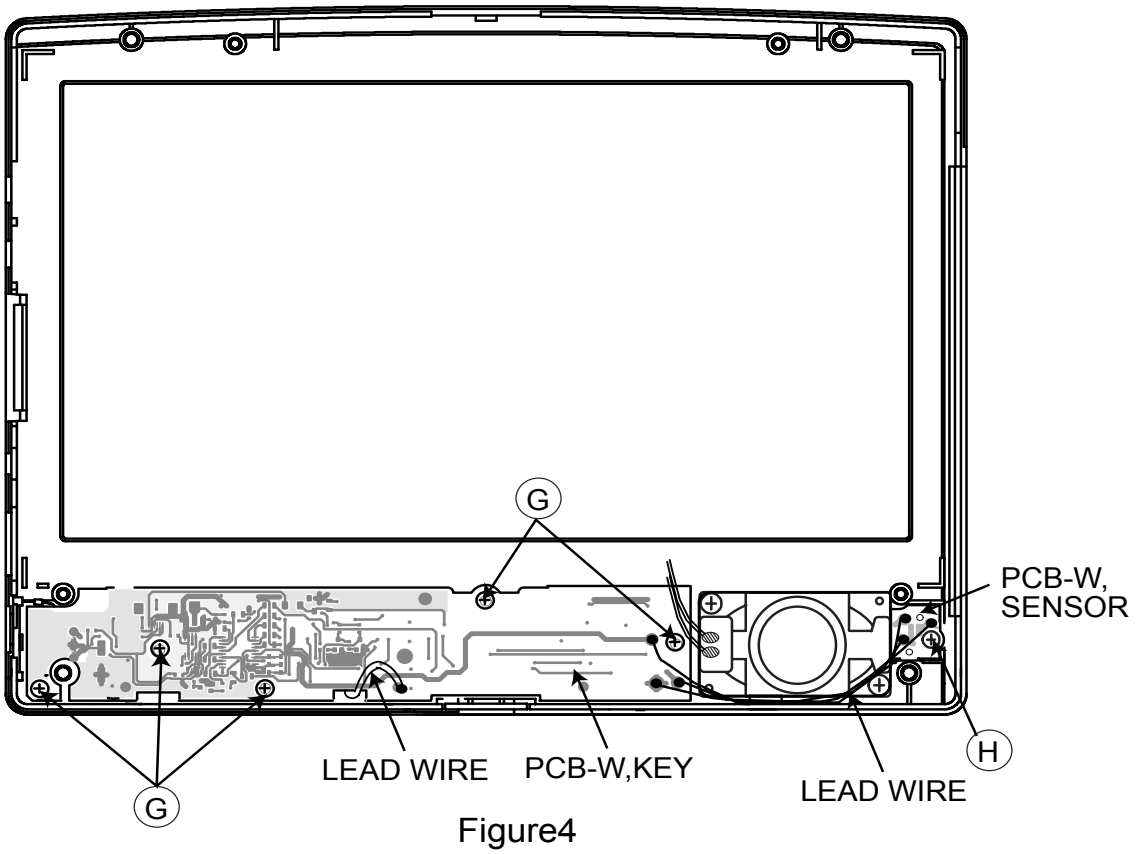


Figure4

ADJUSTMENT PROCEDURES

1.Adjustment Conditions

- Power supply voltage DC ＋9.0 V.
- Input the suitable signal for each adjustment.
- It shifts to TEST MODE by pressing in order of [OUT] [OUT][IN] [IN] [VOLUME-] [VOLUME＋] [VOLUME-] [VOLUME＋] [RETURN] [POSITION].
- When in TEST MODE, the items can be changed by pressing [▲] or [▼] of joystick, and the values can be changed by pressing [VOLUME+] or [VOLUME-] .

2.LCD Adjustment

< Adjustment conditions >

- In VIDEO MODE, input monochrome10 step signal from VIDEO IN.
- Go to TEST MODE and adjust in order of the following.
- Adjust each video signal value by default value (COLOR/TINT/ BLACK: CENTER, DIMMER: MAX, AUTO DIMMER: OFF).

1) B-B Adjustment

- Observe VG(CS1, pin 8) by Synchro - scope.
- Adjust [RGB AMP] to become [4.0V P-P ± 0.1V] between Black - Black voltage (V_{B-B})

2) B-W Adjustment

- Observe VG(CS1, pin 8) by Synchro - scope.
- Adjust [BRIGHT] to become [2.9V P-P ± 0.1V] between Black - White voltage (V_{B-W}).

3) Red Adjustment

- Observe VR(CS1, pin 7) by Synchro - scope.
- Adjust [SUB R] to become [2.9V P-P ± 0.1V] between Black - White voltage (V_{B-W}).

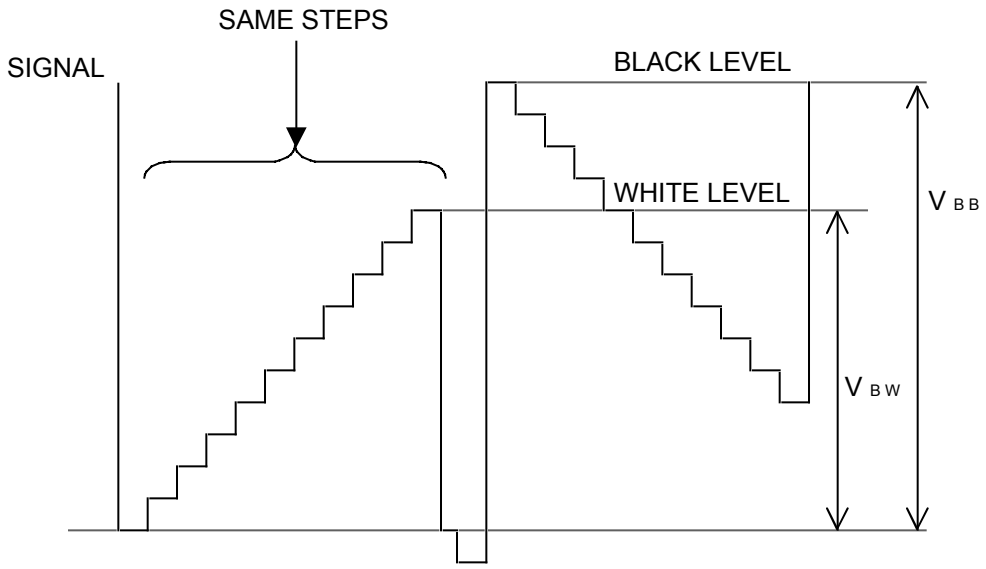
4) Blue Adjustment

- Observe VB(CS1, pin 6) by Synchro - scope.
- Adjust [SUB B] to become [2.9V P-P ± 0.1V] between Black - White voltage (V_{B-W})

5) VCOM Adjustment

- Observe VCOM(CS1, pin 9) by Synchro - scope.
- Adjust [COM AMP] to become wave Form [4.0V P-P ± 0.1V]

The steps should be like figure 1 by the above - mentioned adjustment.



V_{BW} BLACK-WHITE VOLTAGE
V_{BB} BLACK-BLACK VOLTAGE

Figure1

3. FLICKER Adjustment

< Adjustment conditions >

- Adjustment shall be done with the combination of a paired LCD module.
- Adjustment in TEST MODE.
- Display map in NAVI MODE.
- Adjust each video signal value by default value.
  (BLACK : CENTER. DIMMER : MAX.)

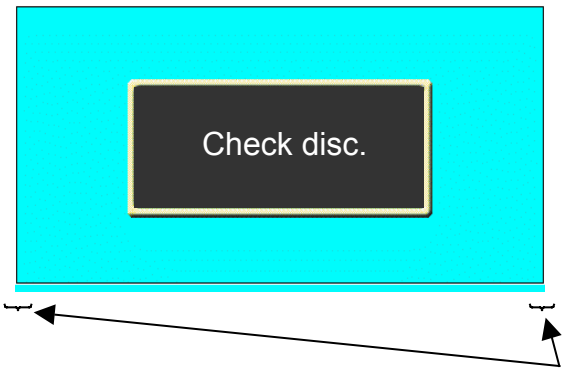
1) FLICKER adjustment

- Give a shock to the set, and adjust the [FLICKER] to make the FLICKER visually optimal.

4. DISPLAY POSITION ADJUSTMENT

< Adjustment conditions >

- Display the following screen in NAVI MODE, and adjust the VOLUME on the reverse side of the LCD module to make the both ends of right and left of the screen equalize.



Right and left of the both ends of the white line shall be equalized.

EXPLANATION OF MICROCOMPUTER

IC501 (M30802)1/2

Pin	Signal	I/O	Function
1	SDA_D	I/O	NC
2	DVD_INT	O	NC
3	DVD_RST	O	NC
4	VOL_O	O	NC
5	DARC_DO	O	DARC
6	DARC_DI	I	DARC
7	DARC_CLK	O	DARC
8	DRAC_CE	O	DARC
9	DRAC_RST	O	DARC
10	TV_CLK	O	TV tuner
11	TV_DATA	O	TV tuner
12	TV_LE	O	TV tuner
13	TV_LOCK	I	TV tuner
14	TV_SD	I	NC
15	BYTE	I	Hi input
16	CNVSS	PWR	GND
17	AU_SW1	O	AUDIO change sw
18	AU_SW2	O	AUDIO change sw
19	RST	I	RESET input
20	XOUT	O	Main clock oscillator input
21	VSS	PWR	GND
22	XIN	I	Main clock oscillator output
23	VCC	PWR	Power supply4.2－5.5V
24	-	-	NC
25	VSYNC	I	Vortical syncro input
26	DARC_INT	I	DARC
27	RMC	I	Remote control sensor input
28	VD_IN	I	VIDEO input
29	DOOR	I	NC
30	KEY_TX	O	RS232C output (to NAVI block)
31	BAT_O	O	Battery output (to NAVI block)
32	PARK_O	O	Parking output (to NAVI block)
33	PARK_I	I	Parking input (to NAVI block)
34	CDCHK	I	GND
35	-	-	NC
36	SCL	O	I^2C BUS
37	SDA	I/O	I^2C BUS
38	VICSTX	O	NC
39	VCC	PWR	Power supply4.2－5.5V
40	VICSRX	I	NC
41	VSS	PWR	GND
42	FM_SD	I	FM tuner SD
43	FM_CE	O	FM tuner
44	FM_DO	O	FM tuner
45	FM_DI	I	FM tuner
46	FM_CLK	O	FM tuner
47	-	-	NC
48	TV	O	NC
49	VIDEO	O	VIDEO(VIDEO:Hi,Other:Lo)
50	NAVI	O	NAVI(NAVI:Hi,Other:Lo)
51	DVD	O	DVD(DVD:Hi,Other:Lo)
52	-	-	NC
53	RAS	O	DRAM
54	-	-	NC
55	-	-	NC
56	POWER	O	POWER ON/OFF output
57	VSS	PWR	GND
58	AMP	O	AMP ON/OFF output
59	VCC	PWR	Power Supply 4.2V－5.5V
60	D_MENU	I	GND
61	ILM	O	NAVI display(Day/Night)change
62	-	-	NC
63	WE	O	DARM
64	-	-	NC

IC501 (M30802)2/2

Pin	Signal	I/O	Function
65	CAS	O	DRAM
66	LMUTE	O	LINE OUT Mute
67	VOL_CLK	O	Electronic Volume
68	VOL_DATA	O	Electronic Volume
69 | 72	-	-	NC
73	DA10R	O	DRAM address
74	VCC	PWR	Power supply 4.2V－5.5V
75	DA9	O	DRAM address
76	VSS	PWR	GND
77 | 85	DA8 | DA0	O	DRAM address
86	NV_BEEP1	I	NAVI Beep input
87	NV_BEEP2	I	NC
88	BEEP	O	Beep output
89	SMUTE	O	Audio mute output
90	DMUTE	O	Image mute output
91	VCC	PWR	Power supply 4.2V－5.5V
92	-	-	NC
93	VSS	PWR	GND
94 | 109	-	-	NC
110 | 113	D7 | D4	I/O	DRAM
114	-	-	NC
115	-	-	NC
116	PARK_SW	I	Parking cable plug input
117	DISVICS	O	NC
118	TEST	I	Test mode input
119 | 122	D3 | D0	I/O	DRAM data
123	LCD_CLK	O	LCD I/F CLOCK
124	LCD_DATA		
125	LCD_CS		
126	DM2	O	LCD display mode output
127	DM3	O	LCD display mode output
128	OSD_SW	O	OSD display output
129	DIMOUT	O	Dimmer output
130	VSS	PWR	GND
131	MODEL_SW	I	Model(NV-DK700/750)change
132	VCC		Power supply 4.2V－5.5V
133	-	-	NC
134	-	-	NC
135	-	-	NC
136	TEMP	I	Temperature input
137	BAT_I	I	Battery input
138	DIMIN	I	Dimmer sensor input
139	FM_SM	I	NC
140	AVSS	PWR	Analog GND
141	-	-	NC
142	VREF	PWR	Battery reference
143	AVCC	PWR	Analog power supply
144	SCL_D	I/O	NC

IC861 (LC24072B)1/2

Pin	Signal	I/O	Function
1	LVcc	PWR	+3.3V
2	HD8	I/O	ATAPI data bus
3	HD7		
4	HD9		
5	HD6		
6	HD10		
7	HD5		
8	HD11		
9	HD4		
10	HD12		
11	HD3		
12	HD13		
13	GND	PWR	0V
14	HD2	I/O	ATAPI data bus
15	HD14		
16	HD1		
17	HD15		
18	HD0		
19	LVcc	PWR	+3.3V
20	HDREQ	I	ATAPI DMA transmit request
21	/HRD	O	ATAPI Read strobe
22	/HWR	O	ATAPI Write strobe
23	/HIORDY	I	ATAPI Wait
24	/HDACK	O	ATAPI DMA transmit strobe
25	HA1	O	ATAPI Address bus
26	HA0	O	ATAPI Address bus
27	HA2	O	ATAPI Address bus
28	/HCS1	O	ATAPI Control Register chip select
29	/HCS3	O	ATAPI Command Register chip select
30	GND	PWR	0V
31	LVcc	PWR	+3.3V
32	FM-ASIC	I	NC
33	ASIC-FM	O	NC
34	BEACON-ASIC	I	NC
35	ASIC-BEACON	O	NC
36	GYRO-ASIC	I	NC
37	ASIC-GYRO	O	NC
38	-	I	Pull-up
39	-	-	NC
40	IRQ_FM	O	NC
41	IRQ_BEACON	O	NC
42	IRQ_GYRO	O	NC
43	-	-	NC
44	VCK	I	Clock input(7.15909MHz)
45	SC	O	3.579545MHz output
46	PLLCK	O	15.7342kHz output
47	GND	PWR	0V
48	/CS_CARD	O	PC card chip select
49	/LOAD	I	BOOT Soft load
50	SI	O	Serial data output(Voice Gaideance)
51	LRCK	O	L/R clock(Voice Gaideance)
52	SCK	O	Clock output(Voice Gaideance)
53	/WAIT_Q2	I	Q2i Wait input
54	/CS_Q2UGM	O	Q2i UGM chip select

IC861 (LC24072B)2/2

Pin	Signal	I/O	Function
55	/CS_Q2REG	O	Q2i inside register chip select
56	ADPCM_SW	I	ADPCM switch
57	GND	PWR	0V
58	/RST_3	I	Power on reset
59	CKIO	I	System clock input(39.3216MHz)
60	GND	PWR	0V
61	LVcc	PWR	+3.3V
62	/FCS	O	Flash memory chip select
63	/FWE	O	Flash memory write strobe
64	/DREQ1	O	DMA request
65	/DREQ0		
66	/DACK1	O	DMA acknowledge
67	/DACK0		
68	/WAIT	O	Wait output
69	/CS6	I	Chip select input
70	/CS5		
71	/CS4		
72	/CS0		
73	GND	PWR	0V
74	/WE1	I	Write strobe
75	/WE0		
76	/RD	I	Read strobe
77	SA22	I	Address bus
78 | 82	SA5 | SA1	I	Address bus
83	GND	PWR	0V
84 | 89	SD0 | SD5	I/O	Data bus
90	GND	PWR	0V
91	LVcc	PWR	+3.3V
92 | 99	SD6 | SD13	I/O	Data bus
100	GND	PWR	0V
101 | 109	SD14 | SD22	I/O	Data bus
110	GND	PWR	0V
111 | 119	SD23 | SD31	I/O	Data bus
120	GND	PWR	0V

IC801 (HD6417706)1/3

Pin	Signal	I/O	Function
1	LLVcc	PWR	+1.9V
2	XTAL2	O	NC
3	EXTAL2	I	Pull-up
4	GND	PWR	0V
5 | 10	SD31 | SD26	I/O	Data bus
11	GND	PWR	0V
12	SD25	I/O	Data bus
13	LVcc	PWR	+3.3V
14 | 18	SD24 | SD20	I/O	Data bus
19	GND	PWR	0V
20	SD19	I/O	Data bus
21	LLVcc	PWR	+1.9V
22 | 24	SD18 | SD16	I/O	Data bus
25	GND	PWR	0V
26	SD15	I/O	Data bus
27	LVcc	PWR	+3.3V
28 | 36	SD14 | SD6	I/O	Data bus
37	GND	PWR	0V
38	SD5	I/O	Data bus
39	LVcc	PWR	+3.3V
40 | 44	SD4 | SD0	I/O	Data bus
45 | 48	SA0 | SA3	O	Address bus
49	GND	PWR	0V
50	SA4	O	Address bus
51	LVcc	PWR	+3.3V
52 | 60	SA5 | SA13	O	Address bus
61	GND	PWR	0V
62	SA14	O	Address bus
63	LVcc	PWR	+3.3V
64 | 70	SA15 | SA21	O	Address bus
71	GND	PWR	0V
72	SA22	O	Address bus
73	LVcc	PWR	+3.3V
74 | 76	SA23 | SA25	O	Address bus

IC801 (HD6417706)2/3

Pin	Signal	I/O	Function
77	/BS	O	NC
78	/RD	O	Read strobe
79	/WE0	O	D70-D0 select signal
80	/WE1	O	D15-D8 select signal
81	/WE2	O	D23-D16 select signal
82	/WE3	O	D31-D24 select signal
83	RD/WR	O	Read/write select signal
84	GND	PWR	0V
85	/CS0	O	Chip select
86	LVcc	PWR	+3.3V
87	/CS2	O	NC
88	/CS3	O	Chip select 3
89	/CS4	O	Chip select 4
90	/CS5	O	Chip select 5
91	/CS6	O	Chip select 6
92	/CE2A	O	NC
93	GND	PWR	0V
94	PTD[7]	O	Input/output port D
95	LVcc	PWR	+3.3V
96	/RAS	O	Lower32 Mbytes address RAS
97	PTD[1]	O	Input/output port D
98	/CAS	O	Lower32 Mbytes address CAS
99	PTD[3]	I/O	NC
100	PTD[4]	I/O	NC
101	/IOIS16	I	Pull-up
102	/BACK	O	NC
103	/BREQ	I	Pull-up
104	/WAIT	I	Hardwave wait request
105	/DACK0	O	DMA acknowledge 0
106	/DACK1	O	DMA acknowledge 1
107	PTE[2]	I	Input/output port E
108	PTE[3]	I	Input/output port E
109	PTF[0]	I	Input/output port F
110	PTF[1]	I	NC
111	PTF[2]	I	Input/output port F
112	PTF[3]	I	Pull-up
113	PTF[4]	O	Input/output port F
114	PTG[0]	I	Pull-up
115	GND	PWR	0V
116	PTG[1]	I	Pull-up
117	LLVcc	PWR	+1.9V
118	PTG[2]	I	Pull-up
119	PTG[3]	I	Pull-up
120	PTF[5]	I/O	NC
121	PTF[6]	I/O	NC
122	/ASEMD0	I	Pull-up
123	LLVcc	PWR	+1.9V
124	CAP1	-	PLL1 external capacitance pin
125	GND	PWR	0V
126	GND	PWR	0V
127	CAP2	-	PLL2 external capacitance pin
128	LLVcc	PWR	+1.9V
129	MD1	I	Pull-up
130	GND	PWR	0V

IC801 (HD6417706)3/3

Pin	Signal	I/O	Function
131	XTAL	O	Clock oscillator pin
132	EXTAL	I	External Clock/crystal oscillator pin
133	STATUS0	O	Processor status
134	STATUS1	O	Processor status
135	PTE[6]	I/O	NC
136	PTE[7]	I	ADPCM SW
137	GND	PWR	0V
138	CKIO	O	Systen clock input/output(39.3216MHz)
139	LVcc	PWR	+3.3V
140	TxD0	O	SCI transmit data0
141	SCK0	I/O	NC
142	TxD2	O	Pull-up
143	SCPT[3]	O	SC port
144	SCPT[4]	I/O	NC
145	RxD0	I	SCI receive data0
146	RxD2	I	SCIF receive data2
147	IRQ5	I	Pull-up
148	GND	PWR	0V
149	/RESETM	I	Pull-up
150	LLVcc	PWR	+1.9V
151	IRQ0	I	External interrupt request(Q2)
152	IRQ1	I	External interrupt request(ATAPI)
153	IRQ2	I	External interrupt request(FM)
154	IRQ3	I	NC
155	IRQ4	I	NC
156	GND	PWR	0V
157	NMI	I	Pull-up
158	LVcc	PWR	+3.3V
159	PTG[4]	I	Pull-up
160	/DREQ0	I	DMA request
161	/DREQ1	I	DMA request
162	PTG[5]	I	Input port G
163	MD0	I	Pull-down
164	MD2	I	Pull-down
165	/RESETP	I	Power-on reset request
166	CA	I	Pull-up
167	MD3	I	Pull-down
168	MD4	I	Pull-up
169	MD5	I	Pull-down
170	GND	PWR	0V
171	PTJ[0]	I	GND
172	PTJ[1]	I	GND
173	PTJ[2]	I	GND
174	PTJ[3]	I	GND
175	LVcc	PWR	+3.3V
176	GND	PWR	0V

IC1151 (HD64F3039TEBL18)1/3

PIN	Signal	I/O	Function
1	/RST0	O	ATAPI controller/decoder reset
2	/RST1	O	Servo/data processor reset
3	SPDRVPS	O	Spindle motor driver power save
4	G	O	H : Operation mode, L : Standby
5	MUTEL	O	H : MUTE ON / L : MUTE OFF LcH
6	MUTER	O	H : MUTE ON / L : MUTE OFF RcH
7	MD2	I	Normally 5V,boot flash writing 0V
8	LSPEED	O	PLL output
9	FLCNT	O	Flash memory output
10	AUDIO	O	AUDIO Disc play : H
11	/G	O	H : Standby,L : Operation mode
12	VSS	—	GND
13	D0	I/O	CPU data bus
14	D1	I/O	CPU data bus
15	D2	I/O	CPU data bus
16	D3	I/O	CPU data bus
17	D4	I/O	CPU data bus
18	D5	I/O	CPU data bus
19	D6	I/O	CPU data bus
20	D7	I/O	CPU data bus
21	VCC	—	+5V
22	HA0	O	CPU address bus
23	HA1	O	CPU address bus
24	HA2	O	CPU address bus
25	HA3	O	CPU address bus
26	HA4	O	CPU address bus
27	HA5	O	CPU address bus
28	HA6	O	CPU address bus
29	HA7	—	NC
30	VSS	—	GND
31	NC	—	NC
32	NC	—	NC
33	LOEJKEY	—	NC

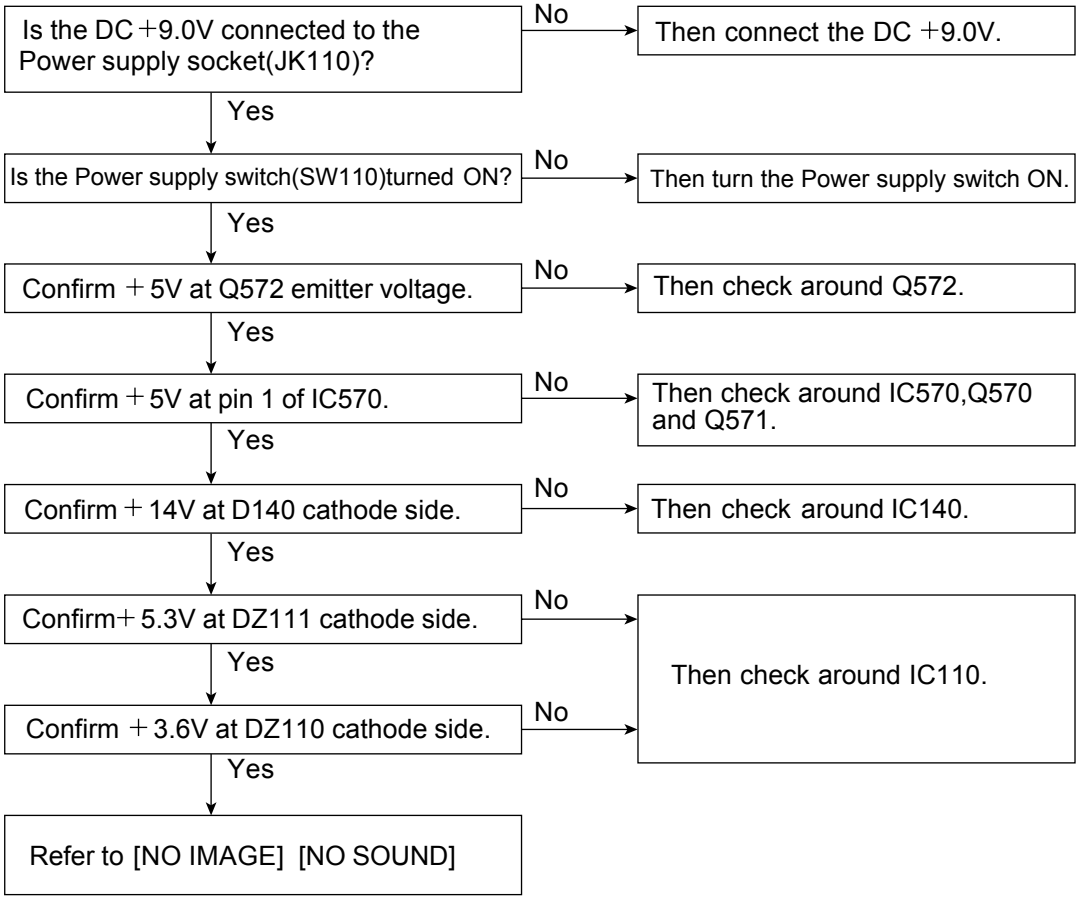
IC1151 (HD64F3039TEB L18)2/3

PIN	Signal	I/O	Function
34	INSIDE	I	Inside switch input
35	NC	—	NC
36	CLOSESW	I	Cover OPEN / CLOSE SW input
37	CSEL	I	IDE cable select input
38	NAVI	I	NAVI,DVD change terminal(Low at NAVI)
39	NC	—	NC
40	SRVDPCS	O	Chip select output
41	ATACS	O	Chip select output
42	NC	—	NC
43	PSC	O	RF AMP prescaler
44	MD0	—	+5V
45	MD1	—	GND
46	PHI	O	System clock output
47	STBY	I	CPU hard ware standby terminal +5V
48	RES	I	CPU hard reset +5V
49	NMI	—	0V
50	VSS	—	GND
51	EXTAL	I	Crystal connection terminal
52	XTAL	I	Crystal connection terminal
53	VCC	—	+5V
54	NC	—	NC
55	/RD	O	READ
56	/WR	O	WRITE
57	/FEW	I	Flash memory output
58	AVSS	—	GND
59	FE	I	Focus error signal input
60	LVL	I	SUM signal input
61	TEST0	I	KEY input terminal for TEST
62	TEST1	I	KEY input terminal for TEST
63	TEST2	I	KEY input terminal for TEST
64	TEST3	I	KEY input terminal for TEST
65	TEST CNT	I	Test mode input
66	NC	—	GND

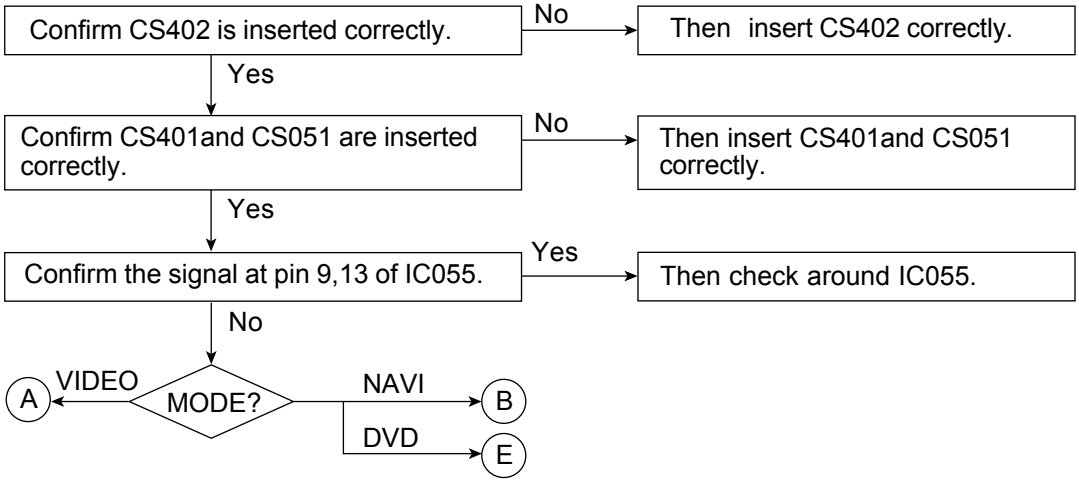
IC1151 (HD64F3039TEBL18)3/3

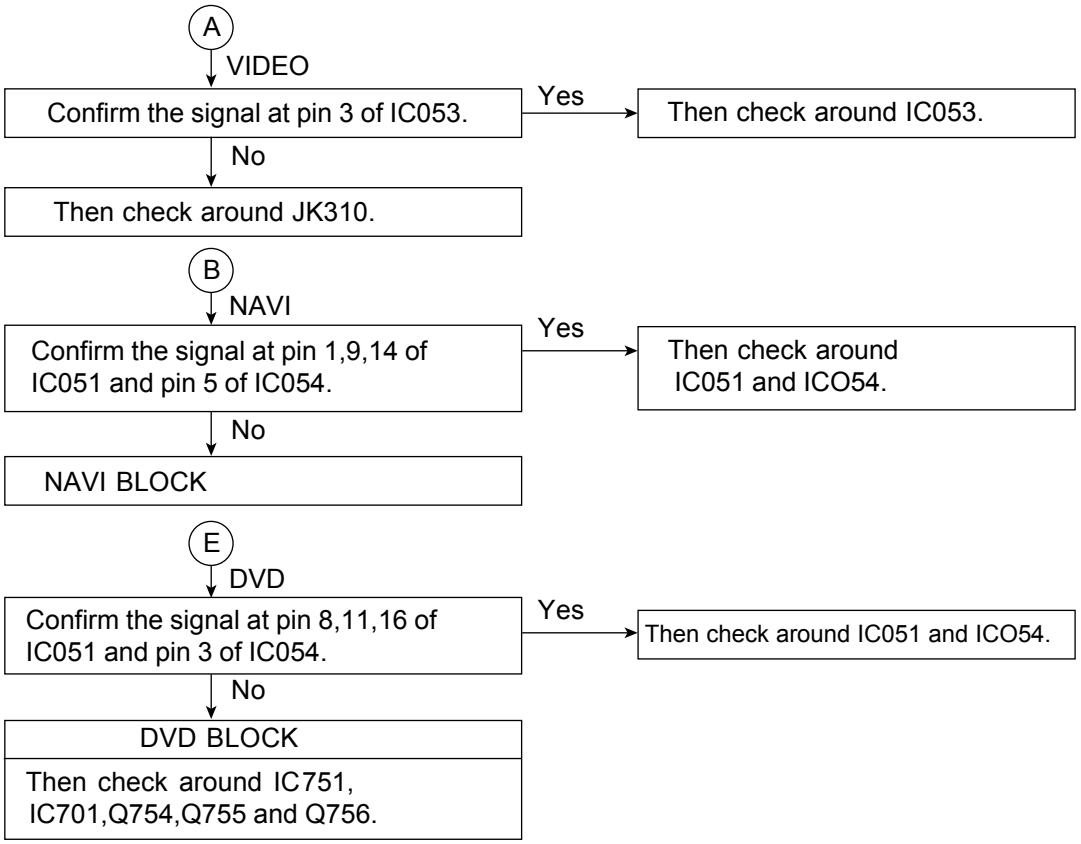
PIN	Signal	I/O	Function
67	AVCC	—	+5V
68	/ATAINT	I	ATAPIcontroller/decoder interrupt input
69	/SDINT	I	Servo/decoder processor interrupt input
70	TXD	O	Serial data trans terminal for debug
71	RXD	I	Serial data receive terminal for debug
72	NC	—	NC
73	ENCODER	I	ENCODER pulse input
74	/PWR DWN1	O	Analog+5V power down control output
75	/PWR DWN2	O	Digtal+5V power down control output
76	STBY	O	PWMdriver MUTEoutput STBY : L
77	DIR	O	H : DSP output, L : DSP input
78	DVDR	O	DVD-Rdisc : L Other disc : H
79	RFMVON	O	Laser RF output DVD : H
80	NC	—	NC

NO POWER

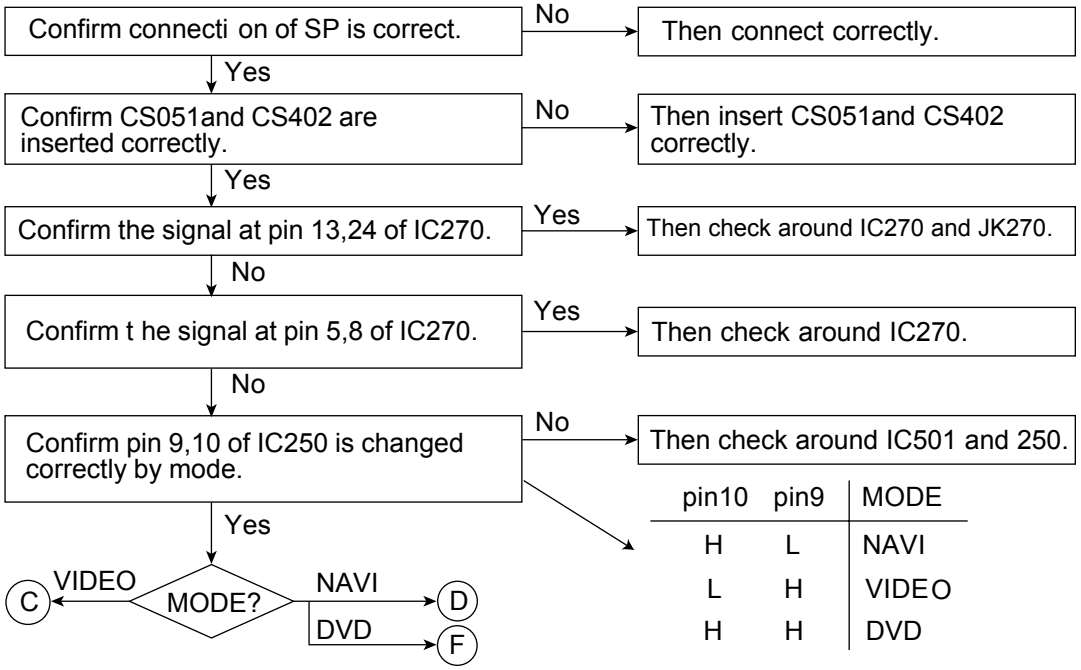


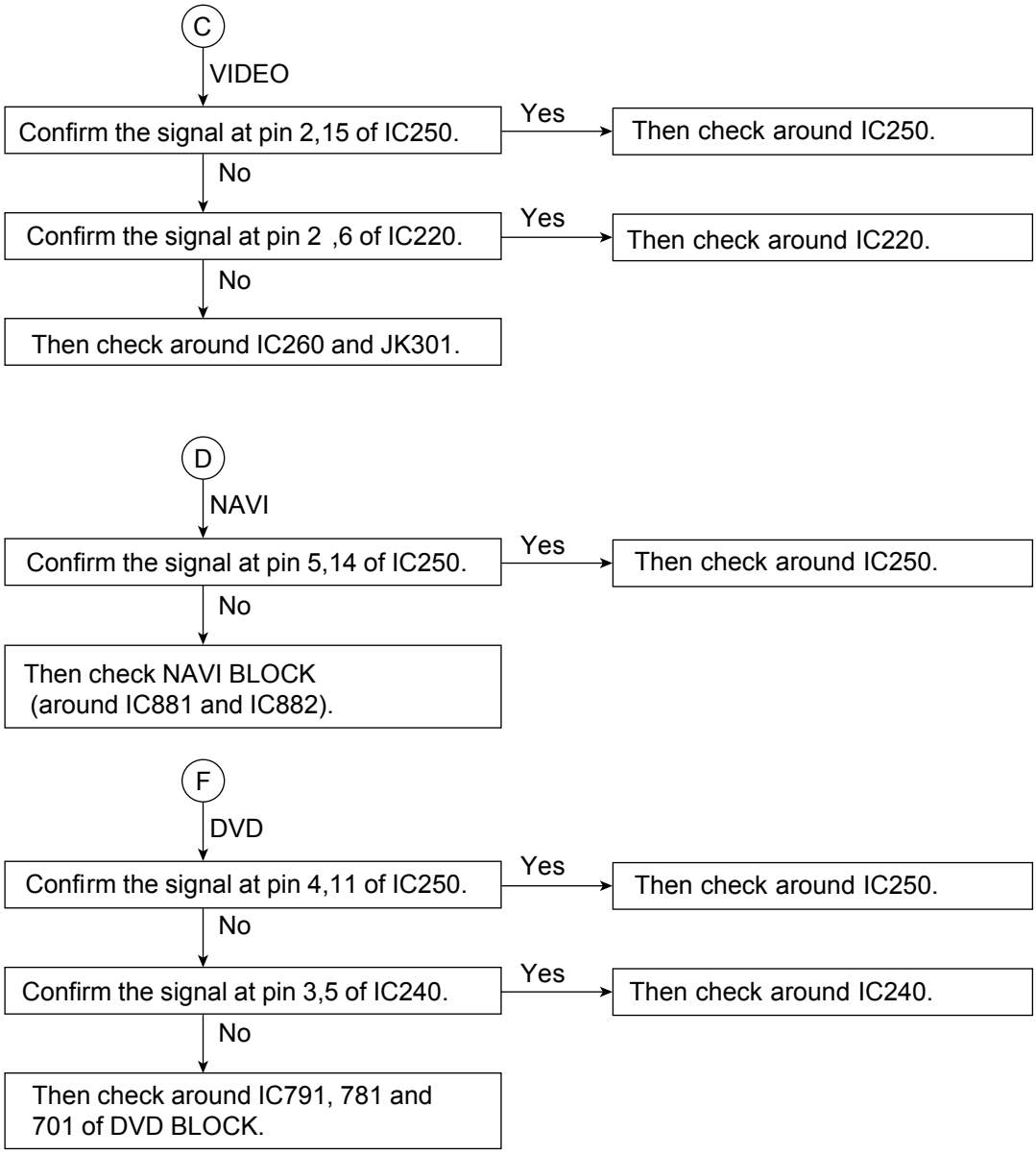
NO IMAGE



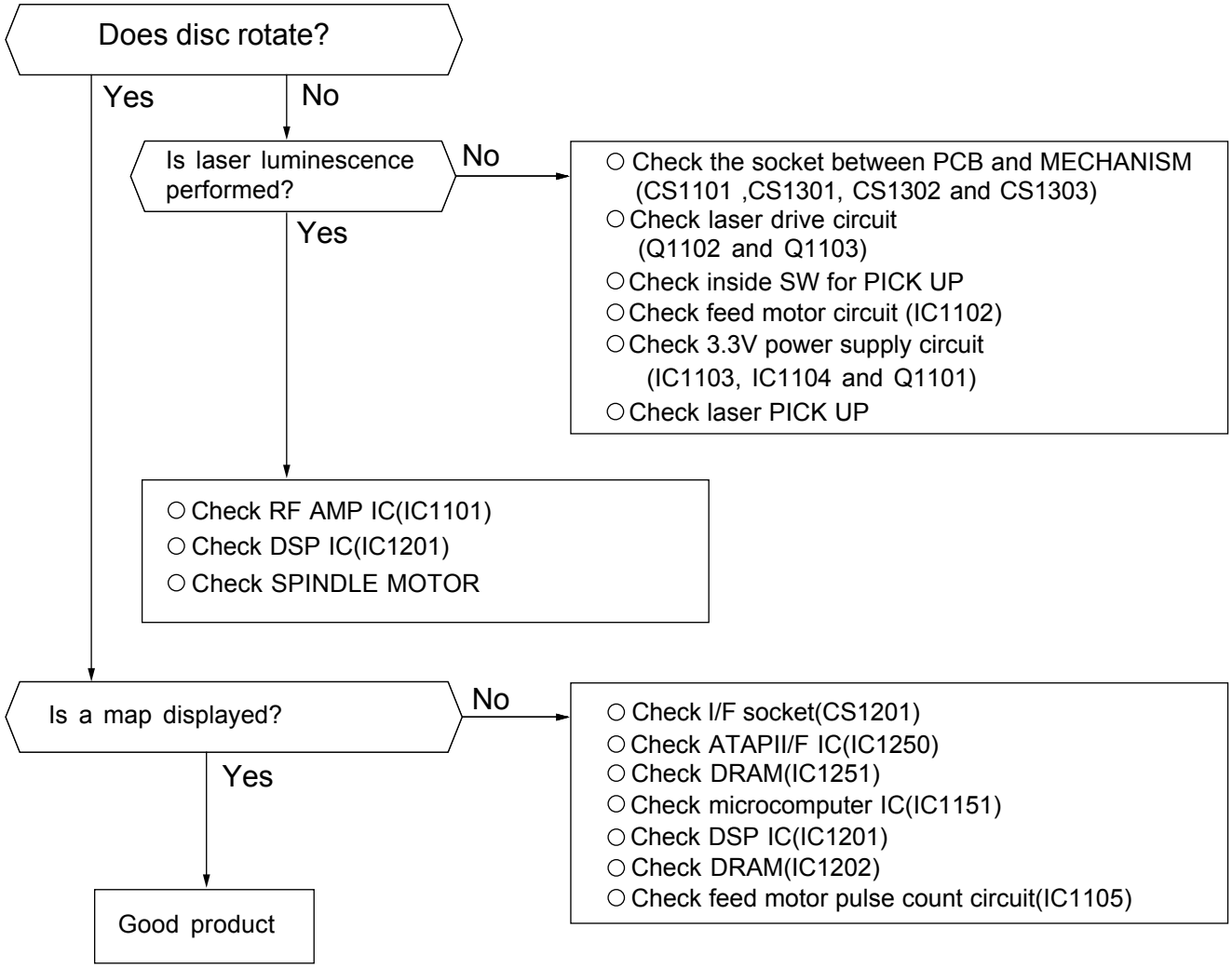

A
VIDEO
Confirm the signal at pin 3 of IC053.
Yes
Then check around IC053.
No
Then check around JK310.
B
NAVI
Confirm the signal at pin 1,9,14 of IC051 and pin 5 of IC054.
Yes
Then check around IC051 and ICO54.
No
NAVI BLOCK
E
DVD
Confirm the signal at pin 8,11,16 of IC051 and pin 3 of IC054.
Yes
Then check around IC051 and ICO54.
No
DVD BLOCK
Then check around IC751, IC701,Q754,Q755 and Q756.

NO SOUND


Confirm connecti on of SP is correct.
No
Then connect correctly.
Yes
Confirm CS051and CS402 are inserted correctly.
No
Then insert CS051and CS402 correctly.
Yes
Confirm the signal at pin 13,24 of IC270.
Yes
Then check around IC270 and JK270.
No
Confirm t he signal at pin 5,8 of IC270.
Yes
Then check around IC270.
No
Confirm pin 9,10 of IC250 is changed correctly by mode.
No
Then check around IC501 and 250.
Yes
C
VIDEO
MODE?
NAVI
DVD
D
F
pin10 pin9 MODE
H L NAVI
L H VIDEO
H H DVD


C
VIDEO
Confirm the signal at pin 2,15 of IC250.
Yes
Then check around IC250.
No
Confirm the signal at pin 2 ,6 of IC220.
Yes
Then check around IC220.
No
Then check around IC260 and JK301.
D
NAVI
Confirm the signal at pin 5,14 of IC250.
Yes
Then check around IC250.
No
Then check NAVI BLOCK
(around IC881 and IC882).
F
DVD
Confirm the signal at pin 4,11 of IC250.
Yes
Then check around IC250.
No
Confirm the signal at pin 3,5 of IC240.
Yes
Then check around IC240.
No
Then check around IC791, 781 and
701 of DVD BLOCK.

(DVD - ROM MECHANISM)



(NAVI MODE)

[Operation flow from inserting a disc to map display]

1. Turn the power supply ON after inserting a disc
2. Check inside switch of PICK UP
3. Movement of PICK UP (inside switch ON→OFF→ON)
4. Focus search operation (dual layer DVD)
5. Focus servo ON
6. Start spindle motor rotation
7. TOC read
8. Movement of PICK UP is performed by command from NAVI main part, and then read the data.
9. Data transmission to NAVI main part
10. Map display

(DVD MODE)

[Operation flow from inserting a disc to DVD video display]

1. Turn the power supply ON after inserting a disc
2. Check inside switch of PICK UP
3. Movement of PICK UP (inside switch ON→OFF→ON)
4. Laser ON
5. Disc distinction operation (focus search)
6. Disc distinction (single layer DVD or dual layer DVD or CD)
7. Focus search operation
8. Focus servo ON
9. Start spindle motor rotation
10. TOC read
11. Start the DVD video opening display (when auto play is ON)

✳Since map disc is limited to dual layer DVD disc, focus search is directly performed as dual layer disc without disc distinction.
In DVD mode, disc distinction is performed.

1.NAVI BLOCK

In NAVI MODE, the power supply is supplied to NAVI BLOCK and SERVO PCB.
The NAVI signal from the microcomputer is Hi, and +3.3V and +5V are supplied to NAVI BLOCK from Q168 and 108. +5V is supplied to SERVO PCB from Q120.

a. CPU(IC801)

IC801 controls ASIC, MEMORY, and GRAPHIC CONTROLER etc. in MAIN CPU.
Taking in the key signal from GPS data and microcomputer are also performed by CPU.
And CPU detects the state of BEEP output, Parking brake, and Disc cover etc.

b. ASIC(IC861)

ASIC performs output of the control signal at the time of memory access of CPU, and communicates with DVD drive.
Voice guidance is outputted through IC881(DAC)and IC82(LPF/AMP)by ASIC.

c. MEMORY(IC841,842,843)

IC841 and 842 are used for memory of Map data and calculation of NAVI microcomputer by SDRAM.
IC843 is used for memory of program software, font data, bit map data, and back up data of course and initial setting by FLASH.

d. GRAPHIC CONTROLER(IC901)

The data sent from NAVI microcomputer or MEMORY is changed into the data for display.
IC931 is used as work memory by DRAM.
Graphic data is inputted by 6-bit RGB data synchronizing with DCLK.
IC 941 is inputted to pin 3 and pin14 by PLL.
15.7KHz is compared and DCLK is outputted from pin 4.

e. VIDEO DAC(IC951)

Digital RGB outputted from IC901 is synchronizes with DCLK and changed into ANALOG, and RGB signal and Composite video signal are outputted.

f. GPS

GPS tuner and MAIN PCB are connected by CS971 and wire.
Pin 8 is power supply for tuner, pin 9 is power supply for antenna, and pin 2 is power supply for backup.
Pin 6 receives data from NAVI microcomputer, and data is transmitted to NAVI Microcomputer from pin 7.
From GPS tuner, position/time data is outputted for every seconds, and it is inputted into pin 145 of NAVI microcomputer.

2.VIDEO BLOCK

a. Microcomputer part

Microcomputer manages the whole set, such as power supply management, change mode, change image/audio , sensor input processing of remote control or dimmer. Communication with parking brake input and NAVI BLOCK are also performed.

b. Image part

There are 3 kinds of images displayed by this set. NAVI image, DVD image, and VIDEO IN image.
Their signals are switched by VIDEO SW (IC053, IC054) and outputted to LCD interface IC(IC055).
However, since NAVI image is outputted from NAVI BLOCK and DVD image is outputted from DVD BLOCK by RGB signal, so DVD image and NAVI image are switched by RGB SW(IC051) , and RGB signal of OSD is switched by RGB SW (IC052), and then they are outputted to LCD interface IC(IC055).
Gamma correction and bright adjustment of the image signal inputted to LCD interface are performed, and then the image signal is out putted to LCD side as RGB signal.

c. Audio part

There are 3 kinds of audio outputted by this set. NAVI GUIDANCE, DVD AUDIO, and VIDEO IN AUDIO.
NAVI GUIDANCE outputted from NAVI BLOCK is directly inputted to SW(IC250).
The audio outputted from DVD BLOCK is outputted to IC250 via GRAND ISOLATOR(IC240).
VIDEO IN AUDIO is switched (input/output)by IC260 and AMP is performed at IC220 and inputted to IC250.
The audio signal outputted from SW is inputted to HEADPHONE SPAMP (IC270)with electronic volume, and volume is adjusted based on the data from the microcomputer and outputted to SPEAKER.

3. POWER SUPPLY BLOCK

When the power supply SW is turned ON, +5V will be supplied to microcomputer by regulator(Q572).
If the power supply signal from microcomputer is “Hi”, the IC for DC - DC(IC110, 140) will operate and +5V, 3V, +3V, 6V, and +14V will be outputted.
Furthermore, +8V will be outputted by regulator(Q101).
These power supplies are supplied to block required in each mode.

4. LCD PCB

LCD PCB has POWER SUPPLY BLOCK for LCD and INVERTER BLOCK.

a. POWER SUPPLY BLOCK for LCD

By DC - DC IC(IC601), +16/- 16V power supply for LCD is outputted from +5V supplied from MAIN PCB, and supplied to LCD PANEL.

b. INVERTER BLOCK

The high pressure for LCD back light is generated based on +14v supplied from MAIN PCB. (T431, 432)
Light adjustment is also performed by DIMOUT signal from microcomputer.

5. KEY PCB

KEY PCB has various keys and remote control dimmer sensor port.

a. +3V is supplied to IC503 by IC540, key SW is taken in, and assignment of remote control and the data of main part key are performed.

6. DVD PCB

In DVD MODE, the power supply is supplied to DVD BLOCK and SERVO PCB. The DVD signal from the microcomputer is Hi, and +3.3V and +5V are supplied to DVD BLOCK from Q611 and Q613. +5V is supplied to SERVO PCB from Q120.

a. DVD DECODER
IC701 communicates with microcomputer, and playbacks DVD by DVD DECODER.

b. VIDEO DAC
IC751 outputs DVDRGB, Y/C signal and VIDEO signal by DVD VIDEO DAC

c. AUDIO DAC
IC781 outputs DVD audio through BUFFER(IC791) by DVD AUDIO DAC.

(SERVO PCB)

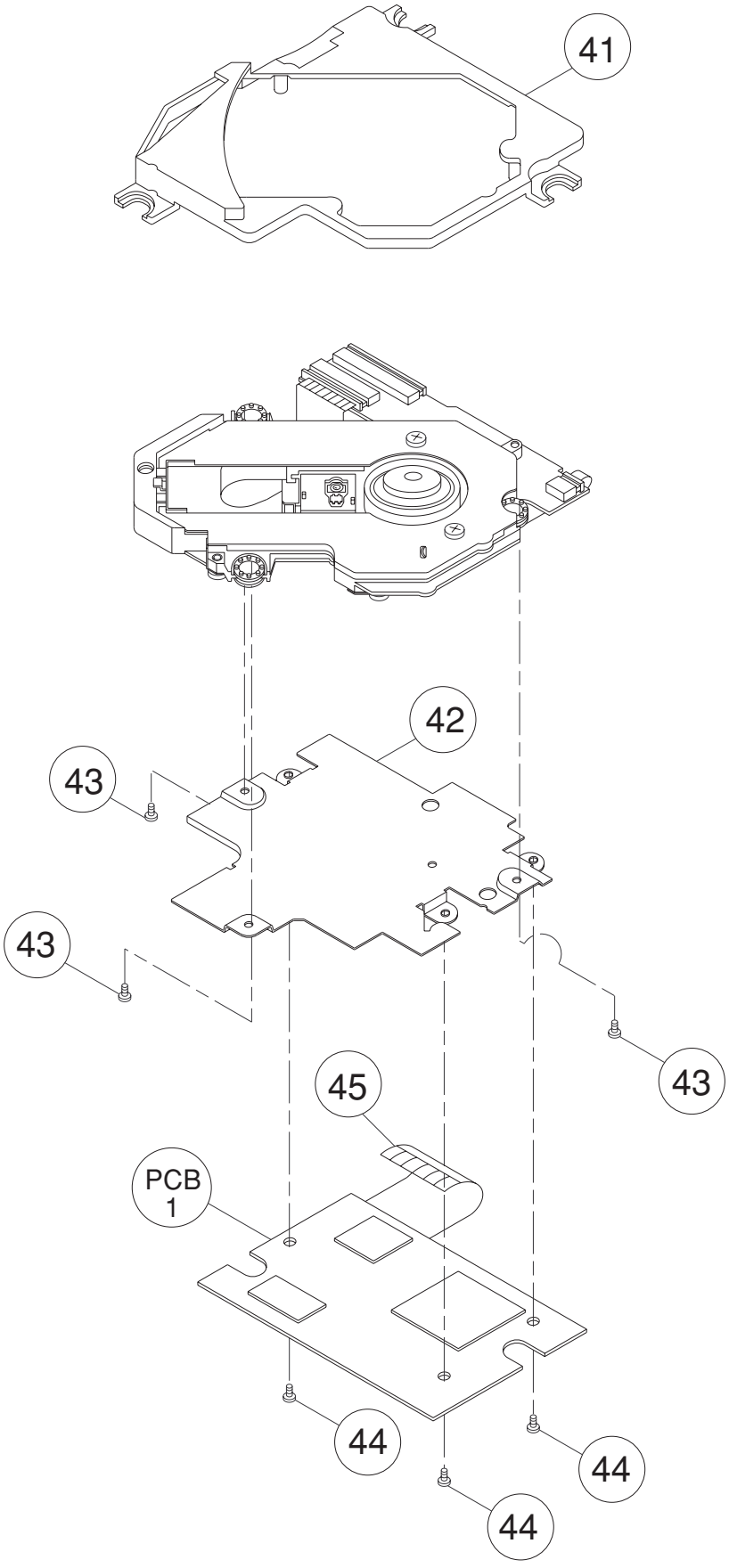
1. RF AMP PART(IC1101)
For the signal read by PICKUP, AMP is performed, and equalizing of playback RF signal and error signal required for each SERVO are generated.

2. DSP PART(IC1201)
Digital signal processing of the signal from RF AMP is performed, and control signals of PICK UP, SPINDLE MOTOR, and FEED MOTOR etc are outputted. Recovery and correction of RF signal are also performed.

3. ATAPII/F PART(IC1250)
It communicates by ASIC and ATAPII/F in NAVI PCB.

4. MICROCOMPUTER PART(IC1151)
When in NAVI MODE, +5V power supply is supplied, and operation of DVD BLOCK is controlled .

EXPLODED VIEW(DVD-ROM MECHANISM)



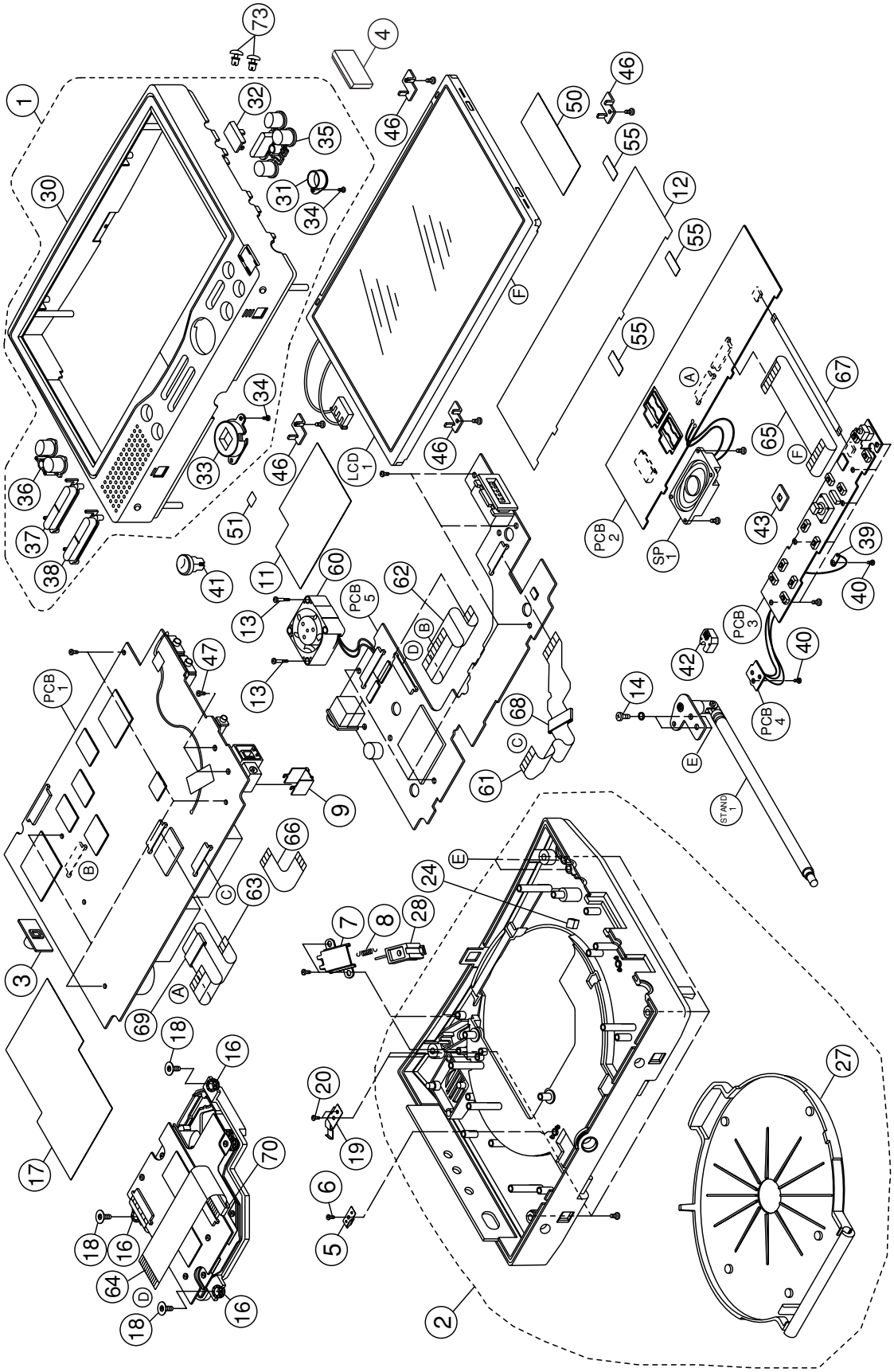
PARTS LIST(DVD-ROM MECHANISM)

Ref. No.	PART No.	DESCRIPTION	Q'ty
DVD-ROM MECHANISM			
	661 035 1884	ASSY,CHASSIS,DVD, NO SERVICE PART	1
41	661 030 2503	BASE	1
42	632 889 9166	PLATE,BOTTOM	1
43	412 056 0208	SPECIAL SCREW,MECHANISM	3
44	411 166 2607	SCR S-TPG PAN PCS 2X3	3
		SERVO PCB	
45	661 025 2419	FFC,45P 30MM	1
		MECHA-SERVO PCB	
	632 864 9211	POLY COVER,200X250	1
SERVO P.C.B.ASSEMBLY			
PCB1	661 031 4179	PCB-ML ASSY,SERVO	1
CS1101	661 022 4669	SOCKET,45P	1
CS1101 OR	632 855 3945	SOCKET,45P	1
CS1201	661 022 4652	SOCKET,50P	1
CS1201 OR	632 818 9397	SOCKET,50P	1
IC1101	409 438 7603	IC TA1293F	1
IC1101 OR	410 347 0906	IC TA1293F(DRY,C)	1
IC1102	409 430 6208	IC BA5918FP-Y	1
IC1105	409 353 4404	IC TC75S51F	1
D1101	407 130 4500	DIODE DAP202U	1
Q1102	405 030 7300	TR 2SA1338-5	1
Q1103	405 030 7300	TR 2SA1338-5	1
Q1152	405 030 7300	TR 2SA1338-5	1
Q1104	405 131 2501	TR DTC114TUA	1
Q1105	405 131 2501	TR DTC114TUA	1
RA1162	632 754 3268	RESISTOR,2X1K	1
RA1103	632 754 3442	RESISTOR,2X10K	1
RA1102	632 754 3572	RESISTOR,2X47K	1
IC1151	410 497 4304	IC HD64F3039TEBL18/7531AB	1
IC1103	409 371 1102	IC RN5RG33AA	1
IC1152	409 375 7001	IC TC7ST08FU	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
IC1153	409 424 7709	IC IC-PST597EN	1
IC1154	409 323 8708	IC TC7WU04FU	1
IC1104	405 164 2202	TR HAT1025R	1
IC1104 OR	405 173 7106	TR NTMD6P02R2	1
Q1101	405 124 2402	TR 2SB1424-R	1
Q1101 OR	405 124 2303	TR 2SB1424-Q	1
Q1151	405 083 6206	TR DTA114YU	1
D1102	407 130 4500	DIODE DAP202U	1
D1105	407 130 4401	DIODE DAN202U	1
X1151	632 815 2773	RESONATOR,CERAM,16.000MHZ	1
RA1151	632 754 3268	RESISTOR,2X1K	1
RA1152	632 746 7144	RESISTOR,4X47K	1
RA1154	632 746 7144	RESISTOR,4X47K	1
RA1155	632 746 7144	RESISTOR,4X47K	1
RA1157	632 746 7144	RESISTOR,4X47K	1
IC1201	409 504 3607	IC TC94A03F	1
IC1202	410 318 2908	IC MSM511666C-50TS-K-DR1	1
IC1203	410 328 9607	IC TC74VHC245FT-(EL)	1
IC1204	409 320 9401	IC TC7S66FU	1
IC1205	409 320 9401	IC TC7S66FU	1
IC1206	409 320 9401	IC TC7S66FU	1
X1201	632 843 4602	RESONATOR,CERAM,22.579MHZ	1
SVR120	632 721 2218	POTENTIOMETER,4.7K	1
RA1202	632 754 3268	RESISTOR,2X1K	1
RA1201	632 754 3442	RESISTOR,2X10K	1
RA1205	632 754 3572	RESISTOR,2X47K	1
RA1203	632 746 6970	RESISTOR,4X10K	1
IC1250	410 377 9702	IC TC9469BF(BS,DRY,CA)	1
IC1251	410 318 2809	IC MSM514265C-50TS-K-DR1	1
X1250	632 833 4513	RESONATOR,CERAM,50.000MHZ	1
RA1250	632 746 5966	RESISTOR,4X47	1
RA1251	632 746 5966	RESISTOR,4X47	1
RA1252	632 746 5966	RESISTOR,4X47	1
RA1253	632 746 5966	RESISTOR,4X47	1
RA1256	632 746 5966	RESISTOR,4X47	1
RA1257	632 746 5966	RESISTOR,4X47	1

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.
3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

EXPLODED VIEW



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in whitch safety can be of special significance. When replacing a component identified with ⚠ use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	PART No.	DESCRIPTION	Q'ty
		INDIVIDUAL	
	661 049 4161	INNER CARTON	1
	661 031 5794	SHEET	1
	661 043 5430	SHEET	1
	661 042 9859	POLY COVER,230X300	1
	661 031 2410	PAD,PARTITION	1
		REMOTE CONTROL	
	661 031 2427	SHEET,REMOTE CONTROL	1
	661 031 2397	PAD,PLAIN	1
	661 035 4847	SHEET	1
		ACCESSORY	
	661 050 0282	INSTRUCTION MANUAL	1
	661 049 4123	NOTICE	1
	661 049 4130	NOTICE	1
	661 049 4147	NOTICE	1
	661 042 9859	POLY COVER,230X300	1
⚠	661 052 8200	AC ADAPTOR,NVP-AC7E	1
		AC/DC ADAPTER	
⚠	661 052 3748	ASSY,DC-DC CONVERTER	1
		12V CIGARETTE LIGHTER	
		CONNECTOR CABLE	
⚠	423 009 4006	FUSE 125V 3A	1
		DC-DC CONVERTER	
	661 059 0405	ASSY,ANTENNA,GPS	1
		GPS EXTERIOR ANTENNA AND	
		INSTALLATION PARTS	
	661 031 8849	ANTENNA,GPS	(1)
	661 031 4483	PLATE,EARTH	(1)
	632 763 3549	CORD,1500MM	2
	632 785 2292	CORD,PARKING BRAKE CABLE	(1)
		PARKING BRAKE CONNCTOR CABLE	
	632 635 1116	CONNECTOR,U ELEMENT	(1)
		SELF-LOCK CONNECTOR	
	661 040 8755	CORD ASSY	1
	661 040 8397	CORD,RCA	(1)
		WHEN IN AUDIO MODE	
	661 040 8403	CORD,RCA	(1)
		WHEN IN VIDEO MODE	
	661 050 4464	DVD-ROM,NVP-KS01U	1
		MAP DVD-ROM	
	661 050 6451	REMOCON,NVP-R7000	1
		REMOTE CONTROL AND HOLDER	
	632 871 1765	TARESIVE SHEET	1
		VELCRO TAPE	
	632 871 1772	TARESIVE SHEET	1
		VELCRO TAPE	
	411 073 2400	SCR TPG PAN 3X8	2
		TAPPING SCREW(M3X8)	
	661 050 6130	BATTERY,LR03	2
		AAA BATTERY	
	632 835 5723	POLY COVER,100X100	1
	632 891 7280	ASSY,STAND	1
		KIT ROR INSTALLATION	
	661 052 2338	CUSHION	2
	661 025 6721	POLY COVER,120X175	1
	411 073 2400	SCR TPG PAN 3X8	4
	632 807 1807	CORD BUSHING	4
	632 835 5723	POLY COVER,100X100	1
	661 052 9085	CORE	1
		CORE(LARGE)	
	661 052 9078	CORE	1
		CORE(SMALL)	
		CABINET	
1	661 049 4253	CABINET ASSY	1
30	661 049 4246	CABINET	(1)
31	661 043 2521	RING	(1)
32	661 043 2453	FILTER	(1)
33	661 059 0412	RING ASSY	(1)
34	412 063 2806	SPECIAL SCREW	(2)
35	661 049 4192	BUTTON,ENTER	(1)
36	661 049 4208	BUTTON,VOL	(1)
37	661 049 4215	BUTTON,MENU	(1)
38	661 049 4222	BUTTON,MODE	(1)
39	632 835 5693	LUG	1
40	412 063 2806	SPECIAL SCREW	2
41	661 043 3900	BUTTON,SCROLL	1
42	661 043 3924	ILLUMINANT	1
2	661 049 4260	REAR CABINET ASSY	1
27	661 059 0429	LID ASSY,CD	(1)
28	661 030 2718	KNOB,OPEN	1
	411 102 8205	SCR S-TPG BIN 2.6X8	4
3	632 887 7720	KNOB,SLIDE,POWER	1
	661 049 7278	RATING LABEL	1
	661 049 7261	LABEL,LICENSE,DTS	1
4	632 814 3146	CAP,SOCKET	1
73	661 050 3900	FIXER	2
	661 052 2321	CAUTION LABEL	1
		CHASSIS	
5	661 030 2442	STOPPER,LID,CD	1
6	412 056 9904	SPECIAL SCREW	1
7	661 030 2435	FIXER	1
8	661 030 6839	COIL SPRING	1
	411 025 9006	SCR S-TPG PAN 2X4	2
9	661 030 2466	BRACKET,SOCKET	1
46	661 043 4341	BRACKET,LCD	4
	411 025 4209	SCR S-TPG BIN 2X6	4
		BRACKET,LCD-CABINET	
	411 025 4209	SCR S-TPG BIN 2X6	5
		SW PCB-CABINET	
11	661 033 4436	INSULATOR	1
12	661 043 7540	SHEET,LCD-PCB	1
	661 049 7285	CAUTION LABEL	1
	632 717 5827	LABEL,IDENTIFICATION	1
13	412 061 7704	SPECIAL SCREW,FAN	2
	411 025 3905	SCR S-TPG BIN 2X5,SPEAKE	2
14	632 866 3545	SPECIAL SCREW, 3X8,STAND	2
	411 086 3609	WASHER SPR 3,STAND	2
47	412 056 9805	SPECIAL SCREW	2
	411 025 4209	SCR S-TPG BIN 2X6	6
	411 025 4209	SCR S-TPG BIN 2X6	8
	632 644 5518	SHEET	2
16	632 870 1391	DAMPER	3
17	661 025 6486	SHIELD PLATE	1
		MECHANISM(68X52)	
18	412 061 6806	SPECIAL SCREW	3
19	661 032 1092	PLATE SPRING	1
20	412 063 2806	SPECIAL SCREW	2
	632 824 7561	LABEL,COLOR,FAN	1
24	661 034 5333	SPACER	1
	632 559 9656	PAD	7
50	661 044 2377	INSULATOR,LCD	1
43	661 037 2810	VEIL	1
51	661 045 8019	SHELTER	1
	632 666 4674	SHEET	4
55	661 052 1218	SHIELD SHEET,LCD	3
		CHASSIS ELECTRICAL	
LCD1	661 031 0348	DISPLAY MODULE	1
SP1	661 031 3127	SPEAKER,8 OHM	1
STAND1	661 049 7292	STAND ASSY	1
	661 029 7465	DVD MECHANISM,MDVC07	1
	661 041 3049	FAN,MOTOR,DC	1
61	661 032 0668	FPC,MAIN PCB-DVD PCB	1
62	661 034 9447	WIRE,50P-64MM	1
		MAIN PCB-DVD PCB	
64	661 057 1251	FFC,50P 92MM	1
		DVD PCB-MECHANISM	
	661 046 0173	WIRE,6P-72MM	1

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.
3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

PARTS LIST(CONTINUED)

Ref. No.	PART No.	DESCRIPTION	Q'ty
	661 046 0166	WIRE,28P-92MM	1
65	661 015 0333	WIRE,24P-82MM,LCD PCB-LC	1
	661 059 7701	WIRE HANESS,9P-60MM	1
68	661 035 1372	CORE,MAIN PCB-DVD PCB	1
69	661 046 6847	CORE,FERRITE MAIN PCB-LCD PCB	1
70	661 025 9586	CORE,FERRITE DVD PCB-MECHANISM	1
MAIN & GPS P.C.B. ASSEMBLY			
PCB1	661 059 4953	PCB-ML ASSY,MAIN & GPS	1
	661 059 0436	PCB-ML ASSY,MAIN	(1)
IC801	410 448 1604	IC HD6417706F133	((1))
IC802	410 359 8709	IC SN74AHC1G08HDCK-R	((1))
IC834	410 359 8709	IC SN74AHC1G08HDCK-R	((1))
IC802 OR	409 368 5809	IC TC7SH08FU	((1))
IC834 OR	409 368 5809	IC TC7SH08FU	((1))
IC831	410 415 7509	IC SN74AHC1G00HDCKR	((1))
IC831 OR	409 395 5902	IC TC7SH00FU	((1))
IC832	409 532 0302	IC R3112Q271A	((1))
IC833	410 369 9505	IC SN74AHC2G14HDC-TR	((1))
IC833 OR	409 468 2302	IC TC7WH14FU	((1))
IC835	409 506 5807	IC NC7ST08P5	((1))
IC835 OR	409 375 7001	IC TC7ST08FU	((1))
IC841	410 459 3604	IC V54C365164VCT-7	((1))
IC842	410 459 3604	IC V54C365164VCT-7	((1))
IC841 OR	410 402 8106	IC HY57V641620HGT-P	((1))
IC842 OR	410 402 8106	IC HY57V641620HGT-P	((1))
IC841 OR	410 441 0000	IC K4S641632F-TC75	((1))
IC842 OR	410 441 0000	IC K4S641632F-TC75	((1))
IC841 OR	410 449 3300	IC MT48LC4M16A2TG-75	((1))
IC842 OR	410 449 3300	IC MT48LC4M16A2TG-75	((1))
IC841 OR	410 450 2309	IC M12L64164A-7T	((1))
IC842 OR	410 450 2309	IC M12L64164A-7T	((1))
IC841 OR	410 451 6306	IC NT5SV4M16DT-7K	((1))
IC842 OR	410 451 6306	IC NT5SV4M16DT-7K	((1))
IC841 OR	410 433 7000	IC HY57V641620HGT-K	((1))
IC842 OR	410 433 7000	IC HY57V641620HGT-K	((1))
IC843	410 500 9401	IC TC58FVT321FT-10/7560AA	((1))
IC843 OR	410 509 5008	IC TC58FVM5T2ATG65/7560AA	((1))
IC861	410 444 8805	IC LC24072B-WC8-E	((1))
IC871	409 323 8708	IC TC7WU04FU	((1))
IC872	409 301 5101	IC TC7W04FU	((1))
IC881	409 391 5005	IC UPD6379ALGR	((1))
IC882	409 228 9206	IC NJM2100M	((1))
IC901	409 429 7100	IC HD64412F	((1))
IC921	409 511 1207	IC XC2151A510M	((1))
IC923	409 435 9501	IC NC7S04P5	((1))
IC923 OR	409 330 2508	IC TC7SH04FU	((1))
IC931	410 403 9706	IC MSM5118165F-60TS-K	((1))
IC941	410 371 6004	IC CD74HC4046AM-96	((1))
IC951	409 459 9303	IC CXA2106R	((1))
X801	661 040 2074	RESONATOR,XTAL,14.7456MHZ	((1))
X871	632 807 3719	RESONATOR,XTAL,7.15909MHZ	((1))
X921	661 032 5212	RESONATOR,XTAL,32.000MHZ	((1))
CS971	632 870 6884	PLUG,9P	((1))
CS981	632 789 6951	SOCKET,50P	((1))
CS991	632 789 6951	SOCKET,50P	((1))
CS982	661 032 8084	SOCKET,34P	((1))
	632 892 1157	SOCKET,GPS	((1))
	661 000 4773	RETAINER,SOCKET,GPS	((1))
Z971	632 806 8784	BATTERY	((1))
Q801	405 183 8704	TR RT1N141M	((1))
Q802	405 183 8704	TR RT1N141M	((1))
Q804	405 183 8704	TR RT1N141M	((1))
Q805	405 183 8704	TR RT1N141M	((1))
Q806	405 183 8704	TR RT1N141M	((1))
Q807	405 183 8704	TR RT1N141M	((1))
Q803	405 183 9008	TR RT1N441M	((1))
Q951	405 102 5609	TR 2SD1819A-R	((1))
Q952	405 102 5609	TR 2SD1819A-R	((1))
Q971	405 111 2408	TR 2SD601A-R	((1))
Q971 OR	405 014 4509	TR 2SC2412K-R	((1))
D971	407 216 8101	DIODE MA721WK	((1))
D972	407 008 5707	DIODE MA152K	((1))
DZ941	407 056 5506	ZENER DIODE RD4.3MB1	((1))
L801	632 883 2132	INDUCTOR,FERRITE	((1))
L802	632 883 2132	INDUCTOR,FERRITE	((1))
L841	632 883 2132	INDUCTOR,FERRITE	((1))
L842	632 883 2132	INDUCTOR,FERRITE	((1))

Ref. No.	PART No.	DESCRIPTION	Q'ty
L861	632 883 2132	INDUCTOR,FERRITE	((1))
L862	632 883 2132	INDUCTOR,FERRITE	((1))
L871	632 883 2132	INDUCTOR,FERRITE	((1))
L881	632 883 2132	INDUCTOR,FERRITE	((1))
L882	632 883 2132	INDUCTOR,FERRITE	((1))
L901	632 883 2132	INDUCTOR,FERRITE	((1))
L902	632 883 2132	INDUCTOR,FERRITE	((1))
L921	632 883 2132	INDUCTOR,FERRITE	((1))
L931	632 883 2132	INDUCTOR,FERRITE	((1))
L951	632 883 2132	INDUCTOR,FERRITE	((1))
L952	632 883 2132	INDUCTOR,FERRITE	((1))
L971	632 883 2132	INDUCTOR,FERRITE	((1))
L941	632 889 9449	INDUCTOR,FERRITE	((1))
L953	661 048 5800	INDUCTOR,56UH J	((1))
NF951	661 012 0138	FILTER,EMI	((1))
RA817	632 754 3053	RESISTOR,2X33	((1))
RA819	632 754 3053	RESISTOR,2X33	((1))
RA820	632 754 3053	RESISTOR,2X33	((1))
RA870	632 754 3053	RESISTOR,2X33	((1))
RA868	632 754 3114	RESISTOR,2X100	((1))
RA869	632 754 3268	RESISTOR,2X1K	((1))
RA823	632 754 3442	RESISTOR,2X10K	((1))
RA825	632 754 3442	RESISTOR,2X10K	((1))
RA881	632 754 3442	RESISTOR,2X10K	((1))
RA901	632 754 3442	RESISTOR,2X10K	((1))
RA872	632 754 3442	RESISTOR,2X10K	((1))
RA801	632 746 5942	RESISTOR,4X33	((1))
RA802	632 746 5942	RESISTOR,4X33	((1))
RA803	632 746 5942	RESISTOR,4X33	((1))
RA804	632 746 5942	RESISTOR,4X33	((1))
RA805	632 746 5942	RESISTOR,4X33	((1))
RA806	632 746 5942	RESISTOR,4X33	((1))
RA807	632 746 5942	RESISTOR,4X33	((1))
RA808	632 746 5942	RESISTOR,4X33	((1))
RA809	632 746 5942	RESISTOR,4X33	((1))
RA810	632 746 5942	RESISTOR,4X33	((1))
RA811	632 746 5942	RESISTOR,4X33	((1))
RA812	632 746 5942	RESISTOR,4X33	((1))
RA813	632 746 5942	RESISTOR,4X33	((1))
RA814	632 746 5942	RESISTOR,4X33	((1))
RA815	632 746 5942	RESISTOR,4X33	((1))
RA816	632 746 5942	RESISTOR,4X33	((1))
RA818	632 746 5942	RESISTOR,4X33	((1))
RA861	632 746 5942	RESISTOR,4X33	((1))
RA862	632 746 5942	RESISTOR,4X33	((1))
RA863	632 746 5942	RESISTOR,4X33	((1))
RA864	632 746 5942	RESISTOR,4X33	((1))
RA865	632 746 5942	RESISTOR,4X33	((1))
RA866	632 746 5942	RESISTOR,4X33	((1))
RA871	632 746 5942	RESISTOR,4X33	((1))
RA902	632 746 5966	RESISTOR,4X47	((1))
RA903	632 746 5966	RESISTOR,4X47	((1))
RA904	632 746 5966	RESISTOR,4X47	((1))
RA905	632 746 5966	RESISTOR,4X47	((1))
RA906	632 746 5966	RESISTOR,4X47	((1))
RA907	632 746 5966	RESISTOR,4X47	((1))
RA908	632 746 5966	RESISTOR,4X47	((1))
RA909	632 746 5966	RESISTOR,4X47	((1))
RA954	632 746 5966	RESISTOR,4X47	((1))
RA867	632 746 6048	RESISTOR,4X100	((1))
RA951	632 746 6062	RESISTOR,4X150	((1))
RA821	632 746 6970	RESISTOR,4X10K	((1))
RA822	632 746 6970	RESISTOR,4X10K	((1))
RA824	632 746 6970	RESISTOR,4X10K	((1))
RA910	632 746 6970	RESISTOR,4X10K	((1))
RA931	632 746 6970	RESISTOR,4X10K	((1))
RA932	632 746 6970	RESISTOR,4X10K	((1))
RA933	632 746 6970	RESISTOR,4X10K	((1))
RA934	632 746 6970	RESISTOR,4X10K	((1))
RA981	632 746 6970	RESISTOR,4X10K	((1))
RA991	632 746 6970	RESISTOR,4X10K	((1))
RA992	632 746 6970	RESISTOR,4X10K	((1))
RA993	632 746 6970	RESISTOR,4X10K	((1))
RA994	632 746 6970	RESISTOR,4X10K	((1))
RA995	632 746 6970	RESISTOR,4X10K	((1))
RA996	632 746 6970	RESISTOR,4X10K	((1))
JK110	632 637 5211	SOCKET, DC JACK	((1))
JK270	632 696 1124	JACK,HEAD PHONE	((1))
JK301	632 889 2105	JACK,LINE IN/OUT	((1))
JK310	632 891 4128	JACK,VIDEO IN/OUT	((1))
JK560	661 030 1070	JACK,PARK	((1))

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.
3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

PARTS LIST(CONTINUED)

Ref. No.	PART No.	DESCRIPTION	Q'ty
SW110	632 815 1585	SWITCH,SLIDE,POWER	((1))
CS051	632 889 2068	SOCKET,28P	((1))
X051	632 659 7989	RESONATOR,XTAL3.579545MHZ	((1))
X501	661 015 6786	OSC,XTAL,12.000MHZ	((1))
IC051	409 494 4905	IC MM1234XFBE	((1))
IC052	409 494 4905	IC MM1234XFBE	((1))
IC053	409 476 7009	IC BA7652AF	((1))
IC054	409 476 7009	IC BA7652AF	((1))
IC055	409 508 4808	IC RB5P0060M	((1))
IC110	409 535 2709	IC LTC3707EGN	((1))
IC140	409 520 7108	IC XC9101D09AK	((1))
IC160	409 531 2109	IC XC6203E192F	((1))
IC201	409 182 1209	IC NJM4565M-B	((1))
IC220	409 182 1209	IC NJM4565M-B	((1))
IC240	409 262 4205	IC BA3121F	((1))
IC250	409 485 0107	IC CD4052BC	((1))
IC260	409 485 0107	IC CD4052BC	((1))
IC270	409 537 8709	IC BH7884EFV	((1))
IC301	410 359 8709	IC SN74AHC1G08HDCK-R	((1))
IC301 OR	409 368 5809	IC TC7SH08FU	((1))
IC310	409 482 0407	IC MM1228XF	((1))
IC501	410 496 9607	IC M30802FCGP/7548AA	((1))
IC530	410 350 7800	IC MSM5117805D-60TS-K	((1))
IC540	409 531 9207	IC M35075-050FP	((1))
IC550	409 530 4401	IC BR24C02FV-W	((1))
IC570	409 506 5906	IC XC61CC4202M	((1))
Q572	405 182 5605	TR 2SC4132	((1))
Q109	405 165 8401	TR RT1N144M	((1))
Q121	405 165 8401	TR RT1N144M	((1))
Q141	405 165 8401	TR RT1N144M	((1))
Q161	405 165 8401	TR RT1N144M	((1))
Q261	405 165 8401	TR RT1N144M	((1))
Q051	405 092 4101	TR 2SC4081-R	((1))
Q101	405 022 6304	TR 2SD1621-T	((1))
Q108	405 124 2402	TR 2SB1424-R	((1))
Q160	405 124 2402	TR 2SB1424-R	((1))
Q120	405 153 4903	TR 2SA2016	((1))
Q140	405 030 7102	TR 2SB1203-T	((1))
Q201	405 144 1508	TR DTA143XUA	((1))
Q260	405 144 1508	TR DTA143XUA	((1))
Q570	405 144 1508	TR DTA143XUA	((1))
Q202	405 083 5209	TR DTC343TK	((1))
Q203	405 083 5209	TR DTC343TK	((1))
Q270	405 083 5209	TR DTC343TK	((1))
Q310	405 083 5209	TR DTC343TK	((1))
Q271	405 102 5609	TR 2SD1819A-R	((1))
Q571	405 102 5609	TR 2SD1819A-R	((1))
Q301	405 183 8605	TR RT1P136C	((1))
Q110	405 167 4104	TR FY5ACJ-03F	((1))
Q111	405 167 4104	TR FY5ACJ-03F	((1))
Q110 OR	405 158 5509	TR FDS8936A	((1))
Q111 OR	405 158 5509	TR FDS8936A	((1))
Q142	405 140 9409	TR IRF7201	((1))
Q560	405 161 4506	TR RT1P141C	((1))
Q112	405 145 0104	TR 2SA1586-GR	((1))
DZ571	407 057 3709	ZENER DIODE RD6.2MB2	((1))
DZ052	407 055 7402	ZENER DIODE RD3.3MB2	((1))
DZ110	407 207 7700	ZENER DIODE PTZ3.9B	((1))
DZ111	407 207 9209	ZENER DIODE PTZ6.2B	((1))
DZ260	407 058 0400	ZENER DIODE RD9.1MB1	((1))
DZ570	407 057 1101	ZENER DIODE RD5.6MB2	((1))
DZ101	407 058 0509	ZENER DIODE RD9.1MB2	((1))
D051	407 228 3507	DIODE UMN1N	((1))
D053	407 228 3507	DIODE UMN1N	((1))
D055	407 224 5109	DIODE MC2848-T11	((1))
D056	407 224 5109	DIODE MC2848-T11	((1))
D115	407 224 5109	DIODE MC2848-T11	((1))
D201	407 224 5109	DIODE MC2848-T11	((1))
D202	407 224 5109	DIODE MC2848-T11	((1))
D310	407 224 5109	DIODE MC2848-T11	((1))
D110	407 108 4006	DIODE DSM10C	((1))
D111	407 149 0807	DIODE 1SS355	((1))
D112	407 149 0807	DIODE 1SS355	((1))
D203	407 149 0807	DIODE 1SS355	((1))
D204	407 149 0807	DIODE 1SS355	((1))
D301	407 149 0807	DIODE 1SS355	((1))
D311	407 149 0807	DIODE 1SS355	((1))
D560	407 149 0807	DIODE 1SS355	((1))
D113	407 217 4904	DIODE EP10QY03	((1))
D114	407 217 4904	DIODE EP10QY03	((1))
D140	407 217 4904	DIODE EP10QY03	((1))
D160	407 217 4904	DIODE EP10QY03	((1))
D270	407 217 4904	DIODE EP10QY03	((1))
TH501	407 211 3101	THERMISTOR SC20-3U104K	((1))
TH570	408 049 2205	TH NCP18XH103F03RB	((1))
L110	661 010 5951	CHOKE COIL	((1))
L111	632 868 7732	INDUCTOR,FERRITE	((1))
L112	632 869 5652	INDUCTOR 22UH M	((1))
L141	632 869 5652	INDUCTOR 22UH M	((1))
L113	632 889 3317	INDUCTOR 8.2UH M	((1))
L114	661 000 7187	INDUCTOR,FERRITE	((1))
L140	661 000 7187	INDUCTOR,FERRITE	((1))
L142	661 000 7187	INDUCTOR,FERRITE	((1))
L160	661 000 7187	INDUCTOR,FERRITE	((1))
L161	661 000 7187	INDUCTOR,FERRITE	((1))
L163	661 000 7187	INDUCTOR,FERRITE	((1))
L260	632 883 2132	INDUCTOR,FERRITE	((1))
L261	632 883 2132	INDUCTOR,FERRITE	((1))
L310	632 883 2132	INDUCTOR,FERRITE	((1))
L501	661 001 2518	INDUCTOR,FERRITE	((1))
L530	661 001 2518	INDUCTOR,FERRITE	((1))
L540	661 001 2518	INDUCTOR,FERRITE	((1))
L541	661 001 2518	INDUCTOR,FERRITE	((1))
L550	661 001 2518	INDUCTOR,FERRITE	((1))
BR503	632 754 3114	RESISTOR,2X100	((1))
BR508	632 754 3114	RESISTOR,2X100	((1))
BR514	632 754 3114	RESISTOR,2X100	((1))
BR250	632 754 3268	RESISTOR,2X1K	((1))
BR270	632 754 3411	RESISTOR,2X6.8K	((1))
BR509	632 754 3442	RESISTOR,2X10K	((1))
BR251	632 754 3619	RESISTOR,2X100K	((1))
BR501	632 746 6048	RESISTOR,4X100	((1))
BR517	632 746 6048	RESISTOR,4X100	((1))
BR541	632 746 6178	RESISTOR,4X1K	((1))
BR051	632 746 7229	RESISTOR,4X100K	((1))
R122	402 083 4300	MT-GLAZE 0.024 JA 1/2W	((1))
R123	402 083 4300	MT-GLAZE 0.024 JA 1/2W	((1))
R114	402 083 4508	MT-GLAZE 0.047 JA 1/2W	((1))
R150	402 083 4508	MT-GLAZE 0.047 JA 1/2W	((1))
	661 036 0008	SHIELD,SHEET	((1))
	661 056 1368	SHIELD SHEET	((1))
	661 056 1375	SHIELD SHEET	((1))
	661 056 1382	SHIELD SHEET	((1))
	632 848 0975	SHEET	((2))
	661 059 4946	PCB-W ASSY,GPS	(1)
	661 052 1980	GPS RECEIVING UNIT	((1))
	632 870 8178	SOCKET,9P(PLUG)	((1))
	661 058 5081	BRACKET	((1))

LCD P.C.B. ASSEMBLY

PCB2	661 051 2872	PCB-W ASSY,LCD	1
CS401	632 798 5822	SOCKET,24P	1
CS402	632 891 4449	SOCKET,28P	1
CS402 OR	632 860 8300	SOCKET,28P	1
CS431	632 775 2707	PLUG,2P	1
CS404	661 044 6931	SOCKET,6P	1
IC441	409 509 2001	IC XC6367B103M	1
Q431	405 182 5605	TR 2SC4132	1
Q432	405 182 5605	TR 2SC4132	1
Q433	405 124 2402	TR 2SB1424-R	1
Q434	405 165 8609	TR RT1N144C	1
Q441	405 182 5605	TR 2SC4132	1
D441	407 218 1803	DIODE RB706D-40	1
D442	407 149 0807	DIODE 1SS355	1
T431	661 015 6076	INVERTER TRANSFORMER	1
T432	661 015 6076	INVERTER TRANSFORMER	1
L431	661 000 7187	INDUCTOR,FERRITE	1
L432	661 009 4651	INDUCTOR 100UH K	1
L441	661 009 2916	INDUCTOR 100UH M	1
L461	632 755 3571	CORE	1

KEY P.C.B. ASSEMBLY

PCB3	661 059 0443	PCB-W ASSY,KEY	1
IC541	409 410 7805	IC TC7WT241FU	1
IC503	410 483 7104	IC M34282M2-338GP	1
IC540	410 464 4009	IC S-812C33AUA-C2N-T2	1
Q550	405 102 5609	TR 2SD1819A-R	1
Q560	405 102 5609	TR 2SD1819A-R	1
Q561	405 102 5609	TR 2SD1819A-R	1
X501	661 046 5345	RESONATOR,CERAM,4.000MHZ	1

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.
3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

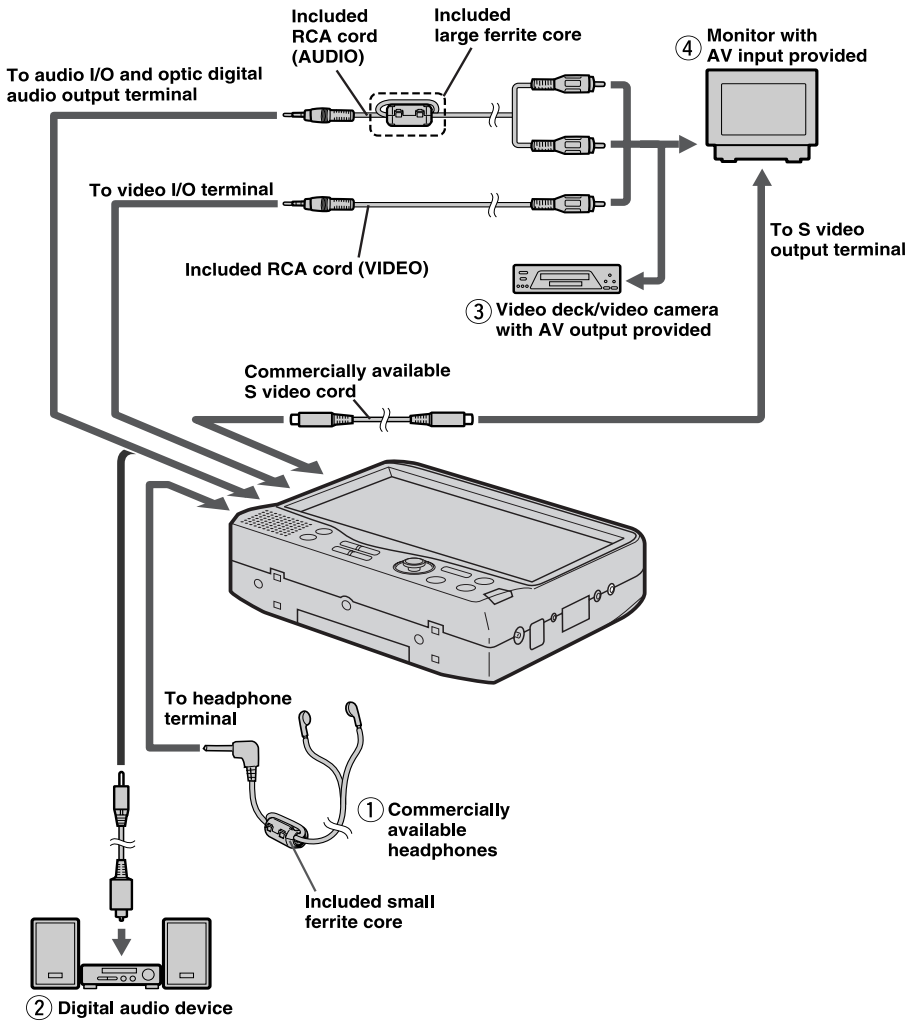
PARTS LIST(CONTINUED)

Ref. No.	PART No.	DESCRIPTION	Q'ty
S540	632 868 0221	SWITCH,TACT	1
S511	632 668 1442	SWITCH,TACT	1
S512	632 668 1442	SWITCH,TACT	1
S513	632 668 1442	SWITCH,TACT	1
S515	632 668 1442	SWITCH,TACT	1
S516	632 668 1442	SWITCH,TACT	1
S517	632 668 1442	SWITCH,TACT	1
S519	632 668 1442	SWITCH,TACT	1
S521	632 668 1442	SWITCH,TACT	1
S528	632 668 1442	SWITCH,TACT	1
S531	632 668 1442	SWITCH,TACT	1
D501	407 231 2306	LED CL-191B1-X	1
D502	407 231 2306	LED CL-191B1-X	1
D503	407 231 2306	LED CL-191B1-X	1
D504	407 231 2306	LED CL-191B1-X	1
D505	407 231 2306	LED CL-191B1-X	1
D506	407 231 2306	LED CL-191B1-X	1
D507	407 231 2306	LED CL-191B1-X	1
D508	407 231 2306	LED CL-191B1-X	1
D509	407 231 2306	LED CL-191B1-X	1
D510	407 231 2306	LED CL-191B1-X	1
D511	407 231 2306	LED CL-191B1-X	1
D513	407 231 2306	LED CL-191B1-X	1
D514	407 231 2306	LED CL-191B1-X	1
D515	407 231 2306	LED CL-191B1-X	1
CS501	661 044 6931	SOCKET,6P	1
REM501	407 213 2102	SENSOR RPM6938-V4	1
	661 033 7475	SPACER	1
	661 045 8026	SHEET	1
	661 053 6472	CUSHION	1
SENSOR P.C.B. ASSEMBLY			
PCB4	661 051 2889	PCB-W ASSY,SENSOR	1
PH601	407 232 1506	PHOTO DIODE RPM-075PT	1
DVD P.C.B. ASSEMBLY			
PCB5	661 059 0450	PCB-ML ASSY,DVD	1
IC701	409 513 8709	IC ES4408FD	1
IC731	409 487 9108	IC S-24C02BFJ	1
IC731 OR	410 382 0107	IC HN58X2402FPI-Z	1
IC733	410 496 9706	IC W29C040T-90/7549AA	1
IC734	410 359 8709	IC SN74AHC1G08HDCK-R	1
IC734 OR	409 368 5809	IC TC7SH08FU	1
IC735	409 323 8708	IC TC7WU04FU	1
IC737	410 416 3401	IC SN74AHC174PW-R	1
IC741	409 525 3204	IC A43L0616AV-6	1
IC742	409 525 3204	IC A43L0616AV-6	1
IC741 OR	410 390 2209	IC LC3816161ET-70-MPB	1
IC742 OR	410 390 2209	IC LC3816161ET-70-MPB	1
IC741 OR	409 521 5707	IC T431616A-7S	1
IC742 OR	409 521 5707	IC T431616A-7S	1
IC751	409 507 1600	IC CS4955-CQ	1
IC781	409 480 3806	IC PCM1720E	1
IC782	409 435 9501	IC NC7S04P5	1
IC782 OR	409 330 2508	IC TC7SH04FU	1
IC791	409 039 7804	IC NJM4558M	1
IC601	409 533 1407	IC NC7WB3306K8	1
IC671	409 533 1506	IC FST16210MTD	1
IC672	409 533 1506	IC FST16210MTD	1
IC673	409 533 1506	IC FST16210MTD	1
X731	661 036 8356	RESONATOR,XTAL,27.000MHZ	1
CS601	632 801 7270	SOCKET,34P	1
CS631	661 015 1255	SOCKET,4P	1
CS641	632 761 9833	SOCKET	1
CS651	632 869 1371	SOCKET,50P	1
CS661	632 789 6951	SOCKET,50P	1
SW661	632 775 2844	SWITCH,MICRO	1
L701	632 883 2132	INDUCTOR,FERRITE	1
L702	632 883 2132	INDUCTOR,FERRITE	1
L734	632 883 2132	INDUCTOR,FERRITE	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
L751	632 883 2132	INDUCTOR,FERRITE	1
L781	632 883 2132	INDUCTOR,FERRITE	1
L782	632 883 2132	INDUCTOR,FERRITE	1
L791	632 883 2132	INDUCTOR,FERRITE	1
L611	632 883 2132	INDUCTOR,FERRITE	1
L612	632 883 2132	INDUCTOR,FERRITE	1
L752	632 559 5733	INDUCTOR 8.2UH K	1
L753	632 559 5733	INDUCTOR 8.2UH K	1
L754	632 559 5733	INDUCTOR 8.2UH K	1
NF751	661 012 0138	FILTER,EMI	1
NF641	661 012 0145	FILTER,EMI	1
Q751	405 145 0104	TR 2SA1586-GR	1
Q752	405 145 0104	TR 2SA1586-GR	1
Q753	405 145 0104	TR 2SA1586-GR	1
Q754	405 145 0104	TR 2SA1586-GR	1
Q755	405 145 0104	TR 2SA1586-GR	1
Q756	405 145 0104	TR 2SA1586-GR	1
Q612	405 165 8401	TR RT1N144M	1
Q614	405 165 8401	TR RT1N144M	1
Q671	405 165 8401	TR RT1N144M	1
Q701	405 165 8401	TR RT1N144M	1
Q613	405 124 2402	TR 2SB1424-R	1
Q611	405 118 7901	TR 2SB709A-R	1
D611	407 092 9506	DIODE SB07-03C	1
DZ601	407 056 5506	ZENER DIODE RD4.3MB1	1
DZ641	407 227 4802	ZENER DIODE RSA6.1EN	1
RA723	632 754 3053	RESISTOR,2X33	1
RA730	632 754 3053	RESISTOR,2X33	1
RA734	632 754 3053	RESISTOR,2X33	1
RA758	661 011 7077	RESISTOR,2X75	1
RA705	632 754 3114	RESISTOR,2X100	1
RA707	632 754 3114	RESISTOR,2X100	1
RA641	632 754 3114	RESISTOR,2X100	1
RA642	632 754 3114	RESISTOR,2X100	1
RA791	632 754 3237	RESISTOR,2X560	1
RA735	632 754 3367	RESISTOR,2X4.7K	1
RA651	632 754 3442	RESISTOR,2X10K	1
RA701	632 746 5942	RESISTOR,4X33	1
RA702	632 746 5942	RESISTOR,4X33	1
RA703	632 746 5942	RESISTOR,4X33	1
RA704	632 746 5942	RESISTOR,4X33	1
RA708	632 746 5942	RESISTOR,4X33	1
RA709	632 746 5942	RESISTOR,4X33	1
RA710	632 746 5942	RESISTOR,4X33	1
RA711	632 746 5942	RESISTOR,4X33	1
RA712	632 746 5942	RESISTOR,4X33	1
RA713	632 746 5942	RESISTOR,4X33	1
RA714	632 746 5942	RESISTOR,4X33	1
RA715	632 746 5942	RESISTOR,4X33	1
RA716	632 746 5942	RESISTOR,4X33	1
RA717	632 746 5942	RESISTOR,4X33	1
RA718	632 746 5942	RESISTOR,4X33	1
RA719	632 746 5942	RESISTOR,4X33	1
RA720	632 746 5942	RESISTOR,4X33	1
RA721	632 746 5942	RESISTOR,4X33	1
RA722	632 746 5942	RESISTOR,4X33	1
RA725	632 746 5942	RESISTOR,4X33	1
RA726	632 746 5942	RESISTOR,4X33	1
RA727	632 746 5942	RESISTOR,4X33	1
RA728	632 746 5942	RESISTOR,4X33	1
RA729	632 746 5942	RESISTOR,4X33	1
RA753	632 746 5966	RESISTOR,4X47	1
RA755	632 746 5980	RESISTOR,4X56	1
RA754	632 746 6062	RESISTOR,4X150	1
RA751	661 012 9674	RESISTOR,4X300	1
RA752	661 012 9674	RESISTOR,4X300	1
RA706	632 746 6901	RESISTOR,4X4.7K	1
RA792	632 746 7229	RESISTOR,4X100K	1
	661 052 1171	SHIELD SHEET	1
	661 036 0978	SHIELD,SHEET	1
	661 055 8573	SHIELD	1
	661 056 1351	SHIELD SHEET	1

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.
3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

① to ④ are commercially available. (See the numbers below and their corresponding descriptions on the right.)



① You can listen to the unit's audio using headphones.

② If using commercially available optic digital cables, you can hear the unit's audio (DVD mode only) using your existing digital audio device.

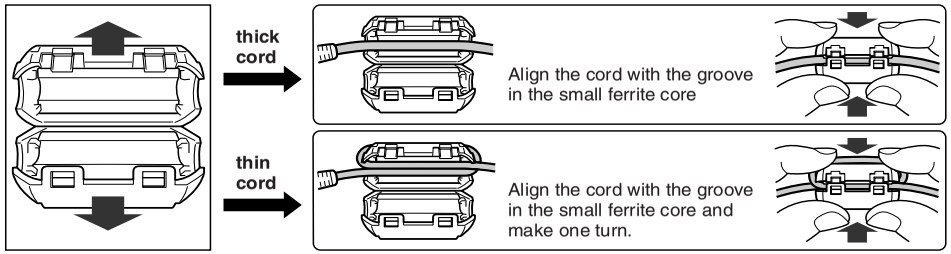
③ If using the RCA cords (AUDIO and VIDEO respectively) included with the unit, you can view images on the unit's screen from a video deck/video camera.
"Connecting a video deck/video camera"

④ If using the RCA cords (AUDIO and VIDEO respectively) included with the unit, you can view the images from the unit on an exterior monitor (with AV output provided).
* If the exterior monitor has an S video terminal, images provided by commercially available media become significantly clearer.

* Inquire at the store of purchase for commercially available items that can be used with this unit.

CONNECTING COMMERCIALLY AVAILABLE HEADPHONES TO THE HEADPHONE TERMINAL OF THE UNIT

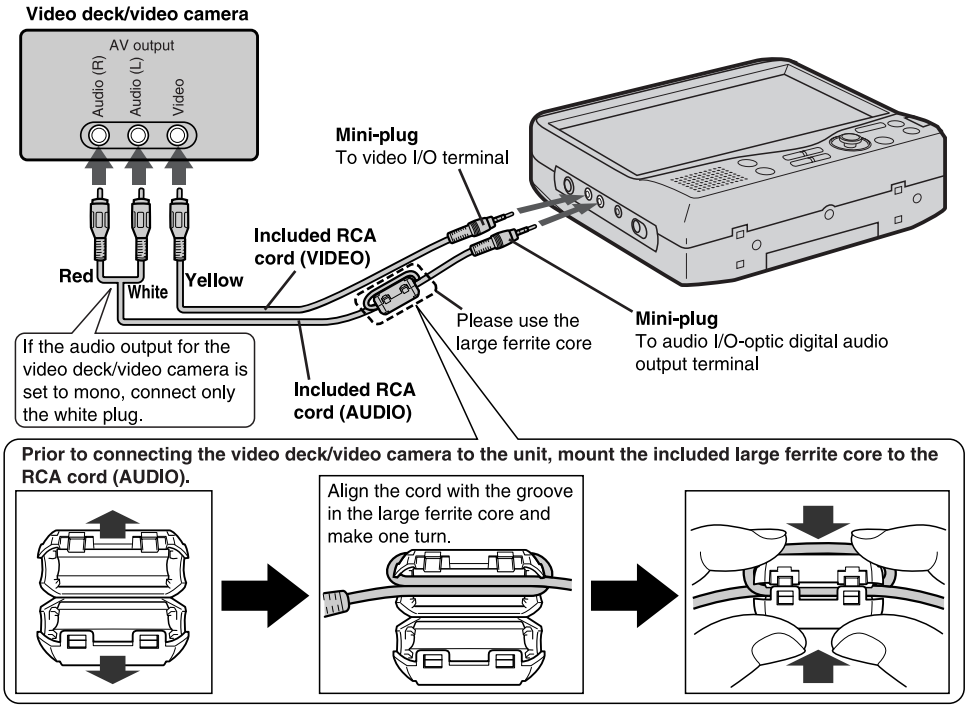
Mount the included small ferrite core to the headphones.



Use the AUDIO and VIDEO RCA cords included with this unit to enable the playback of images from your video deck or video camera.

1 Connect your video deck/video camera to the unit.

* Prior to connecting, cut off the power supply to the video deck/video camera.



2 Turn the power supply ON for the video deck/video camera ”VIDEO” will be displayed on the screen for roughly 10 seconds.

*If the unit is in another mode, press the button to return the unit to the VIDEO mode.

3 Start playback on the video deck/video camera.

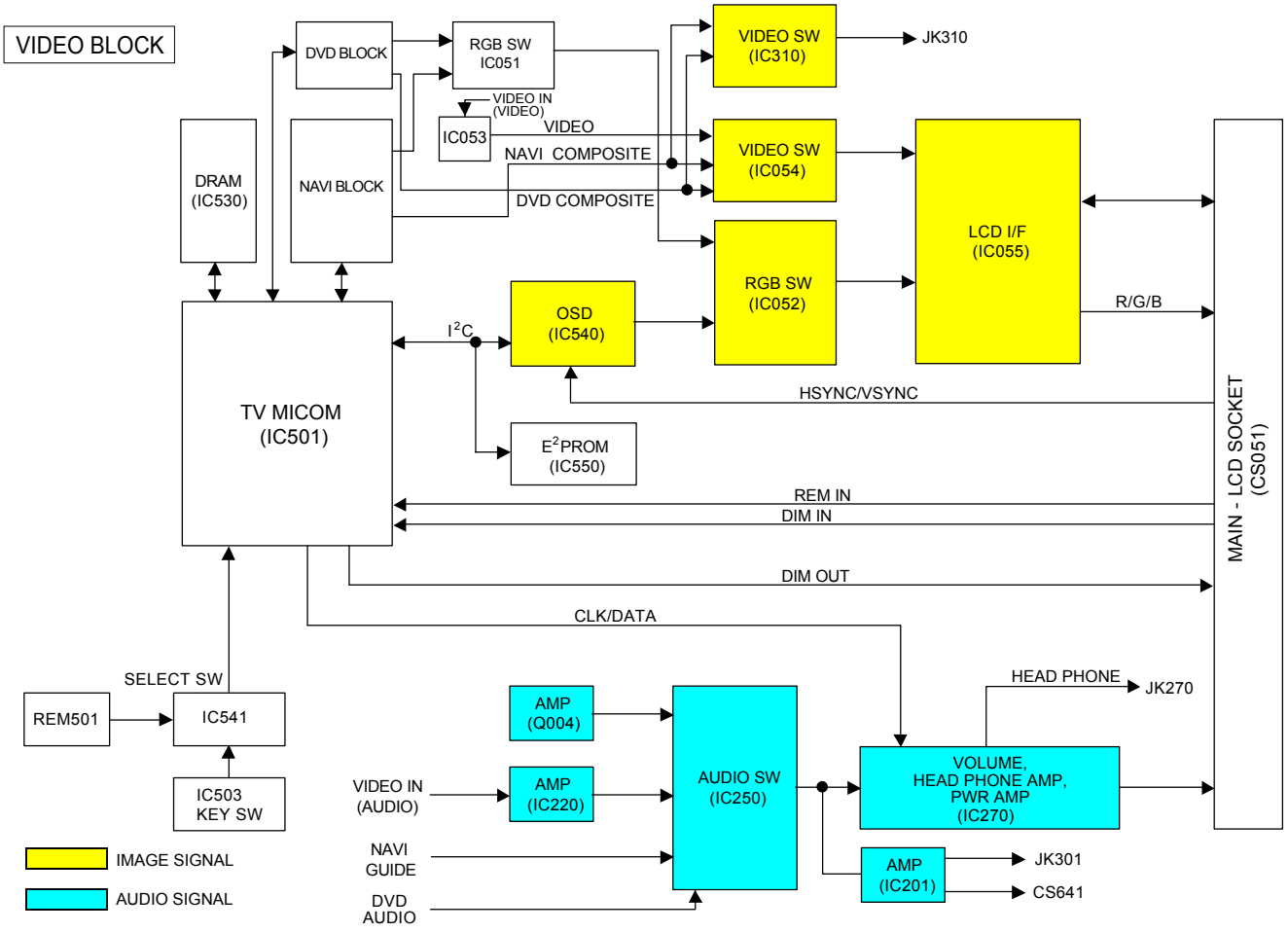
* Refer to the video deck/video camera instruction manual for their respective operation method.

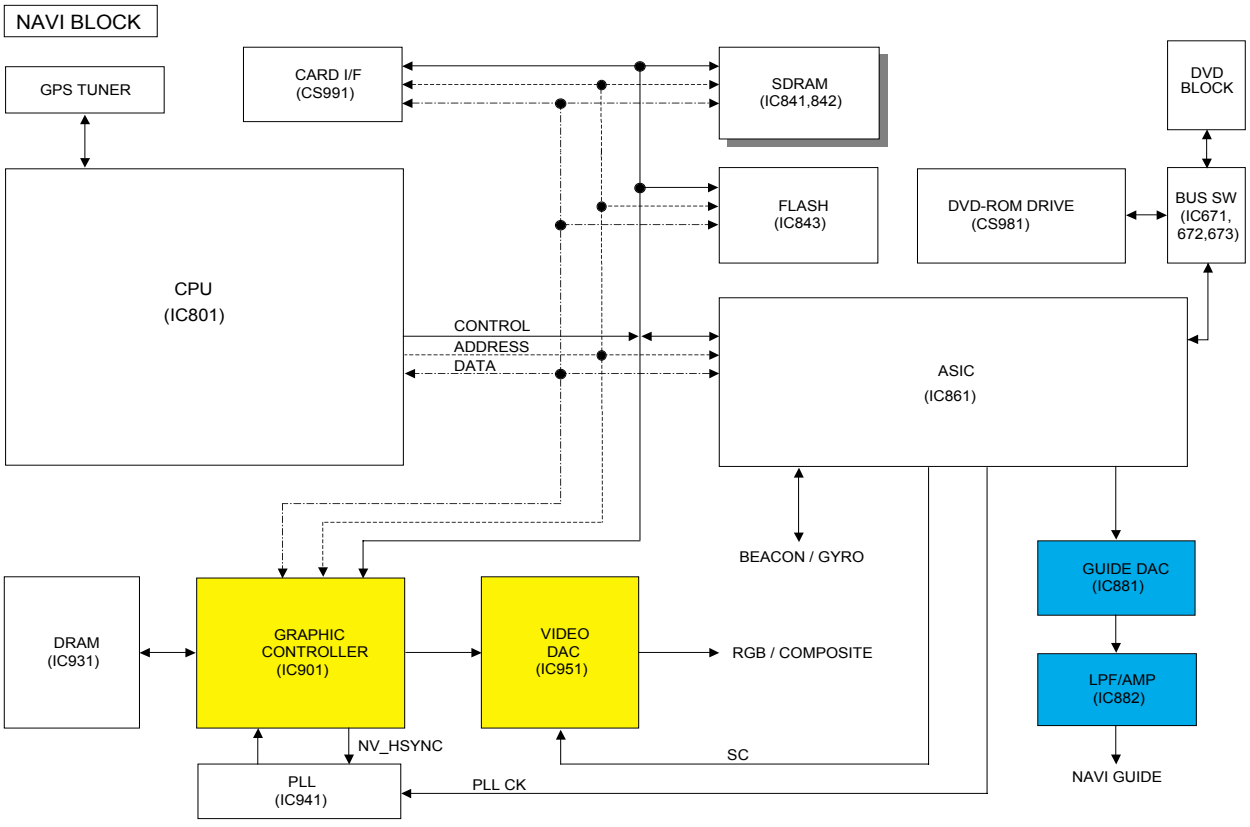
Hint

When connecting the unit to the video deck/video camera, press the MODE button to switch modes in the following order: → “VIDEO” → “NAVI” → “DVD” →

Video deck/video camera operation is enabled only after having put the unit in VIDEO mode.

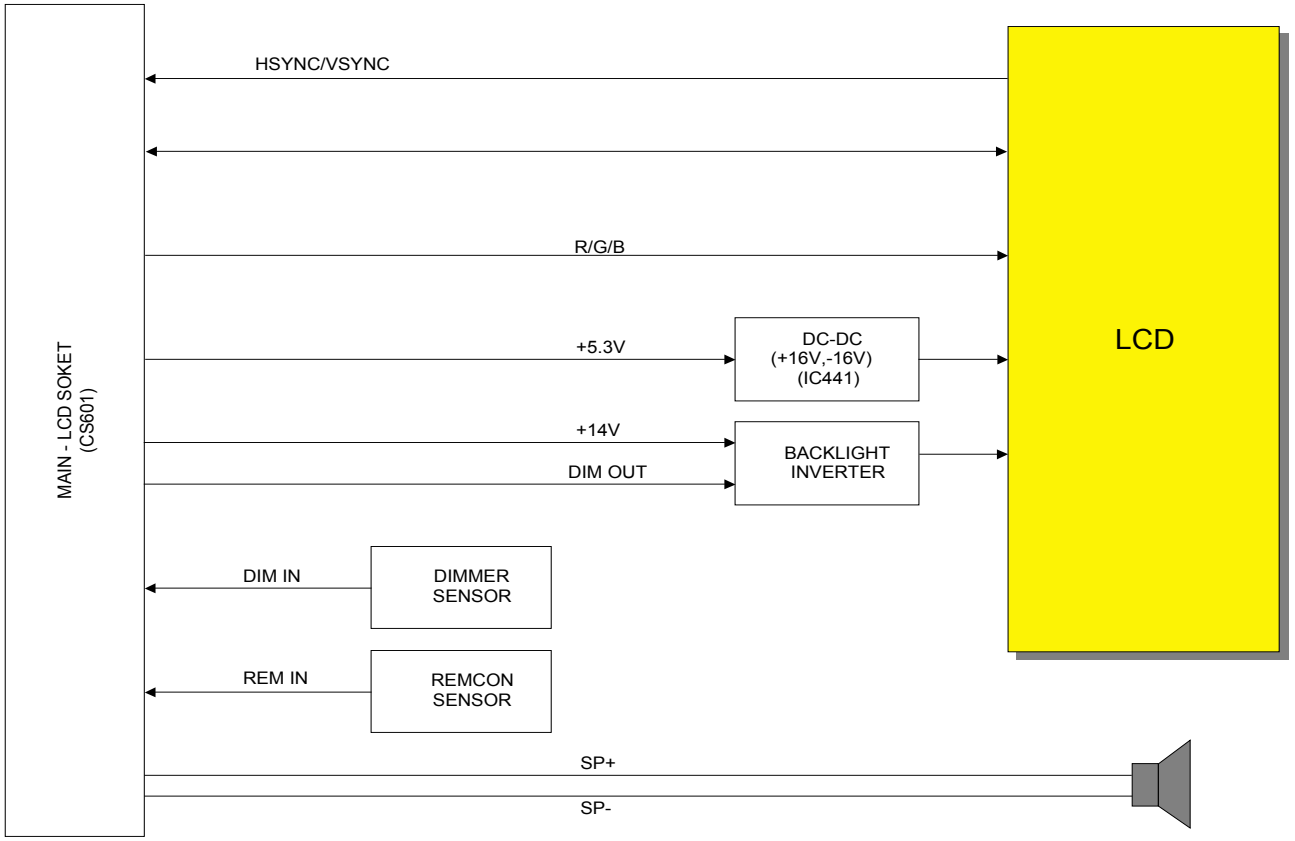
BLOCK DIAGRAM



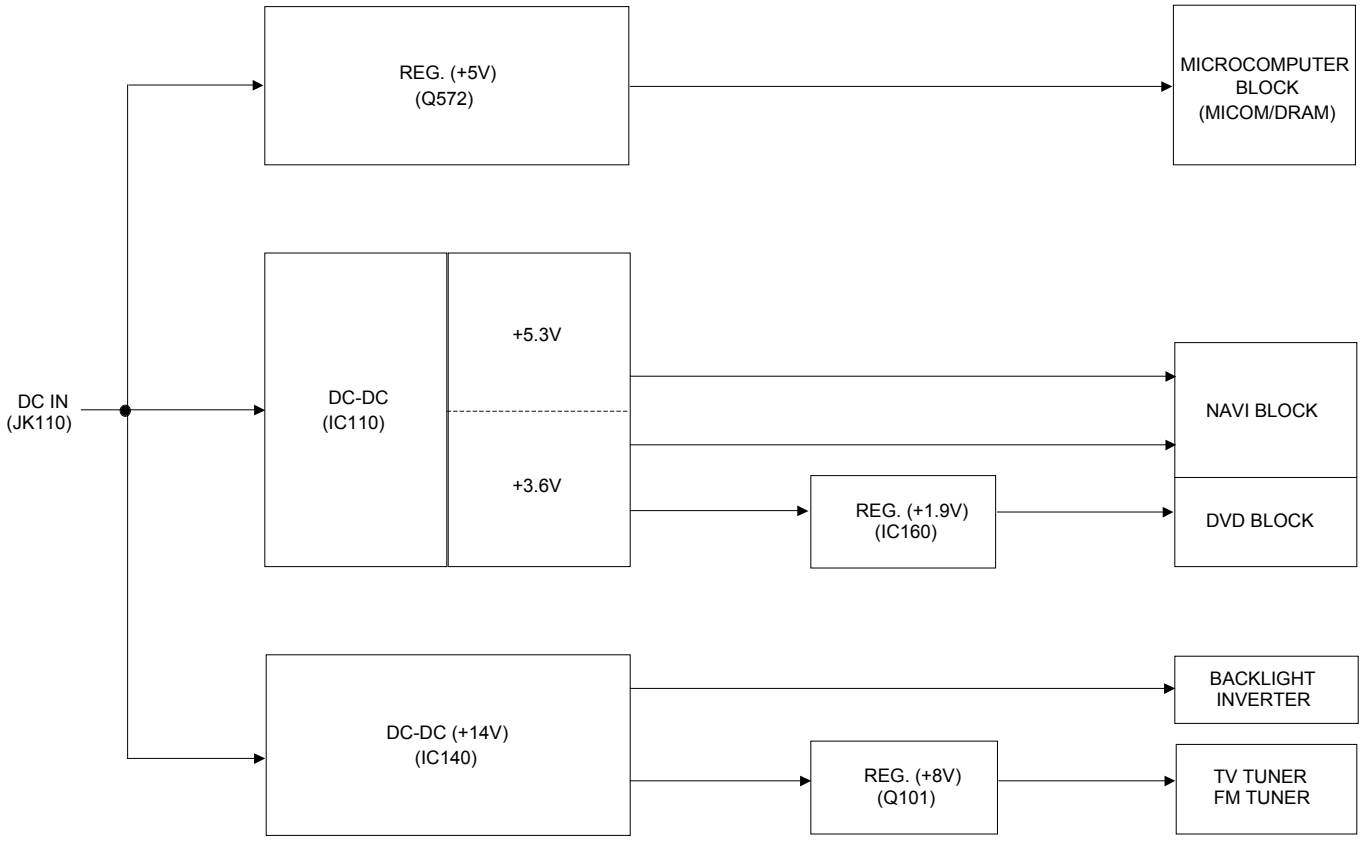


BLOCK DIAGRAM

LCD PCB BLOCK

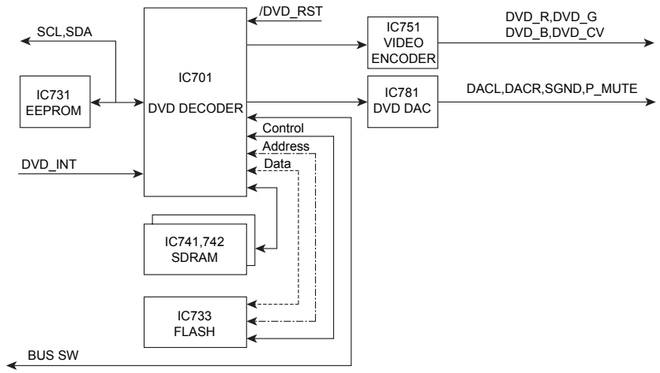


POWER SUPPLY BLOCK

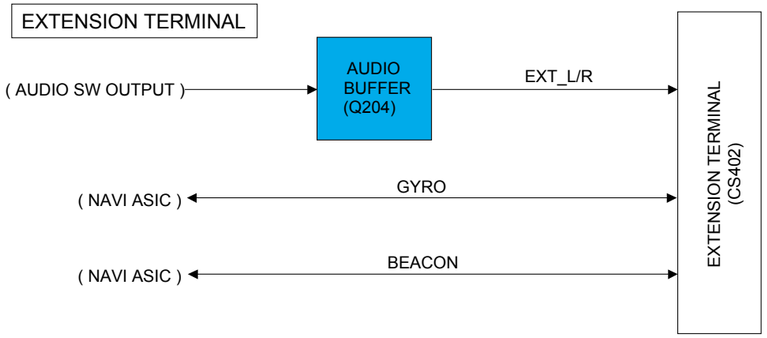


BLOCK DIAGRAM

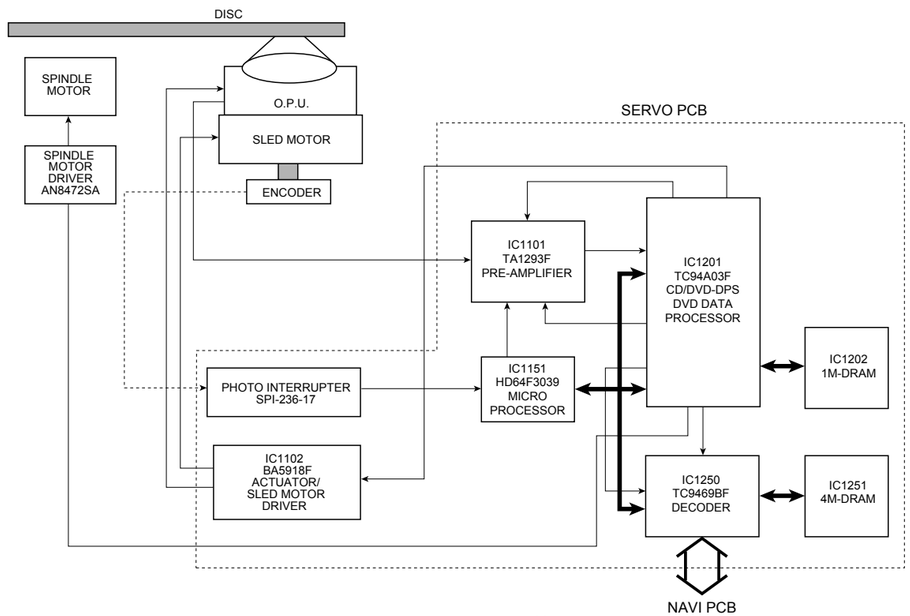
DVD BLOCK



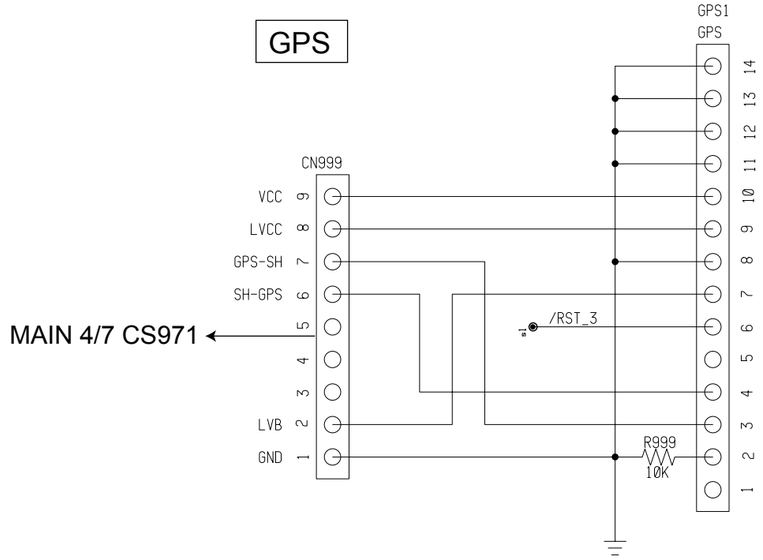
EXTENSION TERMINAL



DVD-ROM MECHANISM

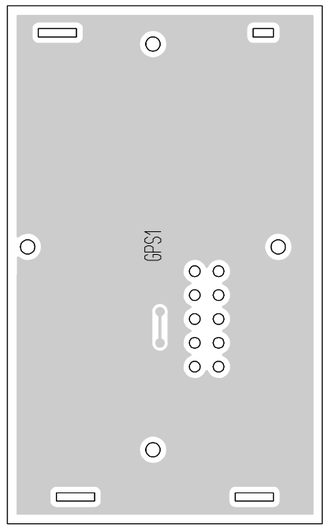


SCHEMATIC DIAGRAM

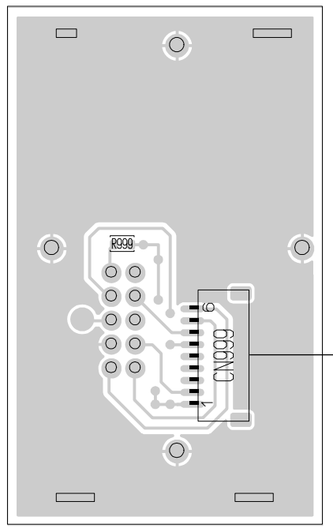


WIRING DIAGRAM

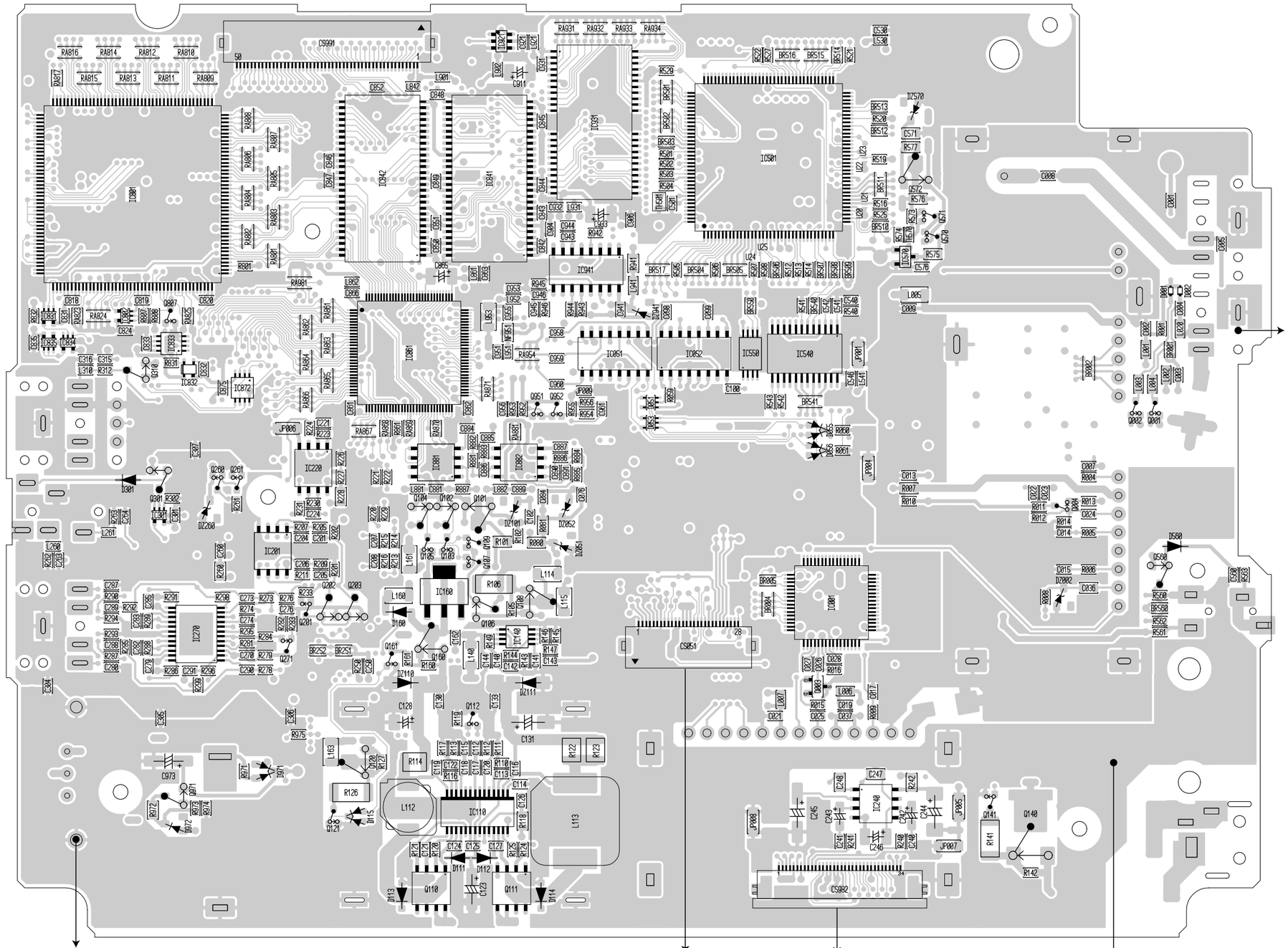
GPS P.C.B.



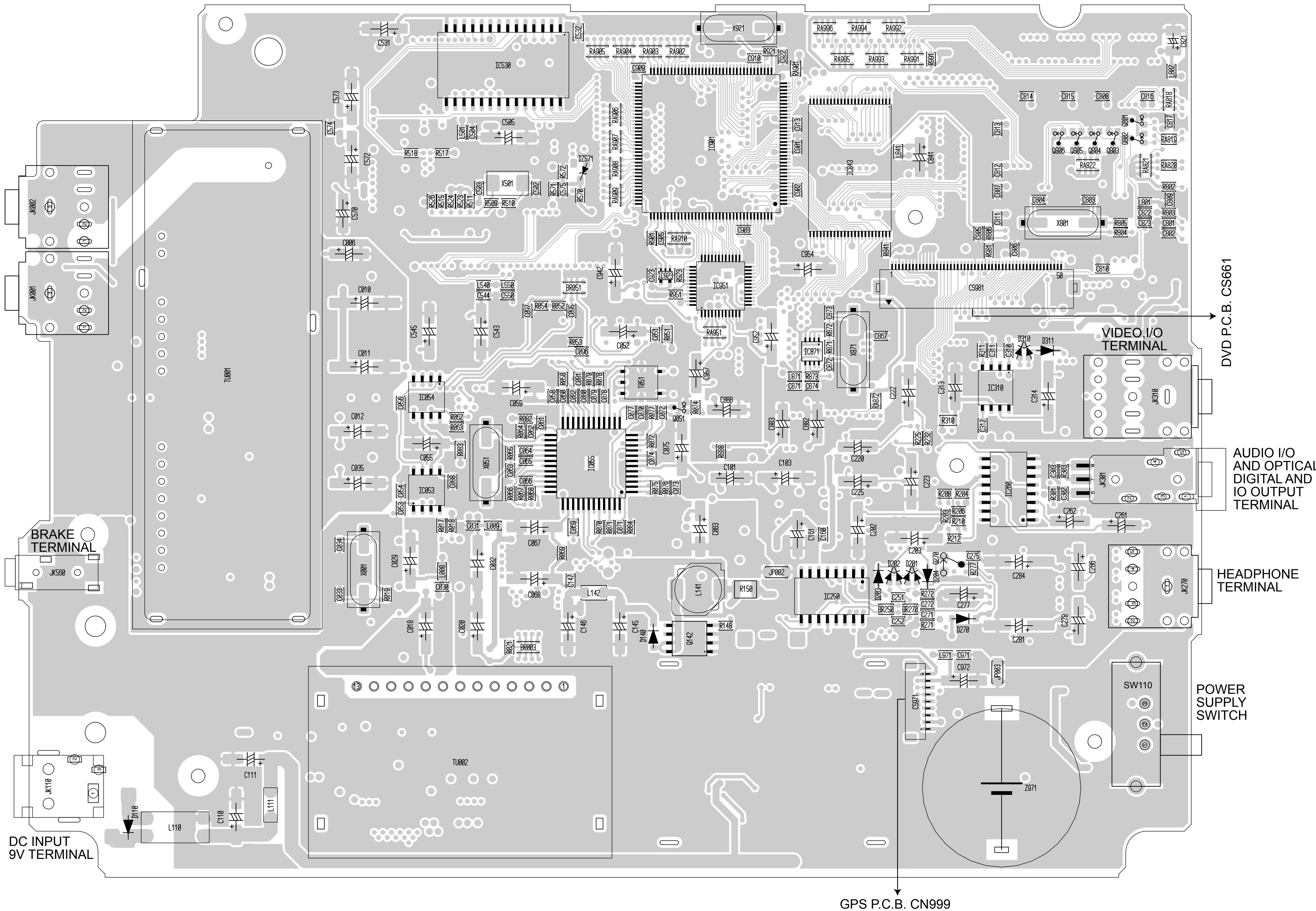
GPS P.C.B.



MAIN P.C.B.



MAIN P.C.B.

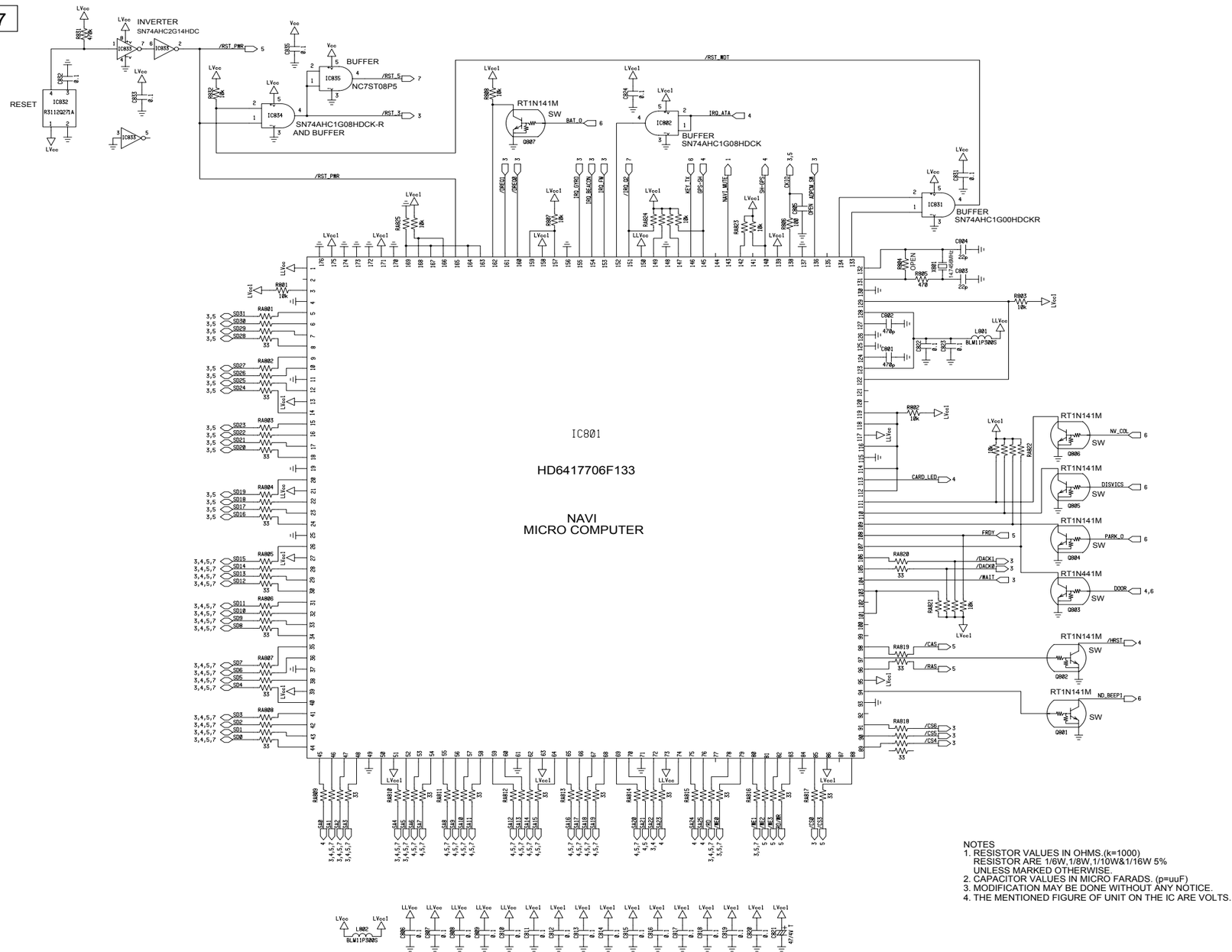

DVD P.C.B. CS661
VIDEO,I/O TERMINAL
AUDIO I/O AND OPTICAL DIGITAL AND IO OUTPUT TERMINAL
HEADPHONE TERMINAL
POWER SUPPLY SWITCH
GPS P.C.B. CN999
BRAKE TERMINAL
DC INPUT 9V TERMINAL

MAIN 1/7

IMAGE SIGNAL

AUDIO SIGNAL

MAIN 2/7


INVERTER
SN74AHC2G14HDC
BUFFER
NC7ST08P5
SN74AHC1G08HDCK-R
AND BUFFER
RT1N141M
SW
BUFFER
SN74AHC1G08HDCK
BUFFER
SN74AHC1G00HDCKR
RESET
IC852
R5112Q27LA
IC801
HD6417706F133
NAVI
MICRO COMPUTER
/RST_PWR
/RST_MDT
/RST_S
/RST_3
BAT_D
IRQ_ATA
CARD_LED
FRDY
/DACK1
/DACK0
/WAIT
/CAS
/RAS
/CS6
/CS5
/CS4
/HRST
ND_BEEP1
NV_COL
DISVICS
PARK_O
DOOR
NOTES
1. RESISTOR VALUES IN OHMS.(k=1000)
RESISTOR ARE 1/6W,1/8W,1/10W&1/16W 5%
UNLESS MARKED OTHERWISE.
2. CAPACITOR VALUES IN MICRO FARADS. (p=uuF)
3. MODIFICATION MAY BE DONE WITHOUT ANY NOTICE.
4. THE MENTIONED FIGURE OF UNIT ON THE IC ARE VOLTS.

MAIN 3/7

音声信号

IC861

LC24072B-WC8-E

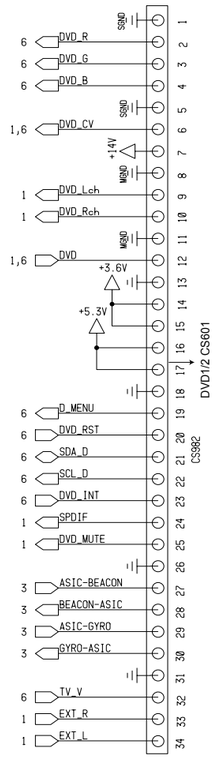
ASIC

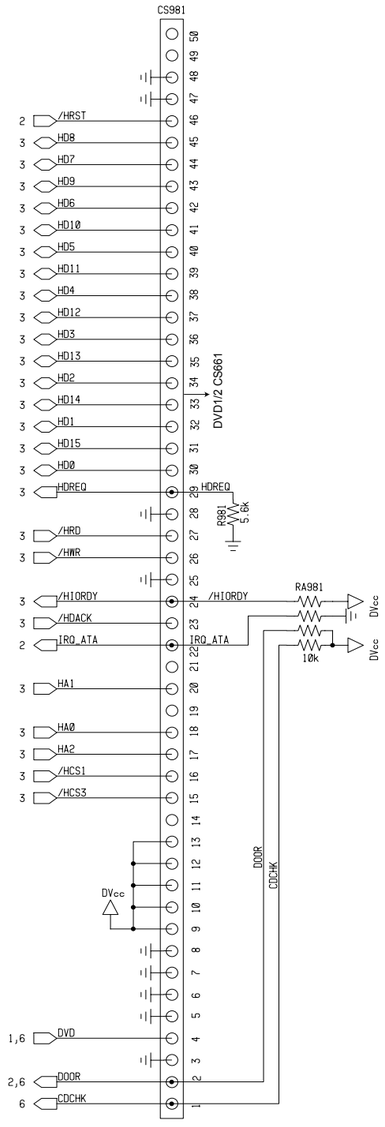
IC881
uPD6379ALGR
AUDIO GAID DAC

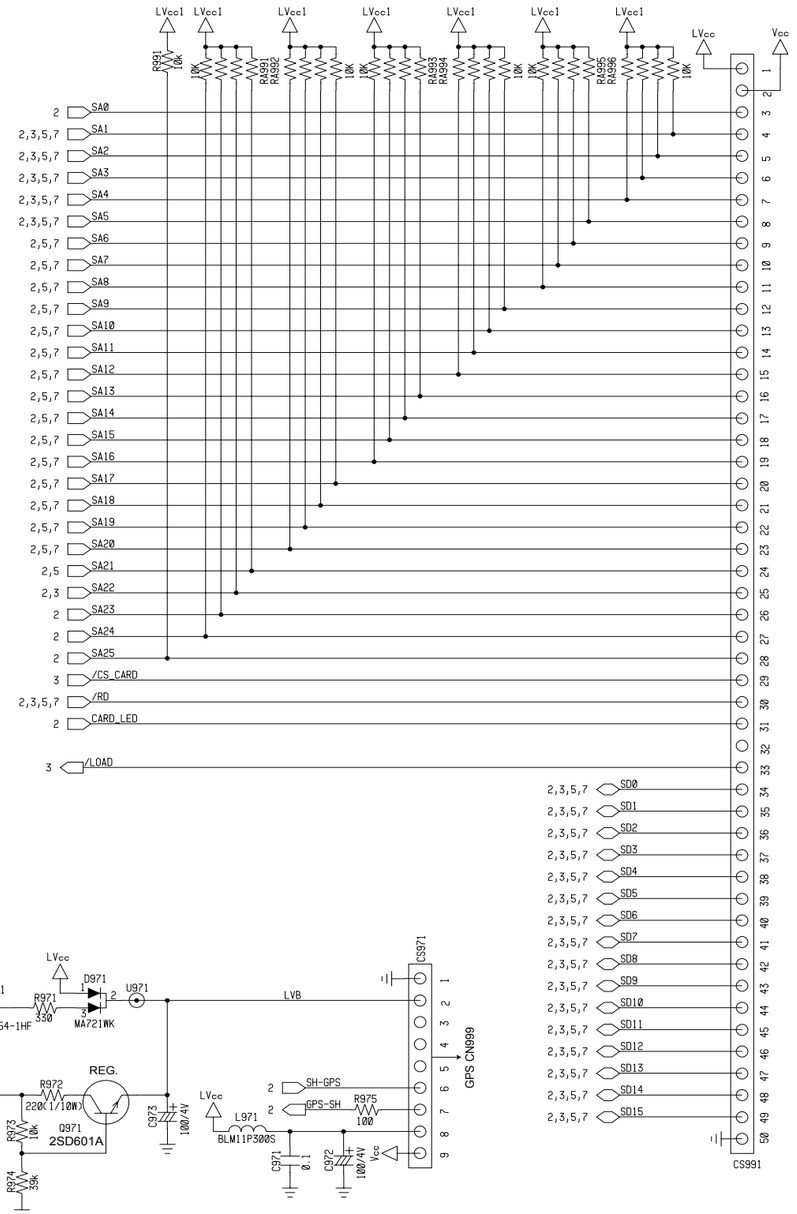
IC882
NJM2100M
L.P.F.

INVERTER
TC7WU04FU

MAIN 4/7







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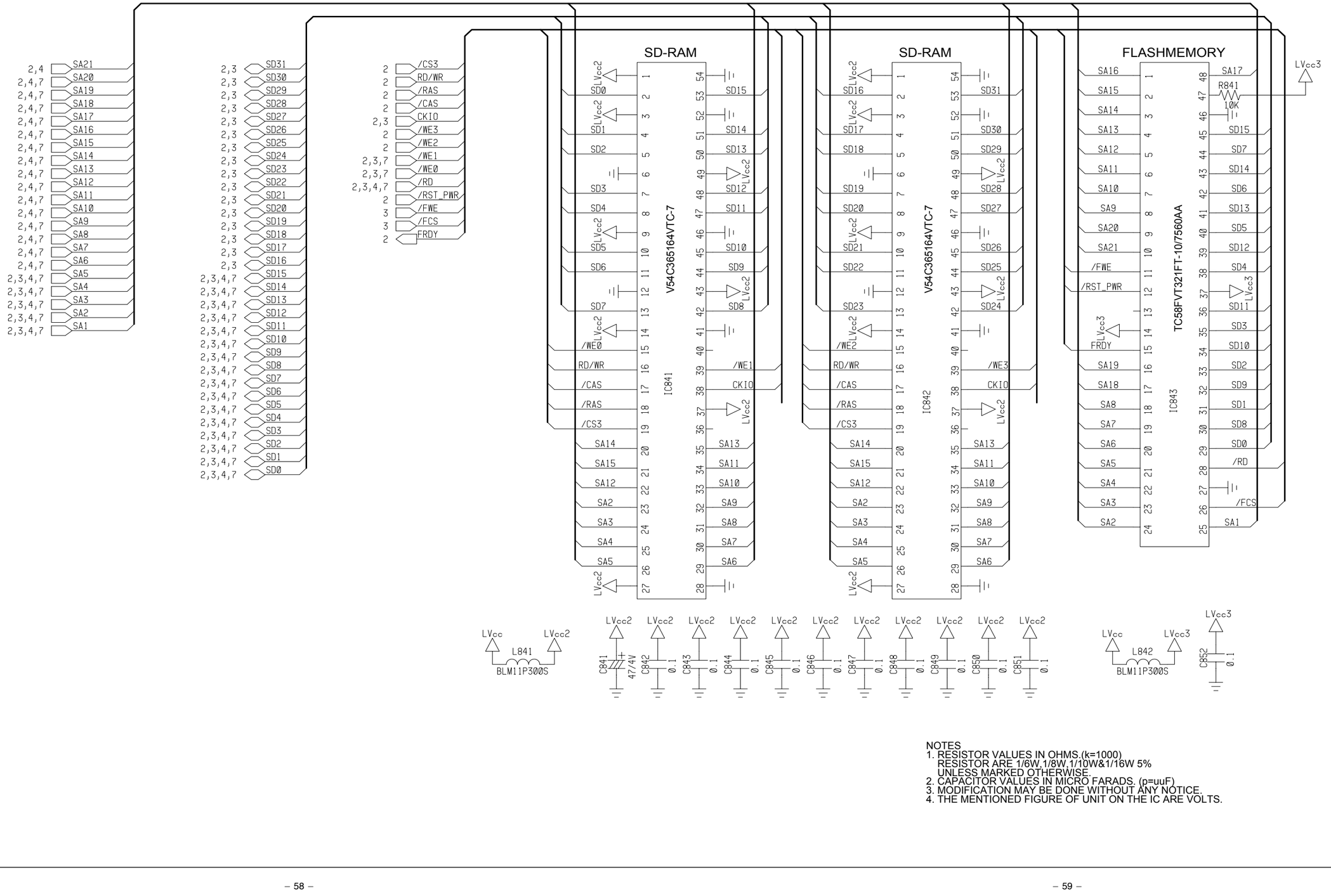
MAIN 5/7



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MAIN 6/7

IC001
OPEN

IC051 WW1234XFBE RGB SW

IC052 WW1234XFBE OSD SW

IC055
RB5P0060M
LCD I/F

LCDCS402

IC501

M30802FCGP/7548AA

MAIN MICRO COMPUTER

VICS D-RAM

M35075-050FP
OSD

5V SW

8V REG

5V REG
2SC4132

RESET SW

PARKING SW

MAIN 7/7

IMAGE SIGNAL

IC901

HD64412F

NAVI IMAGE IC

IC951

CXA2106R

IMAGE DAC

IC941

CD74HC4046AM-96

PLL

IC931

MSM5118165F-60TS-K

D-RAM

IC921

XC2151A510M

CLOCK GENERATOR

Q951 2SD1819 REG.

Q952 2SD1819 VIDEO BUFFER

NOTES
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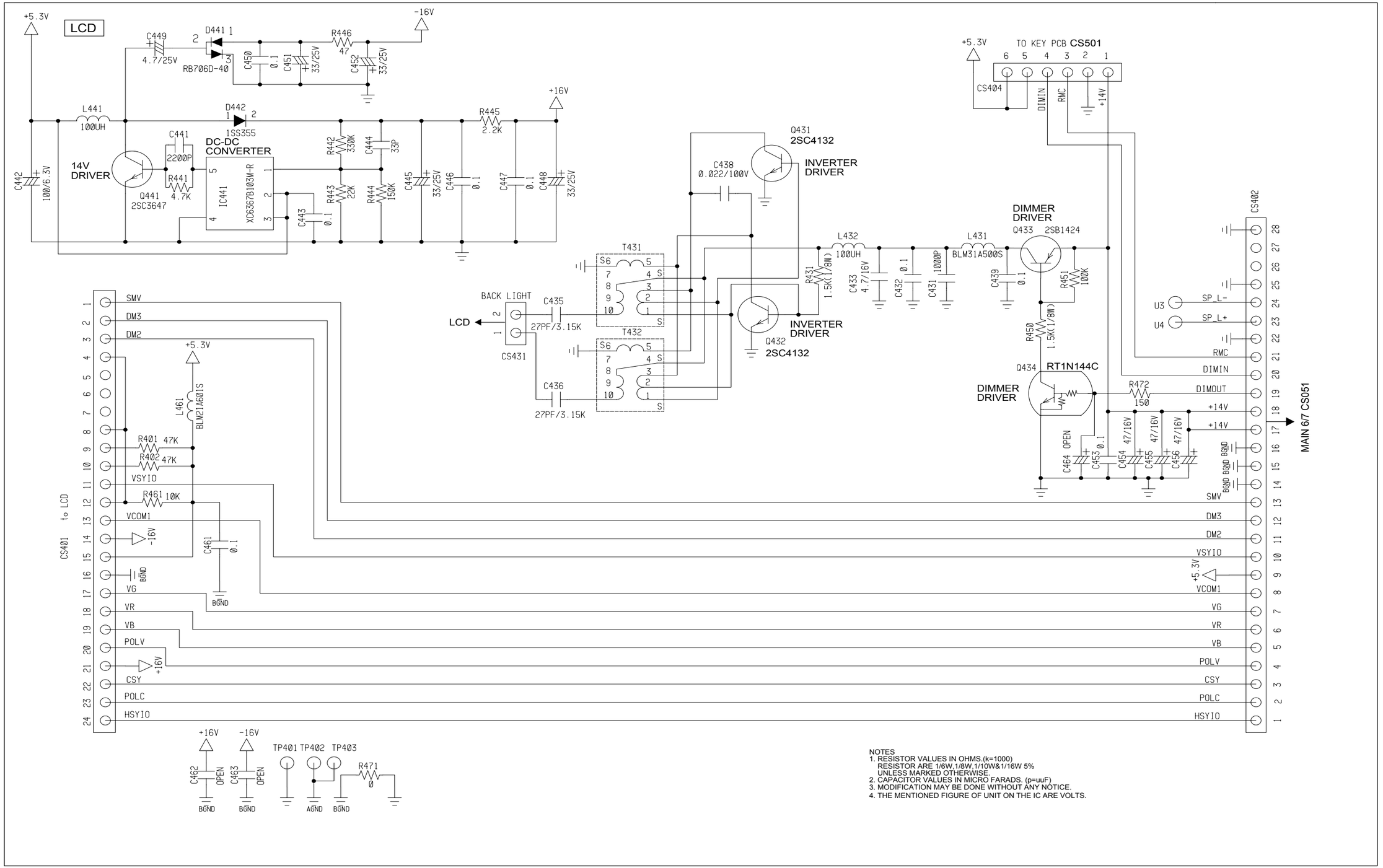

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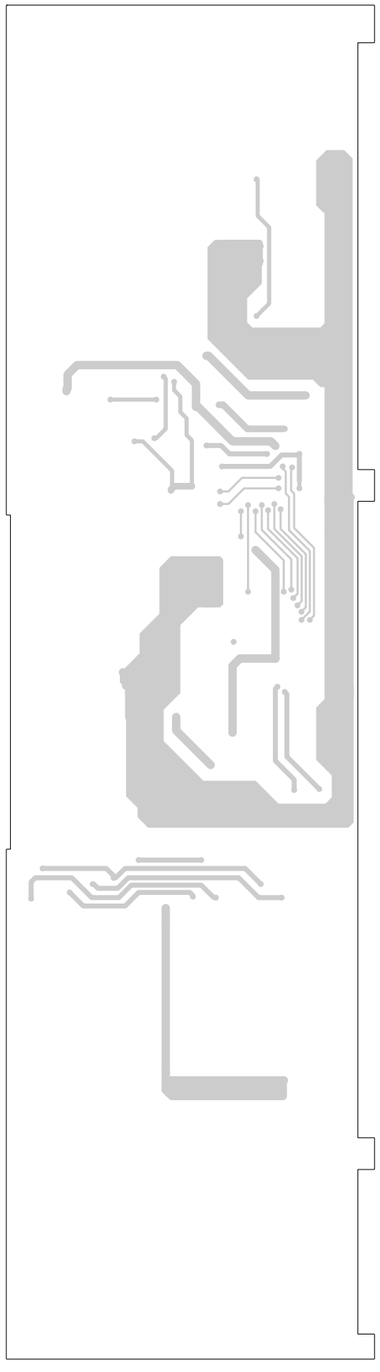
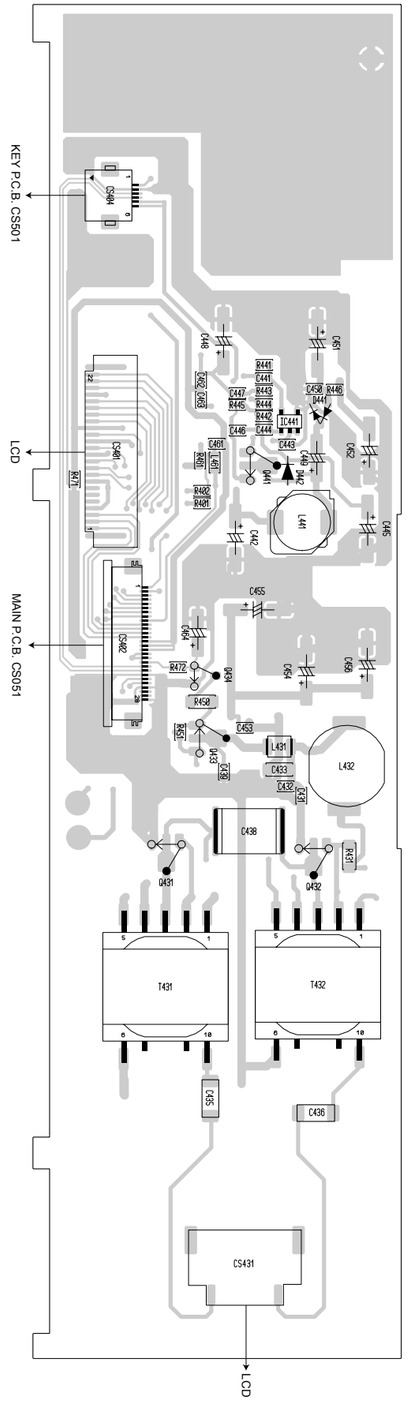
4. THE MENTIONED FIGURE OF UNIT ON THE IC ARE VOLTS.

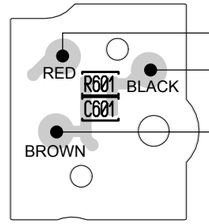
LCD P.C.B.



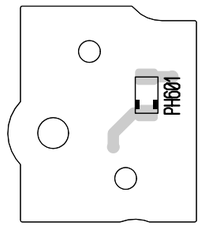
LCD P.C.B.



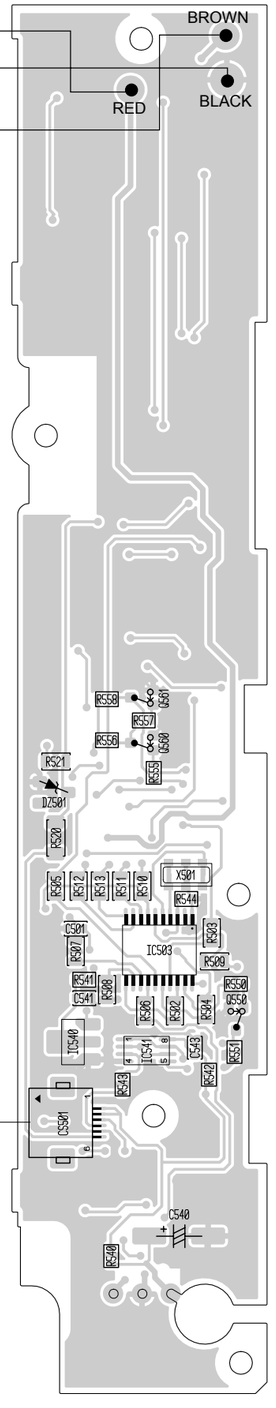
SENSOR P.C.B.



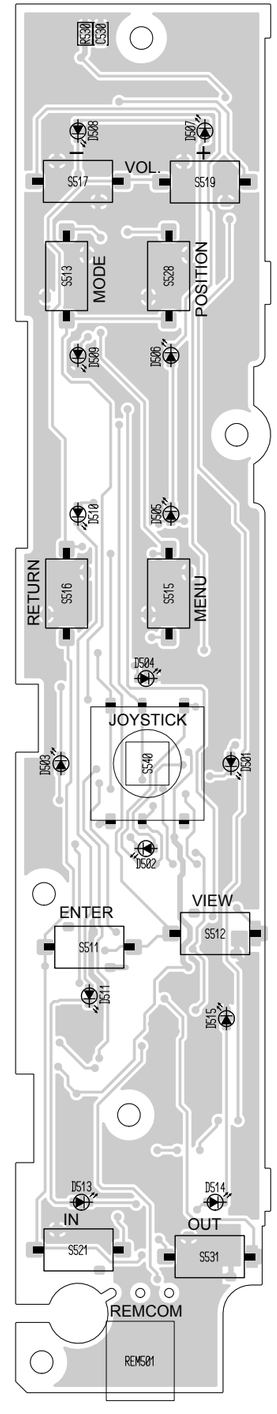
SENSOR P.C.B.

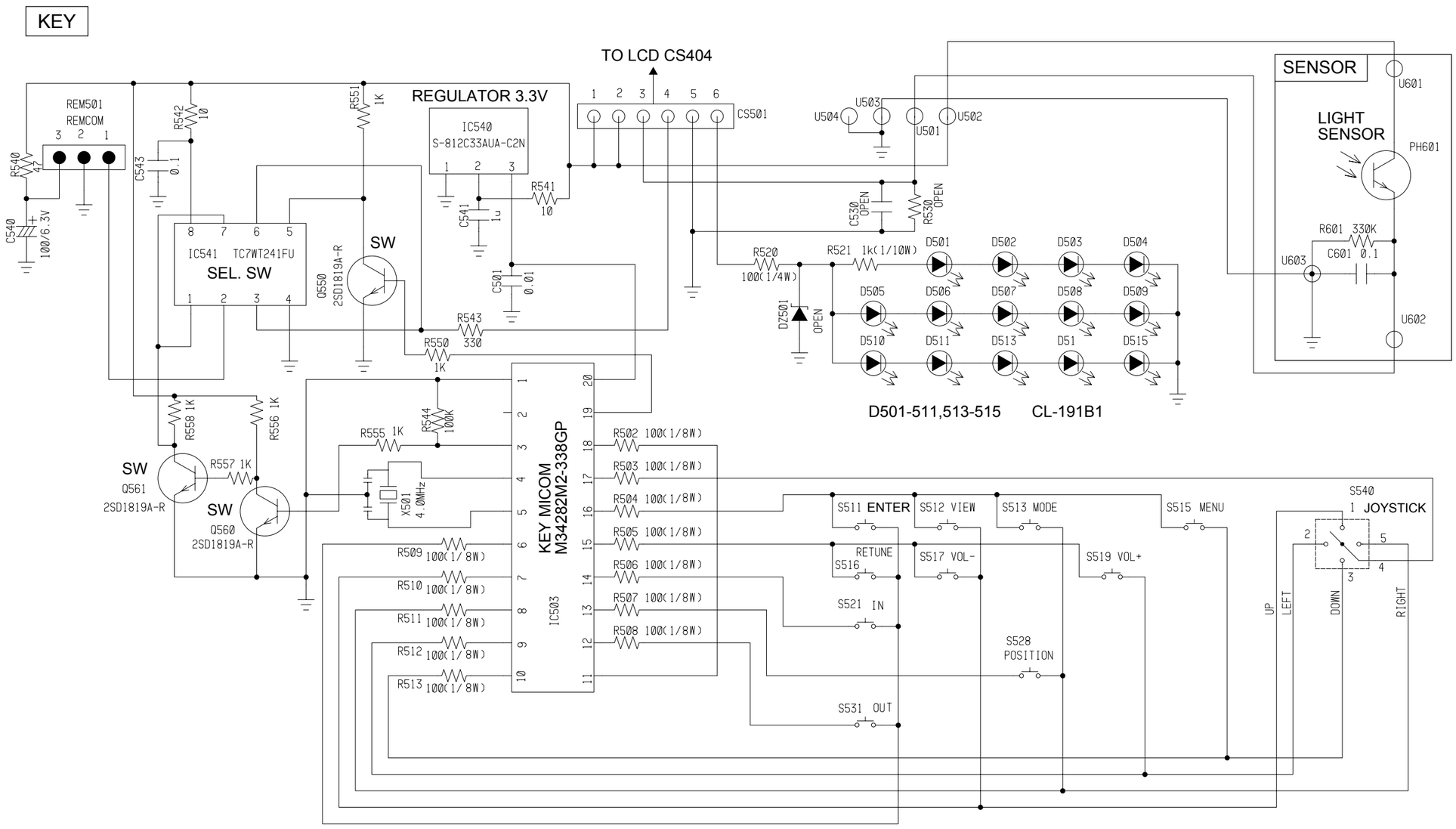


KEY P.C.B.



KEY P.C.B.





NOTES
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DVD 1/2

SERVO 3/3 CS1201

CS651

MAIN 4/7 CS981

CS661

MAIN 4/7 CS982

CS801

DVD 2/2

IMAGE SIGNAL

AUDIO SIGNAL

IC701

ES4408FD

DVD DECODER

IC733 W29C040T-90 DVD FLASH

DVD EEPROM

RESET BUFFER

DVD DAC MODE CONTROL

FILTER

CLOCK INVERTER

INVERTER

BUFFER

IC751 CS4955 VIDEO ENCODER

DVD SDRAM

NOTES
1. RESISTOR VALUES IN OHMS.(k=1000)
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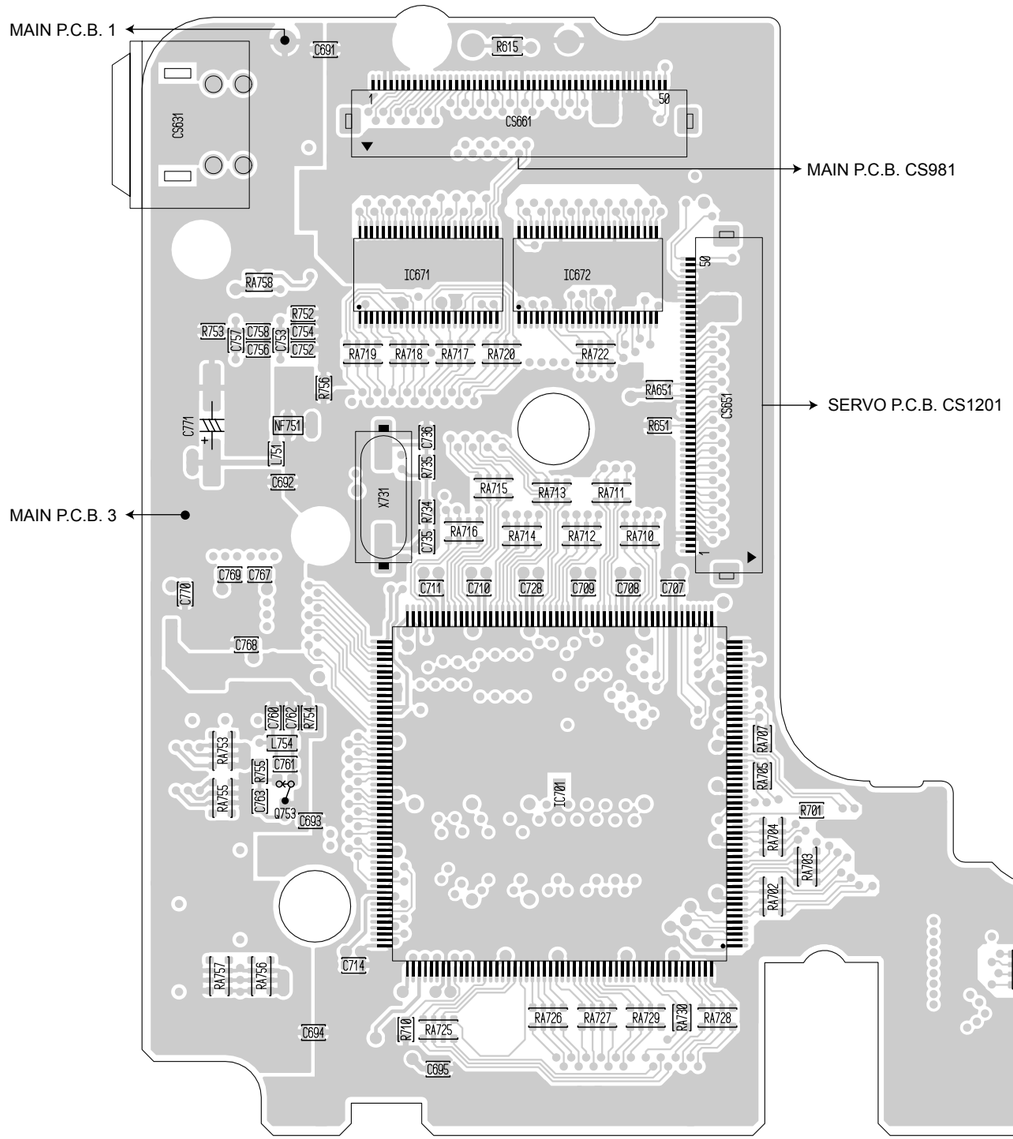
DVD P.C.B.


MAIN P.C.B. 1
MAIN P.C.B. 3
MAIN P.C.B. CS981
SERVO P.C.B. CS1201
C691
R615
CS631
CS661
1
50
IC671
IC672
RA758
R752
R753
C757
C758
C753
C754
C756
C752
RA719
RA718
RA717
RA720
RA722
R755
RA651
R651
CS651
C771
NF751
L751
C692
C736
R735
R734
X731
C735
RA715
RA713
RA711
RA716
RA714
RA712
RA710
C769
C767
C772
C711
C710
C728
C709
C708
C707
C768
C708
C762
R754
L754
RA753
C735
C761
RA755
C703
Q753
C693
IC701
RA707
RA705
R701
RA704
RA703
RA702
C714
RA757
RA756
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RA729
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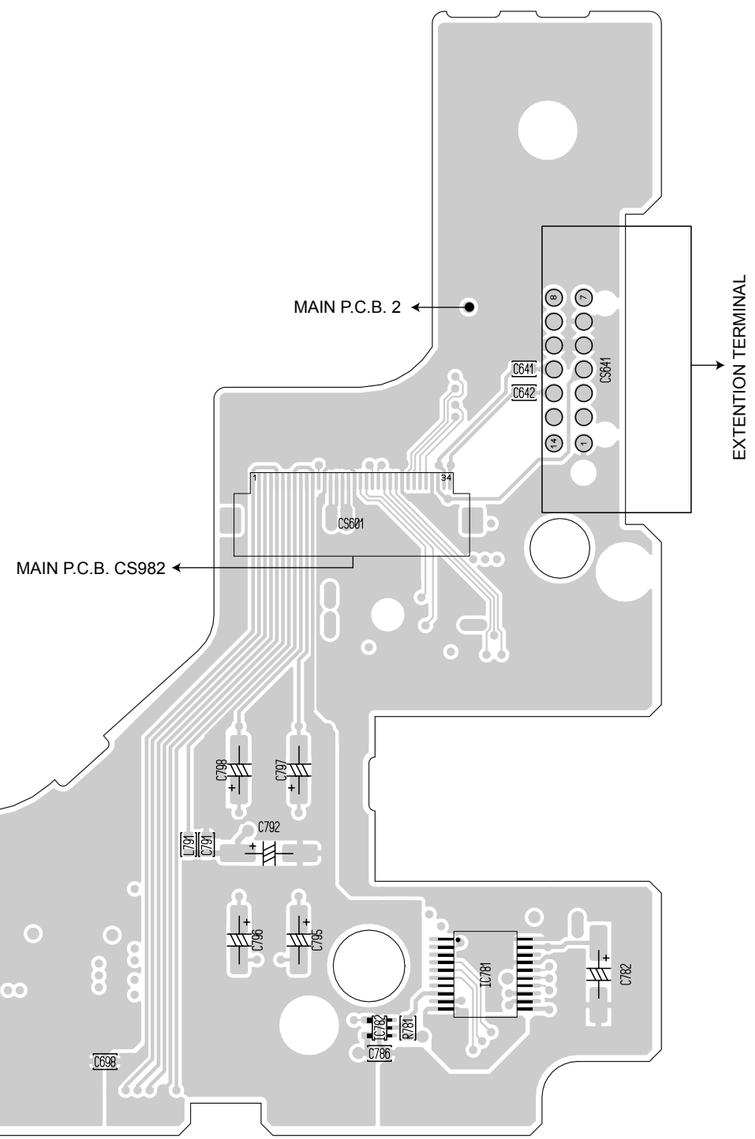
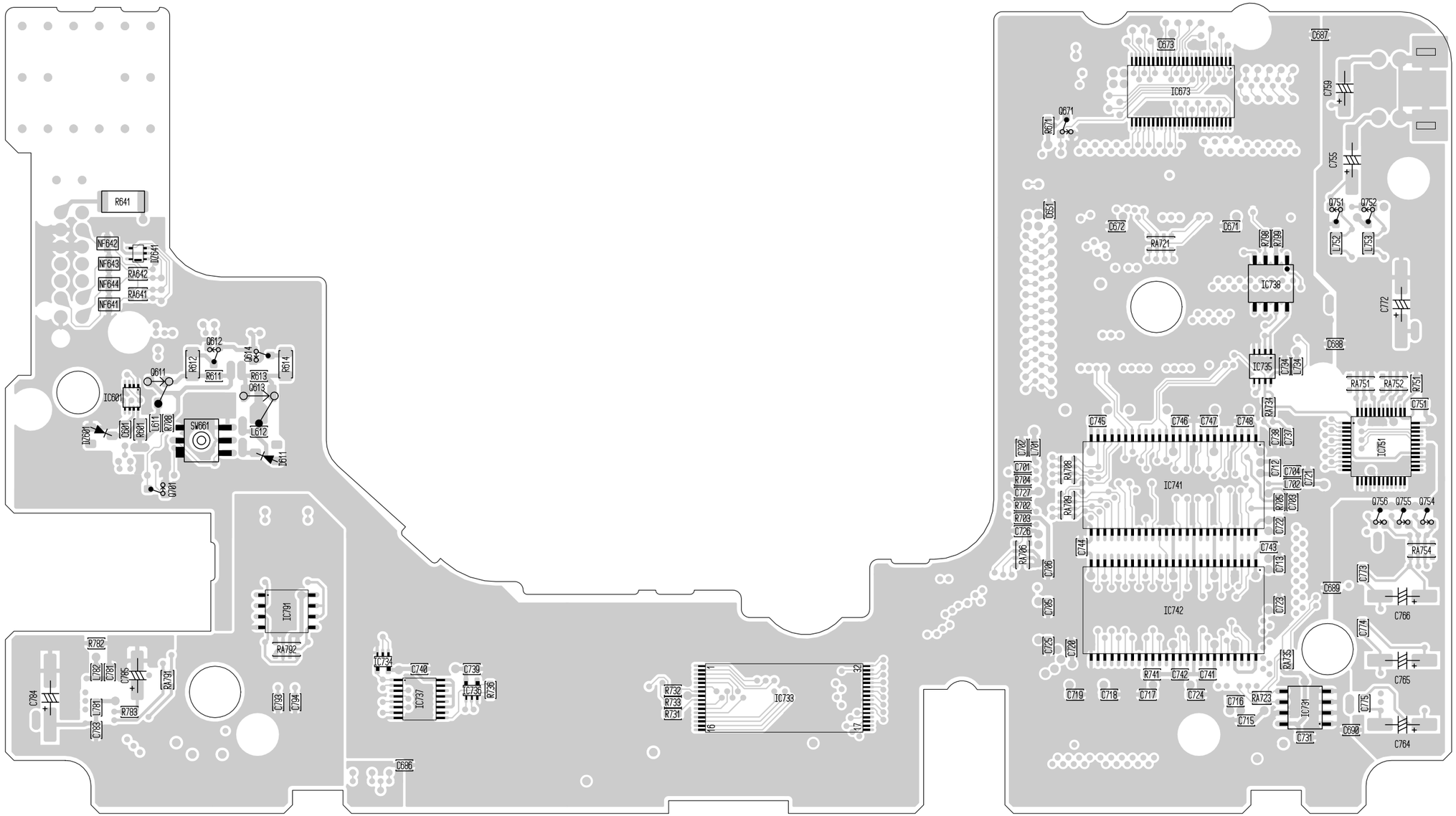
C695
RA701
C733
C696
C697
C698

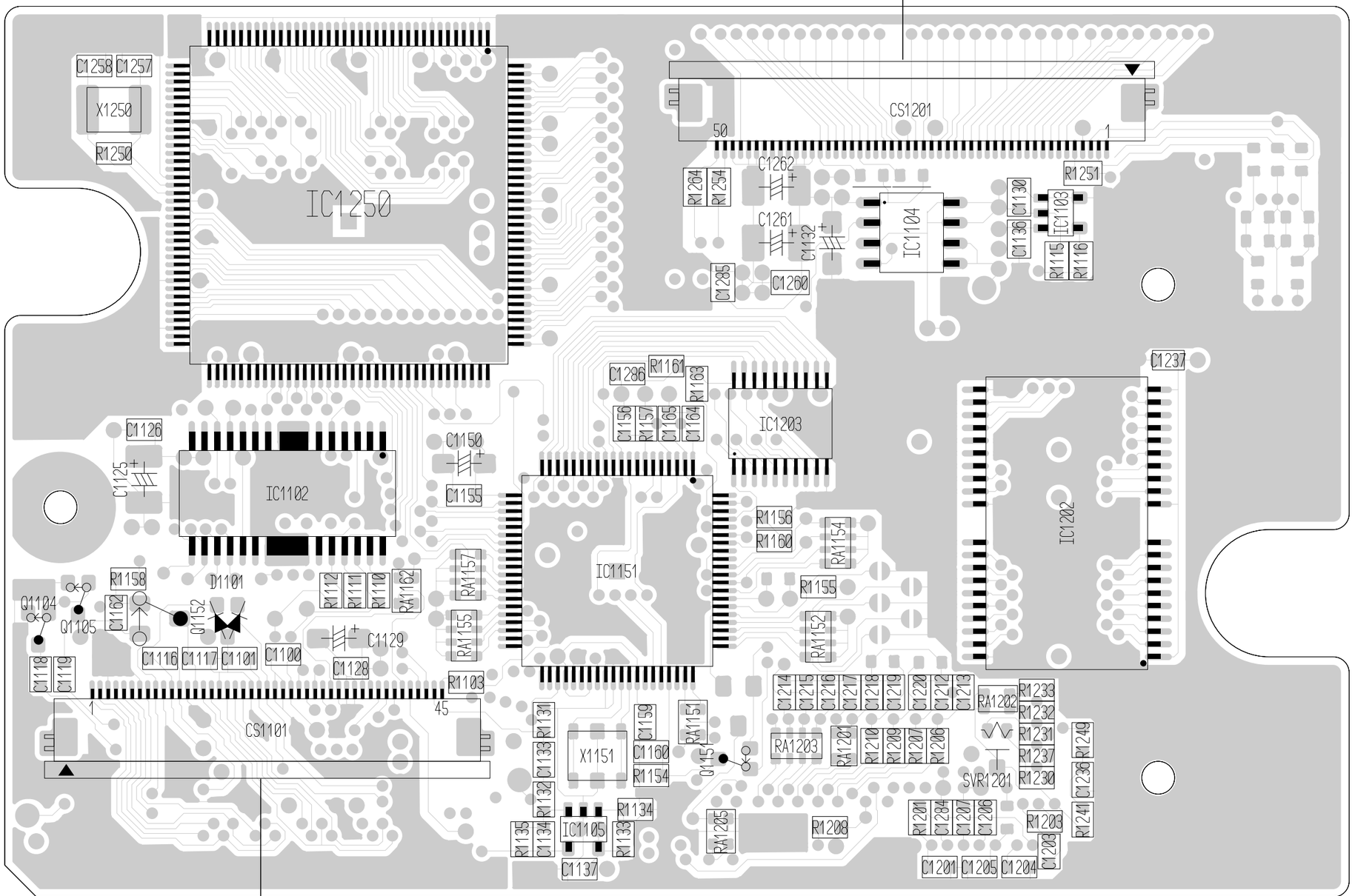

MAIN P.C.B. 2
MAIN P.C.B. CS982
EXTENTION TERMINAL
C641
C642
CS641
CS601
1
34
C798
C797
C792
L791
C791
C796
C795
IC781
C782
R782
R781
C786

DVD P.C.B.


R641
NF642
NF643
NF644
NF641
RA642
RA641
JD641
Q612
Q614
R612
R614
R611
Q611
R613
Q613
IC601
SW661
LG612
JD690
D601
R601
L611
C708
D611
Q701
IC701
RA792
R782
C702
C781
C706
R791
C784
R783
C783
C704
C733
IC734
C740
C738
IC737
C735
R736
R732
R733
R731
IC733
C686
C673
IC673
Q671
R671
C687
C759
C755
C651
C672
RA721
C671
R708
R709
IC738
Q751
Q752
L752
L753
C772
C688
IC735
C734
L734
RA751
RA752
R751
C751
IC751
RA734
C745
C746
C747
C748
C738
C737
C702
L701
C701
R704
C727
R702
R703
C726
R706
R708
IC741
C712
C704
L702
C721
R705
C703
C722
Q756
Q755
Q754
C744
C743
C713
RA754
C706
C773
C689
C723
C766
C725
C726
IC742
C774
RA735
C765
R741
C742
C741
C719
C718
C717
C724
C716
RA723
C715
IC731
C775
C690
C764

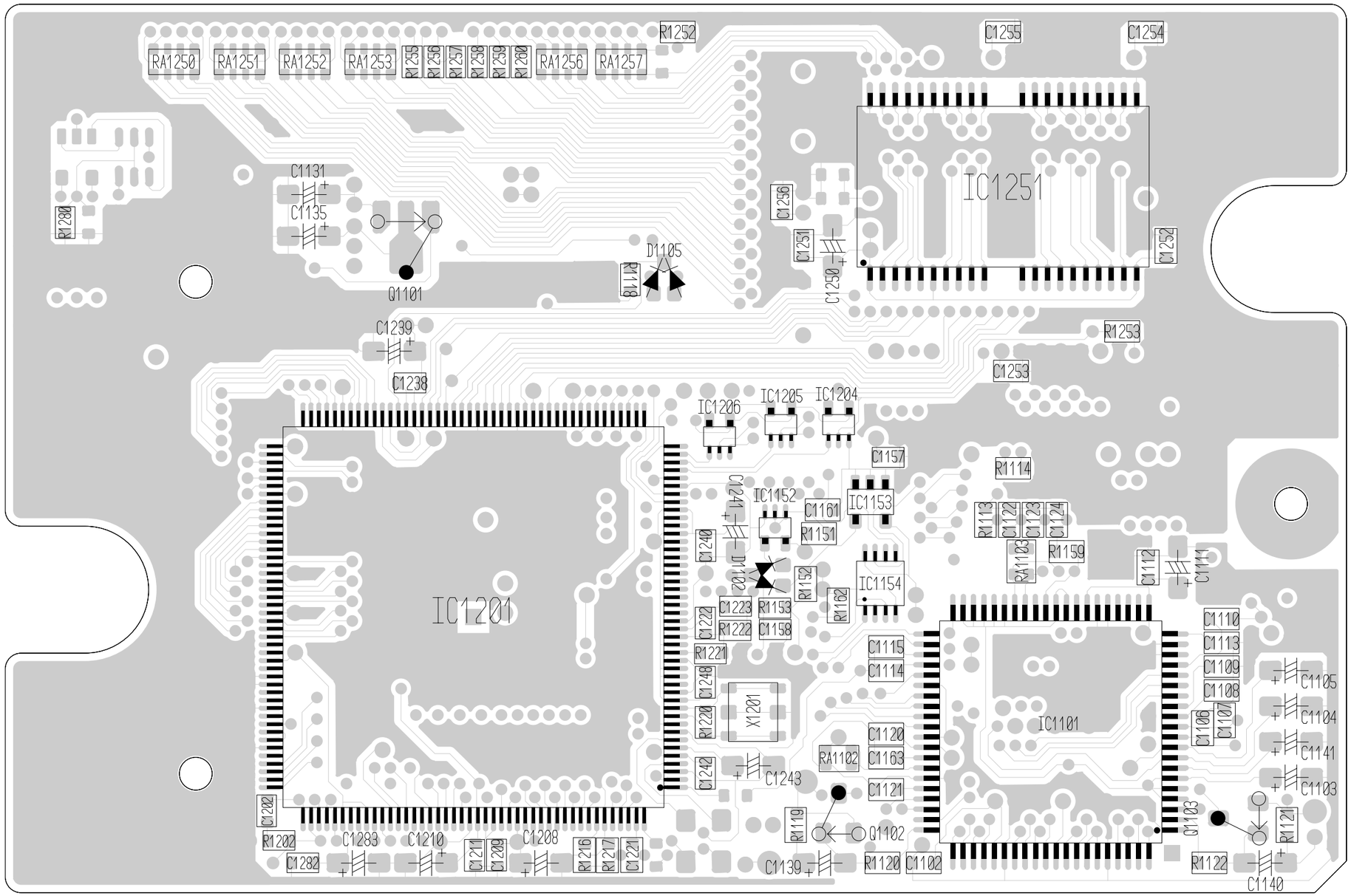
SERVO P.C.B.

DVD P.C.B. CS651



DVD MECHANISM

SERVO P.C.B.


RA1250
RA1251
RA1252
RA1253
R1255
R1256
R1257
R1258
R1259
R1260
RA1256
RA1257
R1252
C1255
C1254
C1131
C1135
R1280
Q1101
D1105
R1118
C1256
C1251
C1250
IC1251
C1252
R1253
C1253
C1239
C1238
IC1206
IC1205
IC1204
C1157
R1114
IC1152
C1241
C1161
IC1153
R1151
C1240
D1102
R1152
R1162
IC1154
R1113
C1122
C1123
C1124
RA1103
R1159
C1112
C1111
C1223
R1153
C1222
R1222
C1158
R1221
C1248
C1115
C1114
C1110
C1113
C1109
C1108
C1107
C1106
C1105
C1104
C1141
C1103
IC1201
X1201
R1220
C1242
C1243
C1120
C1163
C1121
RA1102
IC1101
Q1103
R1121
R1119
Q1102
C1202
R1202
C1283
C1210
C1211
C1209
C1208
R1216
R1217
C1221
C1282
C1139
R1120
C1102
R1122
C1140

SERVO 1/3

RF AMP

ICI101

TA1293F

MICRO PROCESSOR

ICI151

HD64F3039TEBL18

DRIVER

ICI102

BA5918F

PULSE COUNT

ICI105

TC75S51F

LD DRIVE

POWER SW

ICI104 HAT1025R

VOLTAGE REGULATOR

ICI103

RN5RG33

CURRENT BOOST

SW

INVERTER

TC7MU04FU

NOTES
1. RESISTOR VALUES IN OHMS.(k=1000)
   RESISTOR ARE 1/6W,1/8W,1/10W&1/16W 5%
   UNLESS MARKED OTHERWISE.
2. CAPACITOR VALUES IN MICRO FARADS. (p=uuF)
3. MODIFICATION MAY BE DONE WITHOUT ANY NOTICE.
4. THE MENTIONED FIGURE OF UNIT ON THE IC ARE VOLTS.

SERVO 2/3

CD/DVD Servo & Data Processor

IC1201

TC94A03F

NOTES
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IC1202 1M DRAM MSM51V1666C-70

ANALOG SW

IC1204 IC1205 IC1206 TC7S66FU

BUFFER

IC1203 TC74VHC245FT

SERVO 3/3

ATAPI I/F & DVD ROM DECORDER

IC1250

TC9469BF

4M-DRAM

IC1251 MSM514265C

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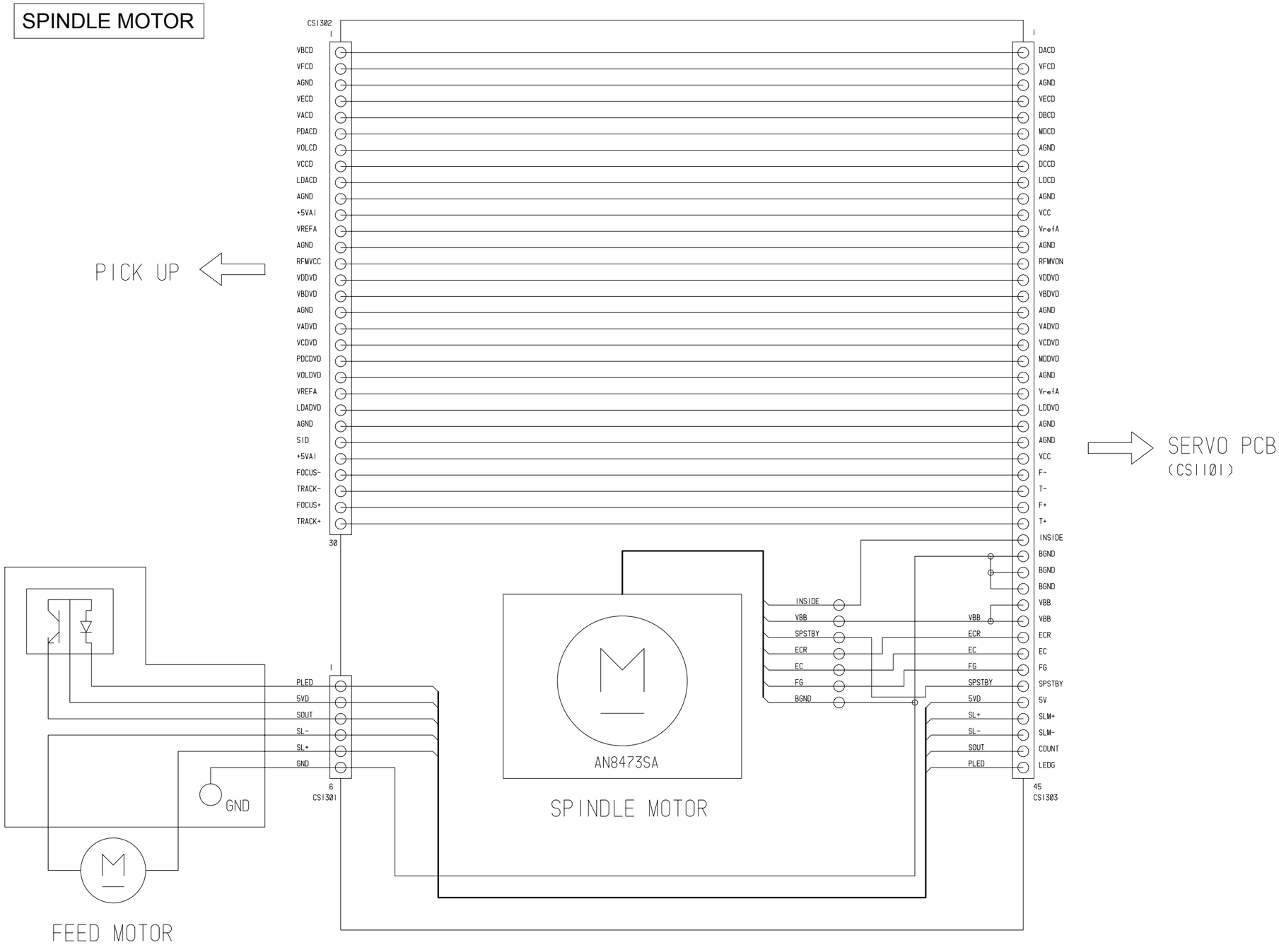
DVD1/2 CS651

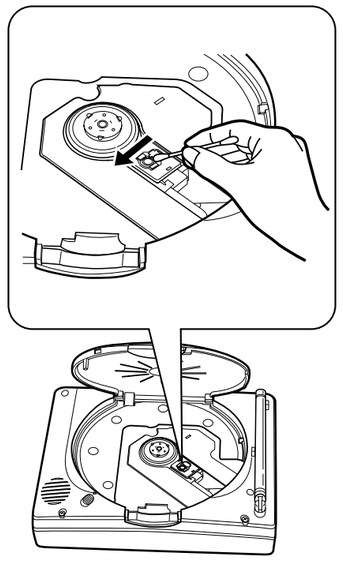

SPINDLE MOTOR
CSI302
VBCD
VFCD
AGND
VECD
VACD
PDACD
VOLCD
VCCD
LDACD
AGND
+5VAI
VREFA
AGND
RFMVCC
VDDVD
VBDVD
AGND
VADVD
VCDVD
PDCDVD
VOLDVD
VREFA
LDADVD
AGND
SID
+5VAI
FOCUS-
TRACK-
FOCUS+
TRACK+
30
DACD
VFCD
AGND
VECD
DBCD
MDCD
AGND
DCCD
LDCD
AGND
VCC
VrefA
AGND
RFMVON
VDDVD
VBDVD
AGND
VADVD
VCDVD
MDDVD
AGND
VrefA
LDDVD
AGND
AGND
VCC
F-
T-
F+
T+
INSIDE
BGND
BGND
BGND
VBB
VBB
ECR
EC
FG
SPSTBY
5V
SLM+
SLM-
COUNT
LEDG
45
CSI303
PICK UP
SERVO PCB
(CSI101)
PLED
5VD
SOUT
SL-
SL+
GND
6
CSI301
GND
FEED MOTOR
AN8473SA
SPINDLE MOTOR
INSIDE
VBB
SPSTBY
ECR
EC
FG
BGND

By long term use, There is a case where it becomes impossible to read the road map data by adhesion of dust, trash, or tar on the PICKUP of the Portable Navigation, and the message “Check disc” will be displayed. In this case, the PICKUP should be cleaned as follows.

REGARDING CLEANING KIT

Please use the head cleaner for cassette deck that you can buy on the market. Generally, there are 2kinds of liquid. One is for the head capstan, and the other is for the pinch roller.
You should use cleaning liquid of the head capstan only.
Though there are some cleaners for CD and DVD on the market, we don’t recommend them because of few cleaning effects.

HOW TO CLEANING



1. Open the lid and take out the disk.
2. Apply a little amount of cleaning liquid to the swab, and wipe softly like stroke the lens of the PICKUP in the direction of the arrow in the left figure several times. (dirt would be floated.)
※ You must wipe softly like stroke in the direction of the arrow. (only in one direction)

■NOTICE
Pressing down strongly or wiping in another direction can cause breaking the pick.

3. Apply a little amount of cleaning liquid to the new swab, (If the swab has cotton on both sides, put the liquid on the other side that not yet used) and wipe softly like stroke the lens of the PICKUP in the direction of the arrow in the left figure several times to remove dirt.

Cleaning is the end above.

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Concord, Ont. L4K 5C7

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Chatsworth, CA 91311

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