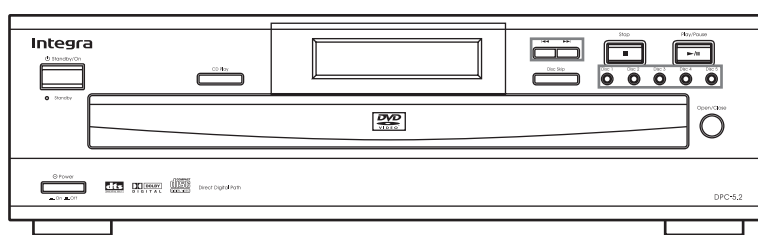


Integra SERVICE MANUAL

Nov, 2001

Schematic diagram & Printed circuit board view only

DVD CHANGER MODEL DPC-5.2




RC-472DV

Black model

BMDD	120V AC, 60Hz
------	---------------

SAFETY-RELATED COMPONENT WARNING!!

THE MARK  FOUND ON SOME COMPONENT PARTS INDICATES THE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK.

WHEN REPLACING, BE SURE TO USE PARTS OF IDENTICAL DESIGNATION.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SERVICE NOTE

PRECAUTIONS

1. Ground for the work-desk.

Place a conductive sheet such as a sheet of copper (with impedance lower than 10Mohm) on the work-desk and place the set on the conductive sheet so that the chassis.

2. Grounding for the test equipments and tools.

Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.

3. Grounding for the human body.

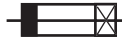
Be sure to put on a wrist-strap for grounding whose other end is grounded.

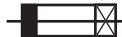
Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.

4. Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.

5. Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

1. Replacing the fuses

 This symbol located near the fuse indicates that the fuse used is show operating type, For continued protection against fire hazard, replace with same type fuse , For fuse rating, refer to the marking adjust to the symbol.

 Ce symbole indique que le fusible utilise est e lent. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce demier est indique la qu le present symbol est appose.

REF.NO.	PART NO.	DESCRIPTION
F1	252159 	2A-UL/T-237

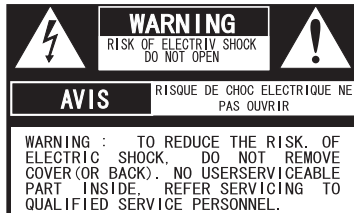
2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer
 Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel.

Specifications: More than 10M ohm at 500V

LASER CAUTION



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION : TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION : POUR EVITER LES CHOCS ELECTRIQUE, INTRODUIRE LA LAME LA PLUS LARGE DA LA FICHE DANS LA BORNE CORRESPONDANTE DA LA PRISE ET POUSSER JUSQU' AU FOND.

Initialization of setup

1. Press the "DISC 4" and "CDPLAY" key to the same timing.

The "DISC 4 key is pushed previously.

Then, light off the FL tube.

2. Push the power switch.

SPECIFICATIONS

DVD Changer

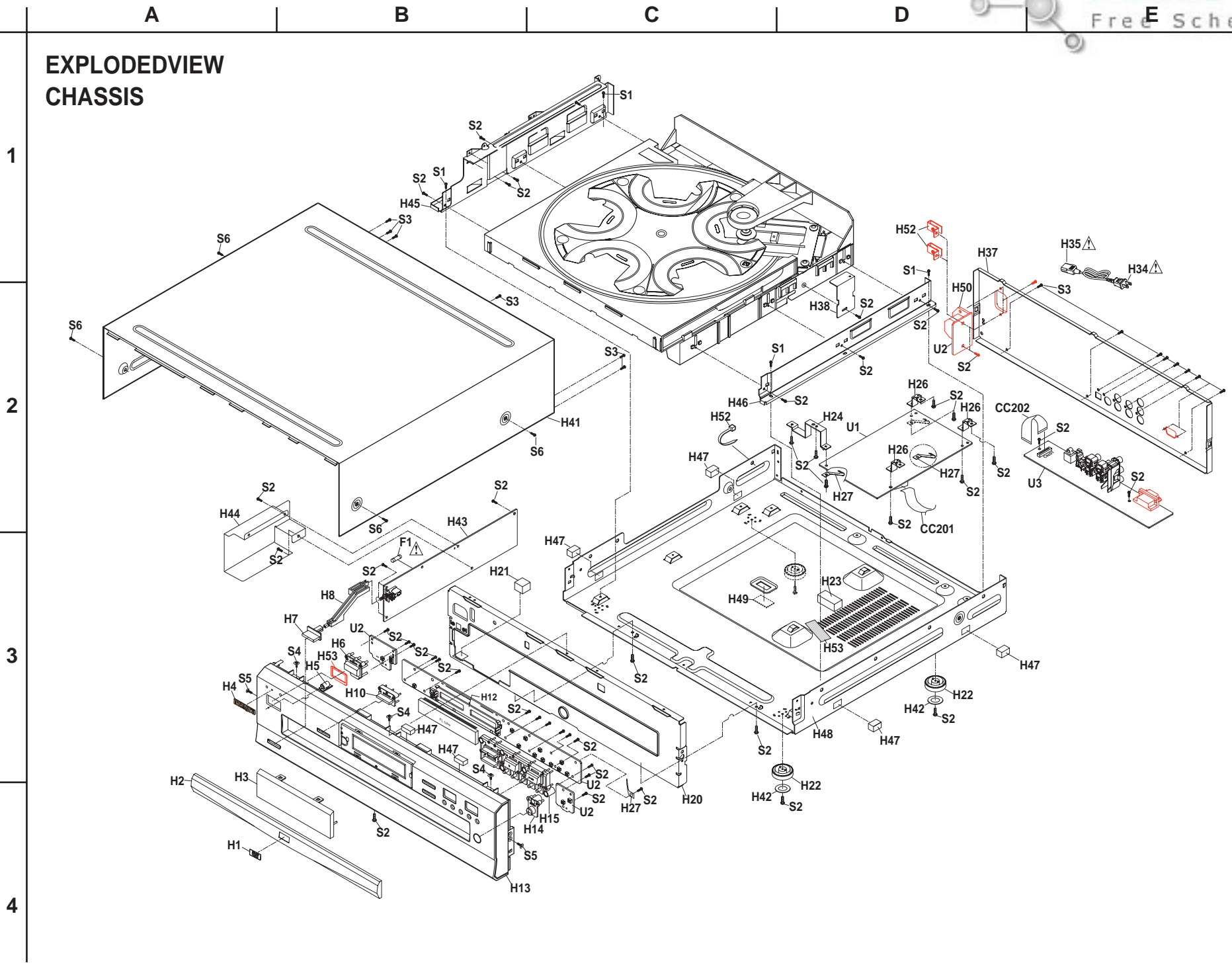
Power supply	AC 120 V, 60 Hz
Power consumption	20 W
Weight	15.0 lbs
External dimensions	17 1/8" x 5 1/16" x 16 15/16" (W/H/D)
Signal system	NTSC
Frequency range (digital audio)	48 kHz sampling 4 Hz to 22 kHz 96 kHz sampling 4 Hz to 42 kHz
Signal-to-noise ratio (digital audio)	More than 98 dB
Audio dynamic range (digital audio)	More than 95 dB
Harmonic distortion (digital audio)	Less than 0.005 %
Wow and flutter	Below measurable level
Operating conditions	Temperature: 41° F to 95° F, Operation status: Horizontal

Outputs

Video output	1.0 V (p-p), 75 ohm, negative sync., pin jack × 1
S-video output	(Y) 1.0 V (p-p), 75 ohm, negative sync. (C) 0.286 V (p-p), 75 ohm, Mini DIN 4-pin × 1
Component video output	(Y) 1.0 V (p-p), 75 ohm, negative sync., pin jack × 1 (P _B)/(P _R) 0.7 V (p-p), 75 ohm, pin jack × 2
Audio output (digital output Optical)	Optical connector × 1
Audio output (digital output Coaxial)	0.5 V (p-p), 75 ohm, pin jack × 1
Audio output (analog output)	2.0 V (rms), 320 ohm, pin jack (L, R) × 2

Specifications and features are subject to change without notice.

EXPLODEDVIEW CHASSIS



EXPLODED VIEW PARTS LIST

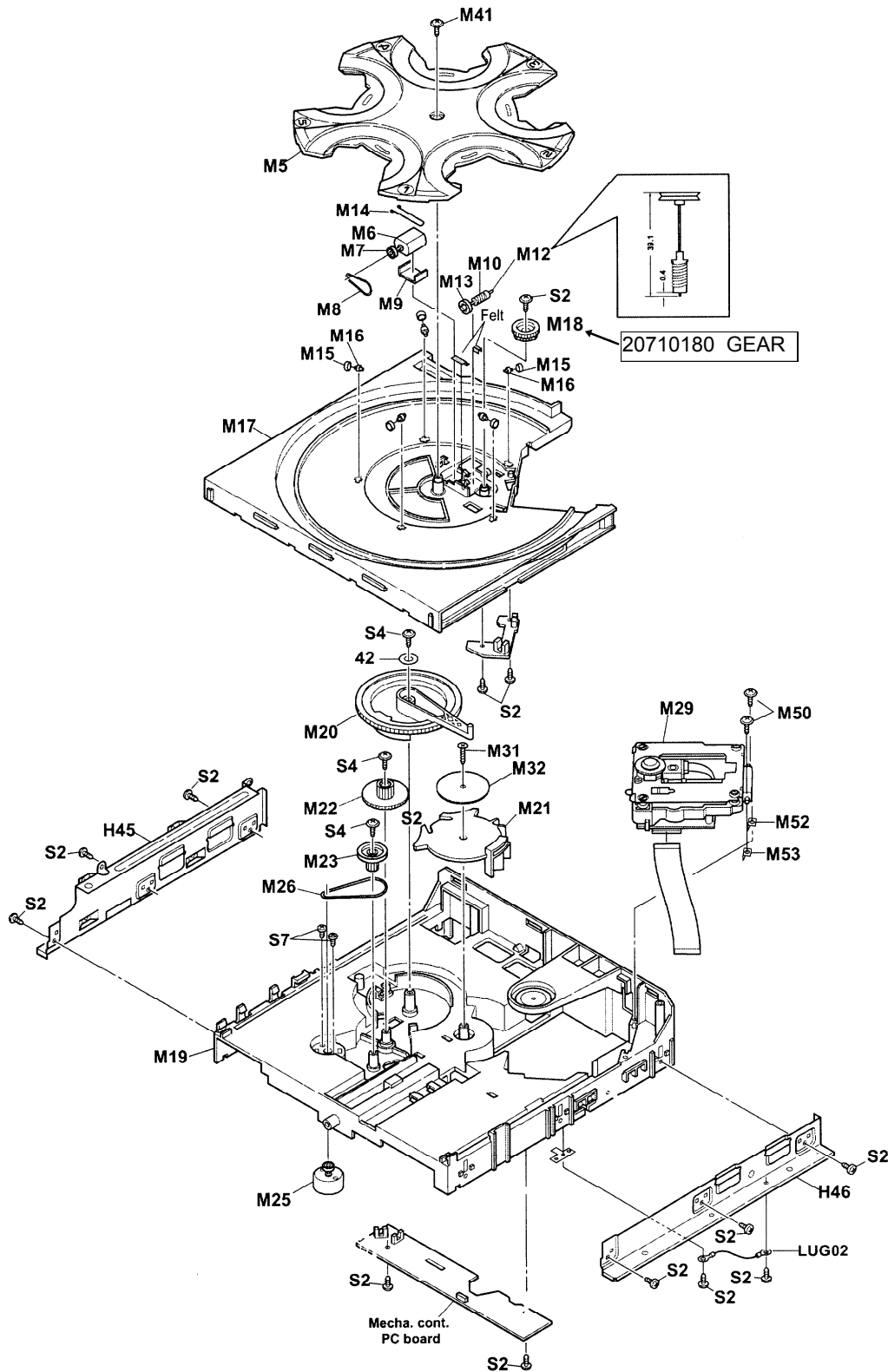
EXPLODED VIEW PARTS LIST

NO	PARTS No	DESCRIPTION	NO	PARTS No	DESCRIPTION
H1	55221510	Badge, DVD	H38	55174610	Bracket R small
H2	55184480	Drawer panel	H41	55186600	Top cover
H3	55223420	Clear plate	H43	△ 55184690	Power supply board unit
H4	55204210	Logo badge, INTEGRA	H44	55202510	Shield cover
H5	55186710	Holder	H45	55186670	Bracket L frame
H6	55204250	Standby button	H46	55186680	Bracket R frame
H7	55244620	Power button	H46	55174680	Bracket roulette R
H8	55184600	Shaft	H47	55174550	Cushion, 12 x 8 x 20
H10	55244670	Button CD PLAY	H48	55186620	Main chassis
H12	55164930	FL Holder	H49	55190690	Rubber sheet, down load
H13	55204180	Font panel	H50	△ 55222010	AC Inlet terminal
H14	55204260	Button OPEN/CLOSE	H52	55222020	Bracket, AC inlet
H15	55244680	Button, 9 Keys	H53	55259110	Cover, Standby button
H20	55236110	Front chassis	U1	55203110	Main circuit PC board assy
H21	55201610	Rubber spacer 14.5 x 14.5 x 22	U2	55203100	Display PC board assy (Included Standby LED PCB +Connection PCB + Open/ Close switch PCB +Inlet terminal PCB)
H22	55125120	Leg	U3	55203120	Output terminal PC board assy
H23	55196510	Sponge, chassis 15 x 16 x 30	U4	55186040	Mechanism PC board assy (Included sensor PCB +roulette motor PCB)
H24	55174580	Bracket ground			
H26	55186640	Bracket, main board			
H27	55178960	Spring, finger			
H35	△ 55222240	Power cord			
H37	55204300	Rear panel			

**NOTE: THE COMPONENTS IDENTIFIED BY MARK △
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.**



EXPLODED VIEW ROULETTE MECHANISM





EXPLODED VIEW PARTS LIST

ROULETTE MECHANISM

REF. NO.	PART NO.	DESCRIPTION
M5	55020070	Roulette
M6	20581820	Roulette motor
M7	20584560	Pulley
M8	20710160	Rubber belt, Roulette motor
M9	20634190	Felt, 30mm x 2
M10	20710170	Worm gear
M12	20711380	Metal shaft
M13	20711410	Pulley
M14	20712060	Clip
M15	20712120	Rubber roller
M16	20712170	Plastic roller
M17	55020080	Drawer
M18	20710180	GEAR
M19	55020090	Base chassis
M20	55020110	Main gear
M21	20712230	Lift cam
M22	20712240	Drive gear
M23	20712250	Pulley
M25	20581800	Loading motor
M26	20712270	Rubber belt
M29	55186040	DVD mechanism assy
M31	J80200031820	Special screw, 3 x 18
M32	J60300048000	Washer, 55mm t=1mm
M41	20366370	Special screw with washer
M50	20349380	Special screw
M52	55232980	Spring L
M53	55232990	Spring R
LUG02	55184700	Climp AS, 190mm UL1007 PVC
S2	838130088	3TTB+8B, Self tapping screw
S4	831130108	3TTW+10B, Self tapping screw
S7	82112604	2.6+4FN, Pan head screw

BLOCK DIAGRAM

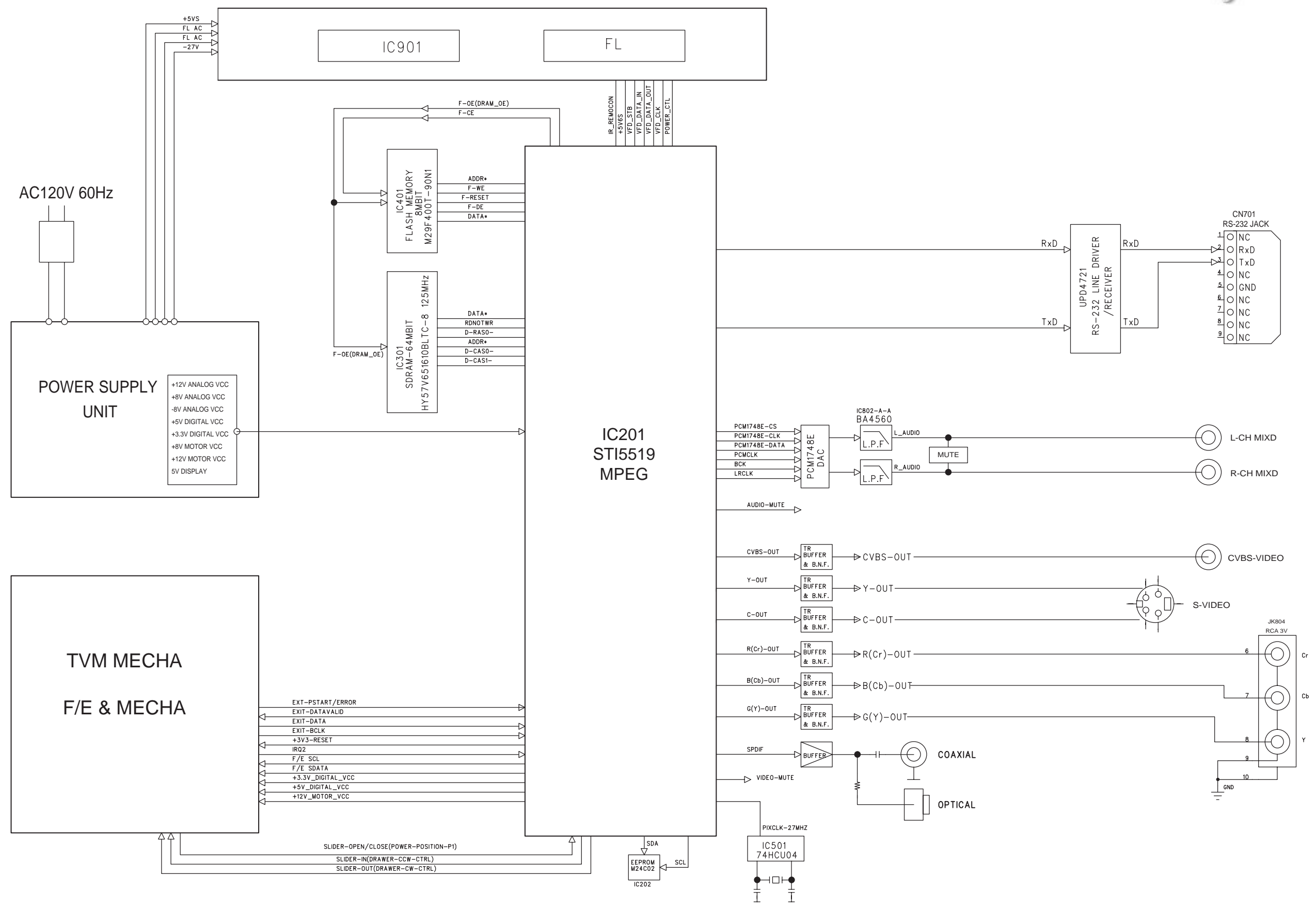
1

2

3

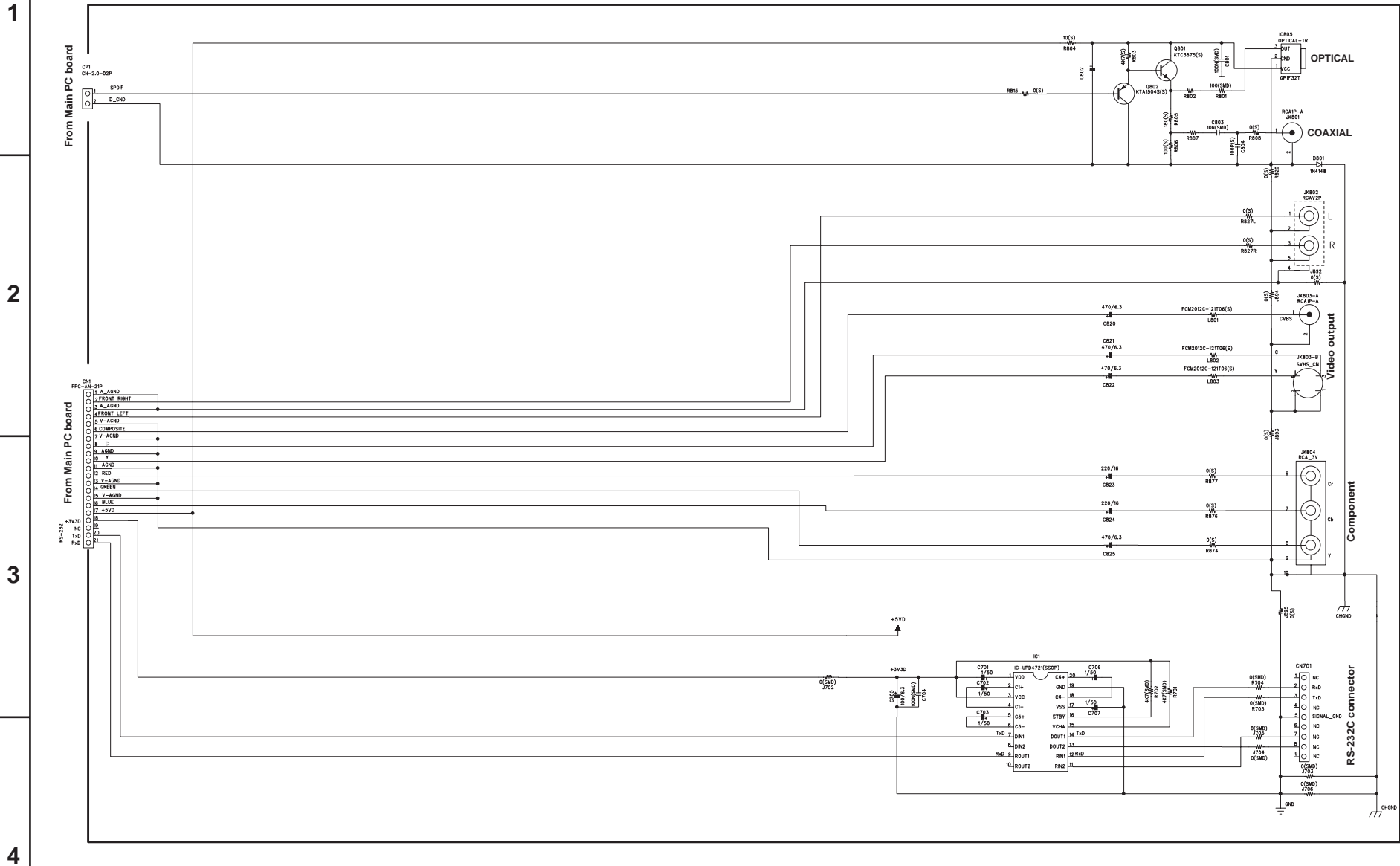
4

5



SCHEMATIC DIAGRAM

Output terminal PC board



A SCHEMATIC DIAGRAM

B

C

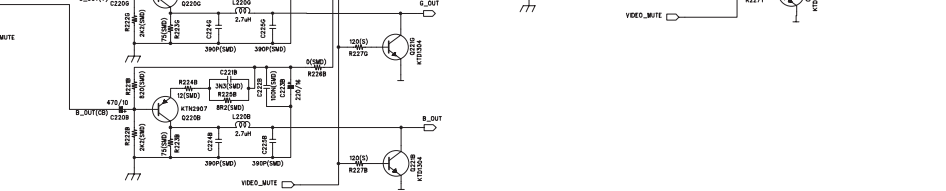
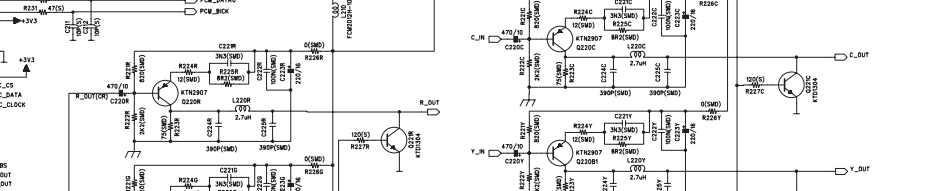
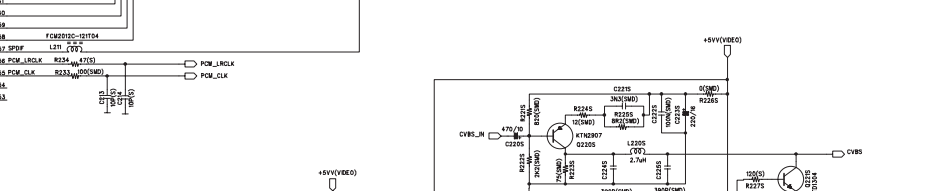
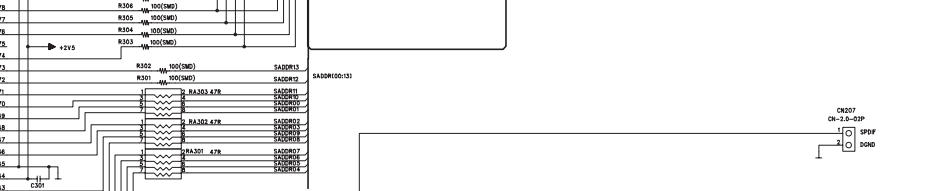
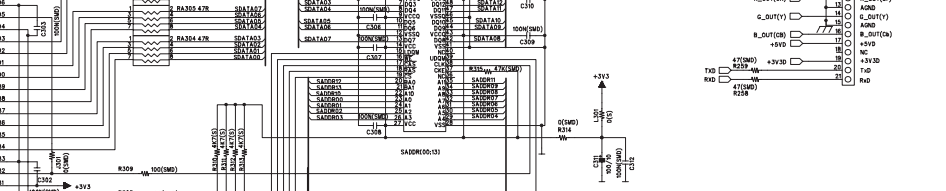
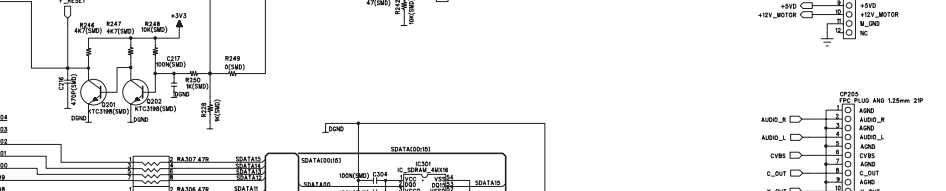
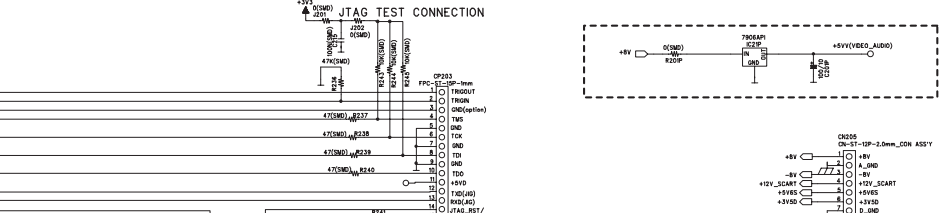
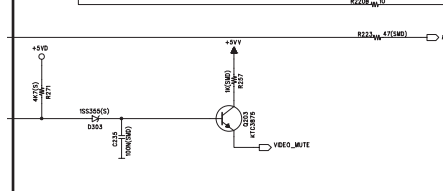
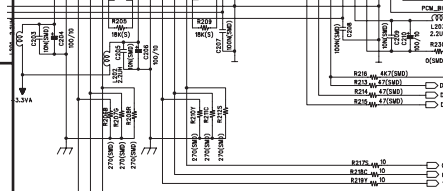
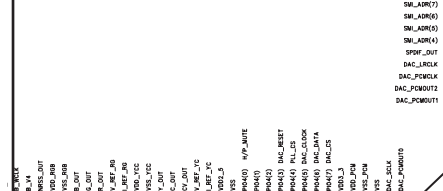
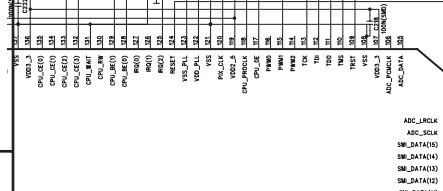
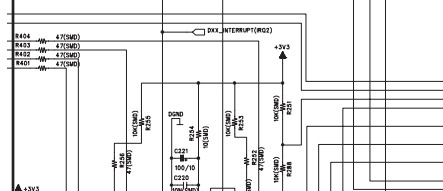
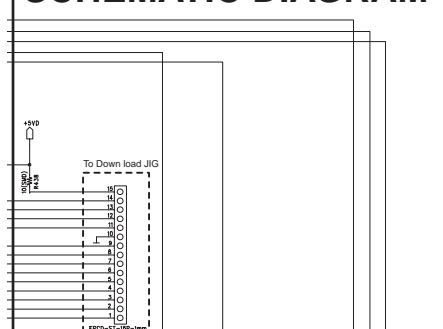
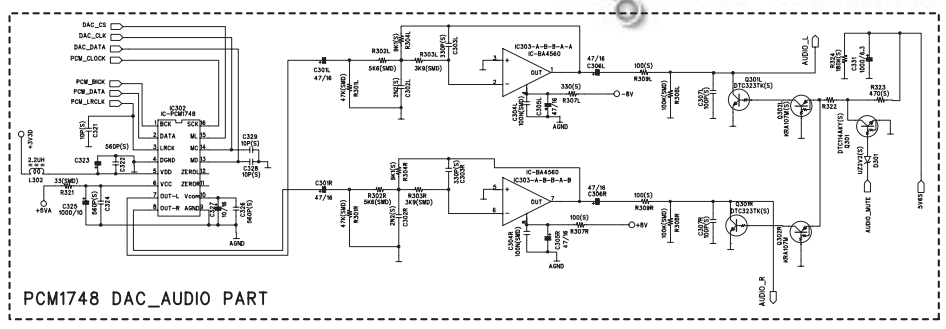
1

2

3

4

5



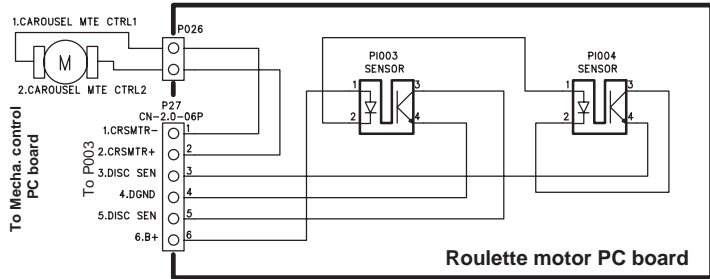
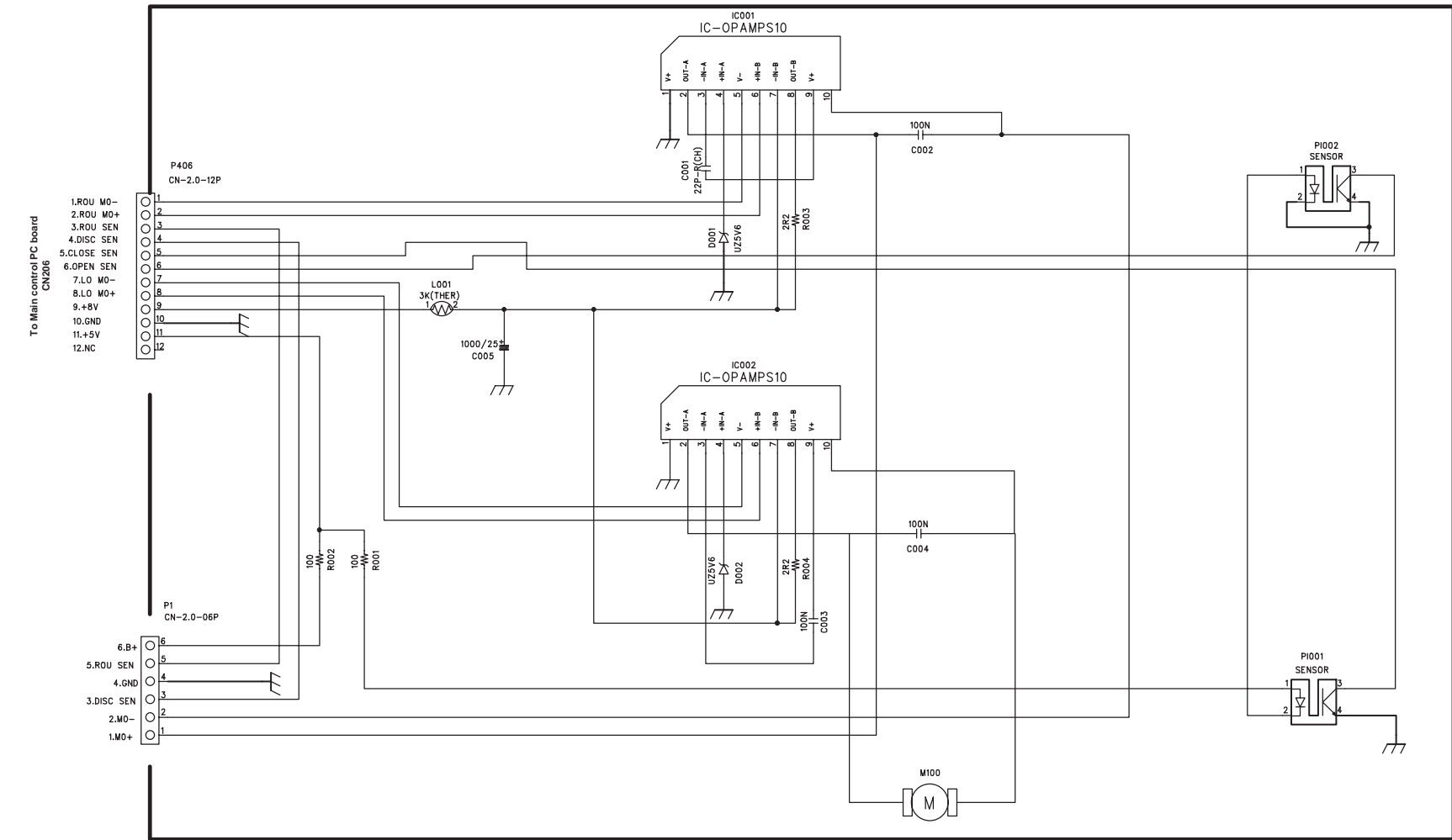
SCHEMATIC DIAGRAM Mechanism circuit PC board

1

2

3

4



PRINTED CIRCUIT BOARD PARTS LIST

MAIN CIRCUIT PC BOARD ASSY (PART NO. 55203110)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
					ICs
IC201	55130350NR	STI55, Video processor	C201P,C204,C206, C210,C221,C232, C311,C406	2026894030	100uF, +/-20%,10V, Elect
IC202	20940740NR	M24C02WM, EEPROM	C220B,C220C, C220G,C220Y, C220R,C220S	2025267030	470uF, +/-20%,10V, Elect
IC301	55156290NR	HY57V65162, DRAM	C223B,C223C, C223G,C223R, C223S,C223Y	2025265030	220uF, +/-20%,16V, Elect
IC302	55156030NR	PCM1748 KE, D/A converter	C228-C230, C301L,C301R, C305L,C305R, C306L,C306R,	2026783030	47uF, +/-20%,16V, Elect
IC303	55128990NR	BA4560F, Ope. Amp.	C323	2026862030	47uF, +/-20%,6.3V, Elect
IC401	55177660NR	SST39V, Flash memory	C325	20269180AM	1uF, +/-20%,6.3V, Elect
IC501	55133310NR	M74HCU04M	C331	1500213030	10uF, +/-20%,16V, Elect
IC21P	20361320NR	7806AP, Regulator	C505	2026862030	470uF, +/-20%,6.3V, Elect
					Transistors
Q201-Q203	2097046092	KTC3875Y	C302L,C302R	1013862091	2200pF, +/-10%, Chip
Q220B,Q220C, Q220G,Q220R, Q220S,Q220Y	5513869056	KTN2907A	C221B,C221C, C221G,C221R, C221S,C221Y	1013867091	3300pF, +/-10%, Chip
Q221B,Q221C, Q221G,Q221R, Q221S,Q221Y	5513871092	KTD1304	C501	1037509091	20pF, +/-5%, Chip
Q301	5513318092	DTC114YKA	C215,C217,C218, C222B,C222C, C222G,C222R, C222S,C222Y, C225,C234,C235,	2028804091	0.1uF, +80/-0%, Chip
Q301L,Q301R	5503943091	DTC323TK	C502,C503	2050652091	22pF, +/-5%, Chip
Q302L,Q302R	5513319092	DTA114YKA	C321	2050654091	10pF, +/-0.5pF, Chip
					Coils
L201-L203, L209,	1404174091		C237,C238, C239,C240, C241,C307L, C307R	2050659091	100pF, +/-5%, Chip
L204-L206, L210,R415, L501	5512667050	Choke, 1uF			
L208	1032875091				
L211,L301	5512671050				
L220B,L220C, L220G,L220R, L220S,L220Y	1404175091	Choke, 2.7uF			
L302	1404174091	Choke, 2.2uF			
					Resonator
X501	55128980NR				

PRINTED CIRCUIT BOARD PARTS LIST

OUTPUT TERMINAL PC BOARD ASSY (PART NO. 55203120)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
IC701	55197900NR	uPD4721, RS-232
IC805	55164740NR	GP1F32T, Optical
	Transistors	
Q801	2097046092	KTC3875Y
Q802	2097048092	KTA1504Y
	Coils	
L801,L802, L803	5512662050	MT1, Choke
	Terminals	
JK801	55164750XX	Coaxial out
JK802	55175260XX	RCA-2P out
JK803	55191220XX	RCA-1P out
JK804	55149420XX	Component out
	Socket	
CN01	55124610XX	1.25mm 21P
	Connector	
CN701	67472300XX	RS-232, 87204-606
	Diode	
D711	7043654016	1N4148
	Capacitors	
C701-C703, C706,C707	2026884030	1uF, +20-80%, 50V, Elect
C705	2025205030	100uF, +20-80%, 6.3V, Elect
C802	2026783030	47uF, +20-80%, 16V, Elect
C820-C822, C825	2026862030	470uF, +20-80%, 6.3V, Elect
C823,C824	2025265030	220uF, +20-80%, 16V, Elect

PARTS LIST

Mechanism control PC board assy (PART NO. 55183130)

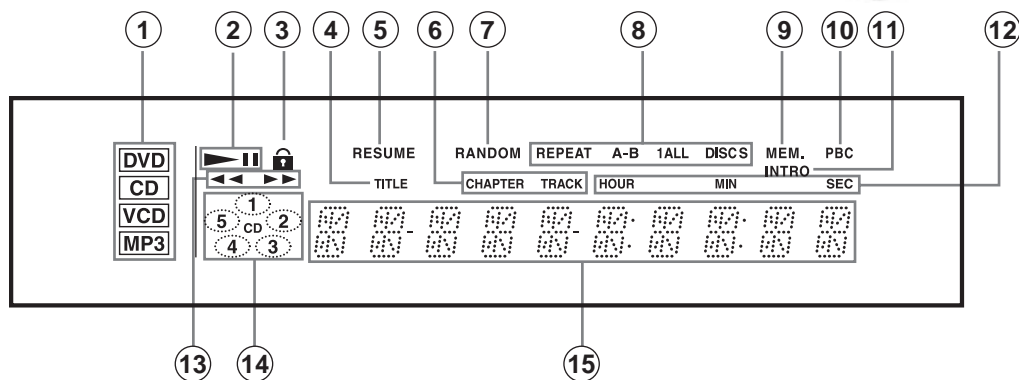
CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
IC001,IC002	20656300NR	LB1641
	Diodes	
D001,D002	2041428001	1N5232B, 5.6V, Zener
	Photo diodes	
PI001-PI003	20586840NR	ITR9606/F2
PI004	20556130NR	GP2S28 20M
	Coil	
L001	20265120NR	LF 39U0H +10% 130M
	Capacitors	
C001,C003	8043459071	22pF,+/-5%, Ceramic (CH)
C002,C004	20246950AF	0.1uF,+/-10%, Ceramic
C005	20268030AM	1000uF,+/-20%, 25V, Elect
	Socket	
P003	20504010XX	2.0MM 6 MA ST
P027	20713500NR	06187F
P406	55183020NR	
	Resistors	
R001,R002	5088295016	100 ohm, +/-5%, 1/6W
R003,R004	2054943001	2.2 ohm, +/-5%, 1/2W

PRINTED CIRCUIT BOARD PARTS LIST

MAIN CIRCUIT PC BOARD ASSY (PART NO. 55203110)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes				
D301	5517107050	UDZ 2.2 B, Zener	C216	2050668091	470pF, +/-5%, Chip
D303	2049651091	1SS355	C303L,C303R	2067807091	330pF, +/-5%, Chip
	Flat cables		C224B,C224C,	2099397091	390pF, +/-5%, Chip
CC201	55191150NR	19X 1.2	C224G,C224R,		
CC202	55182940NR	19X 1.2	C224S,C224Y,		
	Socket AS		C225B,C225C,		
CN201	55182960NR		C225G,C225R,		
CN205	55182970NR		C225S,C225Y		
CN207	55199620NR		C203,C205,C209,	1013896091	0.01uF +/-10%,Chip
	Socket		C220		
CN206	55123450	2.0MM 12 MA R	C211-C214,	2050654091	10pF +/-0.5pF, Chip
CP201	55124680	1.25MM 19 FE	C242-C245,		
CP202	55125910NR	1.0MM 15 FE S	C328,C329		
CP203	55125910NR	1.0MM 15 FE S	C322,C324,C326	1013839091	560pF +/-10pF, Chip
CP205	55124600	1.25MM 19 FE	C404,C405	1013855091	1000pF +/-10%, Chip
				Spring	
				55178960	Finger

PANEL VIEW FL DISPLAY



- ① Inserted disc indicators**
Indicate the type of current disc that is loaded.
- ② Play/Pause indicators**
Illuminate in play or pause mode.
- ③ Parental Lock indicator**
Illuminates in parental lock mode.
- ④ TITLE indicator**
Illuminates to indicate the current title number.
- ⑤ RESUME indicator**
Illuminates when the player is ready for resume playback.
- ⑥ CHAPTER/TRACK indicators**
Indicate display mode of the current chapter of DVD disc or track number of Video CD or CD.
- ⑦ RANDOM indicator**
Illuminates during random playback.
- ⑧ REPEAT indicators**
Illuminate during repeat playback.
- ⑨ MEM. indicator**
Illuminates during memory playback.
- ⑩ PBC indicator**
Illuminates when PBC is on for Video CD.
- ⑪ INTRO indicator**
Illuminates during intro-scan playback.
- ⑫ Elapsed time indicators**
Indicate playing time.
- ⑬ Search indicators**
Illuminate during search and slow playback mode.
- ⑭ Disc number indicator/CD indicator**
Disc number indicators indicate the presence of a disc. CD indicator illuminates when the DVD Changer is in CD Play mode.
- ⑮ Multifunction indicator**
Indicates operating status, messages, etc.

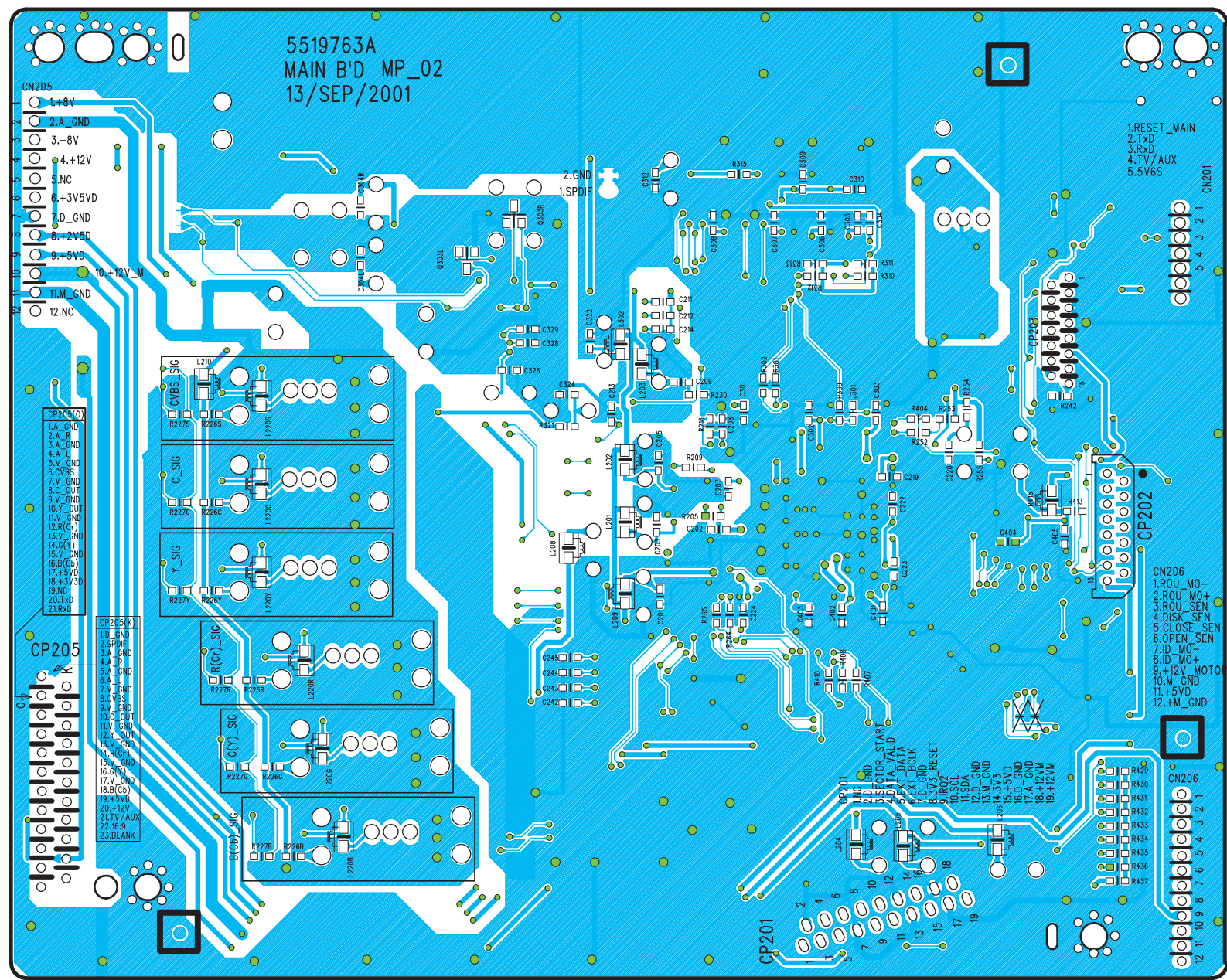
A B C D E

PRINTED CIRCUIT BOARD VIEW

Main circuit board

Bottom pattern and bottom parts

1
2
3
4



A

B

C

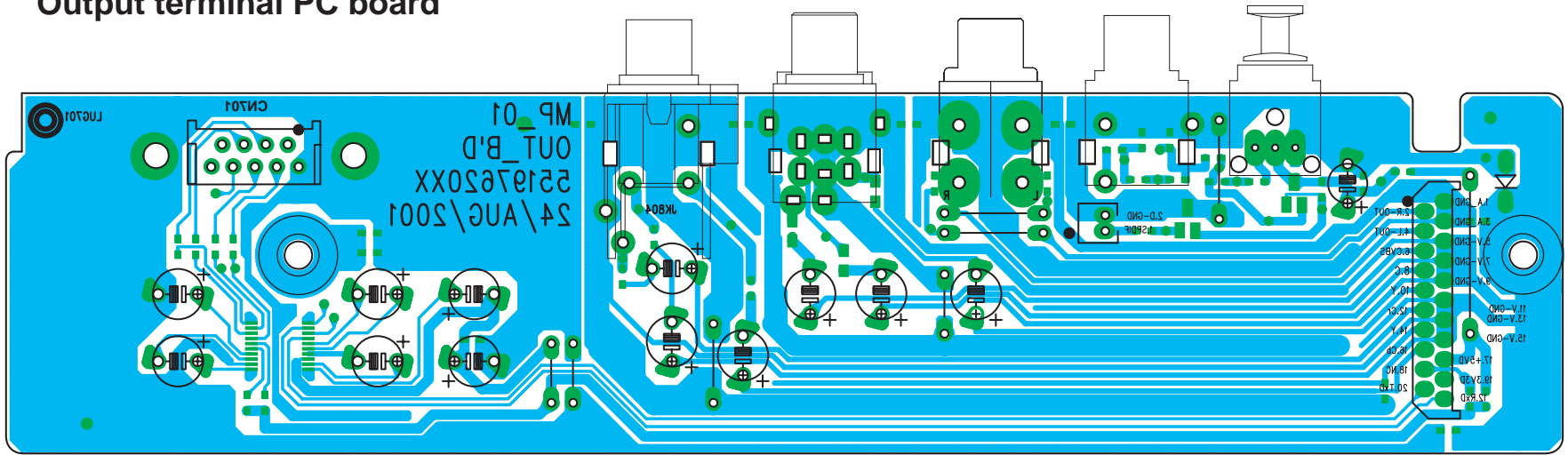
D

E

PRINTED CIRCUIT BOARD VIEW

Output terminal PC board

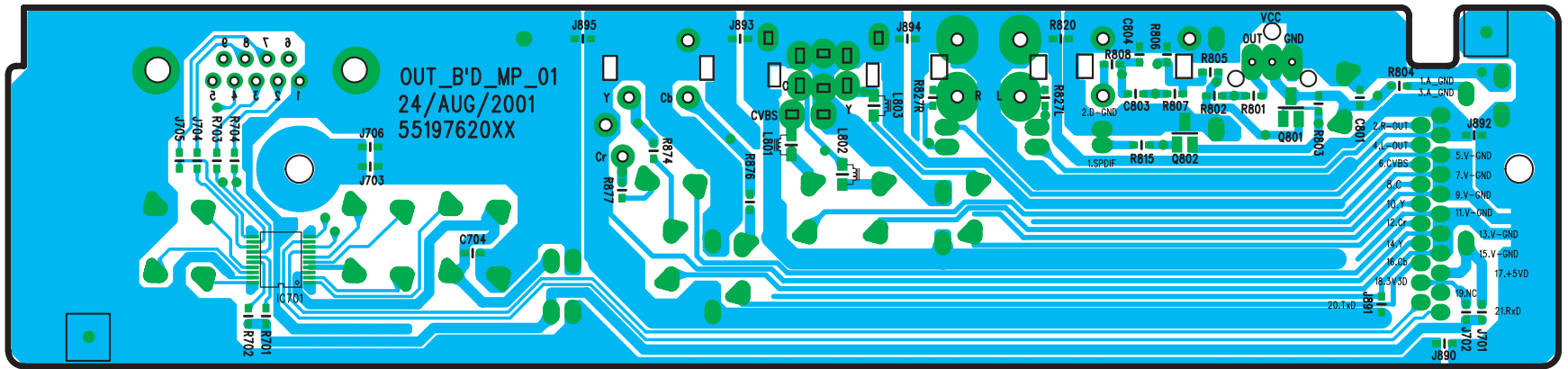
1



Component side view

2

3



Soldering side view

4

A

B

C

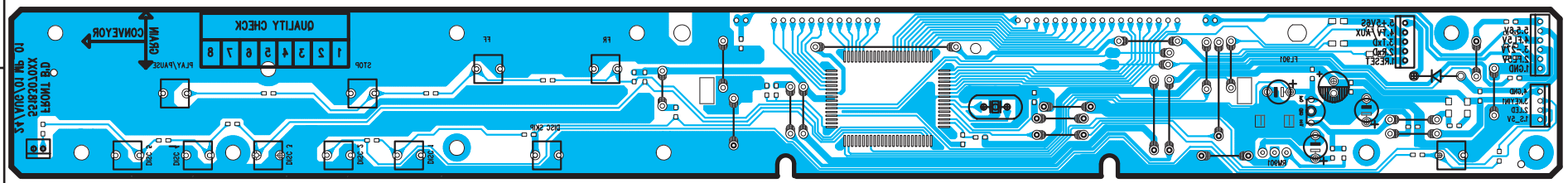
D

E

PRINTED CIRCUIT BOARD VIEW

1

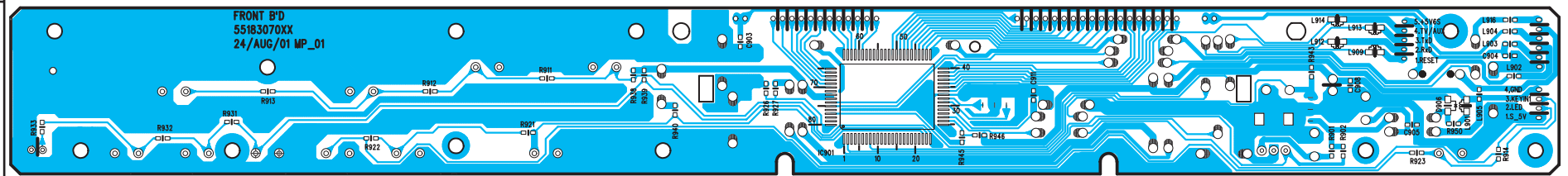
Display circuit PC board



Component side view

2

3



Soldering side view

4

A

B

C

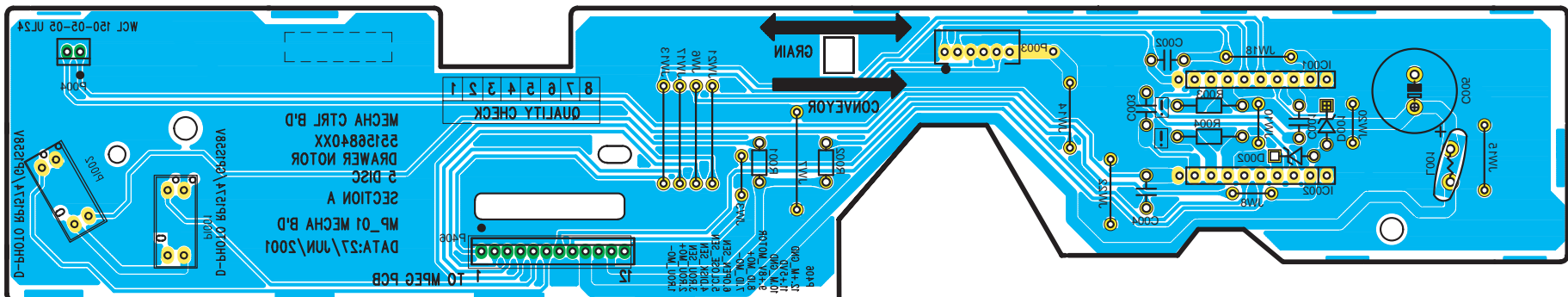
D

E

PRINTED CIRCUIT BOARD VIEW

Mechanism control PC board

1

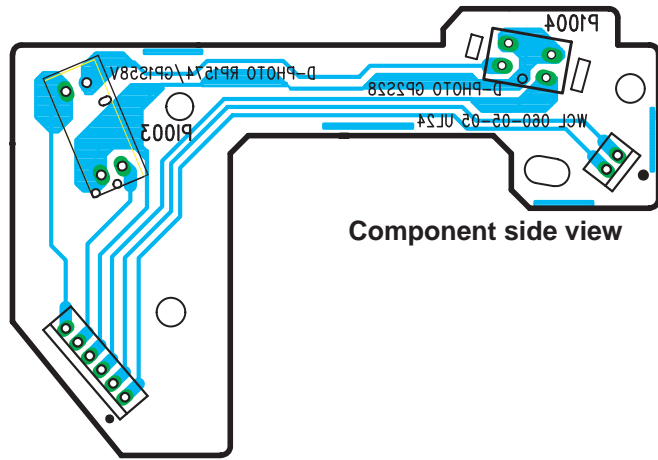


Component side view

2

Roulette motor PC board

3

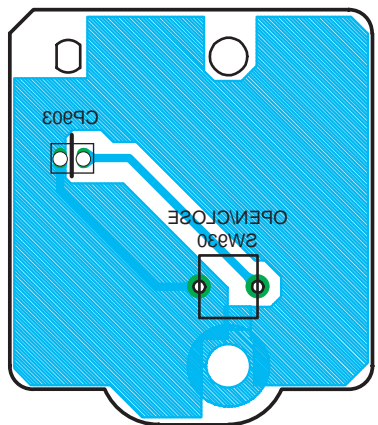


Component side view

4

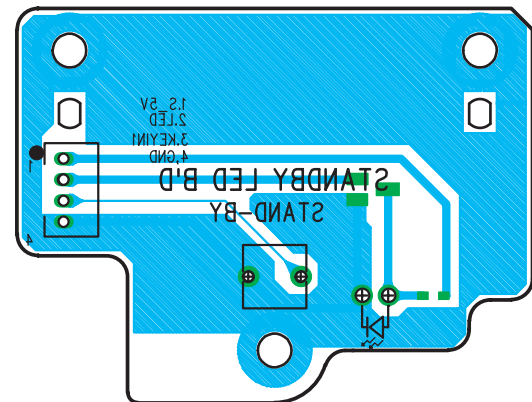
PRINTED CIRCUIT BOARD VIEW

Open/Close switch PC board

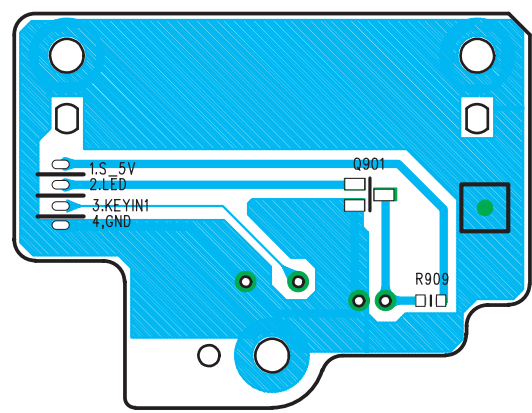


Soldering side view

Standby switch PC board

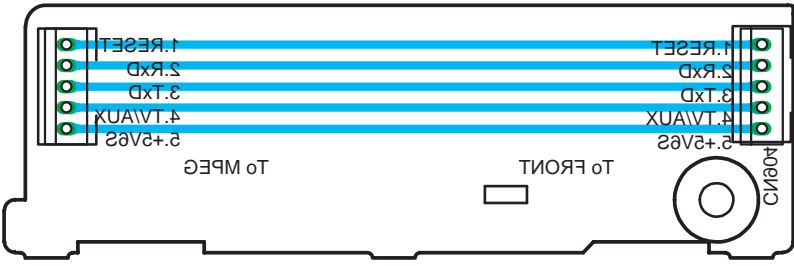


Component side view



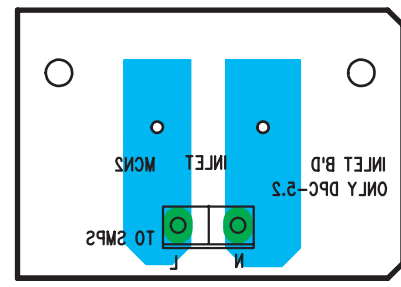
Soldering side view

Connection PC board



Component side view

Inlet PC board



Component

DISASSEMBLY PROCEDURE

Replacement of DVD mechanism

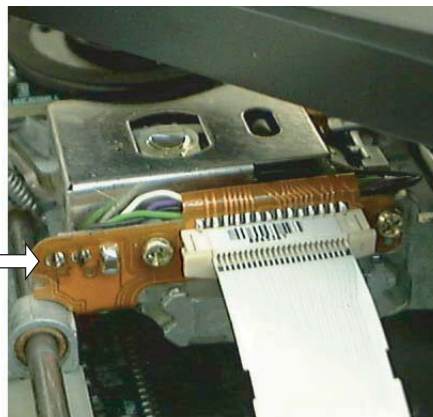
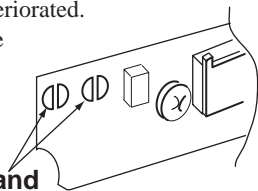
The laser diode in the optical pickup block so sensitive to static electricity, surge current and etc..

That the components are liable to be broken down or its reliability remarkable deteriorated.

During repair, carefully take the following precautions.

Do not touch the optical pickup object lens with the hands.

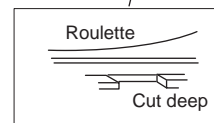
Short Land



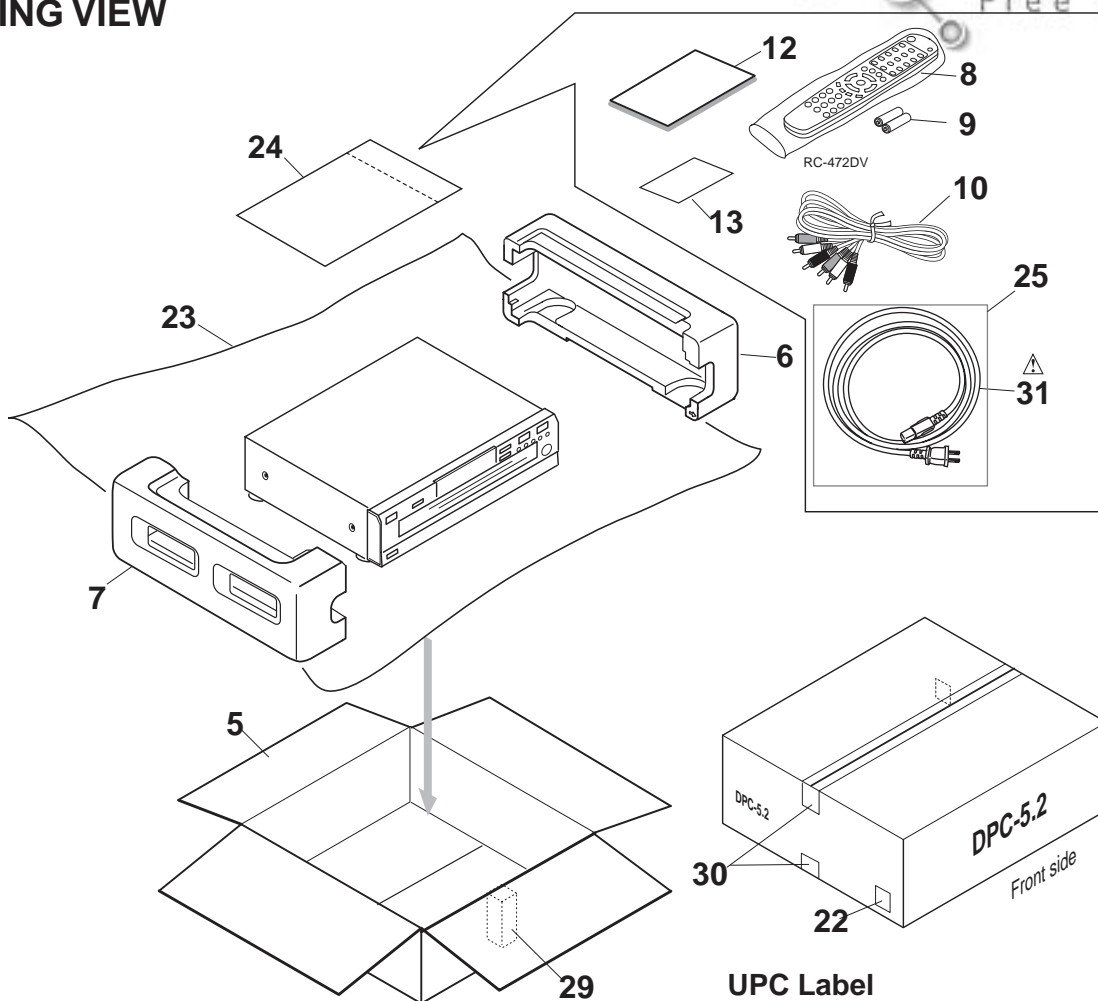
1. Remove the top cover with six screws.
2. Remove the tray.
3. Remove the roulette assembly.
4. Remove the roulette. (Roulette is removed as written below.)
5. Solder the LD output lands on the DVD optical pickup.
Please perform right photo to reference.
6. Replace the pickup mechanism assembly etc. . After unsolder the laser diodes output lands.


Remove the roulette

1. Pull out the tray.
2. Stops in the position (cut deeply).
3. Remove in the direction of arrow.
4. Reassembly is performed by 3 to 1.




PACKING VIEW

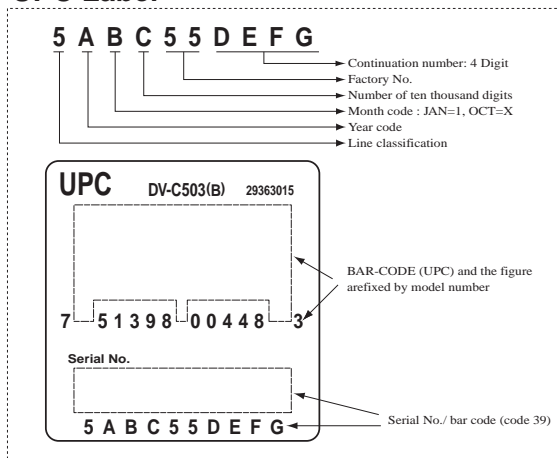


NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PARTS LIST

NO	PARTS No	DESCRIPTION	NO	PARTS No	DESCRIPTION
5	55204420	Carton box	22	55204330	UPC label
6	55184410	Pad Right	23	55170660	Sheet, Set, 1150 x 1000
7	55184420	Pad Left	24	55170650	Poly bag, 335 x 240mm
8	55204310	Remote controller RC-472DV	25	20715540	Poly bag, Power cord
9	55020220NR	Battery, UM-4 x 2	29	55208740	Cushion, 35sq x 80
10	55176530	Audio/ Video connection cable	30	29110141	PP tape
12	55204320	Instruction manual	31	 55222240	Power cord
13	55186720	Warranty card			

UPC Label



UPGRADE THE FIRMWARE 1

- a. The program for writing
 b. The program of binary form AAAABBB.bin
- Two files are saved to the same directory.
- AAAA : model name
 BBB : Version

1. Jigs connection

1-1. PC-JIG

Connect the D-Sub(25 pin) cable.

1.2. JIG-DPC-5.2

Connect the FFC and socket (down load PCB).

1.3. Remove a sheet at the bottom.

Connect the socket (CP202).

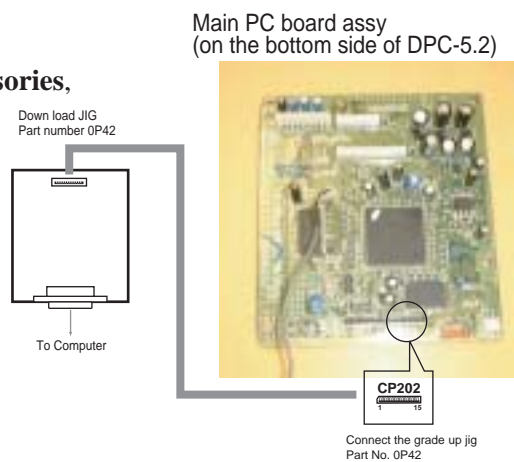
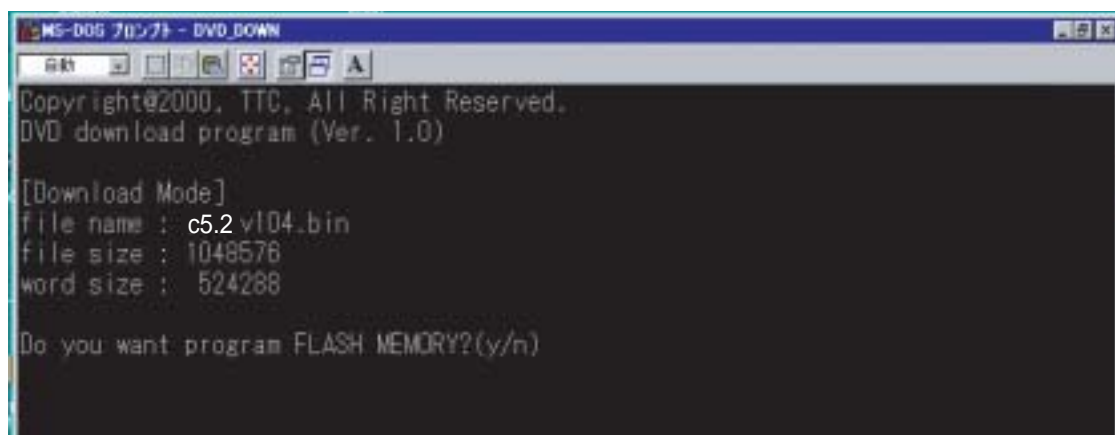
1-4. Turn on the power switch of DPC-5.2.

Light up the LED on the JIG PC board assy.

1-5. Start an MS-DOS window.

(Click **Strat**, point to **Programs**, point to **Accessories**, and then click **MS-DOS Prompt**.)

1-6. Input key the "dvd down AAAABBB.bin" and then click **Return**.

```

MS-DOS プロンプト - DVD_DOWN
Copyright©2000, TTC, All Right Reserved.
DVD download program (Ver. 1.0)

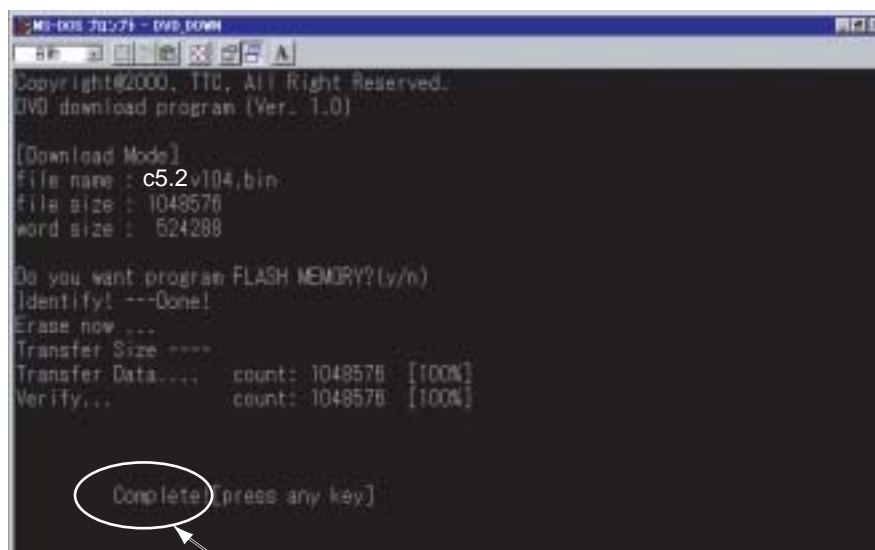
[Download Mode]
file name : c5.2 v104.bin
file size : 1048576
word size : 524288

Do you want program FLASH MEMORY?(y/n)
  
```

UPGRADE THE FIRMWARE 2

1-7. Key input "Y".

It is automatically written in in order of Identify, ROM ERASE, WRITE and Verify.
 Witting time are about 1 minute



```

MS-DOS 7.0571 - DVD Down
Copyright©2000, TTC, All Right Reserved.
DVD download program (Ver. 1.0)

[Download Mode]
file name : c5.2
file size : 1048576
word size : 524288

Do you want program FLASH MEMORY?(y/n)
Identify! ---Done!
Erase now ...
Transfer Size ----
Transfer Data---- count: 1048576 [100%]
Verify... count: 1048576 [100%]

Complete (press any key)
  
```

Writing was completed. →

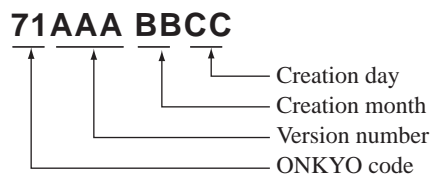
1-8. Press any key.

2. Confirmation of version of firmware

2-1. Press the "DIS 3" and "CDPLAY" key to the same timing.

The "DISC 3" key is pushed previously.

2-2. Version number is displayed on FL tube. (wait several seconds)



Integra Division of

ONKYO CORPORATION

Sales & Product Planning Div. : 2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572-8540, JAPAN

Tel: 072-831-8111 Fax: 072-833-5222 <http://www.onkyo.co.jp/>

Integra Division of

ONKYO U.S.A. CORPORATION

18 Park Way, Upper Saddle River, N.J. 07458, U.S.A.

Tel: 201-785-2600 Fax: 201-785-2650 E-mail: integra@onkyousa.com <http://www.integrahometheater.com>