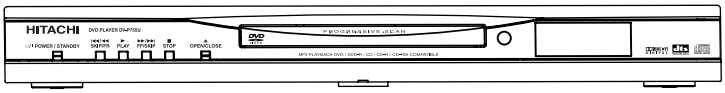
HITACHI

TK | No. 0501E

SERVICE MANUAL

DV-P755U



DO NOT RESELL OR DIVERT IMPROPERLY.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

DVD PLAYER

April 2005 Digital Media Division, Yokohama

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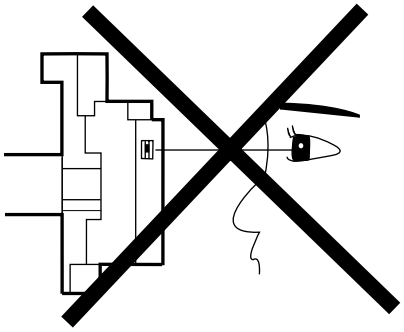
1 CAUTION FOR SAFETY IN PERFORMING REPAIR

1-1 LASER BEAM SAFETY PRECAUTIONS

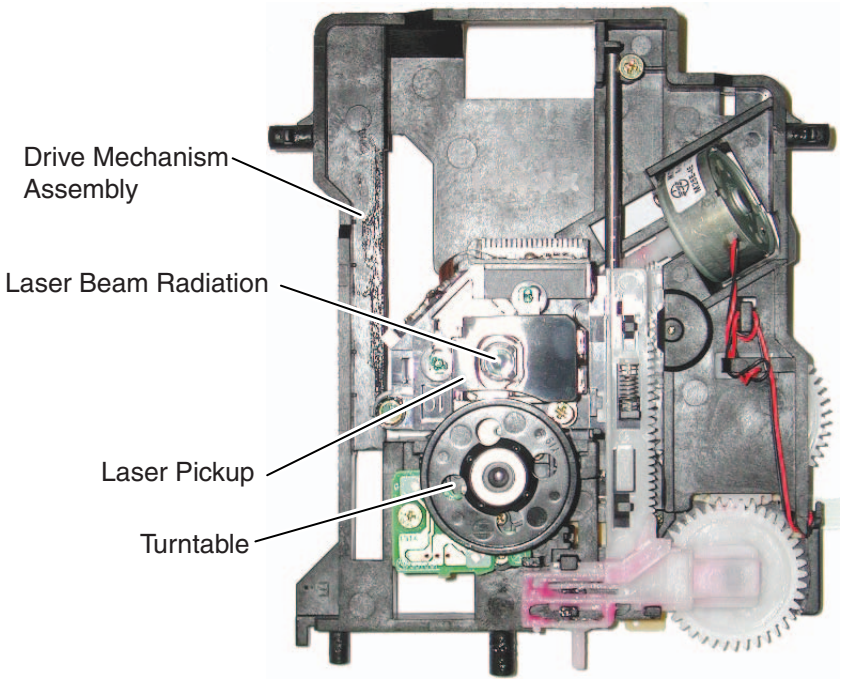
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Top of DVD mechanism.

1-2 IMPORTANT SAFETY PRECAUTIONS

1-2-1 Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

1-2-2 Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation tape
2) PVC tubing
3) Spacers
4) Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector. (Discard it.)
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

1-2-3 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

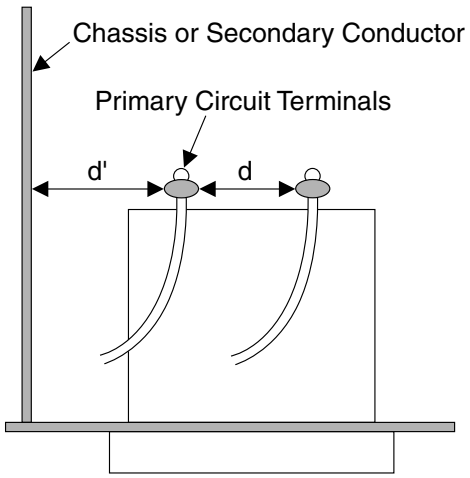


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

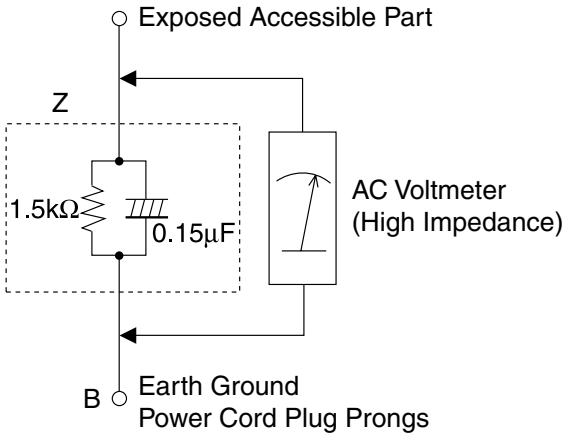


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA Peak	Exposed accessible parts

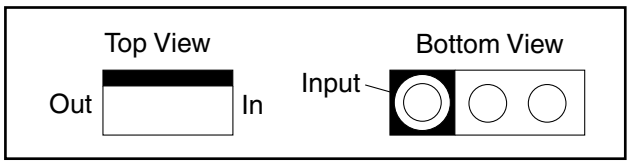
Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

1-3 STANDARD NOTES FOR SERVICING

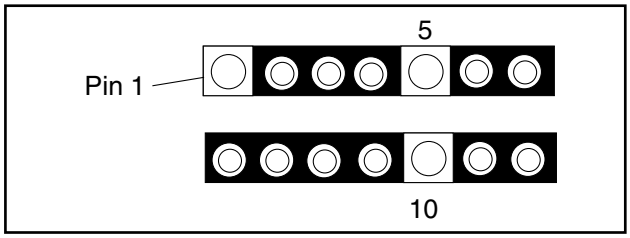
General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

1-3-1 Circuit Board Indications

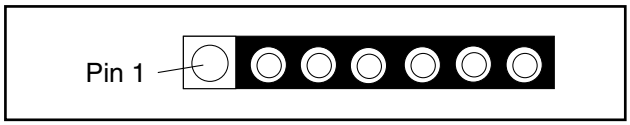
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

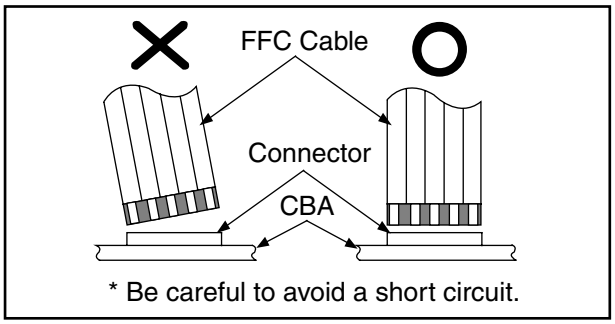


3. The 1st pin of every male connector is indicated as shown.



1-3-2 Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



1-3-3 Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

1-3-4 Instructions for Handling Semi-conductors

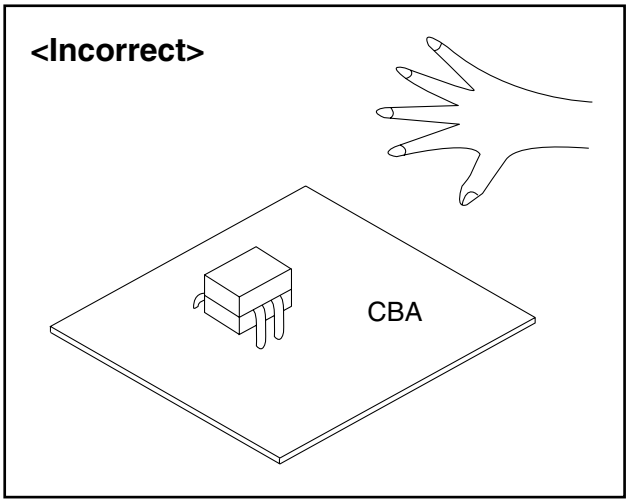
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

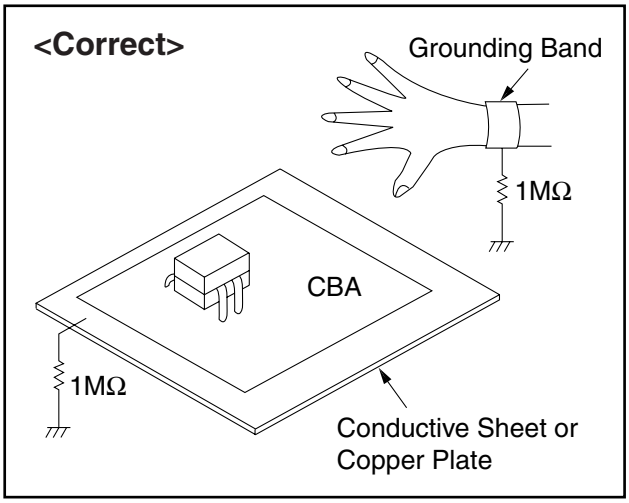
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





2 GENERAL INFORMATION

2-1 SPECIFICATIONS

Item		Description
DVD section	Output signal format	NTSC color
	Video output impedance	75 Ω
	Video output level	1.0 V p-p
	Audio output level	2.0 Vrms
	Video S/N ratio	60 dB or more
	Disc used	DVD video disc, Music CD disc
	Audio frequency characteristic	DVD (linear audio) 20 Hz - 22 kHz (48 kHz sampling frequency) 20 Hz - 44 kHz (96 kHz sampling frequency) Music CD 20 Hz - 20 kHz (JEITA)
	Signal/Noise (S/N) ratio	CD: 70 dB (JEITA)
	Dynamic range	DVD (linear audio): 70 dB, CD: 70 dB (JEITA)
	Total distortion ratio	DVD: 0.004%, CD: 0.0045%
Terminal	Video output	PIN JACK
	Audio output	PIN JACK
	Component video output	PIN JACK
	S Video output	MINI DIN 4PIN JACK (75 Ω)
	Coaxial digital audio output	PIN JACK
Others	Power supply	120 V AC +/- 10%, 60 Hz +/- 0.5%
	Power consumption	10 W (Standby: 0.8 W)
	Temperature range for operation	5 °C - 40 °C
	Dimensions	435(W) mm × 51(H) mm × 211(D) mm
	Weight	1.3 kg

2-2 COMPARISON OF MODELS

O: Yes, ---: No, ←: Same as on left

Item		DV-P755U	DV-P543U
GENERAL	DVD/VCD/SVCD/CD-DA	O / --- / --- / O	←
	CD-R/CD-RW/DVD-R (Video Format)	O / O / O	←
	DVD-RAM/DVD-RW	--- / O (Video Mode)	←
	MP3/WMA	O / ---	←
	Drive Speed	1x	←
	Laser	2	←
	OSD languages	3 (English, French, Spanish)	←
	Front Panel Color	Silver / Black	←
	Remote Controller Model Name	DV-RM755U	DV-RM543U
VIDEO	Video Out Mode NTSC/PAL/PAL60	O / --- / ---	←
	S-Video / Component / Composite	O / O / O	←
	Video D/A Converter	10bit / 54MHz	←
	Black Level Select	O	←
	Progressive Out	O	←
AUDIO	Audio D/A Converter	192kHz / 24bit	←
	Digital Audio Out Optical / Coaxial	--- / O	←
	DTS Digital Out	O	---
	Virtual Surround	O	←
	Dynamic Range Compression (Dolby Digital)	O	←
TRICK PLAY	Search Speed	2 to 100 (FORWARD/REWIND) (DVD: 2, 8, 20, 50, 100/CD: 2, 8, 30)	2 to 100 (FORWARD/REWIND) (DVD: 2, 8, 50, 100/CD: 16)
	Slow Speed	1/16, 1/8, 1/2 (FORWARD/ REWIND)	←
	IP Search (Smooth 2x Play)	O	←
	x1.3, x0.8 Play with Audio	O	---
	Step Forward / Reverse	O / ---	←
	Still Picture Select (Frame/Field)	Frame / Field / Auto	←
FEATURES	Disc Navigation	O	←
	DVD Zoom x2 / x4 / x16	O / O / ---	←
	A-B Repeat	O	---
	Repeat	O	←
	Resume	O	←
	Closed Caption for NTSC DVD	O	←
	Front Panel Display Dimmer	O	←
	Screen Saver	O	←
	Auto Power Off	O (always on)	←

2-3 COMPARISON OF MAIN CONTROL ICS

---: No, ←: Same as on left

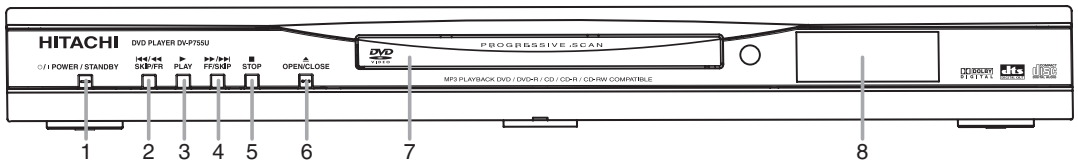
Item	DV-P755U		DV-P543U	
SW	SN74LVC1G3157DCKR	(IC201)	NC7SB3157P6X / SN74LVC1G3157DCKR	(IC201)
OP AMP	LM324PWR / LM324PT	(IC202)	←	
SERVO DRIVE	BA5888FP-E2 / SA5694G / FAN8024CDTF-NL / SA5624G / SA5694 / FAN8024CDTF	(IC301)	SA5694 / FAN8024CDTF / BA5954FP-E2 / BA5888FP-E2	(IC301)
RESET	PST3229NR	(IC461)	←	
	BMR-110529	(IC462)	←	
MICRO CONTROLLER	MN35302	(IC101)	MN35202	(IC101)
SDRAM	K4S641632H-UC75/ P2V64S406TP-G6	(IC503)	K4S641632H-UC75	(IC503)
FLASH ROM	MBM29LV160BE90TN-KE1 / ES29LV160DB-90TG / M29W160EB70N6E-PBF / MX29LV160BBTC-90G	(IC103)	MBM29LB160T / BM90TN-K / MX29LV160ABTC-90G	(IC103)
AUDIO D/A CONVERTER	PCM1782DBQR	(IC601)	PCM1755DBQR	(IC601)
ERROR VOLTAGE DET	EL817B / EL817C / LTV-817B-F / LTV-817C-F / PS2561A-1(W)	(IC1001)	EL817B / EL817C / LTV-817B-F / LTV-817C-F / PS2561A-1(W) / PS2561A-1(Q)	(IC1001)
1.2V REG	LD1117SC-R	(IC1002)	PQ070XZ5MZP	(IC1002)
SHUNT REGULATOR	KIA431-AT / FAN431AZXA	(IC1006)	←	
AMP	KIA4558P/P/ UTC4558 / RC4580IP	(IC1201)	KIA4558P / NJM4558D / RC4580IP	(IC1201)
VIDEO DRIVER	MM1622XJBE	(IC1402)	MM1637XVBE	(IC1402)
	---		MM1636XWRE	(IC1403)
FRONT PANEL CONTROL	PT6313-S-TP(L) / SC16313G	(IC2001)	PT6313-S-TP / SC16313	(IC2001)

2-4 LIST OF ABBREVIATIONS AND TERMS FOR DVD PLAYER

Index	Abbreviation/Term	Explanation
A	AC3	See Dolby AC3.
C	CD-R	One type of DVD standard disc, to which writing once is possible (recordable type)
	CD-RW	One type of CD standard disc, to which writing up to 1000 times is possible
	Component video output terminals	Used for outputs of HDTV video signal format. Since signals for brightness and colors are independently handled for components signals (Y: luminance signal; PR/PB: chrominance signals), degrading of image will be reduced.
D	Dolby AC3	Audio coding format developed by Dolby Laboratories in U.S, also simply referred to as AC3 format: Supports 5-channel full-range sound and one channel for sub-woofer sound playback.
	D terminal	This terminal, specified by EIAJ (currently JEITA), can automatically switch “digital hi-vision” programs of BS digital broadcast, and “digital standard broadcast” of current image quality. A tuner and TV can easily be connected to the D terminal. There are 5 types of D terminal, depending on the different format of video signal passing thorough the D terminal.
	DTS	Digital Theater System: Sound system as for movie theaters developed by US Digital Theater Systems, Inc. The number of channels provided by DTS is the same for Dolby AC3.
	DVD	Digital Versatile Disc. A huge amount of digital data for video (movie) and audio can be recorded on this disc, whose size is the same as CD.
	DVD-Audio	One type of DVD standard disc, on which high-quality audio can be recorded
	DVD-R	One type of DVD standard disc, to which writing once is possible (recordable type)
	DVD-RAM	One type of DVD standard disc, to which writing up to 100,000 times is possible
	DVD-ROM	One type of DVD standard disc, to which data for computer can be recorded
	DVD-RW	One type of DVD standard disc, to which writing up to 1000 times is possible
	DVD-Video	One type of DVD standard disc, on which high-quality video and audio can be recorded
	DVD Video Format	Video recording/playback standard that applies to DVD-Video, DVD-R and DVD-RW
	DVD Video Recording Format	Video recording/playback standard that applies to DVD-RAM and DVD-RW: This allows versatile editing functions, differing from the DVD Video Format.
	DVD Forum	International organization that formulates the technical standards of DVD
E	EIAJ	Electronic Industries Association of Japan: An organization of manufacturers of consumer electronic devices, industrial electronic devices and electronic components, established in April 1948. EIAJ merged with JEIDA (Japan Electronic Industry Development Association) in November 2000 to become JEITA (Japan Electronics and Information Technology Industries Association).
J	JPEG	Joint Photographic Expert Group: International standard format for compressing still images.
L	Linear PCM	Linear Pulse Code Modulation: LPCM is a format that digitizes analog audio signal during recording and converts it back to analog signal during playback.
M	MPEG	Moving Picture Experts Group: Standard related to compression of digital video and audio. MPEG2 is a higher standard of MPEG and is applied to video (movie) requiring higher quality.
	MPEG Audio Layer 2	One of three audio compression standards (layers 1-3) defined by MPEG
	MP3	MPEG1 Audio Layer-3: Audio data digital compression technology.
P	Progressive playback function	This function converts interlaced images to non-interlaced images and displays them. It can play back 24-frame/second images included in DVD movie software, etc.
S	SDMI	Secure Digital Music Initiative: This conference was established by hardware makers, the Recording Industry Association of America (RIAA) and music industry companies, to protect copyrights of musical compositions.
V	Virtual surround	This technology localizes sound at any position using only two front speakers, by subjecting the L and R signals to matrix operation. It uses the four transfer functions from L/R speakers located at specified positions to both ears of listener located in a specified position, taking into account the shape of head and the effect of earlobes, and the two transfer functions from any position to both ears.

2-5 OPERATING CONTROLS AND FUNCTIONS

FRONT PANEL

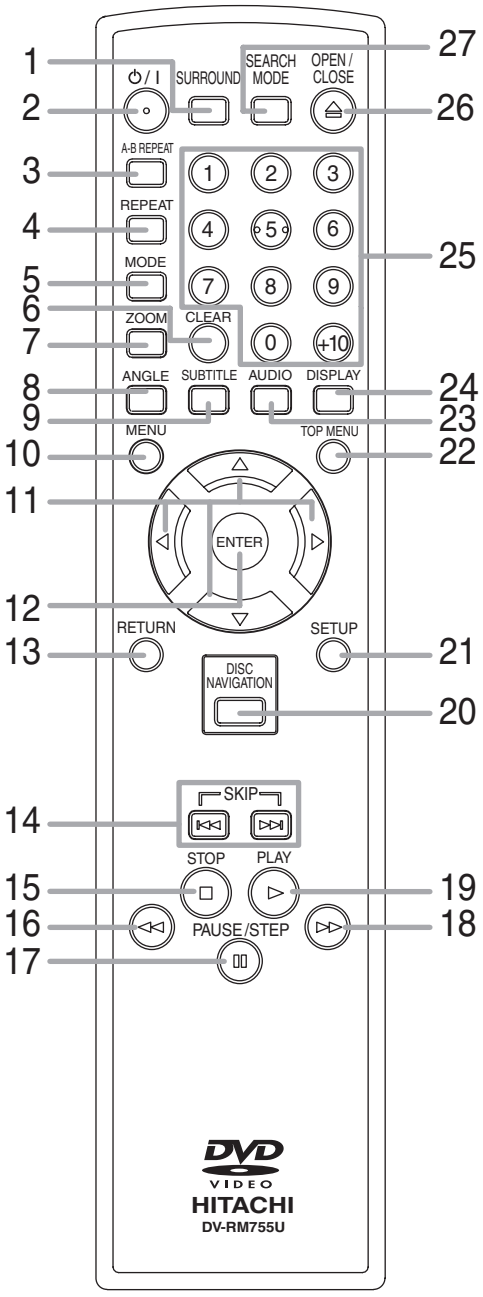


REAR VIEW

1. ⏻/ I **(POWER/STANDBY)**
   Switch the player to ON or OFF.
   (As to the indication of the Operate switch, "I" indicates ON and "⏻" indicates electrical power STANDBY).
2. **SKIP/FR**
   Go to previous chapter or track during playback.
   Press and hold for 1.5 seconds for a reverse search.
3. **PLAY**
   Start or resume disc playback.
   Press for 5 seconds to make progressive scanning mode off.
4. **FF/SKIP**
   Go to next chapter or track during playback.
   Press and hold for 1.5 seconds for a forward search.
5. **STOP**
   Stop playback.
6. **OPEN/CLOSE**
   Open/close the disc tray.
7. **Disc tray**
8. **Display**
9. **MAIN (AC Power Cord)**
   Connect to a standard AC outlet.
10. **COAXIAL (Digital audio out)**
    Use coaxial digital audio out to connect to a compatible Dolby Digital receiver. Use to connect to a Dolby Digital decoder or DTS decoder.
11. **AUDIO OUT (Left/Right)**
    Connect to the AUDIO inputs of an amplifier, receiver or stereo system.
12. **VIDEO OUT**
    Use a video cable to connect one of the jack to Video input on your A/V-compatible TV, wide screen TV, or Stereo system.
13. **COMPONENT VIDEO OUT**
    Connect to a TV with the Component video in jacks.
14. **S-VIDEO OUT**
    Use S-Video cable to connect this jack to the S-Video jack on your A/V-compatible TV or wide screen TV for a higher quality picture.

CAUTION:
Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

REMOTE CONTROL



1. **SURROUND**
   Press to activate the virtual sound.
2. **⏻ / I (POWER/STANDBY)**
   Press to turn the power on and off.
   (As to the indication of the Operate switch, "I" shows ON and "⏻" shows electrical power stand-by.)
3. **A-B REPEAT**
   Repeats playback of a selected section.
4. **REPEAT**
   Press to repeat playback of the current disc, title, chapter or track.
5. **MODE**
   Press to activate program playback or random playback mode when playing CDs or MP3. Press to set x1.3 and x0.8 Rapid Play with voice, Black level (DVD) and Virtual Surround.
6. **CLEAR**
   Press to reset the setting.
7. **ZOOM**
   Press to enlarge part of a DVD-reproduced image.
8. **ANGLE**
   Press to change the camera angle to see the sequence being played back from a different angle.
9. **SUBTITLE**
   Press to select the desired subtitle language.
10. **MENU**
    Press to display the menu of the Disc. Press to call up the file list when playing MP3.
11. **Arrow Buttons** (▼/ ▲/ ►/ ◄)
    Press to move the cursor and determine its position.
12. **ENTER**
    Press to accept a setting.
13. **RETURN**
    Press to return to the previous operation.
14. **SKIP ⏮ ⏭**
    Press to skip Chapters or Tracks.
15. **STOP**
    Press to stop the disc motion.
16. **◀◀ (Backward)**
    Press to play a DVD, an Audio CD, or an MP3 disc in the fast reverse motion.
17. **PAUSE/STEP**
    Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step or one frame at a time.
18. **▶▶ (Forward)**
    Press to fast forward the Disc. Press **PAUSE/STEP**, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.
19. **PLAY**
    Press to begin playback.
20. **DISC NAVIGATION**
    Press to display the first scenes of each chapter of the title being played.
21. **SETUP**
    Press to enter the setup mode.
22. **TOP MENU**
    Press to call up the title menu (DVD). Press to return to the top file of the highest hierarchy in the program and file list (MP3).
23. **AUDIO**
    Press to select a desired audio language or sound mode.
24. **DISPLAY**
    Press to access or remove the display screen during DVD or Audio CD playback.
25. **Numerical Buttons**
    Press to directly select a Track (Audio CD and MP3) for playback.
26. **OPEN/CLOSE**
    Press to open or close the disc loading tray.
27. **SEARCH MODE**
    Press to access or remove the Search display, which allows you to go directly to a specific Title/ Chapter/ Track/ Time/ Marker.

3 MAINTENANCE AND INSPECTION

3-1 TROUBLESHOOTING

Troubleshooting is how to service for the specifying malfunction or poor parts.
Detect malfunction or poor parts and service as the following charts.

FLOW CHART NO.1

The power cannot be turned on.

↓

Is the fuse normal? — No → See FLOW CHART No.2 <The fuse blows out.>

↓ Yes

Is normal state restored when once unplugged power cord is plugged again after several seconds? — No → Check if there is any leak or short-circuiting on the primary circuit component, and service it if defective. (Q1031, Q1003, Q1008, T1001, D1001, D1002, D1004, D1005, D1011, C1003, C1005)

↓ Yes

Is the EV +3.3V line voltage normal? — No → (same as above)

↓ Yes

Check each rectifying circuit of the secondary circuit and service it if defective.

FLOW CHART NO.2

The fuse blows out.

↓

Check the presence that the primary component is leaking or shorted and service it if defective.

Check the presence that the rectifying diode or circuit is shorted in each rectifying circuit of secondary side, and service it if defective.

↓

After servicing, replace the fuse.

FLOW CHART NO.3

When the output voltage fluctuates.

↓

Does the photo coupler circuit on the secondary side operate normally? — No → Check IC1001, IC1006, D1048 and their periphery, and service it if defective.

↓ Yes

Check IC1001, D1012, D1024 and their periphery, and service it if defective.

FLOW CHART NO.4

When buzz sound can be heard in the vicinity of power circuit.

↓

Check if there is any short-circuit on the rectifying diode and the circuit in each rectifying circuit of the secondary side, and service it if defective. (D1003, D1006, D1008, D1016, D1030, IC1002, Q1002, Q1004, Q1005, Q1011)

FLOW CHART NO.5

-FL is not outputted.

↓

Is approximately -23V voltage supplied to the anode of D1003? — No → Check D1003 and periphery circuit, and service it if defective.

↓ Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.6

P-ON+9V (EV+10V) is not outputted.

Is 10V voltage supplied to the emitter of Q1002? — No → Check D1030, D1048, C1035, C1048, L1009, and the periphery circuit, and service it if defective.

Yes

Is the voltage of base on Q1002 lower than the voltage of emitter on Q1002 when turning the power on? — No → Check Q1016 and PWRCON line and service it if defective.

Yes

Replace Q1002.

FLOW CHART NO.7

P-ON+5V is not outputted. (EV+10V is outputted normally.)

Is the "H" signal inputted into the base of Q1004? — No → Check R1068 and D1046, and service it if defective.

Yes

Replace Q1004.

FLOW CHART NO.8

P-ON+3.3V is not outputted. (P-ON+9V is outputted normally.)

Is 3.3V voltage supplied to the collector of Q1011? — No → Check D1008, C1007, C1038, L1007, and the periphery circuit, and service it if defective.

Yes

Replace Q1011 or R1067.

FLOW CHART NO.9

EV+5V is not outputted.

Is EV+10V outputted normally? — No → Refer to "FLOW CHART NO.6" <P-ON+9V (EV+10V) is not outputted.>

Yes

Check D1047 and the periphery circuit, and service it if defective.

FLOW CHART NO.10

EV+1.2V is not outputted.

Is 2.5V voltage supplied to Pin(3) of IC1002? — No → Check D1006, C1014 and the periphery circuit, and service it if defective.

Yes

Replace IC1002.

FLOW CHART NO.11

The fluorescent display tube does not light up.

Is 3.3V voltage supplied to Pins(6,24) of IC2001?
- No → Check the EV+3.3V line and service it if defective.
- Yes ↓

Is the voltage of approximately -20V supplied to Pin(15) of IC2001?
- No → Check the -FL (-20V) line and service it if defective.
- Yes ↓

Is there 500kHz oscillation at Pin(26) of IC2001?
- No → Check R2002, IC2001 and their periphery, and service it if defective.
- Yes ↓

Are the filament voltage supplied between Pins(1, 2) and Pins(29, 30) of the fluorescent display tube? And the negative voltage applied between these pins and GND?
- No → Is -14V voltage supplied to collector of Q1005?
  - No → Check D1016, D1017, T1001, and their periphery, and service it if defective.
  - Yes → Is the "H" signal inputted to base of Q1016?
    - No → Check PWRCON line, and service it if defective.
    - Yes → Check Q1015, Q1016, D1055, and their periphery, and service it if defective.
- Yes ↓

Replace the fluorescent display tube.

FLOW CHART NO.12

The key operation is not functioning.

Are the contact point and the installation state of the key switches (SW2101, SW2104-2108) normal?
- No → Re-install the switches (SW2101, SW2104-2108) correctly or replace the poor switch.
- Yes ↓

When pressing each switches (SW2101, SW2104-2108), do the voltage of each pin of IC2001 (shown below) increase?
SW2104, 2106, 2107: IC2001 3PIN
SW2101, 2105, 2108: IC2001 4PIN
- No → Check the switches (SW2101, SW2104-2108) and their periphery, and service it if detective.
- Yes ↓

Replace IC2001.

FLOW CHART NO.13

No operation is possible from the remote control unit.

Operation is possible from the DVD, but no operation is possible from the remote control unit.

Is 5V voltage supplied to Pin(3) terminal of the infrared remote control receiver (RM2001)?
- No → Check EV+5V line and service it if defective.
- Yes ↓

Is the "L" pulse sent out Pin(1) terminal of receiver (RM2001) when the infrared remote control is activated?
- No → Replace the infrared remote control receiver (RM2001) or replace the remote control unit.
- Yes ↓

Is the "L" pulse supplied to the Pin(25) of CN1001?
- No → Check the line between Pin(1) terminal of receiver (RM2001) and Pin(25) of CN1001, and service it if defective.
- Yes ↓

Replace DVD Main CBA.

FLOW CHART NO.14

The disc tray cannot be opened and closed. (It can be done using the remote control unit.)

↓

Is the normal control voltage inputted to Pin(4) of IC2001? Refer to "FLOW CHART NO.12" <The key operation is not functioning.>

No → Replace the "OPEN/CLOSE" button (SW2108).

↓ Yes

Refer to "FLOW CHART NO.15" <The disc tray cannot be opened and closed.>

FLOW CHART NO.15

The disc tray cannot be opened and closed.

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mechanism.

FLOW CHART NO.16

[No Disc] indicated. (When the focus error occurs.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mechanism.

FLOW CHART NO.17

[No Disc] indicated. (When the focus servo is not functioning.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mechanism.

FLOW CHART NO.18

[No Disc] indicated. (When the laser beam does not light up.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mechanism.

FLOW CHART NO.19

Both functions of picture and sound do not operate normally.

↓

Replace the DVD Main CBA.

↓

No improvement can be found. — No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mechanism.

FLOW CHART NO.20

Picture does not appear normally.

↓

Set the disc on the disc tray, and playback.

↓

Are the video signals outputted to each pin of CN1601 on the AV CBA? — No → Replace the DVD Main CBA or DVD Mechanism.

CN1601	4PIN	Cr/Pr
CN1601	6PIN	Cb/Pb
CN1601	8PIN	S-Y(I/P)
CN1601	10PIN	S-C

↓ Yes

Are the video signals shown above inputted into each pin of IC1402? — No → Check the line between each pin of CN1601 and each pin of IC1402 on the AV CBA, and service it if detective.

IC1402	2PIN	S-C	CN1601	10PIN → IC1402	2PIN S-C
IC1402	6PIN	S-Y(I/P)	CN1601	8PIN → IC1402	6PIN S-Y(I/P)
IC1402	9PIN	Cb/Pb	CN1601	6PIN → IC1402	9PIN Cb/Pb
IC1402	11PIN	Cr/Pr	CN1601	4PIN → IC1402	11PIN Cr/Pr

↓ Yes

Are the video signals outputted to each pin of IC1402? — No → Is 5V voltage applied to the pin(1, 24) of IC1402?

IC1402	18PIN	S-Y(I/P)
IC1402	15PIN	Cb/Pb
IC1402	13PIN	Cr/Pr
IC1402	21PIN	CVBS
IC1402	23PIN	S-C

Is 5V voltage applied to the pin(1, 24) of IC1402?

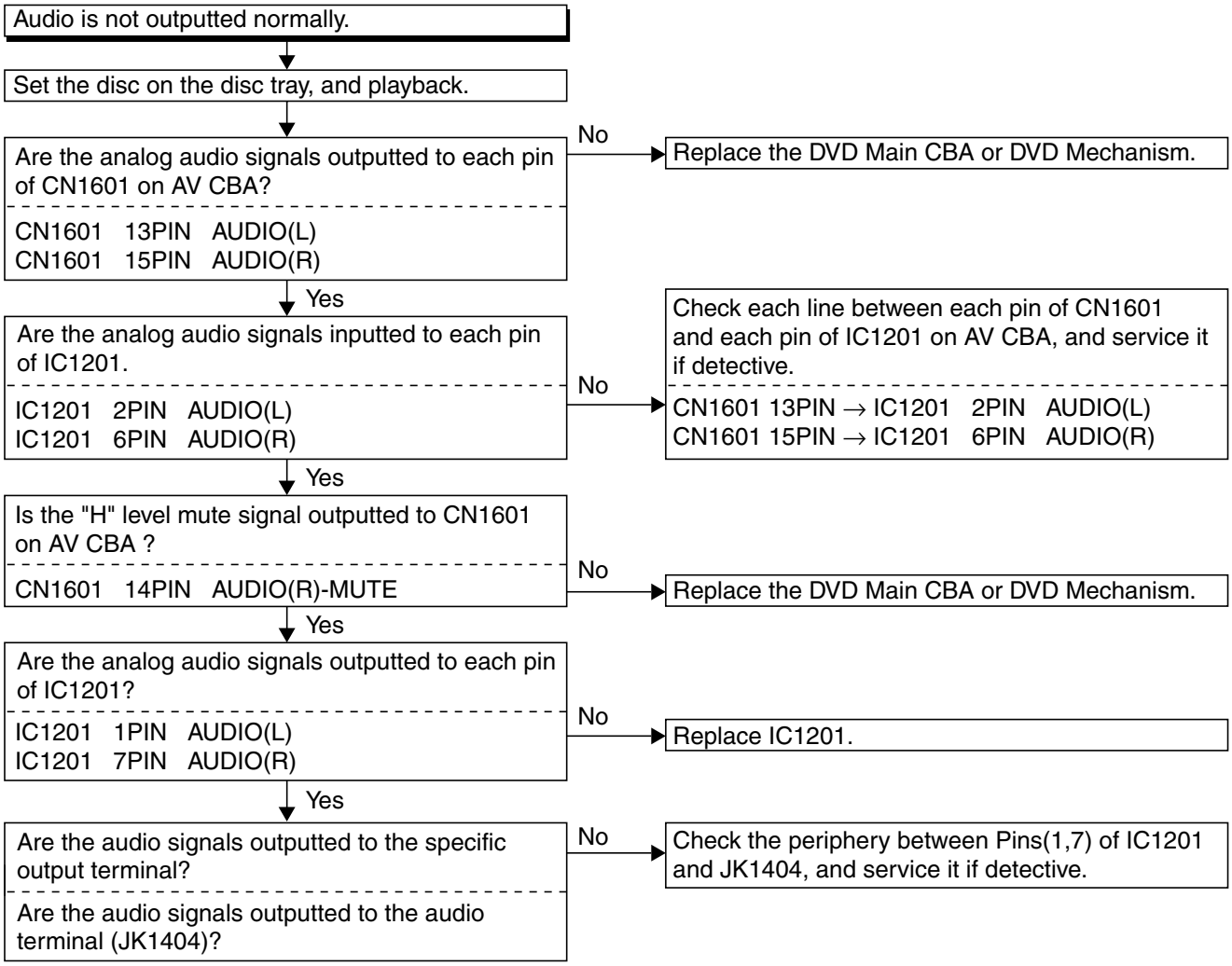
- Yes → Replace IC1402.
- No → Check P-ON+5V line and service it if detective.

↓ Yes

Are the video signals outputted to the specific output terminal?

Are the luminance signals outputted to the S-OUT terminal (JK1401)? — No	Check the periphery of JK1401 from Pin (18) of IC1402 and service it if detective.
Are the chroma signals outputted to the S-OUT terminal (JK1401)? — No	Check the periphery of JK1401 from Pin (23) of IC1402 and service it if detective.
Are the component video signals outputted to the VIDEO OUT terminal (JK1404)? — No	Check the periphery of JK1404 from Pins (13, 15, 18) of IC1402 and service it if detective.
Are the composite video signals outputted to the VIDEO OUT terminal (JK1404)? — No	Check the periphery of JK1404 from Pin(21) of IC1402 and service it if detective.

FLOW CHART NO.21



3-2 HOW TO INITIALIZE THE DVD PLAYER

To put the program back at the factory-default, initialize the DVD player as the following procedure.

1. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. 1 appears on the screen.

"*******" differ depending on the models.

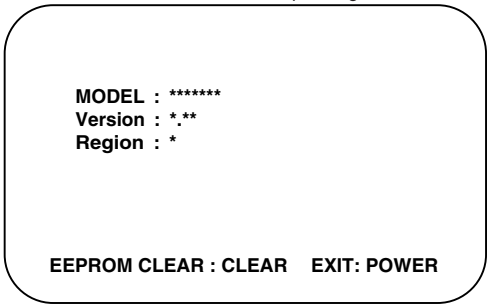


Fig. 1

2. Press [CLEAR] button on the remote control unit.
   Fig. 2 appears on the screen.

"*******" differ depending on the models.

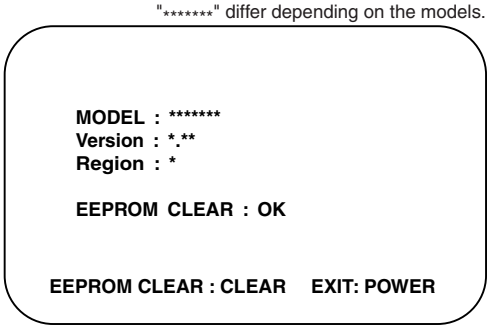


Fig. 2

   When “OK” appears on the screen, the factory default will be set.

3. To exit this mode, press [⏻/ I] button.

3-3 FIRMWARE RENEWAL MODE

3-3-1 How to Update the Firmware Version

Note: If the firmware has been changed, etc., we will use Service News, etc. to report on how to obtain new firmware data and create an upgraded disc.

1. Turn the power on and remove the disc on the tray.
2. To put the DVD player into version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order. The tray will open automatically.
   Fig. 3 appears on the screen and Fig. 4 appears on the VFD.

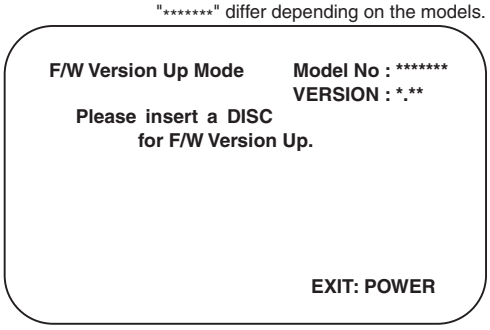


Fig. 3 Version Up Mode Screen

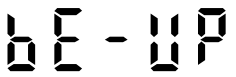


Fig. 4 VFD in Version Up Mode

   The DVD player can also enter the version up mode with the tray open. In this case, Fig. 3 will be shown on the screen while the tray is open.

3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. 5 appears on the screen and Fig. 6 appears on the VFD. If you enter the F/W for different models, “Disc Error” will appear on the screen, then the tray will open automatically.

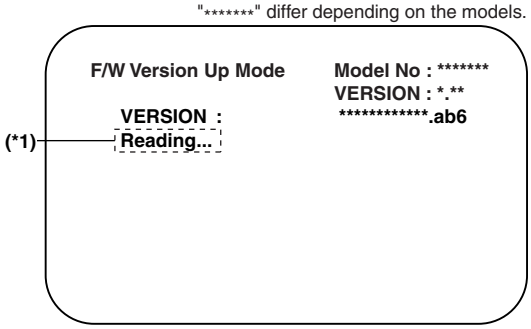


Fig. 5 Programming Mode Screen

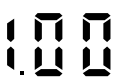


Fig. 6 VFD in Programming Mode (Example)

   The appearance shown in (*1) of Fig. 5 is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. 7 appears on the screen and the checksum in (*2) of Fig. 7 appears on the VFD. (Fig. 8)
   At this time, no button is available.

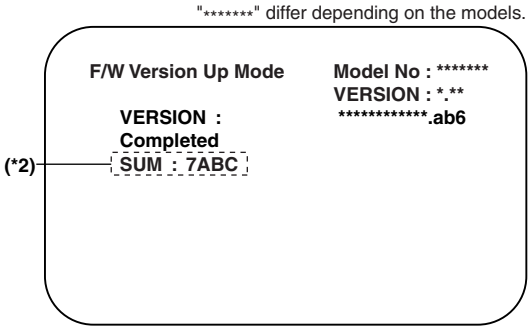


Fig. 7 Completed Program Mode Screen

Fig. 8 VFD upon Finishing the Programming Mode (Example)

6. Remove the disc on the tray.
7. Unplug the AC cord from the AC outlet. Then plug it again.
8. Turn the power on by pressing the [⏻/ I] button and the tray will close.
9. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. 9 appears on the screen.

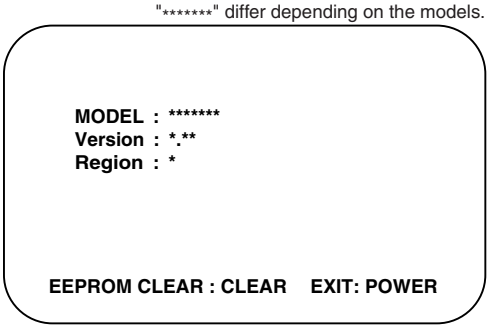


Fig. 9

10. Press [CLEAR C.REST] button on the remote control unit.
    Fig. 10 appears on the screen.

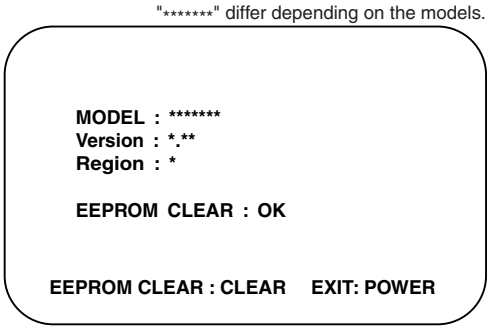


Fig. 10

    When “OK” appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

11. To exit this mode, press [⏻/ I] button.

3-3-2 How to Verify the Firmware Version

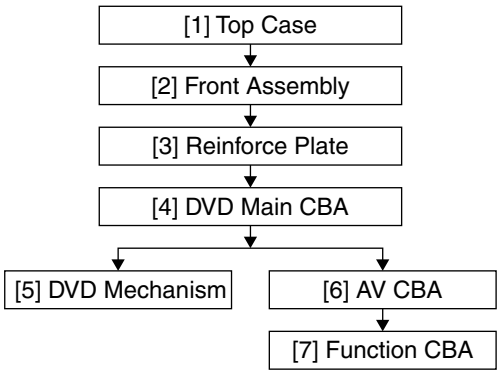
1. After making sure that no disc is in unit, turn the power on.
2. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order. The Firmware version appears on the VFD and TV screen.
3. Turn the power off to reset the unit.

4 DISASSEMBLY

4-1 CABINET DISASSEMBLY INSTRUCTIONS

4-1-1 Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



4-1-2 Disassembly Method

ID/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Desolder	Note
[1]	Top Case	D1	3(S-1)	---
[2]	Front Assembly	D2	*4(L-1), *3(L-2), *3(L-3)	1
[3]	Reinforce Plate	D3	2(S-2)	---
[4]	DVD Main CBA	D4	(S-3A), (S-3B), *CN201, *CN301, *CN401, *CN601, FCC Cover	2
[5]	DVD Mechanism	D4 D5	4(S-4)	2, 3
[6]	AV CBA	D6	(S-5), 4(S-6), *2(L-4)	---
[7]	Function CBA	D6	*CN2001	---

About tightening screws

When tightening screws, tighten them with the following torque.

Screws	Torque
(S-1), (S-2), (S-3A), (S-4), (S-5), (S-6)	0.45 ± 0.05 N·m
(S-3B)	0.38 ± 0.04 N·m

Reference Notes

1. **CAUTION 1:** Locking Tabs (L-1), (L-2) and (L-3) are fragile. Be careful not to break them.
   1) Release four Locking Tabs (L-1). Then, release three Locking Tabs (L-2).
   2) Release three Locking Tabs (L-3). Then remove the Front Assembly.
2. **CAUTION 2:** Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc, during unpacking or repair work.
   To avoid damage of pickup follow next procedures.
   1) Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. D4)
   2) Disconnect Connectors (CN301), (CN401) and (CN601). Remove two Screws (S-3A) and (S-3B) and lift the DVD Main CBA. (Fig. D4)
3. **CAUTION 3:** When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. D4)

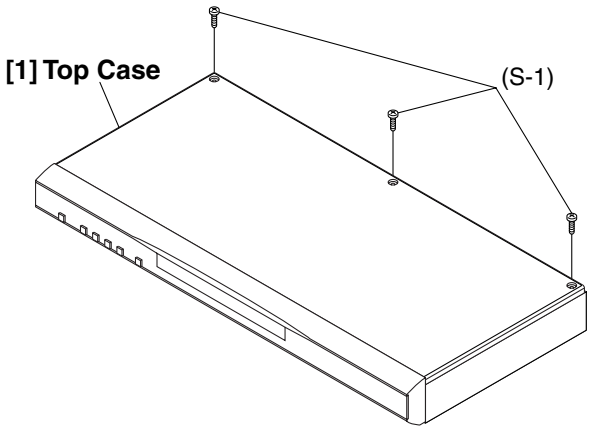


Fig. D1

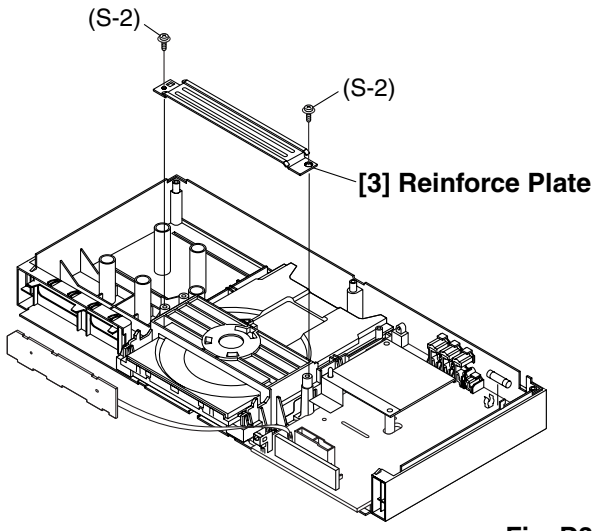


Fig. D3

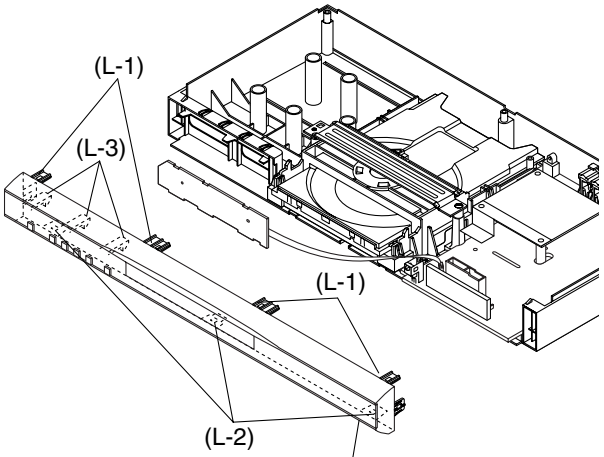
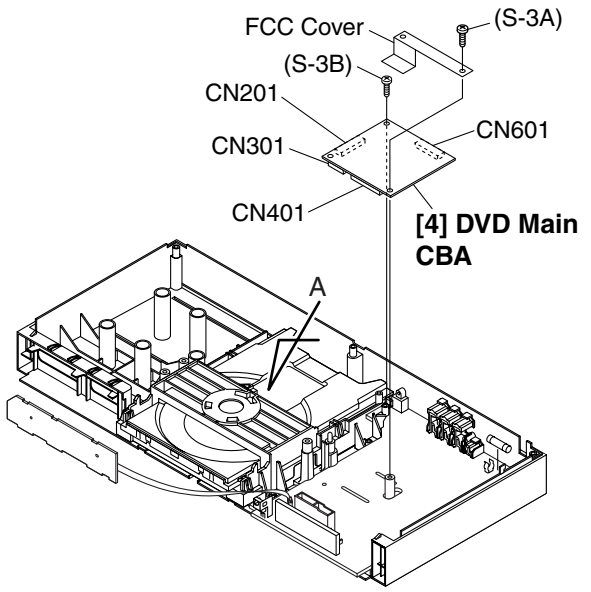


Fig. D2



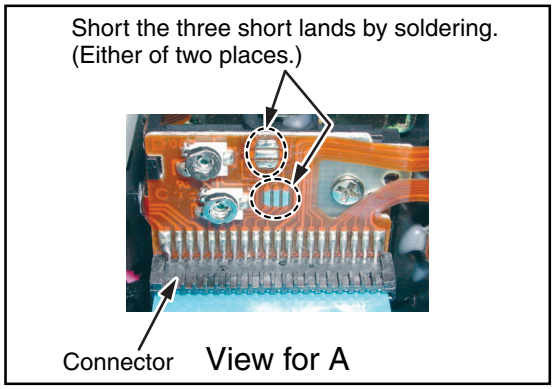


Fig. D4

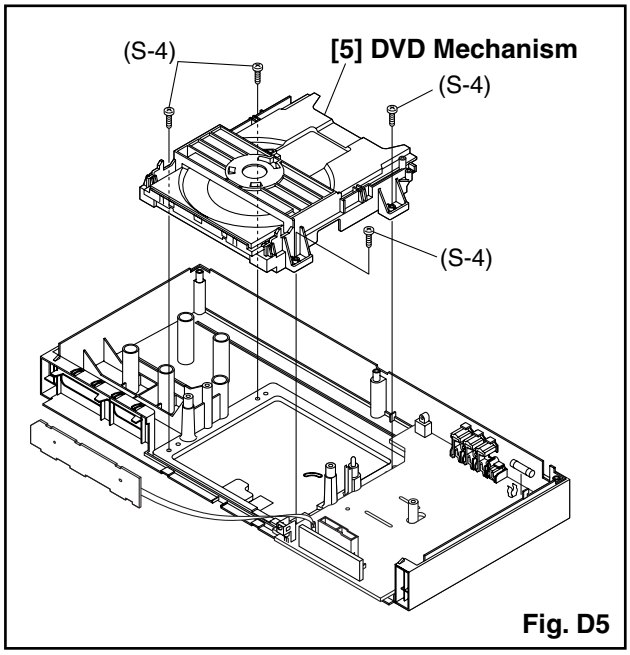


Fig. D5

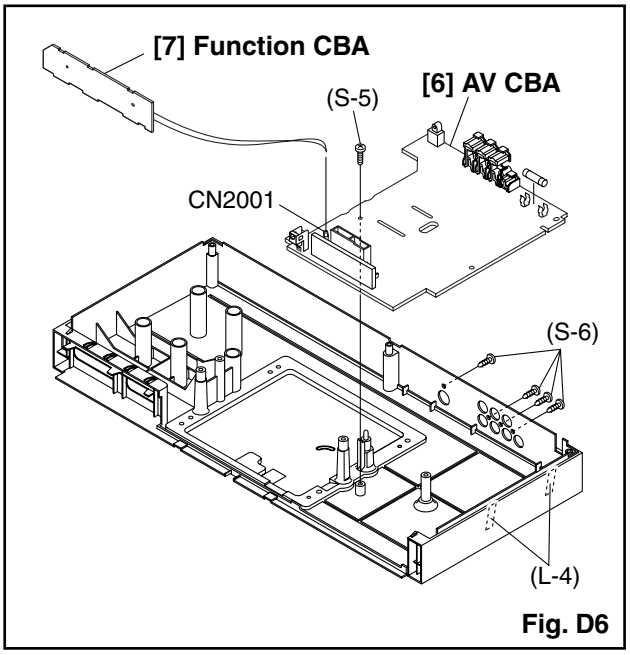
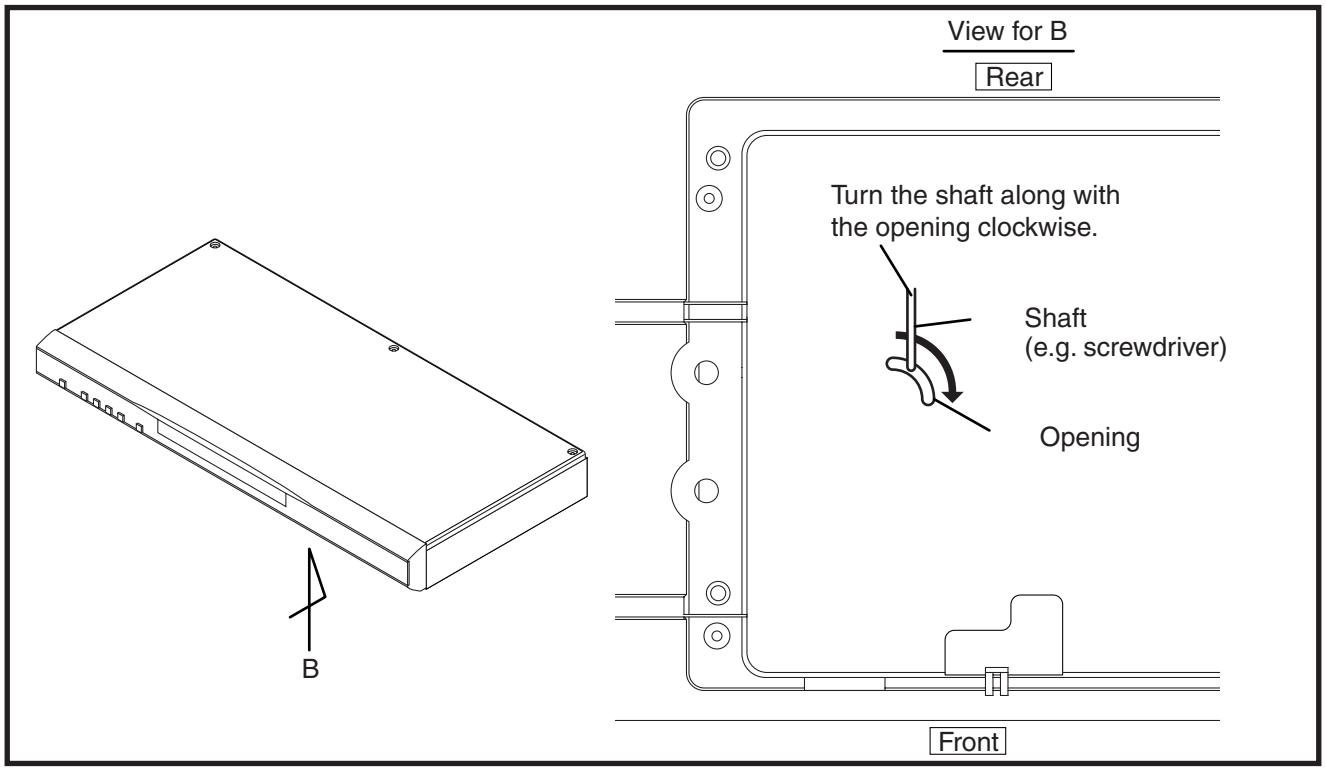


Fig. D6

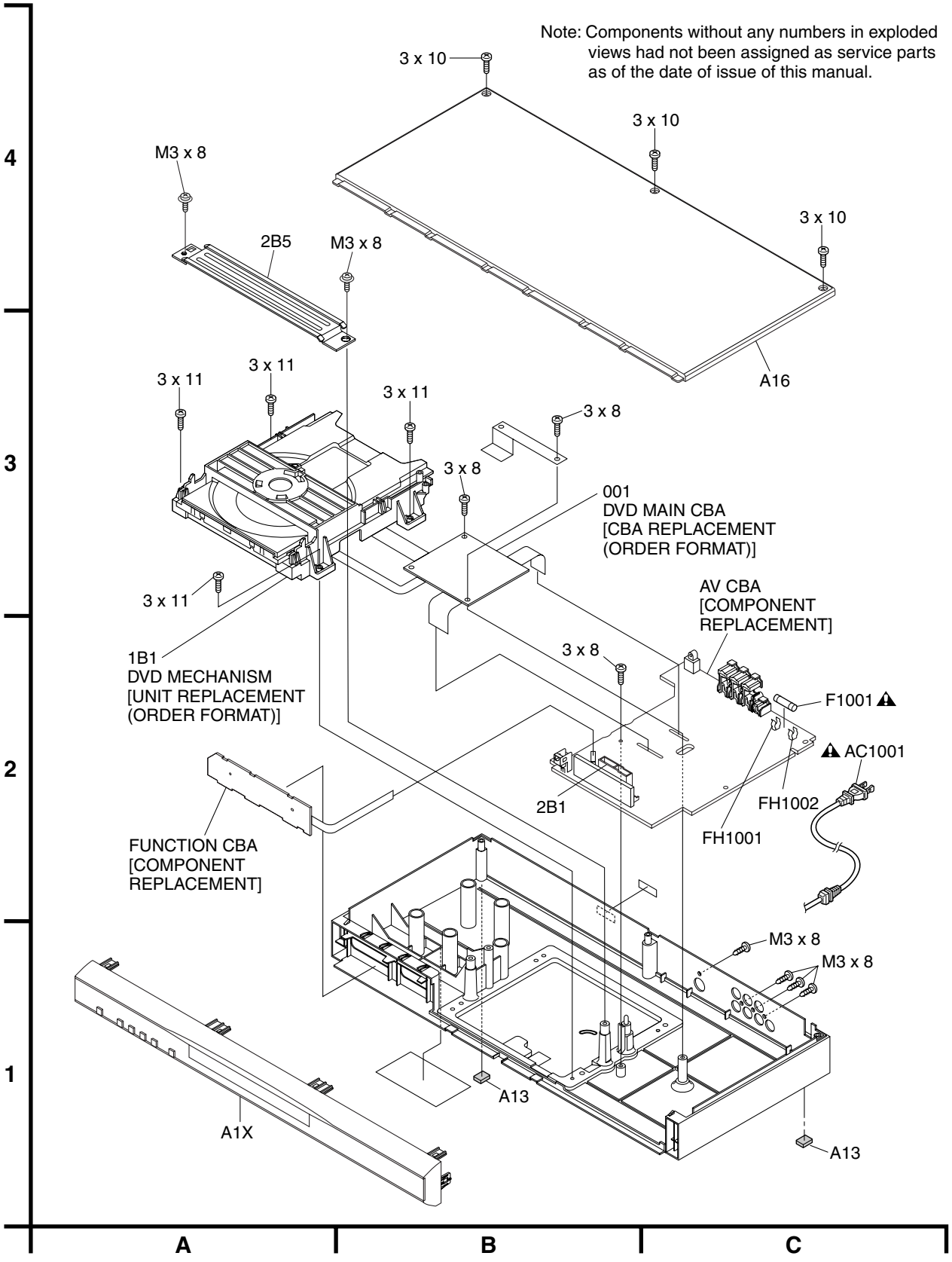
4-1-3 How to Eject Manually

1. Turn the unit over.
2. Insert the shaft less than a diameter of 3 mm (e.g. screwdriver) straightly into the opening as shown.
3. Turn the shaft along with the opening clockwise.
4. Repeat steps 2 and 3 until the tray will open.
5. Pull the tray slowly manually.



5 EXPLODED VIEW AND PARTS LIST

5-1 EXPLODED VIEW



5-2 REPLACEMENT PARTS LIST

5-2-1 Mechanical Parts List

Note: Products marked with a ⚠ have special characteristics important to safety.

	SYMBOL-NO	P-NO	DESCRIPTION
		MECHANISM SECTION	
	A1X	TJ18681	FRONT ASSEMBLY
	A13	TJ16981	FOOT(REAR)
	A16	TJ18582	TOP CASE(V2)
⚠	AC1001	TE15463	AC CORD
	1B1	TJ18583	DVD MECHA
	2B1	TJ17579	HOLDER, F.I.P
	2B5	TJ18584	REINFORCE PLATE
	001	TJ18685	DVD MAIN CBA
		ACCESSORIES	
	X1	TJ18683	REMOTE CONTROL UNIT
	X5	TJ15699	AV CORD RCA
⚠	X20	TJ18684	OWNER'S MANUAL

SYMBOL-NO	P-NO	DESCRIPTION

5-2-2 Electrical Parts Lis

Note: Although some parts in the schematic diagrams have different names from those in the parts list, there is no problem in replacing parts.

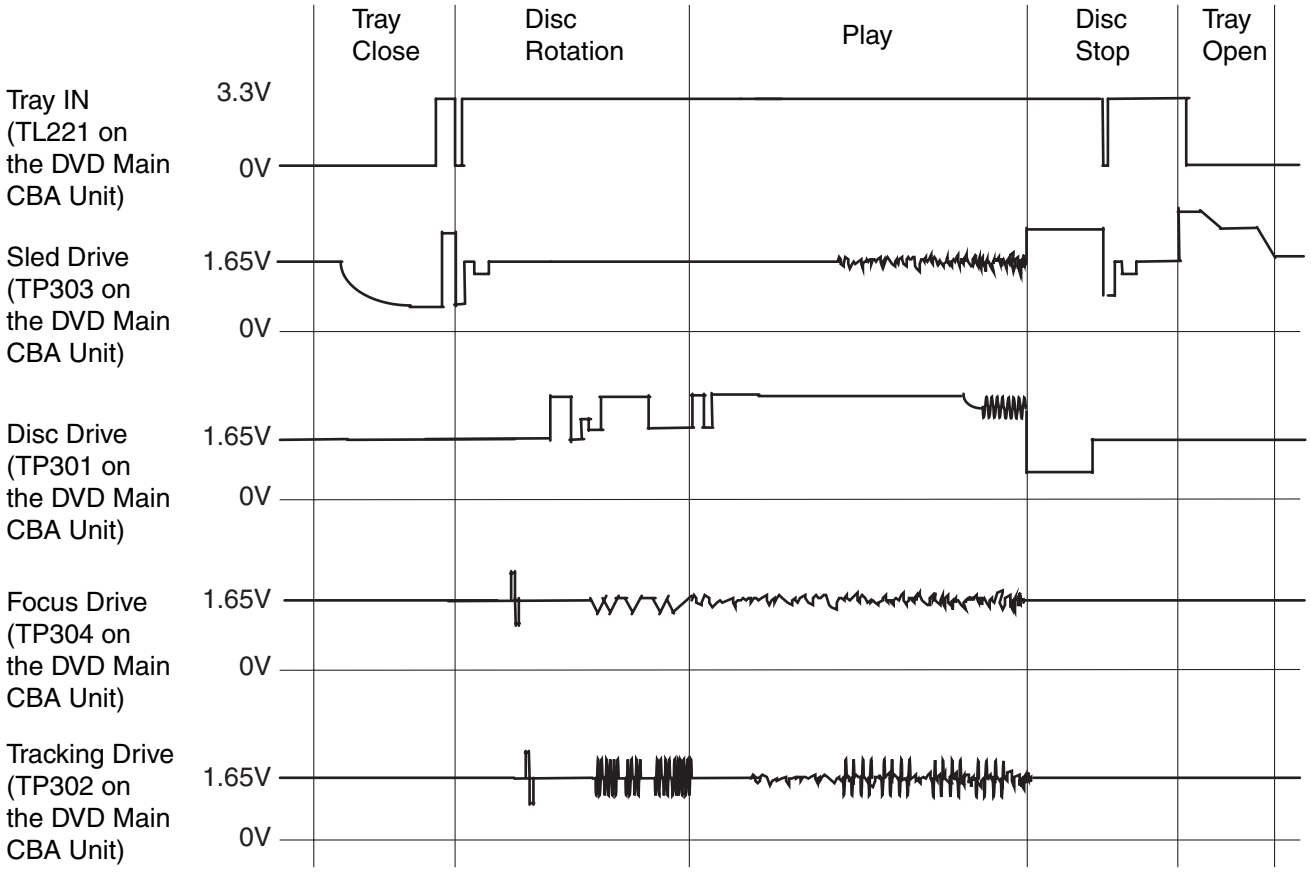
SYMBOL-NO	P-NO	DESCRIPTION
		SEMI-CONDUCTORS
D1001	TC10752	DIODE 1N4005
D1002	TC10752	DIODE 1N4005
D1003	TC10791	DIODE BA157
D1004	TC10752	DIODE 1N4005
D1005	TC10752	DIODE 1N4005
D1006	TC10877	DIODE SB140
D1008	TC10877	DIODE SB140
D1011	TC10791	DIODE BA157
D1012	TC10754	DIODE 1N4148M
D1016	TC10791	DIODE BA157
D1017	TJ17586	ZENER DIODE DZ-18BSBT265
D1018	TC10754	SWITCHING DIODE 1N4148M
D1022	TC10754	SWITCHING DIODE 1N4148M
D1024	TC10754	SWITCHING DIODE 1N4148M
D1025	TC10754	SWITCHING DIODE 1N4148M
D1030	TJ15128	DIODE FR202-B/P
D1046	TJ14689	ZENER DIODE DZ-5.6BSCT265
D1047	TC12611	ZENER DIODE DZ-5.1BSBT265
D1048	TC12681	ZENER DIODE DZ-15BSAT265
D1055	TC10754	SWITCHING DIODE 1N4148M
D1058	TC10877	DIODE SB140
D1301	TJ13895	ZENER DIODE DZ-5.6BSBT265
D2041	TC10754	SWITCHING DIODE 1N4148M
D2042	TC10754	SWITCHING DIODE 1N4148M
D2043	TC10754	SWITCHING DIODE 1N4148M
D2044	TC10754	SWITCHING DIODE 1N4148M
D2045	TJ14752	ZENER DIODE DZ-6.2BSBT265
⚠ IC1001	TE13224	PHOTOCOUPLER LTV-817B-F
IC1002	TJ18591	IC: LD1117SC-R
IC1006	TC12241	IC: KIA431-AT
IC1201	TJ18592	IC: KIA4558P/P
IC1402	TC12683	IC: MM1622XJBE
IC2001	TJ18593	IC PT6313-S-TP(L)
Q1002	TC10782	TRANSISTOR KTA1267(Y)
Q1003	TC10778	TRANSISTOR KTC3199(GR)
Q1004	TJ17492	TRANSISTOR KTC3198(Y)
Q1005	TC10778	TRANSISTOR KTC3199(GR)
Q1008	TC10778	TRANSISTOR KTC3199(GR)
Q1011	TC12634	TRANSISTOR 2SC2120-Y(TPE2)
Q1015	TC12411	TRANSISTOR KRA110M
Q1016	TC10778	TRANSISTOR KTC3199(GR)
⚠ Q1031	TJ17593	FET 2SK3498(T6L1FUNANQ)
Q1201	TC10778	TRANSISTOR KTC3199(GR)
Q1202	TC10778	TRANSISTOR KTC3199(GR)
Q1204	TC10784	TRANSISTOR KTA1266(Y)
Q1351	TC10778	TRANSISTOR KTC3199(GR)
Q1352	TC10778	TRANSISTOR KTC3199(GR)

SYMBOL-NO	P-NO	DESCRIPTION
		TRANSFORMER
⚠ T1001	TJ18595	PULSE TRANS CGS-SW0078A
		COILS
⚠ L1001	TJ15243	LINE FILTER 20MH
L1007	TJ13911	CHOKE COIL 47UH-K
L1009	TJ13911	CHOKE COIL 47UH-K
L1350	TA12561	INDUCTOR(100UH K)
L1351	TA14481	INDUCTOR(0.47UH K)
L2031	TA12561	INDUCTOR(100UH K)
		MISCELLANEOUS
CN1001	TJ17583	22P FFC AV PCB TO MAIN
CN1601	TJ18588	17P AV PCB TO MAIN PCB
CN2001	TJ18589	FMN CONNECTOR, TOP 6P
CN2101	TJ17735	6P FFC AV PCB TO SW PCB
⚠ F1001	TE13223	FUSE SIC 1A 250V
FH1001	TE11084	FUSE HOLDER
FH1002	TE11084	FUSE HOLDER
FL2001	TJ18594	V.F.D. 7-BT-298NYM
JK1202	TE15465	RCA JACK(BLACK)
JK1401	TE14821	S TYPE JACK
JK1404	TE15466	RCA JACK
RM2001	TC12331	REMOTE RECEIVER
⚠ SA1001	TC10891	SURGE ABSORBER 470V
SW2101	TE11957	TACT SWITCH
SW2104	TE11957	TACT SWITCH
SW2105	TE11957	TACT SWITCH
SW2106	TE11957	TACT SWITCH
SW2107	TE11957	TACT SWITCH
SW2108	TE11957	TACT SWITCH

6 APPENDIX

6-1 SYSTEM CONTROL TIMING CHARTS

Tray Close ~ Play / Play ~ Tray Open

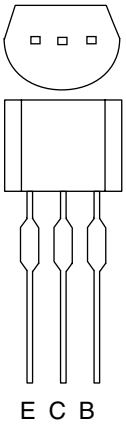


6-2 IC PIN FUNCTION DESCRIPTIONS

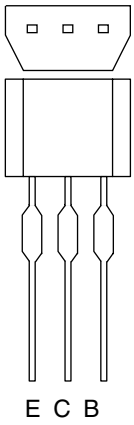
IC2001 (FRONT PANEL CONTROL)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	FP-CLK	Clock Input
2	IN	FP-STB	Serial Interface Strobe
3	IN	K1	Key Data 1 Input
4	IN	K2	Key Data 2 Input
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a / KEY-1	Segment Output / Key Source-1
8	OUT	b / KEY-2	Segment Output / Key Source-2
9	OUT	c / KEY-3	Segment Output / Key Source-3
10	OUT	d / KEY-4	Segment Output / Key Source-4
11	OUT	e	Segment Output
12		f	
13		g	
14		h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	OUT	FP-DOUT	Serial Data Output
28	IN	FP-DIN	Serial Data Input

6-3 LEAD IDENTIFICATIONS

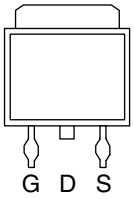


2SA1015-Y(TPE2)
2SC2120-Y(TPE2)
KTA1266(Y)
KTC3198(Y)
KTC3203(Y)

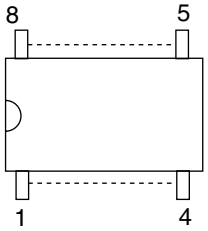


KRA110M
KTA1267(Y)
KTC3199(GR)

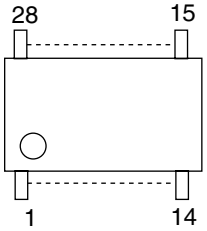
2SK3498



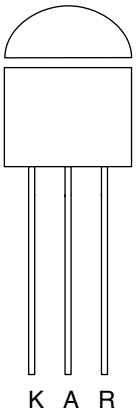
KIA4558P/P
RC4580IP
UTC4558



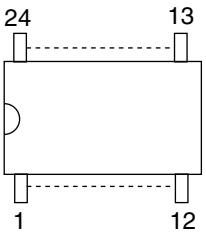
PT6313-S-TP(L)
SC16313(G)



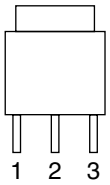
FAN431AZXA
KIA431-AT



MM1622XJBE

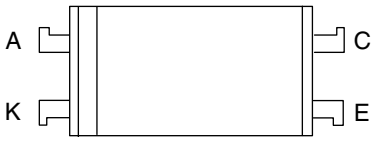


LD1117SC-R



1: GND
2: Vout
3: Vin

EL817B
EL817C
LTV-817B-F
LTV-817C-F
PS2561A-1(W)



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
G: Gate
D: Drain
S: Source

S SCHEMATIC, WIRING DIAGRAMS

S-1 Schematic Diagrams / CBA's and Test Points

Standard Notes

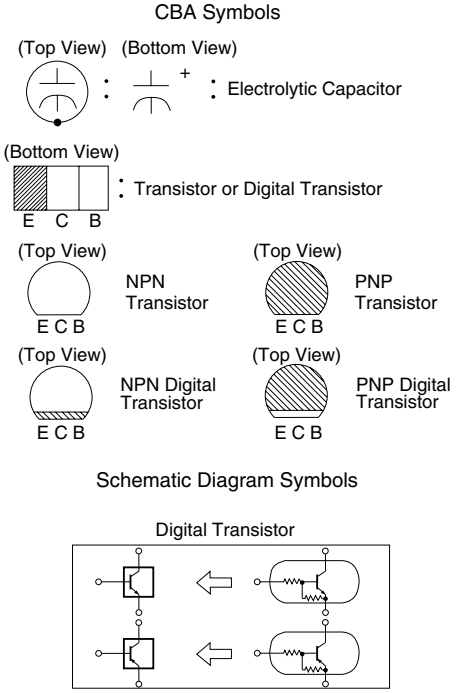
WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	±30 - 80%	20°C	–25~+85°C
(SR)	±15%	20°C	–25~+85°C
(Y)	±22.5%	20°C	–25~+85°C

Capacitors and transistors are represented by the following symbols.



Schematic Diagram Symbols

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All voltages are DC voltages unless otherwise specified.

Values in schematic diagrams

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ..... Ω K ..... kΩ M ..... MΩ
Power capacitance	No indication ..... 1/4W, 1/6W All capacitances other than the above are indicated in schematic diagrams.

[Capacitors]

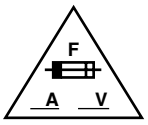
Item	Indication
Value	No indication ..... μF P ..... pF
Dielectric strength	No indication ..... 50V All dielectric strengths other than 50V are indicated in schematic diagrams.

[Coils]

Item	Indication
Value	μ ..... μH m ..... mH

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



For continued protection against fire hazard, replace only with the same type fuse.
ATTENTION: Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.

This symbole means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

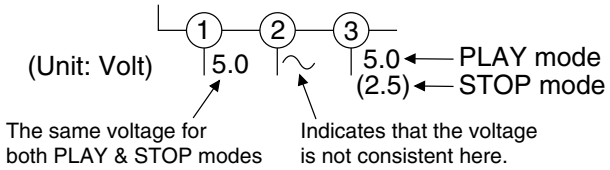
2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

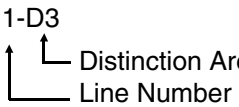
3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

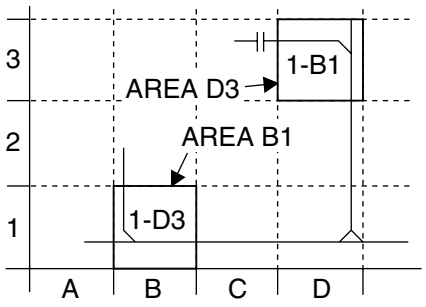
4. Voltage indications for PLAY and STOP mode on the schematics are as shown below:



5. How to read converged lines



Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

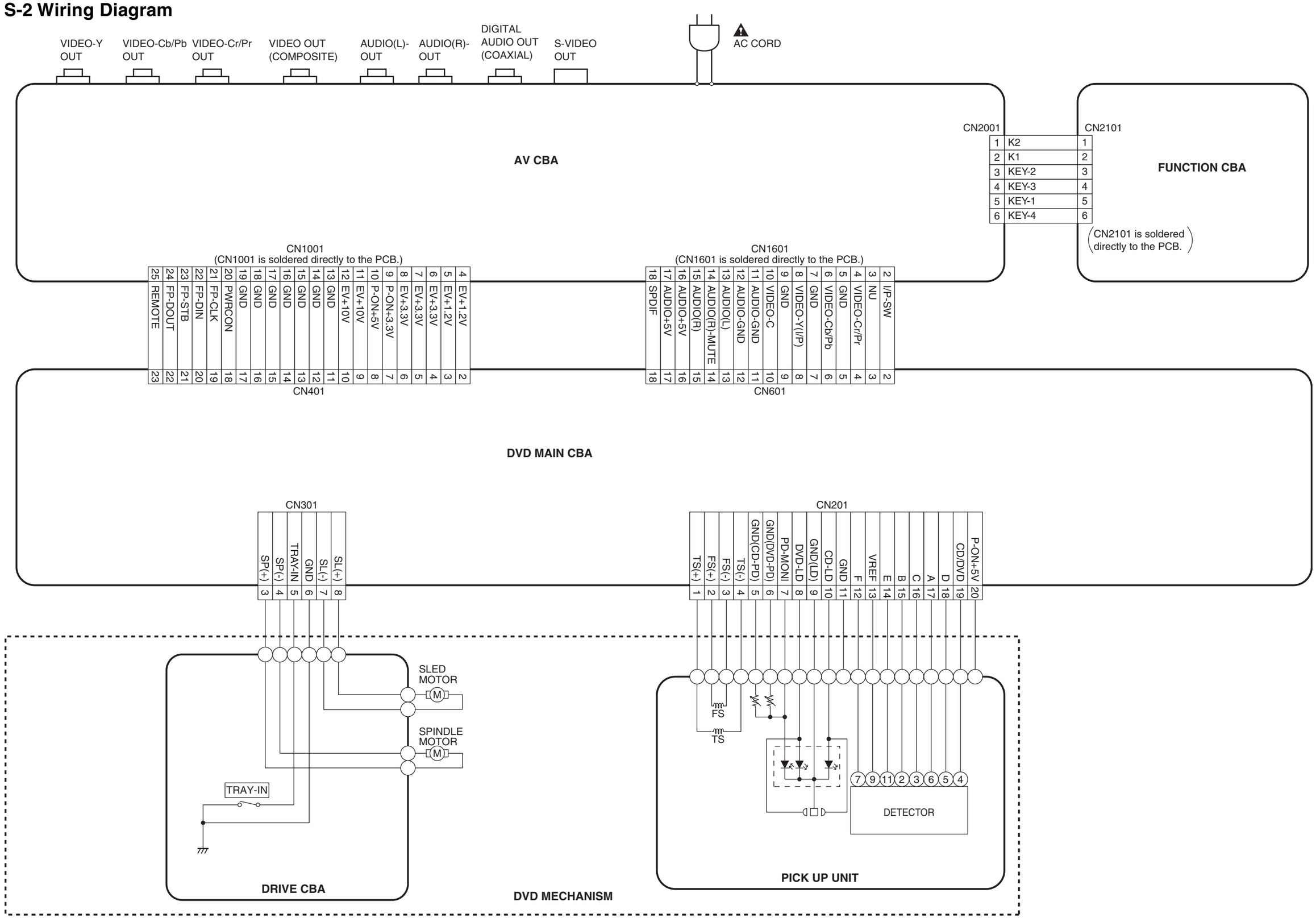
 : Indicates a test point with a jumper wire across a hole in the PCB.

 : Used to indicate a test point with a component lead on foil side.

 : Used to indicate a test point with no test pin.

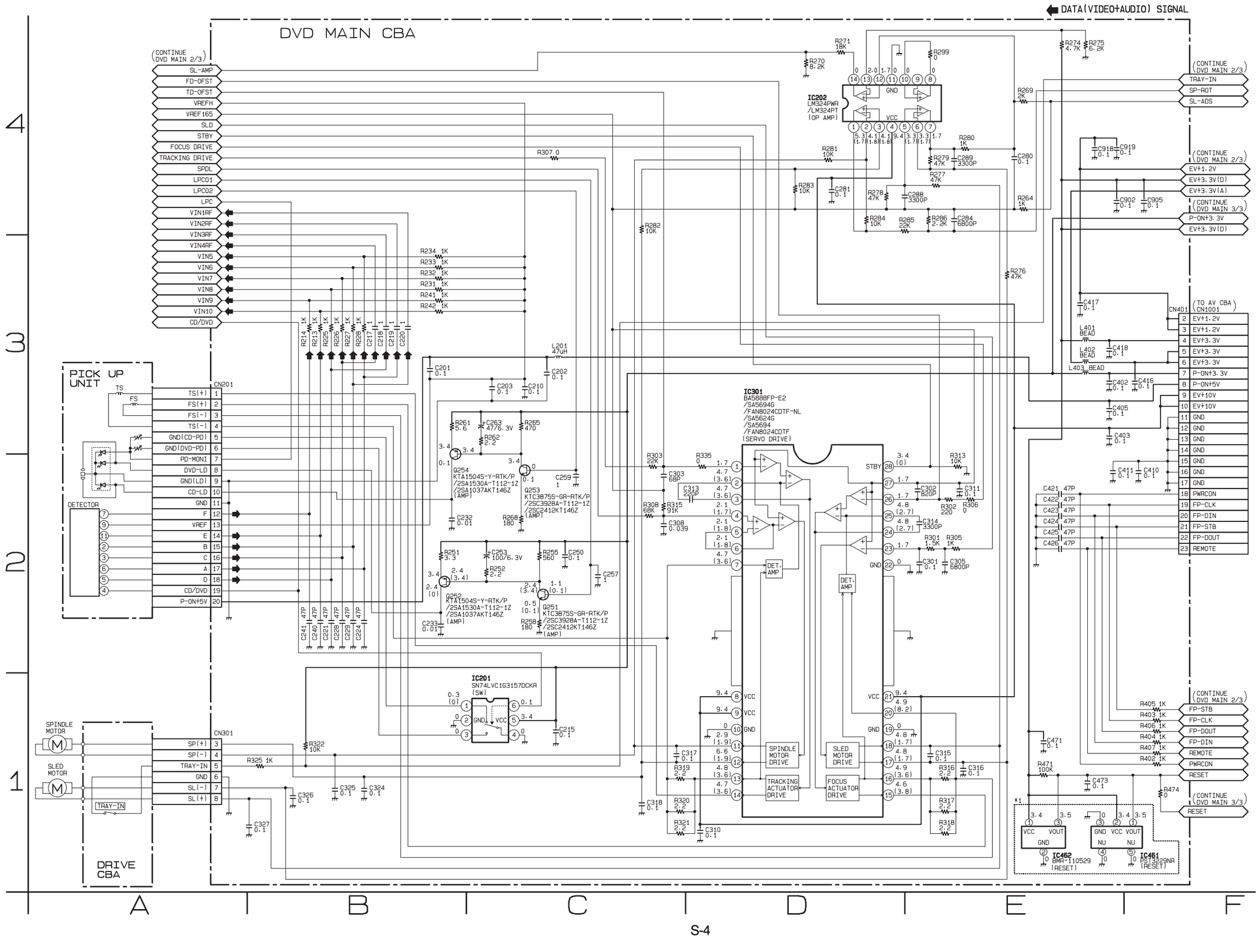
 : Used to indicate a test point with a test pin.

S-2 Wiring Diagram

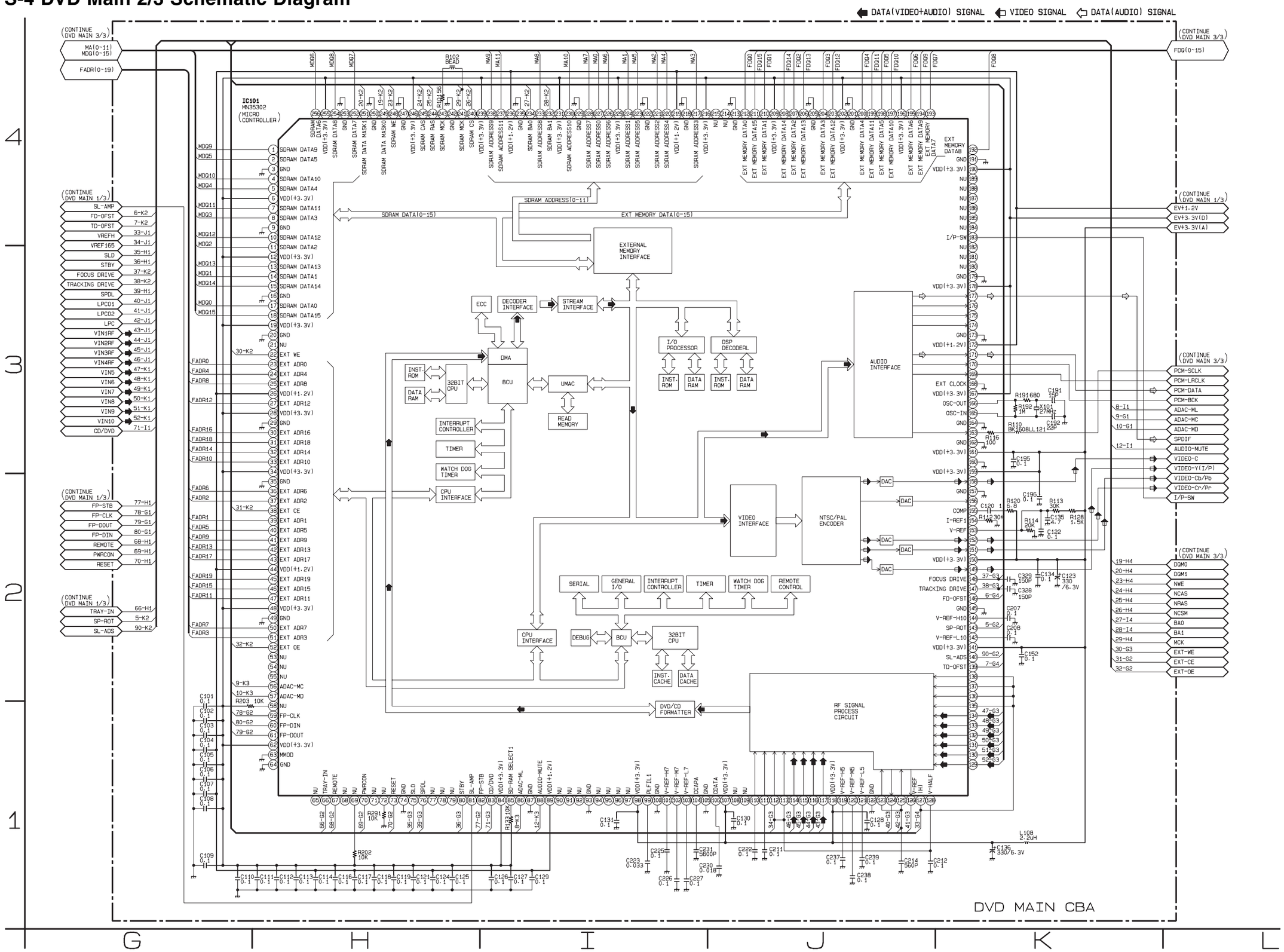


S-3 DVD Main 1/3 Schematic Diagram

***1 NOTE:**
Either IC461 or IC462 is used for DVD MAIN CBA.



S-4 DVD Main 2/3 Schematic Diagram

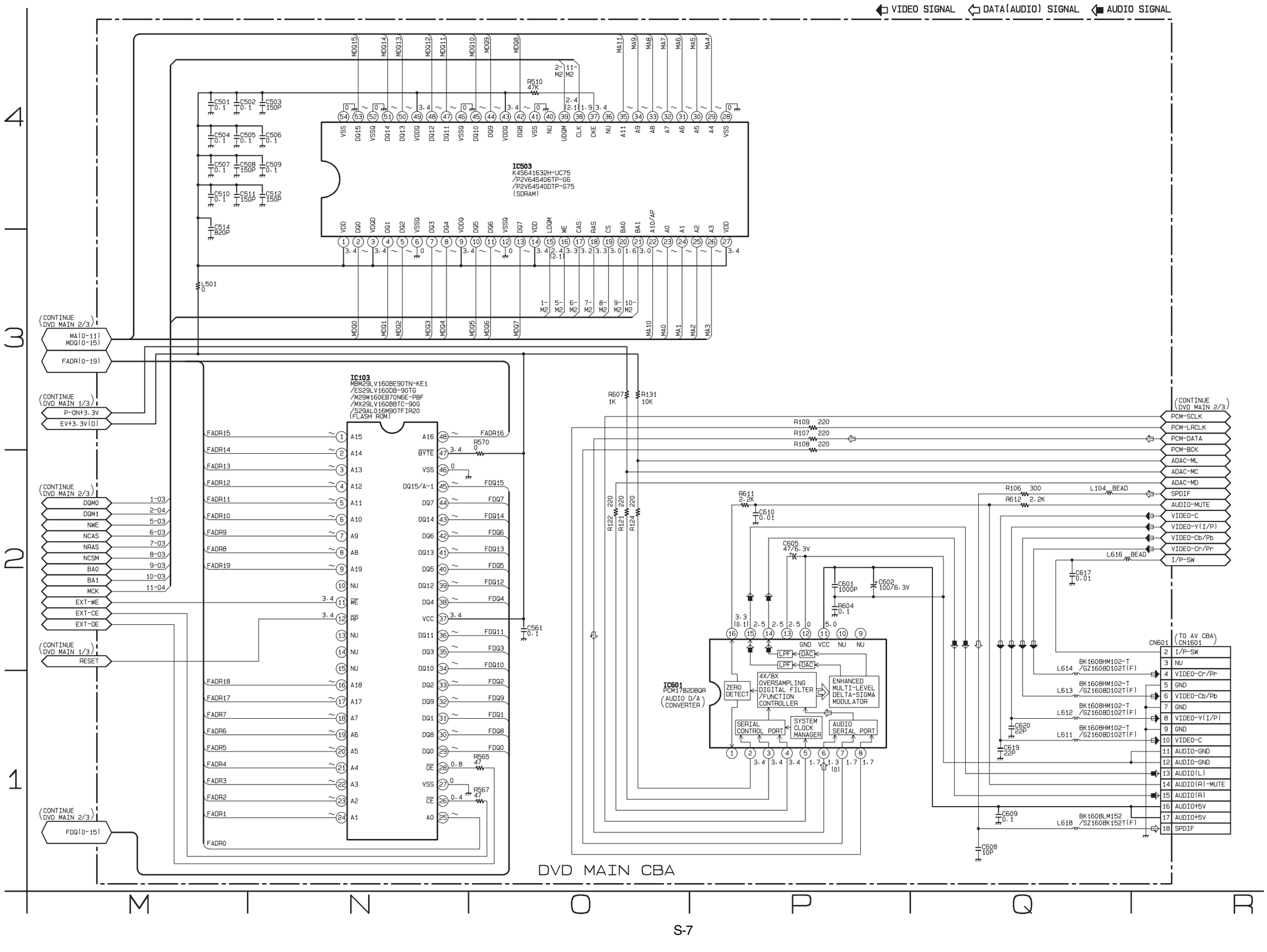


S-5 IC101 Voltage Chart

~ : Voltage is not consistent ----- : Not used Unit : Volts

PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	-----	-----	97	-----	-----	129	2.3	2.3	161	3.4	3.4	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.5	98	3.4	3.4	130	2.3	2.3	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.2	3.2	99	0.9	0.8	131	2.3	2.3	163	1.8	1.8	195	~	~	227	~	~
4	~	~	36	~	~	68	-----	-----	100	0	0	132	2.4	2.3	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	3.4	3.4	101	2.4	2.4	133	2.4	2.4	165	1.7	1.8	197	~	~	229	0	0
6	3.4	3.4	38	0.4	0.3	70	3.4	3.4	102	2.2	2.2	134	2.4	2.4	166	1.7	1.7	198	~	~	230	~	~
7	~	~	39	~	~	71	-----	-----	103	1.9	1.9	135	2.3	2.3	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.4	2.7	104	0.4	0.3	136	2.3	2.3	168	0	0	200	~	~	232	1.3	1.6
9	0	0	41	~	~	73	3.5	3.5	105	0	0	137	2.3	2.3	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.7	1.7	138	2.3	2.3	170	1.7	1.7	202	3.4	3.4	234	1.9	2.3
11	~	~	43	~	~	75	1.7	1.8	107	3.4	3.4	139	1.7	1.7	171	1.3	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.3	1.8	108	-----	-----	140	1.7	1.7	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	~	~	77	-----	-----	109	-----	-----	141	3.4	3.4	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	1.3	1.3	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	2.1	1.7	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	0	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.4	3.3
17	~	~	49	0	0	81	0.1	0.1	113	1.7	1.7	145	0	0	177	1.8	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	2.8	2.8	114	1.7	1.7	146	1.7	1.7	178	3.4	3.5	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	1.7	1.7	147	1.8	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	0.8	0.8	84	3.4	3.4	116	1.7	1.7	148	1.7	1.7	180	-----	-----	212	~	~	244	3.4	3.3
21	-----	-----	53	-----	-----	85	0.1	0.1	117	1.7	1.7	149	0.6	0.5	181	-----	-----	213	0	0	245	3.4	3.4
22	3.4	3.4	54	-----	-----	86	3.6	3.4	118	3.4	3.4	150	3.4	3.4	182	-----	-----	214	-----	-----	246	3.4	3.4
23	~	~	55	-----	-----	87	0	0	119	2.0	2.0	151	0.5	0.5	183	3.4	3.4	215	-----	-----	247	0	0
24	~	~	56	3.4	3.4	88	3.5	0.1	120	1.7	1.7	152	0.5	0.5	184	-----	-----	216	3.4	3.4	248	3.3	3.4
25	~	~	57	3.5	3.5	89	1.3	1.3	121	1.5	1.5	153	1.4	1.3	185	-----	-----	217	~	~	249	3.2	3
26	1.3	1.3	58	3.4	3.4	90	-----	-----	122	0	0	154	1.4	1.3	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.3	0.1	155	2.4	2.4	187	-----	-----	219	1.3	1.3	251	3.2	3.0
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.1	0.1	156	-----	-----	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.5	3.5	93	0	0	125	0.3	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	~	~	62	3.4	3.4	94	-----	-----	126	0.1	0.1	158	0.9	0.9	190	3.4	3.5	222	0	0	254	~	~
31	~	~	63	0	0	95	-----	-----	127	2.3	2.3	159	3.4	3.4	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

S-6 DVD Main 3/3 Schematic Diagram

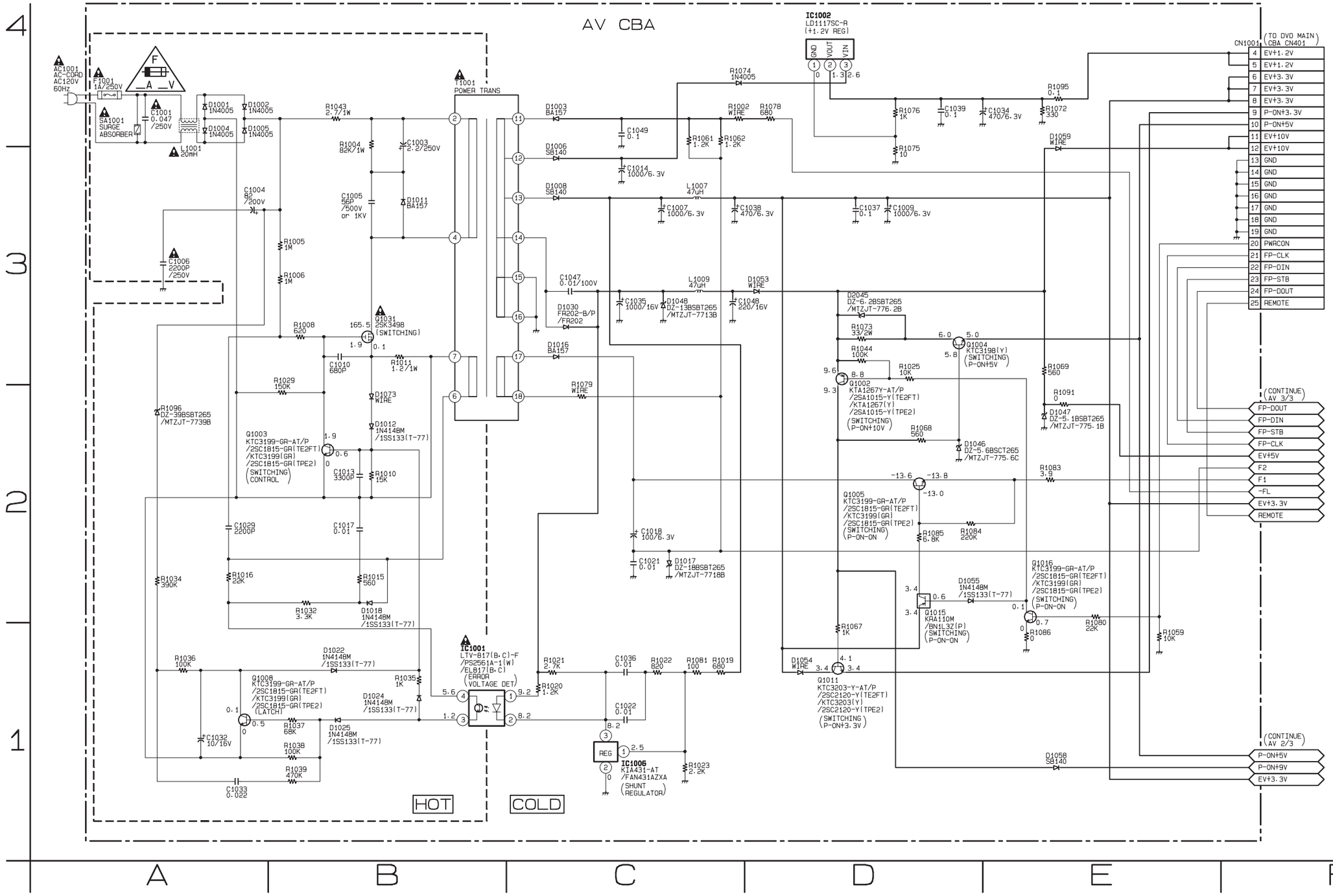


S-7 AV 1/3 Schematic Diagram

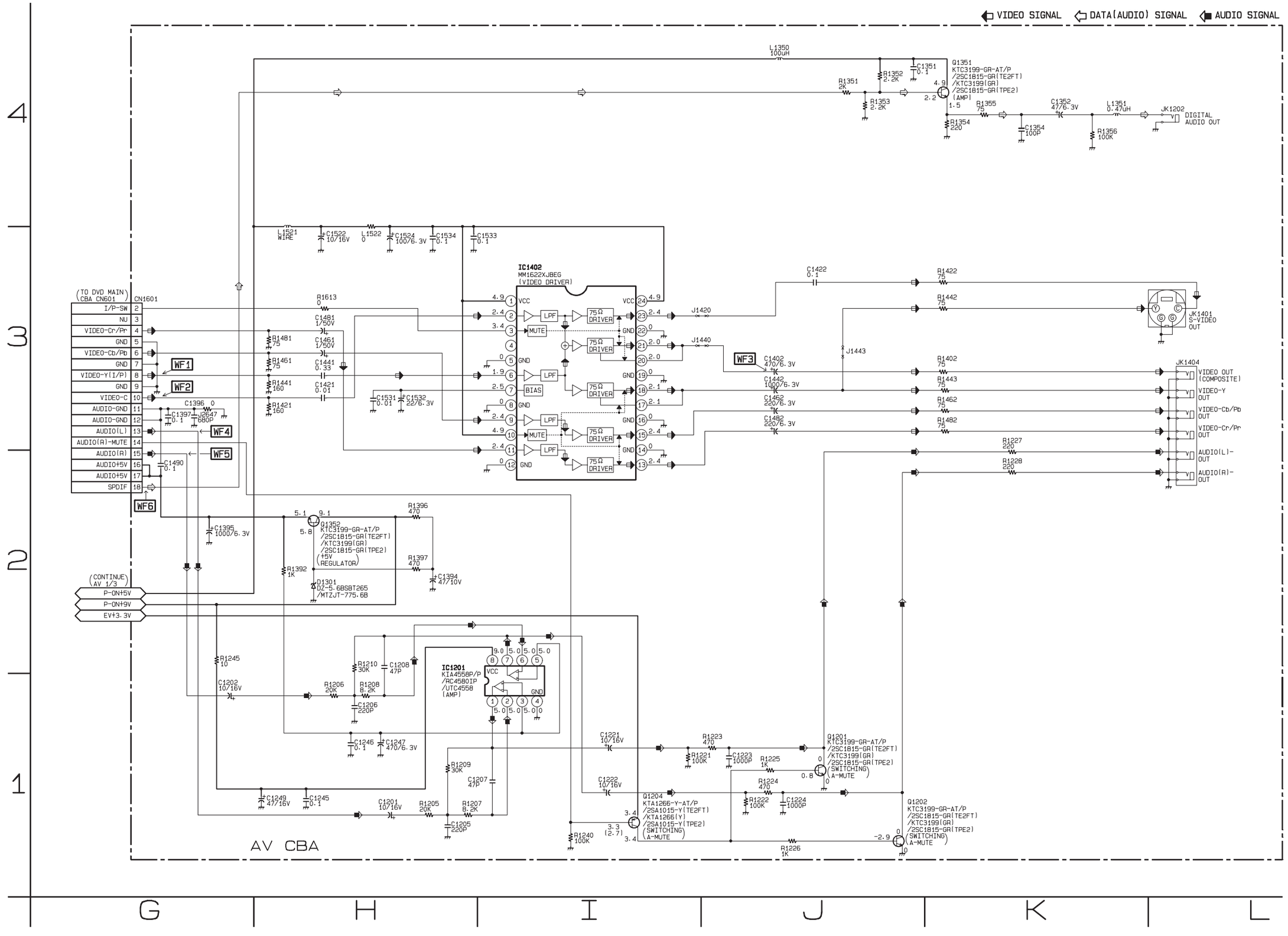
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

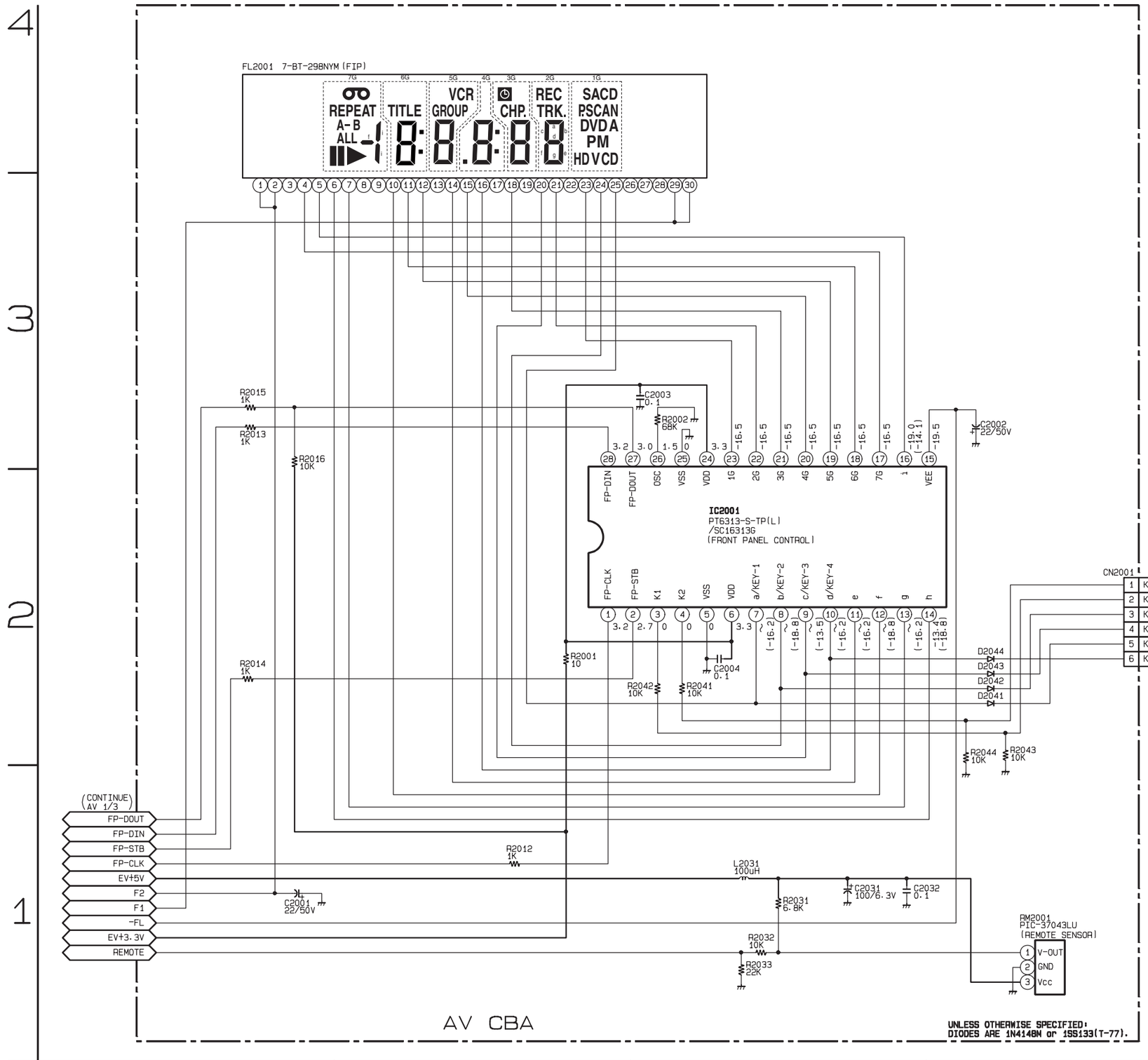
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



S-8 AV 2/3 Schematic Diagram

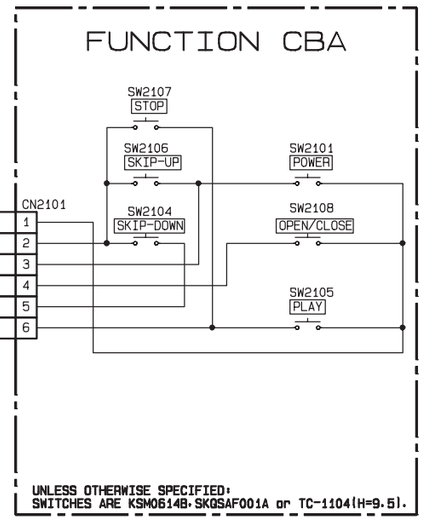


S-9 AV 3/3 & Function Schematic Diagram



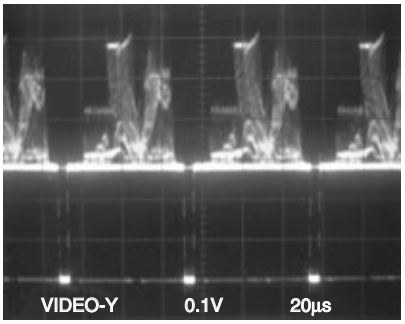
FL2001 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	∞	a	a	a	a	a	SACD
b	REPEAT	b	b	b	b	b	P.SCAN
c	A-	c	c	c	c	c	DVD
d	B	d	d	d	d	d	A
e	ALL	e	e	e	e	e	P
f	f	f	f	f	f	f	M
g	▶	g	g	g	g	g	HD
h	▮▮	:	GROUP	:	CHP.	TRK.	V
i	i	TITLE	VCR	.	◷	REC	CD

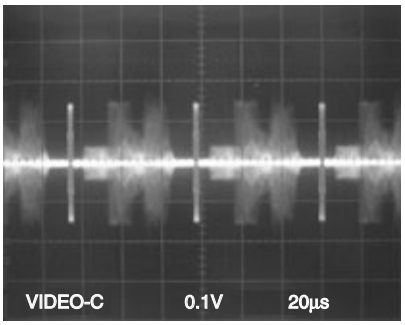


S-10 Waveforms

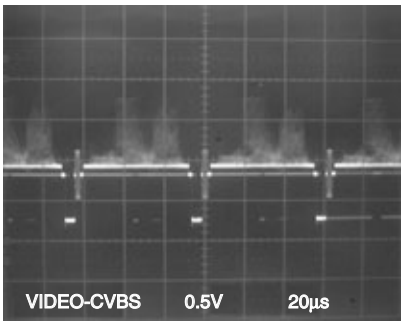
WF1 Pin 8 of CN1601



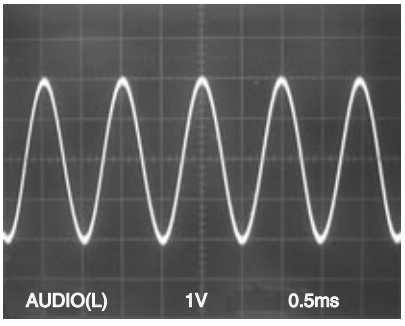
WF2 Pin 10 of CN1601



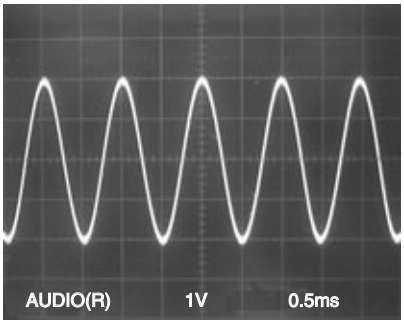
WF3 C1402 PLUS LEAD



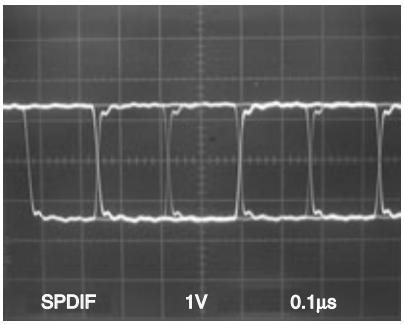
WF4 Pin 13 of CN1601



WF5 Pin 15 of CN1601



WF6 Pin 18 of CN1601



NOTE:

Input

CD: 1kHz PLAY
(WF4~WF6)

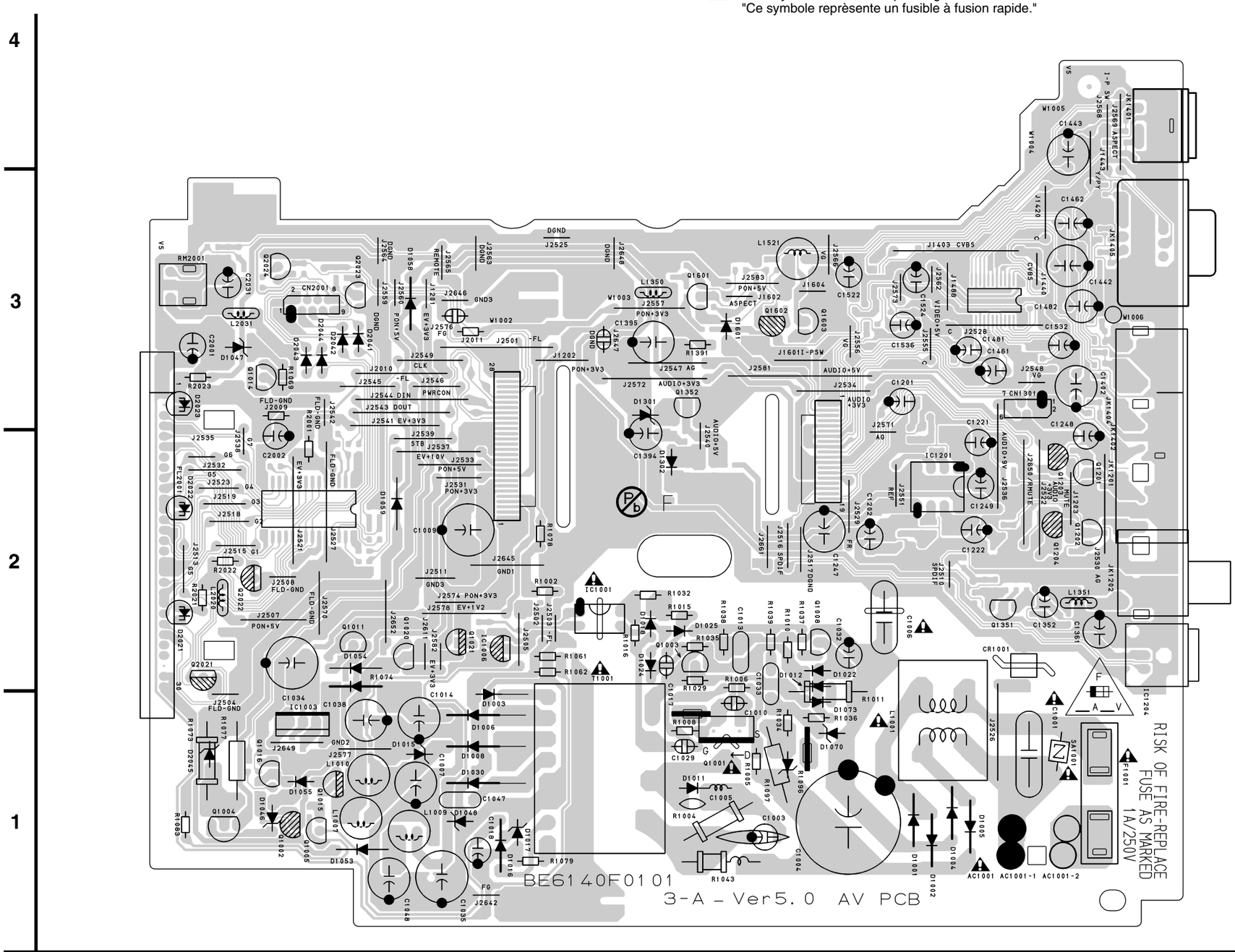
DVD: POWER ON (STOP) MODE
(WF1~WF3)

C CIRCUIT BOARD DIAGRAMS
C-1 AV CBA Top View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

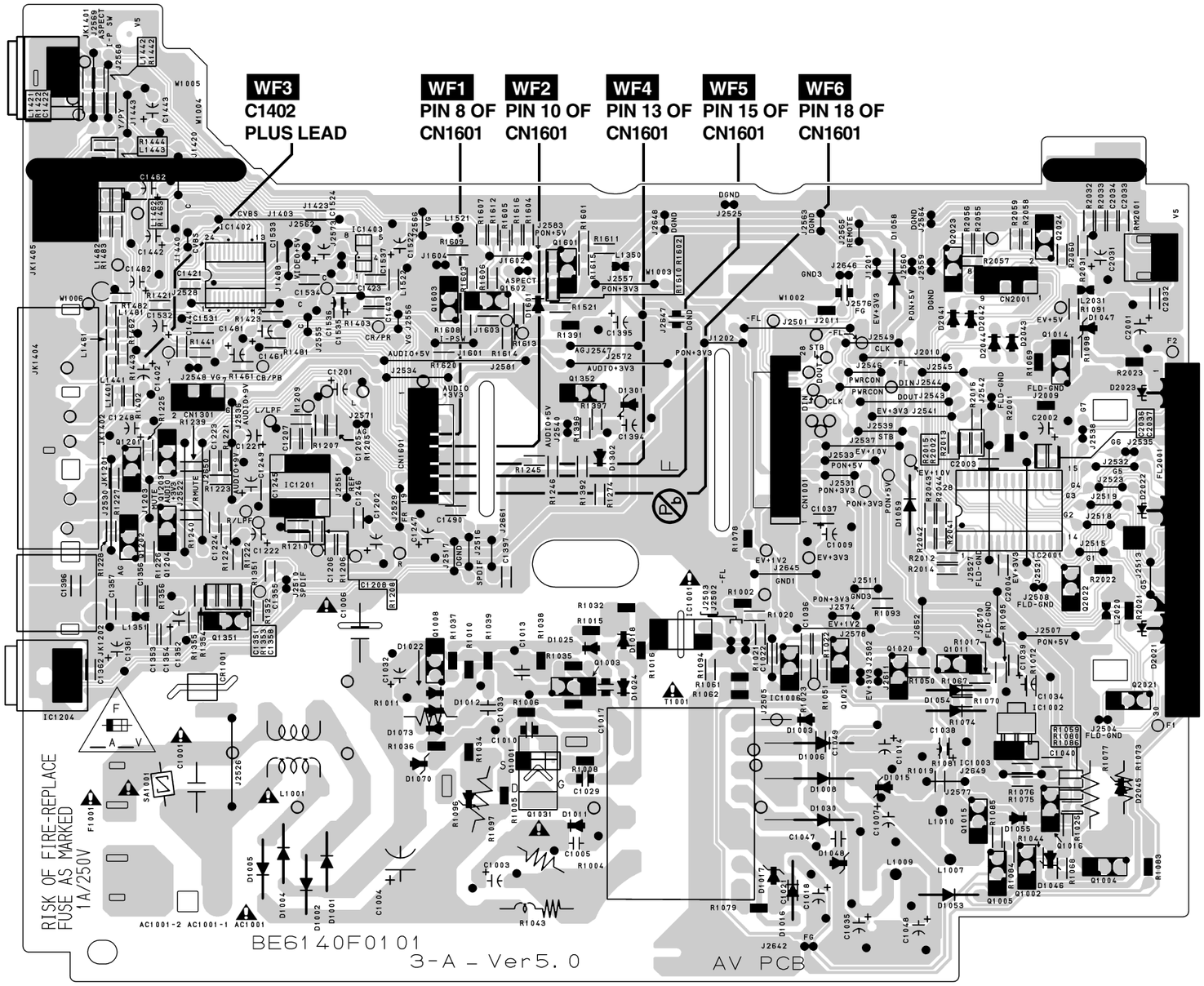


C-2 AV CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

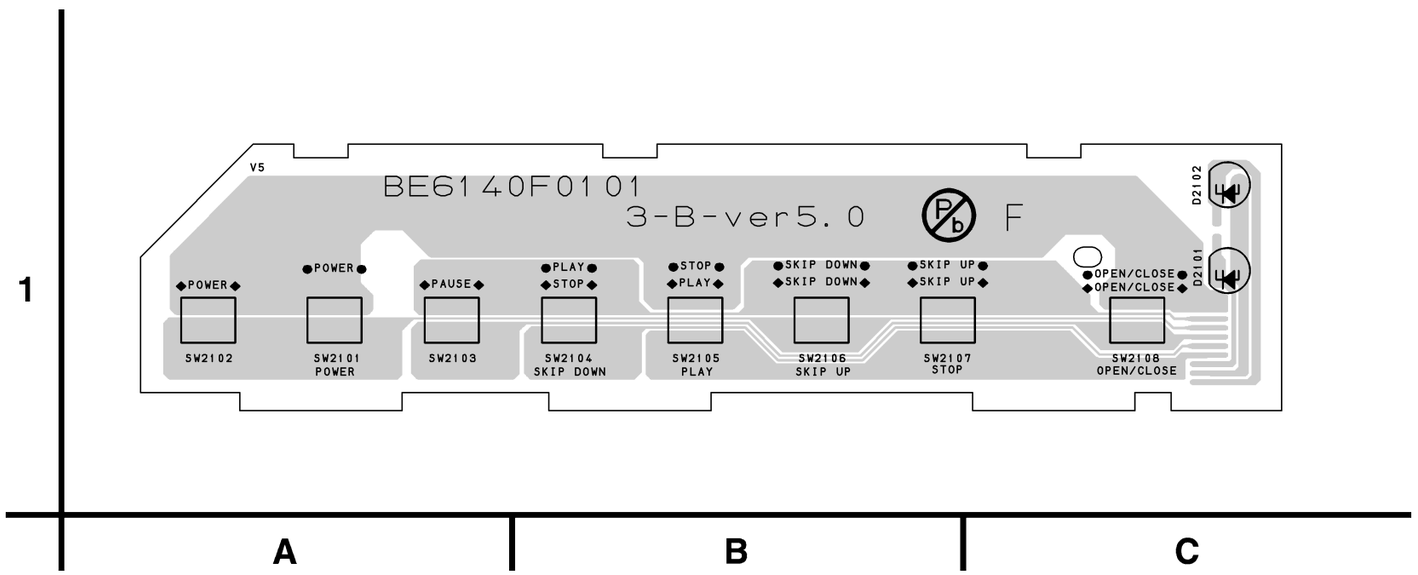


E D C B A

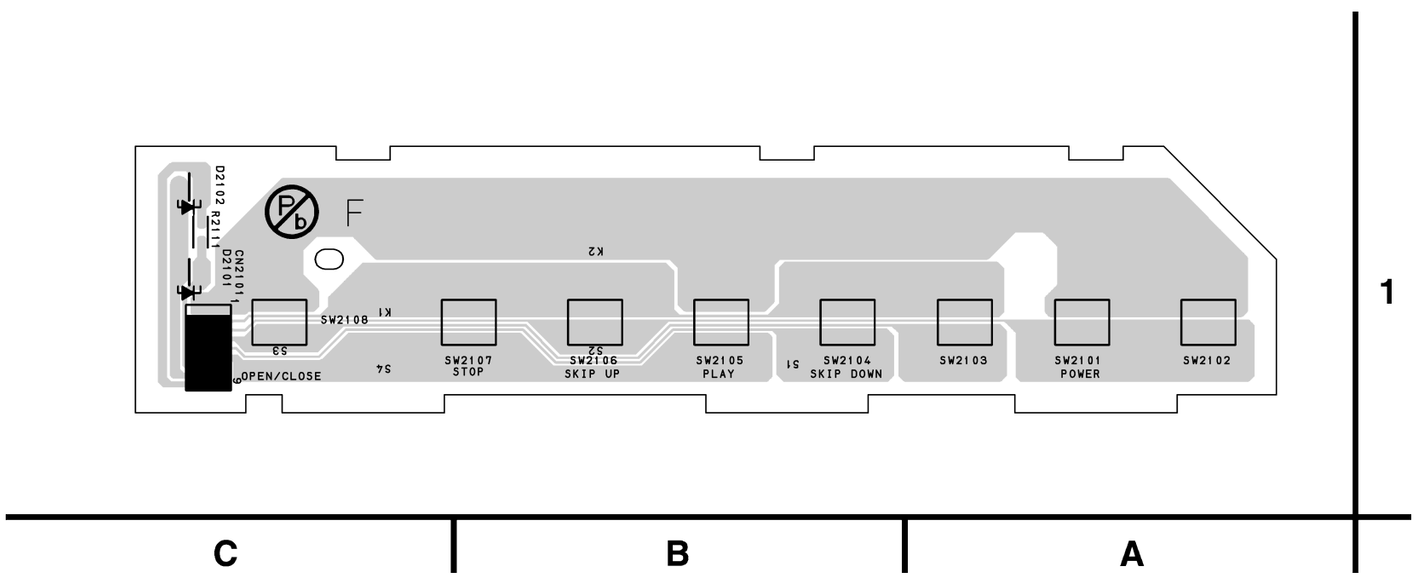
4 3 2 1

C-3 Function CBA Top/Bottom View

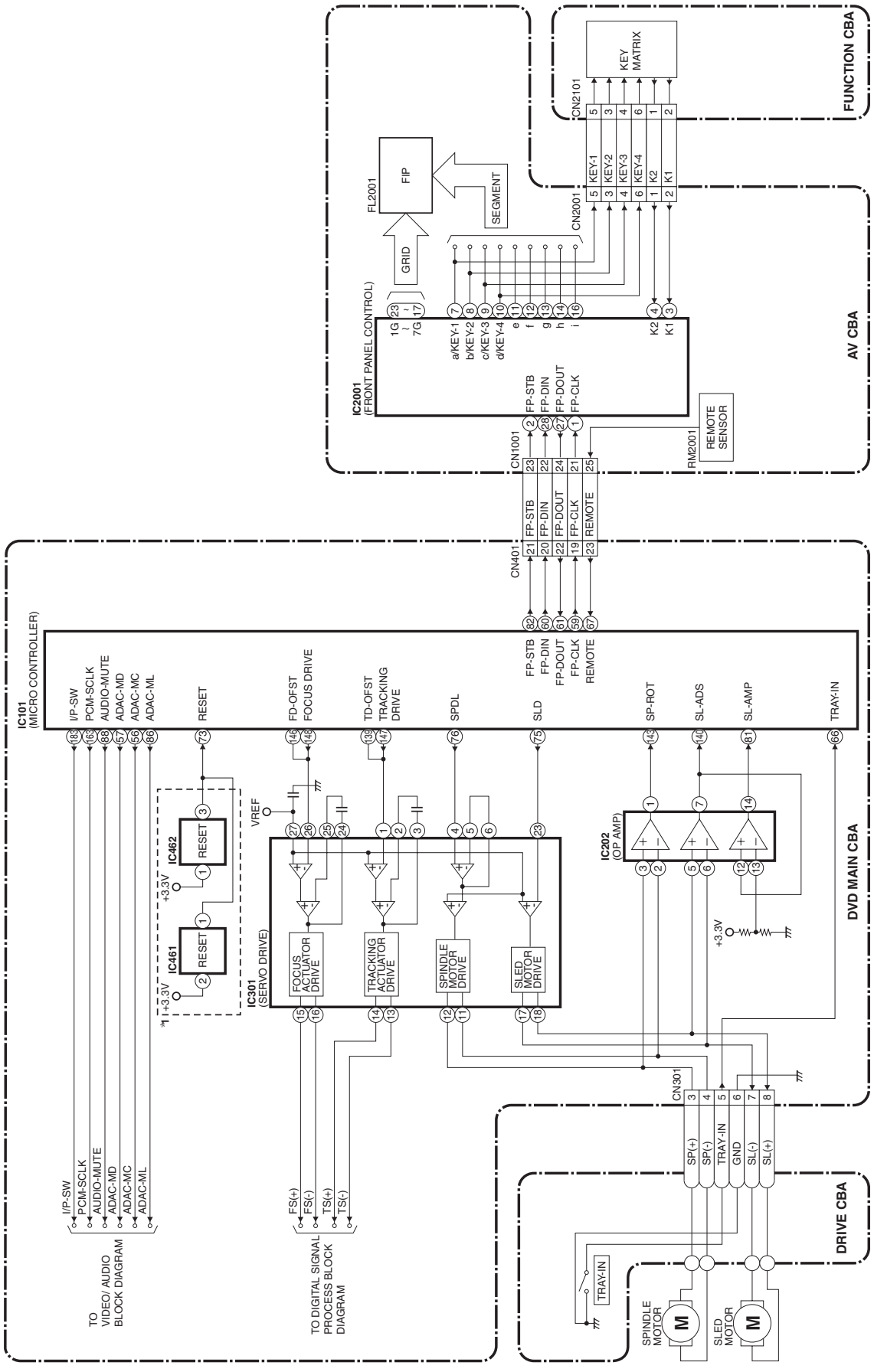
FUNCTION CBA Top View



FUNCTION CBA Bottom View

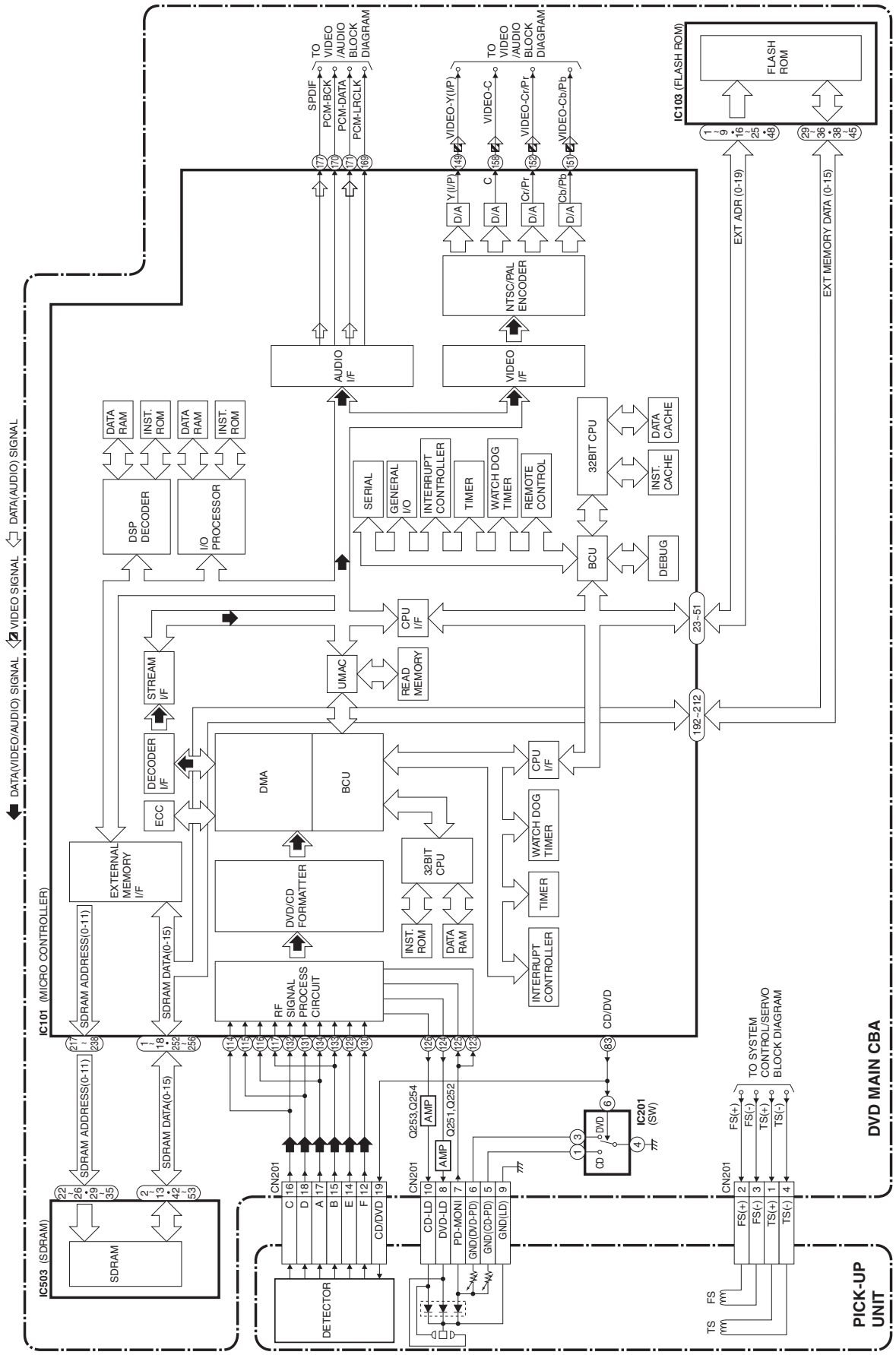


B BLOCK DIAGRAMS
B-1 System Control / Servo Block Diagram

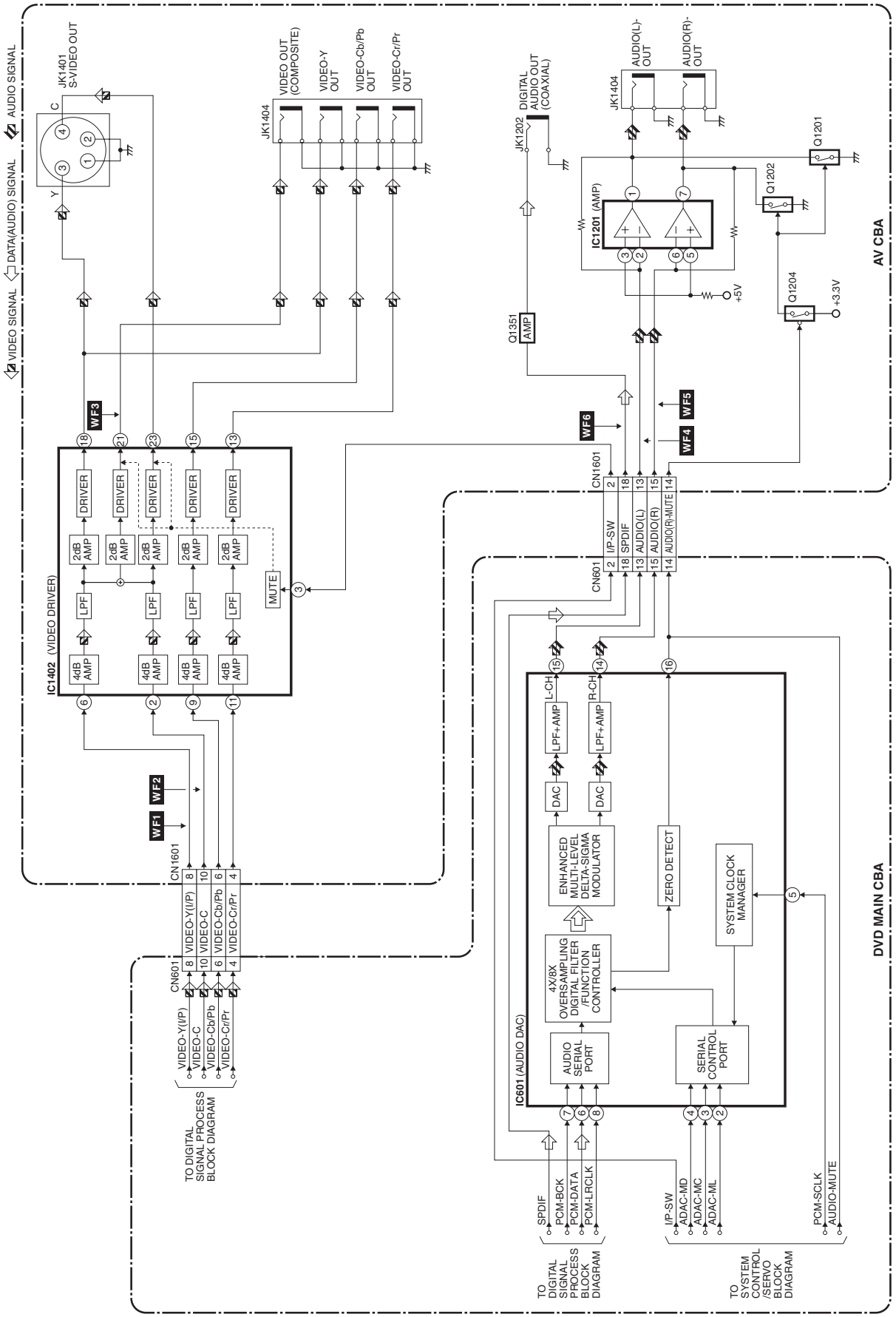


***1 NOTE:**
Either IC461 or IC462 is used for DVD MAIN CBA.

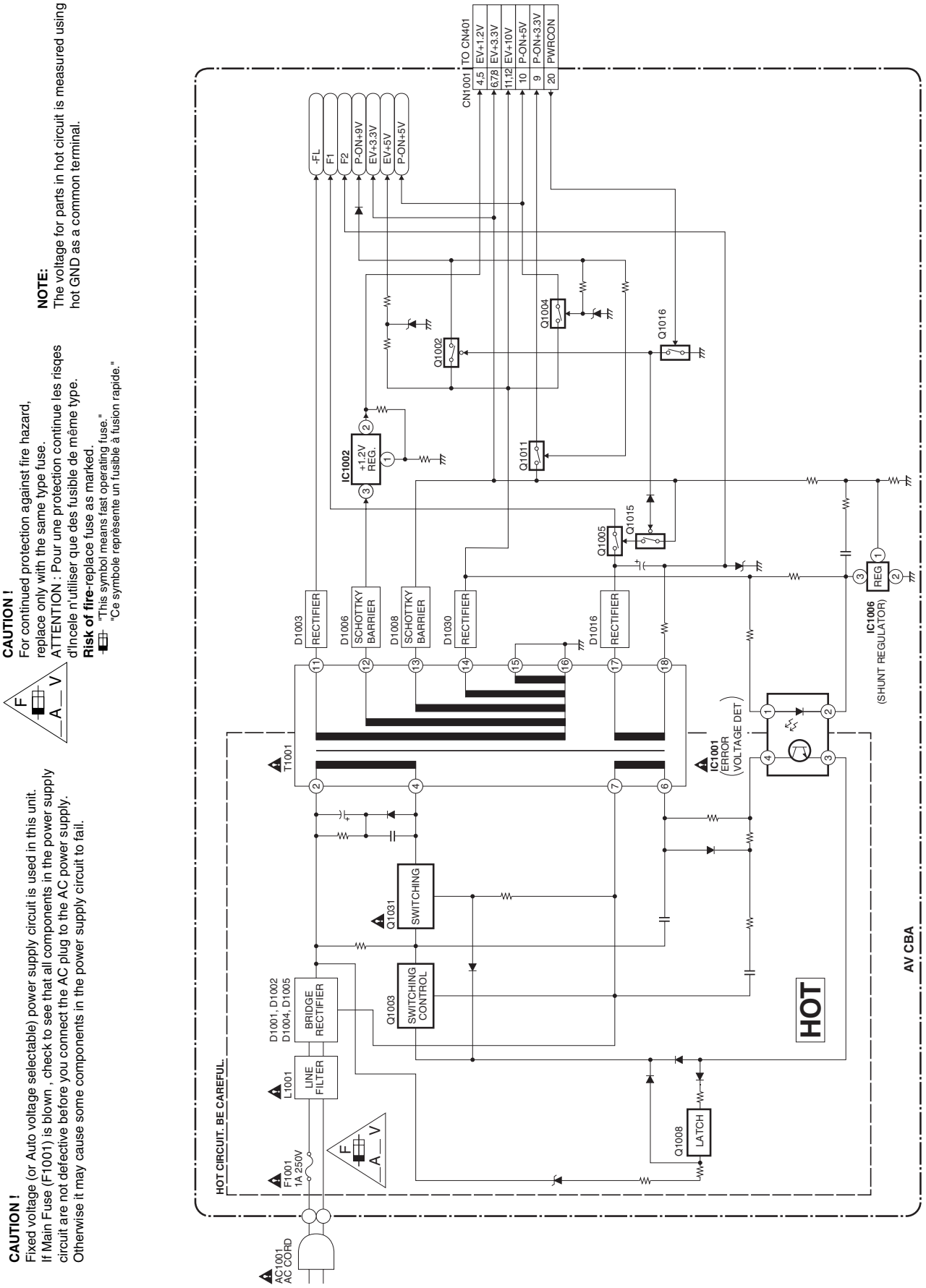
B-2 Digital Signal Process Block Diagram



B-3 Video / Audio Block Diagram



B-4 Power Supply Block Diagram



HITACHI

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 (F)