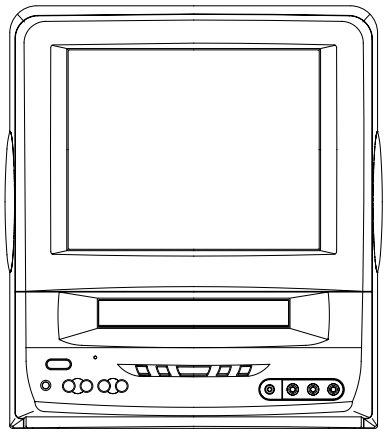
Memorex®

MVD2009CB

SERVICE MANUAL

COLOR TELEVISION/DVD VIDEO PLAYER

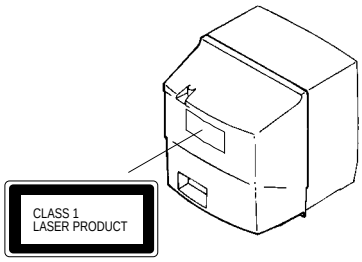


ORIGINAL
MFR'S VERSION A

IMPORTANT WARNING

CAUTION:
DVD PLAYER IS A CLASS 1 LASER PRODUCT. HOWEVER THIS PLAYER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE PLAYER.



(Printed on the Rear Panel)

WHEN THIS PLAYER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS PLAYER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

3. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

4. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)
1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and AV PCB/DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the white gear of Deck CD section in the direction of the arrow by hand. **(Refer to Fig. 1)**
3. Draw the Tray.

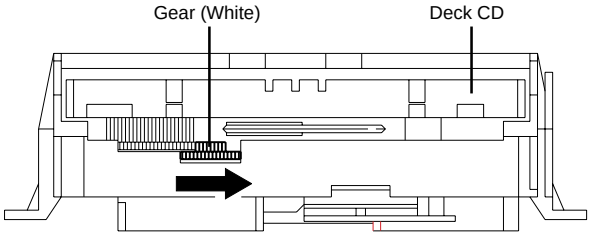


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Press and hold the 'STOP' key on the front panel.
3. Simultaneously press and hold the '7' key on the remote control unit.
4. Hold both keys for more than 3 seconds.
5. The On Screen Display message 'PASSWORD CLEAR' will appear.
6. The 4 digit password has now been cleared.

NB: The above procedure will reset ALL of the player's settings to the default factory state.

TABLE OF CONTENTS

GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size		9 inch / 228.6 mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G / 0.18G
		Color System			NTSC
		Speaker			2 Speaker
			Position		Side
			Size		3 inch
			Impedance		8 ohm
		Sound Output	Max		1.2W + 1.2W
			10%(Typical)		0.8W + 0.8W
G-2	DVD System	Color System			NTSC
		Disc			DVD, CD-DA, CD-R/RW
		Disc Diameter			120 mm , 80 mm
		Deck	Disc Loading System		Front Loading
			Motor		3 Motors
		Pick up			1-Lens 2-Beams System
		Playback time(Max) DVD	DVD 1-Layer		135min (4.7GB)
			DVD 2-Layer		245min (8.5GB)
			CD		74min
			Video CD		--
		Search speed			Fwd 2-15 times / 4 step (DVD)
					2-20 times / 4 step (CD)
				Actual	2-45 times (DVD)
					4-40 times (CD)
					Rev 2-15 times / 4 step (DVD)
					2-20 times / 4 step (CD)
				Actual	2-45 times (DVD)
					4-40 times (CD)
		Slow speed			Fwd 1/8-1/2 times
				Actual	--
					Rev 1/8-1/2 times
				Actual	--
G-3	Tuning System	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		US(w/CATV)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 Ohm
			CH Coverage		2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Frequency	Picture(FP)		45.75MHz
			Sound(FS)		41.25MHz
			FP-FS		4.50MHz
		Preset CH			No
		Stereo/Dual TV Sound			US-Stereo
		Tuner Sound Muting			Yes
G-4	Signal	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		65dB
			Horizontal Resolution at DVD Mode		400 Lines (TV Monitor) 500 Lines (Video Out)
		RGB Signal	Output Level		--
		Audio Signal	Input Level		-8.0dBm/50k ohm
			Output Level		-8 dBm/ 1k ohm (TV Mode, 0dB=0.775Vrms) -12dBm/ 1k ohm (DVD Mode, -20dBFs 0dBFs=2.0Vrms)
			Digital Output Level		0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)		90 dB
			Harmonic Distortion		0.06% (1kHz)
			Frequency Response :	at DVD	4Hz - 22kHz
				at Video CD	--
				at CD	4Hz - 20kHz
G-5	Power	Power Source	AC		120V, 60Hz
			DC		12 V
		Power Consumption		at AC	55W at 120V 60Hz
				at DC	55W at 12V
			Stand by (at AC)		5 W at 120V 60Hz
			Per Year		-- kWh/Year
		Protector	Power Fuse		Yes
G-6	Regulation		Safety		UL
			Radiation		FCC
			X-Radiation		DHHS
			Laser		DHHS
G-7	Temperature		Operation		+5°C ~ +40°C
			Storage		-20°C ~ +60°C

GENERAL SPECIFICATIONS

G-8	Operating Humidity				Less than 80% RH	
G-9	On Screen Display	Menu(TV)			Yes	
			Menu Type		Icon	
			Picture		Yes	
				Brightness	Yes	
				Contrast	Yes	
				Color	Yes	
				Tint	Yes	
				Sharpness	Yes	
			Sound			No
				Bass		No
				Treble		No
				Balance		No
			CH		Yes	
				TV/CATV	Yes	
				Add/Delete	Yes	
				Auto CH Memory	Yes	
			Option		Yes	
				V-Chip	Yes	
				Language	Yes	
		Open			Yes	
		Close			Yes	
		Clock				No
		Clock Set				No
		On/Off Timer				No
		Sleep Timer			Yes	
		CH / AV(LINE) / DVD			Yes	
		Stereo/Audio Output			Yes	
				Bilingual		No
				SAP	Yes	
		Caption / Text			Yes	
		Auto Search/Position				No
		Game				No
		Volume			Yes	
		Mute			Yes	
G-10	On Screen Display	Menu (DVD)			Yes	
			Menu Type		Character	
			Language		Yes	
				OSD Language	Yes	
				Menu	Yes	
				SubTitle	Yes	
				Audio	Yes	
			Picture		Yes	
				TV Screen Size	Yes	
				OSD Display On/Off	Yes	
			Sound		Yes	
				DRC (Dynamic Range Control)	Yes	
				dts Decode		No
				Output(5.1ch/ 2ch)		No
				Surround On/Off		No
				Center On/Off		No
				Sub Woofer On/Off		No
			Parental		Yes	
				Password Lock/ Un Lock	Yes	
				Rating Level	Yes	
			Open		Yes	
			Close		Yes	
			No disc		Yes	
			Reading		Yes	
			Play		Yes	
			Still/Pause		Yes	
			Stop		Yes	
			Prohibit Mark		Yes	
			Step		Yes	
			Skip(>>|)		Yes	
			Skip(|<<)		Yes	
			Random		Yes (CD)	
			Repeat		Yes	
			Slow+		Yes	
			Slow-		Yes	
			Search+		Yes	
			Search-		Yes	
			Jump		Yes	
			Resume		Yes	
			Title No.		Yes	
			Chapter No.		Yes	
			Track No.		Yes	

GENERAL SPECIFICATIONS

		Time		Yes
		Sub Title No.		Yes
		Angle No.		Yes
		Vocal On/Off		No
		Audio No.		Yes
		Audio Stereo L/R		No
		Zoom		Yes
		Marker No.		Yes
		Program Play Back		Yes (CD)
		Surround On/Off		No
		Screen Saver		No
		MP3	Folder Name	No
			File Name	No
			File No	No
			Time	No
			Track No	No
G-11	OSD Language	(TV)		English, French, Spanish
		(DVD)		English, French, Spanish
G-12	Remote Control	Unit		RC-DT
		Glow in Dark Remocon		No
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Keys	Total Keys	46 Keys
			Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Open/Close	Yes
			Play	Yes
			Stop	Yes
			Search+	Yes
			Search-	Yes
			Skip+	Yes
			Skip-	Yes
			Slow+	Yes
			Slow-	Yes
			Still/Pause	Yes
			Display/Call	Yes
			TV/DVD	Yes
			Cancel	Yes
			Audio Select	Yes
			Angle	Yes
			Subtitle	Yes
			Top Menu	Yes
			Setup/TV Menu	Yes
			Return	Yes
			DVD Menu	Yes
			Up/ Set+/ CH Up	Yes
			Down/ Set-/ CH Down	Yes
			Left/Select-	Yes
			Right/Select+	Yes
			Select/Enter	Yes
			Play Mode	Yes
			Marker	Yes
			Input Select	Yes
			Volme +	Yes
			Volme -	Yes
			Repeat A-B	Yes
			Zoom/ Quick View	Yes
			Mute	Yes
			Sleep	Yes
			Jump/Closed Caption	Yes
G-13	Features	CATV		Yes
		Auto Shut Off		Yes
		Auto Clock		No
		Just Clock		No
		Auto CH Memory		Yes
		V-Chip	USA V-chip	Yes
			CANADA V-chip	No
		Auto Search		No

GENERAL SPECIFICATIONS

		SAP			Yes	
		Game Position				No
		FM Transmitter				No
		Energy Star				No
		Closed Caption			Yes	
		Comb Filter				No
		Protect of FBT Leak Circuit				No
		Choke Coil				No
		Power On Memory				No
		Parental Lock (DVD Only)			Yes	
		Tray Lock				No
		VIDEO CD Playback				No
		SVCD Playback				No
				Overlay Graphics And Text		No
				Command List		No
				Entry Point Jump		No
		MP3 Playback				No
		WMA Playback				No
		JPEG Playback				No
		Digital Out		(Dolby Digital)	Yes	
				(MPEG)	Yes	
				(PCM)	Yes	
				(DTS)	Yes	
		Down Mix Out		(Dolby Digital)	Yes	
				(DTS)		No
		Surround (Tru Surround)				No
		Screen Saver				No
		Audio DAC			192kHz / 24bit	
G-14	**Accessories**	Owner's Manual		Language	English, Spanish	
				w/Guarantee Card		No
		Remote Control Unit			Yes	
		Battery				No
				UM size x pcs	--	
				OEM Brand	--	
		Rod Antenna			Yes	
				Poles	2 Poles	
				Terminal	F Type	
		Loop Antenna				No
				Terminal		--
		U/V Mixer				No
		300 ohm to 75 ohm Antenna Adapter				No
		Antenna Change Plug				No
		Guarantee Card			Yes	
		Registration Card				No
		Warranty Card				No
		ESP Card				No
		Service Station List				No
		DC Car Cord (Center+)			Yes	
		Columbia Offer Sheet				No
		Carry 'Bag			Yes	(Supplied by a Buyer)
G-15	**Interface**	Switch	Front	Power (Tact)	Yes	
				Channel Up	Yes	
				Channel Down	Yes	
				Volume Up	Yes	
				Volume Down	Yes	
				Play	Yes	
				Open/Close	Yes	
				Skip(>>|)	Yes	
				Skip(|<<)	Yes	
				Still/Pause		No
				Stop	Yes	
				Main Power SW		No
			Rear	Main Power SW		No
		Indicator		Power	Yes (Red)	
				Stand-by		No
				On Timer		No
		Terminals	Front	Video Input	RCA x 1	
				Audio Input	RCA x 2(Stereo)	
				Other Terminal	HeadPhone	
			Rear	Video Input		No
				Audio Input		No
				Video Output	RCA x 1	
				Audio Output	RCA x 2(Stereo)	
				Digital Audio Output	Coaxial (DVD Only)	
				Diversity		No
				DC Jack 12V(Center +)	Yes	
				VHF/UHF Antenna Input	F Type	

GENERAL SPECIFICATIONS

G-16	**Set Size**		Approx. W x D x H (mm)	278x312.5x311.5	
G-17	**Weight**		Net (Approx.)	8.0 kg (17.6lbs)	
			Gross (Approx.)	11.5 kg (25.4lbs)	
G-18	**Carton**	Master Carton		No	
			Content	--- Sets	
			Material	--- / ---	
			Dimensions W x D x H(mm)	---	
			Description of Origin	---	
		Gift Box		Yes	
			Material	Double/Brown	
			W/Color Photo Label	No	
			Dimensions W x D x H(mm)	338 x 381 x 526	
			Design	As Per Buyer 's	
			Description of Origin	Yes	
		Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces	
			Height (cm)	62	
		Container Stuffing (40' container)		840 Sets	
G-19	**Material**	Cabinet	Front	PS	94V0 DECABROM
			Rear	PS	94V0 DECABROM
			Jack Panel	-	
		PCB	Non-Halogen Demand	No	
			Eyelet Demand	Yes	
G-20	**Environment**	Pb Free	Lead-free Solder	No	
			Other	No	
		Cd Free		No	

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 5 screws (1).
2. Remove the 2 screws (2).
3. Remove the screw (3).
4. Remove the Back Cabinet in the direction of arrow.

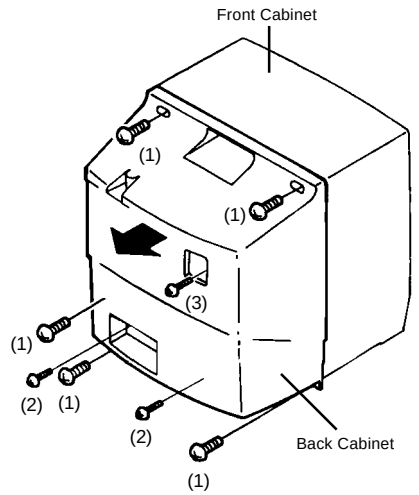


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connector:
   (CP801).
3. Remove the CRT PCB in the direction of arrow.

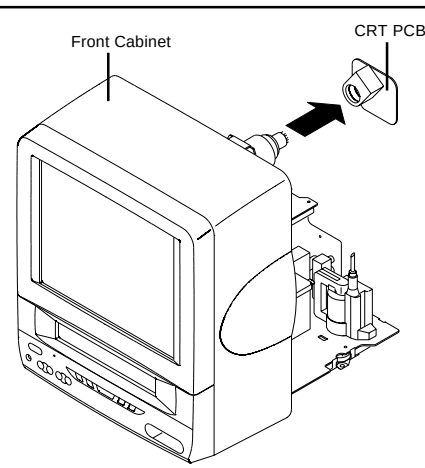


Fig. 1-2

1-3: TV/DVD BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws (1).
2. Disconnect the following connectors:
   (CP301, CP302, CP401 and CP403).
3. Remove the TV/DVD Block in the direction of arrow.

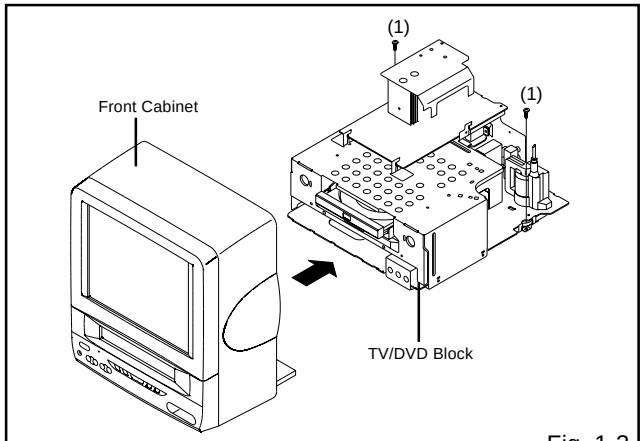


Fig. 1-3

1-4: POWER PCB (Refer to Fig. 1-4)

1. Remove the screw (1).
2. Remove the Main PCB Holder.
3. Remove the 2 screws (2).
4. Disconnect the following connectors:
   (CP3802 and CP3803).
5. Remove the Power PCB in the direction of arrow.

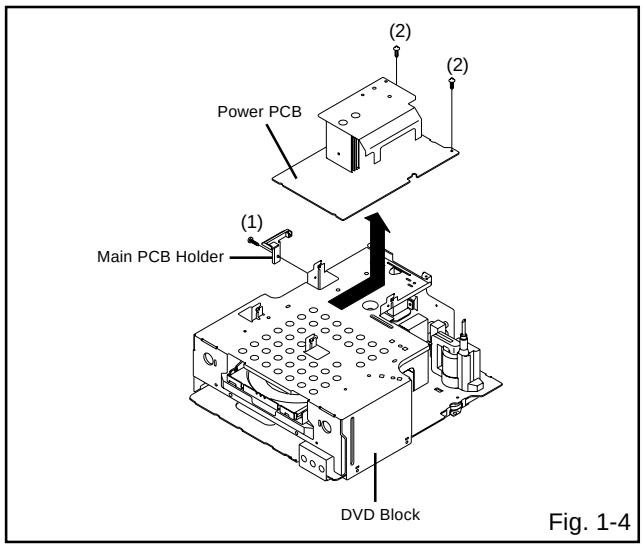


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: FRONT TRAY PLATE/TOP SHIELD (Refer to Fig. 1-5)

1. Unlock the 2 supports (1).
2. Remove the Front Tray Plate in the direction of arrow (A).
3. Remove the 12 screws (2).
4. Remove the Top Shield in the direction of arrow (B).

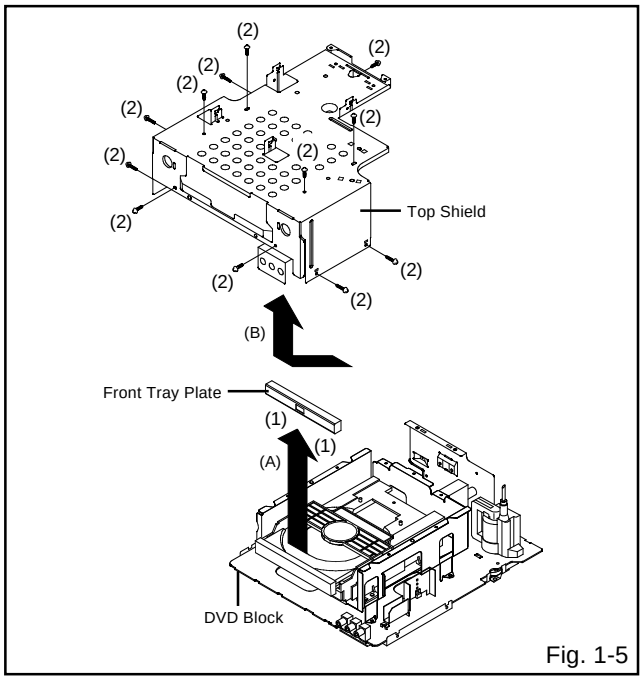


Fig. 1-5

1-6: DVD PCB/DVD DECK (Refer to Fig. 1-6)

1. Make the short circuit on the position as shown **Fig. 1-6** using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (CP8001 and CP8002).
3. Remove the 4 screws (1).
4. Remove the Angle Deck in the direction of arrow (A).
5. Disconnect the following connectors: (CP2001, CP2301 and CP2302).
6. Remove the 4 screws (2).
7. Remove the DVD Deck in the direction of arrow (B).
8. Remove the 4 screws (3).
9. Remove the DVD PCB in the direction of arrow (C).

NOTE

When the installation of the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

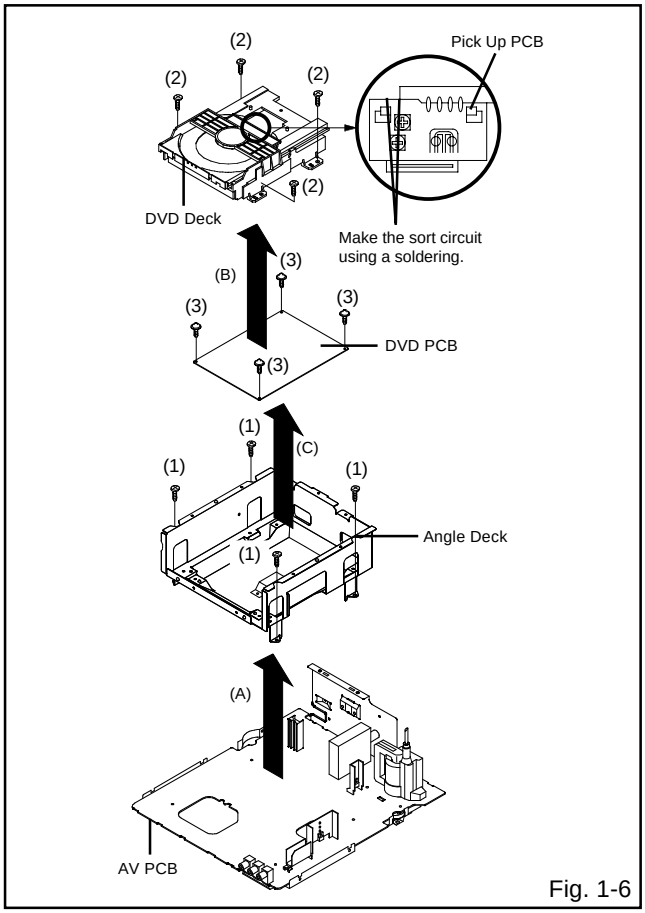


Fig. 1-6

1-7: AV PCB (Refer to Fig. 1-7)

1. Remove the screw (1).
2. Remove the screw (2).
3. Remove the AV PCB in the direction of arrow.

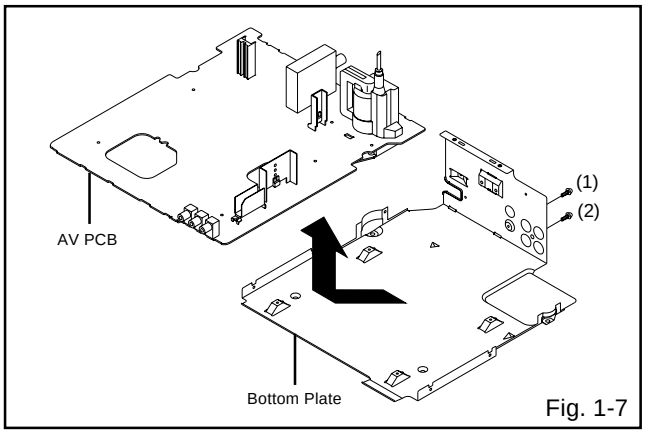


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 2-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

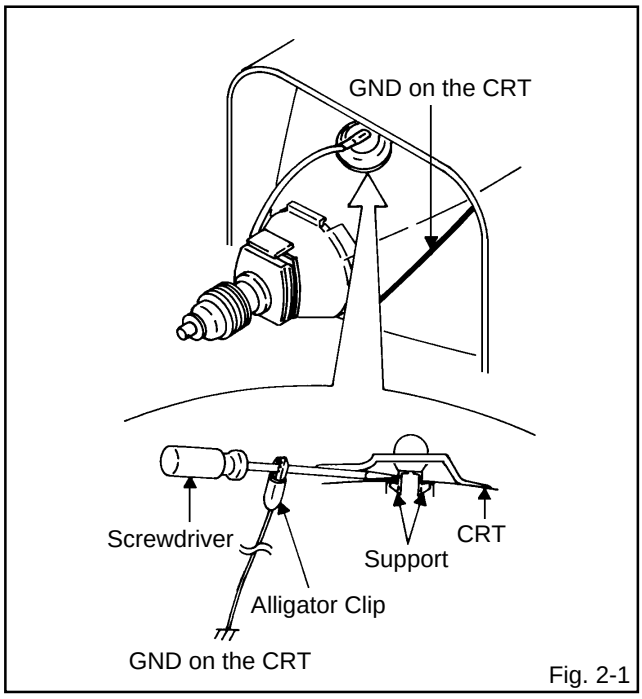


Fig. 2-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 2-2.)**

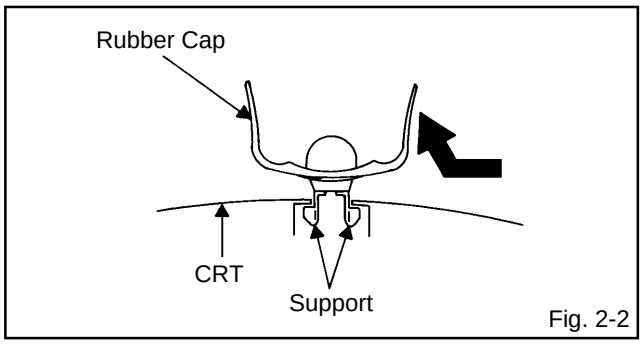


Fig. 2-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 2-3.)**

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

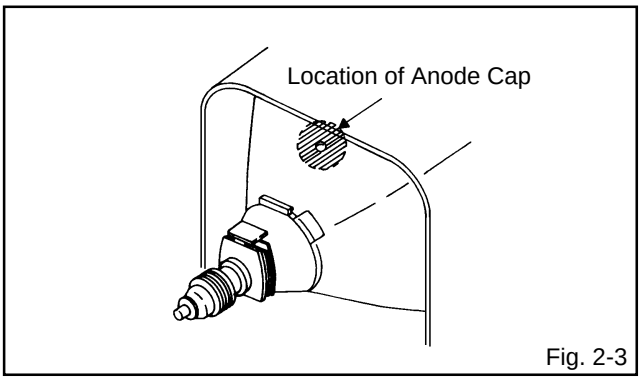


Fig. 2-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 2-4.)**

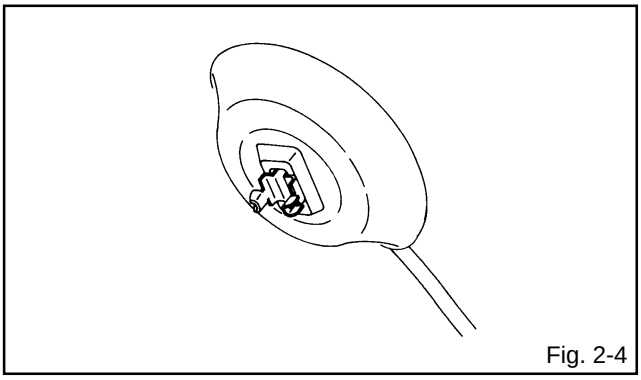


Fig. 2-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 2-5.**

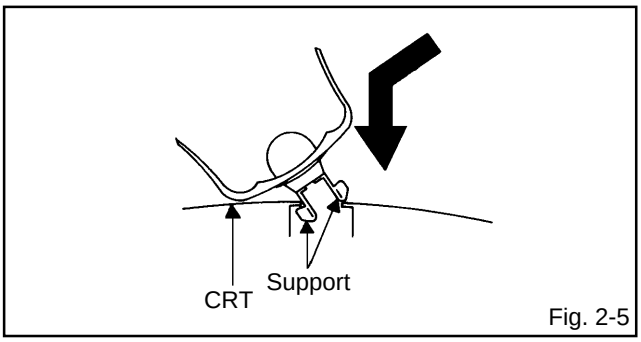


Fig. 2-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 3-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

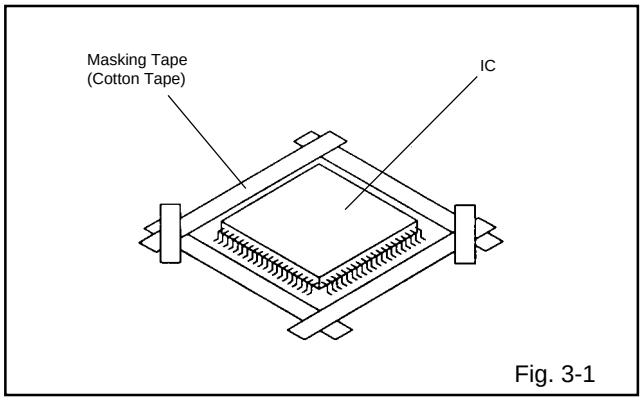


Fig. 3-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 3-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

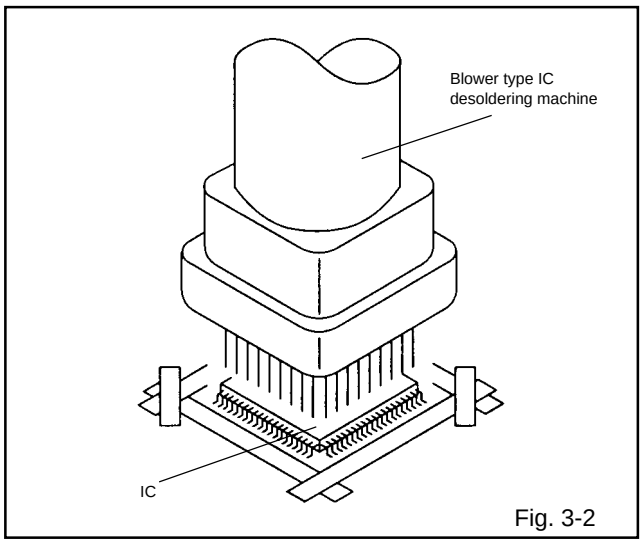


Fig. 3-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 3-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

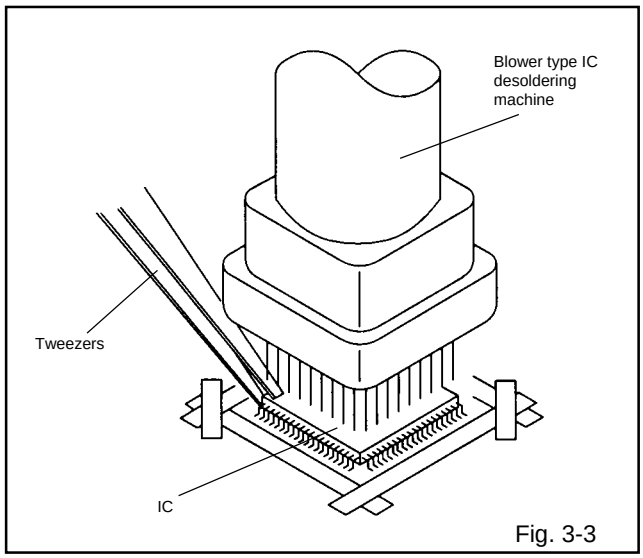


Fig. 3-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 3-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

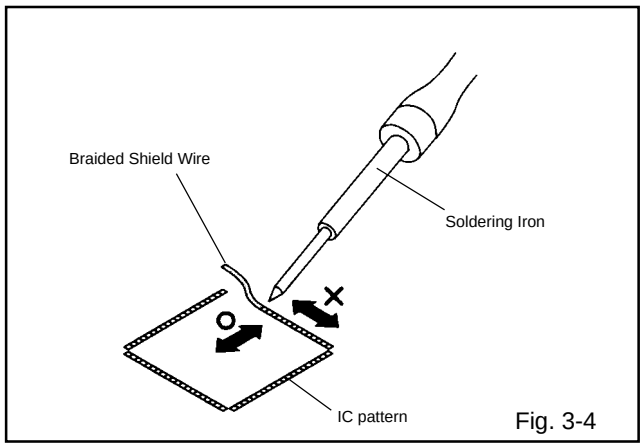


Fig. 3-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**

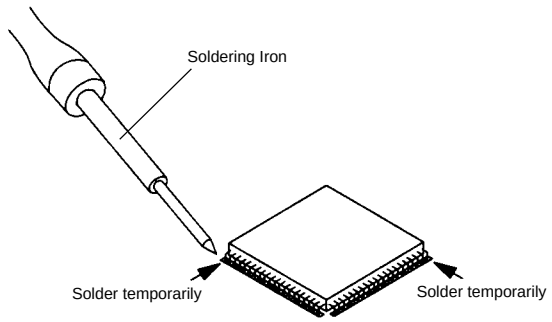


Fig. 3-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**

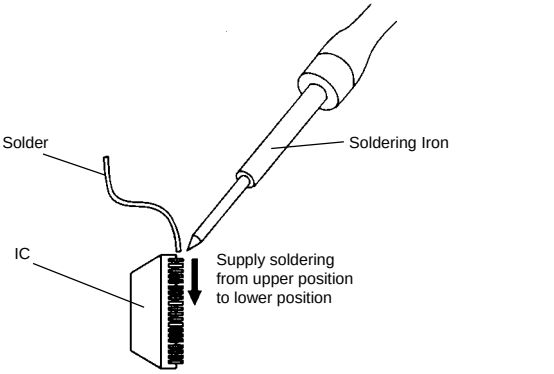


Fig. 3-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

   NOTE

   Do not absorb the solder to excess.

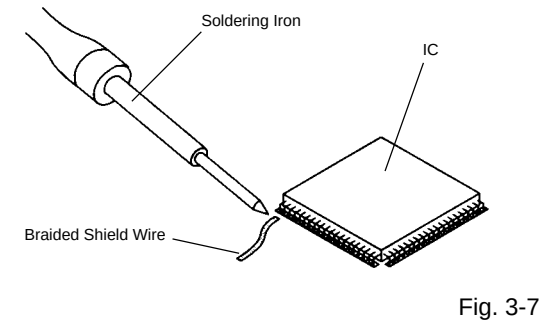


Fig. 3-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**

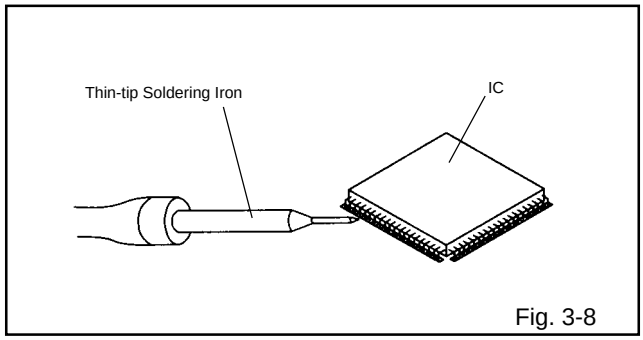


Fig. 3-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a standard time (second).

Set Key	Remocon Key	Standard Time (seconds)	Operations
VOL. (-) MIN	0	1	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	1	Initialization of the factory on TV. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	4	1	Initialization of the factory on DVD. NOTE: Do not use this for the normal servicing. The function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously.
VOL. (-) MIN	6	1	POWER ON total hours are displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED" Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	1	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	1	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
STOP	7	3	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL". NOTE: The function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously.

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.

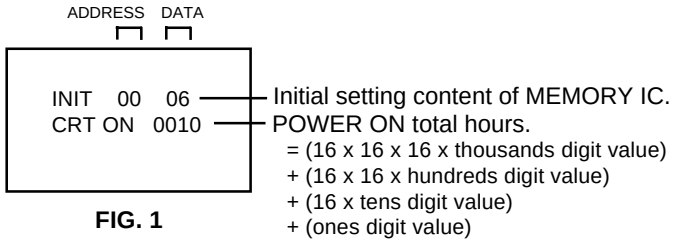


FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 1F due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	06	00	44	00	D0	45	30	25	05	51	01	00	41	50	0F	47
10	30	60	70	05	05	88	03	60	00	78	56	FF	05	FF	FF	FF

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.

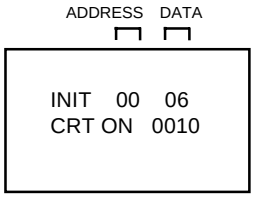


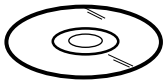
FIG. 1

3. ADDRESS is now selected and should "blink". Using the RIGHT/LEFT button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using RIGHT/LEFT button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 1 second.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

JG175A DVD Test Disc
(A-BEX TDV-540)



Ref. No.	Part No.	Parts Name	Remarks
JG175A	APJG175A00	DVD Test Disc (A-BEX TDV-540)	Tint adjustment of DVD mode

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. AC Voltmeter
4. Pattern Generator
5. Multi-Sound Signal Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

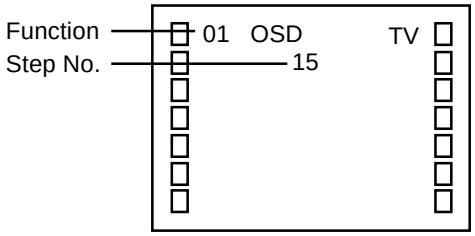


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(1-0)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
01	OSD H	35	CONT. AV(MIN)
02	OSD CONTRAST	36	COL. AV(CENT.)
03	CUT OFF	37	COL. AV(MAX)
04	H POSITION	38	COL. AV(MIN)
05	H.BLK L	39	TINT AV
06	H.BLK R	40	SHARPNESS AV
07	V SIZE	41	SUB BIAS
08	V POSITION	42	BRI. DVD(CENT.)
09	V LINEARITY	43	BRI. DVD(MAX)
10	V S CORRECTION	44	BRI. DVD(MIN)
11	V.COMP	45	CONT. DVD(CENT.)
12	R CUT OFF	46	CONT. DVD(MAX)
13	G CUT OFF	47	CONT. DVD(MIN)
14	B CUT OFF	48	COL. DVD(CENT.)
15	R DRIVE	49	COL. DVD(MAX)
16	G DRIVE	50	COL. DVD(MIN)
17	B DRIVE	51	TINT DVD
18	BRIGHTNESS(CENT.)	52	SHARPNESS DVD
19	BRIGHTNESS(MAX)	53	SUB BIAS
20	BRIGHTNESS(MIN)	54	BRI. GAME(CENT.)
21	CONTRAST(CENT.)	55	BRI. GAME(MAX)
22	CONTRAST(MAX)	56	BRI. GAME(MIN)
23	CONTRAST(MIN)	57	CONT. GAME(CENT.)
24	COLOR(CENT.)	58	CONT. GAME(MAX)
25	COLOR(MAX)	59	CONT. GAME(MIN)
26	COLOR(MIN)	60	SUB BIAS
27	TINT	61	TUNING V MUTE
28	SHARPNESS	62	POWER ON V MUTE
29	SUB BIAS	63	INPUT LEVEL
30	BRI. AV(CENT.)	64	SEPARATION L
31	BRI. AV(MAX)	65	SEPARATION H
32	BRI. AV(MIN)	66	X-RAY TEST
33	CONT. AV(CENT.)	67	H.STOP
34	CONT. AV(MAX)	68	H.FREQ

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Input DC12V to DC Jack and turn the Power ON.
2. Connect the digital voltmeter to the **TP3801**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR3801** until the digital voltmeter is 101 ± 0.5V.
5. Input AC120V to AC cord, and then remove the DC Jack cord.
6. Adjust the **VR3802** until the digital voltmeter is 102 ± 0.5V.

2-2: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-3: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to **pin 6 of CP101**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(63)** on the remote control to select "LVL".
4. Press the RIGHT/LEFT button on the remote control until the AC voltmeter is 80 ± 2mV.

2-4: CUT OFF

1. Adjust the unit to the following settings.
   R CUT=7F, G CUT=7F, B CUT=7F, R DRV=3F,
   G DRV=05, B DRV=3F
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "CUT OFF".
6. Adjust the **Screen Volume** until a dim raster is obtained.

ELECTRICAL ADJUSTMENTS

2-5: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "R CUT".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT", "G CUT", "B CUT", "R DRV" or "B DRV".
6. Adjust the RIGHT/LEFT button on the remote control to whiten the R CUT, G CUT, B CUT, R DRV, and B DRV at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-6: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "HPOSI".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-7: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.

2-8: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "VSIZE".
4. Press the RIGHT/LEFT button on the remote control until the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.

2-9: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-8. After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "VLIN".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "OSD".
2. Press the RIGHT/LEFT button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

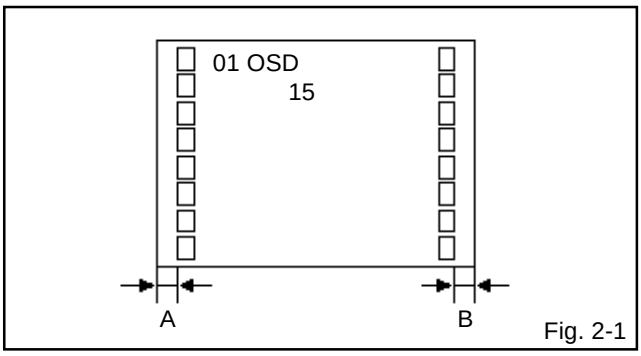


Fig. 2-1

2-11: SEPARATION

Please do the method (1) or method (2) adjustment.

Method (1)

1. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack.**
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(64)** on the remote control to select "SEPAL".
5. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.

Method (2)

1. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(64)** on the remote control to select "SEPAL".
5. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
8. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF signal.
9. Connect the oscilloscope to the **Audio Out Jack (L-ch)**. Then perform the above adjustments 3~7.

ELECTRICAL ADJUSTMENTS

2-12: BRIGHT CENTER

1. Using the remote control, set the brightness and contrast to normal position.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select "BRTC".
3. Press the RIGHT/LEFT button on the remote control until the brightness step No. becomes "3A".
4. Press the INPUT SELECT button on the remote control to set to the AV mode.
5. Using the remote control, set the brightness and contrast to normal position.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(30)** on the remote control to select "BRTCA".
7. Press the RIGHT/LEFT button on the remote control until the brightness step No. becomes "38".
8. Press the TV/DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(42)** on the remote control to select "BRTCD".
10. Press the RIGHT/LEFT button on the remote control to increase the step numbers by 5 steps to the AV.

.

2-13: TINT CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(27)** on the remote control to select "TNTC".
5. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness, contrast, color and tint to normal position.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "TNTCA".
10. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
11. Press the TV/DVD button on the remote control to set to the DVD mode.
12. Playback the Title2 (color bar pattern) of **JG175A**.
13. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(51)** on the remote control to select "TNTCD".
14. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-3)**

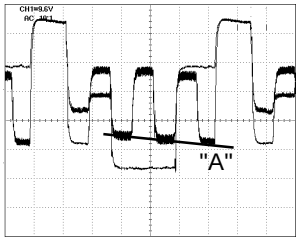


Fig. 2-2

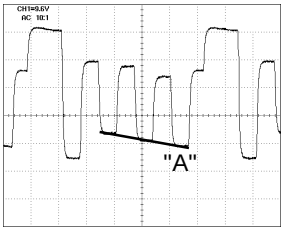


Fig. 2-3

2-14: COLOR CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select "COLC".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 90 ± 5% of the white level. **(Refer to Fig. 2-4)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode.
9. Using the remote control, set the brightness, contrast, color and tint to normal position.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "COLCA".
11. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 90 ± 5% of the white level. **(Refer to Fig. 2-4)**
12. Press the TV/DVD button on the remote control to set to the DVD mode.
13. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(48)** on the remote control to select "COLCD".
14. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV.

ELECTRICAL ADJUSTMENTS

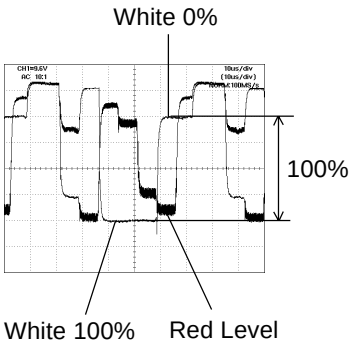


Fig. 2-4

2-15: CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CNTX".
2. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "30"
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT SELECT button on the remote control to set to the AV mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(34)** on the remote control to select "CNTXA".
6. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "31"
7. Receive a broadcast and check if the picture is normal.
8. Press the TV/DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(46)** on the remote control to select "CNTXD".
10. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV.

2-16: SHARPNESS

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(28)** on the remote control to select "SHRP".
2. Check if the step No.SHRP is "11".
3. Press the AV button on the remote control to set to the AV mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(40)** on the remote control to select "SHARPA".
5. Check if the step No.SHRP is "11".
6. Press the DVD button on the remote control to set to the DVD mode.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(52)** on the remote control to select "SHARPD".
8. Check if the step No.SHRP is "05".

2-17: OSD CONTRAST

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "OSD C".
2. Check if the step No.OSD C is "00".

2-18: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	STEP NO.	NO.	FUNCTION	STEP NO.
02	OSD CONTRAST	00	38	COL. AV(MIN)	05
05	H.BLK L	00	41	SUB BIAS	00
06	H.BLK R	00	43	BRI. DVD(MAX)	58
08	V POSITION	04	44	BRI. DVD(MIN)	25
10	V S CORRECTION	0C	45	CONT. DVD(CENT.)	25
11	V.COMP	03	47	CONT. DVD(MIN)	00
16	G DRIVE	05	49	COL. DVD(MAX)	70
19	BRIGHTNESS(MAX)	58	50	COL. DVD(MIN)	05
20	BRIGHTNESS(MIN)	25	53	SUB BIAS	00
21	CONTRAST(CENT.)	25	55	BRI. GAME(MAX)	58
23	CONTRAST(MIN)	00	56	BRI. GAME(MIN)	25
25	COLOR(MAX)	70	57	CONT. GAME(CENT.)	25
26	COLOR(MIN)	05	59	CONT. GAME(MIN)	00
29	SUB BIAS	00	60	SUB BIAS	00
31	BRI. AV(MAX)	58	61	TUNING V MUTE	00
32	BRI. AV(MIN)	25	62	POWER ON V MUTE	40
33	CONT. AV(CENT.)	25	68	H.FREQ	3F
35	CONT. AV(MIN)	00			
37	COL. AV(MAX)	70			

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

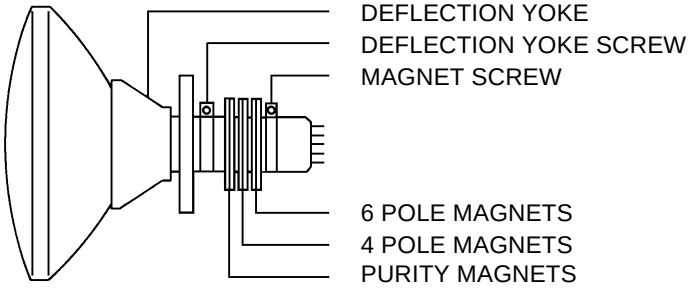


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

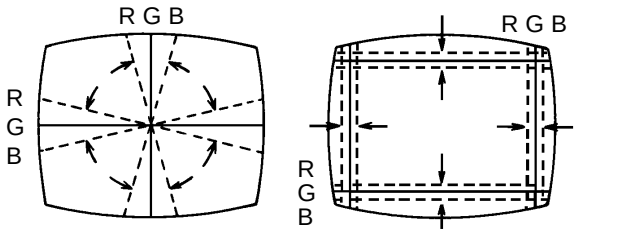
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

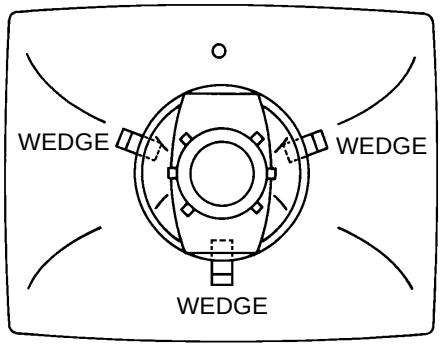
Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

Fig. 3-2-a

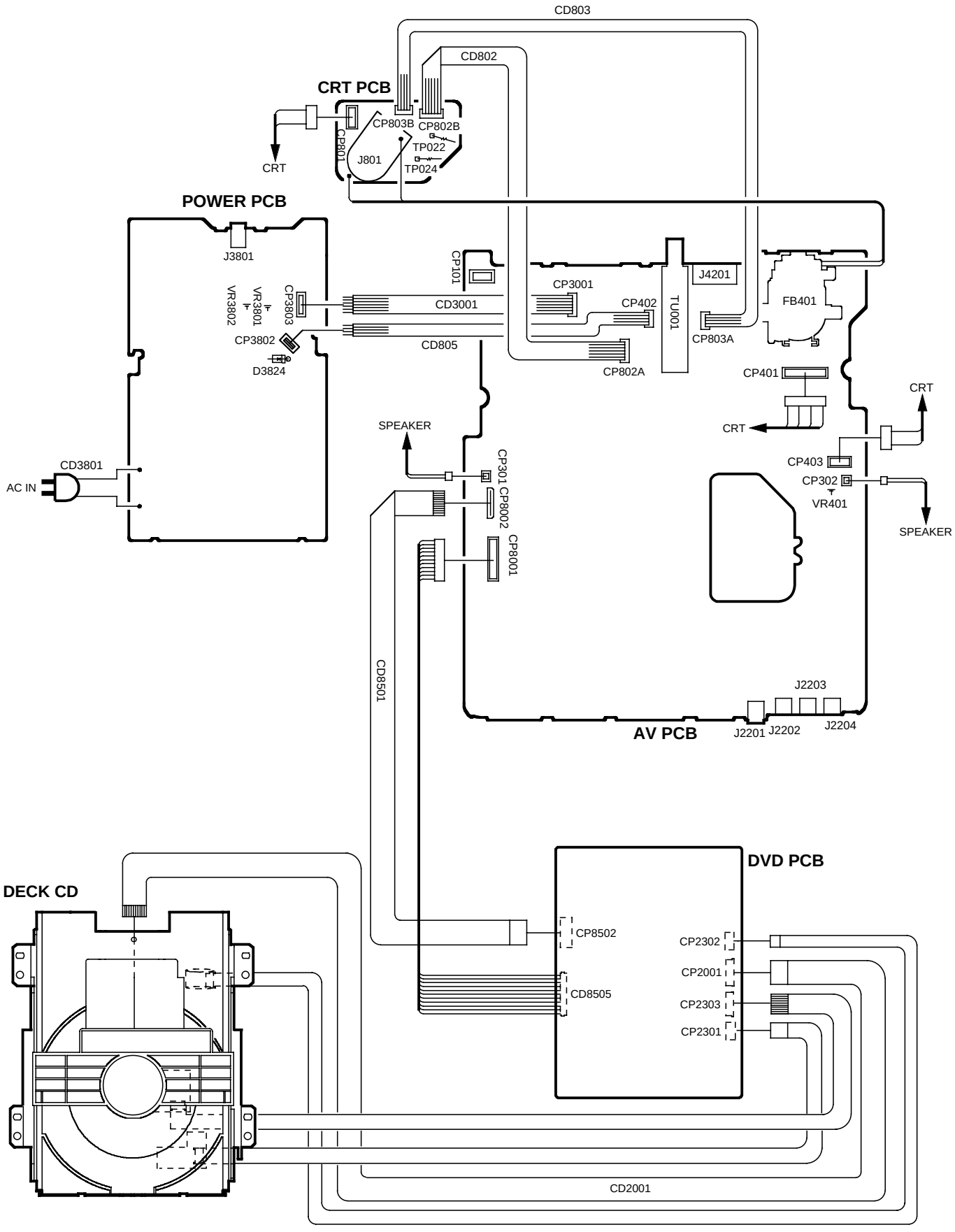


WEDGE POSITION

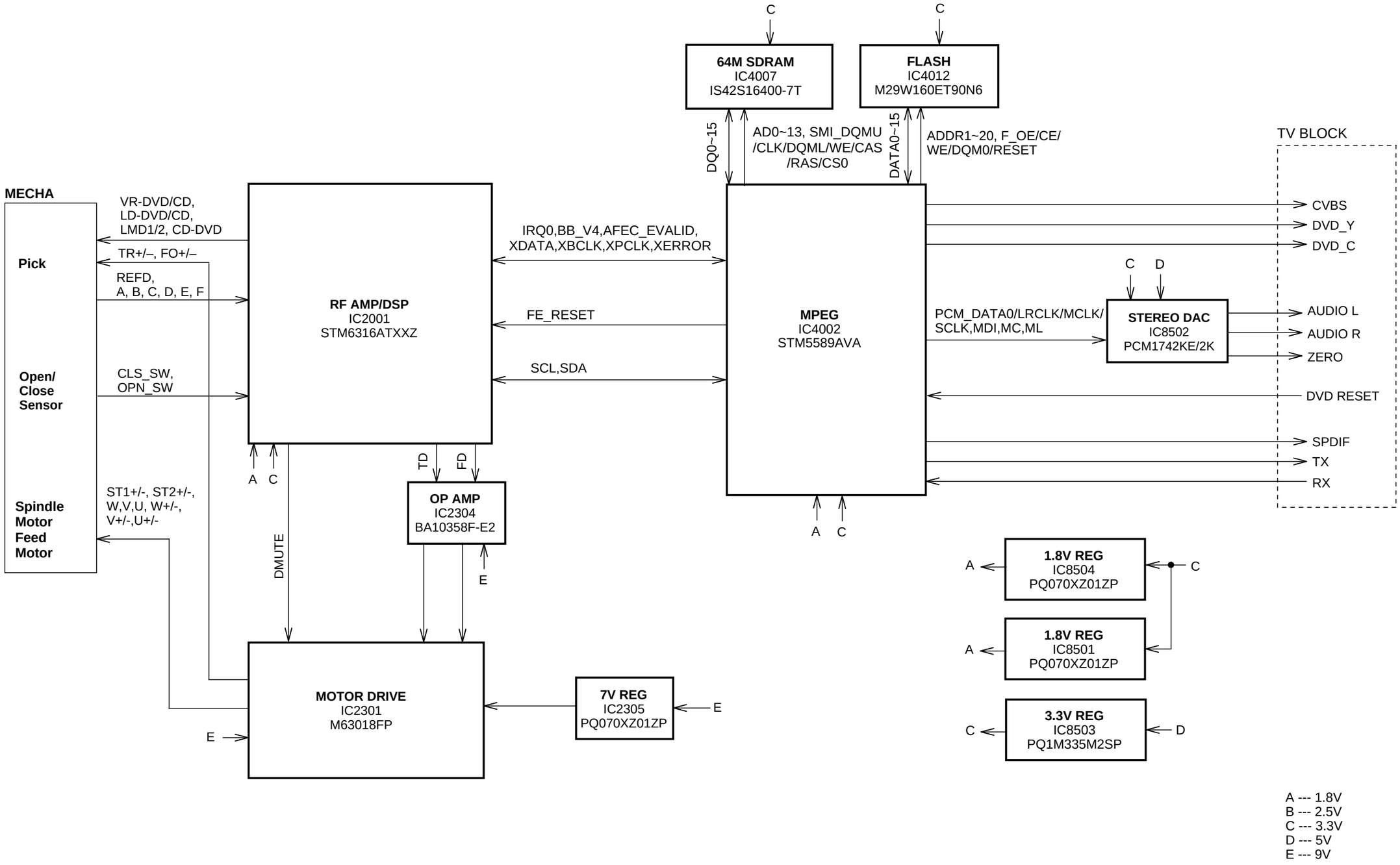
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

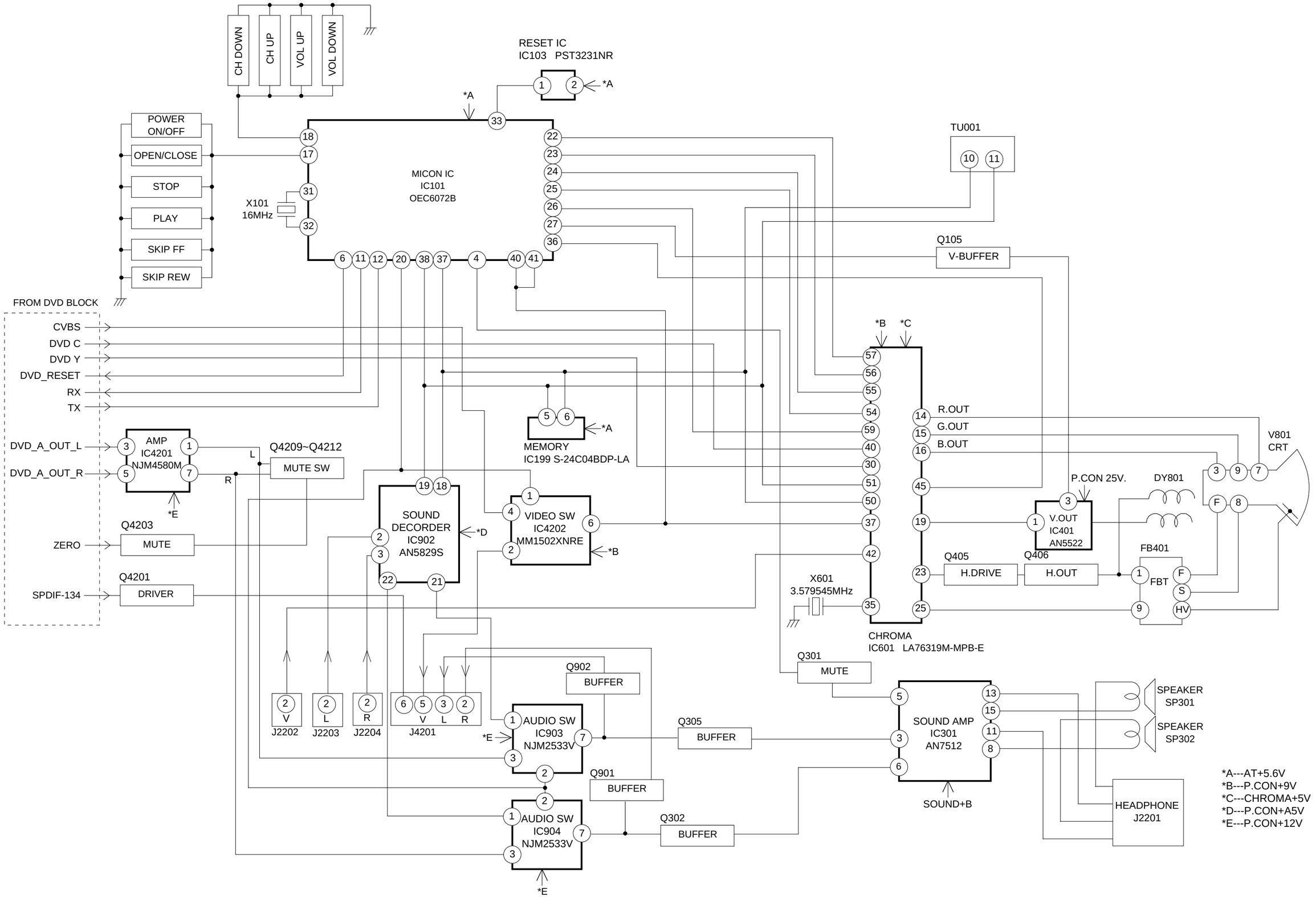
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



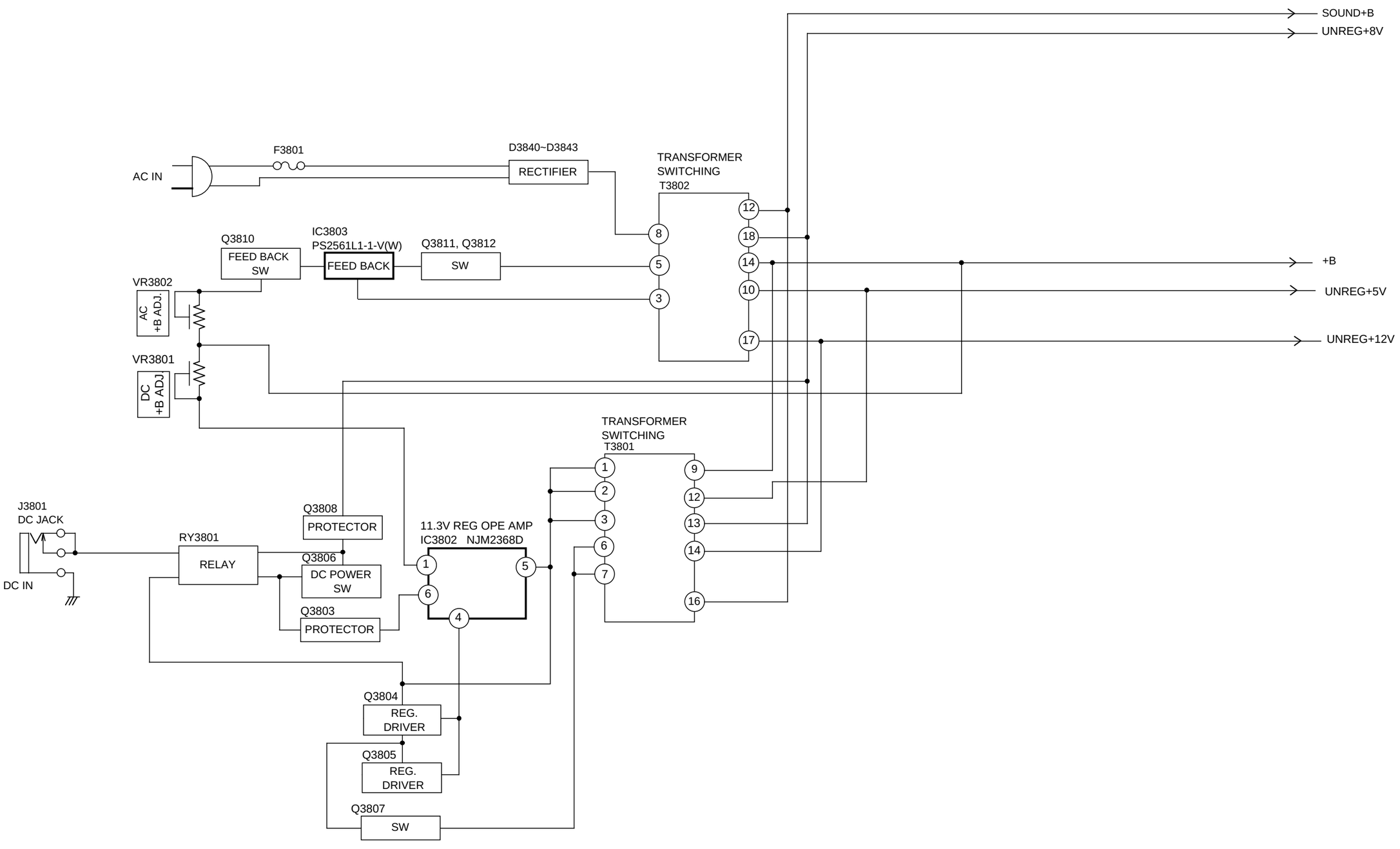
DVD ST SOLUTION BLOCK DIAGRAM



TV BLOCK DIAGRAM

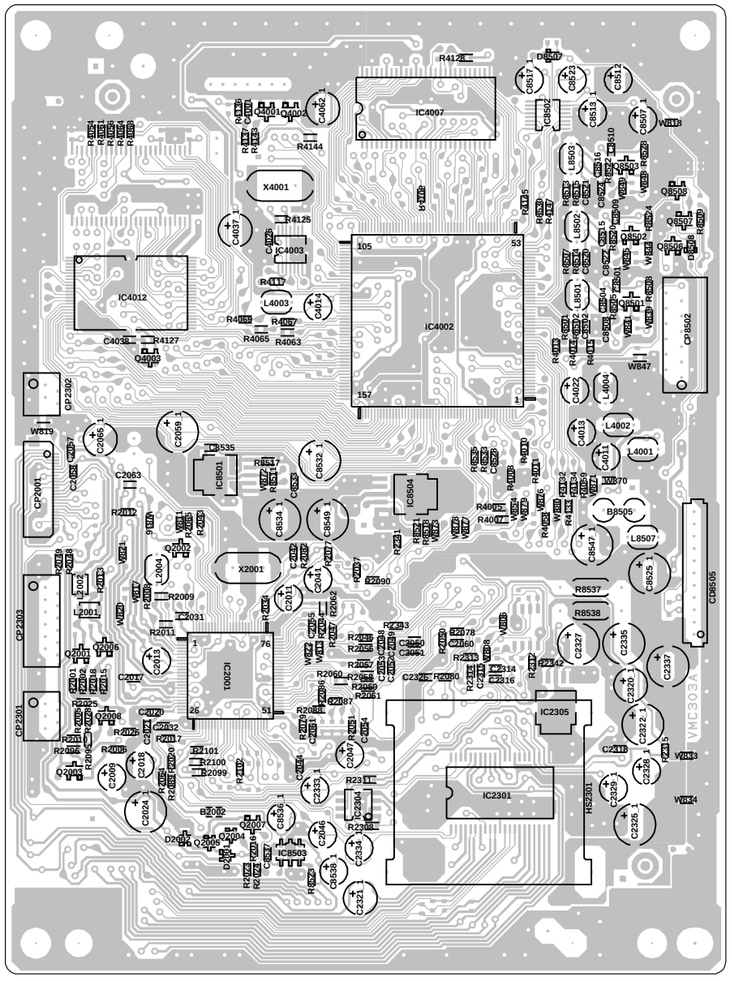


POWER BLOCK DIAGRAM

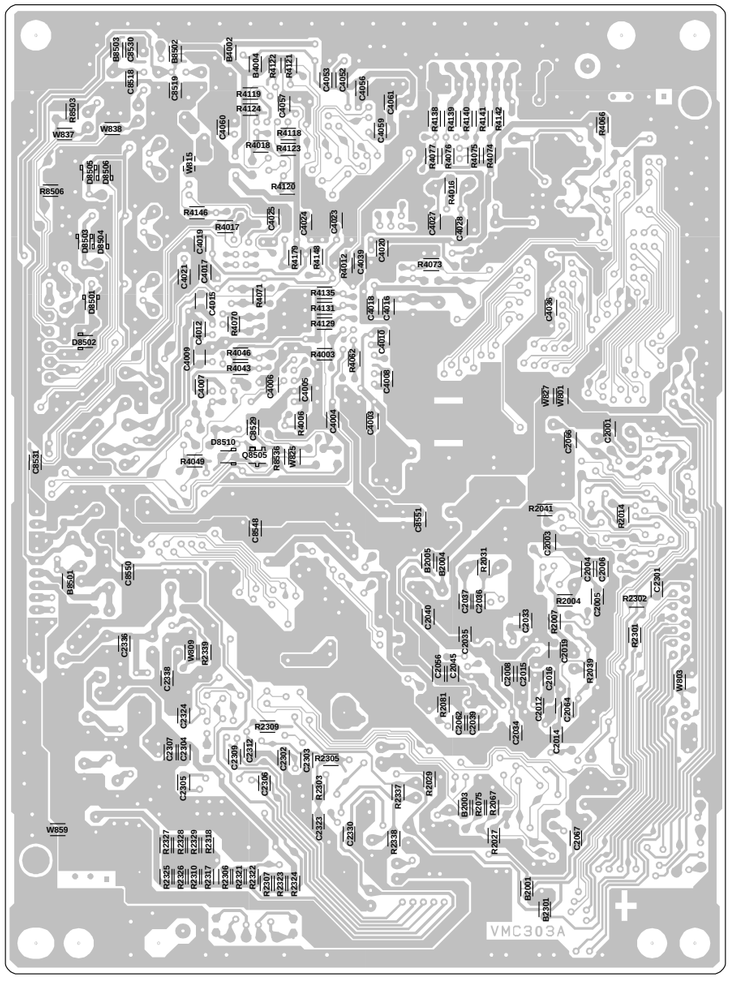


PRINTED CIRCUIT BOARDS

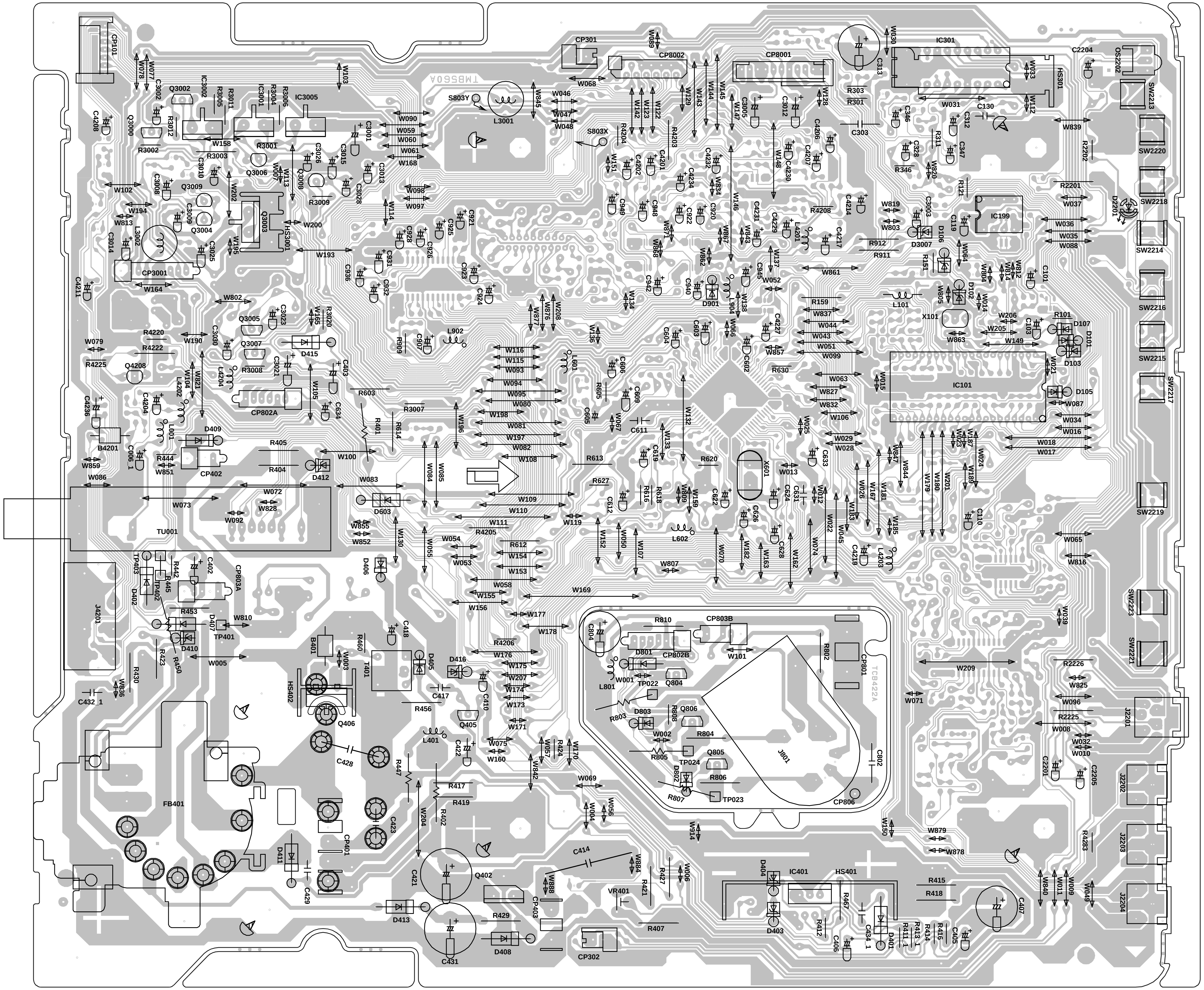
DVD (TOP SIDE)



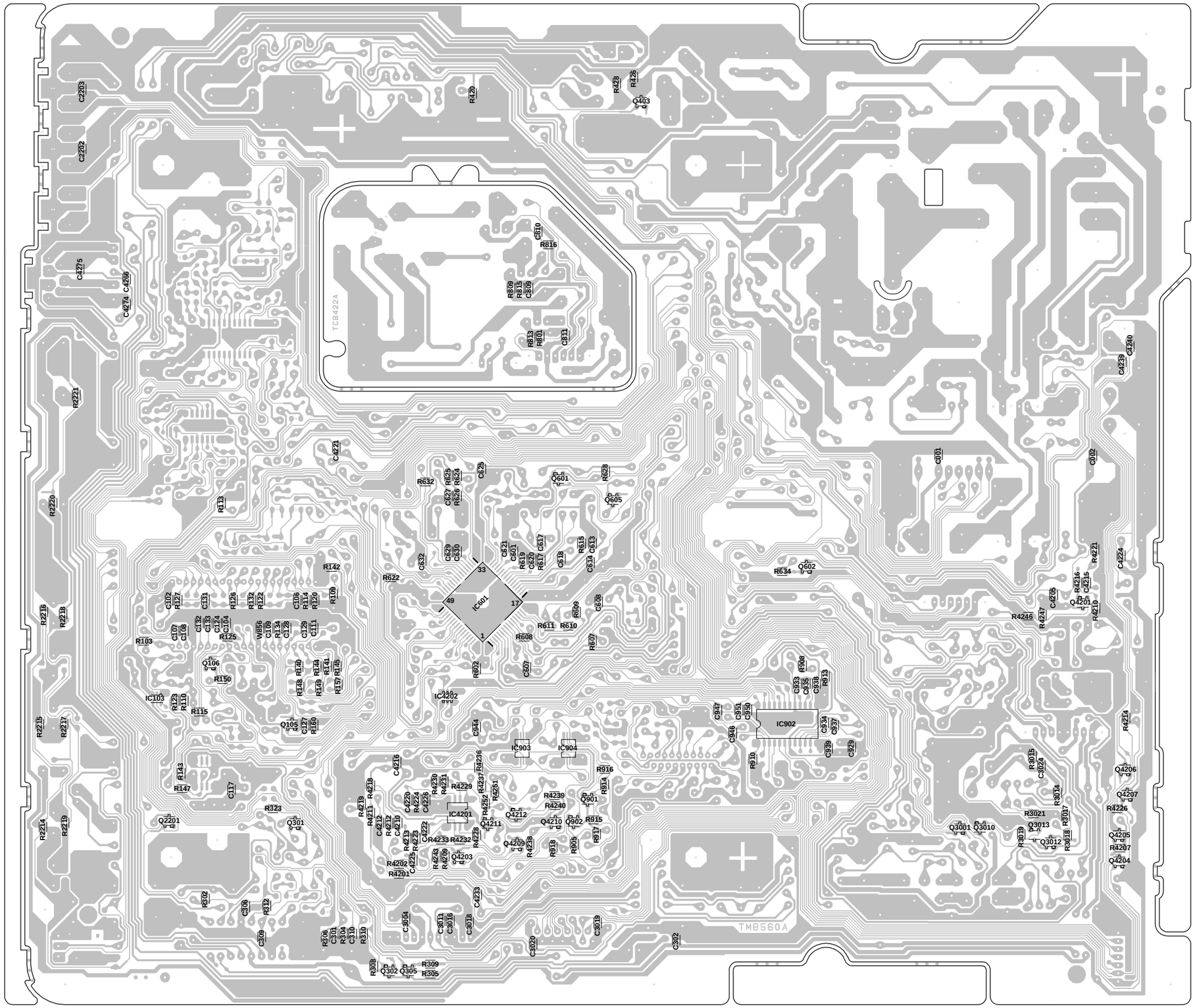
DVD (BOTTOM SIDE)



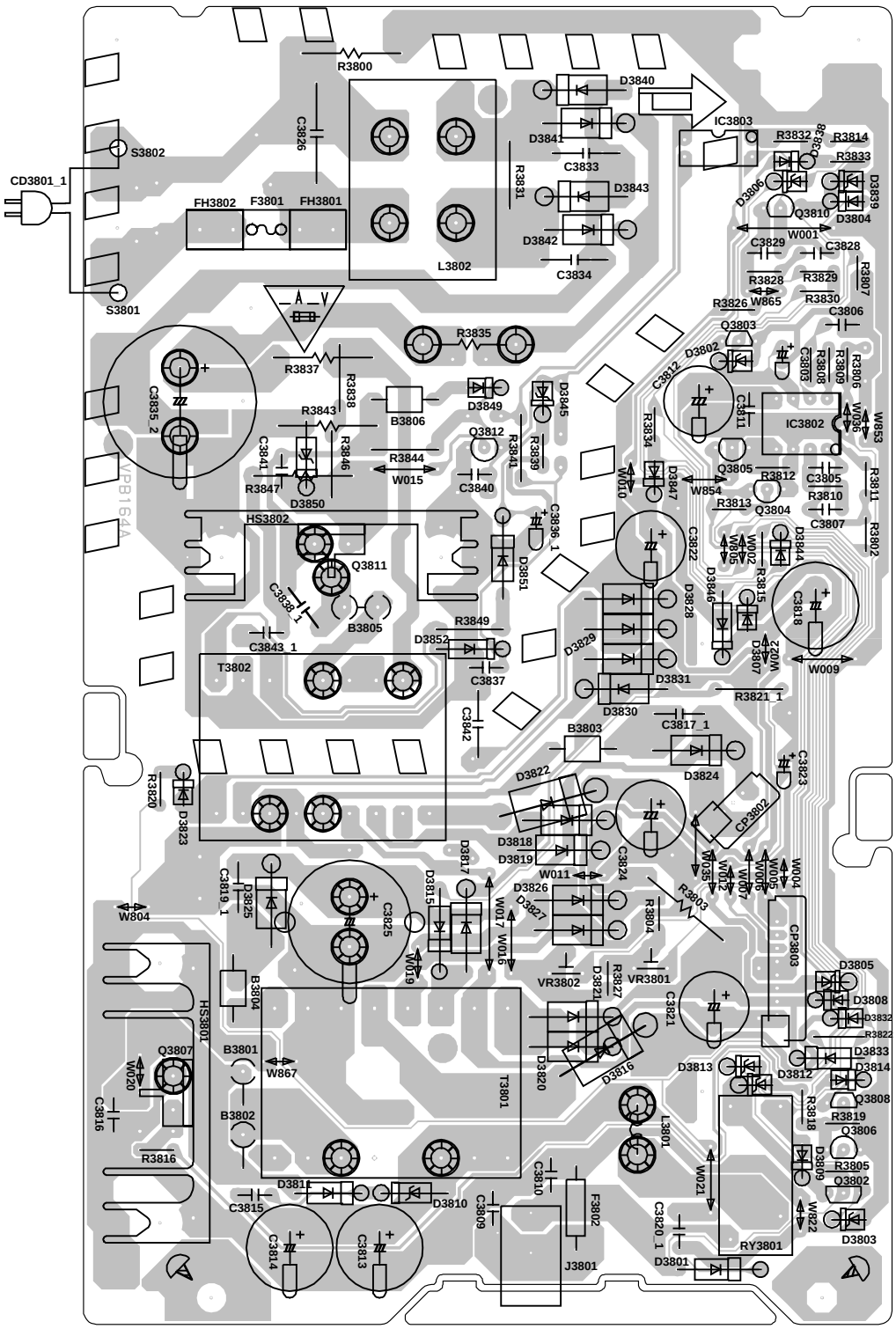
PRINTED CIRCUIT BOARDS
AV/CRT (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
AV/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
POWER
SOLDER SIDE



RF AMP/DSP SCHEMATIC DIAGRAM

(DVD PCB)

DVD LOADER
DK4001
CV-VLM102

FFC(P=0.5mm)
CD2001 2H001902

FROM/TO LOADER

CP2001
52975-2492

24	GND
23	VCC
22	C
21	B
20	SW1(DVD/CD)
19	E
18	SW2(L/H)
17	F
16	A
15	D
14	Vref
13	VR(DVD)
12	VR COM
11	VR(CD)
10	GND
9	LD(CD)
8	PD
7	LD(DVD)
6	GND
5	NC
4	T DRV
3	T RTN
2	F DRV
1	F RTN

FROM REGULATOR2

B2001 FCM2012H-102T04
B2002 FCM2012H-102T04
B2003 FCM2012H-102T04
B2004 FCM2012H-102T04
B2005 FCM2012H-102T04

P.CON+A5V
P.CON+A3.3V
P.CON+A1.8V

+3.3VA
+1.8VA
+3.3VD
+1.8VD

GND
D_GND

DVD JG2001
VCC5 JG2002
CD JG2004

DVD_LD_CTL Q2001 2SA1036K
CD_LD_CTL Q2006 2SA1036K
LD_CTL Q2008 KTC3875S_Y_RTK
LCD_CTL Q2003 KTC3875S_Y_RTK
CD_CTL Q2005 2SK3018
DVD_CTL Q2004 2SK3018
DPD_TE_CTL Q2007 KTC3875S_Y_RTK
BUFFER Q2002 2SA1037AK

D2001 KDS121RTK
D2002 KDS120RTK

W801 W827 W819 W811 W813 W816 W817 W820 W821 W822

TP2001 TP2002 TP2003 TP2004 TP2005

RF AMP/DSP IC
IC2001
STM6316ATXXZ

1	1.3	TST_ADC	
2	0	TST_SLICE	
3	0.6	TST_PM	
4	0.7	GNDL	
5	1.9	LMD2	
6	2.4	LMD1	
7	0	TWSEL	
8	2.4	VCC433	
9	3.3	LD2	
10	2.2	LD1	
11	1.9	VCC18PLL	
12	2.4	FREIN	
13	1.9	FREOUT	
14	2.4	PLLOFF	
15	3.3	GNDPLL	
16	0	VDD18ADAC	
17	3.3	VSSDAC	
18	1.9	RESET_N	
19	0	GNDSD	
20	2.1	F	
21	2.1	E	
22	0	VSHIELDIS	
23	1.9	VCC18ADC	
24	0	GNDADC	
25	0	VSHIELDADC	
26	3.3	VCC33DAC	
27	0	GNDDAC	
28	2.7	SPINDLE	
29	2.7	SLEDGE	
30	1.3	REFEXT	
31	0	REFGND	
32	2.7	REFDAC	
33	2.7	FACT	
34	2.7	TACT	
35	1.9	VCC18DAC	
36	1.6	PD(0)	
37	3.3	PD(1)	
38	3.3	PD(2)	
39	0	PD(3)	
40	3.3	PD(4)	
41	0	VSS(ESD5)	
42	3.3	VDD33	
43	2.0	PD(5)	
44	1.7	PD(6)	
45	3.3	PD(7)	
46	0	VSS(ESD5)	
47	1.9	VDD18	
48	3.2		
49	3.2	PD(6)	
50		PD(5)	
51	1.6	PD(4)	
52		PD(3)	
99		RFSACD	
100		VBGFILT	
1		IREF	
2		GNDAI	
76		VSS(ESD5)	
75		PF(0)	
74		PF(1)	
77		VDD18	
71	3.3	PE(0)	
70	3.3	PE(1)	
69	3.4	PE(2)	
68	3.4	PE(3)	
67	3.4	PE(4)	
66	3.4	PE(5)	
65	0	OUT_SYNC	
64	0.8	OUT_DATA	
63	0.8	OUT_DVALID	
62	1.9	VDD18	
61	1.6	OUT_CLK	
60	0	VSS(ESD5)	
59	0.1	OUT_EVALID	
58	0.1	OUT_ERR	
57	3.3	VDD33	
56	0	VSS(COMP)	
55	1.6	PD(0)	
54	1.6	PD(1)	
53	2.8	PD(2)	
52	0.6		
51	1.6		
75	2.8		
74	0.1		
73	3.3	VDD33	
72	0	VSS(ESD5)	

ICD
PG0 JG2009
PG1 JG2010
JG2011 D_GND
JG2012 +3.3VD
JG2003 FE_RESET

FROM/TO MPEG
FE_RESET
SCL
SDA
IRQ0
BB_V4
AFEC_EVALID
XDATA
XBCLK
XPCLK
AFEC_SCTST
XERROR

FROM/TO MOTOR DRV
LDM
OPN_SW
PSMUTE
SBMUTE
SPD_FG
TD
FD
REFDAC
SLD1
SLD2
SPD
TR-
TR+
FO-
FO+
INSW
D_GND
+3.3VD

FO ERR JG2005
TR ERR JG2006

JG2038 JG2039 JG2040 JG2041 JG2007 JG2042

PCB130
VMC303

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

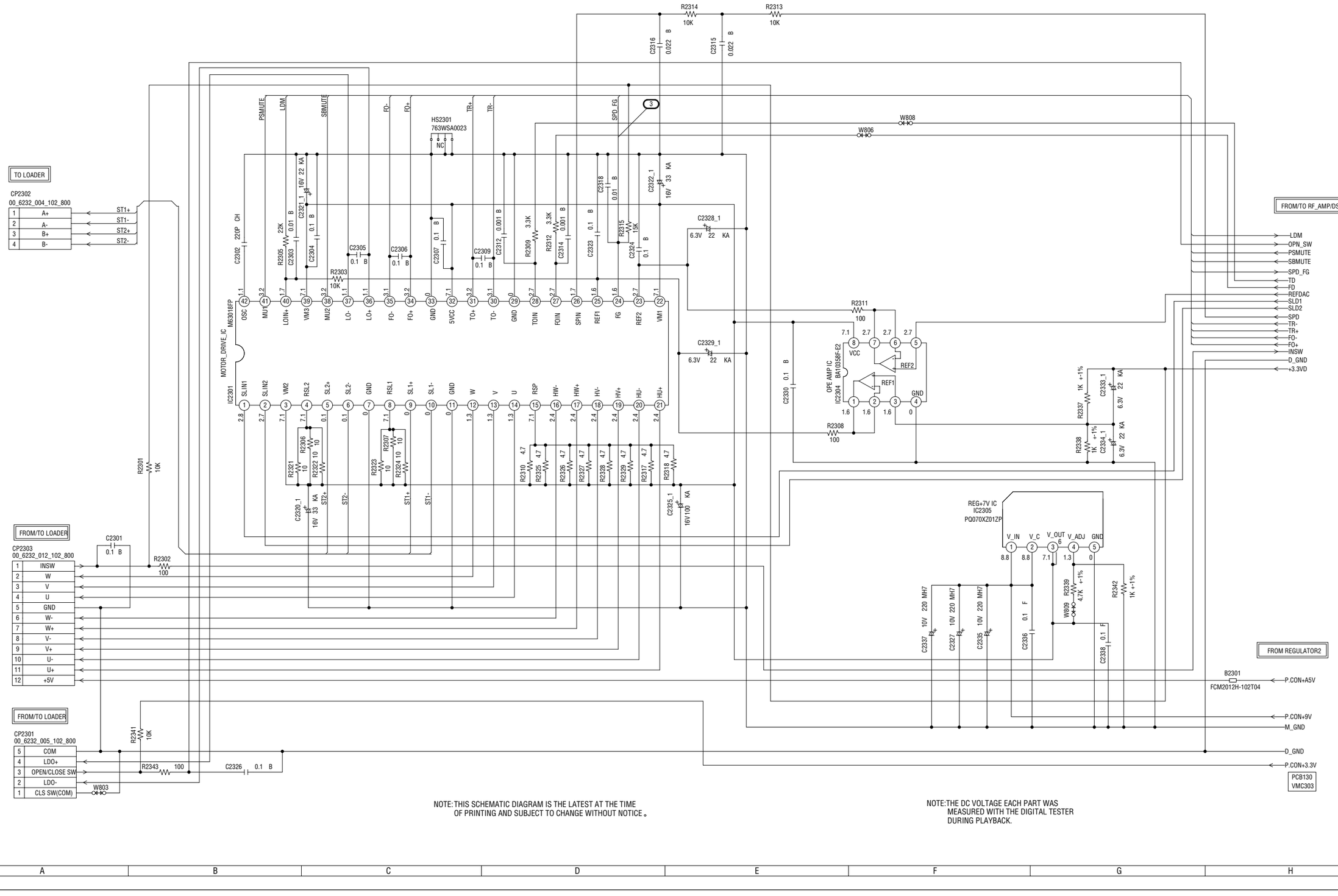
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

MOTOR DRV SCHEMATIC DIAGRAM

(DVD PCB)



MPEG SCHEMATIC DIAGRAM

(DVD PCB)

MPEG IC
IC4002
STM5589AVA

CLOCK_GENERATOR IC
IC4003 SN74AHCU04PWR

FROM/TO MEMORY

FROM/TO RF_AMP/DSP

FROM/TO REGULATOR2

FROM/TO AUDIO/VIDEO

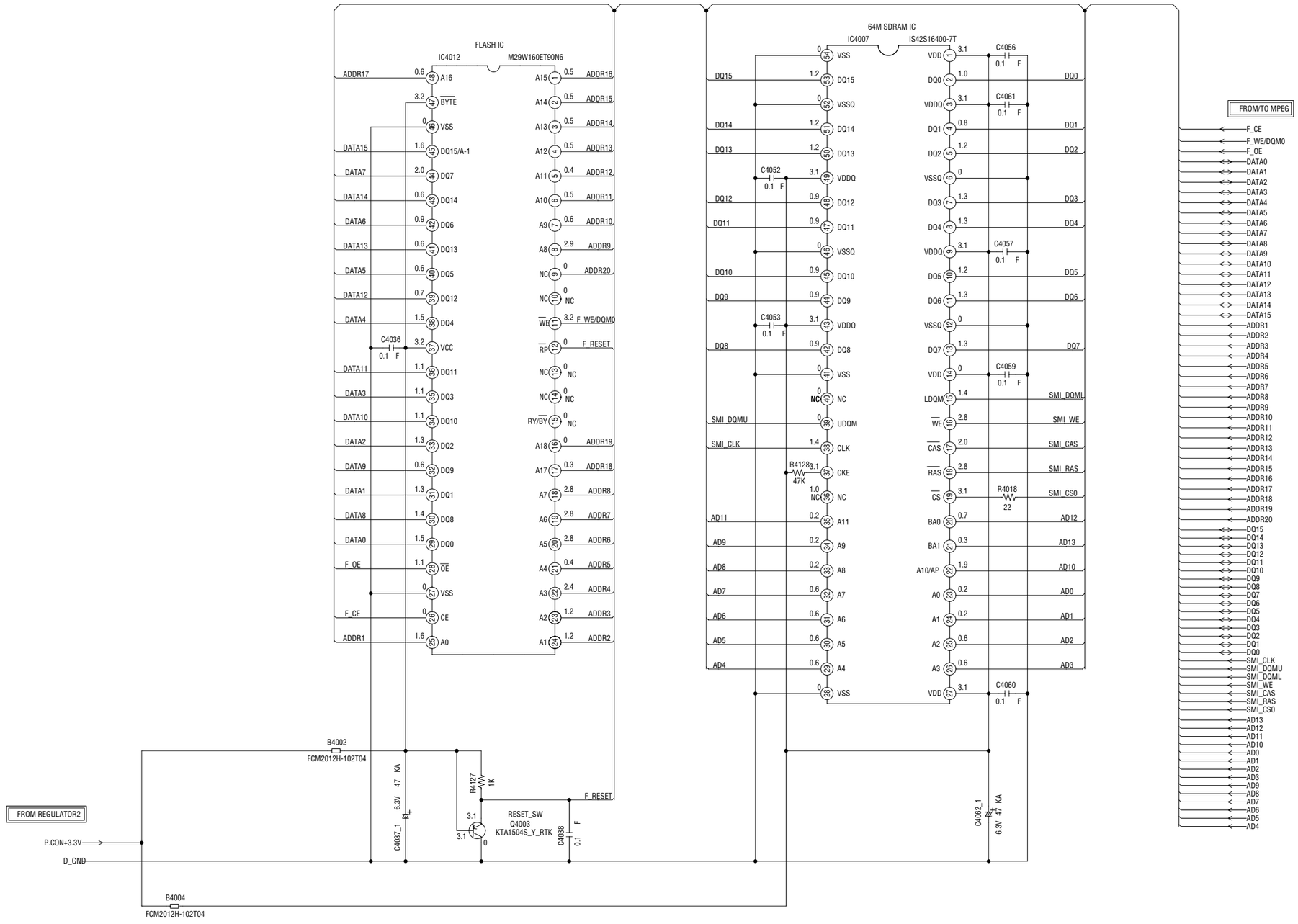
PCB130
VMC303

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

DIGITAL AUDIO SIGNAL(PB)

MEMORY SCHEMATIC DIAGRAM
(DVD PCB)

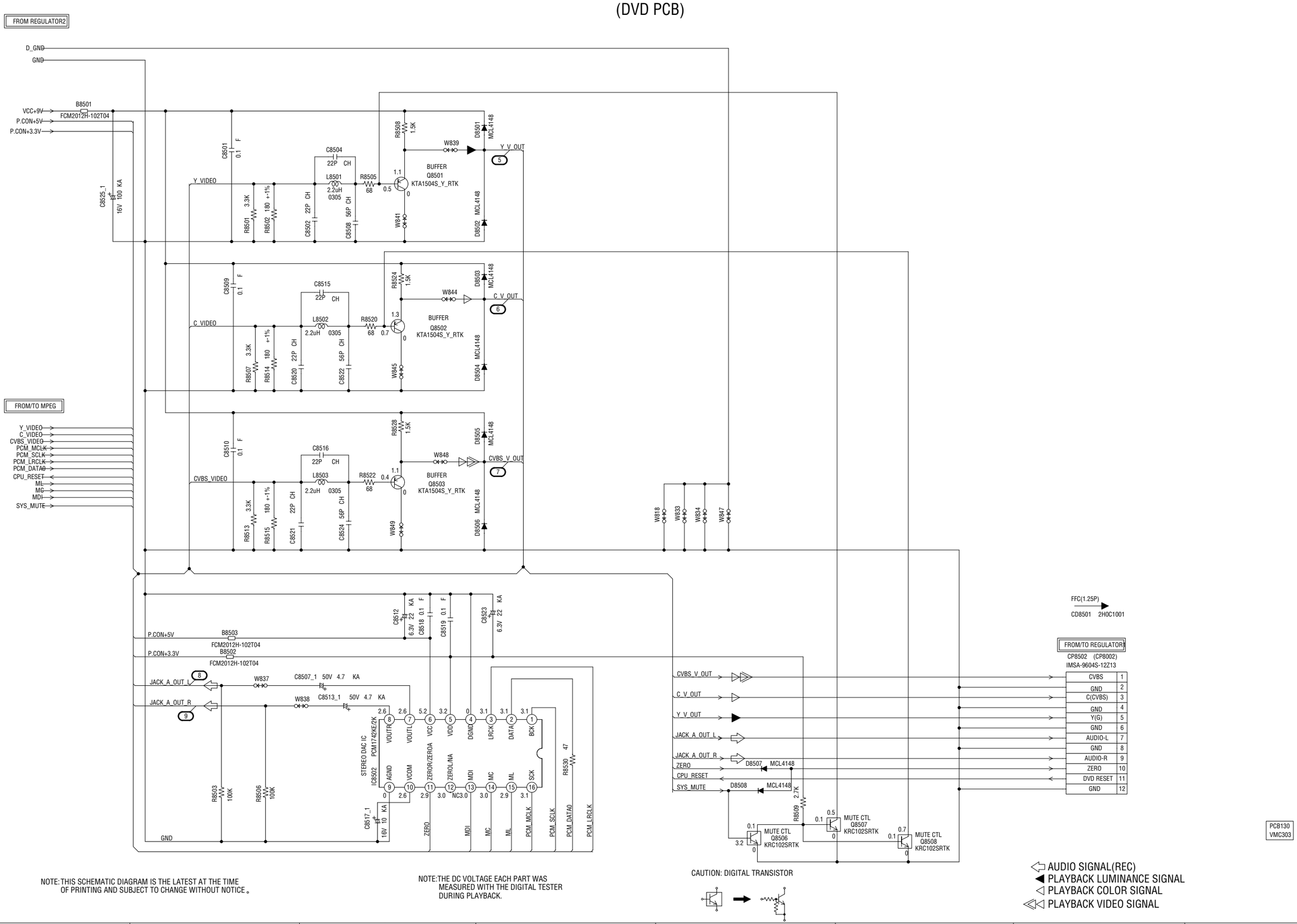


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

AUDIO/VIDEO SCHEMATIC DIAGRAM

(DVD PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

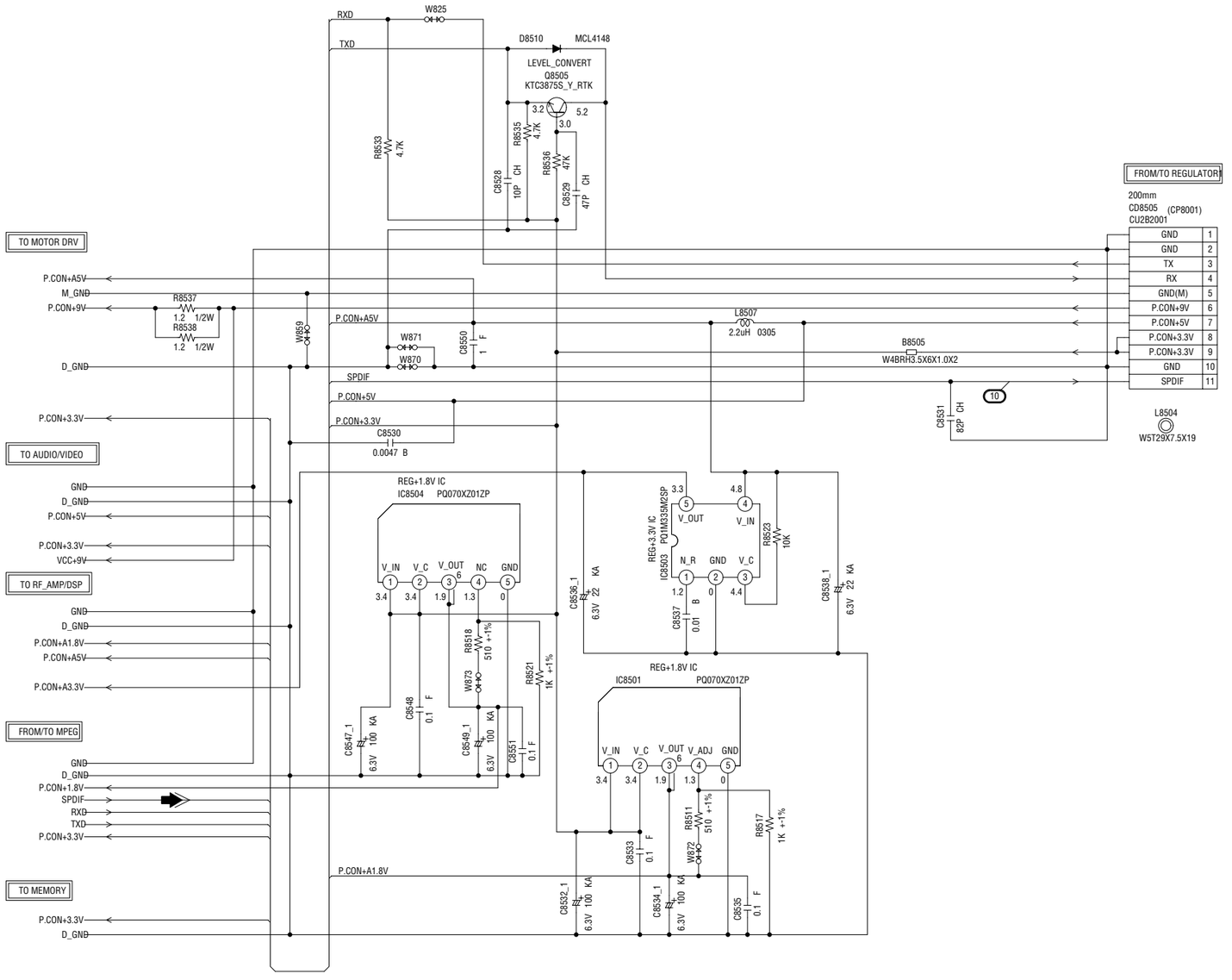
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

AUDIO SIGNAL(REC)
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK VIDEO SIGNAL

REGULATOR2 SCHEMATIC DIAGRAM

(DVD PCB)



PCB130
VMC303

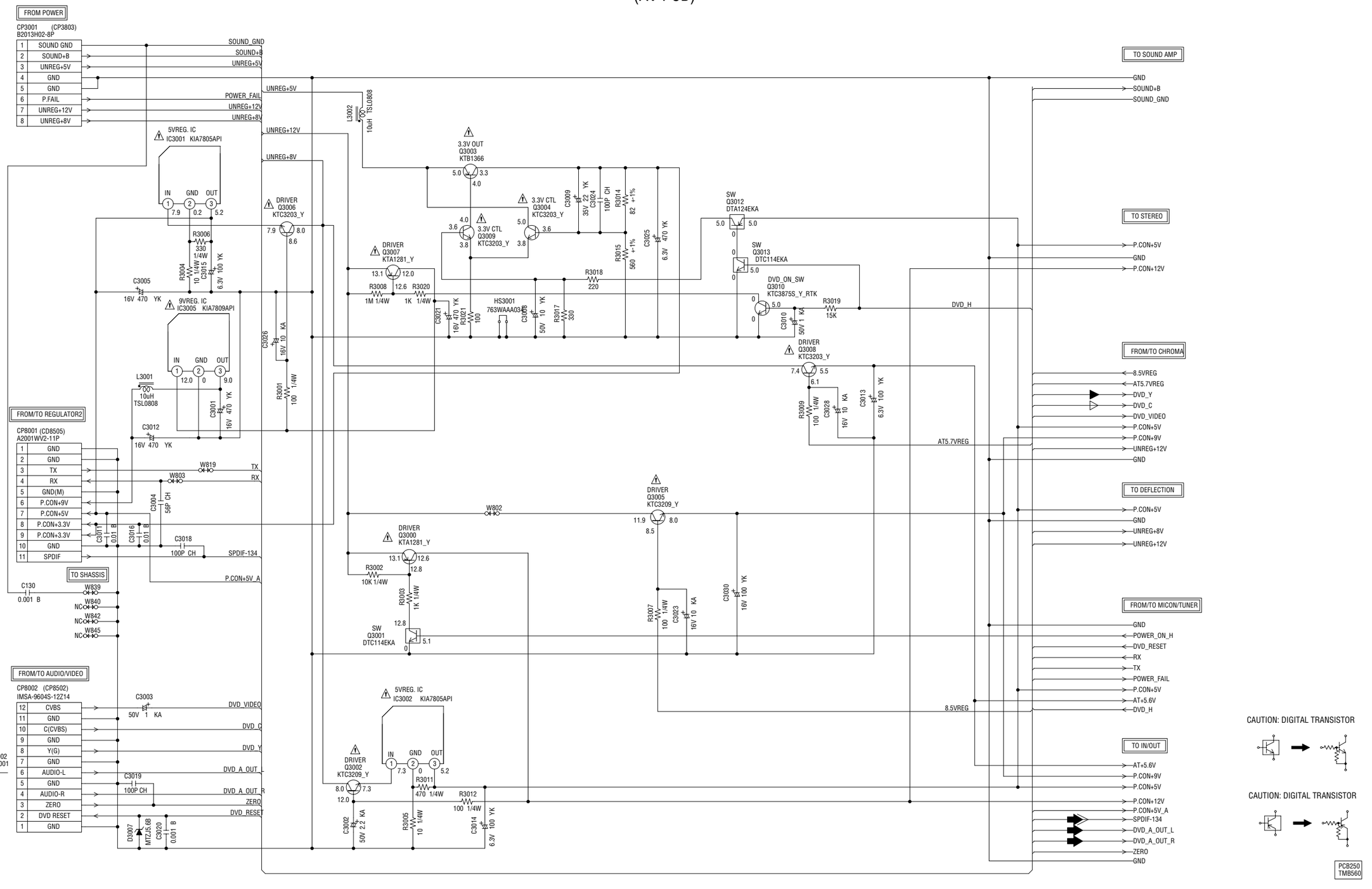
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

DIGITAL AUDIO SIGNAL(PB)

REGULATOR SCHEMATIC DIAGRAM

(AV PCB)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

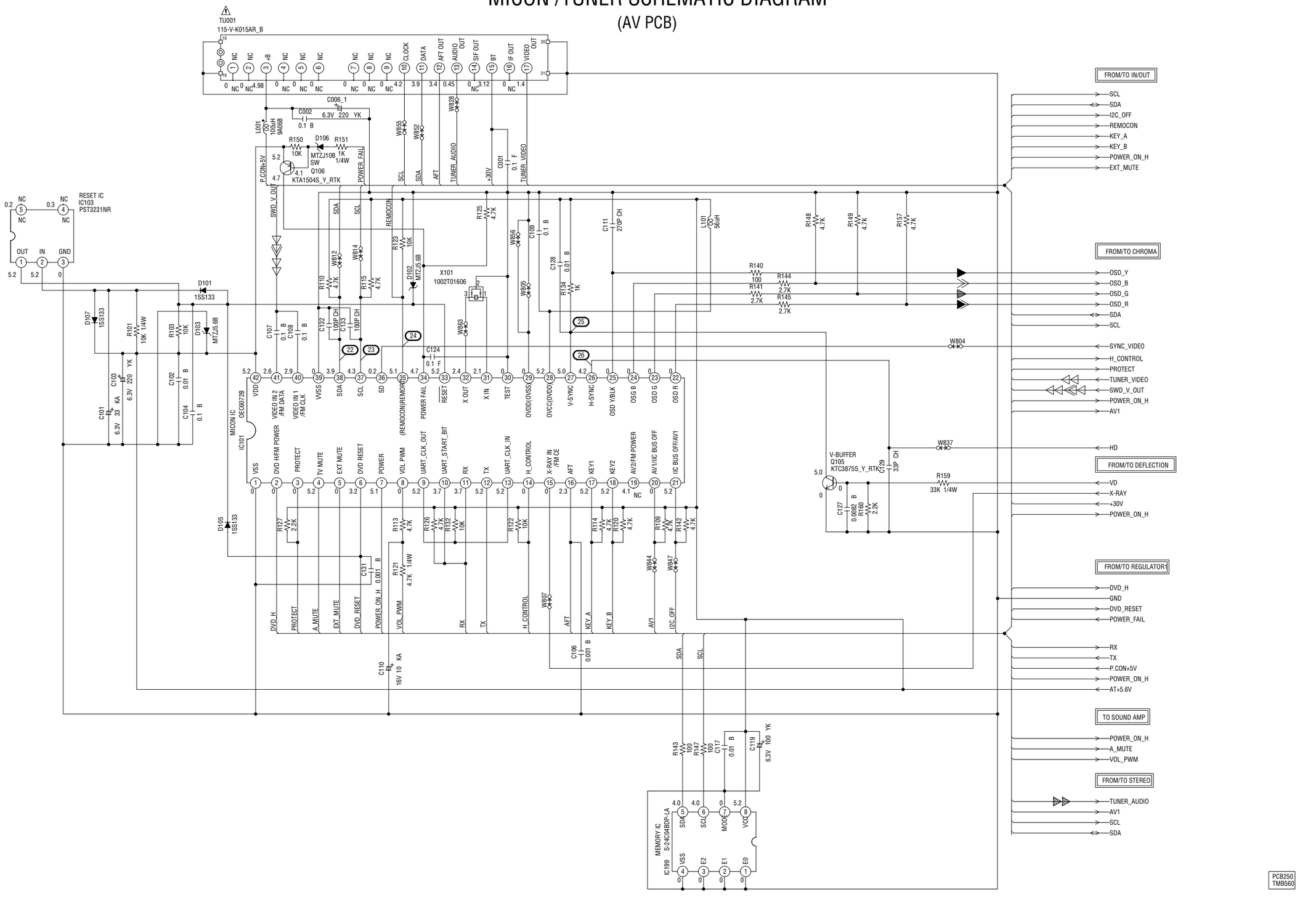
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

DIGITAL AUDIO SIGNAL(PB)
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
AUDIO SIGNAL(PB)

MICON /TUNER SCHEMATIC DIAGRAM

(AV PCB)



CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

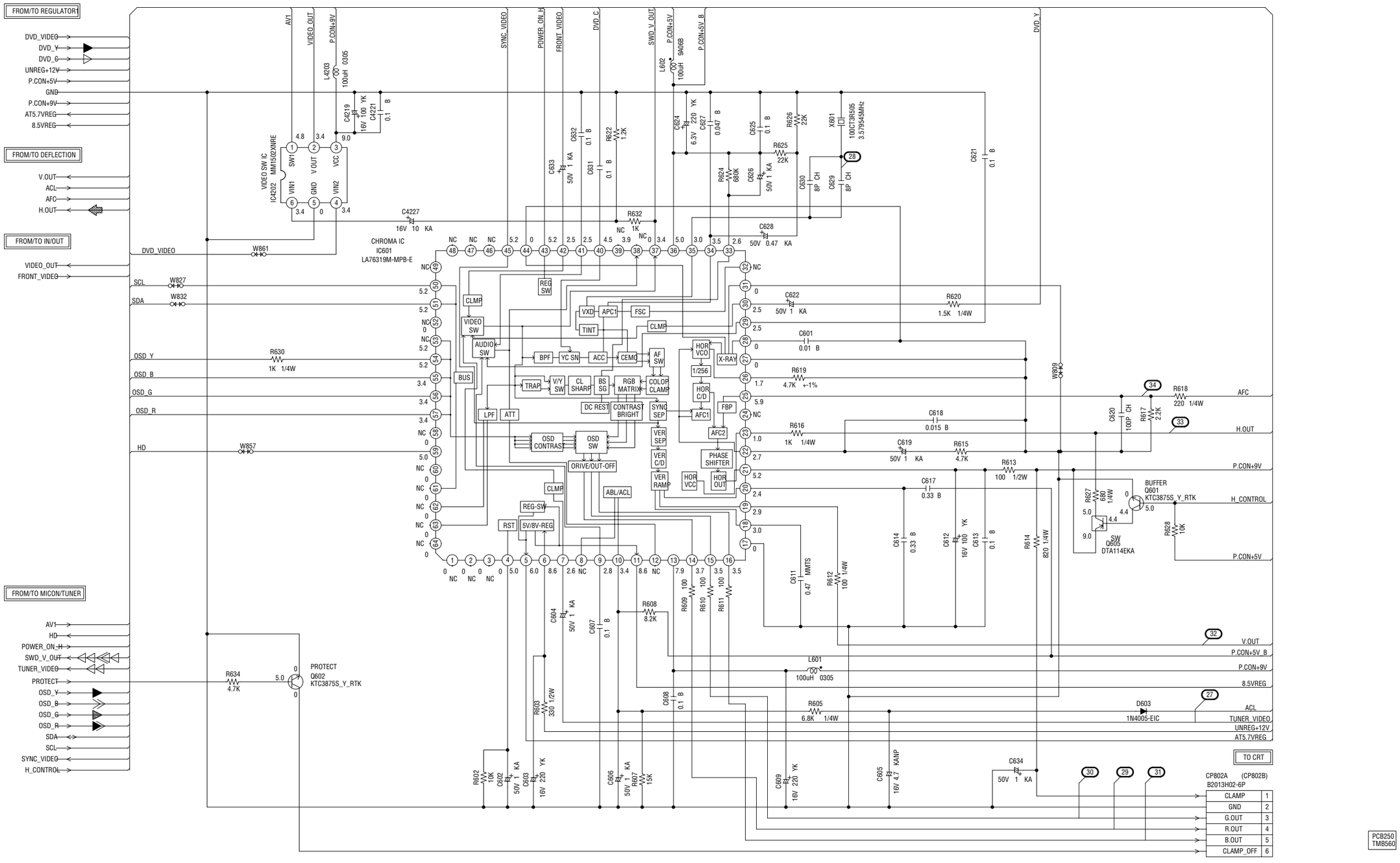
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

◀ PLAYBACK LUMINANCE SIGNAL
◁◁ TUNER VIDEO SIGNAL
◀◁◁ PLAYBACK VIDEO SIGNAL
◀◀◀ TUNER AUDIO SIGNAL

≪ B.SIGNAL
◀◀ G.SIGNAL
◀ R.SIGNAL

CHROMA SCHEMATIC DIAGRAM

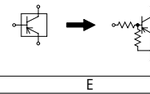
(AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

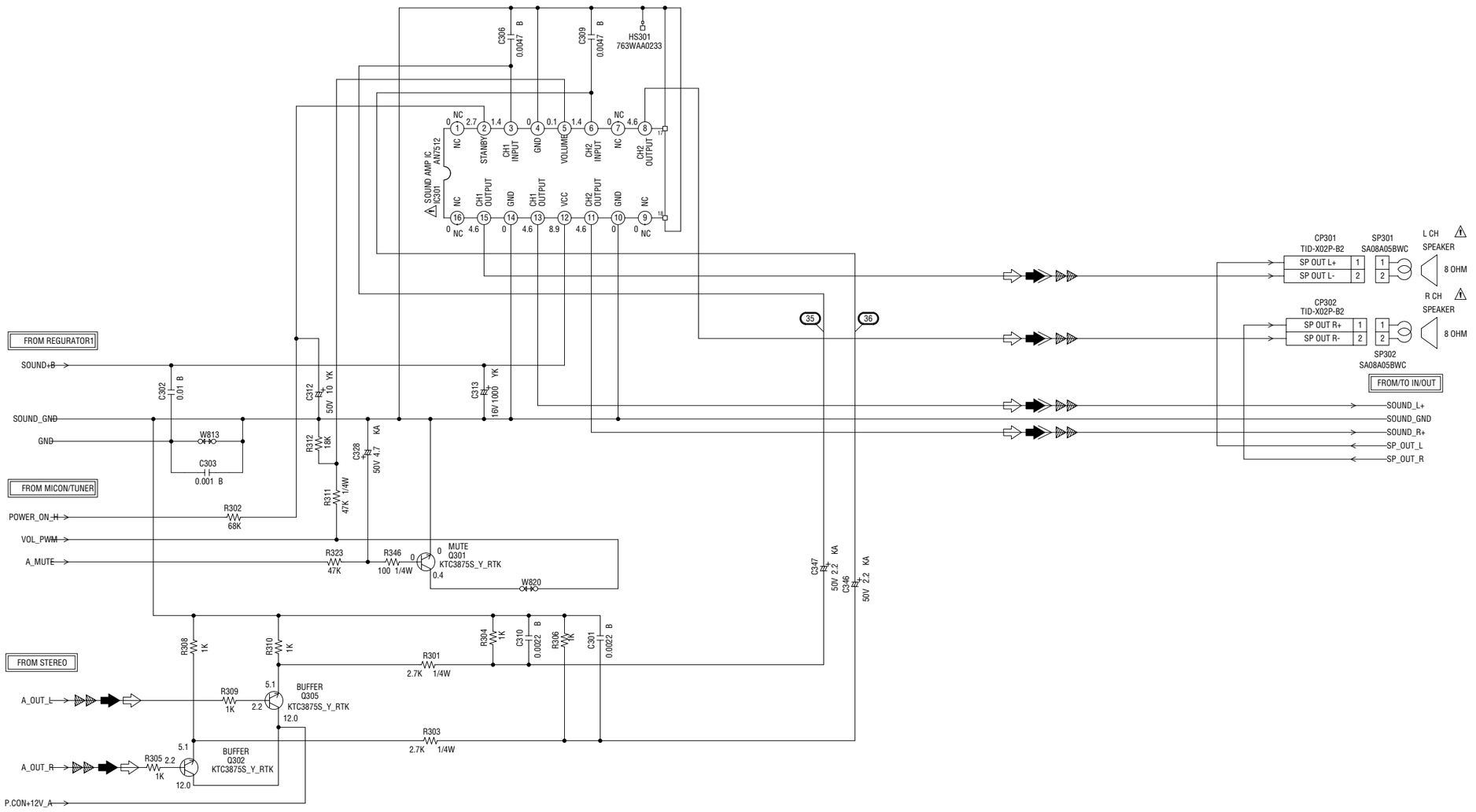


◀ PLAYBACK LUMINANCE SIGNAL
◁ PLAYBACK COLOR SIGNAL
≪ B.SIGNAL
◀ G.SIGNAL
◀ R.SIGNAL

◀ DEFLECTION SIGNAL
◁◁ TUNER VIDEO SIGNAL
◀◁ PLAYBACK VIDEO SIGNAL

SOUND AMP SCHEMATIC DIAGRAM

(AV PCB)



PCB250
TMB560

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

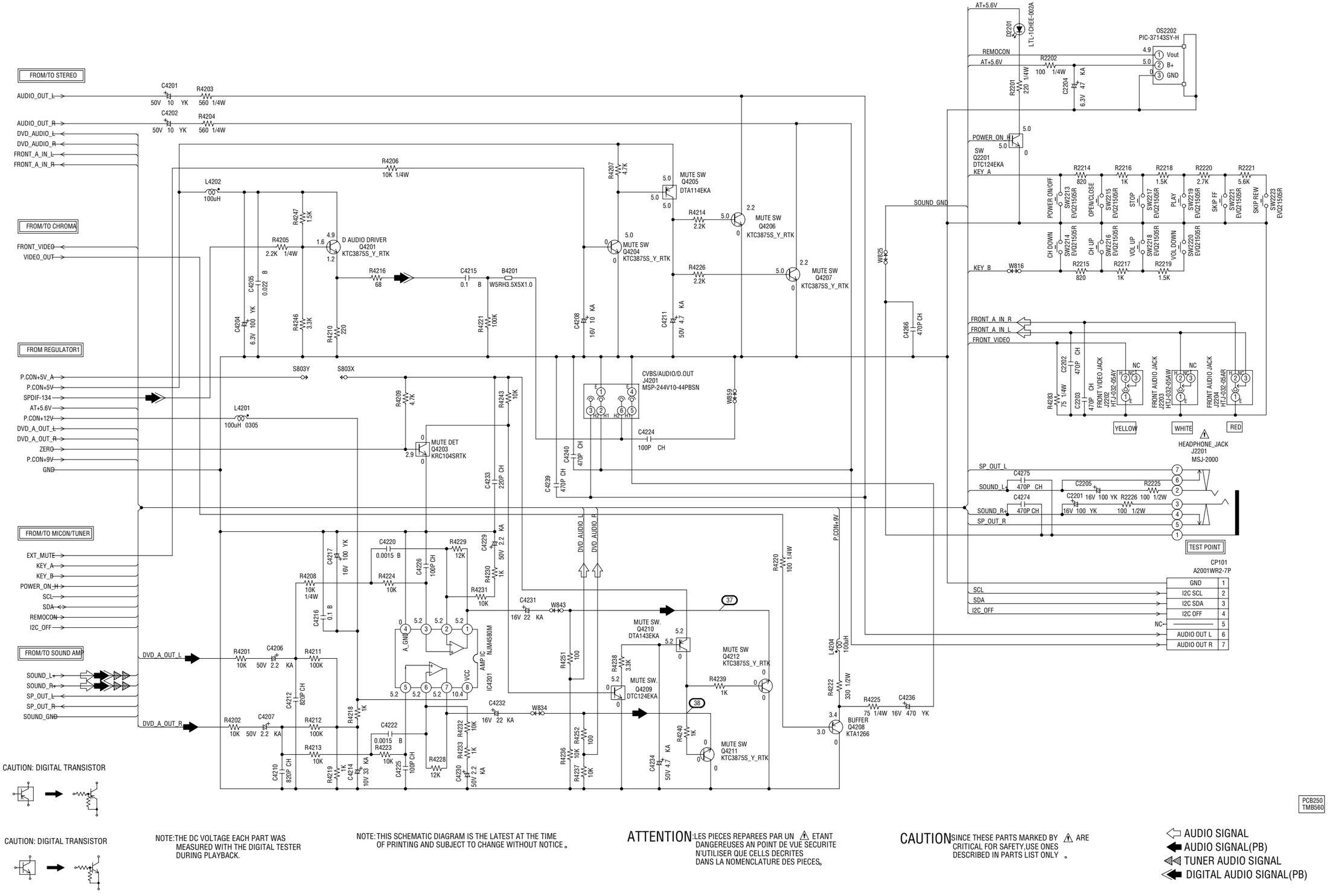
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

- AUDIO SIGNAL
- AUDIO SIGNAL(PB)
- TUNER AUDIO SIGNAL
- DIGITAL AUDIO SIGNAL(PB)

IN/OUT SCHEMATIC DIAGRAM

(AV PCB)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

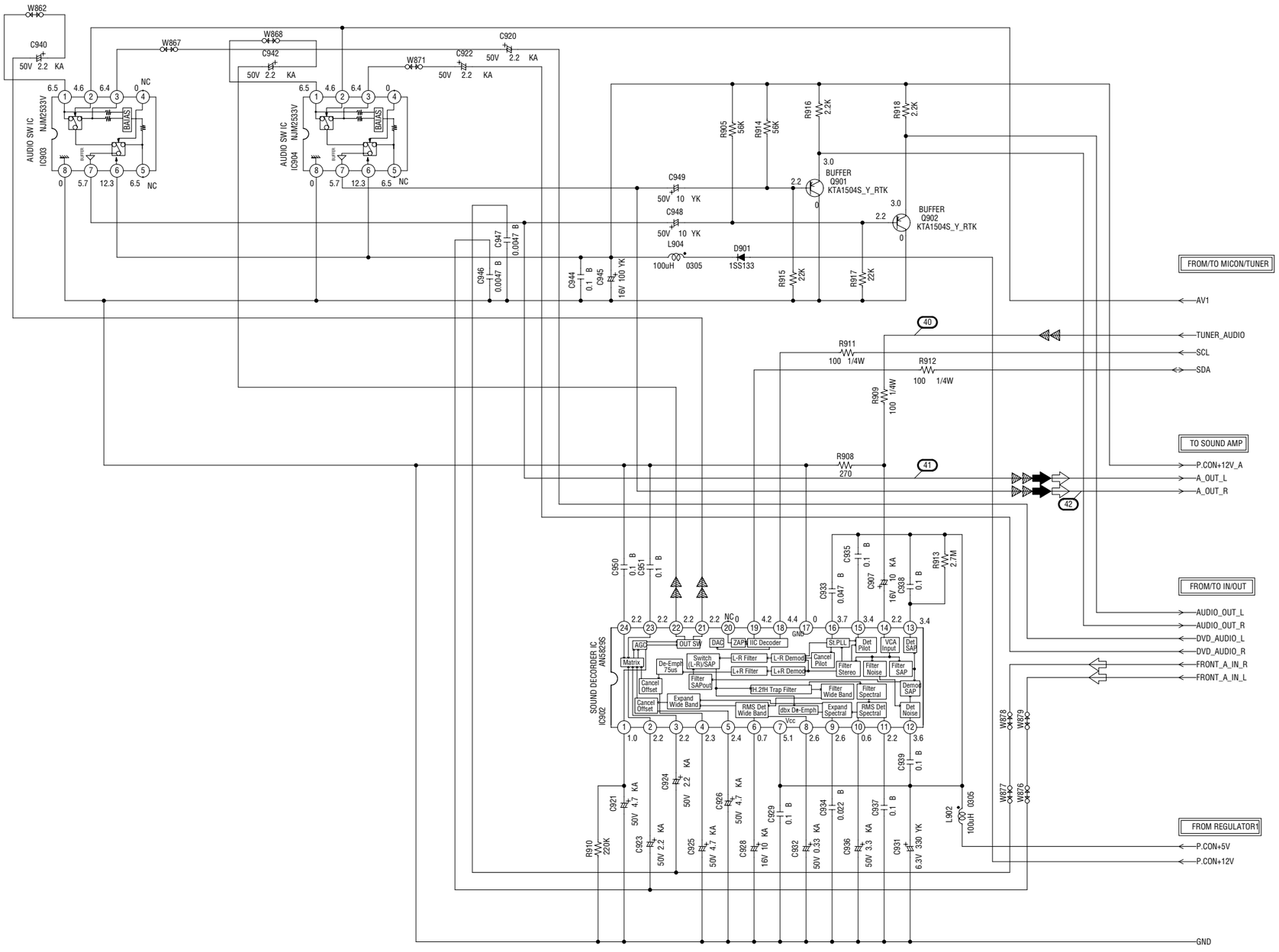
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTIONSINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY 。

STEREO SCHEMATIC DIAGRAM

(AV PCB)

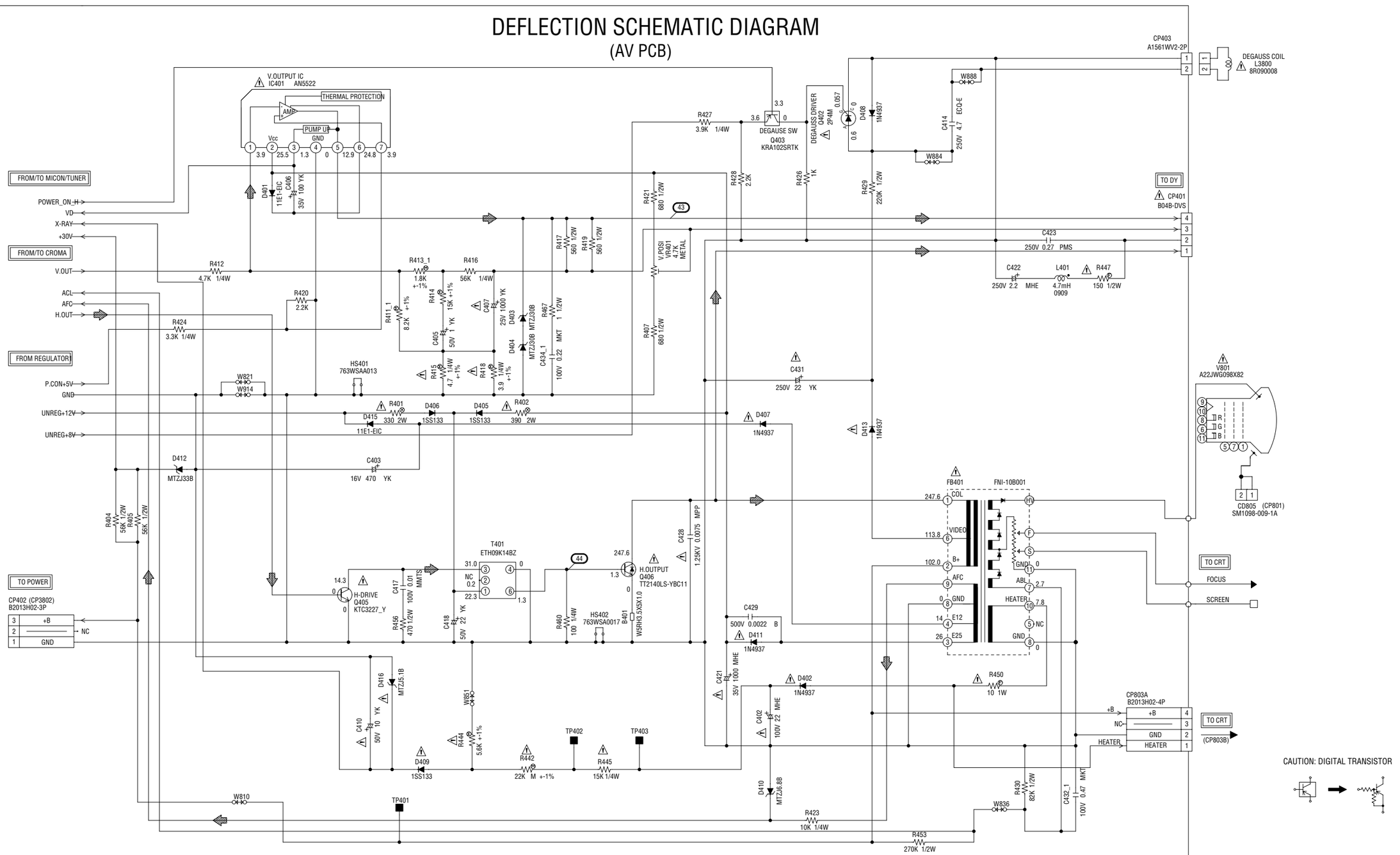


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

TUNER AUDIO SIGNAL
AUDIO SIGNAL(PB)
AUDIO SIGNAL

DEFLECTION SCHEMATIC DIAGRAM
(AV PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

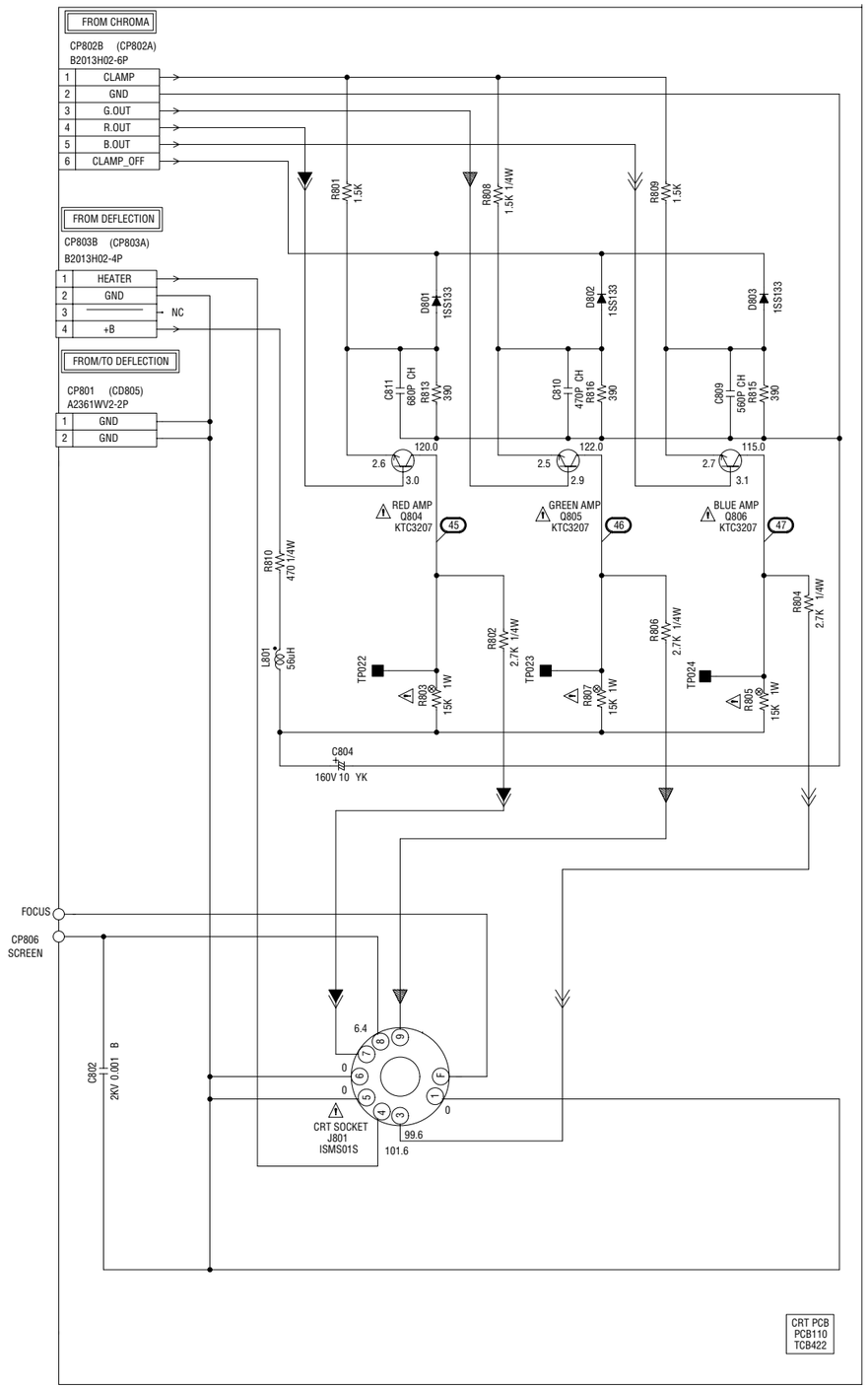
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

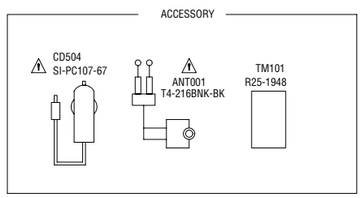
ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CRT SCHEMATIC DIAGRAM

CRT PCB)





PCB250
TMB560

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

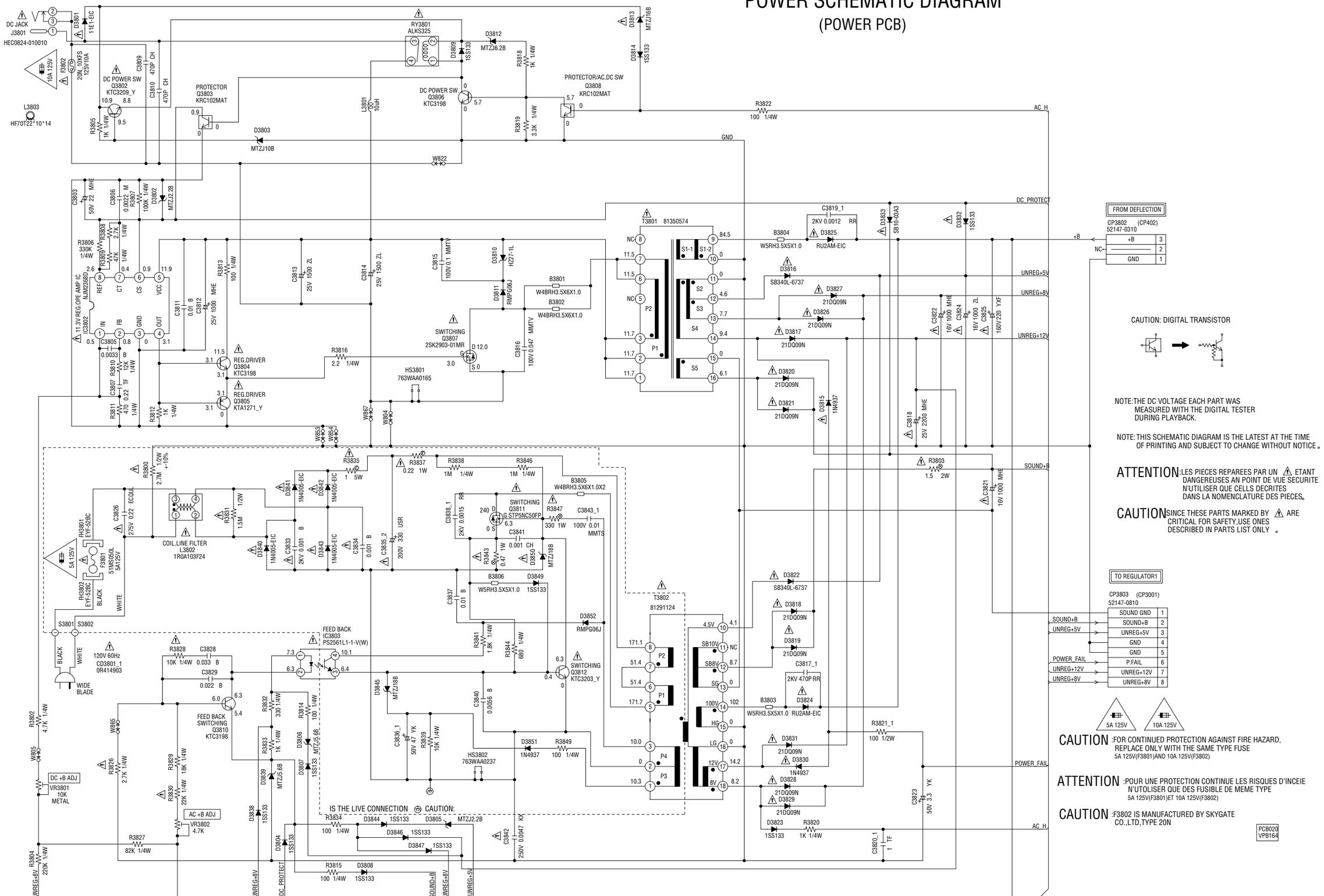
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

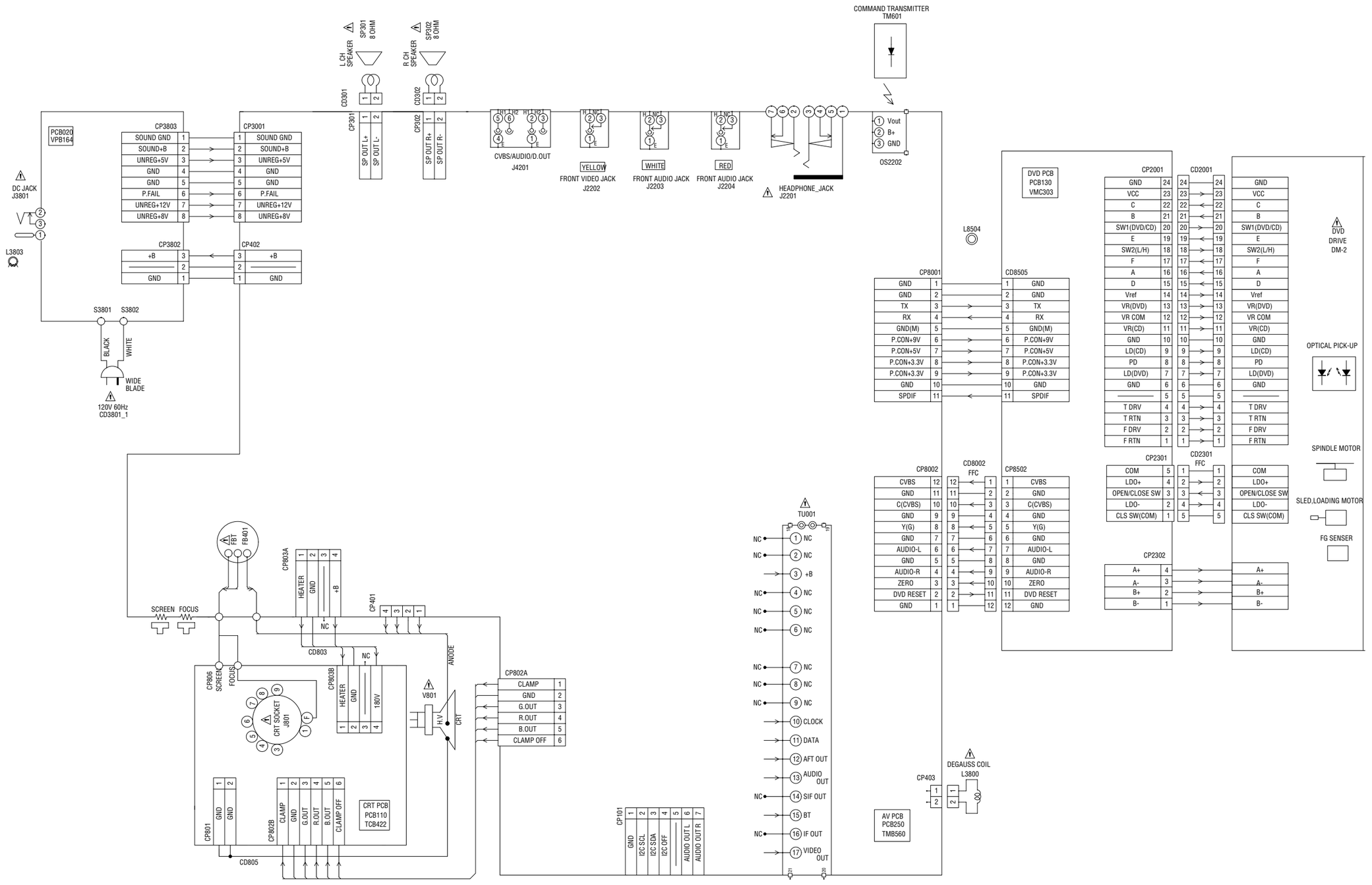
◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL

POWER SCHEMATIC DIAGRAM

(POWER PCB)



INTERCONNECTION DIAGRAM



NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

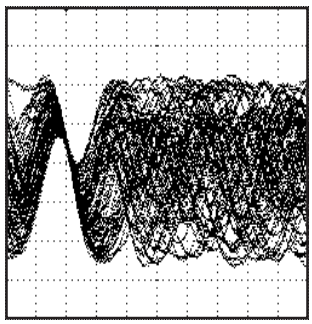
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

WAVEFORMS

RF_AMP/DSP

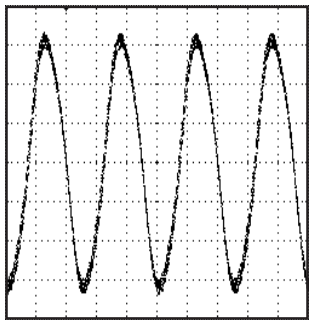
100ns
100mV

①



20ns
200mV

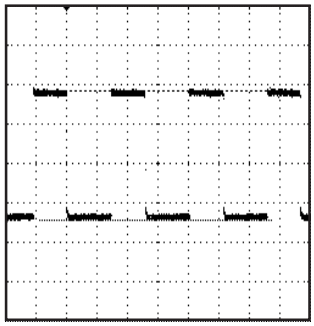
②



MOTOR DRIVE

2ms
1V

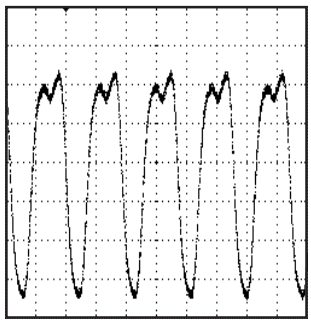
③



MPEG

20ns
500mV

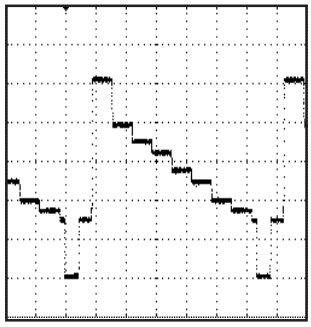
④



AUDIO/VIDEO

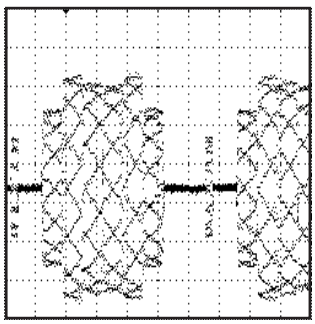
10µs
200mV

⑤



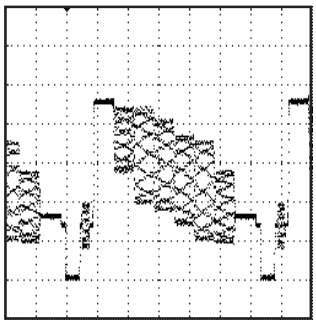
10µs
100mV

⑥



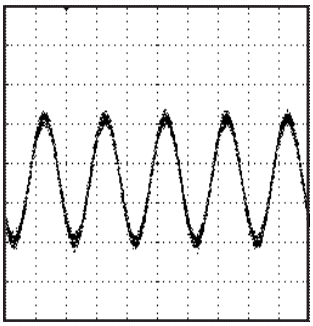
10µs
200mV

⑦



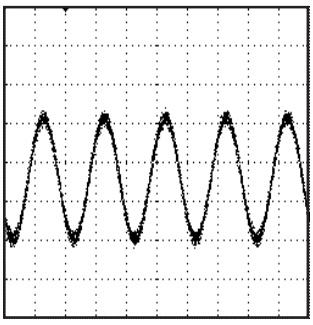
500µs
500mV

⑧



500µs
500mV

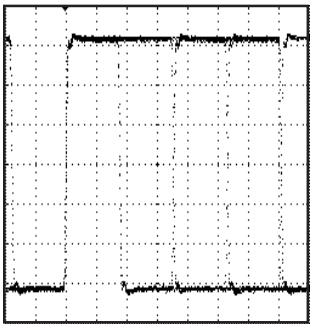
⑨



REGULATOR 2

100ns
500mV

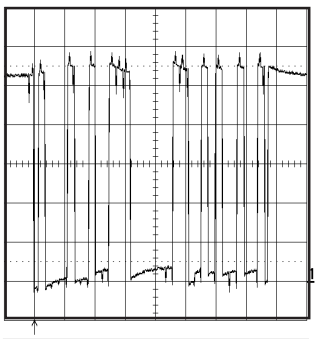
⑩



MICON/TUNER

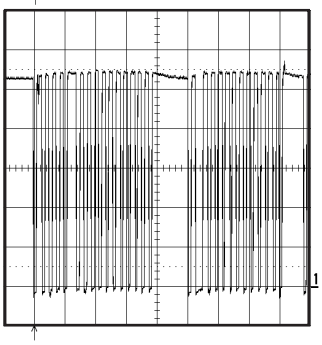
POWER ON
0.2ms
1V

㉒



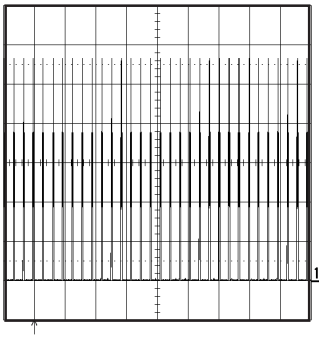
POWER ON
0.2ms
1V

㉓



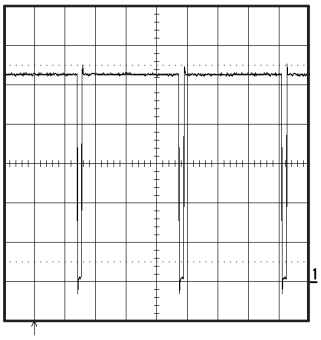
POWER ON
0.2ms
1V

㉔



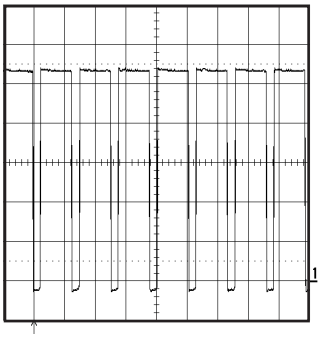
POWER ON
5ms
1V

㉕



POWER ON
50µs
1V

㉖



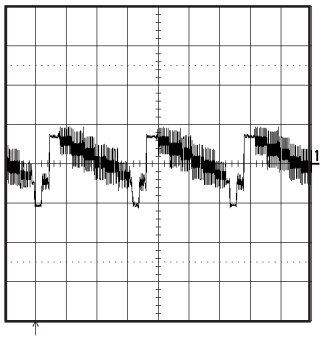
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

CHROMA

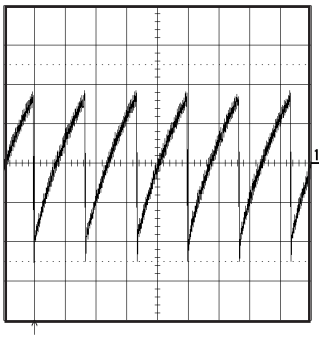
POWER ON
20µs
0.5V

㉗



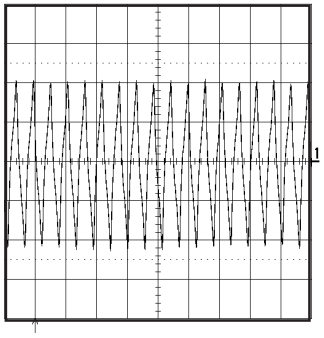
POWER ON
10ms
0.5V

㉜



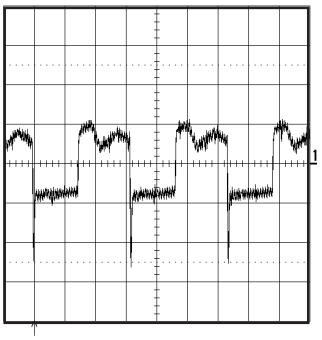
STANDBY
0.5µs
50mV

㉘



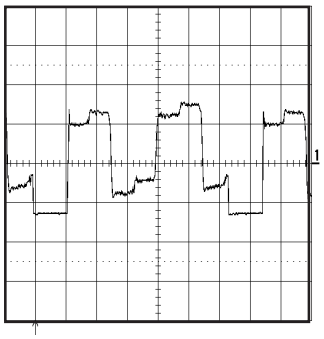
POWER ON
20µs
0.5V

㉝



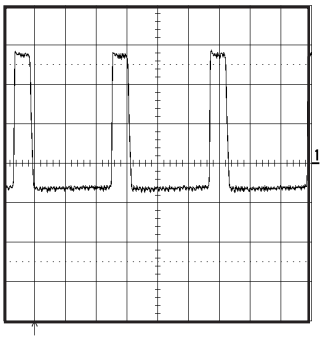
POWER ON
10µs
2V

㉙



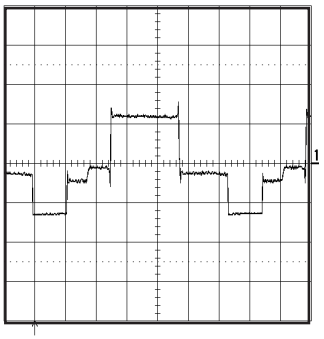
POWER ON
20µs
2V

㉞



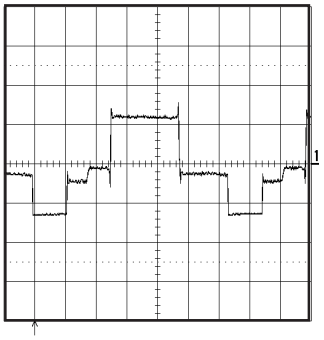
POWER ON
10µs
2V

㉚



POWER ON
10µs
2V

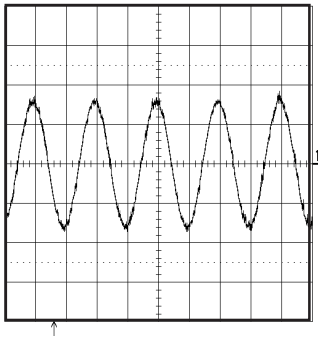
㉛



IN/OUT

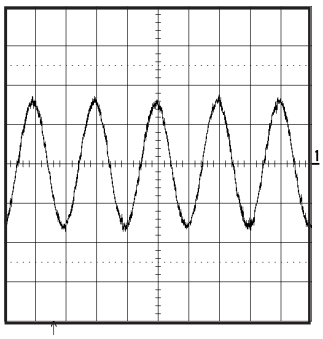
DVD PLAY
0.5ms
200mV

㊲



DVD PLAY
0.5ms
200mV

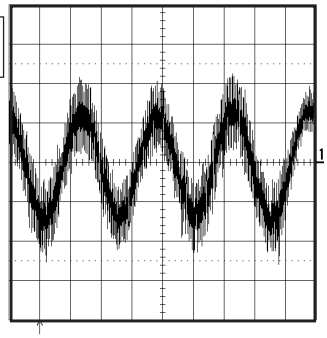
㊳



STEREO

POWER ON
1ms
50mV

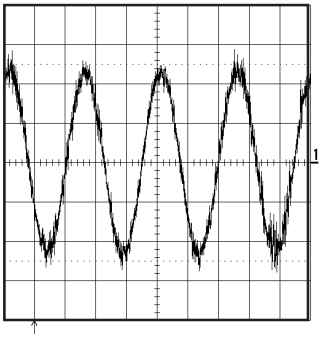
㊵



SOUND AMP

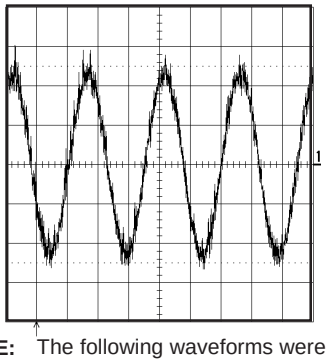
POWER ON
1ms
100mV

㉟



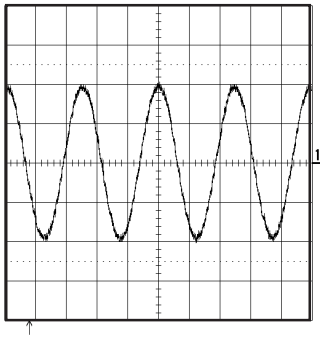
POWER ON
1ms
100mV

㊱



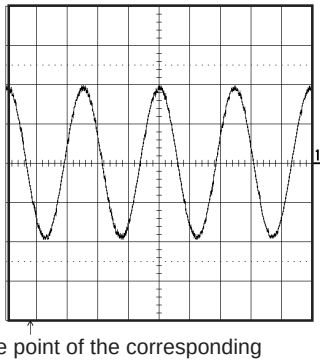
POWER ON
1ms
200mV

㊶



POWER ON
1ms
200mV

㊷



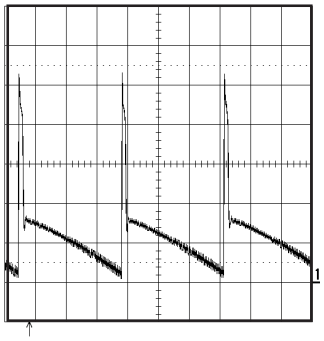
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

DEFLECTION

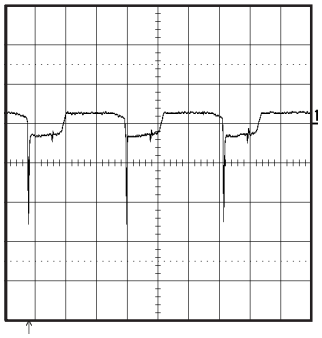
POWER ON
5ms
10V

㊸



POWER ON
20µs
5V

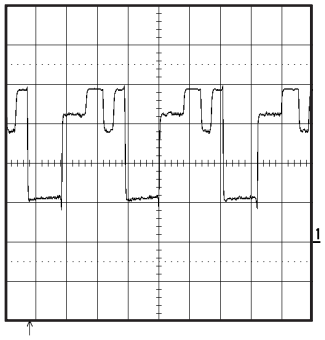
㊹



CRT

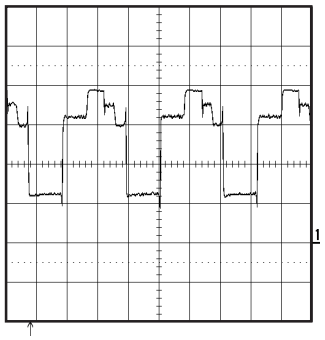
POWER ON
20µs
50V

㊺



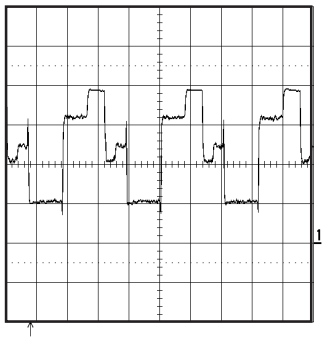
POWER ON
20µs
50V

㊻



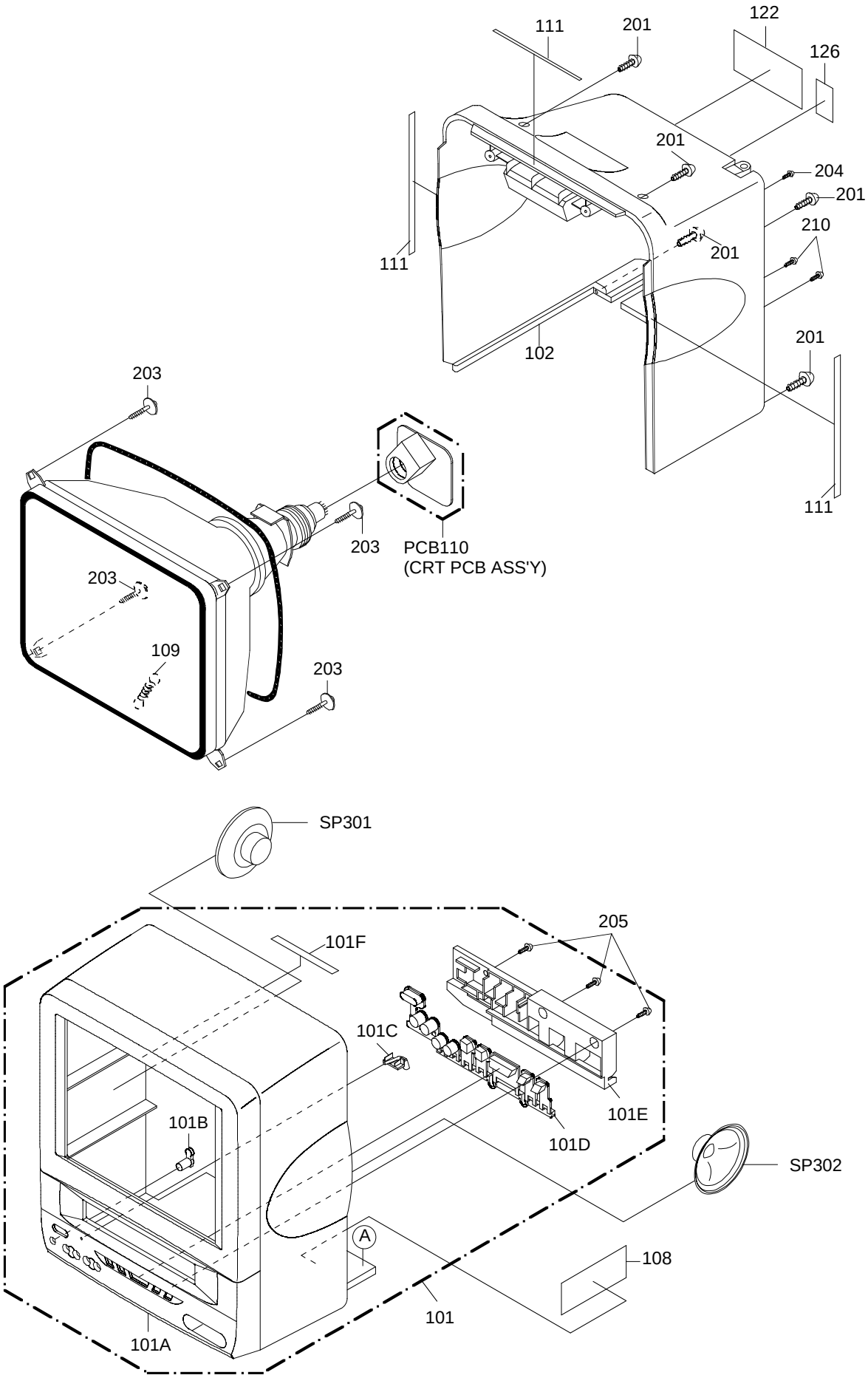
POWER ON
20µs
50V

㊼

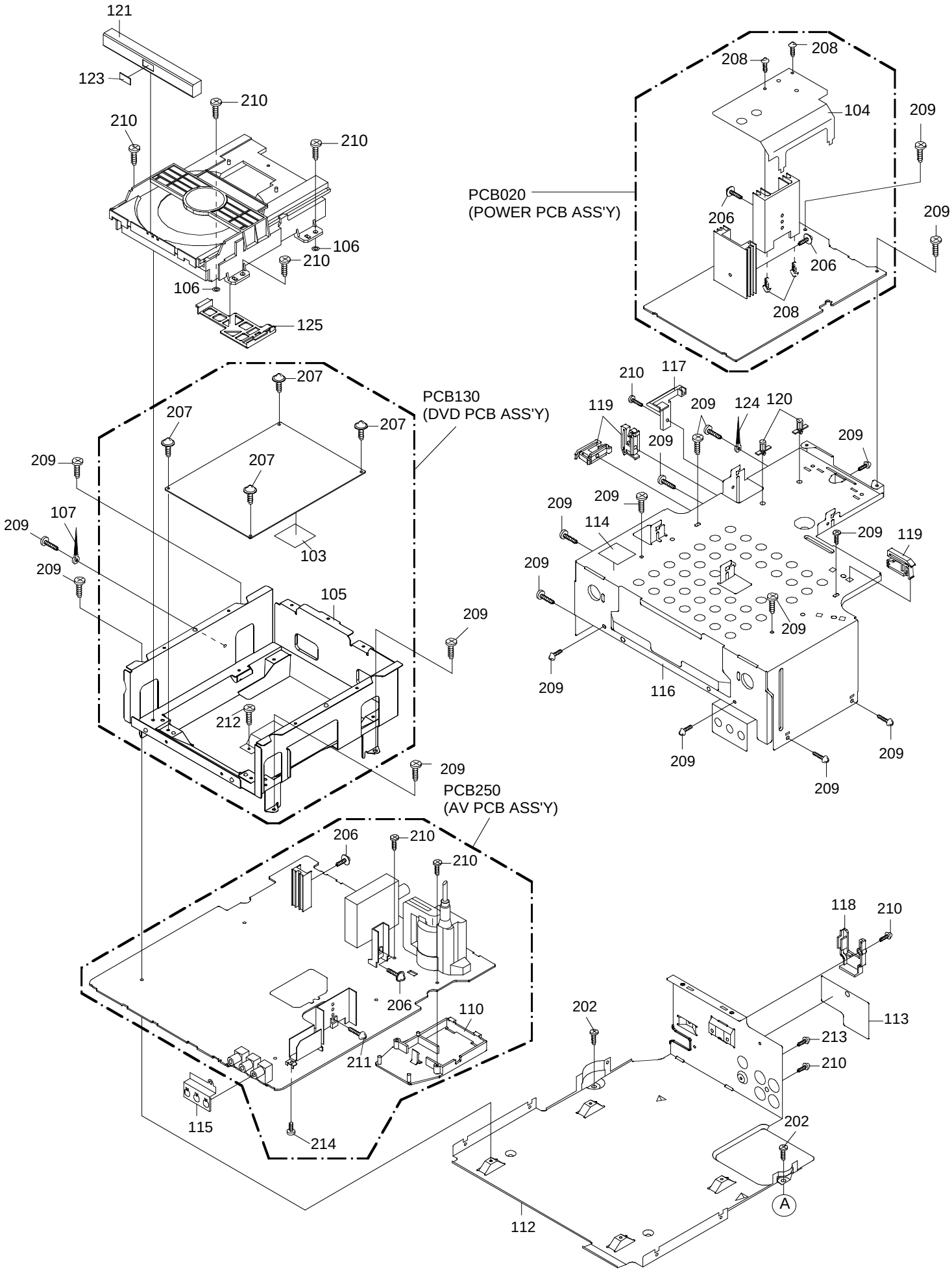


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
101	A5G607I720	CABINET,FRONT ASSY			
101A	701WPJC360	CABINET,FRONT			
101B	713WPA0160	GUIDE,REMOCON			
101C	713WPA0161	GLASS,LED			
101D	735WPBA822	BUTTON,FRAME			
101E	738WPAA010	BUTTON,BASE			
101F	800WQ00056	FELT, SHEET	100x5xT0.3		
102	A5G607I740	CABINET,BACK ASS'Y			or
	702WPAA473	CABINET,BACK			
103	7232020746	SHEET,IC			
104	753WSA0159	SHIELD,TV MAIN PCB			
105	761WSA0115	ANGLE,DECK			
106	800WB0A008	FIBER WASHER			
107	899EFBA001	WIRING CLIP			
108	7260000330	SHEET,CRT SERVICEMAN			
109	741WUA0002	SPRING,EARTH			
110	761WPA0275	HOLDER,FBT			
111	800WQ00045	FELT SHEET	5x150xT0.5		
112	702WSA0172	PLATE,BOTTOM			
113	7230007621	SHEET,JACK			
114	7260000341	SHEET,CAUTION			
115	752WSA0292	SHIELD,AV JACK			
116	752WSA0312	SHIELD,TOP			
117	761WPA0151	HOLDER,M/PCB			
118	761WPA0285	HOLDER,BUSH			
119	774WPA0005	HOLDER,WIRE-2			
120	890PS70100	PUSH SPACER			
121	712WPB0070	PLATE,TRAY-FRONT			
122	722A08A141	SHEET,RATING			
123	7235630001	SHEET,DVD(NEW)			
124	8995034000	CORD CLIP UL CO.			
125	92P100038A	HOLDER FFC			
126	723000C229	LABEL BOOMERANGIT			
201	8117540A64	SCREW,TAPPING(B0)	TRUSS	4x16	
202	8117140804	SCREW,TAPPING(B)	PAN	4x8	
203	8141J40B84	SCREW,TAP TITE(P)	GW15	4x28	
204	8110630A04	SCREW,TAP TITE(P)	BRAZIER	3x10	
205	8110630804	SCREW,TAP TITE(P)	BRAZIER	3x8	
206	8109I30A04	SCREW,TAP TITE(B)	WH7	3x10	
207	8109I30804	SCREW,TAP TITE(B)	WH7	3x8	
208	8109630802	SCREW,TAP TITE(B)	BRAZIER	3x8	
209	8109630604	SCREW,TAP TITE(B)	BRAZIER	3x6	
210	8109230804	SCREW,TAP TITE(B)	BIND	3x8	
211	8107630804	SCREW,TAP TITE(S)	BRAZIER	3x8	
212	8107930604	SCREW,CUP(S)		3x6	
213	8107230404	SCREW,TAP TITE(S)	BIND	3x4	
214	8102120604	SCREW,PAN		M2x6	
---	723000C349	TOTE BAG STICKER			
---	791WHA0023	LAMIFILM BAG			
---	792WHA0299	PACKAGE,TOP			
---	792WHA0300	PACKAGE,BOTTOM			
---	793WCDB863	GIFT BOX			
---	795WCDA007	PAD			
---	J3J81702C	WARRANTY SHEET			
---	J5G60701A	INSTRUCTION BOOK			
---	JA5U0200	POLYBAG,INSTRUCTION			
---	A5G607I975	INSTRUCTION BOOK KIT			

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
⚠ R401	R3X28A331J	R,METAL OXIDE	330 OHM 2W
⚠ R402	R3X28A391J	R.METAL OXIDE	390 OHM 2W
⚠ R415	R4X5T44R7F	R,METAL	4.7 OHM 1/4W
⚠ R418	R4X5T43R9F	R,METAL	3.9 OHM 1/4W
⚠ R442	R4X5T6223F	R,METAL	22K OHM 1/6W
⚠ R444	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠ R445	R002T4153J	RC	15K OHM 1/4W
⚠ R447	R65582151J	R,FUSE	150 OHM 1/2W
⚠ R450	R65581100J	R,FUSE	10 OHM 1W
R803	R3X181153J	R,METAL OXIDE	15K OHM 1W
⚠ R805	R3X181153J	R,METAL OXIDE	15K OHM 1W
R807	R3X181153J	R,METAL OXIDE	15K OHM 1W
⚠ R3800	R0G3K2275K	RC	2.7M OHM 1/2W
⚠ R3803	R3X28A1R5J	R.METAL OXIDE	1.5 OHM 2W
⚠ R3826	R002T4272J	RC	2.7K OHM 1/4W
⚠ R3830	R002T4223J	RC	22K OHM 1/4W
⚠ R3831	R002T2155J	RC	1.5M OHM 1/2W
⚠ R3835	R5Y2CD010J	R,CEMENT	1 OHM 5W
⚠ R3837	R63581R22J	R,FUSE	0.22 OHM 1W
⚠ R3843	R3X181R47J	R,METAL OXIDE	0.47 OHM 1W
⚠ R3847	R3X181331J	R,METAL OXIDE	330 OHM 1W
R8537	R002021R2J	RC	1.2 OHM 1/2W or
	R002T21R2J	RC	1.2 OHM 1/2W
R8538	R002021R2J	RC	1.2 OHM 1/2W or
	R002T21R2J	RC	1.2 OHM 1/2W
		CAPACITORS	
⚠ C402	E5EZT8220M	CE	22 UF 100V
⚠ C407	E02LF3102M	CE	1000 UF 25V
C414	P21503475K	CMP	4.7 UF 250V ECQ-E
⚠ C421	E5EZF4102M	CE	1000 UF 35V
C423	P4J7F3274J	CMPP	0.27 UF 250V PMS
⚠ C428	P4N8FJ752H	CMPP	0.0075UF 1.25KV
⚠ C431	E0ELFD220M	CE	22 UF 250V
C802	C0JBB0713K	CC	0.001 UF 2KV B
C3812	E5EZF3102M	CE	1000 UF 25V
C3813	E62FF3152M	CE	1500 UF 25V
C3814	E62FF3152M	CE	1500 UF 25V
C3817	C0PLRR7Q2K	CC	470 PF 2KV R
⚠ C3818	E5EZF3222M	CE	2200 UF 25V
C3819	C0PLRR7B3K	CC	0.0012 UF 2KV R
⚠ C3821	E5EZT2102M	CE	1000 UF 16V
⚠ C3822	E5EZT2102M	CE	1000 UF 16V
⚠ C3824	E62FF2102M	CE	1000 UF 16V
⚠ C3825	E62NFB221M	CE	220 UF 160V
⚠ C3826	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠ C3833	C0JBB0713K	CC	0.001 UF 2KV B
⚠ C3834	C0JBB0713K	CC	0.001 UF 2KV B
⚠ C3835	E52DGC331M	CE	330 UF 200V
C3838	C0PLRR7E3K	CC	0.0015 UF 2KV R
⚠ C3842	CD39E0MQ3M	CC	0.0047UF 250V
		DIODES	
D101	D1VT001330	DIODE,SILICON	1SS133T-77
D102	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D103	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D105	D1VT001330	DIODE,SILICON	1SS133T-77
D106	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D107	D1VT001330	DIODE,SILICON	1SS133T-77
D401	D2WT011E10	DIODE SILICON	11E1-EIC
⚠ D402	D2WXN49370	DIODE SILICON	1N4937
D403	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D404	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D405	D1VT001330	DIODE,SILICON	1SS133T-77
D406	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D407	D2WXN49370	DIODE SILICON	1N4937
D408	D2WXN49370	DIODE SILICON	1N4937
⚠ D409	D1VT001330	DIODE,SILICON	1SS133T-77
D410	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
⚠ D411	D2WXN49370	DIODE SILICON	1N4937
D412	D97U03301B	DIODE,ZENER	MTZJ33B T-77
⚠ D413	D2WXN49370	DIODE SILICON	1N4937
D415	D2WT011E10	DIODE SILICON	11E1-EIC
⚠ D416	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D603	D2WXN40050	DIODE SILICON	1N4005-EIC
D801	D1VT001330	DIODE,SILICON	1SS133T-77
D802	D1VT001330	DIODE,SILICON	1SS133T-77
D803	D1VT001330	DIODE,SILICON	1SS133T-77
D901	D1VT001330	DIODE,SILICON	1SS133T-77

REF. NO.	PART NO.	DESCRIPTION	
		DIODES	
D2001	DDARDS1210	DIODE SILICON	KDS121RTK
D2002	DDARDS1200	DIODE SILICON	KDS120RTK
D2201	0021E2Q140	LED	LTL-1CHEE-002A
D3007	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D3801	D2WT011E10	DIODE SILICON	11E1-EIC
D3802	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D3803	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D3804	D1VT001330	DIODE,SILICON	1SS133T-77
D3805	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D3806	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D3807	D1VT001330	DIODE,SILICON	1SS133T-77
D3808	D1VT001330	DIODE,SILICON	1SS133T-77
D3809	D1VT001330	DIODE,SILICON	1SS133T-77
D3810	D94TA27011	DIODE ZENER	HZ27-1L TD
D3811	D2LTPG06J0	DIODE SILICON	RMPG06J-G3
D3812	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D3813	D97U01601B	DIODE ZENER	MTZJ16B T-77
D3814	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D3815	D2WXN49370	DIODE SILICON	1N4937
⚠ D3816	D2LKB340L0	DIODE SCHOTTKY	SB340L-6737
⚠ D3817	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3818	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3819	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3820	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3821	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3822	D2LKB340L0	DIODE SCHOTTKY	SB340L-6737
D3823	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D3824	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
⚠ D3825	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
⚠ D3826	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3827	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3828	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3829	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D3830	D2WXN49370	DIODE SILICON	1N4937
⚠ D3831	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D3832	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D3833	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D3838	D1VT001330	DIODE,SILICON	1SS133T-77
D3839	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠ D3840	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D3841	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D3842	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D3843	D2WXN40050	DIODE SILICON	1N4005-EIC
D3844	D1VT001330	DIODE,SILICON	1SS133T-77
D3845	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D3846	D1VT001330	DIODE,SILICON	1SS133T-77
D3847	D1VT001330	DIODE,SILICON	1SS133T-77
D3849	D1VT001330	DIODE,SILICON	1SS133T-77
D3850	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D3851	D2WXN49370	DIODE SILICON	1N4937
D3852	D2LTPG06J0	DIODE SILICON	RMPG06J-G3
D8501	DDDRL41480	DIODE SILICON	MCL4148
D8502	DDDRL41480	DIODE SILICON	MCL4148
D8503	DDDRL41480	DIODE SILICON	MCL4148
D8504	DDDRL41480	DIODE SILICON	MCL4148
D8505	DDDRL41480	DIODE SILICON	MCL4148
D8506	DDDRL41480	DIODE SILICON	MCL4148
D8507	DDDRL41480	DIODE SILICON	MCL4148
D8508	DDDRL41480	DIODE SILICON	MCL4148
D8510	DDDRL41480	DIODE SILICON	MCL4148
		ICS	
IC101	I55D06072B	IC	OEC6072B
IC103	I9UF032310	IC	PST3231NR
IC199	A5G607I255	IC	S-24C04BDP-LA
⚠ IC301	I0FDP75120	IC	AN7512
⚠ IC401	I01TD55220	IC	AN5522
IC601	I03FC63190	IC	LA76319M-MPB-E
IC902	I01FF58290	IC	AN5829S
IC903	I0QF02533V	IC	NJM2533V(TE2)
IC904	I0QF02533V	IC	NJM2533V(TE2)
IC2001	I5PKL63160	IC	STM6316ATXXZ
IC2301	I06F030180	IC	M63018FP
IC2304	I07E00358F	IC	BA10358F-E2
IC2305	I0GF9XZ010	IC	PQ070XZ01ZP
⚠ IC3001	I1KA97805A	IC	KIA7805API
⚠ IC3002	I1KA97805A	IC	KIA7805API
⚠ IC3005	I1KA97809A	IC	KIA7809API

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
ICS			
⚠ IC3802	I0QD023680	IC	NJM2368D
⚠ IC3803	000220001W	PHOTO COUPLER	PS2561L1-1-V(W)
IC4002	I5PK055890	IC	STM5589AVA
IC4003	I5CF0CU040	IC	SN74AHCU04PWR
IC4007	IF8J064007	IC	IS42S16400-7T
IC4012	I5PJ060ET9	IC	M29W160ET90N6
IC4201	I0QF045800	IC	NJM4580M
IC4202	I0UF015020	IC	MM1502XNRE
IC8501	I0GF9XZ010	IC	PQ070XZ01ZP
IC8502	I17F0742K0	IC	PCM1742KE/2K
IC8503	I0GF9M3350	IC	PQ1M335M2SP
IC8504	I0GF9XZ010	IC	PQ070XZ01ZP
TRANSISTORS			
Q105	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q106	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q301	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q302	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q305	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
⚠ Q402	TF2002P4M0	THYRISTOR	2P4M
Q403	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
⚠ Q405	TCAT03227Y	TRANSISTOR SILICON	KTC3227_Y-AT
⚠ Q406	TD3Q021400	TRANSISTOR SILICON	TT2140LS-YBC11
Q601	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q602	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q605	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
⚠ Q804	TCAT032070	TRANSISTOR SILICON	KTC3207-AT
⚠ Q805	TCAT032070	TRANSISTOR SILICON	KTC3207-AT
⚠ Q806	TCAT032070	TRANSISTOR SILICON	KTC3207-AT
Q901	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q902	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q2001	T67J1036K0	TRANSISTOR SILICON	2SA1036KT146
Q2002	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q2003	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2004	T27T030180	FET	2SK3018
Q2005	T27T030180	FET	2SK3018
Q2006	T67J1036K0	TRANSISTOR SILICON	2SA1036KT146
Q2007	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2008	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2201	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
⚠ Q3000	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q3001	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q3002	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
⚠ Q3003	TBA0013660	TRANSISTOR SILICON	KTB1366(O,Y)
⚠ Q3004	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
⚠ Q3005	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
⚠ Q3006	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q3007	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
⚠ Q3008	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q3009	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q3010	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3012	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q3013	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
⚠ Q3802	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
Q3803	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
⚠ Q3804	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠ Q3805	TAAT012714	TRANSISTOR, SILICON	KTA1271_Y-AT
Q3806	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠ Q3807	T410029030	FET	2SK2903-01MR
Q3808	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
Q3810	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠ Q3811	TJXG5NC500	FET	STP5NC50FP
⚠ Q3812	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4001	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4002	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4003	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4201	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4203	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK
Q4204	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4205	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
Q4206	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4207	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4208	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q4209	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q4210	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146
Q4211	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4212	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q8501	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK

REF. NO.	PART NO.	DESCRIPTION	
TRANSISTORS			
Q8502	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q8503	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q8505	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q8506	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q8507	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q8508	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
COILS &TRANSFORMERS			
L001	021375101K	COIL	100 UH
L101	0216A6560K	COIL	56 UH
L401	021679472K	COIL	4.7 MH
L601	02167F101J	COIL	100 UH
L602	021375101K	COIL	100 UH
L801	021673560K	COIL	56 UH
L902	02167F101J	COIL	100 UH
L904	02167F101J	COIL	100 UH
L2001	0216S4100J	COIL	10 UH
L2002	0216S4100J	COIL	10 UH
L2004	02167F2R7J	COIL	2.7 UH
L3001	02167E100K	COIL	10 UH
L3002	02167E100K	COIL	10 UH
⚠ L3800	028R090008	COIL,DEGAUSS	8R090008
L3801	021767100K	COIL	10 UH
⚠ L3802	029T000092	COIL,LINE FILTER	1R0A103F24
L3803	02A6B2E0A1	CORE,FERRITE	HF70T22*10*14
L4001	02167F220J	COIL	22 UH
L4002	02167F220J	COIL	22 UH
L4003	02167F220J	COIL	22 UH
L4004	02167F220J	COIL	22 UH
L4201	02167F101J	COIL	100 UH
L4202	02167F101J	COIL	100 UH
L4203	02167F101J	COIL	100 UH
L4204	021673101K	COIL	100 UH
L8501	02167F2R2J	COIL	2.2 UH
L8502	02167F2R2J	COIL	2.2 UH
L8503	02167F2R2J	COIL	2.2 UH
L8504	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L8507	02167F2R2J	COIL	2.2 UH
T401	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠ T3801	0481350574	TRANSFORMER,SWITCHING	81350574
⚠ T3802	0481291124	TRANSFORMER,SWITCHING	81291124
JACKS			
⚠ J801	066F120018	SOCKET,CATHODE RAY TUBE	ISMS01S
⚠ J2201	060J131015	HEADPHONE JACK	MSJ-2000
J2202	060G421016	RCA JACK	HTJ-032-05AY
J2203	060G421017	RCA JACK	HTJ-032-05AW
J2204	060G421020	RCA JACK	HTJ-032-05AR
⚠ J3801	0602602006	JACK DC	HEC0824-010010
J4201	060J411025	RCA JACK	MSP-244V10-44PBSN
SWITCHES			
SW2213	0504101T34	SWITCH,TACT	EVQ21505R
SW2214	0504101T34	SWITCH,TACT	EVQ21505R
SW2215	0504101T34	SWITCH,TACT	EVQ21505R
SW2216	0504101T34	SWITCH,TACT	EVQ21505R
SW2217	0504101T34	SWITCH,TACT	EVQ21505R
SW2218	0504101T34	SWITCH,TACT	EVQ21505R
SW2219	0504101T34	SWITCH,TACT	EVQ21505R
SW2220	0504101T34	SWITCH,TACT	EVQ21505R
SW2221	0504101T34	SWITCH,TACT	EVQ21505R
SW2223	0504101T34	SWITCH,TACT	EVQ21505R
VARIABLE RESISTORS			
VR401	V1K63Q3BTE	VOLUME,SEMI FIXED	NVG6TLTAB472
VR3801	V1K6314BTE	VOLUME,SEMI FIXED	NVG6TLTAB103
VR3802	V1163Q3BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ3
P.C.BOARD ASSEMBLIES			
PCB020	A5G607I020	PCB ASS'Y	VPB164A
PCB110	A5G607I110	PCB ASS'Y	TCB422A
PCB130	A5G607I130	PCB ASS'Y	VMC303A
PCB250	A5G607I250	PCB ASS'Y	TMB560A
MISCELLANEOUS			
ANT001	125C108027	ANTENNA ROD	T4-216BNK-BK
B401	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B2001	024HC31022	CORE,BEADS	FCM2012H-102T04
B2002	024HC31022	CORE,BEADS	FCM2012H-102T04
B2003	024HC31022	CORE,BEADS	FCM2012H-102T04
B2004	024HC31022	CORE,BEADS	FCM2012H-102T04
B2005	024HC31022	CORE,BEADS	FCM2012H-102T04
B2301	024HC31022	CORE,BEADS	FCM2012H-102T04

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
B3801	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3802	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3803	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3804	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3805	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B3806	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B4002	024HC31022	CORE,BEADS	FCM2012H-102T04
B4004	024HC31022	CORE,BEADS	FCM2012H-102T04
B4201	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B8501	024HC31022	CORE,BEADS	FCM2012H-102T04
B8502	024HC31022	CORE,BEADS	FCM2012H-102T04
B8503	024HC31022	CORE,BEADS	FCM2012H-102T04
B8505	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
⚠ CD504	121B164101	CORD,CAR BATTERY	SI-PC107-67
CD802	WDL6032038	FLAT CABLE	AWG26 6C BLACK 320MM
CD803	WBL6030038	FLAT CABLE	AWG26 4C BLACK 300MM
CD805	06CU82039A	CORD CONNECTOR	SM1098-009-1A
CP101	069S270639	CONNECTOR PCB SIDE	A2001WR2-7P
CP301	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2
CP302	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2
⚠ CP401	069X440029	CONNECTOR PCB SIDE	B04B-DVS
CP402	067U003029	WIRE HOLDER	B2013H02-3P
CP403	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP801	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CD2001	122H0O1902	CORD JUMPER	2H0O1902
CD3001	WFL6022038	FLAT CABLE	AWG26 8C BLACK 220MM
⚠ CD3801	120R414903	CORD AC BUSH	0R414903
CD8501	122H0C1001	CORD JUMPER	2H0C1001
CD8505	06CU2B2001	CORD CONNECTOR	CU2B2001
CP2001	069RYOT109	CONNECTOR PCB SIDE	52975-2492
CP2301	069EV53020	CONNECTOR PCB SIDE	00_6232_005_102_800
CP2302	069EV43020	CONNECTOR PCB SIDE	00_6232_004_102_800
CP2303	069EVC3020	CONNECTOR PCB SIDE	00_6232_012_102_800
CP3001	067U008029	WIRE HOLDER	B2013H02-8P
CP3802	069R230589	CONNECTOR PCB SIDE	52147-0310
CP3803	069R280589	CONNECTOR PCB SIDE	52147-0810
CP8001	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP8002	069J7C0029	CONNECTOR PCB SIDE	IMSA-9604S-12Z14
CP802A	067U006049	WIRE HOLDER	B2013H02-6P
CP802B	067U006049	WIRE HOLDER	B2013H02-6P
CP803A	067U004029	WIRE HOLDER	B2013H02-4P
CP803B	067U004029	WIRE HOLDER	B2013H02-4P
CP8502	069J7C0019	CONNECTOR PCB SIDE	IMSA-9604S-12Z13
CUS251	800WFAA008	CUSHION C	
⚠ DK4001	169E00026A	DECK CD	CV-VLM102
EL001	124120301A	EYE LET	XRY20X30BD
EL002	124116281A	EYE LET	XRY16X28BD
EL003	124120301A	EYE LET	XRY20X30BD
EL004	124116281A	EYE LET	XRY16X28BD
⚠ F3801	081PC05005	FUSE	51MS050L
⚠ F3802	0835C10003	MICRO FUSE	20N_10KFS
⚠ FB401	043210014F	TRANSFORMER,FLYBACK	FNI-10B001
FH3801	06710T0006	HOLDER,FUSE	EYF-52BC
FH3802	06710T0006	HOLDER,FUSE	EYF-52BC
OS2202	077Q037007	REMOTE RECEIVER	PIC-37143SY-H
⚠ RY3801	0560V10118	RELAY	ALKS325
⚠ SP301	070C132019	SPEAKER	SA08A05BWC
⚠ SP302	070C132019	SPEAKER	SA08A05BWC
TM101	076R0DT160	TRANSMITTER	R25-1948
⚠ TU001	0163300005	RF UNIT	115-V-K015AR_B
⚠ V801	0981100405	CRT W/DY	A22JWG098X82
X101	1002T01606	CERAMIC OSCILLATOR	CSTLS16M0X53-A0
X601	100CT3R505	CRYSTAL	HC-49/C
X2001	100BT02003	CRYSTAL	HC-49U/S
X4001	100BT02701	CRYSTAL	HC-49U/S

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M5G6-07I
O/R NO.	W375035