

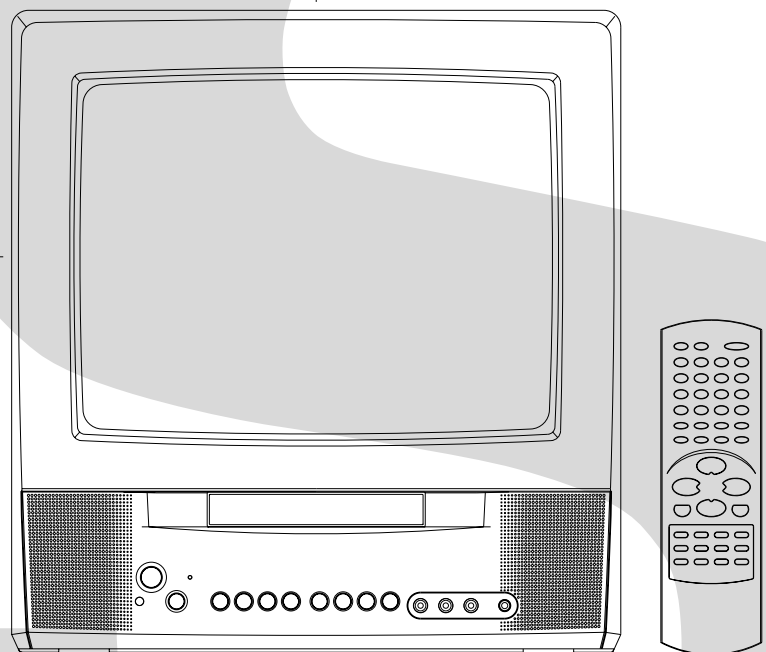
TOSHIBA

FILE NO. 140-200320

SERVICE MANUAL

COLOR TELEVISION/ DVD VIDEO PLAYER

MD13N3R



CAUTION

THIS DIGITAL VIDEO PLAYER EMPLOYS A LASER SYSTEM.

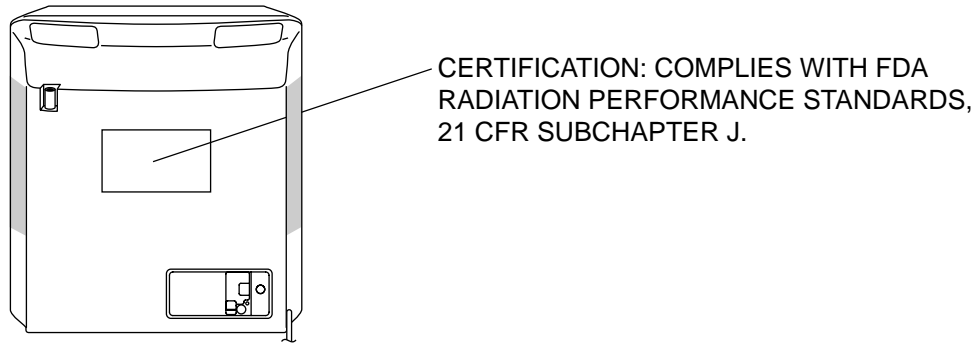
TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS SERVICE MANUAL CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

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

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE. VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

Location of the required Marking

The rating sheet and the safety caution are on the rear of the unit.



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. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. 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.

4. 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.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.

Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.

Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. 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.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the external exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

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.

IMPORTANT SAFEGUARDS

1. READ INSTRUCTIONS

All the safety and operating instructions should be read before the unit is operated.

2. RETAIN INSTRUCTIONS

The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS

All warnings on the unit and in the operating instructions should be adhered to.

4. FOLLOW INSTRUCTIONS

All operating and use instructions should be followed.

5. CLEANING

Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. ATTACHMENTS

Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.

7. WATER AND MOISTURE

Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

8. ACCESSORIES

Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer.

8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. VENTILATION

Slots and openings in the cabinet and in the back or bottom are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. POWER SOURCES

This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11. GROUNDING OR POLARIZATION

This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. If your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, this plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

12. POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. LIGHTNING

To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

14. POWER LINES

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

15. OVERLOADING

Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.

16. OBJECT AND LIQUID ENTRY

Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

17. OUTDOOR ANTENNA GROUNDING

If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

18. SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

PORTABLE CART WARNING
(symbol provided by RETAC)



S3126A

19. DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the unit.
- If the unit has been exposed to rain or water.
- If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
- If the unit has been dropped or the cabinet has been damaged.
- When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original parts.

Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

22. WALL OR CEILING MOUNTING

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

23. HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

24. DISC TRAY

Keep your fingers well clear of the disc tray as it is closing. It may cause serious personal injury.

25. CONNECTING

When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause an electric shock and serious personal injury. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

26. SOUND VOLUME

Reduce the volume to the minimum level before you turn on the product. Otherwise, sudden high volume sound may cause hearing or speaker damage.

27. SOUND DISTORTION

Do not allow the product output distorted sound for a longtime. It may cause speaker overheating and fire.

28. HEADPHONES

When you use the headphones, keep the volume at a moderate level. If you use the headphones continuously with high volume sound, it may cause hearing damage.

29. LASER BEAM

Do not look into the opening of the disc tray or ventilation opening of the product to see the source of the laser beam. It may cause sight damage.

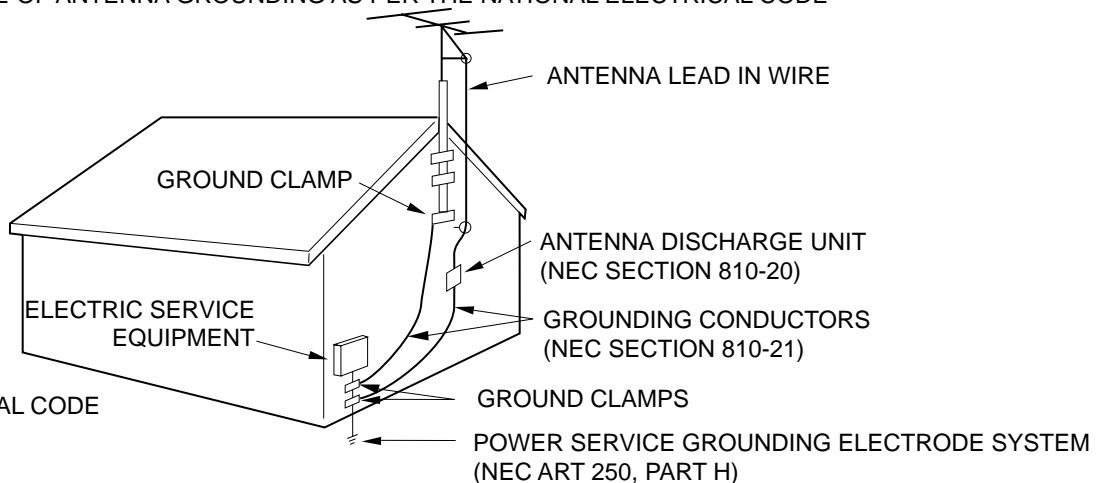
30. DISC

Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

31. NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE



NEC-NATIONAL ELECTRICAL CODE

S2898A

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. Slide the Rack Loading (White) toward the arrow direction by using a minus driver to release the lock. (Refer to Fig. 1)
3. Draw the Tray.

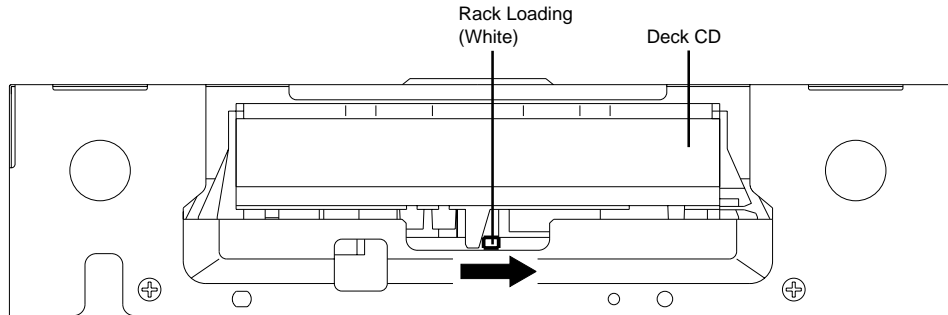


Fig. 1

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.

TRAY LOCK

Tray cannot be opened by setting the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press and hold the '9' key on the remote control unit.
4. Simultaneously press and hold the 'STOP' key on the front panel.
5. Hold both keys for more than 3 seconds.
6. Press the OPEN/CLOSE key on the front panel to check the Tray Lock setting.

NB: No indications on the screen when the Tray Lock is setting.

To unlock the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Set the VOLUME to minimum.
4. Press and hold the 'VOL. DOWN' button on the front panel.
5. Simultaneously press and hold the '4' key on the remote control unit.
6. Hold both keys for more than 1 second.
7. The On Screen Display message 'INITIALIZE5 COMPLETE' will appear.
8. The Tray Lock has now been cleared.

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

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GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size	13 inch / 335.4 mmV	
			CRT Type	Normal	
			Deflection	90 degree	
			Magnetic Field BV/BH	+0.45G / 0.18G	
		Color System		NTSC	
		Speaker	Position	2 Speaker	
			Size	Front	
			Impedance	1.5 x 2.7 inch	
		Sound Output	Max	1.5W + 1.5W	
			10%(Typical)	1.0W + 1.0W	
G-2	DVD System	Color System		NTSC	
		Disc		DVD, CD-DA, CD-R/RW, Video CD	
		Disc Diameter		120 mm , 80 mm	
		Deck	Disc Loading System	Front Loading	
			Motor	2 Motors	
		Pick up		1-Lens 2-Beams System	
		Playback time(Max)	DVD 1-Layer	135min (4.7GB)	
			DVD 2-Layer	245min (8.5GB)	
			CD	74min	
			Video CD	74min	
				Search speed	Fwd 2-15 times / 4 step (DVD, Video CD)
					2-20 times / 4 step (CD)
		Actual	2-45 times (DVD, Video CD)		
			4-40 times (CD)		
			Rev 2-15 times / 4 step (DVD, Video CD)		
			2-20 times / 4 step (CD)		
		Actual	2-45 times (DVD, Video CD)		
			4-40 times (CD)		
		Slow speed	Fwd 1/8-1/2 times		
			--		
		Actual	Rev 1/8-1/2 times		
			--		
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	--	
			S/N Ratio (Weighted)	--	
			Horizontal Resolution at DVD Mode	--	
				--	
			RGB Signal	Output Level	--
			Audio Signal	Input Level	-8.0dBm/50k ohm
				Output Level	--
				Digital Output Level	0.5 V p-p/75 ohm
				S/N Ratio at DVD (Weighted)	--
				Harmonic Distortion	--
				Frequency Response :	at DVD --
			at Video CD --		
			at SVCD --		
			at CD --		
G-5	Power	Power Source	AC	120V, 60Hz	
			DC	--	
		Power Consumption		at AC 75W at 120V 60Hz	
				at DC --	
		Stand by (at AC)		5W at 120V 60Hz	
		Per Year		-- kWh/Year	
		Protector	Power Fuse	Yes	
G-6	Regulation	Safety		UL	
		Radiation		FCC	
		X-Radiation		DHHS	
		Laser		DHHS	

GENERAL SPECIFICATIONS

G-7	Temperature	Operation Storage	+5oC ~ +40oC -20oC ~ +60oC
G-8	Operating Humidity		Less than 80% RH
G-9	On Screen Display	Menu(TV) Menu Type Picture Brightness Contrast Color Tint Sharpness Sound Bass Treble Balance CH TV/CATV Add/Delete Auto CH Memory Option V-Chip Language Open Close Clock Clock Set On/Off Timer Sleep Timer CH / AV(LINE) / DVD Stereo/Audio Output Bilingual SAP Caption / Text Auto Search/Position Game Volume Mute	Yes Icon Yes Yes Yes Yes Yes Yes No No No No Yes Yes Yes Yes Yes Yes Yes No No No Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes

GENERAL SPECIFICATIONS

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		
Time	Yes		
Sub Title No.	Yes		
Angle No.	Yes		
Vocal On/Off	No		
Audio No.	Yes		
Audio Stereo L/R	Yes (Video CD)		
Zoom	Yes		
Marker No.	No		
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) (DVD)	English, French, Spanish English, French, Spanish

GENERAL SPECIFICATIONS

G-12	Remote Control	Unit	RC-GD	
		Glow in Dark Remocon	Yes	
		Format	NEC	
		Custom Code	71-8E h	
		Power Source	Voltage(D.C) UM size x pcs	3V UM-4 x 2 pcs
		Total Keys		45 Key
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Play	Yes
			Stop	Yes
			Search+	Yes
			Search-	Yes
			Skip+	Yes
			Skip-	Yes
			Slow+	Yes
			Slow-	Yes
			Pause	Yes
			Call	Yes
			TV/DVD	Yes
			Cancel	Yes
			Audio Select	Yes
			Angle	Yes
			Subtitle	Yes
			Top Menu	Yes
			Set up/ Menu	Yes
			DVD Menu	Yes
			Return	Yes
			Up/ Set+/ CH Up	Yes
			Down/ Set-/ CH Down	Yes
			Left/Select-/Vol Down	Yes
			Right/Select+/Vol Up	Yes
	Select/ Enter	Yes		
	Play Mode	Yes		
	Closed Caption	Yes		
	Input Select	Yes		
	Repeat A-B	Yes		
	Zoom/ Quick View	Yes		
	Mute	Yes		
	Open/Close	Yes		
	Sleep	Yes		
	Jump	Yes		
	Game	Yes		

GENERAL SPECIFICATIONS

G-13	Features	CATV	Yes	
		Auto Shut Off	Yes	
		Auto Clock	No	
		Just Clock	No	
		Auto CH Memory	Yes	
		V-Chip	USA V-chip CANADA V-chip	Yes
		Auto Search		No
		SAP		Yes
		Game Position		Yes
		FM Transmitter		No
		Energy Star		No
		Closed Caption		Yes
		Comb Filter		No
		Protect of FBT Leak Circuit		Yes
		Choke Coil		No
		Power On Memory		No
		Parental Lock (DVD Only)		Yes
		Tray Lock		Yes
		Video CD Playback		Yes
		SVCD Playback		No
			Overlay Graphics And Text	No
			Command List	No
			Entry Point Jump	No
		MP3 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
Remote Control Unit				Yes
Battery				Yes
	UM size x pcs OEM Brand			UM-4 x 2 pcs No
Rod Antenna				No
	Poles Terminal			No --
Loop Antenna				No
	Terminal			--
U/V Mixer				No
300 ohm to 75 ohm Antenna Adapter				Yes
Antenna Change Plug				No
Guarantee Card				No
Registration Card				Yes
Warranty Card				No
ESP Card				No
Service Station List				No
DC Car Cord (Center+)				No
Columbia Offer Sheet				No
Sheet Information (Return)				Yes[From '03 JUN O/R]

GENERAL SPECIFICATIONS

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	
		Main Power SW	Stop	Yes		
			Main Power SW	No		
		Indicator	Rear	Main Power SW	No	
				Power	Yes (Red)	
				Stand-by	No	
		Terminals	Front	On Timer	No	
				Video Input	RCA x 1	
				Audio Input	RCA x 2(Stereo)	
			Rear	Other Terminal	Head Phone	
				Video Input	No	
Audio Input	No					
Video Output	No					
Audio Output	No					
Digital Audio Output	Coaxial (DVD Only)					
Diversity	No					
DC Jack 12V(Center +)	No					
VHF/UHF Antenna Input	F Type					
G-16	Set Size		Approx. W x D x H (mm)	362x365x382		
G-17	Weight		Net (Approx.)	11.0kg (24.3lbs)		
			Gross (Approx.)	12.5kg (27.6lbs)		
G-18	Carton	Master Carton			No	
			Content	---	Sets	
			Material	---	/ ---	
			Dimensions W x D x H(mm)	---		
			Description of Origin	---		
		Gift Box				Yes
			Material			Double/Full Color
			W/Color Photo Label			No
			Dimensions W x D x H(mm)			423x447x443
			Design			As Per Buyer 's
			Description of Origin			Yes
			Buyer Model No.			MD13N3
		Drop Test	Natural Dropping At			1 Corner / 3 Edges / 6 Surfaces
			Height (cm)			62
	Container Stuffing (40' container)			700 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 4 screws ①.
2. Remove the screw ② which are used for holding the Back Cabinet.
3. Remove the AC cord from the AC cord hook ③.
4. Remove the Back Cabinet in the direction of arrow.

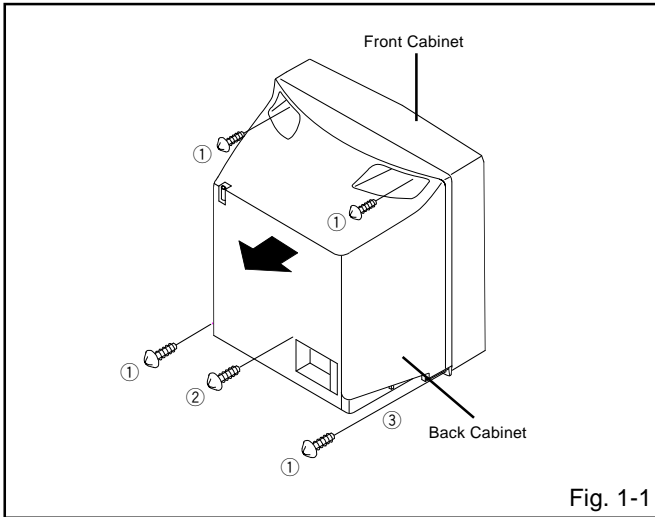


Fig. 1-1

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.

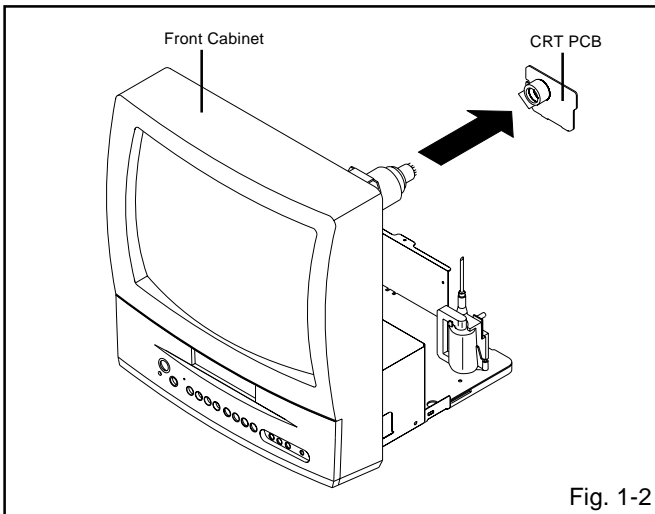


Fig. 1-2

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

1. Remove the 2 screws ①.
2. Disconnect the following connectors: (CP301, CP302, CP401 and CP3800).
3. Remove the AV PCB/DVD Block in the direction of arrow.

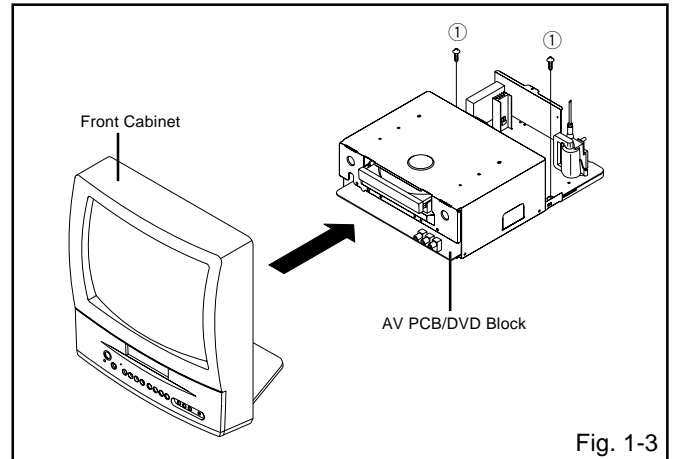


Fig. 1-3

1-4: DVD BLOCK (Refer to Fig. 1-4)

1. Remove the 11 screws ①.
2. Remove the Top Shield in the direction of arrow (A).
3. Disconnect the following connectors: (CP8001 and CP8002).
4. Remove the 4 screws ②.
5. Remove the DVD Block in the direction of arrow (B).
6. Remove the screw ③.
7. Remove the Jack Shield.
8. Remove the AV PCB in the direction of arrow (C).

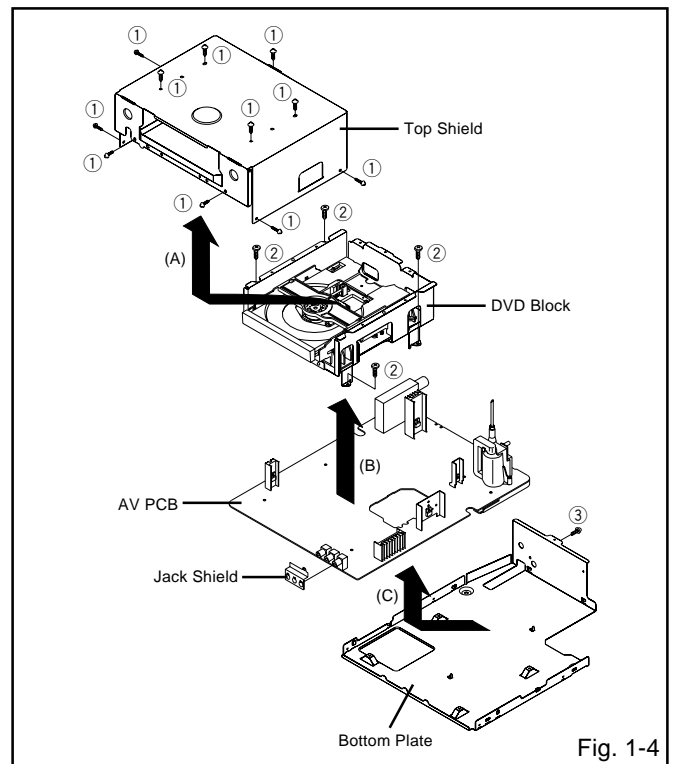


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: DVD PCB/DVD DECK (Refer to Fig. 1-5)

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

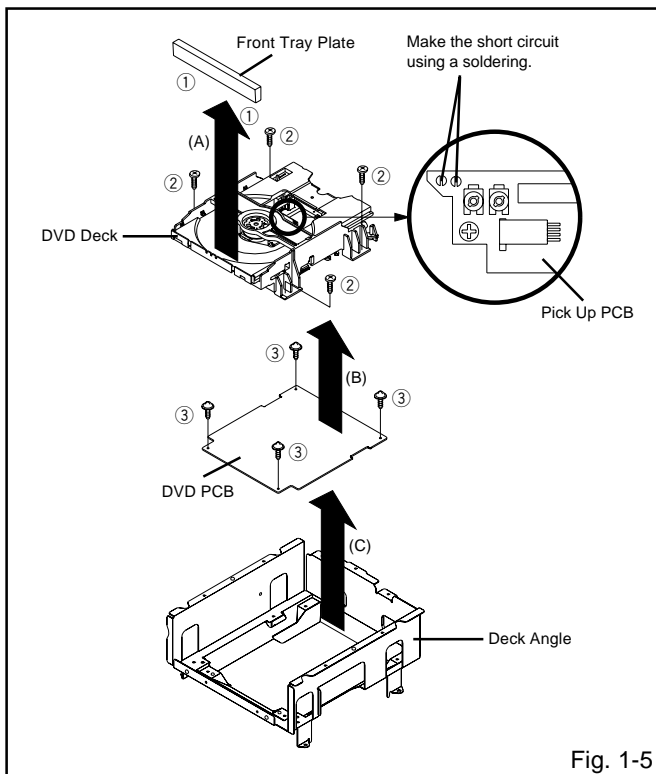


Fig. 1-5

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.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DVD DECK PARTS

NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAY (Refer to Fig. 2-1-A)

1. Set the Tray opened. (Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)
2. Unlock the support ① and remove the Tray.

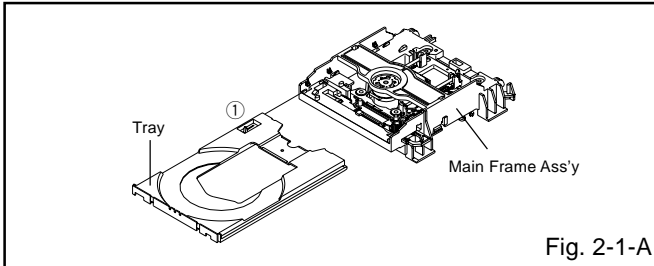


Fig. 2-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 2-1-B so that the each markers are met.

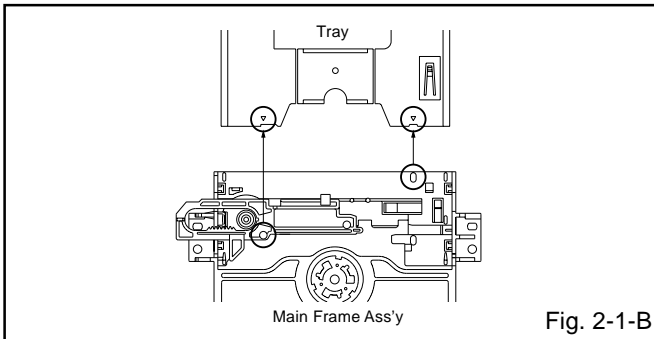


Fig. 2-1-B

2-2: MAIN CHASSIS ASS'Y (Refer to Fig. 2-2-A)

1. Remove the Main Chassis Ass'y from the Insulator (R).
2. Unlock the support ①.
3. Remove the Main Chassis Ass'y.

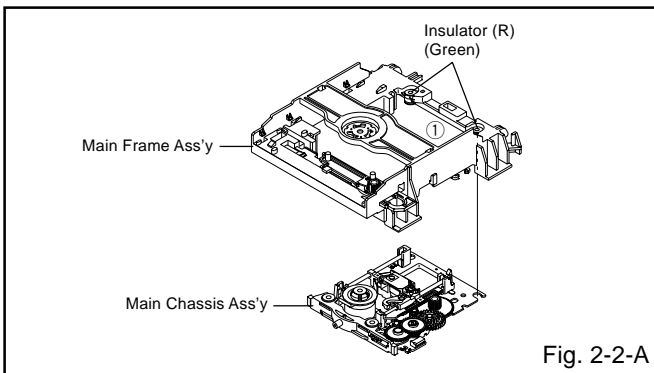


Fig. 2-2-A

NOTE

1. In case of the Main Chassis Ass'y, install it from (1) to (6) in order. (Refer to Fig. 2-2-B)

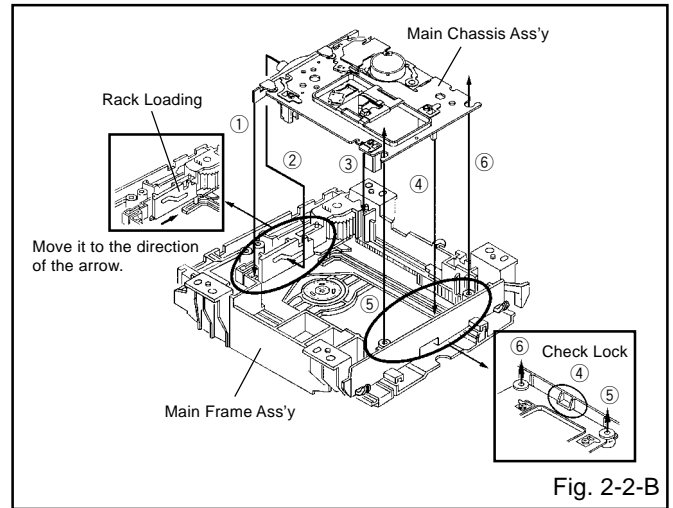


Fig. 2-2-B

2-3: RACK LOADING/MAIN GEAR/ RACK LOADING SPRING/ RACK L SPRING (Refer to Fig. 2-3)

1. Remove the Rack L Spring.
2. Press down the catcher ① and slide the Rack Loading.
3. Remove the Rack Loading, Rack Loading Spring and Main Gear.

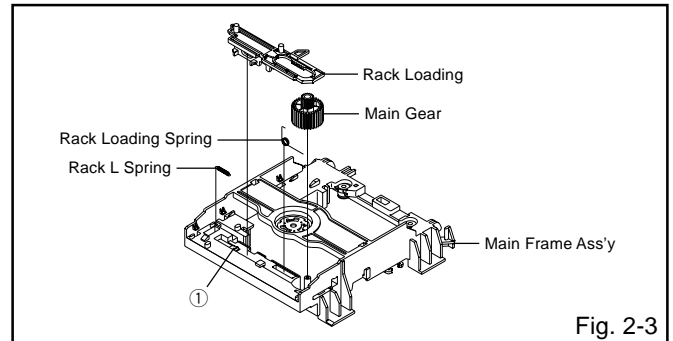


Fig. 2-3

2-4: CLAMPER ASS'Y/INSULATOR(R)/LEVER SWITCH (Refer to Fig. 2-4-A)

1. Remove the screw ①.
2. Remove the Lever Switch.
3. Remove the 2 Insulator (R).
4. Press the Clamper and rotate the Clamper Plate clockwise, then unlock the 3 supports ②.
5. Remove the Clamper Plate, Clamper Magnet and Clamper.

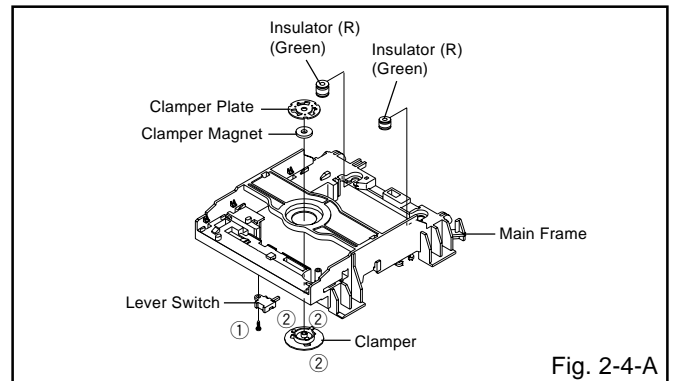
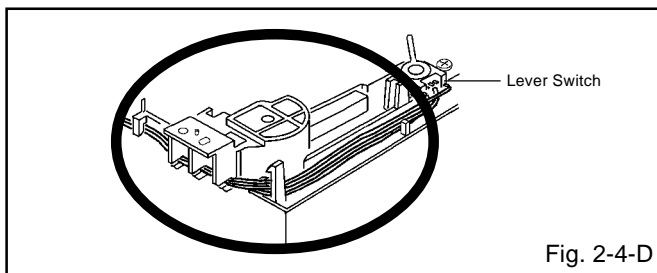
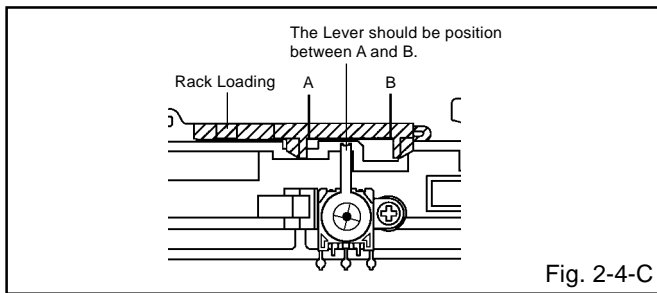
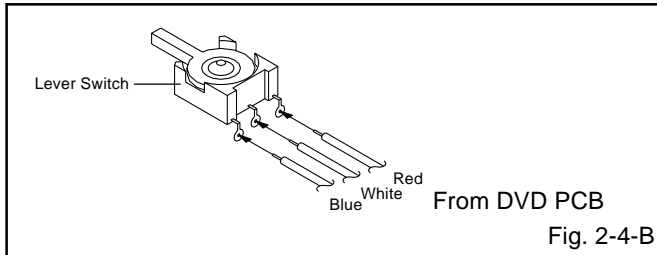


Fig. 2-4-A

DISASSEMBLY INSTRUCTIONS

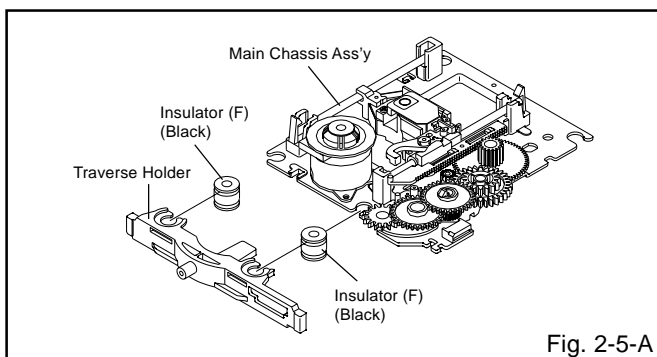
NOTE

1. When installing the Clamper Magnet, install it with the green face up.
2. When installing the wire of the Lever Switch, install it correctly as Fig. 2-4-B.
3. When installing the Lever Switch, install it correctly as Fig. 2-4-C.
4. In case of the Lever Switch installation, hook the wire on the Main Frame as shown Fig. 2-4-D.



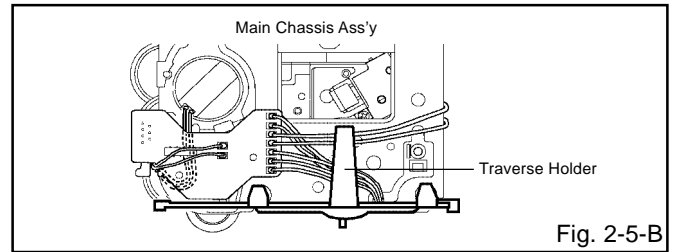
2-5: TRAVERSE HOLDER/INSULATOR (F) (Refer to Fig. 2-5-A)

1. Remove the Traverse Holder.
2. Remove the 2 Insulator (F).



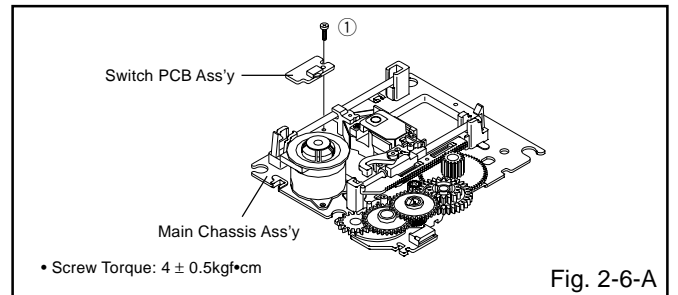
NOTE

1. After the installing of the Traverse Holder, check if the wire is like Fig. 2-5-B.



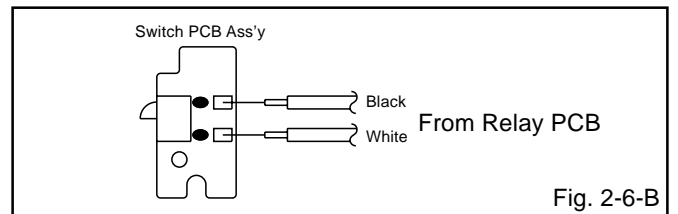
2-6: SWITCH PCB ASS'Y (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Switch PCB Ass'y.



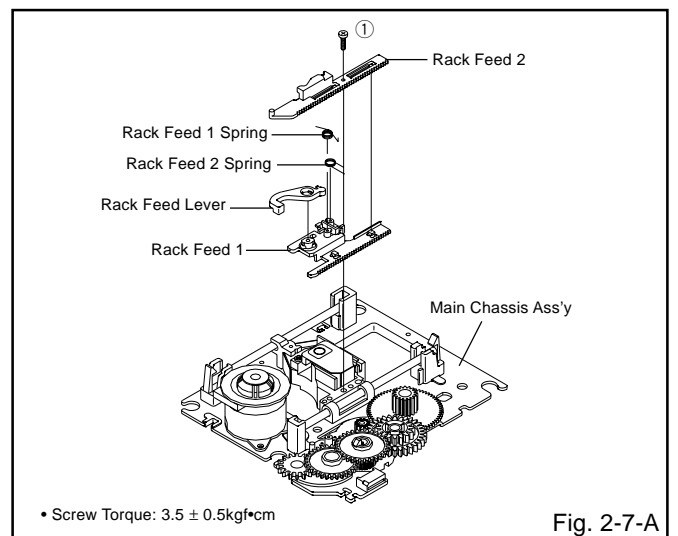
NOTE

1. When installing the wire of the Switch PCB, install it correctly as Fig. 2-6-B.



2-7: RACK FEED ASS'Y (Refer to Fig. 2-7-A)

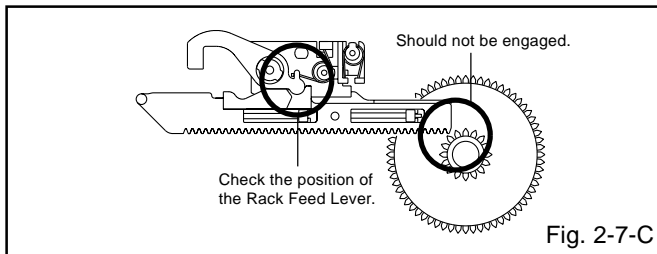
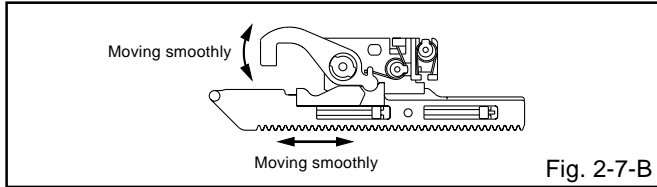
1. Remove the screw ①.
2. Remove the Rack Feed 1/2 Spring, Rack Feed 1/2 and Rack Feed Lever.



DISASSEMBLY INSTRUCTIONS

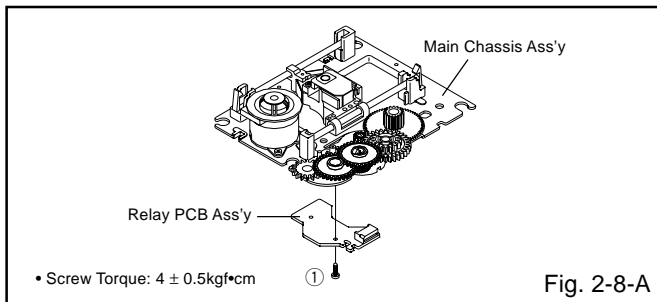
NOTE

1. After the assembly of the Rack Feed, check if the Rack Feed 1/2 is moving smoothly. (Refer to Fig. 2-7-B)
2. In case of the Rack Feed Ass'y installation, install correctly as Fig. 2-7-C.



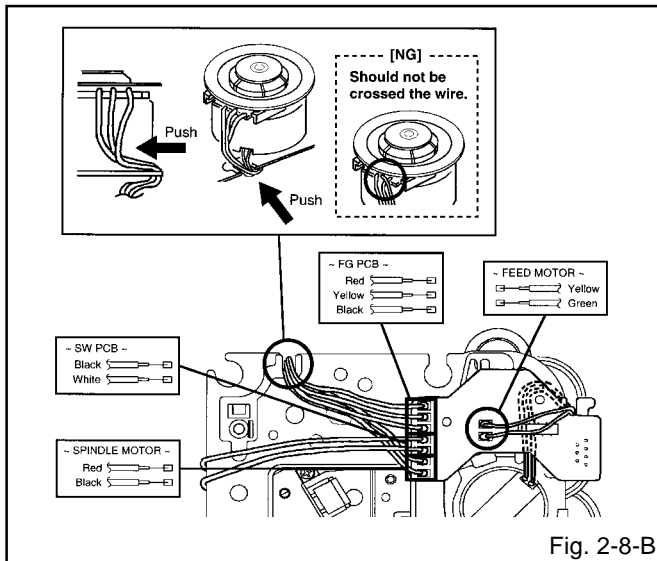
2-8: RELAY PCB ASS'Y (Refer to Fig. 2-8-A)

1. Remove the screw ①.
2. Remove the Relay PCB Ass'y.



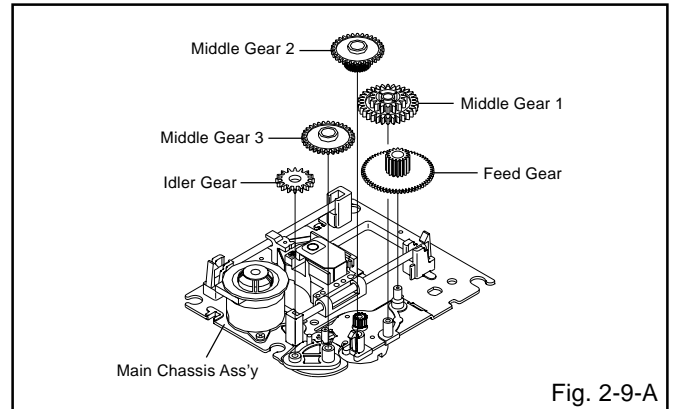
NOTE

1. When installing the wire of the Relay PCB, install it correctly as Fig. 2-8-B.



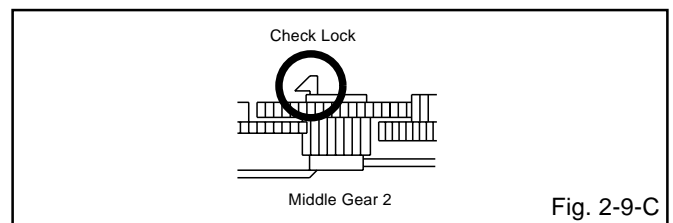
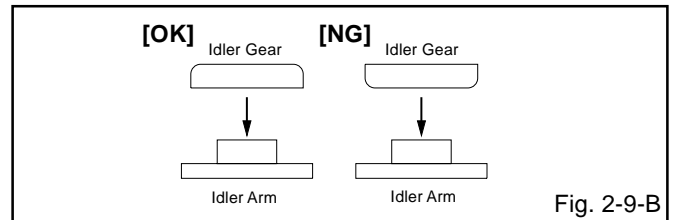
2-9: GEAR (Refer to Fig. 2-9-A)

1. Unlock the support ①.
2. Remove the Middle Gear 1/2/3, Idler Gear and Feed Gear.



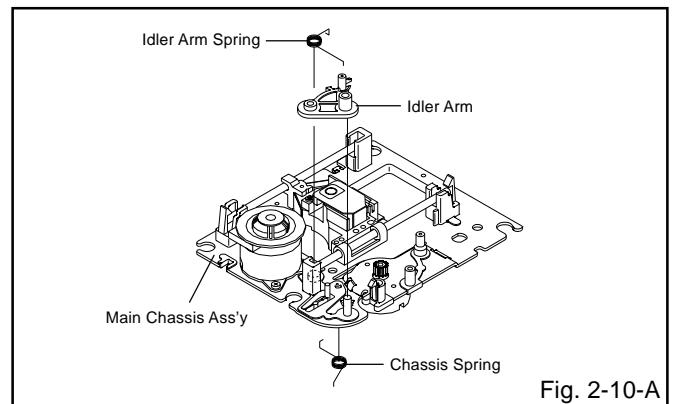
NOTE

1. In case of the Idler Gear installation, install correctly as Fig. 2-9-B.
2. When installing the Middle Gear 2, check if the Middle Gear 2 is locked correctly as Fig. 2-9-C.



2-10: IDLER ARM (Refer to Fig. 2-10-A)

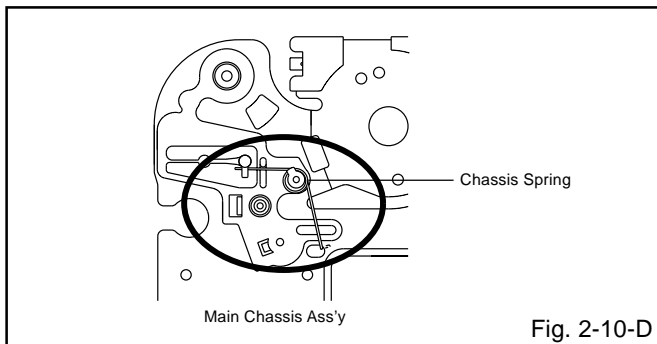
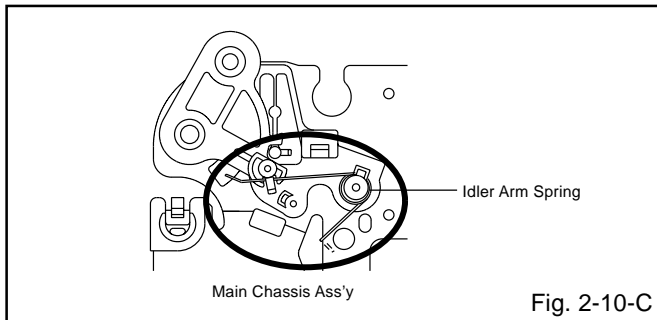
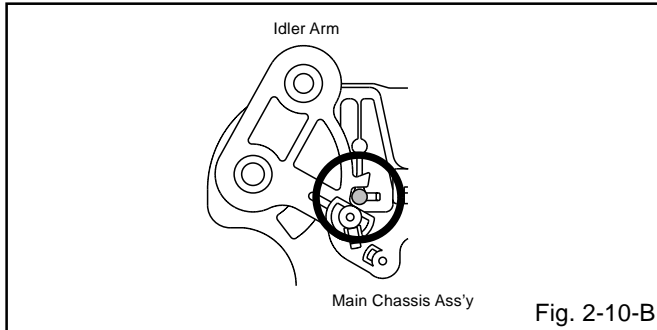
1. Remove the Idler Arm Spring.
2. Remove the Chassis Spring.
3. Remove the Idler Arm.



DISASSEMBLY INSTRUCTIONS

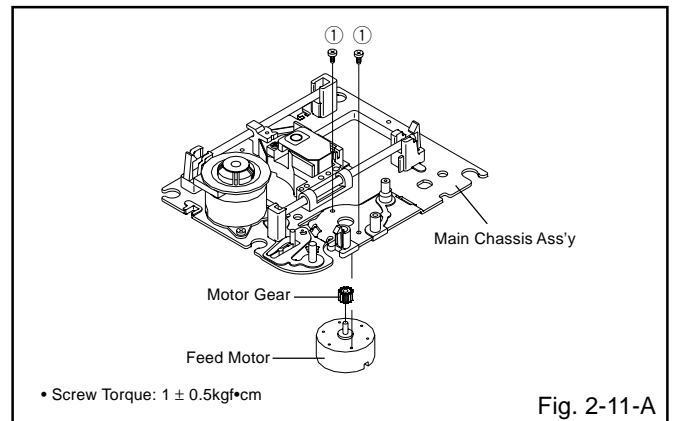
NOTE

1. In case of the Idler Arm installation, install as the circled section of Fig. 2-10-B.
2. In case of the Idler Arm Spring installation, install as the circled section of Fig. 2-10-C.
3. In case of the Chassis Spring installation, install as the circled section of Fig. 2-10-D.



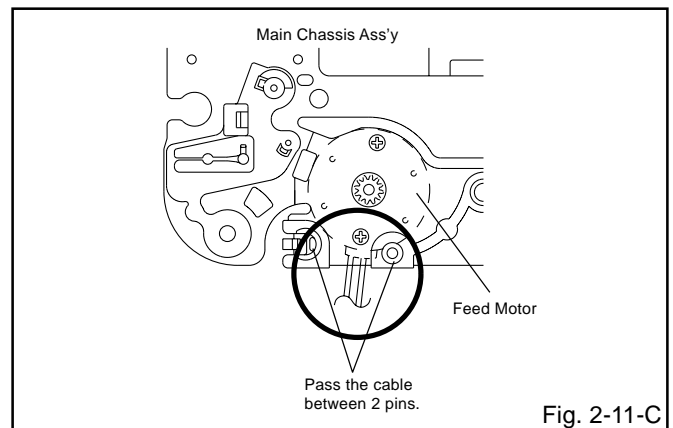
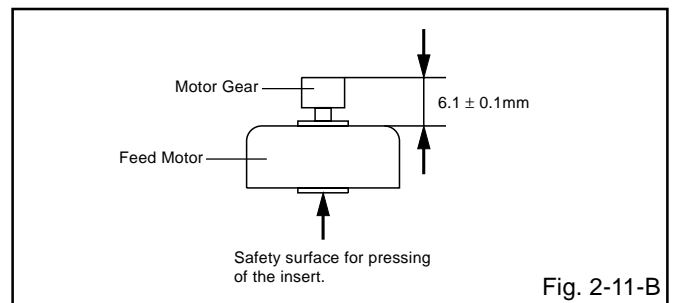
2-11: FEED MOTOR (Refer to Fig. 2-11-A)

1. Remove the 2 screws ①.
2. Remove the Feed Motor.
3. Remove the Motor Gear.



NOTE

1. In case of the Motor Gear installation, check if the value of the Fig. 2-11-B is correct.
2. When installing the Feed Motor, check if the cable is positioned as Fig. 2-11-C.



DISASSEMBLY INSTRUCTIONS

3. 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. 3-1.)**

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.

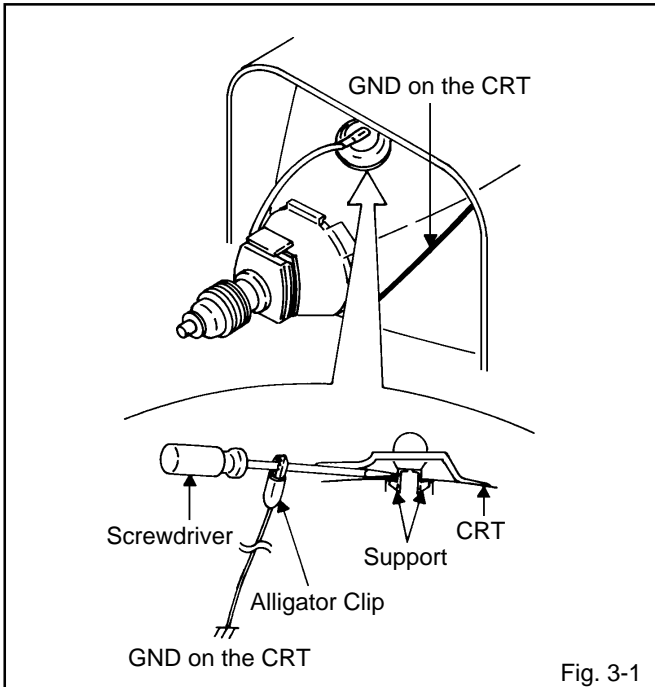


Fig. 3-1

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. 3-2.)**

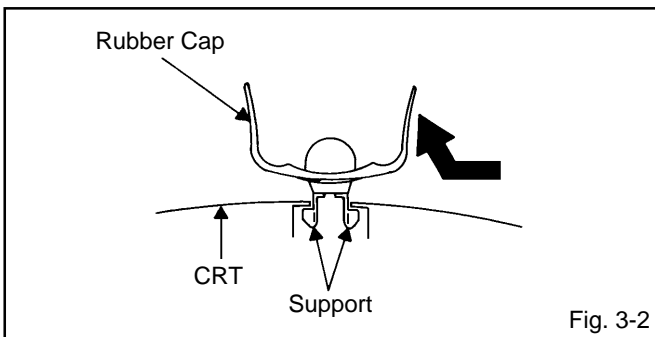


Fig. 3-2

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. 3-3.)**

NOTE

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

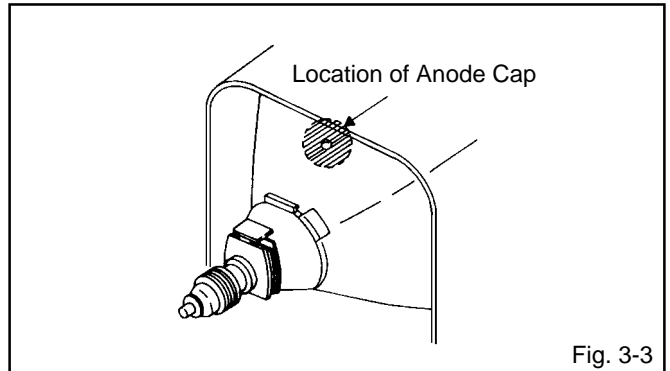


Fig. 3-3

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. 3-4.)**

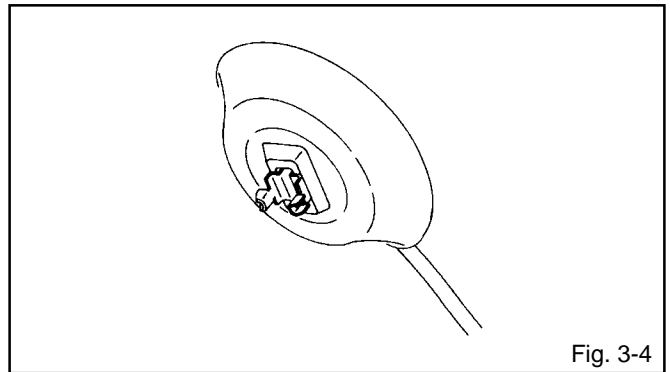


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in Fig. 3-5.

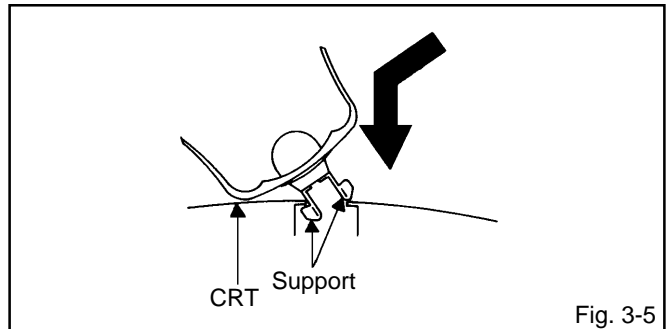


Fig. 3-5

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

DISASSEMBLY INSTRUCTIONS

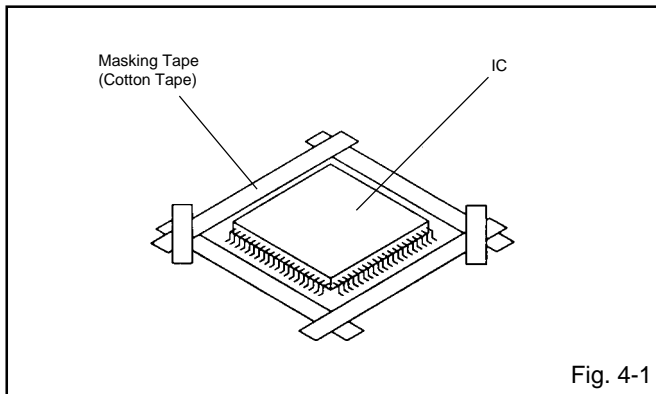
4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 4-1.)

NOTE

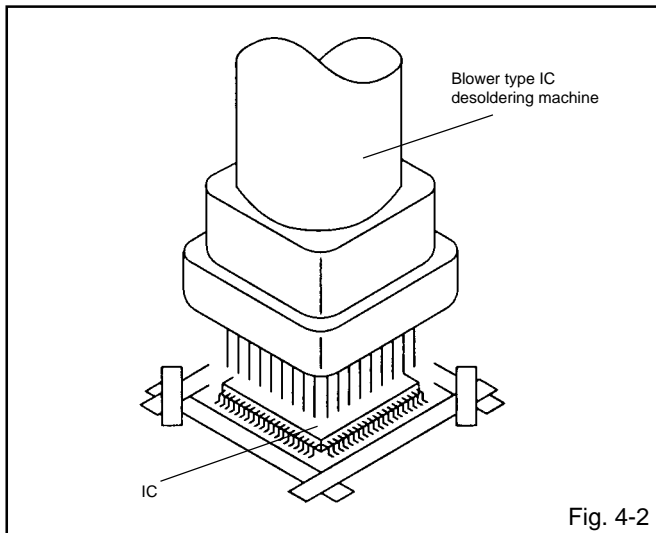
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 4-2.)

NOTE

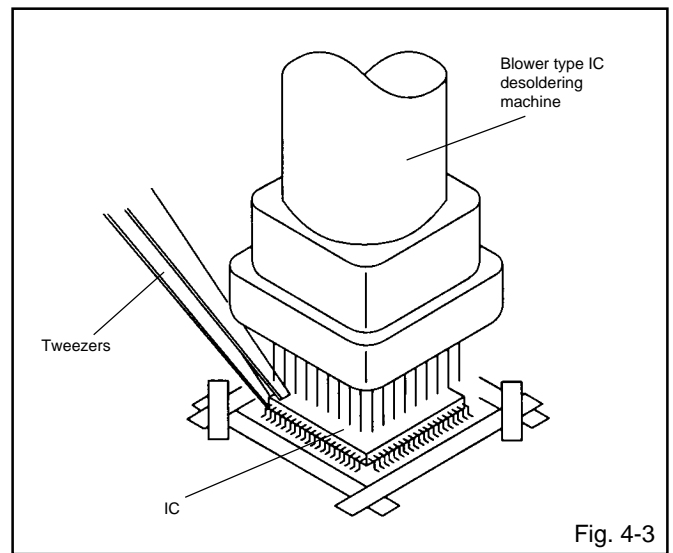
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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. 4-3.)

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.

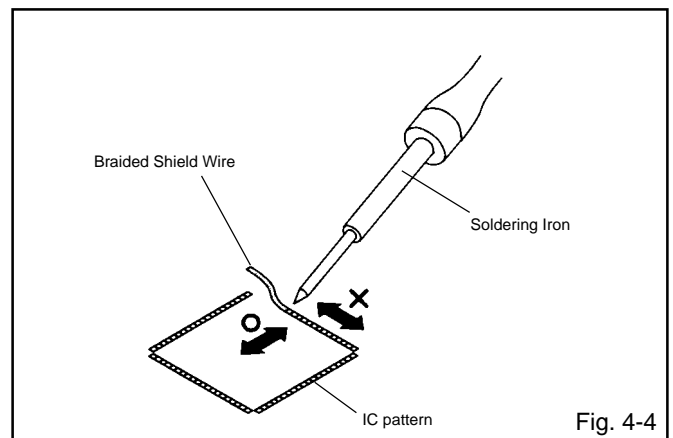


4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 4-4.)

NOTE

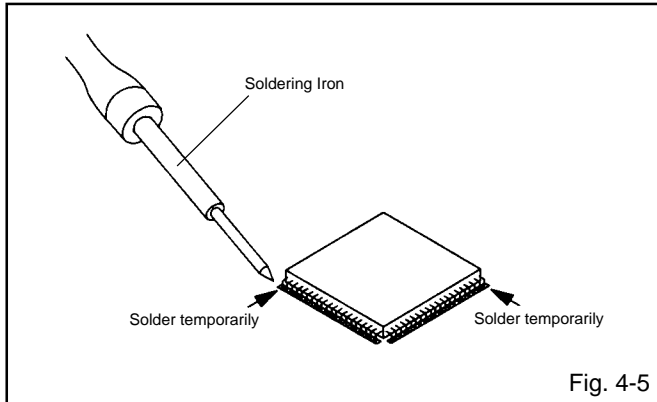
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



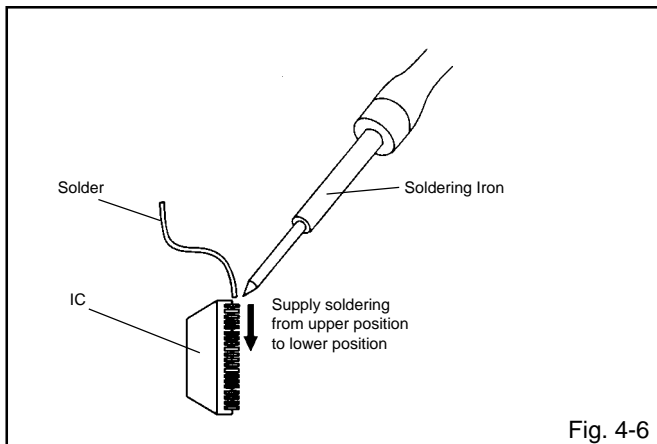
DISASSEMBLY INSTRUCTIONS

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. 4-5.)



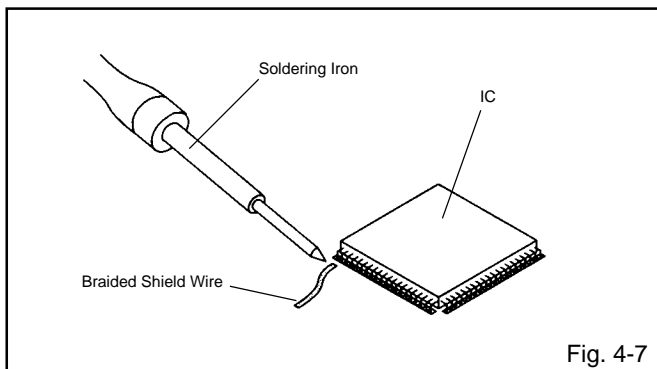
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 4-6.)



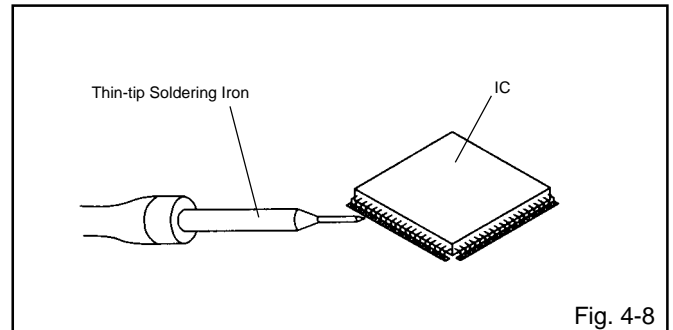
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 4-7.)

NOTE

Do not absorb the solder to excess.



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



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 at the DVD stop mode.
VOL. (-) MIN	6	1	POWER ON total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (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	9	3	Tray cannot be opened. Refer to the "TRAY LOCK". NOTE: No indications on the screen when the Tray Lock is setting.

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.

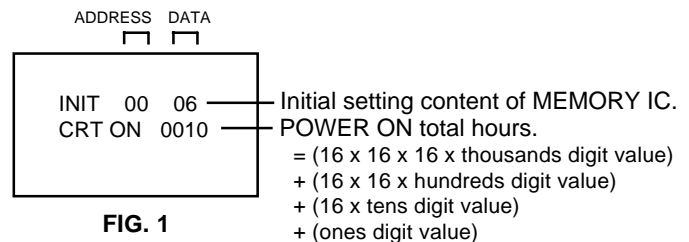


FIG. 1

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.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	06	00	44	20	D0	35	30	25	05	54	01	00	49	55	0F	47
10	30	50	50	04	15	77	03	50	20	77	52	00	12	00	00	00

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.

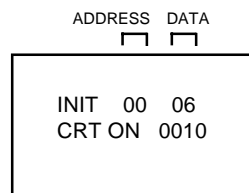


FIG. 1

3. ADDRESS is now selected and should "blink". Using the VOL. UP/DOWN 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 VOL. UP/DOWN 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.

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 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. Set the VOLUME to minimum.
2. 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.

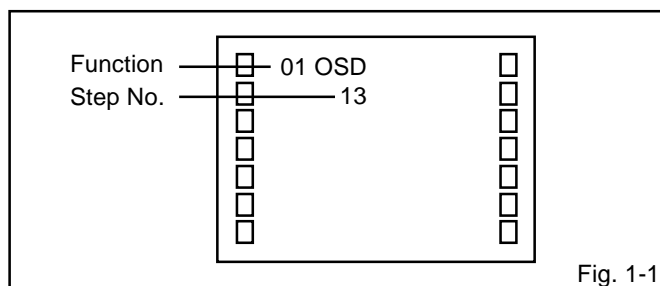


Fig. 1-1

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

NO.	FUNCTION	NO.	FUNCTION
01	OSD H	36	COL. AV(CENT.)
02	OSD CONTRAST	37	COL. AV(MAX)
03	CUT OFF	38	COL. AV(MIN)
04	H POSITION	39	TINT AV
05	H BLK L	40	SHARPNESS AV
06	H BLK R	41	SUB BIAS
07	V SIZE	42	BRI. DVD(CENT.)
08	V POSITION	43	BRI. DVD(MAX)
09	V LINEARITY	44	BRI. DVD(MIN)
10	V S CORRECTION	45	CONT. DVD(CENT.)
11	V COMP	46	CONT. DVD(MAX)
12	R CUT OFF	47	CONT. DVD(MIN)
13	G CUT OFF	48	COL. DVD(CENT.)
14	B CUT OFF	49	COL. DVD(MAX)
15	R DRIVE	50	COL. DVD(MIN)
16	G DRIVE	51	TINT DVD
17	B DRIVE	52	SHARPNESS DVD
18	BRIGHTNESS(CENT.)	53	SUB BIAS
19	BRIGHTNESS(MAX)	54	BRI. GAME(CENT.)
20	BRIGHTNESS(MIN)	55	BRI. GAME(MAX)
21	CONTRAST(CENT.)	56	BRI. GAME(MIN)
22	CONTRAST(MAX)	57	CONT. GAME(CENT.)
23	CONTRAST(MIN)	58	CONT. GAME(MAX)
24	COLOR(CENT.)	59	CONT. GAME(MIN)
25	COLOR(MAX)	60	SUB BIAS
26	COLOR(MIN)	61	TUNING V MUTE
27	TINT	62	POWER ON V MUTE
28	SHARPNESS	63	INPUT LEVEL
29	SUB BIAS	64	SEPARATION L
30	BRI. AV(CENT.)	65	SEPARATION H
31	BRI. AV(MAX)	66	TEST PWM
32	BRI. AV(MIN)	67	X-RAY TEST
33	CONT. AV(CENT.)	68	H STOP
34	CONT. AV(MAX)	69	H FREQ
35	CONT. AV(MIN)		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the digital voltmeter to TP401.
4. Adjust the VR3800 until the digital voltmeter is $135 \pm 0.5V$.

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: CUT OFF

1. Adjust the unit to the following settings.
R DRIVE=3F, G DRIVE=07, B DRIVE=3F, R CUT OFF=7F, G CUT OFF=7F, B CUT OFF=7F
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

2-4: 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 **(16)** on the remote control to select "G DRV".
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 VOL. UP/DOWN 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.

2-5: 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 VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-6: VERTICAL 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 **(08)** on the remote control to select "VPOSI".
4. Check if the step No. V POSI is "02".
5. Adjust the **VR401** until the horizontal line becomes fit to notch of the shadow mask.

2-7: 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 VOL. UP/DOWN 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.

2-8: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-7. 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 VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-9: 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 VOL. UP/DOWN 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 VOL. UP/DOWN 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 VOL. UP/DOWN 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 VOL. UP/DOWN 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

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum.
(Refer to Fig. 2-1)

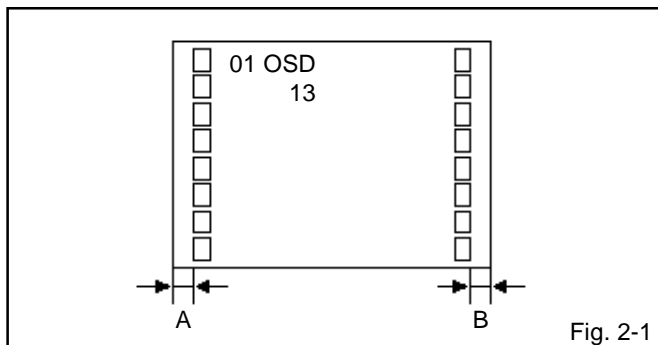


Fig. 2-1

2-11: 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 VOL. UP/DOWN button on the remote control until the AC voltmeter is $75 \pm 2\text{mV}$.

2-12: BRIGHT CENTER

1. Receive the monoscope pattern. (RF Input)
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 (**18**) on the remote control to select "BRTC".
4. Press the VOL. UP/DOWN button on the remote control until the white 15% is starting to be visible
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode.
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**30**) on the remote control to select "BRTCA".
9. Press the VOL. UP/DOWN button on the remote control until the white 15% is starting to be visible
10. Press the TV/DVD button on the remote control to set to the DVD mode.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**42**) on the remote control to select "BRTCD".
12. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.
13. Press the GAME button on the remote control to set to the GAME mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**54**) on the remote control to select "BRTCG".
15. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as 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 VOL. UP/DOWN 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 VOL. UP/DOWN 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. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (**51**) on the remote control to select "TNTCD".
13. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

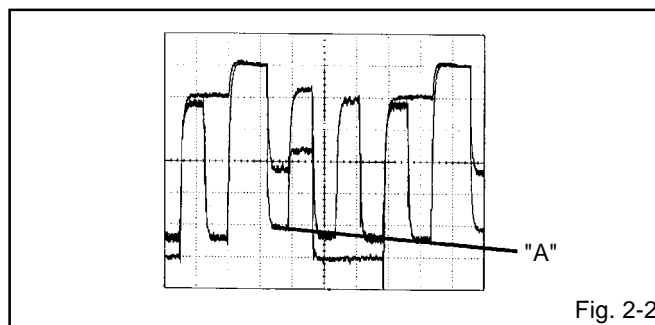


Fig. 2-2

ELECTRICAL ADJUSTMENTS

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 VOL. UP/DOWN button on the remote control until the red color level is adjusted to $110 \pm 10\%$ of the white level. **(Refer to Fig. 2-3)**
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. 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.
12. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to $110 \pm 10\%$ of the white level. **(Refer to Fig. 2-3)**
13. Press the TV/DVD button on the remote control to set to the DVD mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(48)** on the remote control to select "COLCD".
15. Press the VOL. UP/DOWN button on the remote control to decrease the step numbers by 8 steps to the AV.

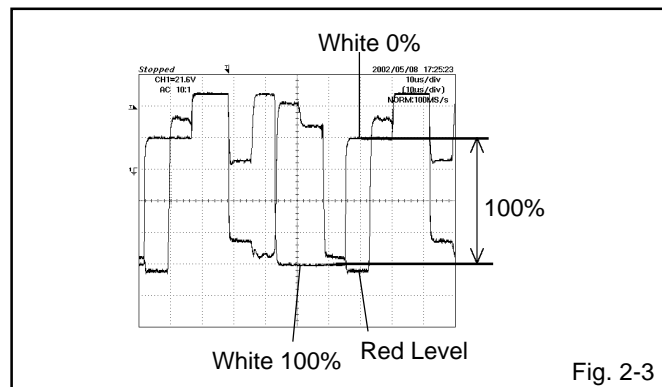


Fig. 2-3

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 VOL. UP/DOWN button on the remote control until the contrast step No. becomes "5A"
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 VOL. UP/DOWN button on the remote control until the contrast step No. becomes "5A"
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 VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.
11. Press the GAME button on the remote control to set to the GAME mode.
12. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(58)** on the remote control to select "CNTXG".
13. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

2-16: 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	03	38	COL. AV(MIN)	10
05	H BLK L	04	40	SHARPNESS AV	10
06	H BLK R	02	41	SUB BIAS	00
08	V POSITION	02	43	BRI. DVD(MAX)	70
10	V S CORRECTION	08	44	BRI. DVD(MIN)	10
11	V COMP	03	45	CONT. DVD(CENT.)	40
16	G DRIVE	07	47	CONT. DVD(MIN)	10
19	BRIGHTNESS(MAX)	70	49	COL. DVD(MAX)	70
20	BRIGHTNESS(MIN)	10	50	COL. DVD(MIN)	10
21	CONTRAST(CENT.)	40	52	SHARPNESS DVD	10
23	CONTRAST(MIN)	10	53	SUB BIAS	00
25	COLOR(MAX)	70	55	BRI. GAME(MAX)	70
26	COLOR(MIN)	10	56	BRI. GAME(MIN)	10
28	SHARPNESS	18	57	CONT. GAME(CENT.)	40
29	SUB BIAS	00	59	CONT. GAME(MIN)	10
31	BRI. AV(MAX)	70	60	SUB BIAS	00
32	BRI. AV(MIN)	10	61	TUNING V MUTE	00
33	CONT. AV(CENT.)	40	62	POWER ON V MUTE	40
35	CONT. AV(MIN)	10	66	TEST PWM	00
37	COL. AV(MAX)	70	69	H FREQ	3F

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.

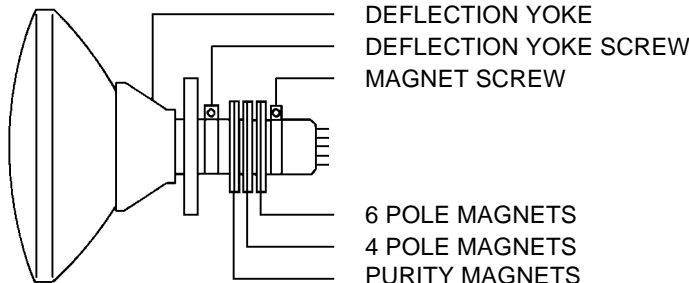


Fig. 3-1

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)**

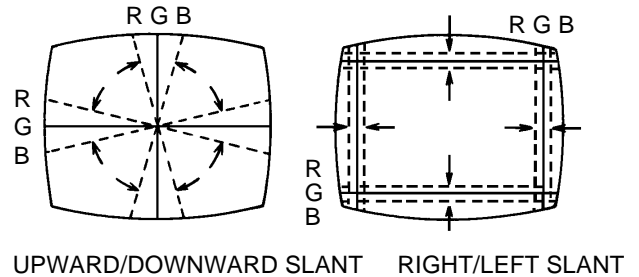


Fig. 3-2-a

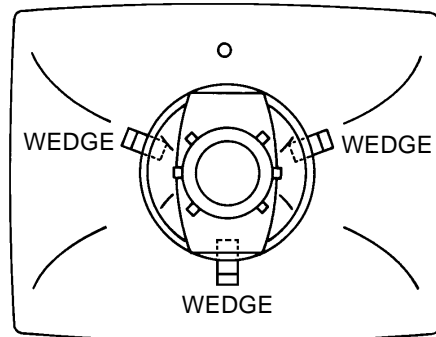
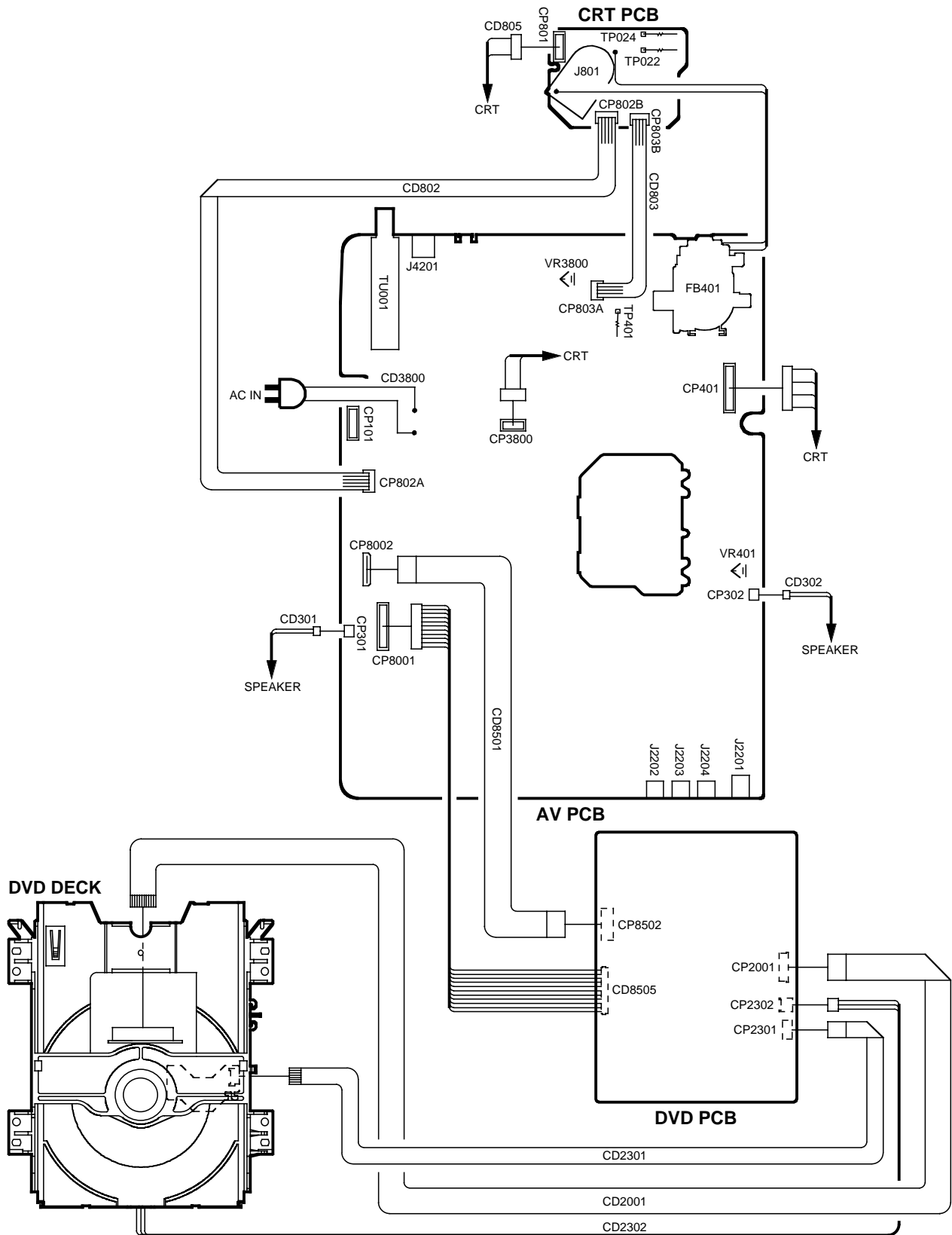


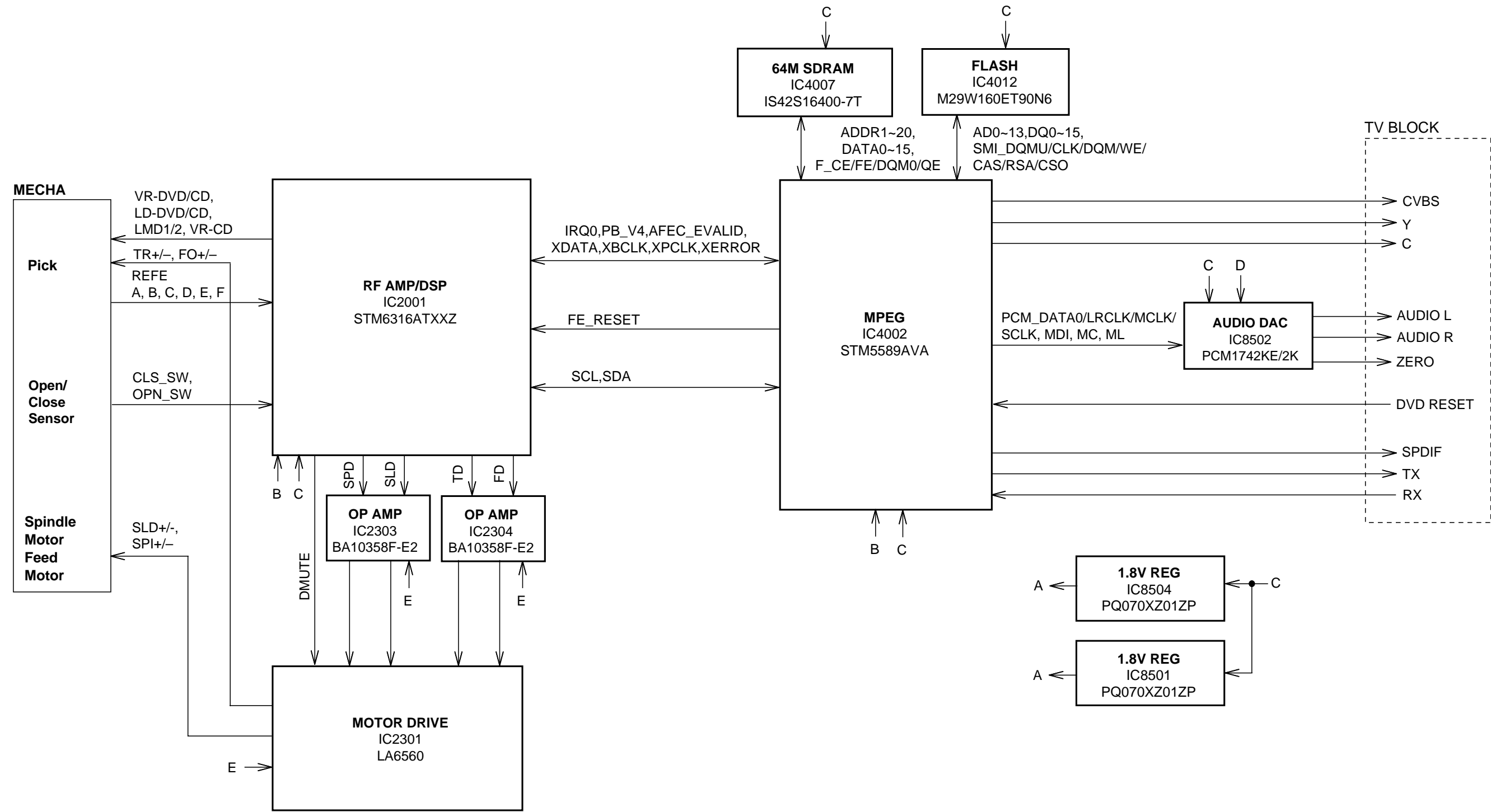
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

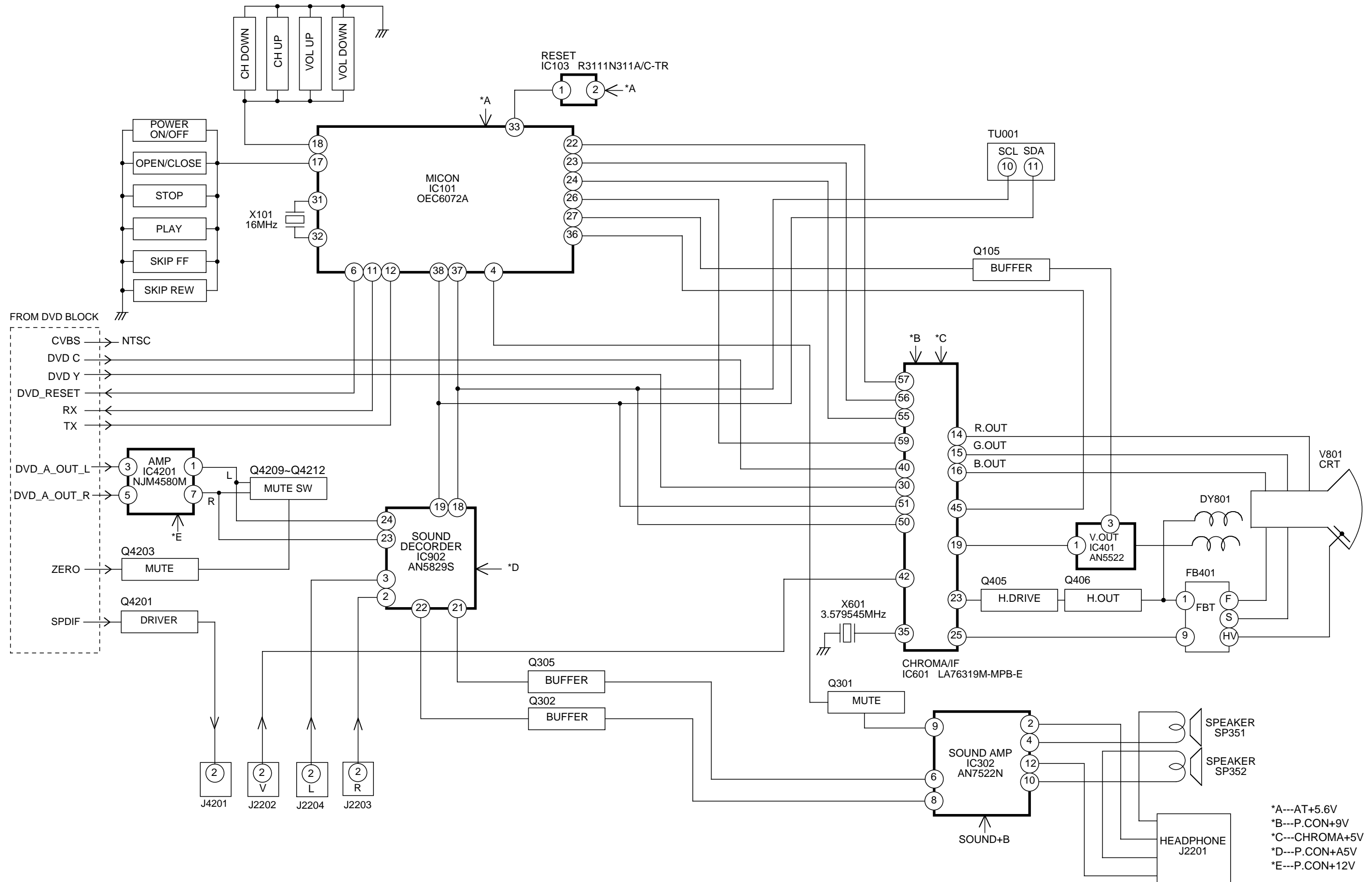


DVD ST SOLUTION BLOCK DIAGRAM

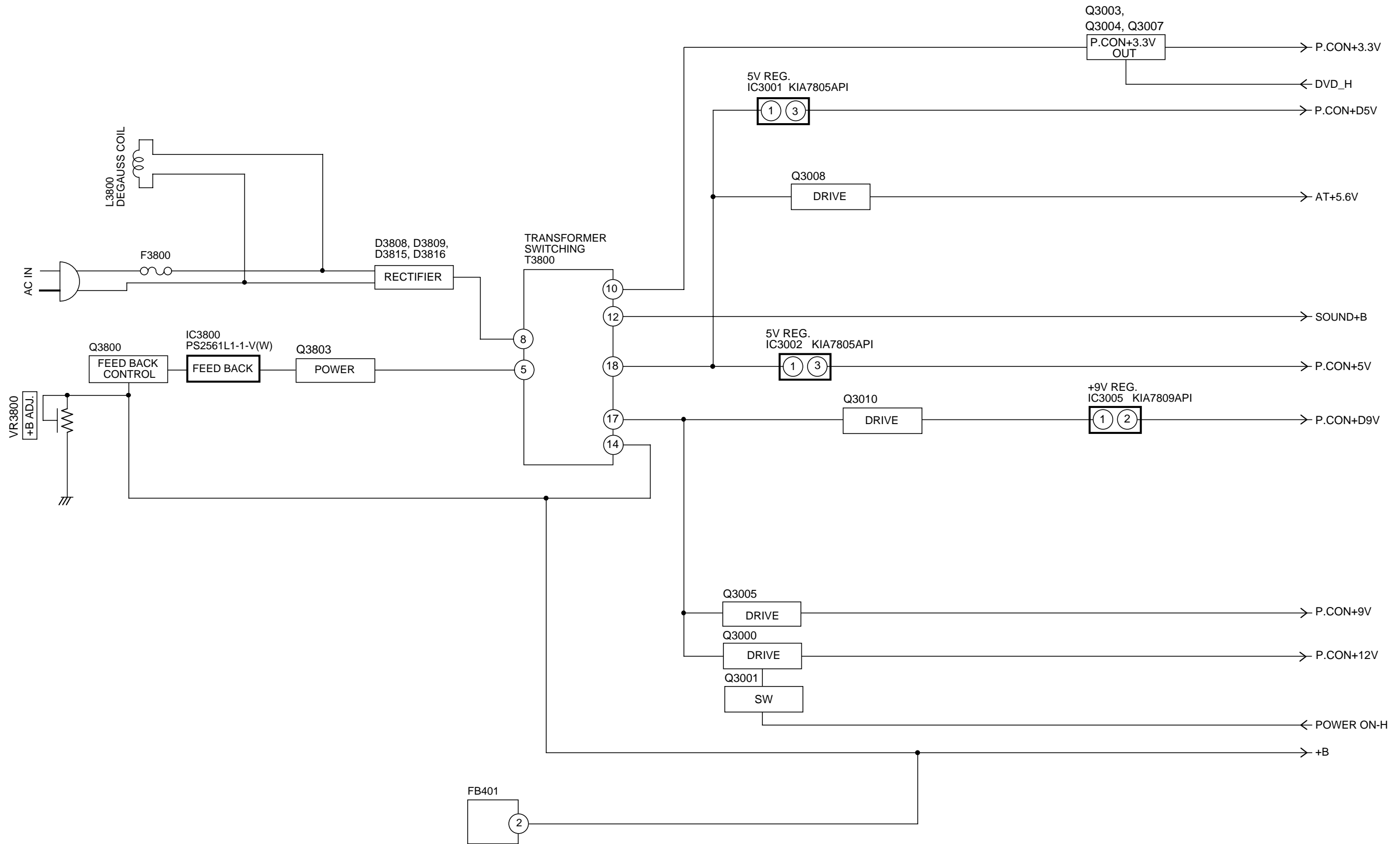


A --- 1.8V
 B --- 2.5V
 C --- 3.3V
 D --- 5V
 E --- 9V

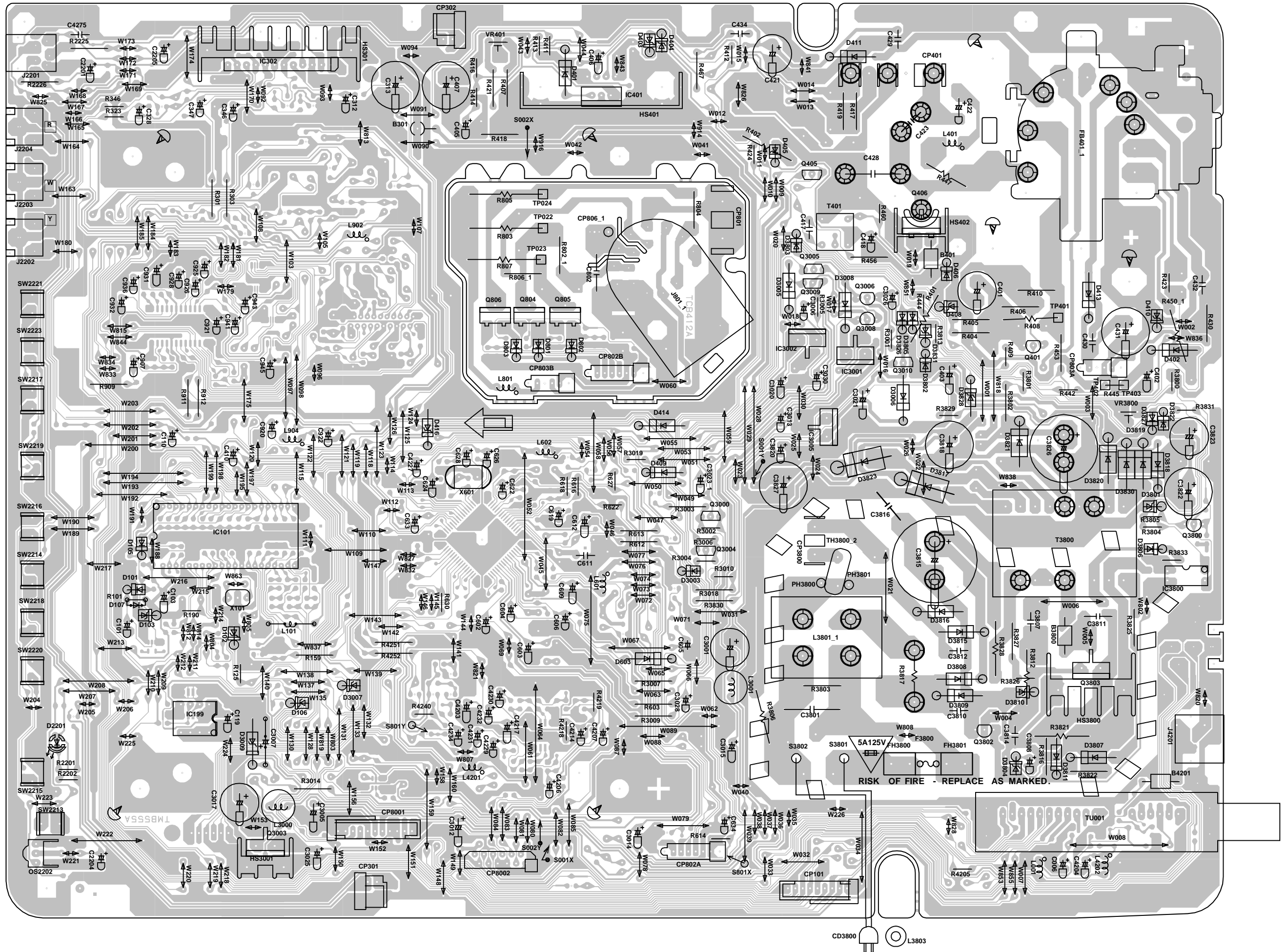
TV BLOCK DIAGRAM



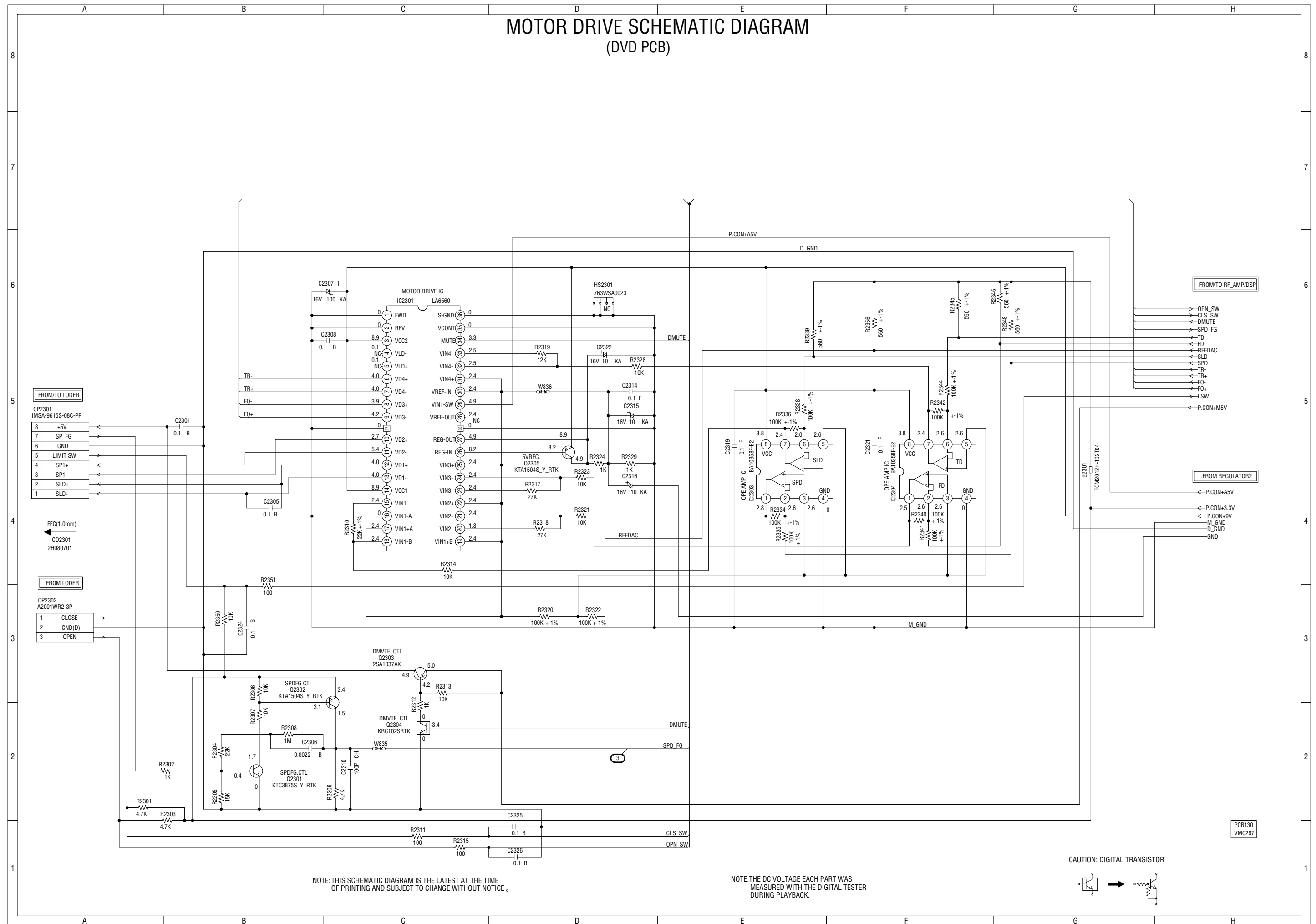
POWER BLOCK DIAGRAM



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



MOTOR DRIVE SCHEMATIC DIAGRAM (DVD PCB)



FROM/TO LOADER

8	+5V
7	SP_FG
6	GND
5	LIMIT SW
4	SP1+
3	SP1-
2	SLD+
1	SLD-

FROM LOADER

1	CLOSE
2	GND(D)
3	OPEN

FROM/TO RF_AMP/DSP

- OPN_SW
- CLS_SW
- DMUTE
- SPD_FG
- TD
- REFDAC
- SLD
- SPD
- TR-
- TR+
- FO-
- FO+
- LSW

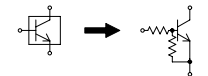
FROM REGULATOR2

- P.CON+5V
- P.CON+3.3V
- P.CON+9V
- M_GND
- D_GND
- GND

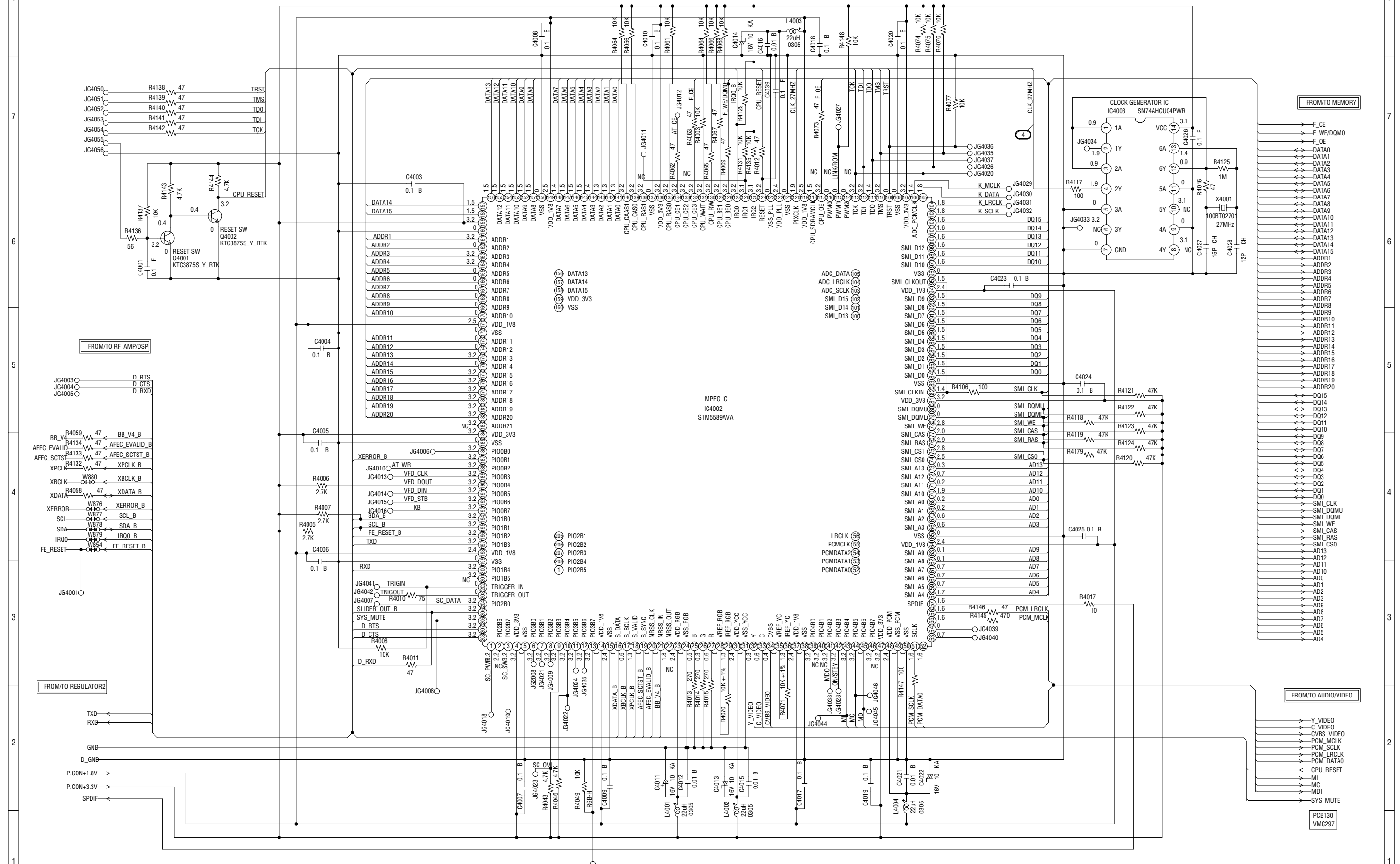
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

CAUTION: DIGITAL TRANSISTOR



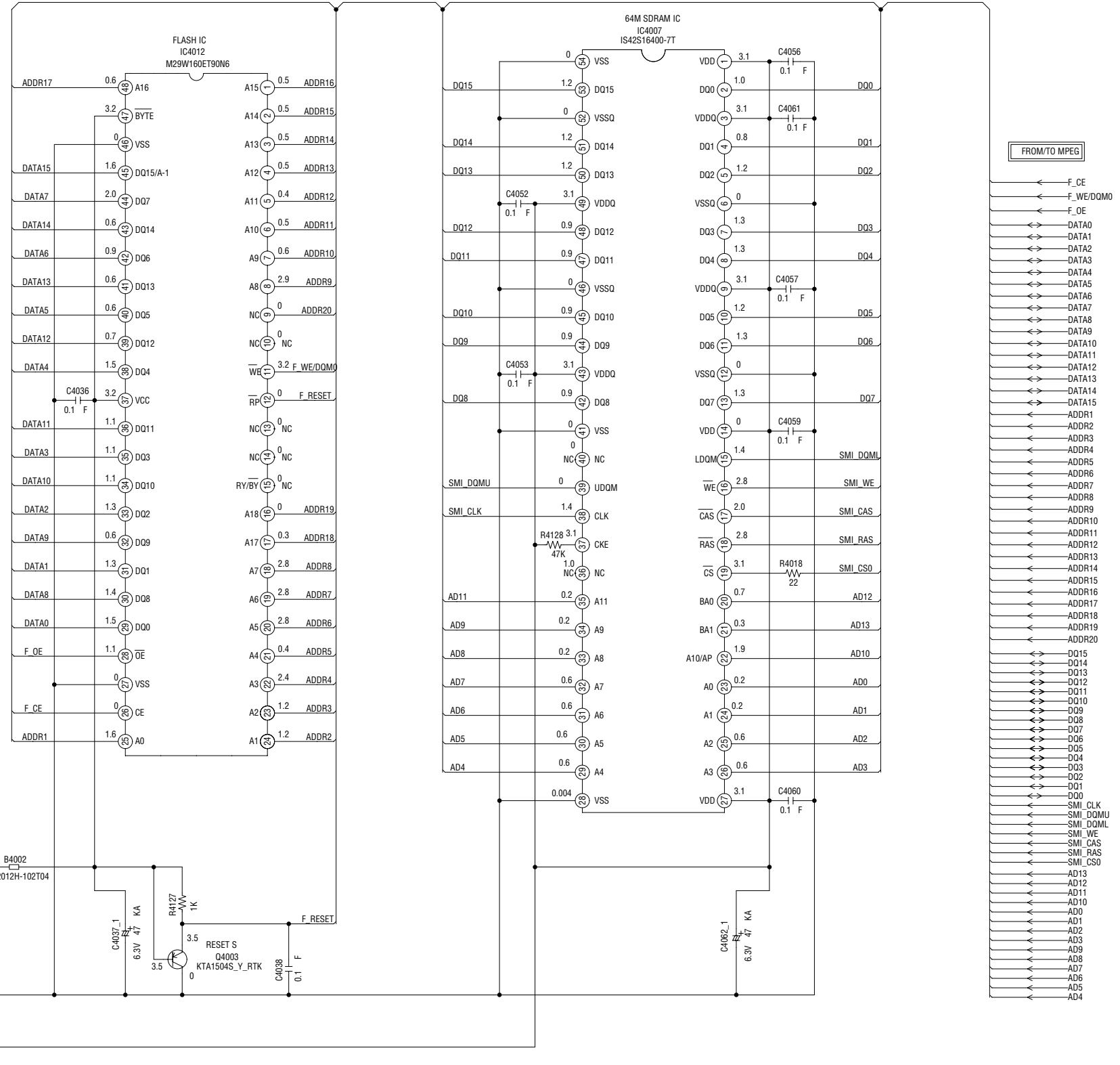
MPEG SCHEMATIC DIAGRAM (DVD PCB)



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.

MEMORY SCHEMATIC DIAGRAM (DVD PCB)



- FROM/TO MPEG
- ← F_CE
 - ← F_WE/DQM0
 - ← F_OE
 - ← DATA0
 - ← DATA1
 - ← DATA2
 - ← DATA3
 - ← DATA4
 - ← DATA5
 - ← DATA6
 - ← DATA7
 - ← DATA8
 - ← DATA9
 - ← DATA10
 - ← DATA11
 - ← DATA12
 - ← DATA13
 - ← DATA14
 - ← DATA15
 - ← ADDR1
 - ← ADDR2
 - ← ADDR3
 - ← ADDR4
 - ← ADDR5
 - ← ADDR6
 - ← ADDR7
 - ← ADDR8
 - ← ADDR9
 - ← ADDR10
 - ← ADDR11
 - ← ADDR12
 - ← ADDR13
 - ← ADDR14
 - ← ADDR15
 - ← ADDR16
 - ← ADDR17
 - ← ADDR18
 - ← ADDR19
 - ← ADDR20
 - ← DQ15
 - ← DQ14
 - ← DQ13
 - ← DQ12
 - ← DQ11
 - ← DQ10
 - ← DQ9
 - ← DQ8
 - ← DQ7
 - ← DQ6
 - ← DQ5
 - ← DQ4
 - ← DQ3
 - ← DQ2
 - ← DQ1
 - ← DQ0
 - ← SMI_CLK
 - ← SMI_DQMU
 - ← SMI_DQML
 - ← SMI_WE
 - ← SMI_CAS
 - ← SMI_RAS
 - ← SMI_CS0
 - ← AD13
 - ← AD12
 - ← AD11
 - ← AD10
 - ← AD9
 - ← AD8
 - ← AD7
 - ← AD6
 - ← AD5
 - ← AD4

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)

FROM REGULATOR2

FROM/TO MPEG

FROM/TO DVD IN/OUT

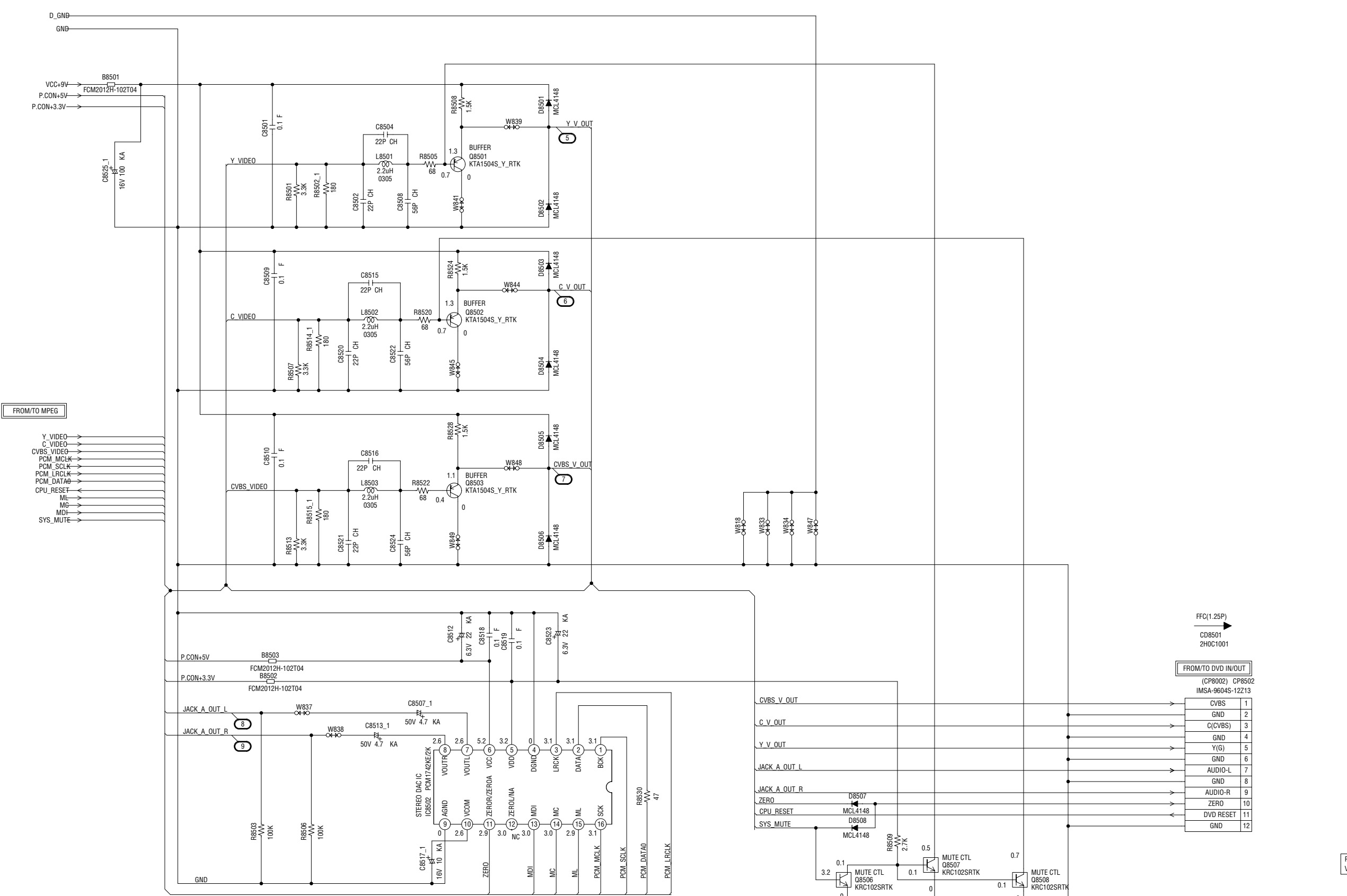
(CP8002) CP8502
IMSA-9604S-12Z13

PCB130
VMC297

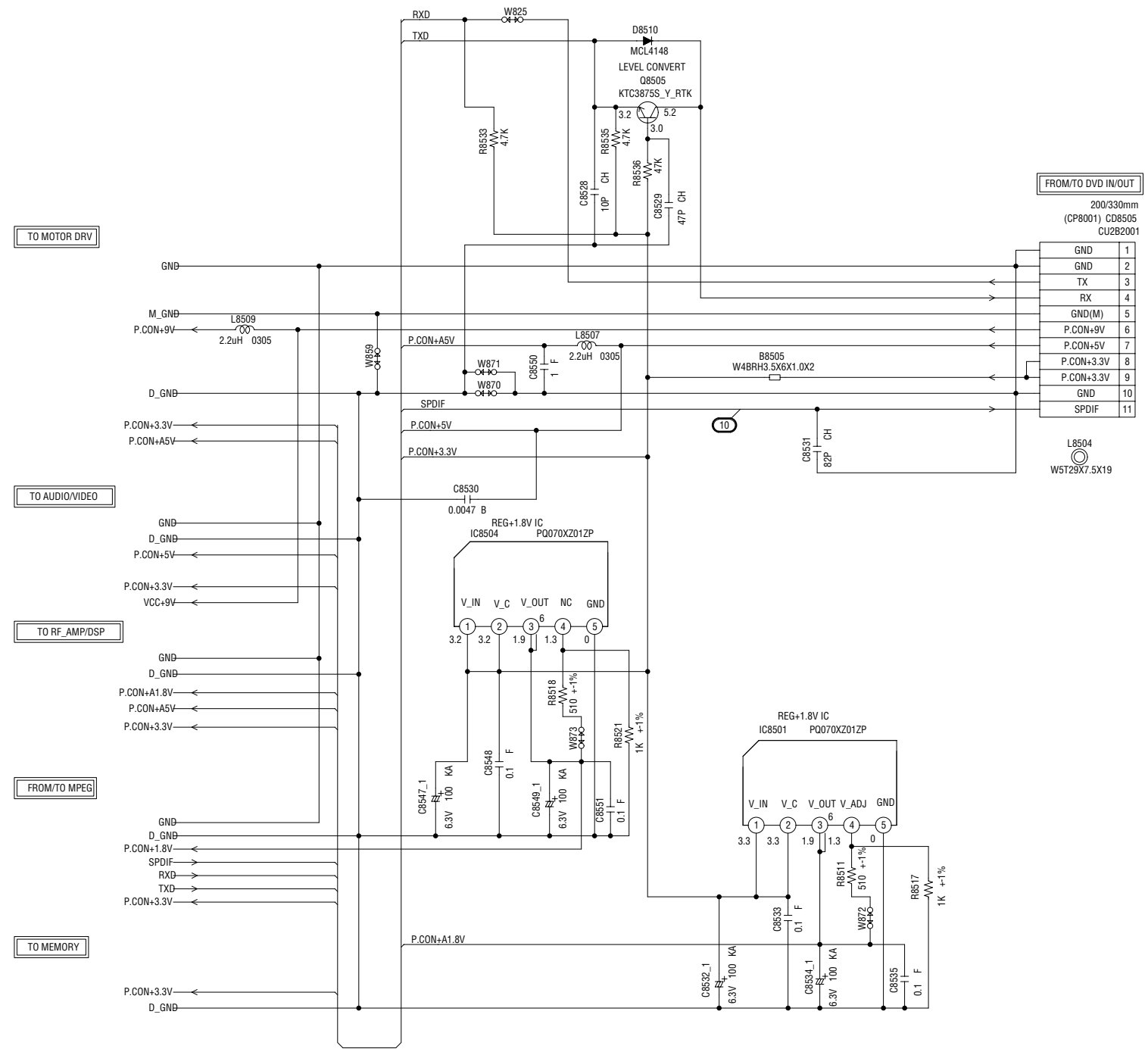
CAUTION: DIGITAL TRANSISTOR

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.



REGULATOR2 SCHEMATIC DIAGRAM (DVD PCB)



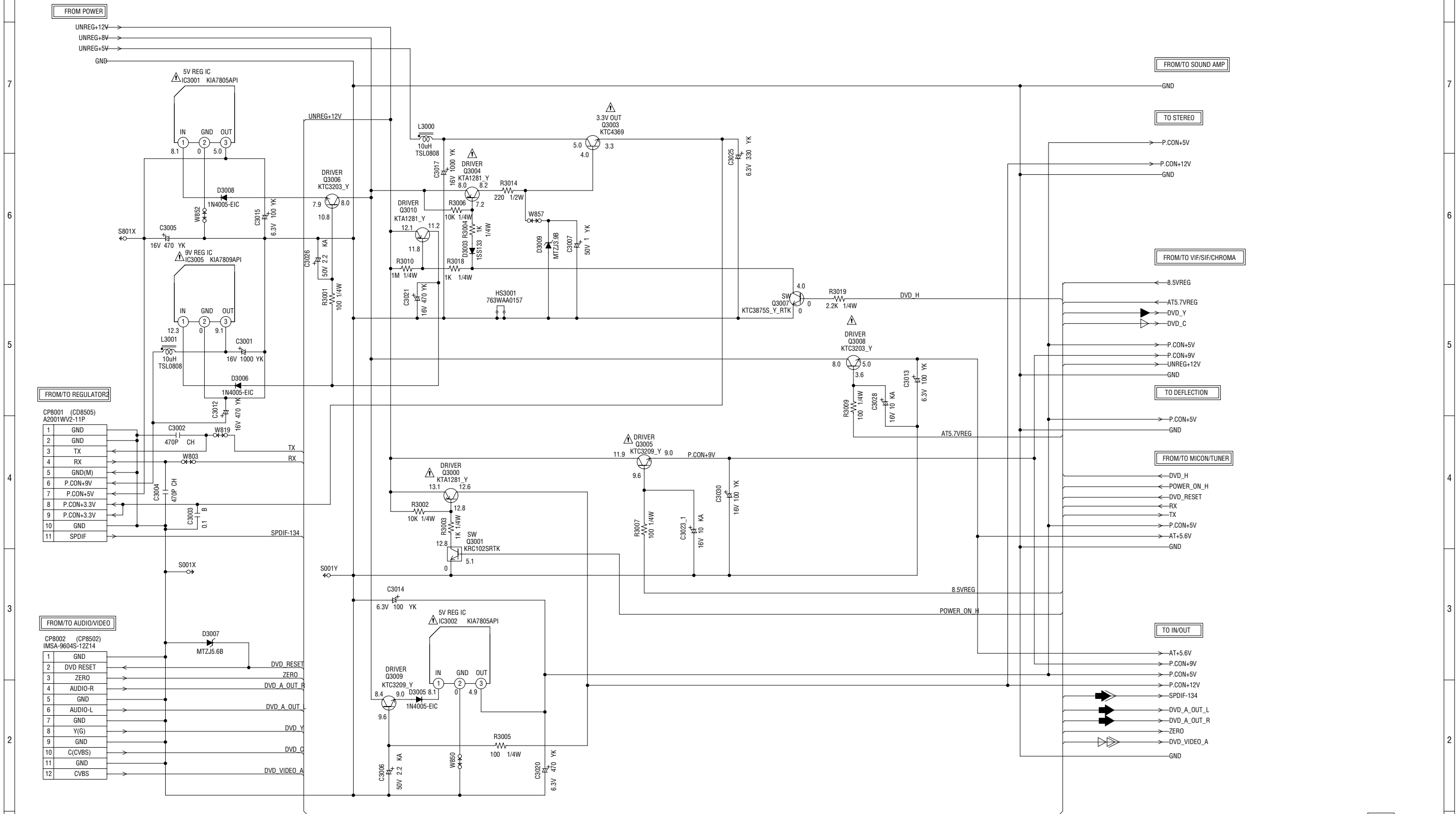
FROM/TO DVD IN/OUT	
200/330mm (CP8001) CD8505 CU2B2001	
GND	1
GND	2
TX	3
RX	4
GND(M)	5
P.CON+9V	6
P.CON+5V	7
P.CON+3.3V	8
P.CON+3.3V	9
GND	10
SPDIF	11

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.

PCB130
VMC297

REGULATOR SCHEMATIC DIAGRAM (AV PCB)



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

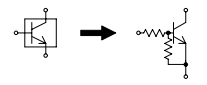
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

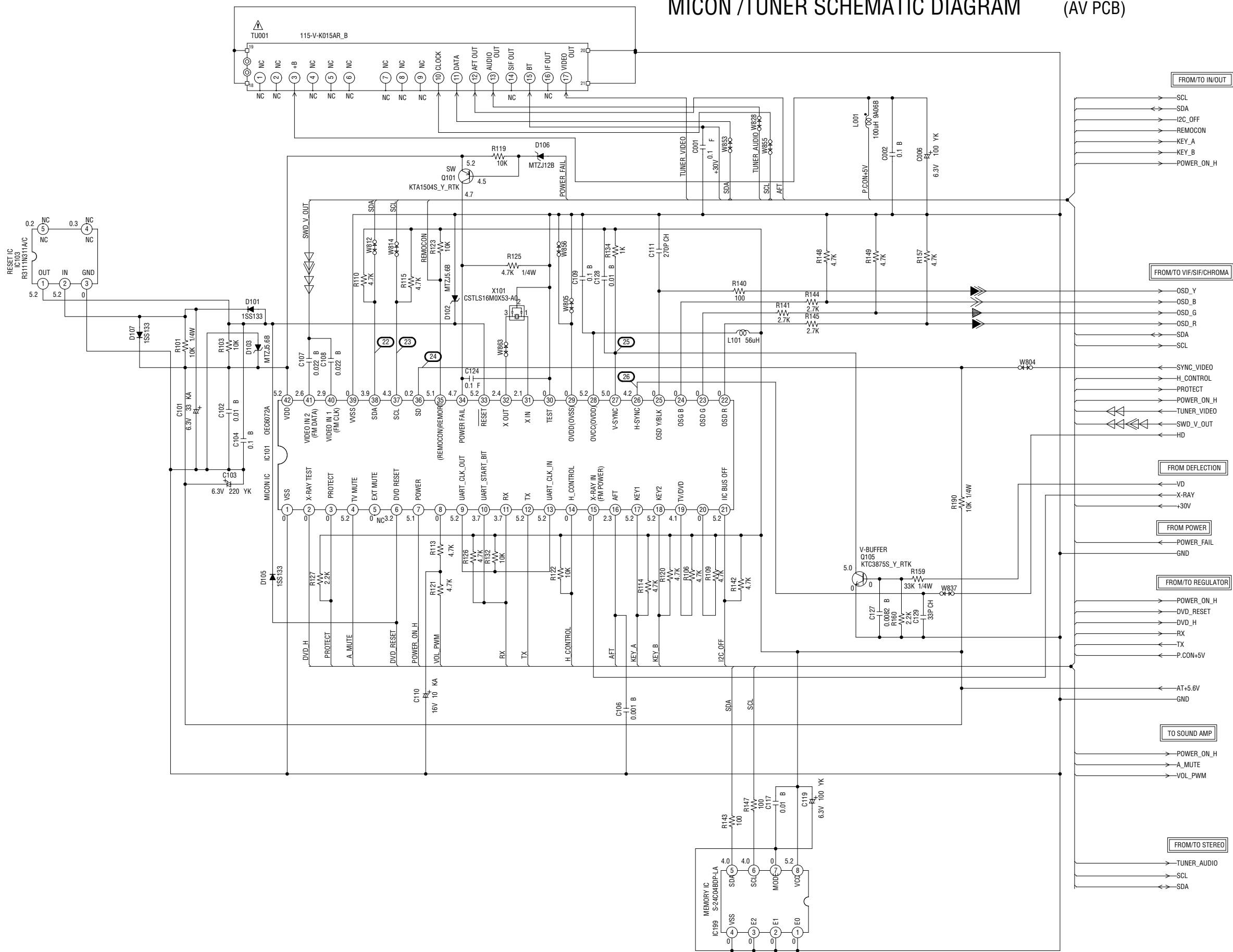
ATTENTION LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

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

CAUTION: DIGITAL TRANSISTOR



MICON /TUNER SCHEMATIC DIAGRAM (AV PCB)



FROM/TO IN/OUT

FROM/TO VIF/SIF/CHROMA

FROM DEFLECTION

FROM POWER

FROM/TO REGULATOR

TO SOUND AMP

FROM/TO STEREO

- SCL
- SDA
- I2C_OFF
- REMOCON
- KEY_A
- KEY_B
- POWER_ON_H

- OSD_Y
- OSD_B
- OSD_G
- OSD_R
- SDA
- SCL

- ← SYNC_VIDEO
- ← H_CONTROL
- ← PROTECT
- ← POWER_ON_H
- ← TUNER_VIDEO
- ← SWD_V_OUT
- ← HD

- ← VD
- ← X-RAY
- ← +30V

- ← POWER_FAIL
- ← GND

- POWER_ON_H
- DVD_RESET
- DVD_H
- RX
- TX
- ← P.CON+5V

- ← AT+5.6V
- ← GND

- POWER_ON_H
- A_MUTE
- VOL_PWM

- TUNER_AUDIO
- SCL
- SDA

PCB250
TMB555

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.

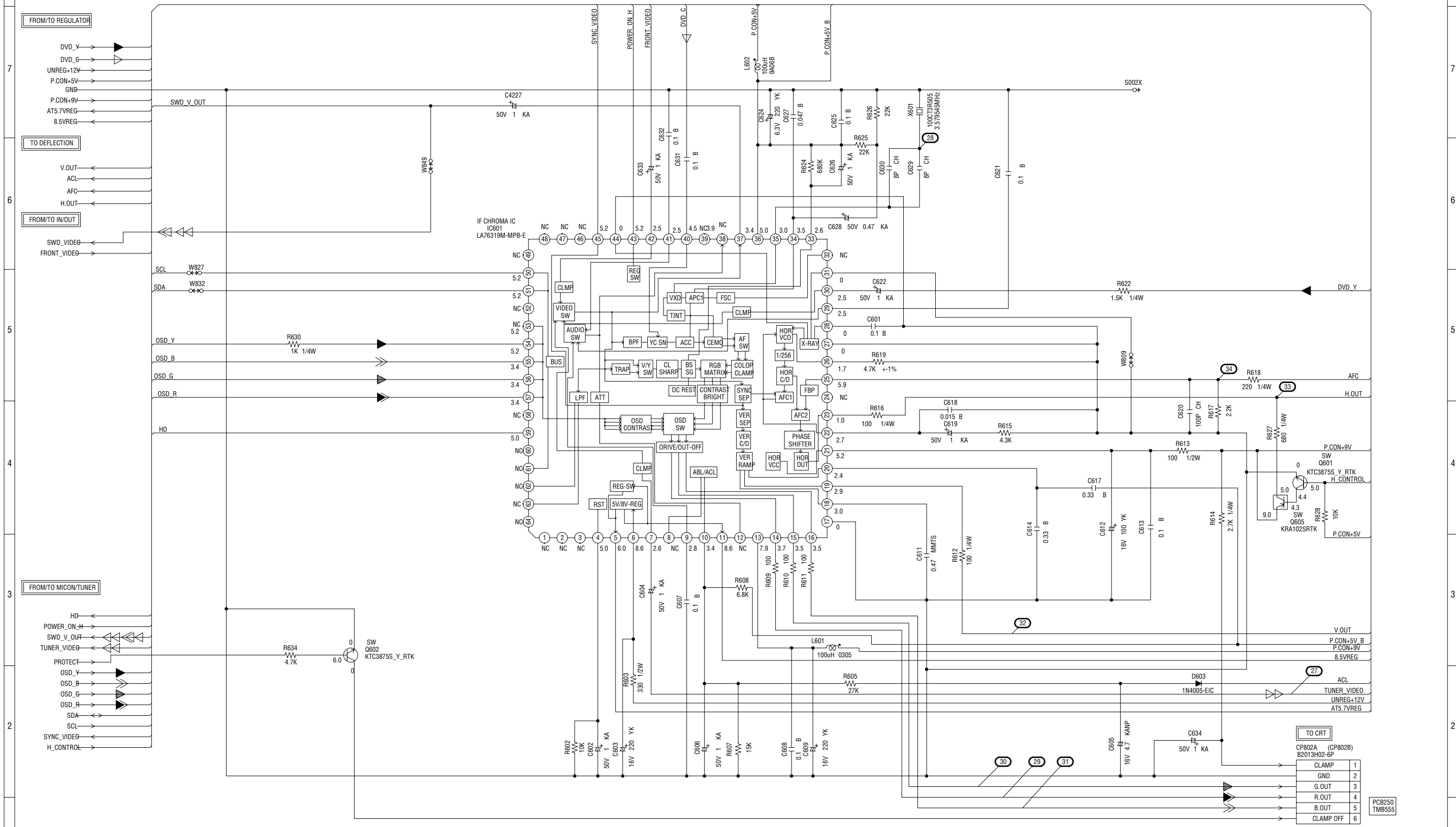
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

◀ B.SIGNAL
▲ G.SIGNAL
◀ R.SIGNAL

◀ TUNER VIDEO SIGNAL
◀ PLAYBACK VIDEO SIGNAL
◀ LUMINANCE SIGNAL

VIF/SIF/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

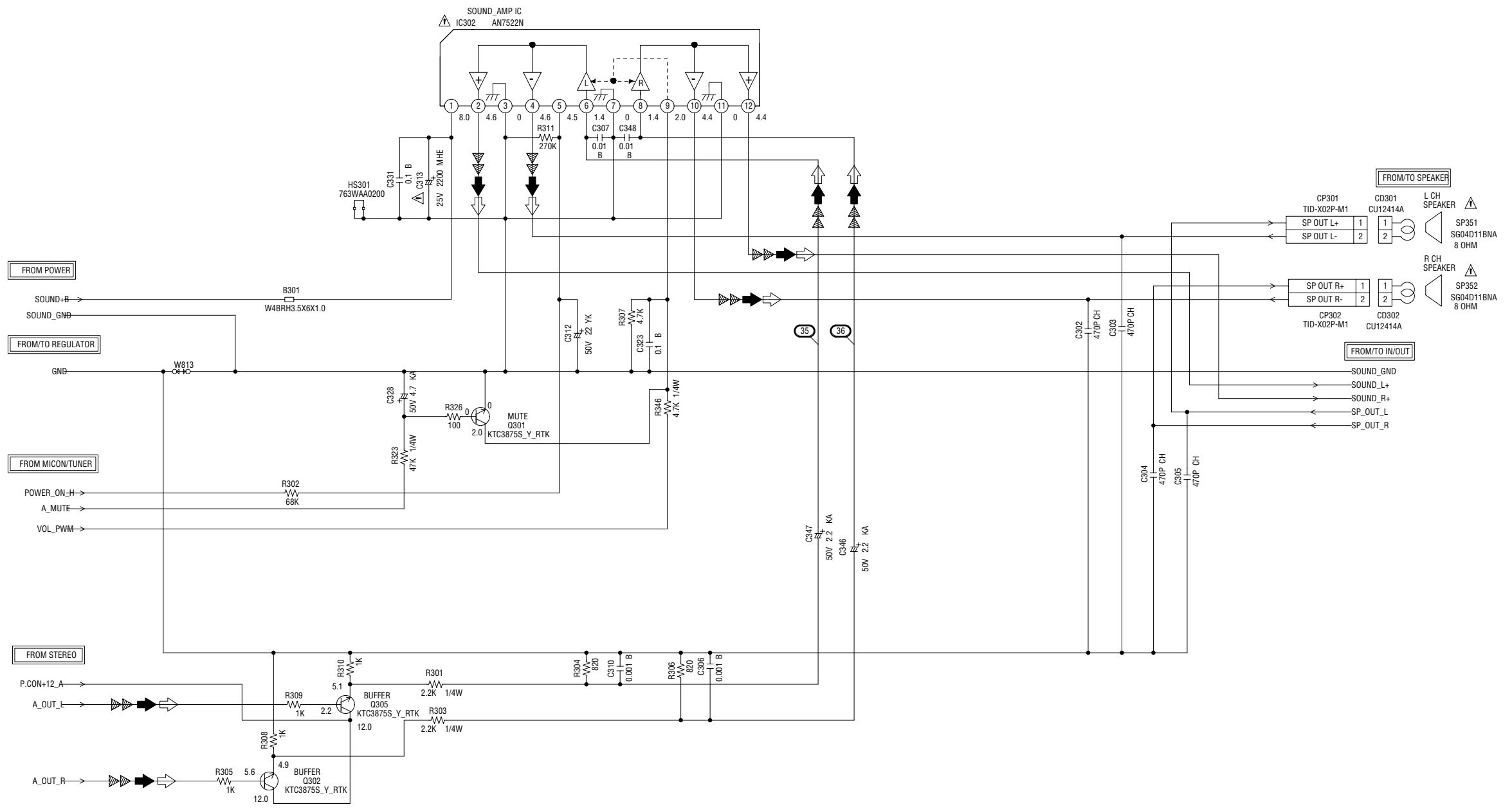
▶ PLAYBACK LUMINANCE SIGNAL
 ◀▶ PLAYBACK COLOR SIGNAL
 ▲ B.SIGNAL
 ▼ G.SIGNAL
 ◀ R.SIGNAL

◀ TUNER VIDEO SIGNAL
 ▲ TUNER AUDIO SIGNAL
 ◀▶ PLAYBACK VIDEO SIGNAL

CLAMP	1
GND	2
G.OUT	3
R.OUT	4
B.OUT	5
CLAMP OFF	6

PCB250
TMB555

SOUND AMP 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.

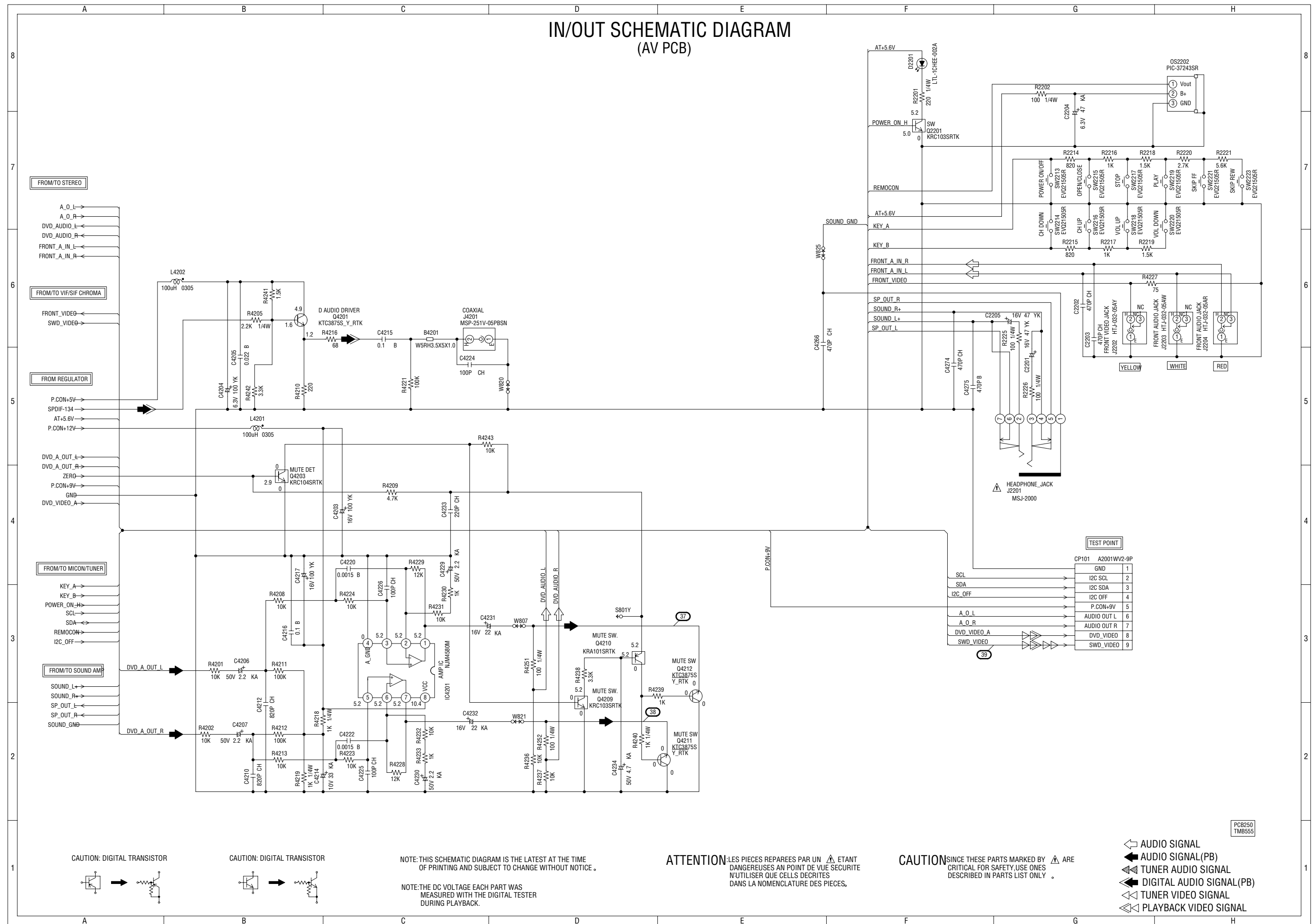
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

ATTENTION LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

AUDIO SIGNAL
 AUDIO SIGNAL (PB)
 TUNER AUDIO SIGNAL

IN/OUT SCHEMATIC DIAGRAM (AV PCB)



FROM/TO STEREO

FROM/TO VIF/SIF CHROMA

FROM REGULATOR

FROM/TO MICON/TUNER

FROM/TO SOUND AMP

TEST POINT

CP101	A2001WV2-9P
GND	1
I2C SCL	2
SDA	I2C SDA
I2C OFF	4
	I2C OFF
A O L	P.CON+9V
A O R	AUDIO OUT L
DVD_VIDEO_A	AUDIO OUT R
SWD_VIDEO	DVD_VIDEO
	SWD_VIDEO

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

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.

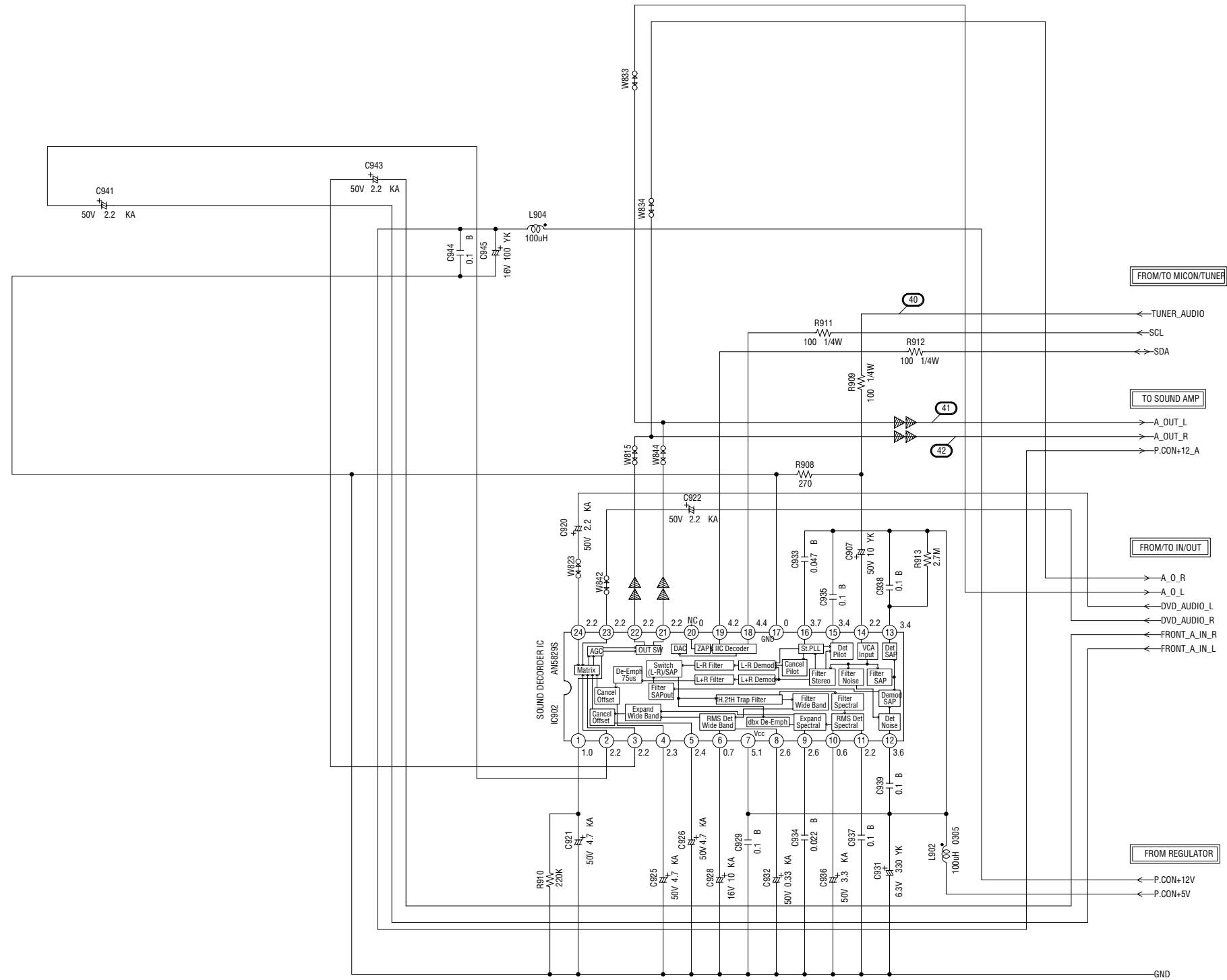
ATTENTION - LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION - SINCE THESE PARTS MARKED WITH ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

PCB250
TMB555

STEREO SCHEMATIC DIAGRAM (AV PCB)



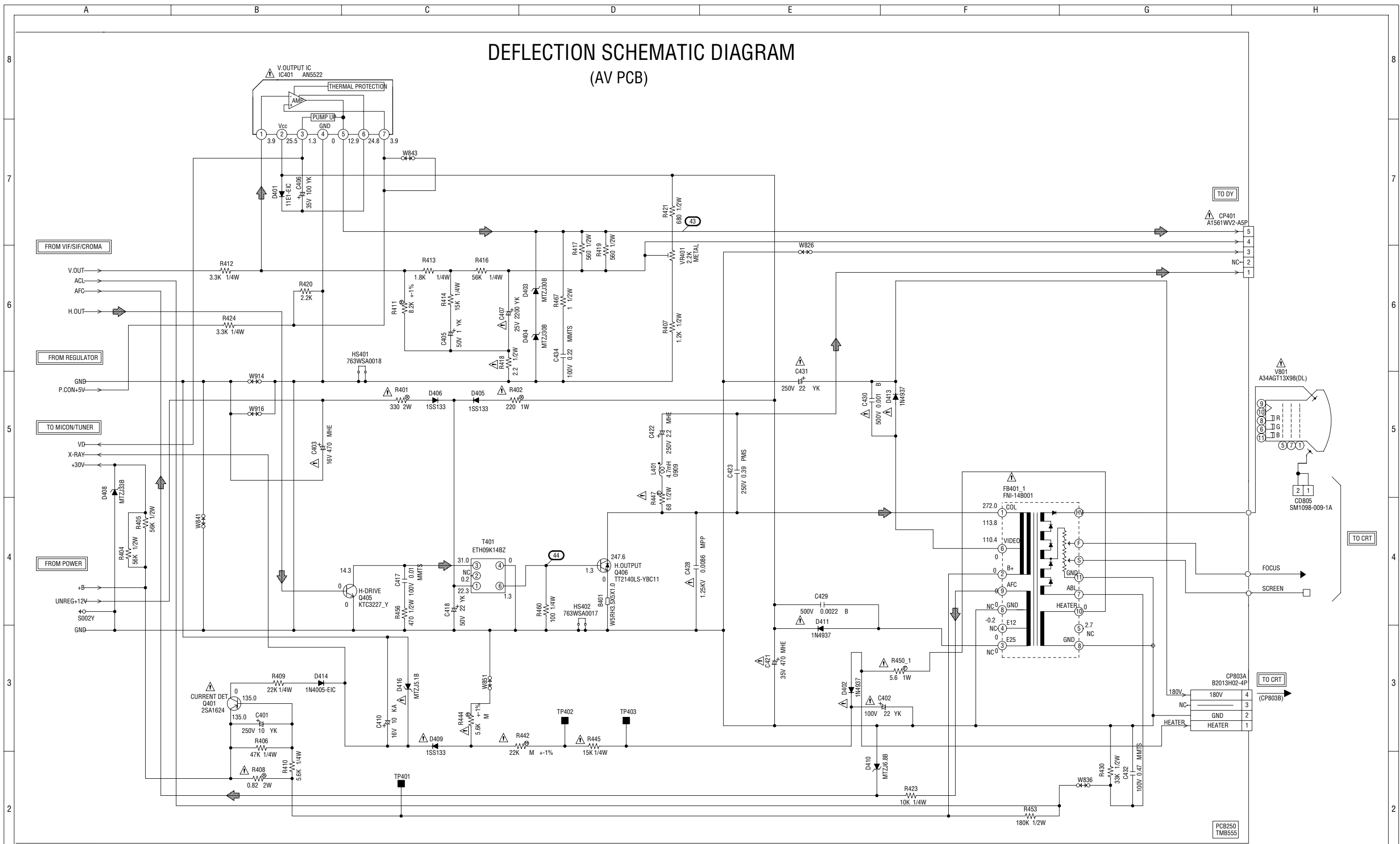
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

▶▶▶ TUNER AUDIO SIGNAL

PCB250
TM8555

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.

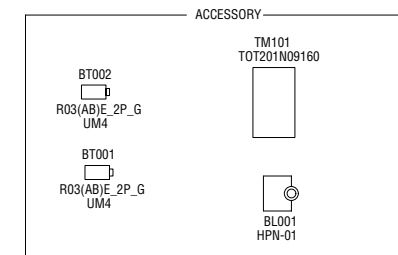
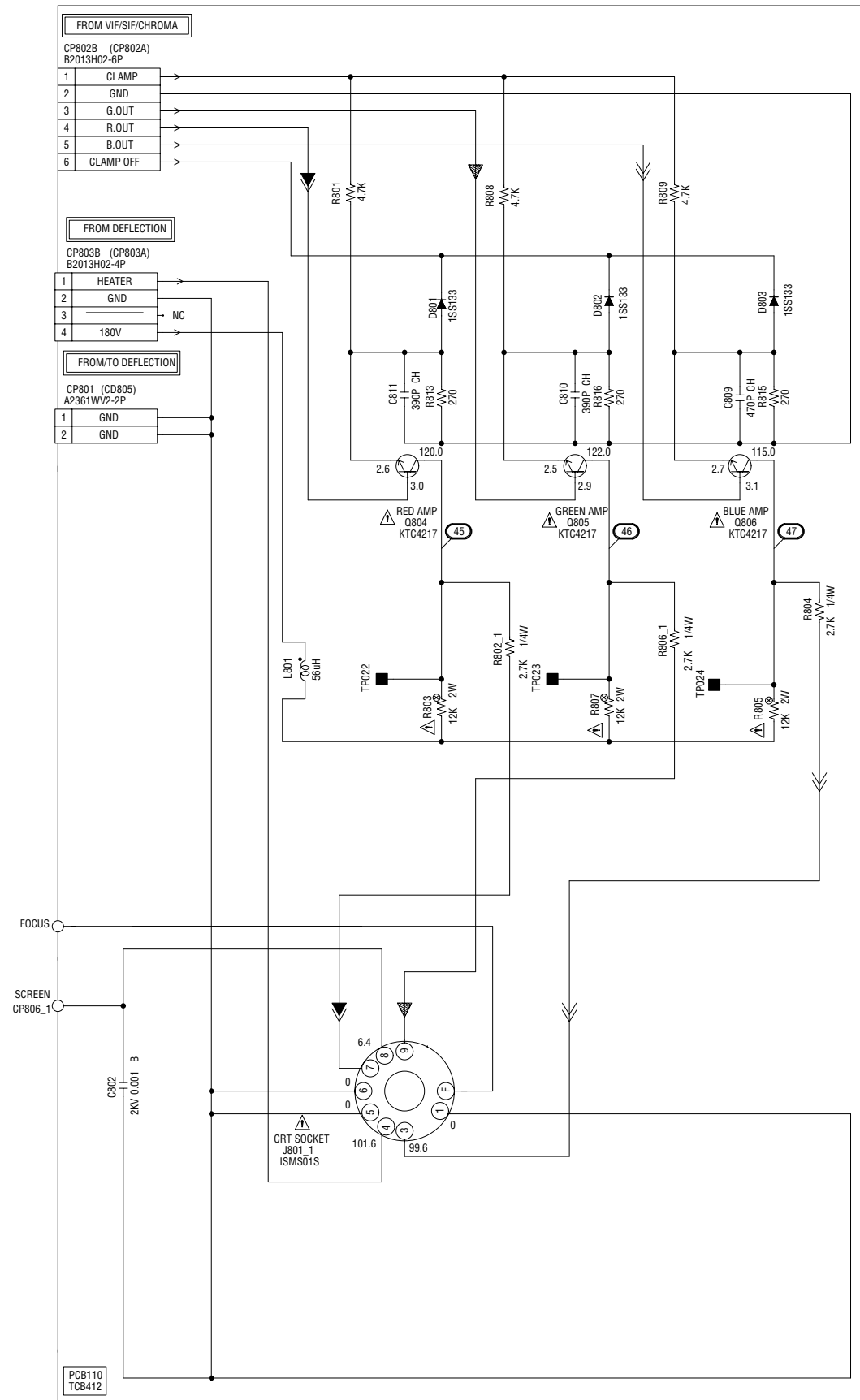
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

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

DEFLECTION SIGNAL

CRT SCHEMATIC DIAGRAM (CRT 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.

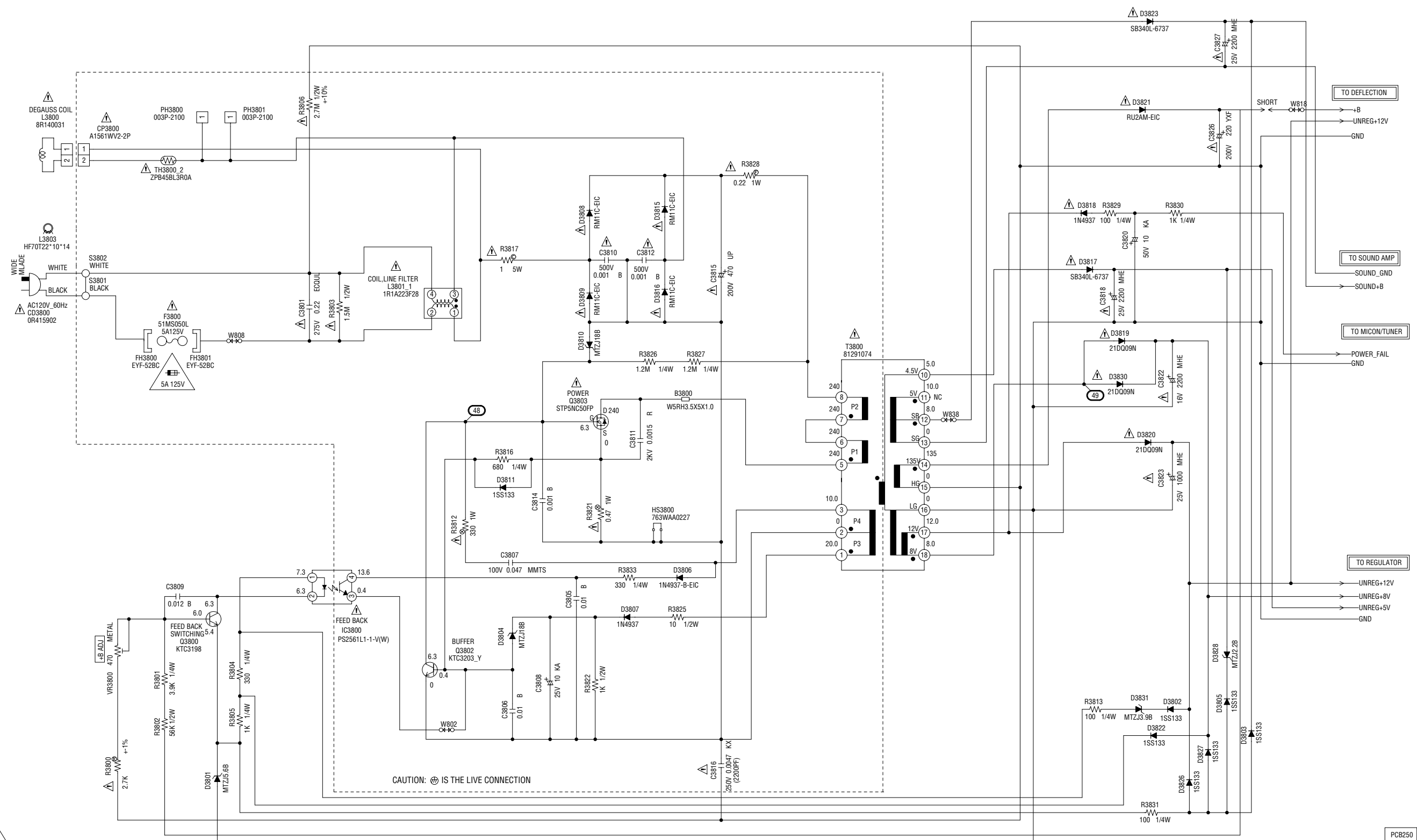
CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPARÉES PAR UN ÉTANT 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

(AV PCB)



ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE
N'UTILISER QUE DES FUSIBLE DE MEME TYPE 5A125V(F3800).
CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE 5A125V(F3800).

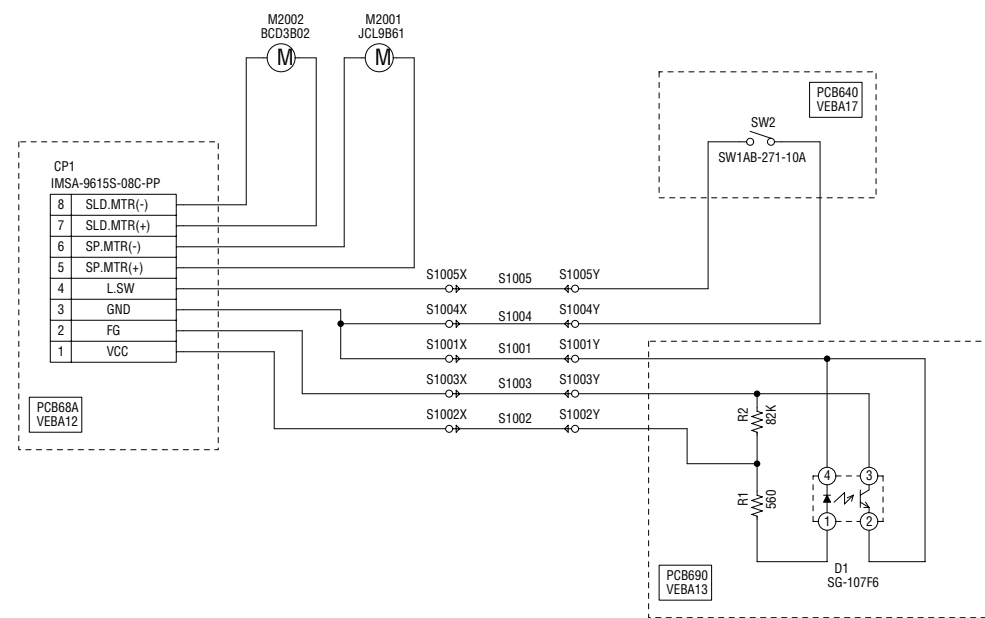
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

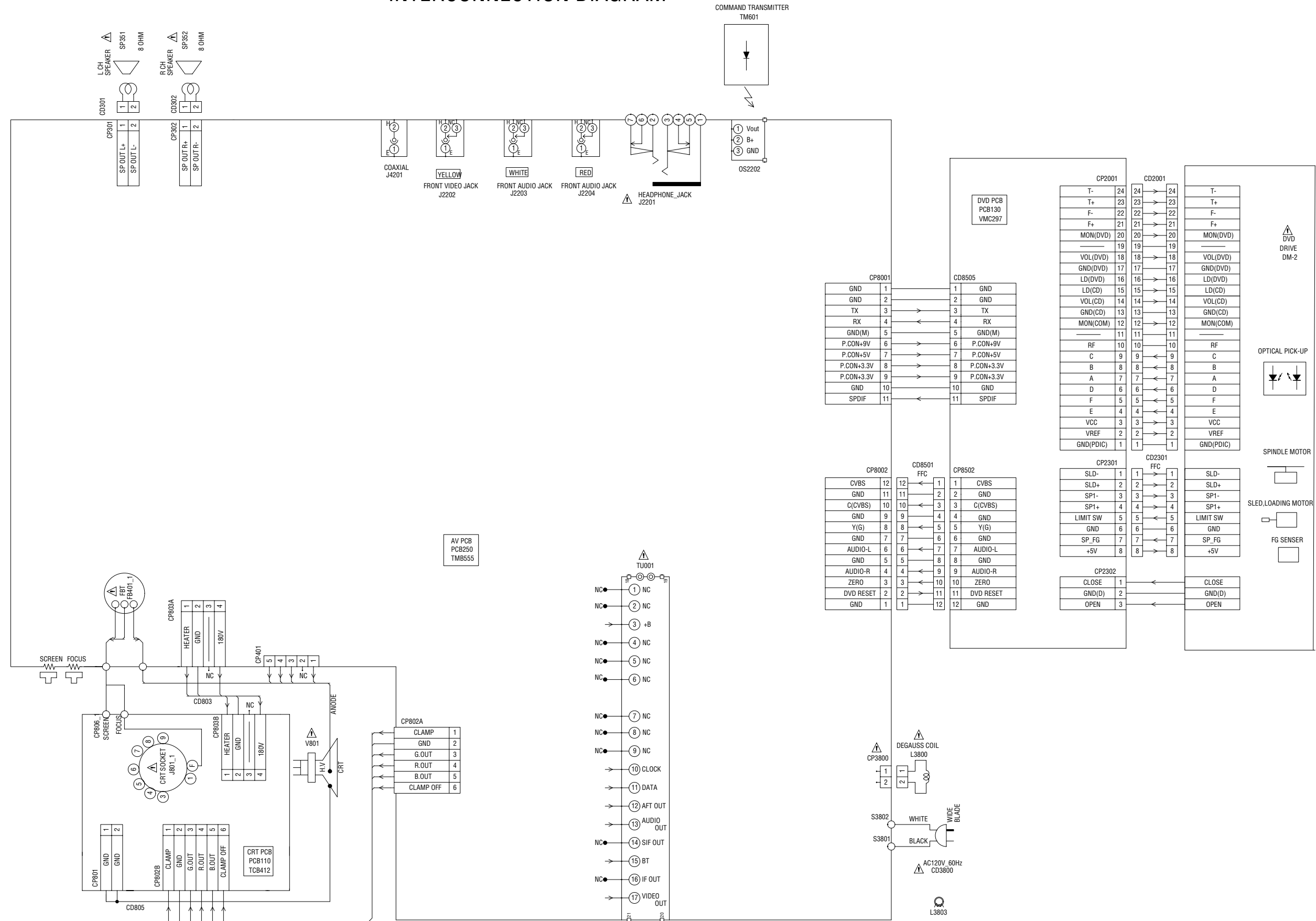
CAUTIONSINCE THESE PARTS MARKED BY ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY .

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

SW/RELAY/FG SCHEMATIC DIAGRAM



INTERCONNECTION DIAGRAM



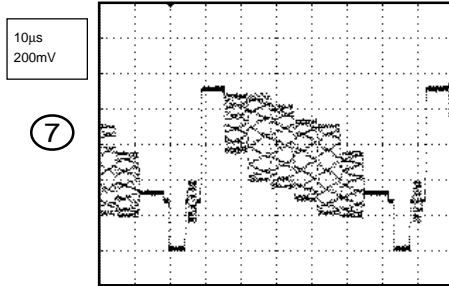
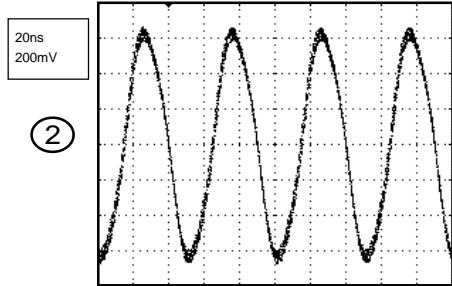
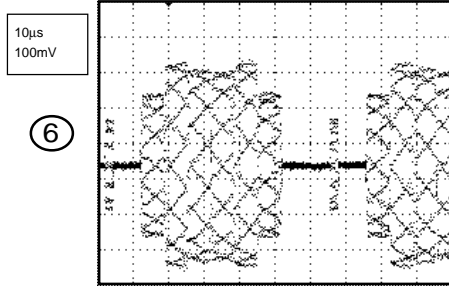
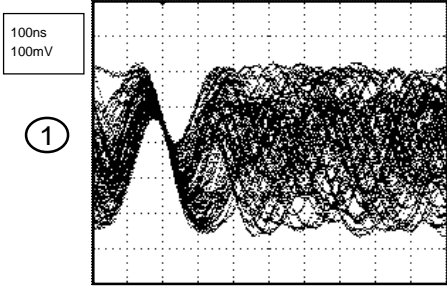
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIÈCES.

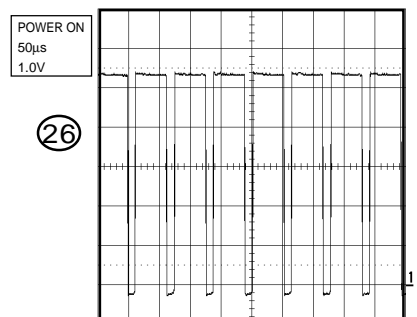
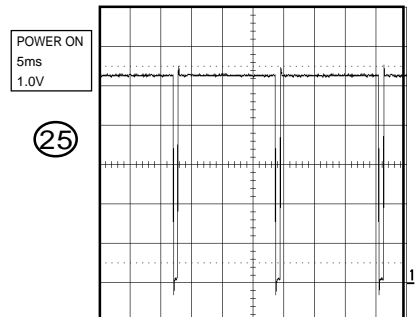
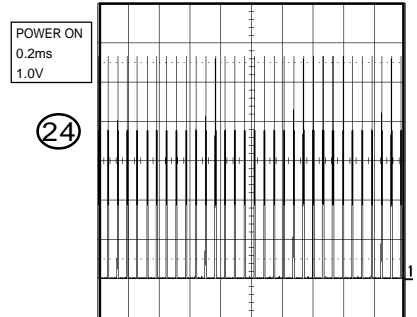
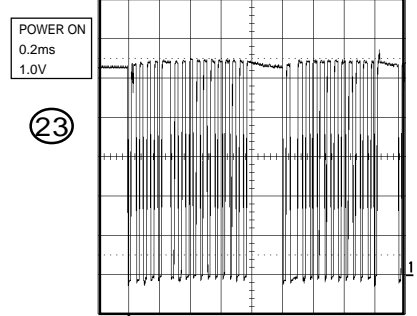
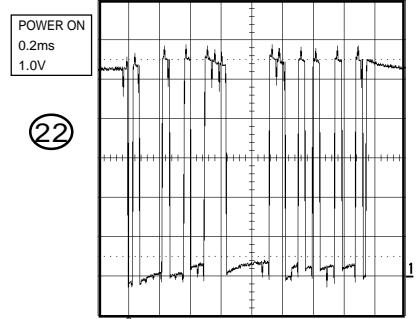
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

WAVEFORMS

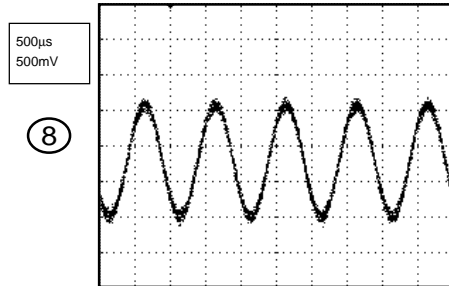
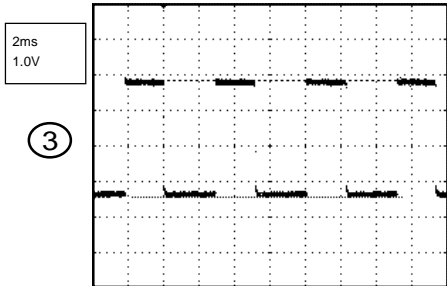
RF_AMP/DSP



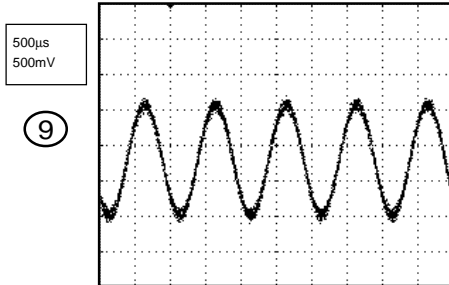
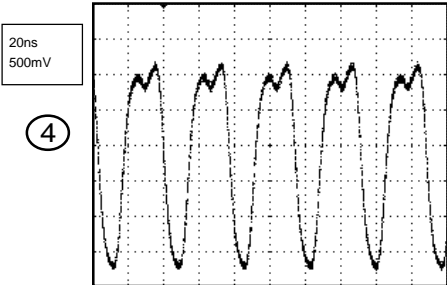
MICON/TUNER



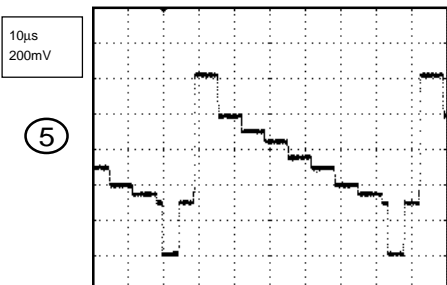
MOTOR DRIVE



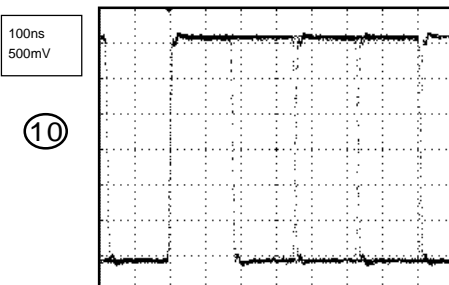
MPEG



AUDIO/VIDEO



REGULATOR 2



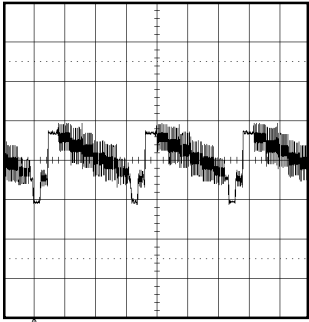
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

VIF/SIF/CHROMA

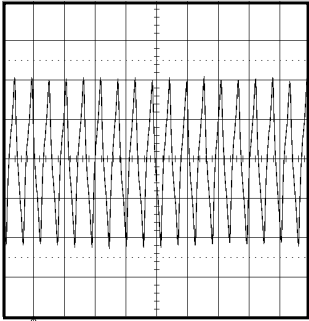
POWER ON
20 μ s
0.5V

27



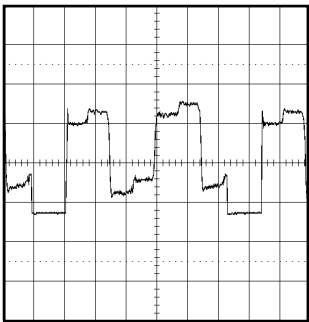
STANDBY
0.5 μ s
50mV

28



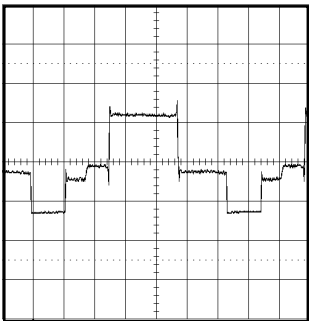
POWER ON
10 μ s
2.0V

29



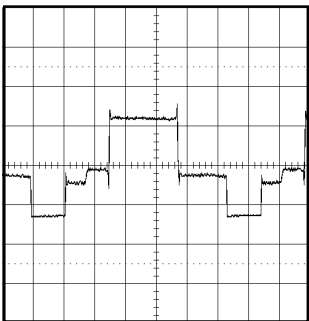
POWER ON
10 μ s
2.0V

30



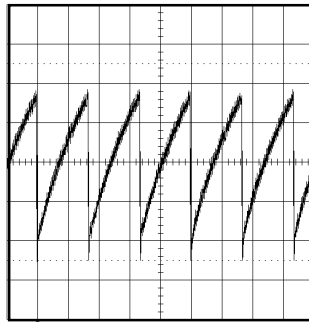
POWER ON
10 μ s
2.0V

31



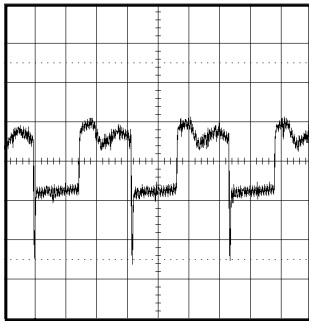
POWER ON
10ms
0.5V

32



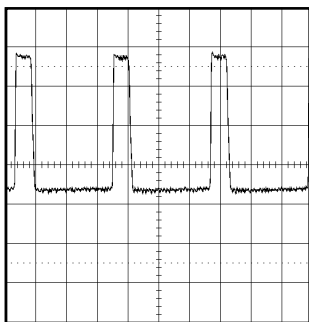
POWER ON
20 μ s
0.5V

33



POWER ON
20 μ s
2.0V

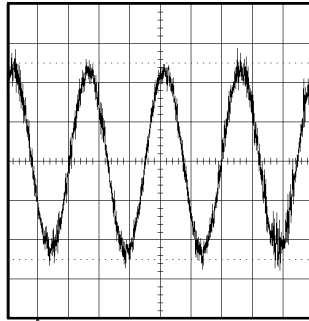
34



SOUND AMP

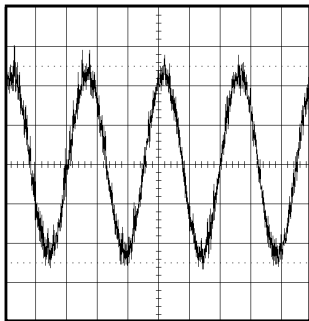
POWER ON
1ms
100mV

35



1ms
100mV

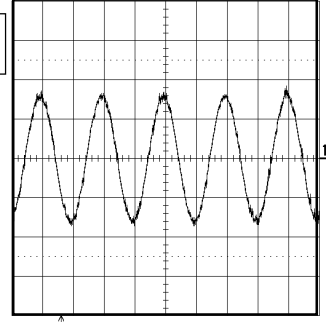
36



IN/OUT

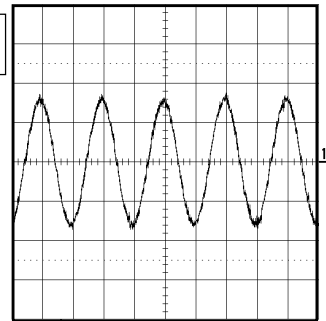
DVD PLAY
0.5ms
200mV

37



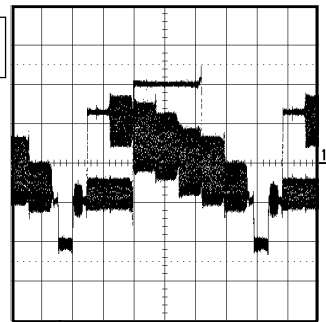
DVD PLAY
0.5ms
200mV

38



DVD PLAY
10 μ s
0.5V

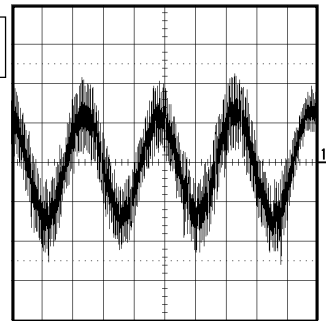
39



STEREO

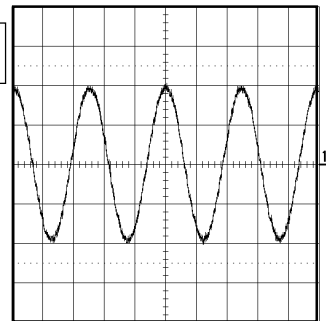
POWER ON
1ms
50mV

40



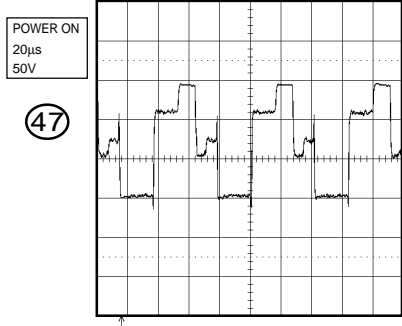
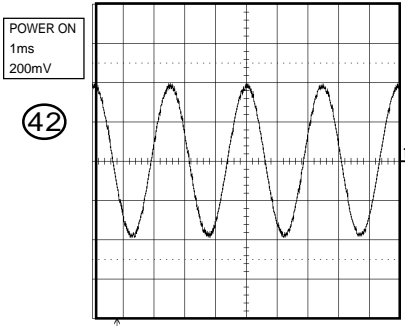
POWER ON
1ms
200mV

41

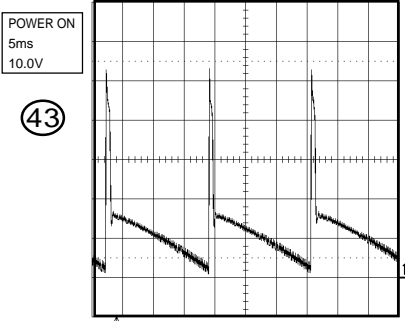


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

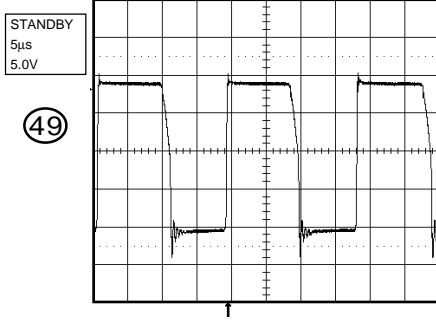
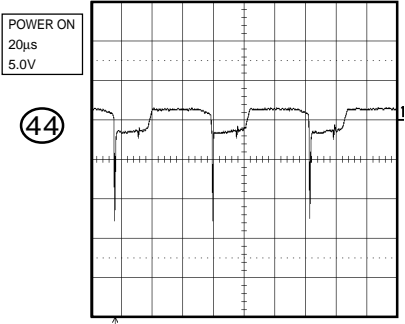
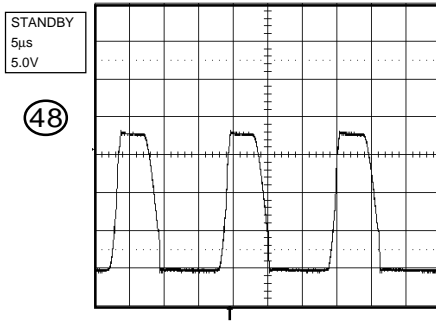
WAVEFORMS



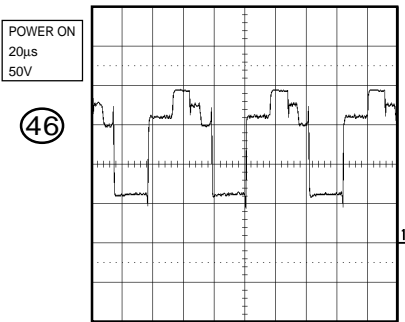
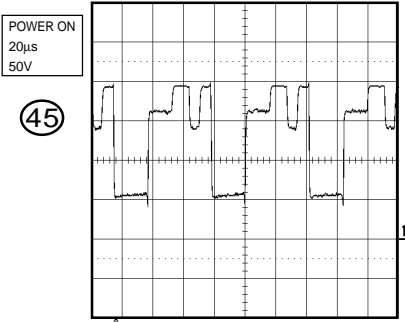
DEFLECTION



POWER

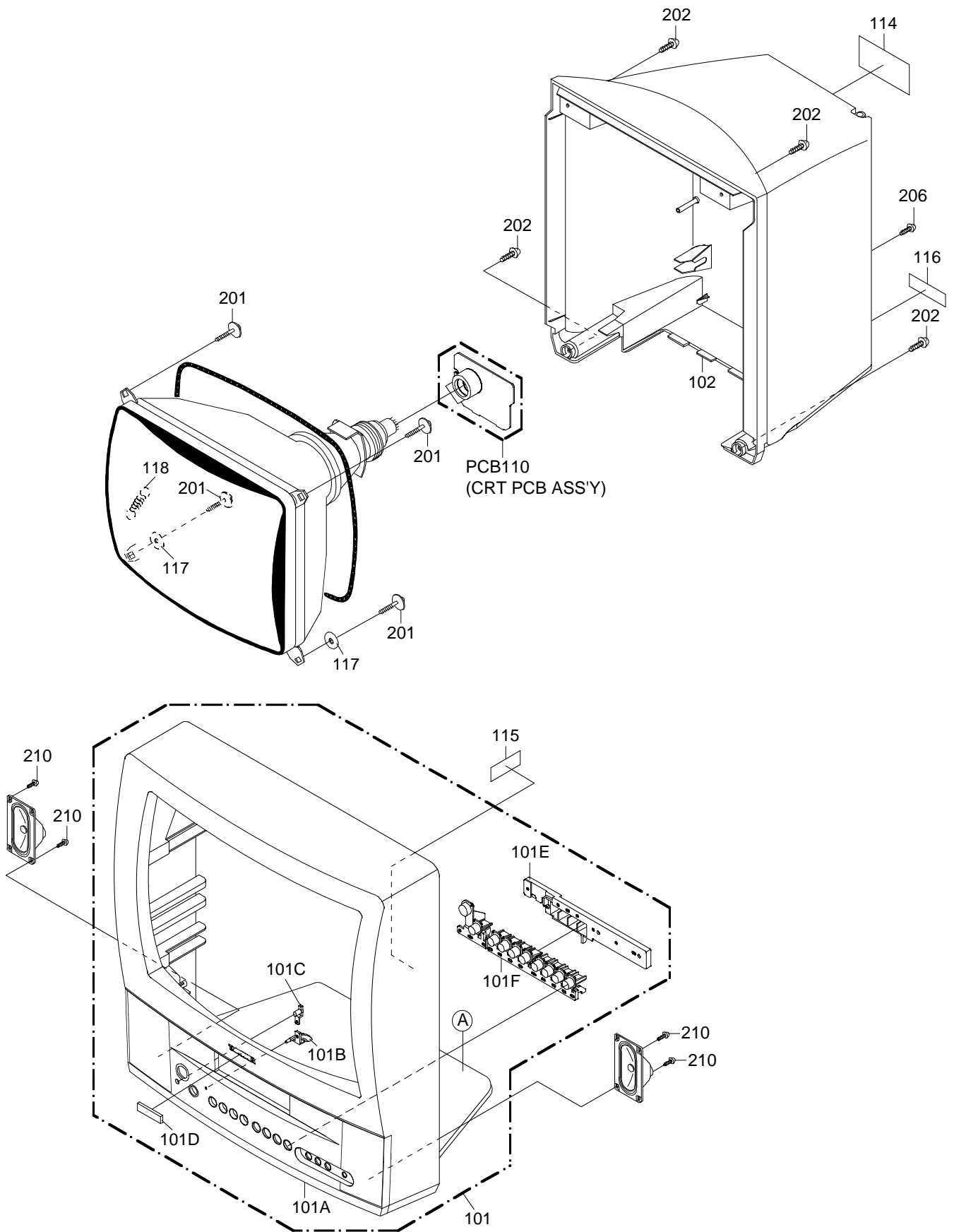


CRT

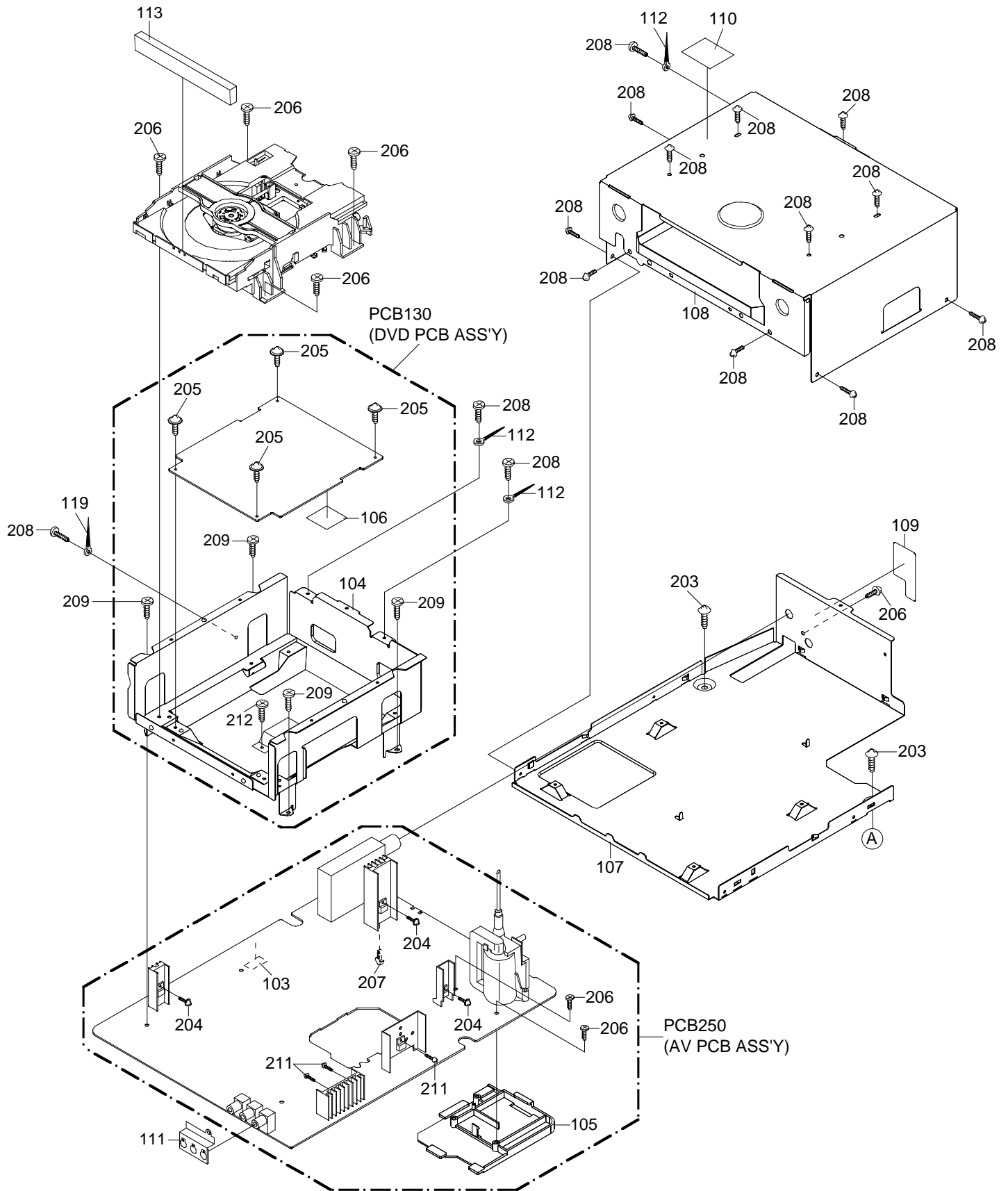


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

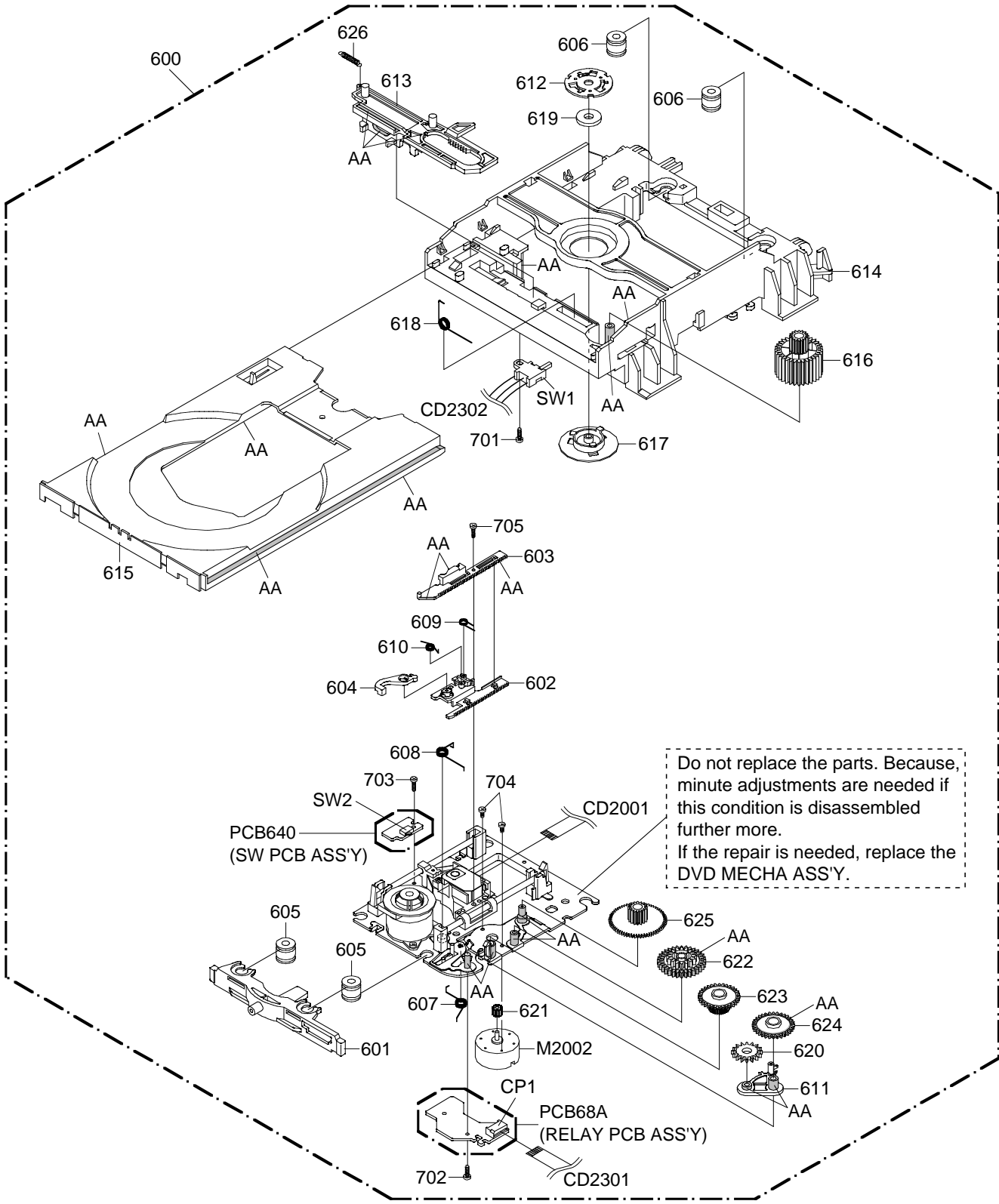
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



DVD DECK EXPLODED VIEW



CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section. Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	AE000715	A5J102A720	CABINET,FRONT ASSY	
101A	AD301808	701WPJ1168	CABINET,FRONT	
101B	AD301664	713WPA0248	GLASS,LED	
101C	AD301663	713WPA0249	GUIDE,REMOCON	
101D	AD301657	723549A011	BADGE,BRAND	
101E	AD301661	735WPAA493	STOPPER,BUTTON	
101F	AD301658	735WPBA527	BUTTON,FRAME	
102	AE000716	A5J102A740	CABINET,BACK ASSY	
103	AD302081	724WNAA001	SHEET,PVC	5x10xT0.3
104	AD301807	761WSA0100	ANGLE,DECK	or
	AE000717	761WSA0123	ANGLE,DECK	
105	BZ710699	761WPA0249	HOLDER,FBT	
106	AD302398	7232020746	SHEET,IC	
107	AD301810	702WSA0165	PLATE,BOTTOM	
108	AE000704	702WSA0190	SHIELD,TOP	
109	AD301812	7230007593	SHEET,JACK	
110	AD301688	7260000341	SHEET,CAUTION	
111	AD302077	752WSA0333	SHIELD,JACK	
112	BZ710039	8995034000	CORD CLIP UL CO.	
113	AD301813	712WPJ0793	PLATE,TRAY-FRONT	
114	AE000718	722549A196	SHEET,RATING	
115	AD300007	7230006755	SHEET,CAUTION	
116	AD301816	7260000343	SHEET,CRT NO.	
117	AD302158	800WR0A002	SHEET,CRT SUPPORT	
118	BZ710258	741WUA0001	SPRING,EARTH	
119	AD300758	899EFBA001	WIRING CLIP	
201	BZ710321	8121F50B84	SCREW,TAP TITE(P) FAI20 FLAT	5x28
202	BZ710035	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
203	BZ710320	8117540804	SCREW,TAPPING(B0) TRUSS	4x8
204	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
205	BZ710562	8109I30804	SCREW,TAP TITE(B) WH7	3x8
206	BZ710678	8109230804	SCREW,TAP TITE(B) BIND	3x8
207	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
208	BZ710408	8109630604	SCREW,TAP TITE(B) BRAZIER	3x6
209	BZ710581	8109230704	SCREW,TAP TITE(B) R BIND	3x7
210	BZ710030	8110630804	SCREW,TAP TITE(P) BRAZIER	3x8
211	BZ710018	8107630804	SCREW,TAP TITE(S) BRAZIER	3x8
212	BZ710337	8107930604	SCREW,CUP(S)	3x6
---	AD302402	791WHA0061	LAMIFILM BAG	
---	AD301669	792WHA0412	PACKAGE,TOP	
---	AE001366	792WHA0478	PACKAGE,BOTTOM	
---	AD301910	793WCD1476	GIFT BOX	
---	AE000719	A5J102A975	INSTRUCTION BOOK KIT	
---	AD302404	J5500817	REGISTRATION CARD	
---	AE000720	J5J10201A	INSTRUCTION BOOK	
---	AD302406	JB5UD200	POLYBAG,INSTRUCTION(RED CAUTION)	

DVD DECK REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
600	AD301821	A5E601V420D	DVD MECHA ASS'Y	A5E601V420D
601	AD301822	92P100022A	TRAVERSE HOLDER	
602	AD301823	92P100032A	RACK,FEED 1	
603	AD301824	92P100033A	RACK,FEED 2	
604	AD301825	92P100035A	LEVER,RACK FEED	
605	AD301826	92P200006A	INSULATOR(F)	
606	AD301827	92P200007A	INSULATOR(R)	
607	AD301850	92P300008A	SPRING,CHASSIS	
608	AD301849	92P300005A	SPRING,ARM IDLER	
609	AD301830	92P300006A	SPRING,RACK FEED 2	
610	AD301831	92P300007A	SPRING,RACK FEED 1	
611	AD301848	92P100031A	ARM,IDLER	
612	AD301833	92P000001A	CLAMPER PLATE	
613	AD301834	92P100019A	RACK,LOADING	
614	AD301835	92P100020A	MAIN FRAME M	
615	AD301836	92P100021A	TRAY	
616	AD301837	92P100023A	GEAR,MAIN	
617	AD301838	92P100024A	CLAMPER	
618	AD301839	92P300002A	SPRING,RACK LOADING	
619	AD301840	92P400002A	MAGNET,CLAMPER	
620	AD301847	92P100030A	GEAR,IDLER	
621	AD301842	92P100025A	GEAR,MOTOR	
622	AD301843	92P100026A	GEAR,MIDDLE 1	
623	AD301844	92P100027A	GEAR,MIDDLE 2	
624	AD301845	92P100028A	GEAR,MIDDLE 3	
625	AD301846	92P100029A	GEAR,FEED	
626	AE001179	92P300009A	SPRING,RACK L	
701	BZ710187	8110226804	SCREW,TAP TITE(P) BIND	2.6x8
702	AD301851	8110120604	SCREW,TAP TITE(P) PAN	2x6
703	AD301852	8107220504	SCREW,TAP TITE(S) BIND	2x5
704	AD301853	8140117254	SCREW,PAN	M1.7x2.5 P3
705	AD301913	8110220804	SCREW,TAP TITE(P) BIND	2x8
CD2001	AD301855	122H001901	CORD JUMPER	2H001901
CD2301	AD301856	122H080701	CORD JUMPER	2H080701
CD2302	AE000148	06CH232101	CORD CONNECTOR	CH232101 or
	AD301857	06CH232003	CORD CONNECTOR	CH232003
CP1	AD301858	069JV80180	CONNECTOR PCB SIDE	IMSA-9615S-08C-PP
△ M2002	AD301861	1515S98001	FEED MOTOR	BCD3B81
PCB640	AD301862	A5E601V640	PCB ASS'Y	VEBA17A
PCB68A	AD301863	A5E601V680	PCB ASS'Y	VEBA12A
SW1	AD301866	0515S32001	SWITCH	SSS-23-6
SW2	AD301867	0500S01032	PUSH LEVER SWITCH	SW1AB-271-10A

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
RESISTORS			
△ R401	AD301016	R3X28A331J	R,METAL OXIDE 330 OHM 2W
△ R402	AD300783	R3X181221J	R,METAL OXIDE 220 OHM 1W
△ R408	BZ210009	R3X28AR82J	R,METAL OXIDE 0.82 OHM 2W
△ R418	BZ210053	R002T22R2J	RC 2.2 OHM 1/2W
△ R442	AD300419	R4X5T6223F	R,METAL 22K OHM 1/6W
△ R444	AD300036	R4X5T6562F	R,METAL 5.6K OHM 1/6W
△ R445	AD302182	R002T4153J	RC 15K OHM 1/4W
△ R447	BZ210021	R65582680J	R,FUSE 68 OHM 1/2W
R450	AD301761	R635815R6J	R,FUSE 5.6 OHM 1W
△ R803	BZ210050	R3X18A123J	R,METAL OXIDE 12K OHM 2W
△ R805	BZ210050	R3X18A123J	R,METAL OXIDE 12K OHM 2W
△ R807	BZ210050	R3X18A123J	R,METAL OXIDE 12K OHM 2W
△ R3803	BZ210206	R002T2155J	RC 1.5M OHM 1/2W
△ R3806	BZ210080	R0G3K2275K	RC 2.7M OHM 1/2W
△ R3812	BZ210217	R3X181331J	R,METAL OXIDE 330 OHM 1W
△ R3817	BZ210188	R5Y2CD010J	R,CEMENT 1 OHM 5W
△ R3821	AD300659	R3X181R47J	R,METAL OXIDE 0.47 OHM 1W
△ R3828	BZ210190	R63581R22J	R,FUSE 0.22 OHM 1W
CAPACITORS			
C313	BZ110101	E5EZF3222M	CE 2200 UF 25V
△ C402	BZ110195	E02LU8220M	CE 22 UF 100V
△ C403	BZ110016	E5EZF2471M	CE 470 UF 16V
△ C407	BZ210176	E02LF3222M	CE 2200 UF 25V
C423	BZ110136	P4J7F3394J	CMPP 0.39 UF 250V PMS
△ C428	BZ110258	P4N8FJ862H	CMPP 0.0086UF 1.25KV
C431	BZ110204	E0ELFD220M	CE 22 UF 250V
C802	AD300078	C0JBB0713K	CC 0.001 UF 2KV B
C3007	AD302087	E02L05010M	CE 1 UF 50V
△ C3801	BZ110025	P2122B224M	CMP 0.22 UF 275V ECQUL
C3810	BZ110080	C0J0B0513K	CC 0.001 UF 500V B
C3811	BZ110191	C03L0R7E3K	CC 0.0015UF 2KV R
C3812	BZ110080	C0J0B0513K	CC 0.001 UF 500V B
△ C3815	BZ110012	E51CGC471M	CE 470 UF 200V
△ C3816	AD301391	CD39E0MQ3M	CC 0.0047UF 250V
C3818	BZ110101	E5EZF3222M	CE 2200 UF 25V
△ C3820	BZ110188	E50HU5100M	CE 10 UF 50V
△ C3822	AD300125	E5EZF2222M	CE 2200 UF 16V
△ C3823	BZ110032	E5EZF3102M	CE 1000 UF 25V
△ C3826	BZ110130	E62NFC221M	CE 220 UF 200V
C3827	BZ110101	E5EZF3222M	CE 2200 UF 25V
DIODES			
D101	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D102	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D103	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D105	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D106	AD300070	D97U01201B	DIODE,ZENER MTZJ12B T-77
D107	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D401	BZ410043	D2WT011E10	DIODE,SILICON 11E1-EIC
△ D402	AD300731	D2WXN49370	DIODE,SILICON 1N4937
D403	BZ410019	D97U03001B	DIODE,ZENER MTZJ30B T-77
D404	BZ410019	D97U03001B	DIODE,ZENER MTZJ30B T-77
D405	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D406	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D408	BZ410037	D97U03301B	DIODE,ZENER MTZJ33B T-77
D409	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D410	BZ410022	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77
D411	AD300731	D2WXN49370	DIODE,SILICON 1N4937
D413	AD300731	D2WXN49370	DIODE,SILICON 1N4937
D414	BZ410085	D2WXN40050	DIODE,SILICON 1N4005-EIC
△ D416	BZ410020	D97U05R11B	DIODE,ZENER MTZJ5.1B T-77
D603	BZ410085	D2WXN40050	DIODE,SILICON 1N4005-EIC
D801	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D802	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D803	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D2001	BZ410120	DDARDS1210	DIODE,SILICON KDS121RTK
D2002	BZ410121	DDARDS1200	DIODE,SILICON KDS120RTK
D2201	BZ410087	0021E2Q140	LED LTL-1CHEE-002A
D3003	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3005	BZ410085	D2WXN40050	DIODE,SILICON 1N4005-EIC
D3006	BZ410085	D2WXN40050	DIODE,SILICON 1N4005-EIC
D3007	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D3008	BZ410085	D2WXN40050	DIODE,SILICON 1N4005-EIC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description
			DIODES
D3009	BZ410064	D97U03R91B	DIODE,ZENER MTZJ3.9B T-77
D3801	BZ410021	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D3802	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3803	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3804	AD300671	D97U01801B	DIODE,ZENER MTZJ18B T-77
D3805	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3806	AD301703	D2W0N49370	DIODE,SILICON 1N4937-B-EIC
D3807	AD300731	D2WXN49370	DIODE,SILICON 1N4937
△D3808	BZ410062	D2WTRM11C0	DIODE,SILICON RM11C-EIC
△D3809	BZ410062	D2WTRM11C0	DIODE,SILICON RM11C-EIC
D3810	AD300671	D97U01801B	DIODE,ZENER MTZJ18B T-77
D3811	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
△D3815	BZ410062	D2WTRM11C0	DIODE,SILICON RM11C-EIC
△D3816	BZ410062	D2WTRM11C0	DIODE,SILICON RM11C-EIC
△D3817	BZ410115	D2LKB340L0	DIODE,SCHOTTKY SB340L-6737
△D3818	AD300731	D2WXN49370	DIODE,SILICON 1N4937
△D3819	BZ410010	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
△D3820	BZ410010	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
△D3821	BZ410080	D2WXRU2AM0	DIODE,SILICON RU2AM-EIC
D3822	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
△D3823	BZ410115	D2LKB340L0	DIODE,SCHOTTKY SB340L-6737
D3826	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3827	BZ410006	D1VT001330	DIODE,SILICON 1SS133T-77
D3828	BZ410067	D97U02R21B	DIODE,ZENER MTZJ2.2B T-77
△D3830	BZ410010	D28T21DQN9	DIODE,SCHOTTKY 21DQ09N-TA2B1
D3831	BZ410064	D97U03R91B	DIODE,ZENER MTZJ3.9B T-77
D8501	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8502	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8503	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8504	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8505	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8506	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8507	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8508	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
D8510	BZ410119	DDDRL41480	DIODE,SILICON MCL4148
			ICS
IC101	AD301763	I55D06072A	IC OEC6072A
IC103	BZ611057	IC7J0311A0	IC R3111N311A/C-TR
IC199	AE000525	A5J102A255	IC S-24C04BDP-LA
△IC302	AD302184	I0FSP7522N	IC AN7522N
△IC401	BZ611053	I01TD55220	IC AN5522
IC601	AD301765	I03FC63190	IC LA76319M-MPB-E
IC902	AD300059	I01FF58290	IC AN5829S
IC2001	AD302391	I5PKL63160	IC STM6316ATXXZ
IC2301	BZ611126	I03F065600	IC LA6560
IC2303	AD301770	I07E00358F	IC BA10358F-E2
IC2304	AD301770	I07E00358F	IC BA10358F-E2
△IC3001	BZ611015	I1KA97805A	IC KIA7805API
IC3002	BZ611015	I1KA97805A	IC KIA7805API
IC3005	BZ611033	I1KA97809A	IC KIA7809API
△IC3800	AD301771	000220001W	IC PHOTO COUPLER PS2561L1-1-V(W)
IC4002	AD302392	I5PK055890	IC STM5589AVA
IC4003	AD301774	I5CF0CU040	IC SN74AHCU04PWR
IC4007	AE000526	IF8J064007	IC IS42S16400-7T
IC4012	AE000527	I5PJ060ET9	IC M29W160ET90N6
IC4201	BZ611074	I0QF045800	IC NJM4580M
	AE001295	I0QJ045800	IC NJM4580M(Te1)
IC8501	BZ611130	I0GF9XZ010	IC PQ070XZ01ZP
IC8502	AD301777	I17F0742K0	IC PCM1742KE/2K
IC8504	BZ611130	I0GF9XZ010	IC PQ070XZ01ZP
			TRANSISTORS
Q101	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q105	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q301	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q302	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q305	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
△Q401	BZ510004	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
△Q405	BZ510097	TCAT03227Y	TRANSISTOR,SILICON KTC3227_Y-AT
△Q406	AD301779	TD3Q021400	TRANSISTOR,SILICON TT2140LS-YBC11
Q601	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q602	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q605	BZ510090	TPAAB05001	COMPOUND TRANSISTOR KRA102SRTK

or

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description
TRANSISTORS			
△ Q804	BZ510091	TCA0042170	TRANSISTOR,SILICON KTC4217(O,Y)
△ Q805	BZ510091	TCA0042170	TRANSISTOR,SILICON KTC4217(O,Y)
△ Q806	BZ510091	TCA0042170	TRANSISTOR,SILICON KTC4217(O,Y)
Q2001	BZ510112	T67J1036K0	TRANSISTOR,SILICON 2SA1036KT146
Q2002	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
Q2003	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q2004	BZ510113	T27T030180	FET 2SK3018
Q2005	BZ510113	T27T030180	FET 2SK3018
Q2006	BZ510112	T67J1036K0	TRANSISTOR,SILICON 2SA1036KT146
Q2007	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q2008	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q2201	BZ510067	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
Q2301	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q2302	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q2303	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
Q2304	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q2305	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q3000	BZ510057	TAAT01281Y	TRANSISTOR,SILICON KTA1281_Y
Q3001	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
△ Q3003	AD301780	TCA0043690	TRANSISTOR,SILICON KTC4369(O,Y)
Q3004	BZ510057	TAAT01281Y	TRANSISTOR,SILICON KTA1281_Y
Q3005	BZ510105	TCAT03209Y	TRANSISTOR,SILICON KTC3209_Y-AT
Q3006	BZ510070	TCAT032034	TRANSISTOR,SILICON KTC3203_Y-AT
Q3007	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q3008	BZ510070	TCAT032034	TRANSISTOR,SILICON KTC3203_Y-AT
Q3009	BZ510105	TCAT03209Y	TRANSISTOR,SILICON KTC3209_Y-AT
Q3010	BZ510057	TAAT01281Y	TRANSISTOR,SILICON KTA1281_Y
Q3800	BZ510069	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
Q3802	BZ510070	TCAT032034	TRANSISTOR,SILICON KTC3203_Y-AT
△ Q3803	BZ510093	TJXG5NC500	FET STP5NC50FP
Q4001	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4002	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4003	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q4201	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4203	BZ510088	TNAAD05001	COMPOUND TRANSISTOR KRC104SRTK
Q4209	BZ510067	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
Q4210	BZ510107	TPAAA05001	COMPOUND TRANSISTOR KRA101SRTK
Q4211	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q4212	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q8501	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q8502	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q8503	BZ510108	TAAA1504SY	TRANSISTOR,SILICON KTA1504S_Y_RTK
Q8505	BZ510109	TCAA3875SY	TRANSISTOR,SILICON KTC3875S_Y_RTK
Q8506	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q8507	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q8508	BZ510071	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
COILS & TRANSFORMERS			
L001	BZ310156	021375101K	COIL 100 UH
L101	BZ310030	021LA6560K	COIL 56 UH
L401	BZ310004	021679472K	COIL 4.7 MH
L601	BZ310041	02167F101J	COIL 100 UH
L602	BZ310156	021375101K	COIL 100 UH
L801	AD301781	021673560K	COIL 56 UH
L902	BZ310041	02167F101J	COIL 100 UH
L904	BZ310041	02167F101J	COIL 100 UH
L2001	AE000529	0216S4100J	COIL 10 UH
L2002	AE000529	0216S4100J	COIL 10 UH
L2004	AE000095	02167F2R7J	COIL 2.7 UH
L3000	AD301785	02167E100K	COIL R6-1 10 UH
L3001	AD301785	02167E100K	COIL R6-1 10 UH
△ L3800	BZ310076	028R140031	COIL,DEGAUSS 8R140031
△ L3801	AD301786	029T000110	COIL,LINE FILTER 1R1A223F28
L3803	BZ310181	02A6B2E0A1	CORE,FERRITE HF70T22*10*14
L4001	BZ310039	02167F220J	COIL 22 UH
L4002	BZ310039	02167F220J	COIL 22 UH
L4003	BZ310039	02167F220J	COIL 22 UH
L4004	BZ310039	02167F220J	COIL 22 UH
L4201	BZ310041	02167F101J	COIL 100 UH
L4202	BZ310041	02167F101J	COIL 100 UH
L8501	BZ310191	02167F2R2J	COIL 2.2 UH
L8502	BZ310191	02167F2R2J	COIL 2.2 UH
L8503	BZ310191	02167F2R2J	COIL 2.2 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description
		COILS & TRANSFORMERS	
L8504	BZ310118	02AHB9A972	CORE,FERRITE W5T29X7.5X19
L8507	BZ310191	02167F2R2J	COIL 2.2 UH
L8509	BZ310191	02167F2R2J	COIL 2.2 UH
T401	BZ310157	045009003J	TRANS,HORIZONTAL DRIVE ETH09K14BZ
△ T3800	AD301787	0481291074	TRANSFORMER,SWITCHING 81291074
		JACKS	
△ J801	AD301147	066F120018	SOCKET,CATHODE RAY TUBE ISMS01S
△ J2201	BZ614361	060J131015	HEADPHONE JACK MSJ-2000
J2202	BZ614146	060G421016	RCA JACK HTJ-032-05AY
J2203	BZ614147	060G421017	RCA JACK HTJ-032-05AW
J2204	BZ614280	060G421020	RCA JACK HTJ-032-05AR
J4201	BZ614400	060J401082	RCA JACK MSP-251V-05PBSN
		SWITCHES	
SW2213	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2214	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2215	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2216	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2217	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2218	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2219	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2220	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2221	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
SW2223	BZ612010	0504101T34	SWITCH,TACT EVQ21505R
		VARIABLE RESISTORS	
VR401	BZ210255	V1K62H3BT8	VOLUME,SEMI FIXED NVG6THTB222
VR3800	BZ210265	V1K63Q2BTE	VOLUME,SEMI FIXED NVG6TLTAB471
		P.C.BOARD ASSEMBLIES	
PCB110	AE000683	A5J101A110	PCB ASS'Y TCB412A
PCB130	AE000684	A5J101A130	PCB ASS'Y VMC297A
PCB250	AE000532	A5J102A250	PCB ASS'Y TMB555A
		MISCELLANEOUS	
B301	BZ310129	024HT03564	CORE,BEADS W4BRH3.5X6X1.0
B401	BZ310121	024HT03553	CORE,BEADS W5RH3.5X5X1.0
B2001	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B2002	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B2003	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B2004	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B2005	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B2301	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B3800	BZ310121	024HT03553	CORE,BEADS W5RH3.5X5X1.0
B4002	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B4004	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B4201	BZ310121	024HT03553	CORE,BEADS W5RH3.5X5X1.0
B8501	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B8502	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B8503	BZ310186	024HC31022	CORE,BEADS FCM2012H-102T04
B8505	BZ310122	024HT03563	CORE,BEADS W4BRH3.5X6X1.0X2
BL001	BZ310014	023C00022A	COIL,BALUN HPN-01
BT001	AE000012	1412004008	BATTERY,MANGAN R03(AB)E_2P_G
BT002	AE000012	1412004008	BATTERY,MANGAN R03(AB)E_2P_G
CD301	BZ614324	06CU12414A	CORD,CONNECTOR CU12414A
CD302	BZ614324	06CU12414A	CORD,CONNECTOR CU12414A
CD802	BZ614404	WDL6032038	FLAT CABLE AWM2468 A WG26 6C BLACK 320MM
CD803	BZ614447	WBL6022038	FLAT CABLE AWM2468 A WG26 4C BLACK 220MM
CD805	BZ614175	06CU82039A	CORD,CONNECTOR SM1098-009-1A
CP101	BZ614458	069S290629	CONNECTOR PCB SIDE A2001WV2-9P
CP301	BZ614268	069W120029	CONNECTOR PCB SIDE TID-X02P-M1
CP302	BZ614268	069W120029	CONNECTOR PCB SIDE TID-X02P-M1
CP401	BZ614303	069S450089	CONNECTOR PCB SIDE A1561WV2-A5P
CP801	BZ614269	069S320010	CONNECTOR PCB SIDE A2361WV2-2P
△ CD3800	AD301791	120R415902	CORD,AC BUSH 0R415902
CD8501	AD301792	122H0C1001	CORD,JUMPER 2H0C1001
CD8505	BZ614299	06CU2B2001	CORD,CONNECTOR CU2B2001
CP2001	AD302396	069JY0T099	CONNECTOR PCB SIDE IMSA-9631S-24Y901
CP2301	AD301858	069JV80180	CONNECTOR PCB SIDE IMSA-9615S-08C-PP
CP2302	AD301795	069S230639	CONNECTOR PCB SIDE A2001WR2-3P
△ CP3800	AD300687	069S420110	CONNECTOR PCB SIDE A1561WV2-2P
CP8001	BZ614214	069S2B0629	CONNECTOR PCB SIDE A2001WV2-11P
CP8002	AD301797	069J7C0029	CONNECTOR PCB SIDE IMSA-9604S-12Z14
CP802A	BZ614333	067U006049	WIRE HOLDER B2013H02-6P
CP802B	BZ614333	067U006049	WIRE HOLDER B2013H02-6P
CP803A	BZ614334	067U004029	WIRE HOLDER B2013H02-4P
CP803B	BZ614334	067U004029	WIRE HOLDER B2013H02-4P

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
			MISCELLANEOUS	
CP8502	AD301798	069J7C0019	CONNECTOR PCB SIDE	IMSA-9604S-12Z13
CUS011	BZ710149	800WFAA008	CUSHION C	
EL001	BZ614044	124120301A	EYE LET	XRY20X30BD
EL002	BZ614043	124116281A	EYE LET	XRY16X28BD
F3800	BZ614504	081PC05005	FUSE	51MS050L
△FB401	AD301650	043214037F	TRANSFORMER,FLYBACK	FNI-14B001
FH3800	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
FH3801	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
OS2202	BZ614199	077Q004017	REMOTE RECEIVER	PIC-37243SR
PH3800	BZ614444	069D01001A	CONNECTOR PCB SIDE	003P-2100
PH3801	BZ614444	069D01001A	CONNECTOR PCB SIDE	003P-2100
△SP351	BZ614200	070C533019	SPEAKER	SG04D11BNA
△SP352	BZ614200	070C533019	SPEAKER	SG04D11BNA
TM101	AD301799	076D0GD010	TRANSMITTER	TOT201N09160
△TU001	AE000273	0163300005	RF UNIT	115-V-K015AR_B
△TH3800	BZ410079	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A
△V801	AD301801	098Q1404D1	CRT W/DY	A34AGT13X98(DL)
X101	BZ613019	1002T01606	CERAMIC OSCILLATOR	CSTLS16M0X53-A0
X601	AD302003	100CT3R505	CRYSTAL	HC-49/C
X2001	AD301802	100BT02003	CRYSTAL	HC-49U/S
X4001	AD301803	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

TOSHIBA CORPORATION

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN