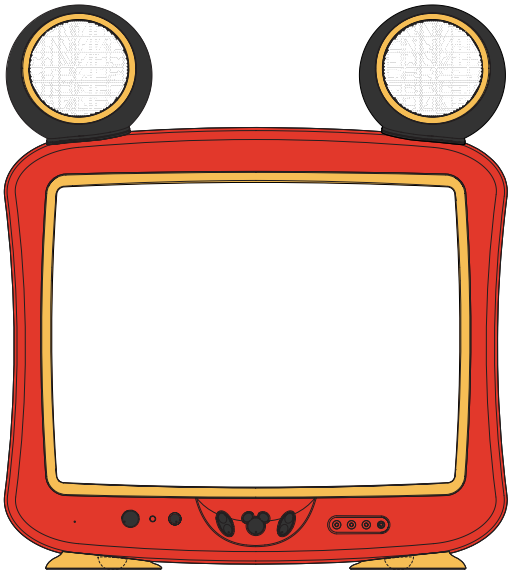
DT1900-C

SERVICE MANUAL

COLOR TELEVISION RECEIVER



ORIGINAL
MFR'S VERSION A

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 eternal 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

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

CONTENTS

GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size		19 inch / 480mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G/0.18G
		Color System			NTSC
		Speaker			2Speaker
			Position		Ext
			Size		3 Inch
			Impedance		8 ohm
		Sound Output	MAX		0.5+0.5 W
			10%(Typical)		-- W
		NTSC3.58+4.43 /PAL60Hz			No
G-2	Tuning System	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		USA(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
		StereoTV Sound (Ext Audio Input Only)			Yes
		Tuner Sound Muting			Yes
G-3	Power	Power Source	AC		120V AC 60Hz
			DC		
		Power Consumption		at AC	
					73 W at AC 120 V 60 Hz
			Stand by (at AC)		5 W at AC 120 V 60 Hz
			Per Year		-- kWh/Year
		Protector	Power Fuse		Yes
			Safety Circuit		Yes
			IC Protector(Micro Fuse)		No
G-4	Regulation		Safety		UL / CSA
			Radiation		FCC / IC
			X-Radiation		DHHS / HWC
G-5	Temperature		Operation		+5°C ~ +40°C
			Storage		-20°C ~ +60°C
G-6	Operating Humidity				Less than 80% RH
G-7	On Screen Display	Menu			Yes
			Menu Type		Disney Charecter
			Picture		Yes
				Contrast	Yes
				Brightness	Yes
				Color	Yes
				Tint	Yes
				Sharpness	Yes
				Reset	Yes
			Audio		No
				Bass	No
				Treble	No
				Balance	No
				BBE On/Off	No
				Stable Sound On/Off	No
			CH Set Up		Yes
				TV/CATV	Yes
				Auto CH Memory	Yes
				Add/ Delete	Yes
			Language		Yes
			V-chip		Yes
				CH Label	No
				Favorite CH	No
				Color Stream DVD/DTV	No
			CAPTION		Yes
			Control Level		Yes
				Sound	Yes
				Brightness	Yes
				Contrast	Yes
		-		Color	Yes
				Tint	Yes
				Sharpness	Yes
				Tuning	No
				Bass	No
				Treble	No
				Balance	No
				Back Light	No

GENERAL SPECIFICATIONS

		Stereo,Audio Output,SAP		No
		Video		Yes
		Color Stream		No
		Channel(TV/Cable)		Yes
		CH Label		No
		Sleep Timer		Yes
		Sound Mute		Yes
		V-chip Rating		Yes
G-8	OSD Language			English French Spanish
G-9	Clock and Timer	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Timer / Off Timer)	No
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode) more than		-- Min Sec
G-10	Remote Control	Unit		RC-JK
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		86-05 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		23 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			100	No
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			TV/Caption/Text	Yes
			CH1/CH2	Yes
			TV/Video(TV/AV)	Yes
			CH RTN/CH ENT(Quick View)	Yes
			Sleep	Yes
			RE Call(Call)	Yes
			Reset	No
			Menu	Yes
			Enter	No
			Mute	Yes
			Exit	No
			MTS(Audio Select)	No
			Set +	No
			Set -	No
		Multi Brand Keys	CH Up(VCR)	No
			CH Down(VCR)	No
			Pause/Still	No
			TV/VCR(VCR)	No
			Code	No
			FF	No
			Rew	No
			Rec	No
			Play	No
			Stop	No
			TV	No
			VCR	No
			Cable	No
G-11	Features	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		CATV		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip		Yes
			Type	USA,ORION Type
		BBE		No
		Auto Search		No

GENERAL SPECIFICATIONS

		CH Allocation			No
		StereoTV Sound (Ext Audio Input Only)			Yes
		Channel Lock			No
		Just Clock Function			No
		Game Position			No
		CH Label			No
		VM Circuit			No
		Full OSD			No
		Premiere			No
		Comb Filter			No Lines
		Auto CH Memory			Yes
		Hotel Lock			No
		Closed Caption			Yes
		Stable Sound			No
		Energy Star			No
		Power On Memory			Yes
		Favorite CH			No
G-12	Accessories	Owner's Manual		Language	English Spanish French
				w/Guarantee Card	No
		Remote Control Unit			Yes
		Rod Antenna			No
				Poles	
				Terminal	
		Loop Antenna			No
				Terminal	-
		U/V Mixer			No
		DC Car Cord (Center+)			No
		Guarantee Card			Yes
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Facility List			No
		Important Safeguard			No
		Dew/AHC Caution Sheet			No
		AC Plug Adapter			No
		Quick Set-up Sheet			No
		Battery			No
				UM size x pcs	
				OEM Brand	No
		AC Cord			No
		AV Cord (2Pin-1Pin)			No
		Registration Card			No
		PTB Sheet			No
		300 ohm to 75 ohm Antenna Adapter			No
		Safety Strap			Yes
		Disney Leaflet			Yes
G-13	Interface	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
				MENU	Yes
				TV/Video	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	No
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input	RCA x 1
				Audio Input	RCA x 2
				Other Terminal	Head Phone
			Rear	Video Input(Rear1)	RCA x 1
				Video Input(Rear2)	No
				Audio Input(Rear1)	RCA x 2
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	No
				Euro Scart	No
				Color Stream	No
				Diversity	No
				Ext Speaker	Yes

GENERAL SPECIFICATIONS

			DC Jack 12V(Center +)	No
			VHF/UHF Antenna Input	F Type
			AC Outlet	No
G-14	Set Size		Approx. W x D x H (mm)	510.0 x 442.5 x 572
			w/o Speaker,Legs Approx. W x D x H (mm)	510.0 x 442.5 x 488.5
G-15	Weight		Net (Approx.)	17.4kg (38.3lbs)
			Net w/o Speaker,Legs Approx.	17.0 kg (37.4lbs)
			Gross (Approx.)	21.3kg (46.9lbs)
G-16	Carton	Master Carton		No
			Content	---- Sets
			Material	-- /--
			Dimensions W x D x H(mm)	-- x -- x --
			Description of Origin	No
		Gift Box		Yes
			Material	Double / Full Color
			Dimensions W x D x H(mm)	596 x 575 x 580
			Design	As per Buyer's
			Description of Origin	Yes
		Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	46
		Container Stuffing		316 Sets/40' container
G-17	Cabinet Material	Cabinet	Cabinet Front	PS 94V0 DECABROM
			Cabinet Rear	PS 94V0 DECABROM
		PCB	Non-Halogen Demand	No
			Eyelet Demand	No
G-18	Environment	Pb Free	Lead-free Solder	No
			Other	No
		Cd Free		No

DISASSEMBLY INSTRUCTIONS

1. 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. 1-1.)**
   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.

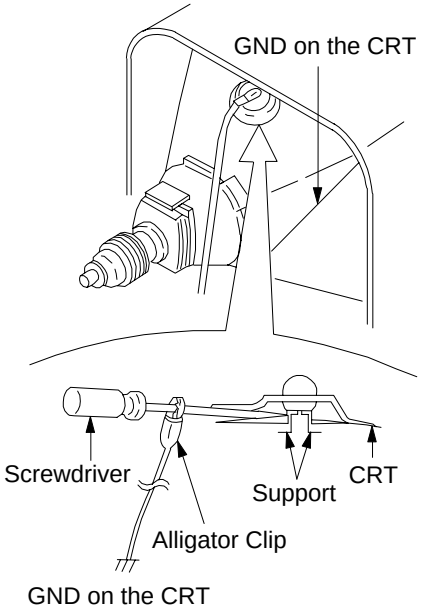


Fig. 1-1

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. 1-2.)**

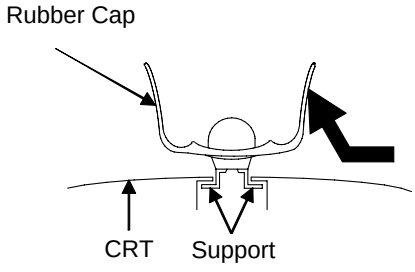


Fig. 1-2

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. 1-3.)**

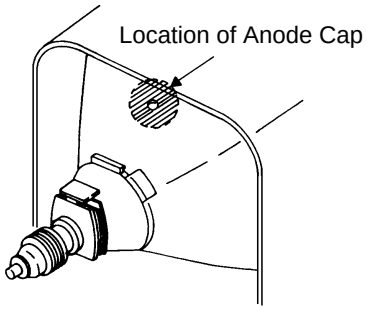


Fig. 1-3

NOTE

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

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. 1-4.)**

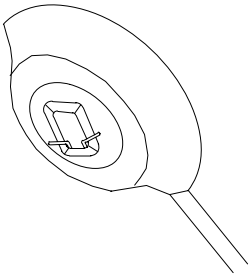


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5.**

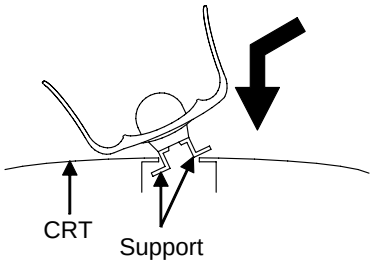


Fig. 1-5

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

DISASSEMBLY INSTRUCTIONS

2. 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. 2-1.)**

   NOTE

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

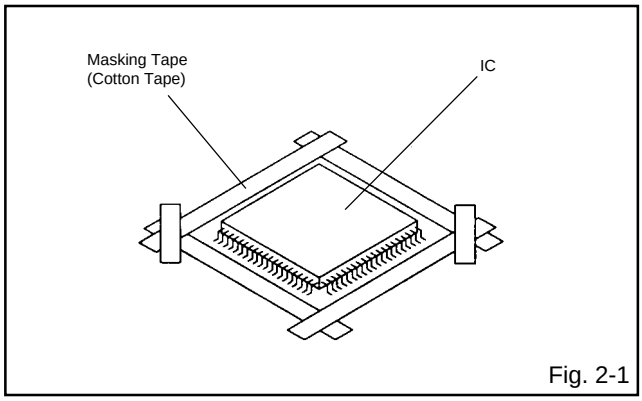


Fig. 2-1

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

   NOTE

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

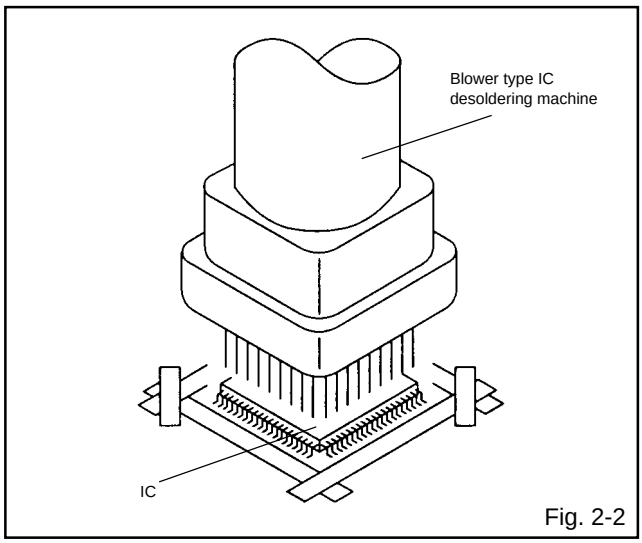


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   NOTE

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

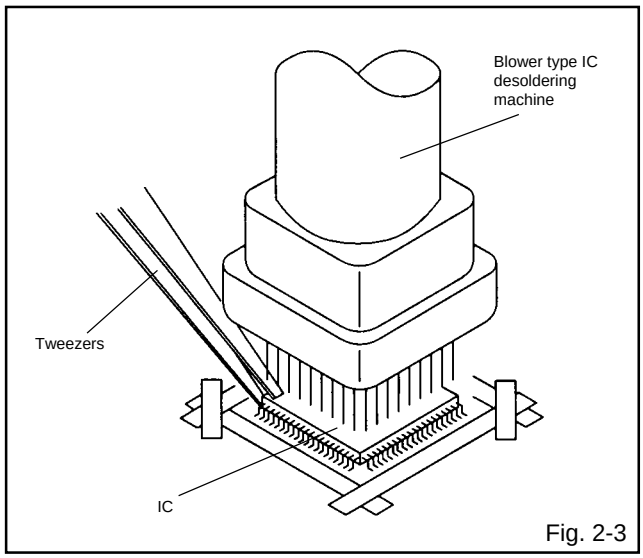


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

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

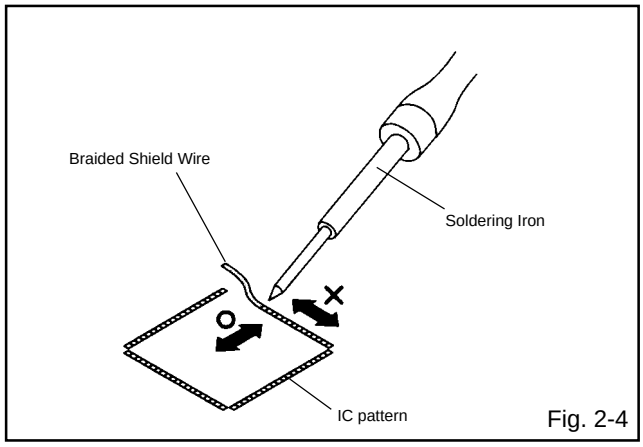


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

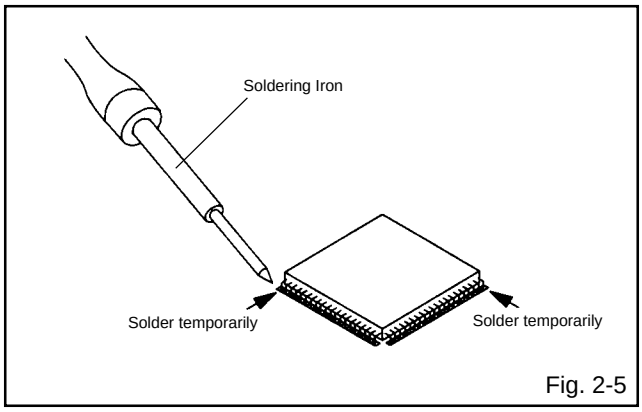


Fig. 2-5

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

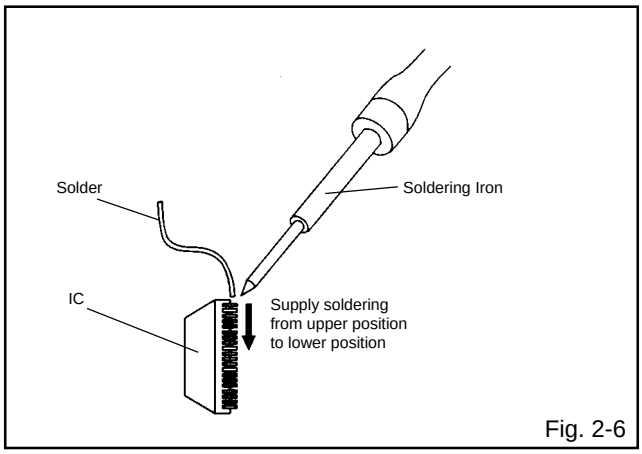


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

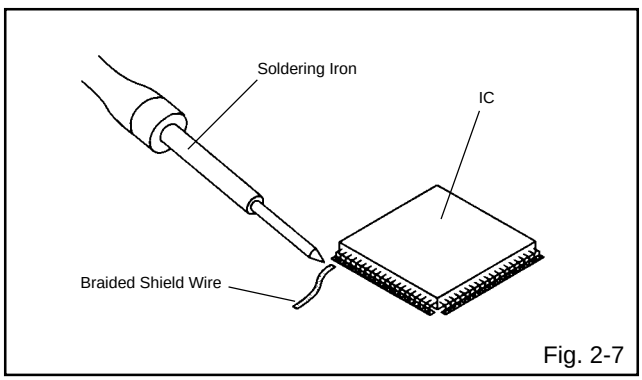


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

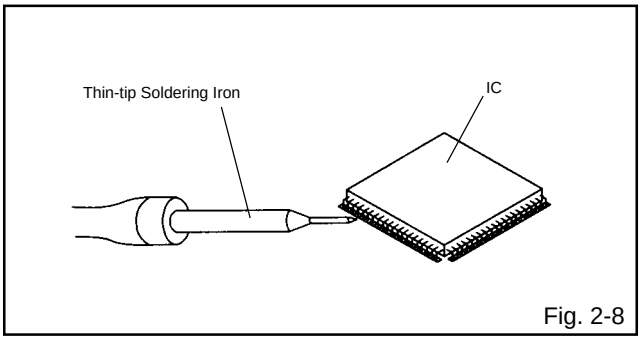


Fig. 2-8

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 the Service Mode, press both set key and remote control key for more than 1 second.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD and LOCK PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

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.

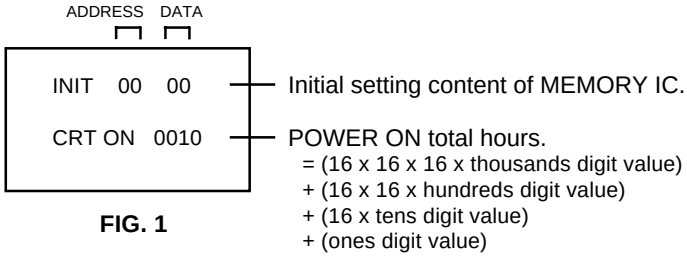


FIG. 1

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.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	00	60	99	93	1B	B3	24	3B	09	00	07	05	80	A8	00	08
10	02															

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. +/- 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. +/- 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. While holding down VOLUME button on front cabinet, press key 1 on remote control for more than 1 second.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

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

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contract 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. Multi-sound Generator
4. Pattern Generator

On-Screen Display Adjustment

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

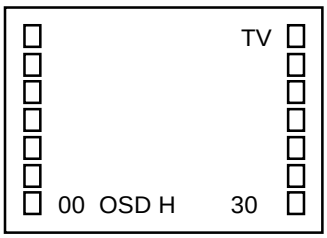


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	16	CONTRAST CENT
02	RF.AGC	17	CONTRAST MAX
03	V.VCO	18	CONTRAST MIN
04	H.VCO	19	COLOR CENT
05	H.PHAS	20	COLOR MAX
06	V.SIZE	21	COLOR MIN
07	V.SHIFT	22	TINT
08	R.DRIVE	23	SHARPNESS
09	B.DRIVE	24	FM LEVEL
10	R.BIAS	28	TEST MONO
11	G.BIAS		
12	B.BIAS		
13	BRIGHT CENT		
14	BRIGHT MAX		
15	BRIGHT MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: VIF VCO

1. Place the set with Aging Test for more than 10 minutes.
2. Receive an 80dB monoscope pattern.
3. Connect the digital voltmeter between the **pin 5 of CP601** and the **GND**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "V. VCO".
5. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5V.

2-2: RF AGC DELAY

1. Place the set with Aging Test for more than 15 minutes.
2. Receive an 63dB monoscope pattern.
3. Connect the digital voltmeter to **TP001** or **pin 5 of CP601**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "RF AGC".
5. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5V ± 0.05V.

2-3: CUT OFF

1. Adjust the unit to the following settings. R.DRIVE=10, B.DRIVE=10, R.BIAS=64, G.BIAS=64, B.BIAS=64, BRI CENT=115, CONT MAX=65.
2. Place the set with Aging Test for more than 15 minutes.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "CUT OFF".
4. Adjust the **Screen Volume** until a dim raster is obtained.

2-4: FOCUS

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

2-5: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Using the adjustment control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(10)** on the remote control to select "R. BIAS".
5. Press the CH. UP/DOWN button on the remote control to select the "R. BIAS", "G. BIAS", "B. BIAS", R. DRIVE or "B. DRIVE".
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R. BIAS, G. BIAS, B. BIAS, R. DRIVE, and B. DRIVE at each step tone sections equally.
7. Perform the above adjustments 6 and 7 until the white color is looked like a white.

ELECTRICAL ADJUSTMENTS

2-6: SUB TINT/SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **pin 6 of CP601** or **TP023**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "TINT".
4. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes as straight line. **(Refer to Fig. 2-1)**
5. Connect the oscilloscope to **pin 7 of CP601** or **TP022**.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(19)** on the remote control to select "COL.CENT".
7. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales
8. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 120% ± 10% of the white level. **(Refer to Fig. 2-2)**
9. Receive the color bar pattern. (Audio Video Input)
10. Press the AV button on the remote control to set the AV mode. Then perform the above adjustments 2~8.

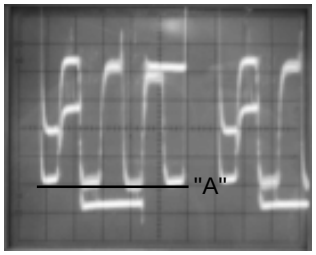


Fig. 2-1

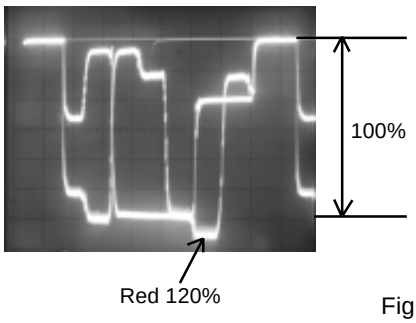


Fig. 2-2

2-7: HORIZONTAL PHASE

1. Receive the monoscope pattern.
2. Using the adjustment control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "H.PHAS".
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.

2-8: VERTICAL SHIFT

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "V.SFT".
3. Press the VOL. UP/DOWN button on the remote control until the horizontal line becomes fit to the notch of the shadow mask.

2-9: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the adjustment control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "V.SIZE".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 10 ± 2%.
5. Receive a broadcast and check if the picture is normal.

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. 2-5)**

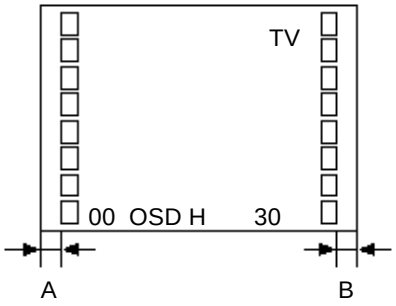


Fig. 2-5

2-11: SUB BRIGHTNESS

1. Receive the monoscope pattern.
2. Using the adjustment control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "BRI.CENT".
4. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.
5. Receive a broadcast and check if the picture is normal.
6. Press the TV/AV button on the remote to set to the AV mode. Then perform the above adjustment 1~5.

ELECTRICAL ADJUSTMENTS

2-12: SUB CONTRAST

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "CONT MAX".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "80".
3. Receive a broadcast and check if the picture is normal.
4. Press the TV/VIDEO 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 **(17)** on the remote control to select "CONT MAX".
6. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "84".

2-13: Confirmation of Fixed Value (step No.)

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

NO.	FUNCTION	RF	AV
04	H VCO	03	---
14	BRIGHT MAX	150	150
15	BRIGHT MIN	50	50
16	CONT CENT	34	34
18	CONT MIN	17	17
20	COLOR MAX	70	70
21	COLOR MIN	00	00
23	SHARPNESS	45	---
24	FM LEVEL	107	---
28	TEST MONO	00	---

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

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

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

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

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

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

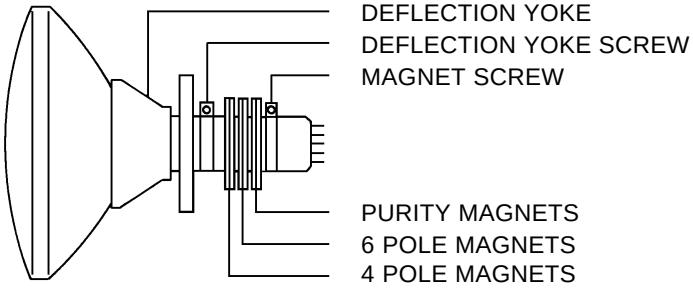


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

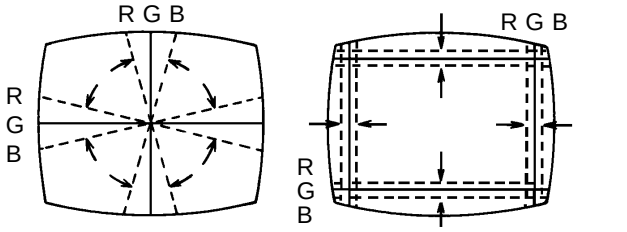
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

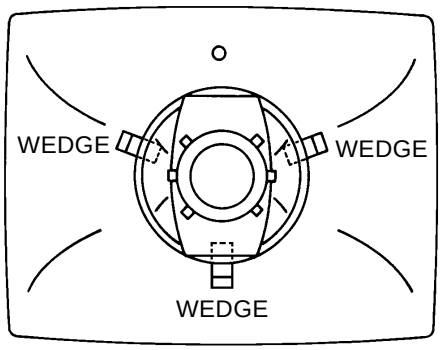
Adjust after performing adjustments in section 3-3.

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



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

Fig. 3-2-a

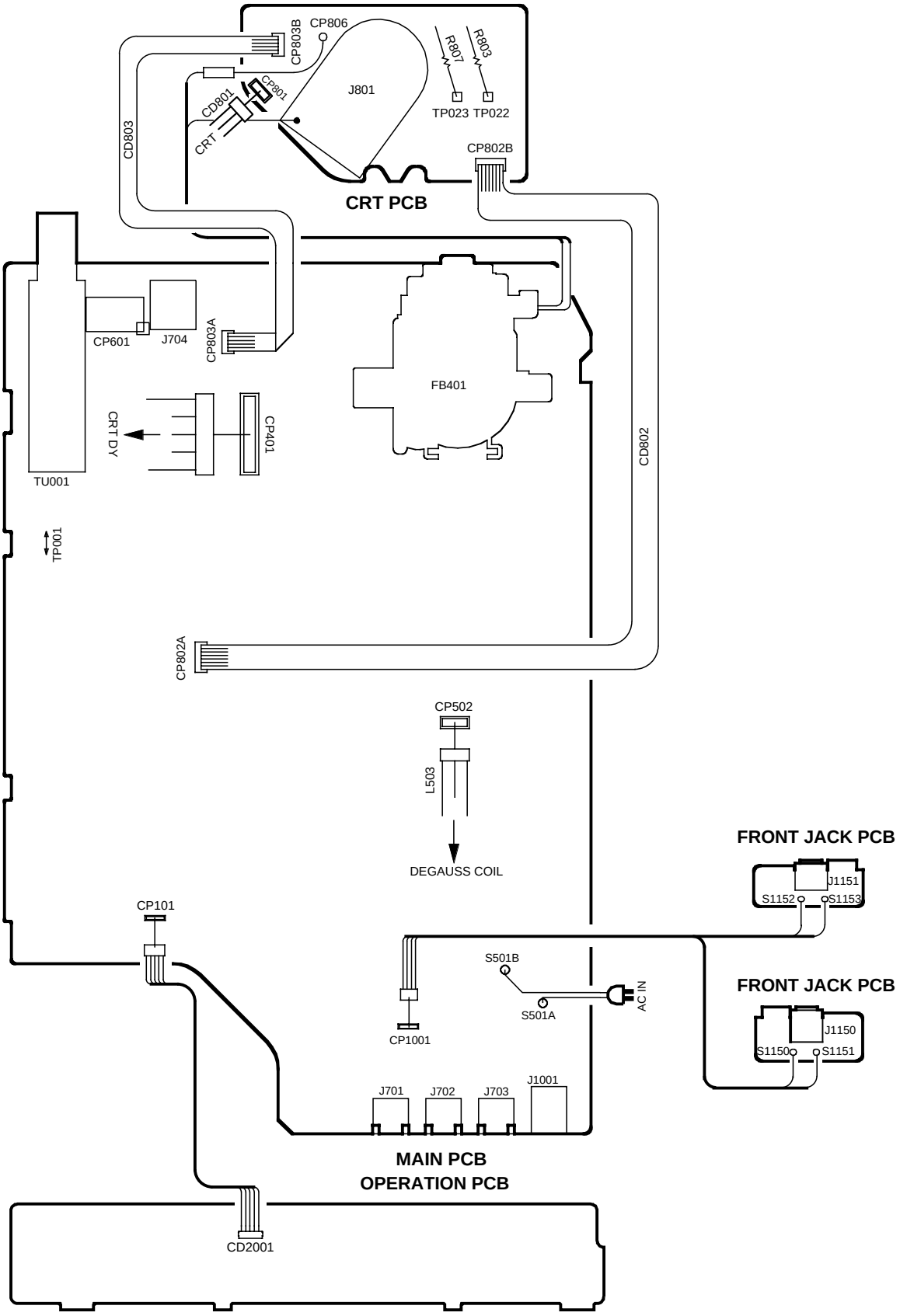


WEDGE POSITION

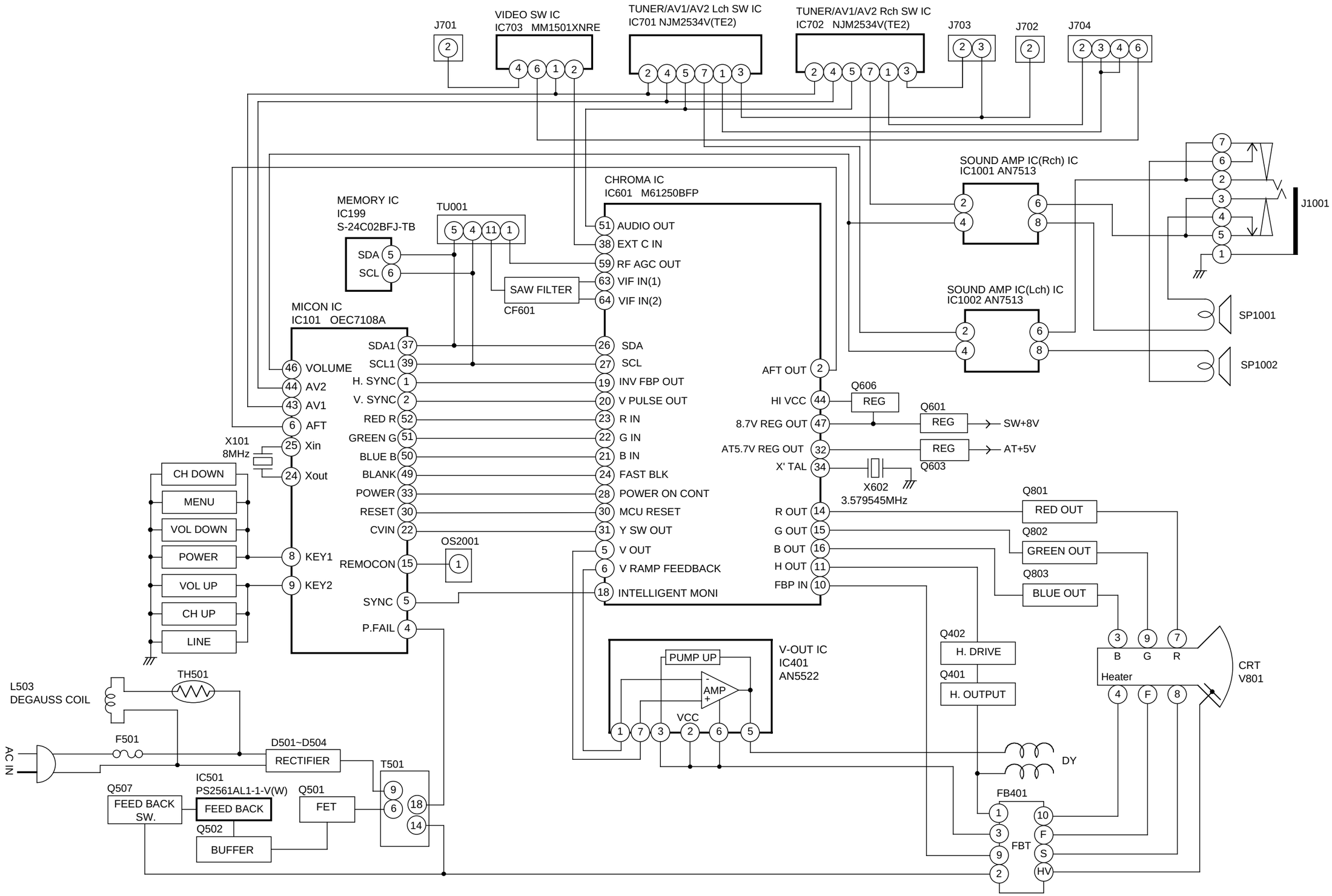
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

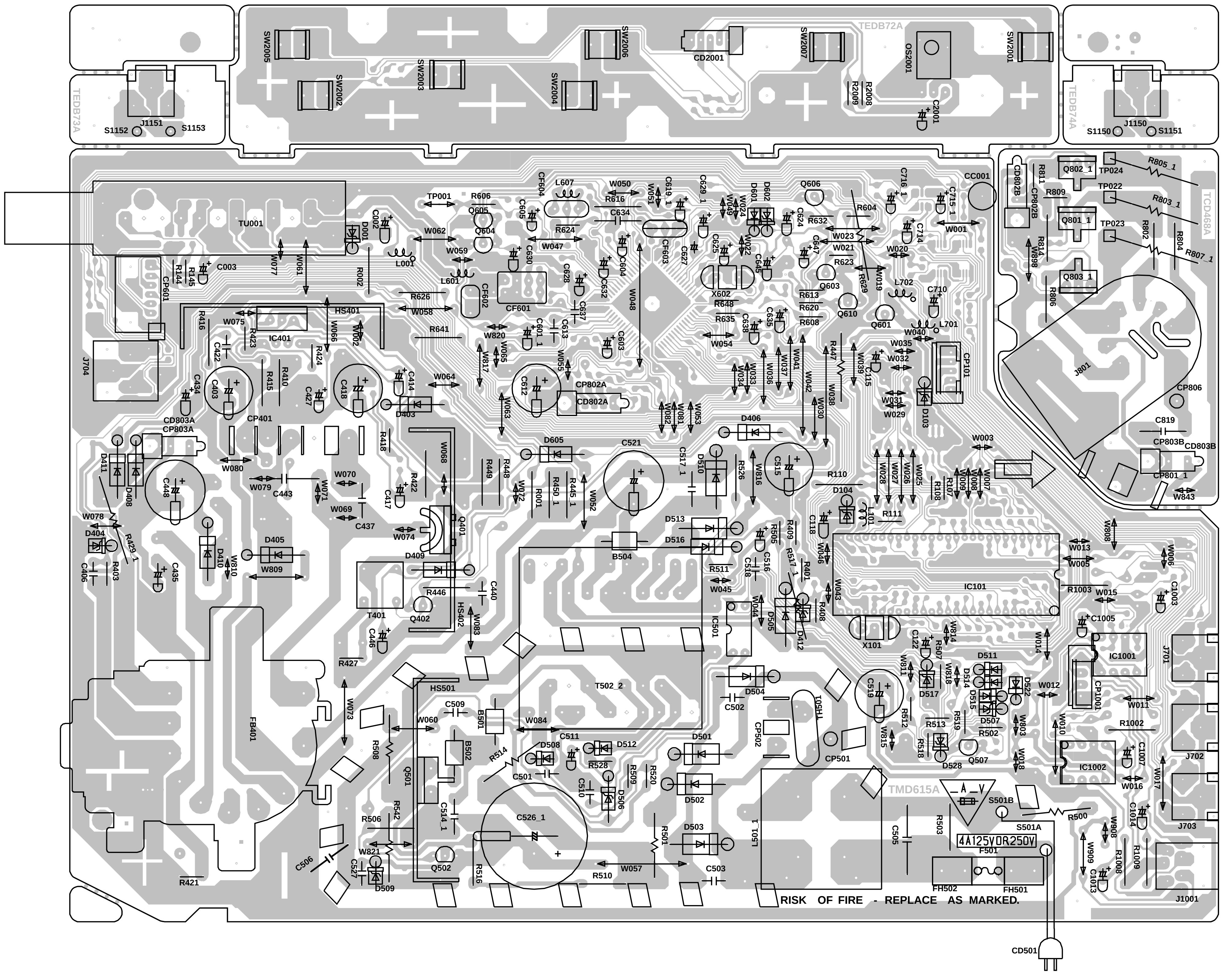
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



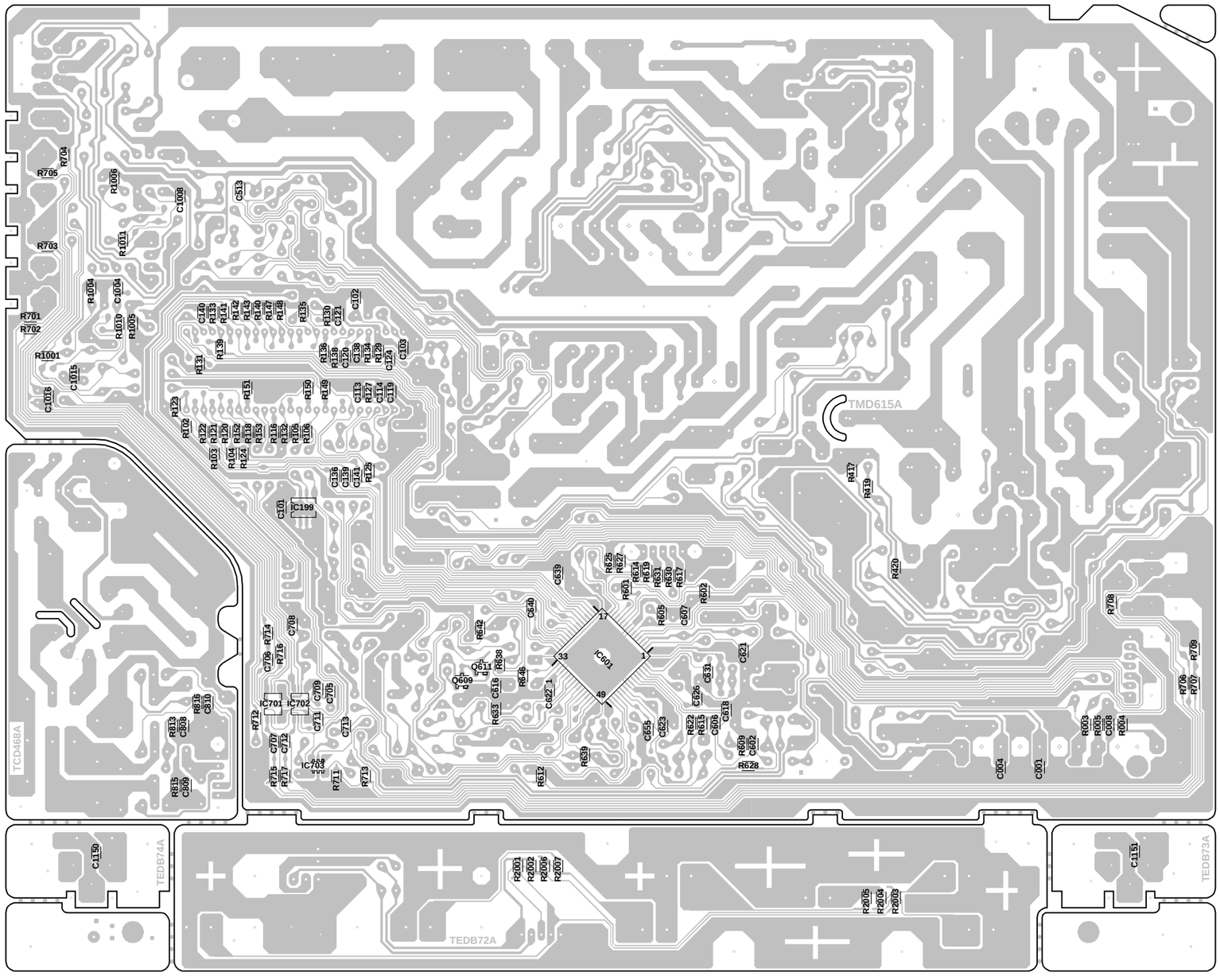
BLOCK DIAGRAM



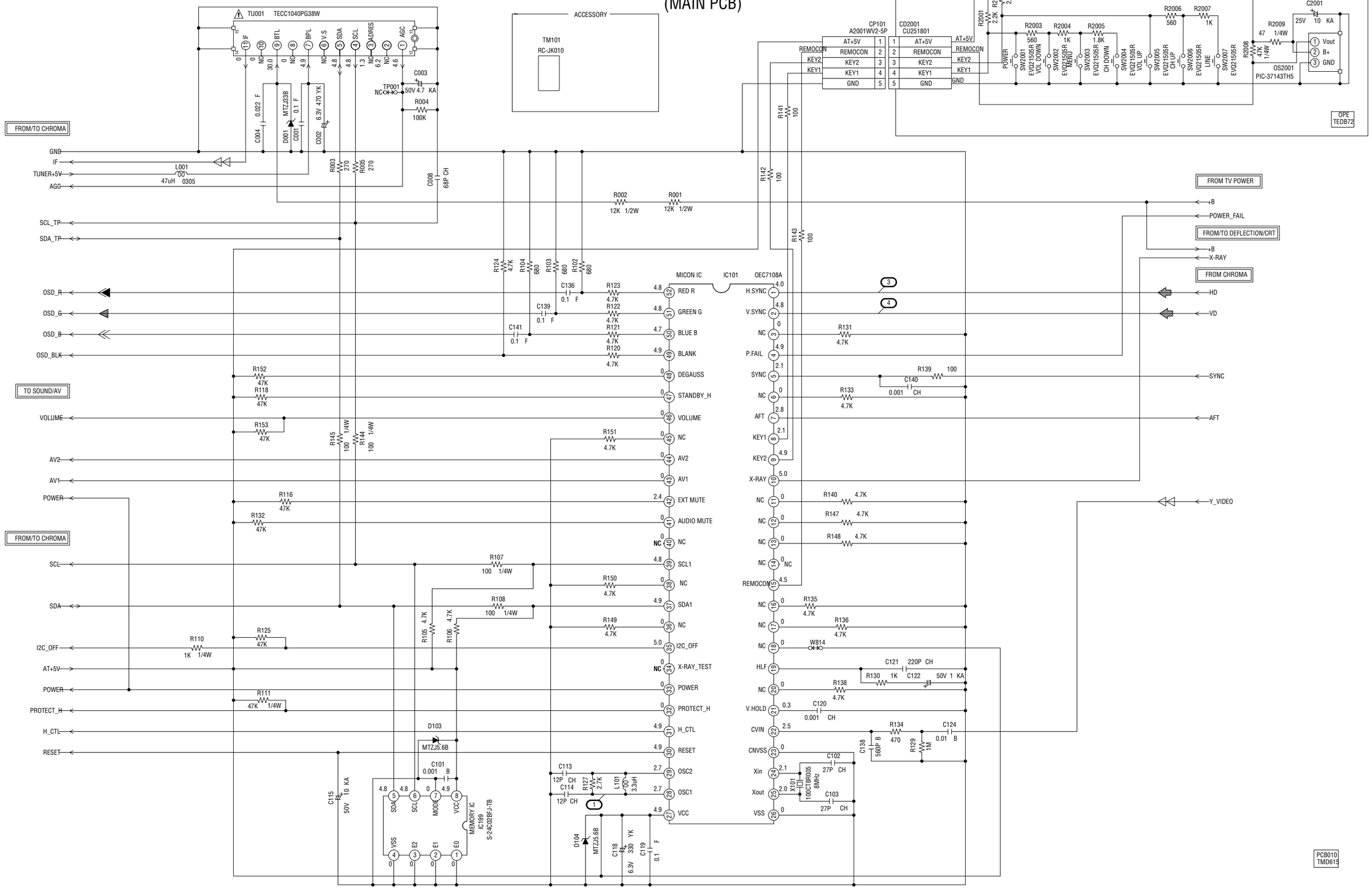
PRINTED CIRCUIT BOARDS
MAIN/CRT/OPERATION/FRONT JACK (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
MAIN/CRT/OPERATION/FRONT JACK (CHIP MOUNTED PARTS)
SOLDER SIDE



MICON/TUNER SCHEMATIC DIAGRAM
(MAIN 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.

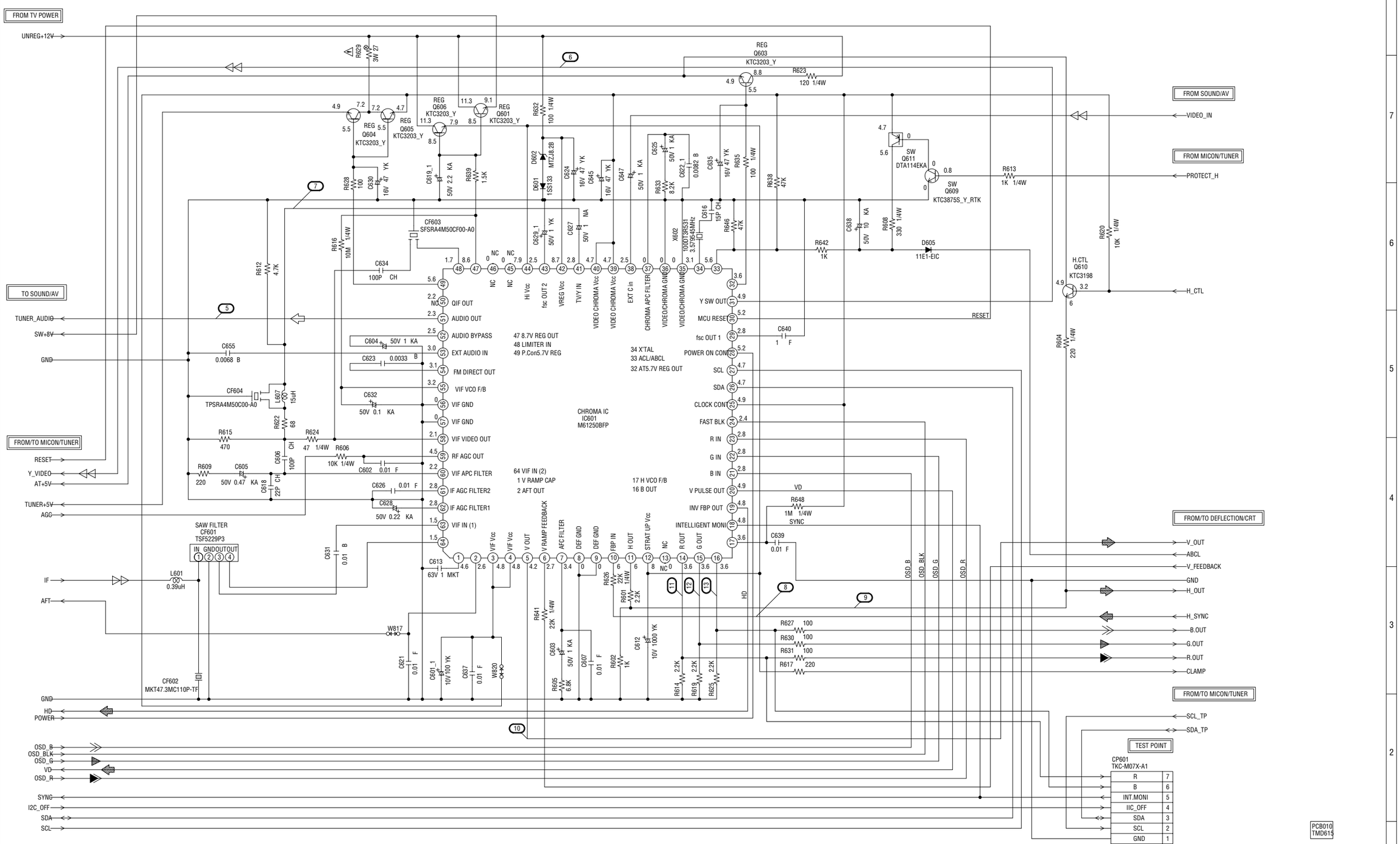
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL

◀ DEFLECTION SIGNAL
◁◁ TUNER VIDEO SIGNAL

CHROMA SCHEMATIC DIAGRAM
(MAIN PCB)



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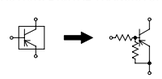
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

CAUTION: DIGITAL TRANSISTOR



R.SIGNAL
G.SIGNAL
B.SIGNAL
DEFLECTION SIGNAL
AUDIO SIGNAL
TUNER VIDEO SIGNAL
RECORD LUMINANCE SIGNAL

TV POWER SCHEMATIC DIAGRAM
(MAIN PCB)

CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 4A 125V (F501) FUSE.

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 125V (F501).

4A 125V

DEGAUSS COIL L503 8R200030

TH501 B59203-S1060-B14

CP501 003P-2100

CP502 A1561WV2-2P

R500 2.7M 1/2W +-10%

R501 3.3 5W

R514 0.22 1W

D501 1N4005-EIC

D502 1N4005-EIC

D503 1N4005-EIC

D504 1N4005-EIC

C502 500V 0.001 B

C526_1 2KV 330 UP

R510 1.2M 1/2W

R516 1.2M 1/2W

D509 MTZJ18B

C527 0.001 B

C503 500V 0.001 B

C505 275V 0.33 ECQUL

R503 1.5M 1/2W

F501 4A125V

FH501 EYF-52BC

T4A_L_125V

FH502 EYF-52BC

COIL,LINE FILTER L501_1 SS24H-10100

AC120V_60Hz CD501 09414909

BLACK

WHITE

BLADE WIDE

S501A

S501B

C506 250V 0.0047 KX

B501 W5RH3.5X5X1.0

B502 W5RH3.5X5X1.0

C514_1 2KV 0.001 R

144.0 0.1 4.8

FET Q501 STP5NC50FP

R508 220 1W

C509 0.047 M

D508 1SS133

D512 1SS133

R520 56K 1/4W

R528 100 1/4W

R509 100 1/4W

C510 0.0039 B

C511 50V 1 KA

D506 MTZJ18B

W821

BUFFER Q502 KTC3198 4.8 0.1

R506 1K 1/4W

R542 0.47 1W

HS501 763WSAA021

C501 0.0082 M

T502_2 8134004S

NC 10 9 1.7 8 NC 7 144.0 6 NC 5 10.3 4 6.6 3 10.3 2 NC 1

11 NC 12 NC 13 132.3 14 0 15 132.3 16 0 17 0 18 11.3 19 NC 20 NC

FEED BACK IC501 PS2561AL1-1-V(W)

11.5 10.5 0.1 9.5

D505 21DQ09N

C518 500V 470P B

R517_1 1 1W

C519 16V 1000 YK

W818

D510 RU2AM-EIC

C517_1 2KV 820P RR

C521 160V 100 MHE

D513 21DQ09N

C515 16V 2200 YK

C516 50V0.2 YK

D516 1N4937

R511 100 1/4W

R505 3.3K 1/4W

R507 10K 1/4W

D517 MTZJ5.1B

B504 W5RH3.5X5X1.0

W816

D515 1SS133

D507 MTZJ2.2B T-77

R502 100 1/4W

D511 1SS133

W811

R513 2.2K 1/4W

R512 680 1/4W

FEED BACK SWITCHING Q507 KTC3198 9.5 5.5 6.0

C513 F 0.1

R526 120K 1/2W

D514 1SS133

D522 1SS133

R519 1.2K 1/4W

D528 MTZJ5.6B

W815

R518 5.6K +-1%

TO SOUND/AV
GND
SOUND+B
SOUND_GND

TO DEFLECTION/CRT
+B
UNREG+12V

GND

TO MICON/TUNER
POWER_FAIL
+B

TO CHROMA
UNREG+12V

PCB010 TMD615

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.

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

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

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

DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)

FROM CHROMA
CLAMP
G.OUT
R.OUT
B.OUT
V-OUT IC IC401 AN5522
THERMAL PROTECTION
PUMP UP
AMP
C414 2u 35V
R423 100 1/4W
R424 6.8K 1/4W
D403 11E1-EIC
R418 33K 1/4W
R420 4.7K
R419 560
C417 1u 50V
C418 470 25V YK
R417 15K
C422 0.15 100V MKT
R410 390 1/2W
R416 1 1/2W
R415 6.8K 1/2W
C427 10u 50V YK
R422 1.8 1/2W
HS401 763WSAA021
C434 22u 100V YK
D411 AU02A-EIC
R429_1 4.7 3W
D412 MTZJ5.1B
R408 10K +-1%
R409 27K +-1%
R401 27K +-1%
FROM/TO MICON/TUNER
X-RAY
+B
FB401 FQI20B103_M
130.0 COL
132.5 VIDEO
132.5 B+
48.0 AFC
0 GND
NC E12
25.0 E25
HI
F
S
GND
ABL 4.3
HEATER 7.0
NC
GND
C437 0.33u 250V PMS
FROM/TO CHROMA
GND
V_FEEDBACK
V_OUT
ABCL
H_OUT
H_SYNC
T401 ETH09K14BZ
27.0 130.0
NC
0
H.DRIVE Q402 KTC3227_Y-AT
R446 470 1/2W
C446 22u 50V YK
C440 0.01 100V MMTS
R427 100 1/4W
H.OUTPUT Q401 2SC5885
HS402 763WSAA021
C443 0.0072 1.25KV MPP
FROM TV POWER
GND
+B
R403 22K 1/4W
C406 100P 500V B
W809
D404 MTZJ6.2B
W810
D405 AU02A-EIC
D410 AU02A-EIC
UNREG+12V
R447 150 2W
D406 11E1-EIC
D409 11E1-EIC
R448 680 1/2W
R449 680 1/2W
R445_1 180K 1/4W
R450_1 470K 1/4W
C435 0.1u 100V MHE
C403 470u 35V YK
C448 22u 250V YK
R421 1M 220K 1/4W
D408 11E1-EIC
PCB010 TMD615
TO DY
CP401 A1561WV2-A5P
CP802A B2013H02-5P
CD802
CP802B B2013H02-5P
CP803A B2013H02-4P
CD803
CP803B B2013H02-4P
HEATER
GND
NC
180V
CD801 CH823004
CP801_1 A2361WV2-2P
V801 A48AKH13X04
R
G
B
W843
W838
RED OUT Q801_1 2SC4217
GREEN OURT Q802_1 2SC4217
BLUE OUT Q803_1 2SC4217
R809 4.7K 1/4W
R811 4.7K 1/4W
R814 4.7K 1/4W
C808 470P B
R813 330
C809 470P B
R815 330
C810 470P B
R816 330
TP022
TP024
TP023
R803_1 12K 2W
R802 2.7K 1/4W
R805_1 12K 2W
R804 2.7K 1/2W
R807_1 12K 2W
R806 2.7K 1/4W
FOCUS
SCREEN
CP806
C819 0.001u 2KV B
J801 ISMS01S
PCB110 TCD468

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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.

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

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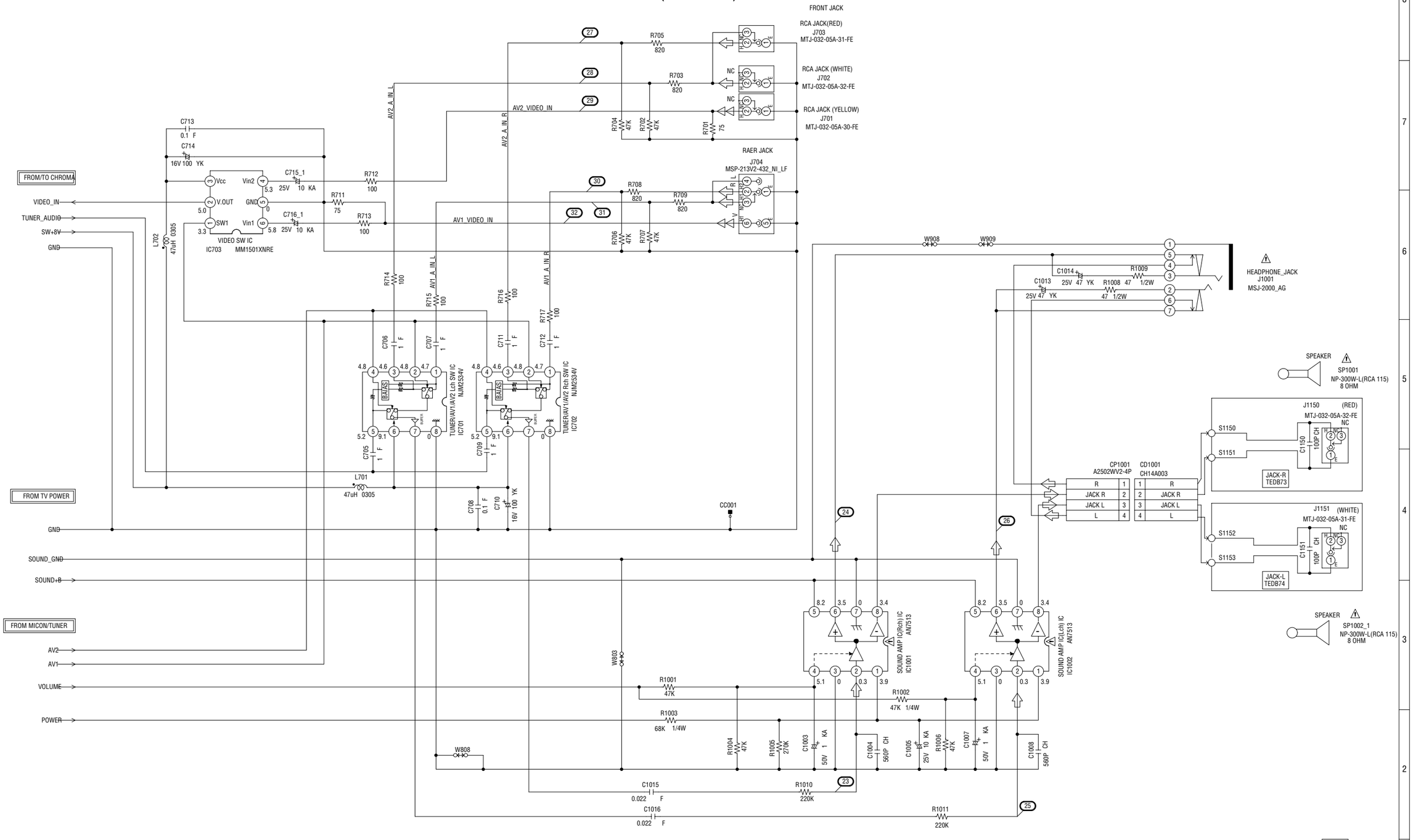
◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL
◀ DEFLECTION SIGNAL

SOUND/AV SCHEMATIC DIAGRAM

(MAIN 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.

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

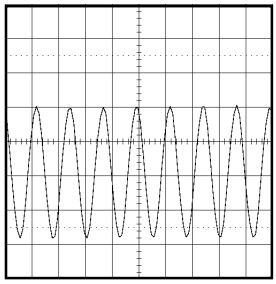
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY 。

◁◁ TUNER VIDEO SIGNAL

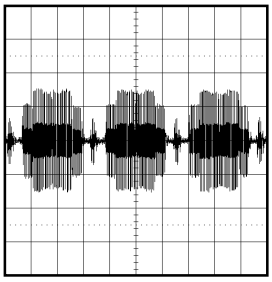
◁ AUDIO SIGNAL

WAVEFORMS

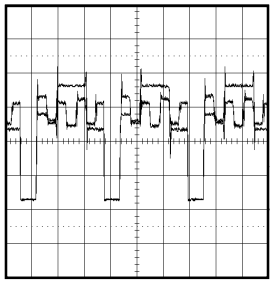
MICON/TUNER



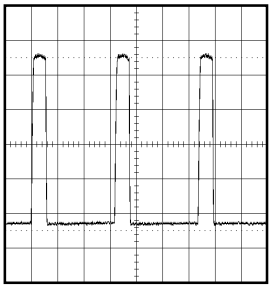
① 1V 0.1µs/div



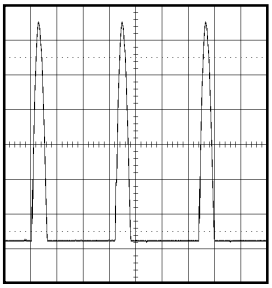
⑦ 200mV 20µs/div



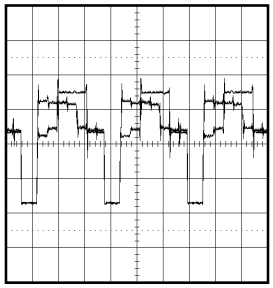
⑫ 1V 20µs/div



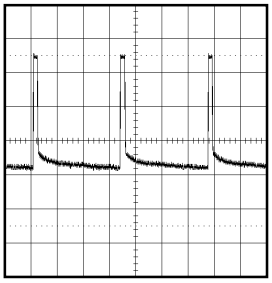
③ 200mV 20µs/div



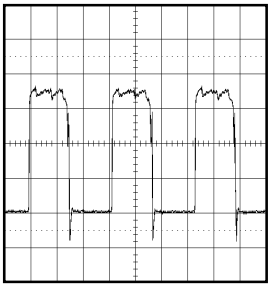
⑧ 20V 20µs/div



⑬ 1V 20µs/div

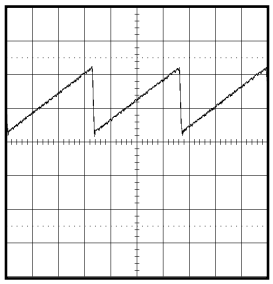


④ 200mV 5ms/div



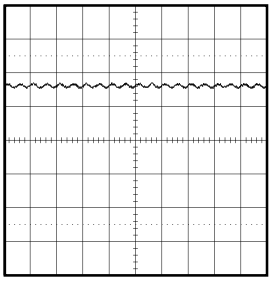
⑨ 200mV 20µs/div

DEFLECTION/CRT

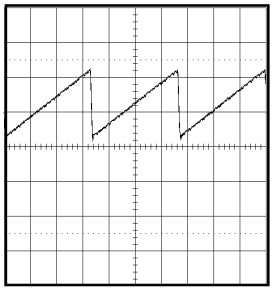


⑭ 0.5V 5ms/div

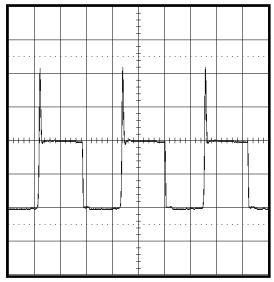
CHROMA



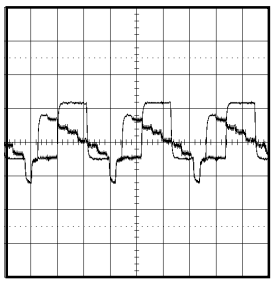
⑤ 0.5V 2ms/div



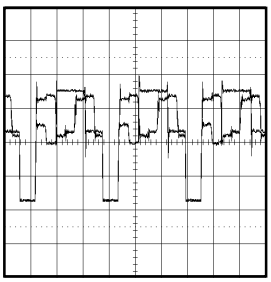
⑩ 0.5V 5ms/div



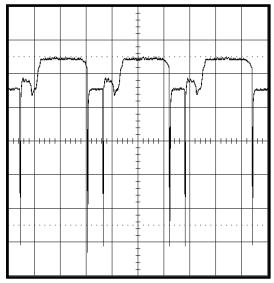
⑮ 20V 20µs/div



⑥ 0.5V 20µs/div



⑪ 1V 20µs/div

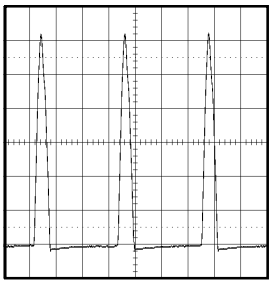


⑯ 2V 20µs/div

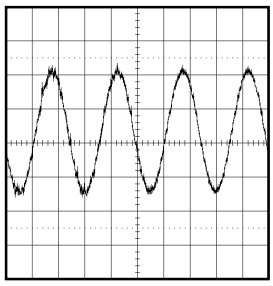
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

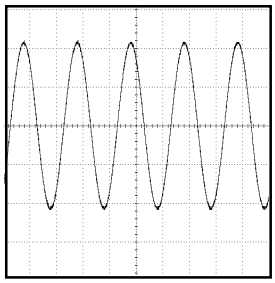
SOUND/AV



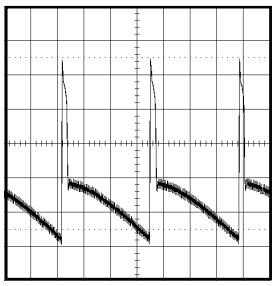
17 200V 20µs/div



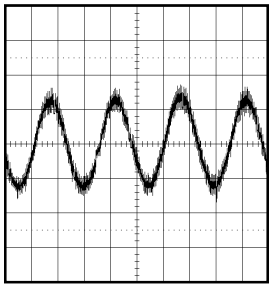
23 200mV 1ms/div



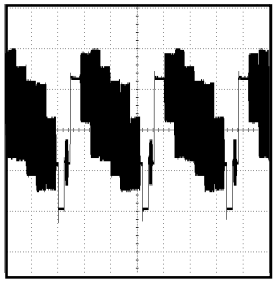
28 200mV 500µs/div



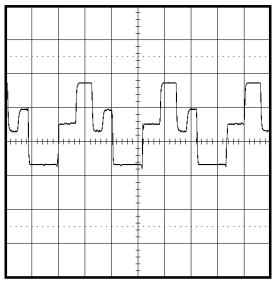
19 10V 5ms/div



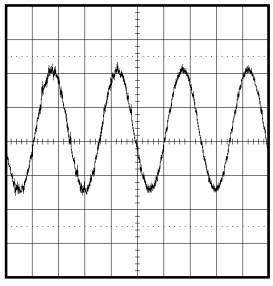
24 0.5V 1ms/div



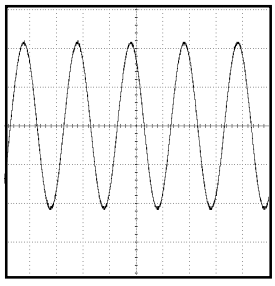
29 500mV 20µs/div



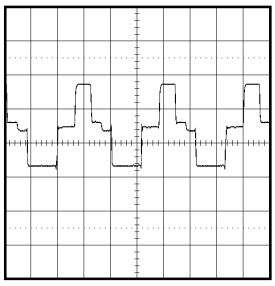
20 50V 20µs/div



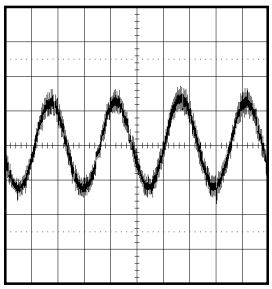
25 200mV 1ms/div



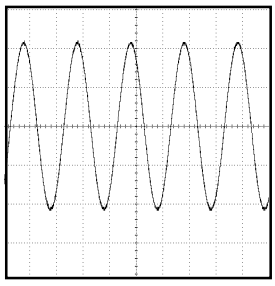
30 200mV 500µs/div



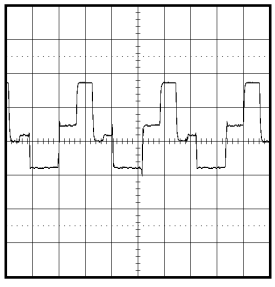
21 50V 20µs/div



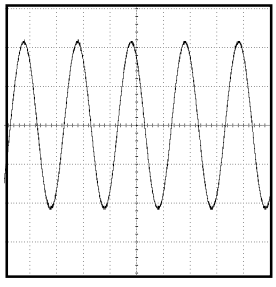
26 0.5V 1ms/div



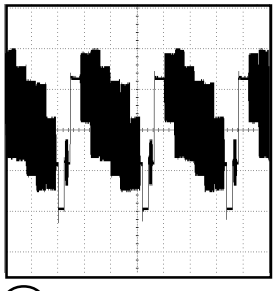
31 200mV 500µs/div



22 50V 20µs/div



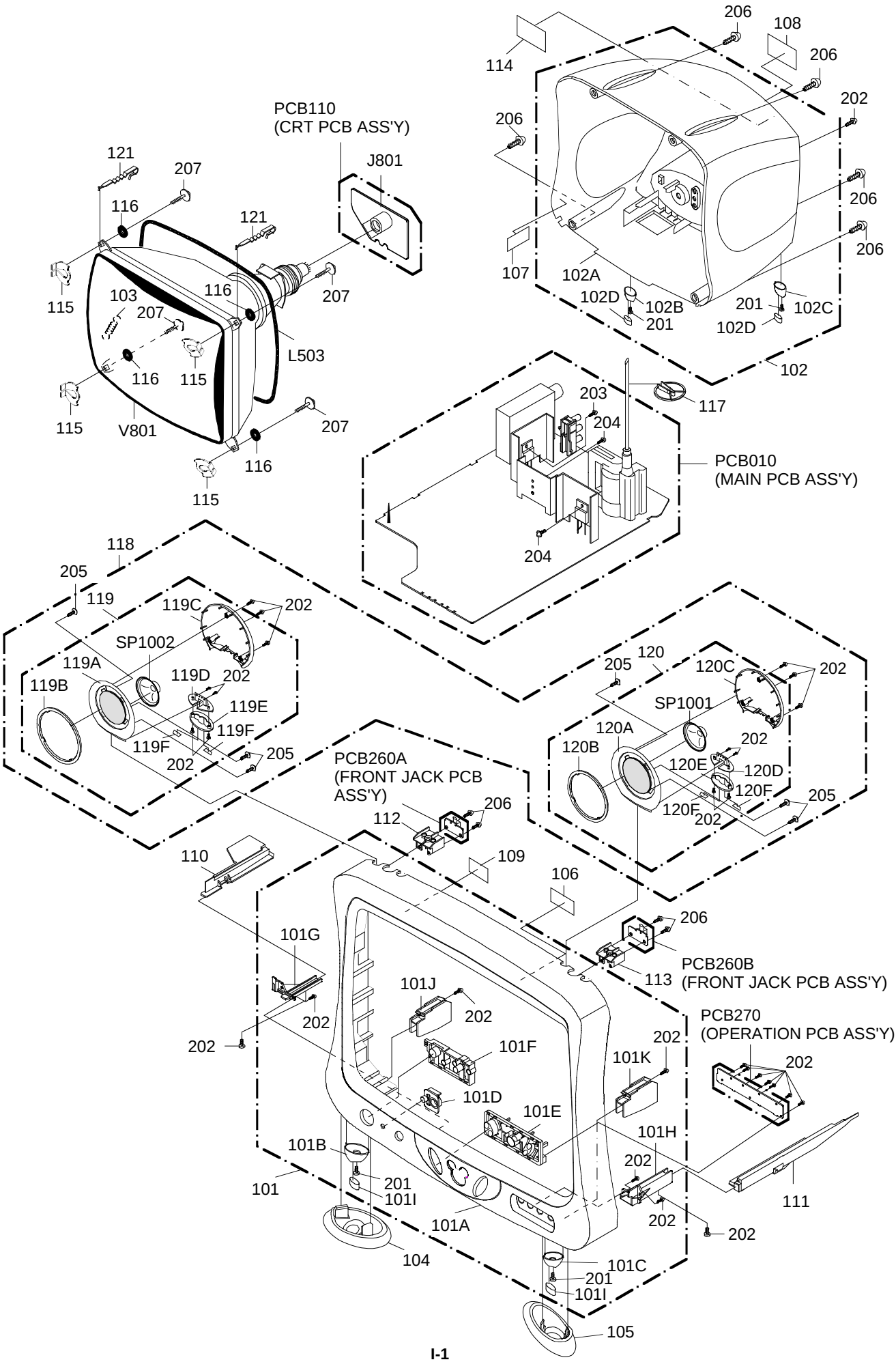
27 200mV 500µs/div



32 500mV 20µs/div

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

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	7A701A230A	FRONT,CABI ASS'Y		
101A	701WPJC815	CABINET,FRONT		
101B	704WPA0042	LEG-FRONT(L)		
101C	704WPA0043	LEG-FRONT(R)		
101D	713WPAA174	GUIDE,REMOCON		
101E	738WPDA009	BUTTON,FRAME-CLASSIC		
101F	738WPDA010	BUTTON,FRAME		
101G	761WPAA119	HOLDER,PCB-2(L)		
101H	761WPAA097	HOLDER,PCB-2(R)		
101I	800WFA0060	CUSHION,LEG		
101J	761WPA0357	HOLDER,CRT(L)		
101K	761WPA0358	HOLDER,CRT(R)		
102	7A702A070B	BACK,CABI ASS'Y		
102A	702WPBA194	CABINET,BACK		
102B	704WPA0044	LEG-BACK(L)		
102C	704WPA0045	LEG-BACK(R)		
102D	800WFA0060	CUSHION,LEG		
103	741WUA0021	SPRING,EARTH		
104	704WPA0040	LEG-CLASSIC(L)		
105	704WPA0041	LEG-CLASSIC(R)		
106	722000A023	SHEET,HWC		
107	7220001119	SHEET,CSA WARNING		
108	722616A015	SHEET,RATING		
109	7230006818	SHEET,CAUTION		
110	761WPA0336	HOLDER,PCB(L)		
111	761WPA0337	HOLDER,PCB(R)		
112	761WPA0338	HOLDER,SPEAKER-PCB(L)		
113	761WPA0339	HOLDER,SPEAKER-PCB(R)		
114	726000A078	SHEET,CRT SERVICEMAN		
115	769WSA0011	WASHER CRT T=0.5		
116	800WR0A011	SHEET CRT SUPPORT (D)		
117	899HV3T000	HOLDER,ANODE WIRE		
118	A3R703QX30	SPEAKER, CABI ASSY		
119	7A701A274A	SPEAKER,CABI (L) ASS'Y		
119A	701WPAA632	CABINET,FRONT-SP (L)		
119B	701WPAA633	RING,SPEAKER (L)		
119C	702WPAA772	CABINET,BACK-SP(L)		
119D	761WPA0340	HOLDER,JACK(L)		
119E	761WPA0342	SHIM,SPEAKER(L)		
119F	800WQ0A086	FELT,SHEET		
120	7A701A275A	SPEAKER,CABI (R) ASS'Y		
120A	701WPAA634	CABINET,FRONT-SP(R)		
120B	701WPAA635	RING,SPEAKER(R)		
120C	702WPAA773	CABINET,BACK-SP(R)		
120D	761WPA0341	HOLDER,JACK(R)		
120E	761WPA0343	SHIM,SPEAKER(R)		
120F	800WQ0A086	FELT,SHEET		
121	8994201000	HOLDER,CRT WIRE		
201	8117330A04	SCREW,TAPPING(B0)	FLAT	3x10
202	8110630A04	SCREW,TAP TITE(P)	BRAZIER	3x10
203	8107630804	SCREW,TAP TITE(S)	BRAZIER	3x8
204	8109I30604	SCREW,TAP TITE(B)	WH7	3x6
205	8159130A01	SCREW,TAPPING(B)	WASHER12 PAN	3x10
206	8117540A64	SCREW,TAPPING(B0)	TRUSS	4x16
207	8141J50D54	SCREW,TAP TITE(P)	GW20	5X45
---	791WHAA062	LAMIFILM,BAG		
---	792WHA0571	PACKAGE,BOTTOM		
---	792WHA0572	PACKAGE,TOP		
---	793WCDC418	GIFT BOX		
---	794WHAA002	STRAP		
---	A3R701Q975	INSTRUCTION BOOK KIT		
---	J3P90130A	DISNEY LEAFLET		
---	J3P90202C	WARRANTY SHEET(E/F)		
---	J3R70131A	INSTRUCTION BOOK		
---	JB5U0300	POLYBAG,INSTRUCTION		

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
RESISTORS			
⚠ R401	R4X5T6273F	R,METAL	27K OHM 1/6W
⚠ R408	R4X5T6103F	R,METAL	10K OHM 1/6W
⚠ R409	R4X5T6273F	R,METAL	27K OHM 1/6W
⚠ R429	R3X28B4R7J	R,METAL OXIDE	4.7 OHM 3W
⚠ R447	R3X28A151J	R,METAL OXIDE	150 OHM 2W
⚠ R500	R0G3K2275K	RC	2.7M OHM 1/2W
⚠ R501	R5X2AD3R3J	R,CEMENT	3.3 OHM 5W
⚠ R508	R3X181221J	R,METAL OXIDE	220 OHM 1W
⚠ R509	R002T4101J	RC	100 OHM 1/4W
⚠ R514	R63581R22J	R,FUSE	0.22 OHM 1W
⚠ R517	R63581010J	R,FUSE	1 OHM 1W
⚠ R518	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠ R519	R002T4122J	RC	1.2K OHM 1/4W
⚠ R542	R3X181R47J	R,METAL OXIDE	0.47 OHM 1W
⚠ R629	R3X28B270J	R,METAL OXIDE	27 OHM 3W
⚠ R803	R3X18A123J	R,METAL OXIDE	12K OHM 2W
⚠ R805	R3X18A123J	R,METAL OXIDE	12K OHM 2W
⚠ R807	R3X18A123J	R,METAL OXIDE	12K OHM 2W
CAPACITORS			
⚠ C403	E02LT4471M	CE	470 UF 35V
⚠ C414	E02LU4101M	CE	100 UF 35V
⚠ C418	E02LT3471M	CE	470 UF 25V
⚠ C434	E02LU8220M	CE	22 UF 100V
C437	P4J7F3334J	CMPP	0.33 UF 250V PMS
⚠ C443	P4N8FJ722H	CMPP	0.0072UF 1.25KV
⚠ C446	E02LU5220M	CE	22 UF 50V
⚠ C448	E0ELFD220M	CE	22 UF 250V
⚠ C503	C0JTB0513K	CC	0.001 UF 500V B
⚠ C505	P2122B334M	CMP	0.33 UF 275V ECQUL
⚠ C506	CD39E0MQ3M	CC	0.0047UF 250V
C514	C0PLRR713K	CC	0.001 UF 2KV R
⚠ C515	E02L02222M	CE	2200 UF 16V
C517	C0PLRR7W2K	CC	820 PF 2KV RR
⚠ C519	E02LT2102M	CE	1000 UF 16V
⚠ C521	E5EZFB101M	CE	100 UF 160V
⚠ C526	E51CGC331M	CE	330 UF 200V
C819	C0JBB0713K	CC	0.001 UF 2KV B
DIODES			
D001	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D103	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D104	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D403	D2WT011E10	DIODE SILICON	11E1-EIC
D404	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
⚠ D405	D2WTAU02A0	DIODE SILICON	AU02A-EIC
D406	D2WT011E10	DIODE SILICON	11E1-EIC
D408	D2WT011E10	DIODE SILICON	11E1-EIC
D409	D2WT011E10	DIODE SILICON	11E1-EIC
⚠ D410	D2WTAU02A0	DIODE SILICON	AU02A-EIC
⚠ D411	D2WTAU02A0	DIODE SILICON	AU02A-EIC
⚠ D412	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
⚠ D501	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D502	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D503	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D504	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D505	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D506	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D508	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D509	D97U01801B	DIODE,ZENER	MTZJ18B T-77
⚠ D510	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
D511	D1VT001330	DIODE,SILICON	1SS133T-77
D512	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D513	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D514	D1VT001330	DIODE,SILICON	1SS133T-77
D515	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D516	D2WXN49370	DIODE SILICON	1N4937
D517	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D522	D1VT001330	DIODE,SILICON	1SS133T-77
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D601	D1VT001330	DIODE,SILICON	1SS133T-77
D602	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D605	D2WT011E10	DIODE SILICON	11E1-EIC
ICS			
⚠ IC101	I56D07108A	IC	OEC7108A
IC199	A3R701Q015	INIT DATA	
⚠ IC401	I01TD55220	IC	AN5522
⚠ IC501	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC601	I06FC1250B	IC	M61250BFP

REF. NO.	PART NO.	DESCRIPTION	
ICS			
IC701	I0QF02534V	IC	NJM2534V(TE2)
IC702	I0QF02534V	IC	NJM2534V(TE2)
IC703	I0UF015010	IC	MM1501XNRE
⚠ IC1001	I01DP75130	IC	AN7513
IC1002	I01DP75130	IC	AN7513
TRANSISTORS			
⚠ Q401	TC1G058850	TRANSISTOR SILICON	2SC5885
⚠ Q402	TCAT03227Y	TRANSISTOR SILICON	KTC3227_Y-AT
⚠ Q501	TJXG5NC500	FET	STP5NC50FP
⚠ Q502	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q507	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q601	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q603	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q604	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q605	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q606	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q609	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q610	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q611	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
⚠ Q801	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q802	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q803	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
COILS &TRANSFORMERS			
L001	02167F470J	COIL	47 UH
L101	021LA63R3K	COIL	3.3 UH
⚠ L501	029X000416	COIL,LINE FILTER	SS24H-10100
⚠ L503	028R200030	COIL,DEGAUSS	8R200030
L601	021LA6R39M	COIL	0.39 UH
L607	021LA6150J	COIL	15 UH
L701	02167F470J	COIL	47 UH
L702	02167F470J	COIL	47 UH
T401	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠ T502	048134004S	TRANSFORMER,SWITCHING	8134004S
JACKS			
J701	060J421036	RCA JACK	MTJ-032-05A-30-FE
J702	060J421037	RCA JACK	MTJ-032-05A-32-FE
J703	060J421030	RCA JACK	MTJ-032-05A-31-FE
J704	060J431020	RCA JACK	MSP-213V2-432_NI_LF
⚠ J801	066F120018	SOCKET,CATHODE RAY TUBE	ISMS01S
J1001	060J131016	HEADPHONE JACK	MSJ-2000_AG
J1150	060J421037	RCA JACK	MTJ-032-05A-32-FE
J1151	060J421030	RCA JACK	MTJ-032-05A-31-FE
SWITCHES			
SW2001	0504101T34	SWITCH,TACT	EVQ21505R
SW2002	0504101T34	SWITCH,TACT	EVQ21505R
SW2003	0504101T34	SWITCH,TACT	EVQ21505R
SW2004	0504101T34	SWITCH,TACT	EVQ21505R
SW2005	0504101T34	SWITCH,TACT	EVQ21505R
SW2006	0504101T34	SWITCH,TACT	EVQ21505R
SW2007	0504101T34	SWITCH,TACT	EVQ21505R
P.C.BOARD ASSEMBLIES			
PCB010	A3R703Q010L	PCB ASS'Y	TMD615A
PCB110	A3R703Q110L	PCB ASS'Y	TCD468A
PCB270	A3R703Q270L	PCB AS'Y	TEDB72A
PCB260A	A3R703Q260L	PCB ASS'Y	TEDB73A
PCB260B	A3R703Q260L	PCB ASS'Y	TEDB74A
MISCELLANEOUS			
B501	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B502	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B504	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
⚠ CD501	1209414909	CORD AC BUSH	9414909
CD801	06CH823004	CORD CONNECTOR	CH823004
CD802	WCL6848038	FLAT CABLE AWM2468	AWG26 5C GRAY 480MM
CD803	WBL6034038	FLAT CABLE AWM2468	AWG26 4C BLACK 340MM
CF601	1029045R7G	FILTER,SAW	TSF5229P3
CF602	1012T04702	FILTER,CERAMIC TRAP	MKT47.3MC110P-TF
CF603	1012T4R520	FILTER,CERAMIC	SFSRA4M50CF00-A0
CF604	1012T4R519	FILTER,CERAMIC TRAP	TPSRA4M50C00-A0
CP101	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
⚠ CP401	069S450089	CONNECTOR PCB SIDE	A1561WV2-A5P
CP501	069D01001A	CONNECTOR PCB SIDE	003P-2100
⚠ CP502	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP601	0697270650	CONNECTOR PCB SIDE	TKC-M07X-A1
CP801	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CD1001	06CH14A003	CORD CONNECTOR	CH14A003
CD2001	06CU251801	CORD CONNECTOR	CU251801
CP1001	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
CP802A	067U005049	WIRE HOLDER	B2013H02-5P
CP802B	067U005049	WIRE HOLDER	B2013H02-5P
CP803A	067U004029	WIRE HOLDER	B2013H02-4P
CP803B	067U004029	WIRE HOLDER	B2013H02-4P
⚠ F501	081PC04005	FUSE	51MS040L
⚠ FB401	043220061F	TRANSFORMER,FLYBACK	FQI20B103_M
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
OS2001	077Q037002	REMOTE RECEIVER	PIC-37143TH5
SP1001	070W132024	SPEAKER	NP-300W-L(RCA 115)
SP1002	070W132024	SPEAKER	NP-300W-L(RCA 115)
⚠ TH501	D8EE0B1400	DEGAUSS ELEMENT	B59203-S1060-B14
TM101	076N0JK010	TRANSMITTER	RC-JK010
⚠ TU001	0145K00062	TUNER,VHF-UHF	TECC1040PG38W
⚠ V801	098Q200490	CRT W/DY	A48AKH13X04
X101	100CT8R005	CRYSTAL	HC-49/U-S
X602	100DT3R531	CRYSTAL	HC-49/U

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

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

SPEC.NO.	M3R7-03Q
O/R NO.	K483071