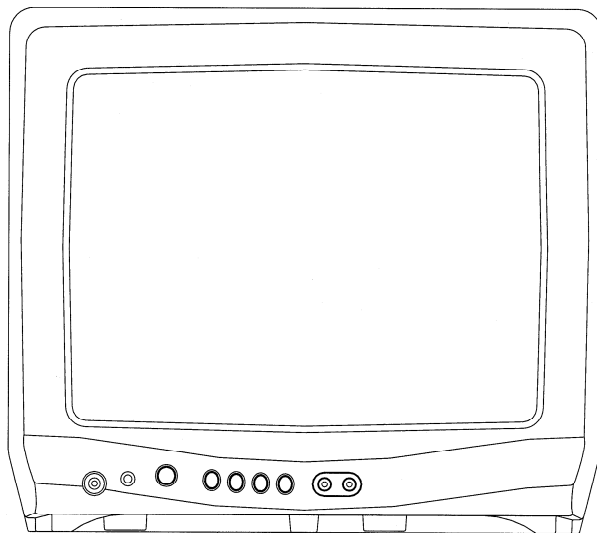


Memorex®

MT1137

SERVICE MANUAL

COLOR TELEVISION RECEIVER



**ORIGINAL
MFR'S VERSION C**

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

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.

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GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size	13 inch / 335.4mmV
			CRT Type	Normal
			Deflection	90 degree
			Magnetic Field BV/BH	+0.45G/0.18G
			Color System	NTSC
			Speaker	1Speaker
			Position	Bottom
			Size	3 Inch
			Impedance	8 ohm
			Sound Output	MAX 1.0 W
				10%(Typical) 0.8 W
		NTSC3.58+4.43 /PAL60Hz	No	
G-2	Tuning System	Broadcasting System		US System M
		Tuner and Receive CH	System	1Tuner
			Destination	Others
			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	No
	Tuner Sound Muting	Yes		
G-3	Power	Power Source	AC	120V AC 60Hz
			DC	
		Power Consumption	at AC	54 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	
G-4	Regulation	Safety		UL
		Radiation		FCC
		X-Radiation		DHHS
G-5	Temperature	Operation		+5°C ~ +40°C
		Storage		-20°C ~ +60°C
G-6	Operating Humidity			Less then 80% RH
G-7	On Screen Display	Menu		Yes
		Menu Type		Character
		Picture		Yes
			Contrast	Yes
			Brightness	Yes
			Color	Yes
			Tint	Yes
			Sharpness	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		

GENERAL SPECIFICATIONS

	Control Level	Yes	
	Sound	Yes	
	Brightness	Yes	
	Contrast	Yes	
	Color	Yes	
	Tint (NTSC Only)	Yes	
	Sharpness	Yes	
	Tuning		No
	Bass		No
	Treble		No
	Balance		No
	Back Light		No
	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
	OSD Language Setting	English	
G-9	Clock and Timer	Sleep Timer	Max Time
			120 Min
		Step	10 Min
	On/Off Timer	Program(On Tim / Off Tim)	No
	Wake Up Timer		No
	Timer Back-up (at Power Off Mode)	more than	-- Min Sec
G-10	Remote Control	Unit	RC-DW
	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		27 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	Yes
		Menu	Yes
		Enter	Yes
		Mute	Yes
		Exit	No

GENERAL SPECIFICATIONS

		MTS(Audio Select)	No
		Set +	Yes
		Set -	Yes
	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
		CH Allocation	No
		SAP	No
		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
		Favorite CH	No
G-12	Accessories	Owner's Manual	Language
			English /Spanish
			w/Guarantee Card
			No
		Remote Control Unit	Yes
		Rod Antenna	Yes
		Poles	1 Pole
		Terminal	F type
		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

GENERAL SPECIFICATIONS

		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	
G-13	Interface	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up/Reset	Yes
				Channel Down/Enter	Yes
				Volume Up/Set Up	Yes
				Volume Down/Set Down	Yes
				MENU=Volume Up+Volume Down	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
				Audio Input	RCA x 1
				Other Terminal	Ear Phone
			Rear	Video Input(Rear1)	No
				Video Input(Rear2)	No
				Audio Input(Rear1)	No
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	No
				Euro Scart	No
				Color Stream	No
				Diversity	No
				Ext Speaker	No
				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)	<u>362 x 360 x 320.5</u>
G-15	Weight		Net (Approx.)		<u>9.5 kg (20.9 lbs)</u>
			Gross (Approx.)		<u>11.0kg (24.4lbs)</u>
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 Carton w/Photo
			Dimensions W x D x H(mm)		<u>440 x 408 x 380</u>
			Design		As per Buyer's
			Description of Origin		Yes
		Drop Test			Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
			Height (cm)		62
		Container Stuffing			<u>866</u> Sets/40' container
G-17	Cabinet Material		Cabinet Front		PS 94V0 DECABROM
			Cabinet Rear		PS 94V0 DECABROM

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.

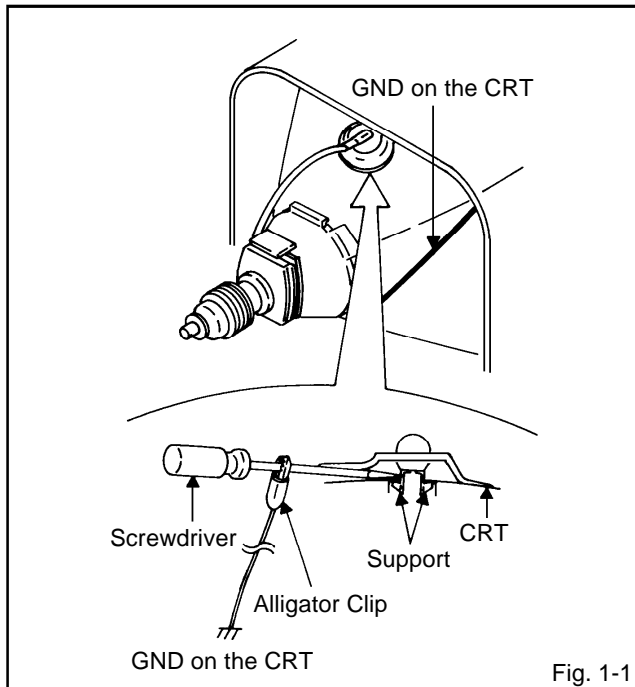


Fig. 1-1

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.)

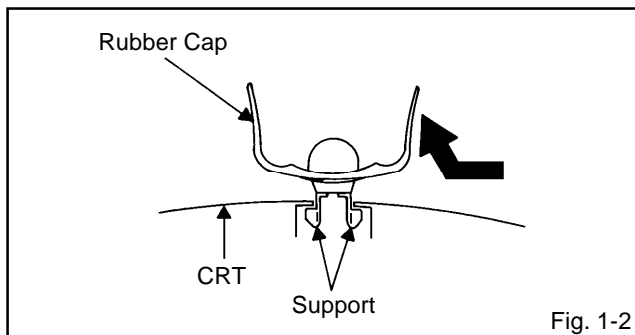


Fig. 1-2

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.)

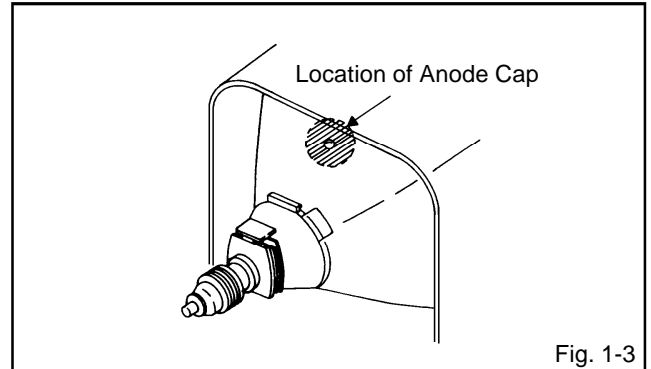


Fig. 1-3

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.)

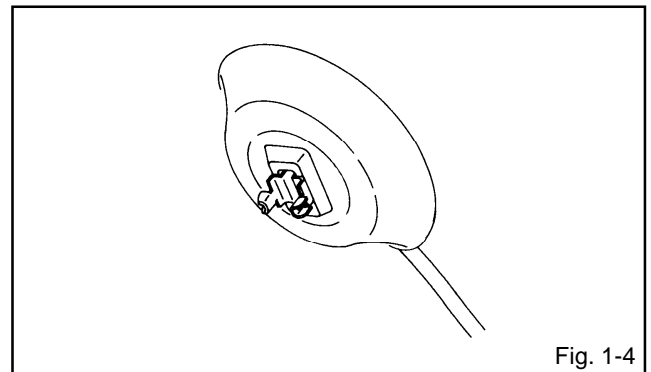


Fig. 1-4

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

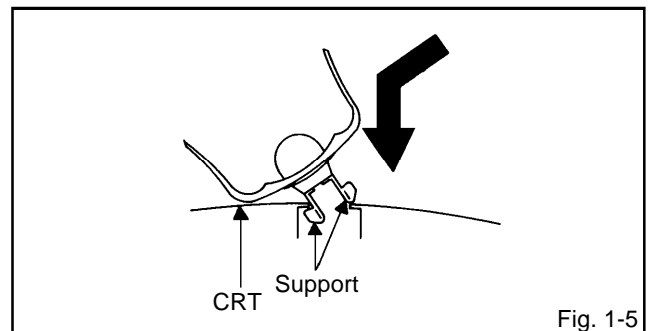


Fig. 1-5

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

DISASSEMBLY INSTRUCTIONS

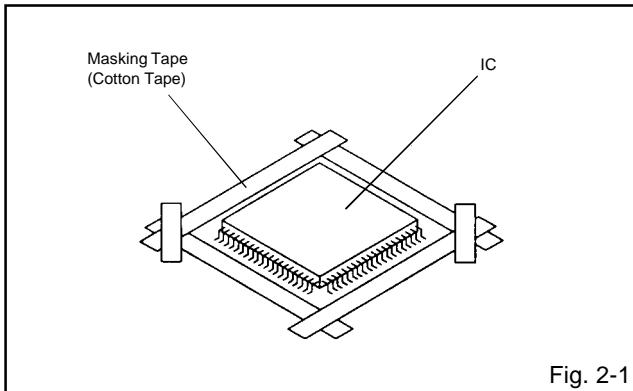
2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

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

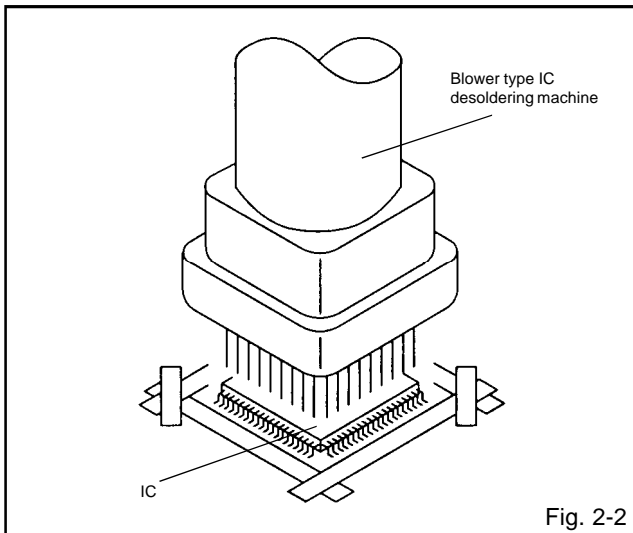
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

NOTE

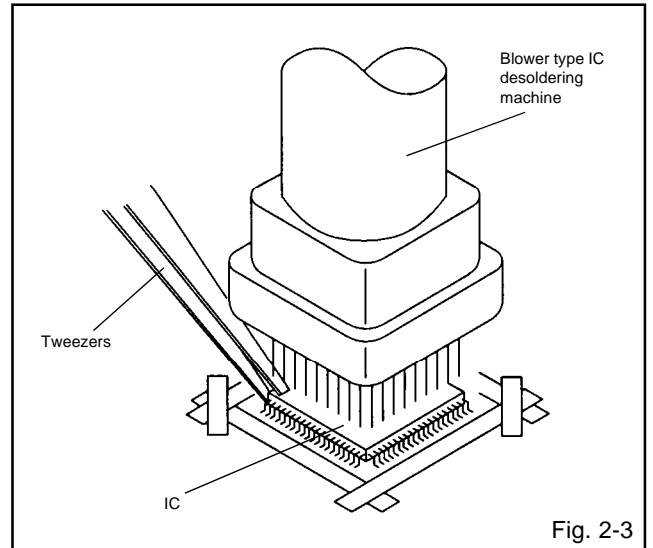
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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.

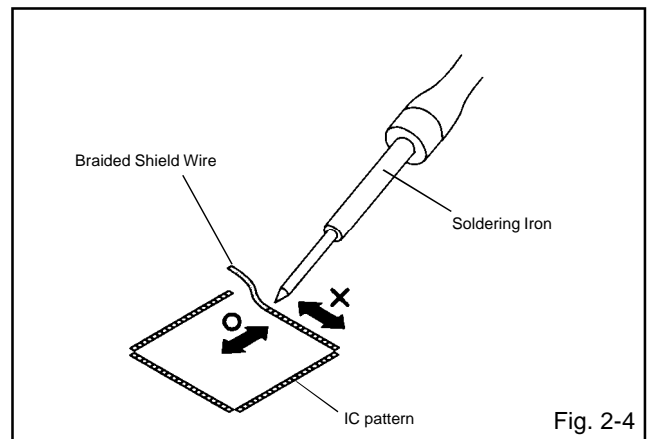


4. Peel off the Masking Tape.

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

NOTE

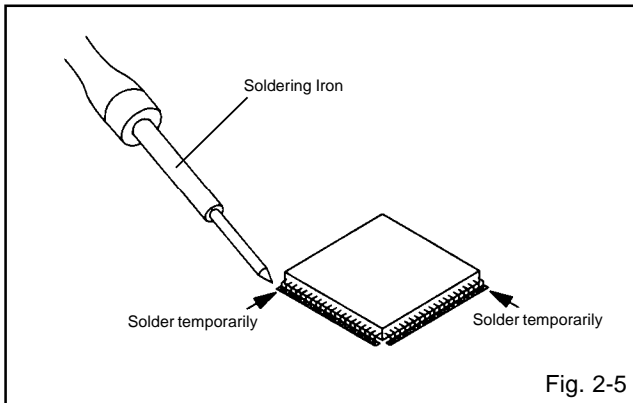
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



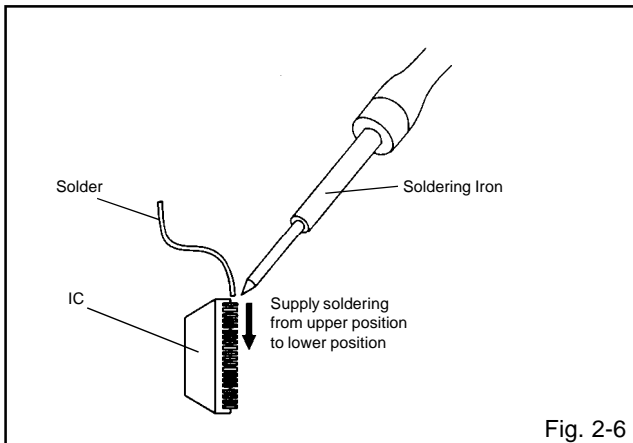
DISASSEMBLY INSTRUCTIONS

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.)**



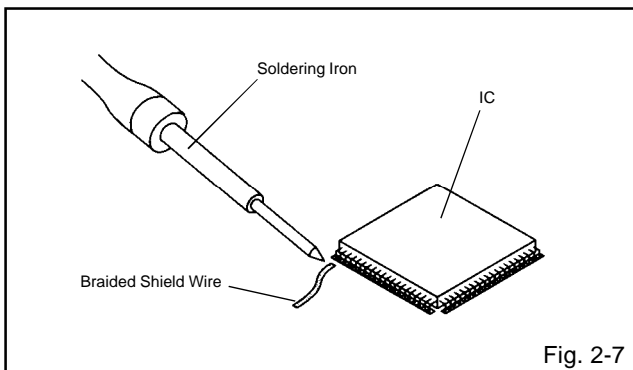
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**



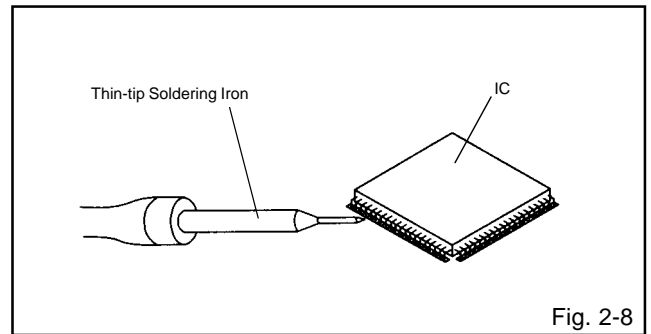
3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

NOTE

Do not absorb the solder to excess.



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.)**



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

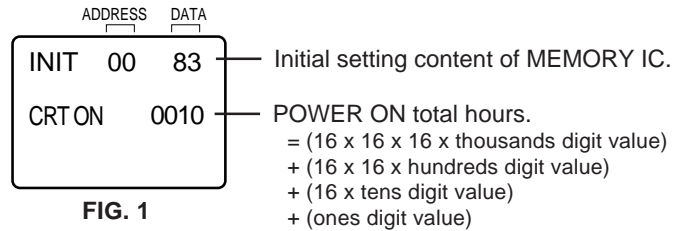
This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily. To enter the Service Mode, press both set key and remote control key for more than 1 second.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
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	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
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.

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.



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	08	20	98	02	09	B3	24	19	01	00	44	05	00	D5	FF	A5

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.
3. ADDRESS is now selected and should "blink". Using the SET + or - keys 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 SET + or - 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. 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.
Inferior silicon grease can damage IC's and transistors. When
- When you exchange IC and Transistor for a heat sink, apply the silicon grease (**YG6260M**) on the contact section of the heat sink, Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Synchro Scope
2. Digital Voltmeter

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**.

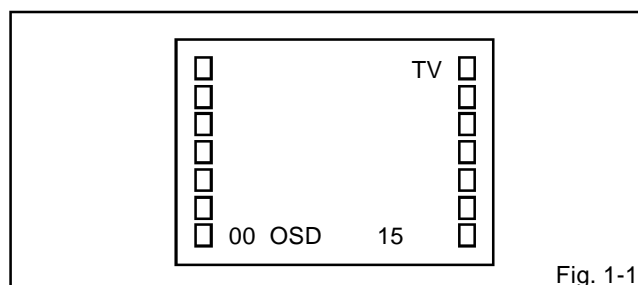


Fig. 1-1

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
01	CUT OFF	17	CONTRAST MAX
02	RF DELAY	18	CONTRAST MIN
03	VIF VCO	19	COLOR CENT
04	H.VCO	20	COLOR MAX
05	H.PHASE	21	COLOR MIN
06	V.SIZE	22	TINT
07	V.SHIFT	23	SHARPNESS
08	R.DRIVE	24	FM LEVEL
09	B.DRIVE	25	LEVEL
10	R.BIAS	26	SEPARATION 1
11	G.BIAS	27	SEPARATION 2
12	B.BIAS	28	TEST MONO
13	BRIGHT CENT	29	TEST STEREO
14	BRIGHT MEX	30	X-RAY TEST
15	BRIGHT MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: 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 **W043**.
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 $2.50 \pm 0.05V$.

2-2: 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, BRIGHTNESS=120, CONTRAST=40.
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.

2-3: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 10 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. Using the VOL. UP/DOWN button on the remote control, adjust the R.BIAS.
6. Press the CH. UP/DOWN button on the remote control to select the "R.DRIVE", "B.DRIVE", "G.BIAS" or "B.BIAS".
7. Using the VOL. UP/DOWN button on the remote control, adjust the R.DRIVE, B.DRIVE, G.BIAS or B.BIAS.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-4: SUB TINT/SUB COLOR

1. Receive the color bar pattern.
2. Connect the oscilloscope to **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 **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. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% of the white level. (**Refer to Fig. 2-2**)
8. Receive the color bar pattern. (Audio Video Input)
9. Press the TV/AV button on the remote to set to the AV mode. Then perform the above adjustment 2~7.

ELECTRICAL ADJUSTMENTS

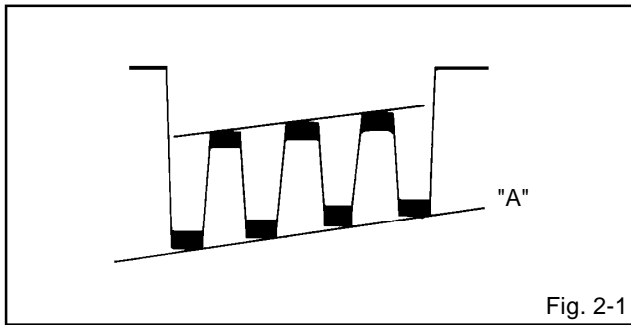


Fig. 2-1

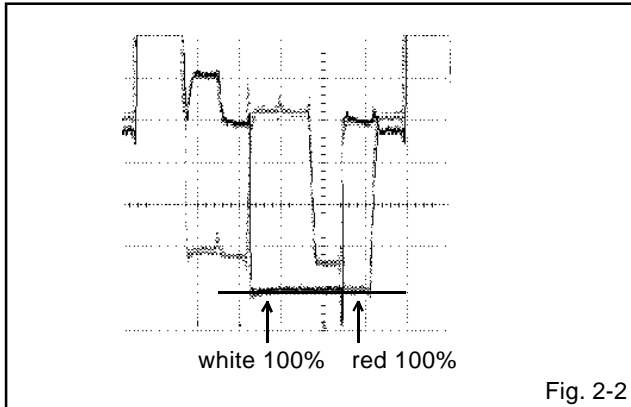


Fig. 2-2

2-5: HORIZONTAL PHASE

1. Receive the center cross signal from the Pattern Generator.
2. Activate the adjustment mode display of Fig. 1-1 and press the channel button (05) on the remote control to select "H.PHAS".
3. 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 SIZE

1. Receive the crosshatch signal from the Pattern Generator.
2. Activate the adjustment mode display of Fig. 1-1 and press the channel button (06) on the remote control to select "V.SIZE".
3. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes $10 \pm 2\%$.
4. Receive a broadcast and check if the picture is normal.

2-7: VERTICAL SHIFT

1. Receive the crosshatch signal from the Pattern Generator.
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.

2-8: 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. 2-3)

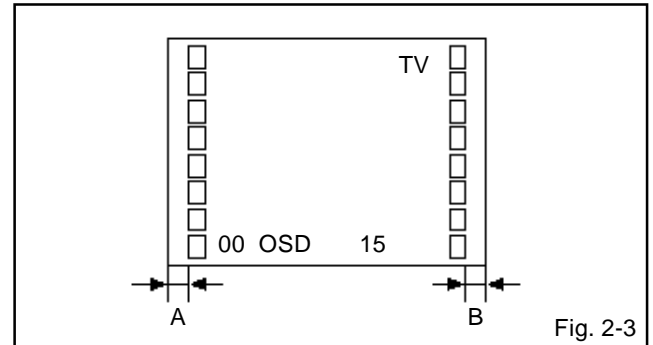


Fig. 2-3

2-9: 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.

2-10: SUB BRIGHTNESS

1. Receive an 70dB monoscope pattern.
2. Activate the adjustment mode display of Fig. 1-1 and press the channel button (13) on the remote control to select "BRI.CENT".
3. Press the VOL. UP/DOWN button on the remote control until the screen begin to shine.
4. Press the TV/AV button on the remote to set to the AV mode. Then perform the above adjustment 2, 3.

2-11: SUB CONTRAST MANUAL

1. Receive an 70dB the color bar pattern.
2. Activate the adjustment mode display of Fig. 1-1 press the channel button (17) on the remote control to select "CONT.MAX".
3. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "40".
4. Press the TV/AV button on the remote to set to the AV mode. Then perform the above adjustment 2, 3.
5. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "38".

2-12: FOCUS

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

ELECTRICAL ADJUSTMENTS

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	04	04
14	BRIGHT MAX	140	140
15	BRIGHT MIN	60	60
16	CONT CENT	30	30
18	CONT MIN	12	12
20	COLOR MAX	74	75
21	COLOR MIN	01	01
23	SHARPNESS	40	40
24	FM LEVEL	00	00
25	LEVEL	00	00
26	SEPARATION 1	00	00
27	SEPARATION 2	00	00
28	TEST MONO	00	00
29	TEST STERO	00	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.

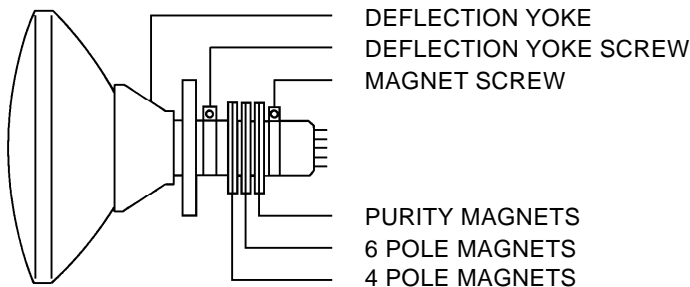


Fig. 3-1

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)**

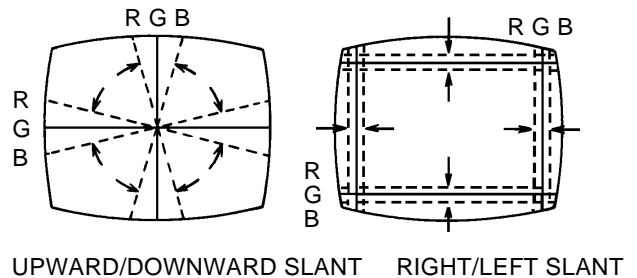
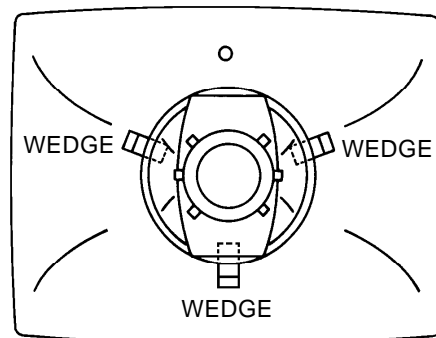


Fig. 3-2-a

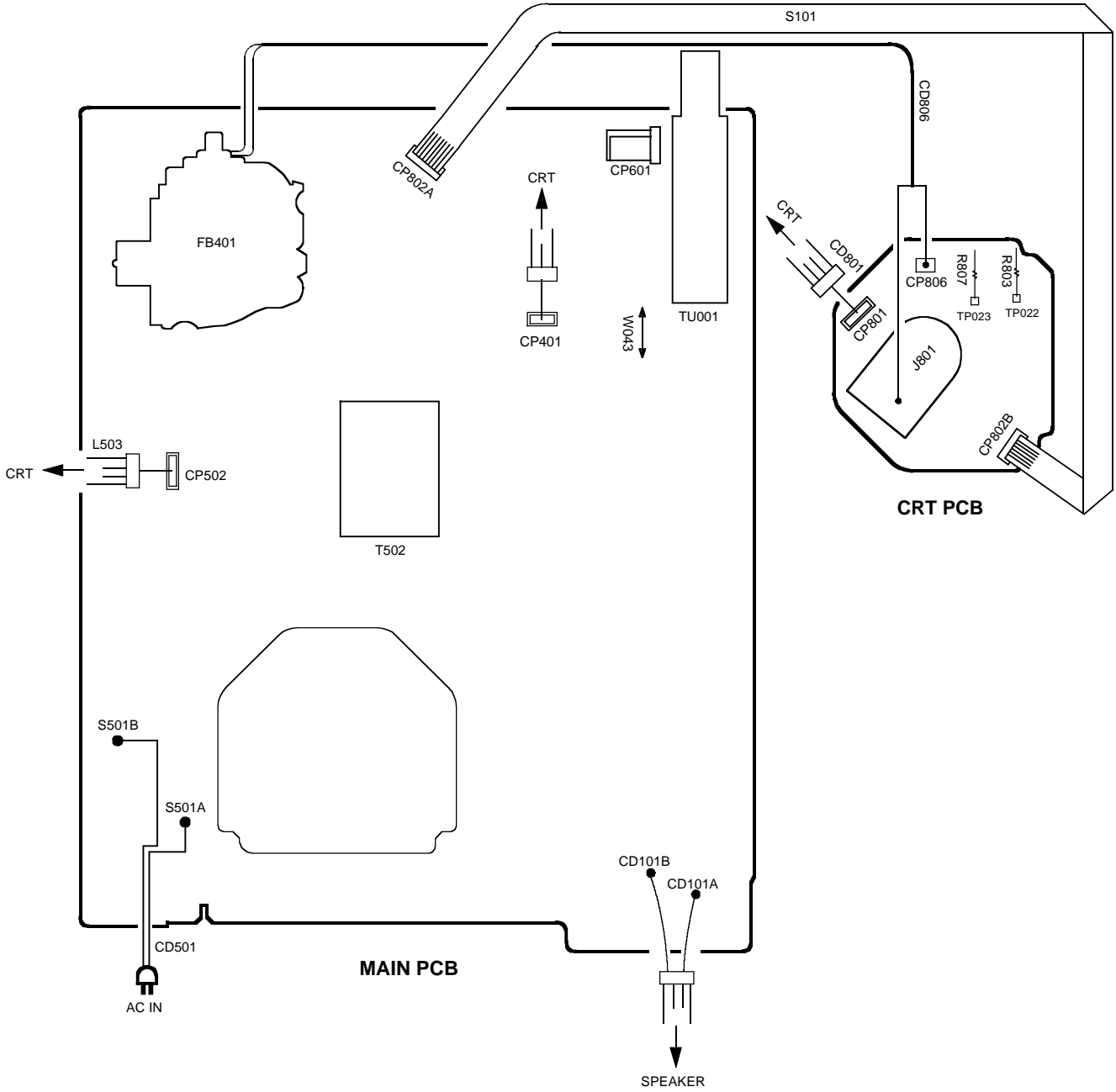


WEDGE POSITION

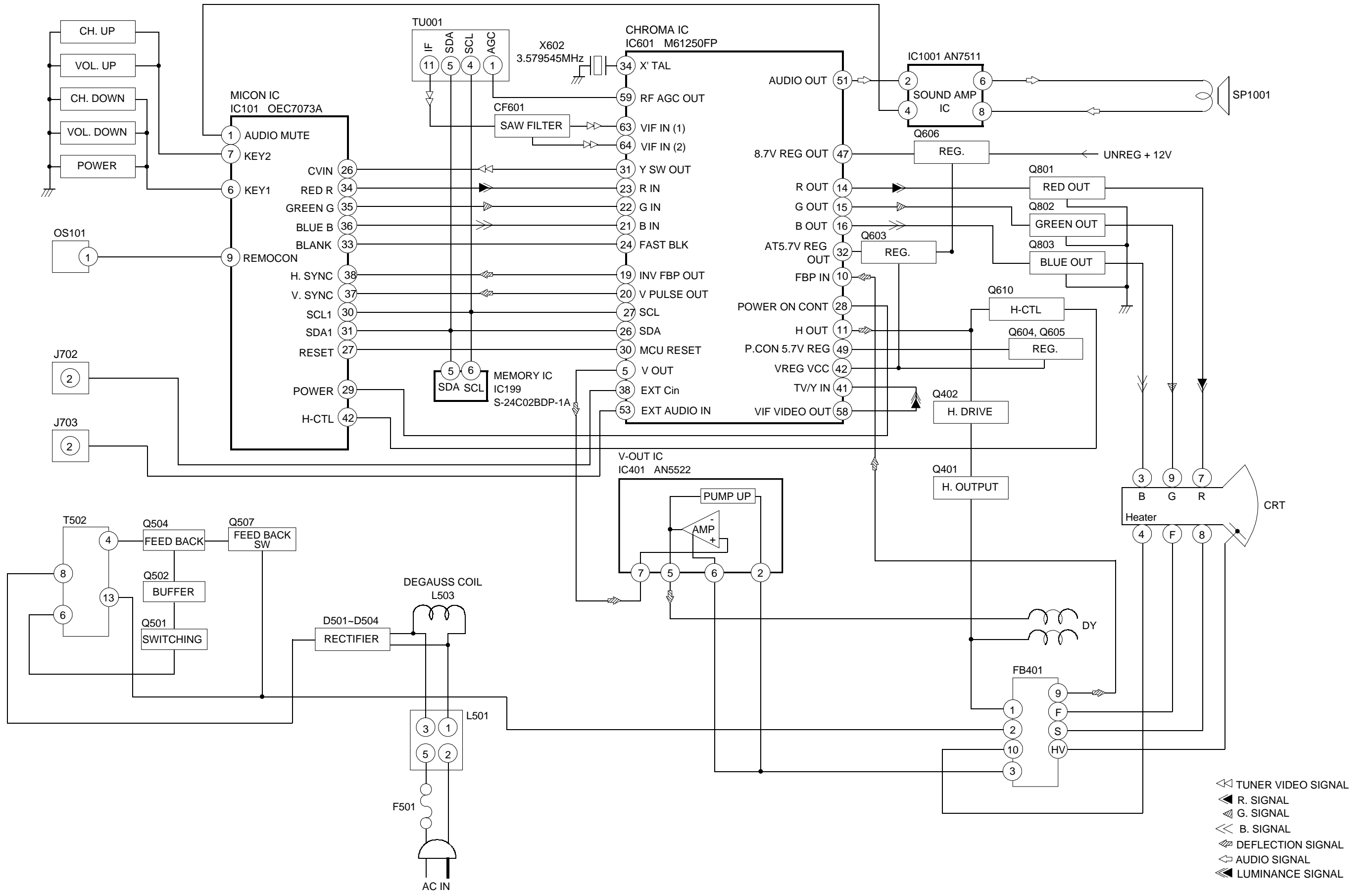
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

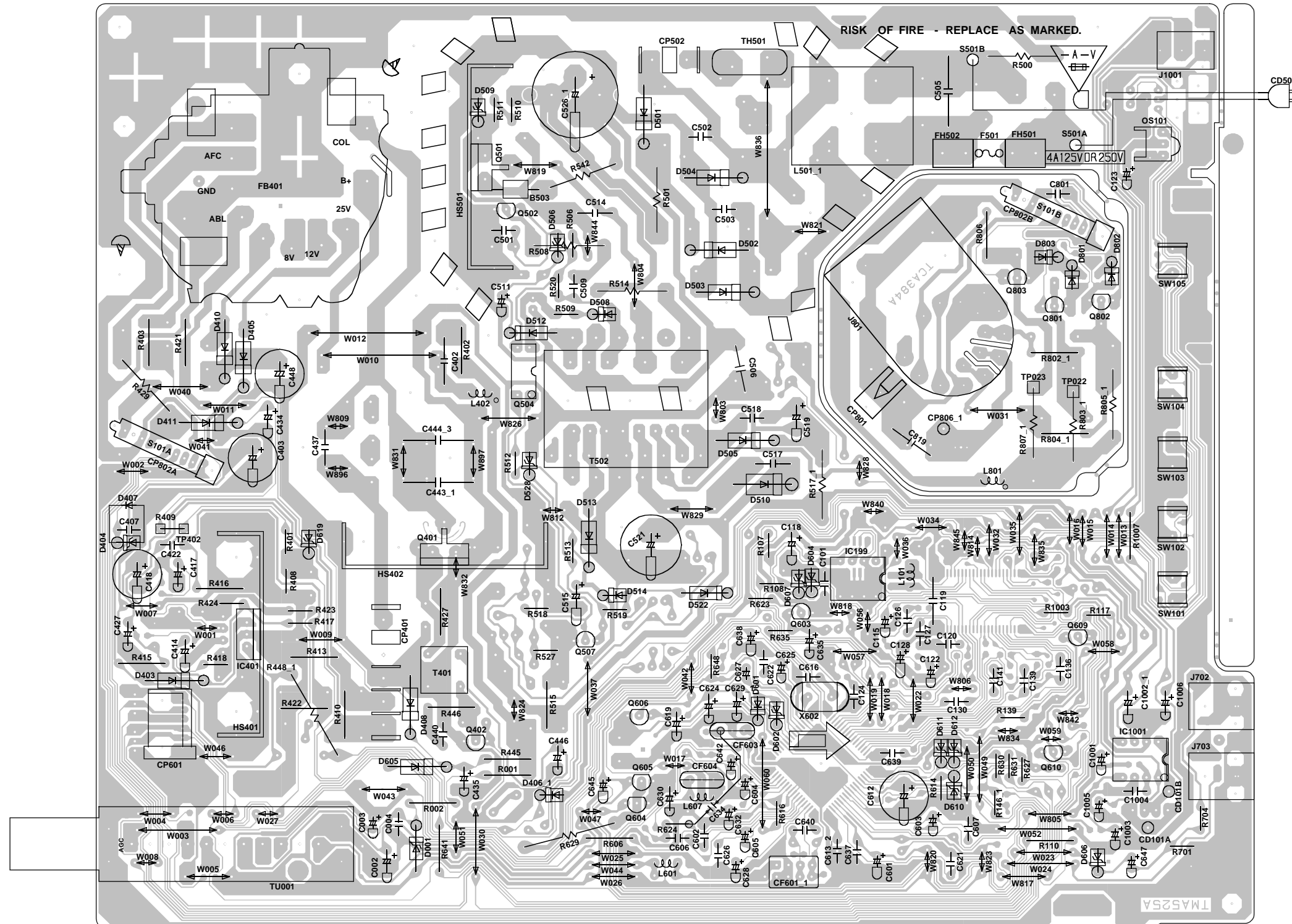
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



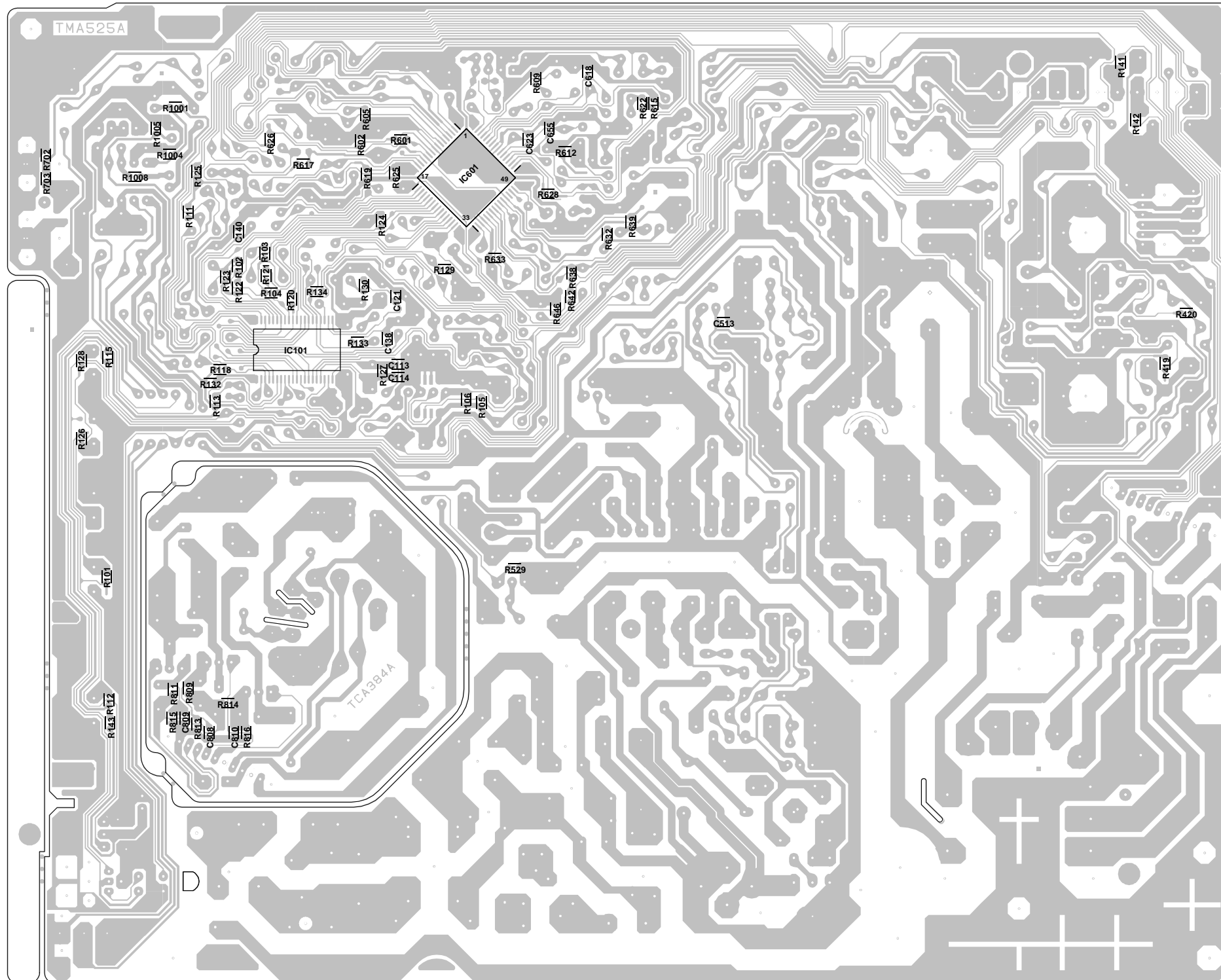
BLOCK DIAGRAM



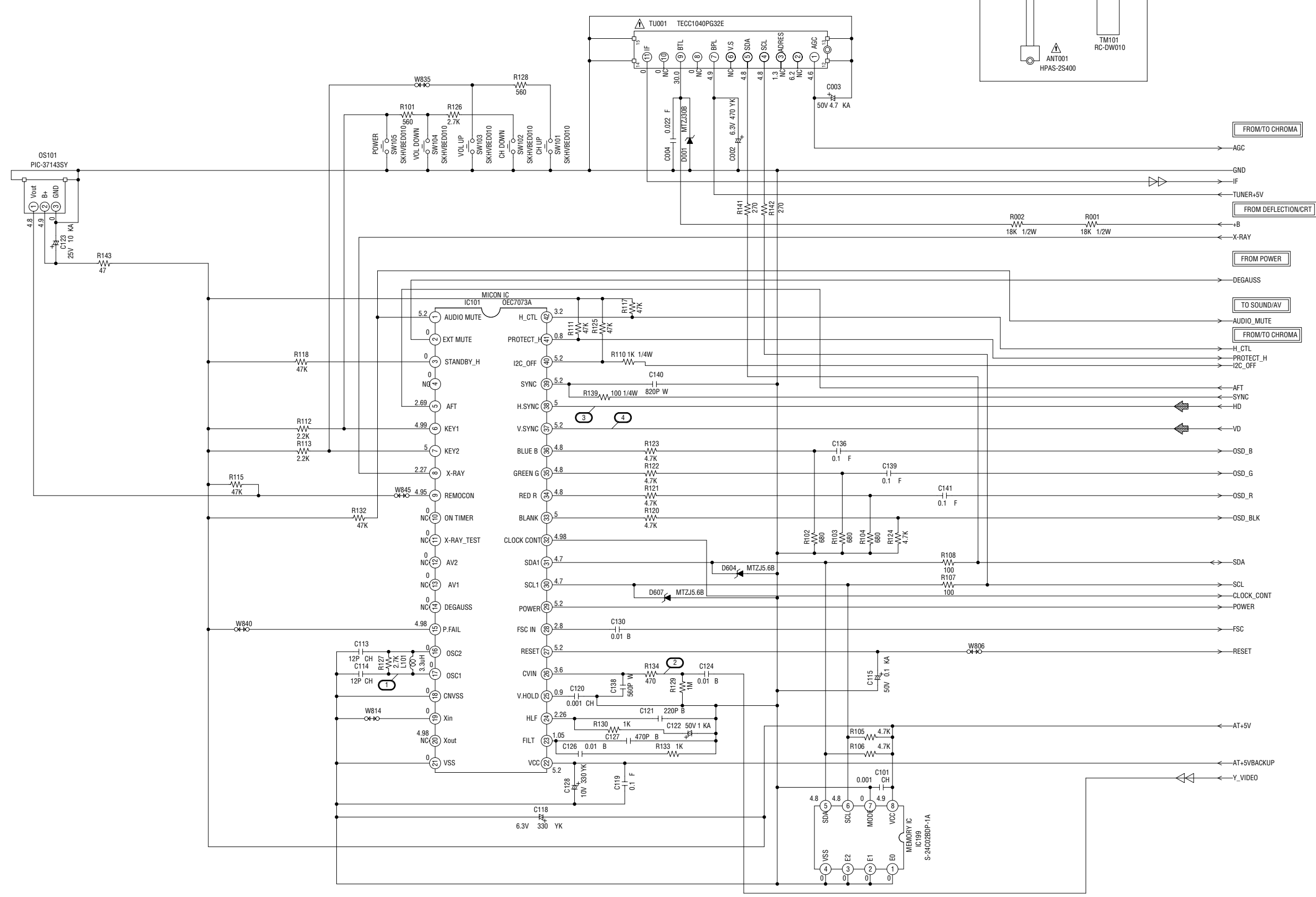
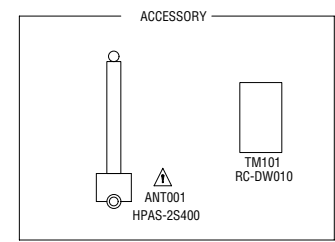
PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
MAIN/CRT (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.

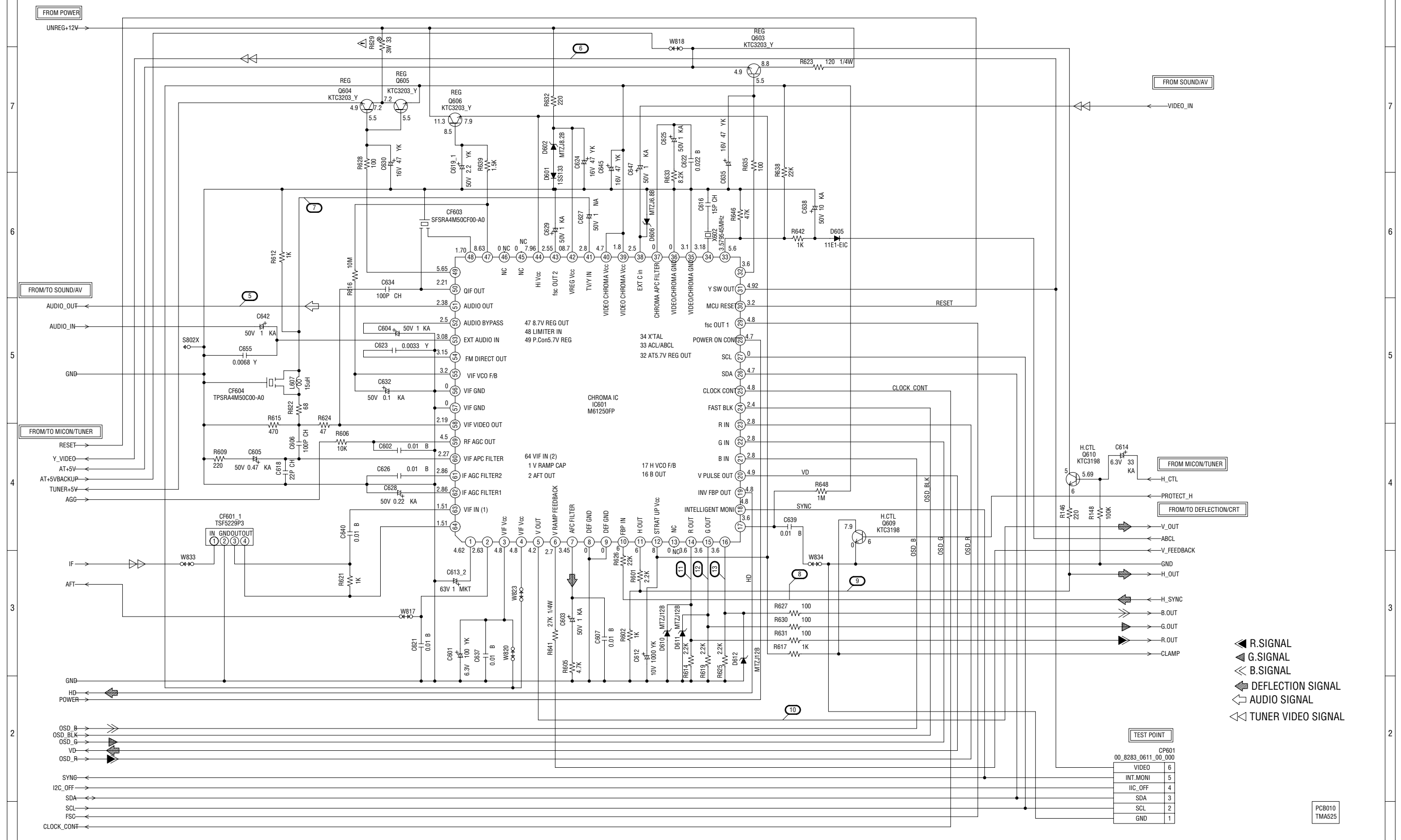
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

- DEFLECTION SIGNAL
- TUNER VIDEO SIGNAL
- R.SIGNAL
- G.SIGNAL
- B.SIGNAL

PCB010
TMA525

CHROMA SCHEMATIC DIAGRAM (MAIN PCB)



- ◀ R.SIGNAL
- ◀ G.SIGNAL
- ◀ B.SIGNAL
- ◀ DEFLECTION SIGNAL
- ◀ AUDIO SIGNAL
- ◀ TUNER VIDEO SIGNAL

TEST POINT	
VIDEO	6
INT.MONI	5
IIC_OFF	4
SDA	3
SCL	2
GND	1

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

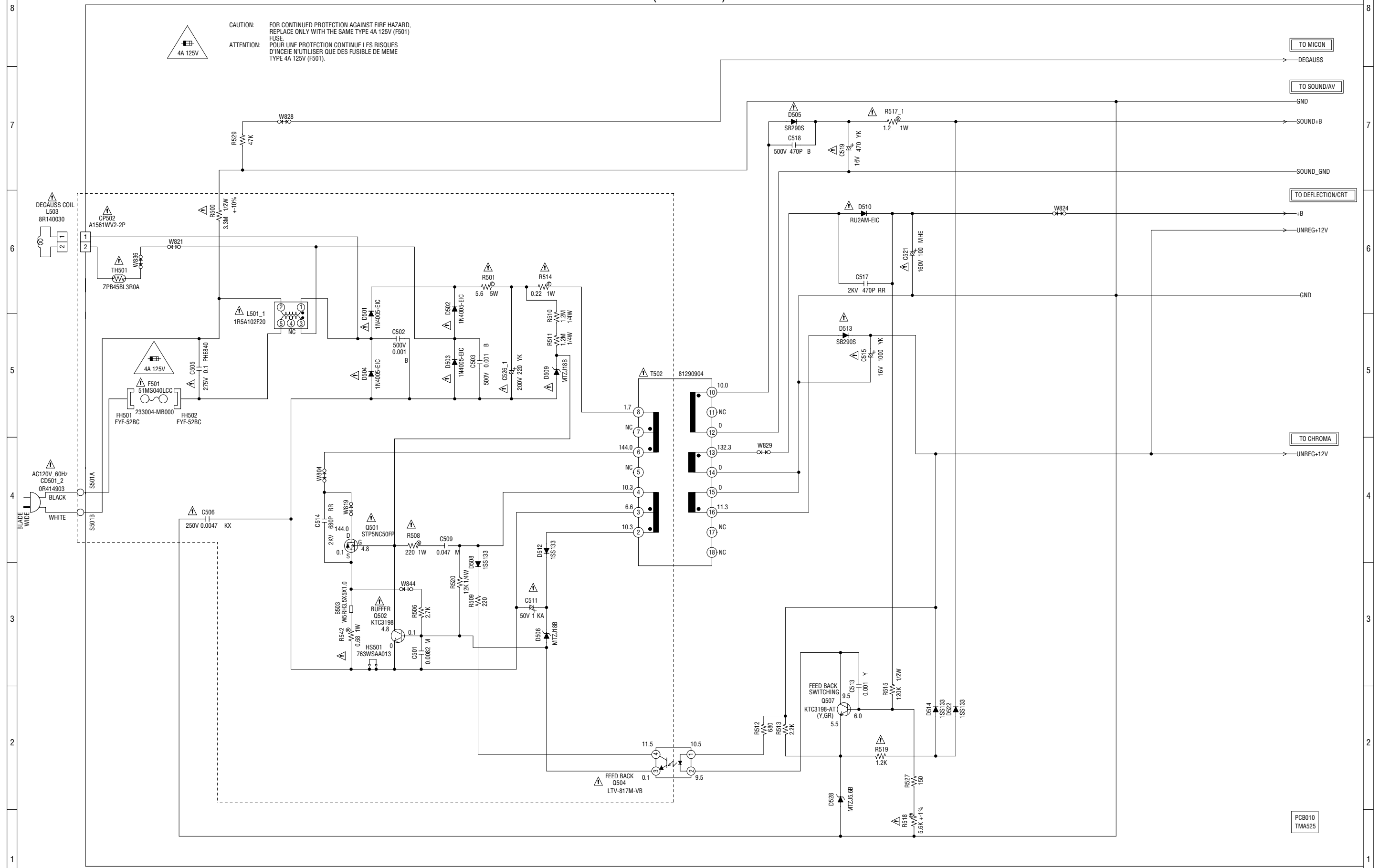
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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 PIÈCES REPARÉES PAR UN ÉTANT
DANGEREUSES AN POINT DE VUE SÉCURITÉ
N'UTILISER QUE CELLS DÉCRITES
DANS LA NOMENCLATURE DES PIÈCES.

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

POWER SCHEMATIC DIAGRAM (MAIN PCB)



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

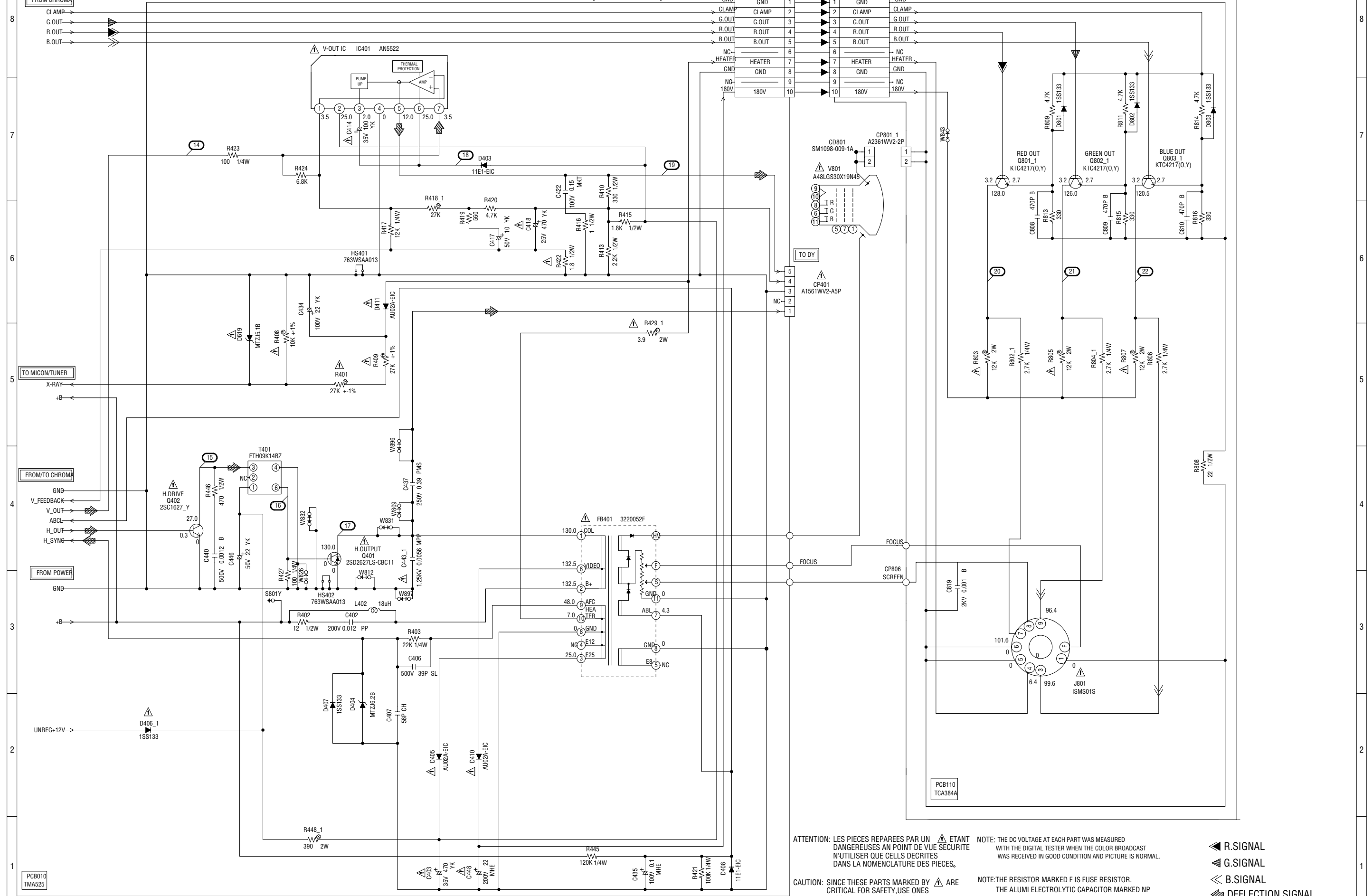
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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.

DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)



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

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.

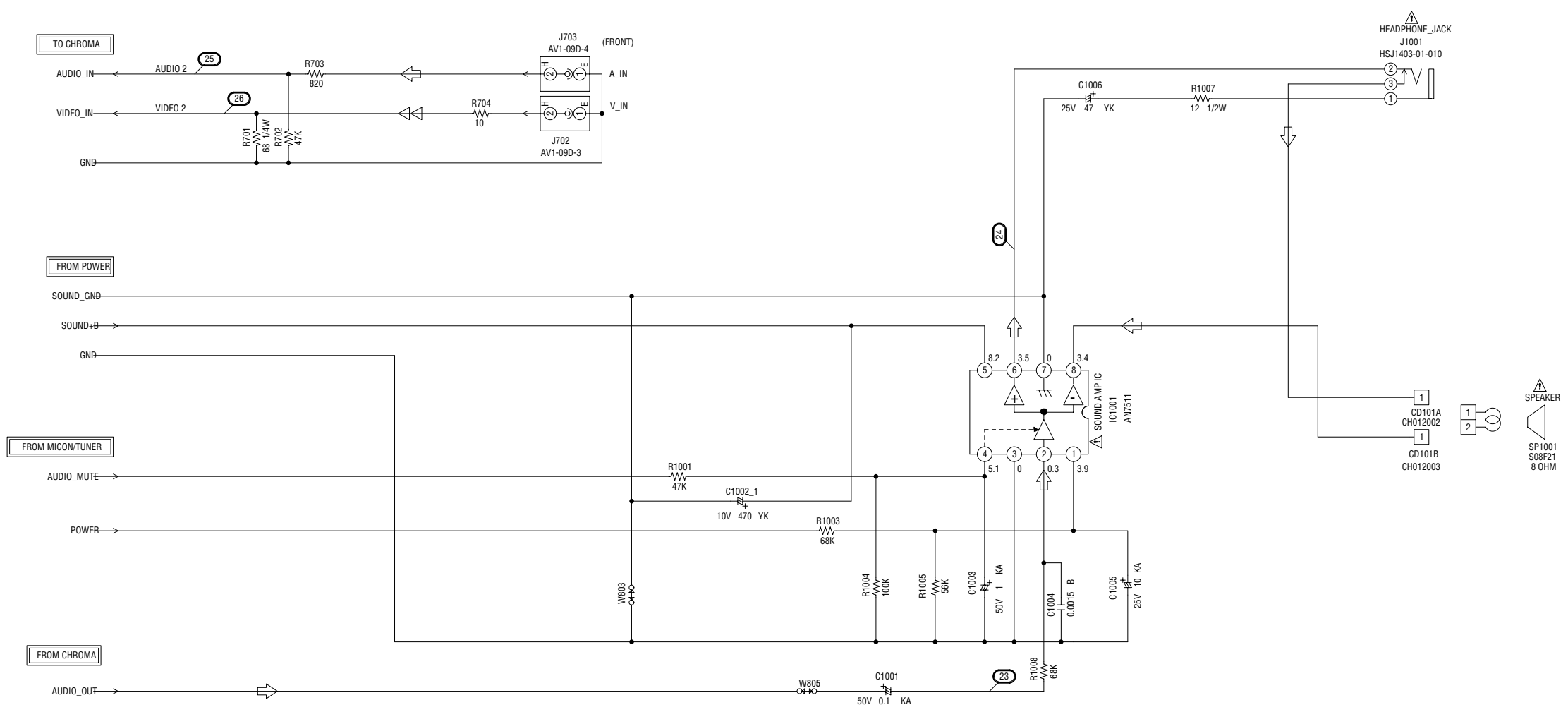
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

- R.SIGNAL
- G.SIGNAL
- B.SIGNAL
- DEFLECTION SIGNAL

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

SOUND/AV SCHEMATIC DIAGRAM (MAIN 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.

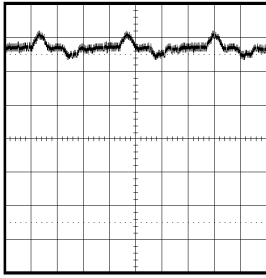
ATTENTION: LES PIECES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

TUNER VIDEO SIGNAL
 AUDIO SIGNAL

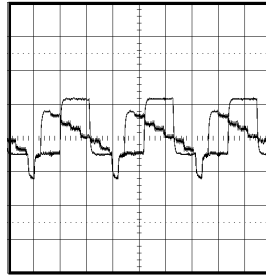
PC8010
TMA525

WAVEFORMS

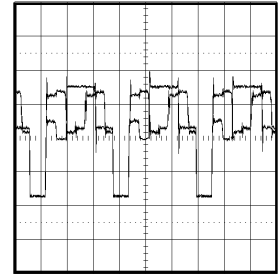
MICON/TUNER



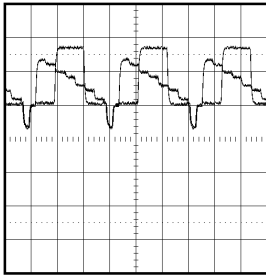
① 200mV 5ms/div



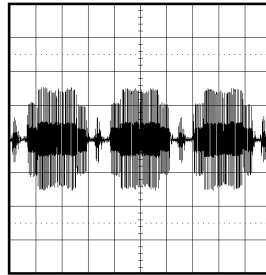
⑥ 0.5V 20μs/div



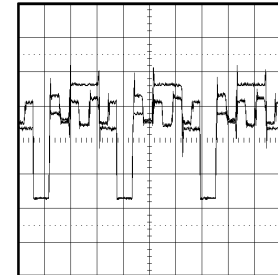
⑪ 1V 20μs/div



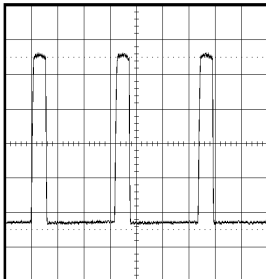
② 0.5V 20μs/div



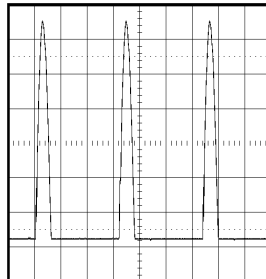
⑦ 200mV 20μs/div



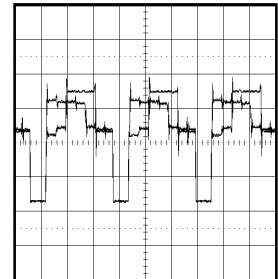
⑫ 1V 20μs/div



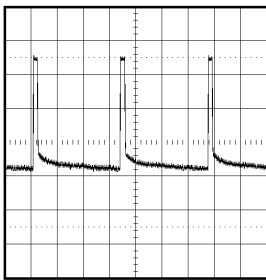
③ 200mV 20μs/div



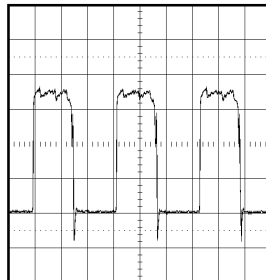
⑧ 20V 20μs/div



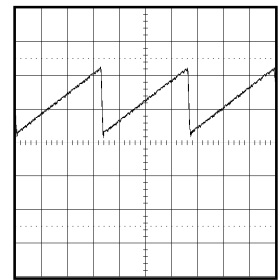
⑬ 1V 20μs/div



④ 200mV 5ms/div

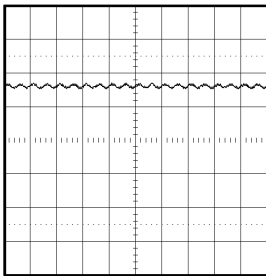


⑨ 200mV 20μs/div

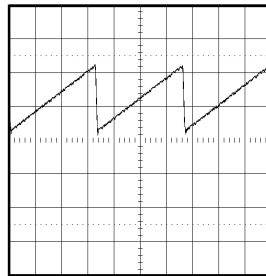


⑭ 0.5V 5ms/div

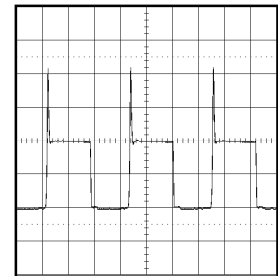
CHROMA



⑤ 0.5V 2ms/div



⑩ 0.5V 5ms/div

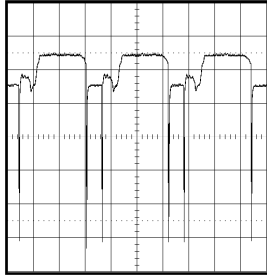


⑮ 20V 20μs/div

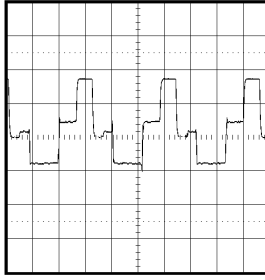
DEFLECTION/CRT

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

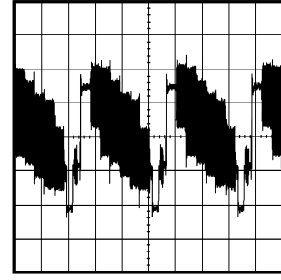
WAVEFORMS



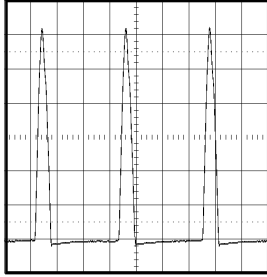
①⑥ 2V 20 μ s/div



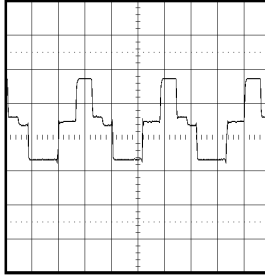
②① 50V 20 μ s/div



②⑥ 500mV 20 μ s/div

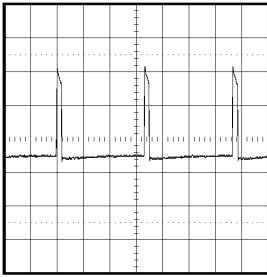


①⑦ 200V 20 μ s/div

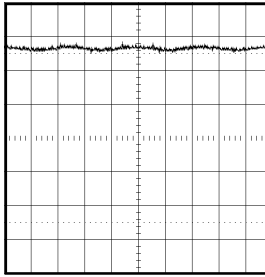


②② 50V 20 μ s/div

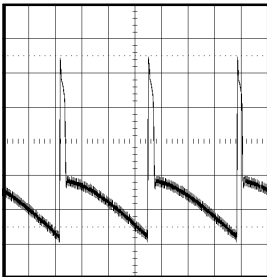
SOUND/AV



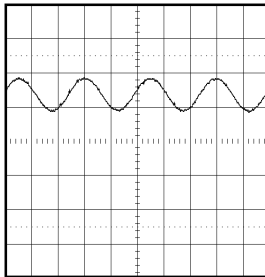
①⑧ 10V 5ms/div



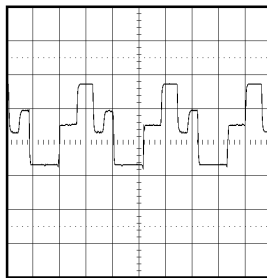
②③ 0.5V 1ms/div



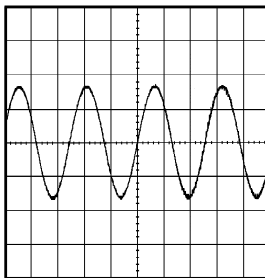
①⑨ 10V 5ms/div



②④ 1V 1ms/div



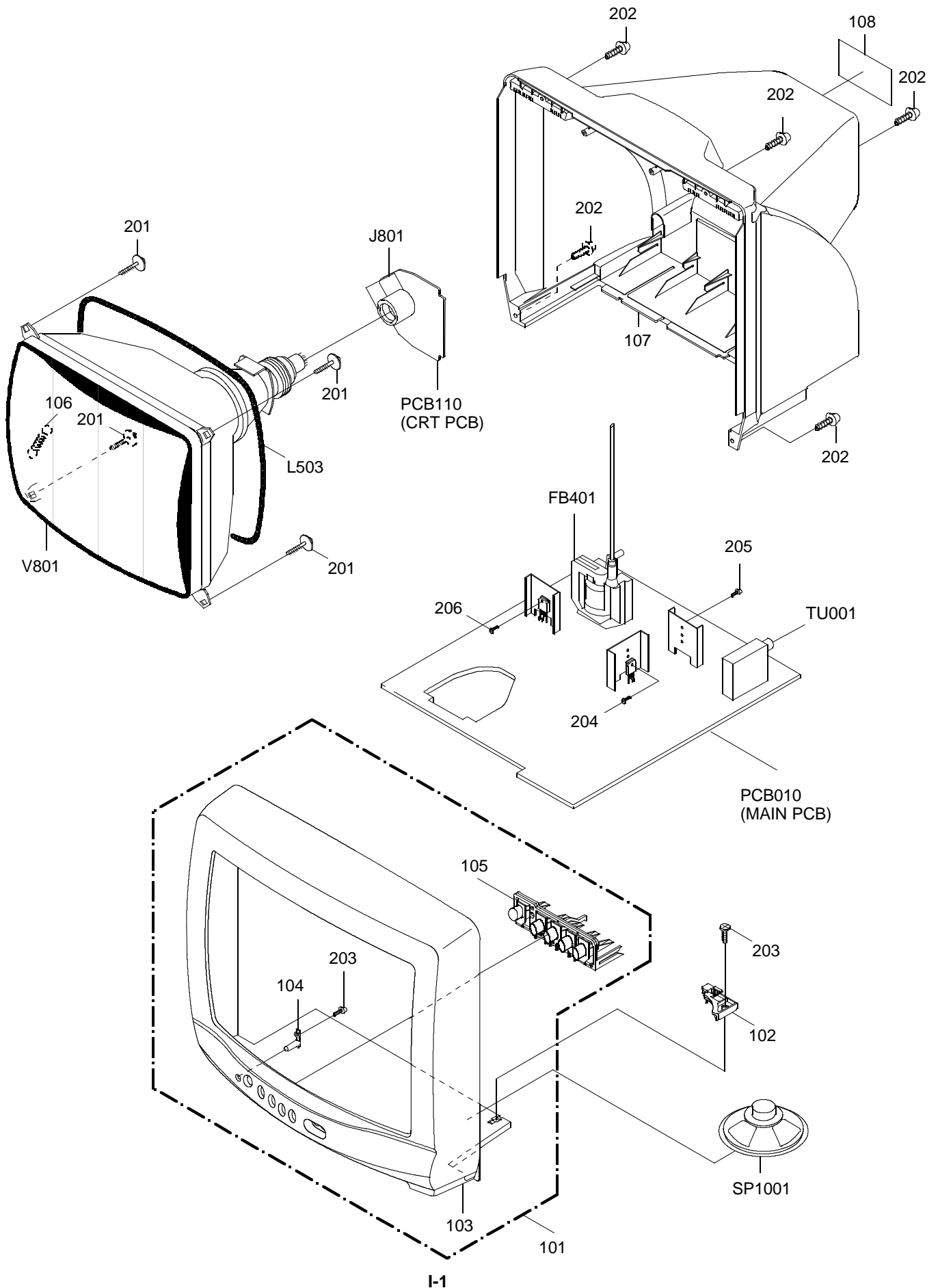
②⑤ 50V 20 μ s/div



②⑤ 500mV 1ms/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	A3L104C720	CABINET,FRONT ASSY
102	735WPA0396	SPEAKER,HOLDER
103	701WPJB618	CABINET,FRONT
104	713WPAA048	GUIDE,REMOCON
105	735WPAA417	BUTTON,FRAME
106	741WUA0019	SPRING,EARTH
107	702WPAA134	CABINET,BACK
108	722A08A108	SHEET,RATING
201	8121J50B54	SCREW,TAPPING(B0) GW20 5x28
202	8117540A64	SCREW,TAPPING(B0) TRUSS 4x16
203	8110630A04	SCREW,TAP TITE(P) BRAZIER 3x10
204	8109I30A04	SCREW,TAP TITE(B) WH7 3x10
205	8109630802	SCREW,TAP TITE(B) BRAZIER 3x8
206	8109I30604	SCREW,TAP TITE(B) WH7 3x6
---	792WHAA018	PACKAGE,BOTTOM
---	792WHAA019	PACKAGE, TOP
---	793WCDB189	GIFT BOX
---	JB5U0200	POLYBAG,INSTRUCTION
---	J3J81702	WARRANTY SHEET
---	J3L10401	INSTRUCTION BOOK
---	791WHA0023	LAMIFILM BAG
---	A3L104C975	INSTRUCTION BOOK KIT

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
RESISTORS			DIODES		
△ R401	R4X5T6273F	R,METAL 27K OHM 1/6W	D802	D1VT001330	DIODE,SILICON 1SS133T-77
△ R408	R4X5T6103F	R,METAL 10K OHM 1/6W	D803	D1VT001330	DIODE,SILICON 1SS133T-77
△ R409	R4X5T6273F	R,METAL 27K OHM 1/6W	ICS		
△ R429	R655812R7J	R,FUSE 2.7 OHM 1W	IC101	I56F07073A	IC OEC7073A
R448	R3X18A821J	R,METAL OXIDE 820 OHM 2W	IC199	A3L101C015	IC S-24C02BDP-1A
△ R500	R0G3K2335K	RC 3.3M OHM 1/2W	△ IC401	I01TD55220	IC AN5522
△ R501	R5Y2CD5R6J	R,CEMENT 5.6 OHM 5W	IC601	I06FC61250	IC M61250FP
△ R508	R3X181221J	R,METAL OXIDE 220 OHM 1W	IC1001	I01DF75110	IC AN7511
△ R509	R001T6221J	RC 220 OHM 1/6W	TRANSISTORS		
△ R514	R63581R22J	R,FUSE 0.22 OHM 1W	△ Q401	TD30026270	TRANSISTOR SILICON 2SD2627LS-CBC11
△ R515	R002T2124J	RC 120K OHM 1/2W	△ Q402	TC5T01627Y	TRANSISTOR SILICON 2SC1627_Y(TPE2)
△ R517	R3X1811R2J	R,METAL OXIDE 1.2 OHM 1W	△ Q501	TJXG5NC500	FET STP5NC50FP
△ R518	R4X5T6562F	R,METAL 5.6K OHM 1/6W	△ Q502	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ R519	R001T6122J	RC 1.2K OHM 1/6W	△ Q504	0002E00610	PHOTO COUPLER LTV-817M-VB
△ R542	R3X181R68J	R,METAL OXIDE 0.68 OHM 1W	Q507	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ R629	R3X28B330J	R,METAL OXIDE 33 OHM 3W	Q603	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ R803	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q604	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ R805	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q605	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ R807	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q606	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
CAPACITORS			Q609	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
C402	P3N1F2103J	CPP 0.01 UF 200V	Q610	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ C403	E02LT4471M	CE 470 UF 35V	△ Q801	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C414	E02LT4101M	CE 100 UF 35V	△ Q802	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C418	E02LT3471M	CE 470 UF 25V	△ Q803	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C434	E02LT8220M	CE 22 UF 100V	COILS & TRANSFORMERS		
C437	P4J7F3474J	CMPP 0.47 UF 250V PMS	L101	021LA63R3K	COIL 3.3 UH
△ C443	P4N8FJ472H	CMPP 0.0047UF 1.25KV	L402	02186G180M	COIL 18 UH
C444	P4N8FJ471J	CMPP 470 PF 1.25KV	△ L501	029T00A7M1	COIL,LINE FILTER 1R5A102F20
△ C446	E02LT5220M	CE 22 UF 50V	△ L503	028R140030	COIL,DEGAUSS 8R140030
△ C448	E5EZ0C220M	CE 22 UF 200V	L601	021LA6R56M	COIL 0.56 UH
△ C503	C0JTB0513K	CC 0.001 UF 500V B	L607	021LA6150K	COIL 15 UH
△ C505	P2472B104M	CMP 0.1 UF 275V PHE840	L801	021673221K	COIL 220 UH
C506	CB3930MQ3M	CC 0.0047UF 250V	T401	045009003J	TRANS,HORIZONTAL DRIVE ETH09K14BZ
C514	C0PLRR7U2K	CC 680 PF 2KV RR	△ T502	0481290904	TRANSFORMER,SWITCHING 81290904
△ C515	E02LT2102M	CE 1000 UF 16V	JACKS		
C517	C0PLRR7Q2K	CC 470 PF 2KV RR	J702	060Q401077	RCA JACK AV1-09D-3
△ C519	E02LT2471M	CE 470 UF 16V	J703	060Q401076	RCA JACK AV1-09D-4
C521	E5EZFB101M	CE 100 UF 160V	△ J801	066F120018	SOCKET,CATHODE RAY TUBE ISMS01S
△ C526	E02LFC221M	CE 220 UF 200V	J1001	0602121012	JACK,RCA 3.5 HSJ1403-01-010
C634	CQG0CH412J	CC 100 PF 50V CH	SWITCHES		
C819	C0JBB0713K	CC 0.001 UF 2KV B	SW101	0504201T31	SWITCH,TACT SKHVBED010
DIODES			SW102	0504201T31	SWITCH,TACT SKHVBED010
D001	D97U03001B	DIODE,ZENER MTZJ30B T-77	SW103	0504201T31	SWITCH,TACT SKHVBED010
D403	D2WT011E10	DIODE SILICON 11E1-EIC	SW104	0504201T31	SWITCH,TACT SKHVBED010
D404	D97U06R21B	DIODE,ZENER MTZJ6.2B T-77	SW105	0504201T31	SWITCH,TACT SKHVBED010
△ D405	D2WTAU02A0	DIODE SILICON AU02A-EIC	P.C.BOARD ASSEMBLIES		
D406	D1VT001330	DIODE,SILICON 1SS133T-77	PCB010	A3L104C010	PCB ASS'Y TMA525A
D407	D1VT001330	DIODE,SILICON 1SS133T-77	PCB110	A3L117C110	PCB ASS'Y TCA384A
D408	D2WT011E10	DIODE SILICON 11E1-EIC	MISCELLANEOUS		
△ D410	D2WTAU02A0	DIODE SILICON AU02A-EIC	ANT001	125C104001	ANTENNA,ROD HPAS-2S400
△ D411	D2WTAU02A0	DIODE SILICON AU02A-EIC	B503	024HT03553	CORE,BEADS W5RH3.5X5X1.0
D501	D2WXN40050	DIODE SILICON 1N4005-EIC	△ CD501	120R414903	CORD AC BUSH 0R414903
△ D502	D2WXN40050	DIODE SILICON 1N4005-EIC	CF601	1029045R7G	FILTER,SAW TSF5229P3
△ D503	D2WXN40050	DIODE SILICON 1N4005-EIC	CF603	1012T4R520	FILTER,CERAMIC SFSRAM50CF00-A0
D504	D2WXN40050	DIODE SILICON 1N4005-EIC	CF604	1012T4R519	FILTER,CERAMIC TRAP TPSRA4M50C00-A0
△ D505	D2WXB290S0	DIODE SILICON SB290S	△ CP401	069S450089	CONNECTOR PCB SIDE A1561VW2-A5P
D506	D97U01801B	DIODE,ZENER MTZJ18B T-77	△ CP502	069S420110	CONNECTOR PCB SIDE A1561VW2-2P
D508	D1VT001330	DIODE,SILICON 1SS133T-77	CP601	069E260659	CONNECTOR PCB SIDE 00_8283_0611_00_000
△ D509	D97U01801B	DIODE,ZENER MTZJ18B T-77	CP801	069W010030	CONNECTOR PCB SIDE TBS-X01X-A1
△ D510	D2WXRU2AM0	DIODE SILICON RU2AM-EIC	CD101A	06CH012002	CORD CONNECTOR CH012002
D512	D1VT001330	DIODE,SILICON 1SS133T-77	CD101B	06CH012003	CORD CONNECTOR CH012003
△ D513	D2WXB290S0	DIODE SILICON SB290S	CP802A	067N010039	WIRE HOLDER 9253_010_000_000
D514	D1VT001330	DIODE,SILICON 1SS133T-77		067U010049	WIRE HOLDER B2013H02-10P
D522	D1VT001330	DIODE,SILICON 1SS133T-77	CP802B	067N010039	WIRE HOLDER 9253_010_000_000
D528	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77		067U010049	WIRE HOLDER B2013H02-10P
D601	D1VT001330	DIODE,SILICON 1SS133T-77	△ F501	081PC04004	FUSE 51MS040LCC
D602	D97U08R21B	DIODE,ZENER MTZJ8.2B T-77	△ FB401	043214029F	TRANSFORMER FLYBACK 3214029F
D604	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77	FH501	06710T0006	HOLDER,FUSE EYF-52BC
D605	D2WT011E10	DIODE SILICON 11E1-EIC	FH502	06710T0006	HOLDER,FUSE EYF-52BC
D606	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77	OS101	077Q037003	REMOTE RECEIVER PIC-37143SY
D607	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77	S101	WHL6032014	FLAT CABLE AWG26 10C BLACK 320MM
D610	D97U01201B	DIODE,ZENER MTZJ12B T-77	SP1001	070Y132018	SPEAKER S08F21
D611	D97U01201B	DIODE,ZENER MTZJ12B T-77	△ TH501	DF5EL3ROA0	DEGAUSS ELEMENT ZPB45BL3ROA
D612	D97U01201B	DIODE,ZENER MTZJ12B T-77	TM101	076N0DW010	TRANSMITTER RC-DW010
△ D619	D97U05R11B	DIODE,ZENER MTZJ5.1B T-77	△ TU001	0145K00056	TUNER,VHF-UHF TECC1040PG32E
D801	D1VT001330	DIODE,SILICON 1SS133T-77	△ V801	098Y1404B9	CRT W/DY A34JXV70X53N45
			X602	100CT3R505	CRYSTAL HC-49/C

ELECTRICAL REPLACEMENT PARTS LIST

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.	M3L1-04C
O/R NO.	K223024