

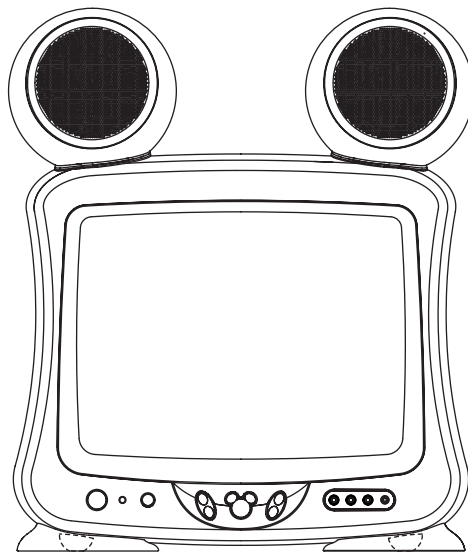
**Disney**

**DT1350-C**

# **SERVICE MANUAL**

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**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  $\triangle$  mark, the designated parts must be used.

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

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

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

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

### 6. AVOID AN X-RAY

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

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

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

### 7. PERFORM A SAFETY CHECK AFTER SERVICING

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

#### (INSULATION CHECK PROCEDURE)

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

#### **[Note 1]**

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

#### **[Note 2]**

External exposure metal: Antenna terminal  
Earphone jack

## HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

#### 1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

#### 2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

## IMPORTANT

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

<b>SERVICING NOTICES ON CHECKING</b> .....	A1-1
<b>HOW TO ORDER PARTS</b> .....	A1-1
<b>IMPORTANT</b> .....	A1-1
<b>CONTENTS</b> .....	A2-1
<b>GENERAL SPECIFICATIONS</b> .....	A3-1~A3-4
<b>DISASSEMBLY INSTRUCTIONS</b>	
1. REMOVAL OF ANODE CAP .....	B1-1
2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC .....	B2-1, B2-2
<b>SERVICE MODE LIST</b> .....	C-1
<b>CONFIRMATION OF HOURS USED</b> .....	C-1
<b>WHEN REPLACING EEPROM (MEMORY) IC</b> .....	C-1
<b>ELECTRICAL ADJUSTMENTS</b> .....	D-1~D-5
<b>BLOCK DIAGRAM</b> .....	E-1, E-2
<b>PRINTED CIRCUIT BOARDS</b>	
MAIN/CRT/OPERATION/FRONT JACK .....	F-1~F-4
<b>SCHEMATIC DIAGRAMS</b>	
MICON/TUNER .....	G-1, G-2
CHROMA .....	G-3, G-4
TV POWER .....	G-5, G-6
DEFLECTION/CRT .....	G-7, G-8
SOUND/AV .....	G-9, G-10
<b>WAVEFORMS</b> .....	H-1, H-2
<b>MECHANICAL EXPLODED VIEW</b> .....	I-1
<b>MECHANICAL REPLACEMENT PARTS LIST</b> .....	J1-1
<b>ELECTRICAL REPLACEMENT PARTS LIST</b> .....	J2-1, J2-2

## GENERAL SPECIFICATIONS

<b>G-1</b>	<b>TV System</b>	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	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		
<b>G-2</b>	<b>Tuning System</b>	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		
<b>G-3</b>	<b>Power</b>	Power Source	AC	120V AC 60Hz	
			DC		
		Power Consumption		at AC	
			Stand by (at AC)		54 W at AC 120 V 60 Hz
			Per Year		5 W at AC 120 V 60 Hz
			-- kWh/Year		
	Protector	Power Fuse		Yes	
		Safety Circuit		Yes	
		IC Protector(Micro Fuse)		No	
<b>G-4</b>	<b>Regulation</b>	Safety		UL / CSA	
		Radiation		FCC / IC	
		X-Radiation		DHHS / HWC	
<b>G-5</b>	<b>Temperature</b>	Operation		+5°C ~ +40°C	
		Storage		-20°C ~ +60°C	
<b>G-6</b>	<b>Operating Humidity</b>			Less than 80% RH	
<b>G-7</b>	<b>On Screen Display</b>	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	
<b>G-8</b>	<b>OSD Language</b>		English	French Spanish
<b>G-9</b>	<b>Clock and Timer</b>	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
<b>G-10</b>	<b>Remote Control</b>	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
<b>G-11</b>	<b>Features</b>	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	
<b>G-12</b>	<b>Accessories</b>	Owner's Manual	Language w/Guarantee Card	English Spanish French 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	
		Printed Matter for Disney		Yes	
		<b>G-13</b>	<b>Interface</b>	Switch	Front
				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
<b>G-14</b>	<b>Set Size</b>	Approx. W x D x H (mm)	<u>410.0 x 371 x 479.5</u>
		w/o Speaker, Legs Approx. W x D x H (mm)	<u>401.5 x 371 x 350</u>
<b>G-15</b>	<b>Weight</b>	Net (Approx.)	<u>10.5kg (23.2lbs)</u>
		Net w/o Speaker, Legs Approx.	<u>9.5 kg (20.9lbs)</u>
		Gross (Approx.)	<u>13.0kg (28.7lbs)</u>
<b>G-16</b>	<b>Carton</b>	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)	<u>493 x 423 x 465</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>640</u> Sets/40' container
<b>G-17</b>	<b>Cabinet Material</b>	Cabinet	Cabinet Front PS 94V0 DECABROM
			Cabinet Rear PS 94V0 DECABROM
		PCB	Non-Halogen Demand No
			Eyelet Demand No
<b>G-18</b>	<b>Environment</b>	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.

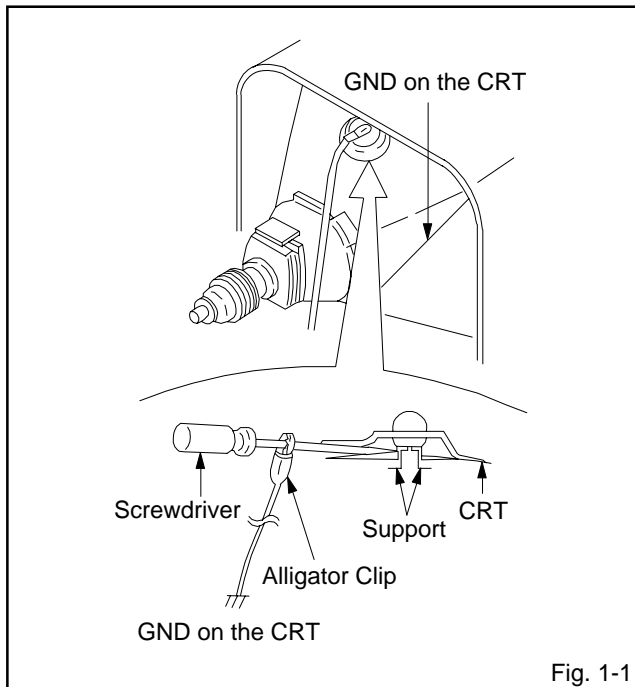


Fig. 1-1

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.)

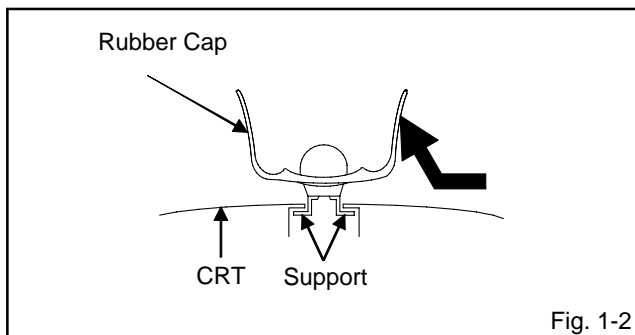


Fig. 1-2

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.)

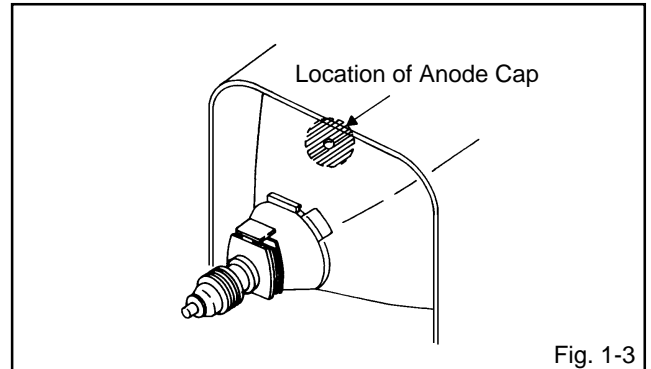


Fig. 1-3

### 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.)

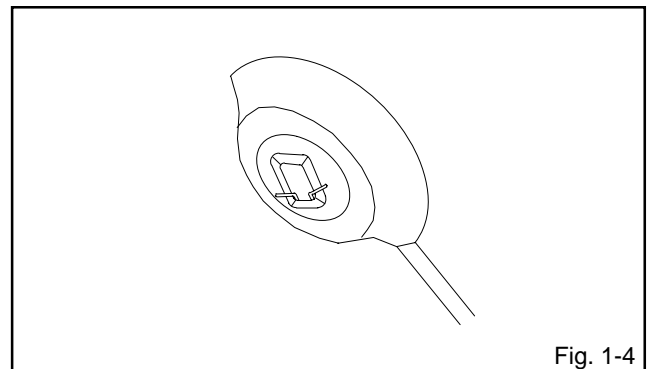


Fig. 1-4

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

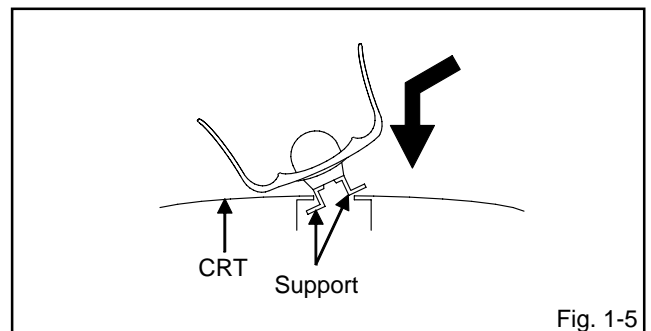


Fig. 1-5

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



# DISASSEMBLY INSTRUCTIONS

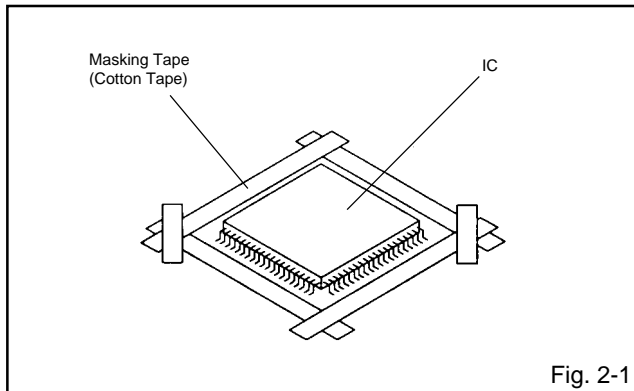
## 2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

### 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

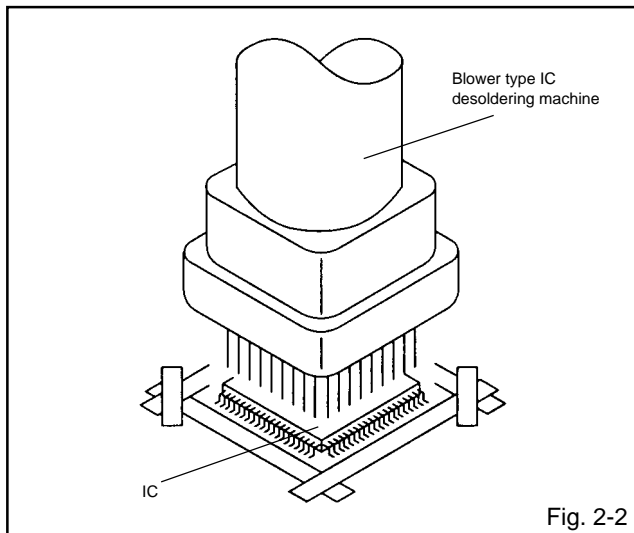
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

#### NOTE

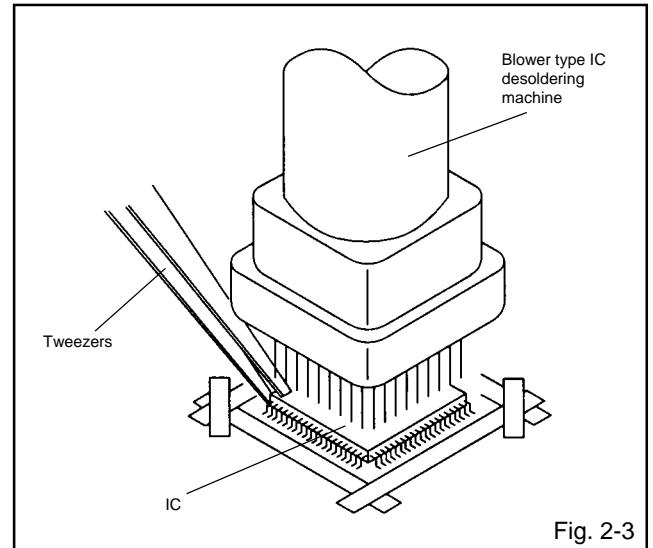
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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

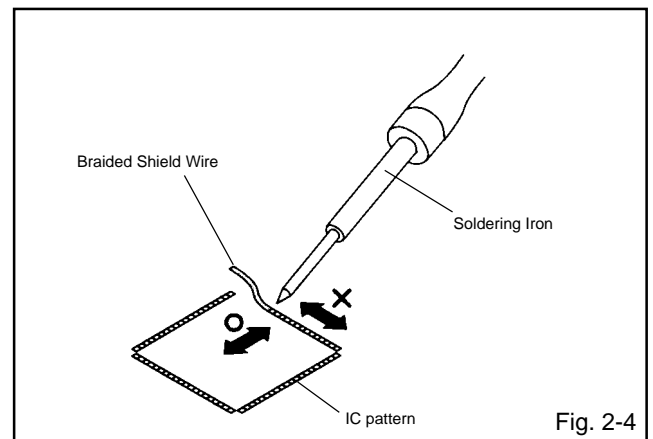
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



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

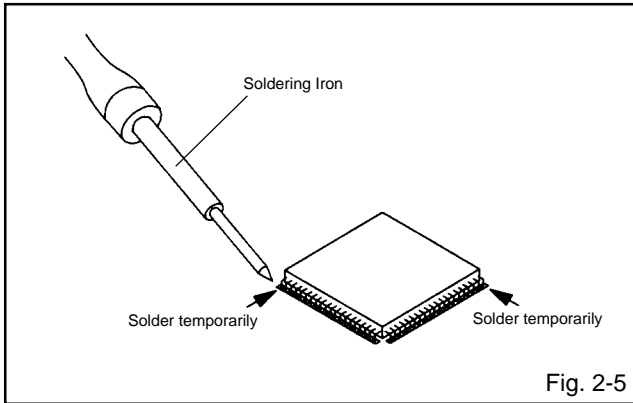
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



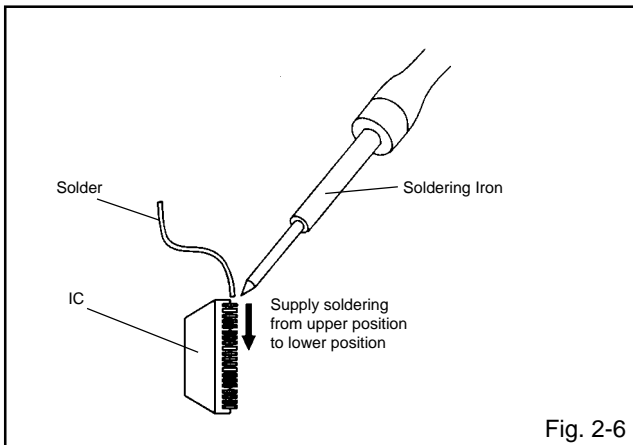
# DISASSEMBLY INSTRUCTIONS

## 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.)



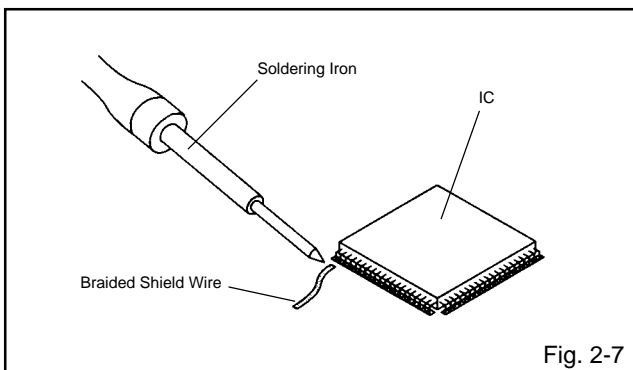
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 2-6.)



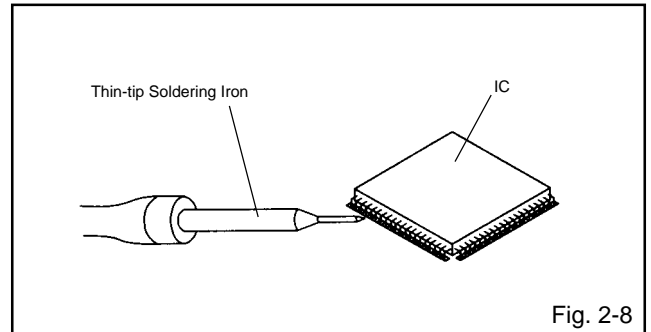
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 2-7.)

### 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.

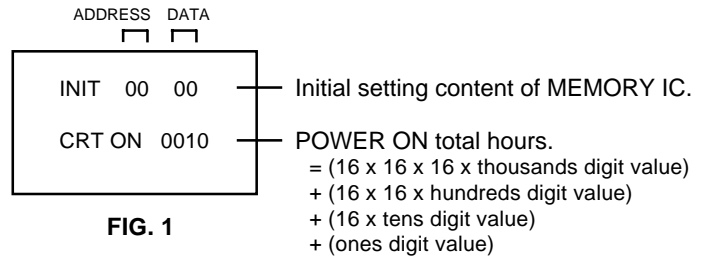
Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD and LOCK PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER 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".**

- Set the VOLUME to minimum.
- Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
- 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	00	60	99	93	1B	B3	24	3B	09	0F	07	05	80	AB	00	08
10	02															

**Table 1**

- Enter DATA SET mode by setting VOLUME to minimum.
- 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.
- 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.
- Press ENTER to select DATA. When DATA is selected, it will "blink".
- Again, step through the DATA using VOL. +/- button until required DATA value has been selected.
- Pressing ENTER will take you back to ADDRESS for further selection if necessary.
- Repeat steps 3 to 6 until all data has been checked.
- 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.**
- Turn POWER on.
- While holding down VOLUME button on front cabinet, press key 1 on remote control for more than 1 second.
- 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 contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

### Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. 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**.

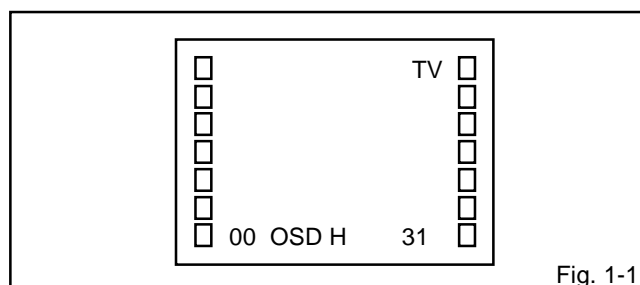


Fig. 1-1

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**.
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  $2.5V \pm 0.05V$ .

### 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=45.
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**.
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**.
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 100% ± 10% of the white level. **(Refer to Fig. 2-2)**
9. Receive the color bar pattern. (Audio Video Input)
10. Connect the oscilloscope to **pin 6 of CP601**.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "TINT".
12. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes as straight line. **(Refer to Fig. 2-3)**
13. Connect the oscilloscope to **pin 7 of CP601**.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(19)** on the remote control to select "COL.CENT".
15. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales
16. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% ± 10% of the white level. **(Refer to Fig. 2-4)**

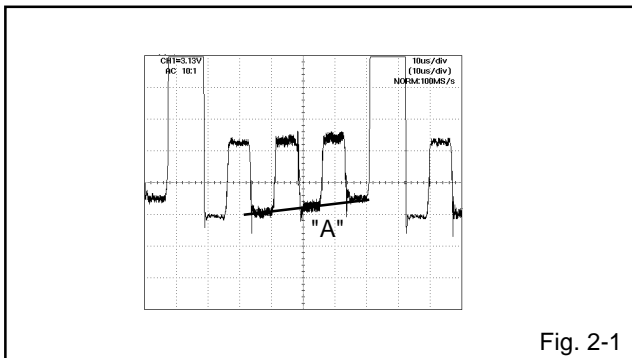


Fig. 2-1

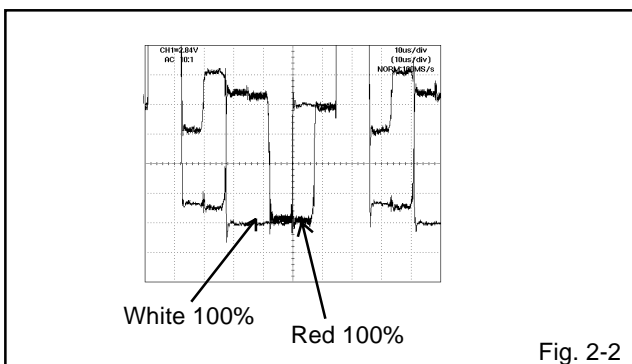


Fig. 2-2

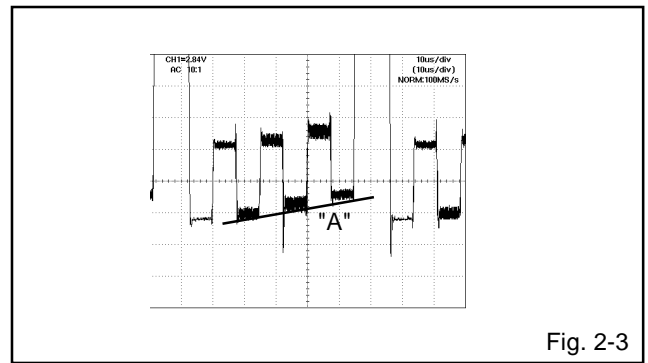


Fig. 2-3

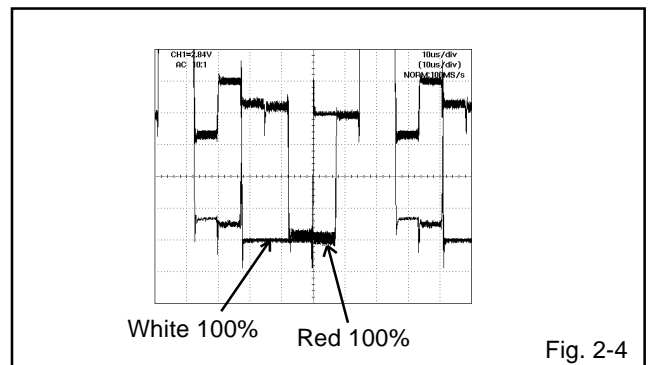


Fig. 2-4

## 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.

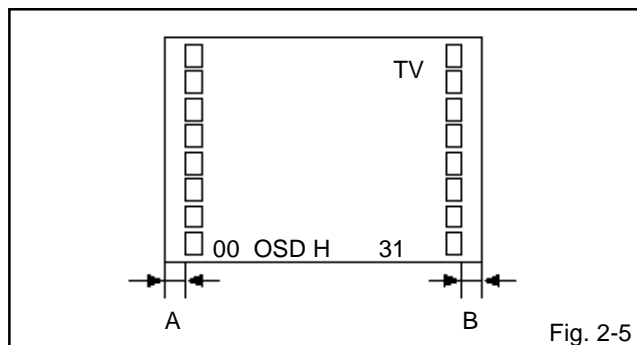
## 2-9: VERTICAL SIZE

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.

# ELECTRICAL ADJUSTMENTS

## 2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. (**Refer to Fig. 2-5**)



## 2-11: SUB BRIGHTNESS

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

## 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 "45".
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. Then perform the above adjustments 1~3.

## 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	50	50
16	CONT CENT	30	30
18	CONT MIN	10	10
20	COLOR MAX	70	70
21	COLOR MIN	00	00
23	SHARPNESS	48	48
24	FM LEVEL	107	107
28	TEST MONO	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.

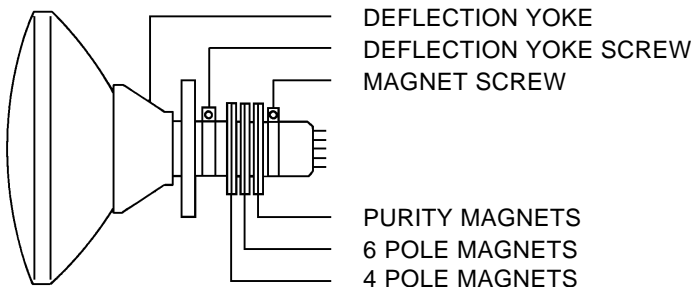


Fig. 3-1

### 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)**

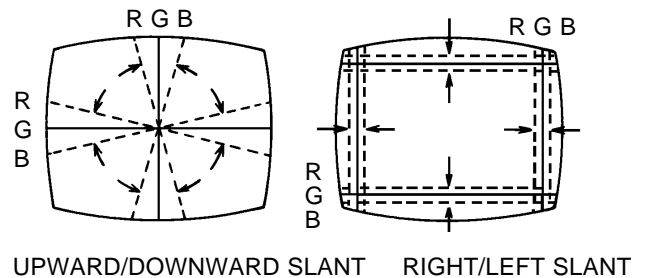
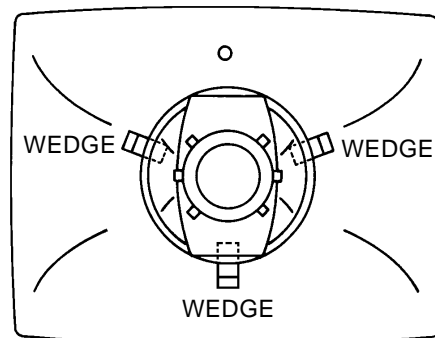


Fig. 3-2-a

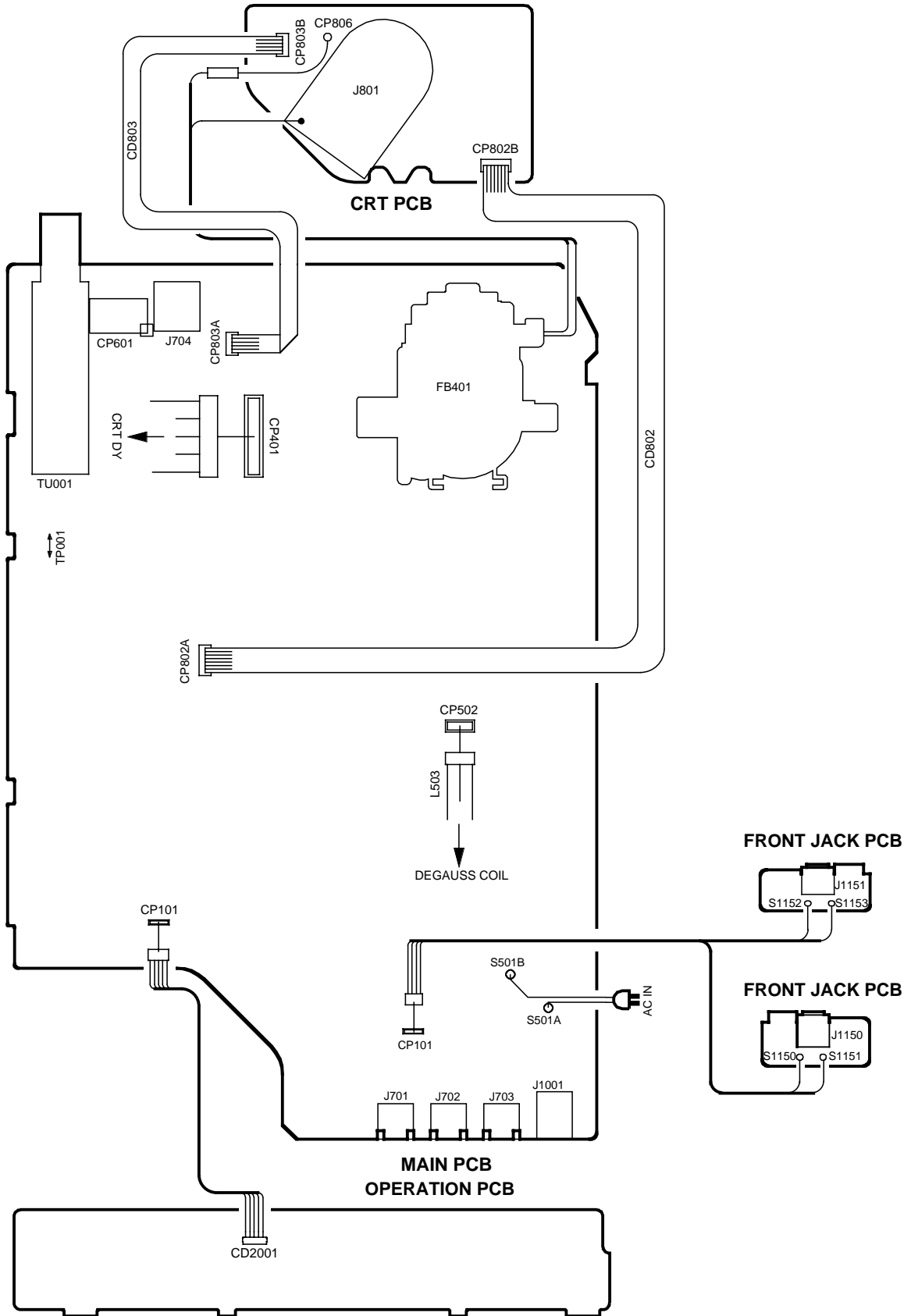


WEDGE POSITION

Fig. 3-2-b

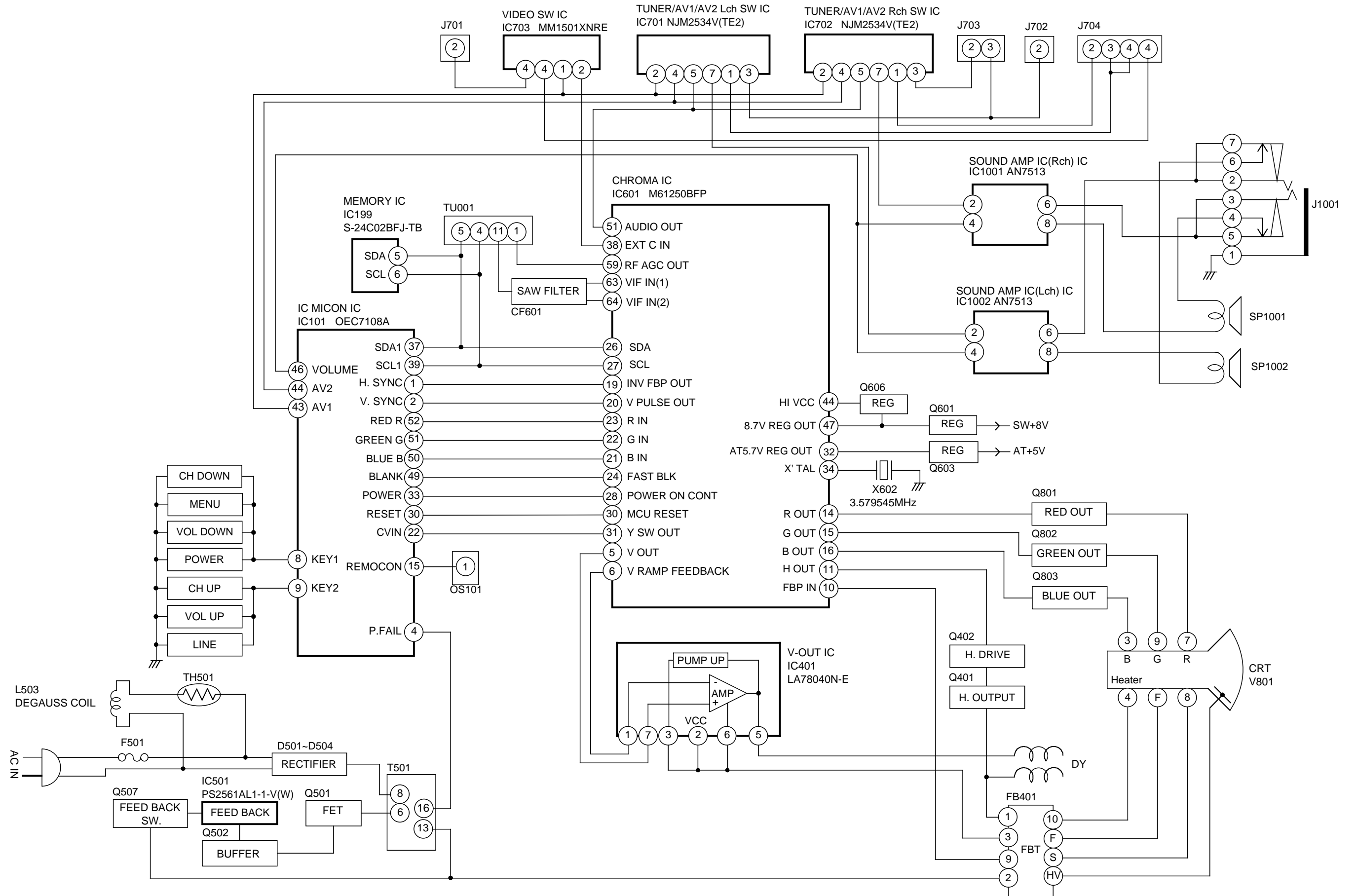
# ELECTRICAL ADJUSTMENTS

## 4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

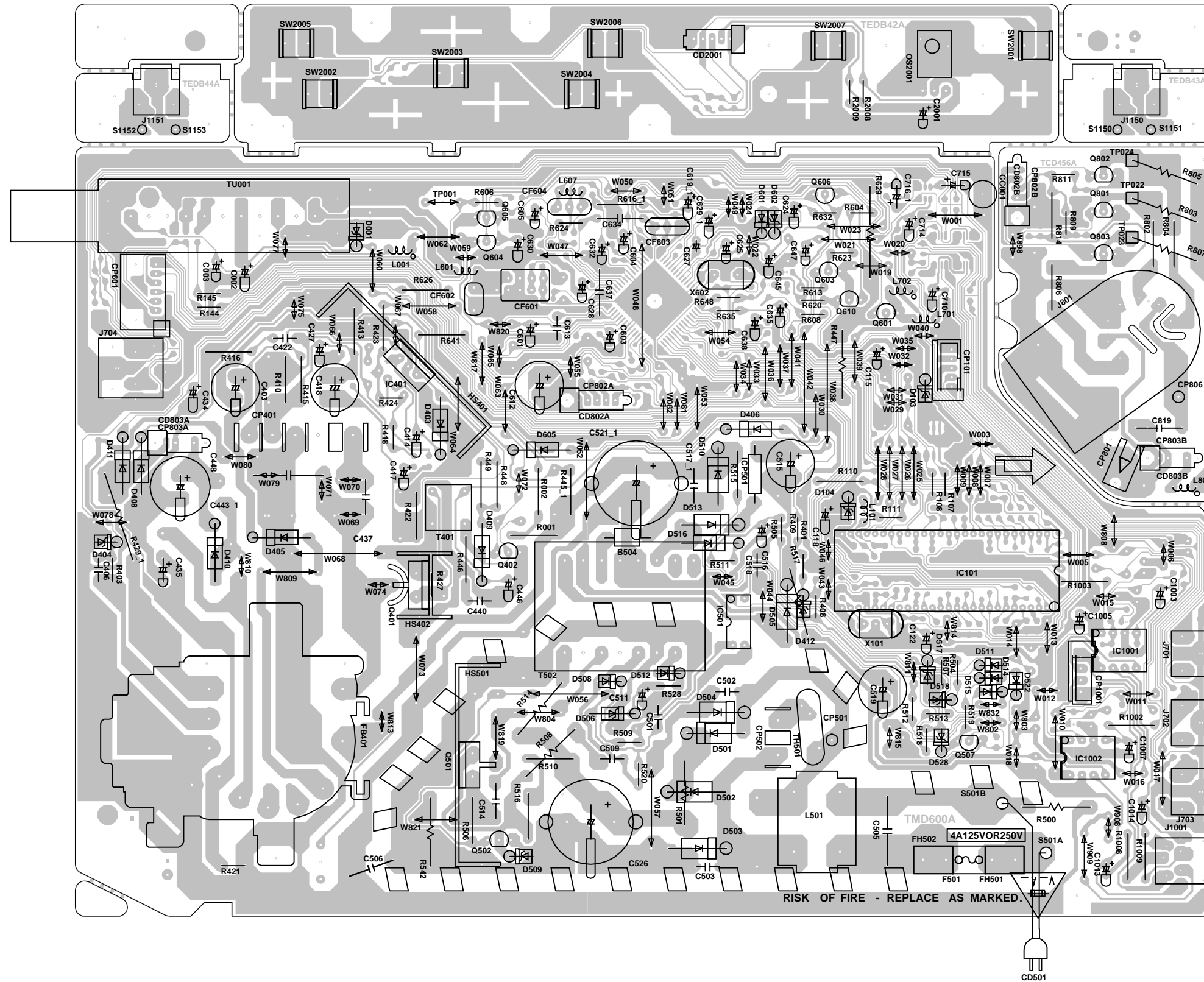




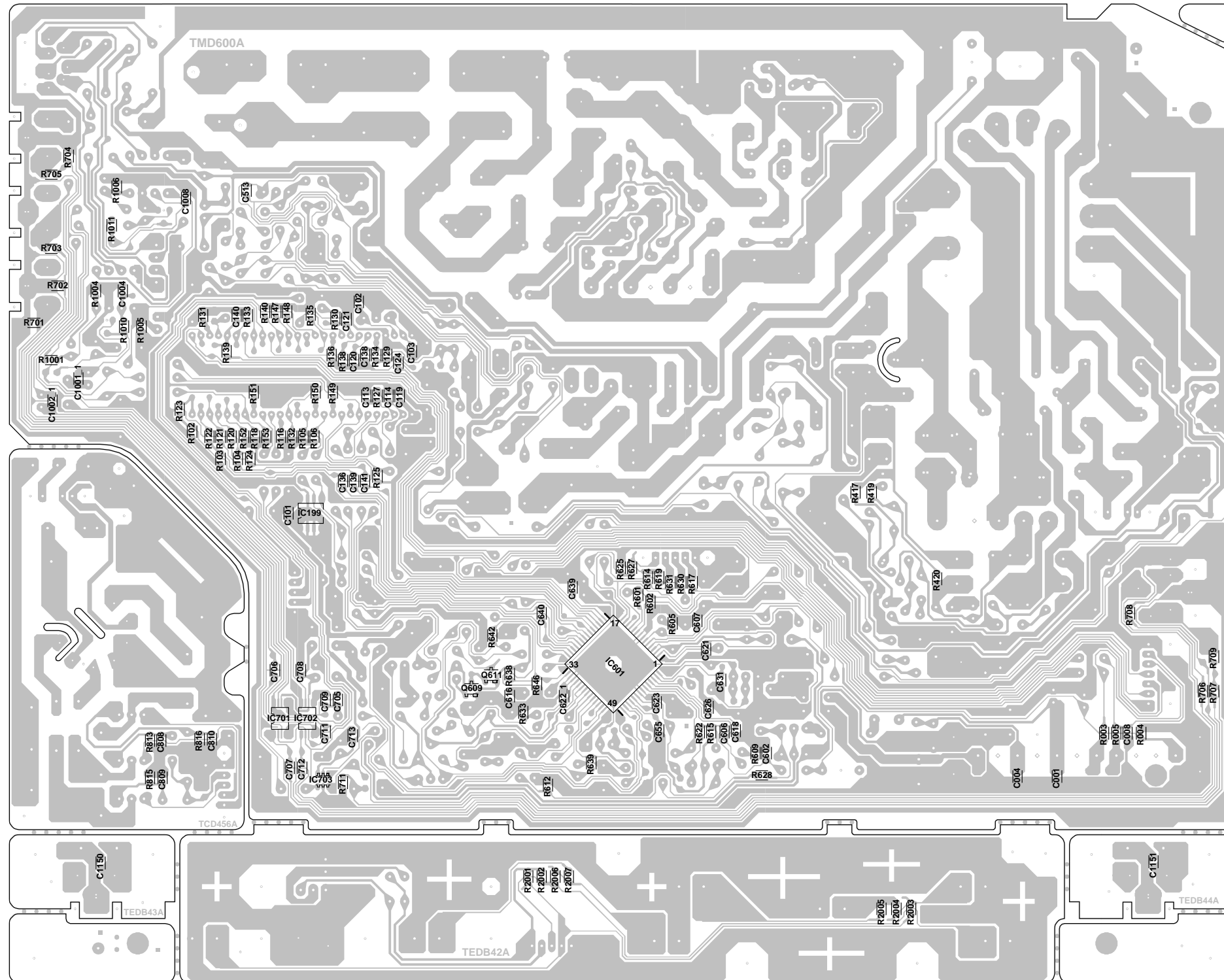
# BLOCK DIAGRAM



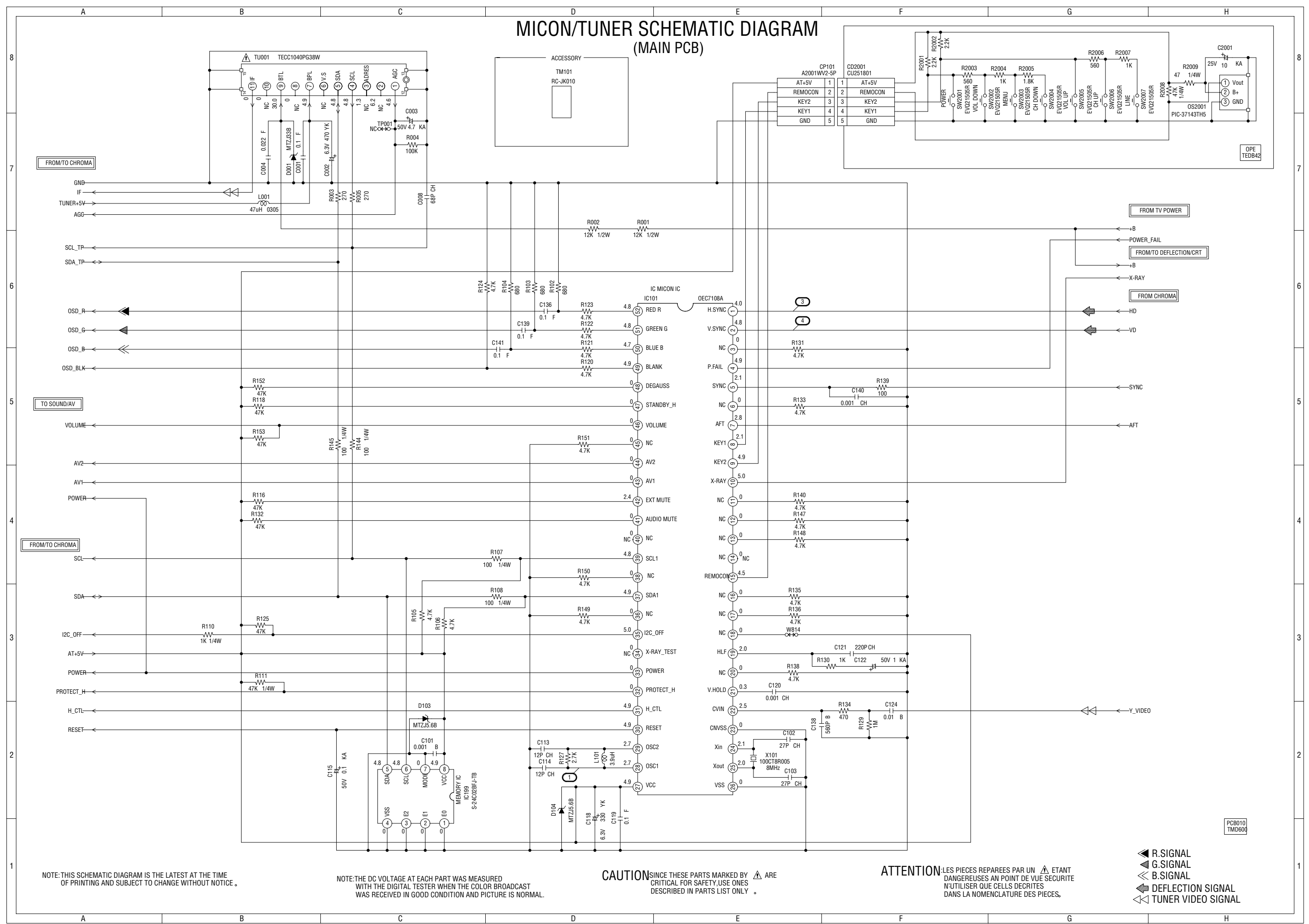
**PRINTED CIRCUIT BOARDS  
 MAIN/CRT/OPERATION/FRONT JACK (INSERTED PARTS)  
 SOLDER SIDE**



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.

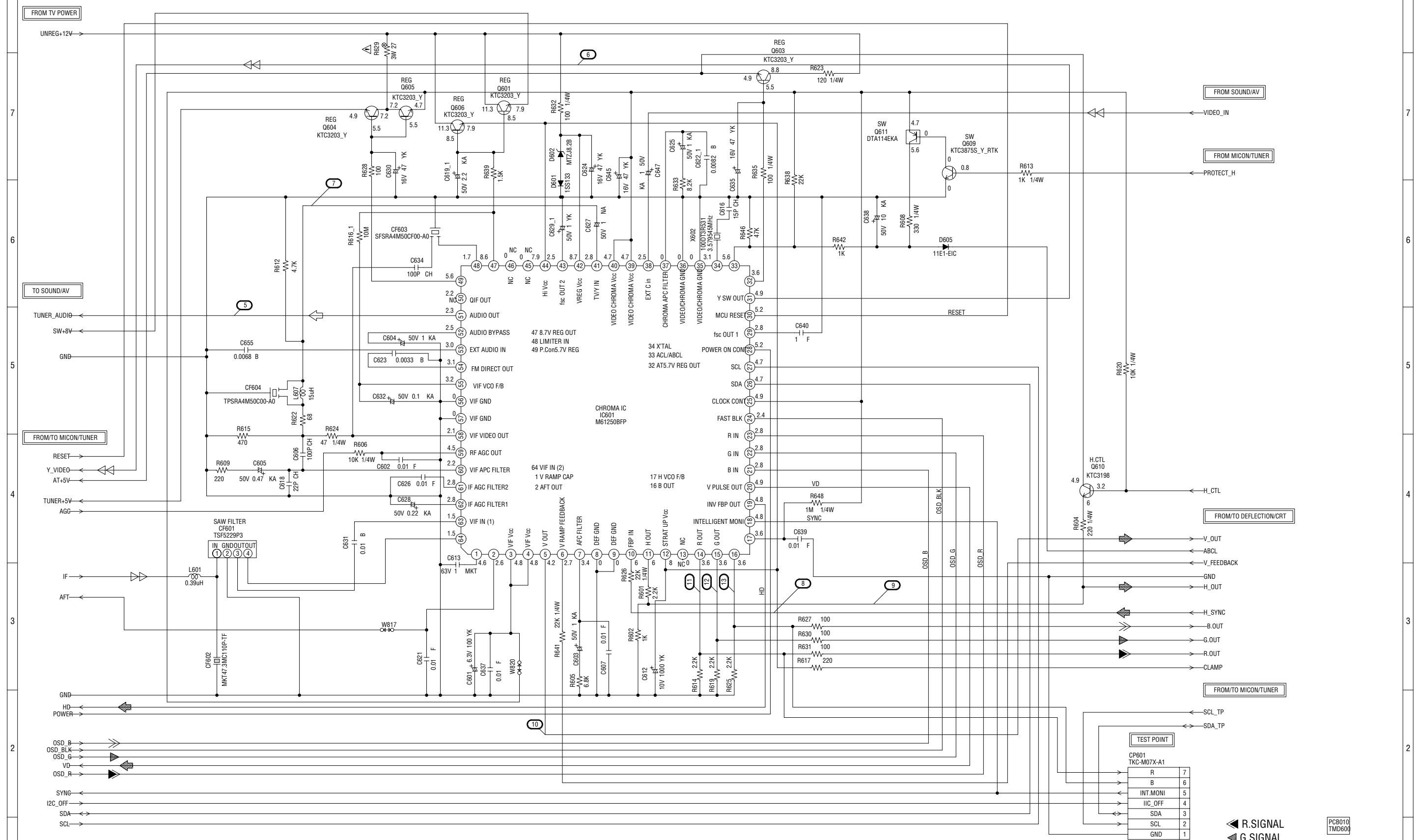
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

- $\blacktriangleleft$  R.SIGNAL
- $\blacktriangle$  G.SIGNAL
- $\circ$  B.SIGNAL
- $\blacksquare$  DEFLECTION SIGNAL
- $\blacktriangleleft$  TUNER VIDEO SIGNAL

# CHROMA SCHEMATIC DIAGRAM (MAIN PCB)



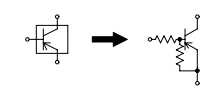
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

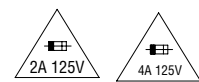
CAUTION: DIGITAL TRANSISTOR



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

PCB010  
TMD600

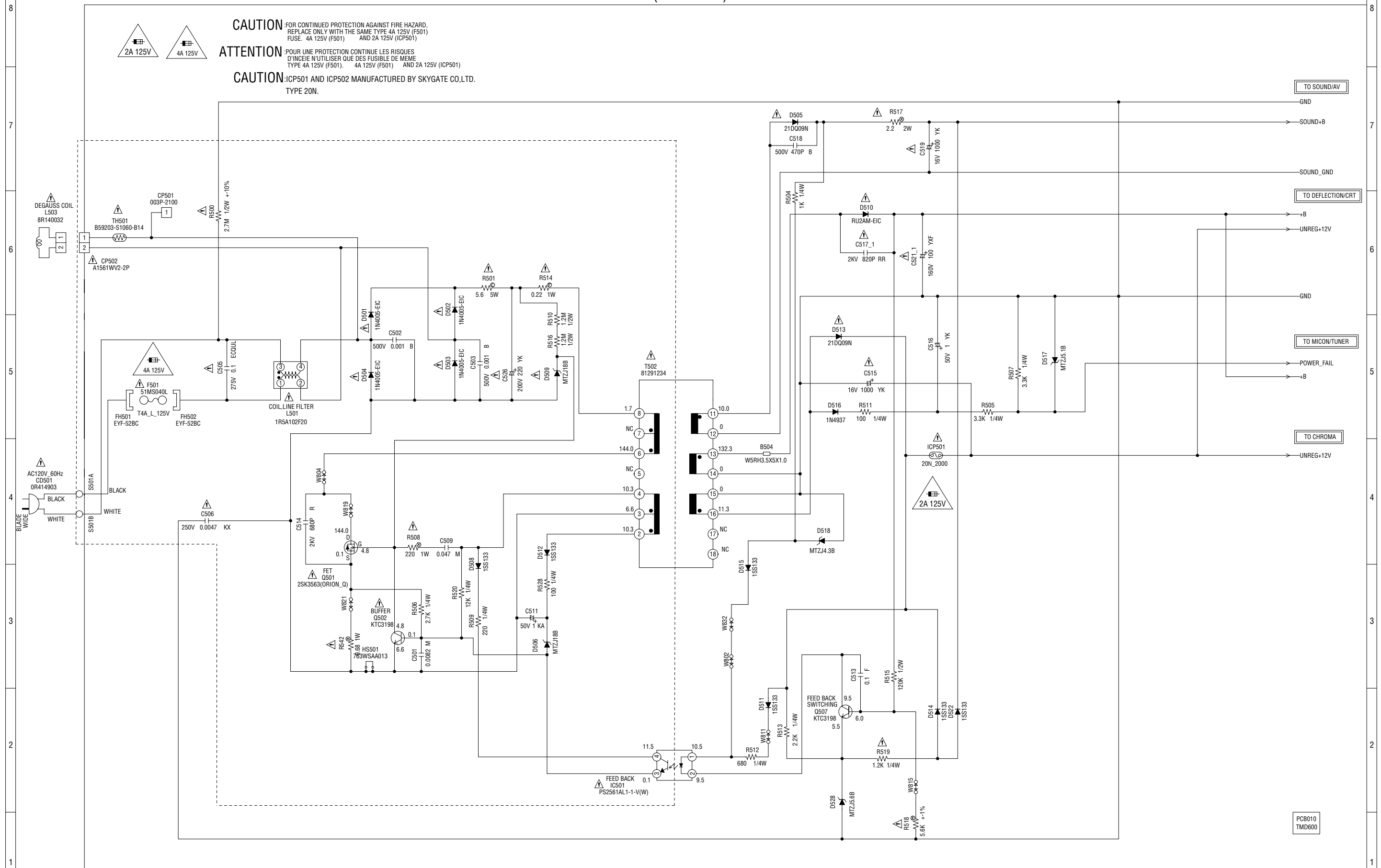
# TV POWER SCHEMATIC DIAGRAM (MAIN PCB)



**CAUTION:** FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE 4A 125V (F501)  
FUSE. 4A 125V (F501) AND 2A 125V (ICP501)

**ATTENTION:** POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MEME  
TYPE 4A 125V (F501), 4A 125V (F501) AND 2A 125V (ICP501)

**CAUTION:** ICP501 AND ICP502 MANUFACTURED BY SKYGATE CO.,LTD.  
TYPE 20N.



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

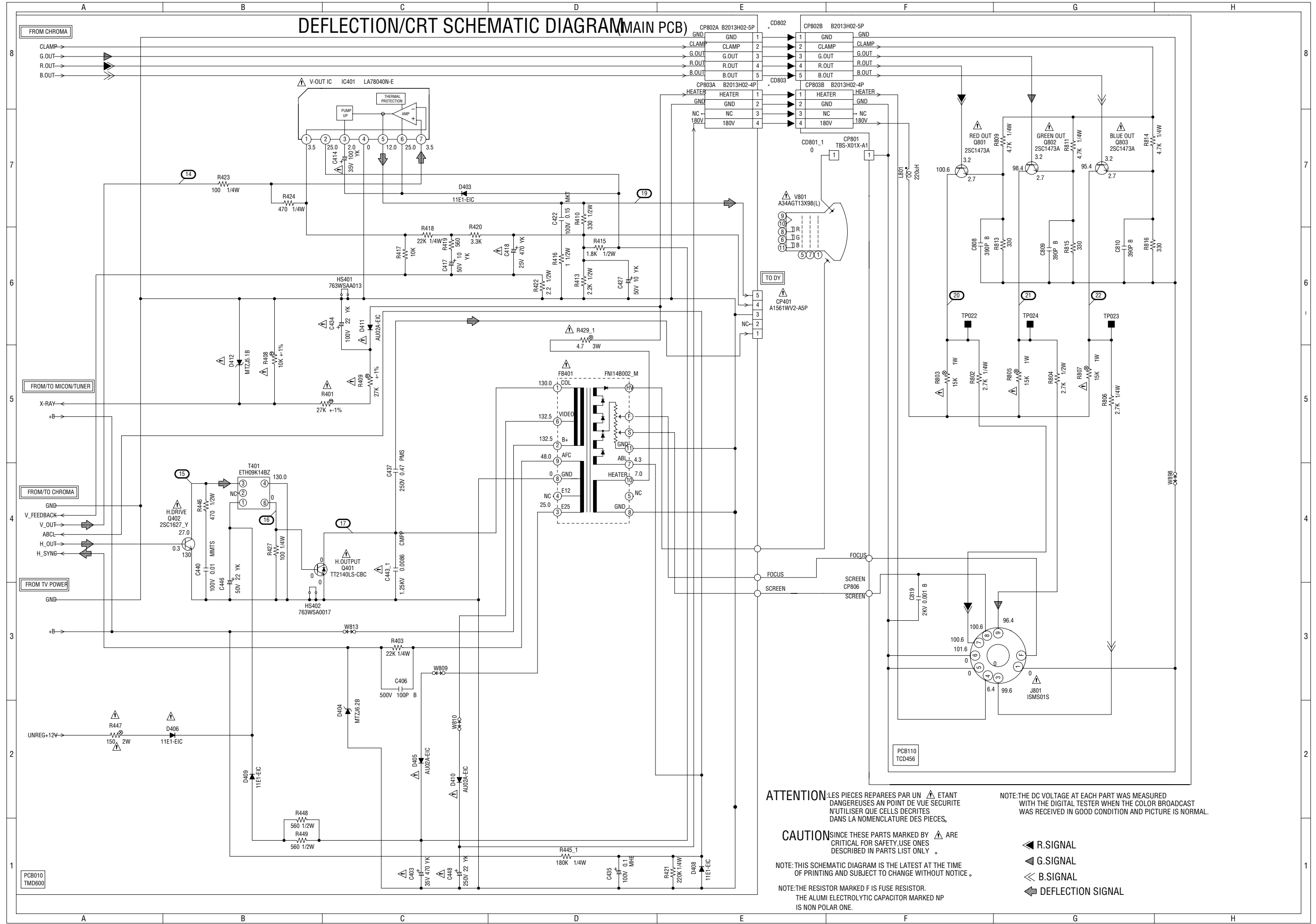
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

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

# DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)



**ATTENTION:** LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS 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.

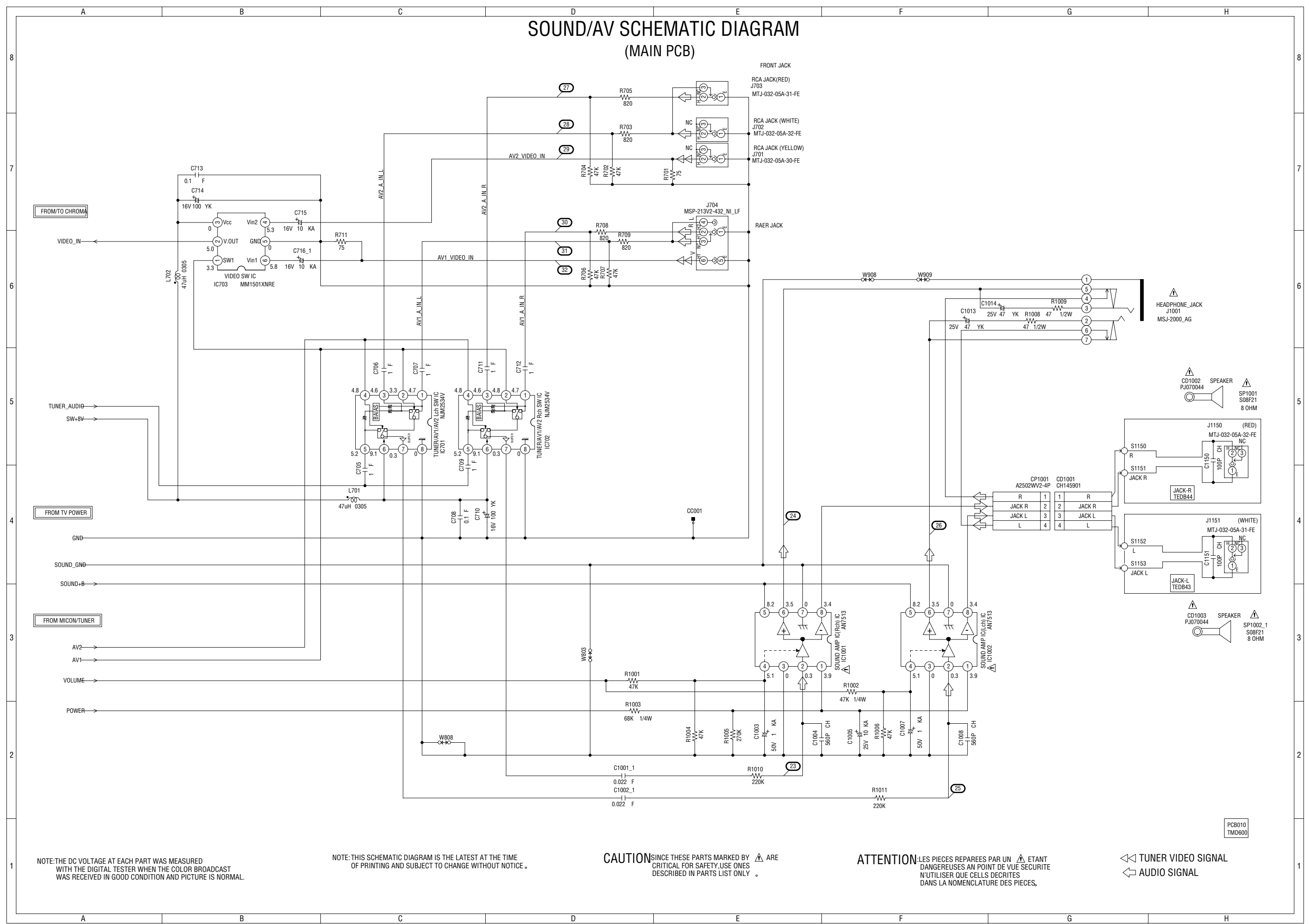
**CAUTION:** SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

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

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

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

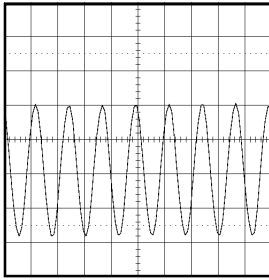
◁ TUNER VIDEO SIGNAL  
⇄ AUDIO SIGNAL

PCB010  
TMD600

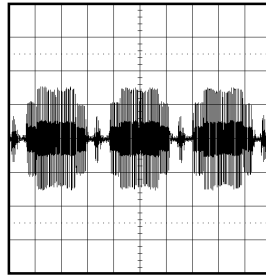


# WAVEFORMS

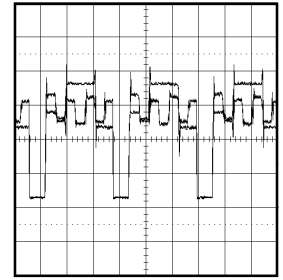
## MICON/TUNER



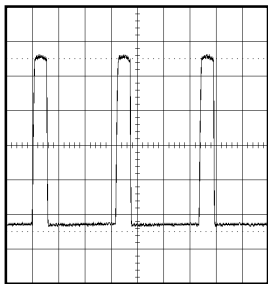
① 1V 0.1 $\mu$ s/div



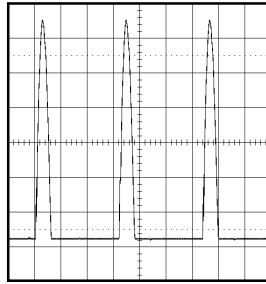
⑦ 200mV 20 $\mu$ s/div



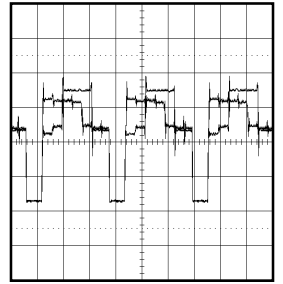
⑫ 1V 20 $\mu$ s/div



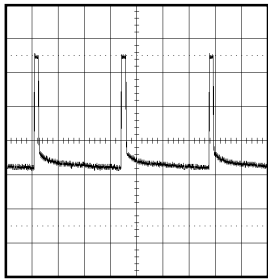
③ 200mV 20 $\mu$ s/div



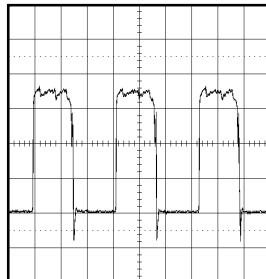
⑧ 20V 20 $\mu$ s/div



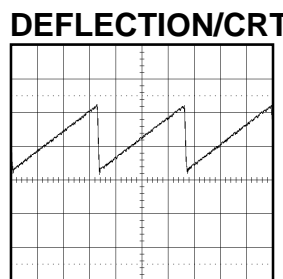
⑬ 1V 20 $\mu$ s/div



④ 200mV 5ms/div



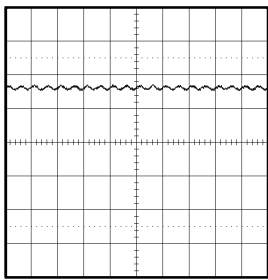
⑨ 200mV 20 $\mu$ s/div



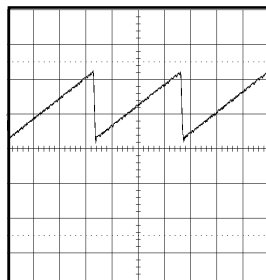
## DEFLECTION/CRT

⑭ 0.5V 5ms/div

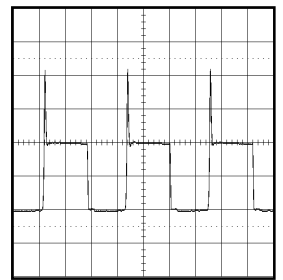
## CHROMA



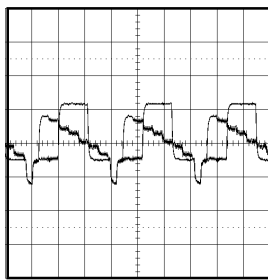
⑤ 0.5V 2ms/div



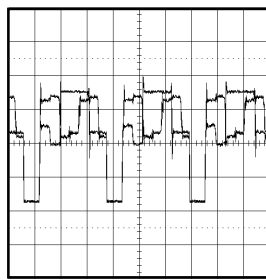
⑩ 0.5V 5ms/div



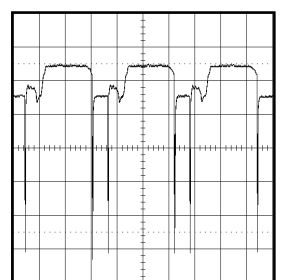
⑮ 20V 20 $\mu$ s/div



⑥ 0.5V 20 $\mu$ s/div



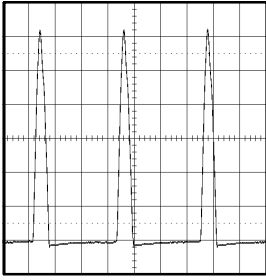
⑪ 1V 20 $\mu$ s/div



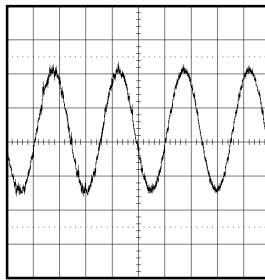
⑯ 2V 20 $\mu$ s/div

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

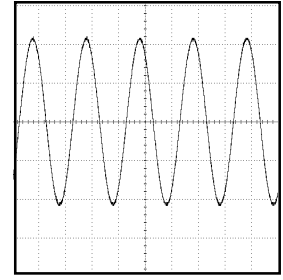
## WAVEFORMS SOUND/AV



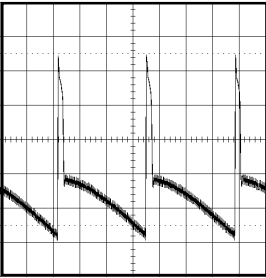
⑰ 200V 20µs/div



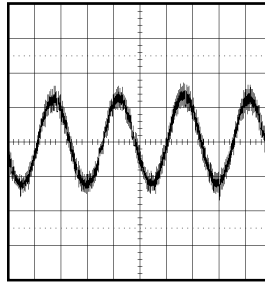
⑳ 200mV 1ms/div



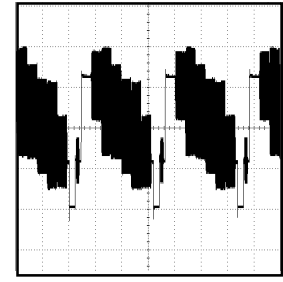
㉑ 200mV 500µs/div



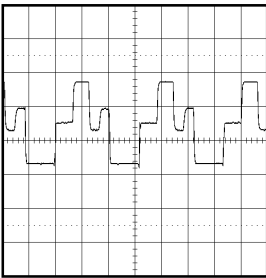
⑲ 10V 5ms/div



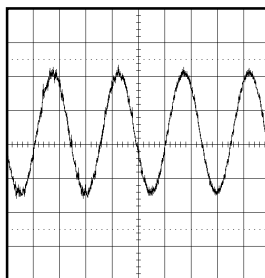
㉒ 0.5V 1ms/div



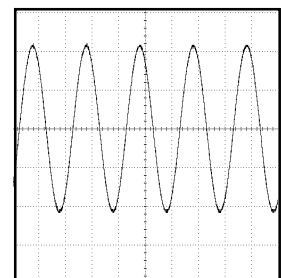
㉓ 500mV 20µs/div



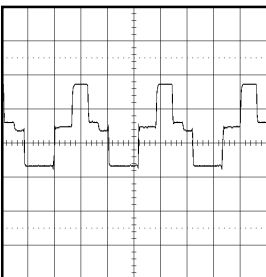
⑳ 50V 20µs/div



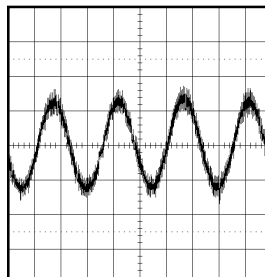
㉔ 200mV 1ms/div



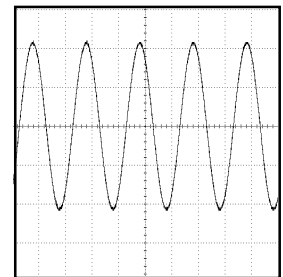
㉕ 200mV 500µs/div



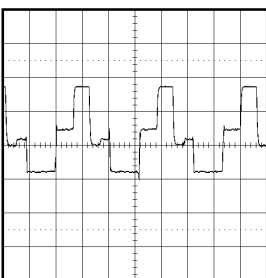
㉖ 50V 20µs/div



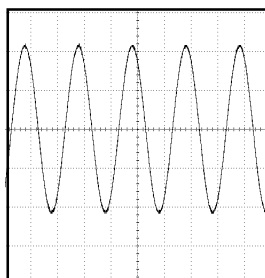
㉗ 0.5V 1ms/div



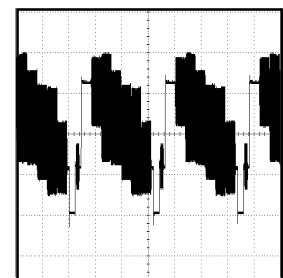
㉘ 200mV 500µs/div



㉙ 50V 20µs/div



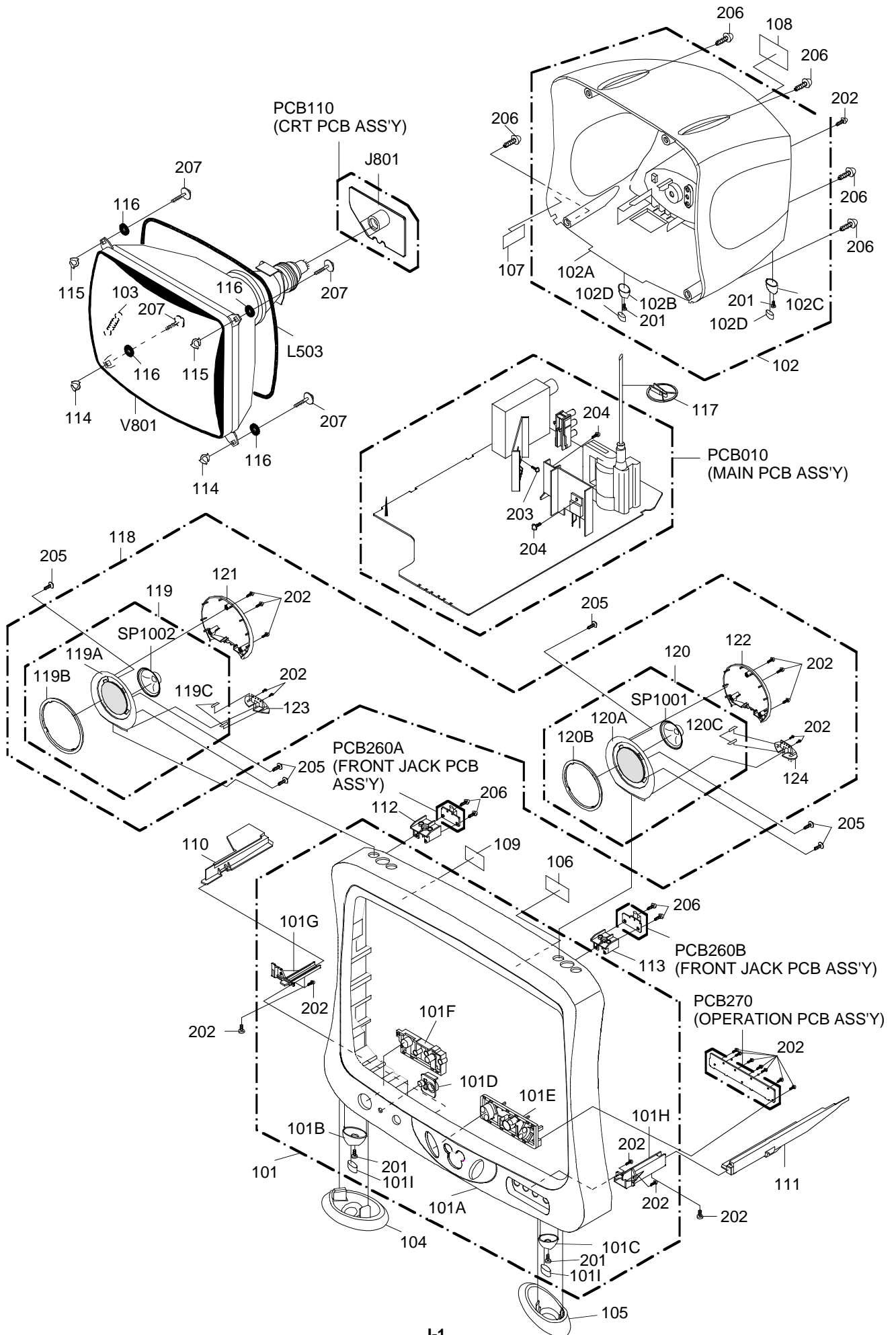
㉚ 200mV 500µs/div



㉛ 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	7A701A067A	FRONT,CABI ASS'Y		
101A	701WPJC562	CABINET,FRONT		
101B	704WPA0014	LEG,FRONT(L)		
101C	704WPA0015	LEG,FRONT(R)		
101D	713WPA0320	GUIDE,REMOCON		
101E	738WPDA001	BUTTON,FRAME-CLASSIC		
101F	738WPDA002	BUTTON,FRAME		
101G	761WPA0319	HOLDER,PCB-2(L)		
101H	761WPA0320	HOLDER,PCB-2(R)		
101I	800WFA0060	CUSHION,LEG		
102	7A7020004A	BACK,CABI ASS'Y		
102A	702WPB0058	CABINET,BACK		
102B	704WPA0016	LEG,BACK(L)		
102C	704WPA0017	LEG,BACK(R)		
102D	800WFA0060	CUSHION,LEG		
103	741WUA0021	SPRING,EARTH		
104	704WPA0027	LEG,CLASSIC(L)		
105	704WPA0028	LEG,CLASSIC(R)		
106	722000A023	SHEET,HWC		
107	7220001119	SHEET,CSA WARNING		
108	722616A002	SHEET,RATING		
109	7230006818	SHEET,CAUTION		
110	761WPA0303	HOLDER,PCB(L)		
111	761WPA0304	HOLDER,PCB(R)		
112	761WPA0305	HOLDER,SPEAKER-PCB(L)		
113	761WPA0306	HOLDER,SPEAKER-PCB(R)		
114	769WSAA005	WASHER CRT T=1		
115	769WSAA011	WASHER CRT T=0.5		
116	800WR0A011	SHEET CRT SUPPORT (D)		
117	899HV3T000	HOLDER,ANODE WIRE		
118	A3P901GX30	SPEAKER CABI ASS'Y		
119	7A7010009A	SPEAKER,F/CABI(L) ASS'Y		
119A	701WPA1268	CABINET,FRONT-SP(L)		
119B	701WPA1270	RING,SPEAKER(L)		
119C	800WQ0A086	FELT,SHEET		
120	7A7010010A	SPEAKER,F/CABI(R) ASS'Y		
120A	701WPA1269	CABINET,FRONT-SP(R)		
120B	701WPA1271	RING,SPEAKER(R)		
120C	800WQ0A086	FELT,SHEET		
121	702WPA1063	CABINET,BACK-SP(L)		
122	702WPA1064	CABINET,BACK-SP(R)		
123	761WPA0307	HOLDER,JACK(L)		
124	761WPA0308	HOLDER,JACK(R)		
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	8121J50B54	SCREW,TAP TITE(P)	GW20	5x28
---	J3P90131A	INSTRUCTION BOOK		
---	J3P90202A	WARRANTY SHEET		
---	JB5U0200	POLYBAG,INSTRUCTION		
---	A3P901G975	INSTRUCTION BOOK KIT		
---	791WHA0023	LAMIFILM BAG		
---	791WHA0052	POLY,BAG		
---	791WHA0053	POLY,BAG		
---	792WHA0528	PACKAGE,BOTTOM		
---	792WHA0530	PACKAGE, TOP		
---	793WCDC130	GIFT BOX		
---	794WHA0005	STRAP		
---	8110230A04	SCREW,TAP TITE(P)	BIND	3x10

# ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
<b>RESISTORS</b>			<b>ICS</b>		
△ R401	R4X5T6273F	R,METAL 27K OHM 1/6W	△ IC101	I56D07108A	IC OEC7108A
△ R408	R4X5T6103F	R,METAL 10K OHM 1/6W	IC199	A3P902G015	INIT DATA
△ R409	R4X5T6273F	R,METAL 27K OHM 1/6W	△ IC401	I03TD804N0	IC LA78040N-E
△ R429	R3X28B4R7J	R,METAL OXIDE 4.7 OHM 3W	△ IC501	000220002W	PHOTO COUPLER PS2561AL1-1-V(W)
△ R447	R3X28A151J	R,METAL OXIDE 150 OHM 2W	IC601	I06FC1250B	IC M61250BFP
△ R500	R0G3K2275K	RC 2.7M OHM 1/2W	IC701	I0QF02534V	IC NJM2534V(TE2)
△ R501	R5Y2CD5R6J	R,CEMENT 5.6 OHM 5W	IC702	I0QF02534V	IC NJM2534V(TE2)
△ R508	R3X181221J	R,METAL OXIDE 220 OHM 1W	IC703	I0UF015010	IC MM1501XNRE
△ R509	R002T4221J	RC 220 OHM 1/4W	△ IC1001	I01DP75130	IC AN7513
△ R514	R63581R22J	R,FUSE 0.22 OHM 1W	IC1002	I01DP75130	IC AN7513
△ R515	R002T2124J	RC 120K OHM 1/2W	<b>TRANSISTORS</b>		
△ R517	R3X28A2R2J	R,METAL OXIDE 2.2 OHM 2W	△ Q401	TD3U021400	TRANSISTOR SILICON TT2140LS-CBC
△ R518	R4X5T6562F	R,METAL 5.6K OHM 1/6W	△ Q402	TC5T01627Y	TRANSISTOR SILICON 2SC1627_Y(TPE2)
△ R519	R002T4122J	RC 1.2K OHM 1/4W	△ Q501	T25F035630	FET 2SK3563(ORION_Q)
△ R542	R3X181R68J	R,METAL OXIDE 0.68 OHM 1W	△ Q502	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ R629	R3X28B270J	R,METAL OXIDE 27 OHM 3W	Q507	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ R803	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q601	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ R805	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q603	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ R807	R3X181153J	R,METAL OXIDE 15K OHM 1W	Q604	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
<b>CAPACITORS</b>			Q605	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ C403	E02LT4471M	CE 470 UF 35V	Q606	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ C414	E02LU4101M	CE 100 UF 35V	Q609	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
△ C418	E02LT3471M	CE 470 UF 25V	Q610	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ C434	E02LU8220M	CE 22 UF 100V	Q611	TPYJB05001	COMPOUND TRANSISTOR DTA114EKAT146
△ C437	P4J7F3474J	CMPP 0.47 UF 250V PMS	△ Q801	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C443	P4N8FJ862H	CMPP 0.0086UF 1.25KV	△ Q802	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C446	E02LU5220M	CE 22 UF 50V	△ Q803	TCKT1473A0	TRANSISTOR SILICON 2SC1473A-TA-(RQ)
△ C448	E0ELFD220M	CE 22 UF 250V	<b>COILS &amp; TRANSFORMERS</b>		
△ C503	C0JTB0513K	CC 0.001 UF 500V B	L001	02167F470J	COIL 47 UH
△ C505	P2122B104M	CMP 0.1 UF 275V ECQUL	L101	021LA63R9K	COIL 3.9 UH
△ C506	CD39E0MQ3M	CC 0.0047UF 250V	△ L501	029T00A7M1	COIL,LINE FILTER 1R5A102F20
△ C514	C0PLRR7U2K	CC 680 PF 2KV R	△ L503	028R140032	COIL,DEGAUSS 8R140032
△ C515	E02LT2102M	CE 1000 UF 16V	L601	021LA6R39M	COIL 0.39 UH
△ C517	C0PLRR7W2K	CC 820 PF 2KV RR	L607	021LA6150J	COIL 15 UH
△ C519	E02LT2102M	CE 1000 UF 16V	L701	02167F470J	COIL 47 UH
△ C521	E62NFB101M	CE 100 UF 160V	L702	02167F470J	COIL 47 UH
△ C526	E02LFC221M	CE 220 UF 200V	L801	021673221K	COIL 220 UH
C715	E52HO2100M	CE 10 UF 16V	T401	045009003J	TRANS,HORIZONTAL DRIVE ETH09K14BZ
C716	E50HU2100M	CE 10 UF 16V	△ T502	0481291234	TRANSFORMER,SWITCHING 81291234
C716	E52HO2100M	CE 10 UF 16V	<b>JACKS</b>		
C819	E50HU2100M	CE 10 UF 16V	J701	060J421036	RCA JACK MTJ-032-05A-30-FE
C819	C0JBB0713K	CC 0.001 UF 2KV B	J702	060J421037	RCA JACK MTJ-032-05A-32-FE
<b>DIODES</b>			J703	060J421030	RCA JACK MTJ-032-05A-31-FE
D001	D97U03301B	DIODE,ZENER MTZJ33B T-77	J704	060J431020	RCA JACK MSP-213V2-432_NI_LF
D103	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77	△ J801	066F120018	SOCKET,CATHODE RAY TUBE ISMS01S
D104	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77	J1001	060J131016	HEADPHONE JACK MSJ-2000_AG
D403	D2WT011E10	DIODE SILICON 11E1-EIC	J1150	060J421037	RCA JACK MTJ-032-05A-32-FE
D404	D97U06R21B	DIODE,ZENER MTZJ6.2B T-77	J1151	060J421030	RCA JACK MTJ-032-05A-31-FE
△ D405	D2WTAU02A0	DIODE SILICON AU02A-EIC	<b>SWITCHES</b>		
D406	D2WT011E10	DIODE SILICON 11E1-EIC	SW2001	0504101T34	SWITCH,TACT EVQ21505R
D408	D2WT011E10	DIODE SILICON 11E1-EIC	SW2002	0504101T34	SWITCH,TACT EVQ21505R
D409	D2WT011E10	DIODE SILICON 11E1-EIC	SW2003	0504101T34	SWITCH,TACT EVQ21505R
△ D410	D2WTAU02A0	DIODE SILICON AU02A-EIC	SW2004	0504101T34	SWITCH,TACT EVQ21505R
△ D411	D2WTAU02A0	DIODE SILICON AU02A-EIC	SW2005	0504101T34	SWITCH,TACT EVQ21505R
△ D412	D97U05R11B	DIODE,ZENER MTZJ5.1B T-77	SW2006	0504101T34	SWITCH,TACT EVQ21505R
△ D501	D2WXN40050	DIODE SILICON 1N4005-EIC	SW2007	0504101T34	SWITCH,TACT EVQ21505R
△ D502	D2WXN40050	DIODE SILICON 1N4005-EIC	<b>P.C.BOARD ASSEMBLIES</b>		
△ D503	D2WXN40050	DIODE SILICON 1N4005-EIC	PCB010	A3P902G010	PCB ASSY TMD600A
△ D504	D2WXN40050	DIODE SILICON 1N4005-EIC	PCB110	A3P902G110	PCB ASSY TCD456A
△ D505	D28T21DQN9	DIODE SCHOTTKY 21DQ09N-TA2B1	PCB270	A3P902G270	PCB ASSY TEDB42A
D506	D97U01801B	DIODE,ZENER MTZJ18B T-77	PCB260A	A3P902G260	PCB ASSY TEDB43A
D508	D1VT001330	DIODE,SILICON 1SS133T-77	PCB260B	A3P902G260	PCB ASSY TEDB44A
△ D509	D97U01801B	DIODE,ZENER MTZJ18B T-77	<b>MISCELLANEOUS</b>		
△ D510	D2WXRU2AM0	DIODE SILICON RU2AM-EIC	B504	024HT03553	CORE,BEADS W5RH3.5X5X1.0
D511	D1VT001330	DIODE,SILICON 1SS133T-77	△ CD501	120R414903	CORD AC BUSH 0R414903
D512	D1VT001330	DIODE,SILICON 1SS133T-77		1209414909	CORD AC BUSH 9414909
△ D513	D28T21DQN9	DIODE SCHOTTKY 21DQ09N-TA2B1	CD802	WCL6842038	FLAT CABLE AWM2468 AWG26 5C GRAY 420MM
D514	D1VT001330	DIODE,SILICON 1SS133T-77	CD803	WBL6028038	FLAT CABLE AWM2468 AWG26 4C BLACK 280MM
D515	D1VT001330	DIODE,SILICON 1SS133T-77	CF601	1029045R7G	FILTER,SAW TSF5229P3
△ D516	D2WXN49370	DIODE,SILICON 1N4937	CF602	1012T04702	FILTER,CERAMIC TRAP MKT47.3MC110P-TF
D517	D97U05R11B	DIODE,ZENER MTZJ5.1B T-77	CF603	1012T4R520	FILTER,CERAMIC SFSRA4M50CF00-A0
D518	D97U04R31B	DIODE,ZENER MTZJ4.3B T-77	CF604	1012T4R519	FILTER,CERAMIC TRAP TPSRA4M50C00-A0
D522	D1VT001330	DIODE,SILICON 1SS133T-77	CP101	069S250629	CONNECTOR PCB SIDE A2001VW2-5P
D528	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77	△ CP401	069S450089	CONNECTOR PCB SIDE A1561VW2-A5P
D601	D1VT001330	DIODE,SILICON 1SS133T-77	CP501	069D01001A	CONNECTOR PCB SIDE 003P-2100
D602	D97U08R21B	DIODE,ZENER MTZJ8.2B T-77	△ CP502	069S420110	CONNECTOR PCB SIDE A1561VW2-2P
D605	D2WT011E10	DIODE SILICON 11E1-EIC			

## ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
<b>MISCELLANEOUS</b>			
	CP601	0697270650	CONNECTOR PCB SIDE TKC-M07X-A1
	CP801	069W010030	CONNECTOR PCB SIDE TBS-X01X-A1
	CD1001	06CH145901	CORD CONNECTOR CH145901
	CD1002	06CXB07001	CORD,RCA PIN PJ070044
	CD1003	06CXB07001	CORD,RCA PIN PJ070044
	CD2001	06CU251801	CORD CONNECTOR CU251801
	CP1001	069S140419	CONNECTOR PCB SIDE A2502WV2-4P
	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	043214050F	TRANSFORMER,FLYBACK FNI14B002_M
	FH501	06710T0006	HOLDER,FUSE EYF-52BC
	FH502	06710T0006	HOLDER,FUSE EYF-52BC
△	ICP501	0845C02003	IC PROTECTOR 20N_2000
	OS2001	077Q037002	REMOTE RECEIVER PIC-37143TH5
	SP1001	070Y132018	SPEAKER S08F21
	SP1002	070Y132018	SPEAKER S08F21
△	TH501	D8EE0B1400	DEGAUSS ELEMENT B59203-S1060-B14
	TM101	076N0JK010	TRANSMITTER RC-JK010
△	TU001	0145K00062	TUNER,VHF-UHF TECC1040PG38W
△	V801	098Q1404B2	CRT W/DY A34AGT13X98(L)
	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.	M3P9-01G
O/R NO.	K433026