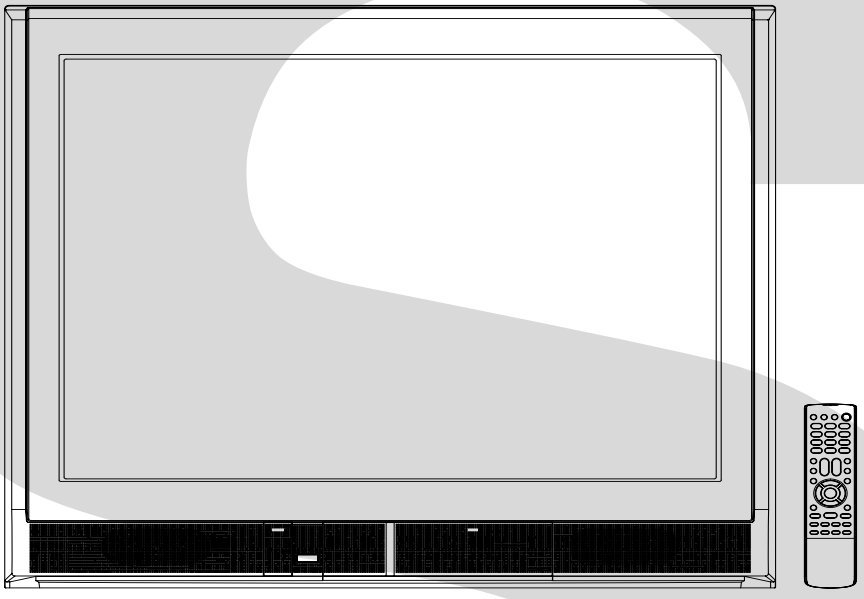
TOSHIBA

FILE NO. 050-200609GR
(MFR'S VERSION A)

SERVICE MANUAL

COLOR TELEVISION

32DF46



The above model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

DOCUMENT CREATED IN JAPAN, April, 2006 GREEN

(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

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

2. AVOID AN ELECTRIC SHOCK

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

3. USE THE DESIGNATED PARTS

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

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

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

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

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

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

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

(INSULATION CHECK PROCEDURE)

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

[Note 1]

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

[Note 2]

External exposure metal: Antenna terminal
Headphone 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

When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Befor applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

TABLE OF CONTENTS

GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size		32 inch / 802.0mmV
			CRT Type		Flat
			Magnetic Field BV/BH		+0.45G/0.18G
		Color System			NTSC
		Speaker			2 Speaker
			Position		Front
			Size		2.0 x 4.7 Inch
			Impedance		8 ohm
		Sound Output	MAX		2.5+2.5 W
			10%(Typical)		- W
		NTSC3.58+4.43 /PAL60Hz			No
G-2	**Tuning System**	Broadcasting System	Analog		US System M
			Digital		ATSC(8VSB), QAM
		Tuner and Receive CH	System		1Tuner
			Destination		USA(W/ CATV)
			CH Coverage		2 - 69, 4A, A-5 - A-1, A - I, J - W, W+1 - W+84
		Intermediate Frequency	Digital		44.00MHz
			Analog	Picture(FP)	45.75MHz
				Sound(FS)	41.25MHz
				FP-FS	4.50MHz
		Preset CH			No
		Stereo/Dual TV Sound			Yes
		Tuner Sound Muting			Yes
G-3	**Power**	Power Source	AC		120V AC 60Hz
			DC		
		Power Consumption		at AC	
					145 W at AC 120 V 60 Hz
			Stand by (at AC)		3 W at AC 120 V 60 Hz
			Per Year		-- kWh/Year
		Protector	Power Fuse		Yes
			Safety Circuit		Yes
			IC Protector(Micro Fuse)		No
G-4	**Regulation**		Safety		UL
			Radiation		FCC
			X-Radiation		DHHS
G-5	**Temperature**		Operation		+5oC ~ +40oC
			Storage		-20oC ~ +60oC
G-6	**Operating Humidity**				Less than 80% RH

GENERAL SPECIFICATIONS

G-7	**On Screen Display**	Menu		Yes	
		Menu Type		Icon	
		Picture		Yes	
			Mode(Picture preference)	No	
			Contrast	Yes	
			Brightness	Yes	
			Color	Yes	
			Tint	Yes	
			Sharpness	Yes	
			Color Temperature	No	
			Reset	Yes	
		Sound		Yes	
			MTS	Yes	
			Bass	Yes	
			Treble	Yes	
			Balance	Yes	
			BBE On/Off	No	
			Stable Sound On/Off	Yes	
			Audio Language	Yes	
			Digital Output(PCM/Dolby Digital)	Yes	
			Surround On/Off	Yes	
			Reset	Yes	
		Set Up		Yes	
			Language	Yes	
			Clock Set	Yes	
			TV/Cable	Yes	
			Auto CH Memory	Yes	
			Add/Delete	Yes	
			Closed Caption	Yes	
			CC Advance(Size, Type, Edge, Color, Background Color)	Yes	
			Signal Meter	Yes	
		Option		Yes	
			Favorite CH	Yes	
			On/Off Timer	Yes	
			CH Label	Yes	
			Video Label	No	
		Locks		Yes	
			Password	Yes	
			V-Chip	Yes	
			CH Lock	Yes	
			Video Lock	Yes	
			Game Timer	Yes	
			Front Panel Lock	Yes	
		Control Level		Yes	
			Volume	Yes	
			Brightness	Yes	
			Contrast	Yes	
			Color	Yes	
			Tint	Yes	
			Sharpness	Yes	
			Bass	Yes	
			Treble	Yes	
			Balance	Yes	
			Back Light	No	
			Signal Meter	Yes	
		Stereo,Audio Output,SAP		Yes	
		Video		Yes	
		Color Stream		Yes	
		Channel(TV/Cable)		Yes	
		CH Label		Yes	
		Video Label		No	
		Clock		Yes	
		Game Timer		Yes	
		On/Off Timer		Yes	
		Sleep Timer		Yes	
		Reset		Yes	
		Sound Mute		Yes	
		Picture Size		Yes	
		V-chip Rating		Yes	
G-8	**OSD Language**			English French Spanish	

GENERAL SPECIFICATIONS

G-9	**Clock and Timer**	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Timer / Off Timer)	Yes
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode) more than		-- Min Sec
G-10	**Remote Control**	Unit		RC-KK
		Glow in Dark Remocon		Yes
		Back Light Remocon		No
		Remocon Format		Toshiba
		Format		Toshiba
		Custom Code		TV:40-BFh
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		44 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 /+10/ -	Yes
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			TV/Video(Input Select)	Yes
			ENT,CH RTN(Quick View)	Yes
			Menu > / FAV Up	Yes
			Menu < / FAV Down	Yes
			Menu Up	Yes
			Menu Down	Yes
			Mute	Yes
			PIC SIZE (16:9)	Yes
			Sleep	Yes
			Exit	Yes
			Light	No
		Multi Brand Keys	TV	Yes
			CBL/SAT	Yes
			VCR	Yes
			DVD	Yes
		(DVD Keys)	Enter	Yes
			DVD Clear	Yes
			Top MENU	Yes
		(TV / DVD Keys)	RECALL(Call) / (Display)	Yes
			Menu/Enter / DVD MENU	Yes
		(DVD / VCR Keys)	Pause/Still	Yes
			FF	Yes
			Rew	Yes
			Play	Yes
			Stop	Yes
			<</Skip / Search Forward	Yes
			>>/Skip / Search Forward	Yes
		(VCR Keys)	Rec	Yes
			TV/VCR	Yes

GENERAL SPECIFICATIONS

G-11	**Features**	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		Cable(CATV)		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip(Analog & Digital)		Yes
			Type	USA,Orion Type
		BBE		No
		Auto Search		No
		CH Allocation		No
		SAP		Yes
		Just Clock Function		No
		CH Label		Yes
		VM Circuit		Yes
		Full OSD		No
		Premiere		No
		Comb Filter		Yes
				3 Lines
		Auto CH Memory		Yes
		Hotel Lock		No
		Closed Caption(Analog & Digital)		Yes
		CC Advance		Yes
		Stable Sound		Yes
		FBT Leak Test Protect		Yes
		CH Lock		Yes
		Video Lock		Yes
		Game Timer (Max Time:120 Min)		Yes
		Energy Star		No
		Favorite CH		Yes
		Surround		Yes
		Picture Size		Yes
		Tone Control		Yes
		Video Label		No
		Variable Audio Out		No
		Front Panel Lock		Yes
		QAM		Yes
		Digital Out	Dolby Digital	Yes
			MPEG	No
			PCM	Yes
			DTS	No
		Zoom		Yes
G-12	**Accessories**	Owner's Manual	Language	English/Spanish
			W/ Warranty	Yes
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	
			Terminal	
		Loop Antenna		No
			Terminal	-
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Station List		No
		Important Safety Instruction		No
		Dew/AHC Caution Sheet		No
		AC Plug Adapter		No
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM-4 x 2
			OEM Brand	No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		Yes
		PTB Sheet		No
		ESP Card		No
		300 ohm to 75 ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-13	**Interface**	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	Yes(RED)
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input = VIDEO2	RCA
				Audio Input = VIDEO2	RCA x 2 (L/MONO,R)
				Other Terminal	No
			Rear	Video Input(Rear1) = VIDEO1	RCA
				Video Input(Rear2)	No
				Audio Input(Rear1) = VIDEO1	RCA x 2 (L/MONO,R)
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	RCA x 2 (L/MONO,R)
				S Input	Yes
				Color Stream Input (w/ Analog Audio L/R)	RCA x 5
				Digital Ausio Out	Coaxial x 1
				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)	774 x 572 x 687
G-15	**Weight**			Net (Approx.)	62.0 kg (136.7lbs)
				Gross (Approx.)	70.5 kg (155.4lbs)
G-16	**Carton**		Master Carton		No
				Content	---- Sets
				Material	-- /--
				Dimensions W x D x H(mm)	-- x -- x --
				Description of Origin	No
			Gift Box	Material	Double/Brown
				Dimensions W x D x H(mm)	917 x 766 x 838
				Design	As per Buyer's
				Description of Origin	No(Assembled in U.S.A.)
			Drop Test		Natural Dropping At 1 Corner / 2 Edges / 4 Surfaces
				Height (cm)	40 (ORION SPEC:25)
			Container Stuffing		72 Sets/40' container
G-17	**Cabinet Material**		Cabinet	Cabinet Front	PS 94V0 DECABROM
				Cabinet Rear	PS 94V0 NON-DECABROM
			PCB	Non-Halogen Demand	No
				Eyelet Demand	Yes
G-18	**Environment**		Environmental standard requirement (by buyer)		Green procurement of Toshiba
			Pb-free		Phase3(Phase3A)

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

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

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

REMOVAL

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

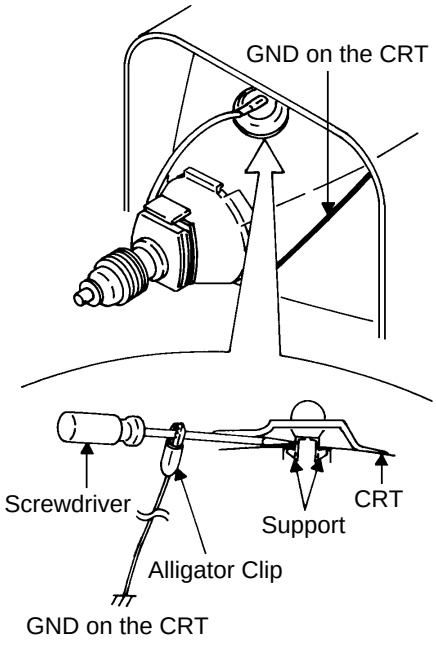


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

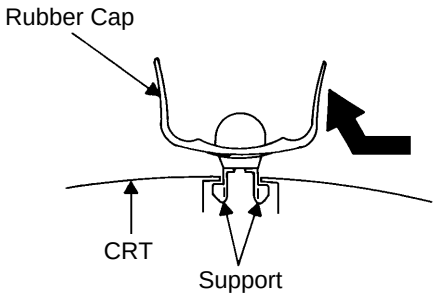


Fig. 1-2

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

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

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

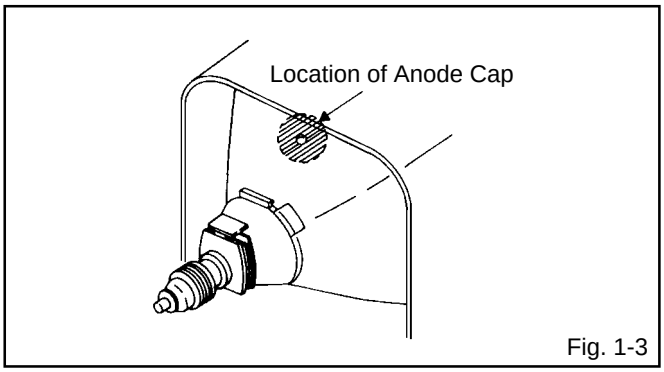


Fig. 1-3

NOTE

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

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**

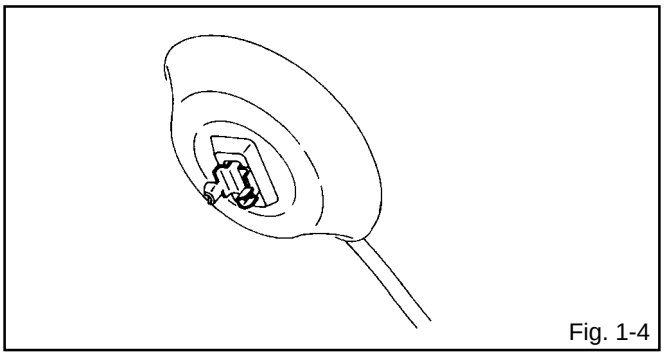


Fig. 1-4

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

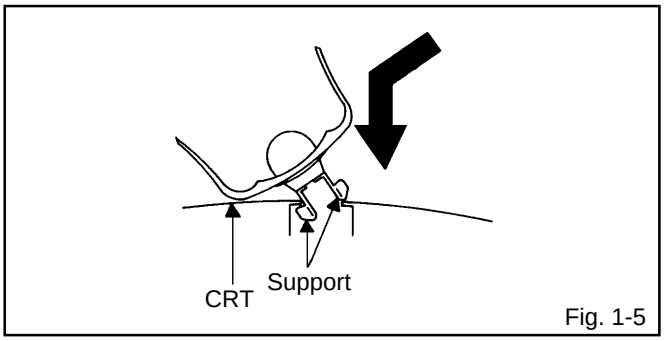


Fig. 1-5

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

DISASSEMBLY INSTRUCTIONS

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   NOTE

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

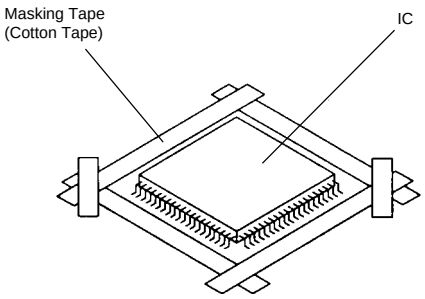


Fig. 2-1

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

   NOTE

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

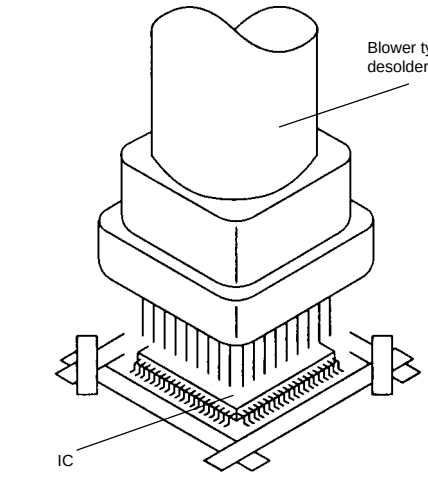


Fig. 2-2

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

   NOTE

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

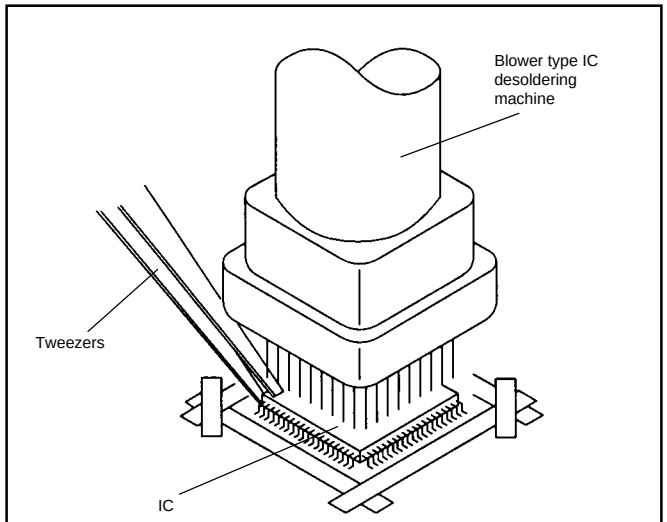


Fig. 2-3

4. Peel off the Masking Tape.

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

   NOTE

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

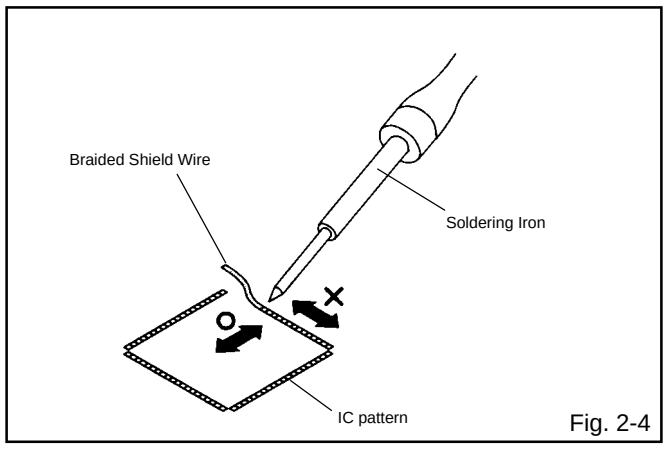


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

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

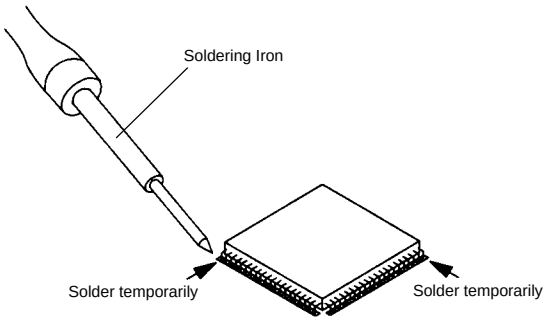


Fig. 2-5

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

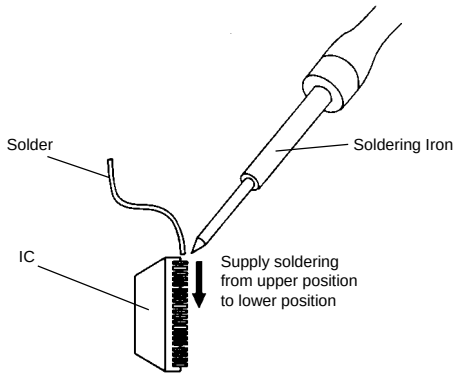


Fig. 2-6

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

   NOTE

   Do not absorb the solder to excess.

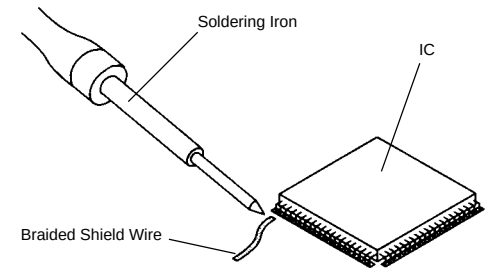


Fig. 2-7

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

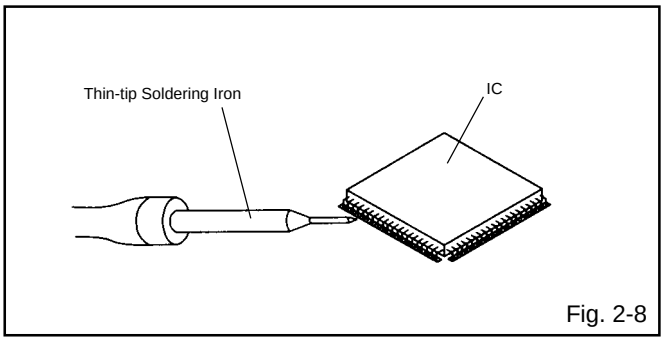


Fig. 2-8

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

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be 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 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of factory data. NOTE: Do not use this for normal servicing. If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	8	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	6	Check for the firmware version. 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).

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS, MICON VERSION AND DIGITAL TV MICON FIRMWARE VERSION

Initial total of MEMORY IC, POWER ON total hours, MICON VERSION and Digital TV MICON Firmware VERSION 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".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(8)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, power on total hours, micon version and Digital TV MICON Firmware version, turn off the power.

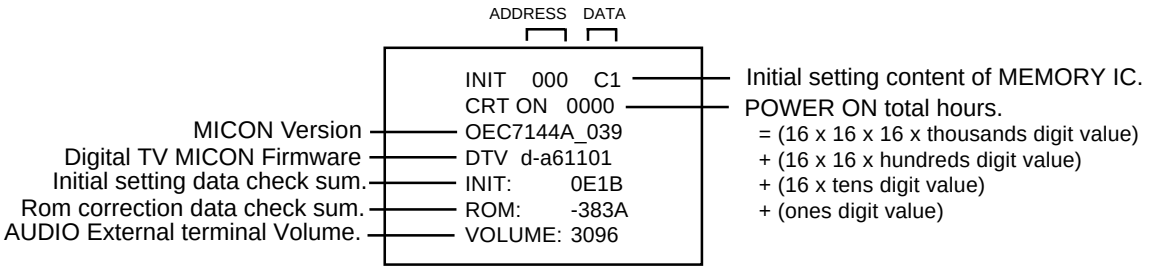


FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

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

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	C1	A6	0D	07	32	08	02	0A	00	80	04	05	30	36	03	00
10	68	00	50	60	88	88	16	00	00	00	F0	06	70	05	AA	00
20	89	00	00	73	00	8A	00	00	00	00	00	00	00	00	00	00
30	30	80	07	22	03	03	00	00	01	01	D0	01	91	13	00	00
40	00	00	00	00	00	00	00	80	80	80	00	2F	40	00	00	00
50	00	00	00	00	19	00	0C	00	48	08	12	12	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	01	01	01	01
70	00	00	00	14	07	00	63	2F	00	00	00	00	00	00	00	00
80	72	76	7A	82	86	8A	8E	92	96	9A	9E	A2	A6	AA	AE	B2
90	B5	B8	BB	BE	C0	C2	C4	C6	C6	C7	C7	C8	C9	CA	CB	CC
A0	CD	CE	CF	D0	D1	D1	D2	D2	D3	D4	D5	D6	D6	D7	D8	D9
B0	DA	DB	DC	DD	DE	DF	E0	E0	E1	E1	E1	E2	E2	E2	E3	E3
C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
F0	00	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

CONFIRMATION OF INITIAL DATA

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 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
6. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

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

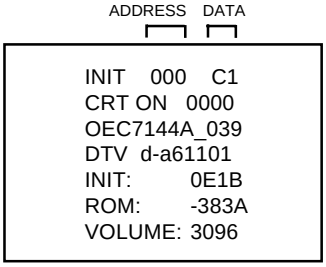
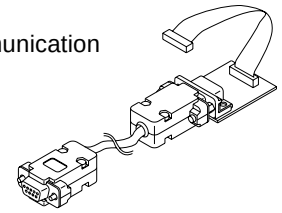
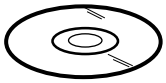
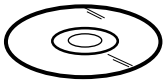


FIG. 1

RE-WRITE FOR DIGITAL SOFT FIRMWARE

JG198 Serial Communication Change JIG 	JG199 Flash UP-Date Soft Disc 	JG176 USA SD DTV ROM DISC 

Ref. No.	Part No.	Parts Name	Remarks
JG198	APJG198000	Serial Communication Change JIG	Connect the set to personal computer
JG199	APJG199000	Flash UP-Date Soft Disc	Up-Date of the Firmware
JG176	APJG176093	USA SD DTV ROM DISC	Up-Date of the Firmware

1. Confirm that the AC cord is plugged out.
2. Using the Serial Communication Change JIG **(JG198)**, connect the set to personal computer. **(Refer to Fig. 1)**
   NOTE: It is possible to write only with the personal computer of WINDOWS.

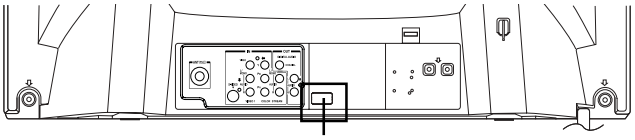


Fig. 1

3. Using the Flash UP-Date Soft Disc **(JG199)** and USA SD DTV ROM DISC **(JG176)**, please Re-write the DIGITAL SOFT FIRMWARE.
   The operating manual for Re-writing is included in Flash UP-Date Soft Disc **(JG199)**.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

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 with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease,remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Multi-sound Generator
4. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the UP/ DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

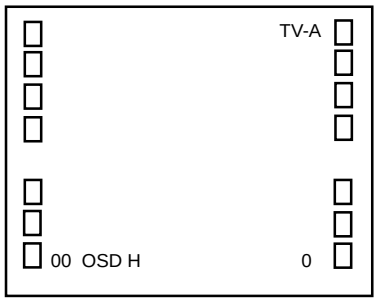


Fig. 1-1

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.
4. To display the adjustment screen for AV, CS and DIGITAL mode, press the TV/VIDEO button on the remote control to set to the AV, CS and DIGITAL mode. Press the VOL.DOWN button on the set and the channel **(9)** on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	20	CONT.CENT
01	OSD C	21	CONT.MAX
02	CUT OFF	22	CONT.MIN
03	H.POSI	23	COL.CENT
04	H BLK L	24	COL.MAX
05	H BLK R	25	COL.MIN
06	V. SIZE	26	TINT CENT
07	V POSI	27	SHARP.CENT
08	V.LIN	28	SHARP.MAX
09	VS CORR	29	SHARP.MIN
10	V COMP	30	SUB BIAS
11	R.BIAS	31	H.SIZE
12	G.BIAS	32	PARABOLA
13	B.BIAS	33	TRAPEZIUM
14	R.DRV	34	COR TOP
15	G.DRV	35	COR BTM
16	B.DRV	36	TEST STEREO
17	BRI.CENT	37	TEST AUDIO
18	BRI.MAX	38	H FREQ
19	BRI.MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set in AV MODE without signal.
2. Connect the digital voltmeter to the **TP003**.
3. Adjust the **VR502** until the digital voltmeter is 130 ± 0.5V.

2-2: CUT OFF

1. Place the set in Aging Test for more than 15 minutes.
2. Place the set in AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of Fig. 1-1 and press the channel button **(02)** on the remote control to select “CUT OFF”.
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: FOCUS

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

2-4: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set in 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 **(11)** on the remote control to select "R.BIAS".
5. Using the CH. 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 CH. 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 achieved.

ELECTRICAL ADJUSTMENTS

2-5: BRIGHT CENT

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRI CENT".
4. Press the UP/DOWN button on the remote control until the white 10% is starting to be visible.
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.
7. Receive the monoscope pattern.
8. Press the TV/VIDEO button on the remote control to set to the CS mode.Then perform the above adjustments 2~4.

2-6: CONTRAST MAX

1. Receive an over 70dB color bar pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(21)** on the remote control to select "CONT.MAX".
4. Press the UP/DOWN button on the remote control until the contrast step No. becomes "87".
5. Receive a broadcast and check if the picture is normal.
6. Receive the color bar pattern. (Audio Video Input)
7. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2 and 3.
8. Press the UP/DOWN button on the remote control until the contrast step No. becomes "89".
9. Receive a broadcast and check if the picture is normal.
10. Receive the monoscope pattern.
11. Press the TV/VIDEO button on the remote control to set to the CS mode.Then perform the above adjustments 2 and 3.
12. Press the UP/DOWN button on the remote control until the contrast step No. becomes "89".
13. Receive a broadcast and check if the picture is normal.

2-7: TINT

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the oscilloscope to **TP806**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(26)** on the remote control to select "TINT".
5. Press the UP/DOWN button on the remote control until the section A becomes as straight line. **(Refer to Fig. 2-1)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.
8. Receive the color bar pattern.
9. Press the TV/VIDEO button on the remote control to set to the CS mode.Then perform the above adjustments 2~5.
10. Receive the digital color bar pattern.
11. Press the TV/VIDEO button on the remote control to set to the DIGITAL mode.Then perform the above adjustments 2~5.

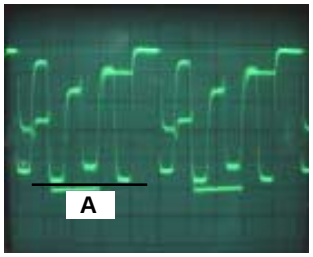


Fig. 2-1

2-8: COLOR CENT

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP804**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(23)** on the remote control to select "COL.CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the UP/DOWN button on the remote control until the red color level is adjusted to 120 ± 10% of the white level. **(Refer to Fig. 2-2)**
7. Receive the video color bar pattern. (Audio Video Input)
8. Press the AV mode. Then perform the above adjustments 2~6.
9. Receive the video color bar pattern.
10. Press the TV/VIDEO button on the remote control to set to the CS mode.Then perform the above adjustments 2~6.
11. Receive the video color bar pattern.
12. Press the TV/VIDEO button on the remote control to set to the DIGITAL mode.Then perform the above adjustments 2~6.

ELECTRICAL ADJUSTMENTS

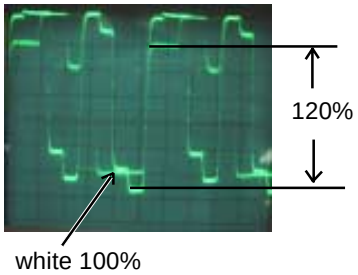


Fig. 2-2

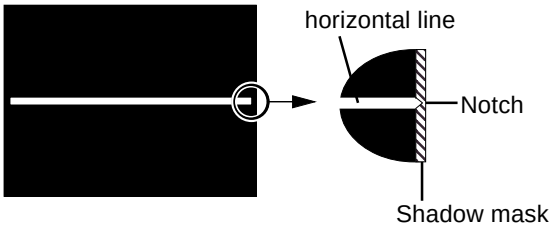


Fig. 2-3

2-9: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select “H.POSIE”.
4. Press the UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-10: HORIZONTAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(31)** on the remote control to select "H.SIZE".
4. Press the LEFT/RIGHT button on the remote control until the SHIFT quantity of the OVER SCAN on the right and left becomes 10± 4%.

2-11: VERTICAL LINEARITY

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness, contrast, to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "V.LIN".
4. Press the UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-12: VERTICAL POSITION

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

2-13: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select “V. SIZE”.
4. Press the LEFT/RIGHT button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 9 ± 2%.

2-14: TRAPEZIUM

1. Receive the crosshatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(33)** on the remote control to select “TRAPEZIUM”.
4. Press the UP/DOWN button on the remote control until the both ends of the right and left vertical lines of the 4th length lines screen become parallel.

2-15: PALABOLA

1. Receive the crosshatch pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(32)** on the remote control to select “PARABOLA”.
4. Press the UP/DOWN button on the remote control, so that the line becomes straight from the outside of the right and left.

2-16: COR TOP/BTM

1. Receive the crosshatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(34)** on the remote control to select “COR. TOP”.
4. Press the UP/DOWN button on the remote control until
5. the both ends of the vertical lines become parallel.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select “COR. BTM”.
7. Press the UP/DOWN button on the remote control until both ends of the vertical lines of the screen become parallel.

ELECTRICAL ADJUSTMENTS

2-17: OSD POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "OSD H".
4. Press the UP/DOWN button on the remote control until the difference of A and B becomes minimum.
   (Refer to Fig. 2-4)

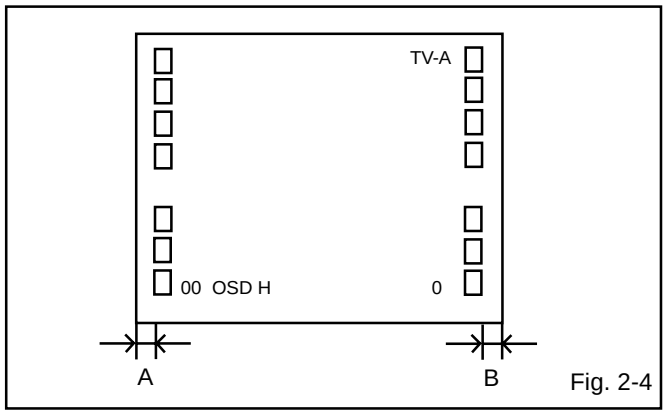


Fig. 2-4

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

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

NO.	FUNCTION	RF	AV	CS	DIGITAL
01	OSD C	03	03	03	03
04	H BLK L	05	05	05	05
05	H BLK R	02	02	02	02
09	VS CORR	13	13	13	13
10	V COMP	01	01	01	01
18	BRI.MAX	80	80	80	80
19	BRI.MIN	20	20	20	20
20	CONT.CENT	60	60	60	60
22	CONT.MIN	30	30	30	30
24	COL.MAX	120	120	120	120
25	COL.MIN	20	20	20	20
27	SHARP.CENT	35	35	35	35
28	SHARP.MAX	50	50	50	50
29	SHARP.MIN	10	10	10	10
30	SUB BIAS	00	00	00	00
36	TEST STEREO	00	00	00	00
37	TEST AUDIO	00	00	00	00
38	H FREQ	07	07	07	07

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 color.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

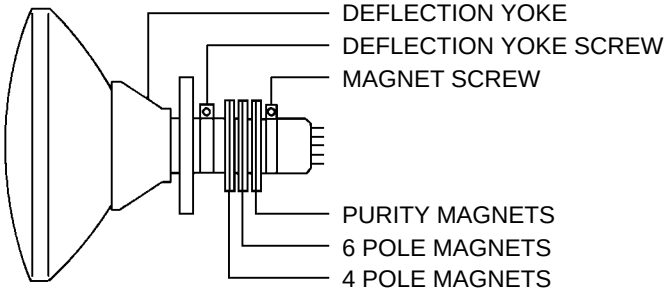


Fig. 3-1

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)**

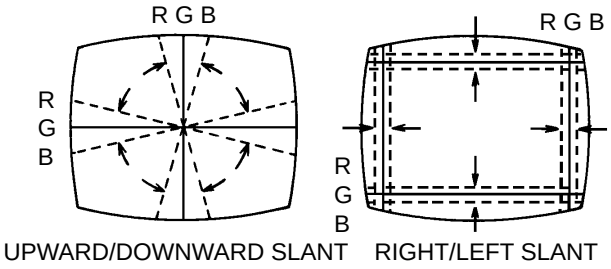
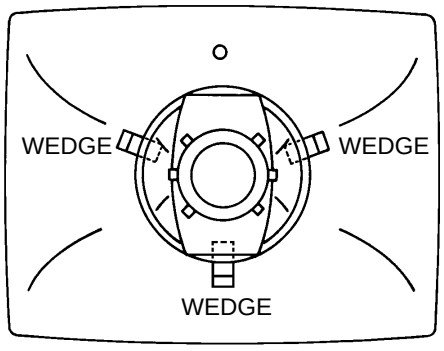


Fig. 3-2-a

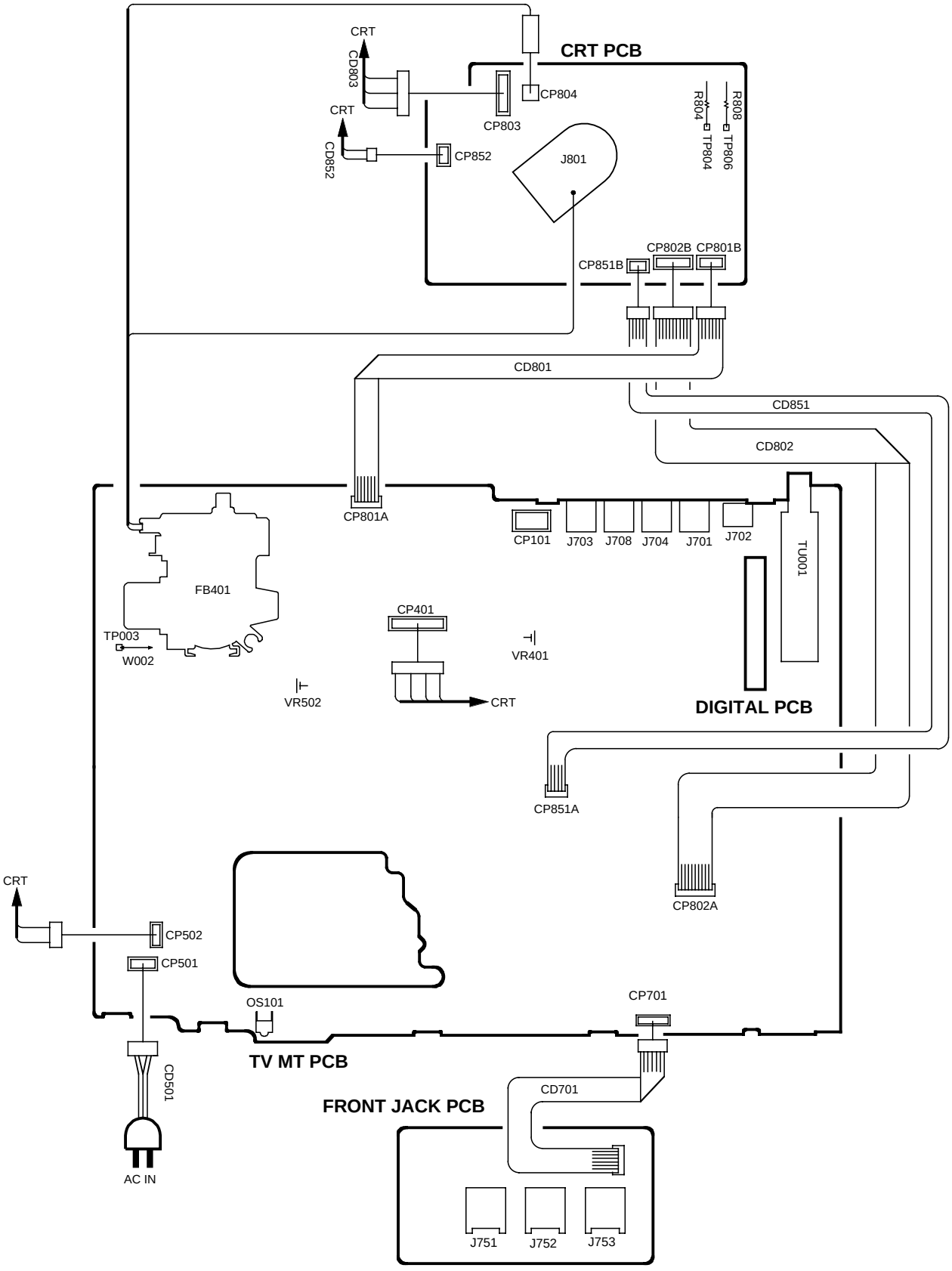


WEDGE POSITION

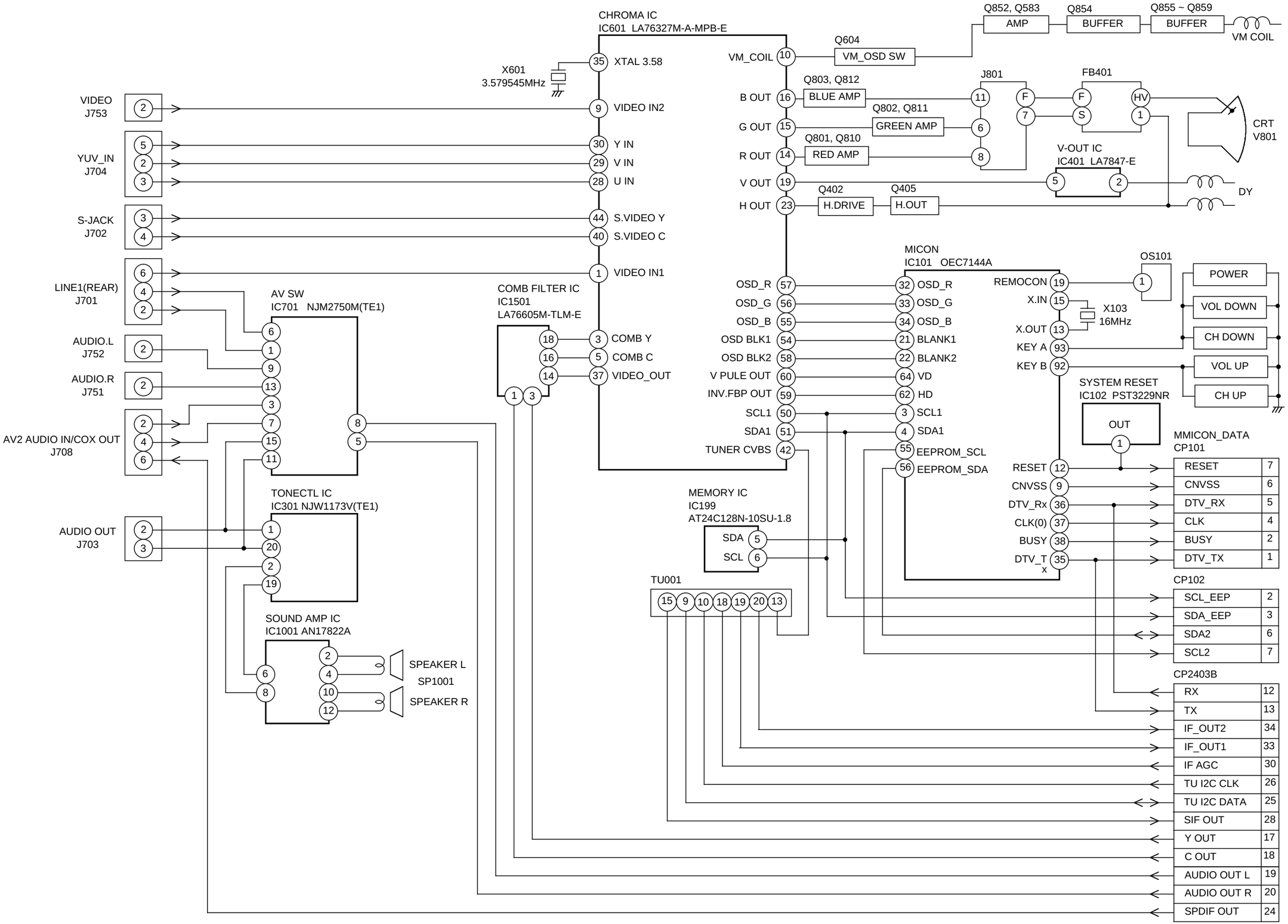
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

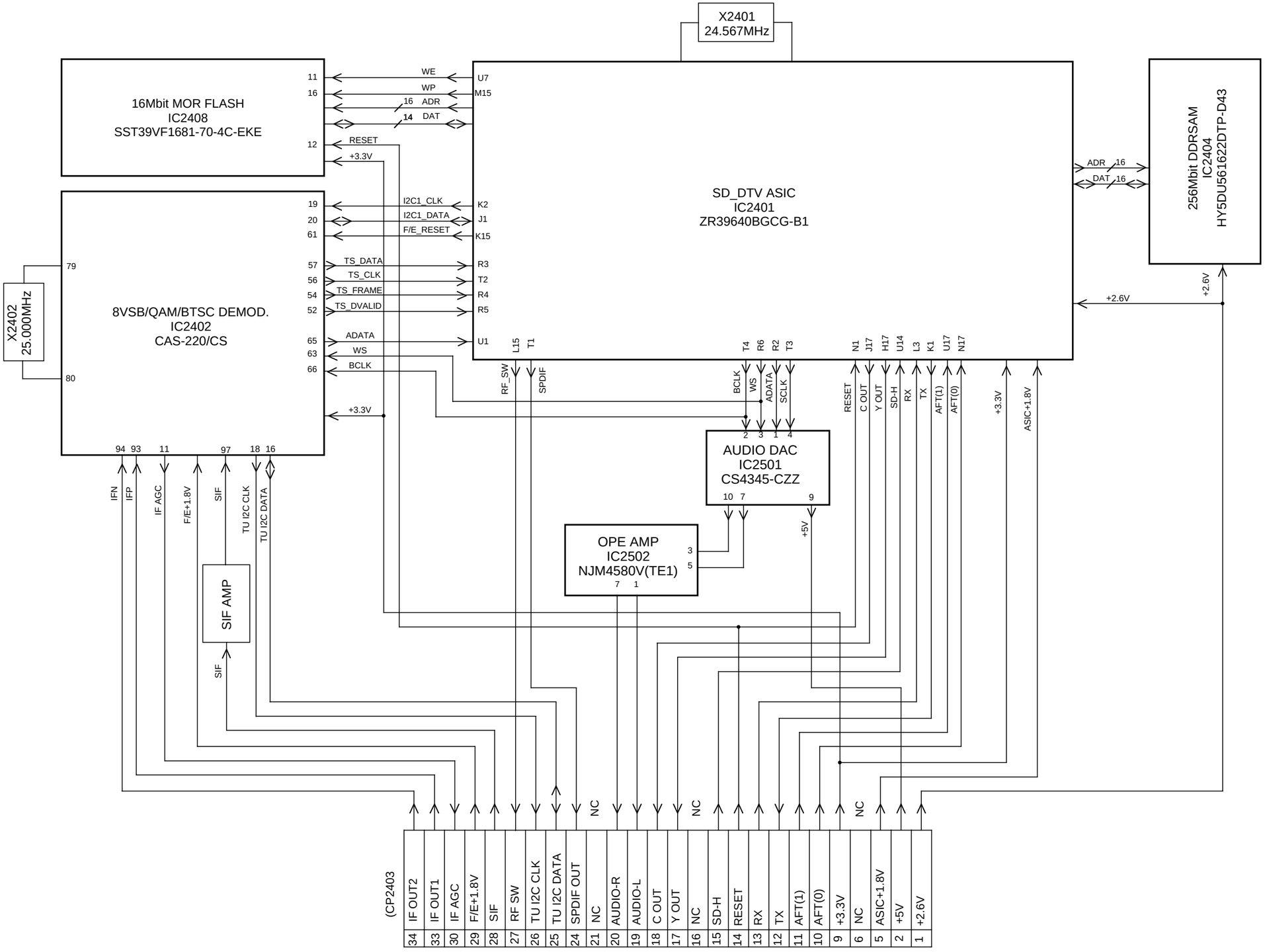
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



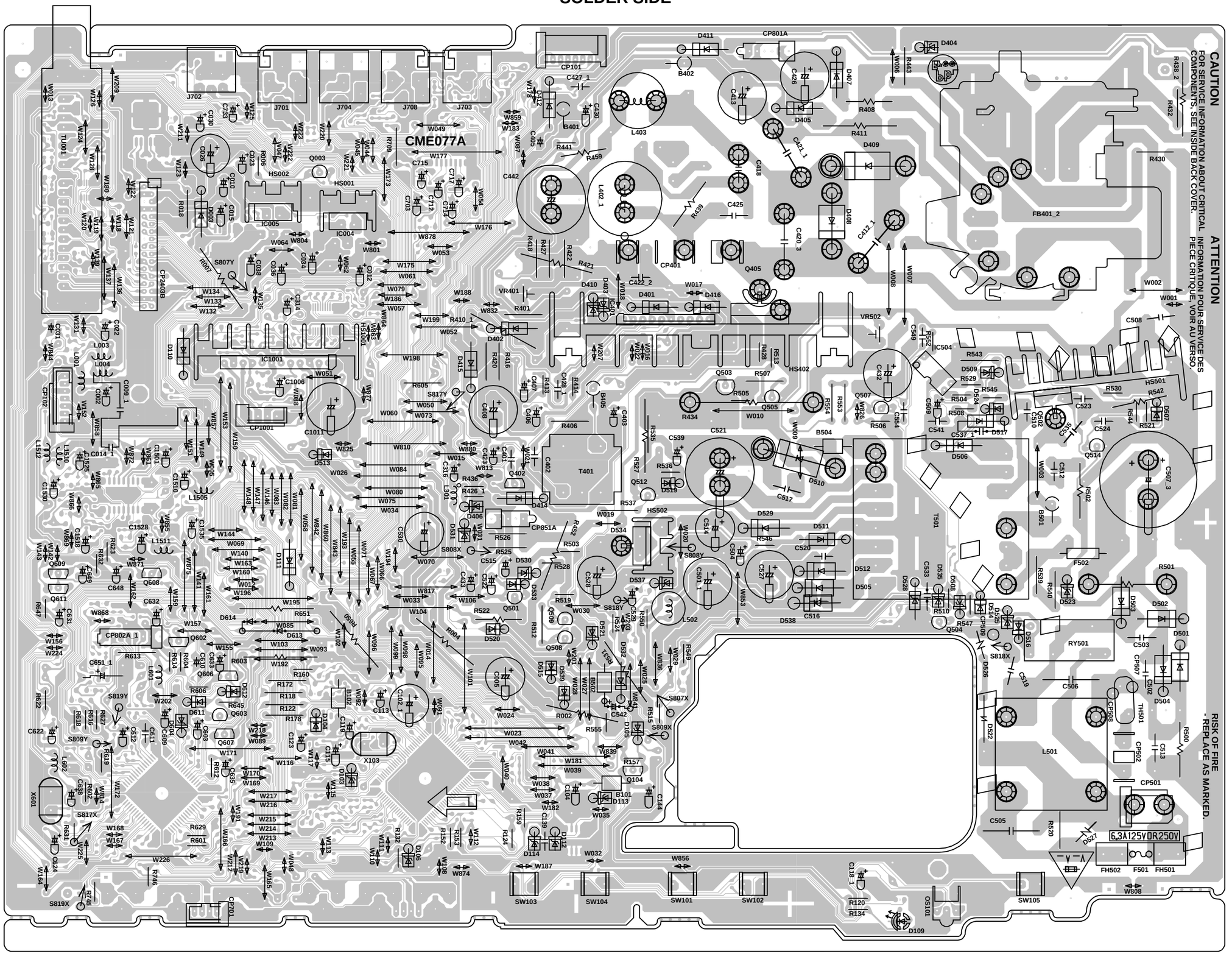
MICON/CHROMA BLOCK DIAGRAM



SD DIGITAL MODULE BLOCK DIAGRAM



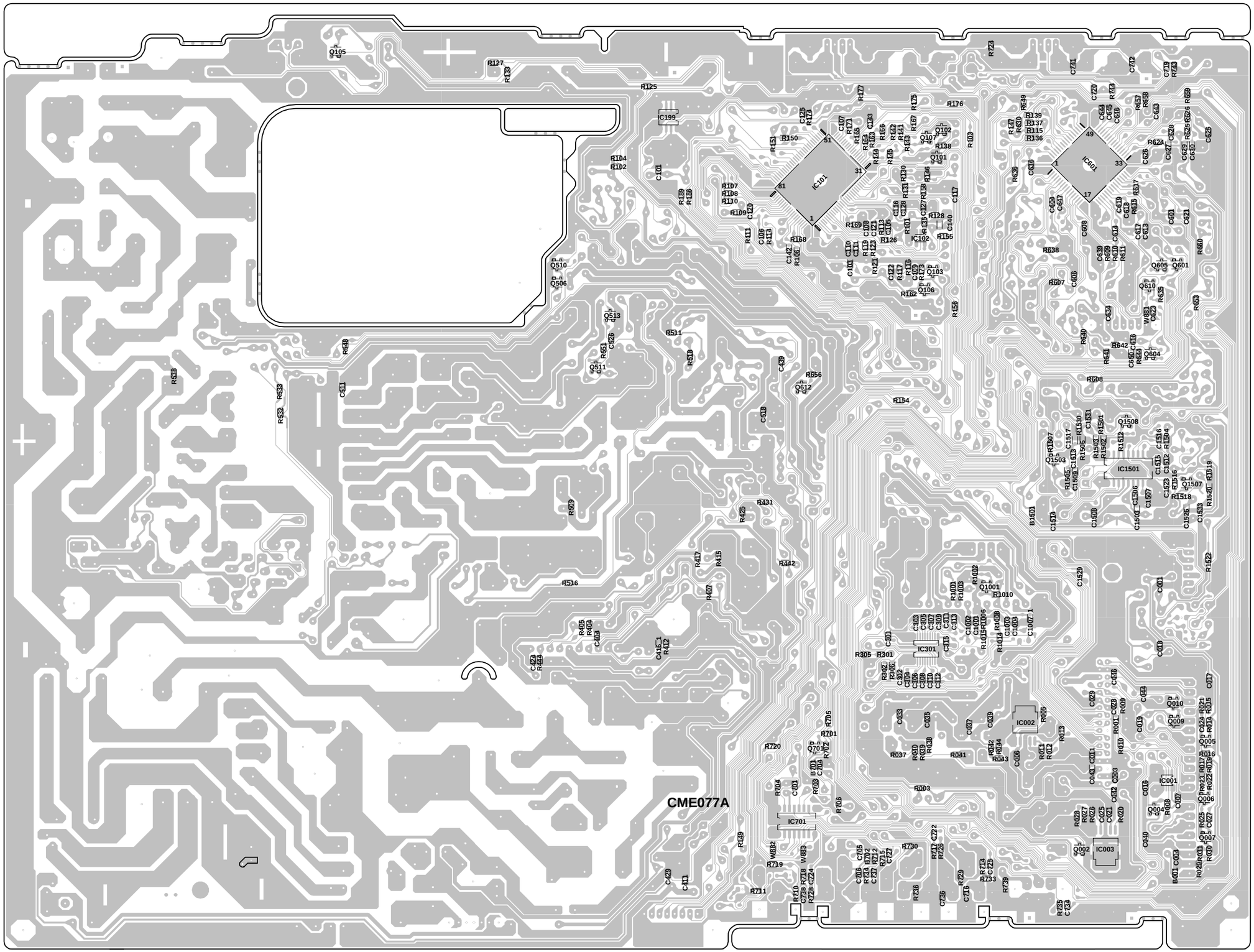
PRINTED CIRCUIT BOARDS
TV MT (INSERTED PARTS)
SOLDER SIDE



F-1

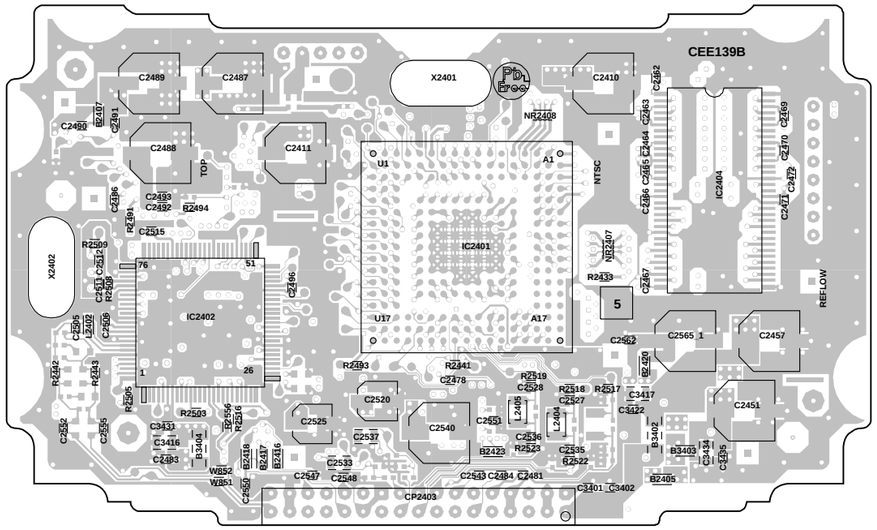
F-2

PRINTED CIRCUIT BOARDS
TV MT (CHIP MOUNTED PARTS)
SOLDER SIDE

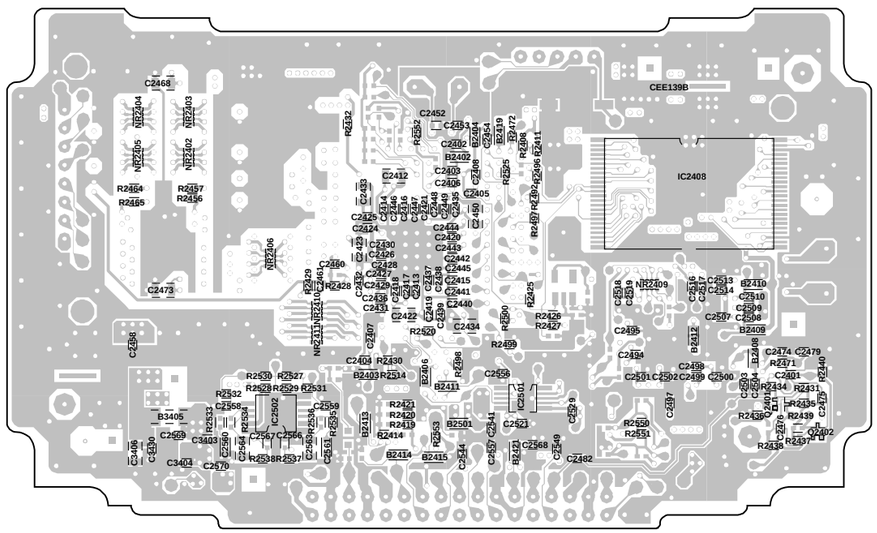


PRINTED CIRCUIT BOARDS

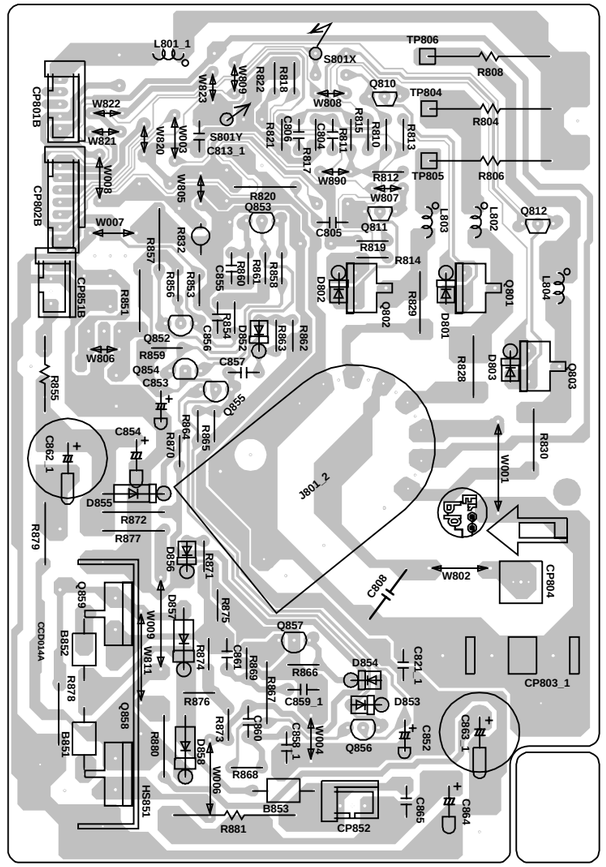
DIGITAL (TOP SIDE)



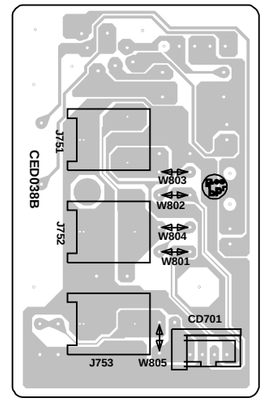
DIGITAL (BOTTOM SIDE)



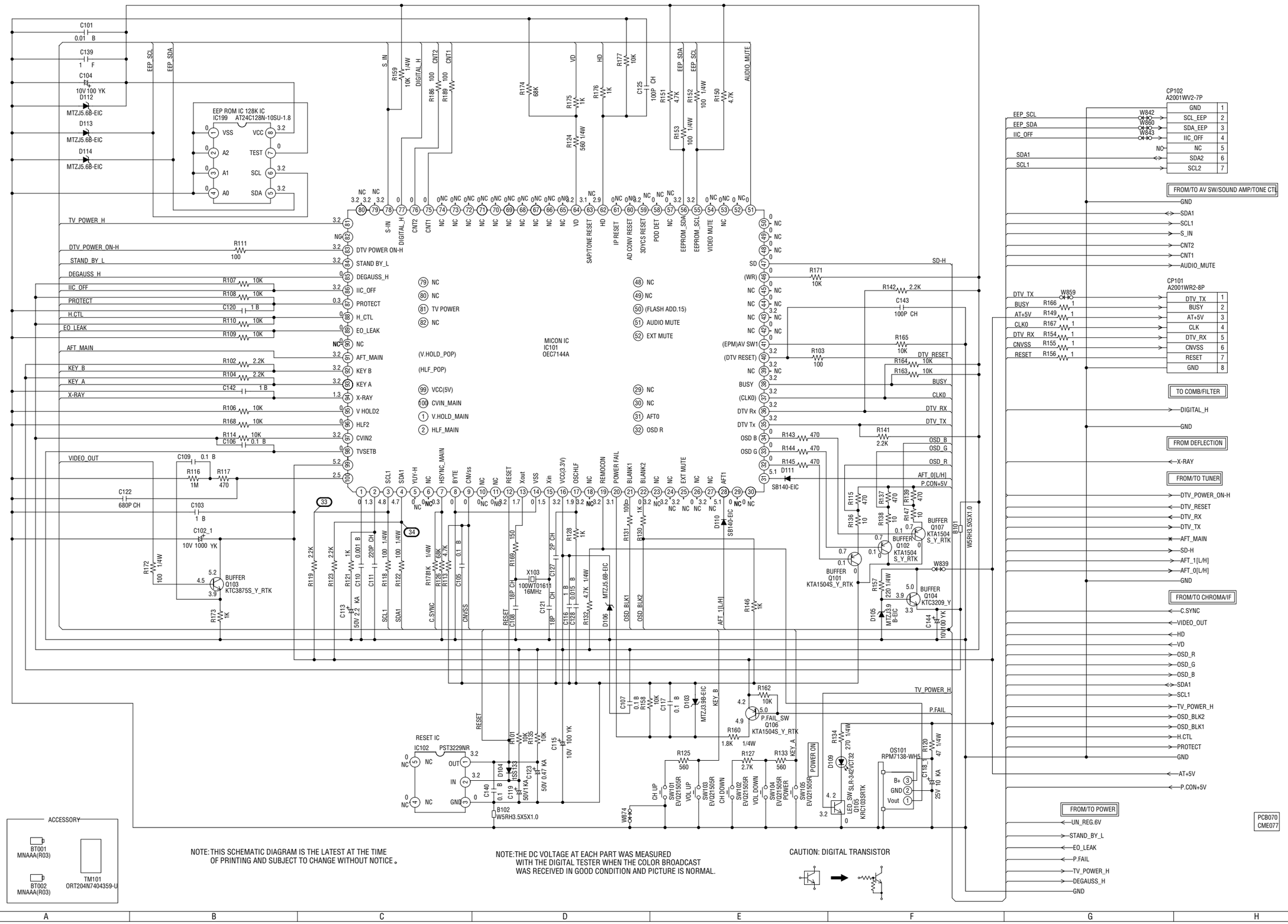
CRT
SOLDER SIDE



FRONT JACK
SOLDER SIDE



MICON SCHEMATIC DIAGRAM (TV MT PCB)

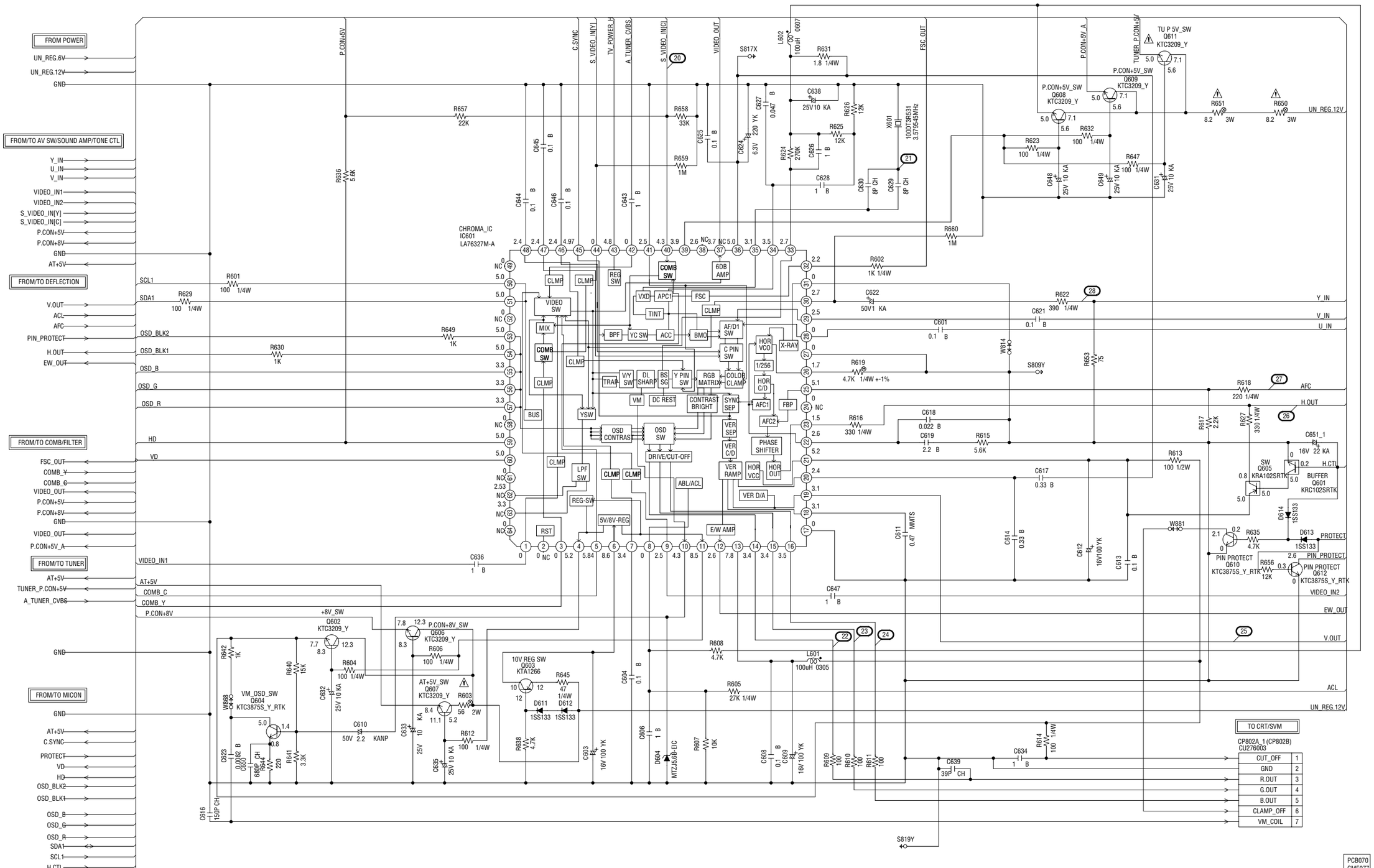


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

CAUTION: DIGITAL TRANSISTOR

CHROMA/IF SCHEMATIC DIAGRAM (TV MT PCB)



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

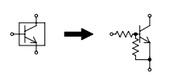
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION 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。

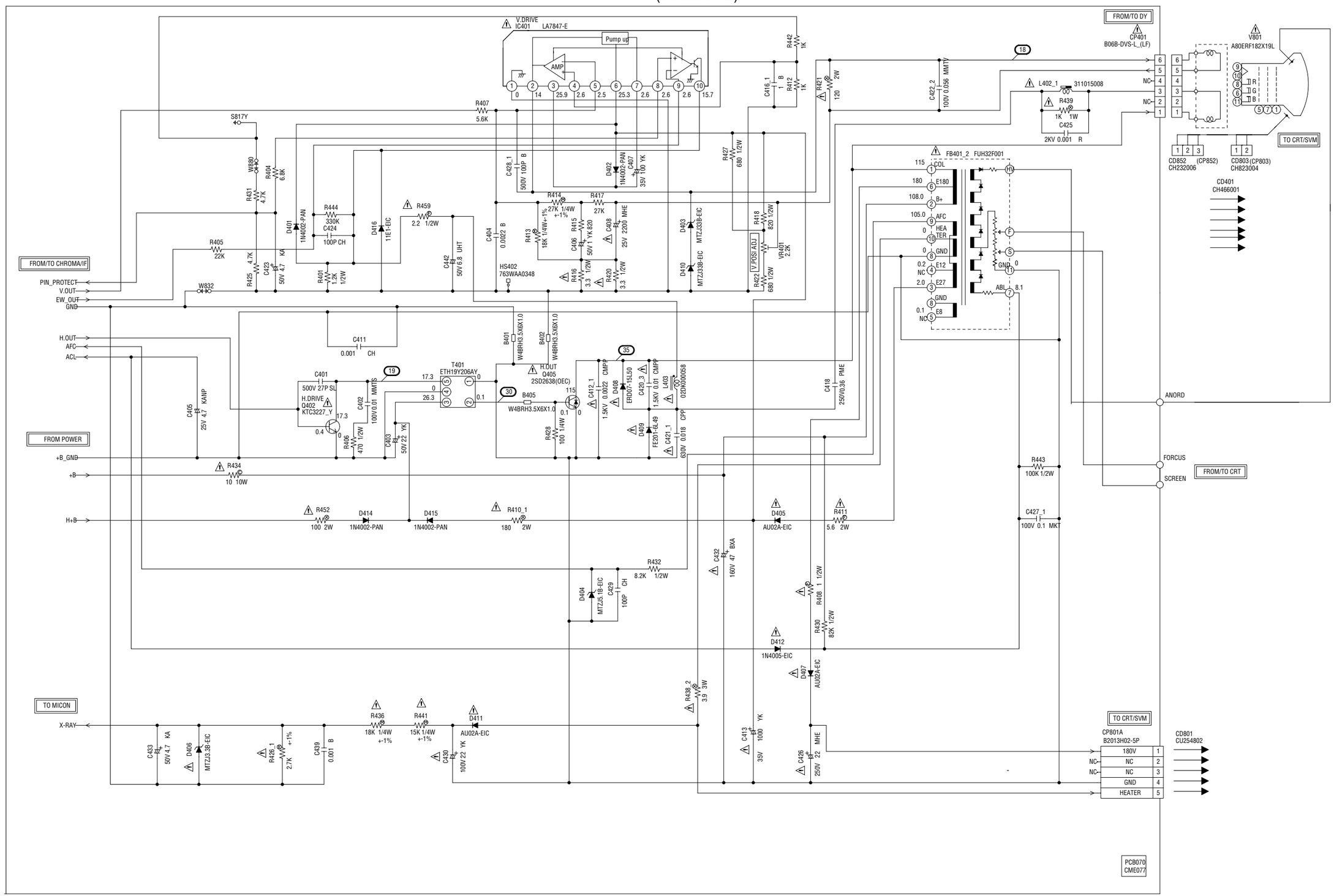
CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR



DEFLECTION SCHEMATIC DIAGRAM

(TV MT PCB)



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

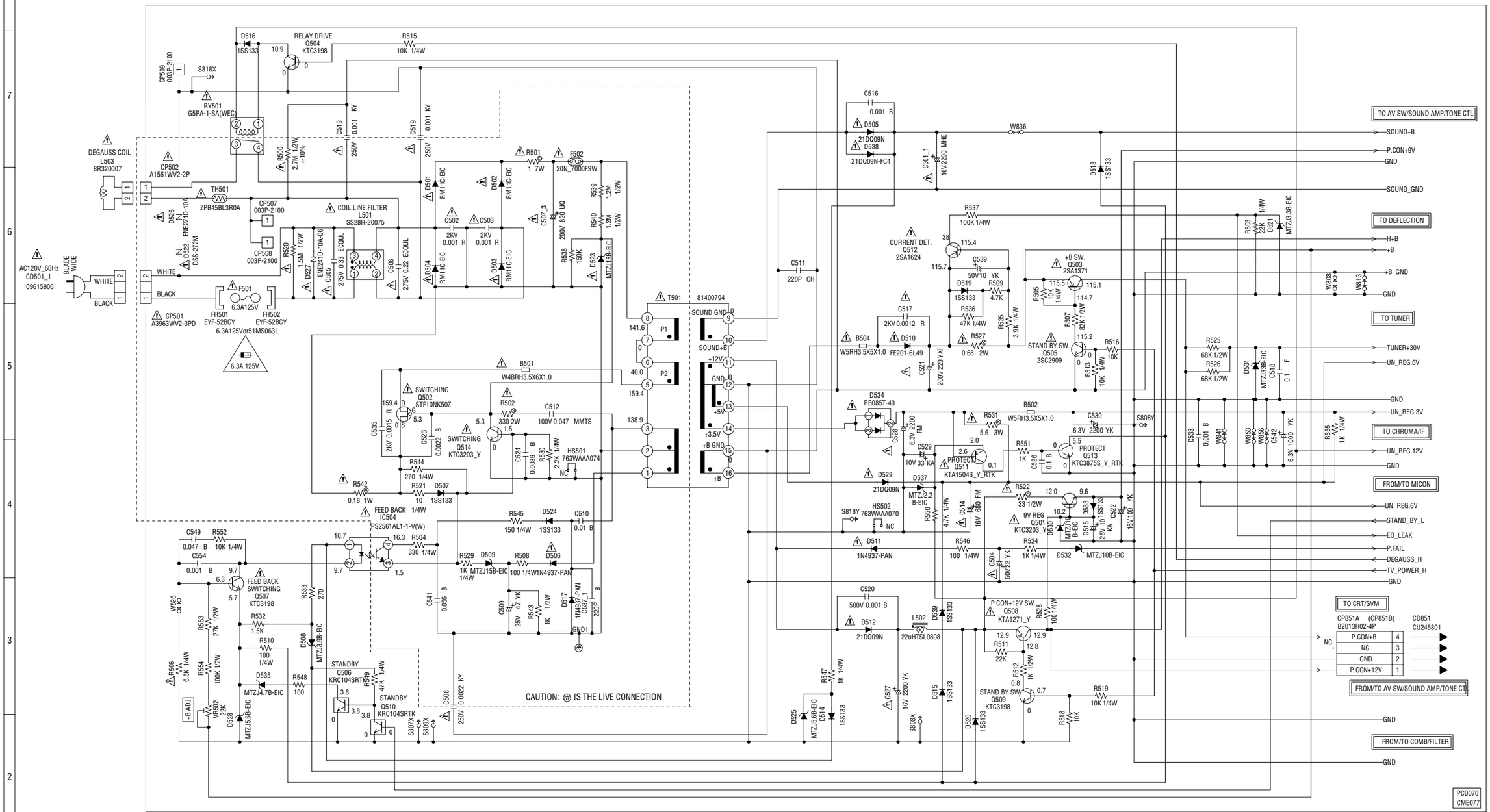
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

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.

POWER SCHEMATIC DIAGRAM

(TV MT PCB)



6.3A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F501)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F501)

CAUTION: F502 ARE MANUFACTURED BY SKYGETE CO.,LTD TYPE 20N

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

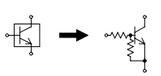
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

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

CAUTION: DIGITAL TRANSISTOR



TUNER SCHEMATIC DIAGRAM
(TV MT PCB)

DIGITAL/ANALOG TUNER W/NTSC_MPX
TU001 ENG36A49KF

TO CHROMA/IF
A_TUNER_CVBS

FRON/TO MICON
AFT_MAIN
DTV_TX
DTV_RX
AFT_0[L/H]
AFT_1[L/H]
SD-H
DTV_POWER_ON-H
DTV_RESET
GND

TO AV SW/SOUND AMP/TONE CTL
SPDIF_OUT
TUNER_AUDIO[L]
TUNER_AUDIO[R]
GND

FROM CHROMA/IF
GND
TUNER_P.CON+5V
AT+5V

FROM POWER
P.CON+9V
UN_REG.3V
UN_REG.6V
TUNER+30V
GND

TO COMB/FILTER
D_Y_OUT
D_C_OUT

FROM/TO AV OUT (CP2403) (CP2438)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
D P.CON+2.6V	D P.CON+5V	GND	GND	AC/IC+1.8V	AUDIO MUTE-L	GND	GND	D.P.CON+3.3V	AFT_0	AFT_1	RX (DTV MAIN)	TX (DTV MAIN)	DTV_RESET	SD-H	V OUT	Y OUT	U OUT	AUDIO OUT L	AUDIO OUT R	D P.CON+12V	GND	GND	SPDIF OUT	TU I2C DATA	TU I2C CLK	RF SW	SIF OUT	F/E 1.8V	IF AGC	GND	GND	IF OUT1	IF OUT2

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

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

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

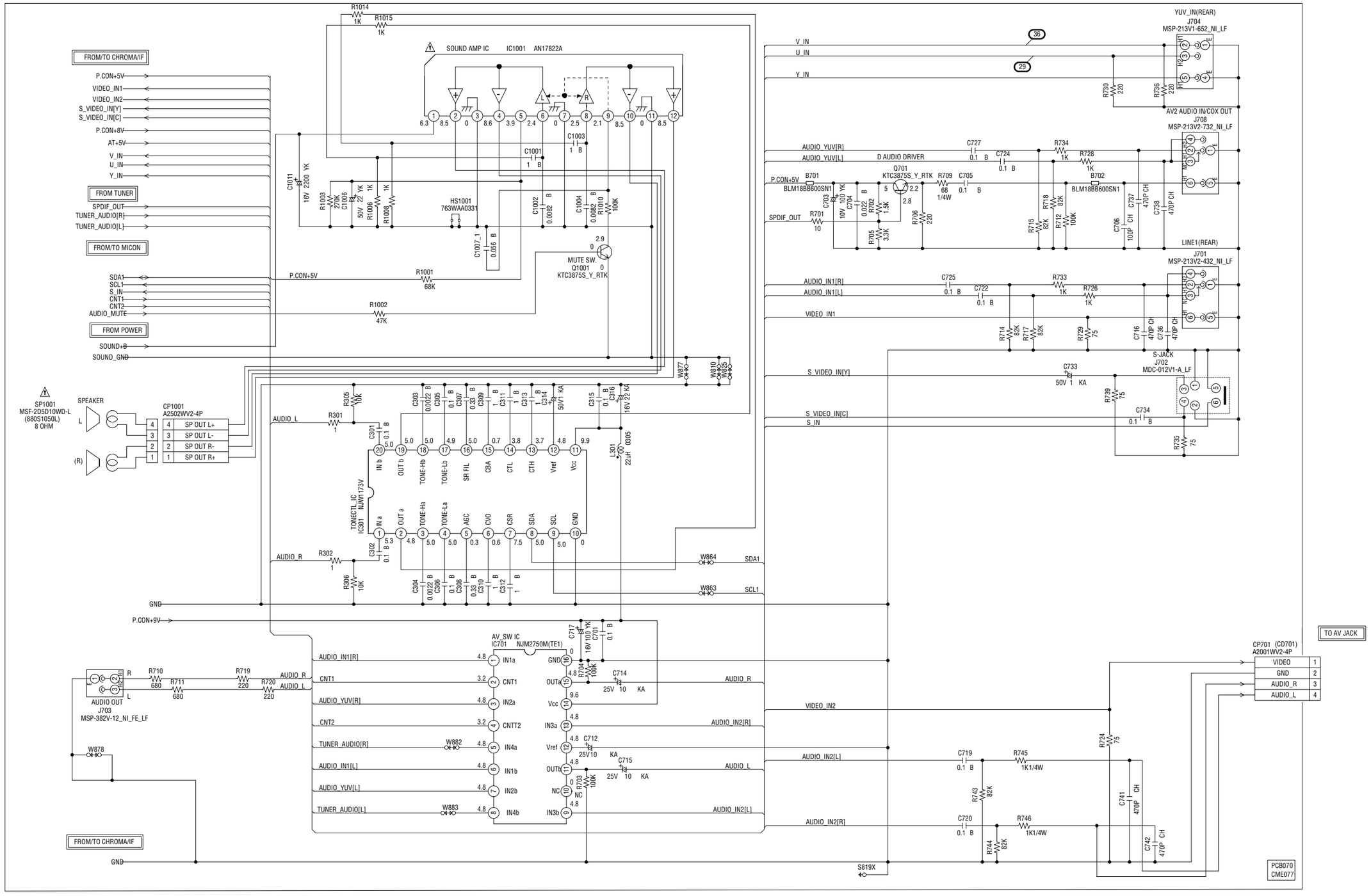
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

PCB070
CME077

AV SW/SOUND AMP/TONE CTL SCHEMATIC DIAGRAM

(TV MT PCB)



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

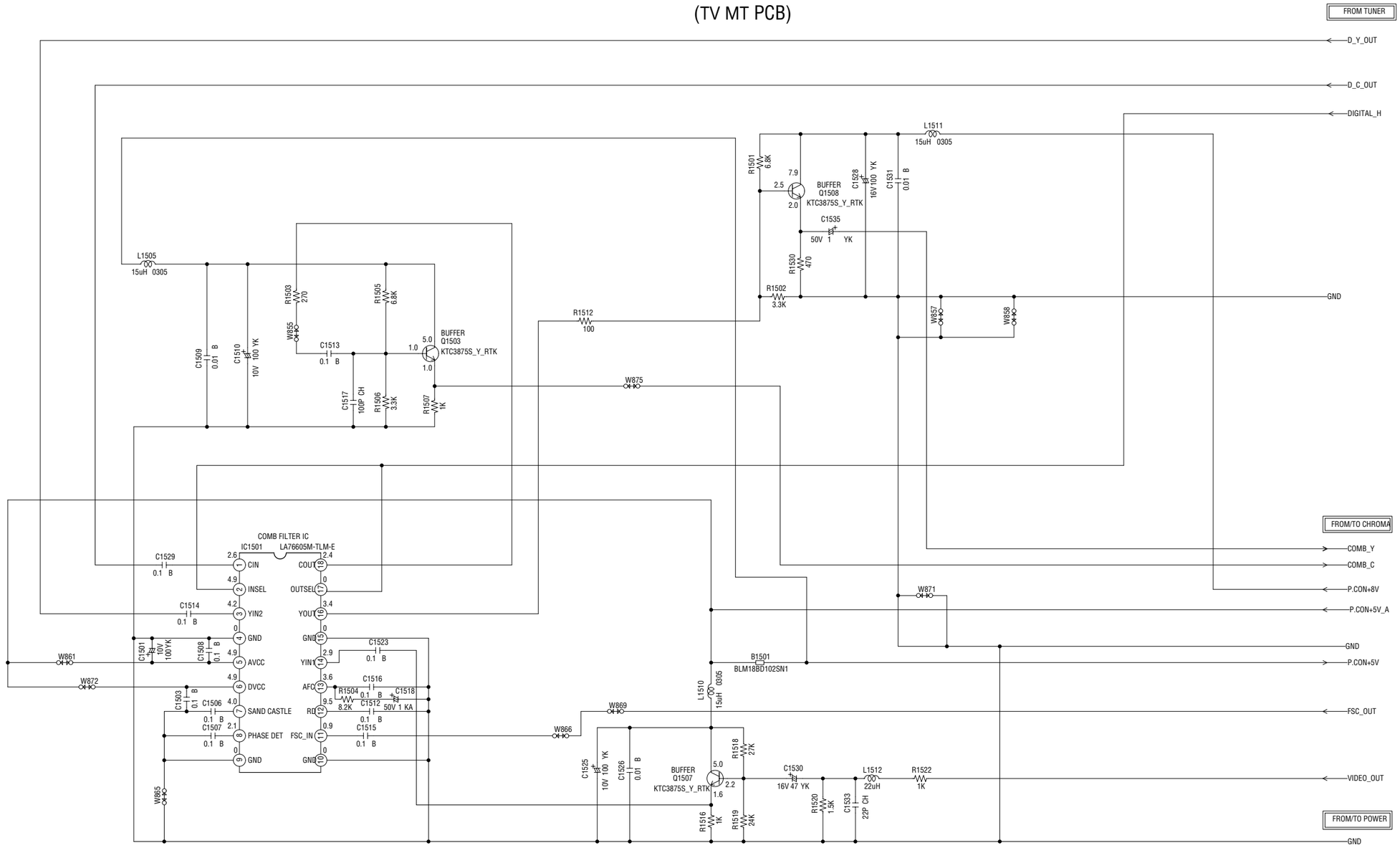
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

COMB/FILTER SCHEMATIC DIAGRAM

(TV MT PCB)



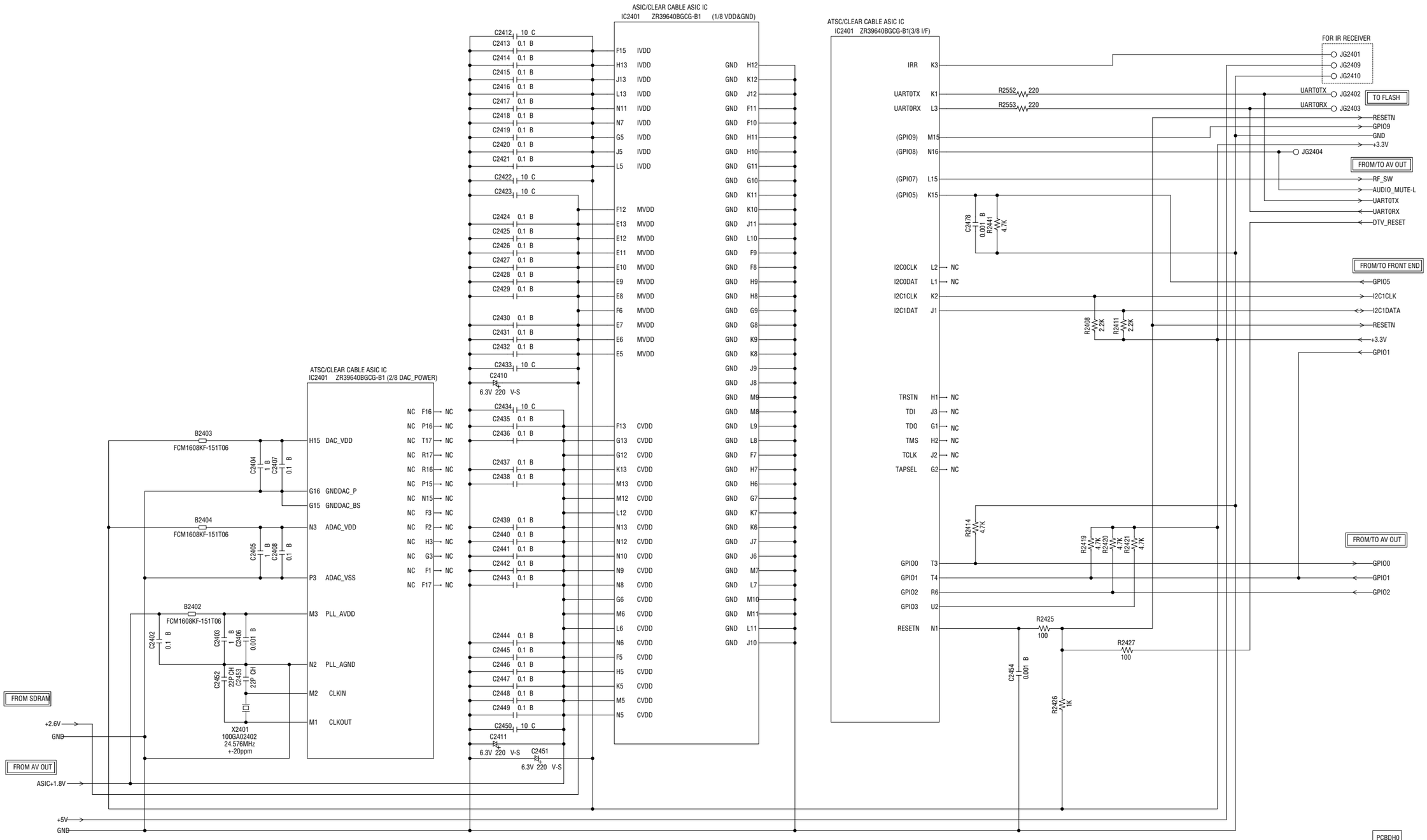
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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.

PCB070
CME077

ASIC SCHEMATIC DIAGRAM

(DIGITAL PCB)

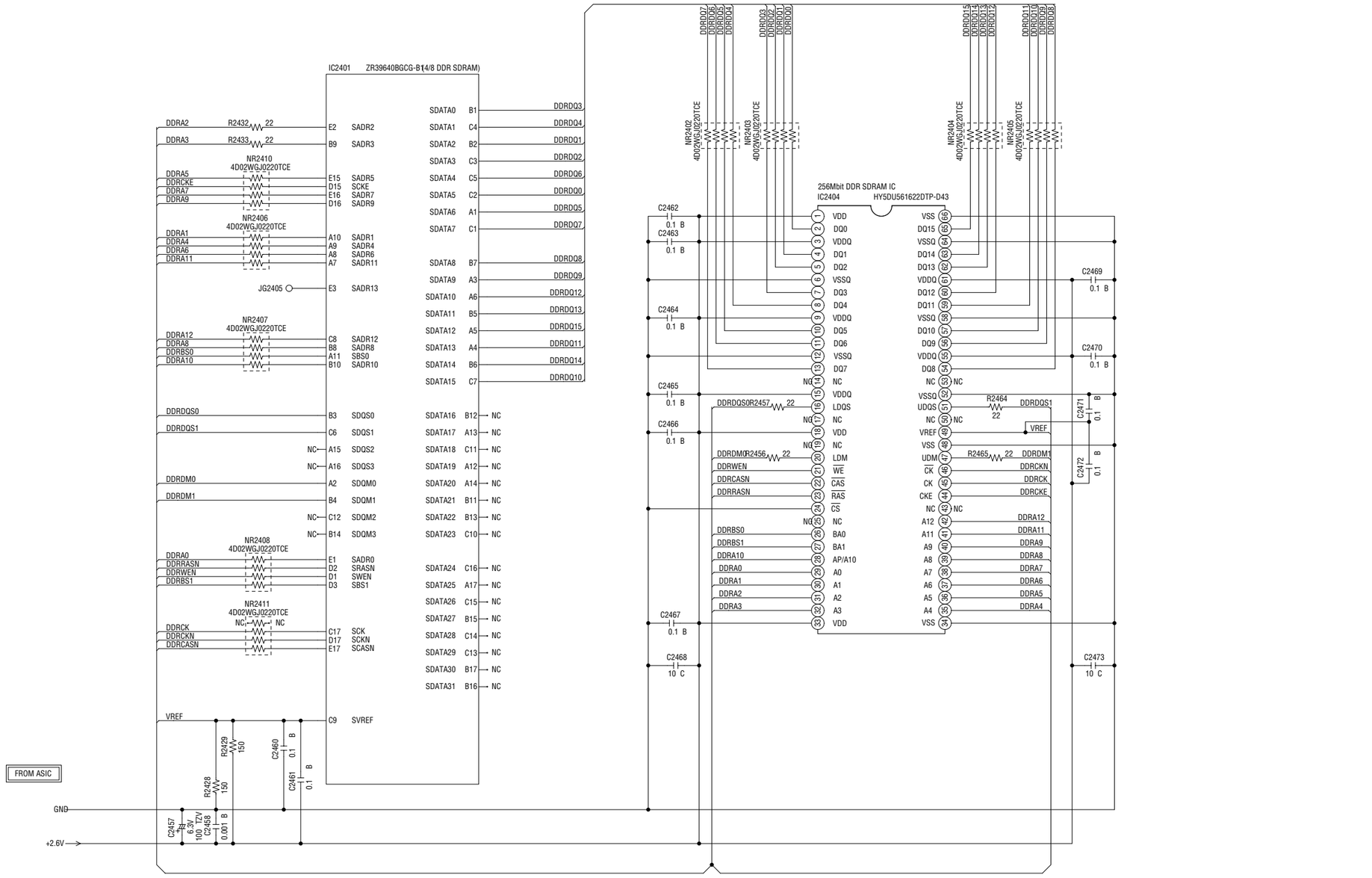


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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.

SDRAM SCHEMATIC DIAGRAM

(DIGITAL PCB)

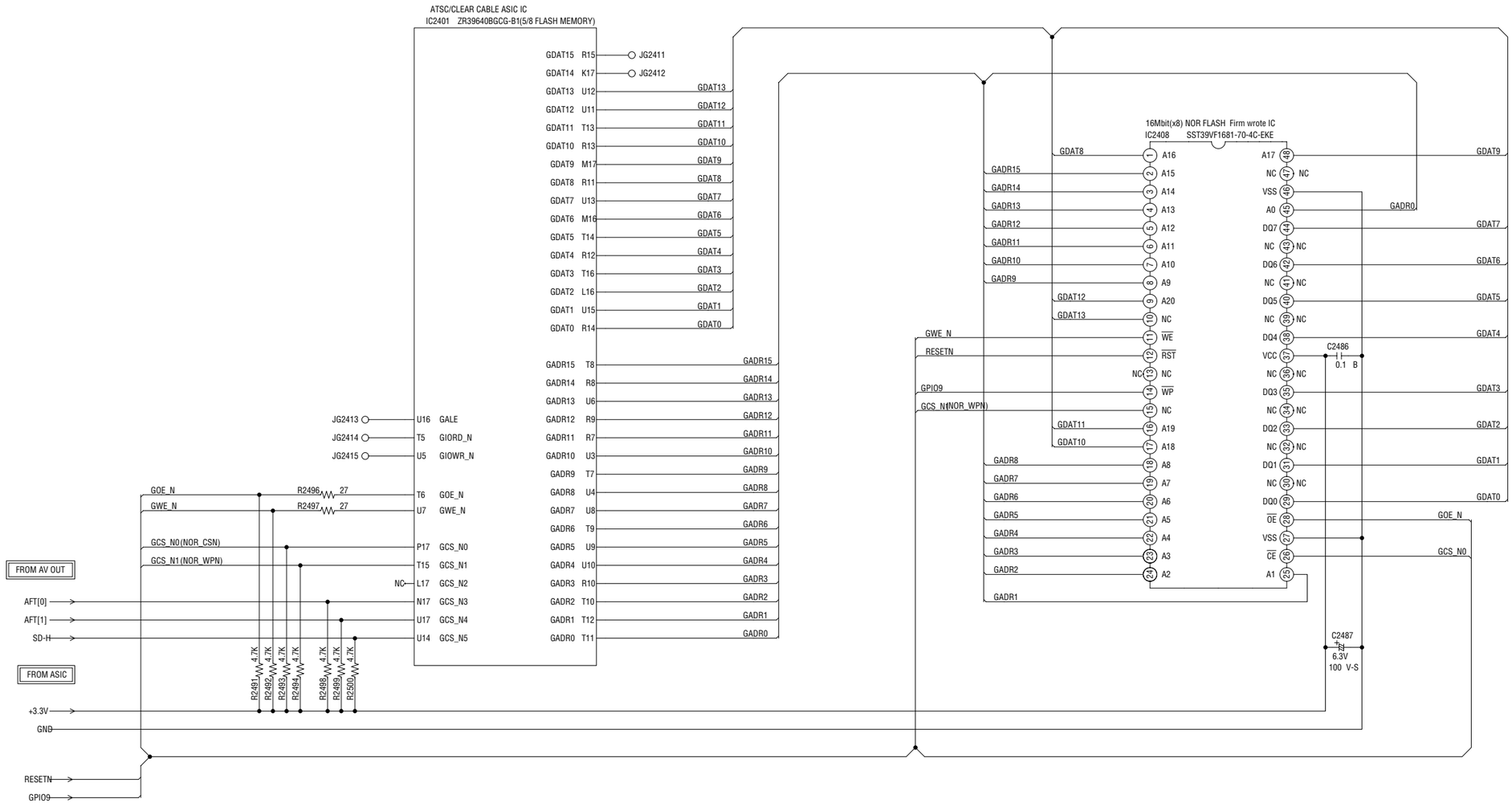


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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.

FLASH SCHEMATIC DIAGRAM

(DIGITAL PCB)



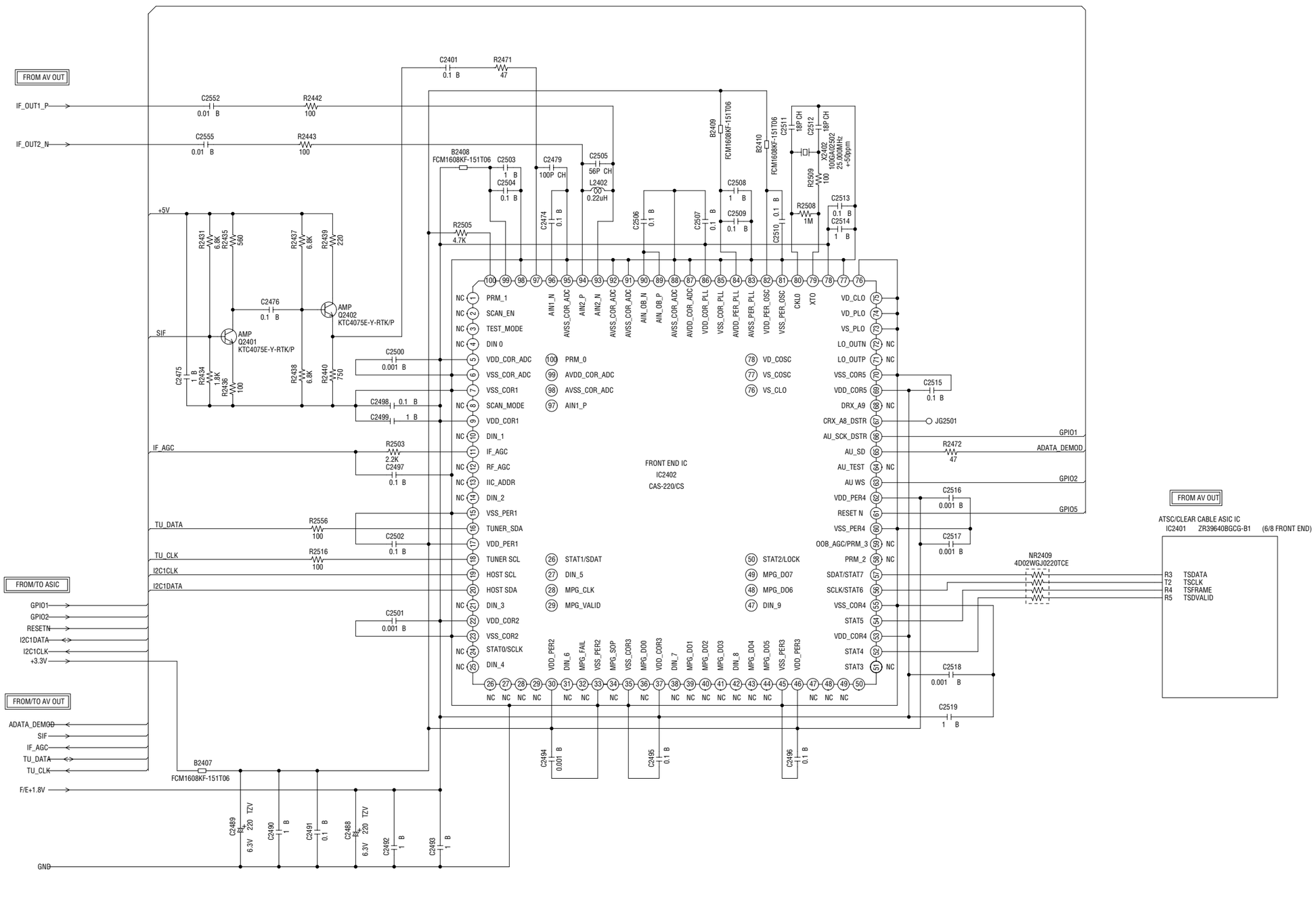
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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.

PCBDH0
CEE139

FRONT END SCHEMATIC DIAGRAM

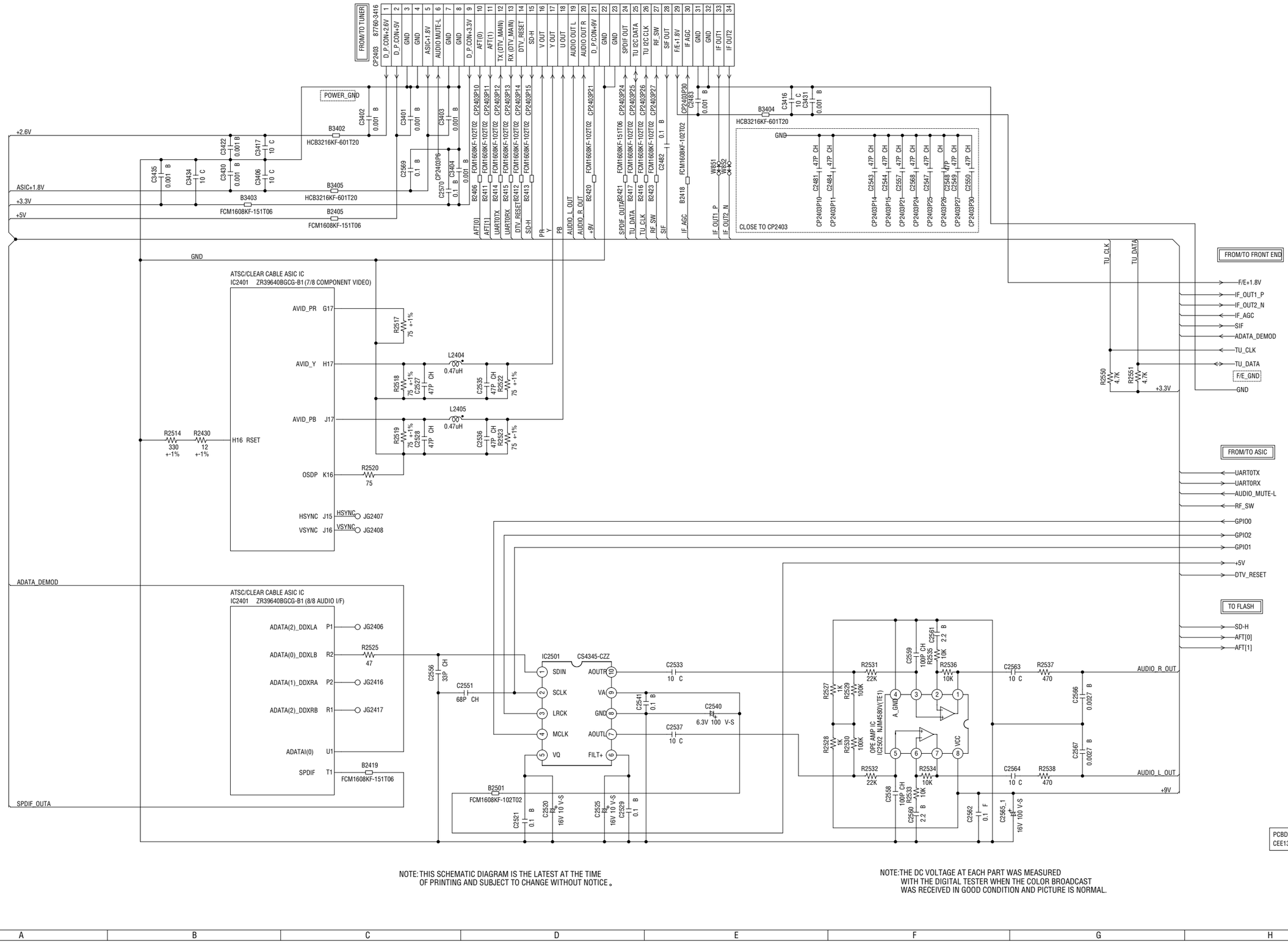
(DIGITAL PCB)



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.

AV OUT SCHEMATIC DIAGRAM
(DIGITAL PCB)

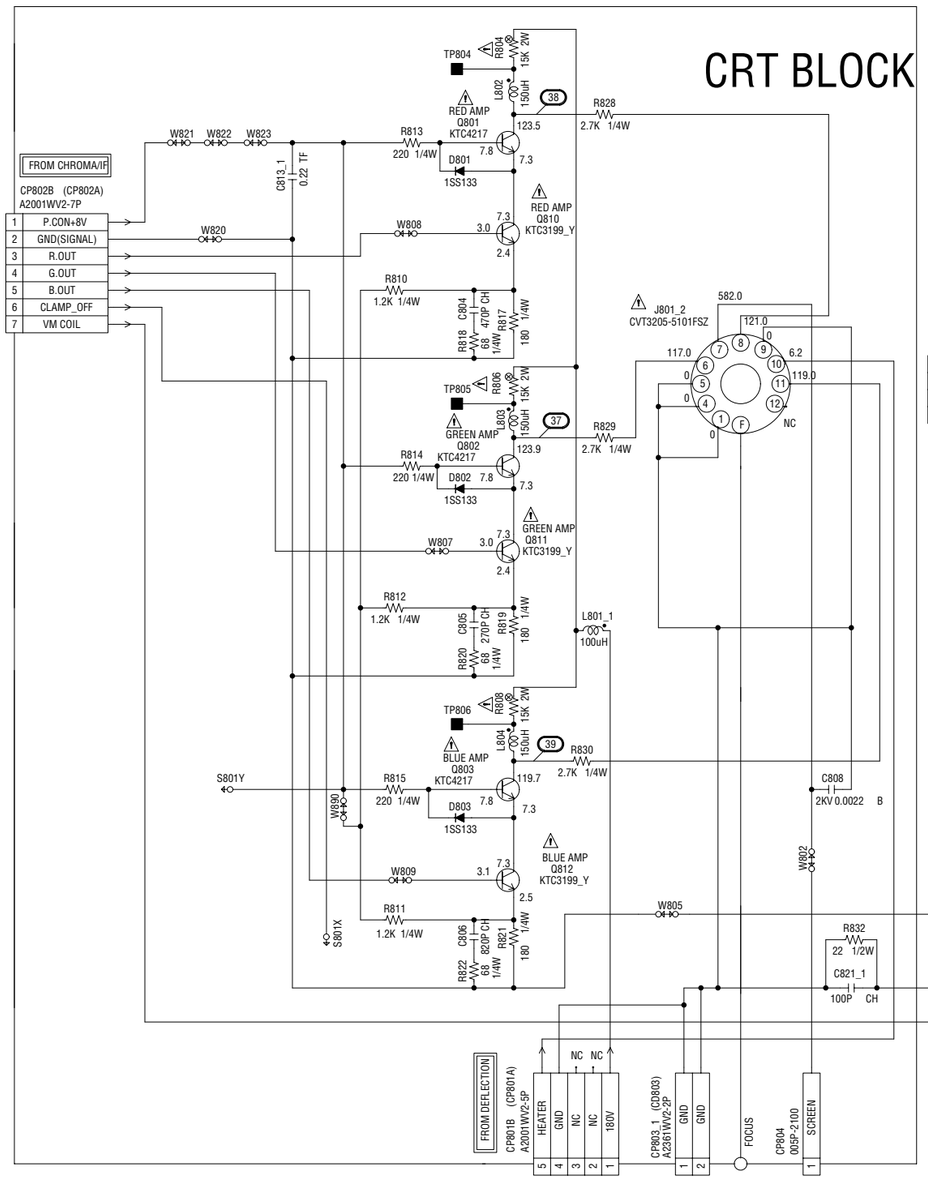


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

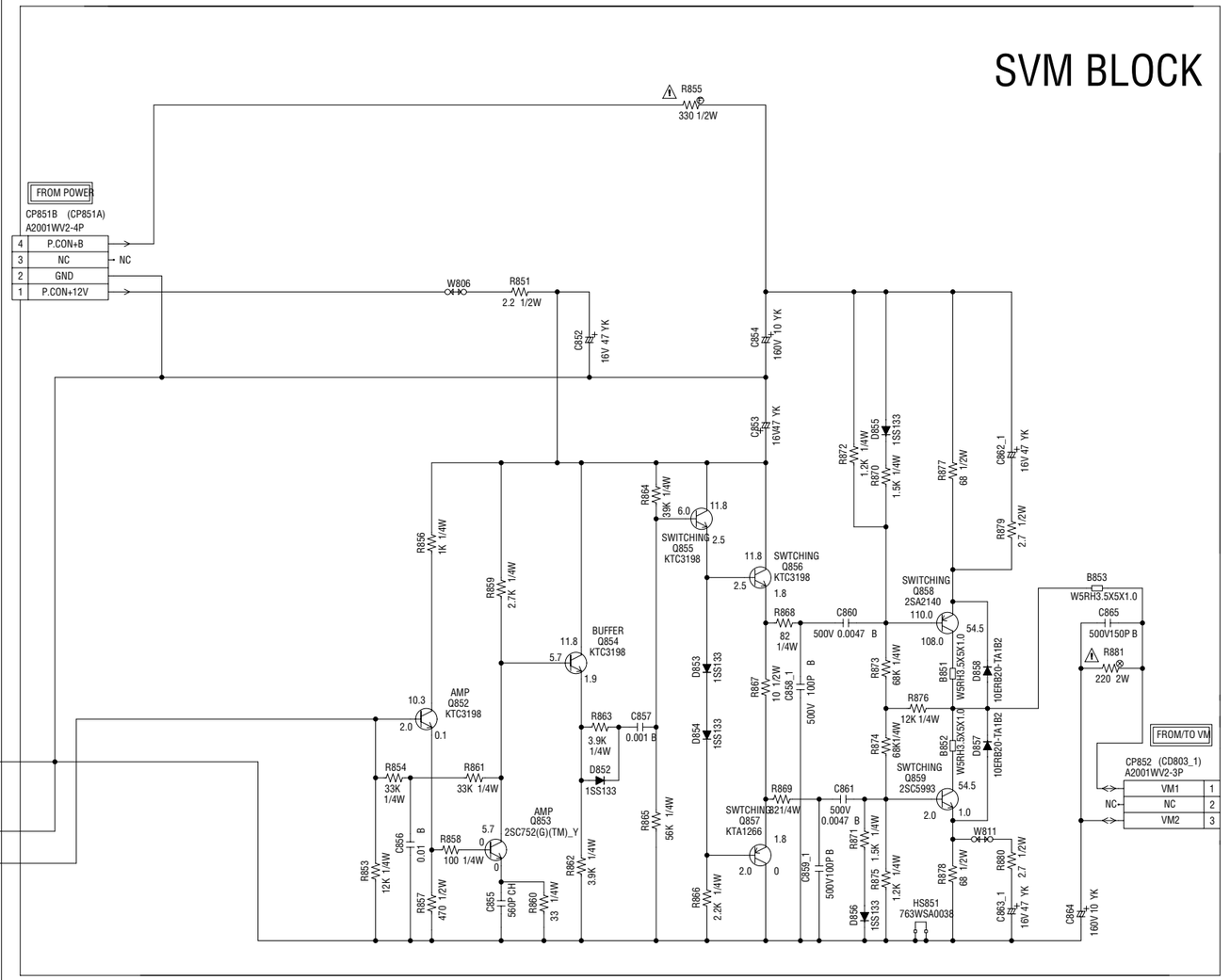
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CRT/SVM SCHEMATIC DIAGRAM (CRT PCB)

CRT BLOCK



SVM BLOCK



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

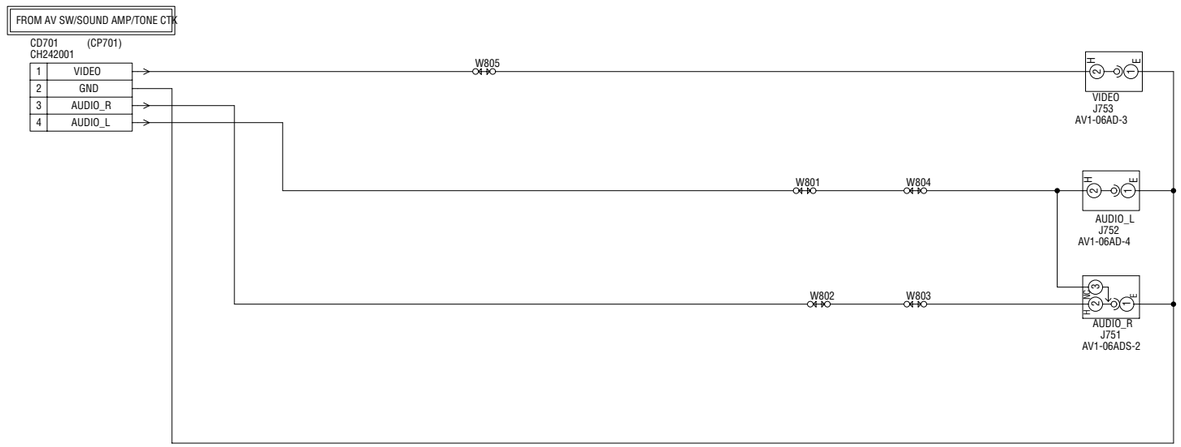
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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。

AV JACK SCHEMATIC DIAGRAM
(FRONT JACK 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.

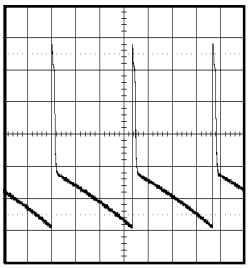
PCB260
CED038

WAVEFORMS

DEFLECTION

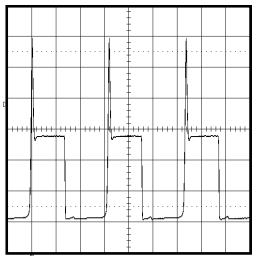
POWER ON
5ms
10.0V

⑱



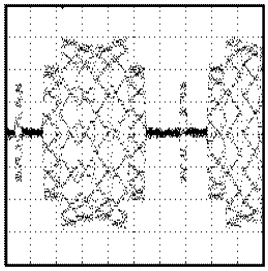
20µs
20V

⑲



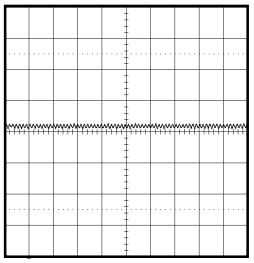
10µs
200mV

⑳



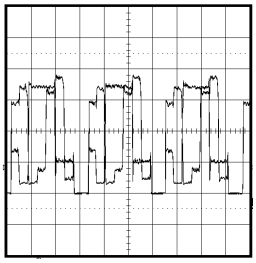
2µs
1V

㉑



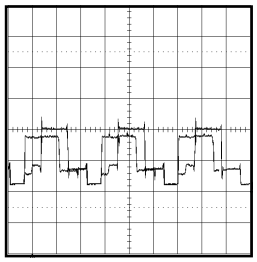
20µs
1V

㉒



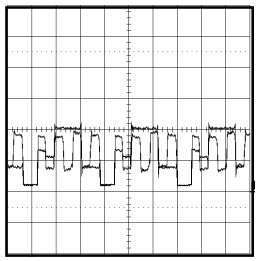
20µs
2V

㉓



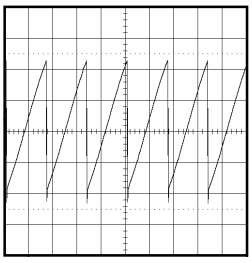
20µs
2V

㉔



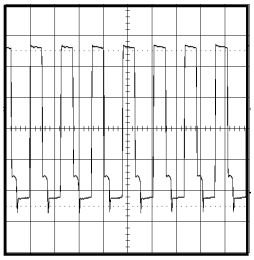
10ms
0.5V

㉕



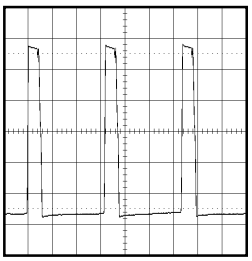
50µs
1V

㉖



20µs
2V

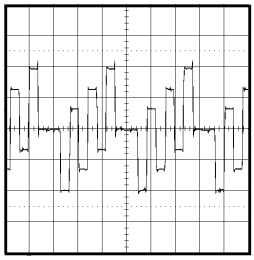
㉗



AV SW/SOUND AMP/TONE CTL

20µs
200mV

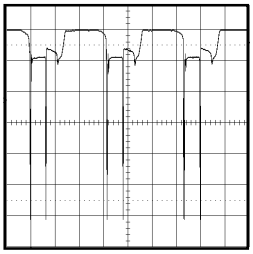
㉙



DEFLECTION

20µs
2V

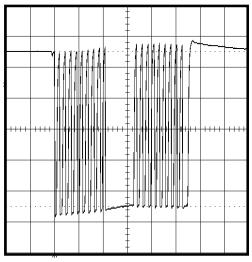
㉚



MICON

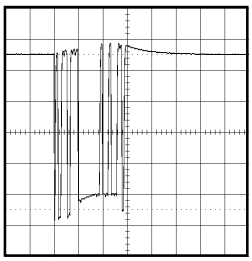
50µs
1V

㉝



0.1ms
1V

㉞



CHROMA/IF

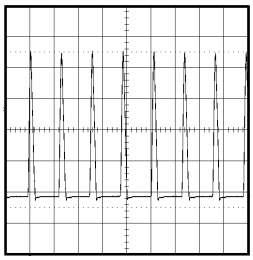
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

DEFLECTION

50µs
200V

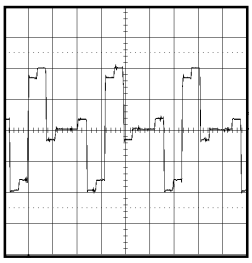
(35)



AV SW/SOUND AMP/TONE CTL

20µs
200mV

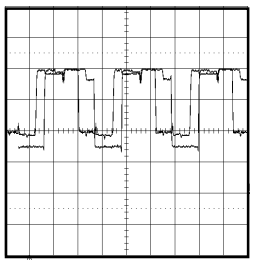
(36)



CRT/SVM

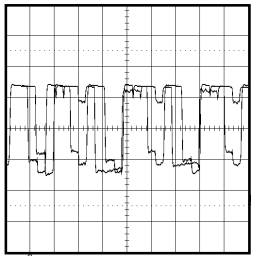
20µs
50V

(37)



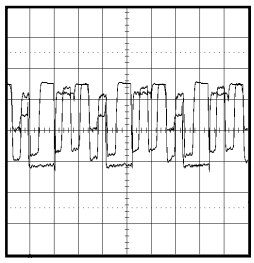
20µs
50V

(38)



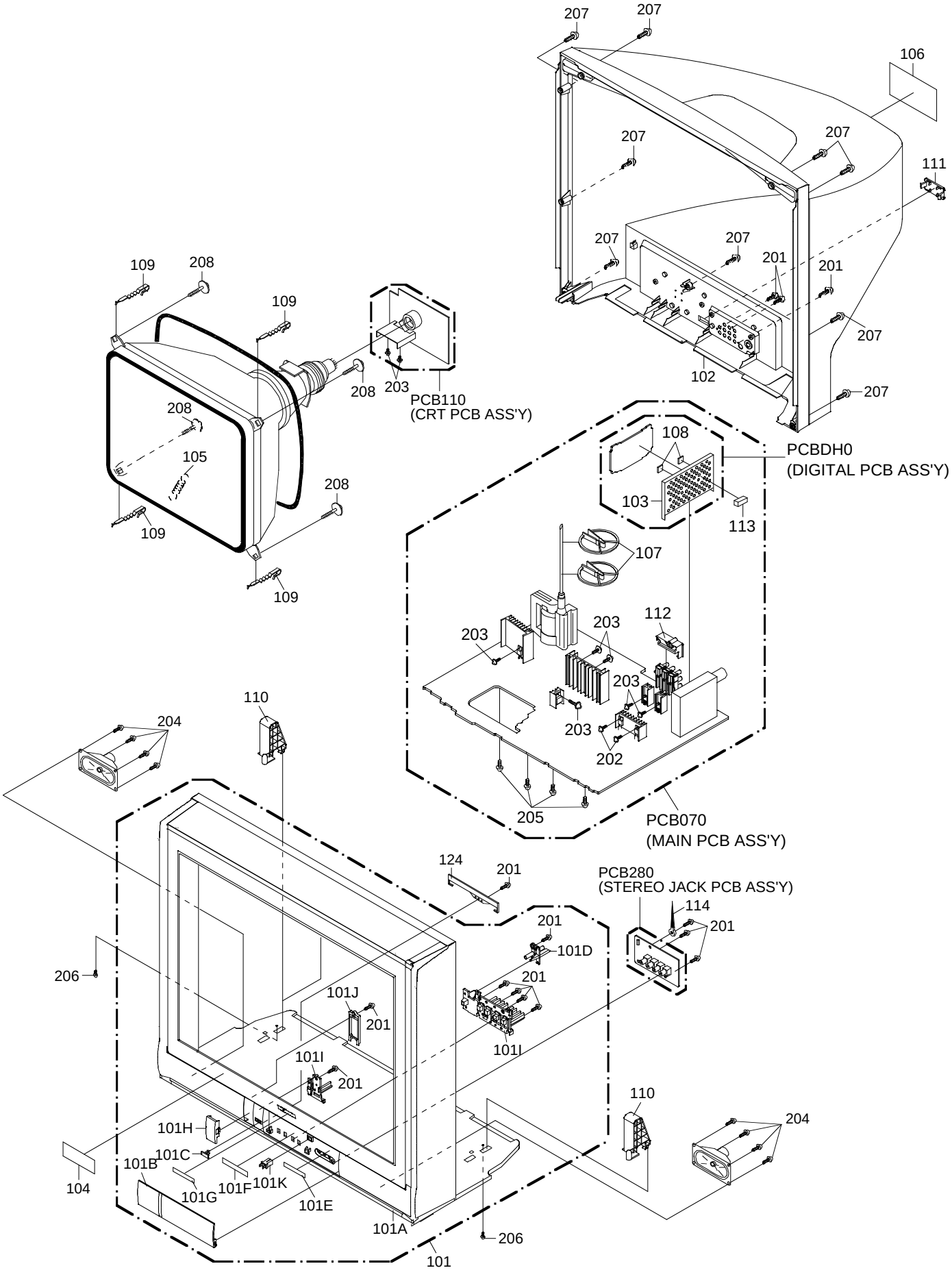
20µs
50V

(39)

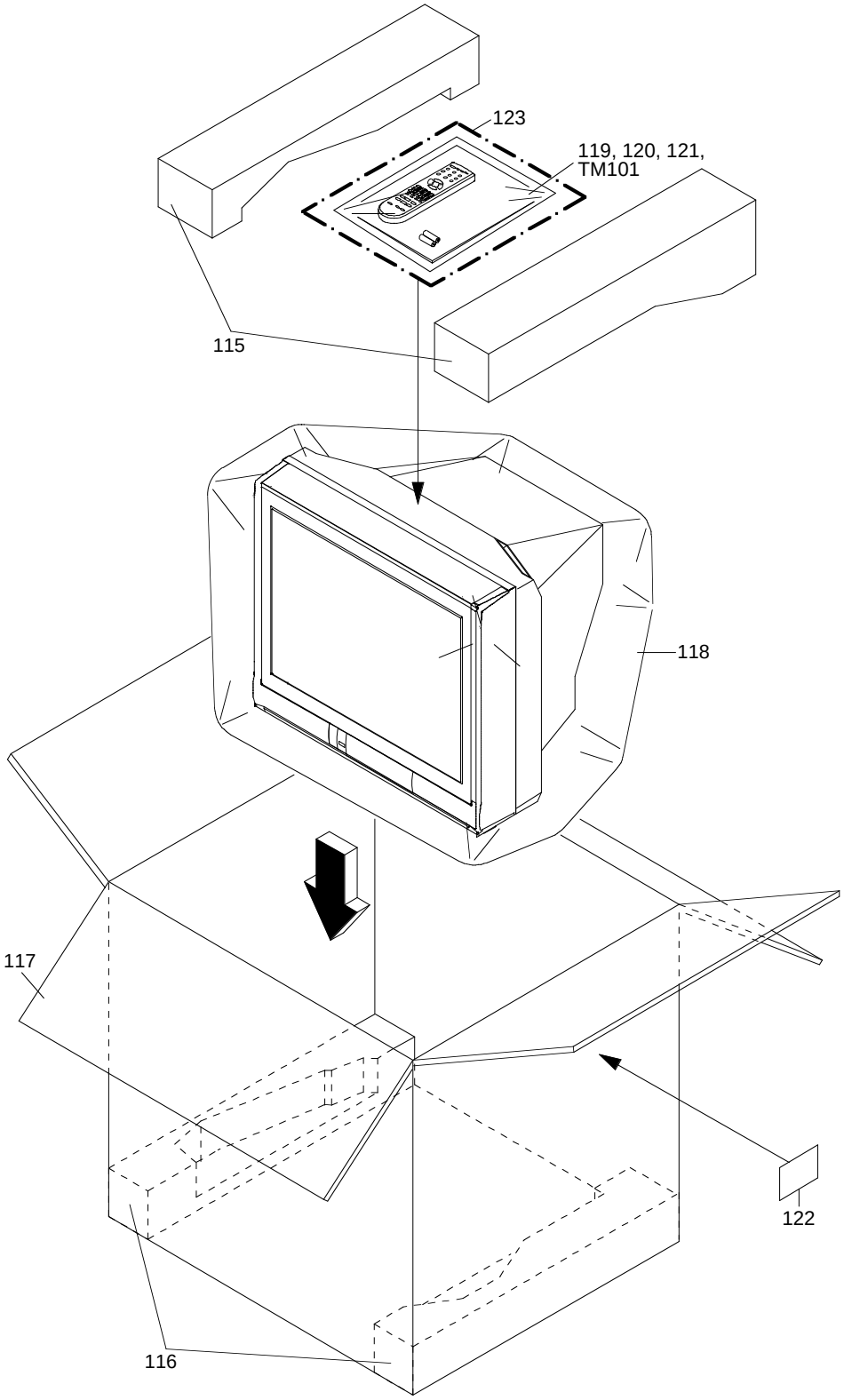


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	72783578	7A7010183A	FRONT CABI ASS'Y
101A	72783557	701WPJ1413	CABINET FRONT
101B	72783576	712WPJ0952	DOOR
101C	72783608	711WPAA129	PLATE,FRONT
101D	72799469	713WPA0364	GUIDE,REMOCON
101E	72783550	723000D252	AV LABEL
101F	72799568	7230007791	SHEET,BUTTON
101G	72798569	7235490037	BADGE,BRAND
101H	72783554	735WPJA863	BUTTON POWER
101I	72783555	735WPBB467	BUTTON,FRAME
101J	72799824	738WPA0160	STOPPER,BUTTON
101K	72795058	890DL20000	DOOR LATCHES(DL2)
102	72783558	A3W302F740L	CABINET,BACK ASSY
103	72783857	7G7520037A	SHIELD,BOTTOM ASS'Y
104	72783577	7230008076	FILM DECORATION
105	72795687	741WUA0021	SPRING EARTH
106	72783617	7225490225	SHEET RATING
107	72794734	899HV3T000	HOLDER ANODE WIRE
108	72783345	800WR00079	SHEET,SILICONE
109	72783298	762WPAA006	HOLDER CRT WIRE 2
110	72799931	761WPA0399	HOLDER,CRT
111	72783574	706WPAA003	COVER CONNECTOR
112	72783347	761WPA0424	HOLDER,JACK
113	72781978	8965TS1017	CUSHION 65TS10-10(17.5*20*14)
114	72795680	8995034000	CORD CLIP UL CO.
115	72783016	792AHAA006	PACKAGE TOP
116	72783017	792AHAA007	PACKAGE BOTTOM
117	72783581	793ACD0516	GIFT BOX
118	72798696	791WHA0102	LAMIFILM BAG
119	72781566	J3N11517A	REGISTRASTION CARD
120	72783587	J3W30221A	INSTRUCTION BOOK(E/S)
121	72781627	JA4LD200A	POLYBAG INSTRUCTION(RED CAUTION)
122	72783613	7230008083	SHEET BAR CODE
123	72783585	A3W302J975	INSTRUCTION BOOK KIT
124	72784143	761WSAA043	ANGLE FRONT
201	72798791	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH
202	72798786	810763080U	SCREW TAP TITE(S) BRAZIER 3*8 CH
203	72798789	8109I30A0U	SCREW TAP TITE(B) WH7 3*10 CH
204	72781290	8146D26A0U	SCREW,TAP TITE(P) WH8 2.6*10+3.8*8 CH
205	72781251	810963080Q	SCREW TAP TITE(B) BRAZIER 3*8 STAINLESS
206	72781276	8117140A2U	SCREW,TAPPING(B0) PAN 4*12 CH
207	72798795	8117540B0U	SCREW TAP TITE(B0) TRUSS 4*20 CH
208	72781286	8141H60D5U	SCREW,TAP TITE(P) GW20 6*45 CH HEXAGON

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			RESISTORS	
⚠R002	72794621	R3X28B010J	R,METAL OXIDE	1 OHM 3W
⚠R004	72794621	R3X28B010J	R,METAL OXIDE	1 OHM 3W
⚠R007	72794621	R3X28B010J	R,METAL OXIDE	1 OHM 3W
⚠R408	72794614	R65582010J	R,FUSE	1 OHM 1/2W
⚠R410	72795112	R3X18A181J	R,METAL OXIDE	180 OHM 2W
⚠R411	72798042	R6558A5R6J	R,FUSE	5.6 OHM 2W
⚠R416	72797795	R002T23R3J	RC	3.3 OHM 1/2W
⚠R420	72797795	R002T23R3J	RC	3.3 OHM 1/2W
⚠R421	72797873	R3X18A121J	R,METAL OXIDE	120 OHM 2W
⚠R426	72795997	R4X5T6272F	R,METAL	2.7K OHM 1/6W
⚠R434	72783393	R5X2CF100J	R,CEMENT	10 OHM 10W
⚠R436	72781717	R4K1T4183F	R,METAL	18K OHM 1/4W
⚠R438	72797928	R3X28B3R9J	R,METAL	3.9 OHM 3W
⚠R439	72796031	R3K181102J	R,METAL OXIDE	1K OHM 1W
⚠R441	72783394	R4K1T4153F	R,METAL	15K OHM 1/4W
⚠R452	72796046	R3X18A101J	R,METAL OXIDE	100 OHM 2W
⚠R459	72795518	R655822R2J	R,FUSE	2.2 OHM 1/2W
⚠R500	72794631	R0G3K2275K	RC	2.7M OHM 1/2W
⚠R501	72795523	R5X2AE010J	R,CEMENT	1 OHM 7W
⚠R502	72781694	R3K58A331J	R,METAL OXIDE	330 OHM 2W
⚠R506	72794616	R002T4682J	RC	6.8K OHM 1/4W
⚠R520	72795500	R002T2155J	RC	1.5M OHM 1/2W
⚠R522	72783395	R65582330J	R,FUSE	33 OHM 1/2W
⚠R527	72794624	R3X18AR68J	R,METAL OXIDE	0.68 OHM 2W
⚠R531	72794640	R3X28B5R6J	R,METAL OXIDE	5.6 OHM 3W
⚠R542	72796436	R3X181R18J	R,METAL OXIDE	0.18 OHM 1W
⚠R551	72794664	R803R9102J	RC	1K OHM 1/16W
⚠R603	72797884	R3X18A560J	R,METAL OXIDE	56 OHM 2W
⚠R650	72783396	R3X28B8R2J	R,METAL OXIDE	8.2 OHM 3W
⚠R651	72783396	R3X28B8R2J	R,METAL OXIDE	8.2 OHM 3W
⚠R804	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R806	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R808	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R855	72794663	R65582331J	R,FUSE	330 OHM 1/2W
⚠R881	72794683	R3X18A221J	R,METAL OXIDE	220 OHM 2W
			CAPACITORS	
C009	72783568	CHG0B04H2K	CC	220 PF 50V B
C014	72783568	CHG0B04H2K	CC	220 PF 50V B
⚠C408	72794381	E5EZF3222M	CE	2200 UF 25V
⚠C412	72794384	P4N8FK222H	CMPP	0.0022UF 1.5KV
⚠C413	72783360	E0EL04102M	CE	1000 UF 35V
C418	72783565	P4J8F3364J	CMPP	0.36 UF 250V PME
⚠C420	72796347	P4N8FK103H	CMPP	0.01 UF 1.5KV
⚠C421	72795102	P3N1F5183J	CPP	0.018 UF 630V
C425	72794393	C03L0R713K	CC	0.001 UF 2KV R
⚠C426	72794394	E5EZFD220M	CE	22 UF 250V
⚠C430	72794396	E02LU8220M	CE	22 UF 100V
⚠C432	72797508	E62DFB470M	CE	47 UF 160V
C442	72794397	E736F56R8M	CE	6.8 UF 50V
⚠C501	72797477	E5EZF2222M	CE	2200 UF 16V
⚠C502	72794393	C03L0R713K	CC	0.001 UF 2KV R
⚠C503	72794393	C03L0R713K	CC	0.001 UF 2KV R
⚠C504	72794379	E02LU5220M	CE	22 UF 50V
⚠C505	72794401	P2122B334M	CMP	0.33 UF 275V ECQUL
⚠C506	72795566	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠C507	72794402	E51DFC821M	CE	820 UF 200V
⚠C508	72796318	CC3LE0MH3M	CC	0.0022UF 250V
⚠C513	72796319	CC3LE0M13M	CC	0.001 UF 250V
⚠C514	72781398	E61FT2681D	CE	680 UF 16V
⚠C517	72797082	C03L0R7B3K	CC	0.0012UF 2KV R
⚠C519	72796319	CC3LE0M13M	CC	0.001 UF 250V
⚠C521	72794411	E62NFC221M	CE	220 UF 200V
⚠C527	72796330	E02LF2222M	CE	2200 UF 16V
⚠C528	72783361	E61F90222D	CE	2200 UF 6.3V
C533	72797131	CHG0B0413K	CC	0.001 UF 50V B
C535	72795581	C0PLRR7E3K	CC	0.0015 UF 2KV R
C537	72783568	CHG0B04H2K	CC	220 PF 50V B
C542	72781380	E02LF0102M	CE	1000 UF 6.3V
C651	72797466	E52H02220M	CE	22 UF 16V
C808	72794440	C0JBB07H3K	CC	0.0022UF 2KV B
C813	72783564	P6M9T0224J	CMPL	0.22 UF 50V TF
C1011	72795575	E02L02222M	CE	2200 UF 16V
			DIODES	
D003	72795626	D2WXN40050	DIODE,SILICON	1N4005-EIC
D103	72783213	D9WU03R92B	DIODE,ZENER	MTZJ3.9B-EIC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D104	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D105	72783213	D9WU03R92B	DIODE,ZENER	MTZJ3.9B-EIC
D106	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D109	72795529	0021721150	LED	SLR-342VCT32
D110	72795627	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D111	72795627	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D112	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D113	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D114	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D401	72783209	D2MXN40020	DIODE,FAST RECOVERY	1N4002-PAN
D402	72783209	D2MXN40020	DIODE,FAST RECOVERY	1N4002-PAN
D403	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
D404	72781368	D9WU05R12B	DIODE,ZENER	MTZJ5.1B-EIC
⚠D405	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D406	72781367	D9WU03R32B	DIODE,ZENER	MTZJ3.3B-EIC
⚠D407	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D408	72794470	D2CF0715L0	DIODE,SILICON	ERD07-15L50
⚠D409	72794475	D2CF2016L0	DIODE,SILICON	FE201-6L49
D410	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
⚠D411	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D412	72795626	D2WXN40050	DIODE,SILICON	1N4005-EIC
D414	72783209	D2MXN40020	DIODE,FAST RECOVERY	1N4002-PAN
D415	72783209	D2MXN40020	DIODE,FAST RECOVERY	1N4002-PAN
D416	72794488	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D501	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D502	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D503	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D504	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D505	72794480	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D506	72795543	D2MXN49370	DIODE,FAST RECOVERY	1N4937-PAN
D507	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D508	72783213	D9WU03R92B	DIODE,ZENER	MTZJ3.9B-EIC
D509	72783366	D9WU01502B	DIODE,ZENER	MTZJ15B-EIC
⚠D510	72794475	D2CF2016L0	DIODE,SILICON	FE201-6L49
⚠D511	72795543	D2MXN49370	DIODE,FAST RECOVERY	1N4937-PAN
⚠D512	72794480	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D513	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D514	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D515	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D516	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D517	72795543	D2MXN49370	DIODE,FAST RECOVERY	1N4937-PAN
D519	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D520	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D521	72781367	D9WU03R32B	DIODE,ZENER	MTZJ3.3B-EIC
⚠D522	72794484	DOU002720M	DIODE,VARISTA	DSS-272M-S00B
⚠D523	72783211	D9WU01802B	DIODE,ZENER	MTZJ18B-EIC
D524	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D525	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
⚠D526	72795544	D6E027110A	DIODE,VARISTA	ENE271D-10A
⚠D527	72797313	D6CE24110A	DIODE,VARISTA	ENE241D-10A-Q6
D528	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
⚠D529	72794480	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D530	72783210	D9WU01002B	DIODE,ZENER	MTZJ10B-EIC
D531	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
D532	72783210	D9WU01002B	DIODE,ZENER	MTZJ10B-EIC
D533	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D534	72781353	D27A85T400	DIODE,SCHOTTKY	RB085T-40
D535	72783367	D9WU04R72B	DIODE,ZENER	MTZJ4.7B-EIC
D537	72783212	D9WU02R22B	DIODE,ZENER	MTZJ2.2B-EIC
⚠D538	72783368	D28F21DQN9	DIODE,SCHOTTKY	21DQ09N-FC4
D539	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D604	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D611	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D612	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D613	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D614	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D801	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D802	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D803	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D852	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D853	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D854	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D855	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D856	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D857	72796388	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D858	72796388	D28T0ERB20	DIODE,RECTIFIER	10ERB20-TA1B2
			ICS	
IC001	72783369	I55J07W660	IC	TC7W66FU(TE12L,F)
⚠IC002	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
⚠IC003	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
⚠IC004	72783370	I0GA9VK020	IC	PQ070VK02FZH
⚠IC005	72783370	I0GA9VK020	IC	PQ070VK02FZH
IC101	75002788	S3W302FM01	MEMORY DATA	OEC7144A
IC102	72795101	I9UF032290	IC	PST3229NR
IC199	72783590	S3W302FE01	MEMORY DATA	AT24C128N-10SU-1.8
IC301	72783378	I5AFF11730	IC	NJW1173V(TE1)
⚠IC401	72783379	I03SD78470	IC	LA7847-E
⚠IC504	72794512	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC601	72783380	I03FC6327A	IC	LA76327M-A-MPB-E
IC701	72783381	I0QF027500	IC	NJM2750M(TE1)
⚠IC1001	72795536	I0FSP7822A	IC	AN17822A
IC1501	72797544	I03FE76605	IC	LA76605M-TLM-E
IC2401	72783373	ICQK039640	IC	ZR39640BGCG-B1
IC2402	72783374	IFYK002200	IC	CAS-220/CS
IC2404	72783375	ICLJ022DT5	IC	HY5DU561622DTP-D43
IC2408	75002789	S3W302JF01	MEMORY DATA	SST39VF1681-70-4C-EKE
IC2501	72783377	I1FF043450	IC	CS4345-CZZ
IC2502	72797569	I0QF0580V0	IC	NJM4580V(TE1)
			TRANSISTORS	
Q002	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q003	72798324	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q004	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q005	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q006	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q007	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q009	72795963	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q010	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q101	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q102	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q103	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q104	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q105	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q106	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q107	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
⚠Q402	72794561	TCAT03227Y	TRANSISTOR,SILICON	KTC3227_Y-AT
⚠Q405	72794562	TD50026380	TRANSISTOR,SILICON	2SD2638(OEC)
⚠Q501	72795476	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠Q502	72783392	TJXG10NK50	FET	STF10NK50Z
⚠Q503	72795475	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE
Q504	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q505	72795474	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
Q506	72794558	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK
⚠Q507	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q508	72798324	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q509	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q510	72794558	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK
⚠Q511	72794566	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
⚠Q512	72794569	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
Q513	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠Q514	72795476	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q601	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q602	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q603	72794578	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q604	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q605	72795963	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q606	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q607	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q608	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q609	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q610	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠Q611	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q612	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q701	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠Q801	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q802	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q803	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q810	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q811	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q812	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
Q852	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			TRANSISTORS	
Q853	72794575	TCUT00752Y	TRANSISTOR,SILICON	2SC752(G)(TM)_Y
Q854	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q855	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q856	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q857	72794578	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q858	72794579	TA10021400	TRANSISTOR,SILICON	2SA2140
Q859	72794580	TC10059930	TRANSISTOR,SILICON	2SC5993
Q1001	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1503	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1507	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1508	72794571	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2401	72783391	TCAA040754	TRANSISTOR,SILICON	KTC4075E-Y-RTK/P
Q2402	72783391	TCAA040754	TRANSISTOR,SILICON	KTC4075E-Y-RTK/P
			COILS &TRANSFORMERS	
L001	72794526	02167F220J	COIL	22 UH
L003	72794540	02167F101J	COIL	100 UH
L004	72794526	02167F220J	COIL	22 UH
L301	72794526	02167F220J	COIL	22 UH
⚠L402	72798925	022K00047A	COIL,LINEARITY	311015008
⚠L403	72794529	02DK000058	COIL,CHOKE	02DK000058
⚠L501	72796639	029X000098	COIL,LINE FILTER	SS28H-20075
L502	72796513	02167E220K	COIL	22 UH
⚠L503	72798939	028R320007	COIL,DEGAUSS	8R320007
L601	72794540	02167F101J	COIL	100 UH
L602	72796407	02167D101K	COIL	100 UH
L801	72796492	021673101J	COIL	100 UH
L802	72795931	021673151K	COIL	150 UH
L803	72795931	021673151K	COIL	150 UH
L804	72795931	021673151K	COIL	150 UH
L1505	72795932	02167F150J	COIL	15 UH
L1510	72795932	02167F150J	COIL	15 UH
L1511	72795932	02167F150J	COIL	15 UH
L1512	72796571	021LA6220J	COIL	22 UH
L2402	72783383	021AS9224J	COIL	0.22 UH
L2404	72783384	0216SDR47J	COIL	0.47 UH
L2405	72783384	0216SDR47J	COIL	0.47 UH
T401	72794690	0450190171	TRANS,HORIZONTAL DRIVE	ETH19Y206AY
⚠T501	72783397	0481400794	TRANSFORMER,SWITCHING	81400794
			JACKS	
J701	72794518	060J431020	RCA JACK	MSP-213V2-432_NI_LF
J702	72799005	063D700010	JACK	MDC-012V1-A_LF
J703	72783382	060J411045	RCA JACK	MSP-382V-12_NI_FE_LF
J704	72795493	060J411032	RCA JACK	MSP-213V1-652_NI_LF
J708	72798996	060J431022	RCA JACK	MSP-213V2-732_NI_LF
J751	72799001	060Q421048	RCA JACK	AV1-06ADS-2
J752	72798999	060Q401109	RCA JACK	AV1-06AD-4
J753	72798998	060Q401108	RCA JACK	AV1-06AD-3
⚠J801	72799008	066C130024	SOCKET,CATHODE RAY TUBE	CVT3205-5101FSZ
			SWITCHES	
SW101	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW102	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW103	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW104	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW105	72794688	0504101T34	SWITCH,TACT	EVQ21505R
			VARIABLE RESISTORS	
VR401	72795471	V1K63H3BTE	VOLUME,SEMI FIXED	NVG6TLTAB222
VR502	72794701	V1163H4BTC	VOLUME,SEMI FIXED	EVNCYAA03BE4
			P.C.BOARD ASSEMBLIES	
PCB070	72783605	A3W302F070L	TV MT PCB ASS'Y	CME077A
PCB110	72783597	A3W302F110L	CRT PCB ASS'Y	CCD014A
PCB260	72783600	A3W302F260L	FRONT JACK PCB ASS'Y	CED038B
PCBDH0	72783602	A3W302FDH0L	DIGITAL PCB ASS'Y	CEE139B
			MISCELLANEOUS	
B001	72798929	024AC5102F	CORE,BEADS	BLM18BD102SN1D
B101	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B102	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B401	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B402	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B405	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
⚠B501	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B502	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
⚠B504	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B701	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B702	72798931	024AC5600E	CORE,BEADS	BLM18BB600SN1D
B851	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			MISCELLANEOUS	
B852	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B853	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B1501	72798929	024AC5102F	CORE,BEADS	BLM18BD102SN1D
B2402	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2403	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2404	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2405	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2406	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2407	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2408	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2409	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2410	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2411	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2412	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2413	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2414	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2415	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2416	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2417	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2418	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2419	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2420	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2421	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2423	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2501	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B3402	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
B3403	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B3404	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
B3405	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
BT001	72783174	141U004016	BATTERY,MANGAN	MNAAA(R03)
BT002	72783174	141U004016	BATTERY,MANGAN	MNAAA(R03)
CD401	72799112	06CH466001	CORD,CONNECTOR	CH466001
⚠CD501	72783570	1209615906	CORD,AC BUSH	9615906
CD701	72783572	06CH242001	CORD,CONNECTOR	CH242001
CD801	72799139	06CU254802	CORD,CONNECTOR	CU254802
CD803	72794460	06CH823004	CORD,CONNECTOR	CH823004
CD805	75002753	06CH01015A	CORD,CONNECTOR	CH01015A
CD851	72782871	06CU245801	CORD,CONNECTOR	CU245801
CD852	72799111	06CH232006	CORD,CONNECTOR	CH232006
CP101	72783364	069S280639	CONNECTOR PCB SIDE	A2001WR2-8P
CP102	72796801	069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
⚠CP401	72782003	069X460109	CONNECTOR PCB SIDE	B06B-DVS-L_(LF)
⚠CP501	72796817	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
⚠CP502	72796821	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP507	72796768	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP508	72796768	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP509	72796768	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP701	72796796	069S240629	CONNECTOR PCB SIDE	A2001WV2-4P
CP803	72796816	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP804	72796824	069W010010	CONNECTOR PCB SIDE	005P-2100
CP805	72796824	069W010010	CONNECTOR PCB SIDE	005P-2100
CP852	72796794	069S230629	CONNECTOR PCB SIDE	A2001WV2-3P
CP1001	72796793	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP2403	72799043	069R2Y0700	CONNECTOR PCB SIDE	87760-3416
CP801A	72796751	067U005049	WIRE HOLDER	B2013H02-5P
CP801B	72796798	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP802A	72783573	06CU276003	CORD,CONNECTOR	CU276003
CP802B	72796801	069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
CP851A	72796750	067U004029	WIRE HOLDER	B2013H02-4P
CP851B	72796796	069S240629	CONNECTOR PCB SIDE	A2001WV2-4P
EL0701	72797069	124116281A	EYE LET	XRY16X28BD
EL0702	72797070	124120301A	EYE LET	XRY20X30BD
⚠F501	72794493	081PC6R305	FUSE	51MS063L
⚠F502	72796952	0835A07005	MICRO FUSE	20N_7000FSW
⚠FB401	72798966	043232014F	TRANSFORMER,FLYBACK	FUH32F001
FH501	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
NR2402	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2403	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2404	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2405	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2406	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2407	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2408	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2409	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
NR2410	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2411	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
OS101	72794541	0773071001	REMOTE RECEIVER	RPM7138-WH5
⚠RY501	72794686	0560X20118	RELAY	G5PA-1-SA(WEC)
⚠SP1001	72783620	070W457011	SPEAKER	MSF-2D5D10WD-L(880S1050L)
⚠TH501	72795546	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A
TM101	72799186	076D0KK010	TRANSMITTER	ORT204N7404359-U
⚠TU001	72783398	0164100005	DIGITAL TUNER	ENG36A49KF
⚠V801	72783575	098T320D02	CRT W/DY	A80ERF182X19L
X103	72799226	100WT01611	CRYSTAL	HC-49/U-S
X601	72794704	100DT3R531	CRYSTAL	HC-49/U
X2401	72783399	100GA02402	CRYSTAL	B24576K010
X2402	72783400	100GA02502	CRYSTAL	B25000H006

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

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

TOSHIBA CORPORATION
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