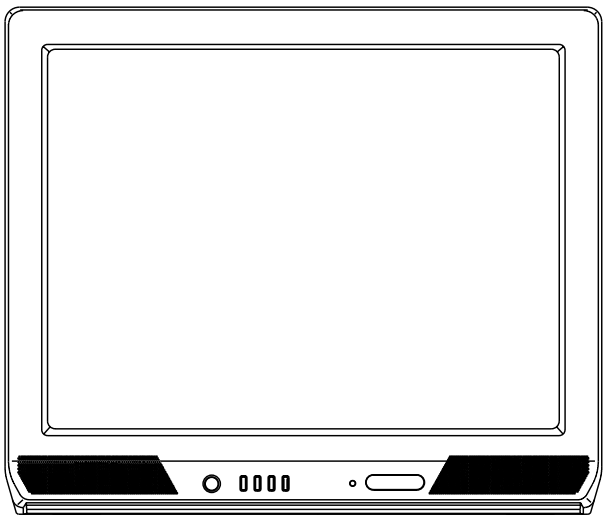
DURABRAND

DBTV2501 SERIES A

SERVICE MANUAL

COLOR TELEVISION RECEIVER



ORIGINAL
MFR'S VERSION A

DURABRAND

DBTV2501 SERIES A

SERVICE MANUAL

COLOR TELEVISION RECEIVER

ORIGINAL 1
MFR'S VERSION B

MFR'S VERSION	CRT
A	A63AHC26X
B	A63ADT15*08

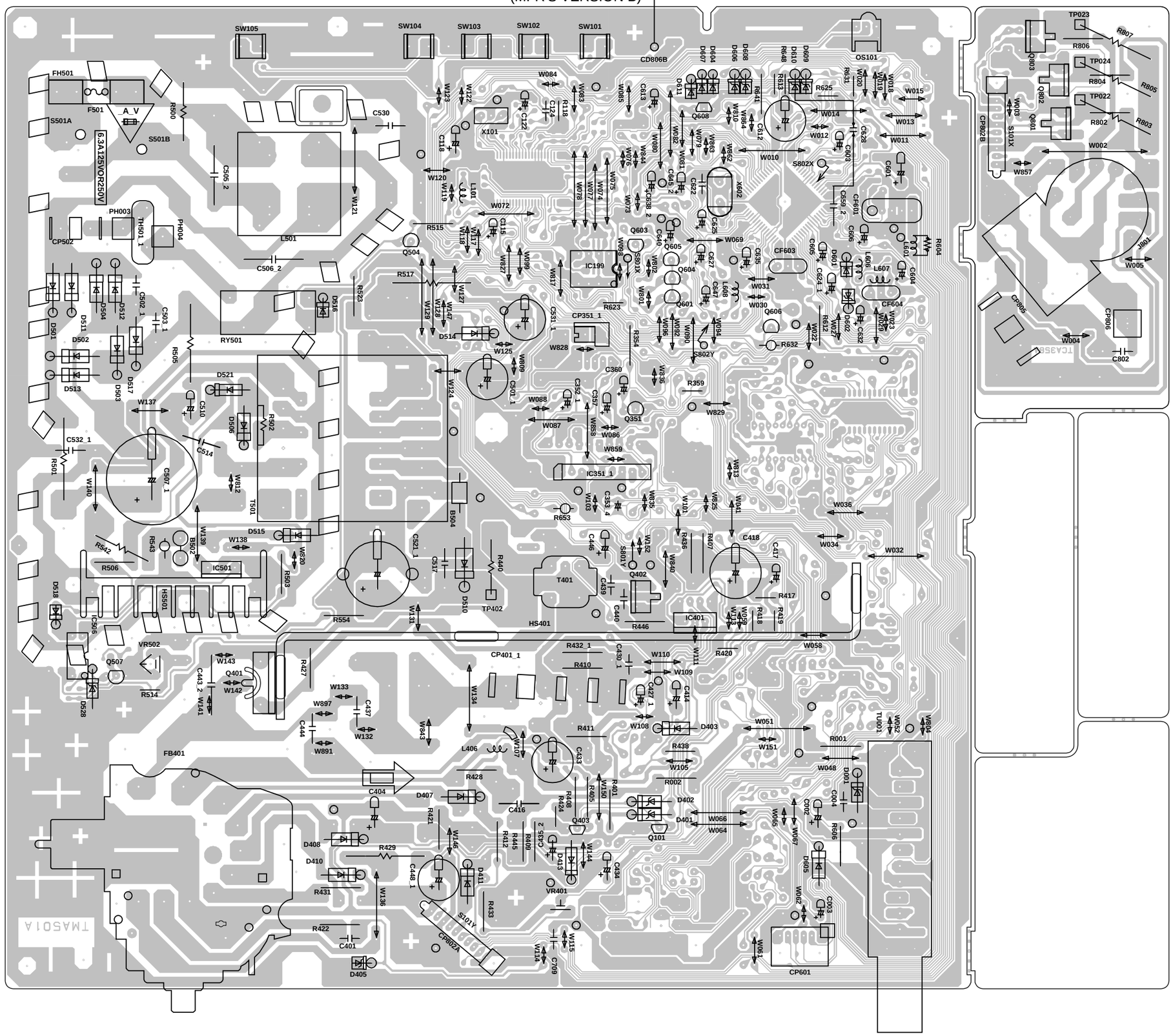
Change of CRT

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MFR'S VERSION A		MFR'S VERSION B	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
⚠ R406	R903N8332J	RC 3.3K OHM 1/8W	R903N8100J	RC 10 OHM 1/8W
⚠ R408	R4X5T6183F	R,METAL 18K OHM 1/6W	R4X5T6273F	R,METAL 27K OHM 1/6W
R410		———	R002T2821J	RC 820 OHM 1/2W
R411	R002T2561J	RC 560 OHM 1/2W	R002T2102J	RC 1K OHM 1/2W
R412		———	R002T2271J	RC 270 OHM 1/2W
R413	R002T2681J	RC 680 OHM 1/2W		DEL
⚠ R415	R3X181471J	R,METAL OXIDE 470 OHM 1W		DEL
R416	R0L2U2102J	RC 1K OHM 1/2W		DEL
R418	R002T4223J	RC 22K OHM 1/4W	R002T4273J	RC 27K OHM 1/4W
R419	R002T4182J	RC 1.8K OHM 1/4W	R002T4122J	RC 1.2K OHM 1/4W
R420	R002T4103J	RC 10K OHM 1/4W	R002T4682J	RC 6.8K OHM 1/4W
⚠ R429	R6558A1R8J	R,FUSE 1.8 OHM 2W	R6558A2R7J	R,FUSE 2.7 OHM 2W
R432		———	R002T2821J	RC 820 OHM 1/2W
R433		———	R002T2271J	RC 270 OHM 1/2W
R438		———	R002T2151J	RC 150 OHM 1/2W
R553	R903N8182J	RC 1.8K OHM 1/8W	R903N8472J	RC 4.7K OHM 1/8W
R613		———	R002T4473J	RC 47K OHM 1/4W
R638	R903N8103J	RC 10K OHM 1/8W	R903N8822J	RC 8.2K OHM 1/8W
C401		———	C0JTB0512K	CC 100 PF 500V B
C427		———	E50HU5100M	CE 10 UF 50V
C444		———	C0JLYR713K	CC 0.001 UF 2KV YR
VR401		———	V1163H3BTC	VOLUME,SEMI FIXED EVNCYAA03BE3
PCB010	A3K004G01A	MAIN PCB ASS'Y TMA501A	A3K004I010K	MAIN PCB ASS'Y (VERSION B) TMA501A
C809	CS0KW04W2M	CC 820 PF 50V W	CS0KW04U2M	CC 680 PF 50V W
C810	CS0KW04S2M	CC 560 PF 50V W	CS0KB04Q2K	CC 470 PF 50V B
C811	CS0KW04U2M	CC 680 PF 50V W	CS0KW04S2M	CC 560 PF 50V W
PCB110	A3K004G11G	CRT PCB ASS'Y TCA358A	A3K004I110K	CRT PCB ASS'Y (VERSION B) TCA358A
CD804		———	06CU34002A	CORD CONNECTOR SM1198-002-1A
⚠ DY801	027M062505	DY 7M062505		DEL
K001	129A000010	WEDGE 8115529		DEL
K002	129A000010	WEDGE 8115529		DEL
K003	129A000010	WEDGE 8115529		DEL
MG801	026A062704	MAGNET,CONVERGENCE 29MMSTAR		DEL
⚠ V801	0984250502	CRT A63AHC26X	0984250503	CRT W/DY A63ADT15*08

MAIN PCB's and CRTPCB's are not interchangeable.

PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE
(MFR'S VERSION B)



CHROMA SCHEMATIC DIAGRAM (MAIN PCB)

(MFR'S VERSION B)

FROM/POWER

AT+10V

GND

TO/ SOUND

STEREO+5V

AUDIO_OUT

FROM/TO MICON/TUNER

IF

Y_VIDEO

AT+5V

SYNC

TUNER+5V

RESET

AFT

AGC

GND

HD

POWER

OSD_B

OSD_BLK

OSD_G

VD

OSD_R

I2C_OFF

SDA

SCL

5V REG Q601 KTC3203_Y

5V REG Q604 2SD734

5V REG Q605 KTC3203_Y

5V REG Q603 KTC3203_Y

REG Q606 KTC3203_Y

CF604 TPSRA4M50C00-A0

CF603 SFSH4.5MCB

SAW FILTER CF601 SAFGP45M7VHCZR

W801 W802 W817 W810 W844

R645 10

R647 220

R623 120 1/4W

R622 68

L607 15uH

L606 2.2uH

L608 6.8uH

L601 1.2uH

R615 470

R639 100

R633 8.2K

R629 27

R635 100

R634 10K

R612 5.6K 1/4W

R611 10K

R632 100 1/2W

R618 10M

R609 330

R606 10K

R604 2.2K

R638 8.2K

R646 27K

R642 6.8K

R650 1K

R641 22K 1/4W

R613 47K 1/4W

R648 100 1/4W

R626 10K

R627 100

R630 100

R631 100 1/4W

R602 1K

R601 2.2K

R624 2K

R614 2.2K

R619 2.2K

R625 2.2K 1/4W

R653 560 1/2W

C606 50V 0.22 KA

C604 50V 1 KA

C658_1 0.001 Y

C623_3 0.0033 Y

C632 50V 2.2 KA

C621 0.01 F

C626_1 0.001 Y

C659_2 470P B

C624_1 16V 47 KA

C605 50V 0.47 KA

C618 22P CH

C616 15P CH

C635 16V 47 KA

C640 16V 47 KA

C625 50V 1 KA

C622 0.015 M

C627 50V 1 KA

C647 50V 1 KA

C638_2 16V 33 KA

C645_2 16V 47 KA

C613 50V 1 TF

C612 10V1000 YK

C651_1 33P SL

C650_1 220P B

C656_1 100P SL

C636_1 0.01 F

C634 1 0.01F

C639_1 0.01 F

C628 0.001 B

C601 6.3V 1000 YK

C603 50V 1 KA

C607 0.01 F

C605 5.6K

D602 MTZJ8.2B

D601 1SS133

D610 MTZJ6.8B

D642 D605 11E1-EIC

D604 1SS133

D607 1SS133

D611 1SS133

D609 MTZJ9.1B

D608 MTZJ9.1B

D606 MTZJ9.1B

X602 3.579545MHz

Q608 DTC114ES

SWITCHING

CHROMA IC IC601 M61206FP

46 SW REG CONT
47 LIMITER IN
48 IF AGC
49 QIF OUT

34 EXT C in
33 8.7V REG OUT
32 X'TAL

64 VIF IN (1)
1 VIF IN (2)

17 V OUT
16 B OUT

49	2.3	AUDIO OUT	
50	3.0	AUDIO BYPASS	
51	2.3	EXT AUDIO IN	
52	NC	FM DIRECT OUT	
53	3.8	VIF VCO F/B	
54	3.1	VREG Vcc	
55	9.2	VIF APC FILTER	
56	3.0	VIF VIDEO OUT	
57	2.6	VIF GND	
58	0	AFT OUT	
59	0	QIF IN	
60	0	RF AGC OUT	
61	2.9	RF AGC FILTER	
62	1.8	VIF Vcc	
63	2.9	H VCO F/B	
64	1.8	SCL	
1	1.5	FBP IN	
2	5.0	H OUT	
3	5.0	DEF	
4	2.7	SDA	
5	4.9	AFC FILTER	
6	6.2	INV FBP OUT	
7	6.2	POWER ON CONT	
8	0	R OUT	
9	0	G OUT	
10	4.9	B OUT	
11	3.5	STRAT UP Vcc	
12	4.9	B IN	
13	4.9	V RAMP FEEDBACK	
14	4.0	V RAMP CAP	
15	4.0	VIDEO CHROMA Vcc	
16	4.8	fsc OUT	
17	4.5	SPOT KILLER	
18	8.2	FAST BLK	
19	8.2	G IN	
20	0	V PULSE OUT	
21	2.5	R IN	
22	5.6	ACL/ABCL	
23	5.0	CHROMA APC FILTER	
24	5.0	VIDEO/CHROMA GND	
25	NC	TV/Y IN	
26	7.3	5v REG	
27	0	Y SW OUT	
28	0	5.7V REG OUT(FOR CPU)	
29	5.0	MCU RESET	
30	0	INTELLIGENT MONI	
31	2.6	Hi Vcc	
32	3.5	NC	
33	8.8	8.2	
34	2.0	8.2	
35	3.3	3.9	
36	2.9	8.2	
37	0	8.2	
38	0	NC	
39	0	3.4	
40	5.5	5.5	
41	4.8	4.8	
42	3.9	3.9	
43	8.2	8.2	
44	8.2	8.2	
45	0	NC	
46	8.2	8.2	
47	2.3	2.3	
48	2.9	2.9	

FROM/TO DEFLECTION/CRT

FBT+8V

V_OUT

ABCL

V_FEEDBACK

GND

H_OUT

H_SYNC

B.OUT

G.OUT

R.OUT

CLAMP

TEST POINT

CP601 TKC-M06X-A1

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

R.SIGNAL

G.SIGNAL

B.SIGNAL

DEFLECTION SIGNAL

AUDIO SIGNAL

TUNER VIDEO SIGNAL

PCB010 TMA501

CAUTION: DIGITAL TRANSISTOR

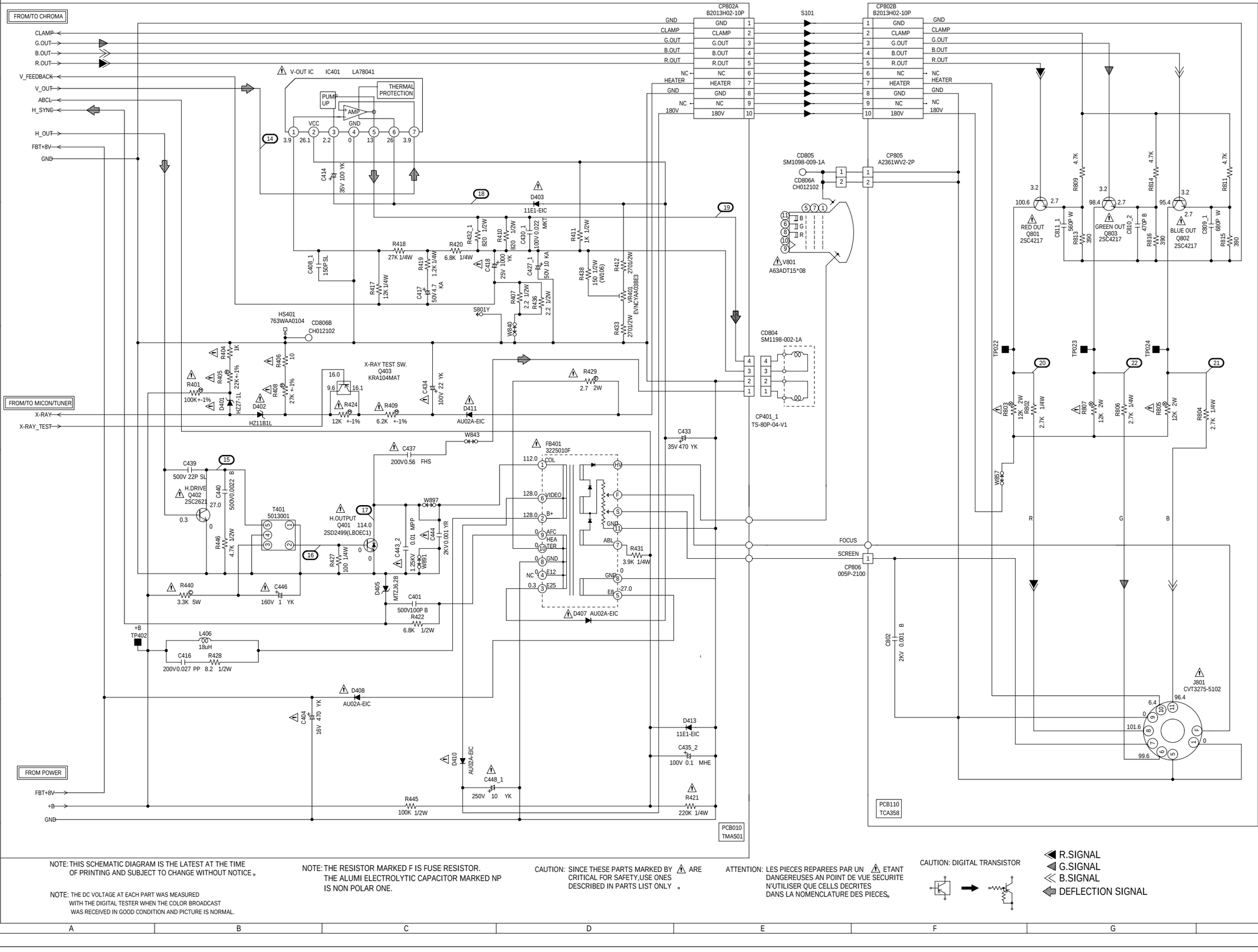
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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。

DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB) (MFR'S VERSION B)



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

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

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

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

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

CAUTION: DIGITAL TRANSISTOR

R.SIGNAL
G.SIGNAL
B.SIGNAL
DEFLECTION SIGNAL

SPEC.NO.	M3K0-04I
O/R NO.	A173518

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

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

SERVICING NOTICES ON CHECKING A1-1
HOW TO ORDER PARTS A1-1
IMPORTANT A1-1
CONTENTS A2-1
GENERAL SPECIFICATIONS ..... A3-1~A3-4
DISASSEMBLY INSTRUCTIONS B-1, B-2
SERVICE MODE LIST C-1
CONFIRMATION OF USING HOURS C-1
NOTE FOR THE REPLACING OF MEMORY IC C-1
ELECTRICAL ADJUSTMENTS ..... D1-1~D2-1
MAJOR COMPONENTS LOCATION GUIDE D3-1
BLOCK DIAGRAM E-1, E-2
PRINTED CIRCUIT BOARDS
MAIN/CRT ..... F-1~F-4
SCHEMATIC DIAGRAMS
MICON/TUNER G-1, G-2
CHROMA G-3, G-4
DEFLECTION/CRT G-5, G-6
POWER G-7, G-8
SOUND G-9, G-10
WAVEFORMS H-1, H-2
MECHANICAL EXPLODED VIEW I-1
MECHANICAL REPLACEMENT PARTS LIST J1-1
ELECTRICAL REPLACEMENT PARTS LIST J2-1, J2-2

GENERAL SPECIFICATIONS

G-1	**TV System**	CRT		CRT Size / Visual Size	25 inch / 626mmV
				CRT Type	Normal
				Deflection	100 degree
				Magnetic Field BV/BH	+0.45G/0.18G
		Color System			NTSC
		Speaker			2Speaker
				Position	Front
				Size	1.5 x 2.7 Inch
				Impedance	4 ohm
		Sound Output		MAX	0.75 + 0.75 W
				10%(Typical)	0.5 + 0.5 W
		NTSC3.58+4.43 /PAL60Hz			No
G-2	**Tuning System**	Broadcasting System			US System M
		Tuner and Receive CH		System	1Tuner
				Destination	Ohers
				Tuning System	F-Synth
				Input Impedance	VHF/UHF 75 ohm
				CH Coverage	2 - 69, 4A, A-5 - A-1, A - I, J - W, W+1 - W+84
		Intermediate Frequency		Picture(FP)	45.75MHz
				Sound(FS)	41.25MHz
				FP-FS	4.50MHz
		Preset CH			No
		Stereo/Dual TV Sound			No
		Tuner Sound Muting			Yes
G-3	**Power**	Power Source		AC	120V AC 60Hz
				DC	
		Power Consumption		at AC	110 W at AC 120 V 60 Hz
				Stand by (at AC)	8 W at AC 120 V 60 Hz
				Per Year	-- kWh/Year
		Protector		Power Fuse	Yes
G-4	**Regulation**			Safety	UL /CSA
				Radiation	FCC /DOC
				X-Radiation	DHHS/HWC
G-5	**Temperature**			Operation	+5oC ~ +40oC
				Storage	-20oC ~ +60oC
G-6	**Operating Humidity**				Less then 80% RH
G-7	**On Screen Display**	Menu			Yes
			Menu Type		Character
			Picture		Yes
				Contrast	Yes
				Brightness	Yes
				Color	Yes
				Tint	Yes
				Sharpness	Yes
			Audio		No
				Bass	No
				Treble	No
				Balance	No
				BBE On/Off	No
				Stable Sound On/Off	No
			CH Set Up		Yes
				TV/CATV	Yes
				CH Program	Yes
				Add/Erase	Yes
			Language		Yes
			V-chip		Yes
				CH Label	No
				Favorite CH	No
				Color Stream DVD/DTV	No
			Control Level		Yes
				Volume	Yes
				Brightness	Yes
				Contrast	Yes
				Color	Yes
				Tint (NTSC Only)	Yes
				Sharpness	Yes
				Tuning	No
				Bass	No
				Treble	No
				Balance	No
				Back Light	No
			Stereo,Audio Output,SAP		No
			Video		No
			Color Stream		No
			Channel(TV/Cable)		Yes
			CH Label		No
			Sleep Timer		Yes
			Sound Mute		Yes
			V-chip Rating		Yes

GENERAL SPECIFICATIONS

G-8	**OSD Language**			English French Spanish
		OSD Language Setting		English
G-9	**Clock and Timer**	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Tim / Off Tim)	No
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode) more than		-- Min Sec
G-10	**Remote Control**	Unit		RC-DW
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		86-05 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		26 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)	No
			CH RTN/CH ENT(Quick View)	Yes
			Sleep	Yes
			RE Call(Call)	Yes
			Reset	Yes
			Menu	Yes
			Enter	Yes
			Mute	Yes
			Exit	No
			MTS(Audio Select)	No
			Set +	Yes
			Set -	Yes
		Multi Brand Keys	CH Up(VCR)	No
			CH Down(VCR)	No
			Pause/Still	No
			TV/VCR(VCR)	No
			Code	No
			FF	No
			Rew	No
			Rec	No
			Play	No
			Stop	No
			TV	No
			VCR	No
			Cable	No

GENERAL SPECIFICATIONS

G-11	**Features**	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		CATV		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip		Yes
			Type	USA,ORION Type
		BBE		No
		Auto Search		No
		CH Allocation		No
		SAP		No
		Channel Lock		No
		Just Clock Function		No
		Game Position		No
		CH Label		No
		VM Circuit		No
		Full OSD		No
		Premiere		No
		Comb Filter		No
				Lines
		Auto CH Memory		Yes
		Hotel Lock		No
		Closed Caption		Yes
		Stable Sound		No
		Favorite CH		No
G-12	**Accessories**	Owner's Manual	Language	English /French
			w/Guarantee Card	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 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

GENERAL SPECIFICATIONS

G-13	**Interface**	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up/Reset	Yes
				Channel Down/Enter	Yes
				Volume Up/Set Up	Yes
				Volume Down/Set Down	Yes
				Menu: Vol Up + Vol Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	No
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input	No
				Audio Input	No
				Other Terminal	No
			Rear	Video Input(Rear1)	No
				Video Input(Rear2)	No
				Audio Input(Rear1)	No
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	No
				Euro Scart	No
				Color Stream	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	F Type
				AC Outlet	No
G-14	**Set Size**			Approx. W x D x H (mm)	618 x 504 x 525
G-15	**Weight**			Net (Approx.)	27kg (59.9 lbs)
				Gross (Approx.)	29Kg (64.3 lbs)
G-16	**Carton**		Master Carton		No
				Content	---- Sets
				Material	-- /--
				Dimensions W x D x H(mm)	-- x -- x --
				Description of Origin	No
			Gift Box		Yes
				Material	Double/White
				Dimensions W x D x H(mm)	689 x 577 x 620
				Design	As per Buyer's
				Description of Origin	Yes
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	31
			Container Stuffing		204 Sets/40' container
G-17	**Cabinet Material**			Cabinet Front	PS 94V0 DECABROM
				Cabinet Rear	PS 94V0 DECABROM

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

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

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

REMOVAL

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

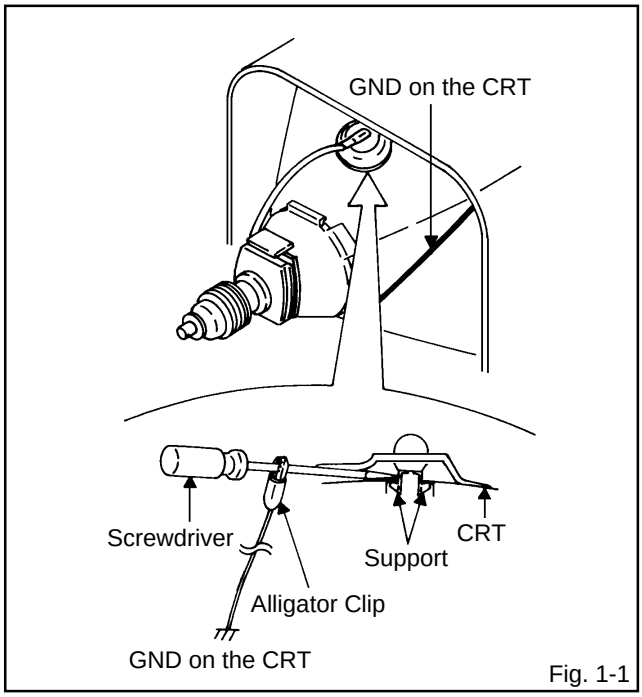


Fig. 1-1

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

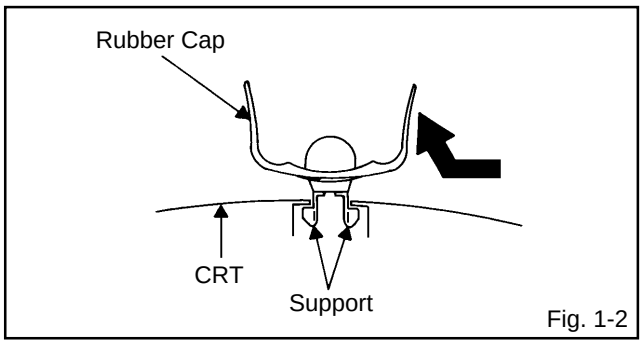


Fig. 1-2

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

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

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

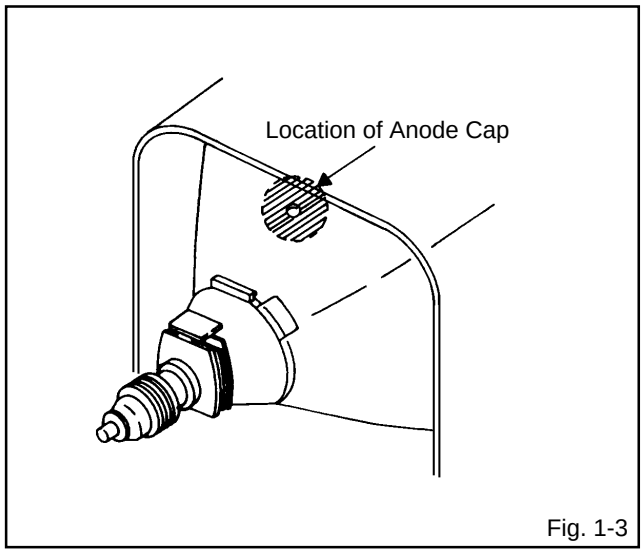


Fig. 1-3

NOTE

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

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

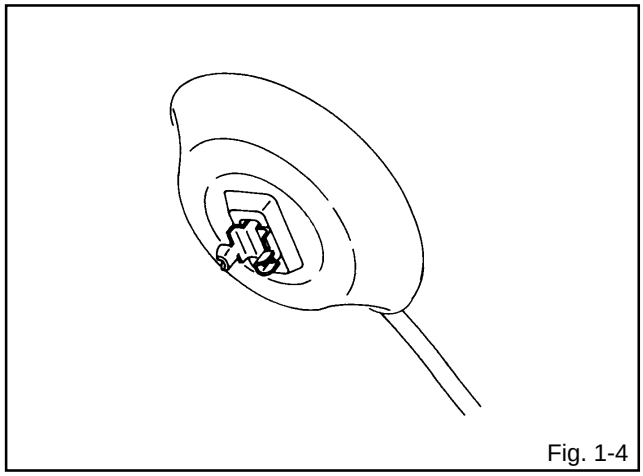


Fig. 1-4

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

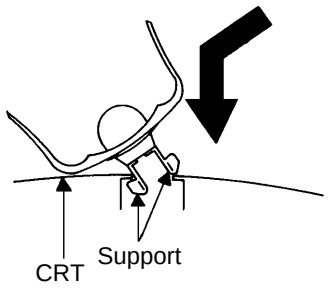


Fig. 1-5

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

2. REMOVAL OF DEFLECTION YOKE

(Refer to Fig. 2-1)

1. Loosen the screw ①.
2. Remove the Convergence • Purity Magnet in the direction of arrow (A).
3. Loosen the screw ②.
4. Remove the 3 Wedges.
5. Remove the Deflection Yoke in the direction of arrow (B).

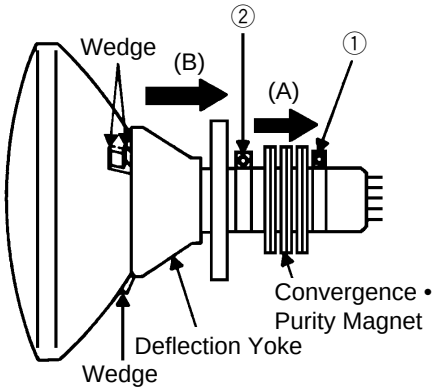


Fig. 2-1

INSTALLATION

Install new Deflection Yoke in reverse steps of REMOVAL.

NOTE

After adjusting the purity and the convergence, fix the screw ② and lock the wedges.

SERVICE MODE LIST

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

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF USING HOURS". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF MEMORY IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF USING HOURS

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.

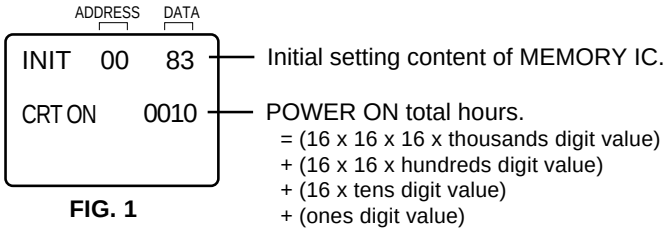


FIG. 1

NOTE FOR THE REPLACING OF 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
70	A0	5A	A2	39	02	63	24	3A	A1	21	FF

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the SET + or - keys on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using SET + or - until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

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

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

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

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
  Inferior silicon grease can damage IC's and transistors.
- When replacing IC's and transistors, use only specified silicon grease (YG6260M).
  Remove all old silicon before applying new silicon.

Prepare the following measurement tools for electrical adjustments.

1. Synchro Scope
2. Digital Voltmeter

On-Screen Display Adjustment

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

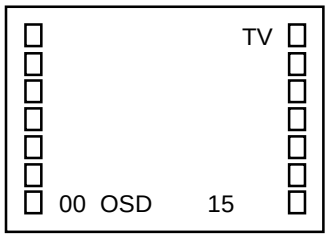


Fig. 1-1

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

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	13	BRIGHTNESS
01	CUT OFF	14	CONTRAST
02	RF AGC	15	COLOR
03	VIF VCO	16	TINT
04	H VCO	17	SHARPNESS
05	H PHASE	18	FM LEVEL
06	V SIZE	19	LEVEL
07	V SHIFT	20	SEPARATION 1
08	R DRIVE	21	SEPARATION 2
09	B DRIVE	22	TEST MONO
10	R BIAS	23	TEST STEREO
11	G BIAS	24	X-RAY TEST
12	B BIAS		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: RF AGC DELAY

1. Receive an 60dB monoscope pattern.
2. Connect the digital voltmeter to **R606**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "RF AGC".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.65 ± 0.05V.

2-2: CUT OFF

1. Adjust the unit to the following settings.
   R.DRIVE=74, B.DRIVE=56, R.BIAS=68, G.BIAS=85, B.BIAS=64, BRIGHTNESS=135, CONTRAST=100.
2. Place the set with Aging Test for more than 15 minutes.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "CUT OFF".
4. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: 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 with Aging Test for more than 10 minutes.
2. Receive the color bar pattern.
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 **(10)** on the remote control to select "R.BIAS".
5. Using the VOL. UP/DOWN button on the remote control, adjust the R.BIAS.
6. Press the CH. UP/DOWN button on the remote control to select the "R.DRIVE", "B.DRIVE", "G.BIAS" or "B.BIAS".
7. Using the VOL. UP/DOWN button on the remote control, adjust the R.DRIVE, B.DRIVE, G.BIAS or B.BIAS.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-5: SUB TINT/SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP024**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "TINT".
4. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-1)**
5. Connect the synchro scope to **TP022**.
6. Press the CH DOWN button once to set to "COLOR" mode.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 110% of the white level. **(Refer to Fig. 2-2)**
8. Receive the color bar pattern. (Audio Video Input)
9. Press the TV/AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~7.

ELECTRICAL ADJUSTMENTS

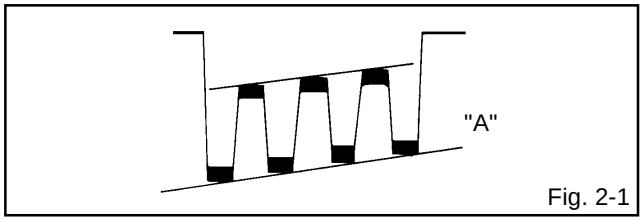


Fig. 2-1

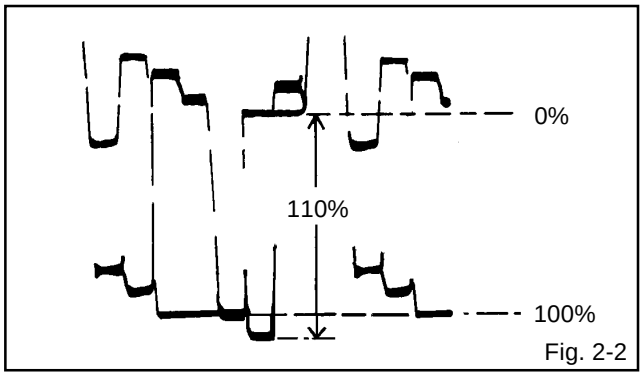


Fig. 2-2

2-6: HORIZONTAL PHASE

1. Receive the center cross 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 **(05)** on the remote control to select "H.PHASE".
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.

2-7: VERTICAL SIZE

NOTE: Adjust after performing adjustments in section 2-6

1. Receive the center cross 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 **(06)** on the remote control to select "V.SIZE".
4. Press the VOL. UP/DOWN button on the remote control until the rectangle on the center of the screen becomes square.
5. Receive a broadcast and check if the picture is normal.

2-8: VERTICAL SHIFT

NOTE: Adjust after performing adjustments in section 2-7

1. Receive the center cross 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 **(07)** on the remote control to select "V.SHIFT".
4. Press the VOL. UP/DOWN button on the remote control until the horizontal line becomes fit to the notch of the shabow mask.

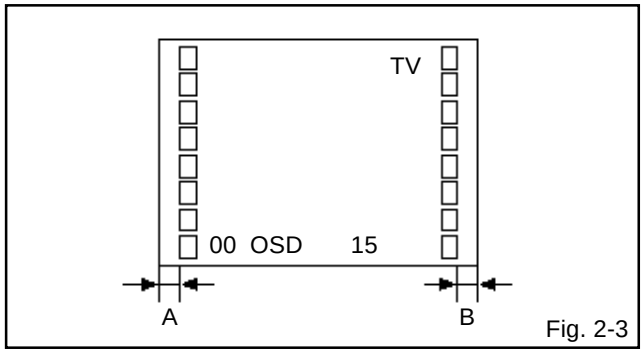


Fig. 2-3

2-9: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-3)**

2-10: VERTICAL VCO

1. Place the set with Aging Test for more than 15 minutes.
2. Receive an 80dB monoscope pattern.
3. Connect the digital voltmeter between the **pin 5 of CP601.**
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "VIF VCO".
5. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5V.

2-11: CONSTANT VOLTAGE

1. Using the remote control, set the brightness and contrast to normal position.
2. Connect the digital voltmeter to **TP402**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR502** until the digital voltmeter is 130V ± 0.5V.

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 rastezr pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

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

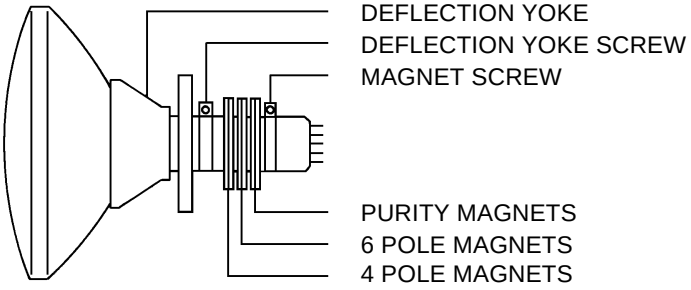


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

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

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

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

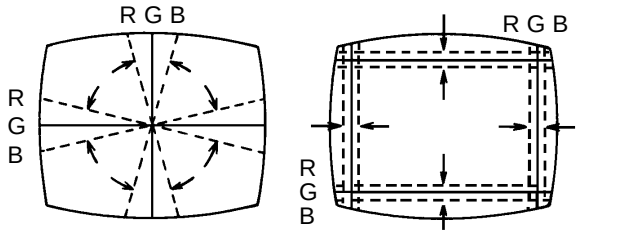


Fig. 3-2-a

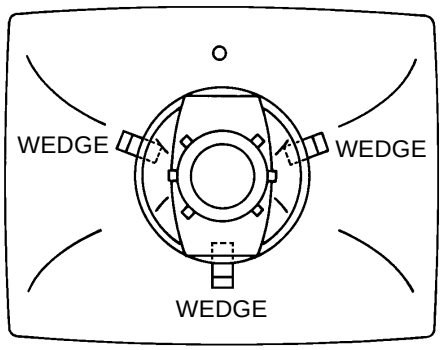
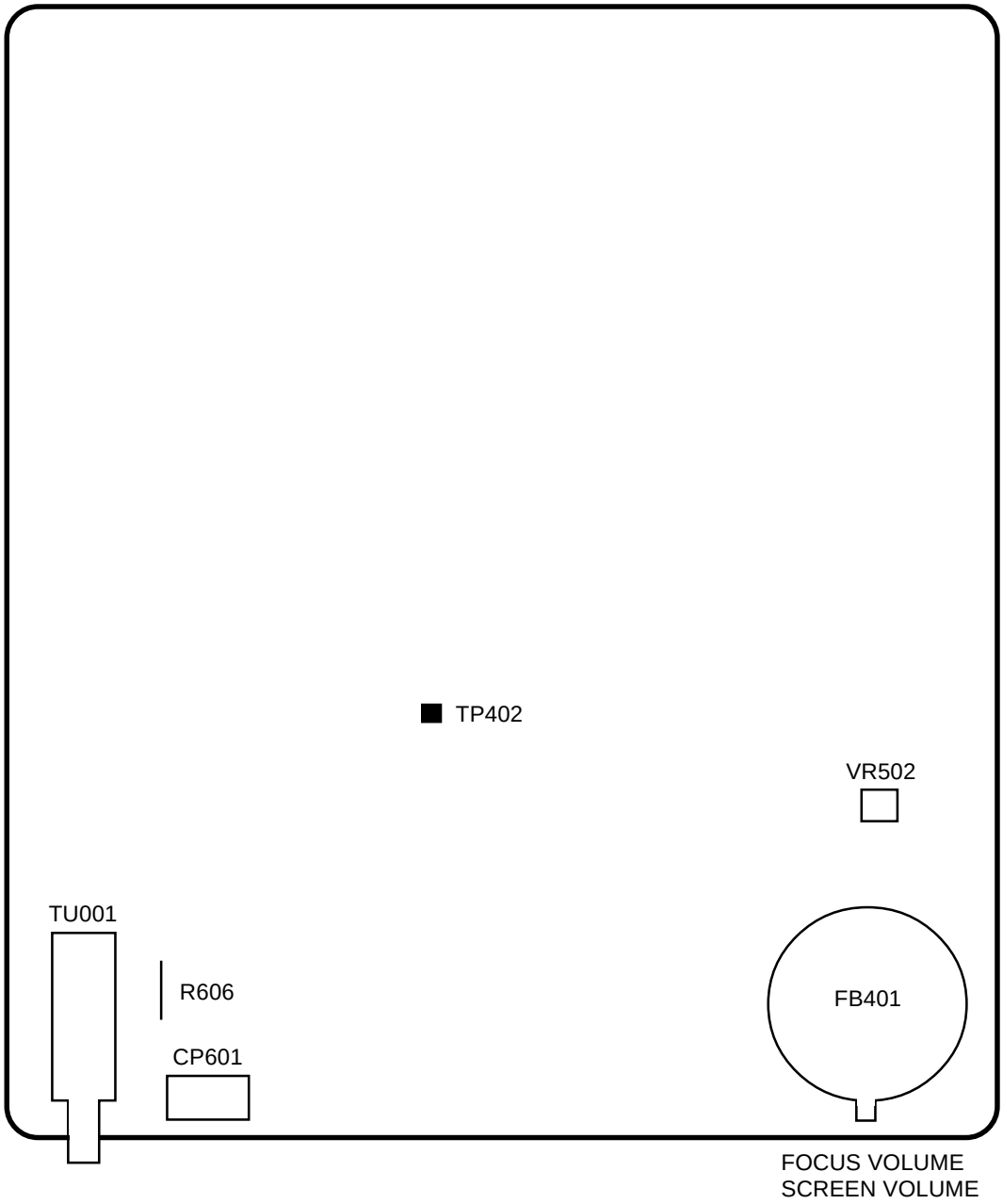
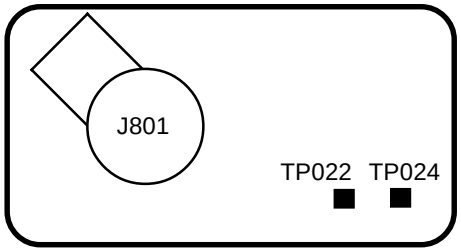


Fig. 3-2-b

MAJOR COMPONENTS LOCATION GUIDE

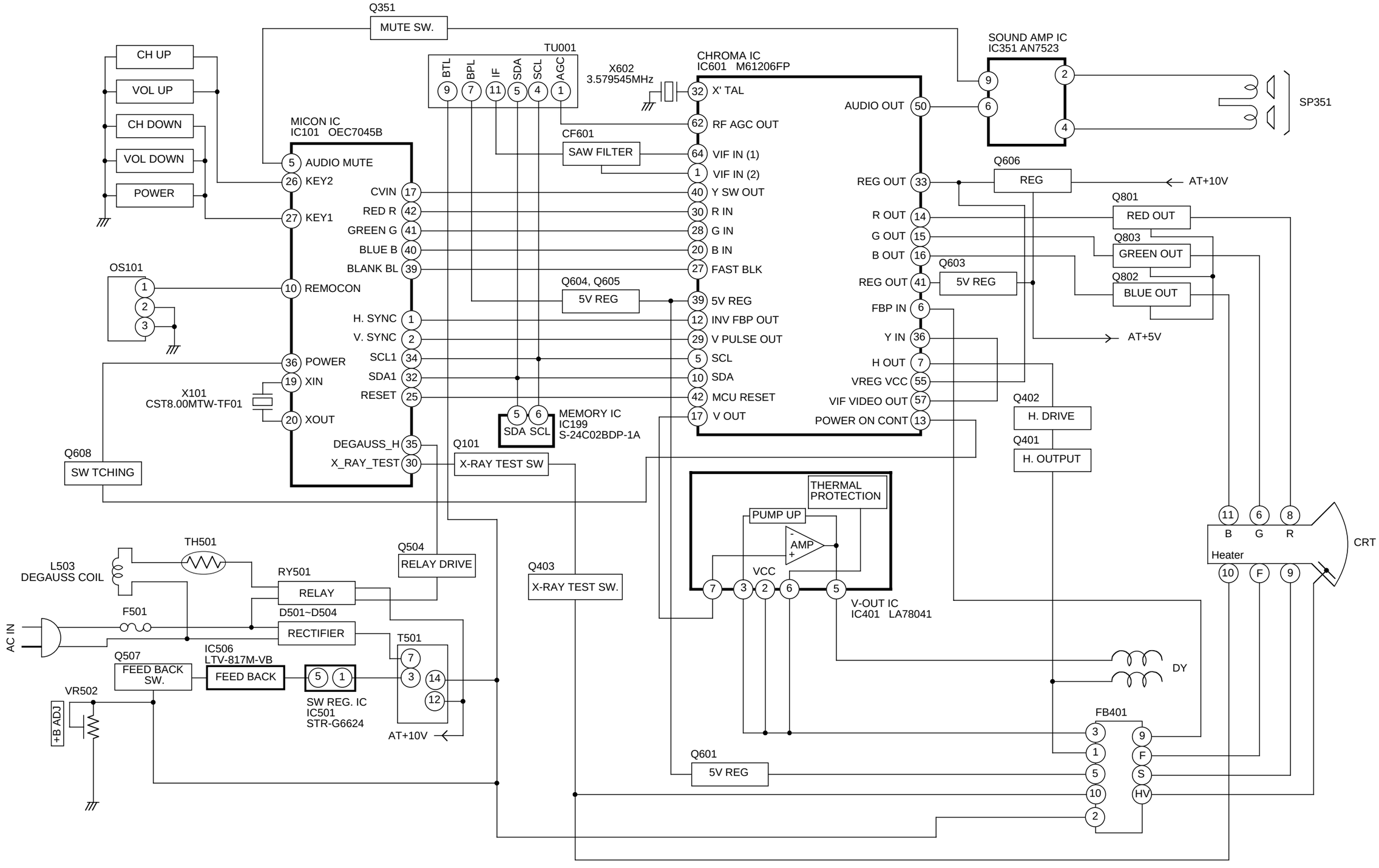


MAIN PCB

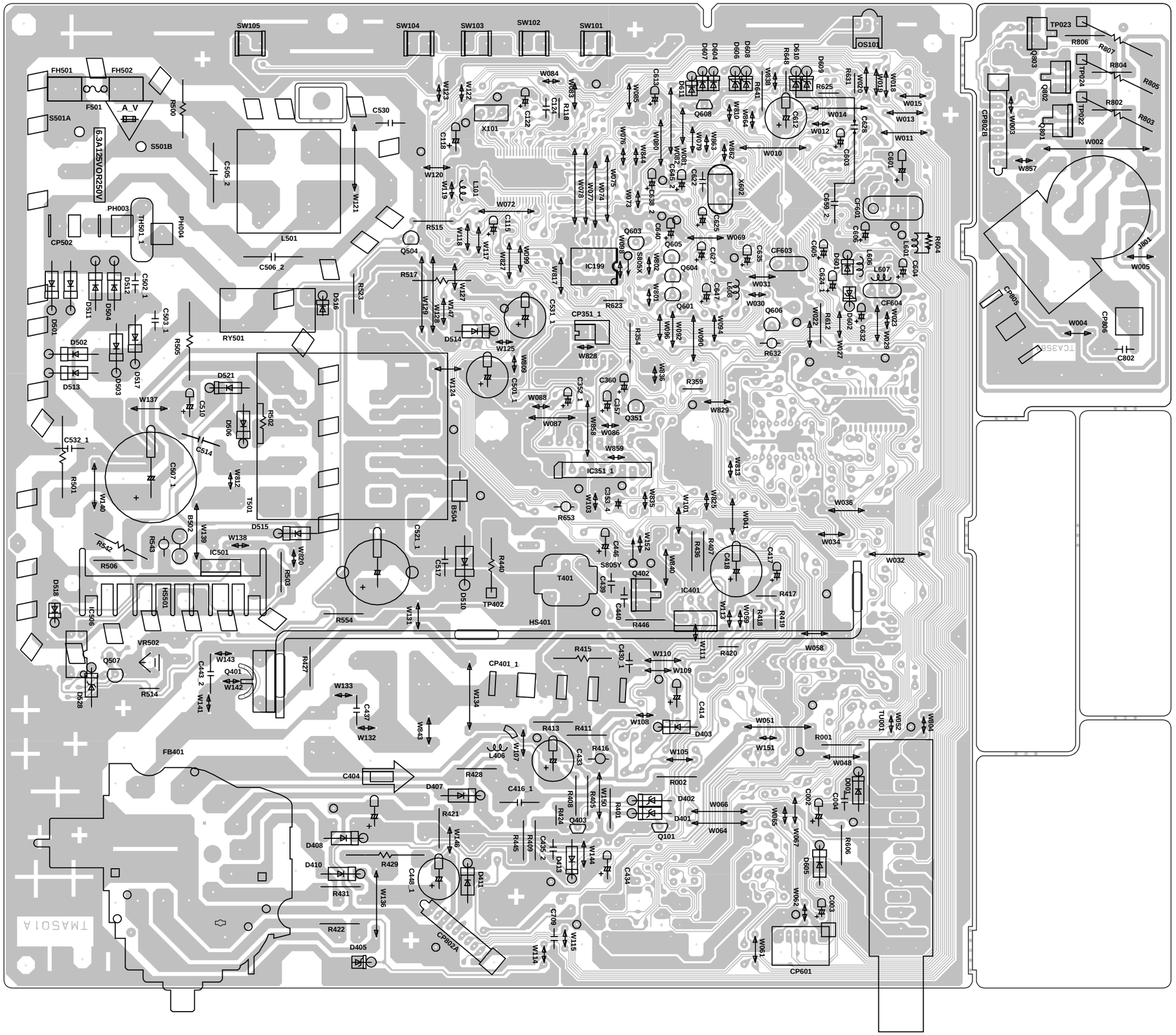


CRT PCB

BLOCK DIAGRAM



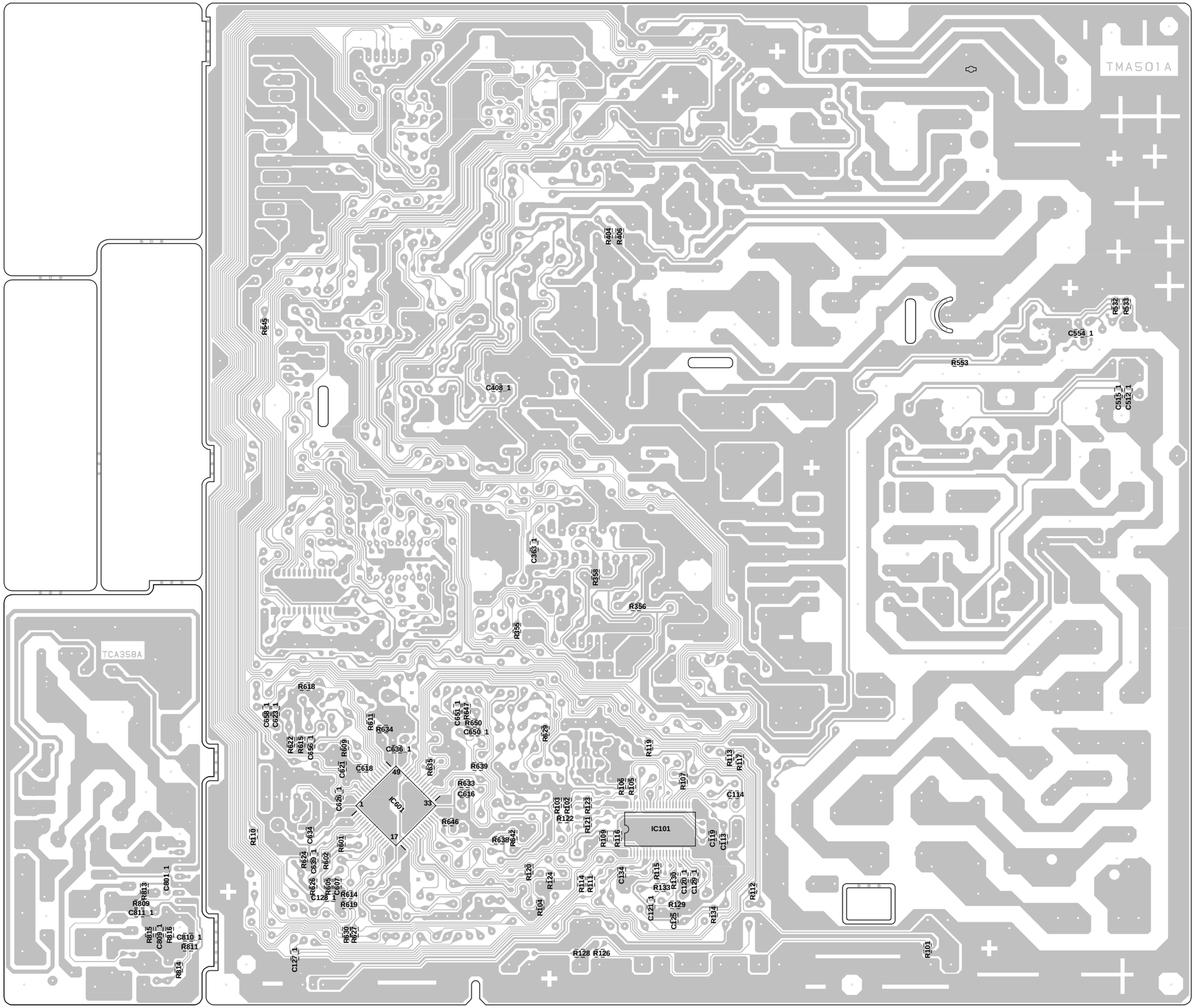
PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE



F-1

F-2

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



MICON/TUNER SCHEMATIC DIAGRAM(MAIN PCB)

TU001 ENV56D66G3

ACCESSORY

TM101
RC-DW020

MICON IC
IC101 OEC7045B

OS101
PIC-28143SY-2

X101
EFOEC8004T4

MEMORY IC
IC199
S-24C02BDP-1A

L101
2.7UH

W804

D001
MTZJ30B

W862

W863

W864

W827

Q101
DTC114TSTP

X-RAY TEST SW

SW105 SKHVBED010 25 POWER

SW104 SKHVBED010 25 VOL_DOWN

SW103 SKHVBED010 25 VOL UP

SW102 SKHVBED010 25 CH DOWN

SW101 SKHVBED010 25 CH UP

FROM/TO CHROMA
AGC
TUNER+5V
IF
SYNC
I2C_OFF
Y_VIDEO
VD
HD
OSD_R
OSD_G
OSD_B
OSD_BLK
GND
POWER
AT+5V
AFT
SCL
SDA
RESET

FROM/TO DEFLECTION/CRT
X-RAY
X-RAY_TEST

FROM/TO POWER
DEGAUSS_H
+B
GND

TO SOUND
AUDIO_MUTE

S805X

CAUTION: DIGITAL TRANSISTOR

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

PCB010
TMA501

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.

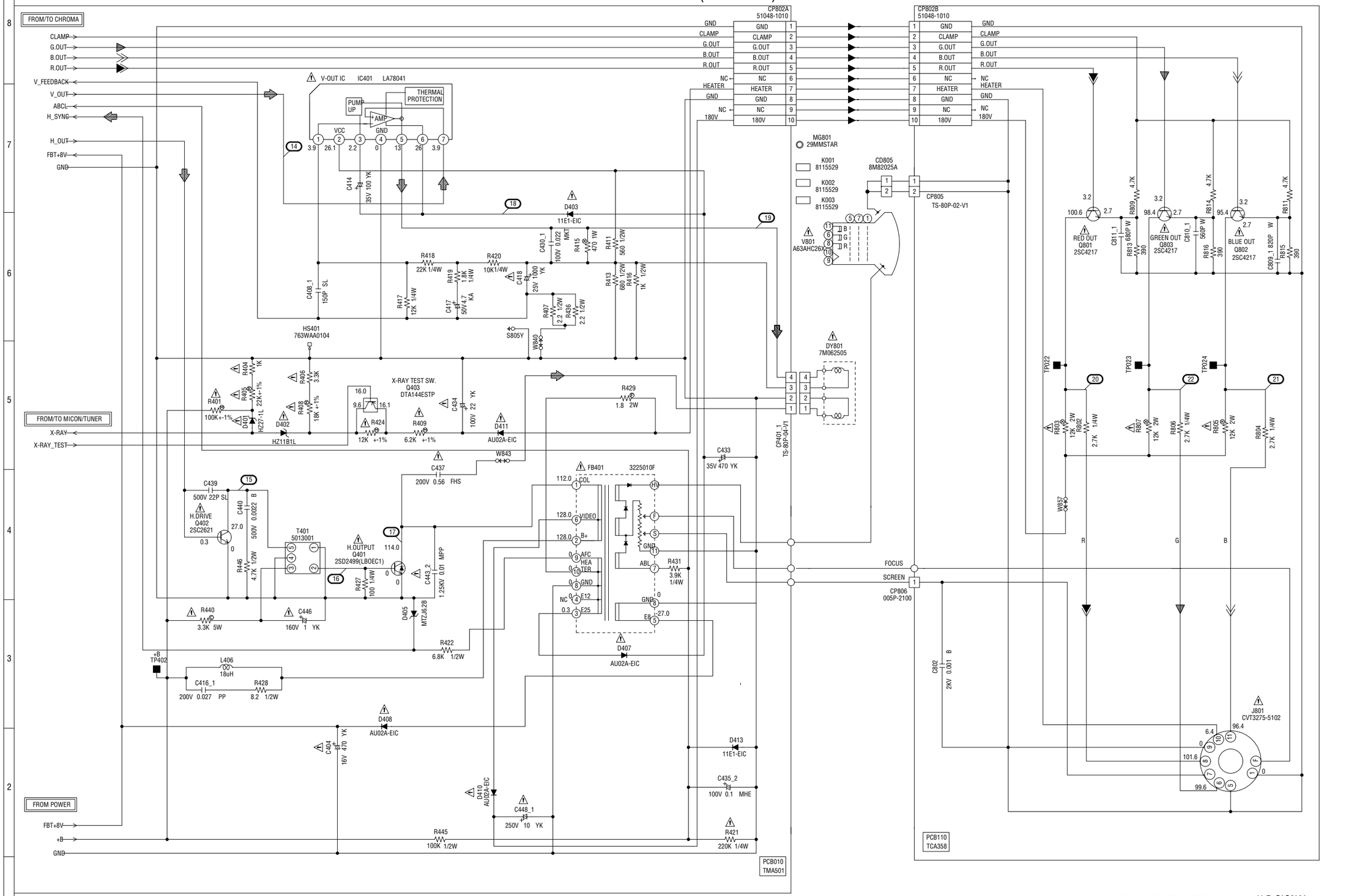
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

CHROMA SCHEMATIC DIAGRAM
(MAIN PCB)

FROM POWER
AT+10V
GND
TO SOUND
STEREO+5V
AUDIO_OUT
FROM/TO MICON/TUNER
IF
Y_VIDEO
AT+5V
SYNC
TUNER+5V
RESET
AFT
AGC
GND
HD
POWER
OSD_B
OSD_BLK
OSD_G
VD
OSD_R
I2C_OFF
SDA
SCL
FROM/TO DEFLECTION/CRT
FBT+8V
V_OUT
ABCL
V_FEEDBACK
GND
H_OUT
H_SYNC
B.OUT
G.OUT
R.OUT
CLAMP
TEST POINT
CP601
TKC-M06X-A1
VIDEO 6
INT.MONI 5
IIC_OFF 4
SDA 3
SCL 2
GND 1
5V REG Q601 KTC3203_Y-AT
5V REG Q604 2SD734(E,F)-AA
5V REG Q605 KTC3203_Y-AT
5V REG Q632 KTC3203_Y-AT
REG Q606 KTC3203_Y-AT
SWITCHING Q608 DTC114ES
CF604 TPSRA4M50C00-A0
CF603 SFSH4.5MCB
SAW FILTER CF601 SAFGP45M7VHCZR
CHROMA IC IC601 M61206FP
X602 3.579545MHz
D602 MTZJ8.2B
D601 1SS133
D604 1SS133
D607 1SS133
D611 1SS133
D609 MTZJ9.1B
D608 MTZJ9.1B
D606 MTZJ9.1B
D610 MTZJ6.8B
W801
W802
W817
W810
W844
W838
R645 10
R623 120 1/4W
R622 68
L607 15uH
L606 2.2uH
L601 1.2uH
R615 470
R634 10K
R612 5.6K 1/4W
R611 10K
R632 100 1/2W
R618 10M
R606 10K
R604 2.2K
R609 330
R602 1K
R601 2.2K
R626 10K
R624 2K
R605 5.6K
R614 2.2K
R619 2.2K
R625 2.2K 1/4W
R627 100
R630 100
R631 100 1/4W
R653 560 1/2W
R639 100
R633 8.2K
R629 27
R635 100
R647 220
R638 10K
R646 27K
R642 6.8K
R641 22K 1/4W
R648 100 1/4W
R650 1K
C647 50V 1 KA
C638_2 16V 33 KA
C645_2 16V 47 KA
C613 50V 1 KA
C616 15P CH
C651_1 33P SL
C650_1 220P B
L608 6.8uH
C625 50V 1 KA
C622 0.015 M
C640 16V 47 KA
C635 16V 47 KA
C627 50V 1 KA
C612 10V 1000 YK
C601 6.3V 1000 YK
C656_1 100P SL
C636_1 0.01 F
C634 0.01 F
C639_1 0.01 F
C628 0.001 B
C658_1 0.001 Y
C623_1 0.0033 Y
C632 50V 2.2 KA
C624_1 16V 47 KA
C605 50V 0.47 KA
C618 225P CH
C621 0.01 F
C626_1 0.001 Y
C659_2 470P B
C606 50V 0.22 KA
C604
C603 50V 1 0.01 F
C607_1
C609_1
C610_1
C611_1
C612_1
C613_1
C614_1
C615_1
C617_1
C618_1
C619_1
C620_1
C621_1
C622_1
C623_1
C624_1
C625_1
C626_1
C627_1
C628_1
C629_1
C630_1
C631_1
C632_1
C633_1
C634_1
C635_1
C636_1
C637_1
C638_1
C639_1
C640_1
C641_1
C642_1
C643_1
C644_1
C645_1
C646_1
C647_1
C648_1
C649_1
C650_1
C651_1
C652_1
C653_1
C654_1
C655_1
C656_1

DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)



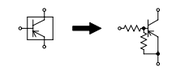
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

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

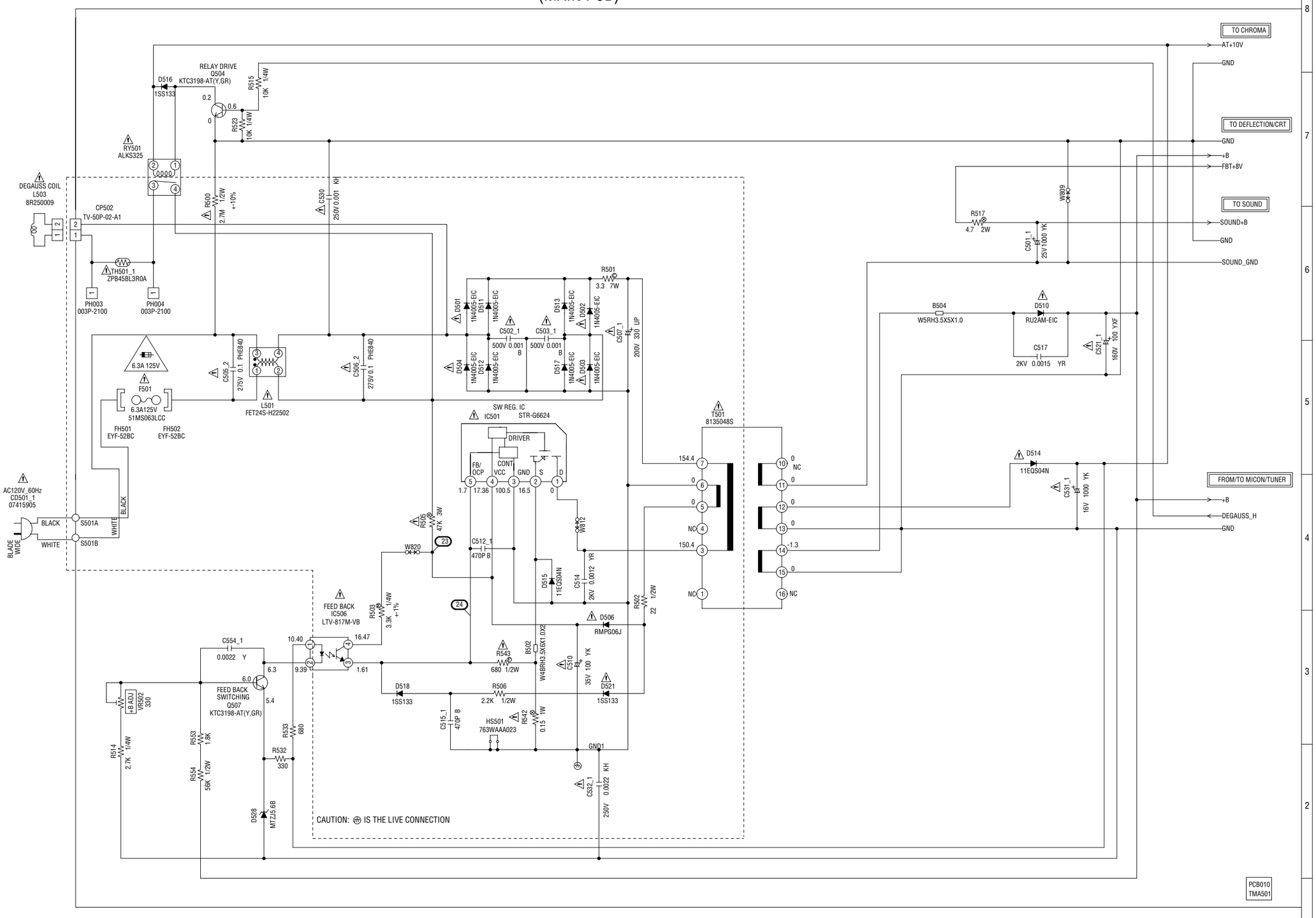
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR



R.SIGNAL
G.SIGNAL
B.SIGNAL
DEFLECTION SIGNAL

POWER SCHEMATIC DIAGRAM
(MAIN 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)

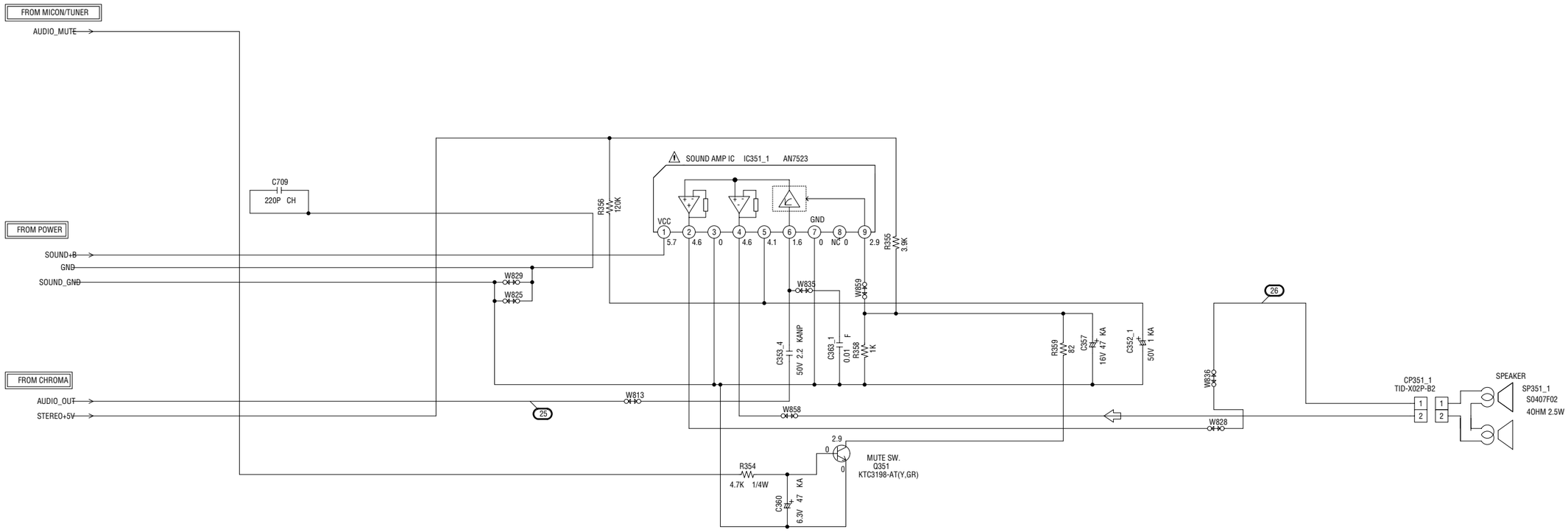
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

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

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

SOUND SCHEMATIC DIAGRAM
(MAIN PCB)



⇦ AUDIO SIGNAL

PCB010
TMA501

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

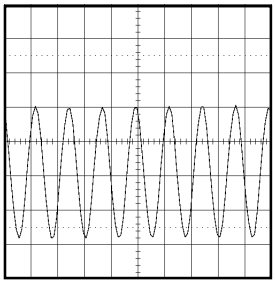
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

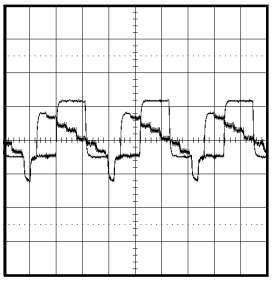
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

WAVEFORMS

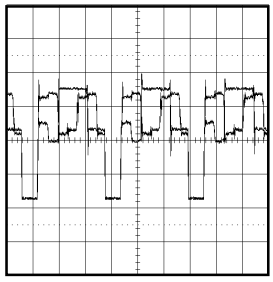
MICON/TUNER



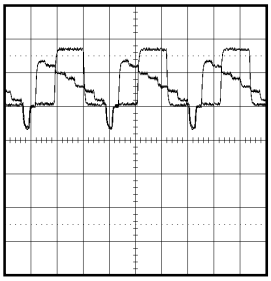
① 1V 0.1µs/div



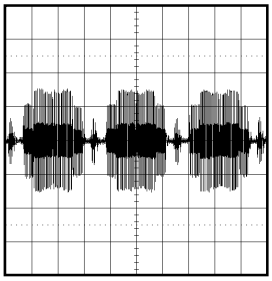
⑥ 0.5V 20µs/div



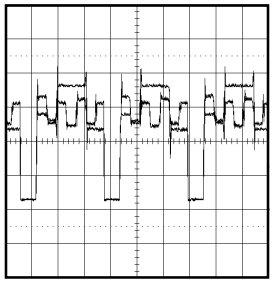
⑪ 1V 20µs/div



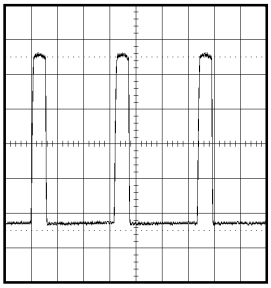
② 0.5V 20µs/div



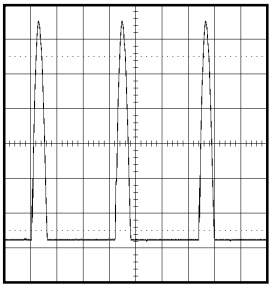
⑦ 200mV 20µs/div



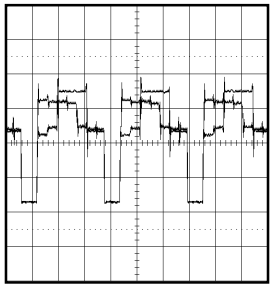
⑫ 1V 20µs/div



③ 200mV 20µs/div

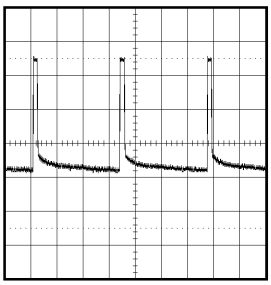


⑧ 20V 20µs/div

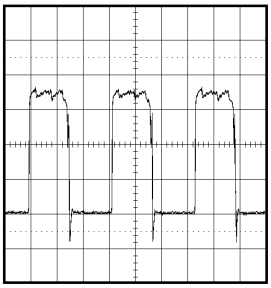


⑬ 1V 20µs/div

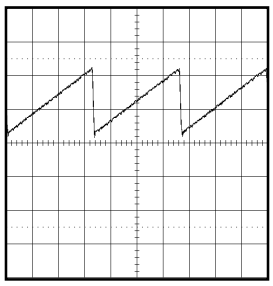
DEFLECTION/CRT



④ 200mV 5ms/div

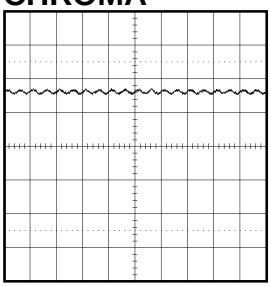


⑨ 200mV 20µs/div

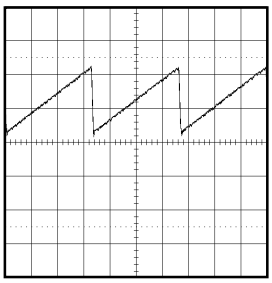


⑭ 0.5V 5ms/div

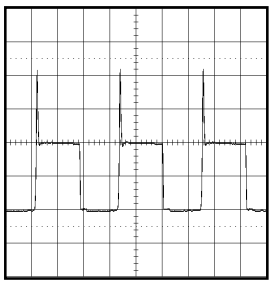
CHROMA



⑤ 0.5V 2ms/div



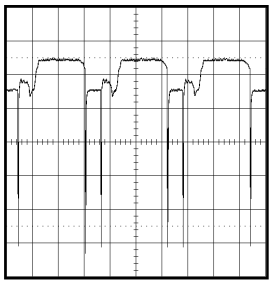
⑩ 0.5V 5ms/div



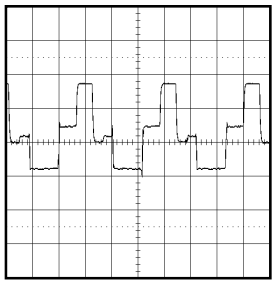
⑮ 20V 20µs/div

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

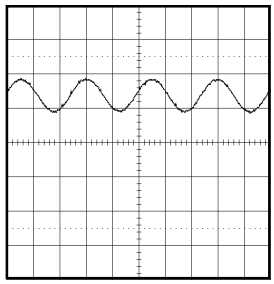
WAVEFORMS



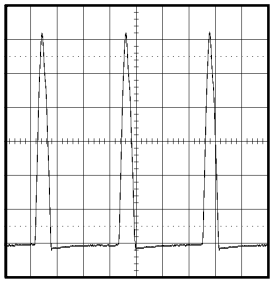
⑯ 2V 20µs/div



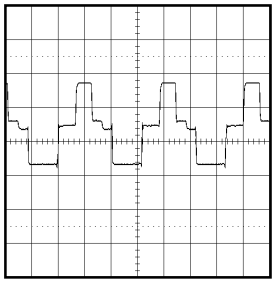
㉑ 50V 20µs/div



㉖ 1V 1ms/div

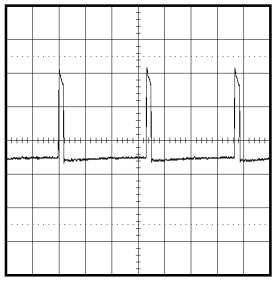


⑰ 200V 20µs/div

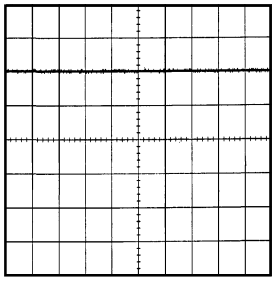


㉒ 50V 20µs/div

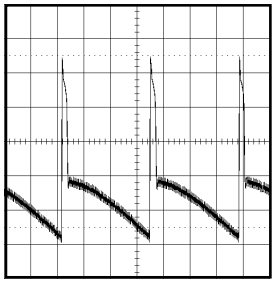
POWER



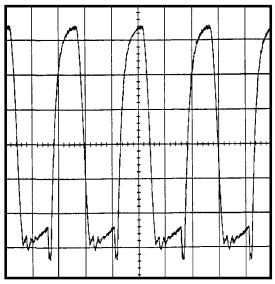
⑱ 10V 5ms/div



㉓ 5.0V 20ms/div

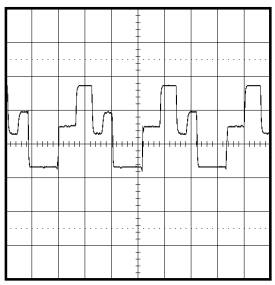


⑲ 10V 5ms/div

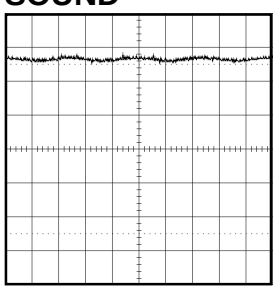


㉔ 500mV 5µs/div

SOUND



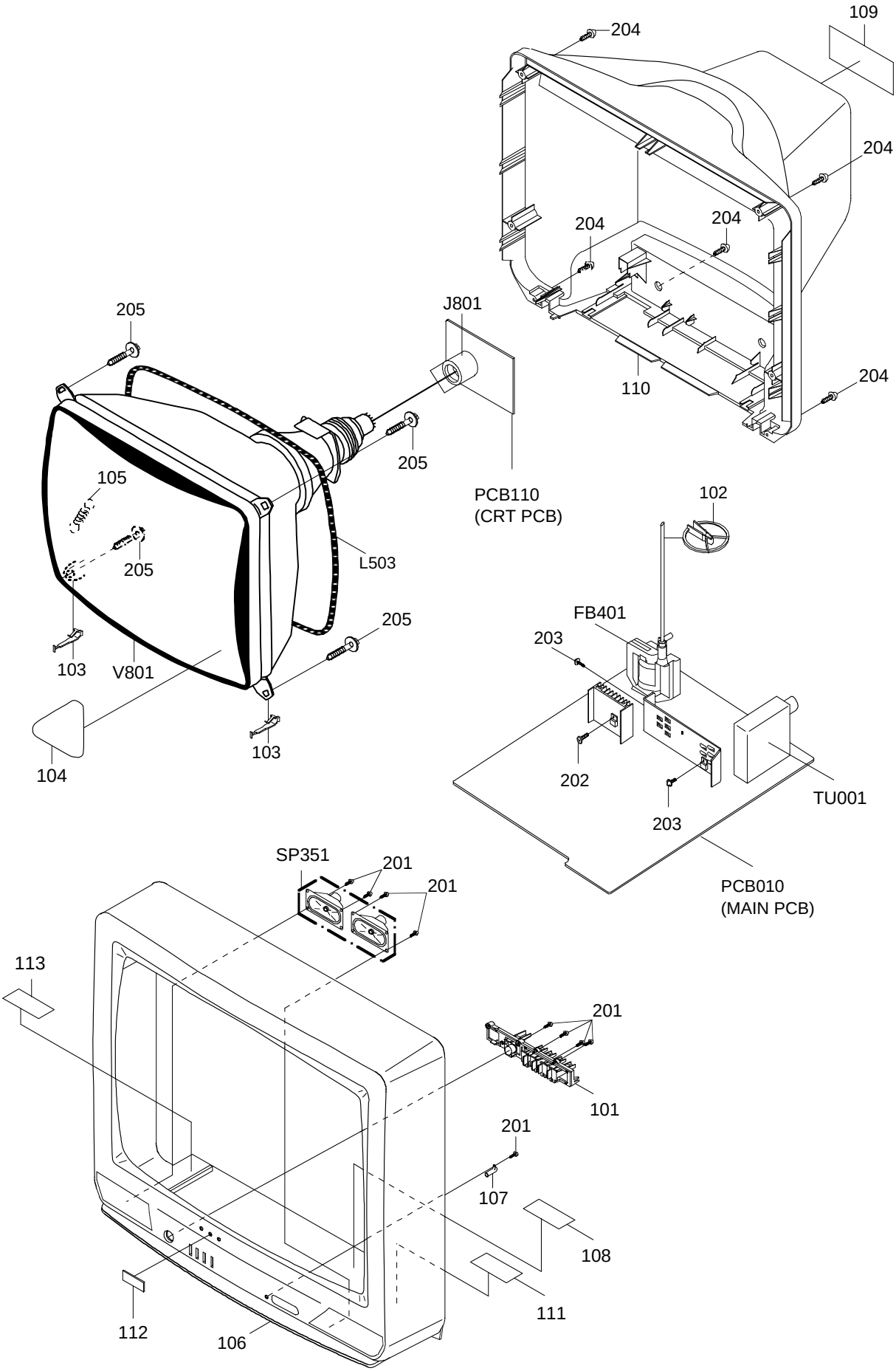
⑳ 50V 20µs/div



㉕ 0.5V 1ms/div

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

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	735WPA0562	BUTTON,ASS'Y		
102	899HV3T000	HOLDER,ANODE WIRE		
103	762WPA0009	HOLDER,CRT WIRE		
104	723000B179	FILM,DECORATION		
105	741WUA0021	SPRING,EARTH		
106	701APJA057	CABINET,FRONT		
107	713WPA0096	GUIDE,REMOCON		
108	7230006856	SHEET,CAUTION		
109	722552A006	SHEET,RATING		
110	702APA0121	CABINET,BACK		
111	7220001109	SHEET,HWC		
112	723552A003	BADGE,BRAND		
113	7240001041	SHEET,CSA WARNING		
201	8110630A04	SCREW,TAP TITE (P)	BRAZIER	3x10
202	810B130A04	SCREW/WASHER (B)		M3x10
203	8109I30A04	SCREW,TAP TITE (B)	WH7	3x10
204	8117540B04	SCREW,TAPPING (B0)	TRUSS	4x20
205	8111J50D05	SCREW,TAPPING (A)	GW22	5x35
---	JB5L0100	POLY BAG		
---	J3K00401	INSTRUCTION BOOK		
---	791AHA0021	FILM,BAG		
---	792AHA0073	PACKAGE,TOP		
---	792AHA0074	PACKAGE,BOTTOM		
---	793ACDA111	GIFT BOX		
---	A3K004E975	INSTRUCTION BOOK KIT		

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART. NO.	DESCRIPTION		
		RESISTORS		
⚠ R401	R4X5T6104F	R, METAL	100K OHM 1/6W	
⚠ R404	R903N8102J	RC	1K OHM 1/8W	
⚠ R405	R4X5T6223F	R, METAL	22K OHM 1/6W	
⚠ R406	R903N8332J	RC	3.3K OHM 1/8W	
R407	R002T22R2J	RC	2.2 OHM 1/2W	
⚠ R408	R4X5T6183F	R, METAL	18K OHM 1/6W	
⚠ R409	R4X5T6622F	R, METAL	6.2K OHM 1/6W	
R415	R3X181471J	R, METAL	470 OHM 1W	
⚠ R421	R001T4224T	RC	220K OHM 1/4W	
⚠ R424	R4X5T6123F	R, METAL	12K OHM 1/6W	
R429	R6558A1R8J	R, FUSE	1.8 OHM 2W	
⚠ R440	R5X2CD332J	R, CEMENT	3.3K OHM 5W	
⚠ R500	R0G3K2275K	RC	2.7M OHM 1/2W	
R501	R5Y2CE3R3J	R, CEMENT	3.3 OHM 7W	
R502	R002T2220J	RC	22 OHM 1/2W	
R503	R4X5T4332F	R, METAL	3.3K OHM 1/4W	
⚠ R505	R3X28B473J	R, METAL OXIDE	47K OHM 3W	
R506	R002T2222J	RC	2.2K OHM 1/2W	
R514	R002T4272J	RC	2.7K OHM 1/4W	
R515	R002T4103J	RC	10K OHM 1/4W	
R517	R3X18A4R7J	R, METAL	4.7 OHM 2W	
⚠ R542	R33681R15J	R, METAL	0.15OHM 1W	
⚠ R543	R635U2681J	R, FUSE	680 OHM 1/2W	
R604	R001T6222J	RC	2.2K OHM 1/6W	
⚠ R803	R3X18A123J	R, METAL OXIDE	12K OHM 2W	
⚠ R805	R3X18A123J	R, METAL OXIDE	12K OHM 2W	
⚠ R807	R3X18A123J	R, METAL OXIDE	12K OHM 2W	
		CAPACITORS		
⚠ C404	E02LT2471M	CE	470 UF 16V	
C414	E02LT4101M	CE	100 UF 35V	
C416	P3N1F2273J	CPP	0.027 UF 200V	
⚠ C418	E02LT3102M	CE	1000 UF 25V	
C433	E02LT4471M	CE	470 UF 35V	
⚠ C434	E02LT8220M	CE	22 UF 100V	
⚠ C437	P447F2564J	CMPP	0.56 UF 200V FHS	
⚠ C443	P4N8FJ103H	CMPP	0.01 UF 1.25KV	
⚠ C446	E02LTB010M	CE	1 UF 160V	
⚠ C448	E0ELTD100M	CE	10 UF 250V	
C501	E02LT3102M	CE	1000 UF 25V	
⚠ C502	C0JTB0513K	CC	0.001 UF 500V	
⚠ C503	C0JTB0513K	CC	0.001 UF 500V	
⚠ C505	P2472B104M	CMP	0.1 UF 275V PHE840	
⚠ C506	P2472B104M	CMP	0.1 UF 275V PHE840	
⚠ C507	E51CGC331M	CE	330 UF 200V	
⚠ C510	E02LT4101M	CE	100 UF 35V	
C514	C0JLYR7B3K	CC	0.0012UF 2KV YR	
C517	C0JLYR7E3K	CC	0.0015UF 2KV YR	
⚠ C521	E62NFB101M	CE	100 UF 160V	
⚠ C530	CB3LE0M13M	CC	0.001 UF 250V	
⚠ C531	E02LT2102M	CE	1000 UF 16V	
⚠ C532	CB3LE0MH3M	CC	0.0022UF 250V	
C628	CHG0B0413K	CC	0.001 UF 50V B	
C802	C13VB0713K	CC	0.001 UF 2KV B	
		DIODES		
D001	D97U03001B	DIODE, ZENER	MTZJ30B T-77	
⚠ D401	D94TA27011	DIODE, ZENER	HZ27-1L TD	
⚠ D402	D94TA11B11	DIODE, ZENER	HZ11B1L TD	
⚠ D403	D2WT011E10	DIODE, SILICON	11E1-EIC	
D405	D97U06R21B	DIODE, ZENER	MTZJ6.2B T-77	
⚠ D407	D2WTAU02A0	DIODE, SILICON	AU02A-EIC	
⚠ D408	D2WTAU02A0	DIODE, SILICON	AU02A-EIC	
⚠ D410	D2WTAU02A0	DIODE, SILICON	AU02A-EIC	
⚠ D411	D2WTAU02A0	DIODE, SILICON	AU02A-EIC	
D413	D2WT011E10	DIODE, SILICON	11E1-EIC	
⚠ D501	D2WXN40050	DIODE, SILICON	1N4005-EIC	
⚠ D502	D2WXN40050	DIODE, SILICON	1N4005-EIC	
⚠ D503	D2WXN40050	DIODE, SILICON	1N4005-EIC	
⚠ D504	D2WXN40050	DIODE, SILICON	1N4005-EIC	
⚠ D506	D2LTPG06J0	DIODE, SILICON	RMPG06J-G3	or
	D2WXN49370	DIODE, SILICON	1N4937	
⚠ D510	D2WXRU2AM0	DIODE, SILICON	RU2AM-EIC	
D511	D2WXN40050	DIODE, SILICON	1N4005-EIC	
D512	D2WXN40050	DIODE, SILICON	1N4005-EIC	
D513	D2WXN40050	DIODE, SILICON	1N4005-EIC	
⚠ D514	D28TQS04N0	DIODE, SCHOTTKY	11EQS04N-TA1B2	
D515	D28TQS04N0	DIODE, SCHOTTKY	11EQS04N-TA1B2	
D516	D1VT001330	DIODE, SILICON	1SS133T-77	

REF. NO.	PART. NO.	DESCRIPTION		
		DIODES		
D517	D2WXN40050	DIODE, SILICON	1N4005-EIC	
D518	D1VT001330	DIODE, SILICON	1SS133T-77	
⚠ D521	D1VT001330	DIODE, SILICON	1SS133T-77	
D528	D97U05R61B	DIODE, ZENER	MTZJ5.6B T-77	
D601	D1VT001330	DIODE, SILICON	1SS133T-77	
D602	D97U08R21B	DIODE, ZENER	MTZJ8.2B T-77	
D604	D1VT001330	DIODE, SILICON	1SS133T-77	
D605	D2WT011E10	DIODE, SILICON	11E1-EIC	
D606	D97U09R11B	DIODE, ZENER	MTZJ9.1B T-77	
D607	D1VT001330	DIODE, SILICON	1SS133T-77	
D608	D97U09R11B	DIODE, ZENER	MTZJ9.1B T-77	
D609	D97U09R11B	DIODE, ZENER	MTZJ9.1B T-77	
D610	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	
D611	D1VT001330	DIODE, SILICON	1SS133T-77	
		ICS		
IC101	I56F07045B	IC	OEC7045B	
IC199	A3K005E015	IC	S-24C02BDP-1A	
⚠ IC351	I0FSP75230	IC	AN7523	
⚠ IC401	I03TD80410	IC	LA78041	
⚠ IC501	I2BT06624G	IC	STR-G6624	
IC506	0002E00610	PHOTO COUPLER	LTV-817M-VB	
IC601	I06FC61206	IC	M61206FP	
		TRANSISTORS		
Q101	TNYTJ03001	COMPOUND TRANSISTOR	DTC114TSTP	or
	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
Q351	TCATC31980	TRANSISTOR, SILICON	KTC3198-AT(Y,GR)	
⚠ Q401	TDUU024990	TRANSISTOR, SILICON	2SD2499(LBOEC1)	
⚠ Q402	TC3Q026210	TRANSISTOR, SILICON	2SC2621(D,E)-RAC	
Q403	TPYTD03001	COMPOUND TRANSISTOR	DTA144ESTP	or
	TPATD03003	COMPOUND TRANSISTOR	KRA104MAT	
Q504	TCATC31980	TRANSISTOR, SILICON	KTC3198-AT(Y,GR)	
Q507	TCATC31980	TRANSISTOR, SILICON	KTC3198-AT(Y,GR)	
Q601	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT	or
	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q603	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT	or
	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q604	TD3T007340	TRANSISTOR, SILICON	2SD734(E,F)-AA	
Q605	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT	or
	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q606	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT	or
	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q608	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP	
⚠ Q801	TC3F042170	TRANSISTOR, SILICON	2SC4217(D,E)-RAC	
⚠ Q802	TC3F042170	TRANSISTOR, SILICON	2SC4217(D,E)-RAC	
⚠ Q803	TC3F042170	TRANSISTOR, SILICON	2SC4217(D,E)-RAC	
		COILS &TRANSFORMERS		
L101	021LA62R7K	COIL	LAP02TA2R7K	
L406	021U6D180K	COIL	RCH-895-180K	
⚠ L501	029F000074	COIL, LINE FILTER	FET24S-H22502	
⚠ L503	028R250009	COIL, DEGAUSS	8R250009	
L601	021LA61R2K	COIL	LAP02TA1R2K	
L606	021LA62R2K	COIL	LAP02TA2R2K	
L607	021LA6150K	COIL	LAP02TA150K	
L608	021LA66R8K	COIL	LAP02TA6R8K	
T401	045013001J	TRANS, HORIZONTAL DRIVE	5013001	
⚠ T501	048135048S	TRANSFORMER, SWITCHING	8135048S	
		JACK		
⚠ J801	066C130015	SOCKET, CRT	CVT3275-5102	
		SWITCHES		
SW101	0504201T31	SWITCH, TACT	SKHVBED010	
SW102	0504201T31	SWITCH, TACT	SKHVBED010	
SW103	0504201T31	SWITCH, TACT	SKHVBED010	
SW104	0504201T31	SWITCH, TACT	SKHVBED010	
SW105	0504201T31	SWITCH, TACT	SKHVBED010	
		VARIABLE RESISTOR		
VR502	V1163L2BTC	VOLUME, SEMI FIXED	EVNCYAA03BY2	
		P.C.BOARD ASSEMBLIES		
PCB010	A3K004G01A	PCB ASS'Y	TMA501A	
PCB110	A3K004G11A	PCB ASS'Y	TCA358A	
		MISCELLANEOUS		
B502	024HT03563	CORE, BEADS	W4BRH3.5X6X1.0X2	
B504	024HT03553	CORE, BEADS	W5RH3.5X5X1.0	
⚠ CD501	1207415905	CORD, AC	07415905	
CD805	068M82025A	CORD, CONNECTOR	8M82025A	or
	06CU82039A	CORD, CONNECTOR	SM1098-009-1A	
CD806	06CH012101	CORD, CONNECTOR	CH012101	
CF601	1022T45R73	FILTER, SAW	SAFGP45M7VHCZR	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART. NO.	DESCRIPTION		
		MISCELLANEOUS		
	CF603	1012T4R509	FILTER, CERAMIC	SFSH4.5MCB-TF21	
	CF604	1012T4R519	FILTER, CERAMIC TRAP	TPSRA4M50C00-A0	
	CP351	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2	
	CP401	069W340018	CONNECTOR PCB SIDE	TS-80P-04-V1	
	CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1	or
		069S420110	CONNECTOR PCB SIDE	A1561WV2-2P	
	CP601	0697260650	CONNECTOR PCB SIDE	TKC-M06X-A1	
	CP805	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1	or
		069S320010	CONNECTOR PCB SIDE	A2361WV2-2P	
	CP806	069W010010	CONNECTOR PCB SIDE	005P-2100	
	CP802A	067R010019	WIRE HOLDER	51048-1010	or
		067U010049	WIRE HOLDER	B2013H02-10P	
	CP802B	067R010019	WIRE HOLDER	51048-1010	or
		067U010049	WIRE HOLDER	B2013H02-10P	
⚠	DY801	027M062505	DY	7M062505	
⚠	F501	081PC6R304	FUSE	51MS063LCC	
⚠	FB401	043225010F	TRANSFORMER, FLYBACK	3225010F	
	FH501	06710T0006	HOLDER, FUSE	EYF-52BC	
	FH502	06710T0006	HOLDER, FUSE	EYF-52BC	
	K001	129A000010	WEDGE	8115529	
	K002	129A000010	WEDGE	8115529	
	K003	129A000010	WEDGE	8115529	
	MG801	026A062704	MAGNET, CONVERGENCE	29MMSTAR	
	OS101	077Q014003	REMOTE RECEIVER	PIC-28143SY-2	
	PH003	069W01001A	CONNECTOR PCB SIDE	003P-2100	
	PH004	069W01001A	CONNECTOR PCB SIDE	003P-2100	
⚠	RY501	0560V10118	RELAY	ALKS325	
	SP351	070Y533002	SPEAKER	S0407F02	
⚠	TH501	DF5EL3R0A0	DEGAUSS, ELEMENT	ZPB45BL3R0A	
	TM101	076N0DW020	TRANSMITTER	RC-DW020	
⚠	TU001	0145S00052	TUNER, VHF-UHF	ENV56D66G3	
⚠	V801	0984250502	COLOR PICTURE TUBE	A63AHC26X	
	X101	1001T8R004	CERAMIC, OSCILLATOR	EFOEC8004T4	
	X602	100CT3R505	CRYSTAL HC-49/C	3.579545MHz	

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.	M3K0-04G
O/R NO.	A153510