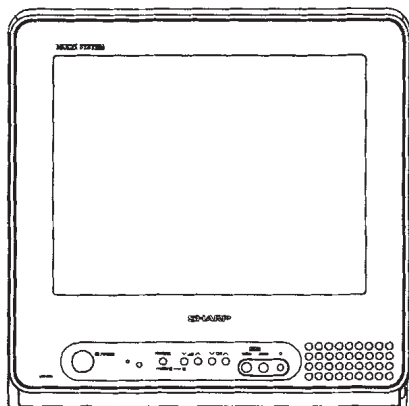


1st Edition

SHARP**SERVICE MANUAL**

COLOUR TELEVISION
Chassis No. GA-1AM

MODEL 15E1-FRU

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

FEATURES

- Multi 18 systems
- Full Auto Channel Preset and Auto Channel Skip
- 100-CH Program Memory
- CATV (Hyper Band) Ready
<Used Frequency Synthesizer Tuner>
- AVL (Sound Keeper) Function
- On Timer/Sleep Timer/Reminder Timer
- Blue Back Noise Mute
- Front AV-In & Rear AV-In/Out Terminals
(Front Priority)
- Colour Comb Filter (AV-NTSC only)
- High Contrast Picture (Black Stretch Circuit)
- Hotel Mode
- 2 Languages OSD (English/Russian)
- White Temperature Adjustment
- 1 Speaker Output/Front Headphone Jack

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WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

SHARP CORPORATION

SPECIFICATIONS

Convergence	Self Convergence System
Focus	Quadra-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Carrier	38.9MHz
Sound IF Carrier Frequency	
6.5MHz	32.4MHz
6.0MHz	32.9MHz
5.5MHz	33.4MHz
Colour Sub-Carrier Frequency	34.47MHz
Power Input	110 ~ 240V AC 50/60 Hz
Power Consumption	68W
Audio Power Output Rating	3.0W(rms)
Speaker	
Size	5 x 9 cm Elliptic (1 pcs)
Voice Coil Impedance	16 ohms at 400 Hz
Aerial Input Impedance	
VHF/UHF	75 ohms Unbalanced
Receiving System	CCIR SECAM/PAL B, G, D, K, I
Tuner Ranges	
VHF-Channels	E2(48.25MHz) thru E12(224.25MHz) C1(49.75MHz) thru C12(216.25 MHz) S1(105.25MHz) thru S36(423.25MHz)
UHF-Channels	E21(471.25MHz) thru E69(855.25MHz) C13(471.25MHz) thru C57(863.25MHz) S37(431.25MHz) thru S41(463.25MHz)
Dimensions	Width: 379.0mm Height: 376.0mm Depth: 396.0mm Weight(approx): 12.5 kg
Cabinet material	All Plastics

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by Connecting a 10K ohm Resistor in series with an insulated wire(such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. When repairing the circuit, be sure not to increase the high voltage to more than 26.5kV(at beam 0 µA) for the set.
2. To keep the set in a normal operation , be sure to make it function on 25.0kV±1.5kV(at beam 1,000 µA) in the case of the set. The set has been factory - Adjusted to the above-mentioned high voltage.
* If there is a possibility that the high voltage fluctuates as a result of the repairing, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety Checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor- capacity networks, mechanical insulators etc.

ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustments via the I²C bus control include preset-only items and variable data.

CAUTION:MAKE SURE TV SET IS IN 'NORMAL CONDITION' BEFORE SWITCH TO SERVICE MODE FOR ADJUSTMENT.

1. Setting the service mode by the microprocessor.

- ① Short JA 137 & JA 138 for 1 second and release to switch to the service mode position, and the microprocessor is in input mode. (Adjustment through the I²C bus control). (Use JWS Key to set as well).
- ② Press the CH DOWN / UP key on the remote controller to get ready to select the mode one by one.
- ③ Press the CH DOWN / UP key on the remote controller to select the modes reversibly one by one.
- ④ Using the VOLUME UP/ DOWN key on the remote controller, the data can be modified.
- ⑤ Short JA 137 & JA 138 for 1 second and release to switch to the normal mode (OFF) position, and the microprocessor is in out of the service mode.

2. Factory Presetting.

- ① Short JA 137 & JA 138 then turn 'ON' the main power and release a switch to the service mode position. Initial values are automatically preset, only when a new EEPROM is used (Judge with the first 4 bytes).
- ② The initial data are preset as listed in page 5.
- ③ Make sure the data need modify or not (Initial data).

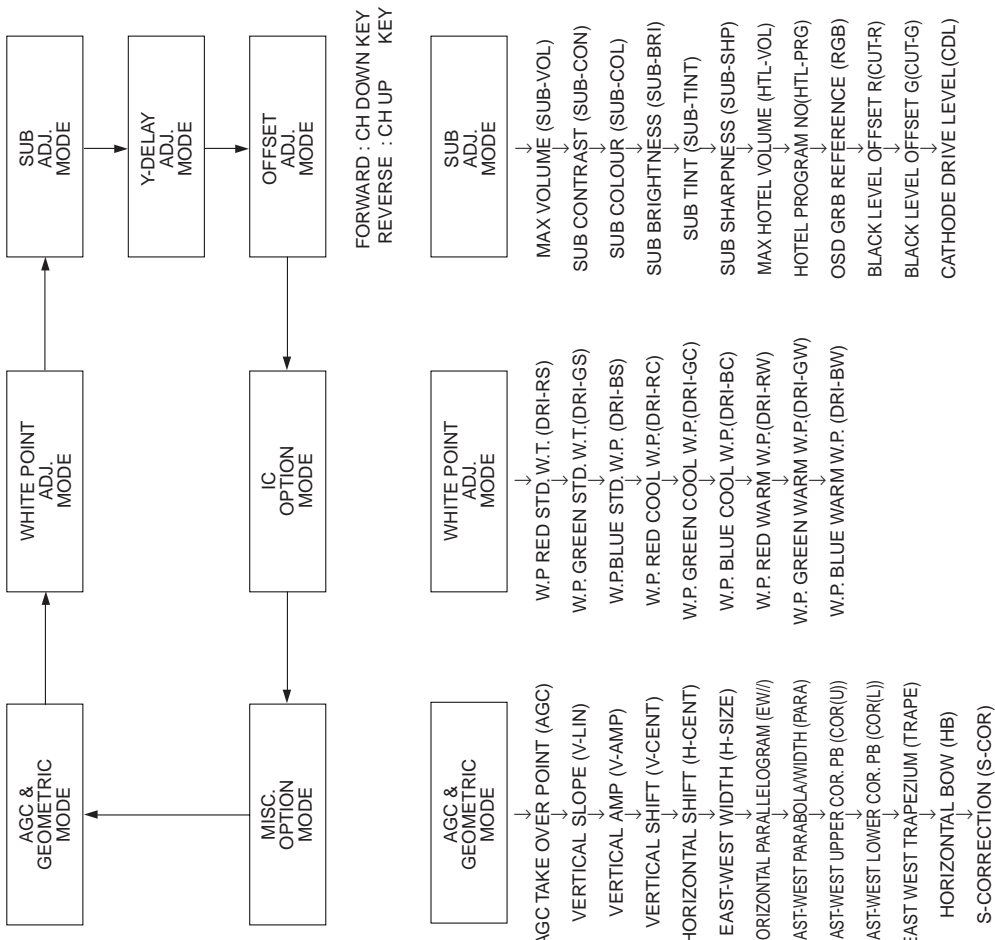
Note: Once the chassis has been assembly together and ready to be **POWER ON** for the **FIRST TIME**, make sure to short **JA137 & JA138** to switch to the **service mode** position first and then turn on the main power switch (See 2-① above).

Precaution: If haven't done this initiation, it may possibly generate excessive Beam current.

3. For reference please check with memory map (GA-1AM Series type RH-IX3368CE Attachment)

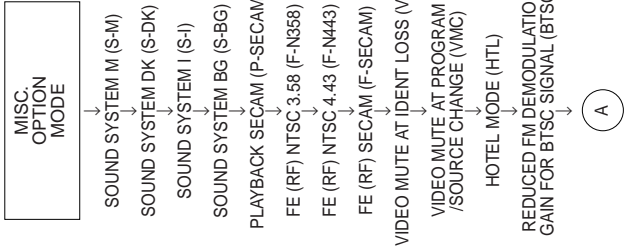
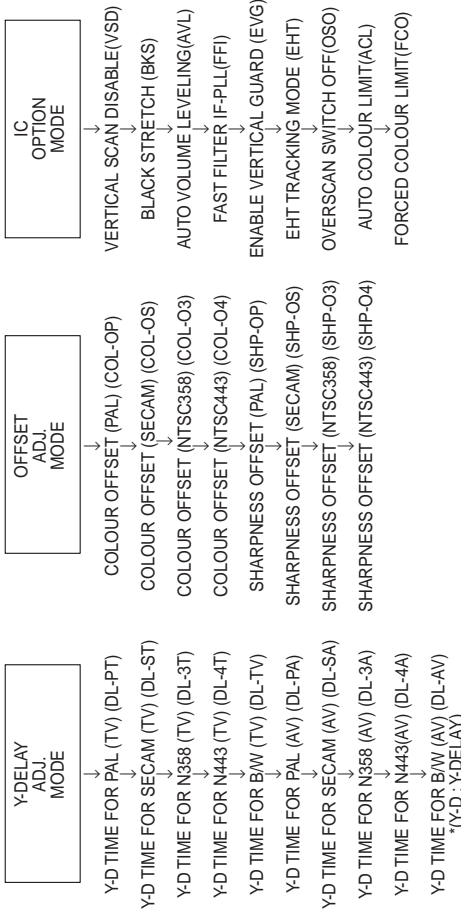
SERVICE MODE

(1) In the Service Mode, Key is used to select the mode in the following order.



FORWARD : CH DOWN KEY
REVERSE : CH UP KEY
*() means OSD display.

* Direct Key-in for service item in service mode



After short JA137 & 138, and turn on the main power switch, read data from EEPROM address 00H ~ 03H, and compare to the list below, if different, initialize the EEPROM.

Address Data Address Data
00H: 55H 02H: 43H
01H: 4FH 03H: A1H

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
AGC TAKE OVER POINT	AGC	0-63	14	ADJ	
VERTICAL SLOPE	V-LIN	0-63	32	ADJ	
VERTICAL AMPLITUDE	V-AMP	0-63	32	ADJ	
HORIZONTAL SHIFT	V-CENT	0-63	32	ADJ	
EAST-WEST WIDTH	H-CENT	0-63	32	ADJ	
HORIZONTAL PARALLELOGRAM	H-SIZE	0-63	32	*FIX	
EAST-WEST PARABOLA WIDTH	EWI	0-63	32	*FIX	
EAST-WEST UPPER CORNER PARABOLA	PARA	0-63	32	*FIX	
EAST-WEST LOWER CORNER PARABOLA	COR (U)	0-63	32	*FIX	
EAST-WEST TRAPEZIUM	COR (L)	0-63	32	*FIX	
HORIZONTAL BOW	TRAPE	0-63	32	*FIX	
S-CORRECTION	HB	0-63	32	*FIX	
WHITE POINT RED STD WHITE TEMP	S-COR	0-63	0 (25)	*FIX	
WHITE POINT GREEN STD WHITE TEMP	DRI-RS	0-63	32	*FIX	
WHITE POINT BLUE STD WHITE TEMP	DRI-GS	0-63	32	ADJ	
WHITE POINT RED COOL WHITE TEMP	DRI-RS	0-63	32	ADJ	*2
WHITE POINT GREEN COOL WHITE TEMP	DRI-RC	0-63	25	CHG	*2
WHITE POINT BLUE COOL WHITE TEMP	DRI-GC	0-63	32	CHG	*2
WHITE POINT RED WARM WHITE TEMP	DRI-BC	0-63	32	ADJ	SAME AS (DRI-B5) DATA
WHITE POINT GREEN WARM WHITE TEMP	DRI-RW	0-63	32	*FIX	
WHITE POINT BLUE WARM WHITE TEMP	DRI-GW	0-63	32	CHG	(DRI-GS)-5
MAX VOLUME	DRI-BW	0-63	32	CHG	(DRI-B5)-5
SUB CONTRAST	SUB-VOL	0-63	63	*FIX	
SUB COLOUR	SUB-CON	0-63	63 (52)	*FIX	
SUB BRIGHTNESS	SUB-COL	0-63	32	ADJ	
SUB SHARPNESS	SUB-BRI	0-63	32	ADJ	
MAX HOTEL VOLUME	SUB-TINT	0-63	32	ADJ	
HOTEL PROGRAM NUMBER	SUB-SHP	0-63	32 (20)	*FIX	
OSD GR8 REFERENCE	HTL-VOL	0-63	32	*FIX	
BLACK LEVEL OFF-SET R	HTL-PRG	0-99 OR-99 FOR NONE	255	*FIX	
BLACK LEVEL OFF-SET G	RGB	0-15	15 (6)	*FIX	
CATHODE DRIVE LEVEL	CUT-R	0-63	32	ADJ	
Y-DELAY TIME FOR PAL (TV) [YD]	CUT-G	0-63	32	ADJ	
Y-DELAY TIME FOR SECAM (TV) [YD]	CBL	0-15	0 (5)	*FIX	
Y-DELAY TIME FOR N358 (TV) [YD]	DL-PT	0-15	12	*FIX	
Y-DELAY TIME FOR N443 (TV) [YD]	DL-ST	0-15	15	*FIX	
Y-DELAY TIME FOR BW (TV) [YD]	DL-3T	0-15	12	*FIX	
Y-DELAY TIME FOR PAL (AV) [YD]	DL-4T	0-15	12	*FIX	
Y-DELAY TIME FOR SECAM (AV) [YD]	DL-TV	0-15	12	*FIX	
Y-DELAY TIME FOR N358 (AV) [YD]	DL-PA	0-15	12	*FIX	
Y-DELAY TIME FOR N443 (AV) [YD]	DL-SA	0-15	15	*FIX	
Y-DELAY TIME FOR BW (AV) [YD]	DL-3A	0-15	12	*FIX	
COLOUR OFFSET (PAL)	DL-4A	0-15	12	*FIX	
COLOUR OFFSET (SECAM)	DL-AV	0-15	12	*FIX	*3
COLOUR OFFSET (NTSC358)	COL-OP	0-15	8	CHG	
SHARPNESS OFFSET (PAL)	COL-OS	0-15	8	CHG	*3
SHARPNESS OFFSET (SECAM)	COL-O3	0-15	4	CHG	
	COL-O4	0-15	8	*FIX	
	SHP-OP	0-15	4	*FIX	
	SHP-OS	0-15	4	*FIX	

5-1

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
SHARPNESS OFFSET (NTSC358)	SHP-O3	0-15	12 (8)	*FIX	
SHARPNESS OFFSET (NTSC443)	SHP-O4	0-15	8	*FIX	
VERTICAL SCAN DISABLE	VSD	0 (DISABLE)/1 (ENABLE)	0	*FIX	
BLACK STRETCH	BKS	0 (DISABLE)/1 (ENABLE)	1	*FIX	
AUTOMATIC VOLUME LEVELING	AVL	0 (DISABLE)/1 (ENABLE)	1	*FIX	
FAST FILTER IF-PLL	FFI	0 (DISABLE)/1 (ENABLE)	0	*FIX	
ENABLE VERTICAL GUARD (RGB BLANKING)	EVG	0 (DISABLE)/1 (ENABLE)	1	*FIX	
EHT TRACKING MODE (HCO)	EHT	0 (DISABLE)/1 (ENABLE)	1	*FIX	
OVERSCAN SWITCH OFF	OSO	0 (DISABLE)/1 (ENABLE)	0	*FIX	
AUTO COLOUR LIMIT	ACL	0 (DISABLE)/1 (ENABLE)	0	*FIX	
FORCED COLOUR LIMIT	FCO	0 (DISABLE)/1 (ENABLE)	0	*FIX	
SOUND SYSTEM M	S-M	0 (DISABLE)/1 (ENABLE)	0	*FIX	
SOUND SYSTEM DK	S-DK	0 (DISABLE)/1 (ENABLE)	1	*FIX	
SOUND SYSTEM I	S-I	0 (DISABLE)/1 (ENABLE)	1	*FIX	
SOUND SYSTEM BG	S-BG	0 (DISABLE)/1 (ENABLE)	1	*FIX	
PLAYBACK SECAM	P-SECAM	0 (DISABLE)/1 (ENABLE)	1	*FIX	
FE (RF) NTSC 3.58	F-N358	0 (DISABLE)/1 (ENABLE)	0	*FIX	
FE (RF) NTSC 4.43	F-N443	0 (DISABLE)/1 (ENABLE)	1	*FIX	
VIDEO MUTE AT IDENT LOSS	F-SECAM	0 (DISABLE)/1 (ENABLE)	1	*FIX	
VIDEO MUTE AT PROGRAM SOURCE CHANGE	VMI	0 (DISABLE)/1 (ENABLE)	1	*FIX	
HOTEL MODE	VMC	0 (DISABLE)/1 (ENABLE)	1	*FIX	
REDUCED FM DEMODULATOR GAIN FOR BTSC SIGNAL	HTL	0 (DISABLE)/1 (ENABLE)	0	*FIX	
NUMBER OF EXTERNAL AV SOURCE	BTSC	0 (DISABLE)/1 (ENABLE)	0	*FIX	
FM WINDOW SELECTION	AV	0 FOR 1 AV/1 FOR 2AV	1 (0)	*FIX	
SOUND MUTE BIT 0	FMWS	0 (DISABLE)/1 (ENABLE)	0	*FIX	
SOUND MUTE BIT 1	SM0	0 (DISABLE)/1 (ENABLE)	1	*FIX	
THAI LANGUAGE	SM1	0 (DISABLE)/1 (ENABLE)	0	*FIX	
ARABIC LANGUAGE	THA	0 (DISABLE)/1 (ENABLE)	0	*FIX	
CHINESE LANGUAGE	ARA	0 (DISABLE)/1 (ENABLE)	1	CHG	*4
RUSSIAN LANGUAGE	MAL	0 (DISABLE)/1 (ENABLE)	1	CHG	*4
FORCED V-SYNC SLICING LEVEL	CHI	0 (DISABLE)/1 (ENABLE)	1	CHG	*4
SYNC OF OSD	FRE	0 (DISABLE)/1 (ENABLE)	1	*FIX	
TUNER SELECTION (0:SHARP/ALPS;1:MURATA)	RUS	0 (DISABLE)/1 (ENABLE)	1	*FIX	
IF AGC SPEED BIT 0	FSL	0 (DISABLE)/1 (ENABLE)	0	*FIX	
IF AGC SPEED BIT 1	HP2	0 (DISABLE)/1 (ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (RF)	CPT	0 (DISABLE)/1 (ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (OFF AIR)	BIL	0 (DISABLE)/1 (ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (OFF AIR)	AGC0	0 (DISABLE)/1 (ENABLE)	1	*FIX	
LED BLINK SPEED	AGC1	0 (DISABLE)/1 (ENABLE)	0	*FIX	
VOLUME CONTROL PWM TABLE	FOA-FE	0 (DISABLE)/1 (ENABLE)	0	*FIX	
OUTPUT VERTICAL GUARD	FOB-FE	0 (DISABLE)/1 (ENABLE)	0	*FIX	
	FOB-AV	0 (DISABLE)/1 (ENABLE)	1	*FIX	
	LED_F	0 (DISABLE)/1 (ENABLE)	0 (1)	*FIX	
	MSA	0 (DISABLE)/1 (ENABLE)	0 (1)	*FIX	
	NDF	0 (DISABLE)/1 (ENABLE)	0 (1)	*FIX	

NOTE :

- *FIX: PLEASE DO NOT CHANGE FIXED DATA WITHOUT SPECIFIC INSTRUCTION.
Please set the EEPROM initial data according to the value in parenthesis () before adjustment.
- *2:ADJUST DRI-RC AND DRI-GC AS FOLLOW:
DRI-RC = 25

- *3:CHANGE COLOUR OFFSET AFTER ADJUST SUB-COLOUR.
Note:Please set default value for colour offset before sub-colour adjustment.
After sub-colour adjustment please up 6 step for colour offset

COLOUR OFFSET (PAL) COL-OP : 8 -----> 14
COLOUR OFFSET (SECAM) COL-OS : 8 -----> 14
COLOUR OFFSET (NTSC358) COL-O3 : 4 -----> 10
COLOUR OFFSET (NTSC443) COL-O4 : 4 -----> 10

- *4:PLEASE SET LANGUAGE QTY AS BELOW:

ARA = 0
MAL = 0
CHI = 0
FRE = 0

5-2

INITIAL SETTING

- (1) Please set the MCL to MCL 1.
(2) After set the MCL, please set the INITIAL SETTING to:
INITIAL5: RUSSIA MODELS

MCL1		
CH-No.	Fv (MHz)	SOUND SYS
0		
1	48.25	B/G
2	62.25	B/G
3	77.25	D/K
4	175.25	B/G
5	182.25	B/G
6	183.25	D/K
7	191.25	D/K
8	196.25	B/G
9	199.25	M
10	210.25	B/G
11	224.25	B/G
12	471.25	B/G
13	487.25	I
14	503.25	B/G
15	575.25	B/G
16	583.25	B/G
17	599.25	B/G
18	621.25	M
19	639.25	D/K
20	703.25	B/G
21	735.25	I
22	767.25	B/G
23	815.25	B/G
24	855.25	I
25	855.25	B/G
26	55.25	M
27	83.25	M
28	183.25	M
29	193.25	M
30	217.25	M
31	471.25	M
32	477.25	M
33	693.25	M
34	41.10	
35	112.25	B/G
36	168.25	B/G
37		
38	294.25	B/G
39	463.25	B/G
40		
41	647.25	B/G
42	663.25	B/G
43	679.25	B/G
44	174.95	B/G
45	175.55	B/G
46		

Note: After pressing initial key, the sound system of all channels will be changed accordingly such as Initial 5 : D/K

SHIPPING SETTING & CHECKING

- (1) The following default data has been factory-set for the EEPROM follow by INITIAL DATA selected.

ITEMS	DATA SETTING
LAST PROGRAM/CHANNEL	1
FLASHBACK PROGRAM/CH	1
CHANNEL ENTRY DIGIT NUMBER	1
C-SYSTEM	AUTO
S-SYSTEM	*1
SKIP	OFF
AFC	ON
VOLUME	1
CONTRAST	(MAX)
COLOUR	(CENTER)
BRIGHTNESS	(CENTER)
TINT	(CENTER)
SHARPNESS	(CENTER)
WHITE TEMP	STANDARD
REMINDER TIMER	In-active, "----"
ON TIMER	In-active, "----"
OFF TIMER	In-active, "----"
LAST POWER	POWER-ON
LANGUAGE	*1
BLUE BACK MUTE	ON
HOTEL MODE	OFF
0 CHANNEL SKIP	ON
LAST TV/AV	TV

*1: Please refer defaults for LANGUAGE and SOUND SYSTEM per MODEL as follows.

INITIAL	LANGUAGE	SOUND SYSTEM
5	RUSSIAN	D/K

FACTORY SETTING BY MODEL
(Reference: Geomagnetism Adjustment)

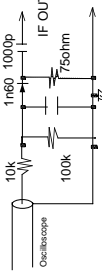
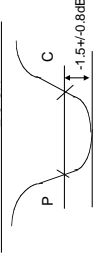
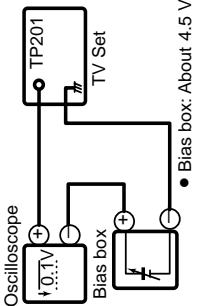
MODEL	MAGNETIC FIELD (V, H) nT	BACKGROUND	LANG.	S-SYS	LANG QTY
RUSSIA	45,000 20,000	7500K	RUSSIAN	D/K	2

LANGUAGE QTY 2: RUSSIAN/ENGLISH

ADJUSTMENT PRECAUTION

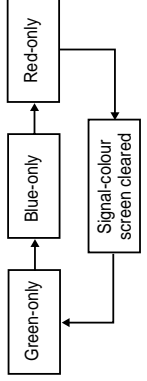
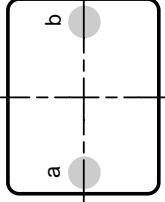
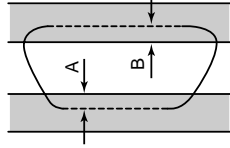
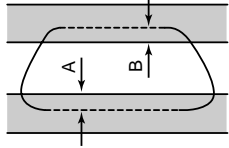
Make sure TV set is in "NORMAL CONDITION" before switch to service mode for Adjustment.

PIF ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	Tuner IFT (PRESET)	<ol style="list-style-type: none"> Get the tuner ready to receive the E-9 signal, but with no signal input. Adjust the PLL data. Connect the sweep generator's output cable to the tuner antenna. (RF SWEEP) Adjust the sweep generator's to 80dBuV. Connect the response lead (use LOW IMPEDANCE probe with wave detector; see Fig.1) to the tuner's IF output terminal. (This terminal must have the probe alone connected). Set the RF AGC to 0 - 6 V with no saturation with the waveform. Adjust the tuner IF coil to obtain the waveform as shown in Fig. 2. <p>Note: Be sure to keep the tuner cover in position during this adjustment.</p>	 <p>Fig. 1</p>  <p>Fig. 2</p>
2	RF-AGC TAKE OVER POINT ADJUSTMENT (I ² C BUS CONTROL)	<ol style="list-style-type: none"> Receive "PAL COLOUR BAR" signal. <ul style="list-style-type: none"> Signal Strength: 57 ± 1 dBuV (75 ohm open) Connect the oscilloscope to TP201 (Tuner's AGC Terminal) as shown in Fig. 3.  <p>Fig. 3</p> <p>• Bias box: About 4.5 V</p> <ol style="list-style-type: none"> Call "AGC" mode in service mode. Adjust the "AGC" bus data to obtain the Tuner output pin drop 0.1 V below maximum voltage. Change the antenna input signal to 63-67dBuV, and make sure there is no noise. Turn up the input signal to 90-95 dBuV to be sure that there is no cross modulation beat. 	<p>Note: For the 50 ohm signal strength gauge, when not using 50/75 impedance adapter, signal strength is 52 ± 1 dBuV (75 ohm open), instead of 57 ± 1 dBuV (75 ohm open).</p> <p>Precaution: The loss of using impedance adapter</p>

7-1

PURITY ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	PURITY ADJ.	<ol style="list-style-type: none"> Receive the GREEN-ONLY signal. Adjust the beam current to about 700 μA. De-gauss the CRT enough with the degaussing coil. Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted. Observe the points a, b, as shown in Fig. 1-1 through the microscope. Adjust the landings to A rank requirement. Orient the raster rotation to 0 eastward. Tighten up the deflection coil screws. <ul style="list-style-type: none"> Tightening torque: $108N \pm 20 N$ ($11kgf \pm 2 kgf$) Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it. <p>Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 700 μA</p> <p>* For the following colours press R/C RGB key to change.</p> 	<p>Fig. 1-1</p>  <p>Fig. 1-2 Rank "A" (on the right of the CRT)</p>  <p>Fig. 1-3 Rank "A" (on the left of the CRT)</p>  <p>* Press R/C RGB key for 1 second in NORMAL MODE, the colour will change to RGB mono colour mode. The TEXT Key "R. G. Cy" Key can be directly use to change to other colours screen.</p>

7-2

CONVERGENCE ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	CONVERGENCE ADJ. (To be done after the purity adjustment.)	<p>1. Receive the "Crosshatch Pattern" signal.</p> <p>2. Using the remote controller, call NORMAL mode.</p> <p>Static convergence</p> <p>1. Turn the 4-pole magnet to a proper opening angle in order to superpose the blue and red colours.</p> <p>2. Turn the 6-pole magnet to a proper opening angle in order to superpose the green colour over the blue and red colours.</p> <p>Dynamic convergence</p> <p>1. Adjust the convergence on the fringes of the screen in the following steps.</p> <p>a) Fig. 5-1: Drive the wedge at point "a" and swing the deflection coil upward.</p> <p>b) Fig. 5-2: Drive the wedge at points "b" and "c" and swing the deflection coil downward.</p> <p>c) Fig. 5-3: Drive the "c" wedge deeper and swing the deflection coil rightward.</p> <p>d) Fig. 5-4: Drive the "b" wedge deeper and swing the deflection coil leftward.</p> <p>2. Fix all the wedges on the CRT and apply glass tape over them.</p> <p>3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole, 6-pole magnets) and magnet unit lock screw.</p> <p>Finally received the Red-only and Blue-only signals to make sure there is no other colours on the screen.</p>	

8-1

CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

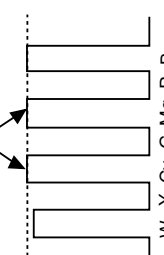
NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	CRT CUTOFF ADJUSTMENT (I ² C BUS CONTROL)	<p>Remark</p> <p>1. Before CRT cutoff adjustment, SUB-BRIGHT, DRI-RS/RWC, DRI-GS/GW/GC, DRI-BB/BW/BC, CUT-R and CUT-G must be INITIAL DATA.</p> <p>2. CRT Cutoff adjustment must be done inside a dark room.</p> <p>1. Switch TV to VIDEO mode BLUE BACK OFF, with NO VIDEO signal.</p> <p>2. Press R/C to set Picture Normal condition.</p> <p>3. First, off the screen by adjust screen variable resistor.</p> <p>*4. Next, checking AKB circuit function by slowly increase screen variable resistor until colour raster suddenly on and off (AKB start function).</p> <p>5. Then continue adjust until retrace line appear.</p> <p>6. Finally, slowly decrease the screen variable resistor until screen retrace line cut off. (Not Raster)</p> <p>Note : Must confirm the AKB function in set before continue the next adjustment.</p>	<p>*Alternative Procedure</p> <p>(1) Step (1), (2), (3) and (4) are same as beside procedure.</p> <p>(2) Then continue adjust until retrace line appear and make sure the colour appear whether red, green or blue.</p> <p>(3) Connect the oscilloscope to related test points as below which is based on colour appear at (2) RED = TP47R, GREEN = TP47G, BLUE = TP47B.</p> <p>(4) Then adjust Screen VR until the tip of signal reach 3.2Vdc.</p>
2	SUB-BRIGHTNESS ADJUSTMENT (I ² C BUS CONTROL)	<p>1. Call " SUB-BRI" in service mode. (Receive Crosshatch pattern with 5 black level windows)</p> <p>*2. Adjust the " SUB BRIGHT " bus data in order that the line 1 and 2 have the same darkness whereas line 3 is one step (data) brighter than line 2. Finally data minus 1 to make line 1, 2, and 3 are in same level (darkness).</p>	 <p>Line 3 is one step (data) brighter than line 2</p>
3	WHITE BALANCE SERVICE MODE ADJ. (I ² C BUS CONTROL)	<p>1. Receive the "WHITE" pattern with BURST signal.</p> <p>2. Press R/C to set Picture NORMAL condition.</p> <p>3. Connect the DC millimeter between the TP602 (-) TP603 (+).</p> <p>4. Check Beam Current should be around 1000 μA.</p> <p>5. Set BRIGHTNESS Y by generator, to high brightness 200 cd/m² (MINOLTA CA-100)</p> <p>6. Switch TV to service mode and adjust the DRI-GS, & DRI-BB data to have a colour temperature of 12300°K, 18000°K or 7500°K (white). * Note.</p> <p>7. Set BRIGHTNESS Y by generator, to low brightness 10 cd/m² (MINOLTA CA-100)</p> <p>8. Adjust "CUT-R" & "CUT-G" to get desired colour temperature #. Then go back NORMAL mode (HIGH BRIGHT*) to check colour temperature.</p> <p>If out of range, back to (1).</p> <p>Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 1000μA.</p>	<p>X : 0.272 Y : 0.275 X : 0.255 Y : 0.255 X : 0.300 Y : 0.310</p> <p>(MINOLTA COLOUR ANALYZER CA-100)</p> <p>*Note: Above Data can be UP/DOWN by Volume key.</p> <p>LOW HIGH 10cd/m² 200cd/m²</p> <p>* 7500°K DRI-GW="DRI-GS"-5 DRI-BW="DRI-BB"-5 DRI-GC="DRI-GS"-7 DRI-RC=25</p> <p>* 12300°K DRI-GW="DRI-GS"-7 DRI-BW="DRI-BB"-7 DRI-GC="DRI-GS"-7 DRI-RC=25</p> <p>* 18000°K DRI-GW="DRI-GS"-7 DRI-BW="DRI-BB"-7 DRI-GC="DRI-GS"-5 DRI-RC=27</p>
4	Max beam check	<p>1. Receive the "Monoscope Pattern" signal.</p> <p>2. Press R/C to set Picture NORMAL condition.</p> <p>3. Connect the DC millimeter between TP603 (+) & TP602 (-).</p> <p>(Full Scale: 3 mA Range)</p> <p>4. Beam current must be within 1000 \pm 100 μA.</p>	

8-2

HORIZONTAL AND VERTICAL DEFLECTION LOOP ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	V-LIN (I ² C BUS CONTROL)	1. Receive Monoscope Pattern Signal. 2. Call the "V-LIN" mode. 3. Increase or decrease "V-LIN" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts.	
2	V-SCENT (I ² C BUS CONTROL)	1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered.	
3	V-AMP (I ² C BUS CONTROL)	1. Call the "V-AMP" mode. 2. Increase or decrease "V - AMP" by Volume key to set overscan of 9.5% typical. Adjustment Spec 9.5% range +1% -0%.	
4	H-CENT (I ² C BUS CONTROL)	1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal.	
5	S-CORRECTION (I ² C BUS CONTROL)	1. SET DATA TO 25 * Check the E-5 CH Monoscope Pattern then re-adjust V-Slope, V-Shift and V-Amp to make sure adjustment is in acceptable Ring-Shaped.	
6	SUB-SHARPNESS	1. SET DATA TO 20	
1	Focus	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Adjust the focus control to get the best focusing.	

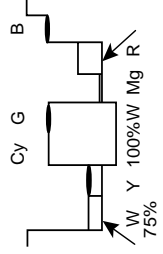
NTSC CHROMA ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	SUB-TINT (I ² C BUS CONTROL)	1. Receive the "NTSC 3.58 Colour Bar" signal thru AV in. 2. Connect the oscilloscope to TP47B (P882 pin 5) BLUE-OUT. <ul style="list-style-type: none"> Range : 100mV/div. (AC) (Use Probe 10:1) Sweep time: 10 usec/div. 3. Call the "SUB-TINT" mode in service mode. Adjust the "SUB-TINT" bus data to obtain the waveform shown as Fig. 1-1. 4. Clear the SERVICE mode.	 <p>Fig. 1-1</p>

PROTECTOR OPERATION CHECKING

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	BEAM PROTECTOR	1. Receive "Monoscope Pattern" signal. 2. Set CONTRAST MAX. 3. Set BRIGHT MAX. 4. During the Collector & Emitter of Q883/5/7 short, make sure the protector ON and switch to standby mode.	* Select one of Q883/5/7 to do each short test.
2	H. V PROTECTOR	1. Receive "Monoscope Pattern" signal. 2. Connect output of Bias Box to D603 cathode (R610 side). 3. Set voltage of Bias Box to 18V and make sure the protector is not working. 4. Set voltage of Bias Box to 27V, and make sure the protector is working.	
3	Other protectors	1. Once finish rectified Electrolytic Capacitor short testing in +B line, check all possible damaged components on +B line. (Use random selected set for inspection)	

PAL CHROMA ADJUSTMENT

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	SUB COLOUR (I ² C BUS CONTROL)	<p>Note:Please set default value for colour offset before proceed to sub-colour adjustment</p> 1. Receive the "PAL Colour Bar" signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red cathode(D881 Cathode) <ul style="list-style-type: none"> Range : 20 V/div. (AC) (Using 10:1 probe) Sweep time : 10 usec/div. 4. Using the R/C call "SUB COL" in SERVICE mode. Adjust SUB COLOUR bus data, so that the 75% White & Red portions of PAL Color Bar be at the same level shown as Fig. 1-1. 5. After adjust Sub-Colour, change colour offset: COL-OP : 8 -----> 14 COL-O3 : 4 -----> 10 COL-OS : 8 -----> 14 COL-O4 : 4 -----> 10 6. Clear the SERVICE mode.	 <p>Fig. 1-1</p>

AV INPUT AND OUTPUT CHECKING

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	VIDEO AND AUDIO OUTPUT CHECK	1. Receive the "PAL Color Bar" signal (100% White Color Bar, Sound 400 Hz 100% Mod). 2. Terminate the Video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ±3 dB). 3. Terminate the Audio output with a 10k ohm impedance. Make sure the O/P is as specified (1.76 Vp-p ±3 dB).	
2	VIDEO AND AUDIO INPUT CHECK	1. Using the TV/AV key on the remote controller, make sure that the modes change in order of TV, AV & TV again and the video & audio output are according to the input terminal for each mode. If connect input to Front and Rear AV terminal, input terminal of Front AV will be selected.	

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO)

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	CONTRAST key	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select CONTRAST. 3. Press Volume Up/Down key to check whether the CONTRAST effect is OK or not.	
2	COLOUR key	1. Receive "Color Bar" signal. 2. Set P-Mode to select COLOUR. 3. Press Volume Up/Down key to check whether the COLOUR effect is OK or not.	
3	BRIGHTNESS key	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select BRIGHTNESS. 3. Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.	
4	TINT key	1. Receive the "NTSC Colour Bar" signal thru AV In. 2. Set P-Mode to select TINT. 3. Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for PURPLE direction whether is OK or not.	
5	SHARPNESS key	1. Receive "Monoscope Pattern" signal. 2. Set P-mode to select SHARPNESS. 3. Press Volume Up/Down key to check whether the SHARPNESS effect is OK or not.	
6	CH DISPLAY COLOUR	1. All Ch (1-99) will have an OSD display of the channel number in green colour under AFT ON condition.	
7	NORMAL Key	1. Once in PICTURE Mode, and the NORMAL key is pressed, all the settings will be present to normal setting. (Normal setting value for every mode). <ul style="list-style-type: none"> ● CONTRAST : MAX ● COLOUR : CENTER ● BRIGHTNESS : CENTER ● TINT : CENTER ● SHARPNESS : CENTER 	Note: If nothing is display mean contrast, colour, bright, tint or sharpness are all in normal setting.
8	White Temp	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select WHITE TEMP. 3. Press Volume Up/Down key to check WHITE TEMP Option, STANDARD: NORMAL SETTING, WARM for more REDDISH direction changing, COOL for more BLUISH direction changing.	

10-1

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO) (Continued)

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
9	COLOUR SYSTEM	1. Receive the "PAL COLOUR BAR" signal, press the COLOUR SYSTEM key to select modes except PAL, check the COLOUR is not working properly. Then, select the "PAL" mode. Check again its colour so that it is working properly. 2. Receive "SECAM COLOUR BAR" signal, press COLOUR SYSTEM key to select modes except SECAM, check the COLOUR is not working properly. Then, select the "SECAM" mode. Check again its colour so that it is working properly. 3. Receive "NTSC 4.43/3.58 COLOUR BAR" signal thru AV, press COLOUR SYSTEM key to select modes except N4.43/3.58, check the COLOUR is not working properly. Then, select the "NTSC 4.43/3.58" mode. Check again its colour so that it is working properly.	
10	SOUND SYSTEM	1. Receive "PAL-D/K" signal, press the "SOUND SYSTEM" to select B/G. I. Check the sound output is not working properly. Select D/K and check the sound output to make sure it is working properly. 2. Receive "PAL-I" signal, press the "SOUND SYSTEM" to select B/G, D/K. Check the sound output is not working properly. Select I and check the sound output to make sure it is working properly. 3. Receive "PAL-B/G" signal, press the "SOUND SYSTEM" to select I, D/K. Check the sound output is not working properly. Select B/G and check the sound output to make sure it is working properly.	
11	NOISE MUTE CHECKING	1. Receive "PAL COLOUR BAR" signal. 2. Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state. 3. Check the sound mute is effective. 4. Finally turn sound level of CTV to minimum.	
12	OSD LANGUAGE QUANTITY CHECK	Check OSD LANGUAGE quantity and type as English and Russian.	

HEADPHONE JACK CHECKING

NO.	Adjustment part	Adjusting procedure and conditions	Waveform and others
1	HEADPHONE OUTPUT CHECKING	1. Receive PAL Color PAR with SOUND 400Hz, 100% MODULATION (±50kHz Dev) 2. Maximum volume, and check the headphone output with 400Hz sound and no sound out from speaker.	

10-2

MEMORY MAP

ADDRESS (HEX)	D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	EPROM RANGE	EPROM (WITESCU)	CHASSIS CHECK DATA	CITY/FINAL CHECK DATA	STATION STATUS DATA	REMARK	
00									55	00-FF						
01									4F	00-FF						
02									43	00-FF						
03									A1	00-FF						
04																
05																
06									0E	00-3F						
07									20	00-3F						
08									20	00-3F						
09									20	00-3F						
0A									20	00-3F						
0B									20	00-3F						
0C									20	00-3F						
0D									20	00-3F						
0E									20	00-3F						
0F									20	00-3F						
10									20	00-3F						
11									20	00-3F						
12									00	00-3F						
13																
14																
15																
16																
17									20	00-3F						
18									20	00-3F						
19									20	00-3F						
1A									20	00-3F						
1B									20	00-3F						
1C									19	00-3F						
1D									20	00-3F						
1E									20	00-3F						
1F																
20																
21																
22									3F	00-3F						
23									3F	00-3F						
24									20	00-3F						
25									20	00-3F						
26									20	00-3F						
27									20	00-3F						
28									20	00-3F						
29									FF	00-FF						
2A																
2B																
2C																
2D									0F	00-0F						
2E									20	00-3F						
2F									20	00-3F						
30									00	00-0F						
31									0C	00-0F						
32									0F	00-0F						
33									0C	00-0F						
34									0C	00-0F						
35									0C	00-0F						
36									0C	00-0F						
37									0F	00-0F						
38									0C	00-0F						
39									0C	00-0F						
3A									0C	00-0F						
3B									08	00-0F						
3C									08	00-0F						
3D									04	00-0F						
3E									04	00-0F						
3F									08	00-0F						
	MODEL									MODEL						

ADDRESS (HEX)	DATA								MOON DEFAULT	EEPROM RANGE	EEPROM WRITE(PAGE)	CHASSIS		CTV FINAL		LAST INITIAL SETTING DATA	REMARK
	D7	D6	D5	D4	D3	D2	D1	D0				CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE		
40									SHARPNESS-OFFSET (SECAM)	04	00-0F						
41									SHARPNESS-OFFSET (N358)	0C	00-0F						
42									SHARPNESS-OFFSET (N443)	08	00-0F						
43																	
44	FC0	ACL	CS0	EHT	EVG	FFI	AVL	BKS		1B	00-FF						
45	SECAM	M40	N358	PR-SECAM	BG	I	DK	M		DE	00-FF						
46	SHI	SM0	FMIS	AV	BT52	HTL	WAG	NIM		S3	00-FF						
47	HP2	FSL	RUS	FRA	CHN	MILY	AR8	THA		3E	00-FF						
48	FOEAV	FOE-AN	FOE-FE	FOE-FE	AG21	BL	CPT	C4		00-FF	00-FF						
49							NDF	MSA		00	00-F3						
4A																	
4B																	
4C									VOLUME	01	00-3C						
4D									CONTRAST	3C	00-3C						
4E									COLOUR	1E	00-3C						
4F									BRIGHTNESS	1E	00-3C						
50									TINT	1E	00-3C						
51									SHARPNESS	1E	00-3C						
52																	
53																	
54																	
55									POSTION/AVI/2	01	00-FF						
56									FAV-POS A	0A	00-FF						
57									FAV-POS B	14	00-FF						
58									FAV-POS C	1E	00-FF						
59									FAV-POS D	28	00-FF						
5A																	
5B																	
5C									LAST POWER MODE	00	00-01						
5D									WHITE TEMP	00	00-02						
5E									BLUE BACK	00	00-01						
5F									LANGUAGE	00	00-07						
60									LANGUAGE	00	00-07						
61									LAST DIGIT MODE (L OR 2)	00	00-01						
62	SMP 0	SMP 1	SMP 2	SMP 3	SMP 4	SMP 5	SMP 6	SMP 7		80	00-FF						
63	SMP 8	SMP 9	SMP 10	SMP 11	SMP 12	SMP 13	SMP 14	SMP 15		00	00-FF						
64	SMP 16	SMP 17	SMP 18	SMP 19	SMP 20	SMP 21	SMP 22	SMP 23		00	00-FF						
65	SMP 24	SMP 25	SMP 26	SMP 27	SMP 28	SMP 29	SMP 30	SMP 31		00	00-FF						
66	SMP 32	SMP 33	SMP 34	SMP 35	SMP 36	SMP 37	SMP 38	SMP 39		00	00-FF						
67	SMP 40	SMP 41	SMP 42	SMP 43	SMP 44	SMP 45	SMP 46	SMP 47		00	00-FF						
68	SMP 48	SMP 49	SMP 50	SMP 51	SMP 52	SMP 53	SMP 54	SMP 55		00	00-FF						
69	SMP 56	SMP 57	SMP 58	SMP 59	SMP 60	SMP 61	SMP 62	SMP 63		00	00-FF						
6A	SMP 64	SMP 65	SMP 66	SMP 67	SMP 68	SMP 69	SMP 70	SMP 71		00	00-FF						
6B	SMP 72	SMP 73	SMP 74	SMP 75	SMP 76	SMP 77	SMP 78	SMP 79		00	00-FF						
6C	SMP 80	SMP 81	SMP 82	SMP 83	SMP 84	SMP 85	SMP 86	SMP 87		00	00-FF						
6D	SMP 88	SMP 89	SMP 90	SMP 91	SMP 92	SMP 93	SMP 94	SMP 95		00	00-FF						
6E	SMP 96	SMP 97	SMP 98	SMP 99						00	00-FF						
70																	
71																	
72																	
73																	
74									TUNING FREQUENCY (HIGHER PART)		S-SYS					POS 0	
75	S-SYS								TUNING FREQUENCY (LOWER PART)		000.BG						
76									AFT	(auto)	001H					POS 1	
77									TUNING FREQUENCY (HIGHER PART)		010.DK						
78									TUNING FREQUENCY (LOWER PART)		011.M						
79	S-SYS								AFT	(auto)						POS 2	
7A									TUNING FREQUENCY (HIGHER PART)		AFT						
7B									TUNING FREQUENCY (LOWER PART)		0.0FF						
7C	S-SYS								AFT	(auto)	1.ON					POS 3	
7D									TUNING FREQUENCY (HIGHER PART)								
7E									TUNING FREQUENCY (LOWER PART)								
7F	S-SYS								AFT	(auto)							
	MODEL										MODEL						

ADDRESS (HEX)	D7	D6	D5	DATA				D0	MICON DEFAULT	EEPROM RANGE	EEPROM (WRITE/READ)	CHASSIS QUICK DATA	CHASSIS CLOCK TYPE	CTV FINAL CLOCK DATA	CAPITAL SERIAL DATA	REMARK
				D4	D3	D2	D1									
C0				TUNING FREQUENCY (LOWER PART)												POS 25
C1		\$-SYS		IFT		IA60		C-SYS								POS 26
C2				TUNING FREQUENCY (HIGHER PART)												
C3				TUNING FREQUENCY (LOWER PART)												
C4		\$-SYS		IFT		IA60		C-SYS								POS 27
C5				TUNING FREQUENCY (HIGHER PART)												
C6				TUNING FREQUENCY (LOWER PART)												
C7		\$-SYS		IFT		IA60		C-SYS								POS 28
C8				TUNING FREQUENCY (HIGHER PART)												
C9				TUNING FREQUENCY (LOWER PART)												
CA		\$-SYS		IFT		IA60		C-SYS								POS 29
CB				TUNING FREQUENCY (HIGHER PART)												
CC				TUNING FREQUENCY (LOWER PART)												
CD		\$-SYS		IFT		IA60		C-SYS								POS 30
CE				TUNING FREQUENCY (HIGHER PART)												
CF				TUNING FREQUENCY (LOWER PART)												
D0		\$-SYS		IFT		IA60		C-SYS								POS 31
D1				TUNING FREQUENCY (HIGHER PART)												
D2				TUNING FREQUENCY (LOWER PART)												
D3		\$-SYS		IFT		IA60		C-SYS								POS 32
D4				TUNING FREQUENCY (HIGHER PART)												
D5				TUNING FREQUENCY (LOWER PART)												
D6		\$-SYS		IFT		IA60		C-SYS								POS 33
D7				TUNING FREQUENCY (HIGHER PART)												
D8				TUNING FREQUENCY (LOWER PART)												
D9		\$-SYS		IFT		IA60		C-SYS								POS 34
DA				TUNING FREQUENCY (HIGHER PART)												
DB				TUNING FREQUENCY (LOWER PART)												
DC		\$-SYS		IFT		IA60		C-SYS								POS 35
DD				TUNING FREQUENCY (HIGHER PART)												
DE				TUNING FREQUENCY (LOWER PART)												
DF		\$-SYS		IFT		IA60		C-SYS								POS 36
E0				TUNING FREQUENCY (HIGHER PART)												
E1				TUNING FREQUENCY (LOWER PART)												POS 37
E2		\$-SYS		IFT		IA60		C-SYS								
E3				TUNING FREQUENCY (HIGHER PART)												
E4				TUNING FREQUENCY (LOWER PART)												
E5		\$-SYS		IFT		IA60		C-SYS								POS 38
E6				TUNING FREQUENCY (HIGHER PART)												
E7				TUNING FREQUENCY (LOWER PART)												
E8		\$-SYS		IFT		IA60		C-SYS								POS 39
E9				TUNING FREQUENCY (HIGHER PART)												
EA				TUNING FREQUENCY (LOWER PART)												
EB		\$-SYS		IFT		IA60		C-SYS								POS 40
EC				TUNING FREQUENCY (HIGHER PART)												
ED				TUNING FREQUENCY (LOWER PART)												
EE		\$-SYS		IFT		IA60		C-SYS								POS 41
EF				TUNING FREQUENCY (HIGHER PART)												
F0				TUNING FREQUENCY (LOWER PART)												
F1		\$-SYS		IFT		IA60		C-SYS								POS 42
F2				TUNING FREQUENCY (HIGHER PART)												
F3				TUNING FREQUENCY (LOWER PART)												
F4		\$-SYS		IFT		IA60		C-SYS								POS 43
F5				TUNING FREQUENCY (HIGHER PART)												
F6				TUNING FREQUENCY (LOWER PART)												
F7		\$-SYS		IFT		IA60		C-SYS								POS 44
F8				TUNING FREQUENCY (HIGHER PART)												
F9				TUNING FREQUENCY (LOWER PART)												
FA		\$-SYS		IFT		IA60		C-SYS								POS 45
FB				TUNING FREQUENCY (HIGHER PART)												
FC				TUNING FREQUENCY (LOWER PART)												
FD		\$-SYS		IFT		IA60		C-SYS								POS 46
FE				TUNING FREQUENCY (HIGHER PART)												
FF				TUNING FREQUENCY (LOWER PART)												
MODEL									MODEL							
LETTER NO.													LETTER NO.			

12-2

[illegible]

12-1

13-1

13

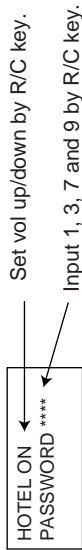
ADDRESS (HEX)	DATA							MICON DEFAULT	EEPROM RANGE	EEPROM WRITE CPU	CHASSIS		CTV FINAL		LAST INITIAL SETTING DATA	REMARK
	D7	D6	D5	D4	D3	D2	D1				D0	CHECK DATA	CHECK TYPE	CHECK DATA		
1C0																
1C1																
1C2																
1C3																
1C4																
1C5																
1C6																
1C7																
1C8																
1C9																
1CA																
1CB																
1CC																
1CD																
1CE																
1CF																
1D0																
1D1																
1D2																
1D3																
1D4																
1D5																
1D6																
1D7																
1D8																
1D9																
1DA																
1DB																
1DC																
1DD																
1DE																
1DF																
1E0																
1E1																
1E2																
1E3																
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1EA																
1EB																
1EC																
1ED																
1EE																
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1F2																
1F3																
1F4																
1F5																
1F6																
1F7																
1F8																
1F9																
1FA																
1FB																
1FC																
1FD																
1FE																
1FF																
	MODEL								MODEL							

GA-1AM HOTEL MODE APPLICATION

How to enable/disable the "Hotel Mode" ?

Ans: a) Press the R/C (FUNCTION) key until language selection appear, within five second press the (one/two digit) key and keep pressing it for five second, then you can see the hotel mode with four digits password.

b) Key in the four digits password starting with number "1", "3", "7", "9", then the hotel mode will be enable, you can switch on/off the hotel mode by using R/C (volume up/down) key.



- * We recommend Before set the hotel mode, it is better to choose ch 1 & set s-vol level Up to 75% full scale. After set hotel mode, starting channel will be always ch 1 & maximum sound level out will be set the half of full scale.
- * If you set hotel mode in AV, starting channel will be the last ch which you received before power off (same as normal operation)

CONDITION:

When using hotel mode, user can control "contrast", "brightness", "sharpness" and "tint" function.

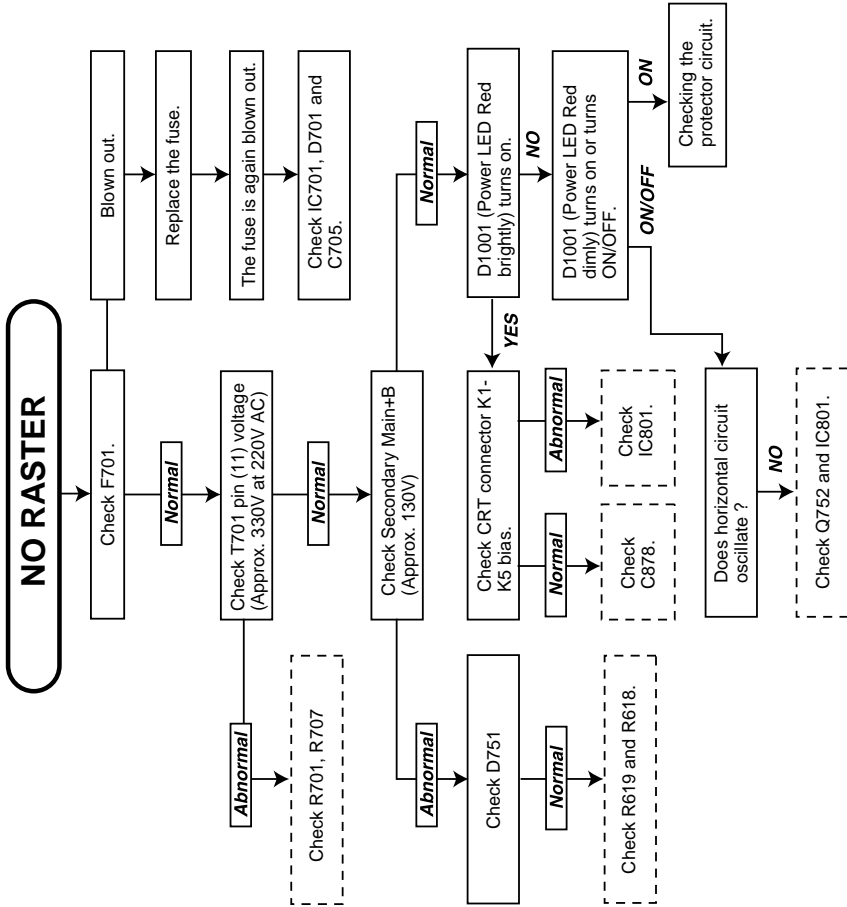
But after power off, it will return to the initial setting.

You can't use:--

- Preset mode
- Fine tuning
- Skip mode
- System selection

The others function is allowed to be used.

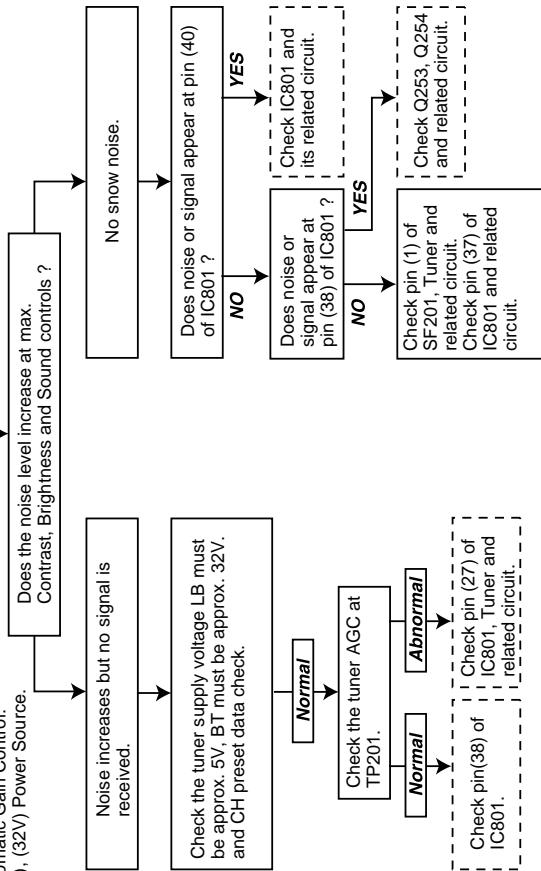
TROUBLE SHOOTING TABLE



TROUBLE SHOOTING TABLE (Continued)

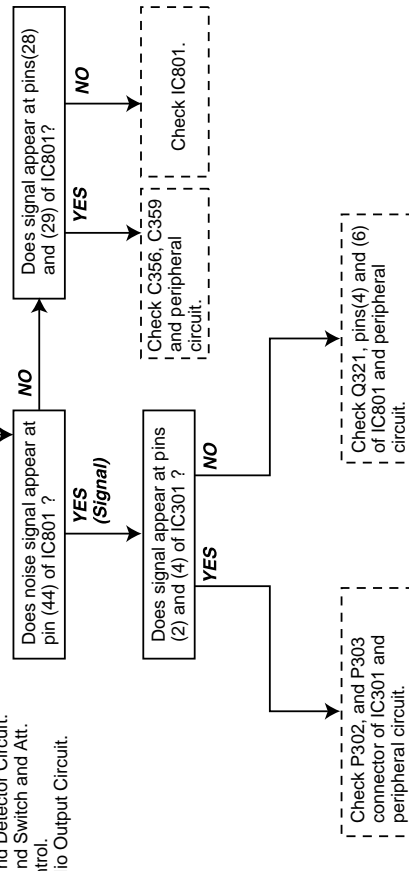
CIRCUITS TO BE CHECKED:

- Tuner.
- PIF.
- Automatic Gain Control.
- (5V), (32V) Power Source.

NO PICTURE, NO SOUND

CIRCUITS TO BE CHECKED:

- Sound system pins (28), (29) and (44) of IC801.
- Sound Detector Circuit.
- Sound Switch and Att. Control.
- Audio Output Circuit.

NO SOUND

16-1

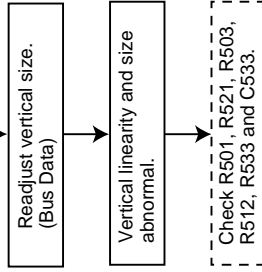
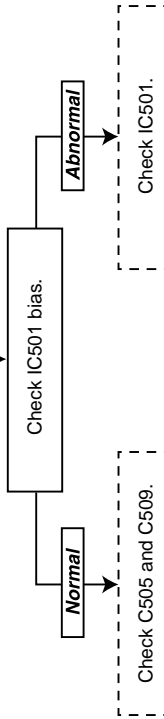
TROUBLE SHOOTING TABLE (Continued)

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:

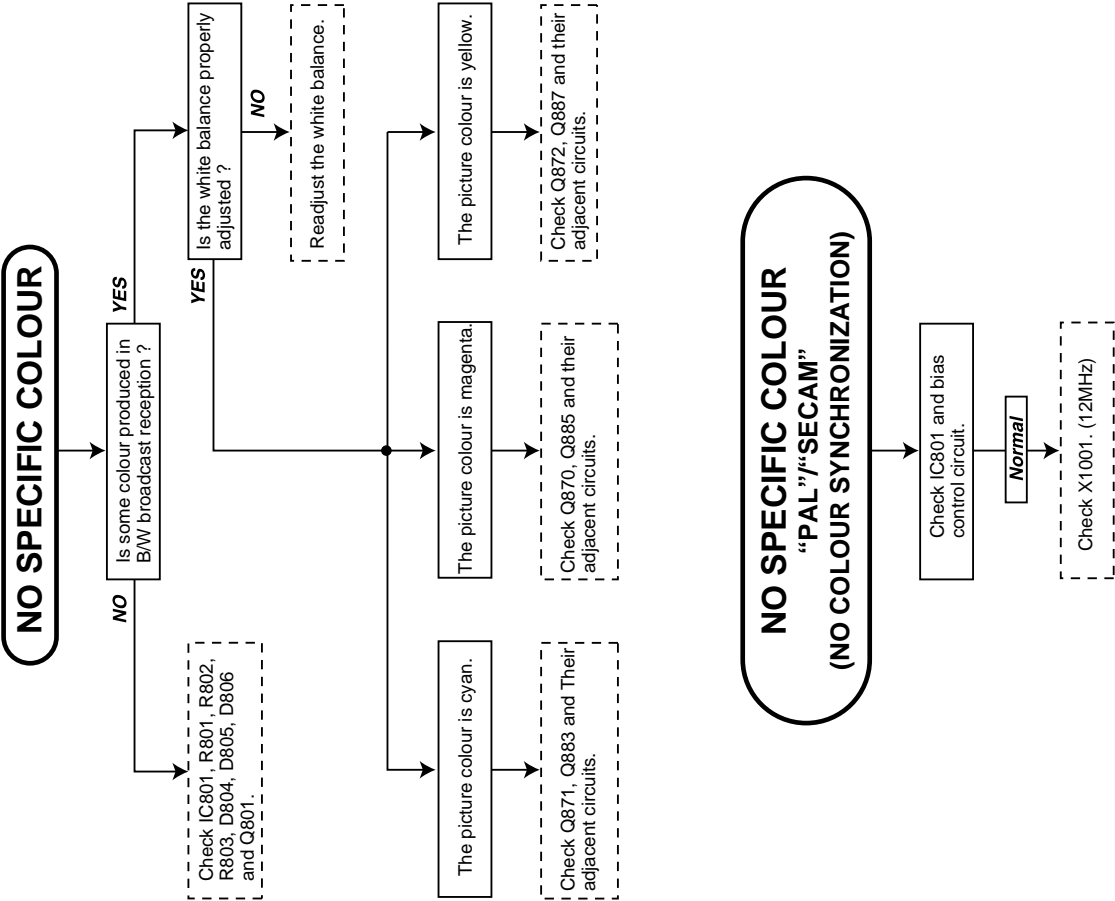
- Sync. Separator Circuit.

Check pins (16), (17), (33) and (34) of IC801.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY**NO VERTICAL SCAN**

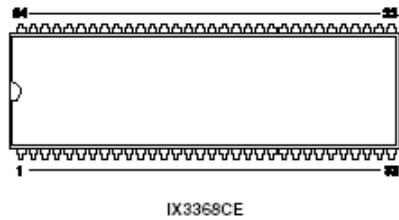
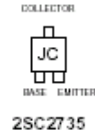
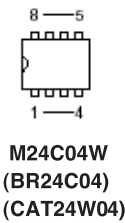
16-2

TROUBLE SHOOTING TABLE (Continued)

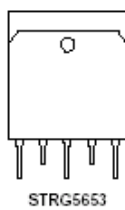
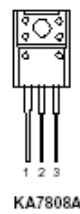
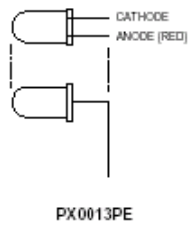
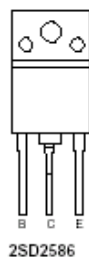
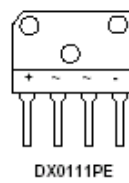


SOLID STATE DEVICE BASE DIAGRAM

TOP VIEW

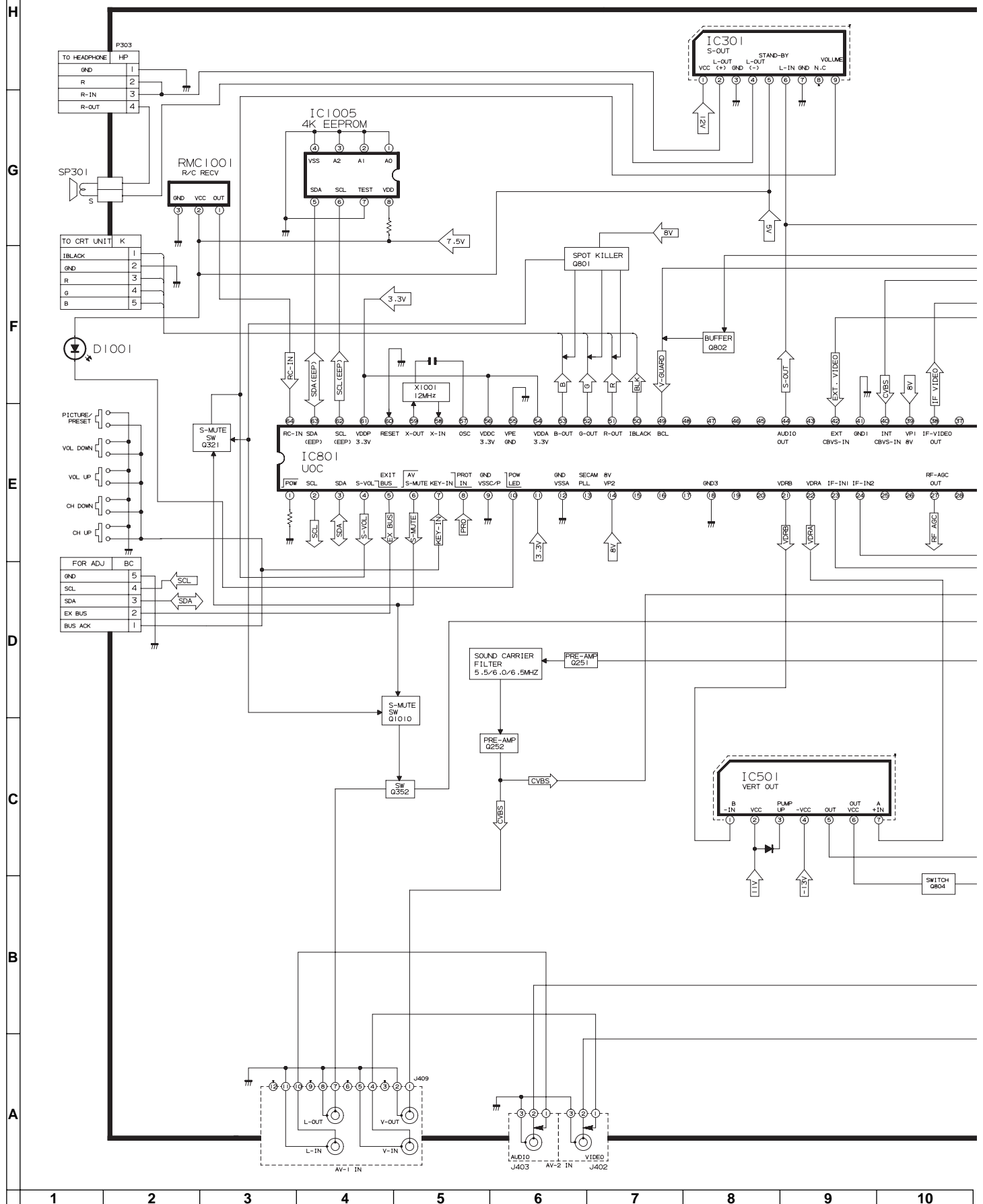


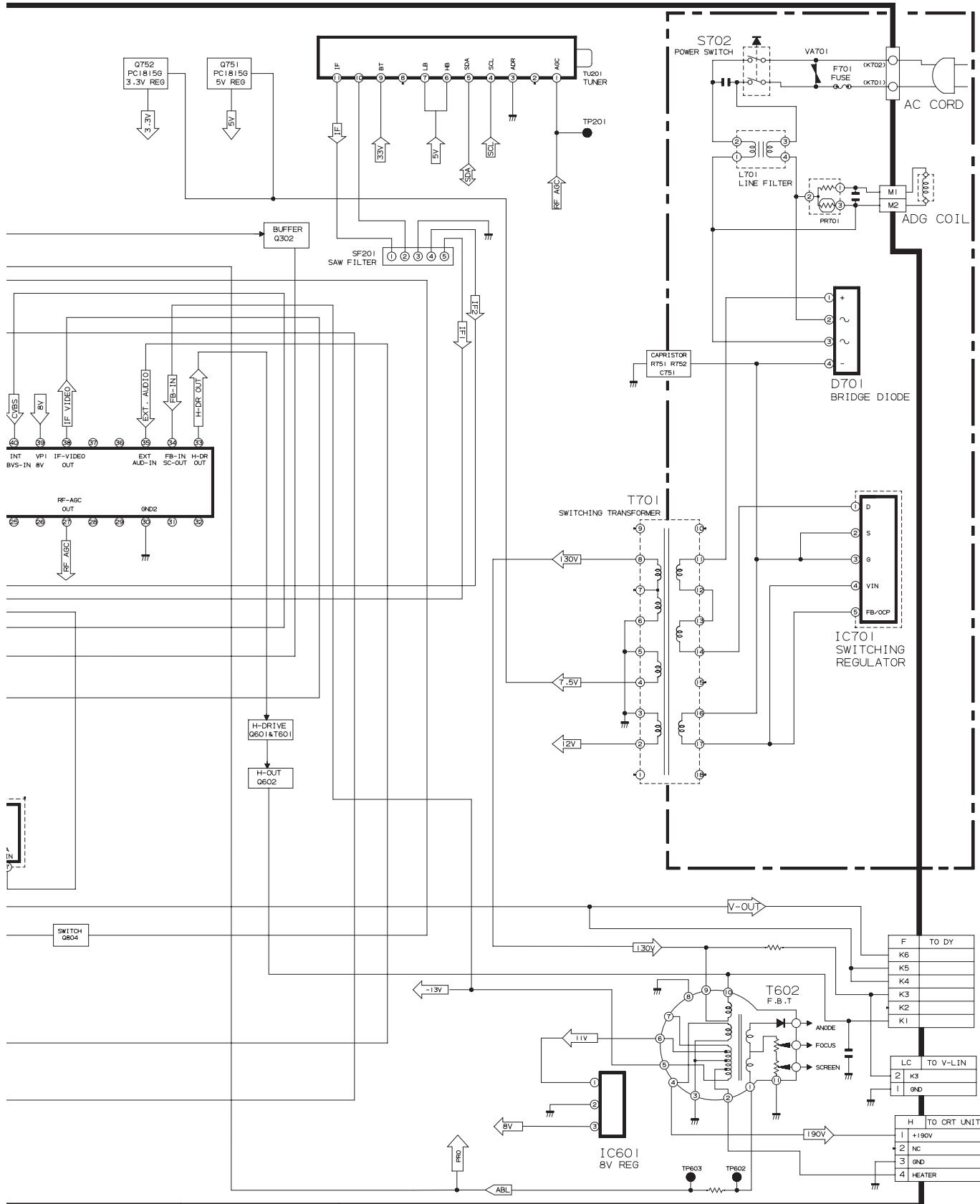
SIDE VIEW





BLOCK DIAGRAM:MAIN UNIT





10

11

12

13

14

15

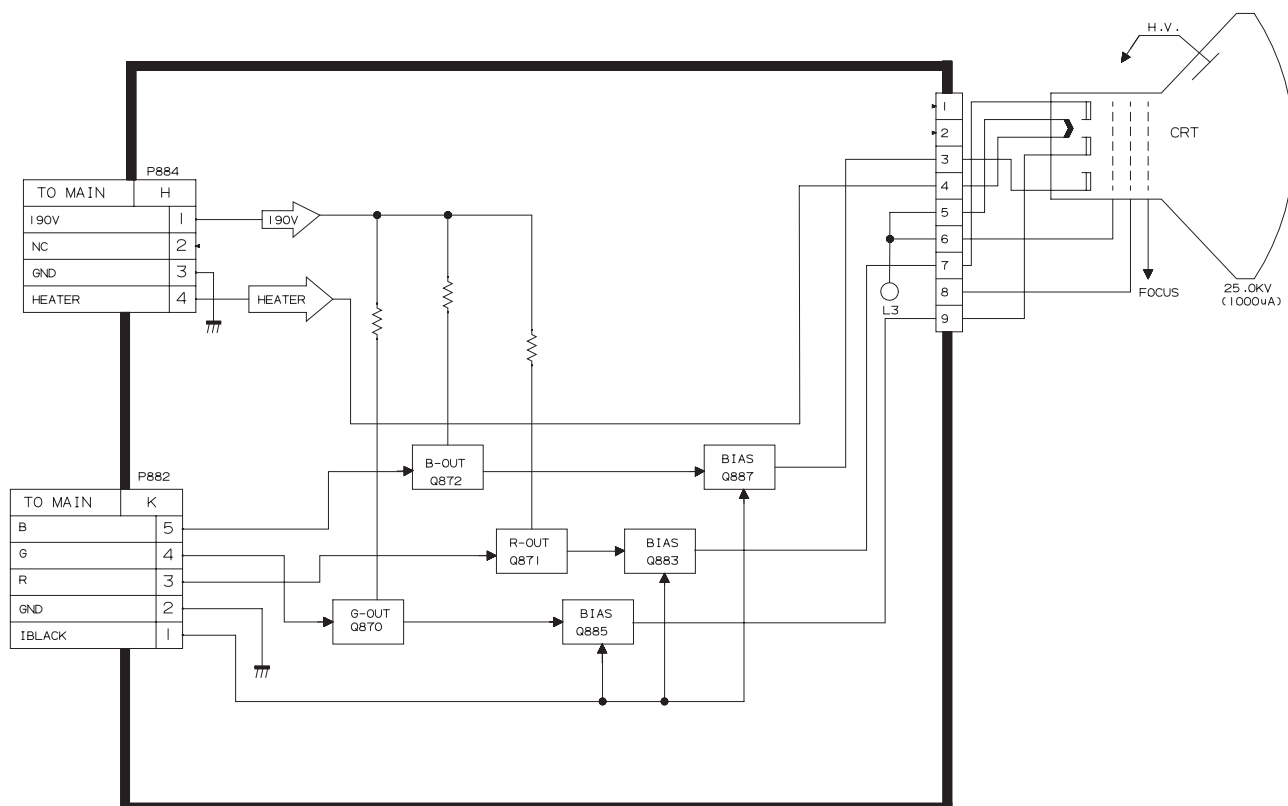
16

17

18

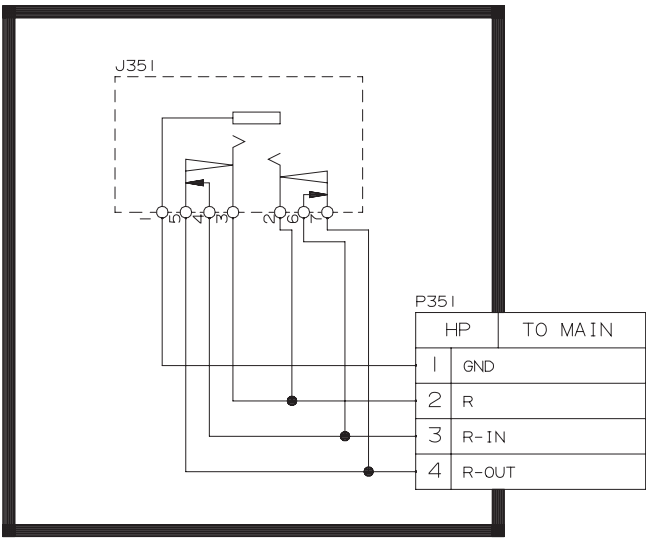
19

BLOCK DIAGRAM:CRT UNIT

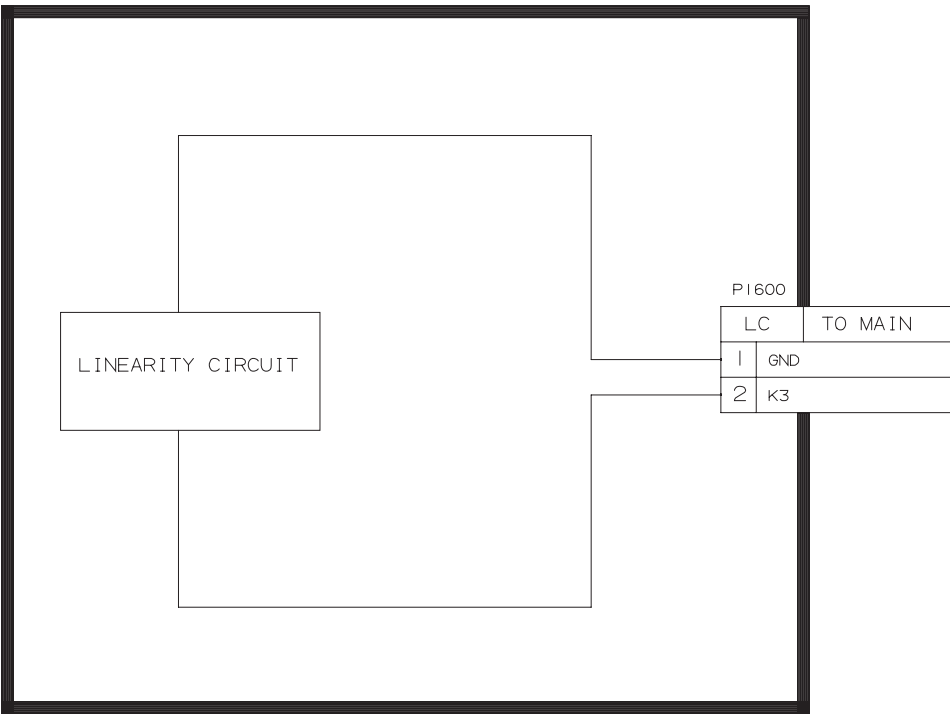


BLOCK DIAGRAM:HEADPHONE and LINEARITY UNIT

HEADPHONE UNIT



LINEARITY UNIT



DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "▲" () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (— — —) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

1. The unit of resistance "ohm" is omitted.
(K = 1000 ohms, M = Meg ohm).
2. All resistors are 1/10 watt, unless otherwise noted.
3. All capacitors are μF , unless otherwise noted. ($P = \mu\mu F$).

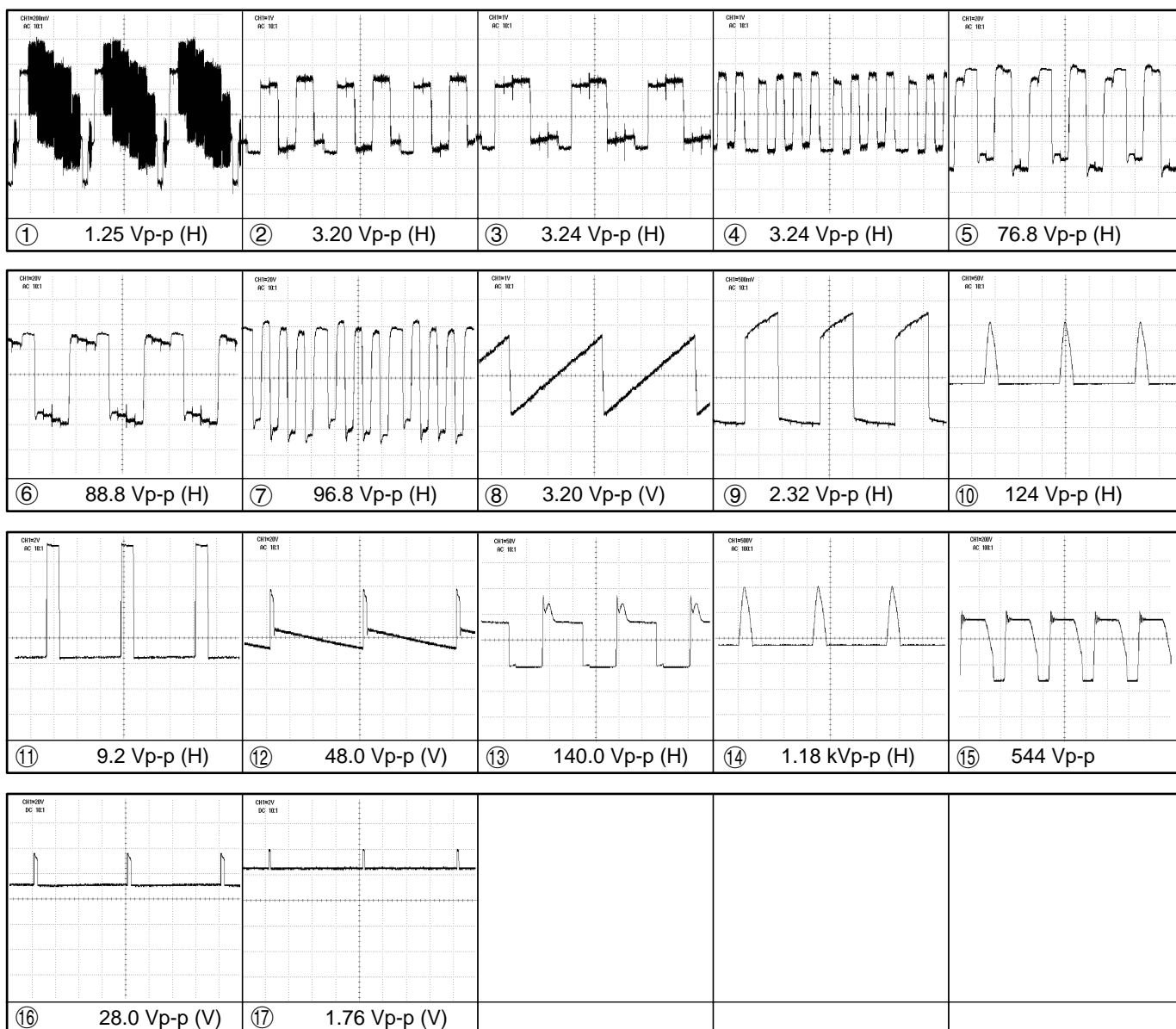
VOLTAGE MEASUREMENT CONDITIONS:

1. Voltage in parenthesis measured with no Signal.
2. Voltages without parenthesis measured with 3mVB&W or Colour-Signal.
3. All the voltages in each point are measured with VTVM.

WAVEFORM MEASUREMENT CONDITIONS:

1. Colour bar generator signal of 2.0V peak to peak applied at Base of Video Buffer Amp. Q252.
2. Approximately 4.0 V AGC bias.

WAVEFORMS



SCHEMATIC DIAGRAM:CRT UNIT

H

G

F

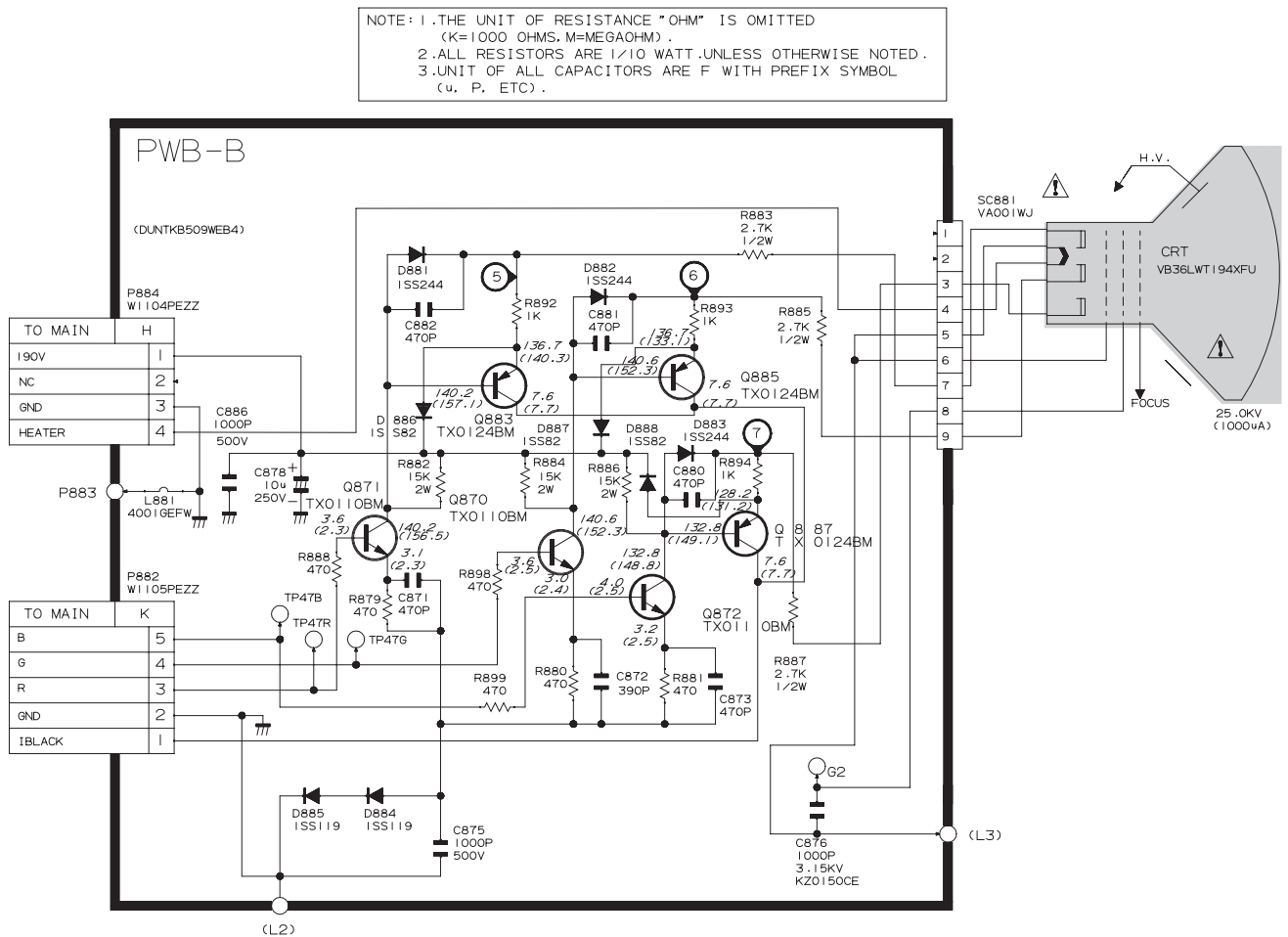
E

D

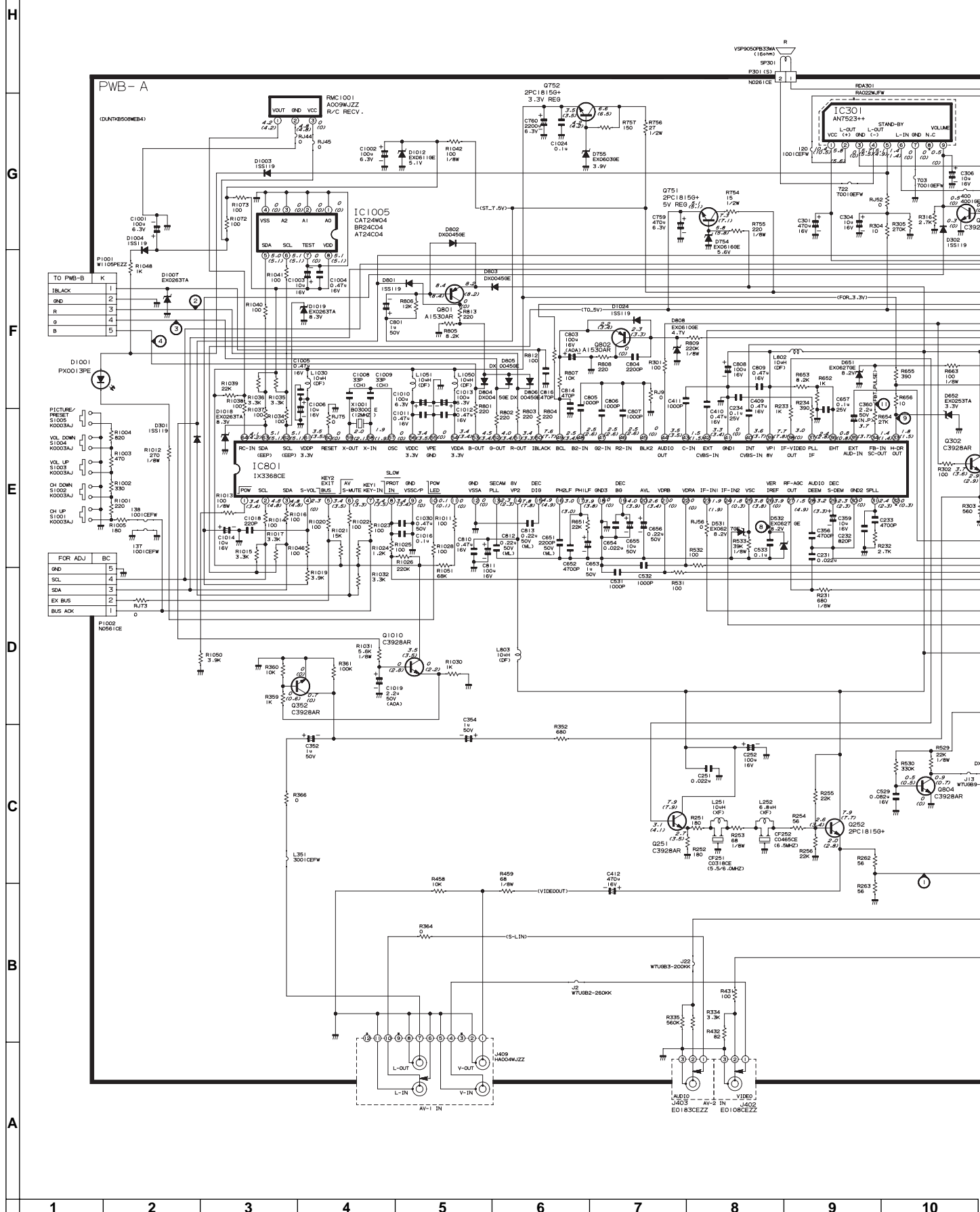
C

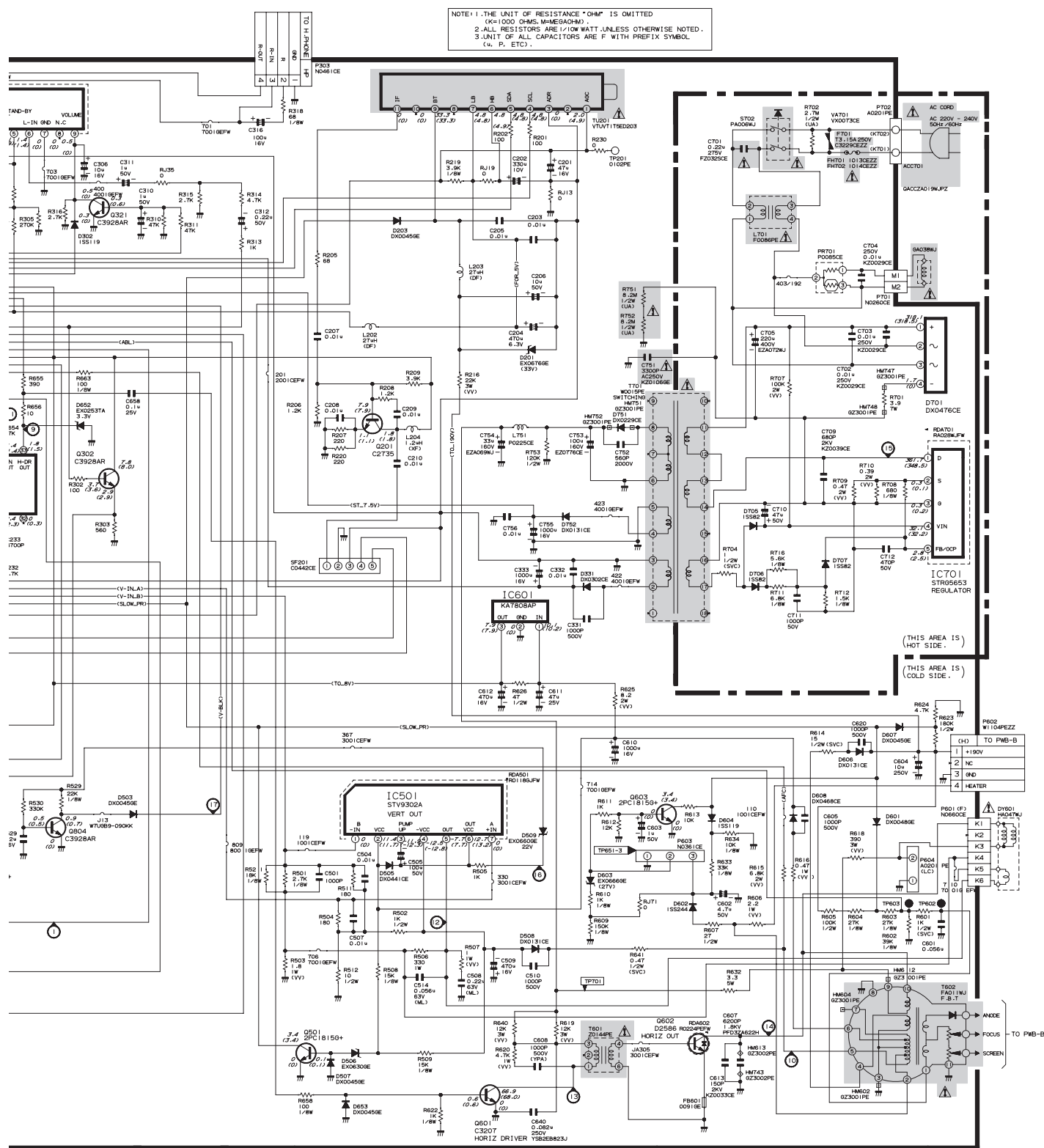
B

A



SCHEMATIC DIAGRAM:MAIN UNIT

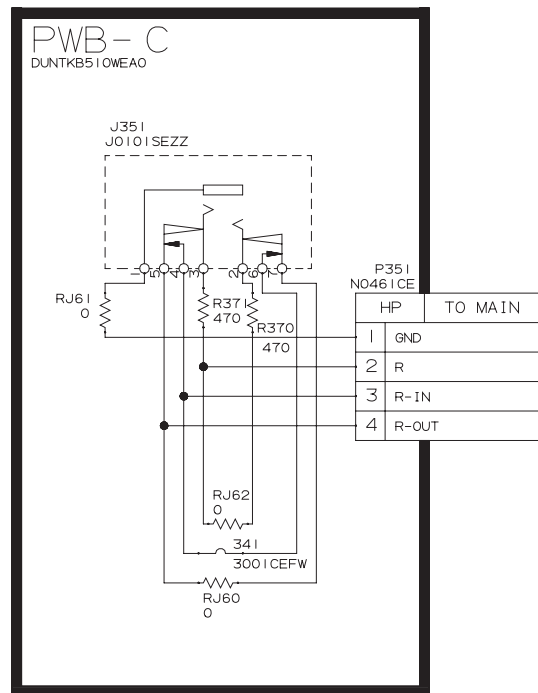




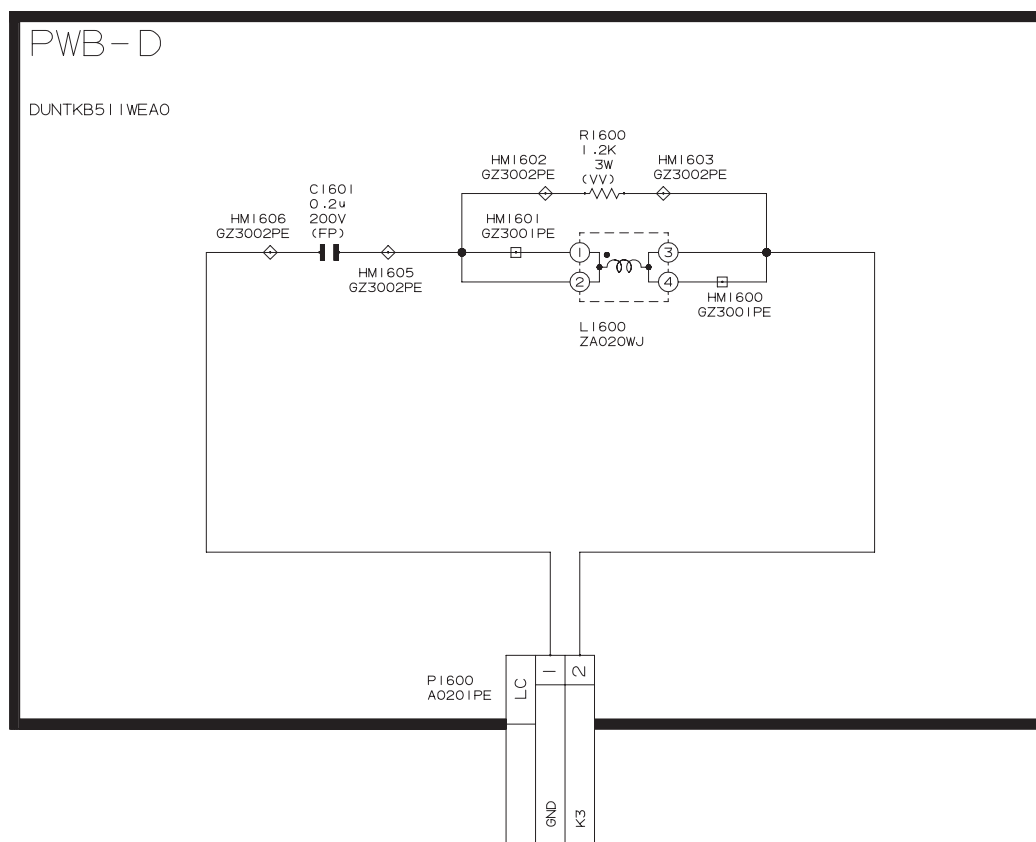
10	11	12	13	14	15	16	17	18	19
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SCHEMATIC DIAGRAM: HEADPHONE and LINEARITY UNIT

HEADPHONE UNIT

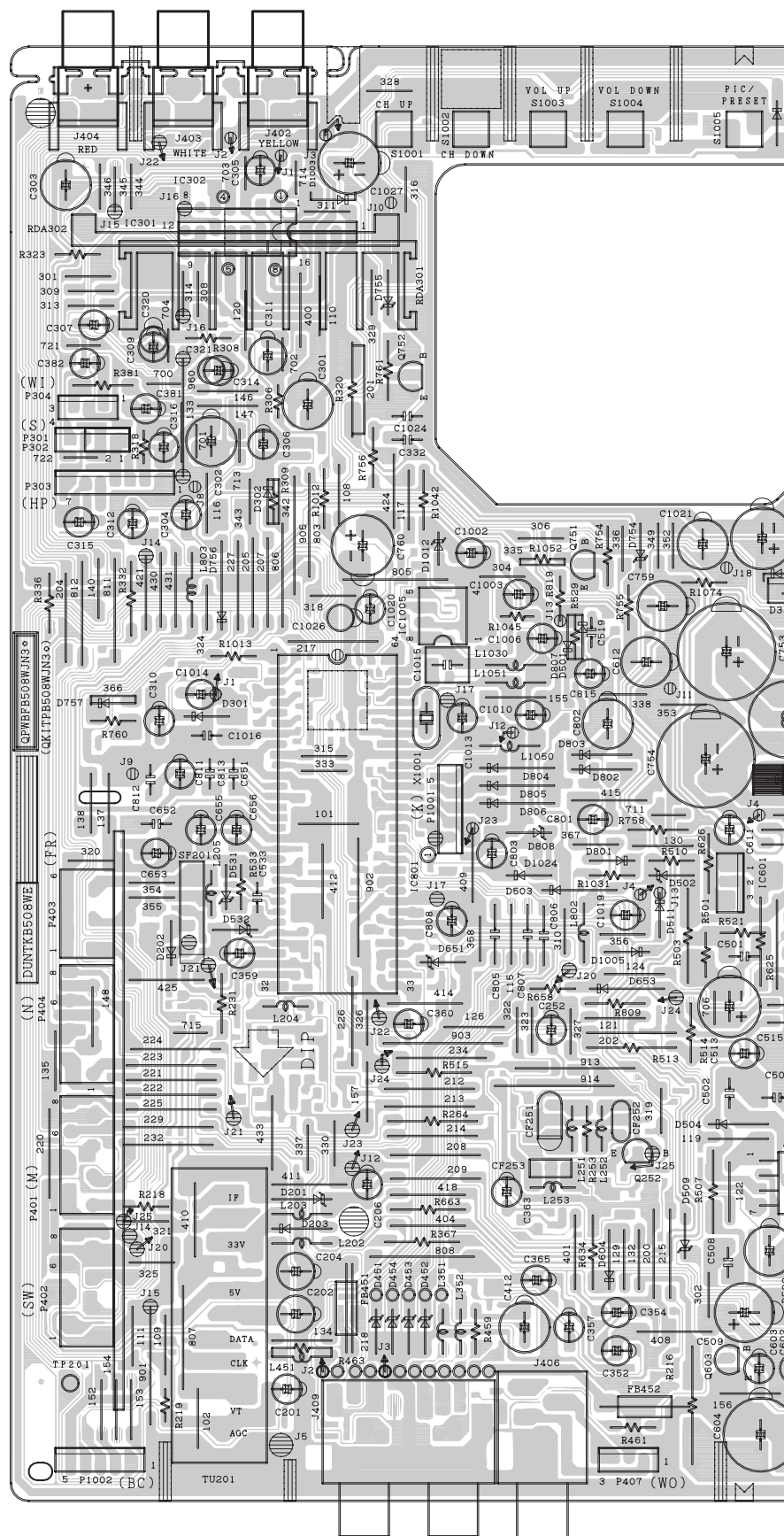


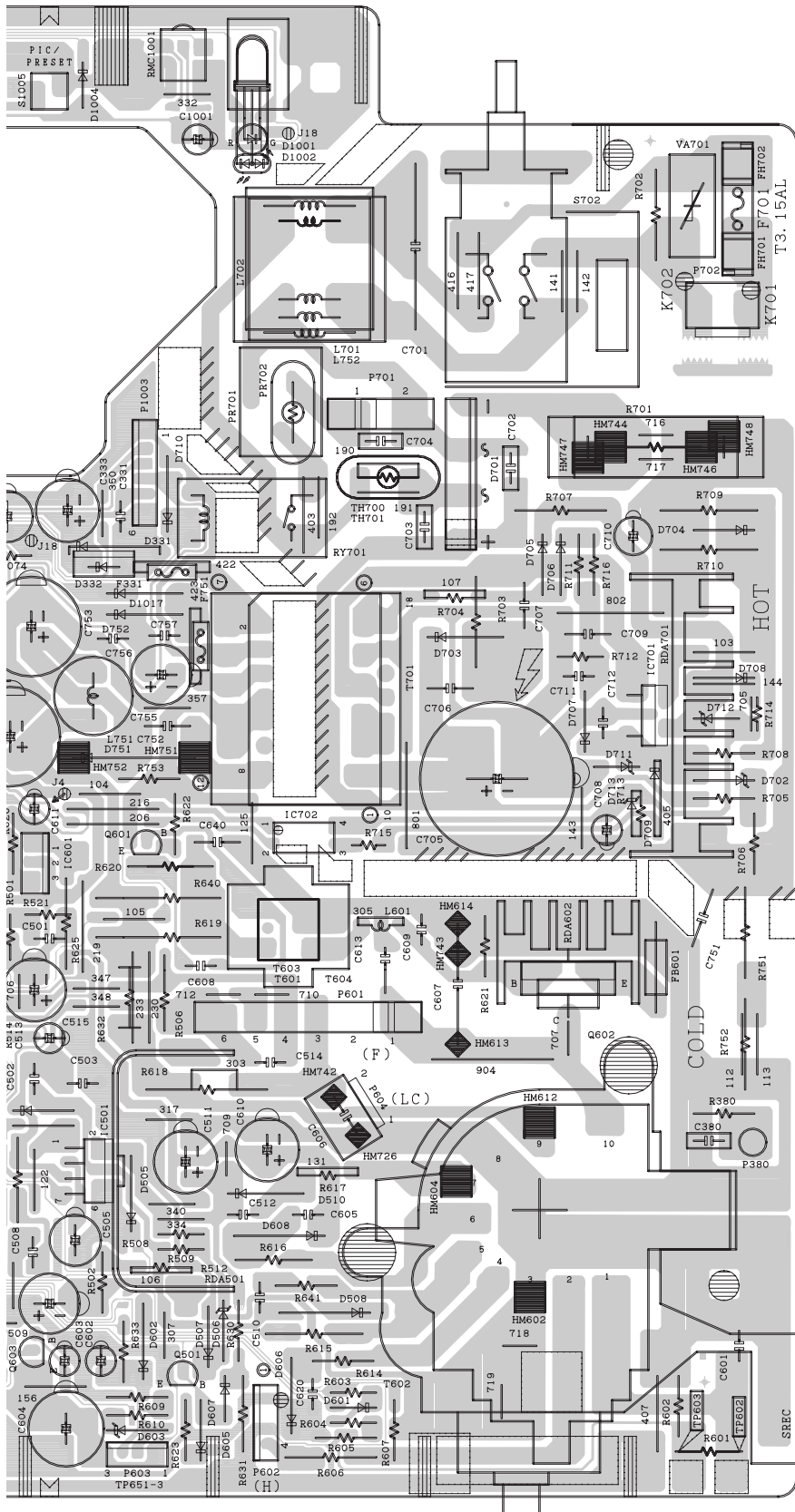
LINEARITY UNIT





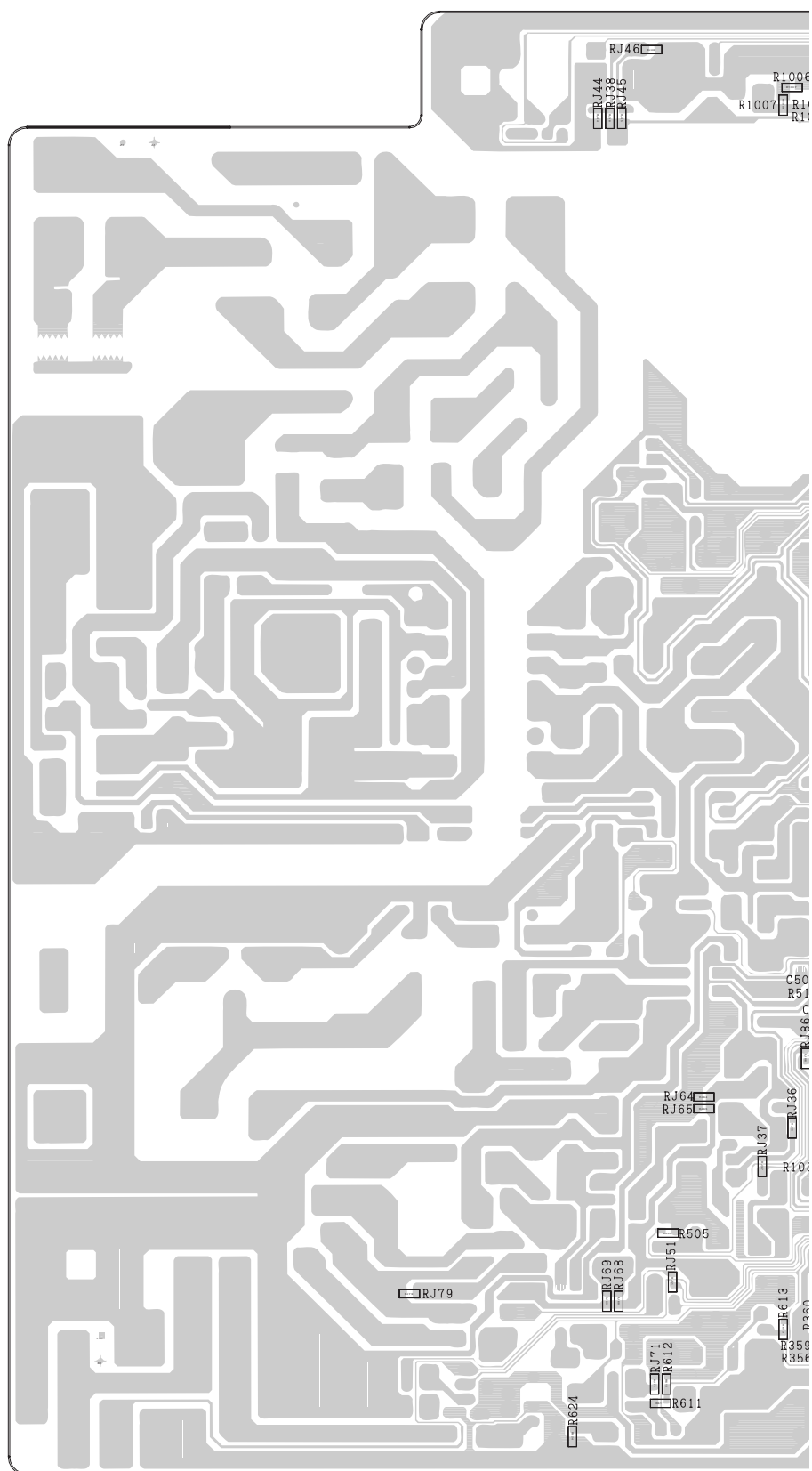
PWB-A:MAIN UNIT (Component Side)

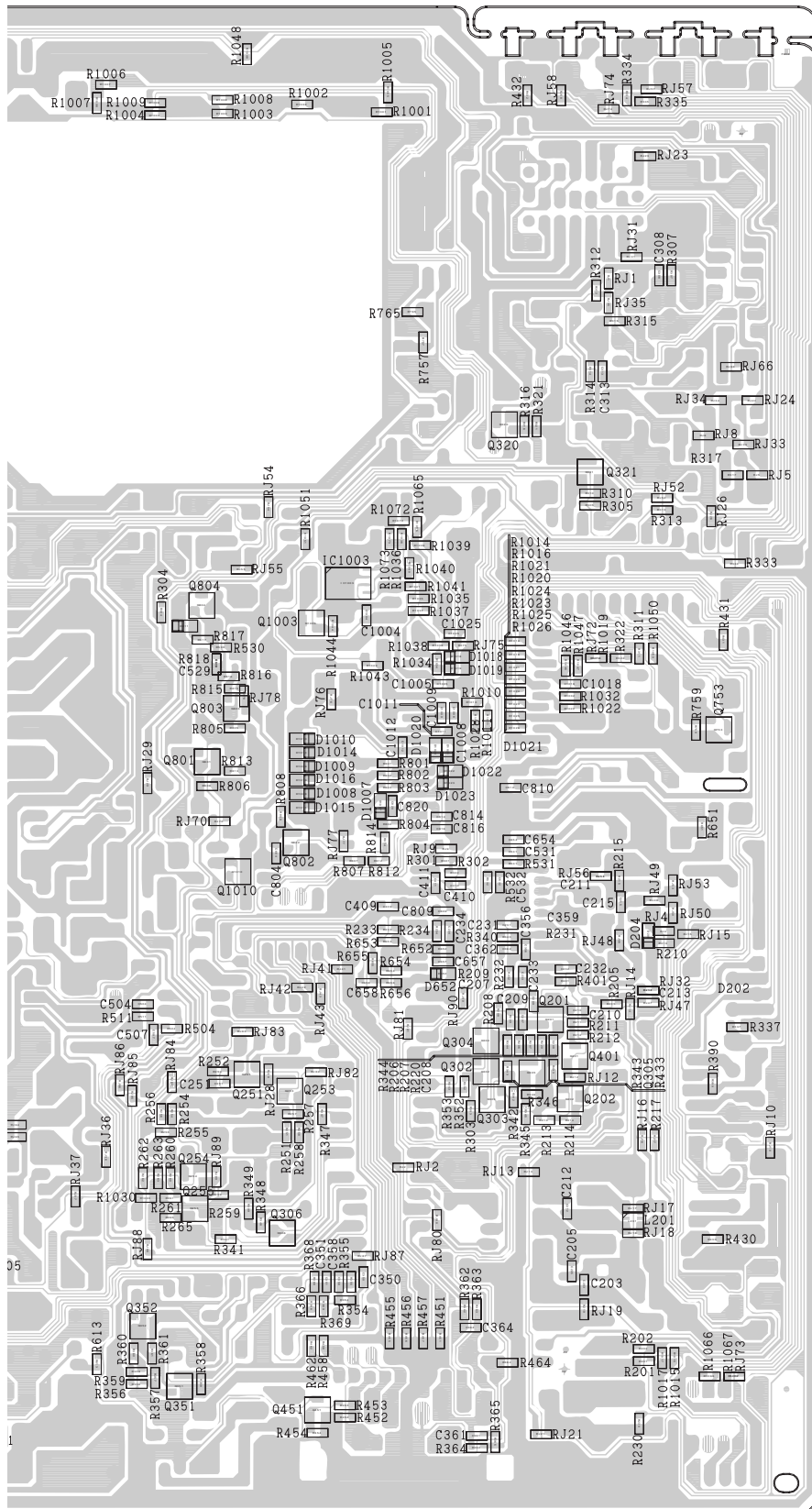




10	11	12	13	14	15	16	17	18	19
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PWB-A:MAIN UNIT (Chip Parts Side)

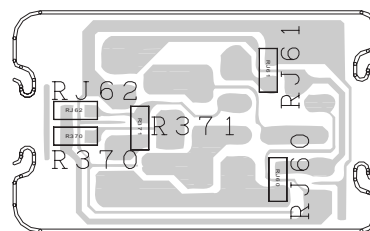
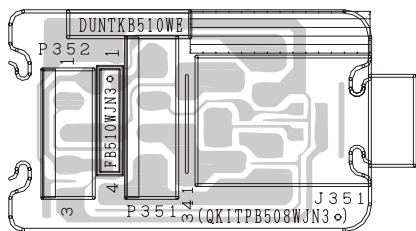




10	11	12	13	14	15	16	17	18	19
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H

G



PWB-C:HEADPHONE UNIT (Component Side) PWB-C:HEADPHONE UNIT (Chip Parts Side)

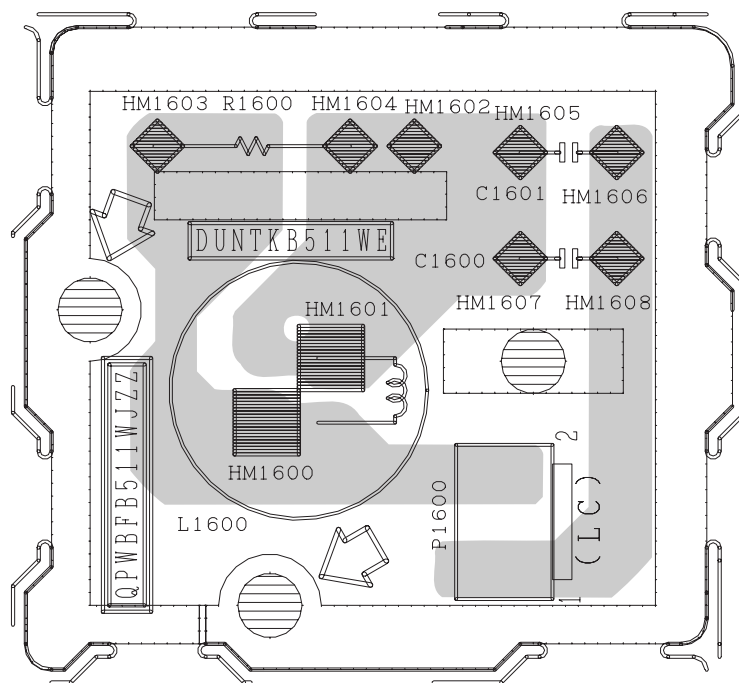
E

D

C

B

A



PWB-D:LINEARITY UNIT (Component Side)

1

2

3

4

5

6

REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "△" in the Replacement Parts Lists.

The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

MARK ★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code
PICTURE TUBE				
△	VB36LWT194XFU	R	Picture Tube	CA
△	RCiLGA038WJZZ	R	Degaussing Coil	AP
△ DY601	RCiLHA047WJZZ	R	Deflection Yoke	BB
	QEARCA011WJZZ	R	Ground-Part	AF
	PMAGF3045CEZZ	R	Magnet	AG

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

PWB-A	DUNTKB508WEB4	—	MAIN Unit	—
PWB-B	DUNTKB509WEB4	—	CRT Unit	—
PWB-C	DUNTKB510WEA0	—	HEADPHONE Unit	—
PWB-D	DUNTKB511WEA0	—	LINEARITY Unit	—

Ref. No.	Part No.	★	Description	Code
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DUNTKB508WEB4 PWB-A MAIN UNIT

TUNER

NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY NOT INDEPENDENTLY

△ TU201	VTUVT1T5ED203	R	VHF Tuner	AX
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INTEGRATED CIRCUITS

IC301	VHiAN7523++-1	R	AN7523	AH
IC501	VHiSTV9302A-1	R	I.C.	AH
IC601	VHiKA7808AP-1	R	KIA7808API	AE
IC701	VHiSTRG5653-1	R	STR-G5653	AQ
IC801	RH-iX3368CEN7	R	I.C.	
IC1005	VHiCAT24W04-1	R	CAT24WC04PI	AE

TRANSISTORS

Q201	VS2SC2735//1EY	R	2SC2735	AC
Q251	VS2SC3928AR-1Y	R	2SC3928AR	AB
Q252	VS2PC1815G+-1+	R	2PC1815G	AC
Q302	VS2SC3928AR-1Y	R	2SC3928AR	AB
Q321	VS2SC3928AR-1Y	R	2SC3928AR	AB
Q352	VS2SC3928AR-1Y	R	2SC3928AR	AB
Q501	VS2PC1815G+-1+	R	2PC1815G	AC
Q601	VS2SC3207//1+	R	2SC3207	AC
Q602	VS2SD2586//1E	R	2SD2586	AM
Q603	VS2PC1815G+-1+	R	2PC1815G	AC
Q751	VS2PC1815G+-1+	R	2PC1815G	AC
Q752	VS2PC1815G+-1+	R	2PC1815G	AC
Q801	VS2SA1530AR-1Y	R	2SA1530AR	AB
Q802	VS2SA1530AR-1Y	R	2SA1530AR	AB
Q804	VS2SC3928AR-1Y	R	2SC3928AR	AB
Q1010	VS2SC3928AR-1Y	R	2SC3928AR	AB

DIODES

D201	RH-EX0676GEZZY	R	Zener Diode, 33V	AA
D203	RH-DX0045GEZZY	R	DX0045GE	AA
D301	VHD1SS119//1Y	R	1SS119	AA
D302	VHD1SS119//1Y	R	1SS119	AA
D331	RH-DX0302CEZZY	R	DX0302CE	AC
D503	RH-DX0045GEZZY	R	DX0045GE	AA
D505	RH-DX0441CEZZY	R	DX0441CE	AC
D506	RH-EX0630GEZZY	R	Zener Diode	AA
D507	RH-DX0045GEZZY	R	DX0045GE	AA
D508	RH-DX0131CEZZY	R	DX0131CE	AC
D509	RH-EX0660GEZZY	R	Zener Diode, 22V	AB
D531	RH-EX0627GEZZY	R	Zener Diode, 8.2V	AA
D532	RH-EX0627GEZZY	R	Zener Diode, 8.2V	AA
D601	RH-DX0048GEZZY	R	DX0048GE	AA
D602	VHD1SS244//1Y	R	1SS244	AB
D603	RH-EX0666GEZZY	R	Zener Diode, 27V	AB
D604	VHD1SS119//1Y	R	1SS119	AA
D606	RH-DX0131CEZZY	R	DX0131CE	AC
D607	RH-DX0045GEZZY	R	DX0045GE	AA
D608	RH-DX0468CEZZ	R	DX0468CE	AE
D651	RH-EX0627GEZZY	R	Zener Diode, 8.2V	AA
D652	RH-EX0253TAZZY	R	Zener Diode, 3.3V	AC
D653	RH-DX0045GEZZY	R	DX0045GE	AA
D701	RH-DX0476CEZZ	R	DX0476CE	AG
D705	VHD1SS82///1AY	R	1SS82	AC
D706	VHD1SS82///1AY	R	1SS82	AC
D707	VHD1SS82///1AY	R	1SS82	AC
D751	RH-DX0229CEZZ	R	DX0229CE	AF
D752	RH-DX0131CEZZY	R	DX0131CE	AC
D754	RH-EX0616GEZZY	R	Zener Diode, 5.6V	AA
D755	RH-EX0603GEZZY	R	Zener Diode, 3.9V	AA
D801	VHD1SS119//1Y	R	1SS119	AA
D802	RH-DX0045GEZZY	R	DX0045GE	AA
D803	RH-DX0045GEZZY	R	DX0045GE	AA
D804	RH-DX0045GEZZY	R	DX0045GE	AA
D805	RH-DX0045GEZZY	R	DX0045GE	AA
D806	RH-DX0045GEZZY	R	DX0045GE	AA
D808	RH-EX0610GEZZY	R	Zener Diode	AA
D1001	RH-PX0013PEZZ	R	PhotoDiode, 4.7V	AC

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
D1003	VHD1SS119/-1Y	R	1SS119	AA	C505	VCEA0A1HW107M+	R	100 50V Electrolytic	AB
D1004	VHD1SS119/-1Y	R	1SS119	AA	C507	VCKYCY1HB103K	R	0.01 50V Ceramic	AA
D1007	RH-EX0263TAZZY	R	Zener Diode	AC	C508	VCFYSA1JB224J+	R	0.22 63V Mylar	AD
D1012	RH-EX0611GEZZY	R	Zener Diode, 5.1V	AA	C509	VCEA0A1CW477M+	R	470 16V Electrolytic	AC
D1018	RH-EX0263TAZZY	R	Zener Diode, 8.3V	AC	C510	VCKYPA2HB102K+	R	1000p 500V Ceramic	AA
D1019	RH-EX0263TAZZY	R	Zener Diode, 8.3V	AC	C514	VCFYSA1JB563J+	R	0.056 63V Mylar	AD
D1024	VHD1SS119/-1Y	R	1SS119	AA	C529	VCKYCY1CB823KY	R	0.082 16V Ceramic	AH
VA701	RH-VX0073CEZZ	R	Varistor	AD	C531	VCKYCY1HB102K	R	1000p 50V Ceramic	AA
PACKAGED CIRCUITS					C532	VCKYCY1HB102K	R	1000p 50V Ceramic	AA
PR701	RMPTP0085CEZZ	R	Packaged Circuit	AL	C533	RC-QZA104TAYJ+	R	0.1	AB
X1001	RCRSB0300CEZZ	R	Crystal	AF	C601	RC-QZA563TAYJ+	R	0.056	AB
COILS					C602	VCEA0A1HW475M+	R	4.7 50V Electrolytic	AB
L202	VP-DF270K0000Y	R	Peaking, 27μH	AB	C603	VCEA0A1HW105M+	R	1 50V Electrolytic	AB
L203	VP-DF270K0000Y	R	Peaking, 27μH	AB	C604	VCEA0A2EW106M	R	10 250V Electrolytic	AD
L204	VP-XF1R2K0000Y	R	Peaking, 1.2μH	AB	C605	VCKYPA2HB102K+	R	1000p 500V Ceramic	AA
L251	VP-XF100K0000Y	R	Peaking, 10μH	AB	C607	VCFPFD3ZA622H	R	6200p 1800V	AD
L252	VP-XF6R8K0000Y	R	Peaking, 6.8μH	AB	Metalized Polypro Film				
△ L701	RCiLF0086PEZZ	R	Coil	AH	C608	VCKYPA2HB102K+	R	1000p 500V Ceramic	AA
L751	RCiLP0225CEZZ	R	Coil	AF	C610	VCEA0A1CW108M	R	1000 16V Electrolytic	AD
L802	VP-DF100K0000Y	R	Peaking, 10μH	AB	C611	VCEA0A1EW476M+	R	47 25V Electrolytic	AB
L803	VP-DF100K0000Y	R	Peaking, 10μH	AB	C612	VCEA0A1CW477M+	R	470 16V Electrolytic	AC
L1030	VP-DF100K0000Y	R	Peaking, 10μH	AB	C613	RC-KZ0033CEZZ	R	150p 2kV Ceramic	AB
L1050	VP-DF100K0000Y	R	Peaking, 10μH	AB	C620	VCKYPA2HB102K+	R	1000p 500V Ceramic	AA
L1051	VP-DF100K0000Y	R	Peaking, 10μH	AB	C640	VCFYSB2EB823J	R	0.082 250V	AD
FILTERS					Metalized Polypro Film				
CF251	RFiLC0318CEZZ	R	Filter	AG	C651	VCQYTA1HM222J+	R	2200p 50V Mylar	AA
CF252	RFiLC0465CEZZ	R	Filter	AD	C652	RC-QZA472TAYJ+	R	4700p	AB
SF201	RFiLC0442CEZZ	R	Filter	AL	C653	VCEA0A1HW105M+	R	1 50V Electrolytic	AB
TRANSFORMERS					C654	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
△ T601	RTRNZ0144PEZZ	R	Transformer	AE	C655	VCEA0A1HW106M+	R	10 50V Electrolytic	AB
△ T602	RTRNFA011WJZZ	R	H-Volt Transformer	AN	C656	VCEA0A1HW224M+	R	0.22 50V Electrolytic	AB
△ T701	RTRNW0015PEZZ	R	Transformer	AL	C657	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
CAPACITORS					C658	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C201	VCEA0A1CW476M+	R	47 16V Electrolytic	AB	C701	RC-FZ032SCEZZ	R	0.22 275V	AD
C202	VCEA0A1AW337M+	R	330 10V Electrolytic	AC	C702	RC-KZ0029CEZZ+	R	0.01 250V Ceramic	AC
C203	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA	C703	RC-KZ0029CEZZ+	R	0.01 250V Ceramic	AC
C204	VCEA0A0JW477M+	R	470 6.3V Electrolytic	AC	C704	RC-KZ0029CEZZ+	R	0.01 250V Ceramic	AC
C205	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA	C705	RC-EZA072WJZZ	R	220 400V Electrolytic	AN
C206	VCEA0A1HW106M+	R	10 50V Electrolytic	AB	C709	RC-KZ0039CEZZ	R	680p 2kV Ceramic	AB
C207	VCKYCY1HF103ZY	R	0.01 50V Ceramic	AA	C710	VCEA0A1HW476M+	R	47 50V Electrolytic	AB
C208	VCKYCY1HF103ZY	R	0.01 50V Ceramic	AA	C711	VCKYPA1HB102K+	R	1000p 50V Ceramic	AA
C209	VCKYCY1HF103ZY	R	0.01 50V Ceramic	AA	C712	VCKYPA1HB471K+	R	470p 50V Ceramic	AA
C210	VCKYCY1HF103ZY	R	0.01 50V Ceramic	AA	△ C751	RC-KZ0106GEZZ	R	3300p AC250V	AG
C231	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB	C752	VCKYPH3DB561K	R	560p 2000V Ceramic	AC
C232	VCKYCY1HB821K	R	820p 50V Ceramic	AA	C753	RC-EZ0776CEZZ	R	100 160V Electrolytic	AF
C233	VCKYCY1HB472K	R	4700p 50V Ceramic	AA	C754	RC-EZA069WJZZ	R	33 160V Electrolytic	AE
C234	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA	C755	VCEA0A1CW108M	R	1000 16V Electrolytic	AD
C251	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB	C756	RC-QZA103TAYJ+	R	0.01	AB
C252	VCEA0A1CW107M+	R	100 16V Electrolytic	AC	C759	VCEA0A0JW477M+	R	470 6.3V Electrolytic	AC
C301	VCEA0A1CW477M+	R	470 16V Electrolytic	AC	C760	VCEA0A0JW228M	R	2200 6.3V Electrolytic	AD
C304	VCEA0A1CW106M+	R	10 16V Electrolytic	AB	C801	VCEA0A1HW105M+	R	1 50V Electrolytic	AB
C306	VCEA0A1CW106M+	R	10 16V Electrolytic	AB	C803	VCEA0A1CW107M+	R	100 16V Electrolytic	AC
C310	VCEA0A1HW105M+	R	1 50V Electrolytic	AB	C804	VCKYCY1HB222K	R	2200p 50V Ceramic	AA
C311	VCEA0A1HW105M+	R	1 50V Electrolytic	AB	C805	VCKYD41HB102KY	R	1000p 50V Ceramic	AA
C312	VCEA0A1HW224M+	R	0.22 50V Electrolytic	AB	C806	VCKYD41HB102KY	R	1000p 50V Ceramic	AA
C316	VCEA0A1CW107M+	R	100 16V Electrolytic	AC	C807	VCKYD41HB102KY	R	1000p 50V Ceramic	AA
C331	VCKYPA2HB102K+	R	1000p 500V Ceramic	AA	C808	VCEA0A1CW107M+	R	100 16V Electrolytic	AC
C332	RC-QZA103TAYJ+	R	0.01	AB	C809	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C333	VCEA0A1CW108M	R	1000 16V Electrolytic	AD	C810	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C352	VCEA0A1HW105M+	R	1 50V Electrolytic	AB	C811	VCEA0A1CW107M+	R	100 16V Electrolytic	AC
C354	VCEA0A1HW105M+	R	1 50V Electrolytic	AB	C812	VCFYFA1HA224J+	R	0.22 50V Mylar	AB
C356	VCKYCY1HB472K	R	4700p 50V Ceramic	AA	C813	VCFYFA1HA224J+	R	0.22 50V Mylar	AB
C359	VCEA0A1CW106M+	R	10 16V Electrolytic	AB	C814	VCKYCY1HB471K	R	470p 50V Ceramic	AA
C360	VCE9GA1HW225M+	R	2.2 50V Electrolytic	AB	C816	VCKYCY1HB471K	R	470p 50V Ceramic	AA
C409	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB	C1001	VCEA0A0JW107M+	R	100 6.3V Electrolytic	AB
C410	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB	C1002	VCEA0A0JW107M+	R	100 6.3V Electrolytic	AB
C411	VCKYCY1HB102K	R	1000p 50V Ceramic	AA	C1003	VCEA0A1CW106M+	R	10 16V Electrolytic	AB
C412	VCEA0A1CW477M+	R	470 16V Electrolytic	AC	C1004	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C501	VCKYPA1HB102K+	R	1000p 50V Ceramic	AA	C1005	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C504	VCKYCY1HB103K	R	0.01 50V Ceramic	AA	C1006	VCEA0A1CW106M+	R	10 16V Electrolytic	AB
					C1008	VCCCCY1HH330J	R	33p 50V Ceramic	AA
					C1009	VCCCCY1HH330J	R	33p 50V Ceramic	AA
					C1010	VCEA0A0JW107M+	R	100 6.3V Electrolytic	AB
					C1011	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
					C1012	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
					C1013	VCEA0A0JW107M+	R	100 6.3V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
C1014	VCEA0A1CW106M+	R 10	16V Electrolytic	AB	R335	VRS-CY1JF564JY	R 560k	1/16W Metal Oxide	AA
C1016	RC-QZA104TAYJ+	R 0.1		AB	R352	VRN-MD2AL681J	R 680	1/10W Metal Film	AA
C1018	VCKYCY1HB221K	R 220p	50V Ceramic	AA	R359	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
C1019	VCEA0A1HW225M+	R 2.2	50V Electrolytic	AB	R360	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
C1024	RC-QZA104TAYJ+	R 0.1		AB	R361	VRN-MD2AL104J	R 100k	1/10W Metal Film	AA
C1030	VCFYFA1HA474J+	R 0.47	50V	AC	R364	VRN-MD2AL000J	R 0	1/10W Metal Film	AA
RESISTORS									
RJ4	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R366	VRN-MD2AL000J	R 0	1/10W Metal Film	AA
RJ9	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R431	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
RJ10	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R432	VRN-MD2AL820J	R 82	1/10W Metal Film	AA
RJ13	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R458	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
RJ14	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R459	VRD-RA2BE680JY	R 68	1/8W Carbon	AA
RJ15	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R501	VRD-RA2BE272JY	R 2.7k	1/8W Carbon	AA
RJ16	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R502	VRD-RM2HD102JY	R 1k	1/2W Carbon	AA
RJ17	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R503	VRN-VV3AB1R8J	R 1.8	1W Metal Film	AA
RJ19	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R504	VRN-MD2AL181J	R 180	1/10W Metal Film	AA
RJ21	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R505	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
RJ26	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R506	VRS-VV3AB331J	R 330	1W Metal Oxide	AA
RJ28	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R507	VRN-VV3AB1R0J	R 1	1W Metal Film	AA
RJ32	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R508	VRD-RA2BE153JY	R 15k	1/8W Carbon	AA
RJ35	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R509	VRD-RA2BE153JY	R 15k	1/8W Carbon	AA
RJ37	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R511	VRN-MD2AL181J	R 180	1/10W Metal Film	AA
RJ41	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R512	VRD-RM2HD100JY	R 10	1/2W Carbon	AA
RJ42	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R521	VRD-RA2BE183JY	R 18k	1/8W Carbon	AA
RJ43	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R529	VRD-RA2BE223JY	R 22k	1/8W Carbon	AA
RJ44	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R530	VRS-CY1JF334JY	R 330k	1/16W Metal Oxide	AA
RJ45	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R531	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
RJ48	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R532	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
RJ49	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R533	VRD-RA2BE393JY	R 39k	1/8W Carbon	AA
RJ51	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R601	VRS-SV2HC102J	R 1k	1/2W Metal Oxide	AA
RJ52	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R602	VRD-RA2BE393JY	R 39k	1/8W Carbon	AA
RJ53	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R603	VRD-RA2BE273JY	R 27k	1/8W Carbon	AA
RJ56	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R604	VRD-RA2BE273JY	R 27k	1/8W Carbon	AA
RJ71	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R605	VRD-RM2HD104JY	R 100k	1/2W Carbon	AA
RJ73	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R606	VRN-VV3AB2R2J	R 2.2	1W Metal Film	AA
RJ75	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R607	VRD-RM2HD270JY	R 27	1/2W Carbon	AA
RJ78	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R609	VRD-RA2BE154JY	R 150k	1/8W Carbon	AA
RJ83	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R610	VRD-RA2BE102GY	R 1k	1/8W Carbon	AB
RJ88	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R611	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R201	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R612	VRN-MD2AL123J	R 12k	1/10W Metal Film	AA
R202	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R613	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
R205	VRS-CY1JF680JY	R 68	1/16W Metal Oxide	AA	R614	VRS-SV2HC150J	R 15	1/2W Metal Oxide	AA
R206	VRS-CY1JF122JY	R 1.2k	1/16W Metal Oxide	AA	R615	VRS-VV3DB682J	R 6.8k	2W Metal Oxide	AA
R207	VRS-CY1JF221JY	R 220	1/16W Metal Oxide	AA	R616	VRN-VV3ABR47J	R 0.47	1W Metal Film	AA
R208	VRS-CY1JF122JY	R 1.2k	1/16W Metal Oxide	AA	R618	VRS-VV3LB391J	R 390	3W Metal Oxide	AB
R209	VRS-CY1JF392JY	R 3.9k	1/16W Metal Oxide	AA	R619	VRS-VV3LB123J	R 12k	3W Metal Oxide	AB
R216	VRS-VV3LB223J	R 22k	3W Metal Oxide	AB	R620	VRS-VV3AB472J	R 4.7k	1W Metal Oxide	AA
R219	VRD-RA2BE392JY	R 3.9k	1/8W Carbon	AA	R622	VRD-RA2BE102JY	R 1k	1/8W Carbon	AA
R220	VRS-CY1JF221JY	R 220	1/16W Metal Oxide	AA	R623	VRD-RM2HD184JY	R 180k	1/2W Carbon	AA
R230	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R624	VRN-MD2AL472J	R 4.7k	1/10W Metal Film	AA
R231	VRD-RA2BE681JY	R 680	1/8W Carbon	AA	R625	VRN-VV3DB8R2J	R 8.2	2W Metal Film	AB
R232	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R626	VRD-RM2HD470JY	R 47	1/2W Carbon	AA
R233	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R632	VRS-KA3HG3R3K	R 3.3	5W Metal Oxide	AD
R234	VRN-MD2AL391J	R 390	1/10W Metal Film	AA	R633	VRD-RA2BE333JY	R 33k	1/8W Carbon	AA
R251	VRN-MD2AL181J	R 180	1/10W Metal Film	AA	R634	VRD-RA2BE103JY	R 10k	1/8W Carbon	AA
R252	VRN-MD2AL181J	R 180	1/10W Metal Film	AA	R640	VRS-VV3LB123J	R 12k	3W Metal Oxide	AB
R253	VRD-RA2BE680JY	R 68	1/8W Carbon	AA	R641	VRN-SV2HCR47J	R 0.47	1/2W Metal Film	AA
R254	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R651	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA
R255	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA	R652	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R256	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA	R653	VRN-MD2AL822J	R 8.2k	1/10W Metal Film	AA
R262	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R654	VRN-MD2AL273J	R 27k	1/10W Metal Film	AA
R263	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R655	VRN-MD2AL391J	R 390	1/10W Metal Film	AA
R301	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R656	VRN-MD2AL100J	R 10	1/10W Metal Film	AA
R302	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R658	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R303	VRN-MD2AL561J	R 560	1/10W Metal Film	AA	R663	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R304	VRN-MD2AL100J	R 10	1/10W Metal Film	AA	R701	VRW-KQ3NC3R9K	R 3.9	7W Cement	AE
R305	VRN-MD2AL274J	R 270k	1/10W Metal Film	AA	R702	VRC-UA2HG275KY	R 2.7M	1/2W Solid	AC
R310	VRN-MD2AL473J	R 47k	1/10W Metal Film	AA	R704	VRN-SV2HC1R0J	R 1	1/2W Metal Film	AA
R311	VRN-MD2AL473J	R 47k	1/10W Metal Film	AA	R707	VRS-VV3DB104J	R 100k	2W Metal Oxide	AB
R313	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R708	VRD-RA2BE681JY	R 680	1/8W Carbon	AA
R314	VRN-MD2AL472J	R 4.7k	1/10W Metal Film	AA	R709	VRN-VV3DBR47J	R 0.47	2W Metal Film	AB
R315	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R710	VRN-VV3DBR39J	R 0.39	2W Metal Film	AA
R316	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R711	VRD-RA2BE682JY	R 6.8k	1/8W Carbon	AA
R318	VRD-RA2BE680JY	R 68	1/8W Carbon	AA	R712	VRD-RA2BE152JY	R 1.5k	1/8W Carbon	AA
R334	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA	R716	VRD-RA2BE562JY	R 5.6k	1/8W Carbon	AA
					△ R751	VRC-UA2HG825KY	R 8.2M	1/2W Solid	AA
					△ R752	VRC-UA2HG825KY	R 8.2M	1/2W Solid	AA

Ref. No.	Part No.	★	Description	Code
R753	VRD-RM2HD124JY	R 120k	1/2W Carbon	AA
R754	VRD-RM2HD150JY	R 15	1/2W Carbon	AA
R755	VRD-RA2BE221JY	R 220	1/8W Carbon	AA
R756	VRD-RM2HD270JY	R 27	1/2W Carbon	AA
R757	VRN-MD2AL151J	R 150	1/10W Metal Film	AA
R801	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R802	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R803	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R804	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R805	VRN-MD2AL822J	R 8.2k	1/10W Metal Film	AA
R806	VRN-MD2AL123J	R 12k	1/10W Metal Film	AA
R807	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
R808	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R809	VRD-RA2BE224JY	R 220k	1/8W Carbon	AA
R812	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R813	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R1001	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R1002	VRN-MD2AL331J	R 330	1/10W Metal Film	AA
R1003	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R1004	VRN-MD2AL821J	R 820	1/10W Metal Film	AA
R1005	VRN-MD2AL181J	R 180	1/10W Metal Film	AA
R1011	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1012	VRD-RA2BE271JY	R 270	1/8W Carbon	AA
R1013	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R1014	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1015	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1016	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1017	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1019	VRN-MD2AL392J	R 3.9k	1/10W Metal Film	AA
R1020	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1021	VRN-MD2AL153J	R 15k	1/10W Metal Film	AA
R1022	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1023	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1024	VRN-MD2AL122J	R 1.2k	1/10W Metal Film	AA
R1025	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1026	VRN-MD2AL224J	R 220k	1/10W Metal Film	AA
R1028	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1030	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R1031	VRD-RA2BE562JY	R 5.6k	1/8W Carbon	AA
R1032	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1034	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1035	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1036	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1037	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1038	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1039	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA
R1040	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1041	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1042	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R1046	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1048	VRS-CY1JF102JY	R 1k	1/16W Metal Oxide	AA
R1050	VRN-MD2AL392J	R 3.9k	1/10W Metal Film	AA
R1051	VRN-MD2AL683J	R 68k	1/10W Metal Film	AA
R1072	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1073	VRN-MD2AL101J	R 100	1/10W Metal Film	AA

SWITCHES

△ S702	QSW-PA006WJZZ	R Switch	AG
S1001	QSW-K0003AJZZ+	R Switch, CH UP	AB
S1002	QSW-K0003AJZZ+	R Switch, CH DOWN	AB
S1003	QSW-K0003AJZZ+	R Switch, VOL. UP	AB
S1004	QSW-K0003AJZZ+	R Switch, VOL. DOWN	AB
S1005	QSW-K0003AJZZ+	R Switch, PICTURE/PRESET	AB

BALUN

FB601	RBLN-0091GEZZY	R Balun	AB
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MISCELLANEOUS PARTS

△ F701	QFS-C3229CEZZ	R Fuse, T3.15A/250V	AD
FH701	QFSDH1013CEZZ+	R Fuse Holder	AC
FH702	QFSDH1014CEZZ+	R Fuse Holder	AC
J402	QJAKE0108CEZZ	R AV-2 In Jack	AC
J403	QJAKE0183CEZZ	R AV-2 In Jack	AE
J409	QJAKHA004WJZZ	R AV-1 In Jack	AE
P301	QPLGNA107WJZZ	R Plug	

Ref. No.	Part No.	★	Description	Code
P303	QPLGNA109WJZZ	R Plug		
P601	QPLGN0660CEZZ	R Plug, 6Pin(F)		AC
P602	LHLDW1104PEZZ	R Holder, 4Pin(H)		AB
P603	QPLGNA108WJZZ	R Plug		
P604	QPLGA0201PEZZ	R Plug, 2Pin		AB
P701	QPLGN0260CEZZ	R Plug, 2Pin(M1-2)		AC
P702	QPLGA0201PEZZ	R Plug, 2Pin		AB
P1001	LHLDW1105PEZZ	R Holder, 5Pin(K)		AB
P1002	QPLGNA110WJZZ	R Plug		
RDA301	PRDARA022WJFW	R Heat Sink for IC301		AD
RDA501	PRDAR0118GJFW	R Heat Sink for IC501		AD
RDA602	PRDAR0224PEFW	R Heat Sink for Q602		AF
RDA701	PRDARA028WJFW	R Heat Sink for IC701		AE
RMC1001	RRMCUA009WJZZ	R Remote Receiver		
TP201	QLUGP0102PEZZ	R Lug		AA
	LHLDP1066PE00	R Holder		AC

**DUNTKB509WEB4
PWB-B CRT UNIT****TRANSISTORS**

Q870	RH-TX0110BMZZ+	R TX0110BM	AC
Q871	RH-TX0110BMZZ+	R TX0110BM	AC
Q872	RH-TX0110BMZZ+	R TX0110BM	AC
Q883	RH-TX0124BMZZ+	R TX0124BM	AC
Q885	RH-TX0124BMZZ+	R TX0124BM	AC
Q887	RH-TX0124BMZZ+	R TX0124BM	AC

DIODES

D881	VHD1SS244//1Y	R 1SS244	AB
D882	VHD1SS244//1Y	R 1SS244	AB
D883	VHD1SS244//1Y	R 1SS244	AB
D884	VHD1SS119//1Y	R 1SS119	AA
D885	VHD1SS119//1Y	R 1SS119	AA
D886	VHD1SS82///1AY	R 1SS82	AC
D887	VHD1SS82///1AY	R 1SS82	AC
D888	VHD1SS82///1AY	R 1SS82	AC

CAPACITORS

C871	VCCCCY1HH471J	R 470p 50V Ceramic	AA
C872	VCCCCY1HH391J	R 390p 50V Ceramic	AA
C873	VCCCCY1HH471J	R 470p 50V Ceramic	AA
C875	VCKYPA2HB102K+	R 1000p 500V Ceramic	AA
C876	RC-KZ0150CEZZ	R 1000p 3.15kV Ceramic	AB
C878	VCEA0A2EW106M+	R 10 250V Electrolytic	AD
C880	VCCCCY1HH471J	R 470p 50V Ceramic	AA
C881	VCKYPA1HB471K+	R 470p 50V Ceramic	AA
C882	VCKYPA1HB471K+	R 470p 50V Ceramic	AA
C886	VCKYPA2HB102K+	R 1000p 500V Ceramic	AA

RESISTORS

R879	VRN-MD2AL471J	R 470 1/10W Metal Film	AA
R880	VRN-MD2AL471J	R 470 1/10W Metal Film	AA
R881	VRN-MD2AL471J	R 470 1/10W Metal Film	AA
R882	VRS-VV3DB153J	R 15k 2W Metal Oxide	AA
R883	VRD-RM2HD272JY	R 2.7k 1/2W Carbon	AA
R884	VRS-VV3DB153J	R 15k 2W Metal Oxide	AA
R885	VRD-RM2HD272JY	R 2.7k 1/2W Carbon	AA
R886	VRS-VV3DB153J	R 15k 2W Metal Oxide	AA
R887	VRD-RM2HD272JY	R 2.7k 1/2W Carbon	AA
R888	VRN-MD2AL471J	R 470 1/10W Metal Film	AA
R892	VRN-MD2AL102J	R 1k 1/10W Metal Film	AA
R893	VRN-MD2AL102J	R 1k 1/10W Metal Film	AA
R894	VRN-MD2AL102J	R 1k 1/10W Metal Film	AA
R898	VRN-MD2AL471J	R 470 1/10W Metal Film	AA
R899	VRN-MD2AL471J	R 470 1/10W Metal Film	AA

MISCELLANEOUS PARTS

SC881	QSOCVA001WJZZ	R Socket, 9Pin	AE
P882	LHLDW1105PEZZ	R Holder, 5Pin(K)	AB
P884	LHLDW1104PEZZ	R Holder, 4Pin(H)	AB

Ref. No.	Part No.	★	Description	Code
DUNTKB510WEA0 PWB-C HEADPHONE UNIT				
RESISTORS				
RJ60	VRN-MD2AL000J	R 0	1/10W Metal Film	AA
RJ61	VRN-MD2AL000J	R 0	1/10W Metal Film	AA
RJ62	VRN-MD2AL000J	R 0	1/10W Metal Film	AA
R370	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R371	VRS-CY1JF471JY	R 470	1/16W Metal Oxide	AA
MISCELLANEOUS PARTS				
J351	QJAKJ0101SEZZ	R Jack		AE
P351	QPLGNA109WJZZ	R Plug		

DUNTKB511WEA0 PWB-D LINEARITY UNIT				
COIL				
L1600	RCiLZA020WJZZ	R Coil		AH
CAPACITOR				
C1601	VCFPVC2DB204J	R 0.2	200V Metallized Polypro Film	AD
RESISTOR				
R1600	VRS-VV3LB122J	R 1.2k	3W Metal Oxide	AB
MISCELLANEOUS PART				
P1600	QPLGA0201PEZZ	R Plug, 2Pin(LC)		AB

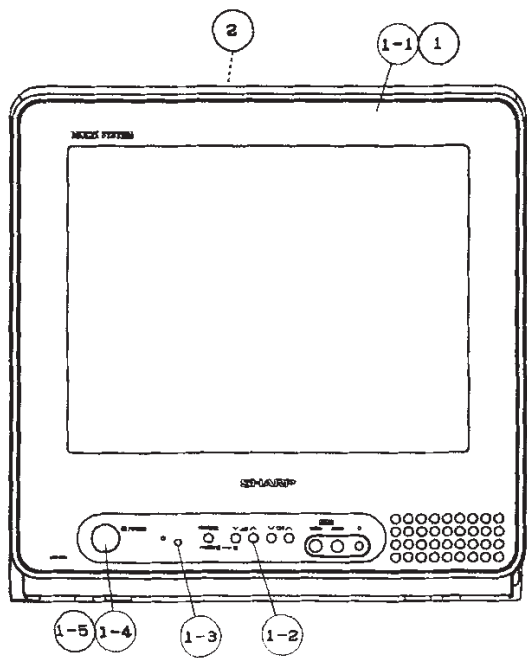
Ref. No.	Part No.	★	Description	Code
MISCELLANEOUS PARTS				
△ ACC701	QACCZA019WJPZ	R	AC Cord	AH
SP301	VSP9050PB35WA	R	Speaker, 16 ohm	AK
	QCNW-A721WJZZ	R	Connecting Cord	AC
	QCNW-A722WJZZ	R	Connecting Cord	AC
	QCNW-A723WJZZ	R	Connecting Cord	AG
	QCNW-2206PEZZ	R	Connecting Cord	AD
	QCNW-2379PEZZ	R	Connecting Cord	AE

SUPPLIED ACCESSORIES				
ACCESSORIES				
	RRMCG1342PESB	R	Infrared R/C Unit	
	TiNS-A765WJZZ	R	Operation Manual	
ACCESSORIE(NOT REPLACEMENT ITEM)				
	TCAUA0002PEZZ	-	Caution Card	—

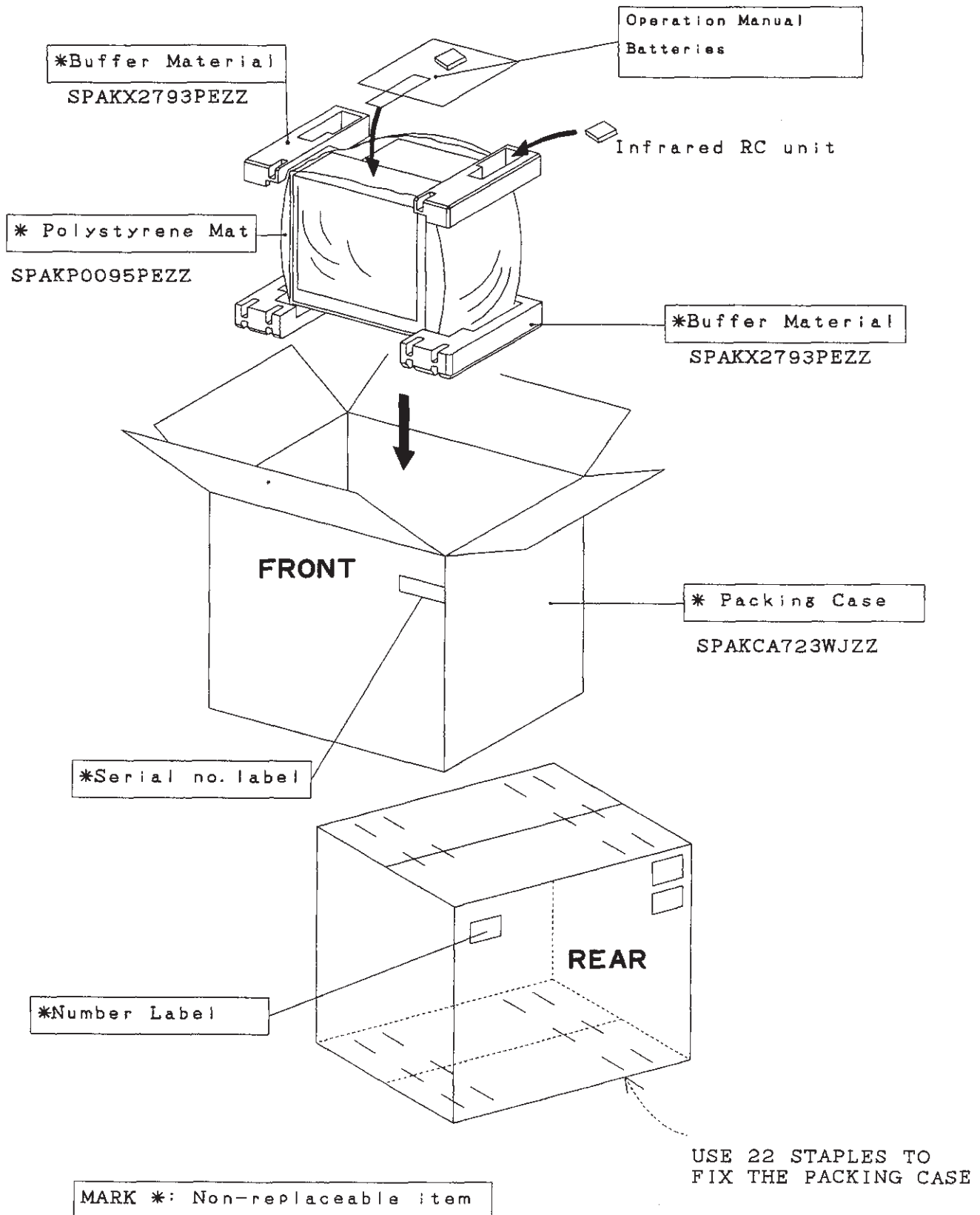
PACKING PARTS (NOT REPLACEMENT ITEM)				
	SPAKCA723WJZZ	-	Packing Case	—
	SPAKP0095PEZZ	-	Polystyrene Mat	—
	SPAKP0110PEZZ	-	Wrapping Paper	—
	SPAKX2793PEZZ	-	Buffer Material	—
	SSAKA0031PEZZ	-	Polyethylene Bag	—

Ref. No.	Part No.	★	Description	Code
CABINET PARTS				
1	CCABAA343WEV0	R	Front Cabinet Ass'y	
1-1	Not Available	—	Front Cabinet	—
1-2	JBTN-0403PESA	R	Control Button	AE
1-3	GCOVAA074WJSA	R	LED/RC Cover	AD
1-4	JBTN-A025WJSB	R	Power Button	AG
1-5	MSPRC0005PEFW	R	Power Button Spring	AB
2	GCABBA036WJKA	R	Rear Cabinet	AZ

CABINET PARTS LOCATION



PACKING OF THE SET





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