

# SERVICE MANUAL

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COLOR TELEVISION

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- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" of TV-C2121 (KE, KER), (S/M Code No. 09-01A-448-8T1).

## SPECIFICATIONS

<b>Tuner System</b>	Frequency synthesized tuner
<b>TV System</b>	PAL (B/G, D/K), SECAM (B/G, D/K, K1)
<b>Video Input Color System</b>	PAL, SECAM, NTSC3.58, NTSC4.43
<b>Channel Coverage</b>	VHF: E2 to E12, R1 to R12 UHF: 21 to 69 CATV: S1 to S41
<b>Program Memory</b>	100 TV stations
<b>Aerial Input</b>	75 ohms, unbalanced
<b>Picture Tube</b>	21"
<b>Screen Size</b>	406(W) x 305(H) mm (16 x 12 <sup>1</sup> / <sub>8</sub> in.) 508 mm (diagonal) (20 in.)
<b>Video Input/Output</b>	1 Vp-p, 75 ohms
<b>Audio Input</b>	0.5 Vrms., 33k ohms
<b>Audio Output</b>	0.5 Vrms., less than 2.2k ohms
<b>Speakers</b>	60 x 120 mm : 2 (2 <sup>3</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub> in.)
<b>Operating Voltage</b>	110 V - 240 V AC, 50/60 Hz
<b>Power Consumption</b>	75W
<b>Earphone Jack</b>	Monaural-mini jack
<b>Operating Temperature</b>	5°C to 40°C
<b>Operating Humidity</b>	35% to 80%
<b>Dimensions</b>	610 (W) x 440 (H) x 480 (D) mm (24 <sup>1</sup> / <sub>8</sub> x 17 <sup>3</sup> / <sub>8</sub> x 19 in.)
<b>Weight</b>	21.4kg (47.1 lbs.)

Design and specifications are subject to change without notice.

## ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-JBP-901-110	IB, KER (ERAP)	C1421/2121 -M<KERJ74M>
1	8B-JBP-904-110	IB, KE (ERAP)	C1421/2121 -C<KERJ2C, KEJ2C>
2	8B-JBC-950-010	RC UNIT, RC-BVT08	

## NOTICES BEFORE REPAIRING

To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

1. Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply cord.
2. Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
3. When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
4. Restore the following items after repairing.
  - 1) Conditions of soldering of the wires (especially, the distance on the AC1 side).
  - 2) Conditions of wiring, bundling of wires, etc.
  - 3) Types of the wires.
  - 4) Attachment conditions of all types of the insulation.
5. After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).
  - 1) The insulation resistance must be 7 to 9.5 M $\Omega$  when applying 500V per second.
  - 2) In the voltage withstand test, apply 3 kV for 1 minute and check that the GO lamp lights.

- \* Breaking current set to 6 mA.
- \* Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.
- \* Do not touch the equipment during testing.
- \* For details of the safety checker, refer to the supplied Operation manual.

Insulation resistance: 7 to 9.5 M $\Omega$  (500 V/s)  
Voltage-withstand: 3 kV for 1 minute

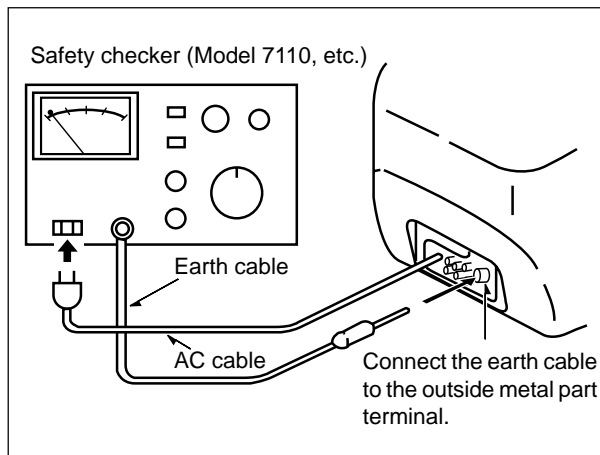


Fig-1

When servicing and checking on the TV, note the followings.

1. Keep the notices.

As for the places which need special attentions, they are indicated with 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 characteristics of incombustibility and withstand voltage for safety.  
Therefore, use a part which has the same character as the replaced part. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts with a  $\triangle$  mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not make contact with the printed board. The inside wiring is designed not to get close to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.
5. Take care of the cathode-ray tube.

By setting an explosion-proof cathode-ray tube in this equipment, safety is secured against implosion. However, when removing it or servicing from the back, it gives out shock that is dangerous. Take enough care to deal with it.
6. Avoid an X-ray.

Safety is secured against an X-ray by giving considerations to the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing, except indicates, causes rising of high voltage, and the cathode-ray tube emits an X-ray.
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 deteriorated portions around the places serviced.

### $\triangle$ Safety Components Symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to confirm to special Safety Specifications.  
Therefore, when replacing a component with this symbol make absolutely sure that you use a designated part.

# DISASSEMBLY INSTRUCTIONS

## 1. REAR CABINET REMOVAL

- (1) Remove four screws ① and three screws ②, then remove the rear cabinet in the direction of the arrow.  
(See Figure 1-1)

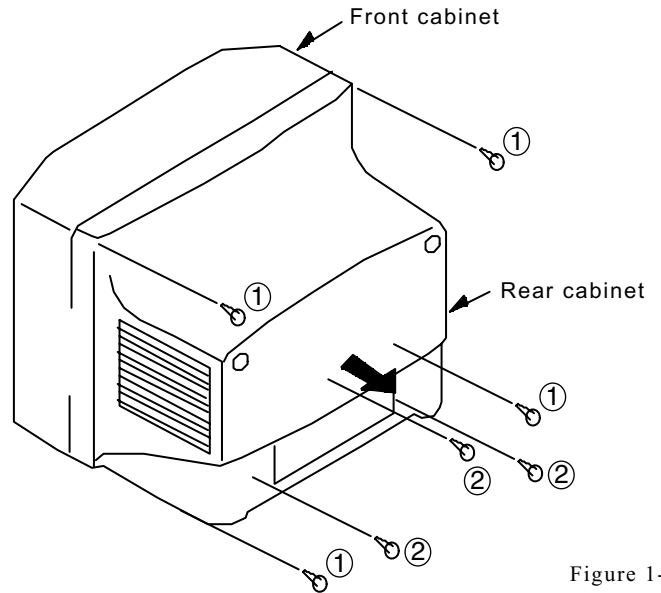


Figure 1-1

## 2. HIGH-VOLTAGE CAP (ANODE CAP) REMOVAL

### 2-1. Cautions before Removing

#### Discharge the anode voltage

- (1) The anode voltage is not discharged completely from the CRT of this unit even after the power is turned off. Be sure to discharge the residual anode voltage before removing the anode cap.

#### Do not use pliers

- (2) Do not use pliers, etc. to remove the anode cap. If you used pliers and bent the hook to remove the cap, the spring characteristics of the hook could be lost, and when reinstalled, the cap would come off from the CRT anode button easily, causing an accident.

#### Do not turn the anode cap

- (3) If the anode cap is turned in the direction of its circumference, the hook is likely to come off.

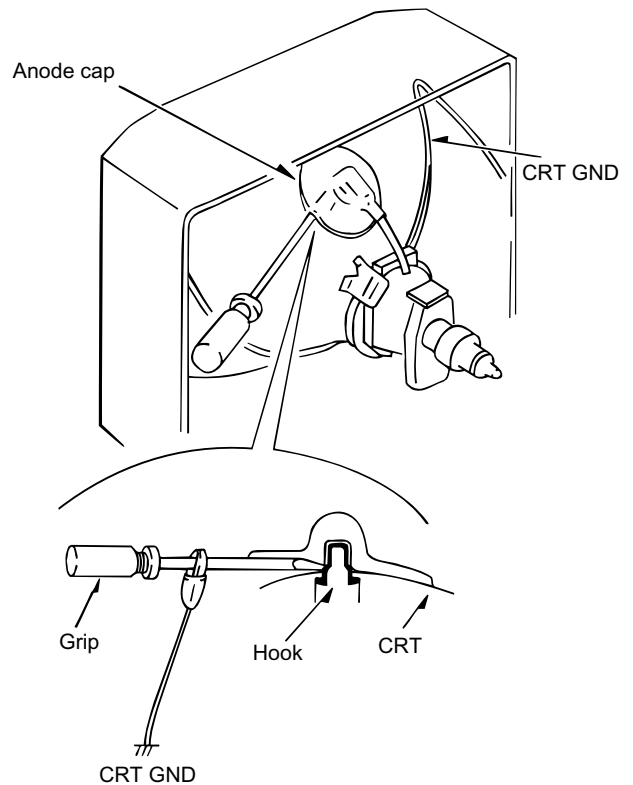


Figure 2-1

### 2-2. Anode Cap Removal

Discharge the anode voltage. (See Figure 2-1)

- (1) Connect a flat-bladed screwdriver to the CRT GND via an alligator clip.
- (2) Use a tester to check the end of the screwdriver and ground of the TV for continuity.
- (3) Touch the hook with the end of the screwdriver.  
**Caution :** Be careful not to damage the anode cap.
- (4) Turn over the anode cap.

**Caution :** Be careful not to damage the anode cap.

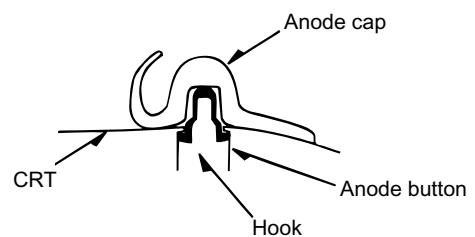


Figure 2-2

- (5) Push the anode cap with your thumb in the direction of arrow ① as shown in the figure, then lift the cap in the direction of arrow ② to release the hook on one side. (See Figure 2-3)

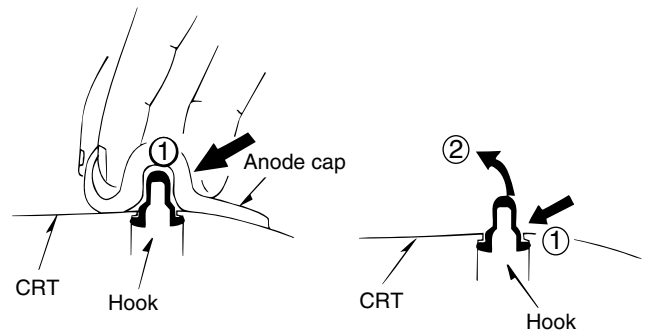


Figure 2-3

- (6) Turn over the anode cap on the side where the hook was released and pull out the cap in the direction opposite to that on which the cap was pushed. (See Figure 2-4)

**Caution :** Do not pull out the anode cap straight up.  
: Do not pull the cap forcibly. After removing the cap, check that the hook is not deformed.

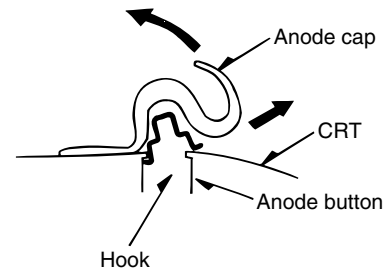


Figure 2-4

### 3. ANODE CAP REINSTALLTION

Observe the cautions carefully so that no accident occurs due to a defect in installing the anode cap and so it does not come off.

#### 3-1. Caution before Reinstalling

Never turn the anode cap after installing it

Never re-use the hook when it has been deformed

- (1) If the anode cap is turned after it is installed, it may come off. Therefore, arrange the high-voltage cable before attaching the anode cap. (See Figure 3-1)
- (2) If you have attached the anode cap before arranging the high-voltage cable, arrange the cable carefully so the cap does not turn.

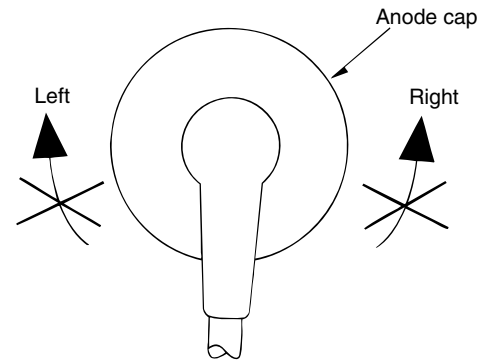


Figure 3-1

#### 3-2. Anode cap reinstallation

- (1) Use a clean cloth moistened slightly with alcohol to clean the installation section. (See Figure 3-2)

**Caution :** Check that the installation section is free from dust, foreign matter, etc.

- (2) Coat the anode cap installation circumference with an appropriate amount of the specified silicone grease (KS-650N).

**Caution :** Be careful that silicone grease does not enter the anode button.

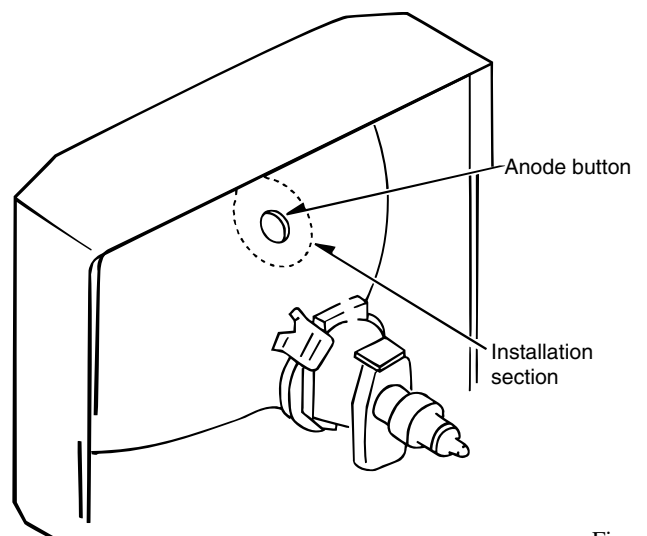


Figure 3-2

- (3) Eliminate twisting, etc. of the high-voltage cable and arrange it so that no twisting occurs. (See Figure 3-3)  
**Caution :** If the cable is not arranged correctly, the anode cap could turn and cause an installation defect.

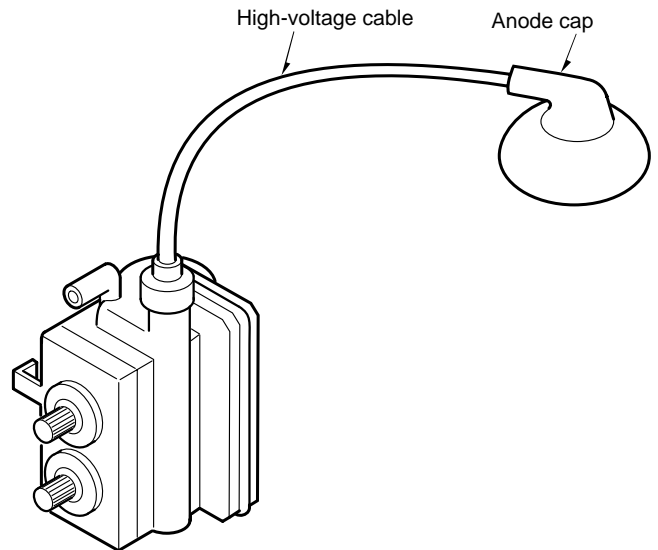


Figure 3-3

- (4) Turn over the rubber cap symmetrically on the left and right. (See Figure 3-4)  
**Caution :** Take great care not to damage the anode cap.

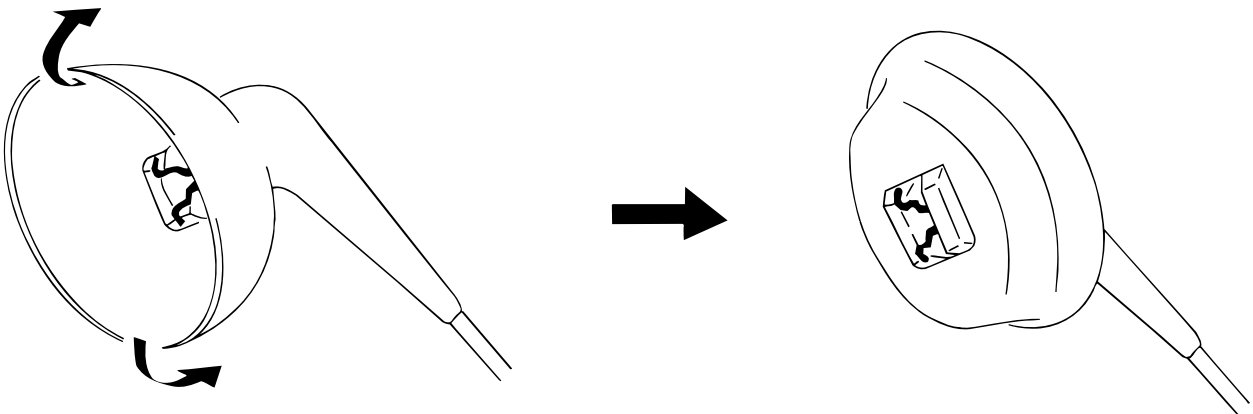


Figure 3-4

- (5) Fit your forefinger over the projection at the center of the cap and hold the cap between your thumb and middle finger. (See Figure 3-5)

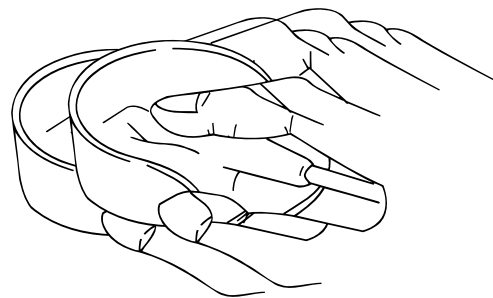


Figure 3-5

- (6) Apply the hook on one side to the anode button as shown on the figure. (See Figure 3-6)  
**Caution :** Check that the hook is held securely.
- (7) Apply the hook on the other side to the anode button as shown in Figure 3-7.

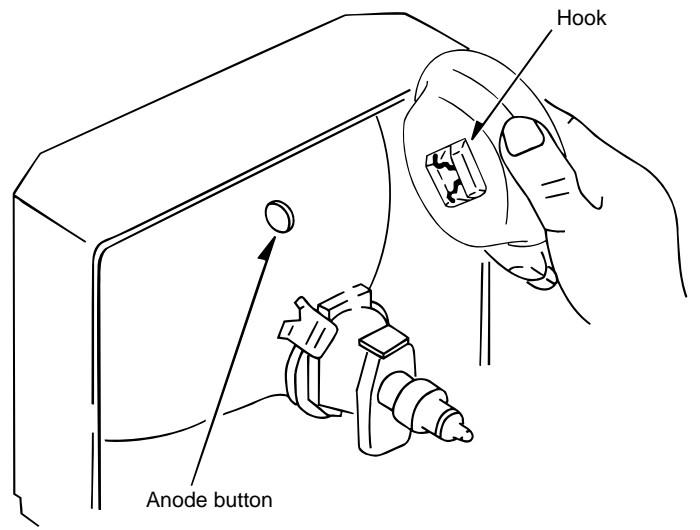
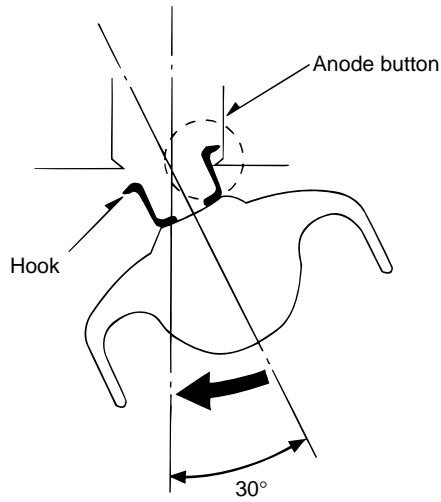


Figure 3-6

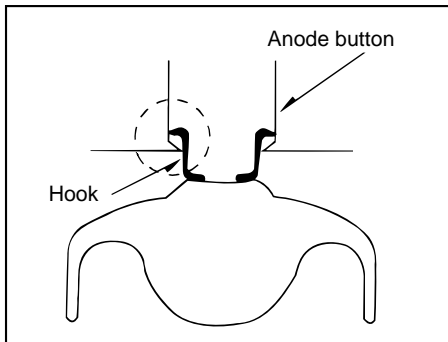


Figure 3-7

- (8) Pull the anode cap slightly with the rubber cap turned over and visually check that the hook is engaged securely.
- (9) Release your hand from the rubber cap of the anode cap.  
**Caution :** Cover the anode cap so that it does not lift.
- (10) Hold the skirt of the anode cap slightly to improve the close contact between the cap and CRT.
- (11) Check that the anode cap is in close contact with the CRT. (See Figure 3-8)

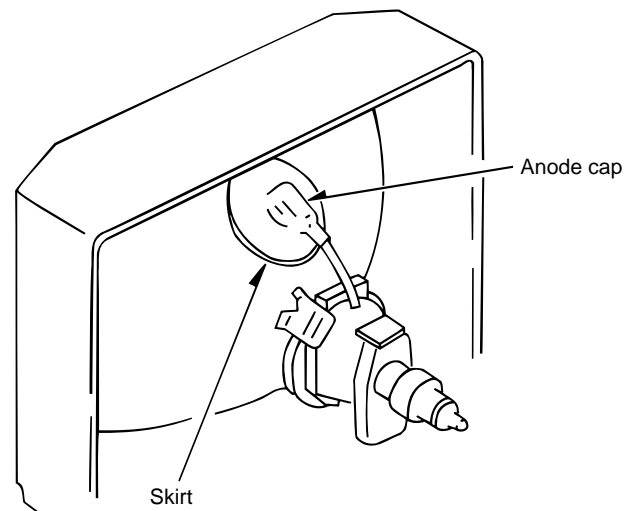


Figure 3-8

#### 4. NK C.B REMOVAL

- (1) Disconnect CN903 (CRT GND), CN904 (SCREEN).
- (2) Remove the NK C.B in the direction of arrow ①.  
(See Figure 4-1)

#### 5. MAIN C.B REMOVAL

- (1) Remove connector (CN401).
- (2) Remove connector (CN802).
- (3) Remove connector (CN801).
- (4) Pull out the MAIN C.B in the direction of the arrow ②.  
(See Figure 4-1)

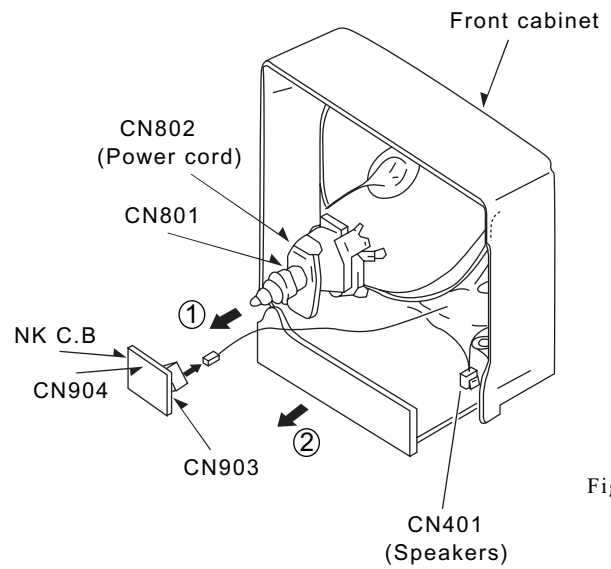


Figure 4-1

#### 6. DECIDING A SERVICING POSITION

- (1) Remove the CN401 (speakers).
- (2) Rotate the circuit board to the direction with arrow A, and set it up. (See Figure 5-1)

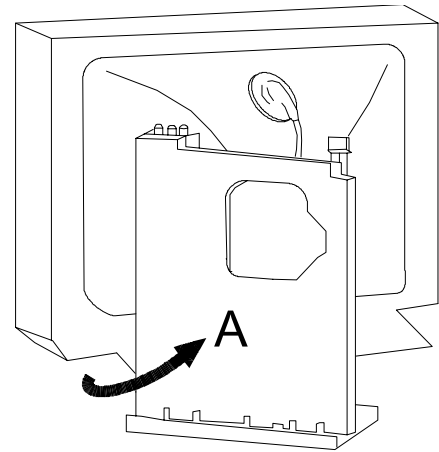


Figure 5-1



# ELECTRICAL MAIN PARTS LIST

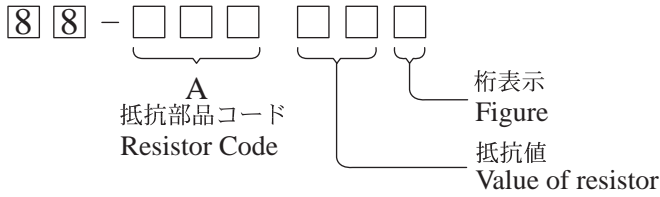
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
<b>IC</b>							
	87-A22-102-040		C-IC,M24C04-WMN6T	C313	87-012-280-080		C-CAP, U 3300P-50
	87-A91-538-010		RCR UNIT,SBX1981-72P	C314	87-A12-066-080		CAP,E 47-16 SMG
	87-A21-979-010		IC,TDA9381PS	C315	87-012-282-080		C-CAP, U 4700P-50
	87-A22-104-010		IC,AN7523	C316	87-012-273-080		C-CAP,U 820P-50 K B
	87-A21-919-010		IC,AN5539N	C317	87-010-831-080		C-CAP,U,0.1-16F Z F
	87-017-804-010		IC,BU4052BC	C318	87-012-286-080		C-CAP, U 0.01-25
	87-A22-015-010		IC,TEA1507P	C319	87-A12-066-080		CAP,E 47-16 SMG
	87-A20-649-080		IC,HA17431VP	C320	87-A12-087-080		CAP,E 1-50 SMG
	87-A22-087-080		IC,MM1180ZT	C324	87-A12-066-080		CAP,E 47-16 SMG
	87-A21-787-010		IC,KIA7805API	C326	87-012-195-080		C-CAP,U 100P-50
	87-A21-784-010		IC,KIA7808API	C327	87-012-195-080		C-CAP,U 100P-50
				C328	87-012-195-080		C-CAP,U 100P-50
				C331	87-010-787-080		C-CAP, U 0.022-25
				C332	87-010-787-080		C-CAP, U 0.022-25
				C333	87-010-787-080		C-CAP, U 0.022-25
<b>TRANSISTOR</b>							
	87-A30-076-080		C-TR,2SC3052F	C401	87-A12-087-080		CAP,E 1-50 SMG
	89-327-143-080		C-TR,2SC27140	C402	87-A12-087-080		CAP,E 1-50 SMG
	87-A30-427-040		C-TR,DTC114EKA	C404	87-016-251-080		CAP,E 220-16 M SMG
	87-A30-075-080		C-TR,2SA1235F	C405	87-A12-091-080		CAP,E 10-50 SMG
	89-324-820-080		TR,2SC2482	C501	87-012-274-080		CHIP CAP,U 1000P-50
	87-A30-633-010		TR,2SD2627LS-YB	C502	87-012-274-080		CHIP CAP,U 1000P-50
	89-110-155-080		TR,2SA1015 GR	C503	87-A12-095-080		CAP,E 100-50 SMG
	87-A30-648-010		FET,FS7KM16A	C504	87-A12-372-080		CAP,M 0.047-100 J CP<KERJ2C,KEJ2C>
	89-109-521-080		TR,2SA952K	C505	87-012-286-080		C-CAP,U 0.01-25
	89-110-913-080		TR,2SA10910	C506	87-012-286-080		C-CAP,U 0.01-25
				C507	87-A12-086-080		CAP,E 0.47-50
				C508	87-012-286-080		C-CAP,U,0.1-25
				C510	87-A12-372-080		CAP,M 0.047-100J CP<KERJ74M>
				C603	87-A12-072-080		CAP,E 100-25 SMG
				C604	87-A10-052-080		CAP,E 2.2-250
	87-070-345-080		DIODE,IN4148	C605	87-A12-491-080		CAP,CER 220P-500 K B Y5P
	87-A40-780-080		ZENER,UZ33BSD	C606	87-A12-492-080		CAP,CER 1000P-500 K B Y5P
	87-017-978-080		DIODE,1N4003	C607	87-A11-253-090		CAP,M/P 0.01-1.6K H B32652
	87-A40-318-080		ZENER,RM26 V1	C608	87-012-406-090		CAP,CER 2200P-2K K BN DE
	87-A40-800-080		DIODE,FR104-F	C609	87-A11-052-010		CAP,M/P 0.47-250 J B32652<KERJ74M>
	87-A40-328-010		DIODE,GBU4JL	C609	87-A11-054-010		CAP,M/P 0.68-250 J B32652<KERJ2C,KEJ2C>
	87-A40-354-090		DIODE,UF3GL-6251	C610	87-016-217-080		CAP,E 4.7-160
	87-A40-758-080		ZENER,UZ8.2BSB	C612	87-A11-354-090		CAP,E 100-160 M SMG
	87-A40-911-090		DIODE,RN2Z	C613	87-A12-370-080		CAP,M 0.033-100 J CP
	87-A40-752-080		ZENER,UZ6.2BSC	C615	87-010-831-080		C-CAP,U,0.1-16
	87-A40-800-080		DIODE,FR104-F<KERJ74M>	C616	87-A12-493-080		CAP,CER 2200P-500 K B Y5P
				C618	87-A12-071-080		CAP,E 47-25
				C619	87-A12-072-080		CAP,E 100-25 SMG
				C620	87-A12-079-080		CAP,E 100-35 SMG
				C701	87-A12-091-080		CAP,E 10-50 SMG
				C702	87-A12-087-080		CAP,E 1-50 SMG
				C703	87-A12-087-080		CAP,E 1-50 SMG
				C704	87-016-459-080		CAP,E 470-10 SMG
				C705	87-A12-087-080		CAP,E 1-50 SMG
				C706	87-A12-087-080		CAP,E 1-50 SMG
				C707	87-012-282-080		C-CAP, U 4700P-50
				C709	87-A12-091-080		CAP,E 10-50 SMG
				C710	87-A12-087-080		CAP,E 1-50 SMG
				C711	87-A12-091-080		CAP,E 10-50 SMG
				C718	87-A12-376-080		CAP,M 0.1-100 J CP
				C719	87-012-286-080		C-CAP, U 0.01-25
				C730	87-A12-069-080		CAP,E 22-25 SMG<KERJ2C,KEJ2C>
				△ C801	87-A12-892-090		CAP,AC M/P 0.22U 275 M (B81130)
				△ C802	87-A12-892-090		CAP,AC M/P 0.22U 275 M (B81130)
				C804	87-016-518-090		CAP,E 220-400 M SMH
				C807	87-A10-845-080		CAP,CER 2200P-1K K R
				C809	87-012-370-010		CAP,CER 3300P-250NS
				C811	87-010-759-080		C-CAP,U, 0.1-25 Z F
				C812	87-A12-070-080		CAP,E 33-25 SMG
				C813	87-010-787-080		C-CAP, U 0.022-25
				C830	87-A10-832-080		CAP,CER 1000P-1K K R
				C831	87-A10-733-090		CAP,E 220-160 SK
				C833	87-A10-918-080		CAP,E 100-16 SMG
				C834	87-A12-091-080		CAP,E 10-50 SMG
				C838	87-A12-372-080		CAP,M 0.047-100 J CP
<b>MAIN C.B</b>							
C1	87-A12-091-080		CAP,E 10-50 SMG				
C2	87-012-195-080		C-CAP,U 100P-50 J CH				
C3	87-A12-091-080		CAP,E 10-50 SMG				
C4	87-010-787-080		C-CAP,U 0.022-25 K B				
C5	87-016-045-080		CAP,E 1000-6.3 M SMG				
C6	87-012-286-080		C-CAP, U 0.01-25				
C7	87-012-176-080		C-CAP U 15P-50J CH				
C8	87-012-176-080		C-CAP U 15P-50J CH				
C11	87-A12-066-080		CAP,E 47-16 SMG				
C12	87-012-286-080		C-CAP, U 0.01-25				
C13	87-A12-066-080		CAP,E 47-16 SMG				
C14	87-012-195-080		C-CAP,U 100P-50 J CH				
C15	87-012-195-080		C-CAP,U 100P-50 J CH				
C101	87-012-286-080		C-CAP, U 0.01-25				
C102	87-A12-088-080		CAP,E 2.2-50 SMG				
C103	87-012-286-080		C-CAP, U 0.01-25				
C104	87-A12-066-080		CAP,E 47-16 SMG				
C105	87-A11-132-080		CAP,TC U 0.01-50 K B				
C106	87-012-286-080		C-CAP,U 0.01-25 K B				
C302	87-012-286-080		C-CAP, U 0.01-25				
C303	87-A12-066-080		CAP,E 47-16 SMG				
C305	87-012-278-080		C-CAP,U 2200P-50 B				
C306	87-A12-087-080		CAP,E 1-50 SMG				
C307	87-012-282-080		C-CAP, U 4700P-50				
C308	87-010-831-080		C-CAP,U,0.1-16 Z F				
C309	87-A12-087-080		CAP,E 1-50 SMG				
C310	87-A12-091-080		CAP,E 10-50 SMG				
C312	87-012-286-080		C-CAP, U 0.01-25				

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C839	87-010-237-080		CAP,E 1000-16 M SME	△ PT801	8B-JAJ-630-010		PT,NH SW BJA-J
C843	87-016-045-080		CAP,E 1000-6.3 M SMG	R509	87-A00-920-050		RES,M/F 0.82-2W J
C846	87-010-831-080		C-CAP,U,0.1-16 Z F	R510	87-A01-104-090		RES,M/F 390-1W J RSS1X
C848	87-A10-918-080		CAP,E 100-16 SMG	R620	87-A00-225-090		RES,M/F 2.2K-5W J RSV5
C849	87-A12-062-080		CAP,E 100-10 SMG	R802	87-A00-552-010		RES,CEM 1.0-10W J MPC722
C853	87-A12-062-080		CAP,E 100-10 SMG	R803	87-A00-552-010		RES,CEM 1.0-10W J MPC722
C870	87-010-831-080		C-CAP,U,0.1-16F	R808	87-A00-594-090		RES,M/F 10-2W J B02SJ
CF702	87-008-577-080		FLTR,TPS5.5MB2	R810	87-A01-101-090		RES,CEM 0.1-5W J MPC71
CF703	87-008-578-080		FLTR,TPS6.5MB2	R815	87-A00-543-080		RES,SD 8.2M-1W J RCR60
CN1	87-A60-446-010		CONN,7P V TID-X	R841	87-A00-587-090		RES,M/F 15K-2W J B02SJ
CN301	87-009-311-010		CONN,5P 51048	R843	87-025-363-080		RES,M/F 470-1/6W F
CN401	87-A60-457-010		CONN,4P V TID-X	R844	87-025-421-080		RES,M/F 2.2K-1/6W F
CN602	87-A61-646-010		CONN,4P V DVS B04-L1	R847	87-025-408-080		RES,M/F 120K-1/6W F
△ CN801	82-481-649-010		CONN,2P VT-50P	R862	87-A00-357-090		RES,M/F 47-2W J RSS2X
△ CN802	87-A61-045-010		CONN,2P V THL-P	R863	87-A00-357-090		RES,M/F 47-2W J RSS2X
CNA401	8Z-JBX-602-010		CONN ASSY,4P SP 205-0.5	S1	87-A90-712-080		SW,TACT EVQ11L07K
CNA601	8Z-JB6-614-010		CONN ASSY,4P V TV-NK 2.5	S2	87-A90-712-080		SW,TACT EVQ11L07K
CNA602	8Z-JBR-660-010		CONN ASSY,5P V W 420JPN<KERJ74M>	S3	87-A90-712-080		SW,TACT EVQ11L07K
D3	87-002-352-010		LED,SPR-39MVWF GRN/RED	S4	87-A90-712-080		SW,TACT EVQ11L07K
△ F801	87-035-458-010		FUSE,4A 250V T 218	S5	87-A90-712-080		SW,TACT EVQ11L07K
FB801	87-003-320-080		F-BEAD,-9.0 FBR07HA121NB-00	S6	87-A90-712-080		SW,TACT EVQ11L07K
FB830	87-003-320-080		F-BEAD,-9.0 FBR07HA121NB-00	△ S801	87-A91-410-010		SW,AC PUSH 1-1-1 ESB92SH1B
FB831	87-003-320-080		F-BEAD,-9.0 FBR07HA121NB-00	SCR801	87-A91-641-010		VRIS,SIOV-S14K300
△ FC801	87-033-213-080		FUSE, CLAMP PFC5000	△ T601	8B-JBC-631-010		FBT,21' DEZHOU-SANHE<KERJ2C,KEJ2C>
△ FC802	87-033-213-080		FUSE, CLAMP PFC5000	△ T601	8B-JBC-630-010		FBT,21' KYUSHU-MATSUSHITA<KERJ74M>
FL101	87-A90-337-010		FLTR,SAW OFW-K2959M	T602	8Z-JB6-605-010		TRANS, HD TB8B
FR501	87-029-160-060		RES,FUSE 2.2-1W J<KERJ2C,KEJ2C>	△ THP801	87-A91-485-010		POS-THMS,DGC3R300N27C
FR601	87-A00-539-090		RES,FUSE 0.56-1W J R-TYPE<KERJ74M>	TU101	87-A92-206-010		TU UNIT, TUAWF4EG-775F2
FR601	87-A00-540-090		RES,FUSE 0.82-1W J R-TYPE<KERJ2C,KEJ2C>	W301	8B-JBP-615-010		F-CABLE,5P 2.0MM 420MM SKY BLU
FR602	87-A00-084-090		RES,FUSE 1-1W J	X301	83-JU3-667-080		VIB,XTAL 12.0MHZ
FR603	87-A00-084-090		RES,FUSE 1-1W J				
FR604	87-A00-063-060		RES,FUSE 2.2-1/2W J R-TYPE	NK C.B			
FR605	87-A00-584-090		RES,M/F 100-2W J B02SJ				
FR606	87-A00-049-060		RES,FUSE 2.2K-1/2W J R-TYPE	C904	87-018-131-080		CAP,TC U 1000P-50
HL1	84-LB3-216-010		HLLDR,LED	C905	87-018-130-080		CAP,TC U 820P-50
J401	87-A61-441-010		JACK,3.5 BLK ST 2SW HTJ03531AB	C906	87-018-195-080		CAP,TC U 1200P-16
J701	87-A60-680-010		JACK,PIN 4P Y-BLK HTJ-036-22	C907	87-A11-124-080		CAP,TC U 2200P-50 K B
J702	87-A61-079-010		JACK,PIN 2P W/O SW RJ-1039	C908	87-A11-124-080		CAP,TC U 2200P-50 K B
L1	87-003-152-080		COIL, 100UH J LAL02	C909	87-018-131-080		CAP,TC U 1000P-50
L2	87-003-152-080		COIL, 100UH J LAL02	C911	87-012-397-090		CAP,CER 1000P-2K K BN DE
L3	87-003-152-080		COIL, 100UH J LAL02	C912	87-A12-492-080		CAP,CER 1000P-500 K B Y5P
L4	87-003-152-080		COIL, 100UH J LAL02	C913	87-A10-052-080		CAP,E 2.2-250
L101	87-005-440-080		COIL,47UH FLR50	C914	87-018-113-080		CAP,TC U 33P-50
L103	87-003-097-080		COIL,1UH K LAL02	CN901	87-009-311-010		CONN 5P V 51048
L301	87-005-730-080		COIL,10UH J SP02	CN903	87-A61-112-080		CONN,1P V BLU TP00704
L302	87-005-730-080		COIL,10UH J SP02	CN904	87-A61-060-080		CONN,1P V RED TP00706
L601	87-A50-467-010		COIL,2.2MH CW8A	R907	87-A00-587-090		RES,M/F 15K-2W J B02SJ
L602	88-JBJ-625-010		COIL,HLC-ELH5L4120N	R908	87-A00-587-090		RES,M/F 15K-2W J B02SJ
L701	87-005-730-080		COIL,10UH J SP02	R909	87-A00-587-090		RES,M/F 15K-2W J B02SJ
L702	87-005-730-080		COIL,10UH J SP02	SO901	86-LBR-670-010		SOCKET,CRT 9P HPS1521
△ L830	87-A50-466-010		COIL,390UH CRCH-106				
△ LF801	87-JB8-651-010		FLTR,LINE SS24H-K15070				
△ PR830	87-A90-090-080		PROTECTOR,1.5A 491SERIES 60V				
△ PR831	87-A90-094-080		PROTECTOR,4A 491SERIES 60V				
△ PS801	87-A30-096-010		P-COUPLER,TLP721F				

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

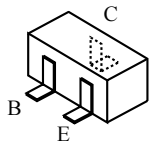
Chip Resistor Part Coding



チップ抵抗  
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法/Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形/Form	L	W		t
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



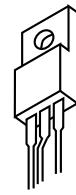
2SA1235F  
2SC2714O  
2SC3052F  
DTC114EKA



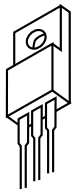
E C B  
2SA952K



E C B  
2SA1091O  
2SA1015 GR  
2SC2482



B C E  
2SD2627LS-YB

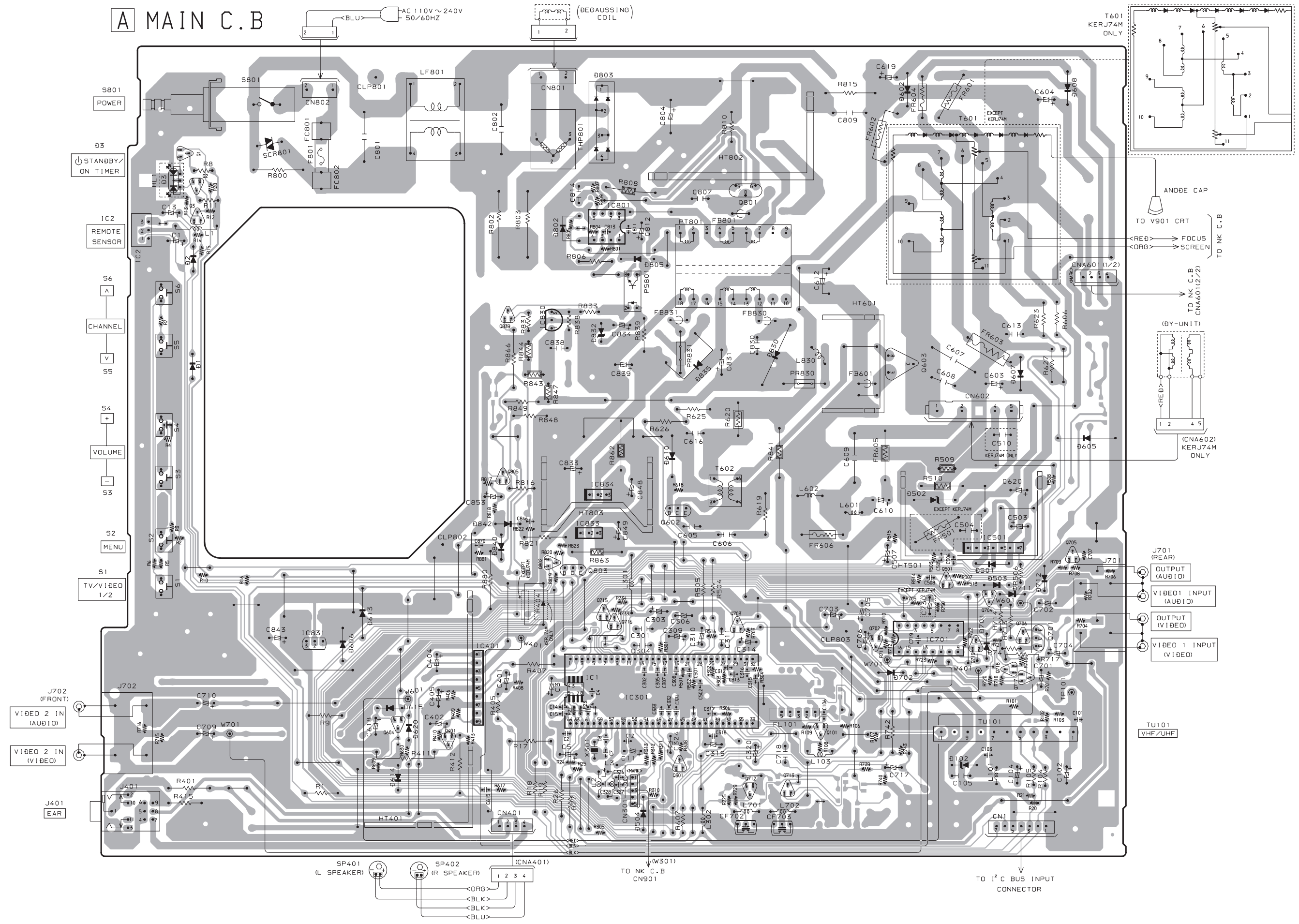


G D S  
FS7KM16A

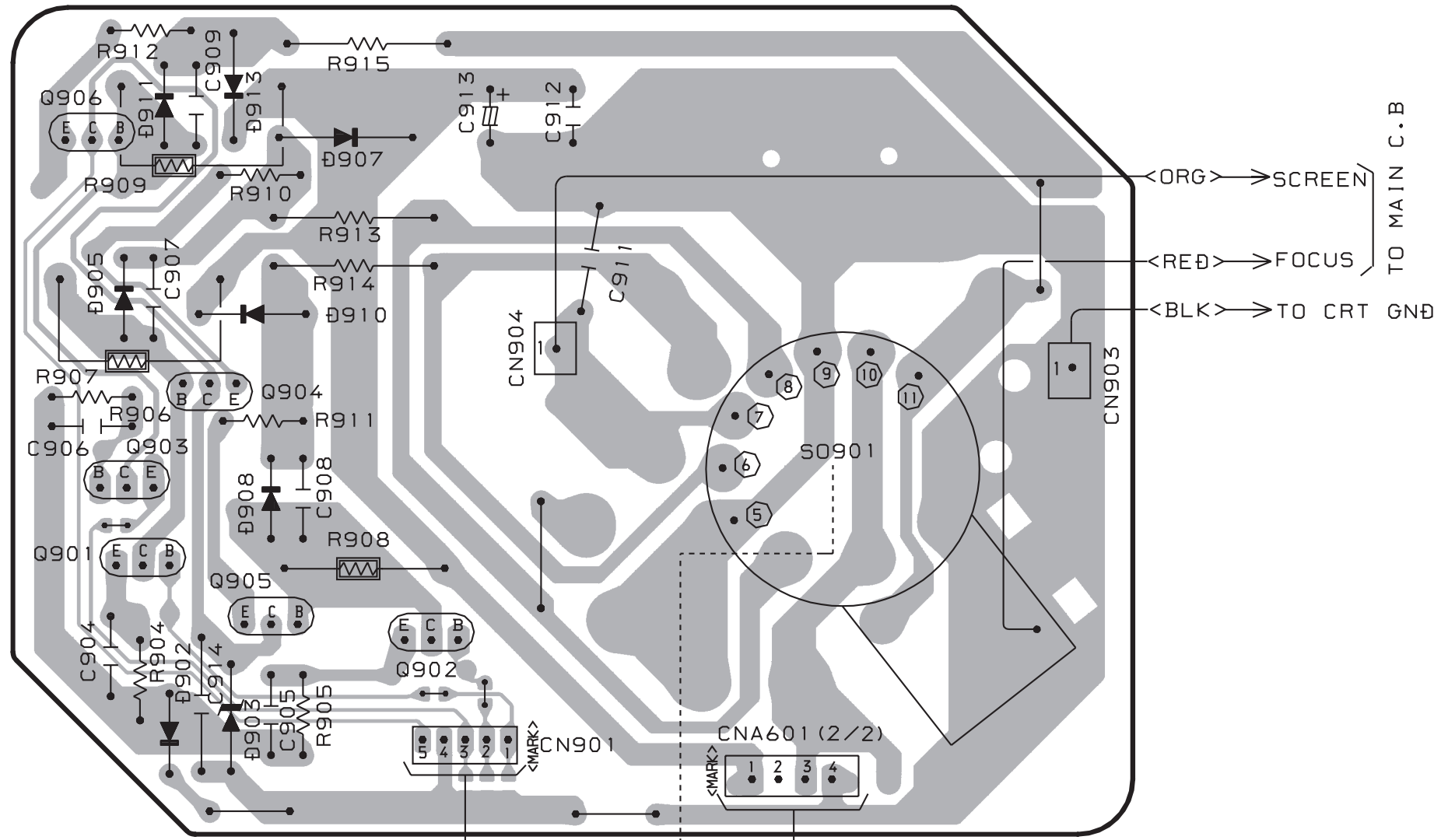
WIRING-1 (MAIN)

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A MAIN C.B



# BANK C.B

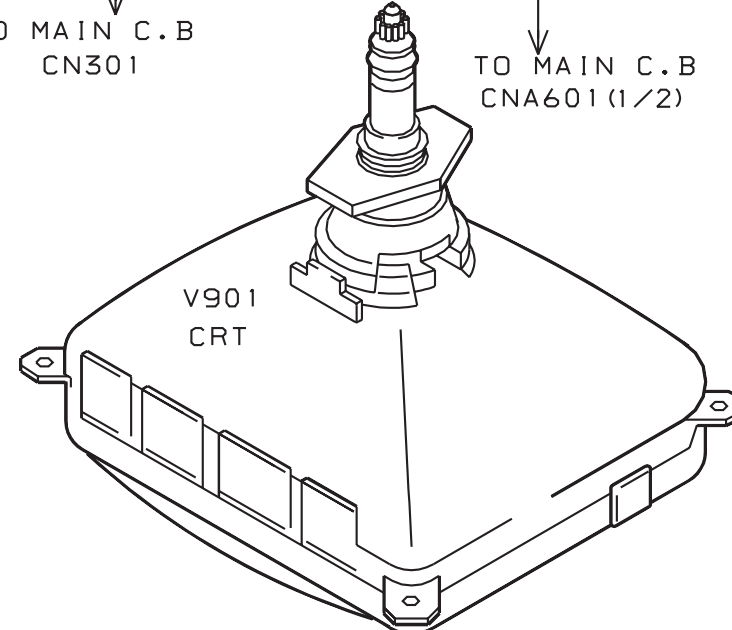


<ORG> → SCREEN  
 <RED> → FOCUS  
 <BLK> → TO CRT GND

TO MAIN C.B

(W301)  
 TO MAIN C.B  
 CN301

TO MAIN C.B  
 CNA601 (1/2)

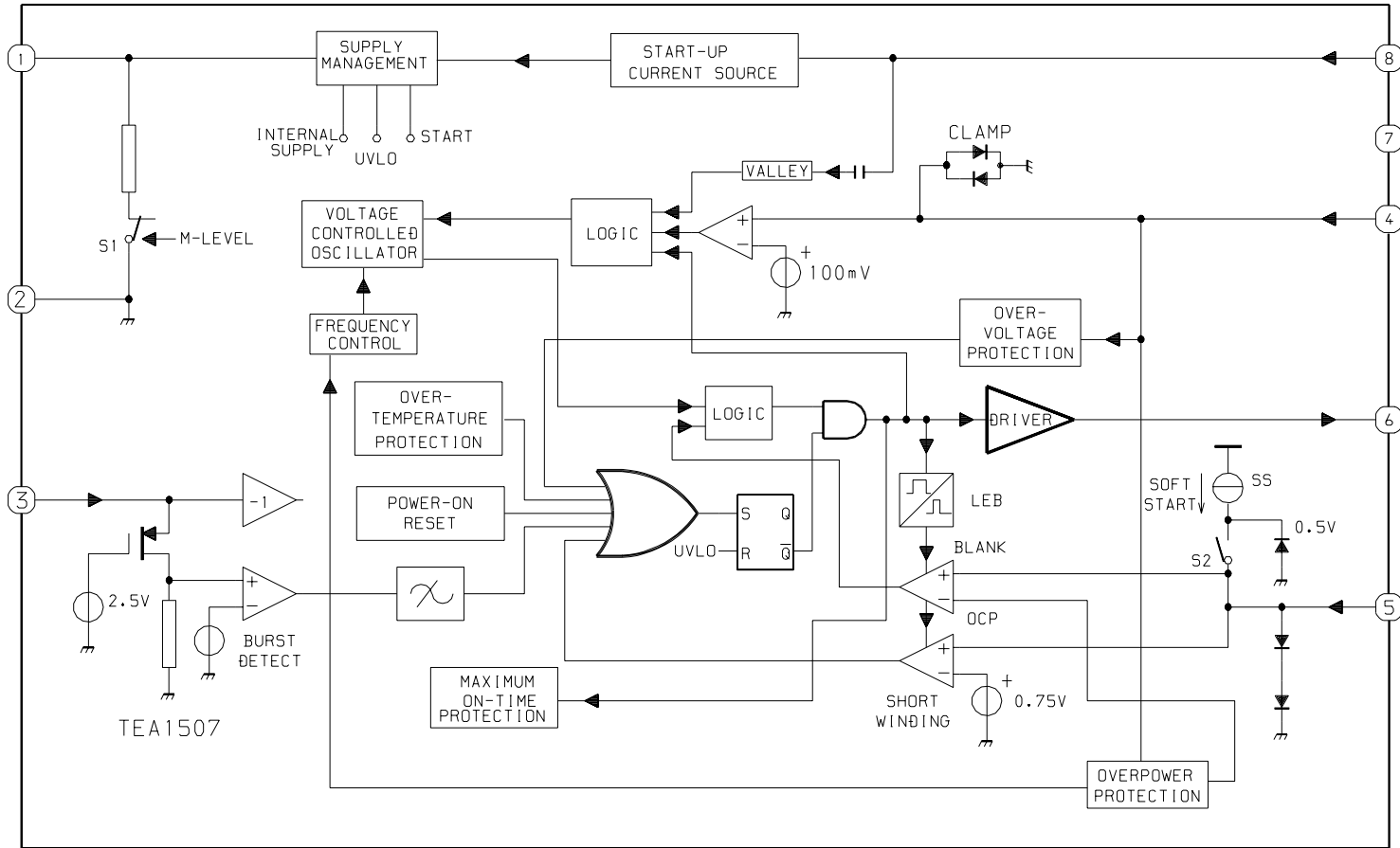


A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U

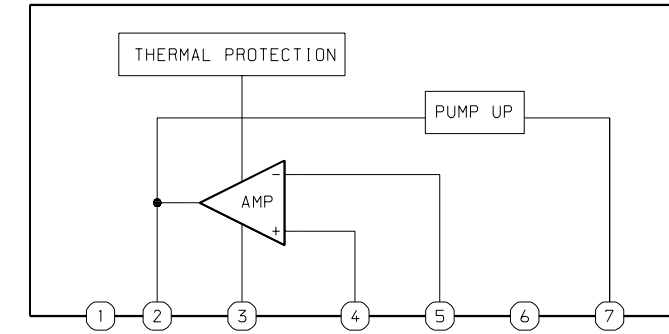


# IC BLOCK DIAGRAM

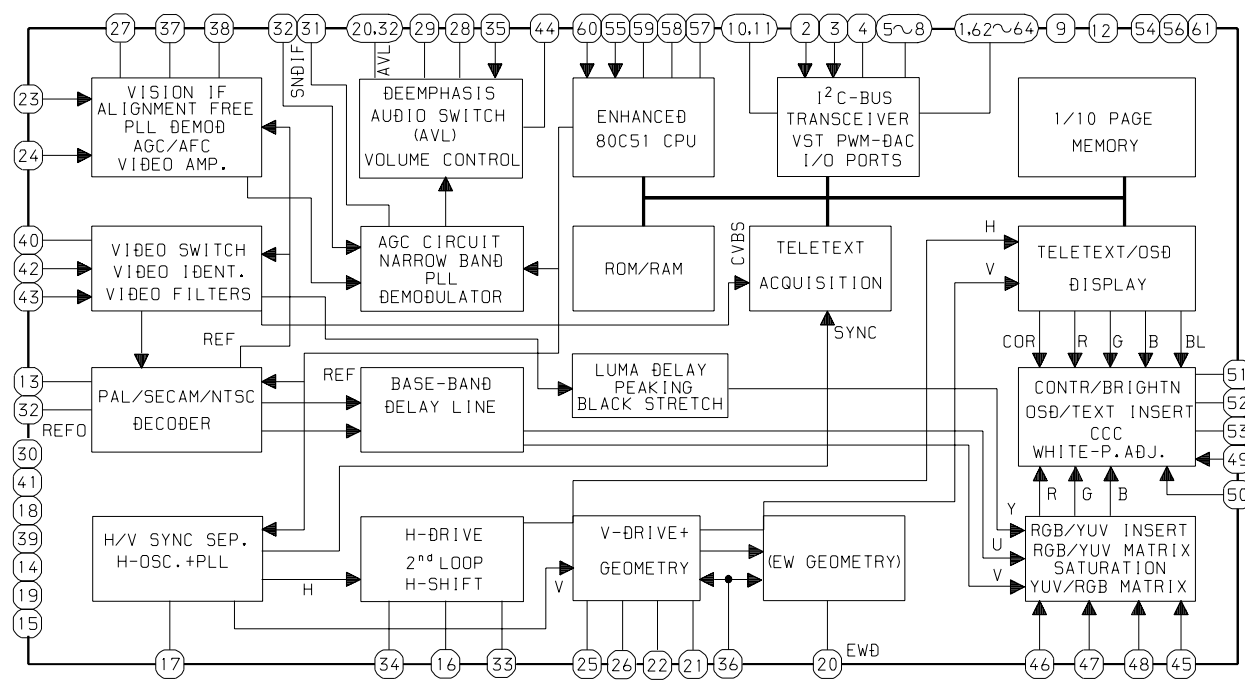
IC, TEA1507P



IC, AN5539N



IC, TDA9381PS



## IC DESCRIPTION

IC, TDA9381PS

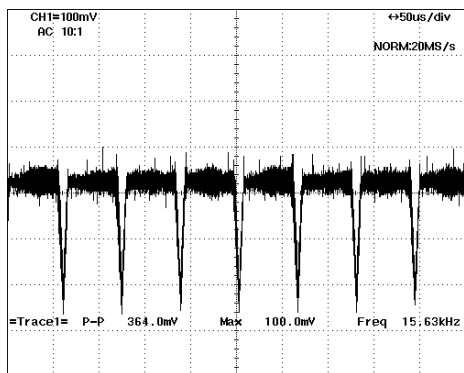
Pin No.	Pin Name	I/O	Description
1	POWER	O	On/stand-by control output.
2	SCL0	O	I <sup>2</sup> C-bus serial clock output.
3	SDA0	I/O	I <sup>2</sup> C-bus serial data input/output.
4	$\overline{M/I/BG}$	O	Tuner system control output. (Not used)
5	NC	–	Not connected.
6	KEY-IN	I	Front key scan input.
7	SEL1	–	Select 1 (signal select).
8	SEL2	–	Select 2 (signal select).
9	D-GND	–	GND (digital).
10	$\overline{AMUTE}$	O	Audio mute output.
11	ON-TIMER	O	On timer output.
12	D-GND	–	GND (analog text and digital TV processor).
13	SECAMPLL	–	SECAM PLL capacitor.
14	8VDD	–	VCC (8V).
15	DECDEC	–	Digital decoupling.
16	PHI-2	–	PHI-2 control loop.
17	PHI-1	–	PHI-1 control loop.
18	A-GND	–	GND (analog TV processor).
19	BANDGAP	–	Bandgap decoupling.
20	AVL	–	AVL (Automatic Volume Levelling).
21	V-DR-	–	Vertical drive -.
22	V-DR+	–	Vertical drive +.
23	PIF+	I	IF input.
24	PIF-	I	IF input.
25	IREF	–	Reference current.
26	VSAW	–	Vertical sawtooth.
27	AGC-OUT	O	Tuner AGC output.
28	AU-DEEM	O	Audio deemphasis.
29	DECSDEM	–	Decoupling sound demodulator.
30	A-GND	–	GND (analog TV processor).
31	SNDPLL	–	Narrow band PLL filter.
32	REF0	–	AVL, comb filter. (Not used)
33	HOUT	–	Horizontal drive.
34	SAND	O/I	Sandcastle output/flyback input.
35	AU-EXT	I	External audio input.
36	EHT	I	EHT/overvoltage protection input.
37	PLL IF	–	PLL loop filter.
38	IF VOUT	O	IF video output.
39	VDD8V	–	VCC (8V) main supply voltage.
40	CVBS INT	I	CVBS input (tuner input).
41	A-GND	–	GND (analog TV processor).
42	CVBS/Y	I	CVBS input (external input).



Pin No.	Pin Name	I/O	Description
43	CHROMA	I	Chroma input. (Connected to GND)
44	AUDIO-OUT	O	Audio output.
45	S/SW	I	Insertion switch input. (Connected to GND)
46	R/V	I	External input Red/V.
47	G/Y	I	External input Green/Y.
48	B/U	I	External input Blue/U.
49	BCL	I	Beam current limiter input.
50	IBLACK	I	Black current input/vertical guard.
51	R-OUT	O	Red output.
52	G-OUT	O	Green output.
53	B-OUT	O	Blue output.
54	3.3VDDA	–	VCC (3.3V).
55	VPE (GND)	–	GND.
56	3.3VDDC	–	VCC (3.3 V).
57	XGND	–	GND (crystal oscillator).
58	XIN	I	Crystal oscillator input. (12.0MHz)
59	XOUT	O	Crystal oscillator output. (12.0MHz)
60	RESET	I	Reset. (Connected to GND)
61	3.3VDDP	–	VCC (3.3 V).
62	SCL1	O	I <sup>2</sup> C-bus serial clock output (for EEPROM).
63	SDA1	I/O	I <sup>2</sup> C-bus serial data input/output (for EEPROM).
64	REMOCON	I	Remote controller input.

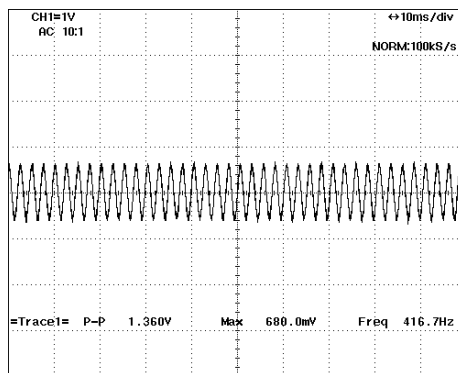
# WAVEFORM

① IC301 PIN 16: PHI-2



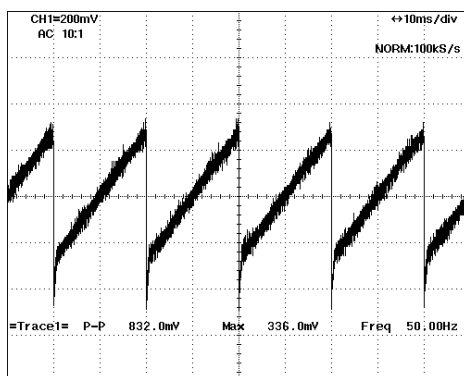
100 mV/div  
50 µs/div

⑤ IC301 PIN 28: AU-DEEM



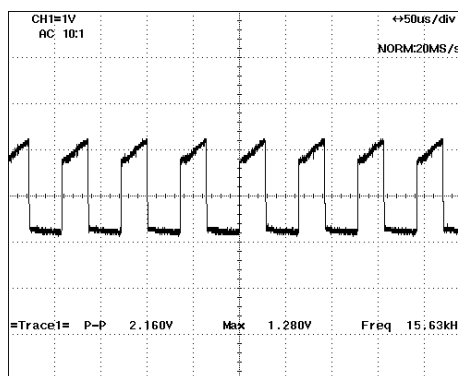
1 V/div  
10ms/div

② IC301 PIN 21: V-DR-



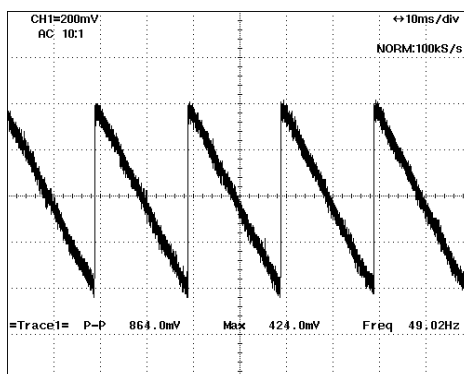
200 mV/div  
10 ms/div

⑥ IC301 PIN 33: HOUT



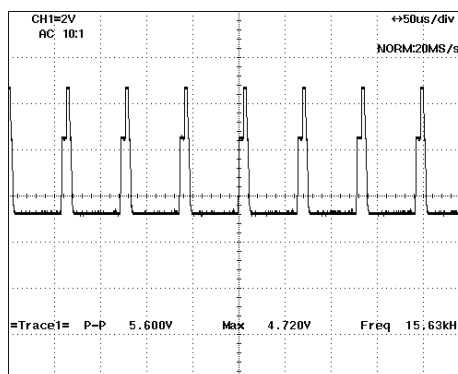
1 V/div  
50µs/div

③ IC301 PIN 22: V-DR+



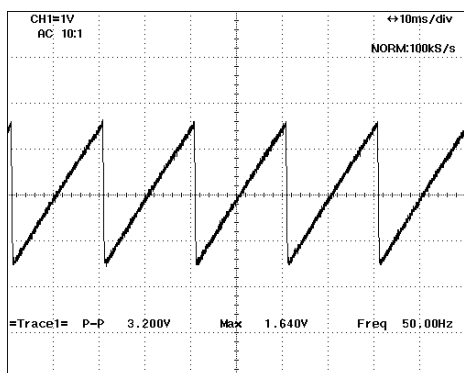
200 mV/div  
10 ms/div

⑦ IC301 PIN 34: SAND



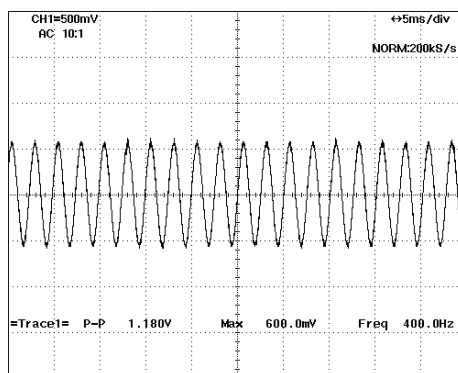
2V/div  
50µs/div

④ IC301 PIN 26: VSAW



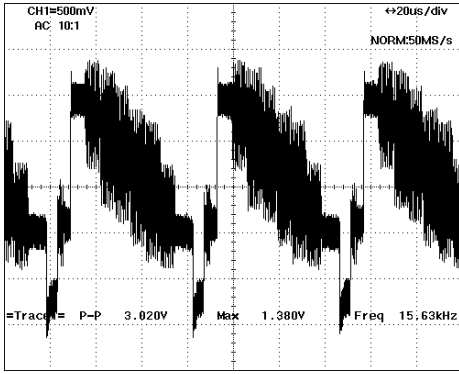
1 V/div  
10 ms/div

⑧ IC301 PIN 35: AU-EXT



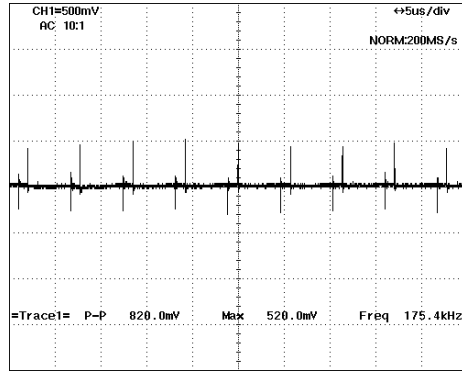
500mV/div  
5ms/div

⑨ IC301 PIN 38: IF VOUT



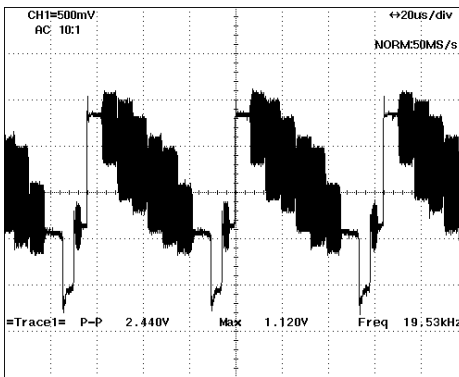
500 mV/div  
20 μs/div

⑬ IC801 PIN 3: CTRL



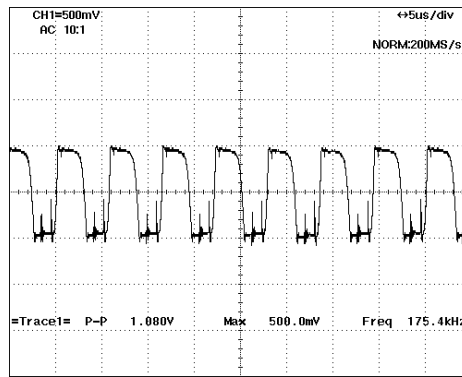
500 mV/div  
5 μs/div

⑩ IC301 PIN 40: CVBS INT



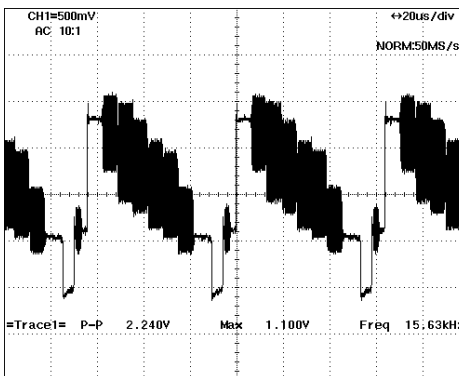
500 mV/div  
20 μs/div

⑭ IC801 PIN 4: DEMAG



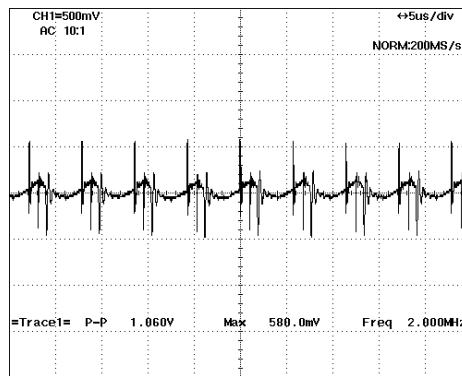
500 mV/div  
5 μs/div

⑪ IC301 PIN 42: CVBS/Y



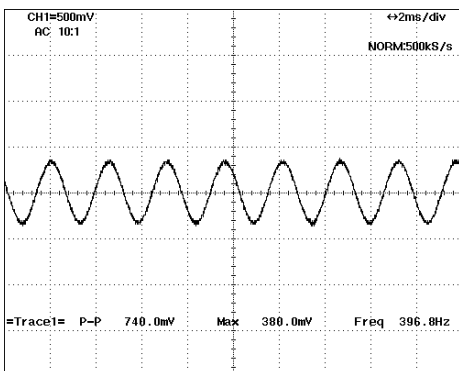
500 mV/div  
20 μs/div

⑮ IC801 PIN 5: SENCE



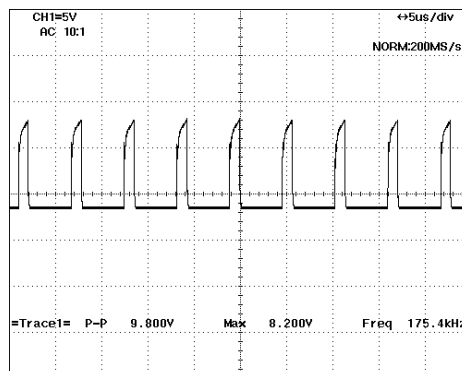
500 mV/div  
5 μs/div

⑫ IC301 PIN 44: AUDIO-OUT



500 mV/div  
2 ms/div

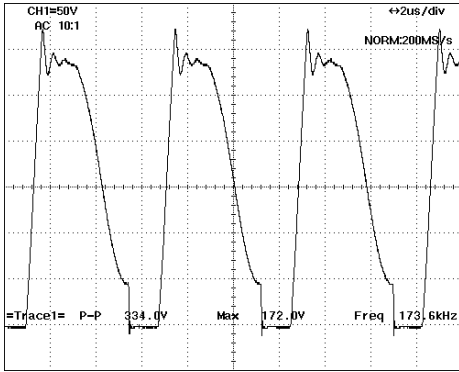
⑯ IC801 PIN 6: DRIVER



5 V/div  
5 μs/div

17 IC801 PIN 8: DROIN

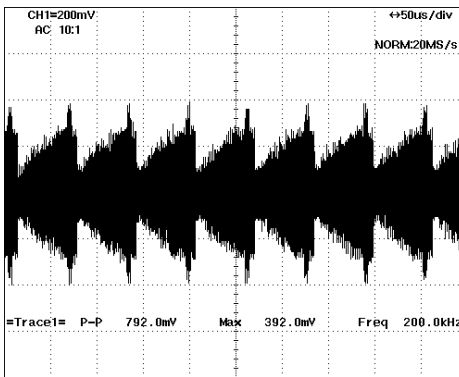
17



50 V/div  
2 μs/div

18 TUT101 PIN11: IF1

18



200 mV/div  
50 μs/div

# VOLTAGE CHART

Test condition

AC Voltage: 230V

Signal input: 1. VIDEO 1 IN

VIDEO: PAL COLOR BAR

AUDIO: 1KHz, -8dBm

2. RF IN

fp = 471.25MHz, 60dBu; P/S = 10dB

VIDEO: PAL COLOR BAR

AUDIO: 1KHz

IC1, M24C04-WMN6T

PIN NO.	STD	STANDBY
1	0	0
2	0	0
3	0	0
4	0	0
5	4.92	4.92
6	4.92	4.92
7	0.61	0
8	4.92	4.92

IC2, SBX1981-72P

PIN NO.	STD	STANDBY
1	4.89	4.91
2	4.91	4.91
3	0	0

IC301, TDA9381PS

PIN NO.	STD	STANDBY
1	3.36	0
2	4.65	4.92
3	4.69	4.92
4	3.31	1.87
5	0.93	0.64
6	3.34	3.34
7	3.31	3.32
8	0	3.32
9	0	0
10	3.31	0
11	0	0
12	0	0
13	2.29	0.63

PIN NO.	STD	STANDBY
14	7.75	0
15	4.96	0
16	2.72	0.20
17	3.88	0
18	0	0
19	3.98	0
20	0.60	0.46
21	0.66	0
22	0.70	0
23	1.86	0
24	1.86	0
25	3.83	0
26	3.83	0
27	3.91	1.36
28	3.28	0
29	2.52	0.45
30	0	0
31	2.53	0.15
32	0.30	0.10
33	1.03	3.27
34	0.47	0
35	3.66	0
36	0	0
37	2.30	0.10
38	4.79	0
39	7.68	0.63
40	4.16	0.20
41	0	0
42	3.82	0.20
43	0	0
44	3.42	0
45	0	0
46	2.50	0
47	2.50	0
48	2.50	0
49	2.50	0
50	4.54	0.34
51	2.72	0.20
52	2.61	0.20
53	2.61	0
54	3.08	3.10

PIN NO.	STD	STANDBY
55	0	0
56	3.20	3.20
57	0	0
58	1.45	1.45
59	1.53	1.53
60	0	0
61	3.32	3.32
62	4.92	4.93
63	4.92	4.93
64	4.90	4.90

PIN NO.	STD	STANDBY
7	0	0
8	0	0
9	0	0
10	7.71	0.62
11	0	0
12	2.31	0.34
13	1.89	0.15
14	1.89	0.41
15	0.42	0.41
16	7.77	0.63

IC401, AN7523

PIN NO.	STD	STANDBY
1	13.01	9.97
2	8.11	0
3	0	0
4	7.61	0
5	2.82	0.33
6	1.33	0
7	0	0
8	NC	NC
9	1.23	0

IC701, BU4052BC

PIN NO.	VIDEO 1	VIDEO 2	TUNER
7	0	7.70	0
8	7.70	0	0

IC801, TEA1507P

PIN NO.	STD	STANDBY
1	15.49	13.41
2	0	0
3	1.27	1.40
4	0.19	0
5	0	0
6	1.40	0
7	0	0
8	328	334

IC501, AN5539N

PIN NO.	STD	STANDBY
1	-11.52	-0.50
2	0.12	0
3	11.75	0
4	0.35	0
5	0.38	0
6	11.48	0
7	-10.34	0

IC830, HA17431VP

PIN NO.	STD	STANDBY
1	0	2.48
2	0	0
3	6.48	4.82

IC701, BU4052BC

PIN NO.	STD	STANDBY
1	1.70	0.21
2	0.34	0.34
3	4.37	0.37
4	0.42	0.30
5	4.37	0.47
6	0	0

IC831, MM1180ZT

PIN NO.	STD	STANDBY
1	4.92	4.92
2	0	0
3	3.34	3.34

IC833, KIA7805API

PIN NO.	STD	STANDBY
1	7.94	7.95
2	0.51	0.1
3	4.93	4.93

IC834, KIA7808API

PIN NO.	STD	STANDBY
1	12.91	1.0
2	0.30	0.10
3	7.94	7.94

PIN NAME	STD	STANDBY
Q 1		
B	0	0
C	4.90	4.92
E	0.32	0.40
Q 2		
B	0	2.51
C	4.92	1.89
E	0.27	1.81
Q 3		
B	0.65	0
C	0	2.51
E	0	0
Q 101		
B	1.14	1.14
C	4.92	4.92
E	0.40	0.40
Q 301		
B	4.65	5.51
C	0	0
E	2.55	0.20
Q 401		
B	1.96	1.69
C	2.58	0
E	2.48	0
Q 501		
B	-0.36	0.42
C	-0.31	0.31
E	0	0

PIN NAME	STD	STANDBY
Q 602		
B	0	0
C	68.60	114.50
E	0	0
Q 603		
B	0.12	0
C	19.68	114.50
E	0	0
Q 604		
B	8.40	8.34
C	0	0
E	7.85	7.48
Q 702		
B	4.37	0.37
C	7.77	0.62
E	3.76	0
Q 703		
B	3.32	0.40
C	4.92	4.92
E	2.72	0
Q 704		
B	0.68	0
C	0.20	0.57
E	0	0
Q 705		
B	0.20	0.55
C	0	0
E	0	0
Q 706		
B	0	0.57
C	2.77	0.45
E	0	0
Q 712		
B	4.77	0.26
C	7.78	0.63
E	4.13	0
Q 713		
B	3.99	0.17
C	7.78	0
E	3.39	0

PIN NAME	STD	STANDBY
Q 715		
B	3.31	3.31
C	0	0
E	0	0
Q 716		
B	0	0
C	7.71	0
E	0	0
Q 717		
B	2.20	0
C	0	0
E	2.79	0.46
Q 718		
B	7.22	0.63
C	2.26	0
E	7.77	0.63
Q 719		
B	1.89	0
C	7.22	0.63
E	1.34	0
Q 802		
B	0.63	0
C	0	7.87
E	0	0
Q 803		
B	7.18	7.87
C	7.81	0.63
E	7.94	7.95
Q 805		
B	3.34	3.34
C	0	0
E	3.34	3.34
Q 839		
B	0	0
C	7.04	5.38
E	0	0
Q 901		
B	3.20	0.20
C	125.60	114
E	2.51	0

PIN NAME	STD	STANDBY
Q 902		
B	2.90	0.20
C	129.90	114
E	2.38	0
Q 903		
B	2.90	0.32
C	128.40	114
E	2.38	0
Q 904		
B	125.70	114
C	5.67	0.42
E	123.90	113.60
Q 905		
B	130	113.60
C	5.67	0.42
E	127.30	114
Q 906		
B	128.60	113.60
C	5.67	0.42
E	128.90	114

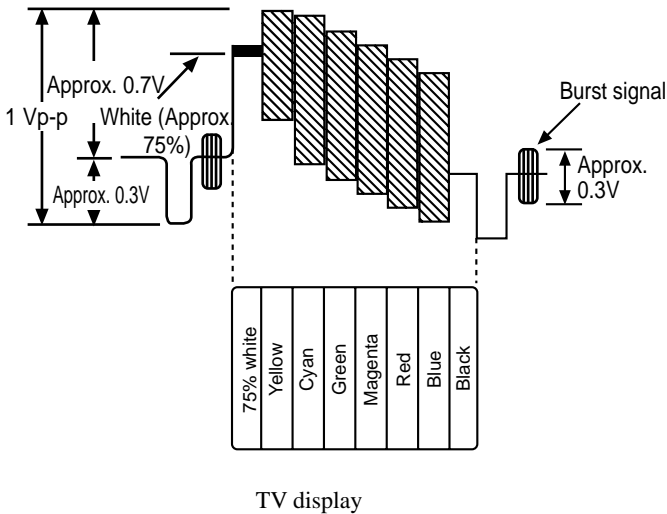


# CRT ADJUSTMENT

## SET-UP FOR ADJUSTMENT

Because the video signal output from a pattern generator is used as the adjustment signal input during adjustment, the video signal output from the pattern generator must conform with the specifications. Measure the output waveform across  $75\ \Omega$  load. Confirm that the synchronizing signal has an amplitude of about  $0.3\ \text{V}$ , the video signal portion has an amplitude of about  $0.7\ \text{V}$  and the burst signal has an amplitude of about  $0.3\ \text{V}$  with flat envelope. Confirm that ratio of the burst signal amplitude and the red signal amplitude is  $0.30 : 0.66$ . If the output signal does not conform with the specifications, calibrate the pattern generator. (Refer to pattern generator operation manual.)

Use the LEADER: LCG 404 for the pattern generator.



Color bar signal of a pattern generator

## PRECAUTIONS BEFORE STARTING ADJUSTMENT

Satisfy the following setting conditions before starting adjustment.

- Allow warm-up of 20 minutes or longer. (Do not turn off during warm-up.)
- Set all picture quality controls of users' setting to initial set-up, unless otherwise specified.
- Picture quality reset
  1. Select "Picture" on the screen menu and press enter button.
  2. Select "Normal" and press enter button.
  3. Select "Reset" and press enter button.
- Set the pattern generator's output level to  $1.0\ \text{V}_{\text{p-p}}$  (across  $75\ \Omega$  load).

## 1. CRT ADJUSTMENT

### 1-1. Precautions

- (1) Receive the white raster signal, and then perform aging for at least 20 minutes.
- (2) Demagnetize the area surrounding the CRT with a degausser before making adjustments.
- (3) Set the picture quality for each mode to the factory setting.
- (4) Position the front screen facing the east as much as possible.

### 1-2. Purpose

- (1) Beam landing adjustment (purity magnet)

Set the left/right balance of beam landing. If there is a discrepancy in this adjustment, a color irregularity will occur. After completion of the landing adjustment, it is necessary to perform convergence adjustment.

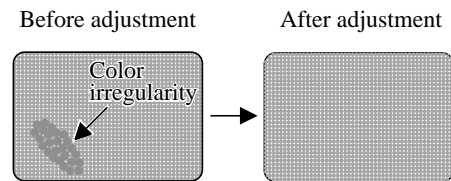
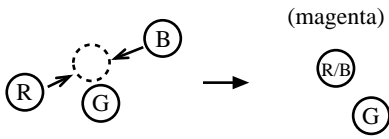


Fig. 1-1

(2) Beam convergence adjustment (4-pole magnet)

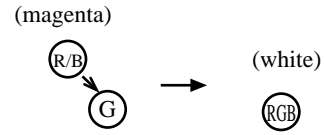
Align the R beam with the B beam. The G beam does not move with this adjustment.



Align the R beam with the B beam  
Fig. 1-2

(3) Beam convergence adjustment (6-pole magnet)

With a 4-pole magnet align the G beam with the already aligned R/B beam.



Align the G beam with the R/B beam  
Fig. 1-3

(4) The composition of each magnet is as shown in Fig. 1-4.

In making adjustments, rotate the lock ring clockwise (looking from the CRT's back screen) and disengage.  
Be careful not to loose the lock ring too much. If the magnet assembly has become shifted during adjustments, secure it to the position in Fig. 1-4.

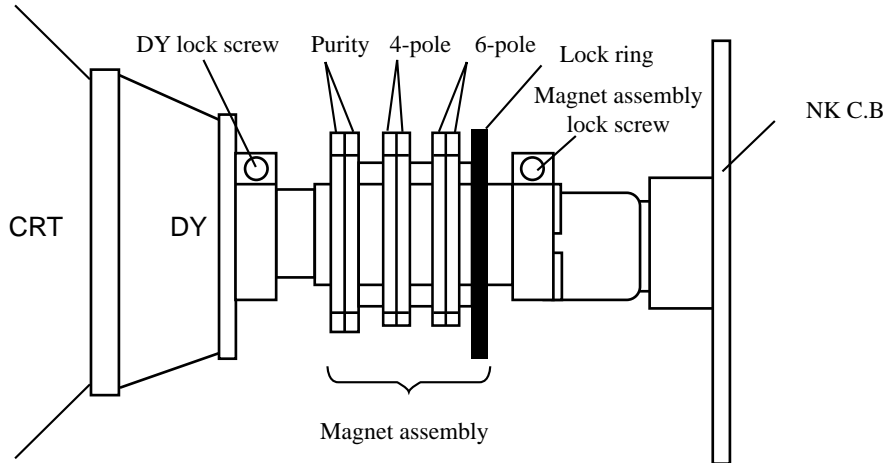


Fig 1-4

### 1-3. Beam Landing Adjustment

- (1) Receive the green raster signal from the pattern generator.
- (2) Loosen the magnet lock screw, and shift the magnet assembly backward (toward the neck).
- (3) Loosen the DY lock screw, and shift the DY deflecting yoke backward (toward the neck).
- (4) After opening the two purity magnets to the same angle, adjust the color width of the bands on both sides of the screen so that they are equal. (refer to Fig. 1-5 (a)).

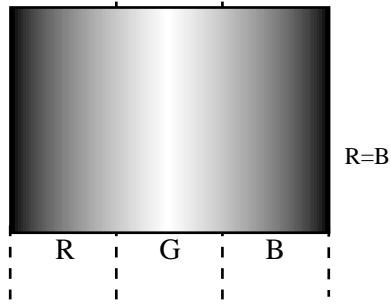


Fig 1-5 (a)

As shown in Fig. 1-5 (b), the purity magnet functions in relation to the electron beam.

- (5) Gradually shift the deflecting yoke toward the front (toward the CRT funnel). Stop movement at the point when the screen has become completely green.

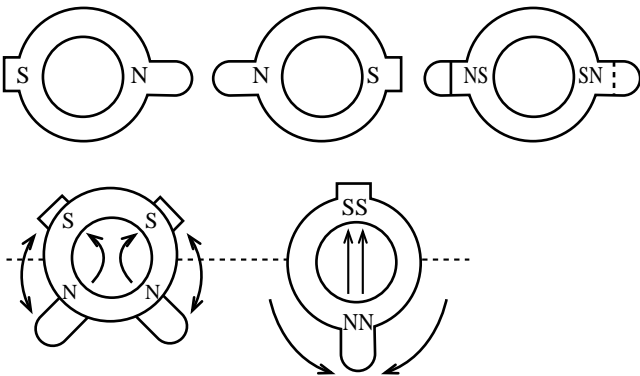


Fig 1-5 (b)

- (6) Also, verify the respective monochromatics of red and blue.
- (7) While looking at the screen, adjust the tilt of the deflecting yoke and tighten the DY lock screw.
- (8) Shift the magnet assembly to the front (toward the CRT funnel), stop movement before the adjustment position and then tighten the magnet lock screw.  
At this time, be careful not to shift the position of the purity magnet.

As there is occurrence of convergence distortion after completing the landing adjustments, be sure to carry out convergence adjustments.

If the color irregularities in the screen's corner section are not improved, correct them with the landing magnet. After using the landing magnet, be sure to demagnetize the CRT with degausser and verify that there is no occurrence of color irregularity. (refer to Fig. 1-6)

Landing magnet: 81-JTI-710-010  
(two-sided adhesive tape) : 80-XVI-218-010 Cushion

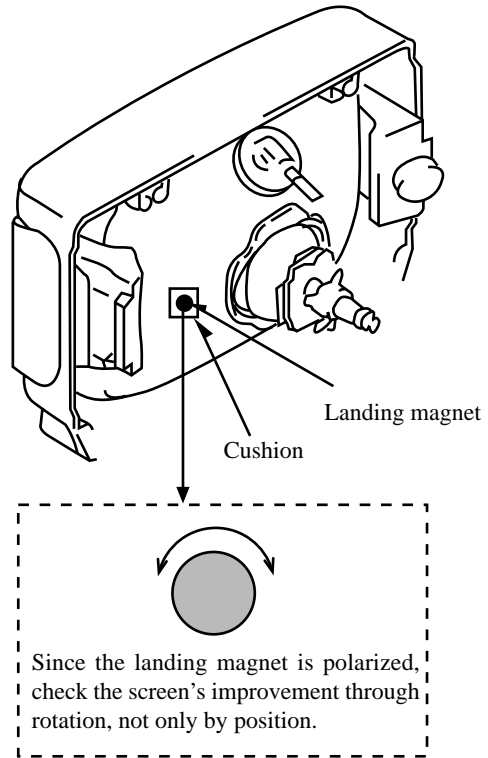


Fig 1-6

#### 1-4. Beam Center Convergence Adjustment

Make adjustments on the convergence with 4-pole and 6-pole magnets. Operate each magnet in relation to the electron beam as shown in Figs. 1-7 and 1-8. When performing this adjustment, verify whether there is distortion in the focus adjustment. If necessary, carry out adjustments again.

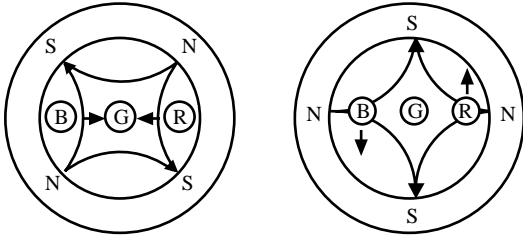


Fig 1-7

In Fig. 1-7, two 4-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 4-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

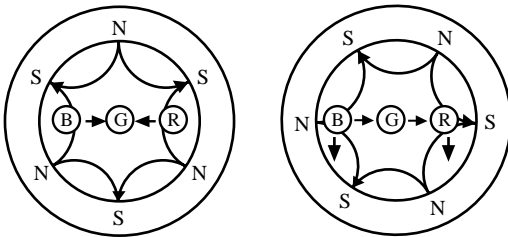


Fig 1-8

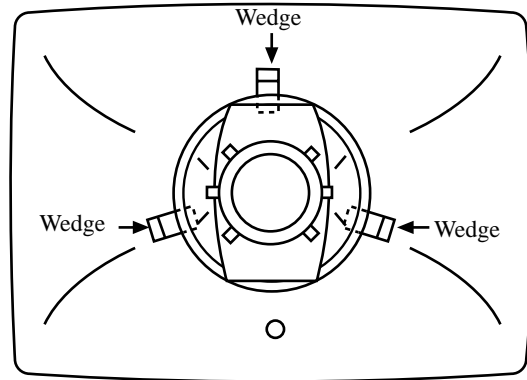
In Fig. 1-8, the two 6-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 6-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

- (1) Receive the dot pattern signal from the pattern generator.
- (2) Pay attention to the center of the screen, and perform adjustments with two 4-pole magnets so that the R beam and B beam are perfectly aligned and become a magenta color. (Refer to Fig. 1-2)
- (3) In the same way, pay attention to the screen, and perform adjustments with a 6-pole magnet so that the magenta beam and G beam are aligned and become a white dot. (Refer to Fig. 1-3)
- (4) After adjustments are completed, secure all magnets with the lock link. (Refer to Fig. 1-4)

#### 1-5. The Surrounding Convergence Adjustment

Perform this adjustment after completion of adjustment 1-4.

- (1) Shake the deflecting yoke up, down to the right and left, and adjust any discrepancies in the screen's surroundings.
- (2) Insert wedges in three locations in the gap between the deflecting yoke and the surface of the CRT funnel in order to secure the deflecting yoke. (Refer to Fig. 1-9)



Position of wedge

Fig. 1-9

# ELECTRICAL ADJUSTMENT

The procedure for electric adjustment is as follows.

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1. Modifying Jig Remote-Controller
  2. Details of Aging Mode Screen
  3. Operating Adjustment Mode
  4. Checking and Configuring Initial Data
  5. List of Electric Adjustment Points (Adjustment Menu Screen):
    - 5-1. Adjustment of screen size and screen position (PAL)
      - 1-1 H POS 50
      - 1-2 V POS 50
      - 1-3 V SIZE 50
      - 1-4 V LINEA 50
      - 1-5 OSD H 50
      - 1-6 OSD V 50
    - 5-2. Adjustment of screen size and screen position (NTSC)
      - 2-1 H POS 60
      - 2-2 V POS 60
      - 2-3 V SIZE 60
      - 2-4 V LINEA 60
      - 2-5 OSD H 60
      - 2-6 OSD V 60
    - 5-3. Tuning adjustment
      - 3-1 RFAGC
    - 5-4. Adjustment of color and brightness
      - 4-1 SCREEN
      - 4-2 BRIGHT
      - 4-3 FOCUS
      - 4-4 WHITE BALANCE
        - R CUT OFF
        - G CUT OFF
        - R GAIN
        - G GAIN
        - B GAIN
-

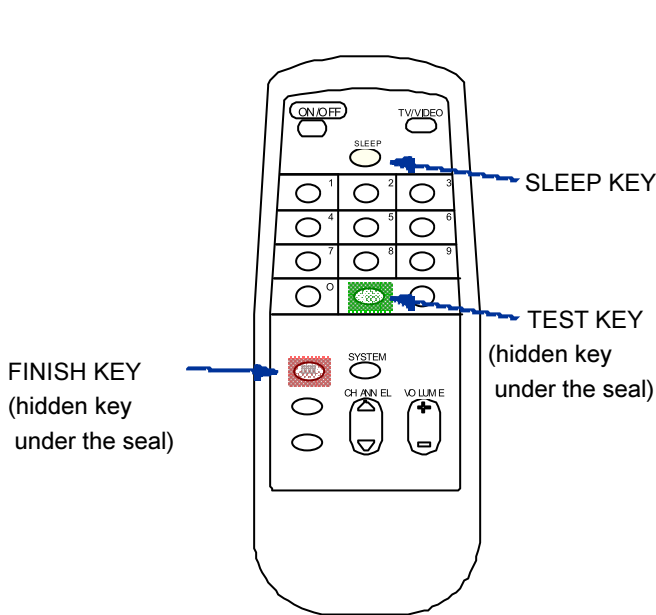
## 1. Modifying Jig Remote-Controller

Using of a jig remote controller allows major adjustment of picture and deflection of the unit.

Part Name : RC-6VT06

Part No : 86-LB4-951-010

Preparation: Use the jig remote-controller/RC-6VT06 (TV-C142/86-LB4-951-010) and modify the following two places as shown in the diagram below so that the hidden keys become easily accessible.

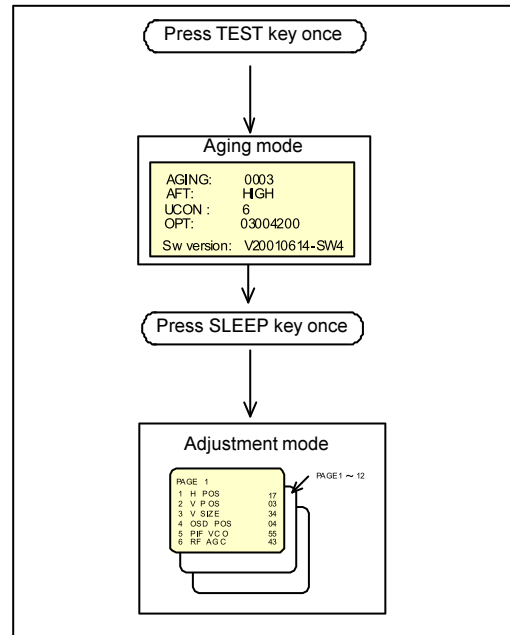


### Hidden keys/FINISH

When FINISH key found on the jig remote controller is pressed, the integrating time of aging mode is reset.

\* Do not press for normal servicing.

## Activating Servicing Mode



## 2. Details of Aging Mode Screen

Press TEST key once to enter the aging mode.

The auto power-off function, which corresponds to non-input state, is deactivated during aging mode.

This mode is used for aging (warming up) such as CRT adjustment.

The following appears on CRT.



### Details of Screen Display

#### a. CRT ON integrating time

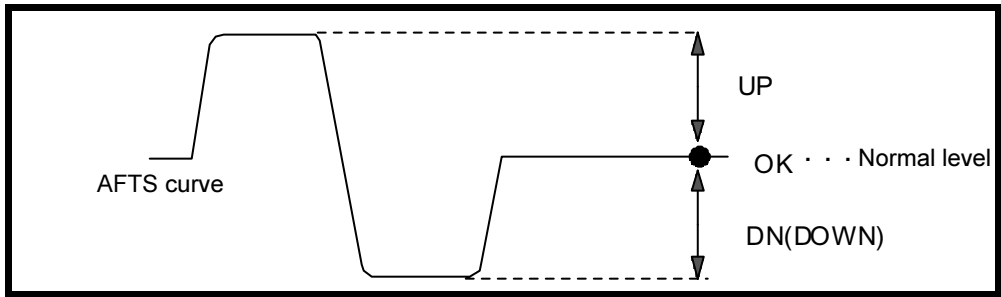
The hourly integration of CRT usage is displayed in hexadecimal digit.

Eg: 1234=(1x16x16x16)+(2x16x16)+(3x16)+4=4660 hours

“FFFF” appears when the time exceeds FFFF (35535 hours).

b. AFTS curve status (AFT OUT, AFT LOW, AFT IN, AFT HIGH)

High, suitable or low status of AFTS curve is displayed respectively as UP, OK, or DN.



3. Operating Adjustment Mode

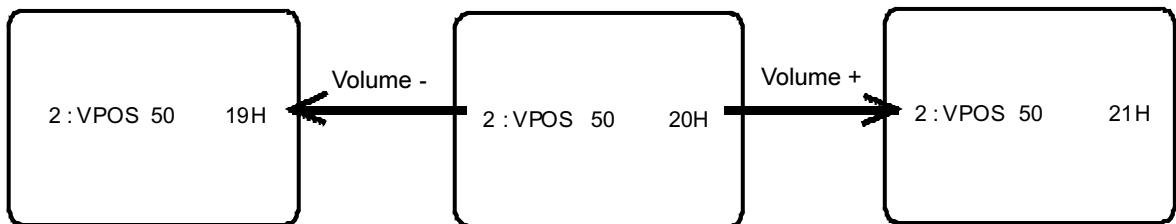
1. Press SLEEP key once at the aging mode to display MENU 1 of the adjustment mode.

MENU 1/12	
1.H POS 50	20H
2.V POS 50	20H
3.V SIZE 50	20H
4.V LINEA 50	20H
5.O SDH 50	03H
6.O SDV 50	30H
7.V S-CORR 50	16H
8.H SD SOT	02H
9.VSD SOT	20H

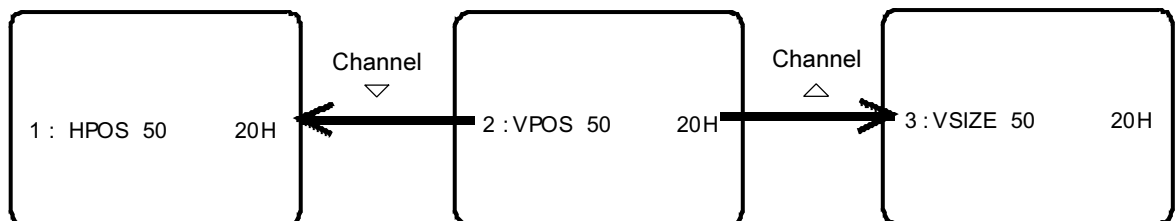
2. Press the “Channel△•▽” key to switch between the menus from MENU 1 to MENU 12.
3. Press a number key (1 to 9) assigned for an adjustment item.  
Ex.: To select “2. VPOS50”, press the number key, “2” on the remote controller at MENU 1.

2 : VPOS 50	20H
-------------	-----

4. Press the VOLUME + or - key to modify the data.



5. To display the next or previous adjustment item, press the “Channel△•▽” key after modification is applied.



6. Press SLEEP key once to go back to the aging mode.

#### 4. Checking and Configuring Initial Data

Check the initial data of all the items before adjustment, and if an error is found, configure using the jig remote controller.

The adjustment menus are available from MENU 1 to MENU 12. (Refer to the following tables.)

\* Only shaded adjustment items can be configured. The reference values should be entered for other items. Wrong configuration may cause faulty operation.

##### <MENU 1>

No	MENU	Details	Reference value
1	H POS 50	50Hz horizontal position	20H
2	V POS 50	50Hz vertical position	20H
3	V SIZE 50	50Hz vertical size	20H
4	V LINEA 50	50Hz vertical linearity	20H
5	OSD H 50	50Hz OSD horizontal position	03H
6	OSD V 50	50Hz OSD vertical position	30H
7	VS CORR 50	50Hz vertical S-shape correction	16H
8	HSD50T	50Hz TEXT horizontal position	02H
9	VSD50T	50Hz TEXT vertical position	20H

##### <MENU 4>

No	MENU	Details	Reference value
1	IF FREQ	IF frequency *1	03H
2	RF AGC	AGC TAKE OVER POINT	20H
3	ATRVAL	AGC ATSS THRESHOLLD	00H
4	OSO	Fixation of vertical deflection at upper screen during CRT discharge at standby mode.	01H
5	EVG	Vertical protection (0: OFF, 1: ON)	01H
6	HCO	EHT (0: Vertical, 1: Horizontal / Vertical)	00H
7	AKB	AKB (0: Active, 1: Stop)	00H

##### <MENU 2>

No	MENU	Details	Reference value
1	H POS 60	60Hz horizontal position	25H
2	V POS 60	60Hz vertical position	20H
3	V SIZE 60	60Hz vertical size	20H
4	V LINEA 60	60Hz vertical linearity	20H
5	OSD H 60	60Hz OSD horizontal position	20H
6	OSD V 60	60Hz OSD vertical position	05H
7	VS CORR 60	60Hz vertical S-shape correction	20H
8	HSD60T	60Hz TEXT horizontal position	02H
9	VSD60T	60Hz TEXT vertical position	02H

##### <MENU 5>

No	MENU	Details	Reference value
1	R CUT OFF	Red cutoff	20H
2	G CUT OFF	Green cutoff	20H
3	R GAIN	Red drive	20H
4	G GAIN	Green drive	20H
5	B GAIN	Blue drive	20H
6	BKS	Black expansion (0: OFF, 1: ON)	01H
7	ACL	COLOR LIMIT (0: OFF, 1: ON)	01H
8	FCON	COLOR KILLER (0: ON, 1: OFF)	00H
9	NTSC MAT	NTSC MATRIX (1: JPN, 1: USA)	00H
10	CMA	Compulsory PAL MATRIX (0: STANDARD, 1: PAL MATRIX)	00H

##### <MENU 3>

No	MENU	Details	Reference value
1	COLOR	COLOR center value	20H
2	BRIGHT	BRIGHT center value	20H
3	CONT	CONTRAST center value	20H
4	TINT	TINT center value	20H
5	SHARP	PEAKING center value	3FH
6	CD LVL	Cathode drive level	04H
7	Y SECAM	SECAM Y-delay	06H
8	Y NTSC	NTSC Y-delay	04H
9	Y PAL	PAL Y-delay	04H
10	Y OTHER	Other Y-delays	04H

##### <MENU 6>

No	MENU	Details	Reference value
1	EW AMP50	50Hz horizontal size	20H
2	EW WID50	50Hz pin cushion (whole)	20H
3	EW UP50	50Hz pin cushion (upper)	20H
4	EW LOW50	50Hz pin cushion (lower)	20H
5	TRPEZ50	50Hz trapezoid distortion correction	20H
6	H PARA50	50Hz parallelogram distortion correction	20H
7	H BOW50	50Hz cupid's bow distortion correction	20H
8	VPOS Z50	50Hz zoomed vertical position	20H
9	VSIZE Z50	50Hz zoomed vertical size	26H



**<MENU 7>**

No	MENU	Details	Reference value
1	V POS Z 60	60Hz zoomed vertical position	20H
2	V SIZE Z 60	60Hz zoomed vertical size	26H
3	V POS 16 50	50Hz vertical position at 16:9	20H
4	V SIZE 16 50	50Hz vertical size at 16:9	00H
5	V POS 16 60	60Hz vertical position at 16:9	20H
6	V SIZE 16 60	60Hz vertical size at 16:9	00H
7	V POS GAM50	50Hz vertical position for GAME	20H
8	V SIZE GAM 50	50Hz vertical size for GAME	1CH
9	V POS GAM 60	60Hz vertical position for GAME	20H
10	V SIZE GAM 60	60Hz vertical size for GAME	1CH

**<MENU 8>**

No	MENU	Details	Reference value
1	VXM 16	16:9 for VX mode	20H
2	VXM Z	Zoom for VX mode	20H
3	VXM G	GAME POSITION for VX mode	20H
4	EW AMP 60	60Hz horizontal size	20H
5	EW WID 60	60Hz pin cushion (whole)	20H
6	EW UP 60	60Hz pin cushion (upper)	20H
7	EW LOW 60	60Hz pin cushion (lower)	20H
8	TRPEZ 60	60Hz trapezoid distortion correction	20H
9	H PARA 60	60Hz parallelogram distortion correction	20H
10	H BOW 60	60Hz cupid's bow distortion correction	20H

**<MENU 9>**

No	MENU	Details	Reference value
1	FM VOL	NICAM output level (FM)	20H
2	AM VOL	NICAM output level (AM)	20H
3	VOL 74	NICAM output level (NICAM)	20H
4	NERL	NICAM ERROR RATE LOWER	80H
5	NERH	NICAM ERROR RATE HIGHER	80H
6	AVL74	AUTO VOLUME LEVEL *2	00H
7	GAIN73	GAIN TDA9873 (0: REDUCE GAIN, 1: NORMAL GAIN)	01H
8	GAIN ST	STEREO GAIN	20H
9	AVL UOC	UOC internal AUTO VOLUME LEVEL	00H
10	DEF VOL	Volume level of factory setting	10H

**<MENU 10>**

No	MENU	Details	Reference value
1	OP SYS	System setting *3	03H
2	OP ST	Audio volume control (0: No, 1: Yes)	00H
3	OP BBE	BBE (0: No, 1: Yes)	00H
4	OP QSUR	Q surround (0: No, 1: Yes)	00H
5	OP WOFR	Subwoofer (0: No, 1: Yes)	00H
6	OP VOL	Volume type setting (0, 1, 2)	00H
7	OP TXT	TEXT (0: No, 1: Yes)	00H
8	OP MOD	Demodulation (0: FM, 1: TDA9873, 2: TDA9874)	00H
9	OP ROT	Rotation (0: No, 1: Yes)	00H

**<MENU 11>**

No	MENU	Details	Reference value
1	OP VM	VM circuit (0: No, 1: Yes)	00H
2	OP YUV	YUV input (0: No, 1: Yes)	00H
3	OP YC	S input (0: No, 1: Yes)	00H
4	OP MUTE	TUNER MUTE (0: No, 1: Yes)	01H
5	OP ATSS	ATSS (0: No, 1: Yes)	00H
6	OP TONE	TONE CONTROL (0: No, 1: Yes)	00H
7	OP MM1311	AV switch (0: No, 1: Yes)	00H
8	OP M62332	D/A converter (0: No, 1: Yes)	00H
9	OP LANGP	Language setting *4	01H

**<MENU 12>**

No	MENU	Details	Reference value
1	OP NVMMAP	EPROM MAP Ver	00H
2	OP VIRGIN	EPROM formatting	00H

\* 1 IF FREQ → 0: Europe 38.9MHz, 1: FranceA 33.4MHz, 2: FranceB 33.9MHz, 3: China 38.0MHz, 4: Japan 58.75MHz, 5: USA 45.75MHz

\* 2 AVL74 → 0: Adapt to Standard, 1: Short Delay, 2: Medium Delay, 3: Long Delay

\* 3 OP SYS → 0: PAL / SECAM / NTSC-B / G,D / K,I,L / L'  
 1: PAL-I (LINE INPUT: PAL / NTSC)  
 2: PAL / SECAM / NTSC-B / G,D / K,I,L  
 3: PAL / SECAM-B / G,D / K(LINE INPUT: PAL / SECAM / NTSC)  
 4: PAL-B / G (LINE INPUT: PAL / NTSC)  
 5: PAL-B / G,I (LINE INPUT: PAL / NTSC)

\* 4 OP LANGP → 0: European specification, 1: EAPM, 2: E, 3:ETM, 4: EC  
 (E: ENGLISH, A: ARABIC, P: PERSIAN, M: MALAYSIAN, T: THAI, C: CHINA)

## 5. List of Electric Adjustment Points (Adjustment Menu Screen):

Check and adjust the state of applicable parts during normal servicing.

### Precautions taken before adjustment

- If a mono-scope signal oscillator is not available for the adjustment which requires mono-scope signals, use the picture signal produced by playback of the test tape, TTV-06T (PAL 625 LINE) and TTV-N06T (NTSC 525 LINE) via VCR. Observe the color system of input signal (VCR output signal).
- This manual uses the values measured with SHIBASOKU mono-scope and the screen sizes expressed in percentage as adjustment values of screen size measured with a mono-scope (PAL • NTSC). The values read by other mono-scope should be converted into percentage to give compatibility.
- This manual uses the values measured with LEADER LCG-404 (PAL / SECAM) and LCG-401 (NTSC) as simple adjustment values of screen size measured with a pattern generator.

### 5-1. Adjustment of screen size and screen position (PAL)

#### 1-1. [H POS 50] Adjustment of PAL horizontal position

[TV / Measuring device setting]

Adjustment menu number	MENU1-1
Input signal	PAL mono-scope
SPEC	Right and left horizontal scales are equal.
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust and equalize both the right and left horizontal scales. (Fig. 1-1)

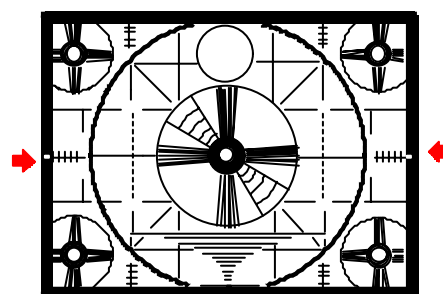


Fig.1-1 PAL MONO-SCOPE

[TV / Measuring device setting] H POS 50 simple adjustment

Adjustment menu number	MENU1-1
Input signal	PAL CONVERGENCE
SPEC	A=B
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust and position the dot mark appearing in the center of the CONVERGENCE screen to the middle and to equalize the number of boxes appearing in the right and left sides of the screen (A=B). (Fig. 1-2)

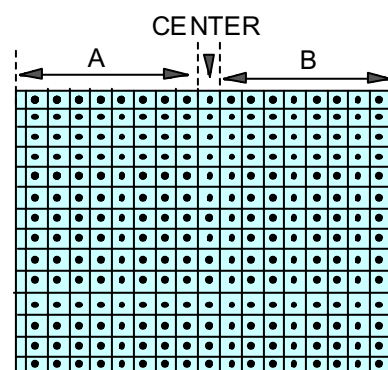


Fig.1-2 PAL CONVERGENCE

#### 1-2. [V POS 50] Adjustment of PAL vertical position

[TV / Measuring device setting]

Adjustment menu number	MENU1-2
Input signal	PAL mono-scope
SPEC	CRT center = mono-scope center line
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust and match the center lines appearing in the right and left edges of the mono-scope screen with the CRT center mark. (Fig. 1-3)

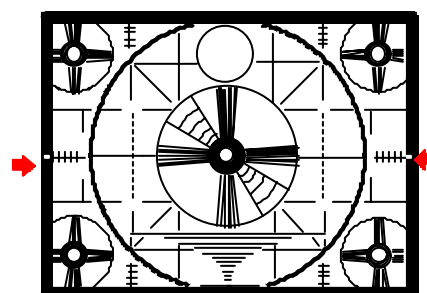


Fig.1-3 PAL MONO-SCOPE

[TV / Measuring device setting] V POS 50 simple adjustment

Adjustment menu number	MENU1-2
Input signal	PAL CONVERGENCE
SPEC	CRT center and the center of cross hatch are matched.
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust and match the dot mark appearing in the center of the cross hatch screen and the CRT center mark. (Fig. 1-4)

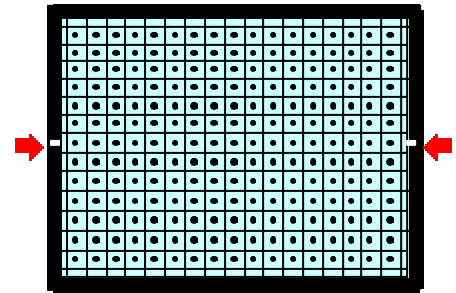


Fig.1-4 PAL CONVERGENCE

1-3. **V SIZE 50** Adjustment of PAL vertical size

[TV / Measuring device setting]

Adjustment menu number	MENU1-3
Input signal	PAL mono-scope
SPEC	Vertical scale: 3.5 to 4.5 (90% to 94%)
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust the upper and lower scales within the range specified in SPEC. (Fig. 1-5)

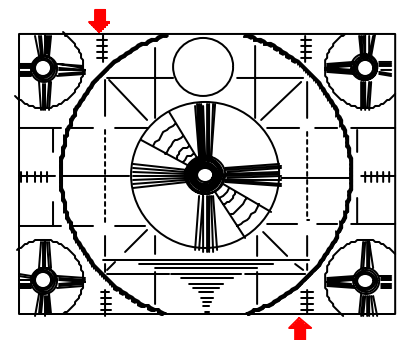


Fig.1-5 PAL MONO-SCOPE

[TV / Measuring device setting] V SIZE 50 simple adjustment

Adjustment menu number	MENU1-3
Input signal	PAL CONVERGENCE
SPEC	The number of boxes: 13 to 13.25
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust the number of upper and lower boxes within the range specified in SPEC. (Fig. 1-6)

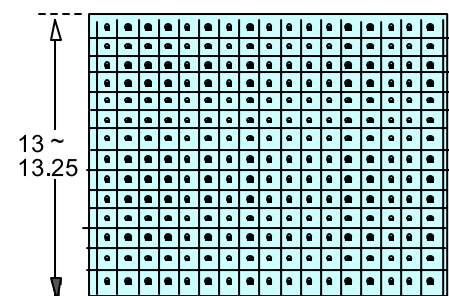


Fig.1-6 PAL CONVERGENCE

1-4. **V LINEA 50** Adjustment of PAL vertical linearity

[TV / Measuring device setting]

Adjustment menu number	MENU1-4
Input signal	PAL mono-scope
SPEC	True circle
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust each of the six circles to draw a true circle. (Fig. 1-7)

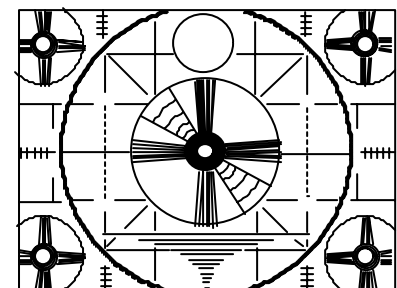


Fig.1-7 PAL MONO-SCOPE

Note: After adjustment, check V POS 50 (PAGE 1-2) and V SIZE 50 (PAGE 1-3).  
Adjust irregularity if found.

[TV / Measuring device setting] V LINEA 50 simple adjustment

Adjustment menu number	MENU1-4
Input signal	PAL CONVERGENCE
SPEC	Square
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust each box to draw a square. (Fig. 1-8)

Note: After adjustment, check V POS 50 (PAGE 1-2) and V SIZE 50 (PAGE 1-3).  
Adjust irregularity if found.

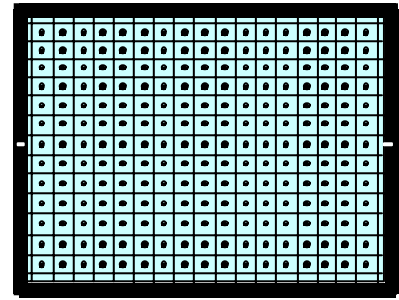


Fig.1-8 PAL CONVERGENCE

1-5. [OSD H 50] Adjustment of PAL OSD horizontal position

[TV / Measuring device setting]

Adjustment menu number	MENU1-5
Input signal	PAL CONVERGENCE
SPEC	A=B
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Adjust and equalize the distances indicated with A (the left end to ■ mark) and B (the right end to ■ mark). (Fig. 1-9)

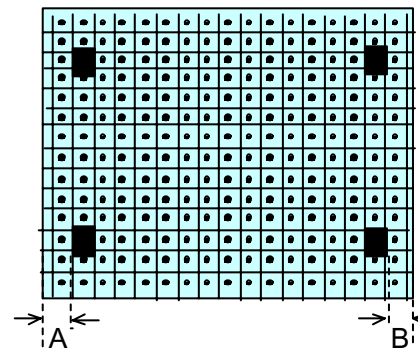


Fig.1-9 PAL CONVERGENCE

1-6. [OSD V 50] Adjustment of PAL OSD vertical position

[TV / Measuring device setting]

Adjustment menu number	MENU1-5
Input signal	PAL CONVERGENCE
SPEC	A=B
MODE	VIDEO

1. Input CONVERGENCE signal with a pattern generator.
2. Adjust and equalize the distances indicated with A (the upper end to ■ mark) and B (the lower end to ■ mark). (Fig. 1-10)

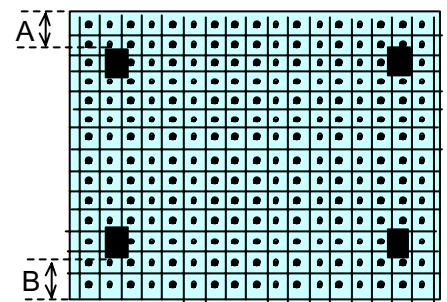


Fig.1-10 PAL CONVERGENCE

5-2. Adjustment of screen size and screen position (NTSC)

2-1. [H POS 60] Adjustment of NTSC horizontal position

[TV / Measuring device setting]

Adjustment menu number	MENU2-1
Input signal	NTSC mono-scope
SPEC	Right and left horizontal scales are equal.
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust and equalize both the right and left horizontal scales. (Fig. 2-1)

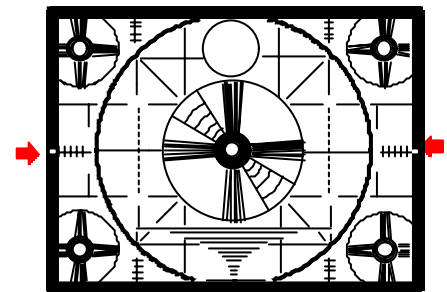


Fig.2-1 NTSC MONO-SCOPE

[TV / Measuring device setting] H POS 60 simple adjustment

Adjustment menu number	MENU2-1
Input signal	NTSC cross hatch
SPEC	A=B
MODE	VIDEO

1. Input cross hatch signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust and position the dot mark appearing in the center of the cross hatch screen to the middle and to equalize the number of boxes appearing in the right and left sides of the screen (A=B). (Fig. 2-2)

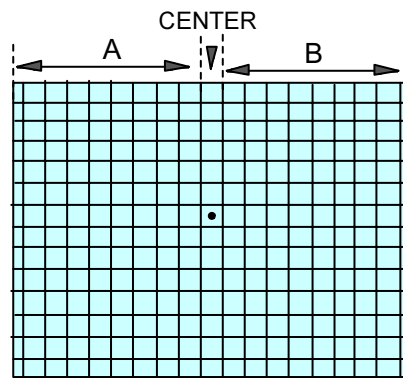


Fig.2-2 NTSC CROSS HATCH

2-2. **V POS 60** Adjustment of NTSC vertical position

[TV / Measuring device setting]

Adjustment menu number	MENU2-2
Input signal	NTSC mono-scope
SPEC	CRT center = mono-scope center line
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust and match the center lines appearing in the right and left edges of the mono-scope screen with the CRT center mark. (Fig. 2-3)

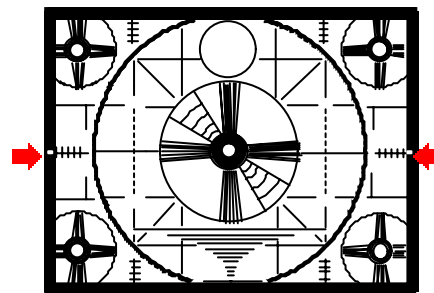


Fig.2-3 NTSC MONO-SCOPE

[TV / Measuring device setting] V POS 60 simple adjustment

Adjustment menu number	MENU2-2
Input signal	NTSC cross hatch
SPEC	CRT center and the center of cross hatch are matched
MODE	VIDEO

1. Input cross hatch signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust and match the dot mark appearing in the center of the cross hatch screen and the CRT center mark. (Fig. 2-4)

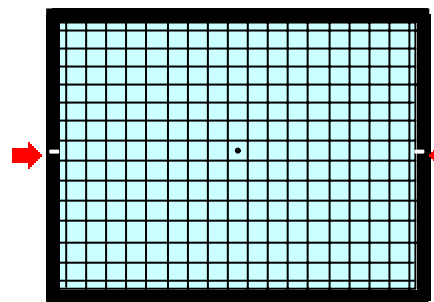


Fig.2-4 NTSC CROSS HATCH

2-3. **V SIZE 60** Adjustment of NTSC vertical size

[TV / Measuring device setting]

Adjustment menu number	MENU2-3
Input signal	NTSC mono-scope
SPEC	Vertical scale: 3.5 to 4.5 (90% to 94%)
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust the upper and lower scales within the range specified in SPEC. (Fig. 2-5)

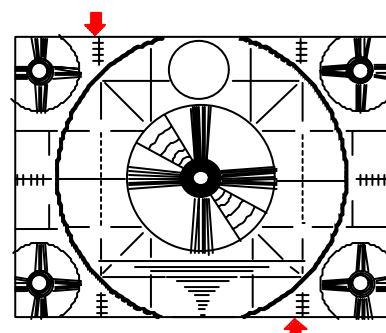


Fig.2-5 NTSC MONO-SCOPE

[TV / Measuring device setting] V SIZE 60 simple adjustment

Adjustment menu number	MENU2-3
Input signal	NTSC cross hatch
SPEC	The number of boxes: 6 ~ 6.25
MODE	VIDEO

1. Input cross hatch signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust the number of upper and lower boxes within the range specified in SPEC. (Fig. 2-6)

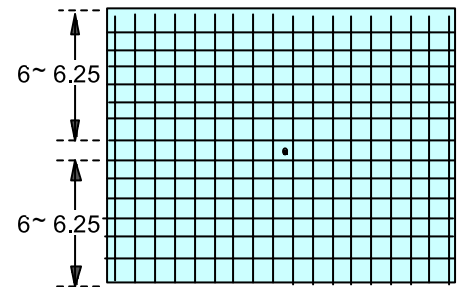


Fig.2-6 NTSC CROSS HATCH

2-4. **V LINEA 60** Adjustment of NTSC vertical linearity

[TV / Measuring device setting]

Adjustment menu number	MENU2-4
Input signal	NTSC mono-scope
SPEC	True circle
MODE	VIDEO

1. Input LION mark signal with a mono-scope.
2. Use the VOLUME + or - key on the remote controller to adjust each of the six circles to draw a true circle. (Fig. 2-7)

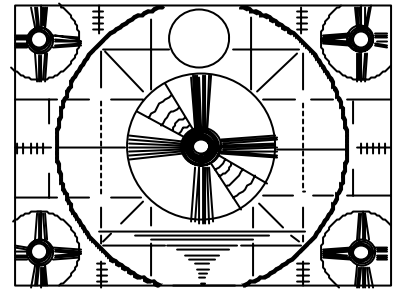


Fig.2-7 NTSC MONO-SCOPE

Note: After adjustment, check V POS 60 (PAGE 2-2) and V SIZE 60 (PAGE 2-3). Adjust irregularity if found.

[TV / Measuring device setting] V LINEA 60 simple adjustment

Adjustment menu number	MENU2-4
Input signal	NTSC cross hatch
SPEC	Square
MODE	VIDEO

1. Input CONVERGENCE with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust each box to draw a square. (Fig. 2-8)

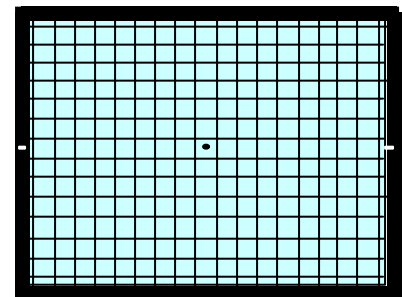


Fig.2-8 NTSC CROSS HATCH

Note: After adjustment, check V POS 60 (PAGE 2-2) and V SIZE 60 (PAGE 2-3). Adjust irregularity if found.

2-5. **OSD H 60** Adjustment of NTSC OSD horizontal position

[TV / Measuring device setting]

Adjustment menu number	MENU2-5
Input signal	NTSC cross hatch
SPEC	A=B
MODE	VIDEO

1. Input cross hatch signal with a pattern generator.
2. Adjust and equalize the distances indicated with A (the left end to ■ mark) and B (the right end to ■ mark). (Fig. 2-9)

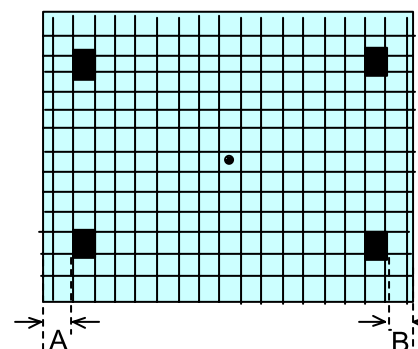


Fig.2-9 NTSC CROSS HATCH

2-6. **OSD V 60** Adjustment of NTSC OSD vertical position

[TV / Measuring device setting]

Adjustment menu number	MENU2-6
Input signal	NTSC cross hatch
SPEC	A=B
MODE	VIDEO

1. Input cross hatch signal with a pattern generator.
2. Adjust and equalize the distances indicated with A (the upper end to ■ mark) and B (the lower end to ■ mark). (Fig. 2-10)

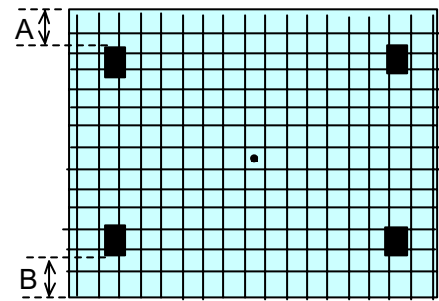


Fig.2-10 NTSC CROSS HATCH

5-3. Tuning adjustment

3-1. **RFAGC** Adjustment of RF AGC

[TV / Measuring device setting]

Adjustment menu number	MENU4-2
Input signal	PAL color bar (FULLFIELD, WHITE 75%) Input level : 64±0.5dBuV Channel : 471.25MHz
Test point	TU101 1PIN / RFAGC
SPEC	3.4±0.5VDC
MODE	TUNER

1. Connect a digital voltmeter to the test point.
2. Input the specified input signal to RF ANT in order to receive 471.25MHz.
3. Use the VOLUME + or - key on the remote controller to adjust the voltage level at test point to indicate 3.4±0.5V DC.

5-4. Adjustment of color and brightness

4-1. **SCREEN** Adjustment of screen

[TV / Measuring device setting]

Adjustment menu number	MENU3-2
Input signal	PAL color bar (FULLFIELD, WHITE 75%)
Adjustment point	T601 (FBT lower SFR)
SPEC	WBC : 04H HBC : 02H
MODE	VIDEO

1. Start the adjustment mode screen, using the jig remote controller.
2. Set the BRIGHT value on PAGE 3-2 to 32H.
3. Press SLEEP key on the jig remote controller once to start the AGING mode.
4. Press the number key, "10" on the jig remote controller once to display the SCREEN adjustment screen. (Fig. 4-1)
5. Adjust FBT lower SFR so that each data value becomes within the range specified in SPEC.
6. Set the BRIGHT value on PAGE 3-2 to 20H.

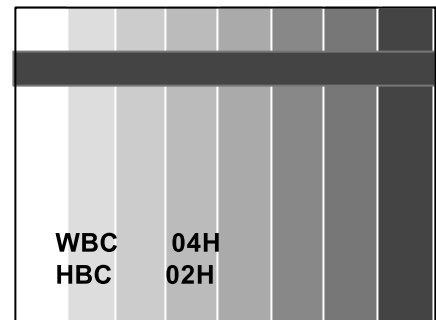


Fig.4-1

Note: After adjustment, apply the BRIGHT adjustment of adjustment menu 3-2.

4-2. **BRIGHT** Adjustment of brightness

[TV / Measuring device setting]

Adjustment menu number	MENU3-2
Input signal	PAL stair step
MODE	VIDEO

1. Input stair step signal with a pattern generator.
2. Use the VOLUME + or - key on the remote controller to adjust and brighten the second scale from the right slightly. (Fig. 4-2)

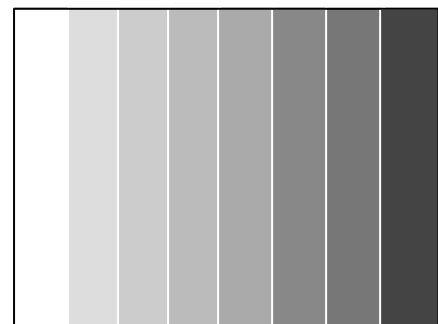


Fig.4-2

4-3. **FOCUS** Adjustment of focus

[TV / Measuring device setting]

Input signal	Dot pattern
Adjustment point	T601 (FBT upper SFR)
MODE	VIDEO

1. Input dot pattern with a pattern generator.
2. Adjust FBT upper SFR so that the dots on dot pattern are most focused.

4-4. **WHITE BALANCE** Adjustment of white balance

This adjustment uses CA-100 (CRT COLOR ANALYZER).

[TV / Measuring device setting]

Adjustment menu number	MENU5-1 / R CUT OFF MENU5-2 / G CUT OFF MENU5-3 / R GAIN MENU5-4 / G GAIN MENU5-5 / B GAIN
Input signal	PAL white luster (WHITE 100%)
SPEC	X=0.274, Y=0.286 Color temperature = 11000°±1%
MODE	VIDEO

\* Apply aging for at least 20 minutes before adjustment.

1. Apply the CA-100 setting. (Fig. 4-3)
2. Adjust each CUT OFF and GAIN so that the X and Y values become within the range specified in SPEC.
3. After adjustment, check that the color temperature is ranged within 11000°±1%.

CA-100 SETTING		
	SYNC	PAL
CH		00
CAL :	X	0.274
	Y	0.286
RANGE :	X	1.0%
	Y	1.0%

Fig.4-3

[TV / Measuring device setting]

Adjustment menu number	MENU5-1 / R CUT OFF MENU5-2 / G CUT OFF MENU5-3 / R GAIN MENU5-4 / G GAIN MENU5-5 / B GAIN
Input signal	White luster (WHITE 100%)
SPEC	WHITE
MODE	VIDEO

\* Apply aging for at least 20 minutes before adjustment.

\* Repeat the whole steps (1 to 6) several times to complete this adjustment.

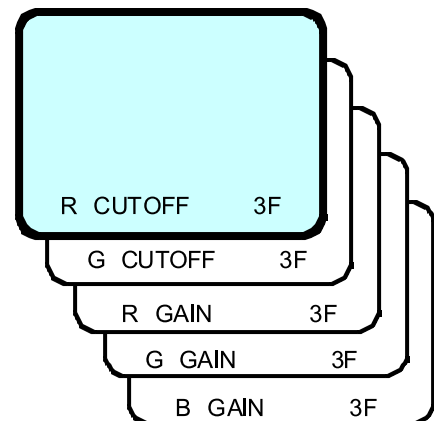


Fig.4-4

CUT OFF adjustment (LOW LIGHT):

1. Input white luster signal with a pattern generator.
2. Set the cutoff value of the most visibly strong color on the screen to "20". Use the VOLUME + or - key on the jig remote controller, and adjust other two cut off values to obtain white picture.

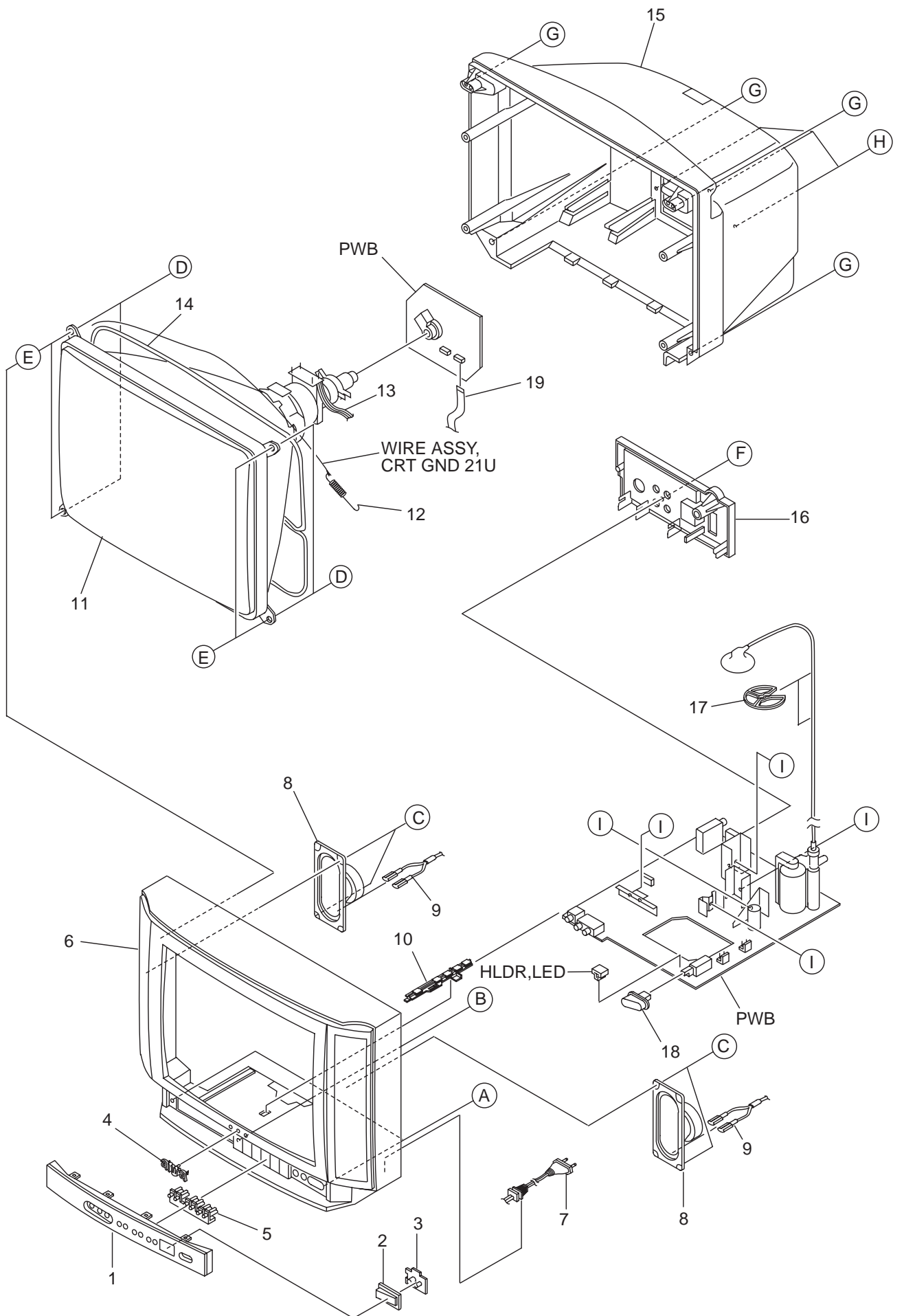
GAIN adjustment (HIGH LIGHT):

3. Use the VOLUME + or - key on the jig remote controller, and raise the level of R GAIN so that red shade is obtained.
4. Then, lower the level till red shade disappears.
5. Use the VOLUME + or - key on the jig remote controller, and raise the level of G GAIN so that green shade is obtained.
6. Then, lower the level till green shade disappears.
7. Use the VOLUME + or - key on the jig remote controller, and raise the level of B GAIN so that blue shade is obtained.
8. Then, lower the level till blue shade disappears.
9. Repeat the steps 1 to 8 till white shade becomes most visible. (Fig. 4-4)

Note: After adjustment, apply the BRIGHT adjustment of adjustment menu 3-2.



MECHANICAL EXPLODED VIEW 1 / 1



# MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-JBF-004-010		PANEL,MAIN C2121 KE
2	8Z-JBR-005-010		LENS,RC
3	8Z-JBR-006-010		LENS,LED
4	87-B00-034-010		BADGE,AIWA 52.5 SIL GRAY
5	8Z-JBR-004-110		KEY,MAIN
6	8B-JBF-002-010		CABI,FR DC MS328 C<KERJ2C,KEJ2C>
6	8B-JBF-001-010		CABI,FR DC MS328 M<KERJ74M>
△	7	8Z-JB4-695-010	AC CORD SET,EH BLK<KERJ2C,KEJ2C>
△	7	8Z-JB6-695-010	AC CORD SET,KE BLK<KERJ74M>
8	8B-JBF-621-010		SPKR,6*12 8OHM 10W (NOM.5W)<KERJ2C,KEJ2C>
8	87-A91-411-010		SPKR,6*12 8OHM 8W<KERJ74M>
9	8Z-JBX-602-010		CONN ASSY,4P SP 205-0.5
10	8Z-JBR-201-010		HLDR,PCB 1
△	11	8Z-JB9-611-010	CRT,A51QAE320X45CQMA<KERJ2C>
△	11	8B-JBC-620-010	CRT,A51AEZ90X02N<KERJ74M>
△	11	8B-JAN-650-010	CRT,A51QAE320X45CMMMA(0.35)<KEJ2C>
12	83-JT1-217-010		SPR-E,EARTH
13	8Z-JBR-660-010		CONN ASSY,5P V W 420JPN<KERJ74M>
△	14	87-JBN-630-010	DGC,21PAL 7JB-22
15	8Z-JBX-005-010		CABI,REAR MI C<KERJ2C,KEJ2C>
15	8Z-JBX-002-010		CABI,REAR MI<KERJ74M>
16	8B-JBF-003-010		PANEL,REAR 4HL
17	87-A90-332-010		HLDR,SF-2001 HV CABLE
18	8B-JAB-007-010		BTN,POWER 2
19	8B-JBP-615-010		F-CABLE,5P 2.0MM 420MM
A	87-067-680-010		BVI T3+3-10
B	87-067-758-010		BVT2+3-12 W/O SLOT
C	87-078-070-010		BVIT3B+4-12
D	86-LBB-206-010		S-SCREW,ASSY TV5-40 W20
E	8Z-JBS-204-010		W-PVC,10-20-1
F	87-067-761-010		TAPPING SCREW, BVT2+3-10
G	87-067-766-010		BVT2+4-16
H	87-067-690-010		TAPPING SCREW, BVIT3+3-12
I	87-067-579-010		TAPPING SCREW, BVT2+3-8

## COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern

**アイワ株式会社** 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111