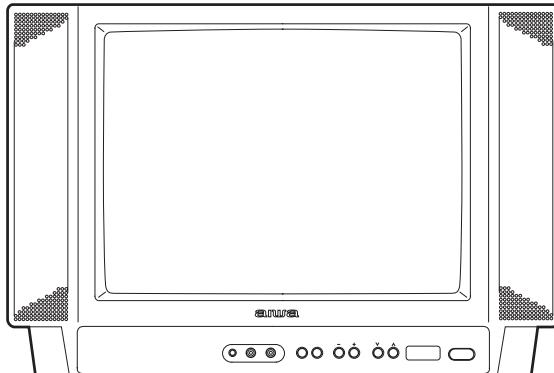




TV-C2121 KE, KER



SERVICE MANUAL

COLOR TELEVISION

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

aiwa
S/M Code No. 09-01B-448-8R1

REVISION
DATA

SPECIFICATIONS

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

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 △ 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

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

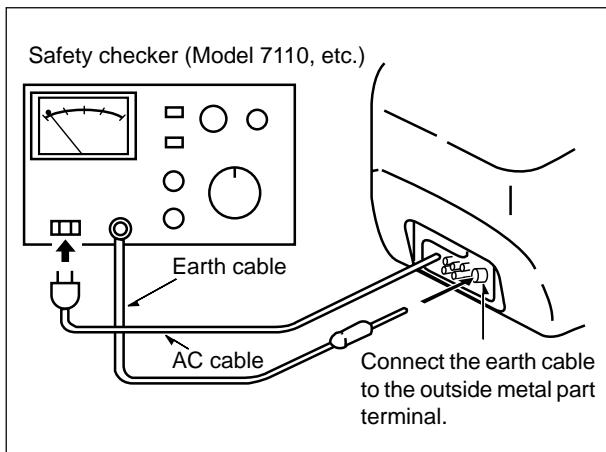


Fig-1

- 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.

⚠ 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)

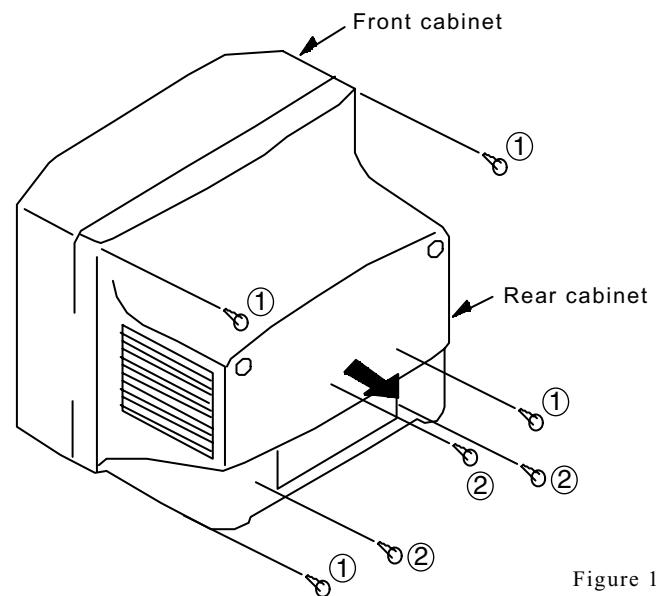


Figure 1-1

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.

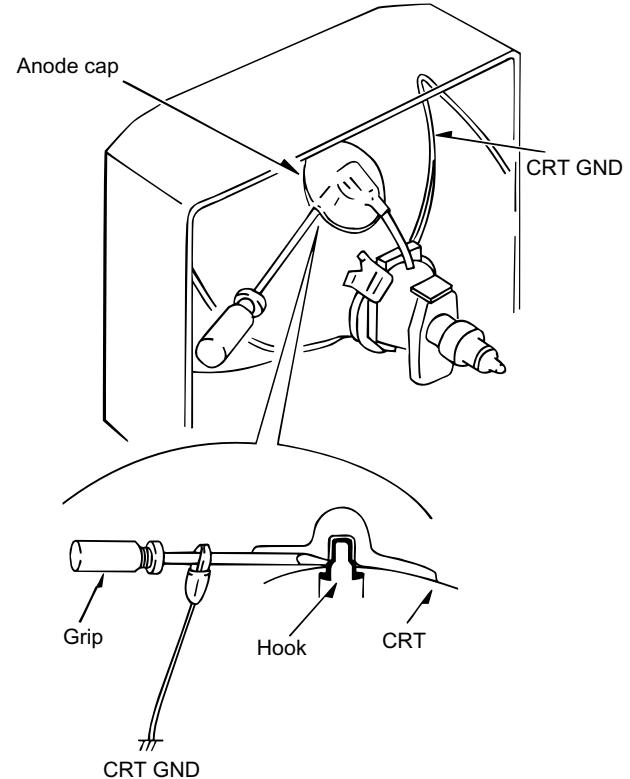


Figure 2-1

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.

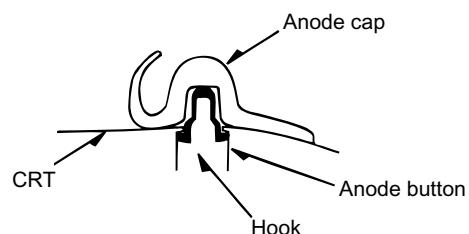


Figure 2-2

- (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)

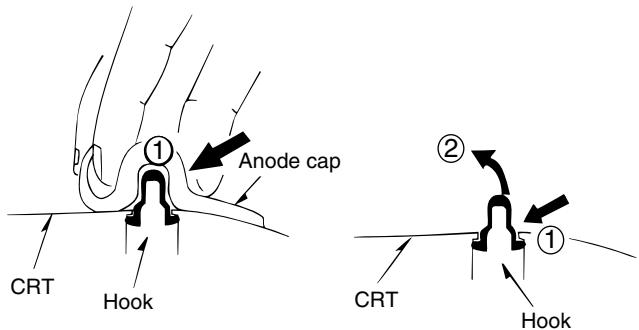


Figure 2-3

- (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.

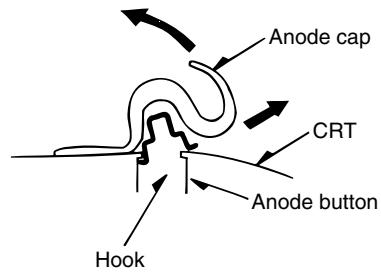


Figure 2-4

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.

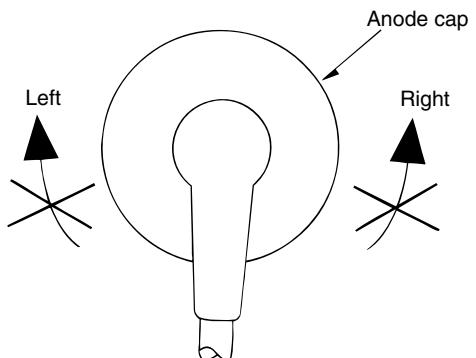


Figure 3-1

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.

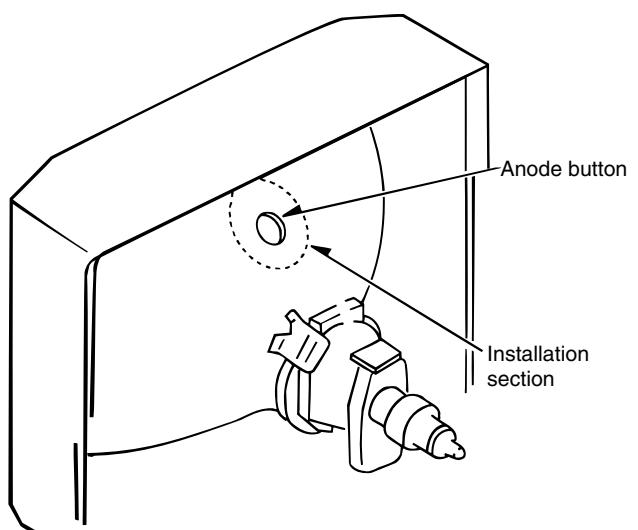


Figure 3-2

- (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.

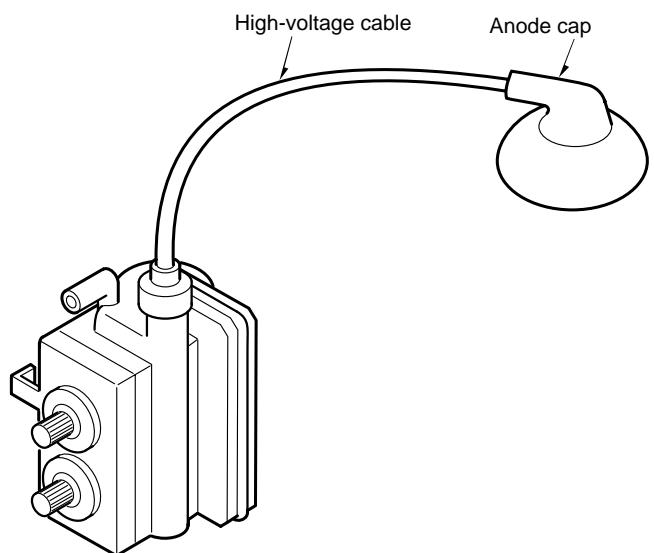


Figure 3-3

- (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.

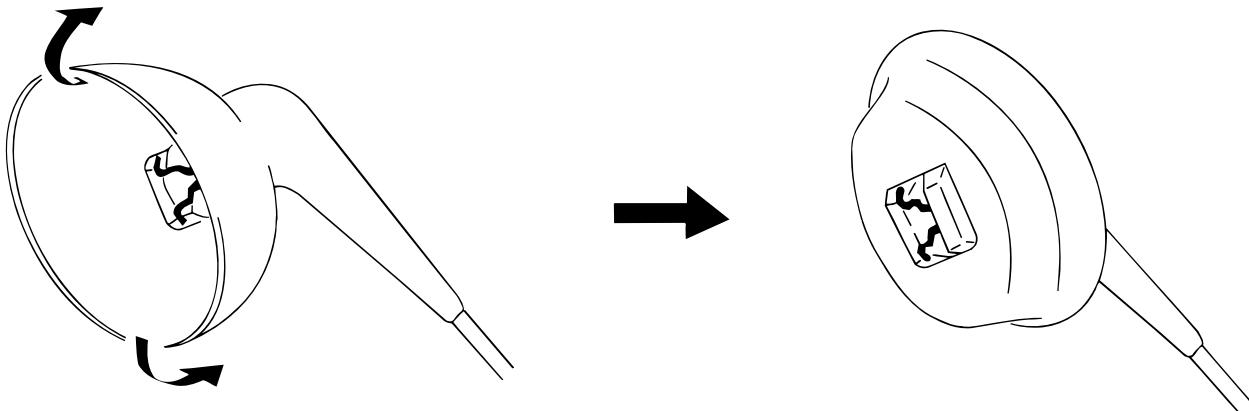


Figure 3-4

- (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)

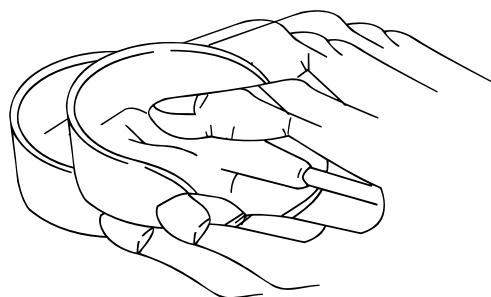


Figure 3-5

- (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.

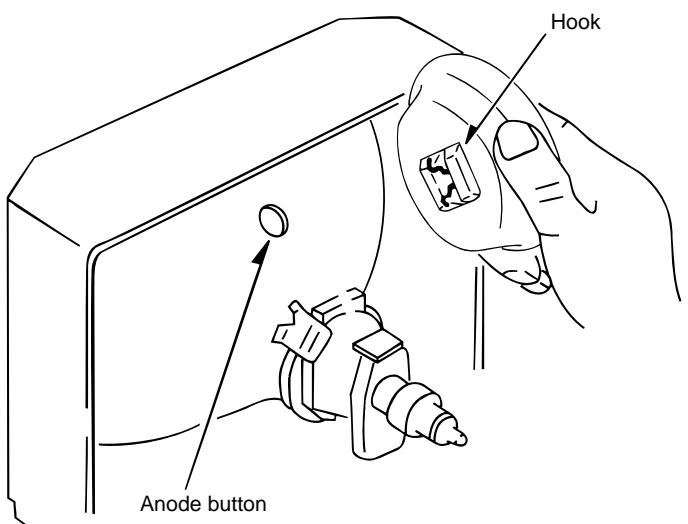
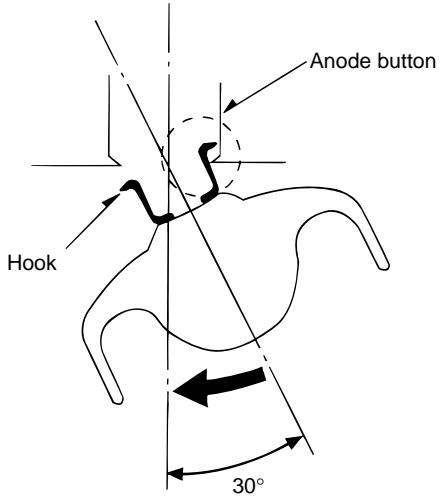


Figure 3-6

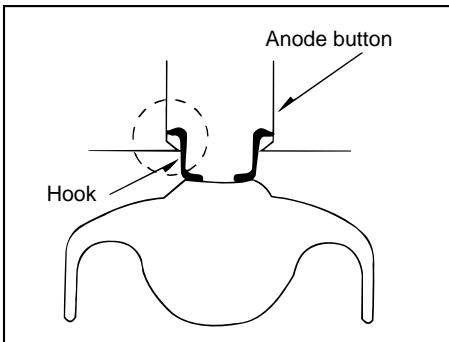


Figure 3-7

- (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)

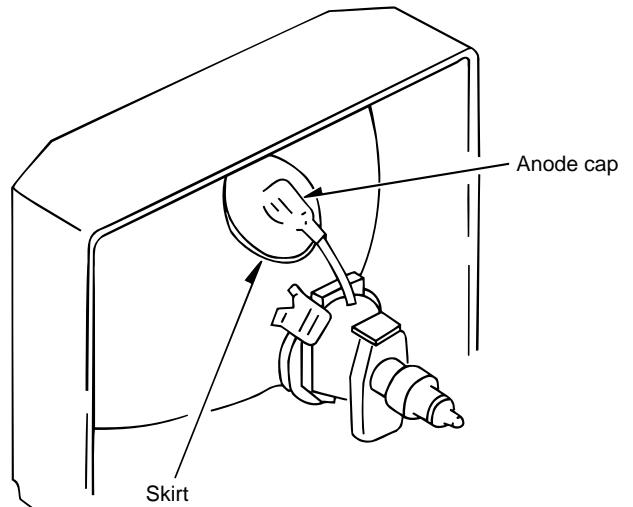


Figure 3-8

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)

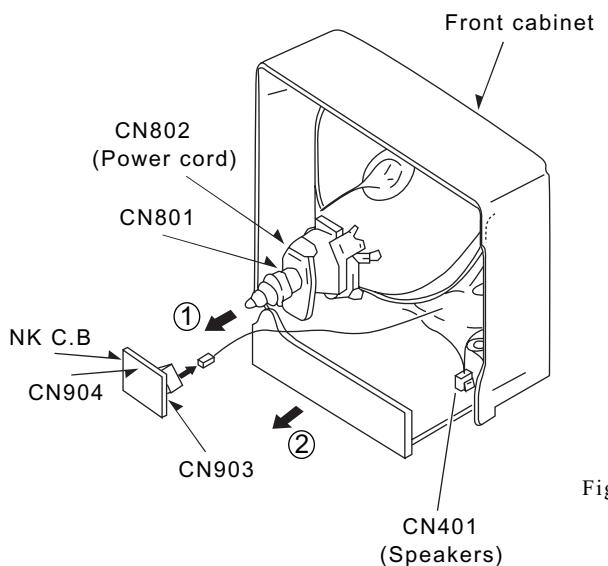


Figure 4-1

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)

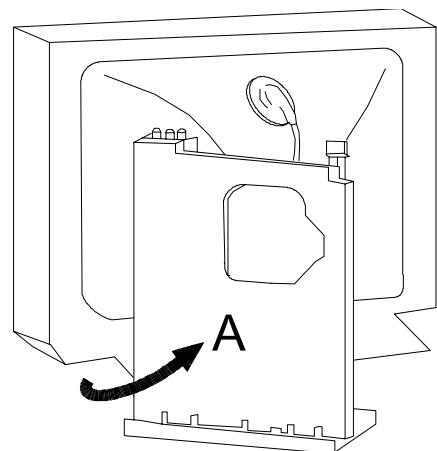


Figure 5-1

ELECTRICAL MAIN PARTS LIST

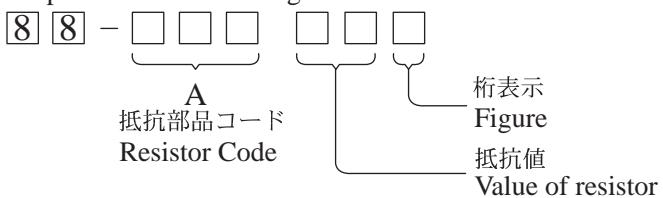
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C313	87-012-280-080	C-CAP, U 3300P-50	
	87-A22-102-040	C-IC, M24C04-WMN6T		C314	87-A12-066-080	CAP, E 47-16 SMG	
	87-A91-538-010	RCR UNIT, SBX1981-72P		C315	87-012-282-080	C-CAP, U 4700P-50	
	87-A21-979-010	IC, TDA9381PS		C316	87-012-273-080	C-CAP, U 820P-50 K B	
	87-A22-104-010	IC, AN7523		C317	87-010-831-080	C-CAP, U, 0.1-16F Z F	
	87-A21-919-010	IC, AN5539N		C318	87-012-286-080	C-CAP, U 0.01-25	
	87-017-804-010	IC, BU4052BC		C319	87-A12-066-080	CAP, E 47-16 SMG	
	87-A22-015-010	IC, TEA1507P		C320	87-A12-087-080	CAP, E 1-50 SMG	
	87-A20-649-080	IC, HA1743LVP		C324	87-A12-066-080	CAP, E 47-16 SMG	
	87-A22-087-080	IC, MM1180ZT		C326	87-012-195-080	C-CAP, U 100P-50	
	87-A21-787-010	IC, KIA7805API		C327	87-012-195-080	C-CAP, U 100P-50	
	87-A21-784-010	IC, KIA7808API		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	
TRANSISTOR				C401	87-A12-087-080	CAP, E 1-50 SMG	
	87-A30-076-080	C-TR, 2SC3052F		C402	87-A12-087-080	CAP, E 1-50 SMG	
	89-327-143-080	C-TR, 2SC27140		C404	87-016-251-080	CAP, E 220-16 M SMG	
	87-A30-427-040	C-TR, DTC114EKA		C405	87-A12-091-080	CAP, E 10-50 SMG	
	87-A30-075-080	C-TR, 2SA1235F		C501	87-012-274-080	CHIP CAP, U 1000P-50	
	89-324-820-080	TR, 2SC2482		C502	87-012-274-080	CHIP CAP, U 1000P-50	
	87-A30-633-010	TR, 2SD2627LS-YB		C503	87-A12-095-080	CAP, E 100-50 SMG	
	89-110-155-080	TR, 2SA1015 GR		C504	87-A12-372-080	CAP, M 0.047-100 J CP<KERJ2C, KEJ2C>	
	87-A30-648-010	FET, FS7KM16A		C505	87-012-286-080	C-CAP, U 0.01-25	
	89-109-521-080	TR, 2SA952K		C506	87-012-286-080	C-CAP, U 0.01-25	
	89-110-913-080	TR, 2SA1091O		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 0.047-100 J CP<KERJ74M>	
				C603	87-A12-072-080	CAP, E 100-25 SMG	
				C604	87-A10-052-080	CAP, E 2.2-250	
DIODE				C605	87-A12-491-080	CAP, CER 220P-500 K B Y5P	
	87-070-345-080	DIODE, IN4148		C606	87-A12-492-080	CAP, CER 1000P-500 K B Y5P	
	87-A40-780-080	ZENER, UZ33BSD		C607	87-A11-253-090	CAP, M/P 0.01-1.6K H B32652	
	87-017-978-080	DIODE, 1N4003		C608	87-012-406-090	CAP, CER 2200P-2K K BN DE	
	87-A40-318-080	ZENER, RM26 V1		C609	87-A11-052-010	CAP, M/P 0.47-250 J B32652<KERJ74M>	
	87-A40-800-080	DIODE, FR104-F		C605	87-A11-054-010	CAP, M/P 0.68-250 J B32652<KERJ2C, KEJ2C>	
	87-A40-328-010	DIODE, GBU4JL		C610	87-016-217-080	CAP, E 4.7-160	
	87-A40-354-090	DIODE, UF3GL-6251		C612	87-A11-354-090	CAP, E 100-160 M SMG	
	87-A40-758-080	ZENER, UZ8.2BSB		C613	87-A12-370-080	CAP, M 0.033-100 J CP	
	87-A40-911-090	DIODE, RN2Z		C615	87-010-831-080	C-CAP, U, 0.1-16	
	87-A40-752-080	ZENER, UZ6.2BSC		C616	87-A12-493-080	CAP, CER 2200P-500 K B Y5P	
	87-A40-800-080	DIODE, FR104-F<KERJ74M>		C618	87-A12-071-080	CAP, E 47-25	
MAIN C.B				C619	87-A12-072-080	CAP, E 100-25 SMG	
C1	87-A12-091-080	CAP, E 10-50 SMG		C620	87-A12-079-080	CAP, E 100-35 SMG	
C2	87-012-195-080	C-CAP, U 100P-50 J CH		C701	87-A12-091-080	CAP, E 10-50 SMG	
C3	87-A12-091-080	CAP, E 10-50 SMG		C702	87-A12-087-080	CAP, E 1-50 SMG	
C4	87-010-787-080	C-CAP, U 0.022-25 K B		C703	87-A12-087-080	CAP, E 1-50 SMG	
C5	87-016-045-080	CAP, E 1000-6.3 M SMG		C704	87-016-459-080	CAP, E 470-10 SMG	
C6	87-012-286-080	C-CAP, U 0.01-25		C705	87-A12-087-080	CAP, E 1-50 SMG	
C7	87-012-176-080	C-CAP U 15P-50J CH		C706	87-A12-087-080	CAP, E 1-50 SMG	
C8	87-012-176-080	C-CAP U 15P-50J CH		C707	87-012-282-080	C-CAP, U 4700P-50	
C11	87-A12-066-080	CAP, E 47-16 SMG		C709	87-A12-091-080	CAP, E 10-50 SMG	
C12	87-012-286-080	C-CAP, U 0.01-25		C710	87-A12-087-080	CAP, E 1-50 SMG	
C13	87-A12-066-080	CAP, E 47-16 SMG		C717	87-A12-091-080	CAP, E 10-50 SMG	
C14	87-012-195-080	C-CAP, U 100P-50 J CH		C718	87-A12-376-080	CAP, M 0.1-100 J CP	
C15	87-012-195-080	C-CAP, U 100P-50 J CH		C719	87-012-286-080	C-CAP, U 0.01-25	
C101	87-012-286-080	C-CAP, U 0.01-25		C730	87-A12-069-080	CAP, E 22-25 SMG<KERJ2C, KEJ2C>	
C102	87-A12-088-080	CAP, E 2.2-50 SMG		△ C801	87-A12-892-090	CAP, AC M/P 0.22U 275 M (B81130)	
C103	87-012-286-080	C-CAP, U 0.01-25		△ C802	87-A12-892-090	CAP, AC M/P 0.22U 275 M (B81130)	
C104	87-A12-066-080	CAP, E 47-16 SMG		△ C804	87-016-518-090	CAP, E 220-400 M SMH	
C105	87-A11-132-080	CAP, TC U 0.01-50 K B		C807	87-A10-845-080	CAP, CER 2200P-1K K R	
C106	87-012-286-080	C-CAP, U 0.01-25 K B		C809	87-012-370-010	CAP, CER 3300P-250NS	
C302	87-012-286-080	C-CAP, U 0.01-25		C811	87-010-759-080	C-CAP, U, 0.1-25 Z F	
C303	87-A12-066-080	CAP, E 47-16 SMG		C812	87-A12-070-080	CAP, E 33-25 SMG	
C305	87-012-278-080	C-CAP, U 2200P-50 B		C813	87-010-787-080	C-CAP, U 0.022-25	
C306	87-A12-087-080	CAP, E 1-50 SMG		C830	87-A10-832-080	CAP, CER 1000P-1K K R	
C307	87-012-282-080	C-CAP, U 4700P-50		C831	87-A10-733-090	CAP, E 220-160 SK	
C308	87-010-831-080	C-CAP, U, 0.1-16 Z F		C833	87-A10-918-080	CAP, E 100-16 SMG	
C309	87-A12-087-080	CAP, E 1-50 SMG		C834	87-A12-091-080	CAP, E 10-50 SMG	
C310	87-A12-091-080	CAP, E 10-50 SMG		C838	87-A12-372-080	CAP, M 0.047-100 J CP	
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,TPSS.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		NK C.B			
FR604	87-A00-063-060	RES,FUSE 2.2-1/2W J R-TYPE					
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	HLDR,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

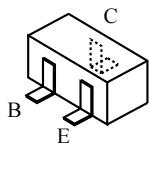
Chip Resistor Part Coding



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 Resistor Code : A
				外形／Form	L	W	
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



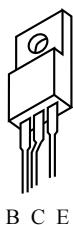
2SA1235F
2SC2714O
2SC3052F
DTC114EKA



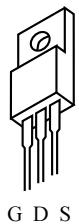
2SA952K



2SA1091O
2SA1015 GR
2SC2482



2SD2627LS-YB

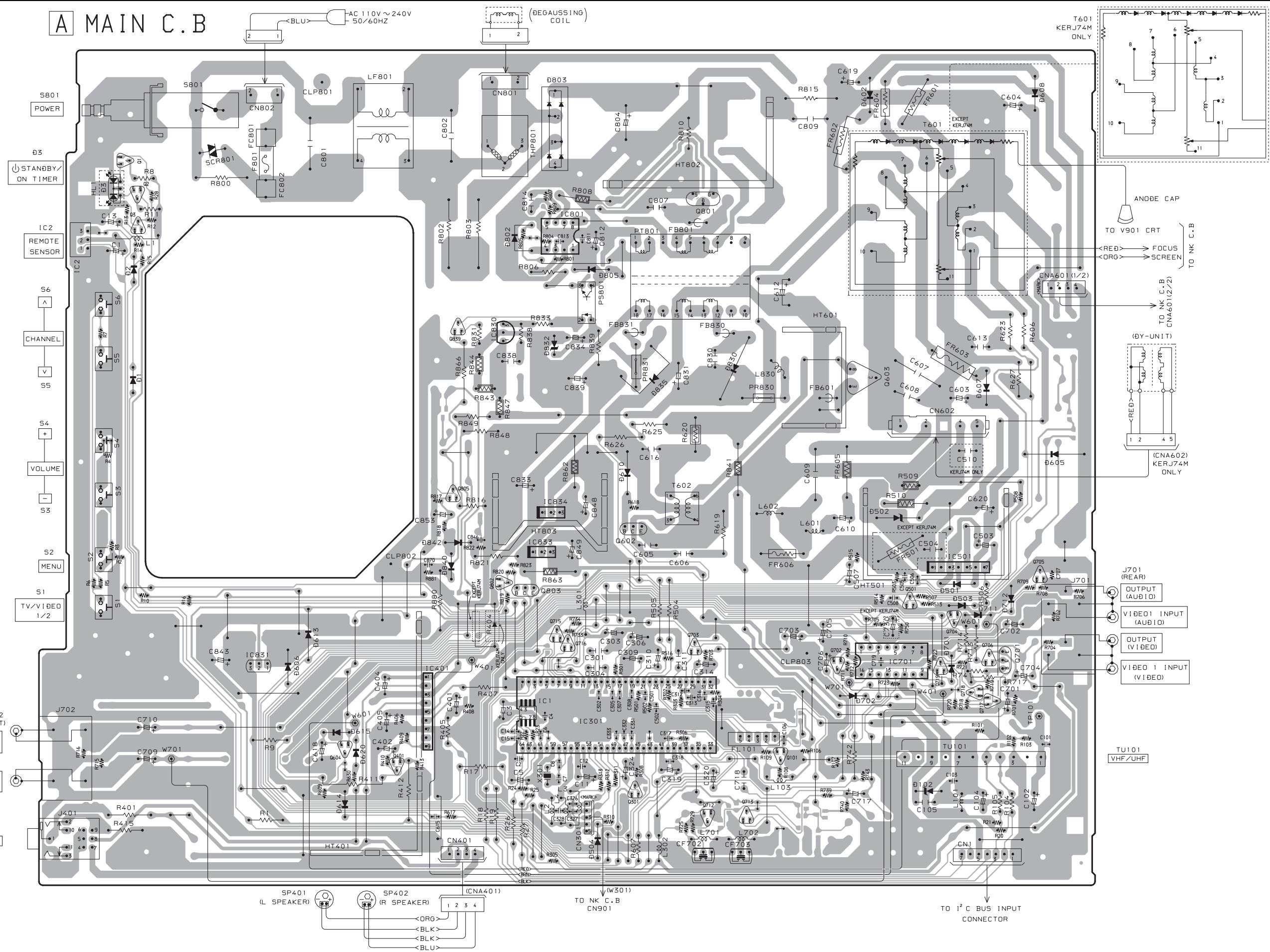


FS7KM16A

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 |

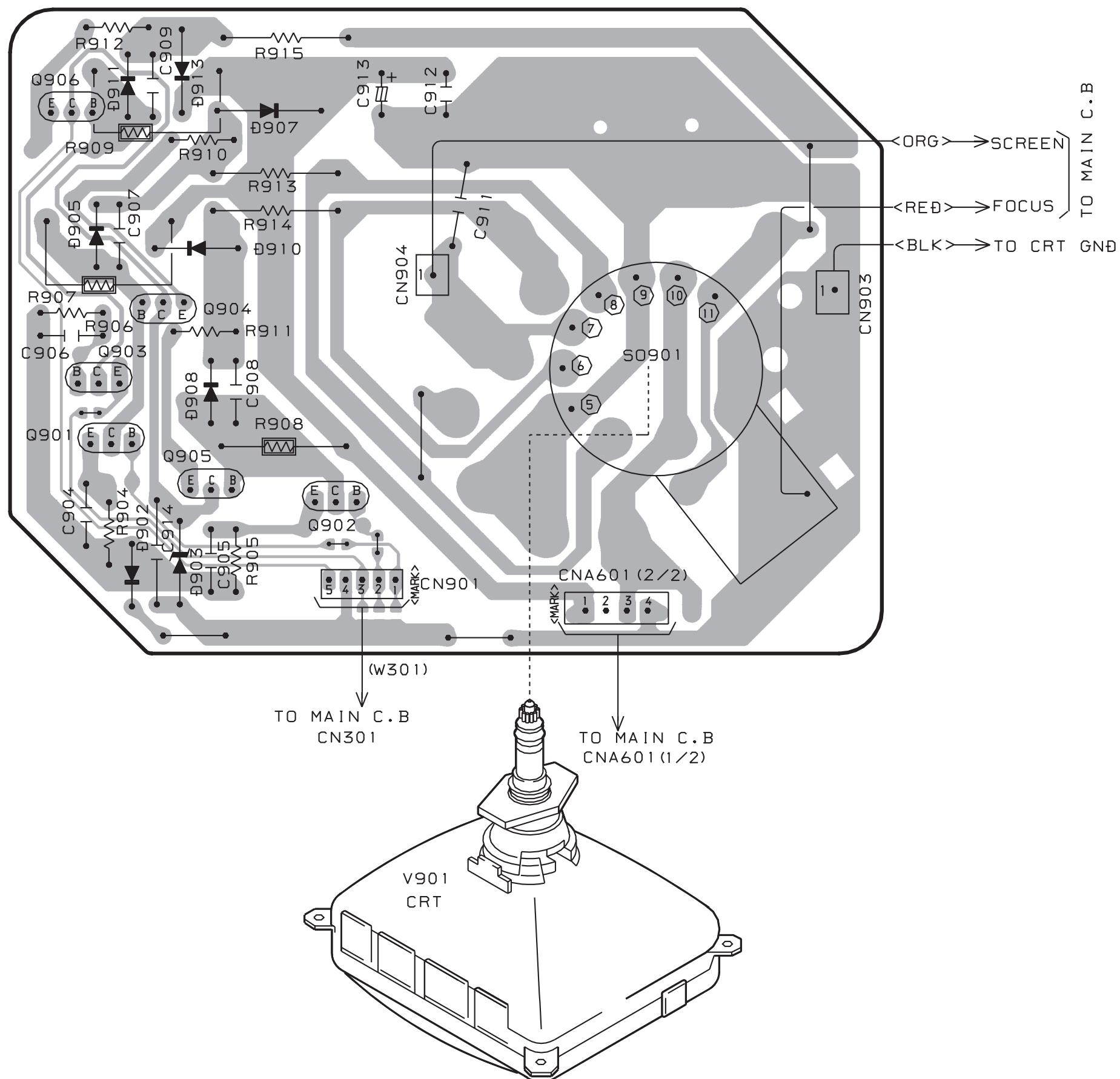
A MAIN C.B



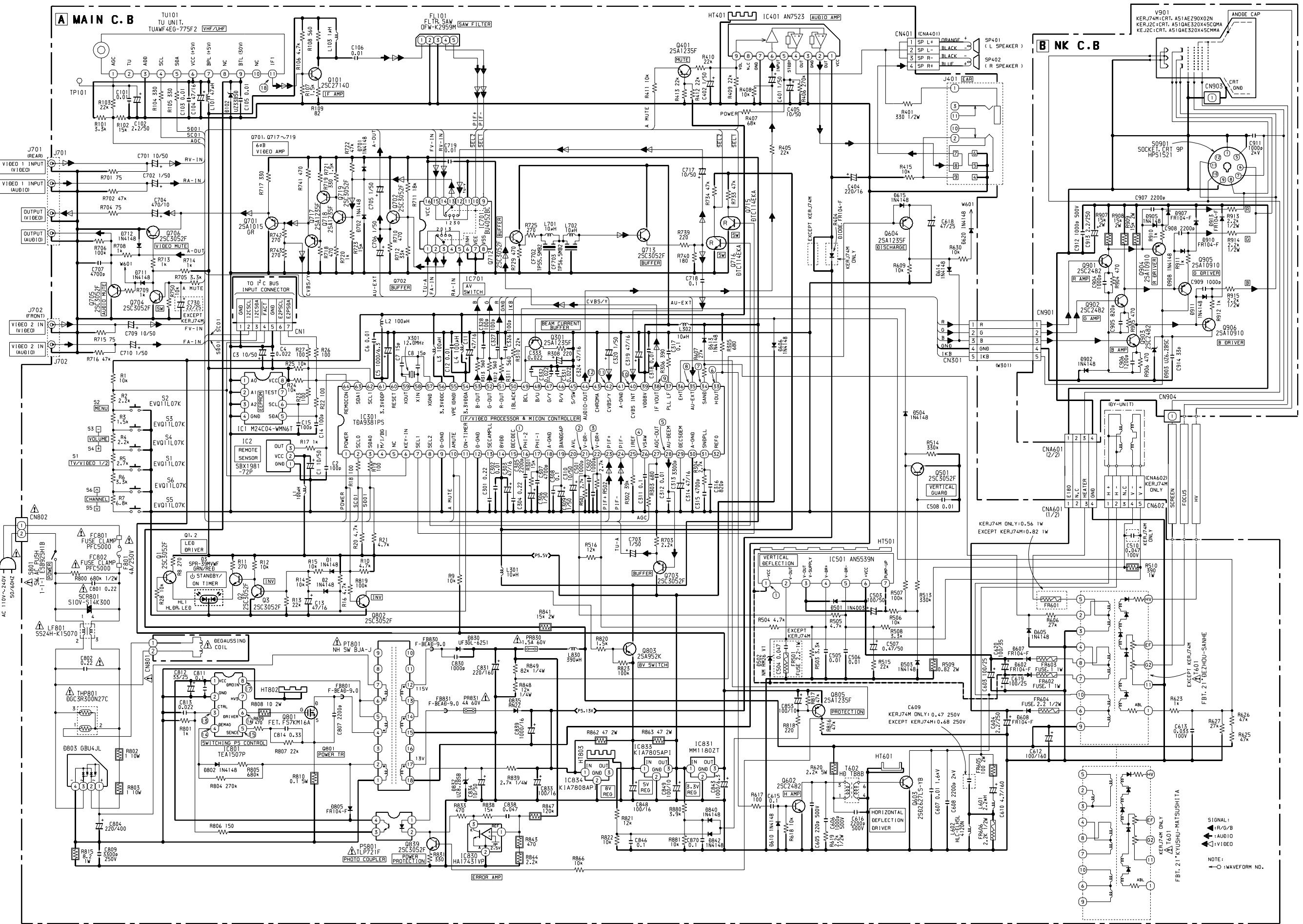
WIRING-2 (NK)

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
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

B NK C. B

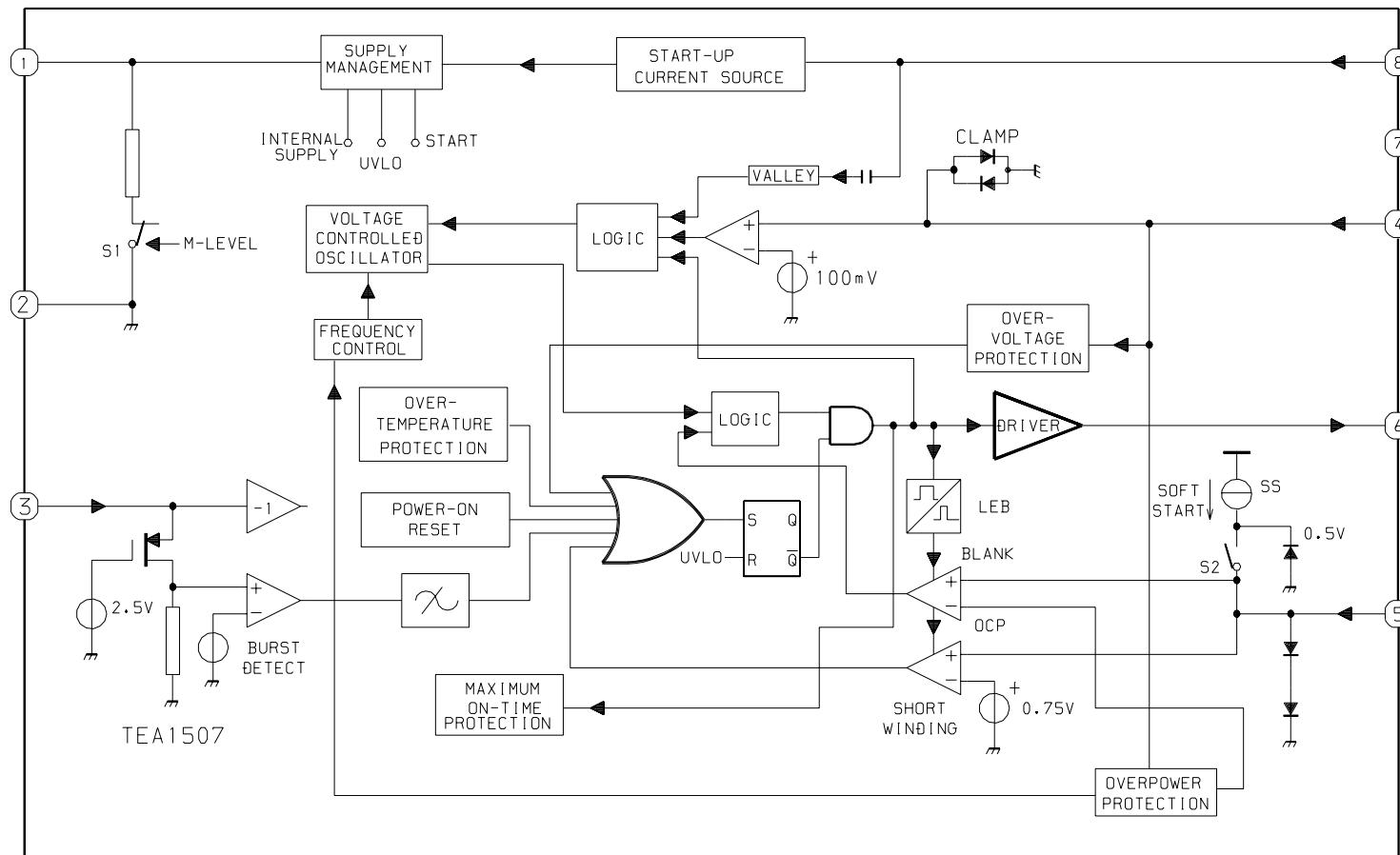


SCHEMATIC DIAGRAM (MAIN / NK)

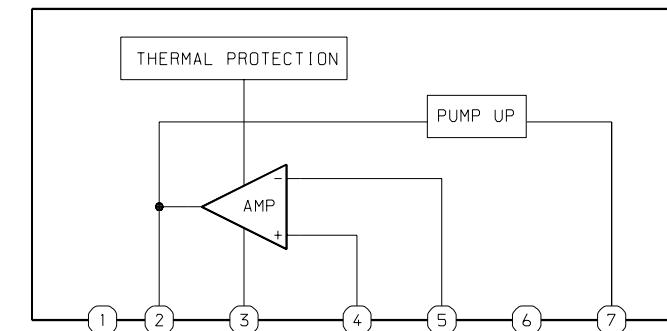


IC BLOCK DIAGRAM

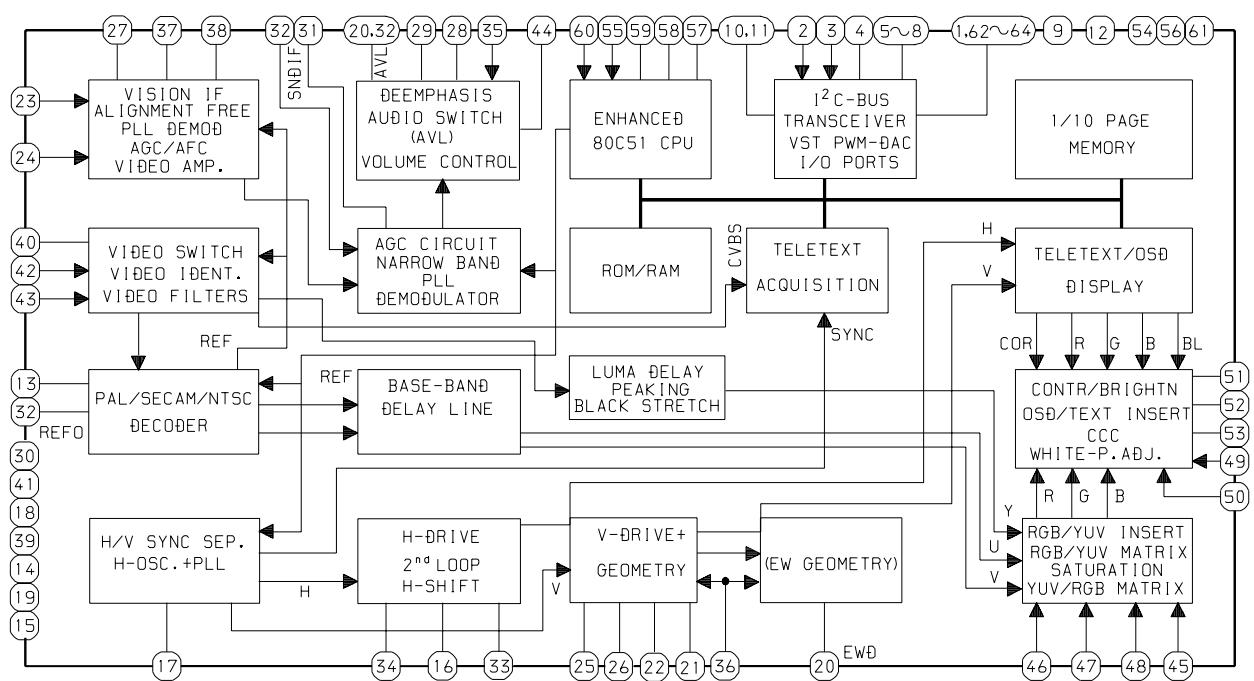
IC, TEA1507P



IC, AN5539N



IC, TDA9381PS



IC DESCRIPTION

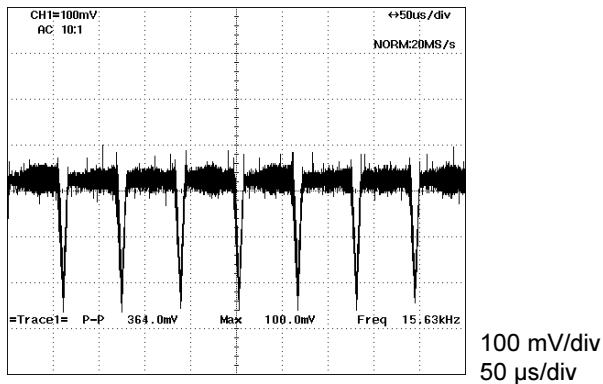
IC, TDA9381PS

Pin No.	Pin Name	I/O	Description
1	POWER	O	On/stand-by control output.
2	SCL0	O	I ² C-bus serial clock output.
3	SDA0	I/O	I ² C-bus serial data input/output.
4	<u>M/I/BG</u>	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	<u>AMUTE</u>	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).

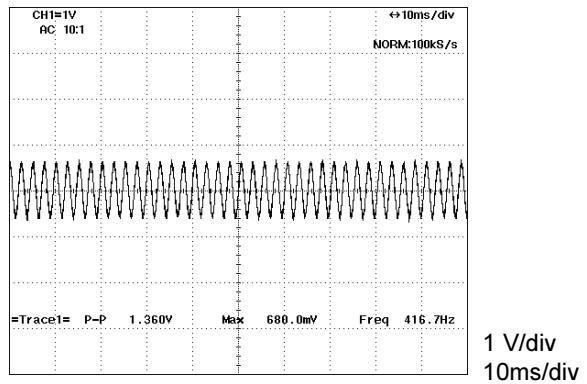
Pin No.	Pin Name	I/O	Description
43	CHROMA	I	Chroma input. (Connected to GND)
44	AUDIO-OUT	O	Audio output.
45	S/SW	I	Insertion switch input. (Connected to GND)
46	R/V	I	External input Red/V.
47	G/Y	I	External input Green/Y.
48	B/U	I	External input Blue/U.
49	BCL	I	Beam current limiter input.
50	IBLACK	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 ² C-bus serial clock output (for EEPROM).
63	SDA1	I/O	I ² C-bus serial data input/output (for EEPROM).
64	REMOCON	I	Remote controller input.

WAVEFORM

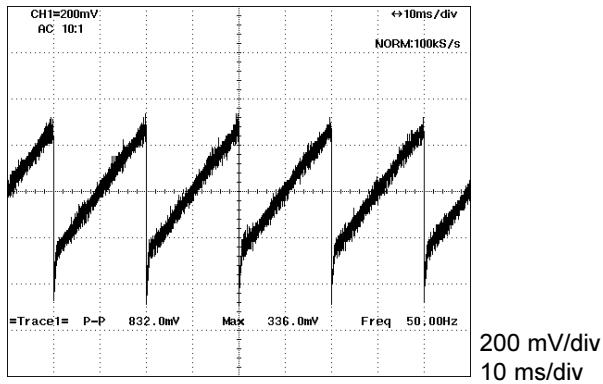
① IC301 PIN 16: PHI-2



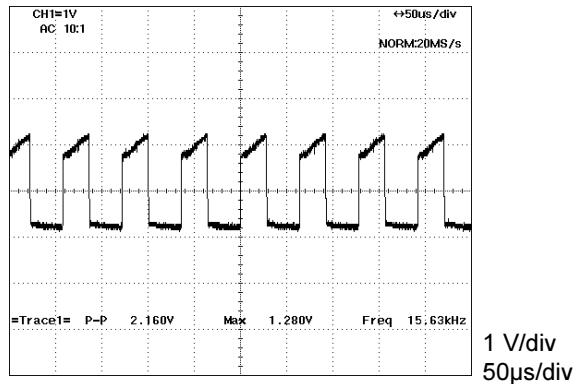
⑤ IC301 PIN 28: AU-DEEM



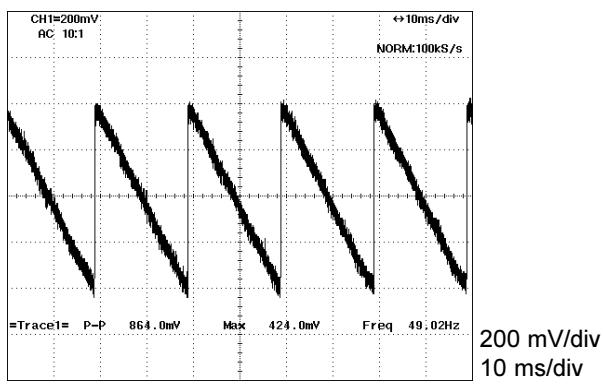
② IC301 PIN 21: V-DR-



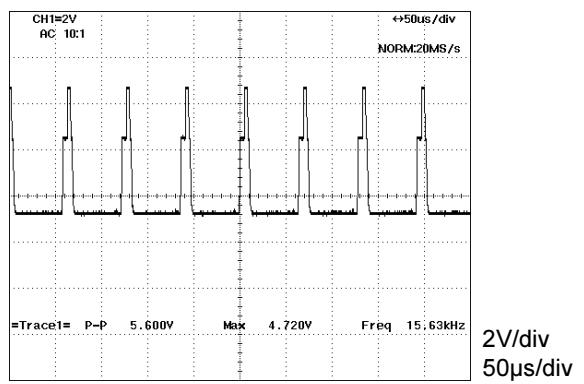
⑥ IC301 PIN 33: HOUT



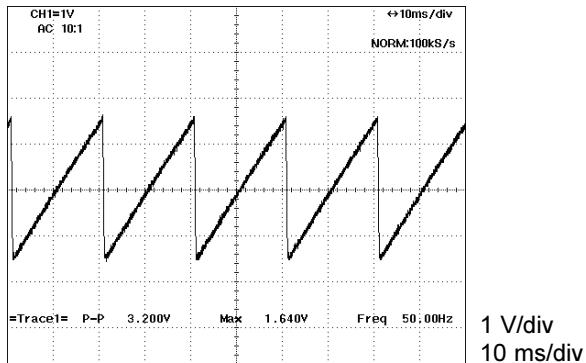
③ IC301 PIN 22: V-DR+



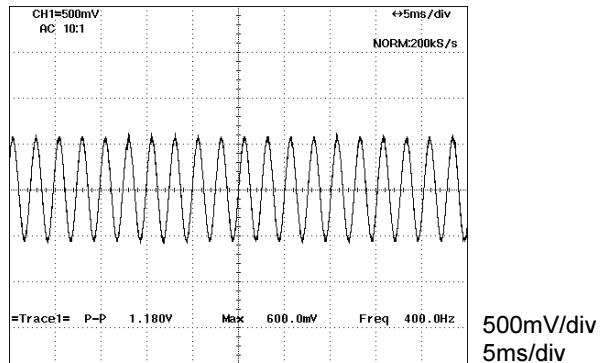
⑦ IC301 PIN 34: SAND



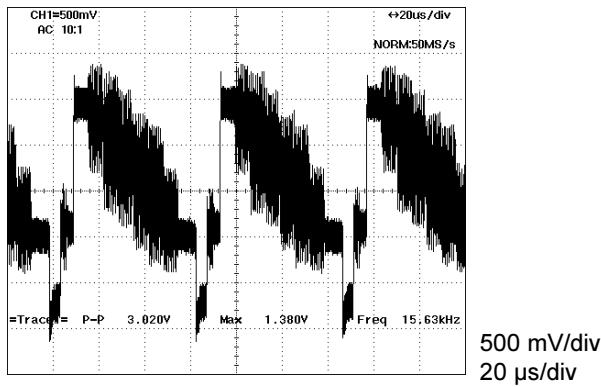
④ IC301 PIN 26: VSAW



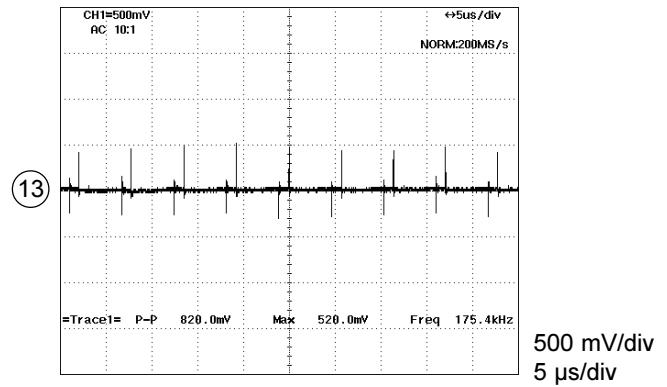
⑧ IC301 PIN 35: AU-EXT



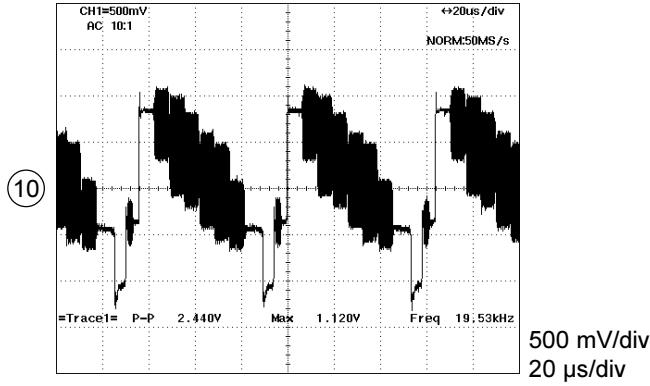
⑨ IC301 PIN 38: IF VOUT



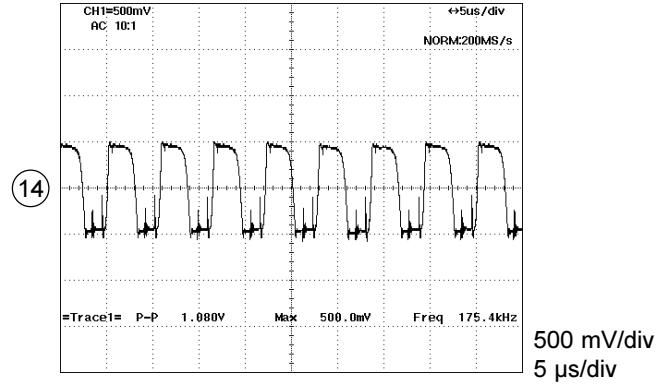
⑬ IC801 PIN 3: CTRL



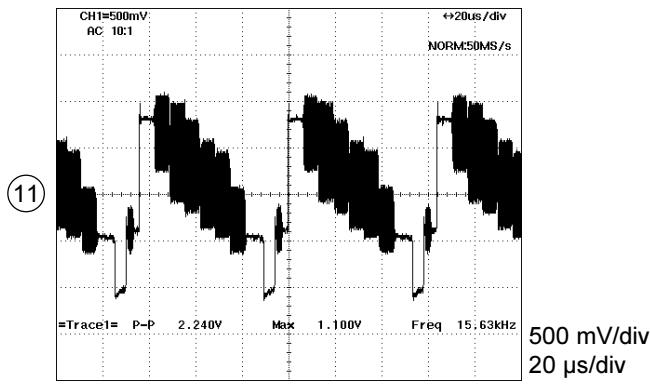
⑩ IC301 PIN 40: CVBS INT



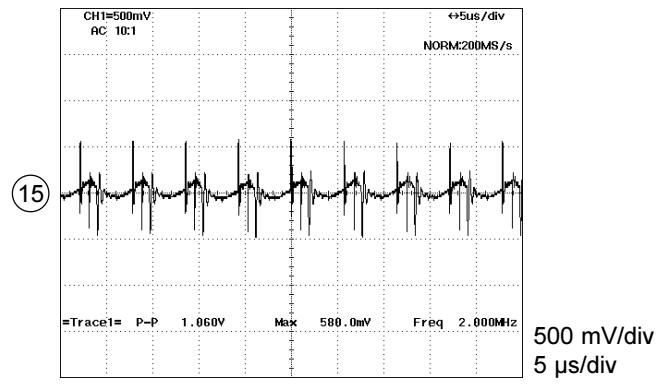
⑭ IC801 PIN 4: DEMAG



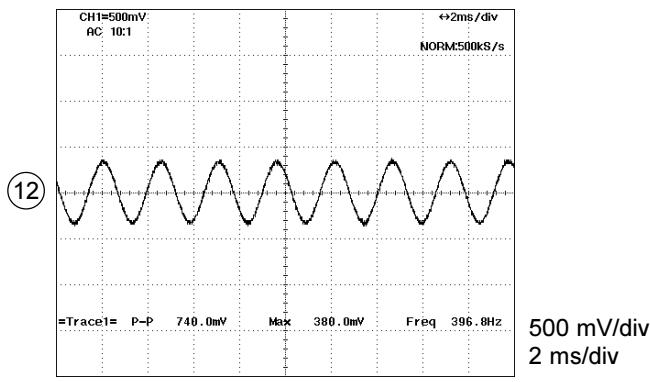
⑪ IC301 PIN 42: CVBS/Y



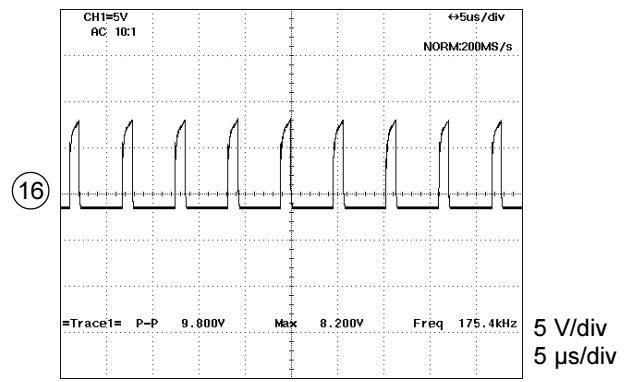
⑮ IC801 PIN 5: SENCE



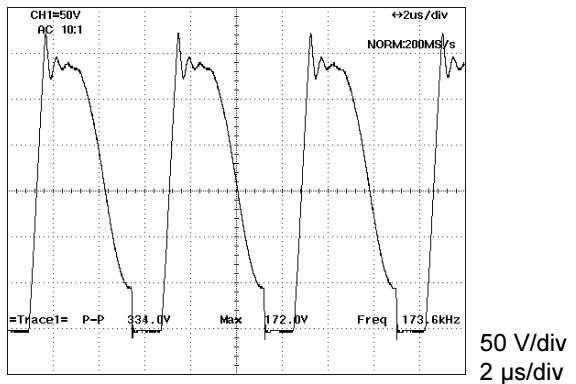
⑫ IC301 PIN 44: AUDIO-OUT



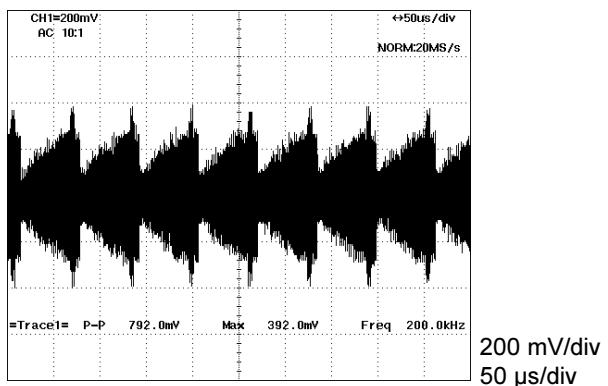
⑯ IC801 PIN 6: DRIVER



(17) IC801 PIN 8: DROIN



(18) TUT101 PIN11: IF1



VOLTAGE CHART

Test condition

AC Voltage: 230V

Signal input: 1. VIDEO 1 IN

VIDEO: PAL COLOR BAR

AUDIO: 1KHz, -8dBm

2. RF IN

$f_p = 471.25\text{MHz}$, 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

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

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

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

IC830, HA17431VP

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

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

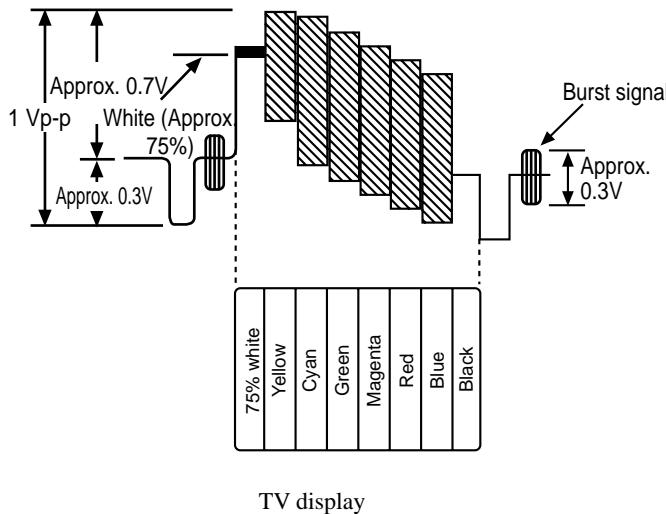
PIN NAME	STD	STANDBY
Q 902		
B	2.90	0.20
C	129.90	114
E	2.38	0
Q 903		
B	2.90	0.32
C	128.40	114
E	2.38	0
Q 904		
B	125.70	114
C	5.67	0.42
E	123.90	113.60
Q 905		
B	130	113.60
C	5.67	0.42
E	127.30	114
Q 906		
B	128.60	113.60
C	5.67	0.42
E	128.90	114

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 75Ω load. Confirm that the synchronizing signal has an amplitude of about 0.3 V, the video signal portion has an amplitude of about 0.7 V and the burst signal has an amplitude of about 0.3 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 1.0Vp-p (across 75Ω 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.

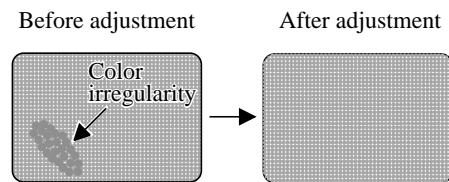
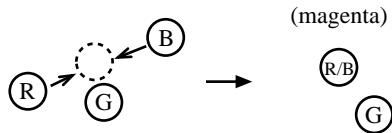


Fig. 1-1

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

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

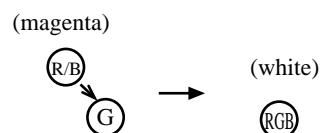


Align the R beam with the B beam

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.

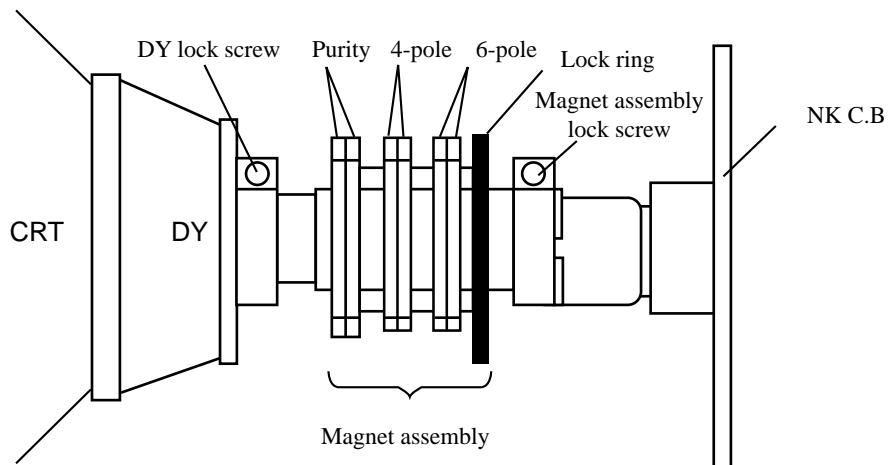


Fig 1-4

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)).

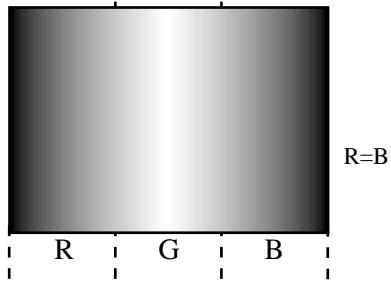


Fig 1-5 (a)

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.

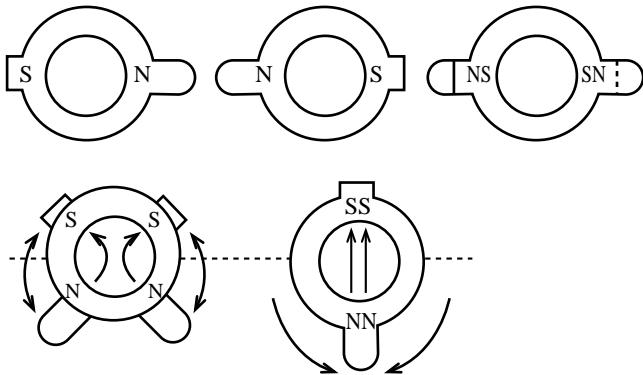


Fig 1-5 (b)

- (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

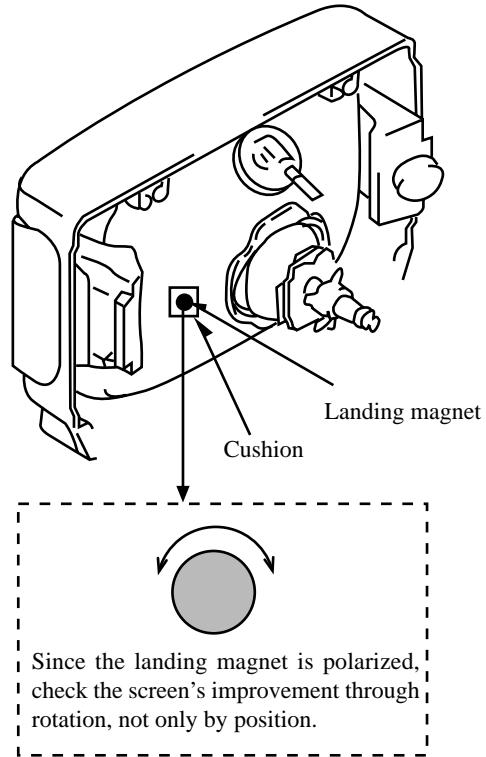


Fig 1-6

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.

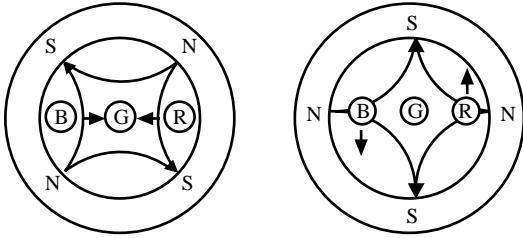


Fig 1-7

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.

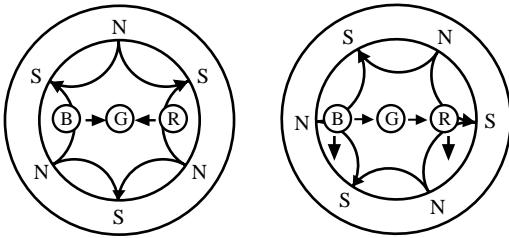


Fig 1-8

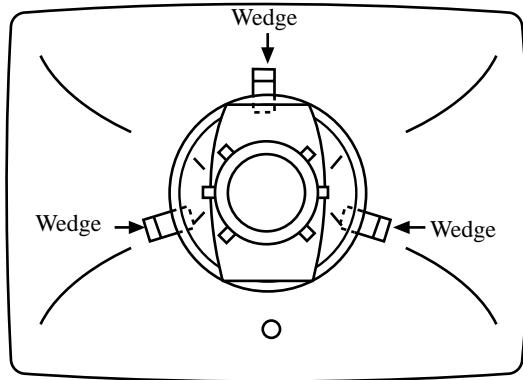
In Fig. 1-8, the two 6-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 6-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

- (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.

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

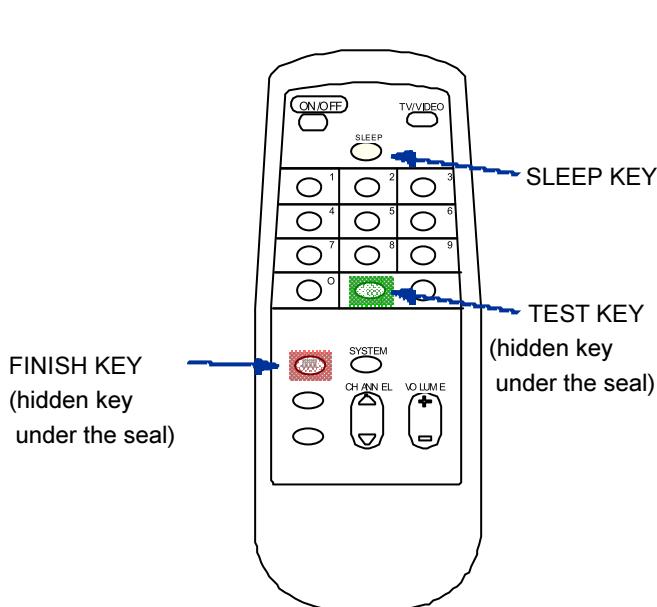
1. Modifying Jig Remote-Controller

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.

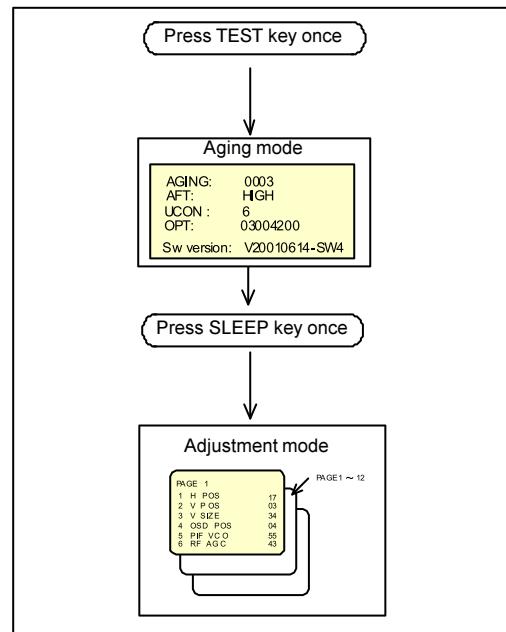


Hidden keys/FINISH

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.

AGING: 0003	←	a. CRT ON integrating time
AFT: HIGH	←	b. AFTS curve status
UCON: 6	←	u-CON version
OPT: 03004200	←	u-CON version
Sw version: V20010614-SW4	←	u-CON version

Details of Screen Display

a. CRT ON integrating time

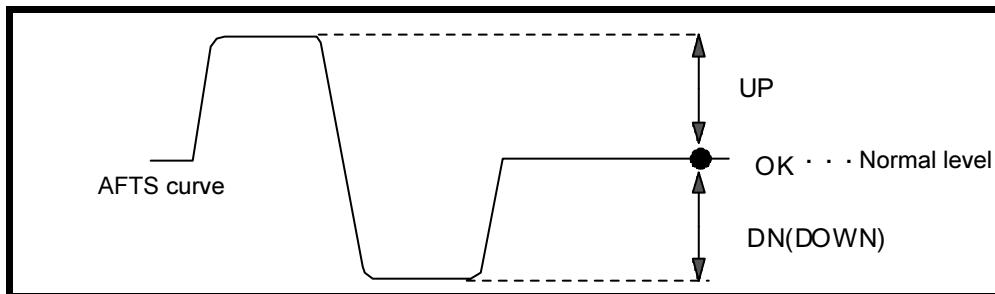
The hourly integration of CRT usage is displayed in hexadecimal digit.

Eg: $1234 = (1 \times 16 \times 16 \times 16) + (2 \times 16 \times 16) + (3 \times 16) + 4 = 4660$ hours

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

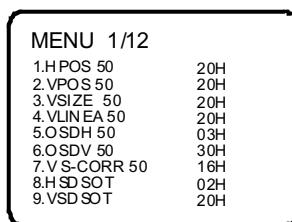
b. AFTS curve status (AFT OUT, AFT LOW, AFT IN, AFT HIGH)

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



3. Operating Adjustment Mode

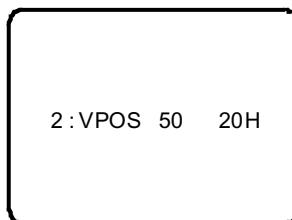
1. Press SLEEP key once at the aging mode to display MENU 1 of the adjustment mode.



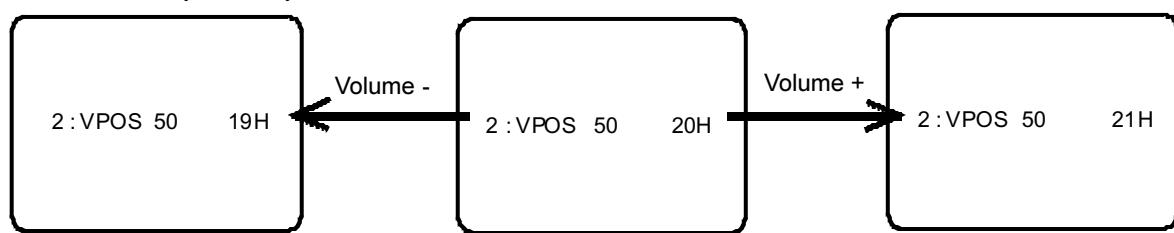
2. Press the “Channel△•▽” key to switch between the menus from MENU 1 to MENU 12.

3. Press a number key (1 to 9) assigned for an adjustment item.

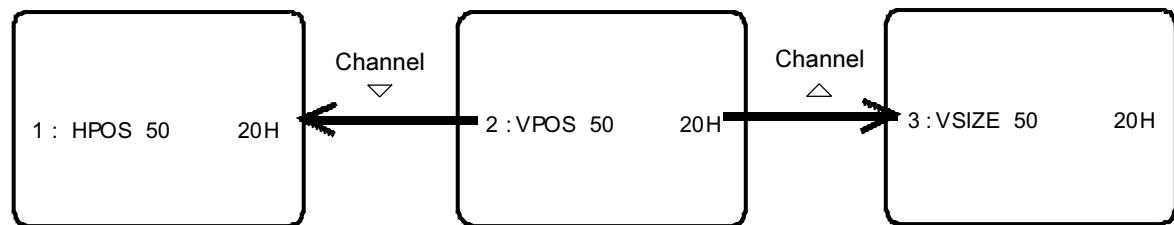
Ex.: To select “2. VPOS50”, press the number key, “2” on the remote controller at MENU 1.



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	A TRVAL	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 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 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 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 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 GA IN, 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 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

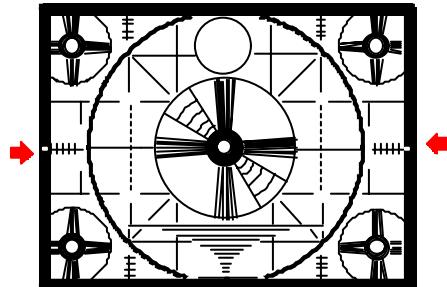


Fig.1-1 PAL MONO-SCOPE

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)

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

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

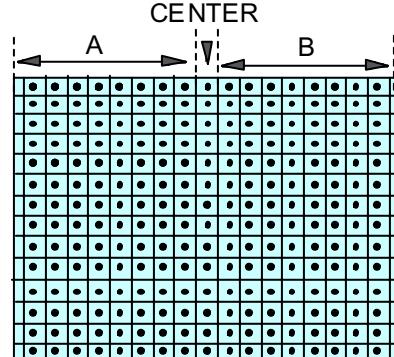


Fig.1-2 PAL CONVERGENCE

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

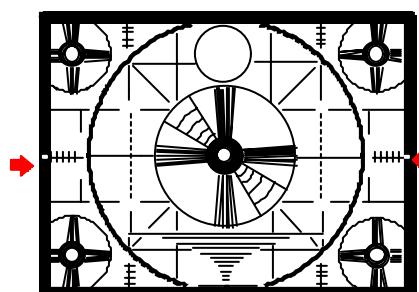


Fig.1-3 PAL MONO-SCOPE

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)

[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)

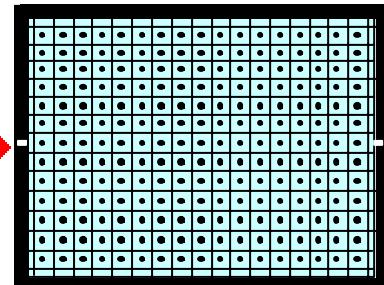


Fig.1-4 PAL CONVERGENCE

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)

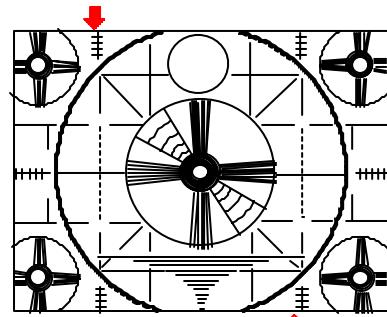


Fig.1-5 PAL MONO-SCOPE

[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)

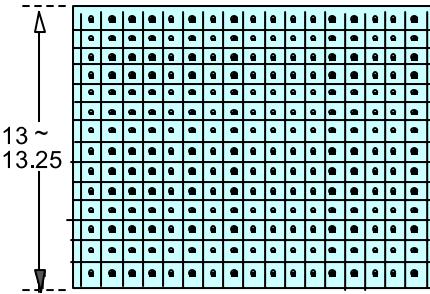


Fig.1-6 PAL CONVERGENCE

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)

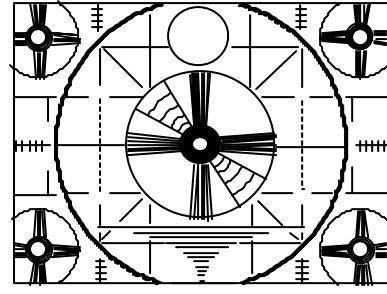


Fig.1-7 PAL MONO-SCOPE

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.

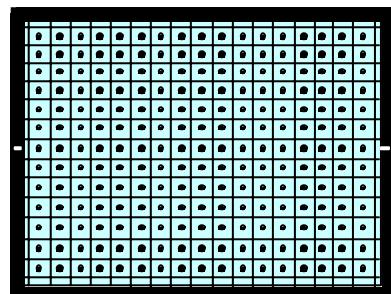


Fig.1-8 PAL CONVERGENCE

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)

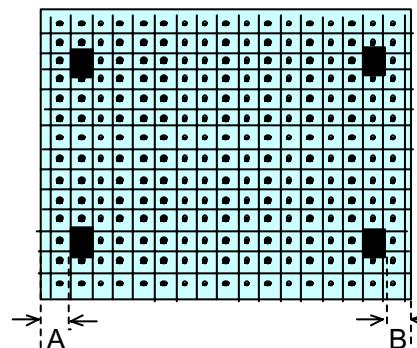


Fig.1-9 PAL CONVERGENCE

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)

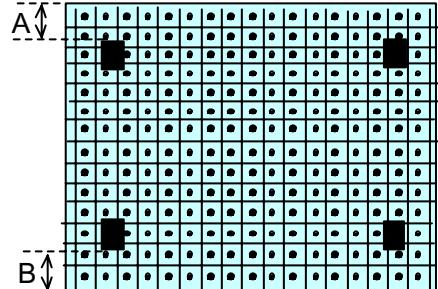


Fig.1-10 PAL CONVERGENCE

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)

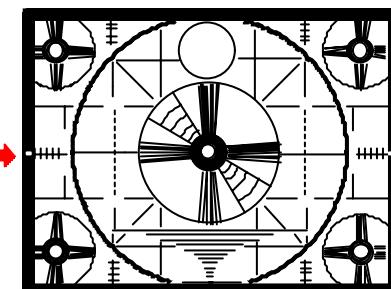


Fig.2-1 NTSC MONO-SCOPE

[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)

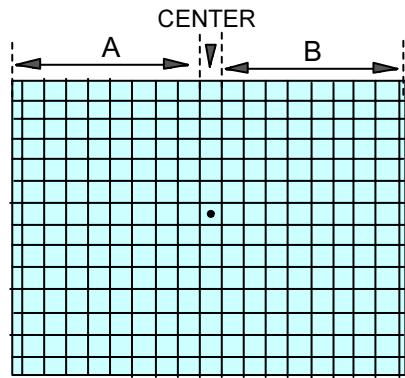


Fig.2-2 NTSC CROSS HATCH

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)

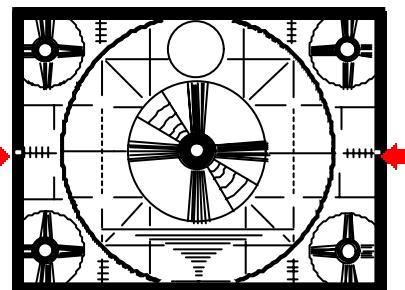


Fig.2-3 NTSC MONO-SCOPE

[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)

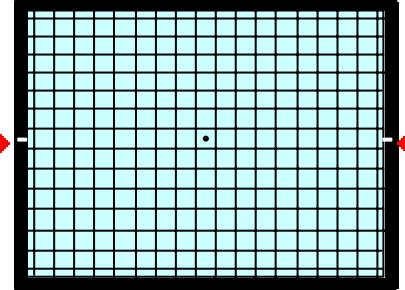


Fig.2-4 NTSC CROSS HATCH

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)

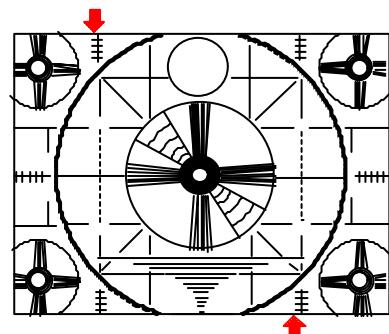


Fig.2-5 NTSC MONO-SCOPE

[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)

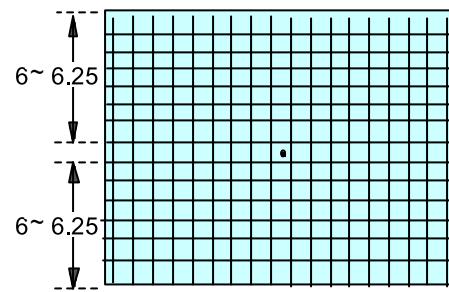


Fig.2-6 NTSC CROSS HATCH

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)

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

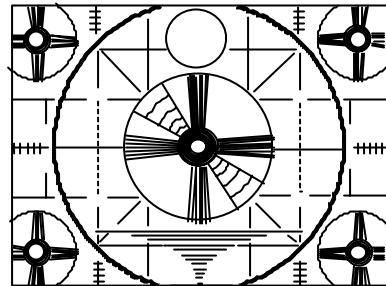


Fig.2-7 NTSC MONO-SCOPE

[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)

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

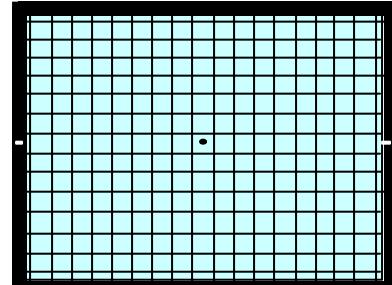


Fig.2-8 NTSC CROSS HATCH

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)

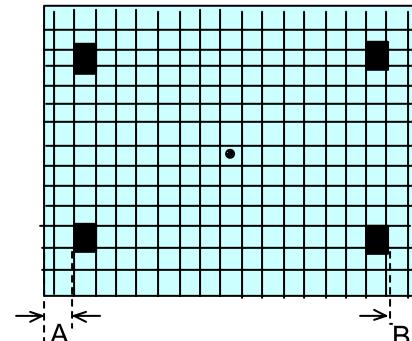


Fig.2-9 NTSC CROSS HATCH

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

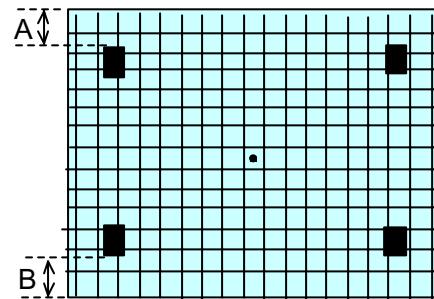


Fig.2-10 NTSC CROSS HATCH

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.

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

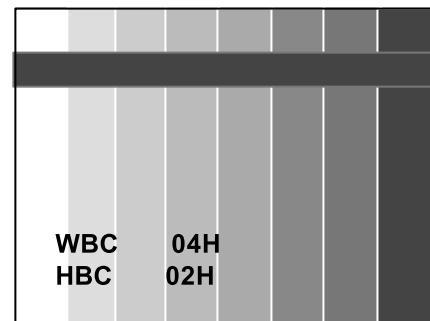


Fig.4-1

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)

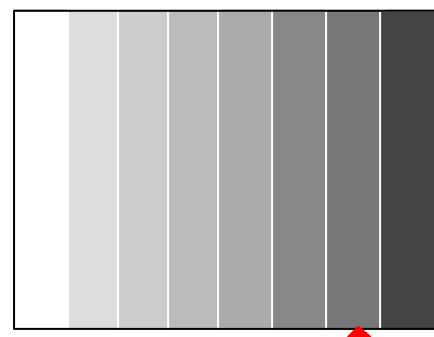


Fig.4-2

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%.

[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.

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

Fig.4-3

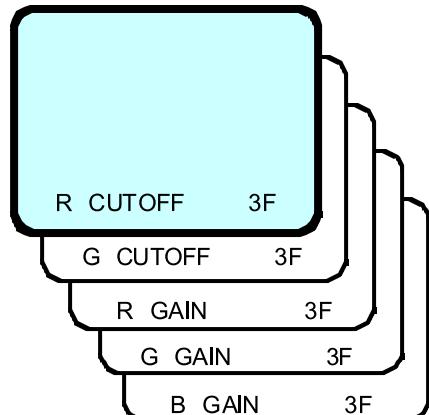


Fig.4-4

CUT OFF adjustment (LOW LIGHT):

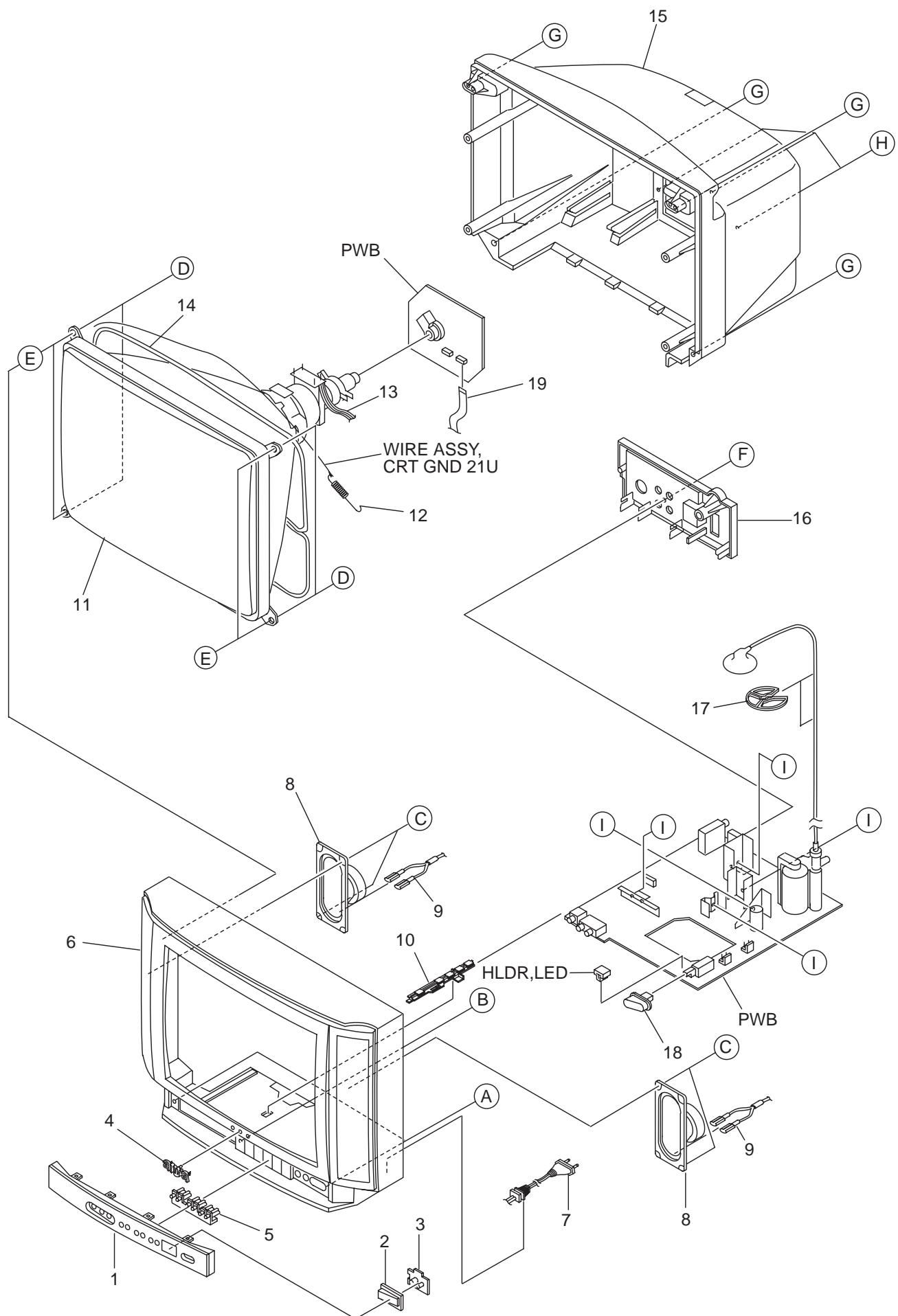
1. Input white luster signal with a pattern generator.
2. Set the cutoff value of the most visibly strong color on the screen to "20". Use the VOLUME + or - key on the jig remote controller, and adjust other two cut off values to obtain white picture.

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 80HM 10W (NOM.5W)<KERJ2C,KEJ2C>
8	87-A91-411-010		SPKR,6*12 80HM 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,A51QAE320X45CMMA(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