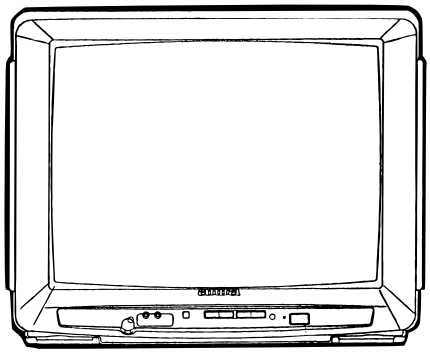
aiwa SERVICE

TV-CN202 NH1C3



SERVICE MANUAL

COLOR TELEVISION

This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-995-333-9T1).

aiwa

S/M Code No. 09-995-333-9R1

REVISION DATA

SPECIFICATIONS

Category:	Color television
TV Broadcasting System:	NTSC-M
Channel Coverage:	TV: 2 – 69 Cable (CATV): 5A, 2 – 13,A-5 – A-1, A–W, W+1 – W+84 (A-8)
Number of Preset Channels	181
Aerial Input	75 ohms, unbalanced
Picture Tube	20” (510 mm)
Screen Size	404 (W) x 303 (H) x mm (16 x 12 in.) 480 mm (diagonal) (19 in.)
Video Input/Output	1 Vp-p, 75 ohms
Audio Input	0.5 Vrms., 33 k ohms more
Audio Output	0.5 Vrms., 2.2 k ohms less
Speaker	76 mm (3 in.) round: 2
Operating Voltage	110 – 240 V AC, 50/60 Hz
Power Consumption	85 W
Earphone Jack	Mini jack
Operating Temperature	5°C – 40°C
Operatin Humidity	35% – 80%
Dimensions	520 (W) x 479.5 (D) x 425 (H) mm (20 $^{1}/_{2}$ x 19 x 16 $^{3}/_{4}$ in.)
Weight	18 kg (39.6 lbs.)

•Design and specifications are subject to change without notice.

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-JBG-902-010		IB,NH (E) -CN202/142 -M
2	87-JBG-953-010		RC UNIT,RC-7VT02
3	87-B30-136-010		ANT ASSY,TV 5 SEC (NTSC)
4	87-A90-786-010		PLUG,CONVERSION IR46

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 wries.
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 7.0 to 9.5 MΩ when applying 500V per second.
2) In the voltage withstand test, apply 3.6 KV for 3 seconds and check that the GO lamp lights.

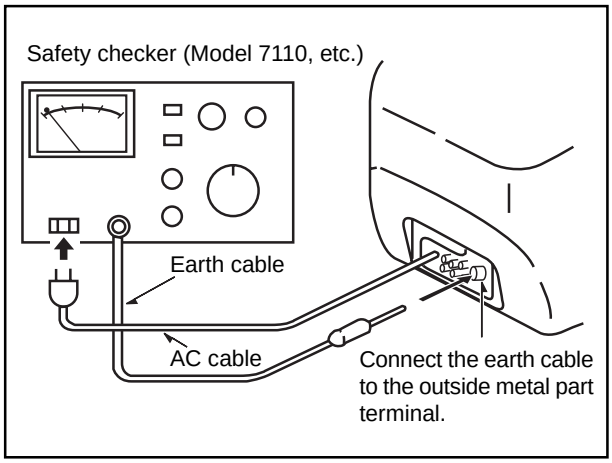


Fig-1

removed in order to service are put in the original

positions, or whether there are the portions which are

deteriorated around the places serviced.

DISASSEMBLY INSTRUCTIONS

1. HIGH-VOLTAGE CAP (ANODE CAP) REMOVAL

1-1. 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.

1-2. Anode Cap Removal

Discharge the anode voltage. (See Figure 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.

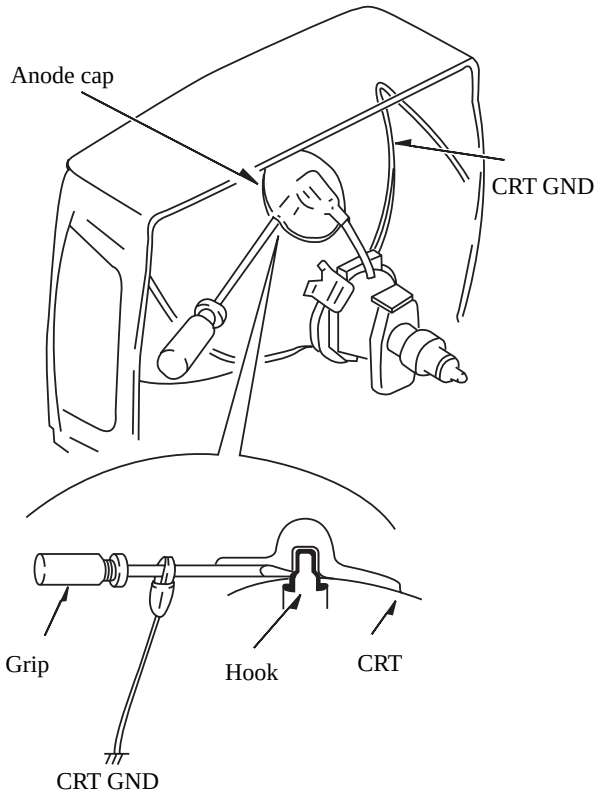


Fig. 1

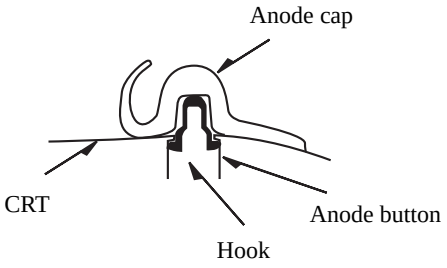


Fig. 2

(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 3)

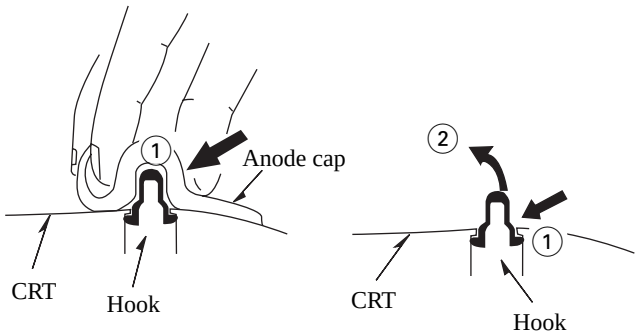


Fig. 3

(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 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.

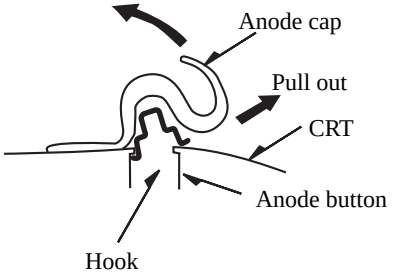


Fig. 4

2. 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.

2-1. 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 1-1)

(2) If you have attached the anode cap before arranging the high-voltage cable, arrange the cable carefully so the cap does not turn.

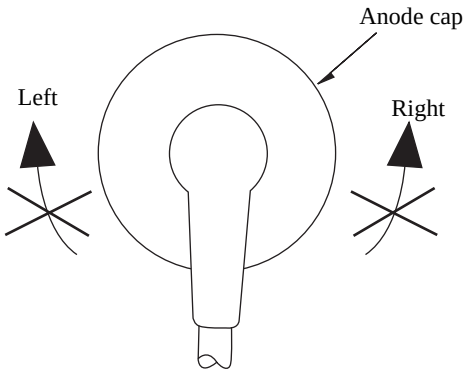


Fig. 1-1

2-2. Anode cap reinstallation

(1) Use a clean cloth moistened slightly with alcohol to clean the installation section. (See Figure 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). (See Figure 2)
Caution : Be careful that silicone grease does not enter the anode button.

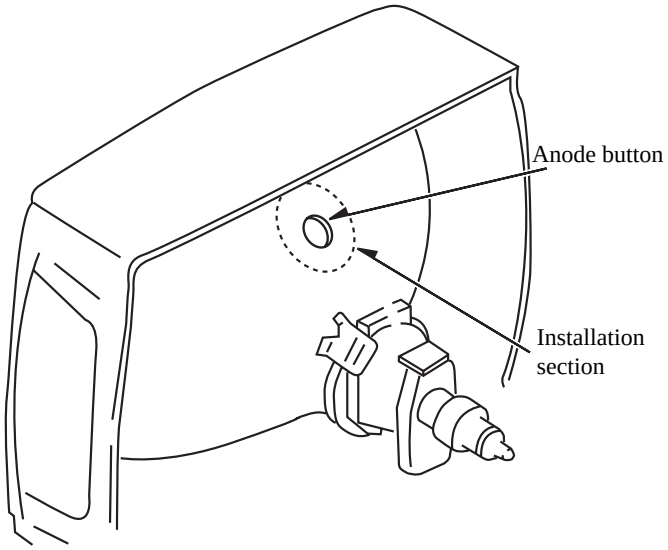


Fig. 2

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

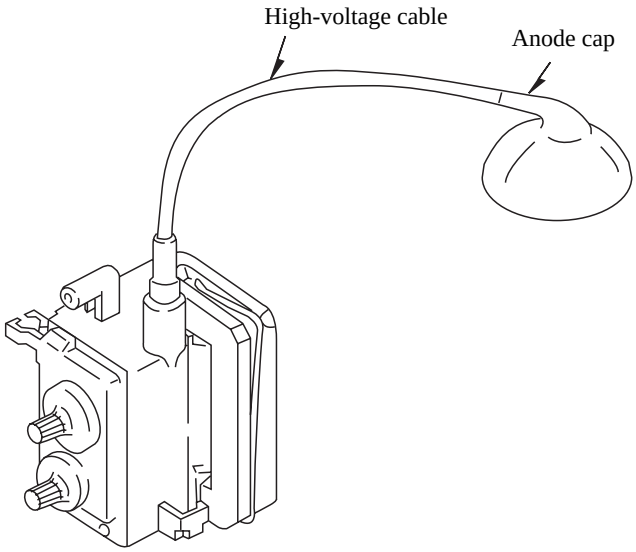


Fig. 3

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

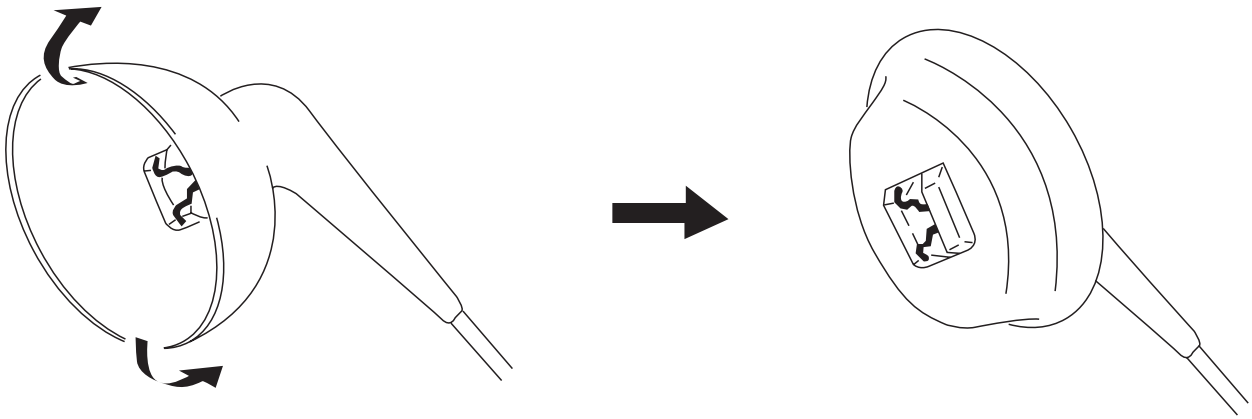


Fig. 4

(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 5-1)
(6) Apply the hook on one side to the anode button as shown on the figure. (See Figure 5-2)
Caution : Check that the hook is held securely.
(7) Apply the hook on the other side to the anode button as shown in Figure 5-3.

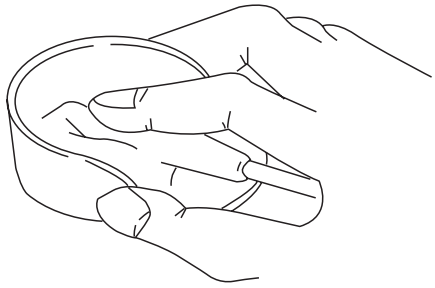
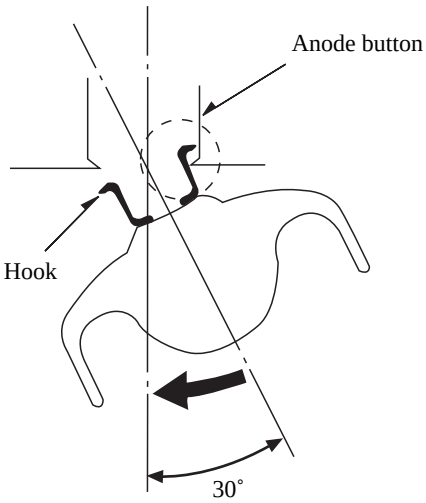


Fig. 5



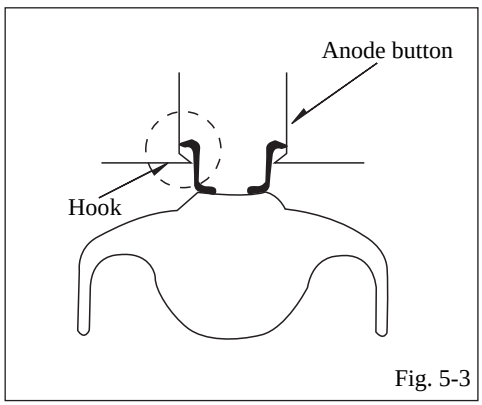


Fig. 5-3

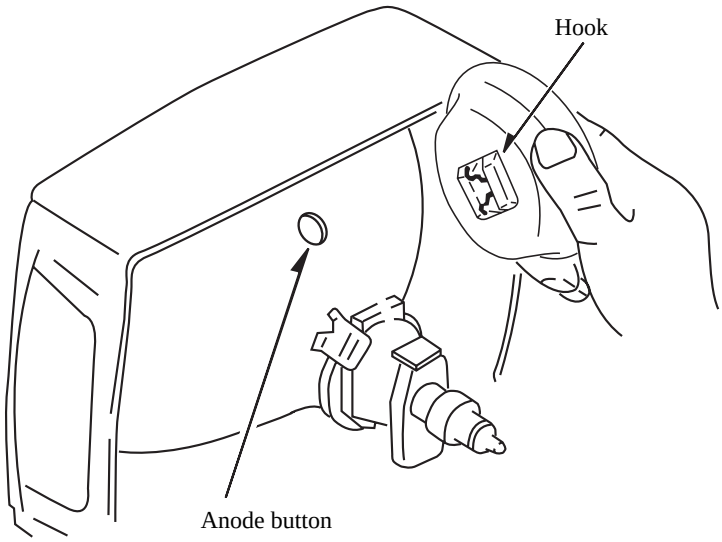


Fig. 5-2

(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 andoe 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 6)

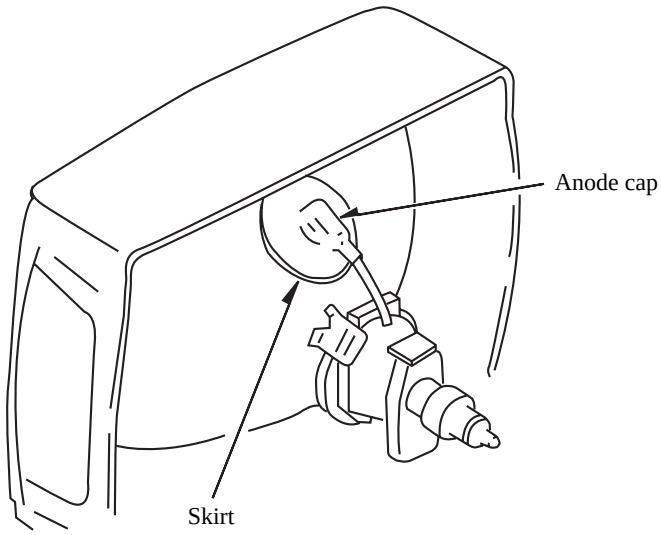


Fig. 6

3. CASE REMOVAL

3-1. Rear Cabinet Removal (See Figure 1)

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

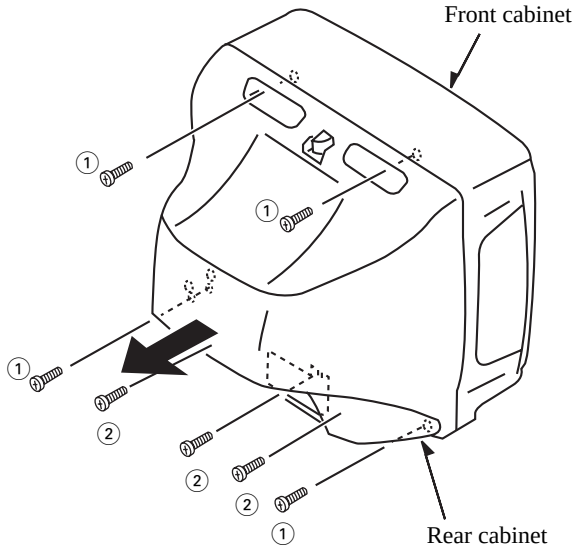


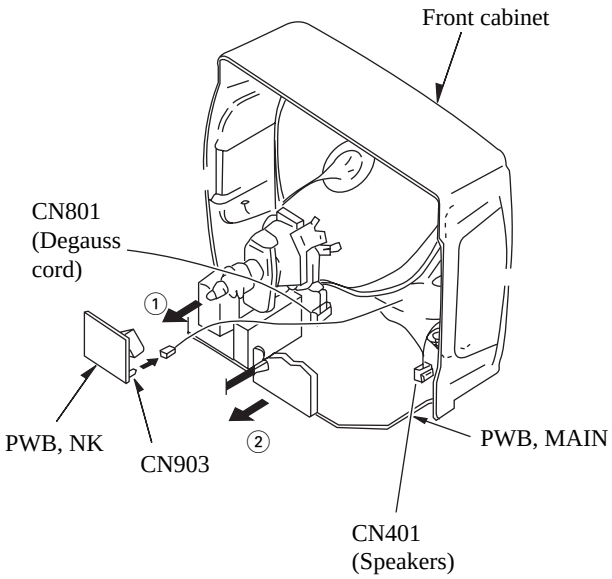
Fig. 1

3-2. Neck C.B. (PWB, NK) Removal (See Figure 2)

(1) Disconnect CN903 (CRT GND).
(2) Remove the Neck C.B. in the diection of arrow ①.

3-3. Main C.B. (PWB, MAIN) Removal (See Figure 2)

(1) Remove connector (CN401).
(2) Remove connector (CN801).
(3) Pull out the Main C.B. in the direction of the direction of arrow ②.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description, please look in "REFERENCE NAME LIST"

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-JBC-629-010		IC,M37272M8-131SP
	87-A90-297-010		RCR UNIT,SBX1981-52
	87-A20-612-010		IC,AT93C46-10PI
	87-A20-611-080		IC,M51943BSL-700A
	87-A20-362-010		IC,LA7676 D
	87-A20-364-010		IC,KIA7809PI
	87-A20-734-010		IC,TDA2007A
	87-002-577-010		IC,LA7953N
	87-001-647-080		IC,NJM78L 12A
	87-002-524-010		IC,LA7837
	87-017-956-010		IC,BA7611AN
	87-A20-980-010		IC,STR-S6707N
	87-020-881-080		IC,NJM78L05A
TRANSISTOR			
	87-A30-091-080		FET,2SJ460
	89-111-755-080		TR,2SA1175F
	89-327-854-080		TR,2SC2785F
	89-337-794-580		TR,2SC3779 D/E
	87-A30-090-080		FET,2SK2541
	87-A30-095-010		TR,2SD2333LS/C202
	89-334-674-580		TR,2SC3467 D/E
	87-A30-041-010		TR,SE115N
	87-A30-005-010		TR,2SC2688M/L
DIODE			
	87-070-345-080		DIODE,IN4148
	87-070-150-080		ZENER,MTZJ33D
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-286-080		DIODE,RGP10JE-5025
	87-A40-004-080		ZENER,MTZJ16A
	87-017-654-060		DIODE,GBU6J
	87-A40-450-090		DIODE,RU 1P
	87-A40-354-090		DIODE,UF3GL-6251
	87-A40-440-080		ZENER,MTZJ7.5A
MAIN C.B			
BT301	87-JBC-625-010		CONN ASSY,5P V WHT TV-NK
BT403	87-JBC-624-010		CONN ASSY,9P V JK
BT601	87-JBC-626-010		CONN ASSY,4P V WHT TV-NK
C1	87-016-624-080		CAP,E 10-16 SSL
C2	87-018-119-080		CAP, CER 100P-50V
C3	87-018-134-080		CAPACITOR,TC-U 0.01-16
C4	87-016-633-080		CAP,E 1-50 SSL
C5	87-016-583-080		CAP,E 100-25 SSL
C6	87-018-134-080		CAPACITOR,TC-U 0.01-16
C9	87-018-128-080		CAP, CERA-SOL SS 560P
C10	87-018-131-080		CAP, CER 1000P-50V
C11	87-016-633-080		CAP,E 1-50 SSL
C12	87-018-209-080		CAP, CER 0.1-50V
C13	87-018-109-080		CAP, CER 22P-50V
C14	87-018-109-080		CAP, CER 22P-50V
C15	87-018-109-080		CAP, CER 22P-50V
C16	87-018-109-080		CAP, CER 22P-50V
C17	87-018-109-080		CAP, CER 22P-50V
C18	87-018-109-080		CAP, CER 22P-50V
C19	87-018-131-080		CAP, CER 1000P-50V
C21	87-016-637-080		CAP,E 10-50 SSL
C22	87-016-633-080		CAP,E 1-50 SSL
C23	87-016-637-080		CAP,E 10-50 SSL
C25	87-016-633-080		CAP,E 1-50 SSL
C26	87-018-209-080		CAP, CER 0.1-50V
C29	87-018-123-080		CAP, CER 220P-50V
C101	87-016-636-080		CAP,E 4.7-50 SSL
C102	87-018-134-080		CAPACITOR,TC-U 0.01-16
C103	87-016-575-080		CAP,E 220-16 SSL
C105	87-016-637-080		CAP,E 10-50 SSL
C106	87-018-134-080		CAPACITOR,TC-U 0.01-16
C107	87-A10-207-080		CAP,TCS 0.01-50KBUP050
C203	87-018-134-080		CAPACITOR,TC-U 0.01-16
C204	87-018-134-080		CAPACITOR,TC-U 0.01-16
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16
C207	87-016-632-080		CAP,E 0.47-50 SSL
C208	87-018-131-080		CAP, CER 1000P-50V
C210	87-018-134-080		CAPACITOR,TC-U 0.01-16
C211	87-A10-585-080		CAP,CER 18P-50 J CH
C214	87-018-134-080		CAPACITOR,TC-U 0.01-16
C215	87-016-637-080		CAP,E 10-50 SSL
C216	87-018-134-080		CAPACITOR,TC-U 0.01-16
C218	87-016-583-080		CAP,E 100-25 SSL
C219	87-018-134-080		CAPACITOR,TC-U 0.01-16
C301	87-016-583-080		CAP,E 100-25 SSL
C302	87-016-632-080		CAP,E 0.47-50 SSL
C303	87-018-134-080		CAPACITOR,TC-U 0.01-16
C305	87-016-583-080		CAP,E 100-25 SSL
C306	87-018-134-080		CAPACITOR,TC-U 0.01-16
C309	87-016-634-080		CAP,E 2.2-50 SSL
C312	87-016-637-080		CAP,E 10-50 SSL
C314	87-018-125-080		CAP, CER 330P-50V
C315	87-016-632-080		CAP,E 0.47-50 SSL
C316	87-016-633-080		CAP,E 1-50 SSL
C319	87-018-130-080		CAP,TC-U 820P-50 B
C320	87-016-627-080		CAP,E 47-16 SSL
C321	87-016-634-080		CAP,E 2.2-50 SSL
C322	87-016-633-080		CAP,E 1-50 SSL
C323	87-016-636-080		CAP,E 4.7-50 SSL
C325	87-018-134-080		CAPACITOR,TC-U 0.01-16
C326	87-018-113-080		CAP, CER 33P-50V
C327	87-016-633-080		CAP,E 1-50 SSL
C328	87-018-115-080		CAP, CER 47P-50V
C329	87-016-637-080		CAP,E 10-50 SSL
C330	87-018-194-080		CAP,TC-U 91P-50 B
C331	87-018-111-080		CAP,TC-U 27P-50 B
C332	87-018-134-080		CAPACITOR,TC-U 0.01-16
C333	87-018-115-080		CAP,TC-U 47P-50 B
C334	87-018-134-080		CAPACITOR,TC-U 0.01-16
C336	87-018-134-080		CAPACITOR,TC-U 0.01-16
C337	87-018-134-080		CAPACITOR,TC-U 0.01-16
C401	87-016-586-080		CAP,E 470-25 SSL
C403	87-016-586-080		CAP,E 470-25 SSL
C405	87-A10-776-080		CAP,E 1000-25 M 105 KMG
C406	87-016-621-080		CAP,E 220-10 SSL
C407	87-016-621-080		CAP,E 220-10 SSL
C408	87-016-627-080		CAP,E 47-16 SSL
C412	87-016-633-080		CAP,E 1-50 SSL
C414	87-016-637-080		CAP,E 10-50 SSL
C418	87-016-583-080		CAP,E 100-25 SSL
C422	87-016-636-080		CAP,E 4.7-50 SSL
C423	87-A10-831-080		CAP,E 1000-25 M SMG
C424	87-016-632-080		CAP,E 0.47-50 SSL
C425	87-016-632-080		CAP,E 0.47-50 SSL
C426	87-016-637-080		CAP,E 10-50 SSL
C427	87-016-586-080		CAP,E 470-25 SSL
C501	87-016-583-080		CAP,E 100-25 SSL
C504	87-016-591-080		CAP,E 100-35 SSL
C505	87-016-641-080		CAP,E 100-50 SSL
C506	87-A10-367-080		CAP,CER 10P-500 J SL
C507	87-A10-402-080		CAP,M 0.22-100 J TF TYPE1
C508	87-016-634-080		CAP,E 2.2-50 SSL
C509	87-016-587-090		CAP,E 1000-25 M SSL
C511	87-018-123-080		CAP, CER 220P-50V
C601	87-016-596-080		CAP,E 10-160 SSL
C602	87-016-635-080		CAP,E 3.3-50 SSL
C603	87-A10-457-080		CAP,E 2.2-160 M SSL
C604	87-016-597-080		CAP,E 22-160 SSL
C605	87-012-405-080		CAP,CER 1800P-2K K BN DE

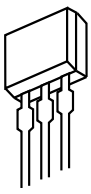
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C606	87-A10-474-090		CAP,PP 0.01-1.25K J PHS
C607	87-010-974-080		CAP,CER 220P-500 B
C609	87-016-583-080		CAP,E 100-25 SSL
C610	87-016-594-090		CAP,E 1000-35 M SSL
C611	87-010-976-080		CAP,CER 1000P-500 B
C612	87-010-974-080		CAP,CER 220P-500 B
C616	87-A10-674-090		CAP,M/P 0.47-250 J
C701	87-016-633-080		CAP,E 1-50 SSL
C702	87-016-637-080		CAP,E 10-50 SSL
C705	87-016-637-080		CAP,E 10-50 SSL
C707	87-016-633-080		CAP,E 1-50 SSL
C708	87-016-637-080		CAP,E 10-50 SSL
C710	87-016-622-080		CAP,E 470-10 SSL
C712	87-016-637-080		CAP,E 10-50 SSL
C715	87-016-633-080		CAP,E 1-50 SSL
C716	87-016-634-080		CAP,E 2.2-50 SSL
C801	87-A10-688-090		CAP,M/P 0.22-275 K (B81133)
C802	87-A10-688-090		CAP,M/P 0.22-275 K (B81133)
C803	87-012-370-010		CAP,CER 3300P-250NS
C804	87-012-370-010		CAP,CER 3300P-250NS
C808	87-A10-646-090		CAP,E 220-400 SMH (25.4*40)
C809	87-016-584-080		CAP,E 220-25 SSL
C810	87-A10-728-080		CAP,E 680-10 M LXV
C811	87-018-131-080		CAP, CER 1000P-50V
C812	87-A10-645-010		CAP,M/P 0.01-1K J MMH
C813	87-012-372-010		CAP,CER 1000P-2K
C814	87-A10-832-010		CAP,CER 1000P-1K K R LONG
C815	87-012-397-010		CAP,CER 1000P-2K BN
C816	87-A10-731-090		CAP,E 220-160 M KMF
C817	87-A10-756-090		CAP,E 100-160 M KMF
C819	87-016-576-080		CAP,E 330-16 SSL
C821	87-016-588-090		CAP,E 2200-25 SSL
C822	87-016-587-090		CAP,E 1000-25 M SSL
C823	87-016-627-080		CAP,E 47-16 SSL
C824	87-016-583-080		CAP,E 100-25 SSL
C825	87-A10-469-080		CAP,CER 2200P-500 K B DD10
CF201	84-LB3-627-010		FLTR,SFSF 4.5MDB SIF
CF202	84-LB3-626-010		FLTR,TPS4.5MB2
CN401	87-049-469-010		CONN,4P V
CN601	87-099-675-010		CONN,5P V V
!CN801	87-099-454-010		CONN,2P TV-50 EYLET
!CN802	87-099-674-010		CONN,2P VA V
D1	87-070-110-010		LED,SLP-181B-51
!F801	87-035-458-010		FUSE,4A 250V T W/C
FB801	87-003-320-080		F-BEAD,FBR07HA121NB
FB802	87-003-320-080		F-BEAD,FBR07HA121NB
FB803	87-003-320-080		F-BEAD,FBR07HA121NB
FB804	87-003-320-080		F-BEAD,FBR07HA121NB
FB805	87-003-320-080		F-BEAD,FBR07HA121NB
⚠FC801	87-033-213-080		CLAMP, FUSE
⚠FC802	87-033-213-080		CLAMP, FUSE
⚠FR601	87-A00-063-060		RES,FUSE 2.2-1/2W J R-TYPE
⚠FR602	87-A00-371-090		RES,FUSE 5.6-1W J R-TYPE
⚠FR604	87-A00-051-060		RES,FUSE 2.7-1W J R-TYPE
⚠FR801	87-A00-081-090		RES,FUSE 1-1/2W
J401	87-A60-420-010		JACK,3.5 ST (MSC)
J701	87-A60-321-010		JACK,PIN 2P BLK-Y
J702	87-A60-323-010		JACK,PIN 4P Y-BLK
L1	87-005-614-080		COIL 100UH LAV35 J
L2	87-005-614-080		COIL 100UH LAV35 J
L101	87-005-614-080		COIL 100UH LAV35 J
L102	87-005-608-080		COIL,33UH J LAV35
L201	84-LB2-684-010		COIL,TRAP 47.25 SA
L202	87-003-140-080		CH COIL 0.82
L203	84-LB2-681-010		COIL,VCO 45.75 SA
L204	87-005-604-080		COIL,15UH J LAV35
L205	87-003-146-080		COIL,15UH LAL02
L206	84-LB2-682-010		COIL,AFT 45.75 SA
L207	84-LB2-683-010		COIL,SIF 4.5M SA
L208	87-005-485-080		COIL,100UH J FLR50
L301	87-003-051-080		COIL,470UH
L303	87-003-149-080		COIL,47UH
L304	87-003-147-080		COIL, 22UH
L305	87-003-295-080		COIL,10UH
L306	87-003-147-080		COIL, 22UH
L501	87-005-608-080		COIL,33UH J LAV35
L603	87-A50-040-010		COIL,2.2MH
L802	87-A50-170-010		COIL,390UH RCH106
L803	87-005-608-080		COIL,33UH J LAV35
⚠LF801	87-JB8-650-010		FLTR,LINE SS24H-K18055
⚠P801	87-A30-096-010		P-TR,TLP721F
⚠P802	87-A30-096-010		P-TR,TLP721F
⚠PR601	87-A90-757-080		PROTECTOR,0.75A 60V 491
⚠PR801	87-A90-090-080		PROTECTOR,1.5A 491SERIES 60V
⚠PR802	87-026-681-080		PROTECTOR,5A 60V 491
⚠PR803	87-A90-247-080		RPOTECTOR,0.315A 60V 491
R327	87-A00-161-090		RES,M/F 47-2W J RSF(S)
R401	87-A00-150-090		RES,M/F 220-1W J RSF(S)
R402	87-A00-150-090		RES,M/F 220-1W J RSF(S)
⚠R406	87-029-158-060		RES,FUSE 1-1W J
⚠R407	87-029-158-060		RES,FUSE 1-1W J
R503	87-025-429-080		RES,M/F 47K-1/6W F
R507	87-A00-197-090		RES,M/F 1.2-1W J RSF
R603	87-A00-247-090		RES,M/F 100-3W J RSF
R605	87-A00-300-090		RES,M/F 2.2-1W J RSF(F)
R610	87-A00-225-090		RES,M/F 2.2K-5W J RSV5
R611	87-A00-196-090		RES,M/F 0.47-1/2W J RSF(S)
R804	87-A00-224-090		RES,SD 8.2M-1W J CE
R805	87-A00-333-090		RES,M/F 100K-3W J RSS
R806	87-A00-287-090		RES,CEM 0.33-5W K RGC5
R807	87-A00-333-090		RES,M/F 100K-3W J RSS
R808	87-A00-243-090		RES,M/F 22-1W J RSF(S)
R809	87-A00-332-090		RES,CEM 1-10W J RGC
R810	87-A00-332-090		RES,CEM 1-10W J RGC
R812	87-A00-170-090		RES,M/F 82K-3W J RSF(S)
R815	87-A00-199-090		RES,M/F 12K-3W J RSF(S)
R816	87-A00-223-090		RES,M/F 47K-2W J RSF(S)
SF201	87-A90-694-010		FLTR,SAW TSF1239P
SFR201	87-024-433-080		SFR,10K RH063EC
SFR301	87-024-432-080		SFR,4.7K RH063EC
SFR302	87-024-434-080		SFR,22K RH063EC
SFR303	87-024-434-080		SFR,22K RH063EC
SFR501	87-A90-385-080		SFR,22K H DIA6 EVM
SW2	87-A90-712-080		SW,TACT EVQ11L07K
SW3	87-A90-712-080		SW,TACT EVQ11L07K
SW4	87-A90-712-080		SW,TACT EVQ11L07K
SW5	87-A90-712-080		SW,TACT EVQ11L07K
SW6	87-A90-712-080		SW,TACT EVQ11L07K
SW7	87-A90-712-080		SW,TACT EVQ11L07K
SW501	87-A90-567-010		SW,LVR 4-1-3 EVQRAAL10
⚠SW801	87-A90-364-010		SW,PUSH SDDLB1-C-D-2
⚠T601	84-LB2-606-010		FBT,HFL1530G
T602	85-JT2-653-010		PT,HDT-TV141-2
⚠T801	87-JBC-627-010		PT,SWT 7JB
TH801	87-A90-830-010		POS-THMS,PTH451C463BF9R0Q270
TU101	87-A90-660-010		TU UNIT, BTP-AB455
X1	87-030-212-080		CERA LOCK CST8.0M
X301	87-A70-007-080		VIB,XTAL 3.58MHZ AQC-1001
X302	87-A70-017-010		VIB,CER 503KHZ F45
NK C.B			
	84-LB2-633-110		CONN ASSY,1P CRT GND
C901	87-018-129-080		CAP, CER 680P-50V
C902	87-018-129-080		CAP, CER 680P-50V
C903	87-018-129-080		CAP, CER 680P-50V
⚠C905	87-012-397-010		CAP,CER 1000P-2K BN
CN901	87-049-469-010		CONN,4P V
CN902	87-009-033-010		CONNECTOR, 5P
CN903	87-A60-485-010		CONN,2P V LV GRA

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L901	87-005-615-080		COIL,120UH J LAV35
⚠R904	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
⚠R905	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
⚠R906	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
R907	87-025-355-080		RES,M/F 100-1/6W F
S901	84-LB3-610-010		SOCKET,CRT HPS1171
SFR901	87-024-519-080		SFR,470 DIA6 V NTP
SFR902	87-024-519-080		SFR,470 DIA6 V NTP
SFR903	87-024-520-080		SFR,1K DIA6 V NTP
SFR904	87-024-520-080		SFR,1K DIA6 V NTP
SFR905	87-024-520-080		SFR,1K DIA6 V NTP

TRANSISTOR ILLUSTRATION

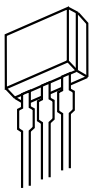
E C B

2SC3467



S D G

2SK2541
2SJ460



E C B

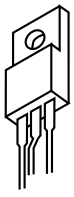
2SC2785
2SA1175

E C B

2SC2688

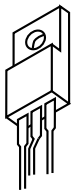
B E C

2SC3779



1 2 3

SE115N

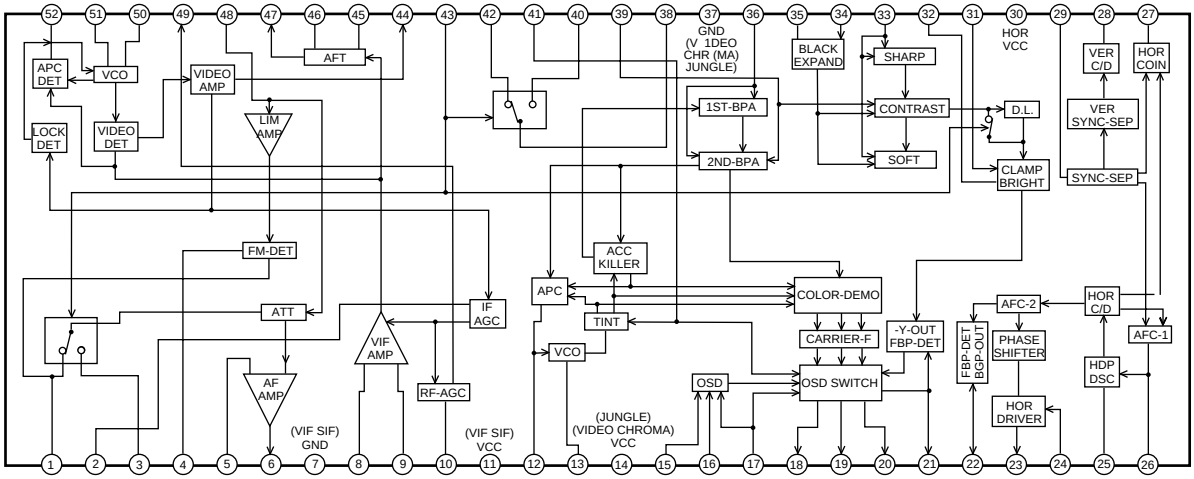


B C E

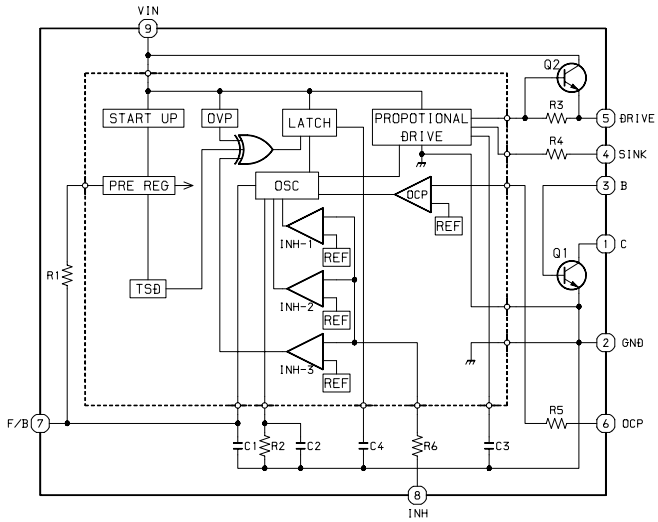
2SD2333

IC BLOCK DIAGRAM

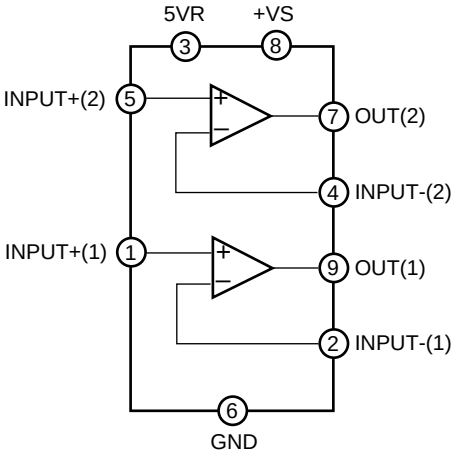
IC, LA7676D



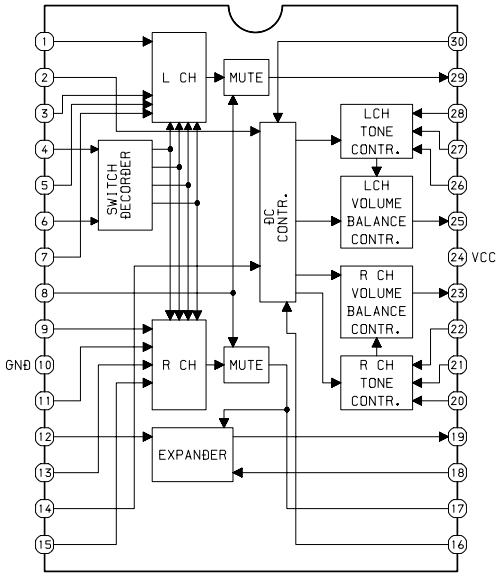
IC, STR-S6707



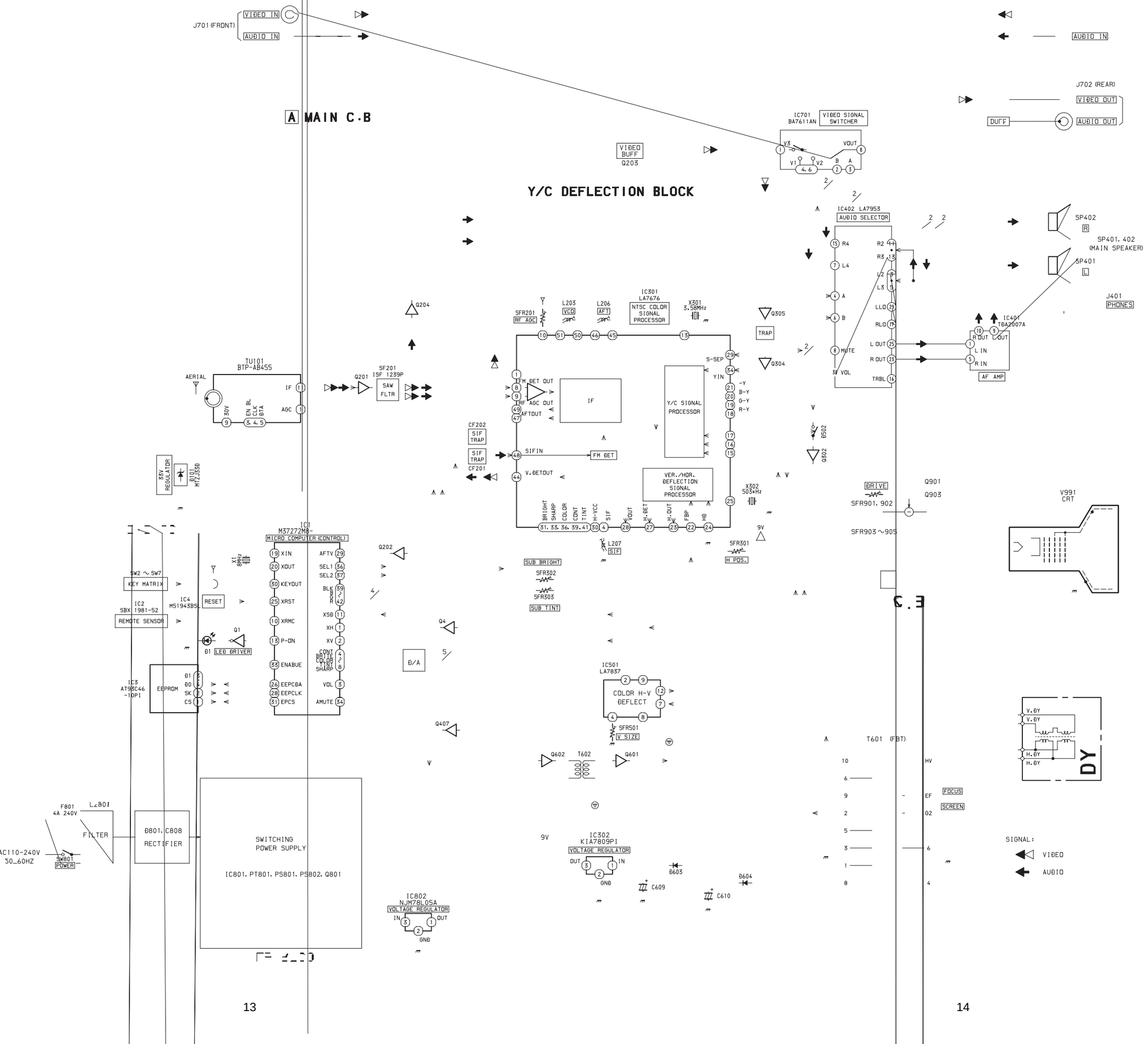
IC, TDA2007A



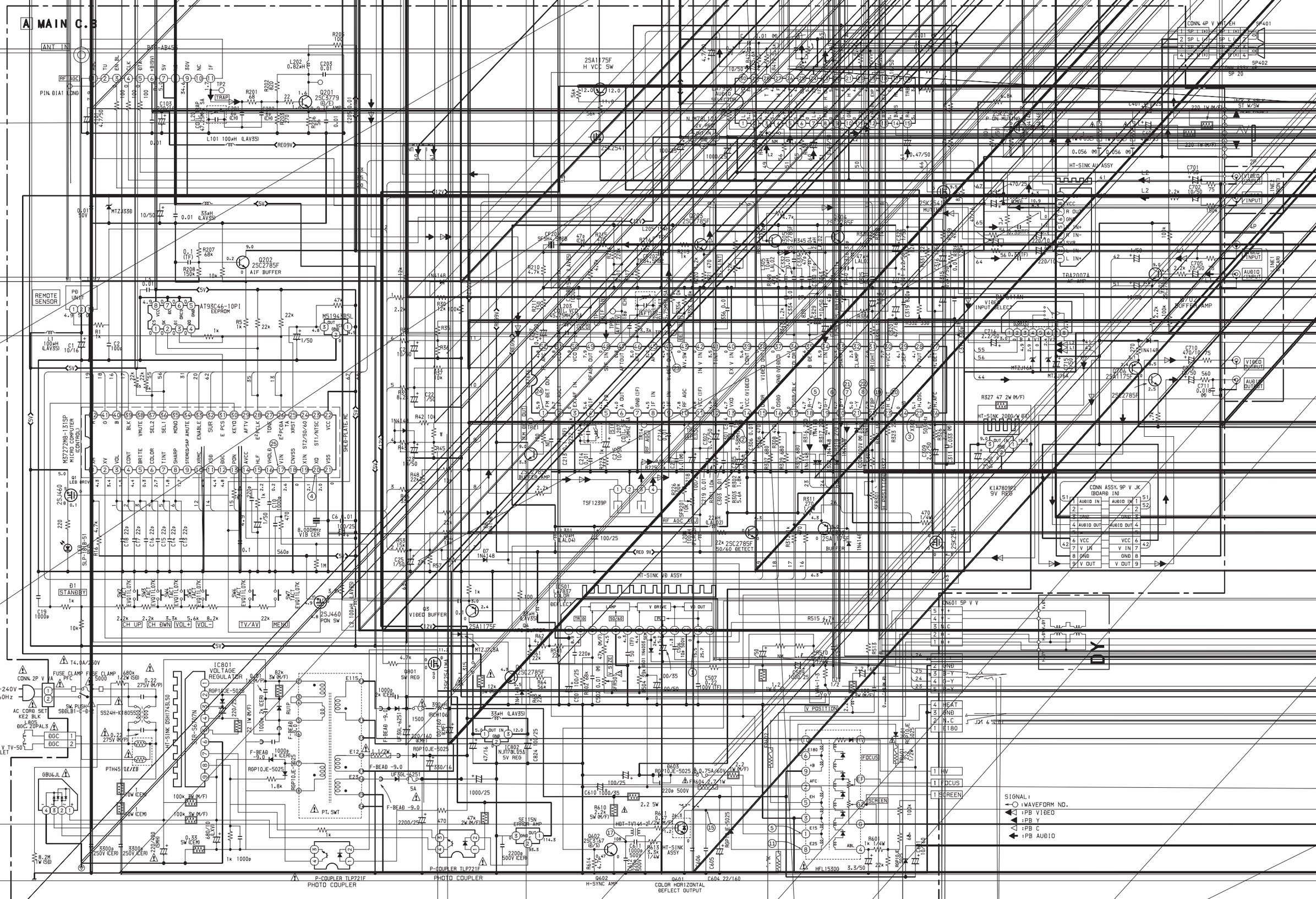
IC, LA7953



BLOCK DIAGRAM

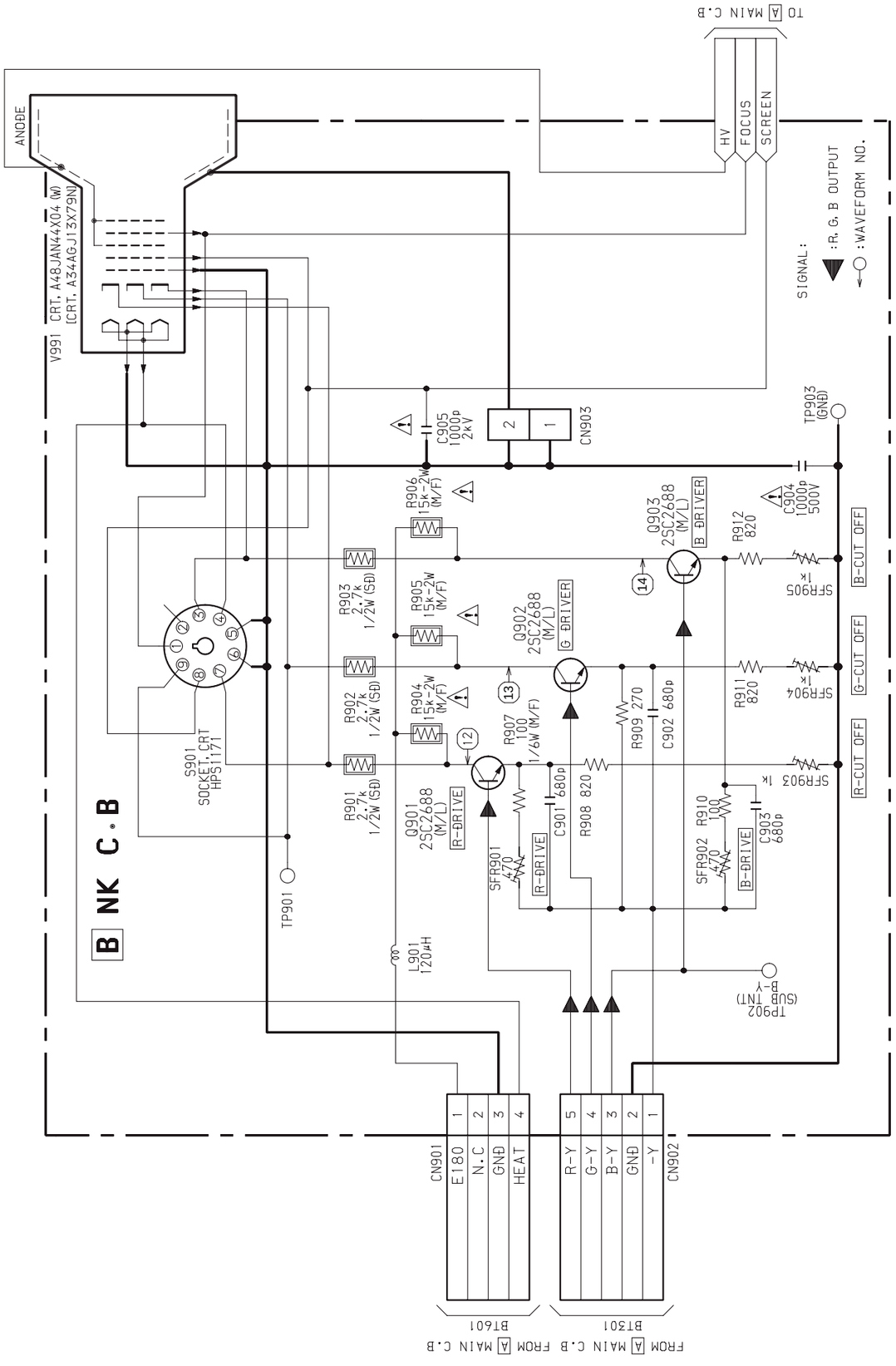


SCHEMATIC DIAGRAM-1 (MAIN C.B SECTION)

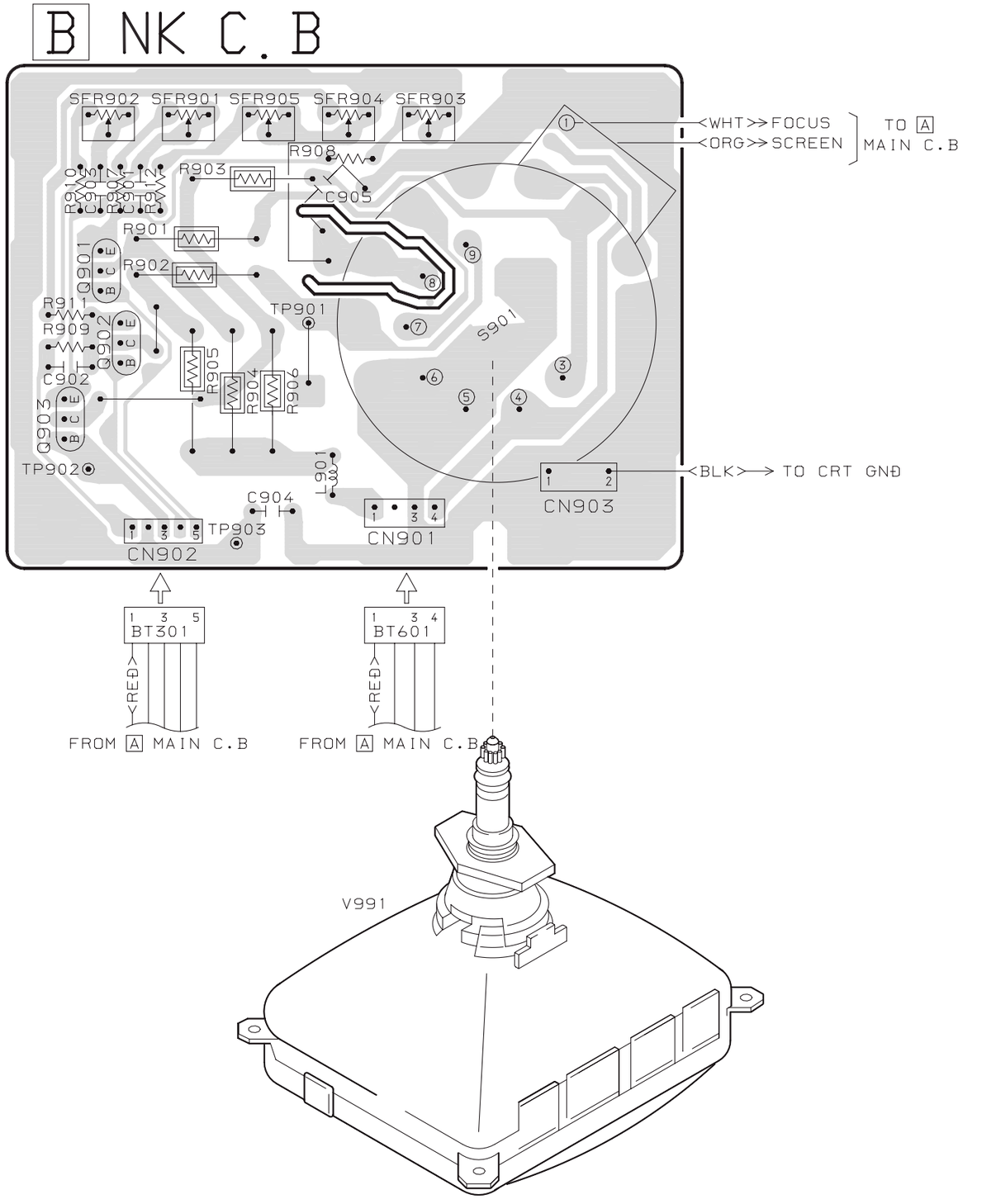


WIRING-1 (MAIN C.B SECTION)

SCHEMATIC DIAGRAM-2 (N.K C.B SECTION)



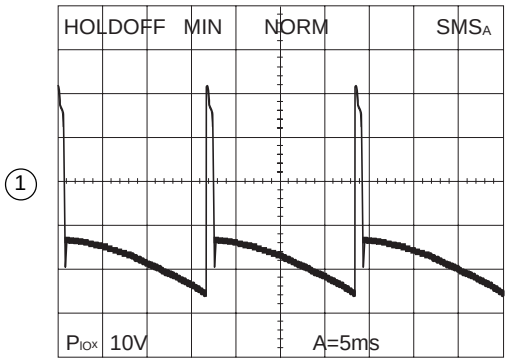
WIRING-2 (N.K C.B SECTION)



WAVEFORM

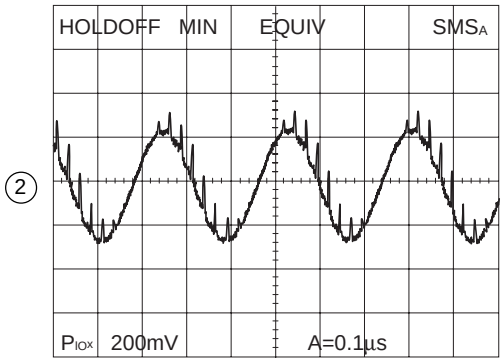
Input condition : Tuner 11ch (199.25MHz), 80dBμ input : P = Full Field CB & S = 1kHz (Mono)

① IC501 Pin 12



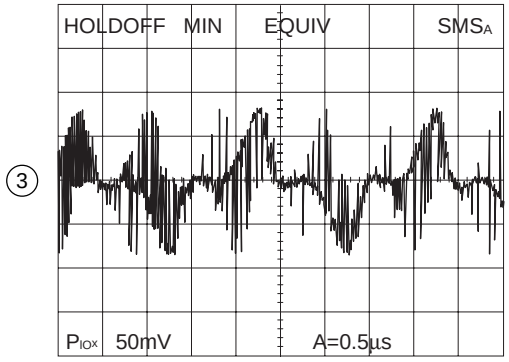
5 ms/div
10 V/div

② Between X301 & C304



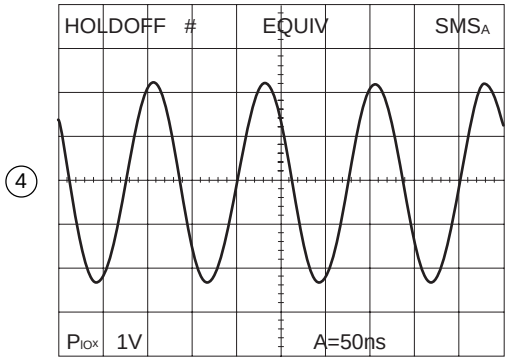
0.1μ/div
200 mV/div

③ IC301 Pin 25



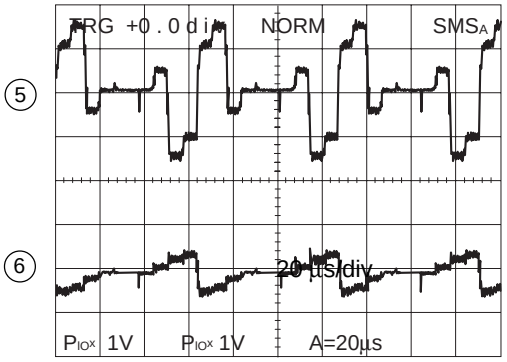
0.5 μs/div
50 mV/div

④ IC1 Pin 20



5 ns/div
1 V/div

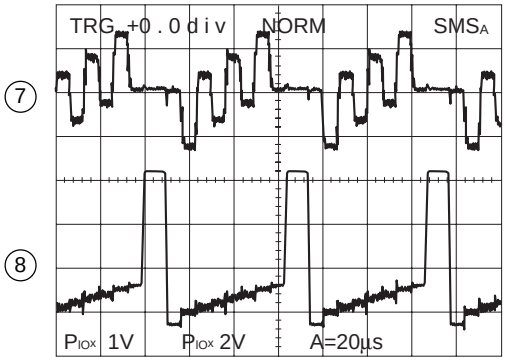
⑤ IC301 Pin 18
⑥ IC301 Pin 19



20 μs/div
1 V/div

1 V/div

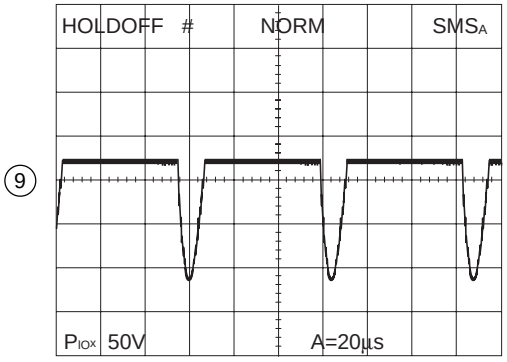
⑦ IC301 Pin 20
⑧ IC301 Pin 21



20 μs/div
1V/div

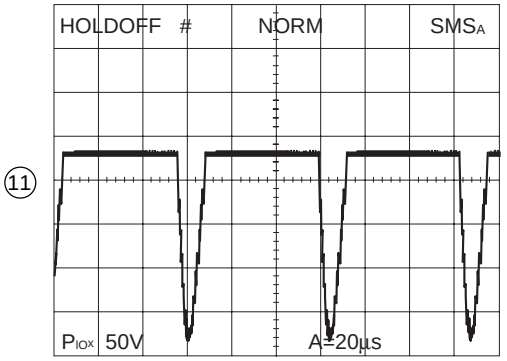
20 μs/div
2 V/div

⑨ T601 Pin 1



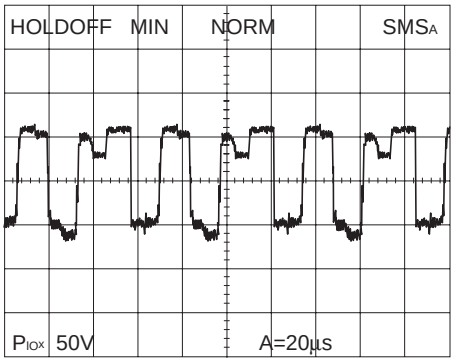
20 μs/div
50 V/div

⑪ T601 Pin 8

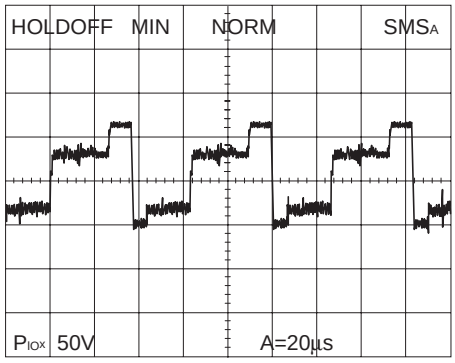


20 μs/div
50 V/div

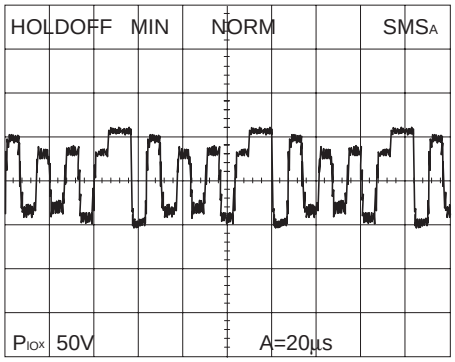
⑫ Q901 Collector



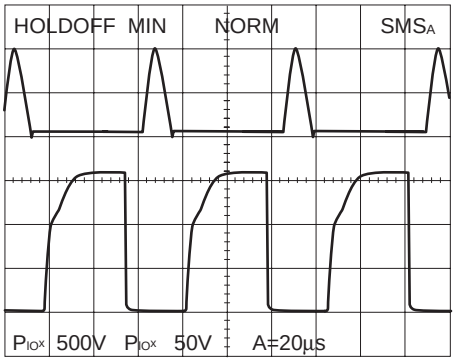
⑬ Q902 Collector



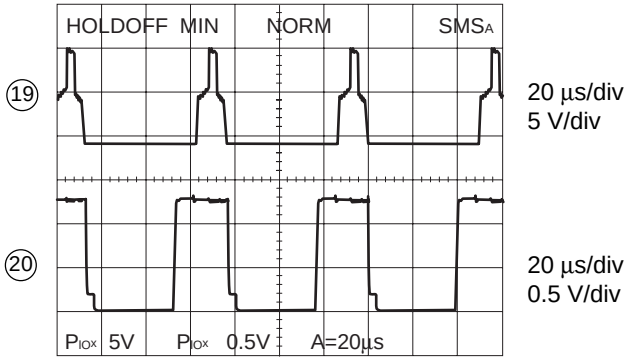
⑭ Q903 Collector



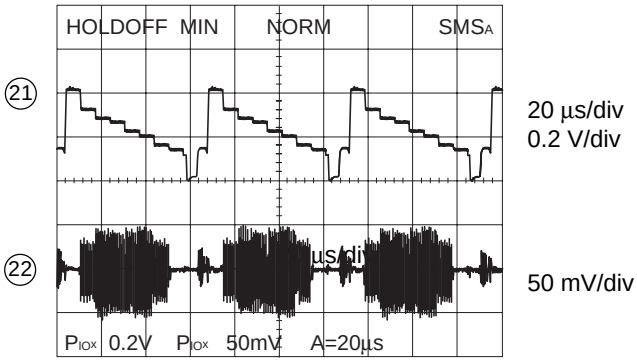
⑮ Q601 Collector
⑰ Q602 Collector



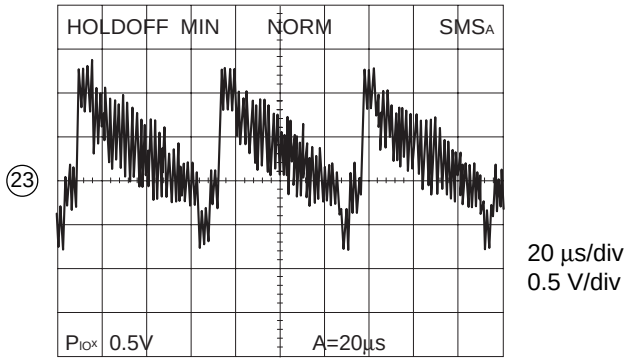
⑲ IC301 Pin 22
⑳ IC301 Pin 23



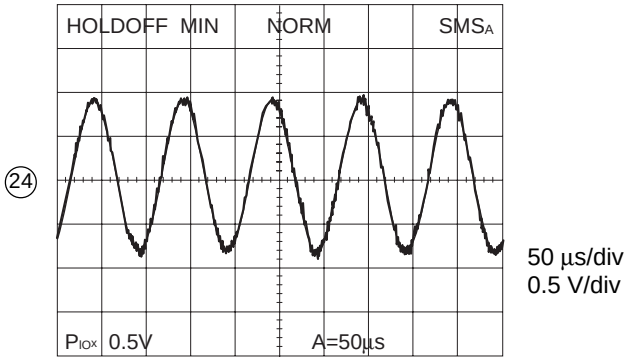
㉑ IC301 Pin 20
㉒ IC301 Pin 21



㉓ IC301 Pin 44

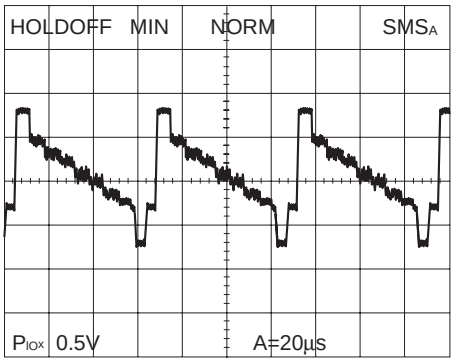


㉔ IC301 Pin 1



㉕ IC1 Pin 17

㉕



20 µs/div
0.5 V/div

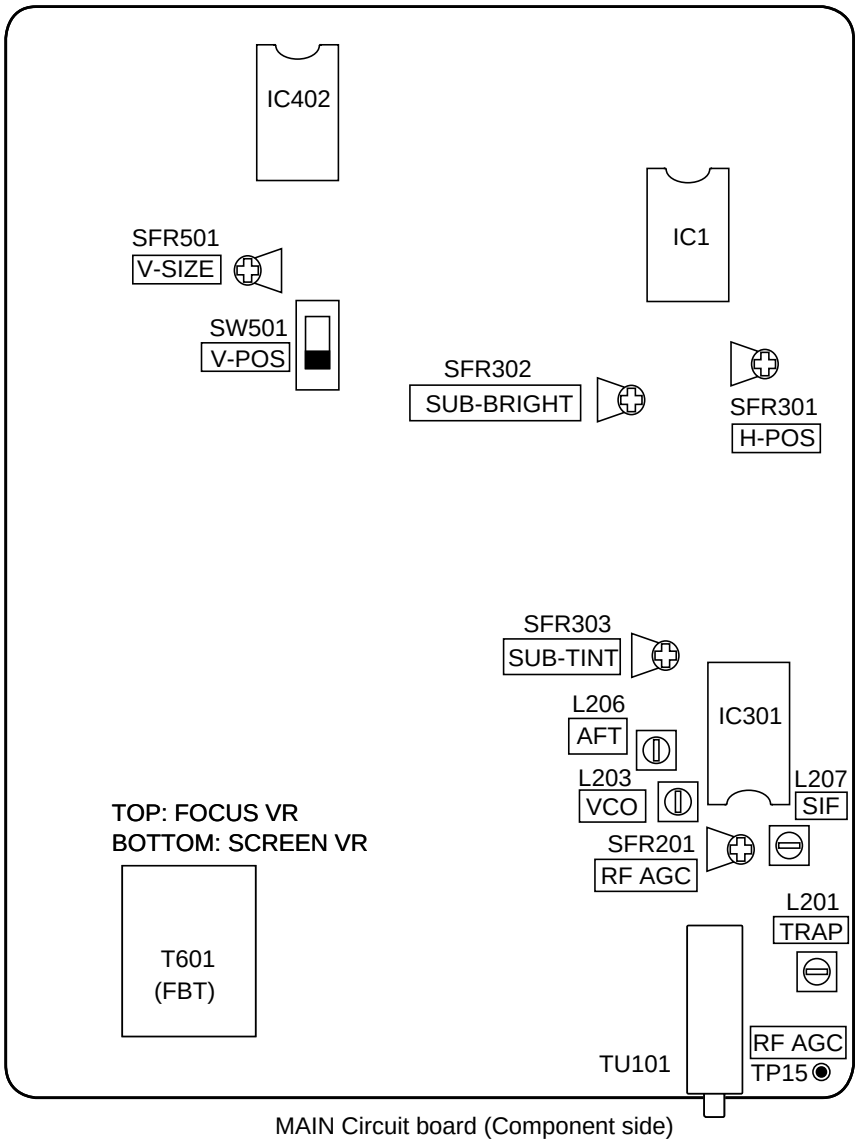
IC DESCRIPTION

IC, M37272M8-113SP

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>$\overline{\text{HSYNC}}$</td><td>I</td><td>OSD horizontal synchronised signal input terminal. "L"= active.</td></tr>
<tr><td>2</td><td>$\overline{\text{VSYNC}}$</td><td>I</td><td>OSD vertical synchronised signal input terminal. "L"= active.</td></tr>
<tr><td>3</td><td>VOL</td><td>O</td><td>Volume control output. (Volume PWM 8 bit.)</td></tr>
<tr><td>4</td><td>CONT</td><td>O</td><td>Contrast control output. (Contrast PWM 8 bit.)</td></tr>
<tr><td>5</td><td>BRIGHT</td><td>O</td><td>Brightness control output. (Brightness PWM 8 bit.)</td></tr>
<tr><td>6</td><td>COLOR</td><td>O</td><td>Color control output. (Color PWM 8 bit.)</td></tr>
<tr><td>7</td><td>TINT</td><td>O</td><td>Tint control output. (Tint PWM 8 bit.)</td></tr>
<tr><td>8</td><td>SHARP</td><td>O</td><td>Sharpness control output. (Sharpness PWM 8 bit.)</td></tr>
<tr><td>9</td><td>STEREO / SAP</td><td>I</td><td>STEREO / SAP detect. (Not connected)</td></tr>
<tr><td>10</td><td>$\overline{\text{RMC}}$</td><td>I</td><td>Remote control signal is led to this pin.</td></tr>
<tr><td>11</td><td>SD</td><td>I</td><td>Horizontal sync. detected input. The level of this pin will be sampled by µ-P to determine whether there is picture signal detected.</td></tr>
<tr><td>12</td><td>DGC</td><td>–</td><td>Not connected.</td></tr>
<tr><td>13</td><td>$\overline{\text{PON}}$</td><td>O</td><td>During standby mode, "H" level is inserted to switch off horizontal deflection and high voltage.</td></tr>
<tr><td>14</td><td>AVCC</td><td>–</td><td>5V supply.</td></tr>
<tr><td>15</td><td>HLF</td><td>–</td><td>Connected to filter.</td></tr>
<tr><td>16</td><td>VHOLD</td><td>–</td><td>Connected to condensor.</td></tr>
<tr><td>17</td><td>CVIN</td><td>I</td><td>Video signal input.</td></tr>
<tr><td>18</td><td>CNVSS</td><td>–</td><td>Connected to ground.</td></tr>
<tr><td>19</td><td>XIN</td><td>I</td><td>8 MHz clock input.</td></tr>
<tr><td>20</td><td>XOUT</td><td>O</td><td>8 MHz clock output.</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Connected to ground.</td></tr>
<tr><td>22</td><td>VCC</td><td>–</td><td>5 V supply.</td></tr>
<tr><td>23, 24</td><td>ST1, ST2
(NC)</td><td>O</td><td>TUNER SAP
<table>
<tr><th></th><th>Pin 23</th><th>Pin 24</th><th>Pin 35</th></tr>
<tr><td>MONO/SAP</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>MONO</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>SAP</td><td>H</td><td>L</td><td>L</td></tr>
</table>
TUNER STEREO
<table>
<tr><th></th><th>Pin 23</th><th>Pin 24</th><th>Pin 35</th></tr>
<tr><td>STEREO</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>MONO</td><td>L</td><td>H</td><td>H</td></tr>
</table>
TUNER STEREO / SAP
<table>
<tr><th></th><th>Pin 23</th><th>Pin 24</th><th>Pin 35</th></tr>
<tr><td>MONO/SAP</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>STEREO</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>SAP</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>MONO</td><td>L</td><td>H</td><td>H</td></tr>
</table>
PIN 35 : MONO</td></tr>
<tr><td>25</td><td>$\overline{\text{RST}}$</td><td>I</td><td>Used to reset the µ-P when power up.</td></tr>
<tr><td>26</td><td>SLDA</td><td>I/O</td><td>Data bus between µ-P and E^{2}PROM / tuner.</td></tr>
<tr><td>27</td><td>TONE</td><td>–</td><td>Not connected.</td></tr>
<tr><td>28</td><td>SLCK</td><td>O</td><td>Synchronizing clock between µ-P and E^{2}PROM / tuner provided by µ-P through this pin.</td></tr>
<tr><td>29</td><td>AFTV</td><td>I</td><td>AFT voltage from IC301 is received by µ-P during channel tuning.</td></tr>
<tr><td>30</td><td>KEY0</td><td>I</td><td>Input key is detected by monitor.</td></tr>
</table>

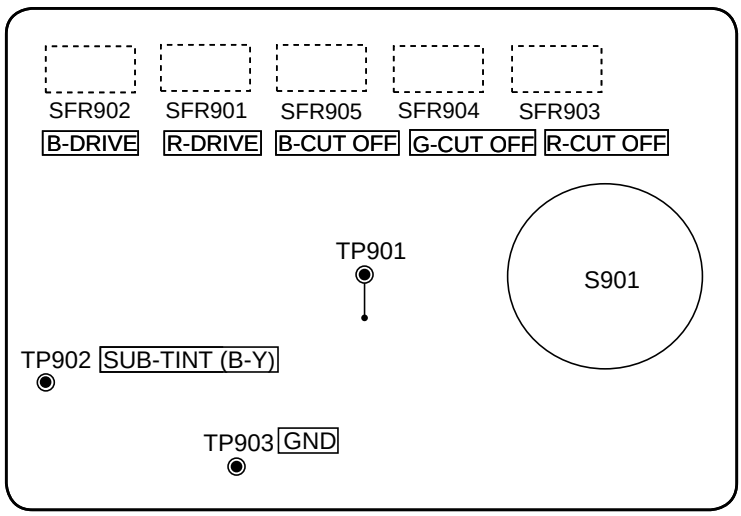
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>31</td><td>EEP CS</td><td>O</td><td>EEP-ROM chip selection.</td></tr>
<tr><td>32</td><td>SUR</td><td>O</td><td>Surround ON "H", OFF "L".</td></tr>
<tr><td>33</td><td>ENABLE</td><td>O</td><td>Timing data bus between μ-P and tuner.</td></tr>
<tr><td>34</td><td>AMUTE</td><td>O</td><td>Used to mute line out sound and picture when no input signal is detected.
"H" to mute.</td></tr>
<tr><td>35</td><td>MONO</td><td>O</td><td>Compel the sound system to monaural. (Not connected)</td></tr>
<tr><td>36, 37</td><td>SEL1, SEL2</td><td>O</td><td>Selecting tuner receiving band.
<table>
<tr><th></th><th>Pin 36</th><th>Pin 37</th></tr>
<tr><td>TUNER</td><td>L</td><td>L</td></tr>
<tr><td>VIDEO 1</td><td>H</td><td>L</td></tr>
<tr><td>VIDEO 2</td><td>L</td><td>H</td></tr>
</table>
Reset start : Both of Pin 36, Pin 37 are "H".</td></tr>
<tr><td>38</td><td>VMUTE</td><td>–</td><td>Not connected.</td></tr>
<tr><td>39</td><td>BLK</td><td>O</td><td>OSD blanking output.</td></tr>
<tr><td>40</td><td>B</td><td>O</td><td>OSD blue output.</td></tr>
<tr><td>41</td><td>G</td><td>O</td><td>OSD green output.</td></tr>
<tr><td>42</td><td>R</td><td>O</td><td>OSD red output.</td></tr>
</table>

A MAIN C.B



MAIN Circuit board (Component side)

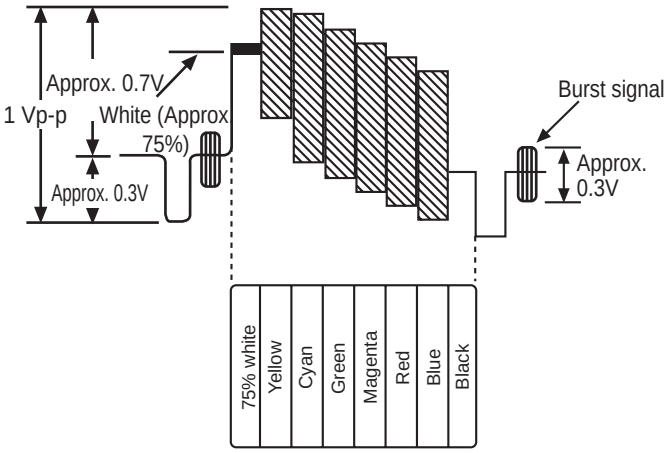
B NK C.B



NK Circuit board (Solder side)

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 Ω 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



TV display

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 at 1.0Vp-p (across 75Ω load).

1. CRT ADJUSTMENT

1-1. Precautions

(1) Receive the white raster signal, and then perform edging for at least 20 minutes.
(2) Demagnetize the area surronding 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 to 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 a convergence adjustment.

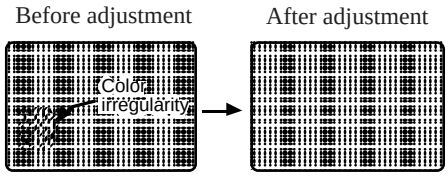
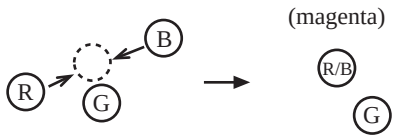


Fig. 1-1

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

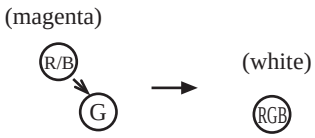
Align the R beam with the B beam. The G beam does not move with this adjustment.



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 appears 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.

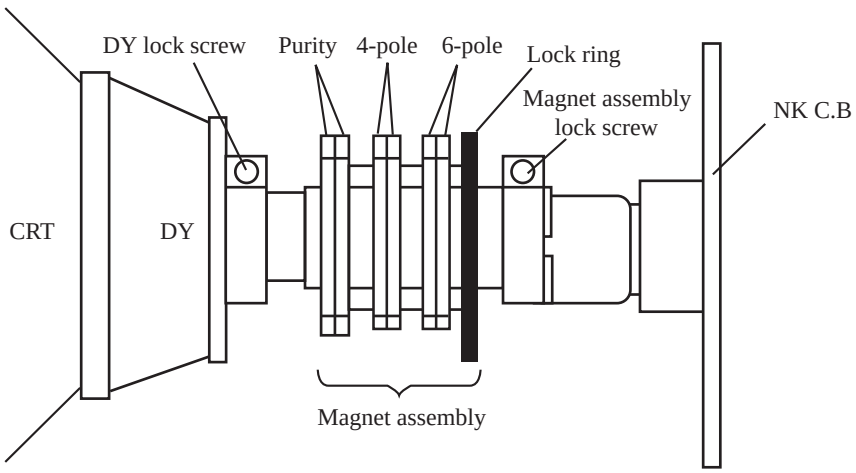


Fig 1-4

1-3. Beam Landing Adjustment

(1) Receive the green raster signal through 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 of equal width. (refer to Fig. 1-5 (a)).

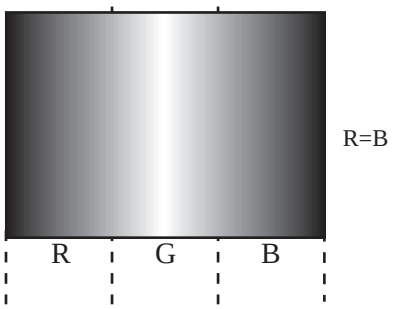


Fig 1-5 (a)

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

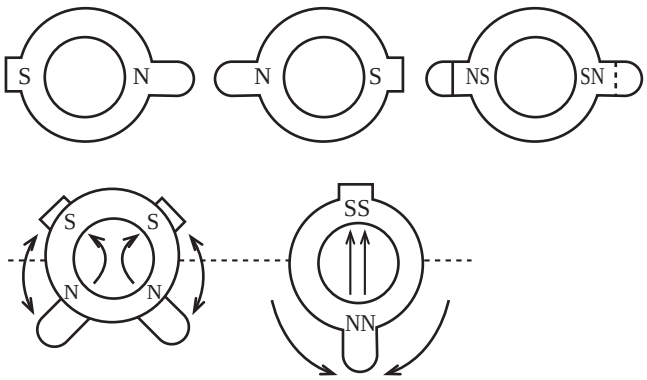


Fig 1-5 (b)

(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.
(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 certain to carry out convergence adjustments.

❖ If the color irregularity 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

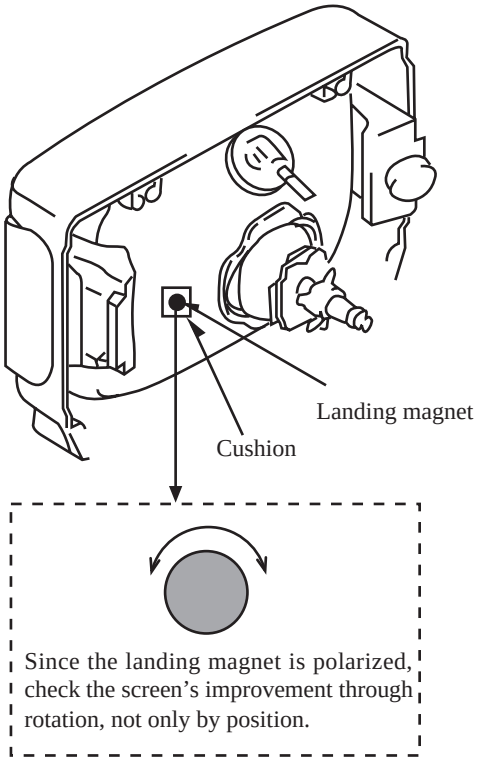


Fig 1-6

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.

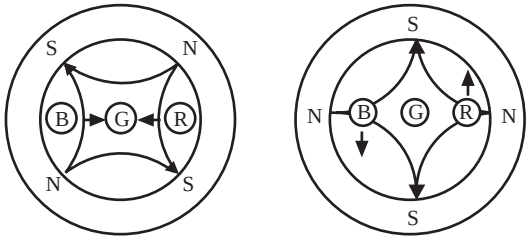


Fig 1-7

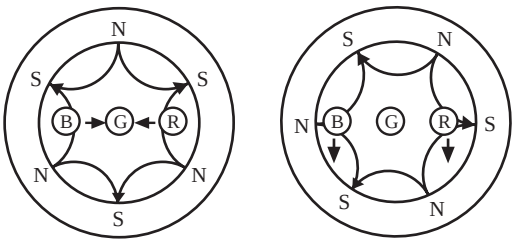


Fig 1-8

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.

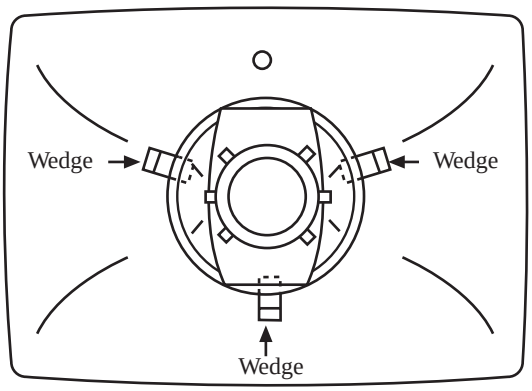
In Fig. 1-8, the two 6-pole magnets are stacked together so as to be of the same polarity. Move the B and R beams to their respective direction, by rotating the two 6-pole magnets together. By adjusting the opening of the two magnets, it is possible to adjust the amount of the beam's movement.

(1) Receive the dot pattern signal through 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 the B beam perfectly align 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 the G beam align 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

Make this adjustment after completion of adjustment 1-4.

(1) Shake the deflecting yoke up, down, 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

2. ELECTRICAL ADJUSTMENT

2-1. White Balance Adjustment (NK C.B.)

(1) Receive a NTSC raster signal (white).
(2) Set the customer picture controls “bright” and “contrast” to minimum.
(3) Set the CUT OFF SFR (SFR903, SFR904, SFR905) and DRIVE SFR (SFR901, SFR902) to their mechanical centers.
(4) Leaves the CUT OFF SFR of the color which is brightest on the screen as it is and use other two CUT OFF SFR to adjust the white balance.
(5) Set the customer picture controls “brightness” and “contrast” to maximum.
(6) Turn SFR901 (R DRIVE) fully counterclockwise so the whole screen becomes red.
(7) Turn SFR901 (R DRIVE) gradually clockwise and stop it where red disappears from the screen.
(8) Turn SFR902 (B DRIVE) fully counterclockwise so the whole screen becomes blue.
(9) TurnSFR902 (B DRIVE) gradually clockwise and stop it where blue disappears from the screen.
(10) Repeat steps (2)-(4) and (5)-(9) until the white balance has been adjusted completey.
(11) Return the customer picture controls to their original positions.
(12) Receive a stairstep signal (color bar with chroma off) and check that there is no unnatural color at any bands.

* Perform 2-3 Sub-bright adjustment after completing the white balance adjustment.

2-2. Screen Adjustment

(1) Short the IC501 Pin2 and Pin5 (or 11) and set the screen in single horizontal line.
(2) Set the TV to the external input mode (no input).
(3) Connect an oscilloscope to TP901 (JW901) Pin9 of S901 (on the NK C.B.).
(4) Adjust SFR302 (Sub-bright) so the voltage at TP901 (JW901) Pin9 of S901 is 170 ± 5VDC. (See Figure 2-1)
(5) Adjust the SCREEN VR (FBT) so that a horizontal line begins to appear at the center of the screen.
(6) Release the short-circuit point.

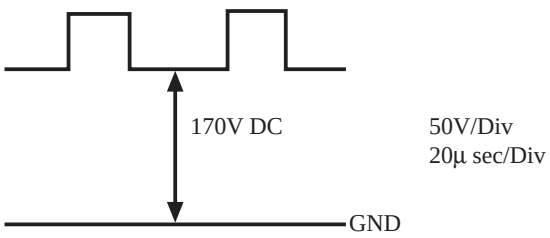
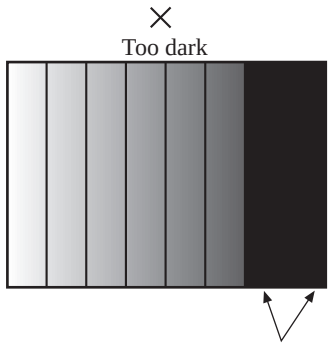


Fig 2-1

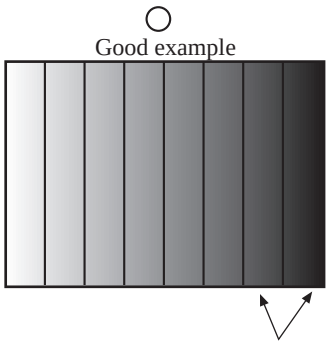
* Be sure to perform the next sub-bright adjustment after completing this adjustment.

2-3. Sub-bright Adjustment

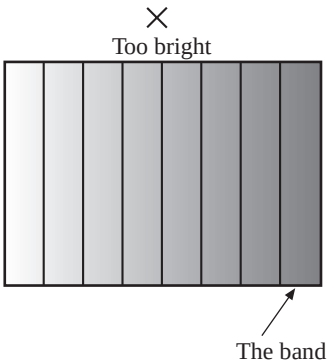
(1) Receive a NTSC stairstep signal (color bar with chroma off).
(2) Adjust SFR302 so the band next to the right end start to light. (See Figure 2-2)



Two bands on the right are dark and cannot be distinguished.



The band on the right end is not lit and the adjacent band is very dim.



The band on the right end is lit.

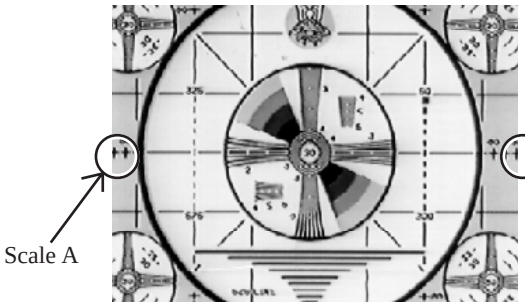
Fig 2-2

2-4. Focus Adjustment

(1) Receive a NTSC dot pattern signal.
(2) Adjust the FOCUS SFR (FBT) so the focus of the dots is optimum.

2-5. Horizontal Position Adjustment

(1) Input the following signals.
Monoscope signal of the test tape TTV-06T (connect video)
(2) As is shown in Fig. 2-3, make adjustments with SFR301 so that the scales on both sides of the screen are the same.



Scale A = Scale B

Fig 2-3

2-6. Vertical Size Adjustment

(1) Input the monoscopic signal of the test tape TTV-06T. (connect video)
(2) Make adjustments with SFR501 so that the upper and lower scales on the monoscope screen have the numerical values that appear below. (refer to Fig. 2-4 (a))
* SW501 is used only for initial setting in the factory. Make sure that the selector of SW501 is positioned at B (center) before adjusting.

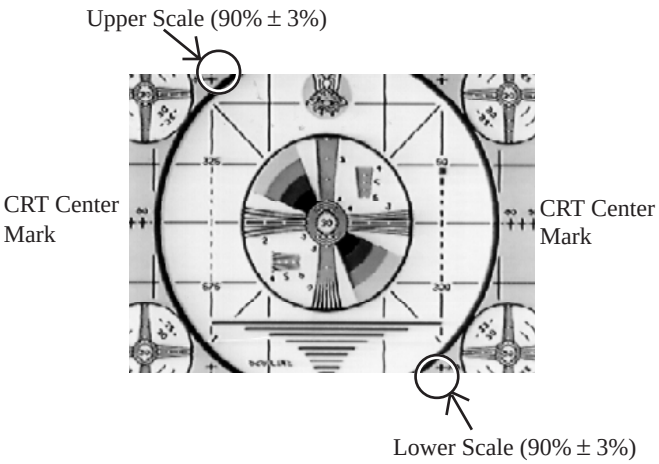


Fig 2-4 (a)

(Simple Adjustment Method)

(1) Using LEADER LCG-404, input the cross hatch signal.
(2) As is shown in Fig. 2-4 (b), make adjustments with SFR501 so that the number of vertical squares is 13.

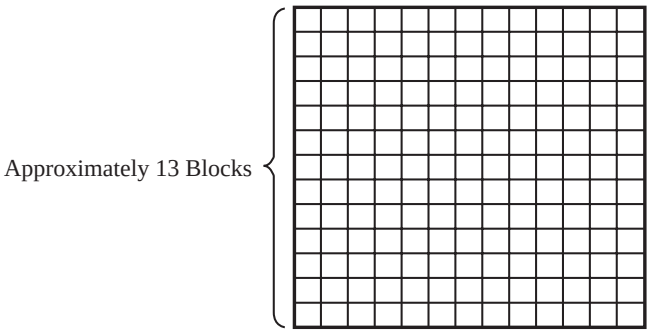


Fig. 2-4 (b)

2-7. Sub-tint Adjustment

(1) Receive an NTSC 3.58 MHz color bar signal.
(2) Connect an oscilloscope to Q903 Collector (on the NK C.B).
(3) Adjust SFR303 so the bottom edges of the waveform fall on one line. (See figure 2-5)

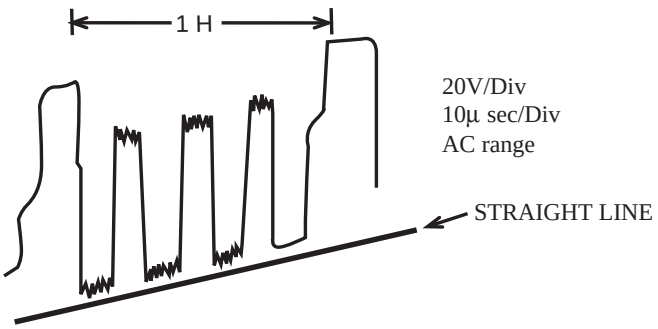


Fig. 2-5

3. TUNER ADJUSTMENT

3-1. AGC Adjustment

(1) Receive a NTSC signal of RF INPUT under the following conditions.
Input level: 58 dBμ
Modulation percentage: 87.5%
Received channel : US TV 10ch (fp = 193.25MHz)

(2) Adjust SFR201 so the voltage at the TU101 Pin1 (TP15 or JW101) is 6.8V ± 0.2VDC.

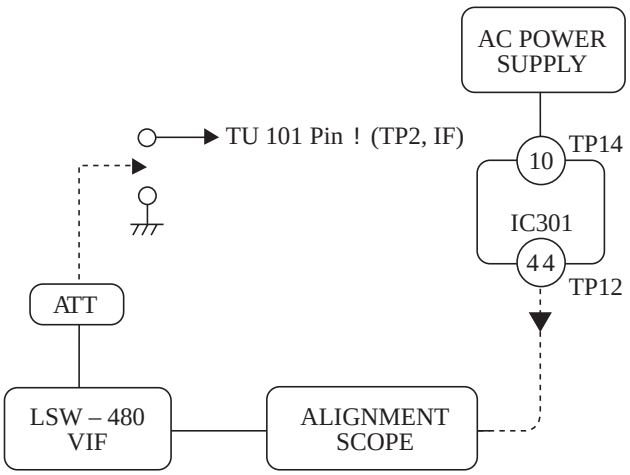
(Simple Adjustment Method)

(1) Using the LEADER LCG-401 (65dBμ), receive the color bar signal on channel 2.
(2) With SFR201, make adjustments so that the voltage of TU101 pin1 becomes 3.6VDC.
(3) Receive a television broadcast, and verify that the screen is clear.

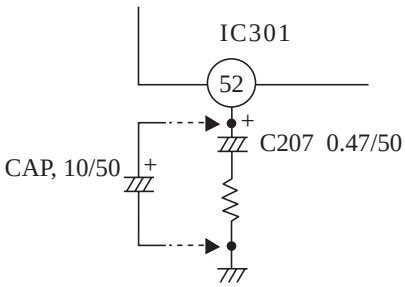
3-2. VCO Adjustment

(Rough Adjustment)

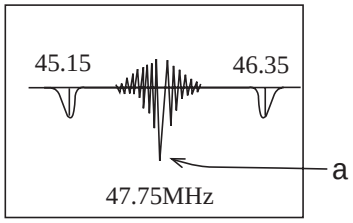
(1) Make connections as they appear below.



(2) Connect between Pin52 and GND of IC301 with capacitor.



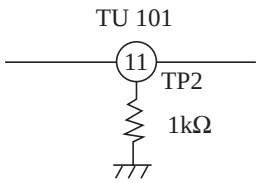
(3) Using a DC power supply, add DC3.0V ± DC0.2V of voltage to the IC301 Pin10 (TP14).
(4) Make adjustments with L203 so that the waveform's center section (section in the figure below) of the ALIGNMENT SCOPE becomes 45.75 MHz ± 50 kHz.



(5) Remove the capacitor.

3-3. AFT Adjustment

(1) Connect the resistance of 1 kΩ between the TU101 Pin11 and the GND.



(2) Input the following signal conditions to the TU101 Pin11. (AM/FM SSG)
CARRIER 45.75 MHz
LEVEL 100 dBμ
MOD OFF
(3) Make adjustments with L206 so that the voltage of the IC301 Pin47 (TP16) is DC4.5V ± DC0.2V.
(4) Remove resistance (1 kΩ).

(Simple Adjustment Method)

(1) Using the pattern generator LCG-401, receive the signal for channel 2.
(2) Adjust L206 so that the voltage at IC301 Pin47 (TP16) becomes 4.5V ± 0.3VDC.
(3) Receive each television broadcasts and vertify that the picture is clear.

3-4. SIF Adjustment

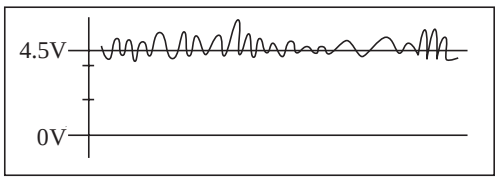
(1) Input the following signal conditions to the IC301 Pin48 (TP1).
(FM/SG)
CARRIER 4.5MHz
LEVEL 90dBμ
MOD OFF

(2) Adjust L207 so that the voltage at IC301 Pin1 (TP21) becomes 4.5V ± 0.3VDC.

(Simple Adjustment Method)

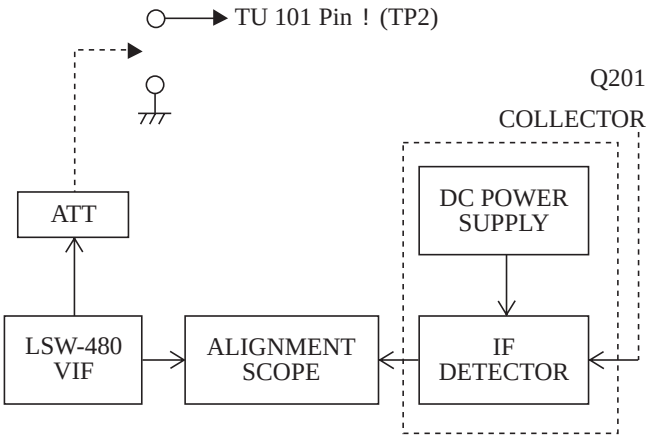
(1) Connect an oscilloscope to IC301 Pin1 (TP21), then receive a television broadcast.

(2) Adjust L207 so that the center of audio signal level becomes 4.5V.

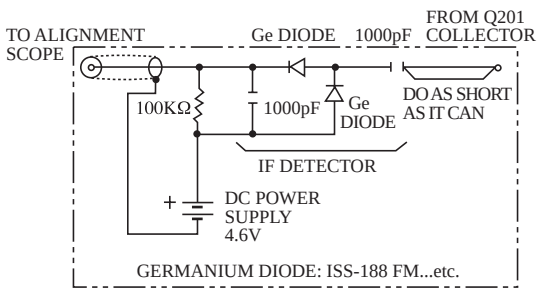


3-5. TRAP Adjustment

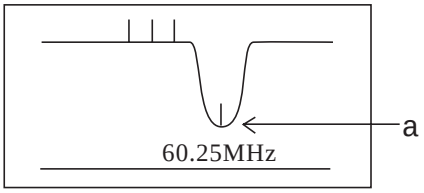
(1) Make connections as shown in figure below.



<IF DETECTOR>



(2) Adjust L201 so that center section (section in the figure below) of the ALIGNMENT SCOPE waveform becomes 60.25 MHz ± 50 kHz.



1. How To Activate /Release Service Mode

<JIG remote control unit>
JIG remote control unit to operate the service mode should be used with the remote control unit for RC-6VT03 (86-LBR-951-010) or 86-6VT07 (86-LBP-951-010).

Test mode is activated by pressing TEST key (Hidden Key under the label). (Refer to Fig.1).

When the Test Mode is activated, below menu (refer to Fig.2) will be appeared and turn on and off at one second interval.

❖ Jig Remote Controller
(1) Remove label of jig remote controller.
(2) Cut label of two hidden keys (Finish and Test) into button size.
(3) Place two timer buttons on the two hidden keys.
(4) Place label back after above steps.

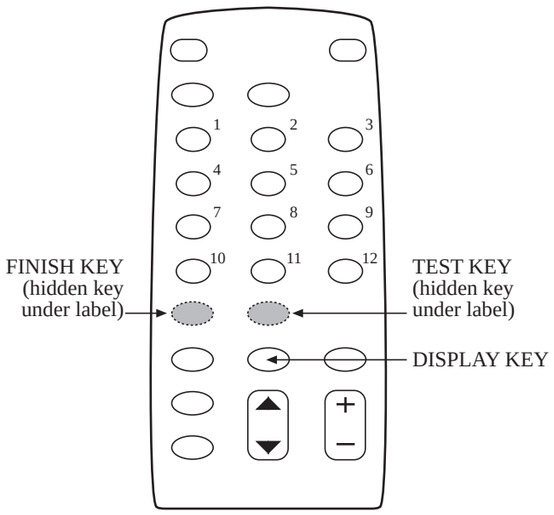


Fig. 1

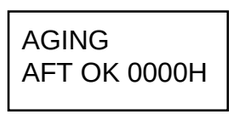


Fig. 2

Test mode is released by pressing TEST KEY again.

2. Content of Service Mode.

Test mode have the following functions.
[1] Function for releasing Auto Power OFF.
[2] Display AFT S curb status.
[3] Display the product Hours of CRT ON.

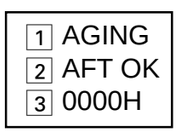


Fig. 3

[1] Release the function of Auto Power OFF.
It releases the function of Auto Power OFF when no input occurs.

It is used for warming up (Aging) of CRT Adjustment.

[2] Display of AFT S curb.
It displays OK, UP, DN in the status of AFT S curb.
(Observe the Voltage of IC301 Pin47)

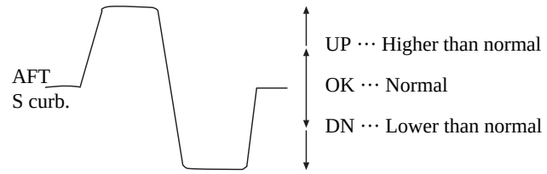
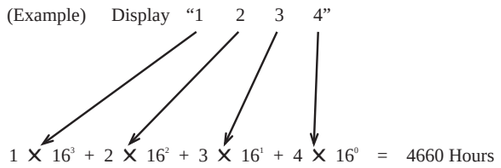


Fig. 4

[3] Display the product hours of CRT ON.
It product hours of CRT ON at one hour interval count up by (HEX).

Display is 4 digits in HEX.
The product hours is connected to the decimal scale number from the displayed number.



❖ When it exceeds 7FFF H (32768 hours), it will reflect to 0000 H again.

Precautions to replace EEPROM

When replacing the EEPROM (IC3, AT93C46-10PI), be certain to follow the sequence appearing below to carry out initialization.

1. Press " TEST " key (hidden key) on the remote control unit to activate the Service Mode. (Refer to Fig. 1)
2. Press " DISPLAY " key on the remote control unit and verify that the screen is the same as in Fig. 2.
3. Press " CHANNEL ⓘ " key and move the red cursor to S2 position.
4. Press "VOLUME + –" key, and display data appears as below.

S1	S2	M	1	2	3	4	5	6	7	8
0	1	0	1	1	1	1	0	1	0	1

Red cursor

5. With conditions as they are in step 4, press the "DISPLAY" key and then press the "FINISH key (hidden key)". (refer to Fig. 1)
6. Following the display of "INITIAL" on the screen for a few seconds, the power will automatically go off.

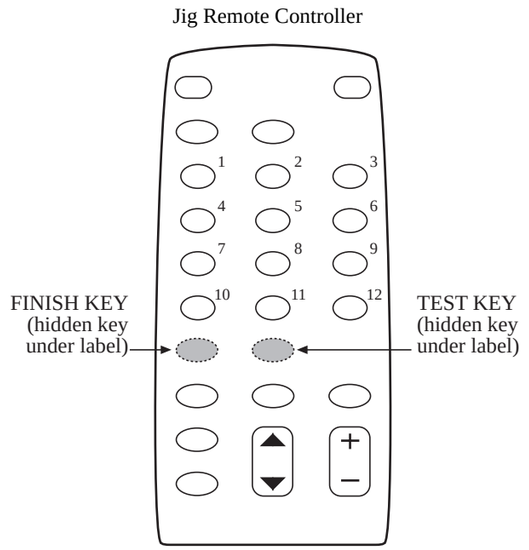
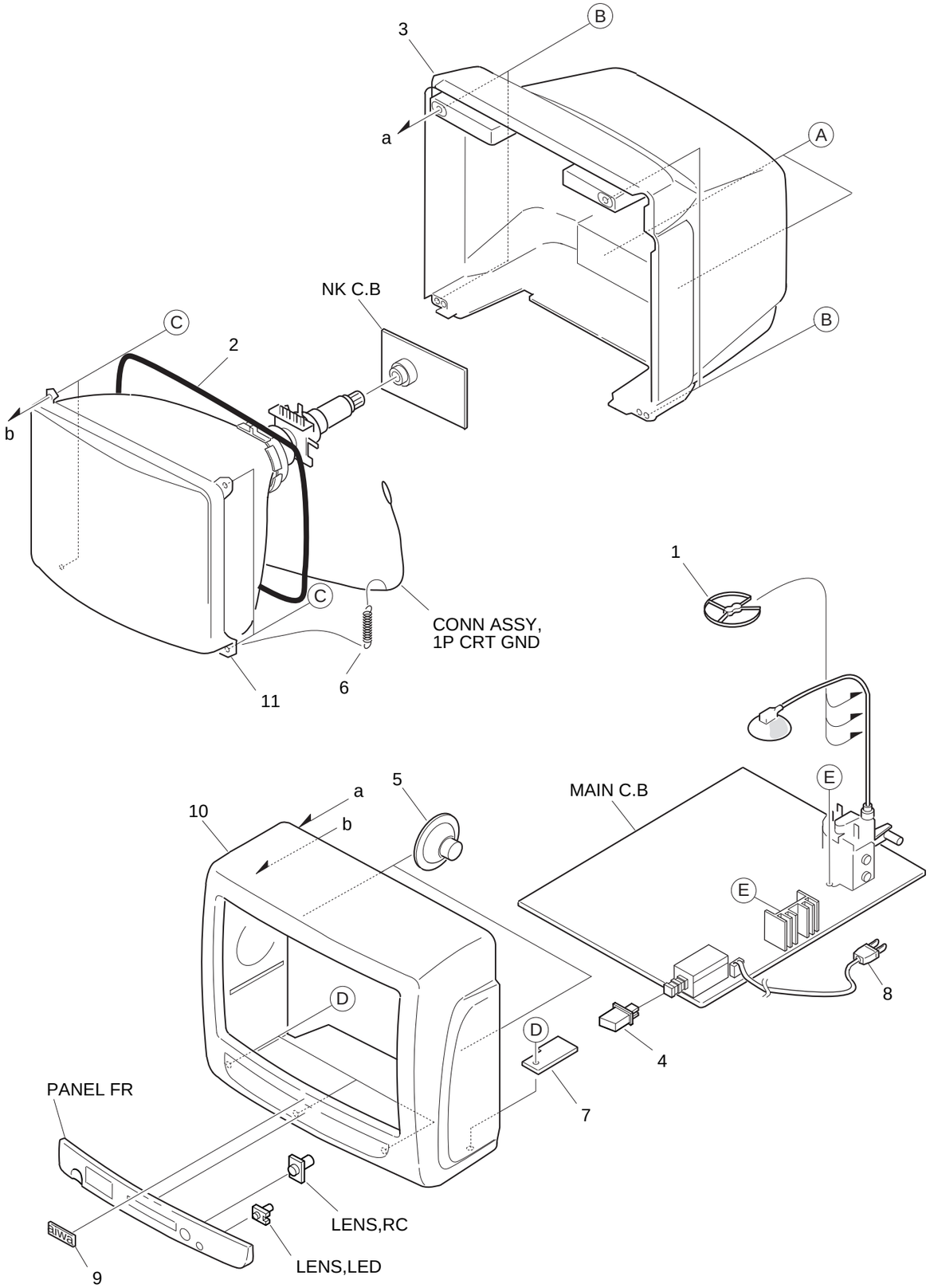


Fig. 1

Fig. 2

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description, please check in "REFERENCE NAME LIST"

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-054-086-010		BADGE,AIWA 52.5
2	8Z-JBW-001-010		PANEL,FR CN202
3	86-LB4-006-010		LENS,LED
4	86-LB4-005-010		LENS,RC
5	86-LB4-001-210		CABI,FR
6	86-LBU-201-010		HLDR,AC CORD
7	86-LB4-004-010		BTN,POWER
⚠ 8	87-JBC-628-010		AC CORD SET,NH BLK
9	86-LB7-202-110		HLDR,FBT
10	84-LB3-641-010		SP,F DIA 7.6
11	87-A90-332-010		HLDR,SF-2001 HV CABLE
12	87-JBD-605-010		CRT,A48JAN44X04(W)
13	84-LB3-205-010		SPR-E,EARTH
14	84-LB2-633-110		CONN ASSY,1P CRT GND
15	87-JBD-625-010		DGC,20 15 OHM
16	86-LB4-002-110		CABI,REAR
17	87-JBG-004-010		PLATE,JACK NH
18	84-LB3-216-010		HLDR,LED
A	87-067-758-010		BVT2+3-12 W/O SLOT
B	87-067-680-010		BVI T3+3-10
C	86-LBB-206-010		S-SCREW,ASSY TV5-40 W20
D	87-067-844-010		BVT2+4-16 BLK
E	87-067-761-010		TAPPING SCREW, BVT2+3-10
F	87-067-579-010		TAPPING SCREW, BVT2+3-8