

SERVICE MANUAL

COLOR TELEVISION

- This Service Manual contains information about the difference between TV-S2011 (U5AL) and TV-S2011 (U). If requiring other information, see Service Manual of TV-S2011 (U), (S/M Code No. 09-99C-416-8R2).

SPECIFICATIONS

Tuner System	Frequency synthesized tuner
TV System	NTSC-M
Channel Coverage	VHF: 2 to 13 UHF: 14 to 69 CATV: 5A, A-1 to A-5, A to W, W+1 to W+84
Program Memory	181
Antenna Input	75 ohms, unbalanced
Picture Tube	20"
Screen Size	406 (W) X 305 (H) mm (16 x 12 ¹ / ₈ in.) 508 mm (diagonal) (20 in.)
Video Input	1 Vp-p 75 ohms
Audio Input	0.5 Vrms., 33 k ohms more
Speaker	103 X 45 mm (4 ¹ / ₈ X 1 ¹³ / ₁₆ in.)
Operating Voltage	120 V AC, 60 Hz
Power Consumption	85 W
Phones Jack	Stereo-mini jack
Operating Temperature	5°C – 40°C
Operating Humidity	35% – 80%
Dimensions	580 (W) X 425 (H) X 491 (D) mm (22 ⁷ / ₈ x 16 ³ / ₄ x 19 ³ / ₈ in.)
Weight	22 kg (48.4 lbs.)

- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
2	8Z-JBE-910-210	IB,U(ESF)	S2011/1311 -NEW

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 1.5 to 3.0 M Ω when applying 500V per second.
 - 2) In the voltage withstand test, apply 1 KV for 1 minute and check that the GO lamp lights.

- * Breaking current set to 10 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.

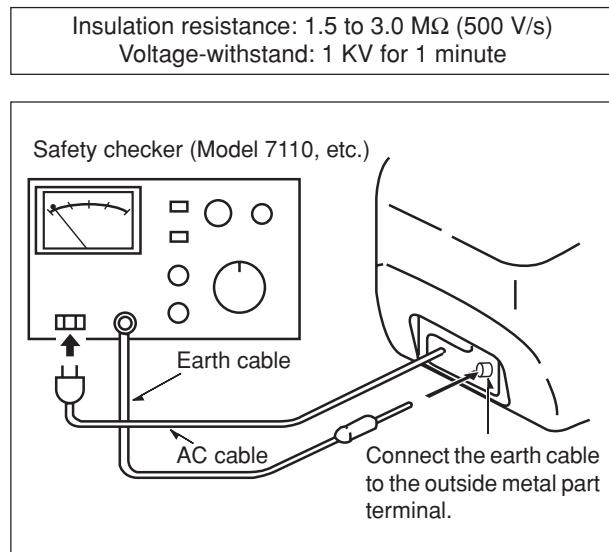


Fig-1

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

1. Keep the notices.

As for the places which need special attentions, they are indicated with labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
2. Avoid an electric shock.

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
3. Use the designated parts.

The parts in this equipment have the specific characteristics of incombustibility and withstand voltage for safety.
Therefore, use a part which has the same character as the replaced part. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts with a Δ mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.

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

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

Safety is secured against an X-ray by giving considerations to the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing, except indicates, causes rising of high voltage, and the cathode-ray tube emits an X-ray.
7. Perform a safety check after servicing.

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are deteriorated portions around the places serviced.

Δ 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.

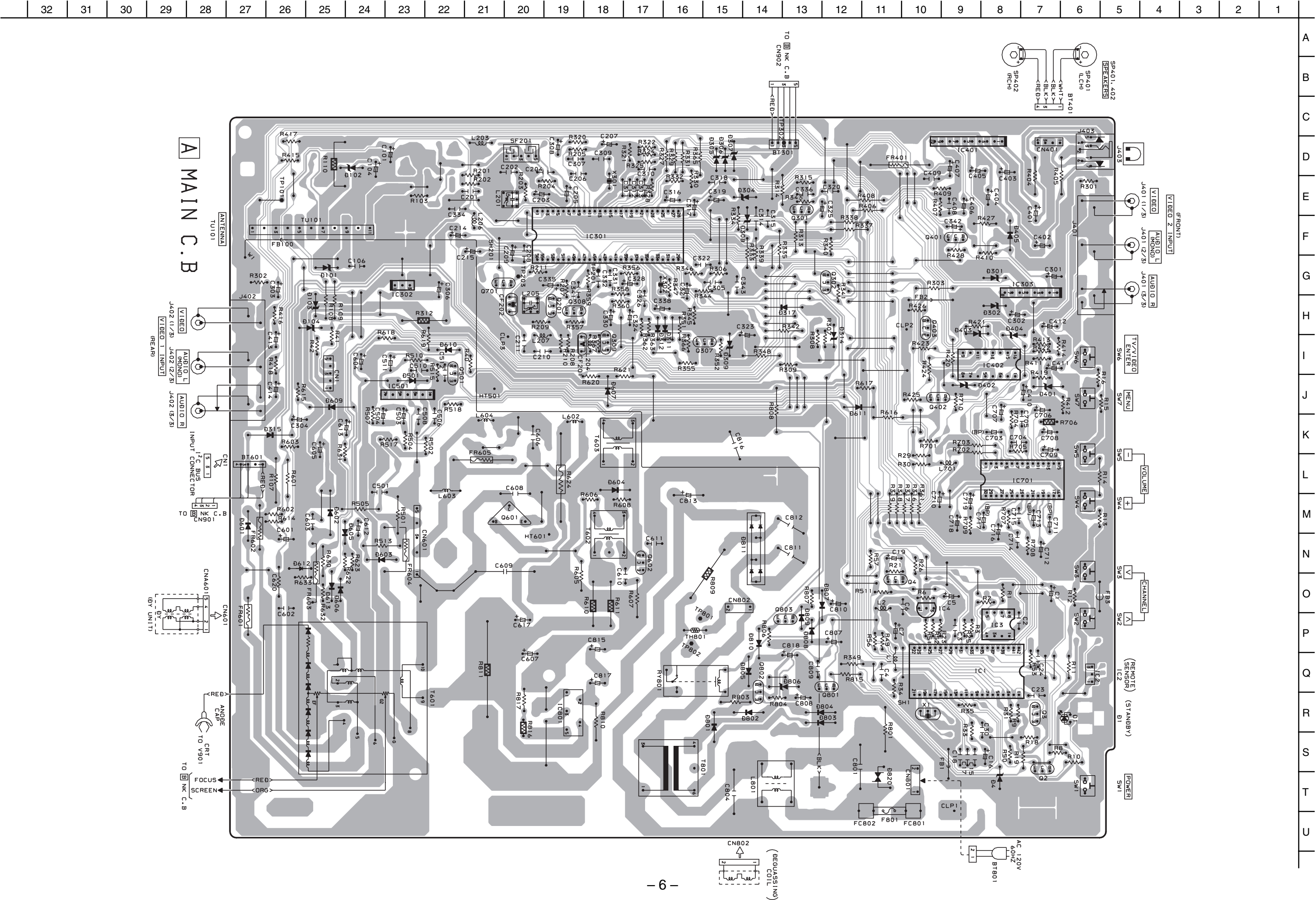
ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C211	87-018-115-080		CAP, CER 47P-50V
	8Z-JBH-622-010		IC,M37272M8-183SP	C214	87-A12-086-080		CAP,E 0.47-50 SMG
	87-A91-538-010		RCR UNIT,SBX1981-72P	C215	87-A12-086-080		CAP,E 0.47-50 SMG
	87-A21-133-080		IC,BMR-0101D	C301	87-A12-091-080		CAP,E 10-50 SMG
	87-A21-788-010		IC,KIA7809API	C302	87-A12-091-080		CAP,E 10-50 SMG
	87-A21-239-010		IC,TA1201CN	C303	87-A12-091-080		CAP,E 10-50 SMG
	87-A21-378-010		IC,S-24C04BDP-1A	△ C304	87-A12-091-080		CAP,E 10-50 SMG
	87-002-421-010		IC,NJM2233BL	C305	87-018-134-080		CAPACITOR,TC-U 0.01-16
	87-A21-090-010		IC,LA4600	C306	87-A12-061-080		CAP,E 47-10 SMG
	87-027-666-010		IC,TC4052BP	C307	87-A10-299-080		CAP,M 0.022-50 J
	87-070-237-010		IC,LA7832	C308	87-A12-086-080		CAP,E 0.47-50 SMG
	8Z-JBH-605-010		IC,CXA2104S	C309	87-018-147-080		CAP,TC-U 10P-50 CH
	87-A21-290-010		IC,STR30110	C310	87-018-119-080		CAP, CER 100P-50V
				C311	87-A11-148-080		CAP, TC U 0.1-50 ZF
				C312	87-A11-148-080		CAP, TC U 0.1-50 ZF
TRANSISTOR				C313	87-A11-148-080		CAP, TC U 0.1-50 ZF
	87-026-269-080		TR,DTA114ES	C314	87-018-134-080		CAPACITOR,TC-U 0.01-16
	89-327-854-080		TR,2SC2785F	C315	87-018-131-080		CAP, CER 1000P-50V
	89-111-755-080		TR,2SA1175F	C316	87-A10-378-080		CAP,E 2.2-50 K SH
	89-110-154-080		TR,2SA1015Y	C317	87-A12-088-080		CAP,E 2.2-50 SMG
	87-026-245-080		TR,DTC114ES	C318	87-018-134-080		CAPACITOR,TC-U 0.01-16
	87-A30-176-010		TR,2SC1573A P/Q/R	C319	87-016-251-080		CAP,E 220-16 M SMG
	89-320-012-080		TR,2SC2001L	C320	87-018-196-080		CAP, CER 1500P-16V
	87-A30-050-010		TR,2SD2499	C321	87-A12-090-080		CAP,E 4.7-50 SMG
				C323	87-010-379-080		CAP,E 22-16 M 11L SME
DIODE				C324	87-A12-086-080		CAP,E 0.47-50 SMG
	87-017-931-080		ZENER,MTZJ5.6B	C325	87-A12-086-080		CAP,E 0.47-50 SMG
	87-002-743-080		ZENER,MTZJ 33B	C328	87-A12-091-080		CAP,E 10-50 SMG
	87-070-136-080		ZENER,MTZJ5.1B	C330	87-A12-087-080		CAP,E 1-50 SMG
	87-A40-523-080		ZENER,MTZJ9.1B	C332	87-018-134-080		CAPACITOR,TC-U 0.01-16
	87-A40-348-080		ZENER,MTZJ3.3A	C334	87-018-134-080		CAPACITOR,TC-U 0.01-16
	87-A40-611-080		ZENER,MTZJ3.9B	C335	87-A10-918-080		CAP,E 100-16 SMG
	87-020-465-080		DIODE,1SS133	C336	87-A11-148-080		CAP, TC U 0.1-50 ZF
	87-A40-520-080		ZENER,MTZJ11B	C338	87-A12-086-080		CAP,E 0.47-50 SMG
	87-A40-286-080		DIODE,RGP10JE-5025	C341	88-707-959-810		CAP,M 0.39-50 J TF
	87-070-274-080		DIODE,1N4003 SEM	C342	87-A12-087-080		CAP,E 1-50 SMG
	87-A40-824-090		DIODE,RU3LFB1	C343	87-018-131-080		CAP, CER 1000P-50V
	87-A40-328-010		DIODE,GBU4JL	C401	87-A12-068-080		CAP,E 470-16 SMG
				C402	87-A12-068-080		CAP,E 470-16 SMG
				C403	87-A12-068-080		CAP,E 470-16 SMG
MAIN C.B				C404	87-A10-918-080		CAP,E 100-16 SMG
	BT301	87-JBC-625-010	CONN ASSY,5P V WHT TV-NK	C405	87-A12-090-080		CAP,E 4.7-50 SMG
	BT601	87-JBG-626-010	CONN ASSY,4P V WHT TV-NK	C406	87-A12-084-080		CAP,E 0.22-50 SMG
	C1	87-A12-091-080	CAP,E 10-50 SMG	C407	87-A12-084-080		CAP,E 0.22-50 SMG
	C2	87-018-134-080	CAPACITOR,TC-U 0.01-16	C410	87-A12-091-080		CAP,E 10-50 SMG
	C3	87-018-134-080	CAPACITOR,TC-U 0.01-16	C411	87-A12-091-080		CAP,E 10-50 SMG
	C4	87-018-196-080	CAP, CER 1500P-16V	C412	87-A12-091-080		CAP,E 10-50 SMG
	C5	87-A12-087-080	CAP,E 1-50 SMG	C413	87-A12-091-080		CAP,E 10-50 SMG
	C7	87-A12-063-080	CAP,E 220-10 SMG	C414	87-A12-091-080		CAP,E 10-50 SMG
	C15	87-018-123-080	CAP, CER 220P-50V	C501	87-A12-373-080		CAP,M 0.056-100 J CP
	C16	87-A12-087-080	CAP,E 1-50 SMG	C502	87-A10-831-080		CAP,E 1000-25 M SMG
	C17	87-018-131-080	CAP, CER 1000P-50V	C503	87-A12-087-080		CAP,E 1-50 SMG
	C18	87-018-128-080	CAP, CERA-SOL SS 560P	C504	87-A12-087-080		CAP,E 1-50 SMG
	C19	87-A12-083-080	CAP,E 0.1-50 SMG	C508	87-A10-469-080		CAP,CER 2200P-500 K B DD10
	C23	87-018-123-080	CAP, CER 220P-50V	C510	87-018-131-080		CAP, CER 1000P-50V
	C24	87-018-131-080	CAP, CER 1000P-50V	C511	87-A12-079-080		CAP,E 100-35 SMG
	C101	87-A12-090-080	CAP,E 4.7-50 SMG	C512	87-018-127-080		CAP, CER 470P-50V
	C104	87-A12-063-080	CAP,E 220-10 SMG	C601	87-016-373-080		CAP,E 10-250 M SME
	C201	87-018-134-080	CAPACITOR,TC-U 0.01-16	△ C603	87-010-974-080		CAP,CER 220P-500 B
	C202	87-018-134-080	CAPACITOR,TC-U 0.01-16	C604	87-010-396-080		CAP,E 470-35 SME
	C203	87-A12-086-080	CAP,E 0.47-50 SMG	C605	87-A10-831-080		CAP,E 1000-25 M SMG
	C204	87-018-134-080	CAPACITOR,TC-U 0.01-16	C606	8Z-JBH-626-010		CAP,M/P 0.30-250 J A TYPE
	C205	87-A12-068-080	CAP,E 470-16 SMG	C607	87-A11-321-090		CAP,E 100-160 M 105 YXA
	C206	87-A10-287-080	CAP,M 2200P-50 J	C608	8Z-JBJ-602-010		CAP,CER 220P-2K K BN
	C207	87-A12-086-080	CAP,E 0.47-50 SMG	△ C609	87-016-482-010		CAP,PP 6800P-1.6K J DKR
	C208	87-018-134-080	CAPACITOR,TC-U 0.01-16	△ C610	87-010-974-080		CAP,CER 220P-500 B
				△ C611	87-010-974-080		CAP,CER 220P-500 B
	C209	87-A12-066-080	CAP,E 47-16 SMG	C612	87-A12-091-080		CAP,E 10-50 SMG
	C210	87-018-115-080	CAP, CER 47P-50V	C613	87-A12-088-080		CAP,E 2.2-50 SMG
				C617	87-016-215-080		CAP,E 1-160 M TWSS

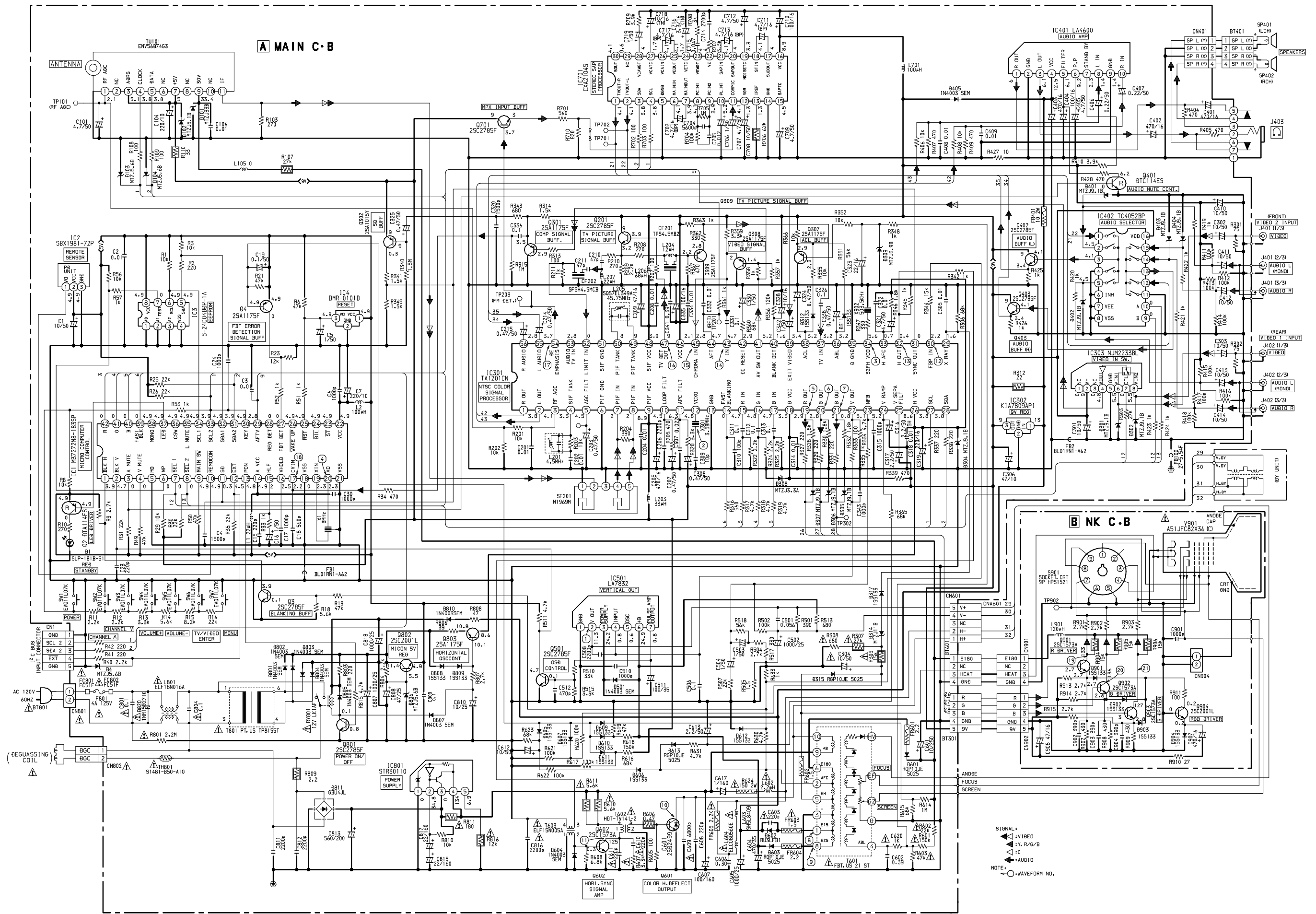
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
△ C620	88-130-102-080	RES,1K-1/4W J	
C703	87-015-464-080	CAP,E 4.7-16 BP	
C704	87-A10-292-080	CAP,M 5600P-50 J	
C705	87-A10-296-080	CAP,M 0.012-50 J	
C706	87-A12-087-080	CAP,E 1-50 SMG	
C707	87-A12-090-080	CAP,E 4.7-50 SMG	
C708	87-A12-091-080	CAP,E 10-50 SMG	
C709	87-A12-090-080	CAP,E 4.7-50 SMG	
C710	87-A10-918-080	CAP,E 100-16 SMG	
C711	87-015-464-080	CAP,E 4.7-16 BP	
C712	87-A12-090-080	CAP,E 4.7-50 SMG	
C713	87-015-464-080	CAP,E 4.7-16 BP	
C714	87-A10-288-080	CAP,M 2700P-50 J	
C716	87-016-301-080	CAP,TN 3.3-16K DN	
C717	87-015-464-080	CAP,E 4.7-16 BP	
C718	87-016-302-080	CAP,TN 10-16K DN	
C719	87-A12-087-080	CAP,E 1-50 SMG	
△ C801	87-A10-374-010	CAP,M/P 0.1-275 K RMR	
△ C804	87-A10-374-010	CAP,M/P 0.1-275 K RMR	
C807	87-A10-831-090	CAP,E 1000-25 M SMG	
C808	87-A12-071-080	CAP,E 47-25 SMG	
C809	87-A11-148-080	CAP, TC U 0.1-50 ZF	
C810	87-010-405-080	CAP,E 10-50 M 11L SME	
C811	87-A10-867-090	CAP,CER 2200P-2K K R	
C812	87-A10-867-090	CAP,CER 2200P-2K K R	
C813	8Z-JBE-604-090	CAP,E 560U-200K	
C815	87-A11-319-080	CAP,E 22-160 M 105 YXA	
△ C816	87-012-388-010	CAP,CER 2200P-125M E DE	
C817	87-A11-319-080	CAP,E 22-160 M 105 YXA	
C818	87-A10-831-090	CAP,E 1000-25 M SMG	
CF201	84-LB3-626-010	FLTR,TPS4.5MB2	
CF202	87-008-574-080	FLTR,SFSH4.5MCB	
CN1	87-009-195-010	CONN,5P B5BEH	
CN401	87-049-469-010	CONN,4P V	
CN601	87-A60-933-010	CONN,4P V B04(5-3)B-DVS-L	
△ CN801	87-099-674-010	CONN,2P VA V	
△ CN802	82-481-649-010	CONN,2P V TV-50P	
CNA601	8Z-JBH-638-010	CONN ASSY,5P V W 320-600-US	
D1	87-070-110-010	LED,SLP-181B-51 RED	
△ D820	8Z-JBH-606-010	VRIS,TNR15G271K	
△ F801	87-035-489-010	FUSE,4A 125V T237	
FB1	8Z-JBH-635-080	COIL,CORE BL01RN1-A62	
FB2	8Z-JBH-635-080	COIL,CORE BL01RN1-A62	
FB3	8Z-JBH-635-080	COIL,CORE BL01RN1-A62	
FB100	8Z-JBH-636-010	F-BEAD,2.7-5.5-4 FS0B060	
△ FC801	87-A90-160-080	FUSE CLAMP,FC 51F	
△ FC802	87-A90-160-080	FUSE CLAMP,FC 51F	
FR401	87-029-151-090	RES,FUSE 10-2W J	
FR601	87-A00-063-060	RES,FUSE 2.2-1/2W J R-TYPE	
FR602	87-A00-056-060	RES,FUSE 1.5-2W J R-TYPE	
△ FR603	87-A00-056-060	RES,FUSE 1.5-2W J R-TYPE	
FR604	87-A00-050-060	RES,FUSE 2.2-1W J R-TYPE	
△ FR605	87-A00-650-090	RES FUSE,2.2K 1W J RF1S	
HL1	84-LB3-216-010	HLDR,LED	
J401	87-A60-322-110	JACK,PIN 3P Y-W-R W/SW	
J402	8Z-JBH-616-010	JACK,PIN 3P Y	
J403	87-A60-420-010	JACK,3.5 ST (MSC)	
JW1	8Z-JBH-635-080	COIL,CORE BL01RN1-A62	
JW16	87-003-147-080	COIL,22UH J LAL02	
JW26	8Z-JBH-635-080	COIL,CORE BL01RN1-A62	
L1	87-003-147-080	COIL, 22UH J LAL02	
L2	87-005-614-080	COIL 100UH LAV35 J	
L201	8Z-JBR-612-010	COIL,SIF 4.5MHZ 504BN	
L203	87-003-148-080	COIL BIAS 33UH	
L204	87-003-282-080	COIL,12UH	
L205	8Z-JBH-610-010	COIL,PIF-SQ57EL349A 45.75MHZ	
L206	87-005-612-080	COIL,68UH J LAV35	
L207	87-003-147-080	COIL, 22UH	
△ L602	87-A50-040-010	COIL,2.2MH	
△ L603	8Z-JBE-606-010	COIL,LINEARITYSH5L8409	

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
△ L604	8Z-JBE-608-010	COIL,CHOKEELC08D560E	
L701	87-005-614-080	COIL 100UH LAV35 J	
△ L801	8Z-JBH-613-010	FLTR,LINE ELF18N016A	
R107	87-A00-331-090	RES,M/F 27K-2W J RSF(S)	
R110	87-A00-160-090	RES,M/F 33-2W J RSF(S)	
△ R307	87-025-427-080	RES,M/F 27K-1/6W F	
△ R308	88-121-681-080	RES,680-1/8W J	
△ R309	87-025-380-080	RES,M/F 15K-1/6W F	
R312	87-A00-356-090	RES,M/F 22-2W J RSS2X	
△ R601	88-130-154-080	RES,150K-1/4W J	
△ R602	88-121-223-080	RES,22K-1/8W J	
△ R603	88-121-473-080	RES,47K-1/8W J	
R606	87-A00-795-050	RES,M/F 0.47-1/2W J	
△ R607	88-140-332-080	RES,3.3K-1/2W J	
△ R610	87-A00-548-090	RES,M/F 5.6K-2W J ERGS	
△ R611	87-A00-548-090	RES,M/F 5.6K-2W J ERGS	
△ R624	87-A00-654-090	RES,FUSE 150-2W J RF2S	
R706	87-A00-130-080	RES,M/F 62K-1/6W F	
△ R801	8Z-JBH-629-080	RES,SD 2.2M-1/2W K ERC 12UG	
R809	87-A00-277-090	RES,CEM 2.2-10W J RGC	
△ R811	8Z-JBE-603-090	RES,CEM 180-20W J ZY	
△ R816	87-025-425-080	RES,M/F 12K-1/6W F	
△ RY801	87-A90-358-010	RELAY,12V LK1AF	
SF201	8Z-JBH-633-010	FLTR,SAW M1969-US	
SW1	87-A90-712-080	SW,TACT EVQ11L07K	
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	
△ T601	8Z-JBE-620-010	FBT,US 21 ST	
△ T602	85-JT2-653-010	PT,HDT-TV141-2	
△ T603	8Z-JBH-612-010	FLTR,PULSE ELF15N005A	
△ T801	8Z-JBH-614-010	PT,US TP8155T	
△ TH801	87-A90-996-010	POS-THMS,S1481-B50-A10	
TU101	8Z-JBE-610-010	TU UNIT,USA ENV56D74G3	
X1	87-030-212-080	CERA LOCK CST8.0M	
X301	87-A70-007-080	VIB,XTAL 3.58MHZ AQC-1001	
X302	87-030-327-010	VIB,CER CSB503F30	
NK C.B			
C901	87-A10-833-090	CAP,CER 1000P-2K K R	
C902	87-018-126-080	CAP,TC-U 390P-50 B	
C903	87-018-126-080	CAP,TC-U 390P-50 B	
C904	87-018-126-080	CAP,TC-U 390P-50 B	
C907	87-A12-068-080	CAP,E 470-16 SMG	
C908	87-A12-066-080	CAP,E 47-16 SMG	
CN901	87-049-469-010	CONN,4P V	
CN902	87-009-033-010	CONNECTOR, 5P	
CN904	87-A60-485-010	CONN,2P V LV GRA	
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)	
S901	86-LBR-670-010	SOCKET,CRT 9P HPS1521	

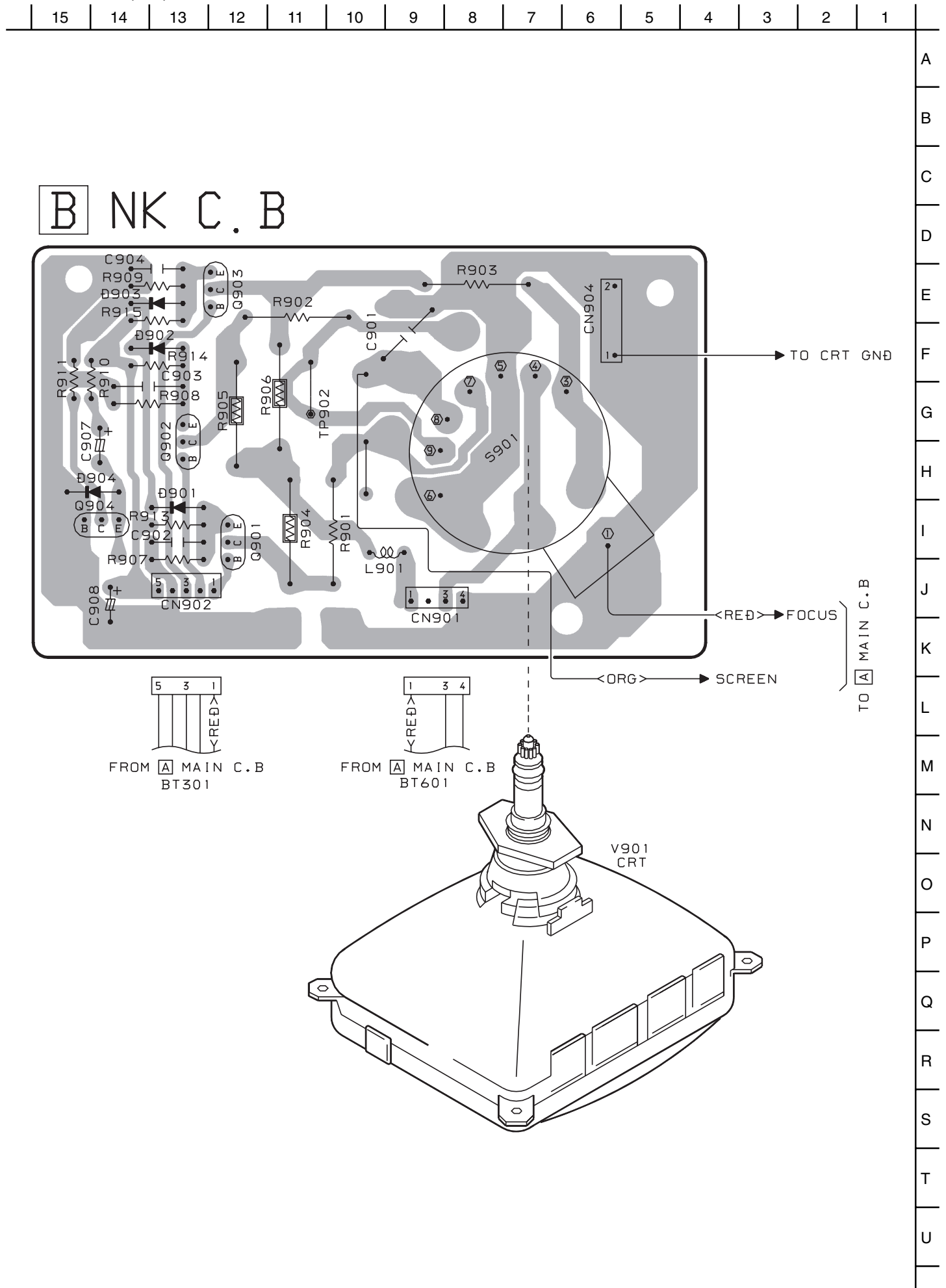
WIRING – 1 (MAIN)



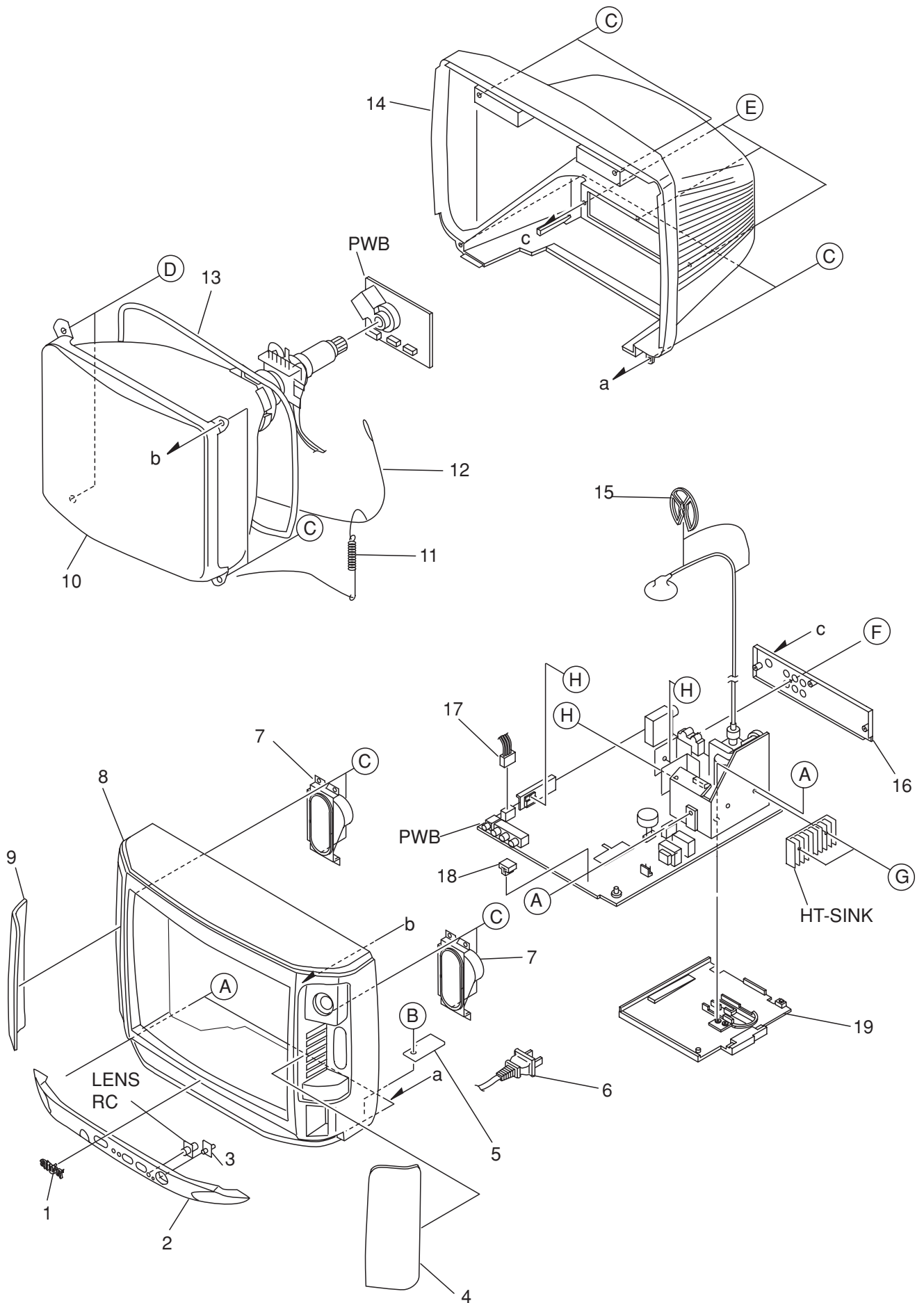
SCHEMATIC DIAGRAM – 1 (MAIN / NK)



WIRING – 2 (NK)



MECHANICAL EXPLODED VIEW 1 / 1



MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-054-086-010		BADGE,AIWA 52.5	16	8Z-JBE-010-010		PANEL,REAR U MPI
2	8Z-JBE-003-010		PANEL,FR S2011 UL	17	8Z-JBW-602-110		CONN ASSY,4P V WHT SP20
3	86-LBB-007-010		LENS,LED	18	84-LB3-216-010		HLDR,LED
4	88-JBJ-009-010		GRILLE,SPKR R ST	19	8Z-JBH-201-010		HLDR,FBT ST
5	86-LBU-201-010		HLDR,AC CORD	A	87-067-680-010		BVI T3+3-10
△	6	8Z-JBH-618-010	AC CORD,US BLK	B	87-067-758-010		BVT2+3-12 W/O SLOT
7	87-A91-412-010		SPKR,F 4*10 80HM 5W S0410J06	C	87-067-844-010		BVT2+4-16 BLK
8	8Z-JBE-002-010		CABI,FR UL	D	86-LBB-206-010		S-SCREW,ASSY TV5-40 W20
9	88-JBJ-008-010		GRILLE,SPKR L ST	E	87-B10-071-010		BVT2+3-16 W/O SLOT B
△	10	8Z-JBE-611-110	CRT,ASSY:A51JFC82X36 (C)	F	87-067-761-010		TAPPING SCREW, BVT2+3-10
11	84-LB3-205-010		SPR-E,EARTH	G	87-751-074-410		VT2+2.6-8 W/O CUT
12	86-LBN-622-110		CONN ASSY,1P CRT-GND	H	87-067-579-010		TAPPING SCREW, BVT2+3-8
△	13	8Z-JBE-605-010	DGC,21'US				
14	8Z-JBE-007-010		CABI,REAR UL				
15	87-A90-332-010		HLDR,SF-2001 HV CABLE				

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		

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