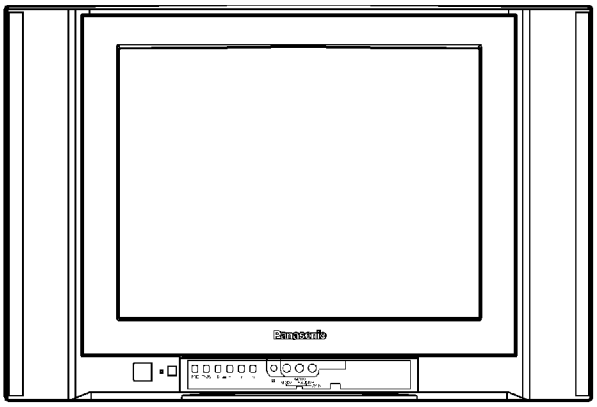
ORDER NO. MTV0308263C3

Service Manual

Colour Television



TC-21Z88RQ

GP3 Chassis

Specifications

Power Source :	AC AUTO 110-240V, 50/60 Hz
Power Consumption :	89W
Aerial Impedance :	75Ω unbalanced
	Coaxial type
Receiving System :	17 Systems
Receiving Channels :	
VHF	1-11 PAL B (Australia & N.Zealand)
	1-12 PAL/SECAM D
	1-12 NTSC M JAPAN
	2-12 PAL/SECAM B, G
	2-13 NTSC M U.S.A.
UHF	21-69 PAL G I/SECAM B, G, K1
	28-69 PAL G (Australia)
	13-56 PAL D
	13-52 NTSC M JAPAN
	14-69 NTSC NTSC M U.S.A.
CATV	S1-S41 (Hyper)
Intermediate Frequency :	
Video	38.0 MHz
Sound	31.5 MHz (D, K, K1)
	32 MHz (I)
	32.5 MHz (B, G)
	33.5 MHz (M)
Colour	33.57 MHz (PAL)
	33.6 MHz (SECAM)
	33.75 MHz (SECAM)
	34.42 MHz (NTSC)
Video / Audio Terminals :	
RAV In	Video In 1 Vp-p 75Ω
	Audio In Approx. 400mVrms
Monitor Out	Video Out 1 Vp-p 75Ω
	Audio Out Approx. 400mVrms
High Voltage :	27.5kV ±1.5
	at zero beam current
Picture Tube :	A51KQK99X
	51cm (21 inches)
	Measured diagonally,
	90° deflection
Audio Output :	16.0W
Dimensions :	Height : 464.0 mm
	Width : 682.0 mm
	Depth : 496.0 mm
Mass :	22.0 kg (Net Wt.)

Specifications are subject to change without notice.
Mass and dimensions shown are approximate.

Panasonic®

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

1 Safety Precautions

1.1. General Guide Lines

1. It is advisable to insert an isolation transformer in the AC supply before servicing this hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations, are properly installed.
4. When the receiver is not to be used for a long period of time, unplug the power cord from the AC cord outlet.
5. Potential, as high as **27.5kV** is present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Turn on the receiver's power switch.
   Measure the resistance value, with an ohmmeter, between the jumper AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4 MΩ and 20 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

1.3. Leakage Current Hot Check (Fig. 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Check a 2 kΩ non-inductive resistor and an AC/DC current meter, in series with each exposed metallic part on the receiver in turn and an earth such as a water pipe.
   The current from any point should not exceed 0.7 mA peak AC or 2 mA DC. In the case of a measurement being outside of these limits specified, there is a possibility of a shock hazard and the receiver should be repaired and rechecked before it is returned to the customer.

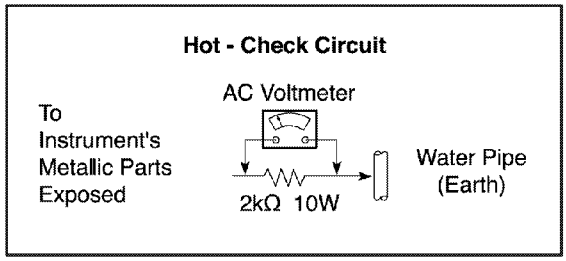


Fig. 1

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1.4. X-Radiation

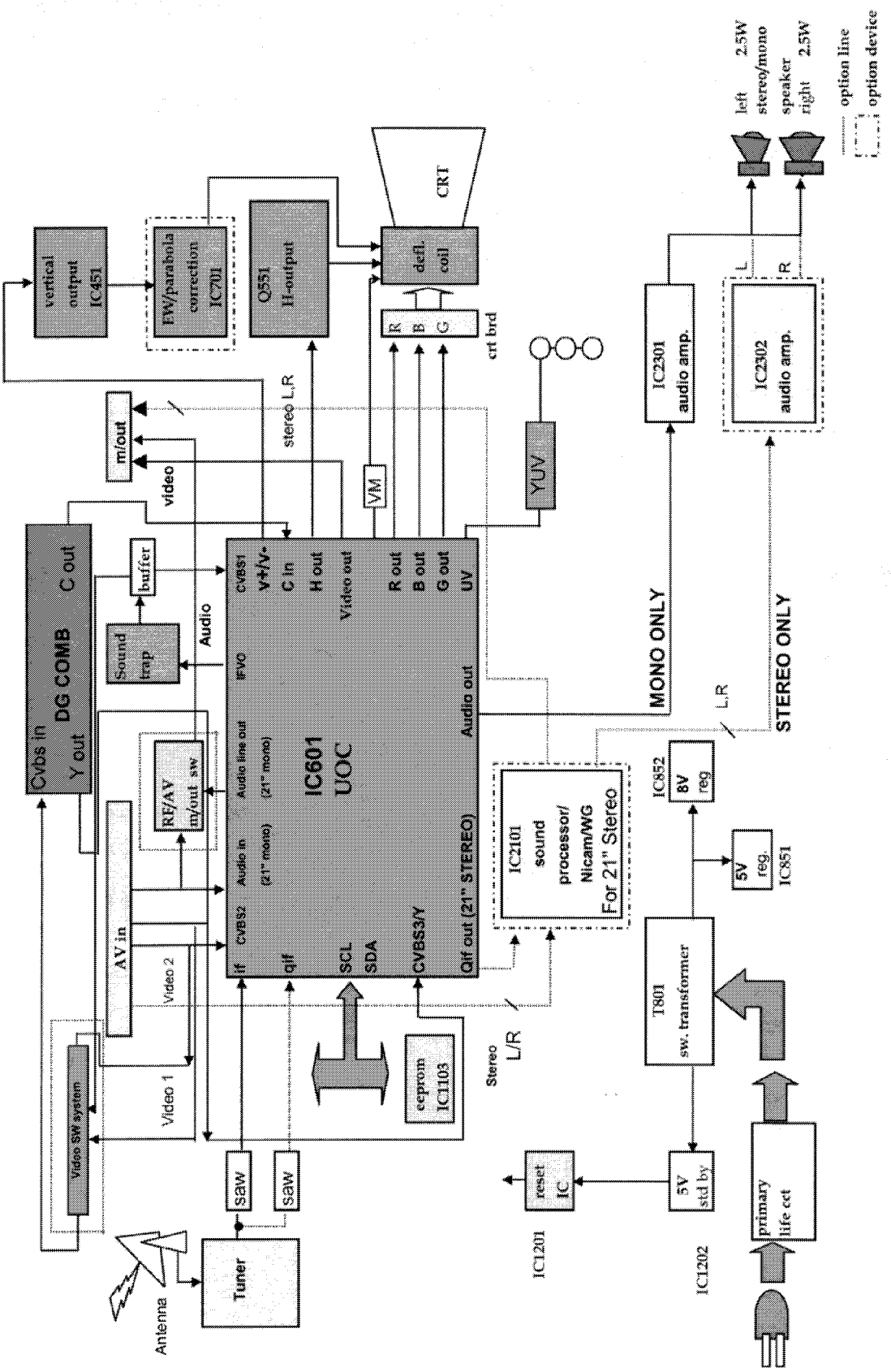
Warning:

The potential sources of X-Radiation in TV set are the EHT section and the picture tube. When using a picture tube test jig for service, ensure that jig is capable of handling **29.0kV** without causing X-Radiation.

Note: It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Use the remocon to get into Service Mode.
3. Measure the EHT. The meter reading should indicate **27.5±1.5kV**. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent the possibility X-Radiation, it is essential to use the specified picture tube, if service replacement becomes necessary.

1.5. GP3 Chassis Block Diagram



2 Service Hints

2.1. Service Position for E-Board

1. Remove the back cover.
2. Stand the TV set as shown in Fig. 2.
3. Remove the A-Board from the TV set by pulling the main board out as shown in Figure 2.

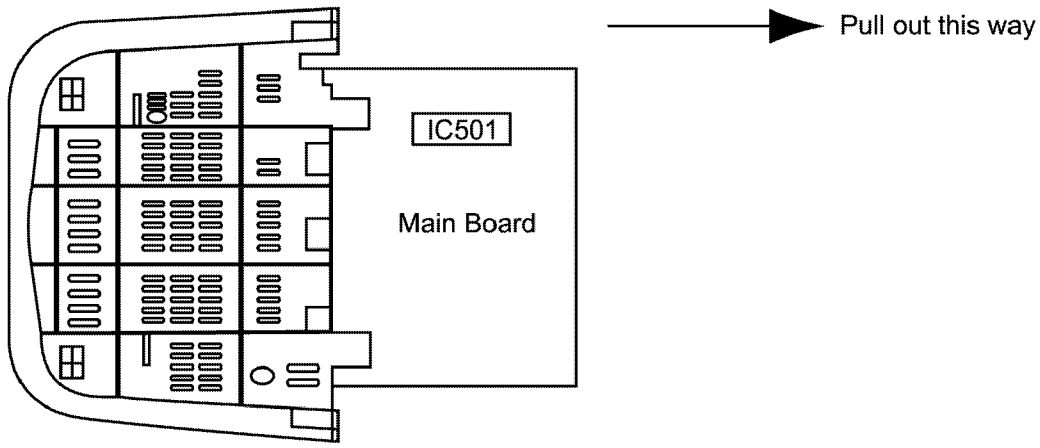


Fig. 2

2.2. Factory Mode Adjustment

How to set :

To set the Factory mode, press Volume 0 dac on the TV and Timer Setting 30 min. on the remote control and press Volume (-) Down button on the TV together press recall on the remote control.
CHK should appear on right of TV screen.
To move from CHK1 to CHK2 mode, etc. please follow below rotation :

To Set Self-Check :

Press the Volume Down button on TV then press the Off Timer button on remote control.

CHK1 -----➤ CHK2 -----➤ CHK3 -----➤ CHK4 -----➤ CHK1

←----- "1" ←----- "1" ←----- "1" ←----- "1"

2.3. Adjustment for White Balance

Preparation:

1. Receive the white balance pattern and aging should have been performed over 30 minutes.
2. Set the picture menu to DYNAMIC NORMAL.
3. Degausse the CRT face.
4. Fix the CRT colour analyzer receiver unit to CRT face.

Adjustment of Low Light.

1. Adjustment Sub Bright, so that Y = 7.0 ± 1.0 nit.
2. Adjustment R-CUT OFF, so that X = 0.238 ± 0.010 nit.
3. Adjustment G-CUT OFF, so that Y = 0.229 ± 0.010 nit.

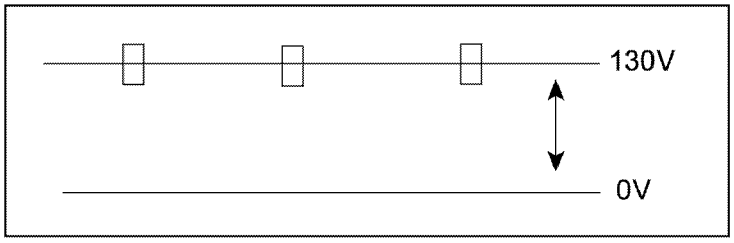
Adjustment of High Light

1. Adjustment Sub Bright, so that Y = 155 nit.
2. Adjustment R-Drive, so that X = 0.263 ± 0.010 nit.
3. Adjustment B-Drive, so that Y = 0.273 ± 0.010 nit.

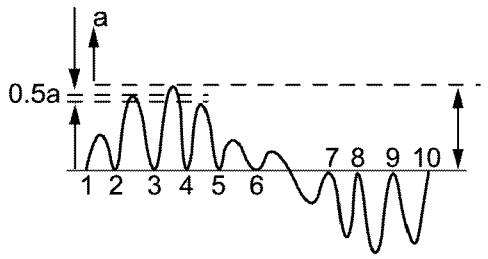
2.4. Adjustment for CRT CUT OFF

Preparation:

1. Connect the oscilloscope probe to TPL5.
2. Screen VR min.
3. Set the data Sub Bright, Bright.
4. In service Mode at “Bright” dac press [5] in factory mode to enter vertical line and adjust by volume down or up button.
5. Adjust “Screen VR” until 1-H Line appears.



2.5. Adjustment Procedure

Item / Preparation	Adjustment Procedure
+B Voltage 1. Operate the TV set. 2. Set control as follows : Brightness ..... minimum Contrast ..... minimum	Confirm the DC voltage at the indicated test points, as follows : TPA 9 : 5 ± 1V TPA 11 : 8 ± 1V TPA 10 : 141.0 ± 1.5V TPA 21 : 175 ± 15V
RF AGC 1. Receive a colour bar signal at an RF level of 69 +1-2 dBU with 75Ω loaded. 2. Connect digital multimeter to RF AGC at Tuner.	1. Select "RF AGC" indication in CHK2, on Screen by remote control at factory mode. 2. Set RF AGC by using remote control Volume (+) or Volume (-) button until voltage AGC at Tuner reaches 2.6 ± 0.1V at TPA 15 (Tuner point). 3. Increase RF signal strength by 2dB, confirm AGC at Tuner voltage drop.
High Voltage 1. Receive the crosshatch pattern. 2. Set to 0 Beam. Screen VR ..... minimum Contrast ..... minimum	1. Connect a DC voltage meter to TPA 12 and confirm the +B voltage is 140.5 ± 1.5V. 2. Connect a high frequency voltmeter to heater and confirm that voltage reads 6.0 ± 0.24 (VRMS). 3. Normalize the brightness and contrast.
Item / Preparation	**Adjustment Procedure**
NTSC TINT COLOUR Connect oscilloscope probe to TPL1 (R out). Press Main Menu and set system to use AV-NTSC (3.58 MHz). DYNAMIC ..... Normal Channel CLR Set ..... STD	1. Adjust Sub-Tint so that No. 2, 3 and 4 becomes level waveform is similar to Fig. 3. 2. Confirm phase at Tint is changes more than ± 30 by Tint control. 3. Confirm that colour level is maximum when colour DAC is adjusted to maximum position. **Note:** Use remote control only when adjusting user mode to Sub-Tint.  Fig. 3

2.6. PAL Colour

1. Receive the PAL B/G studio colour bar pattern and adjust local frequency at the best tuned position.
2. Pic Menu: Dynamic Normal, Confirm Contrast - 63, Sub Contrast - 21.
3. Channel colour set --------- STD
4. "CHK2" and press digit key "5" (AKB OFF) also confirm OSD become blue colour.
5. Connect TPA 10 to TPA 20.
6. Set (A) to 2.3 ± 0.2V by BRT (CHK2) at measurement point TPL 2 Fig. 4.

2.7. Adjustment

1. Connect oscilloscope probe to TPL 2 (G OUT) with 10kΩ series resistor and adjust Contrast so that (B) as in Fig. 4 is 2.4 ± 0.1V.
2. Adjust "Sub Colour" so that waveform as in Fig. 4 (1) 2.5 ± 0.1V.
3. Connect oscilloscope probe to TPL 1 (R OUT) with 10kΩ series resistor and confirm waveform as in Fig. 5 is (2) 2.7 ± 0.4V.
4. Take out jumper TPA 10 and TPA 20.
5. Press digit key "5" (AKB ON) and confirm the OSD become white colour.

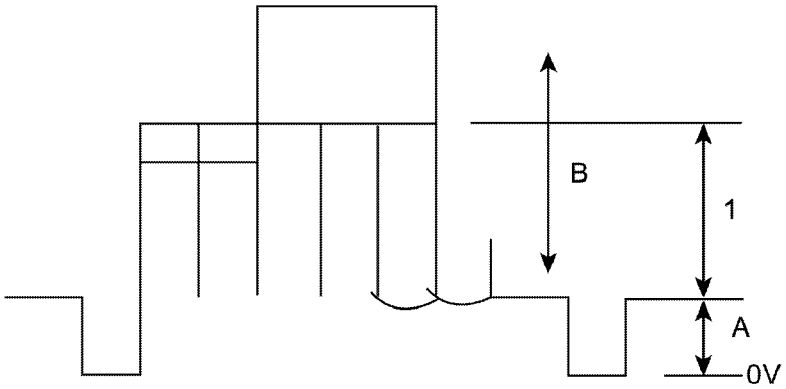


Fig. 4

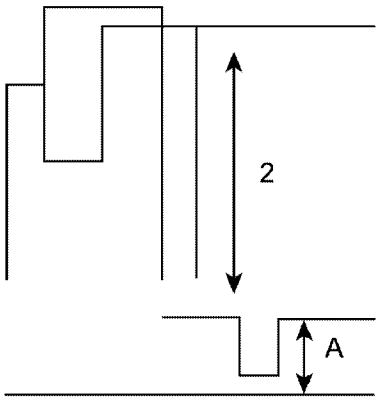


Fig. 5

Before Colour Purity, Convergence and White Balance adjustment are attempted, V. Height, H. Centre and Focus adjustments must be completed.

Colour Purity

1. Set the Brightness and Contrast controls to their maximum positions.
2. Operate the TV set for 60 minutes.
3. Fully degausse the picture tube by using an external degaussing coil.
4. Apply a crosshatch pattern signal and adjust the static convergence magnets to the approximately correct position.
5. Receive a black and white signal.
6. Set the control as follows:
   Red.....minimum
   Green.....minimum
   Blue.....minimum
   Press the Shipping button on the remote control twice to select CRT Adjustment Mode to select low light.
7. Loosen the clamp screw for the Deflection Yoke A in Fig. 10 and move the Deflection Yoke as close to the purity magnet as possible.
8. Adjust the purity magnetic rings so that a vertical green field is obtained at the centre of the screen.

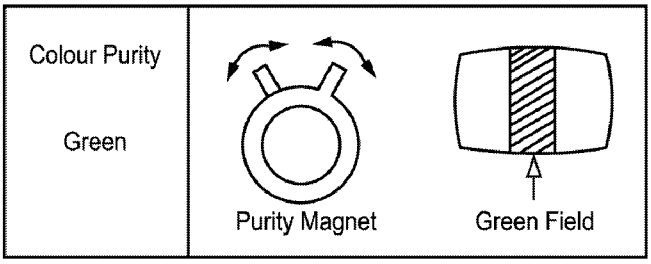


Fig. 6

9. Slowly push the Deflection Yoke and set it where a uniform green field is obtained.

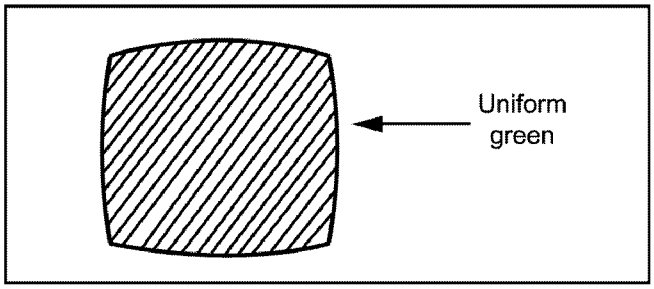


Fig. 21

10. Re-adjust the Low Light controls to their correct settings and make sure that a uniform white field is obtained.
11. Tighten the clamp screw A in Fig. 10.

Convergence

1. Apply a crosshatch pattern signal and Normalize Contrast control to the maximum positions.
2. Adjust Brightness until the grey position of the crosshatch pattern just becomes black.
3. Adjust the Red and Blue line at the centre of the screen by rotating the R-B static.

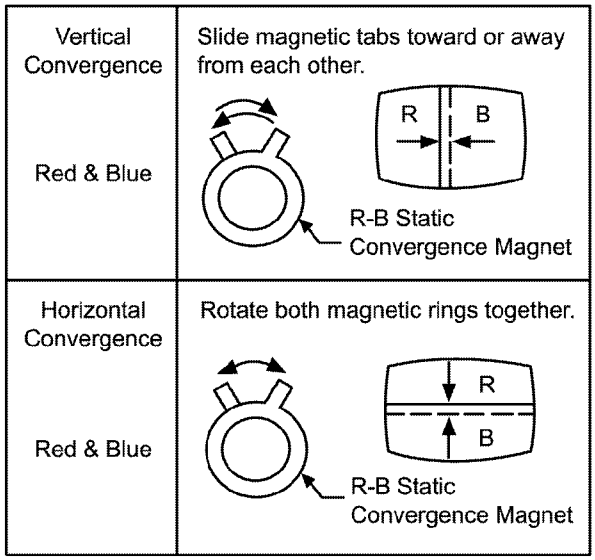


Fig. 8

4. Adjust Red and Blue with Green line at centre of the screen by rotating (RB)-G static convergence magnetic rings.
5. Lock convergence magnets with silicone sealer.
6. Remove the DY wedges and slightly tilt the Deflection Yoke vertically and horizontally to obtain the good overall convergence.

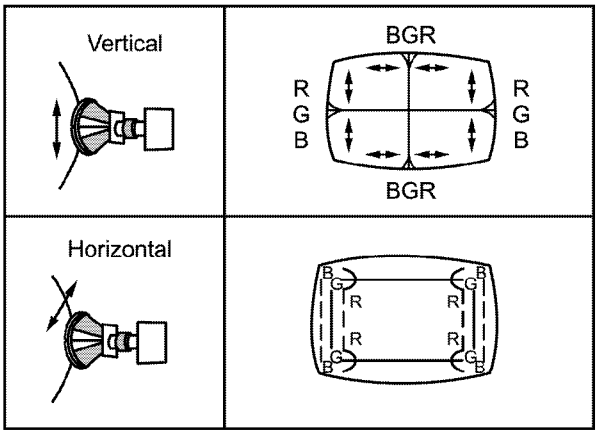


Fig. 9

7. Fix the Deflection Yoke by reinserting the DY wedges. Refer to Fig. 10.
8. If purity error is found, repeat “Colour Purity” adjustment.

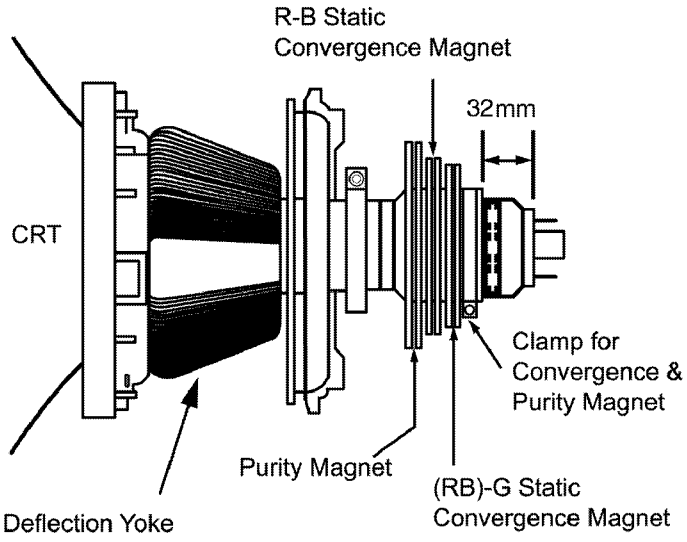


Fig. 10

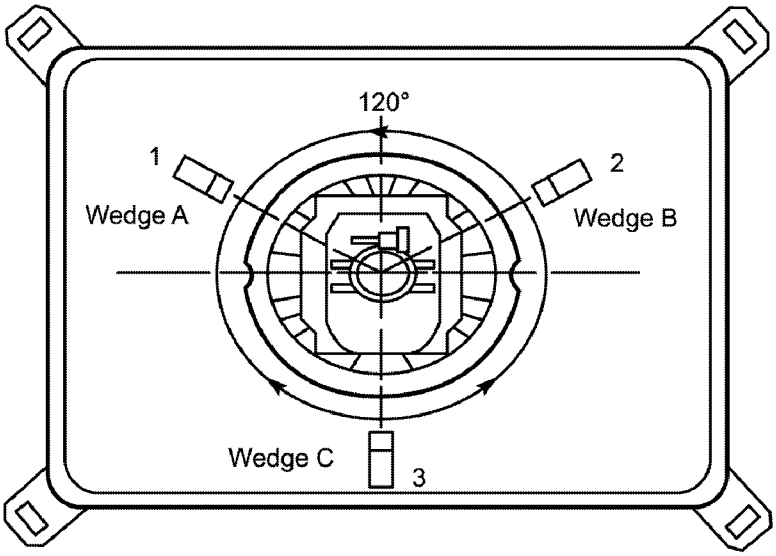
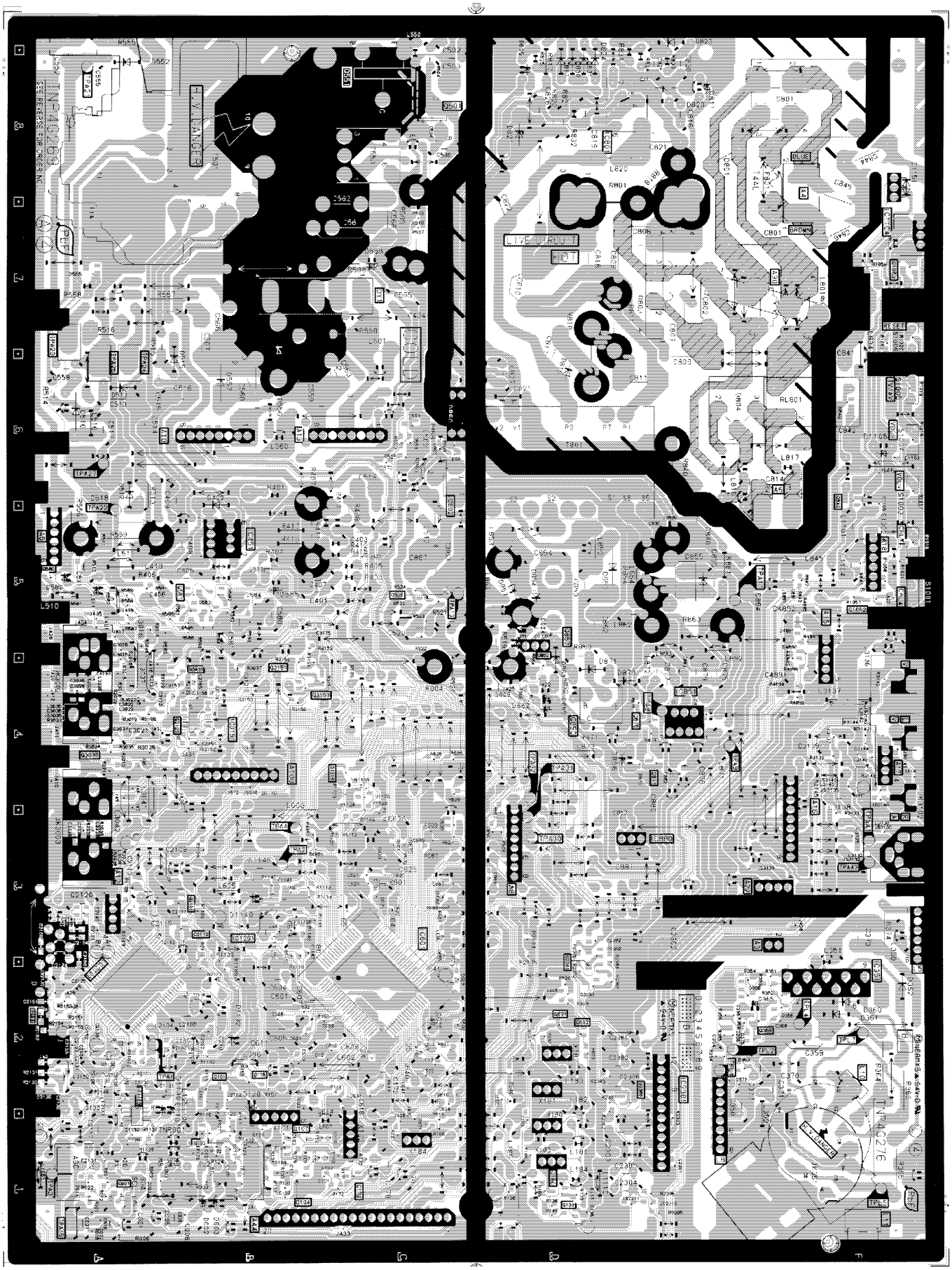


Fig. 11

Notes:

1. Wedge A, B and C should be inserted following the sequence of 1, 2 and 3 shown in Fig. 11.
2. The wedges should be set 120° apart from each other.
3. Be certain that three wedges are firmly fixed and the Deflection Yoke is tightly clamped in place. Otherwise the Deflection Yoke may shift its position and cause a loss of convergence and purity.

3 Conductor Views



4 Schematic Diagram

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Notes :

1. Resistor

   All resistors are carbon 1/4W resistors unless marked as follows :

   Unit of resistance is OHM (Ω) (K = 1 000 M = 1 000 000)

○	Nonflammable	⊠	Metal Oxide
△	Solid	◎	Metal Film
⊠	Wire Wound	⊗	Fuse

2. Capacitor

   All capacitors are ceramic 50V capacitors unless marked as follows :

   Unit of capacitance is μF unless otherwise noted.

⊗	Temperature Compensation	+ -	Electrolytic
Ⓜ	Polyester	NP	Bipolar
ⓜ	Metalized Polyester	Ⓣ	Dipped Tantalum
⊠	Polypropylene	Ⓩ	Z-Type

3. Coil

   Unit of inductance is μH, unless otherwise noted.

4. Test Point

   : Test Point position

5. Earth Symbol

   : Chassis Earth (Cold) : Line Earth (Hot)

6. Voltage Measurement
   Voltage is measured using DC voltmeter.
   Conditions of the measurement are the following :
   Power Source..... AC AUTO 110-240V, 50/60Hz
   Receiving Signal.....Colour Bar signal (RF)
   All customer's controls.....Maximum positions

7. Number in red circle indicates waveform number.
   (See waveform pattern table.)

8. When arrow mark (↗) is found, connection is easily found from the direction of arrow.

9. → : Indicates the major signal flow.

10. This schematic diagram is the latest at the time of printing and subject to change without notice.

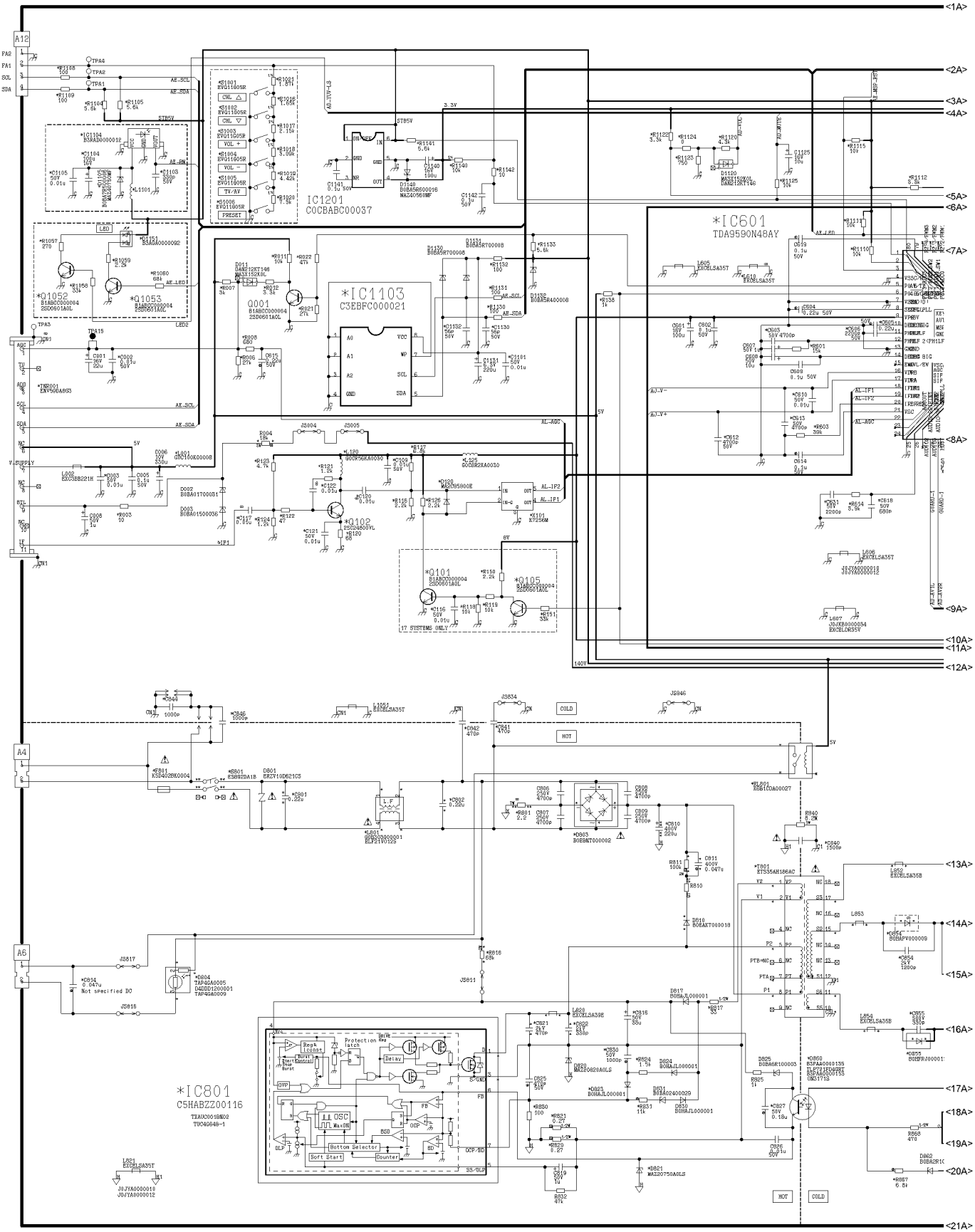
Remarks :

The Power Circuit contains a circuit area which uses a seperate power supply to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram.
Take the following precautions :
All circuits, except the Power Circuit are cold.
Precautions :

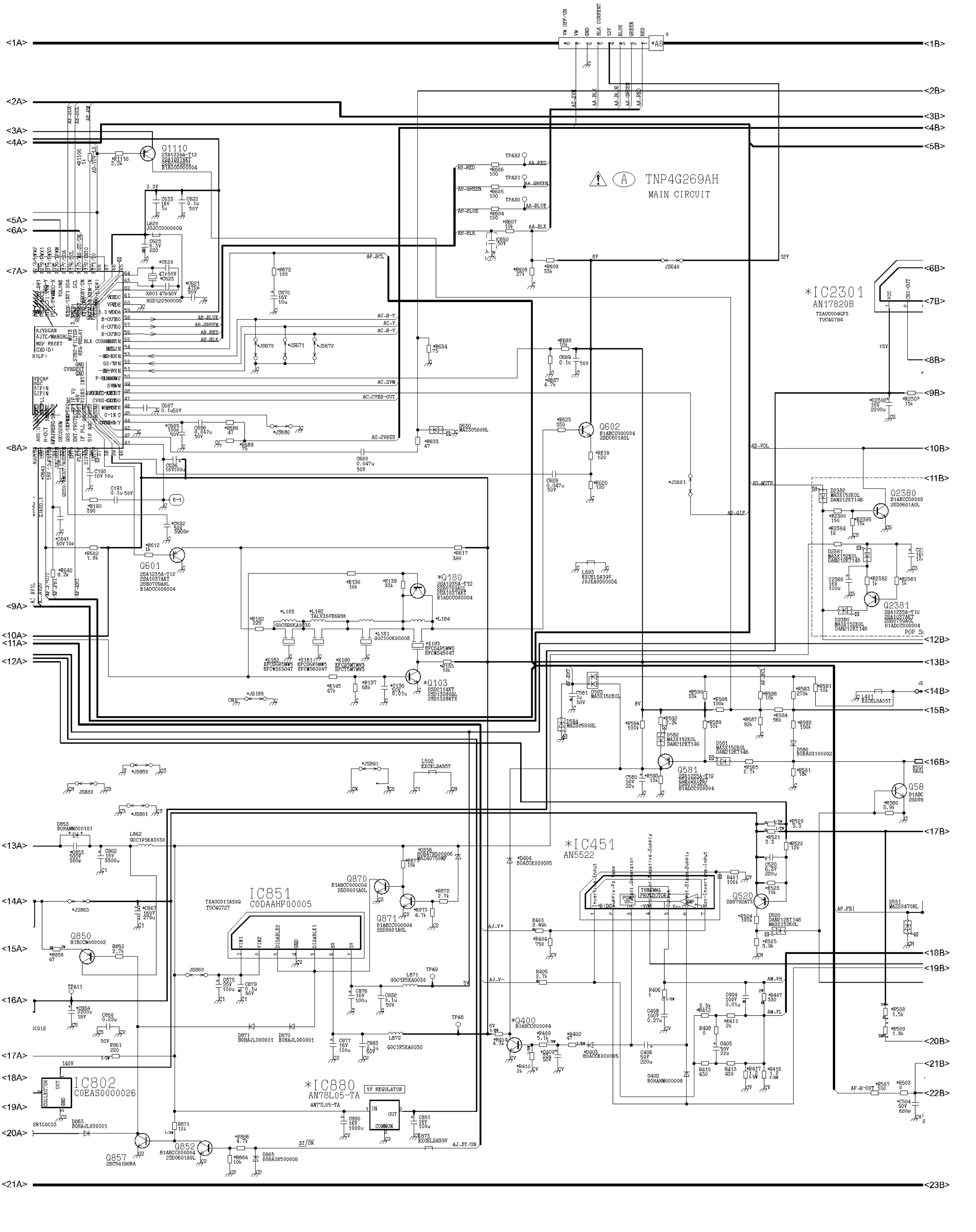
a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
b. Do not short-circuit the hot and cold circuits or a fuse may blow and parts may break.
c. Do not connect an instrument such as an oscilloscope to the hot and cold circuits simultaneously or a fuse may be blown.
   Connect the earth of instruments to the earth connection of the circuit being measured.
d. Make sure to disconnect the power plug before removing the chassis.

4.1. A BOARD

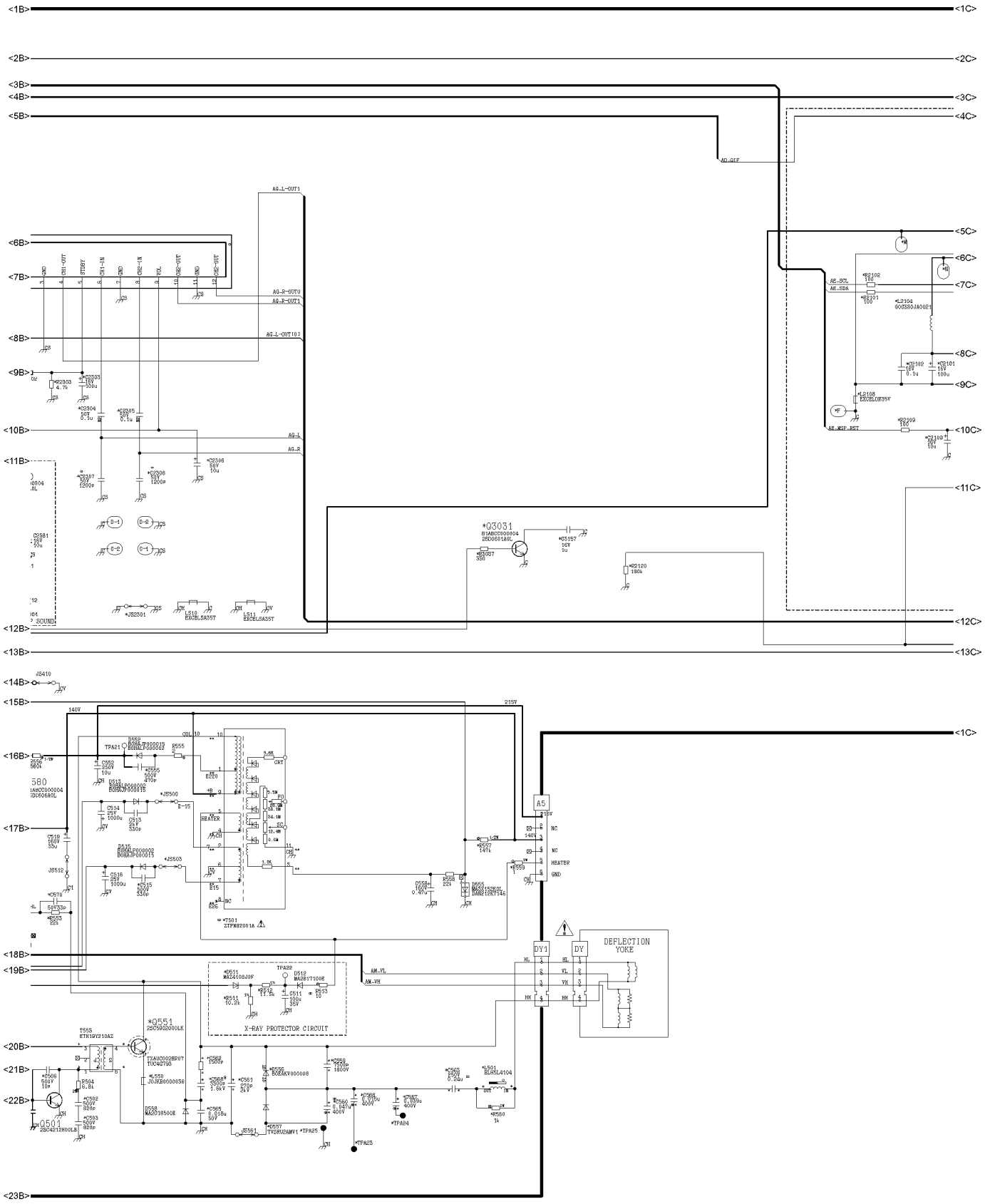
4.1.1. A BOARD 1/4



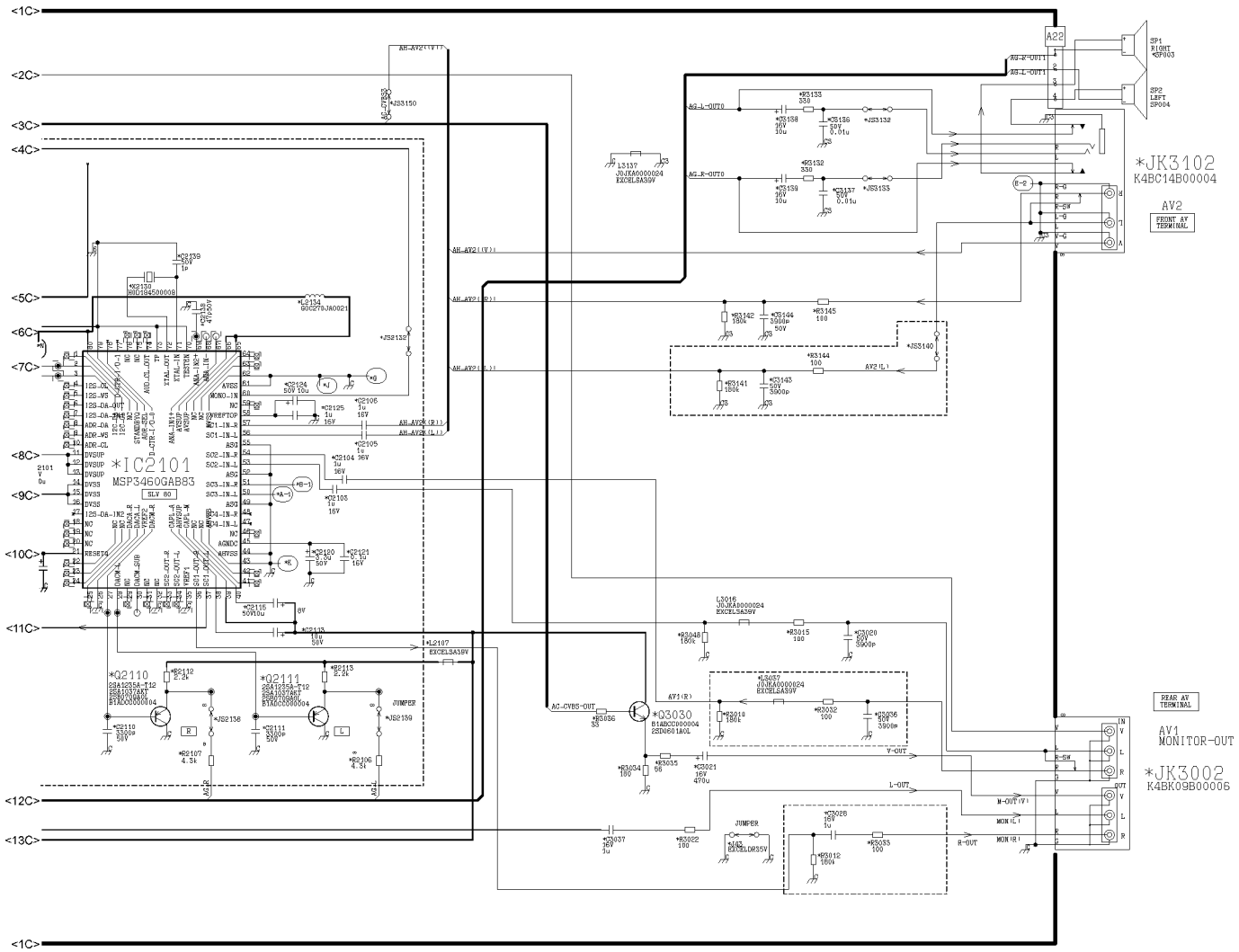
4.1.2. A BOARD 2/4



4.1.3. A BOARD 3/4

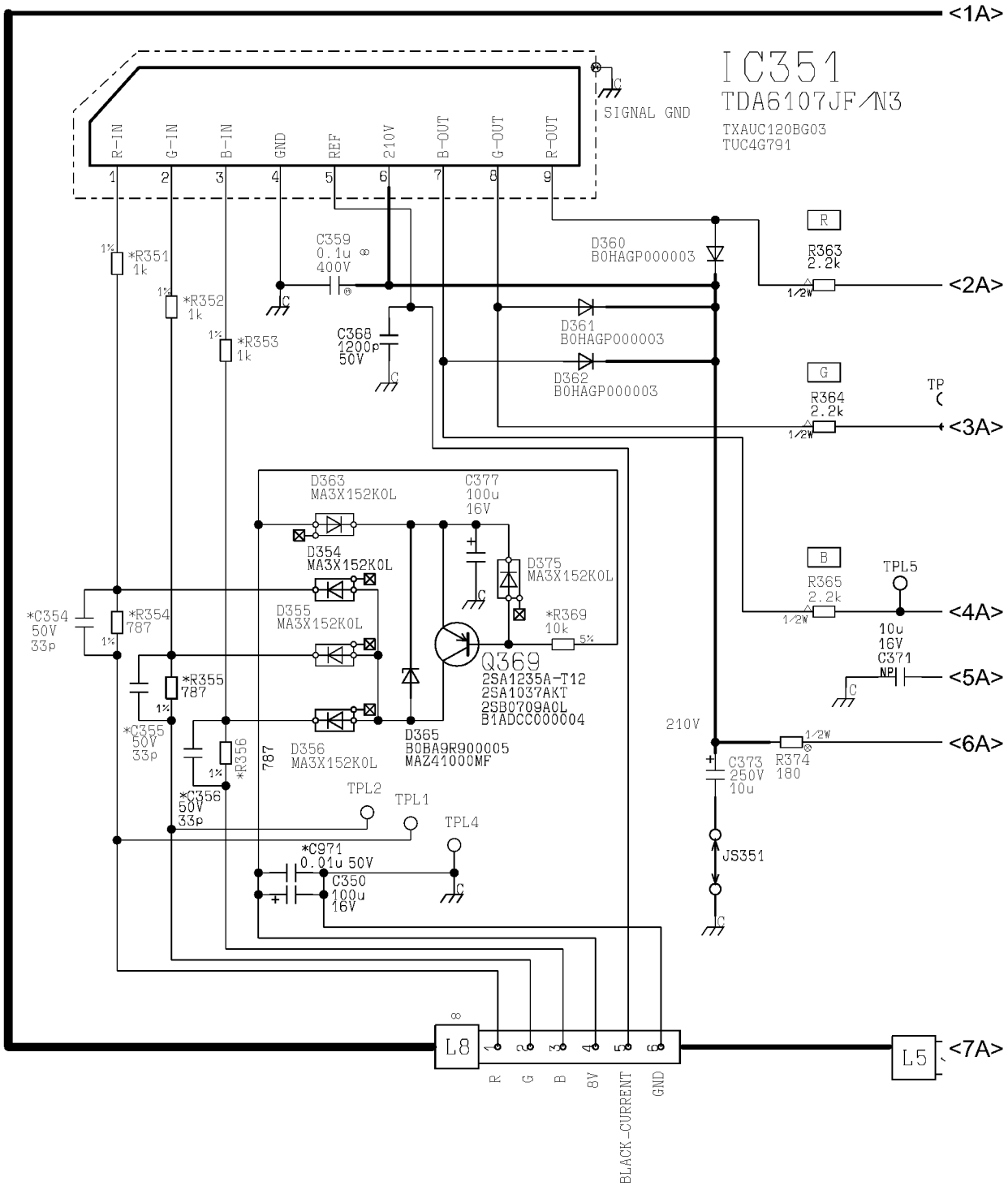


4.1.4. A BOARD 4/4

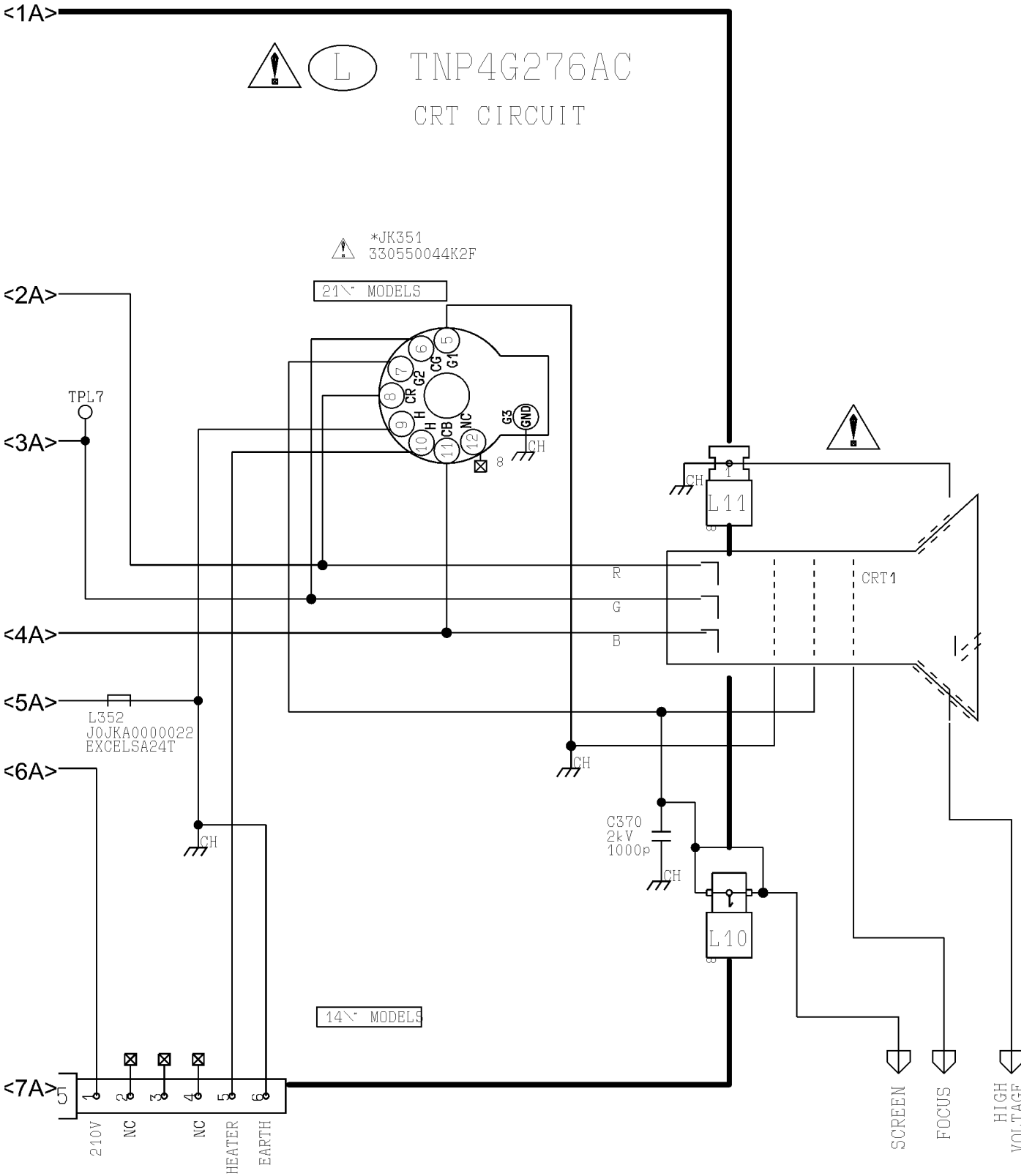


4.2. L BOARD

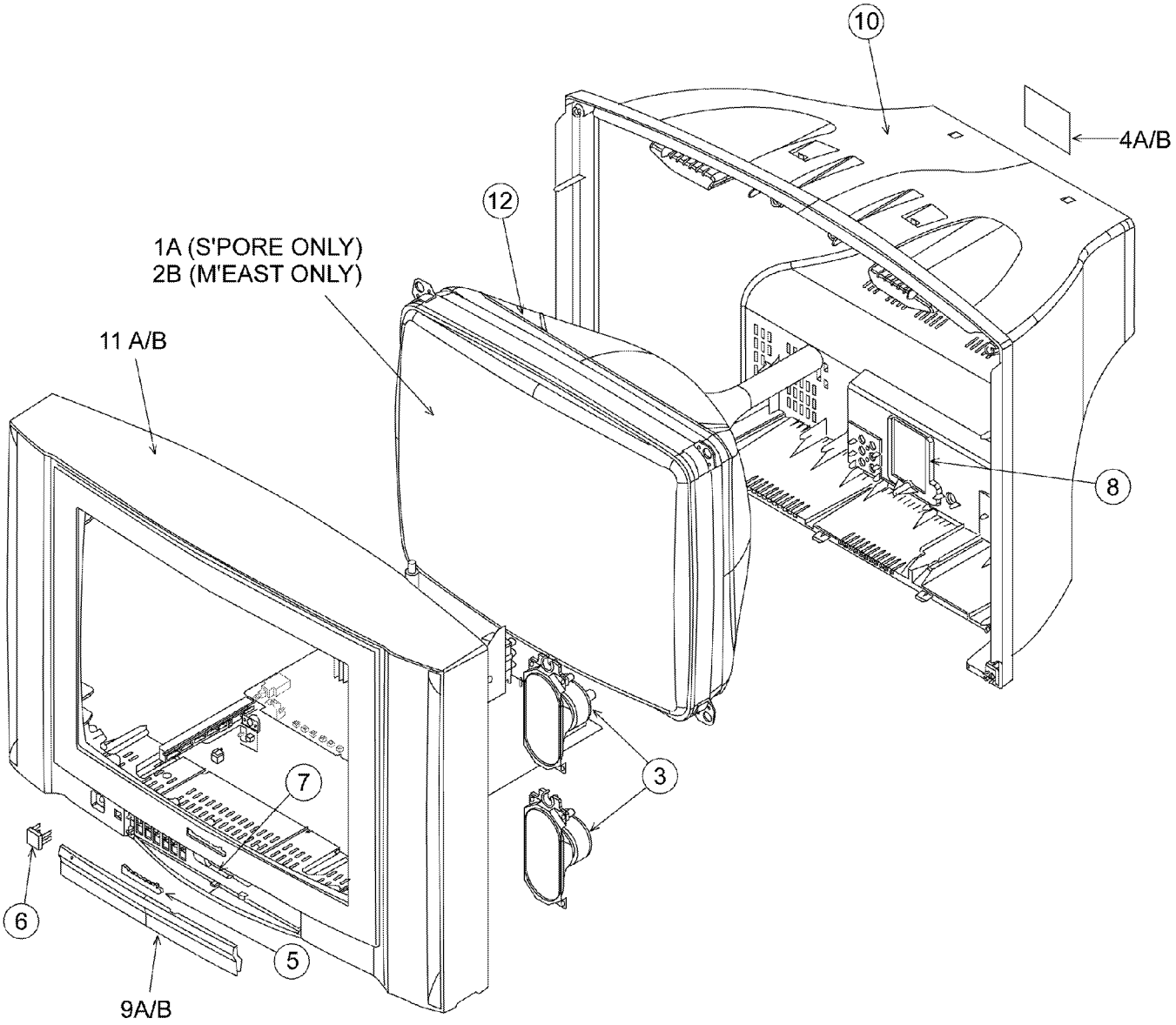
4.2.1. L BOARD 1/2



4.2.2. L BOARD 1/2



5 Part Location



6 Replacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

Note: Printed circuit board assembly with "NLA" is no longer available after production discontinuation of the complete set.

Abbreviation of part name and description

1. Resistor

Example :

ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

Type	Allowance
C : Carbon	F : ± 1%
F : Fuse	G : ± 2%
M : Metal Oxide Metal Film	J : ± 5% K : ± 10%
S : Solid	M : ± 20%
W : Wire Wound	

2. Capacitor

Example :

ECKF1H103ZF **C** 0.01μF, **Z**, 50V
Type Allowance

Type	Allowance
C : Carbon	C : ± 0.25pF
E : Electrolytic	D : ± 0.5pF
P : Polyester Polypropylene	F : ± 1pF G : ± 3%
T : Tantalum	J : ± 5%
	K : ± 10%
	L : ± 15%
	M : ± 20%
	P : ± 100%, -0%
	Z : ± 80%, -20%

6.1. Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
1A	A51KQK99X0	PICTURE TUBE	⚠
		(S'PORE ONLY)	
2B	A51KQK99X	PICTURE TUBE	⚠
		(M'EAST ONLY)	
	EUR7717020	REMOTE CONTROL	
	JH291U-009	CONVERGENCE YOKE	
3	L0AA12B00010	SPEAKER	
4A	TBM4G1005	MODEL NAME PLATE	⚠
		(S'PORE ONLY)	
4B	TBM4G1021	MODEL NAME PLATE	⚠
		(M'EAST ONLY)	
5	TBM4G3003	PANASONIC BADGE	
6	TBX4G89002	POWER BUTTON	
7	TEK6935	DOOR SWITCH	
	TES4G206	COIL SPRING	
	THT4G1005R	CRT SCREW	
	THT4G1010R	SCREW (SPEAKER)	
	THT4G1013R	SCREW	
8	TKP4G11744	AC CORD BRACKET	
	TJS4G8150	AC PLUG ADAPTOR	⚠
		(KWT,SAUDI ONLY)	
9A	TKP4G13085	DOOR	
		(M'EAST,S'PORE ONLY)	
9B	TKP4G12866	DOOR	
		(KWT,SAUDI ONLY)	
10	TKU4G9801-1	BACK COVER	
11A	TKY4GA1432-1	CABINET	
		(M'EAST,S'PORE ONLY)	
11B	TKY4GA1431-1	CABINET	
		(KWT,SAUDI ONLY)	
12	TLK4G9079X	DEGAUSSING COIL	⚠
	TLY4G331S	DEFLECTION YOKE	⚠
	TMM4G502	RUBBER WASHER	
	TMM4G503	RUBBER WEDGE	
NLA	TNP4G269AH	A BOARD	⚠
		(S'PORE ONLY)	
NLA	TNP4G269AH.A	A BOARD	⚠
		(M'EAST ONLY)	
NLA	TNP4G276AC	L BOARD	⚠
	TPE4G14003	LAMI BAG	
		(S'PORE ONLY)	
	TPE4G14025	SET COVER	
		(S'PORE ONLY)	
	TPE4G14036	SET COVER	
		(M'EAST ONLY)	
	TQB4G3679	FAN BAG	
		(S'PORE ONLY)	
	TQB4G3680	FAN BAG	
		(KWT,SAUDI ONLY)	
	TQB4G3685	FAN BAG	
		(M'EAST ONLY)	
	TSM10032-4	PURITY MAGNET	
	TSN63115-4	PURITY MAGNET	
	TSX4G111H1	AC POWER CORD	⚠
		(S'PORE ONLY)	
	TSX4G117H1	AC POWER CORD	⚠
		(KWT,SAUDI ONLY)	
	TSX4G111L	AC POWER CORD	⚠
		(M'EAST ONLY)	
	TXFPC02BS07	CARTON	
		(S'PORE ONLY)	
	TXFPC02BG27	CARTON	
		(KWT,SAUDI ONLY)	
	TXFPC02BG12	CARTON	
		(M'EAST ONLY)	
	TXFPD02AS03	CUSHION (BOTTOM)	
	TXFPD03BS07	CUSHION (TOP)	
	CAPACITORS		
C001	ECEA1CKA220	E 22UF, 16V	
C002	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C003	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C005	ECJ2VF1H104Z	C 0.1UF, Z, 50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C006	ECA1AM331B	E 330UF, 10V	
C008	ECEA1HKA010	E 1UF, 50V	
C109	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1101	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1103	ECJ2VC1H331J	C 330PF, J, 50V	
C1104	ECA1CM101B	E 100UF, 16V	
C1105	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1125	ECEA1CKA100	E 10UF, 16V	
C1130	ECJ2VC1H560J	C 56PF, J, 50V	
C1131	ECA0JM221B	E 220UF, 6.3V	
C1132	ECJ2VC1H560J	C 56PF, J, 50V	
C1140	ECEA1CKA101	E 100UF, 16V	
C1141	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C1142	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C116	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C117	ECJ2VB1H103J	C 0.01UF, 50V	
C120	F1B1H103A013	C 0.01UF, 50V	
C121	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C122	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C136	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C191	ECUX1H104KBX	C 0.1UF, K, 50V	
C193	ECA1CM100B	E 10UF, 16V	
C2101	ECA1CM101B	E 100UF, 16V	
C2102	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2103	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2104	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2105	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2106	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2109	ECA1CM100B	E 10UF, 16V	
C2110	ECJ2VB1H332K	C 3300PF, K, 50V	
C2111	ECJ2VB1H332K	C 3300PF, K, 50V	
C2113	ECA1HM100B	E 10UF, 50V	
C2115	ECA1HM100B	E 10UF, 50V	
C2120	ECEA1HKS3R3	E 3.3UF, 50V	
C2121	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2124	ECA1HM100B	E 10UF, 50V	
C2125	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2138	ECJ2VC1H470J	C 47PF, J, 50V	
C2139	ECJ2VC1H010C	C 1PF, C, 50V	
C2142	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C2302	F2A1C222A117	E 2200UF, 16V	
C2303	ECA1CM101B	E 100UF, 16V	
C2304	ECEA1HKN0R1	E 0.1UF, 50V	
C2305	ECEA1HKN0R1	E 0.1UF, 50V	
C2306	ECA1HM100B	E 10UF, 50V	
C2307	ECJ2VC1H122J	C 1200PF, J, 50V	
C2308	ECJ2VC1H122J	C 1200PF, J, 50V	
C2380	ECA1CM101B	E 100UF, 16V	
C2381	ECA1CM100B	E 10UF, 16V	
C3020	ECJ2VB1H392K	C 3900PF, K, 50V	
C3021	ECA1CM471B	E 470UF, 16V	
C3028	ECJ2VF1C105Z	C 1UF, Z, 16V	
C3036	ECJ2VB1H392K	C 3900PF, K, 50V	
C3037	ECJ2VF1C105Z	C 1UF, Z, 16V	
C3136	ECJ2VB1H103J	C 0.01UF, 50V	
C3137	ECJ2VB1H103J	C 0.01UF, 50V	
C3138	ECA1CM100B	E 10UF, 16V	
C3139	ECA1CM100B	E 10UF, 16V	
C3143	ECJ2VB1H392K	C 3900PF, K, 50V	
C3144	ECJ2VB1H392K	C 3900PF, K, 50V	
C3157	ECJ2VF1C105Z	C 1UF, Z, 16V	
C350	ECA1CM101B	E 100UF, 16V	
C354	ECJ2VC1H330J	C 33PF, J, 50V	
C355	ECJ2VC1H330J	C 33PF, J, 50V	
C356	ECJ2VC1H330J	C 33PF, J, 50V	
C359	ECQM4104KZ	P 0.1UF, K,400V	
C368	ECJ2VC1H122J	C 1200PF, J, 50V	
C370	ECKW3D102KBP	C 1000PF, K, 2KV	
C371	ECEA1CN100U	E 10UF, 16V	
C373	ECA2EM100B	E 10UF, 250V	
C377	ECA1CM101B	E 100UF, 16V	
C403	ECA1HM220B	E 22UF, 50V	
C404	ECQB1103JF	P 0.01UF, J,100V	
C406	ECA1HHG221	E 220UF, 50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C408	ECQB1274JF	P 0.27UF, J,100V	
C502	F1B2H821A025	C 820PF, 500V	
C503	F1B2H821A025	C 820PF, 500V	
C504	ECJ2VB1H681K	C 680PF, K, 50V	
C506	F1A2H1000002	C 10PF, 500V	
C511	ECA1VM101B	E 100UF, 35V	
C513	ECKW3D331JBP	C 330PF, J, 2KV	
C514	ECA1EM102B	E 1000UF, 25V	
C515	F1B2H331A025	C 330PF, 500V	
C516	ECA1EM102B	E 1000UF, 25V	
C519	F2A2C330A020	E 33UF, 160V	
C520	ECA0JM221B	E 220UF, 6.3V	
C552	ECA2EM100B	E 10UF, 250V	
C555	F1B2H471A025	C 470PF, 500V	
C558	ECA2CMR47B	E 0.47UF, 160V	
C559	ECWH16752JVB	P 7500PF,J,1.6KV	
C560	ECQM4473JZ	P 0.047UF, J,400V	
C561	ECKW3D271KBR	C 270PF, K, 2KV	
C562	ECKW3D152KBR	C 1500PF, K, 2KV	
C563	F0C2E244A039	P 0.24UF, 500V	
C565	ECQP1H183JZ	P 0.018UF, J, 50V	
C566	ECQM4153JZ	P 0.015UF, J,400V	
C567	ECQM4393JZ	P 0.039UF, J,400V	
C568	ECWH16332JVB	P 3300PF,J,1.6KV	
C570	ECJ2VC1H330J	C 33PF,J, 50V	
C580	ECA1HM220B	E 22UF, 50V	
C581	ECQV1H105JM	P 1UF, J, 50V	
C601	ECEA1CKA101	E 100UF, 16V	
C602	ECUX1H104KBX	C 0.1UF, K, 50V	
C603	ECJ2VB1H472K	C 4700PF, K, 50V	
C604	ECQV1H224JL	P 0.22UF, J, 50V	
C605	ECQV1H224JL	P 0.22UF, J, 50V	
C606	ECJ2VC1H222J	C 2200PF, J, 50V	
C607	ECEA1HKA010	E 1UF, 50V	
C608	ECA1HM100B	E 10UF, 50V	
C609	ECUX1H104KBX	C 0.1UF, K, 50V	
C610	ECJ2VB1H103J	C 0.01UF, 50V	
C612	ECJ2VB1H472K	C 4700PF, K, 50V	
C613	ECJ2VB1H472K	C 4700PF, K, 50V	
C614	ECQV1H104JL	P 0.1UF, J, 50V	
C615	ECQV1H224JL	P 0.22UF, J, 50V	
C618	F1B1H681A130	C 680PF, 50V	
C619	ECQV1H104JL	P 0.1UF, J, 50V	
C620	ECJ2VC1H470J	C 47PF, J, 50V	
C621	ECJ2VB1H471K	C 470PF, K, 50V	
C622	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C623	ECJ2VC1H470J	C 47PF, J, 50V	
C625	ECEA0JN221U	E 220PF, 6.3V	
C628	ECJ2YB1H473K	C 0.047UF, K, 50V	
C631	ECJ2VB1H222K	C 2200PF, K, 50V	
C632	ECJ2VB1H392K	C 3900PF, K, 50V	
C633	ECJ2ZF1C105Z	C 1UF, Z, 16V	
C636	ECA1CM101B	E 100UF, 16V	
C640	ECA1CM100B	E 10UF, 16V	
C641	ECJ2VC1H100C	C 10PF, C, 50V	
C670	ECA1CM100B	E 10UF, 16V	
C680	ECJ2YB1H473K	C 0.047UF, K, 50V	
C685	ECJ2VC1H101K	C 100PF, 50V	
C686	ECJ2YB1H473K	C 0.047UF, K, 50V	
C687	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C689	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C801	ECQU2A224BN9	P 0.22UF, 250V	⚠
C802	ECQU2A224BN9	P 0.22UF, 250V	
C806	ECKWAE472ZED	C 4700PF, Z,500V	
C807	ECKWAE472ZED	C 4700PF, Z,500V	
C808	ECKWAE472ZED	C 4700PF, Z,500V	
C809	ECKWAE472ZED	C 4700PF, Z,500V	
C810	EETHC2G221H	E 220UF, 400V	
C811	ECQM4473JZ	P 0.047UF, J,400V	
C814	ECQE2A473JF	P 0.047UF, J,250V	
C816	F2A1H330A115	E 33UF, 50V	
C819	ECA1HM010B	E 1UF, 50V	
C821	ECKW3D471KBR	C 470PF, K, 2KV	
C822	ECKW3D331JBR	C 330PF, J, 2KV	

Ref. No.	Part No.	Part Name & Description	Remarks
C825	ECQB1H471JF	P 470PF, J, 50V	
C826	F0A1H103A039	C 0.01PF, 50V	
C827	ECQV1H184JM	P 0.18UF, J, 50V	
C830	ECQB1H102JF	P 1000PF, 50V	
C840	ECKCNA152ME7	C 1500PF, M,	
C841	ECKCNA471MB7	C 470PF, M,	
C842	ECKCNA471MB7	C 470PF, M,	
C844	ECKCNA102MB7	C 1000PF, M,	
C846	ECKCNA102MB7	C 1000PF, M,	
C850	ECJ2VF1H224Z	C 0.22UF, Z, 50V	
C853	F1B2H561A025	C 560PF, 50V	
C854	ECKW3D122KBP	C 1200PF, K, 2KV	
C855	F1B2H331A025	C 330PF, 500V	
C862	ECA1CHG332E	E 3300UF, 16V	
C864	F2A1C222A117	E 2200UF, 16V	
C867	EC0S2CA271BB	E 270UF, 160V	
C875	ECA1EM101B	E 100UF, 25V	
C876	ECA1CM101B	E 100UF, 16V	
C877	ECA1CM101B	E 100UF, 16V	
C879	ECQV1H104JL	P 0.1UF, J, 50V	
C880	ECA1CM102B	E 1000UF, 16V	
C881	ECA1CM101B	E 100UF, 16V	
C882	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C883	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C971	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
	DIODES		
D002	MTZJ18B	ZENER DIODE	
D003	MTZJ16A	ZENER DIODE	
D011	MA152KTX	DIODE	
D1105	MTZJ7.5C	ZENER DIODE	
D1120	MA152KTX	DIODE	
D1130	MTZJ5.6C	ZENER DIODE	
D1131	MTZJ5.6C	ZENER DIODE	
D1132	MTZJ5.6A	ZENER DIODE	
D1140	MTZJ5.6B	ZENER DIODE	
D1151	B3AGA0000092	DIODE	
D120	MA858	DIODE	
D2380	MA152KTX	DIODE	
D2381	MA152KTX	DIODE	
D2382	MA152KTX	DIODE	
D354	MA152KTX	DIODE	
D355	MA152KTX	DIODE	
D356	MA152KTX	DIODE	
D360	ERA22-04	DIODE	
D361	ERA22-04	DIODE	
D362	ERA22-04	DIODE	
D363	MA152KTX	DIODE	
D365	MTZJ10C	ZENER DIODE	
D375	MA152KTX	DIODE	
D402	B0HAHM000008	DIODE	
D512	MA171	DIODE	
D513	B0HAJP000015	DIODE	
D515	B0HAJP000015	DIODE	
D520	MA152KTX	DIODE	
D551	MA3047HTX	DIODE	
D552	B0HAJP000015	DIODE	
D555	MA152KTX	DIODE	
D556	ERB06-15	DIODE	
D557	B0HAMQ000001	DIODE	
D558	MA185	DIODE	
D580	MTZJ33B	ZENER DIODE	
D581	MA152KTX	DIODE	
D582	MA152KTX	DIODE	
D583	MA3X152E0L	DIODE	
D584	MAZ30560HL	DIODE	
D585	MTZJ3.9A	ZENER DIODE	
D586	B0ACCK000005	DIODE	
D630	MAZ30560HL	DIODE	
D801	ERZV10D621CS	VARISTOR	⚠
D803	D4SB80	DIODE	
D804	TAP4GA0005	POSISTOR	⚠
D810	B0EAKT000018	DIODE	
D817	AG01Z	DIODE	
D820	MAZ20820A0LS	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D821	MAZ20750A0LS	DIODE	
D823	AG01Z	DIODE	
D824	AG01Z	DIODE	
D825	B0BA6R100003	DIODE	
D830	AG01Z	DIODE	
D831	B0BA02400029	ZENER DIODE	
D853	RN1ZLF-A1	DIODE	
D854	FMGG2CSLF665	DIODE	
D855	FMLG12S	DIODE	
D856	MTZJ7.5C	ZENER DIODE	
D860	PC123F2	DIODE	
D862	MTZJ2.0B	ZENER DIODE	
D863	AG01Z	DIODE	
D865	MTZJ3.6A	ZENER DIODE	
D870	AG01Z	DIODE	
D871	AG01Z	DIODE	
	INTEGRATED CIRCUITS		
IC1103	TVR4GAS226	EEPROM IC	
IC1104	B3RAD0000012	REMOTE RECEIVER IC	
IC1201	PQ1R33	LINEAR IC	
IC2101	MSP3460GAB83	IC	
IC2301	AN17820B	IC	
IC351	TDA6107JF/N3	IC	
IC451	AN5522	IC	
IC601	TDA9590N48AY	IC	
IC801	C5HABZZ00116	IC, POWER SUPPLY	⚠
IC802	C0EAS0000026	IC	
IC851	C0DAAHF00005	IC, POWER SUPPLY	⚠
IC880	AN78L05	LINEAR IC	
	COILS		
L001	G0C100K00008	COIL	
L002	EXC3BB221H	CHIP BEAD CORE	
L1051	EXCELSA35T	BEAD CORE	
L1101	TALV35VB331K	PEAKING COIL	
L120	TLTACTR56K	PEAKING COIL	
L125	TALV35VB8R2K	PEAKING COIL	
L181	G0C100K00008	COIL	
L182	TALV35VB6R8K	PEAKING COIL	
L183	TALV35VB5R6K	PEAKING COIL	
L184	TALV35VB6R8K	PEAKING COIL	
L2104	TLTACT330J	PEAKING COIL	
L2107	EXCELSA39V	BEAD CORE	
L2108	EXCELDR35V	CORE	
L2134	TLTACT270J	PEAKING COIL 27U	
L3016	J0JKA0000024	EMI FILTER	
L3037	J0JKA0000024	EMI FILTER	
L3137	J0JKA0000024	EMI FILTER	
L352	EXCELSA24T	BEAD CORE	
L401	EXCELSA35T	BEAD CORE	
L501	ELH5L4104	LINEARITY COIL	
L502	EXCELSA35T	BEAD CORE	
L510	EXCELSA35T	BEAD CORE	
L511	EXCELSA35T	BEAD CORE	
L550	J0JKB0000038	COIL	
L603	J0JKA0000024	EMI FILTER	
L605	EXCELSA35T	BEAD CORE	
L606	EXCELSA35T	BEAD CORE	
L607	J0JKB0000034	EMI FILTER	
L610	EXCELSA35T	BEAD CORE	
L620	TSK1045	BEAD CORE	
L801	G0B303G00001	LINE FILTER	⚠
L820	EXCELSA39E	BEAD CHOKE	
L821	EXCELSA35T	BEAD CORE	
L852	EXCELSA35B	BEAD CORE	
L853	EXCELSA39E	BEAD CHOKE	
L854	EXCELSA35B	BEAD CORE	
L862	TLTACT1R5K	PEAKING COIL	
L871	TLTACT1R5K	PEAKING COIL	
L872	TLTACT1R5K	PEAKING COIL	
L873	EXCELSA39V	BEAD CORE	
	TRANSISTORS		
Q001	B1ABCE000005	TRANSISTOR	
Q101	B1ABCE000005	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q102	2SC2480TX	TRANSISTOR	
Q103	2SD2114KT	TRANSISTOR	
Q105	B1ABCE000005	TRANSISTOR	
Q1052	B1ABCE000005	TRANSISTOR	
Q1053	B1ABCE000005	TRANSISTOR	
Q1110	2SB709ATX	TRANSISTOR	
Q180	2SB709ATX	TRANSISTOR	
Q2110	2SB709ATX	TRANSISTOR	
Q2111	2SB709ATX	TRANSISTOR	
Q2380	B1ABCE000005	TRANSISTOR	
Q2381	2SB709ATX	TRANSISTOR	
Q3030	B1ABCE000005	TRANSISTOR	
Q3031	B1ABCE000005	TRANSISTOR	
Q369	2SB709ATX	TRANSISTOR	
Q501	2SC4212H	TRANSISTOR	
Q520	2SB792ATX	TRANSISTOR	
Q551	2SC5902000LK	TRANSISTOR	
Q580	B1ABCE000005	TRANSISTOR	
Q581	2SB709ATX	TRANSISTOR	
Q601	2SB709ATX	TRANSISTOR	
Q602	B1ABCE000005	TRANSISTOR	
Q850	B1BCCM000002	TRANSISTOR	
Q852	B1ABCE000005	TRANSISTOR	
Q857	2SC54190RA	TRANSISTOR	
Q870	B1ABCE000005	TRANSISTOR	
Q871	B1ABCE000005	TRANSISTOR	
	RESISTORS		
R003	ERJ6GEYJ100	M 10OHM,J,1/10W	
R004	ERG3FJ183H	M 18KOHM,J, 3W	
R006	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R007	ERJ6GEYJ302	M 3KOHM,J,1/10W	
R008	ERJ6GEYJ681	M 680OHM,J,1/10W	
R011	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R012	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R021	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R022	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R1016	ERJ6ENF1651	M1.65KOHM, 1/10W	
R1017	ERJ6ENF2151	M2.15KOHM, 1/10W	
R1018	ERJ6ENF3091	M3.09KOHM, 1/10W	
R1019	ERJ6ENF4421	M4.42KOHM, 1/10W	
R1020	ERJ6ENF7501	M 7.5KOHM, 1/10W	
R1021	ERJ6ENF1871	M1.87KOHM, 1/10W	
R1057	ERJ6GEYJ271	M 270OHM,J,1/10W	
R1058	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R1059	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R1060	ERJ6GEYJ683	M 68KOHM,J,1/10W	
R1104	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1105	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1106	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1108	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1109	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1110	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1111	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1112	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R1115	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1116	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R1120	ERJ6GEYJ432	M 4.3KOHM,J,1/10W	
R1122	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R1123	ERJ6GEYJ751	M 750OHM,J,1/10W	
R1124	ERJ6GEY0R00	M 0OHM,J,1/10W	
R1125	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1130	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1131	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1132	ERJ6GEYJ101	M 100OHM,J,1/10W	
R1133	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1140	ERJ6ENF1002	M 10KOHM, 1/10W	
R1141	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R1142	ERJ6GEYJ100	M 10OHM,J,1/10W	
R116	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R117	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R118	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R119	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R120	ERJ6GEYJ680	M 68OHM,J,1/10W	
R121	ERJ6GEYJ122	M 1.2KOHM,J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R122	ERJ6GEYJ470	M 47OHM,J,1/10W	
R123	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R124	ERJ6GEYJ122	M 1.2KOHM,J,1/10W	
R126	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R136	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R137	ERJ6GEYJ683	M 68KOHM,J,1/10W	
R138	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R139	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R145	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R150	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R151	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R182	ERJ6GEYJ221	M 220OHM,J,1/10W	
R185	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R190	ERJ6GEYJ391	M 390OHM,J,1/10W	
R2101	ERJ6GEYJ101	M 100OHM,J,1/10W	
R2102	ERJ6GEYJ101	M 100OHM,J,1/10W	
R2106	D0AE432JA046	C 4.3OHM,J, 1/4W	
R2107	D0AE432JA046	C 4.3OHM,J, 1/4W	
R2109	ERJ6GEYJ101	M 100OHM,J,1/10W	
R2112	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R2113	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R2120	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R2302	ERJ6GEYJ153	M 15KOHM,J,1/10W	
R2303	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R2380	ERJ6GEYJ151	M 150OHM,J,1/10W	
R2381	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2382	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R2383	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R2384	ERJ6GEYJ100	M 10OHM,J,1/10W	
R3010	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R3012	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R3015	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3022	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3032	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3033	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3034	ERJ6GEYJ181	M 180OHM,J,1/10W	
R3035	ERJ6GEYJ560	M 56OHM,J,1/10W	
R3036	ERJ6GEYJ330	M 33OHM,J,1/10W	
R3037	ERJ6GEYJ331	M 330OHM,J,1/10W	
R3048	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R3132	ERJ6GEYJ331	M 330OHM,J,1/10W	
R3133	ERJ6GEYJ331	M 330OHM,J,1/10W	
R3141	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R3142	ERJ6GEYJ184	M 180KOHM,J,1/10W	
R3144	ERJ6GEYJ101	M 100OHM,J,1/10W	
R3145	ERJ6GEYJ101	M 100OHM,J,1/10W	
R351	ERJ6ENF1001	M 1KOHM, 1/10W	
R352	ERJ6ENF1001	M 1KOHM, 1/10W	
R353	ERJ6ENF1001	M 1KOHM, 1/10W	
R354	ERJ6ENF7870	M 787OHM, 1/10W	
R355	ERJ6ENF7870	M 787OHM, 1/10W	
R356	ERJ6ENF7870	M 787OHM, 1/10W	
R363	ERC12GK222	S 2.2KOHM,K, 1/2W	
R364	ERC12GK222	S 2.2KOHM,K, 1/2W	
R365	ERC12GK222	S 2.2KOHM,K, 1/2W	
R369	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R374	ERQ12AJ181P	F 180OHM,J, 1/2W	
R401	ERDS2TJ104	C 100KOHM,J, 1/4W	
R403	ER0S2CHF2491	C 2.49OHM,F, 1/4W	
R404	D0AE751JA046	C 750OHM,J, 1/4W	
R405	ER0S2CHF2701	C 2.7KOHM,F, 1/4W	
R406	ERDS1FJ1R0	C 1OHM,J, 1/2W	
R407	ERG2FJ331H	M 330KOHM,J,2W	
R408	ERD25V0R00T	C 0OHM, 1/4W	
R411	D0AE202JA046	C 2KOHM,J, 1/4W	
R412	ERDS2TJ332	C 3.3KOHM,J, 1/4W	
R413	D0AE431JA046	C 430OHM,J, 1/4W	
R415	D0AE431JA046	C 430OHM,J, 1/4W	
R416	ERDS1TJ1R2	C 1.2OHM,J, 1/2W	
R417	ERDS1TJ1R2	C 1.2OHM,J, 1/2W	
R502	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	
R503	ERJ6GEY0R00	M 0OHM,J,1/10W	
R504	ERG2SJ682E	M 6.8KOHM,J, 2W	
R507	ERJ6GEYJ101	M 100OHM,J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R508	ERG3FJ152H	M 1.5KOHM,J, 3W	
R509	ERG3FJ182H	M 1.8KOHM,J, 3W	
R511	ERJ6ENF1022	M10.2KOHM, 1/10W	
R512	ERJ6ENF1152	M11.5KOHM, 1/10W	
R513	ERQ14AJ100E	F 10OHM,J, 1/4W	
R520	ERQ12AJ3R3E	F 3.3OHM,J, 1/2W	
R521	ERQ12AJ3R3E	F 3.3OHM,J, 1/2W	
R522	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R523	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R524	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R525	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R553	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R555	ERQ14AJ2R0P	F 2.0OHM, J,1/4W	
R556	ER050CKF5603	M 560KOHM,F, 1/2W	
R557	ER050CKF1473	M 147KOHM,F, 1/2W	
R558	ERDS2TJ223	C 22KOHM,J, 1/4W	
R559	ERQ1CJP1R0S	F 1OHM,J, 1W	
R560	ERG1SJ102E	M 1KOHM,J, 1W	
R580	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R581	ERJ6GEYJ183	M 18KOHM,J,1/10W	
R582	ERJ6GEYJ154	M 150KOHM,J,1/10W	
R583	ERJ6GEYJ274	M 270KOHM,J,1/10W	
R584	ERJ6GEYJ563	M 56KOHM,J,1/10W	
R585	ERJ6GEYJ272	M 2.7KOHM,J,1/10W	
R586	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R587	ERJ6GEYJ823	M 82KOHM,J,1/10W	
R588	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R589	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R590	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R591	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R592	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R593	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R594	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R601	ERJ6GEYJ153	M 15KOHM,J,1/10W	
R603	ERJ6GEYJ393	M 39KOHM,J,1/10W	
R604	ERJ6GEYJ101	M 100OHM,J,1/10W	
R605	ERJ6GEYJ101	M 100OHM,J,1/10W	
R606	ERJ6GEYJ101	M 100OHM,J,1/10W	
R607	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R608	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R609	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R612	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R614	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R617	ERJ6GEYJ391	M 390OHM,J,1/10W	
R619	ERJ6GEYJ121	M 120OHM,J,1/10W	
R620	ERJ6GEYJ121	M 120OHM,J,1/10W	
R623	ERJ6GEYJ331	M 330OHM,J,1/10W	
R633	ERJ6GEYJ470	M 47OHM,J,1/10W	
R634	ERJ6GEYJ750	M 75OHM, 1/10W	
R640	ERJ6GEYJ822	M 8.2KOHM,J,1/10W	
R672	ERJ6GEYJ181	M 180OHM,J,1/10W	
R686	ERJ6GEYJ470	M 47OHM,J,1/10W	
R687	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R688	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R689	ERJ6GEYJ750	M 75OHM, 1/10W	
R801	ERF7ZK2R2	W 2.2OHM, 7W	⚠
R810	ERG2FJ470	M 47OHM,J, 2W	
R811	ERG2FJ104H	M 100KOHM,J, 2W	
R817	ERDS1TJ330	C 33OHM,J, 1/2W	
R818	ERG2FJ683H	M 68KOHM,J, 2W	
R820	ERX12SJR27E	M 0.27OHM,J, 1/2W	
R821	ERX12SJR27E	M 0.27OHM,J, 1/2W	
R824	ERDS2TJ152	C 1.5KOHM,J, 1/4W	
R825	ERDS2TJ102	C 1KOHM,J, 1/4W	
R830	ERDS2TJ101	C 100OHM,J, 1/4W	
R831	ER0S2CKF1102	M 11KOHM,F, 1/4W	
R832	ERDS2TJ473	C 47KOHM,J, 1/4W	
R840	ERD75TAJ825	C 8.2MOHM,J, 3/4W	
R850	ERG3SJ470	M 47OHM,J, 2W	
R852	ERDS2TJ272	C 2.7KOHM,J, 1/4W	
R861	ERDS1TJ221	C 220OHM,J, 1/2W	
R864	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R866	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R867	ER0S2CHF6801	M 6.8KOHM,F, 1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R868	ERDS1TJ471	C 470OHM,J, 1/2W	
R871	ERDS1TJ103	C 10KOHM,J, 1/2W	
R872	ERJ6GEYJ272	M 2.7KOHM,J,1/10W	
R873	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R875	ERJ6GEYJ103	M 10KOHM,J,1/10W	
	TRANSFORMER		
T501	ZTFN82001A	FLYBACK TRANS	⚠
T553	ETH19Y210AZ	H DRIVE TRANS	⚠
T801	ETS35AH186AC	SWITCHING TRANS	⚠
	OTHERS		
S1001	EVQ11G05R	SWITCH	
S1002	EVQ11G05R	SWITCH	
S1003	EVQ11G05R	SWITCH	
S1004	EVQ11G05R	SWITCH	
S1005	EVQ11G05R	SWITCH	
S1006	EVQ11G05R	SWITCH	
S801	ESB92DA1B	SWITCH	⚠
TNR001	ENV59DA8G3	TUNER	⚠
F801	XBA2C40TR0	FUSE 250V 4A	⚠
X101	K7256M	SAW FILTER	⚠
X180	EFCS5M7MW3	CERAMIC FILTER	
X181	EFCS6R0MW5	CERAMIC FILTER	
X182	EFCS6R5MW5	CERAMIC FILTER	
X183	EFCS4R5MW5	CERAMIC FILTER	
X2130	TSSA128	CRYSTAL OSC	
X601	H0D120500006	CRYSTAL OSC	
L5	TJS3A9670	6P CONNECTOR	
L8	TJS3A9670	6P CONNECTOR	
L10	K1ZZ00001205	CONNECTOR	
A12	TJSF29204	CONNECTOR	
A22	TJS3A9650	4P CONNECTOR	
A5	TJS3A9670	6P CONNECTOR	
A8	TJS3A9670	6P CONNECTOR	
J43	EXCELDR35V	CORE	
JA1	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA10	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA11	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA12	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA14	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA16	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA17	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA19	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA2	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA20	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA22	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA23	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA25	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA28	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA29	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA30	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA32	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA34	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA35	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA36	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA37	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA4	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA5	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA6	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA7	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA8	ERJ6GEY0R00	M 0OHM,J,1/10W	
JA9	ERJ6GEY0R00	M 0OHM,J,1/10W	
JK3002	K4BK09B00006	REAR AV TERMINAL	
JK3102	K4BC14B00004	FRONT AV TERMINAL	
JK351	330550044K2F	CRT SOCKET	⚠
JS185	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS2132	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3132	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3133	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS3140	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS601	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS670	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS671	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS672	ERJ6GEY0R00	M 0OHM,J,1/10W	
JS680	ERJ6GEY0R00	M 0OHM,J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
JS891	ERJ6GEY0R00	M 0OHM,J,1/10W	