

Service Manual



Colour Television TX-21JT2P TX-21JT2P/B Z-M3L Chassis

SPECIFICATIONS

Power Source:	220-240V a.c., 50Hz
Power Consumption:	60W
Stand-by Power Consumption:	1W
Aerial Impedance:	75Ω unbalanced, Coaxial Type
Receiving System:	PAL-B/G, DK, PAL-525/60 SECAM B/G, D/K M.NTSC NTSC (AV only)
Receiving Channels:	VHF E2-E12 VHF A-H (ITALY) VHF R3-R5 UHF E21-E68 CATV S1-S10 (M1-M10) CATV S21-S41 (HYPERBAND)
	VHF H1-H2 (ITALY) VHF R1-R2 VHF R6-R12 CATV (S01-S05) CATV S11-S20 (U1-U10)
Intermediate Frequency:	
Video/Audio	
Video	38.9MHz, 34MHz
Audio	32.9MHz, 33.16MHz, 33.4MHz
Colour	34.47MHz (PAL) 34.5MHz, 34.65MHz (SECAM)

Video/Audio Terminals:		
AV1 IN	Video (21 pin) Audio (21 pin) RGB (21 pin) Audio (RCAX1) Video (RCAX1)	1V p-p 75Ω 500mV rms 10kΩ 500mV rms 10kΩ 1V p-p 75Ω
AV1 OUT	Video (21 pin) Audio (21 pin)	1V p-p 75Ω 500mV rms 1kΩ
High Voltage:	29kV ± 1kV	
Picture Tube:	A51QAE320X47P	37cm
Audio Output:	3W (Music Power) 8Ω Impedance	
Headphones:	8Ω Impedance 3.5mm	
Accessories supplied :	Remote Control 2 x R6 (UM3) Batteries	
Dimensions:		
Height:	482mm	
Width:	506mm	
Depth:	484mm	
Net weight:	20kg	

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

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SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the a.c. supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts that have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the a.c. outlet.
5. Potentials as high as 30kV are 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 familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

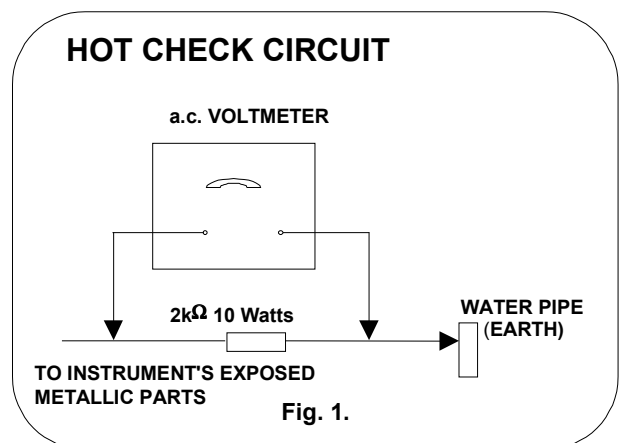
LEAKAGE CURRENT COLD CHECK

1. Unplug the a.c. cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered a.c. 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 4M ohm and 20M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the a.c. cord directly into the a.c. outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth, such as a water pipe.
3. Use an a.c. voltmeter with high impedance to measure the potential across the resistor.

4. Check each exposed metallic part and check the voltage at each point.
5. Reverse the a.c. plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1,4Vrms. In case a measurement is outside the 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.



X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that the jig is capable of handling 30kV without causing X-Radiation.

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

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate. 29kV ± 1kV.
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

SERVICE HINTS

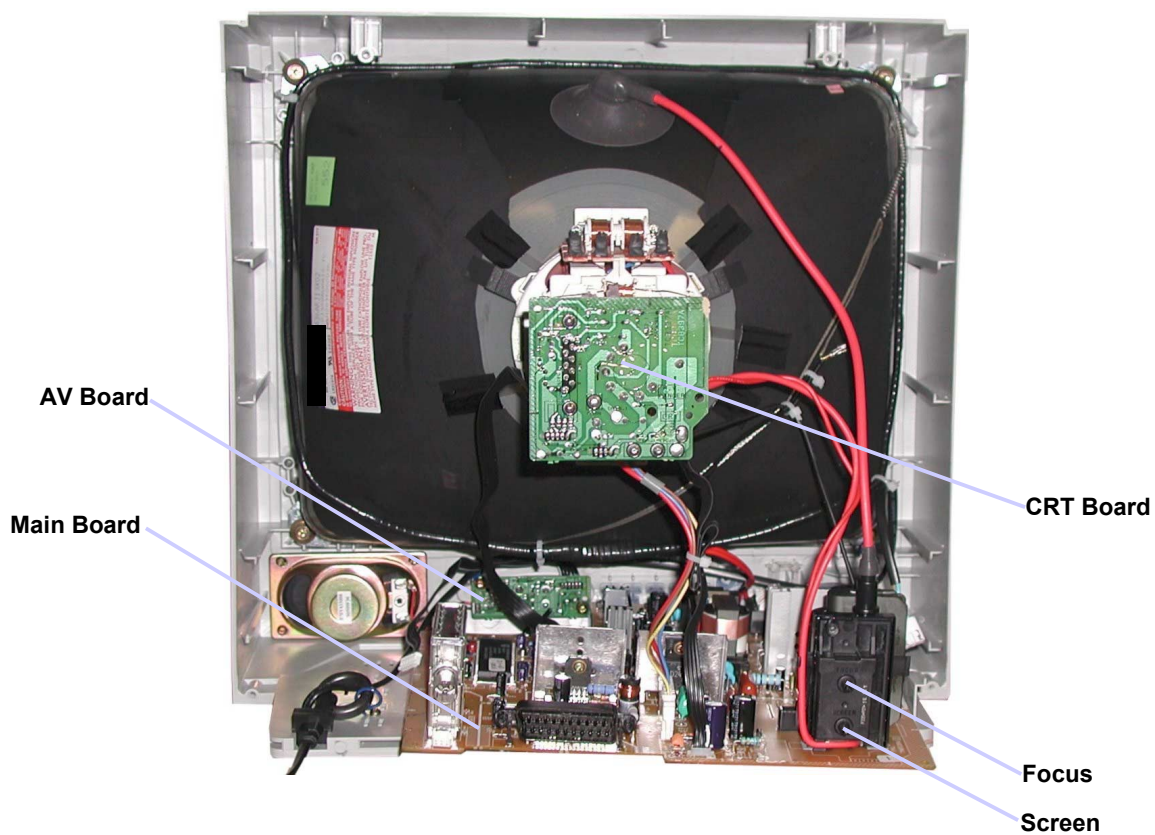
How to remove the rear cover

1. Remove the 5 screws as shown in Fig.2.



Fig. 2.

LOCATION OF CONTROLS



ALIGNMENT PROCEDURE AND OPTION SETTING

Entering SERVICE mode

Service mode is entered by selecting the “mute” remote key and local “down” simultaneously with the sharpness DAC set to Minimum and programme position 99 selected.

Service mode 2 is selected by pressing the Recall remote key while in service mode 1.

Service mode navigation

- Up /Down remote keys :cycle through the service items available.
- +/- remote keys :Decrement/Increment the values within range.
- TV/AV :Store the current data.
- 0 – 7 digit keys :Toggle bits 0-7 in option byte (service mode 2).

Order	Item	Range
1	Cut off (VG2)	LED ON , LED OFF
2	Vertical slope	0-63
3	Vertical Shift	0-63
4	Vertical amplitude	0-63
5	Horizontal shift	0-63
6	Red Cut	0-63
7	Green Cut	0-63
8	Red Drive	0-63
9	Green Drive	0-63
10	Blue Drive	0-63
11	AGC	0-63
12	Sub-Colour	0-63
13	Sub-Brightness	0-63

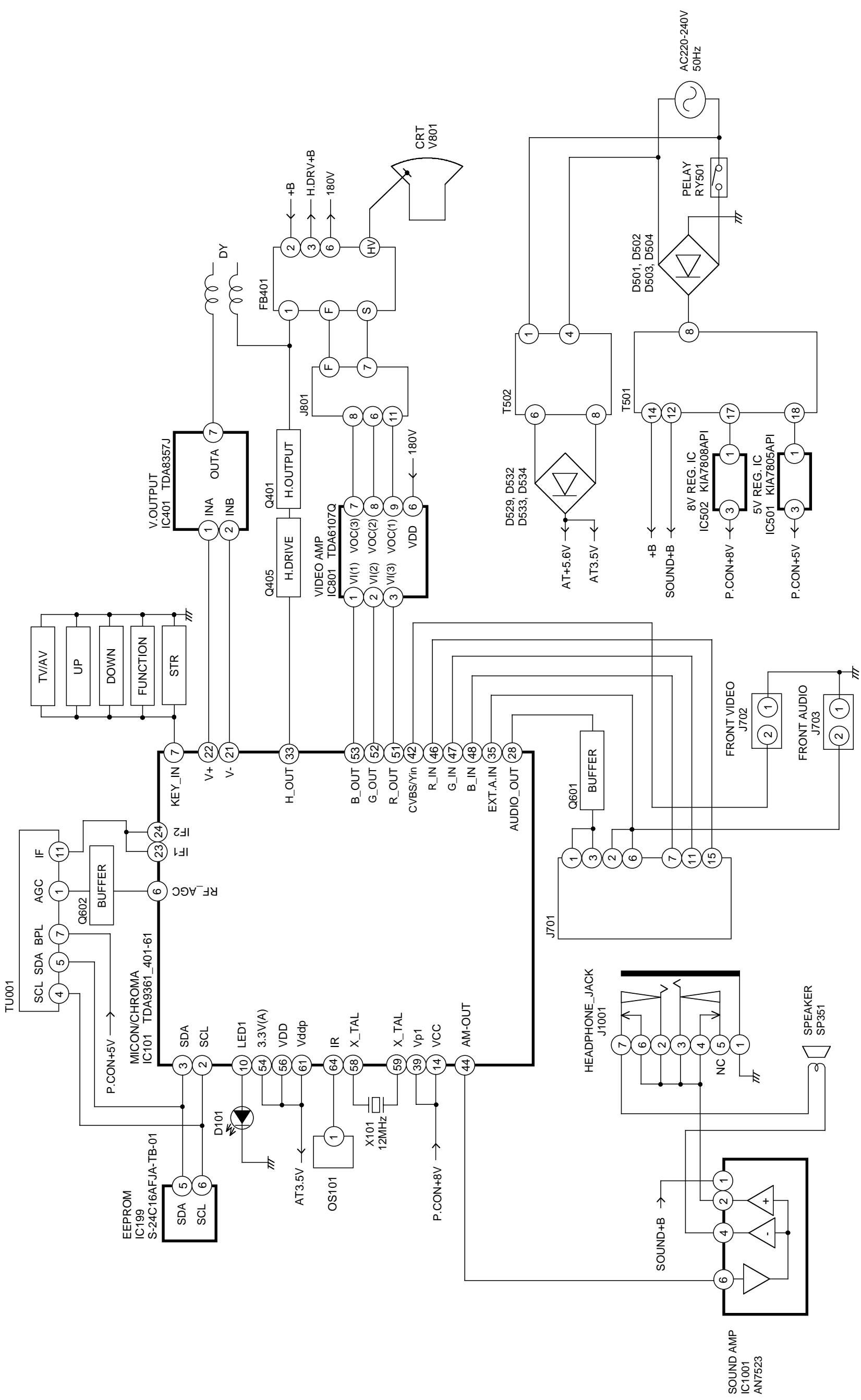
Sub-Colour: Set sub-colour to 16.

Sub-Brightness: Set sub-colour to 33.

G2 alignment: Before entering into service mode, recall the nominal picture setting :remote key “N”. From this setting, increase brightness by 11 steps and reduce sharpness to minimum. Tune a colour bar signal on Prg 99 and enter into SVC mode. In SVC mode , select “G2” item and press – or + remote key to control software disable vertical deflection. The user must then adjust G2 voltage on FBT, to find the point where LED is ON. Press – or + remote key to return to normal SVC mode.

White balance: - Select a dark picture and adjust Red Cut and Green Cut to the desired colour temperature.
- Select a bright picture, set Blue Drive to 32 and adjust Red Drive, and Green Drive to the desired colour temperature.

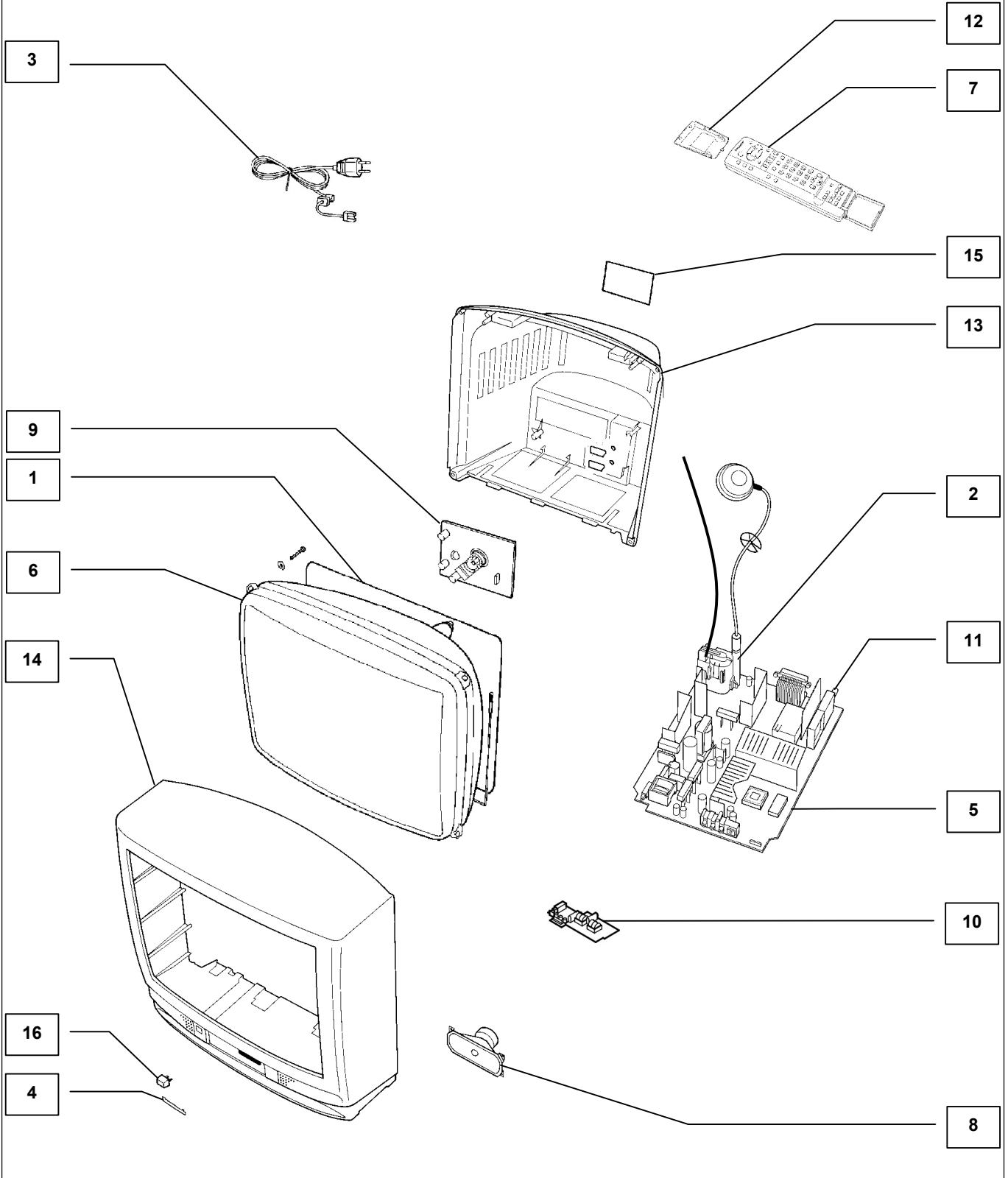
BLOCK DIAGRAM



PARTS LOCATION


NOTE:










The numbers on the exploded view below refer to the mechanical section of the Replacement Parts List. This diagram is used for representative purposes only.








REPLACEMENT PARTS LIST

Important Safety Notice

Components Identified by  mark have special characteristics important for safety.
 * When replacing any of these components, use only manufacturers specified parts.
 In case of ordering these spare parts, please always add the complete Model-Type number to your order.

Cct Ref	Parts Number	Description	
COMMON PARTS			
EXPLODED VIEW			
1	028R200015	DEGAUSS COIL	
2	043221021F	F.B.T.	
3	0G650809	AC POWER CORD	
4	7235760001	PANASONIC BADGE	
5	A3L917D010K	MAIN P.C.B.	
6	A51QAE320X47	C.R.T.	
7	EUR511300	REMOTE CONTROL	
8	SG04D11BNA	SPEAKER	
9	TCB411A	CRT P.C.B.	
10	TEBB07A	AV P.C.B.	
11	TUWRF4EG-778	TUNER	
12	UR51EC904A	BATTERY COVER (REMOTE)	
MISCELLANEOUS COMPONENTS			
.	711WPAA089	IR LENS COVER	
.	792UHA0182	TOP CUSHION	
.	792UHA0183	BOTTOM CUSHION	
.	R6RC/2P	BATTERY PACK	
RY501	ALKS329	RELAY	
I.C.s			
IC101	TDA9361	MICON/CHROMA	
IC199	X24C1621JT2P	EAROM*	
IC401	TDA8357J	VERTICAL AMPLIFIER	
IC501	KIA7805API	5V REGULATOR	
IC502	KIA7808API	8V REGULATOR	
IC801	TDA6107Q	RGB OUTPUT	
IC1001	AN7523	AUDIO AMPLIFIER	
OS101	PIC-37142SY	REMOTE RECEIVER	
FUSES			
F501	50T040HCC	FUSE	
DIODES			
D001	MTZJT-773.3B	ZENER DIODE	
D101	SLR-342VCT32	LED	
D401	AU02A-EIC	DIODE	
D402	AU02A-EIC	DIODE	
D403	MTZJT-773.3B	ZENER DIODE	
D404	MTZJT-773.3B	ZENER DIODE	
D406	MTZJT-771.2B	ZENER DIODE	
D407	MA165TA5	DIODE	
D408	MTZJT-771.8B	ZENER DIODE	
D409	AU02A-EIC	DIODE	
D410	MTZJT-776.8B	ZENER DIODE	
D411	MA165TA5	DIODE	
D413	AU02A-EIC	DIODE	

Cct Ref	Parts Number	Description	
D501	RM11C-EIC	DIODE	
D502	RM11C-EIC	DIODE	
D503	RM11C-EIC	DIODE	
D504	RM11C-EIC	DIODE	
D505	SB290S	DIODE	
D506	MTZJT-775.6B	DIODE	
D507	MTZJT-771.8B	ZENER DIODE	
D508	SB290S	DIODE	
D509	MA165TA5	DIODE	
D510	D28F30DF60	DIODE	
D511	MTZJT-771.8B	ZENER DIODE	
D512	1N4937	DIODE	
D513	SB290S	DIODE	
D514	MA165TA5	DIODE	
D515	MA165TA5	DIODE	
D516	SB290S	DIODE	
D517	MA165TA5	DIODE	
D518	MA165TA5	DIODE	
D519	MA165TA5	DIODE	
D520	MTZJT-771.8B	ZENER DIODE	
D521	MA165TA5	DIODE	
D522	MTZJT-773.9B	ZENER DIODE	
D524	SB290S	DIODE	
D525	MA165TA5	DIODE	
D528	MTZJT-775.6B	DIODE	
D529	1N4005-EIC	DIODE	
D530	MA165TA5	DIODE	
D532	1N4005-EIC	DIODE	
D533	1N4005-EIC	DIODE	
D534	1N4005-EIC	DIODE	
D602	MA165TA5	DIODE	
D603	MA165TA5	DIODE	
D801	AU02A-EIC	DIODE	
D802	AU02A-EIC	DIODE	
D803	AU02A-EIC	DIODE	
D804	AU02A-EIC	DIODE	
IC506	LTV-817M-VB	PHOTO COUPLER	
TH501	B59104-T80-B	THERMISTOR(PTC)	
TRANSISTORS			
Q401	TDUF024990	TRANSISTOR	
Q402	2SA1624	TRANSISTOR	
Q405	2SC1627Y	TRANSISTOR	
Q501	KTC3209Y-AT	POWER TRANSISTOR	
Q502	KTC3203_Y-AT	TRANSISTOR	
Q503	KTC3209Y-AT	POWER TRANSISTOR	
Q504	2SC2412	TRANSISTOR	
Q505	2SC2412	TRANSISTOR	
Q506	TPAAB05001	TRANSISTOR	
Q507	KTC3198-ATY	POWER TRANSISTOR	
Q508	KTC3198-ATY	POWER TRANSISTOR	
Q509	KTC3209Y-AT	POWER TRANSISTOR	
Q511	2SK2647-01MR	MOSFET	

Cct Ref	Parts Number	Description
Q512	TPAAB05001	TRANSISTOR
Q513	TNAAB05003	TRANSISTOR
Q601	2SC2412	TRANSISTOR
Q602	2SC2412	TRANSISTOR
Q606	2SC2412	TRANSISTOR
Q607	2SC2412	TRANSISTOR
Q608	2SA1037AKT	TRANSISTOR
Q609	KTC3881S-RTK	POWER TRANSISTOR
TRANSFORMERS		
T401	ETH14Y47AY	DRIVE TRANSFORMER △
T501	8129098S	SWITCHING TRANSFORMER △
T502	406280011	POWER TRANSFORMER △
COILS		
B502	024HT03564	BEAD CORE
B504	024HT03553	BEAD CORE
B1003	024HT03553	BEAD CORE
L001	02167F100J	COIL
L101	02167F100J	COIL
L102	02167F100J	COIL
L104	02167F100J	COIL
L401	021679472K	COIL
L402	20416A	LINEARITY COIL
L501	029T000091	LINE FILTER
L502	02AHB9A972	FERRITE CORE
L601	02167F100J	COIL
L602	021LA6100J	COIL
L603	02167F680J	COIL
L604	021LA6R33M	COIL
L605	02167F1R0K	COIL
L701	021LA6100J	COIL
L702	02AHB9A972	FERRITE CORE
L703	021LA6100J	COIL
L704	021LA6100J	COIL
L705	021LA6100J	COIL
L706	0216S7100J	COIL
L802	021673560J	COIL
FILTERS		
CF601	J1981M	SAW FILTER
CF604	TPWA02B-TF21	TRAP FILTER
CF605	MKT40.4MA110	TRAP FILTER
CF607	MKT31.9MA110	TRAP FILTER
CRYSTALS		
X101	HC-49/U-S	QUARTZ OSCILLATOR
RESISTORS		
R001	ERD50TJ183	CARBON 0.5W 5% 18K Ω
R002	ERD50TJ183	CARBON 0.5W 5% 18K Ω
R003	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R004	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R005	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100K Ω
R006	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K Ω
R007	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75 Ω
R008	ERJ6GEYJ123	S.M.CARB 0.1W 5% 12K Ω
R101	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180 Ω
R102	ERJ6GEYJ221	S.M.CARB 0.1W 5% 220 Ω
R103	ERJ6GEYJ331	S.M.CARB 0.1W 5% 330 Ω
R104	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470 Ω
R105	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R106	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3 Ω
R107	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R108	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3 Ω
R109	ERD25TJ122	CARBON 0.25W 5% 1K2 Ω
R110	ERJ6GEYJ333	S.M.CARB 0.1W 5% 33K Ω
R111	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K Ω
R112	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R113	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω

Cct Ref	Parts Number	Description
R114	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R115	ERJ6GEYJ221	S.M.CARB 0.1W 5% 220 Ω
R116	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K Ω
R117	ERD25TJ332	CARBON 0.25W 5% 3K3 Ω
R118	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R119	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R120	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R123	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R124	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K Ω
R126	ERD25TJ470	CARBON 0.25W 5% 47 Ω
R401	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2 Ω
R402	ERG3FJ821	METAL 3W 5% 820 Ω △
R403	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2 Ω
R404	ERD50TJ471	CARBON 0.5W 5% 470 Ω
R405	ERD50TJ1R5	CARBON 0.5W 5% 1.5 Ω
R407	ERD25TJ473	CARBON 0.25W 5% 47K Ω
R408	ERD50TJ1R5	CARBON 0.5W 5% 1.5 Ω
R409	ERJ6GEYJ155	S.M.CARB 0.1W 5% 1M5 Ω
R410	ERD25TJ562	CARBON 0.25W 5% 5K6 Ω
R411	ERD25TJ392	CARBON 0.25W 5% 3K9 Ω
R412	ERD25TJ562	CARBON 0.25W 5% 5K6 Ω
R413	ERD25TJ104	CARBON 0.25W 5% 100K Ω
R414	ERD25TJ103	CARBON 0.25W 5% 10K Ω
R419	ERD50TJ471	CARBON 0.5W 5% 470 Ω
R423	ERD25TJ103	CARBON 0.25W 5% 10K Ω
R447	ERQ12AJ680P	METAL 0.5W 5% 68 Ω △
R448	ERG1FJ102	METAL 1W 5% 1K Ω
R450	ERQ2CJP6R8	FUSIBLE 2W 5% 6.8 Ω △
R455	ERD50TJ391	CARBON 0.5W 5% 390 Ω
R456	ERG2SJS6R8H	METAL 2W 5% 6.8 Ω
R460	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R490	ERD25TJ223	CARBON 0.25W 5% 22K Ω
R501	ERD50TJ155	CARBON 0.5W 5% 1.5M Ω
R502	ERG1ANJPR82	METAL 1W 5% 0.82 Ω
R503	ERF7ZK5R6	WOUND 7W 10% 5R6 Ω △
R504	ERD50TJ225	CARBON 0.5W 5% 2.2M Ω
R505	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R506	ERD50TJ225	CARBON 0.5W 5% 2.2M Ω
R507	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R508	ERG3FJ330	METAL 3W 5% 33 Ω
R510	ERQ1CJP1R0	FUSIBLE 1W 5% 1 Ω △
R511	ERG1ANJP331	METAL 1W 5% 330 Ω
R512	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1K Ω
R513	ERJ6GEYJ152	S.M.CARB 0.1W 5% 1K5 Ω
R514	ERD50FJ104	CARBON 0.5W 5% 100K Ω △
R515	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 Ω
R516	ERD25TJ332	CARBON 0.25W 5% 3K3 Ω
R519	ERD25TJ102	CARBON 0.25W 5% 1K Ω
R521	ERD50TJ102	CARBON 0.5W 5% 1K Ω
R522	ERD25TJ271	CARBON 0.25W 5% 270 Ω
R523	ERD25TJ100	CARBON 0.25W 5% 10 Ω
R524	ERD25TJ151	CARBON 0.25W 5% 150 Ω
R525	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470 Ω
R526	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100K Ω
R528	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1K Ω
R529	ERD25TJ101	CARBON 0.25W 5% 100 Ω
R531	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K Ω
R532	ERD25TJ332	CARBON 0.25W 5% 3K3 Ω
R533	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1K Ω
R537	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R538	ERD25TJ271	CARBON 0.25W 5% 270 Ω
R601	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K Ω
R602	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1K Ω
R603	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1K Ω
R604	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39K Ω
R605	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560 Ω

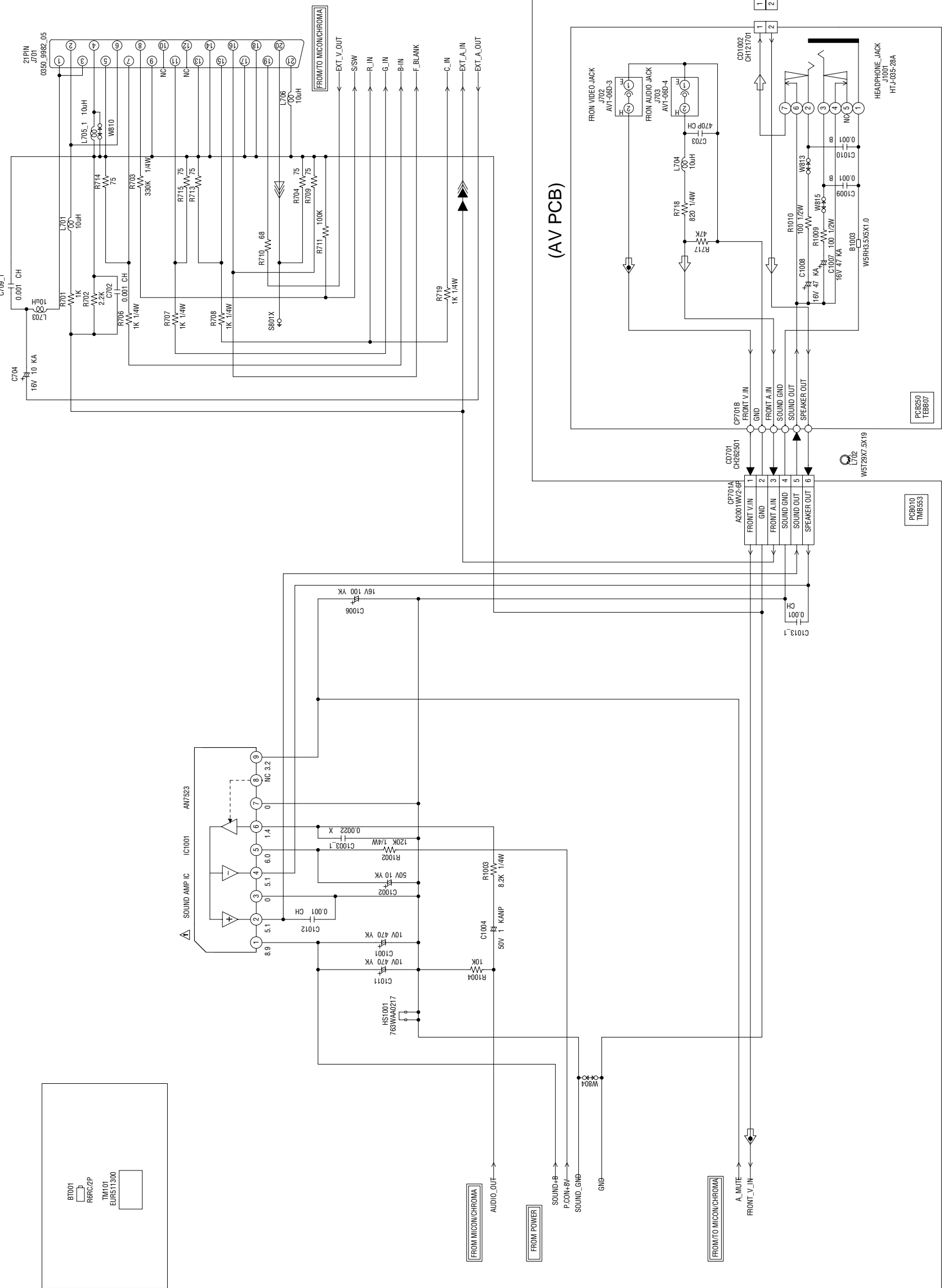
Cct Ref	Parts Number	Description				
R606	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R607	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R608	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9 Ω	
R609	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R610	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω	
R621	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560 Ω	
R622	ERD25TJ101	CARBON	0.25W	5%	100 Ω	
R623	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω	
R624	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R625	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R626	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω	
R627	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω	
R628	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R629	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R630	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω	
R631	ERDS2TJ4R7T	CARBON	2W	5%	4R7 Ω	
R632	ERD25TJ271	CARBON	0.25W	5%	270 Ω	
R633	ERD25TJ561	CARBON	0.25W	5%	560 Ω	
R634	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω	
R635	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R636	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47 Ω	
R637	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω	
R638	ERG3FJ333H	METAL	3W	5%	33K Ω	
R639	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R640	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω	
R641	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R642	ERJ6GEYJ224	S.M.CARB	0.1W	5%	220K Ω	
R643	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω	
R644	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R645	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R646	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R647	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R648	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R649	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R650	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R651	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680 Ω	
R652	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω	
R653	ERD25TJ221	CARBON	0.25W	5%	220 Ω	
R654	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R655	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω	
R656	ERJ6GEYJ820	S.M.CARB	0.1W	5%	82 Ω	
R657	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω	
R658	ERD50TJ221	CARBON	0.5W	5%	220 Ω	
R666	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω	
R701	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R702	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R703	ERD25TJ334	CARBON	0.25W	5%	330K Ω	
R704	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R706	ERD25TJ102	CARBON	0.25W	5%	1K Ω	
R707	ERD25TJ102	CARBON	0.25W	5%	1K Ω	
R708	ERD25TJ102	CARBON	0.25W	5%	1K Ω	
R709	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R710	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68 Ω	
R711	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω	
R713	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R714	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R715	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R717	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω	
R718	ERD25TJ821	CARBON	0.25W	5%	820 Ω	
R719	ERD25TJ102	CARBON	0.25W	5%	1K Ω	
R801	ERD50TJ102	CARBON	0.5W	5%	1K Ω	
R802	ERD50TJ102	CARBON	0.5W	5%	1K Ω	
R803	ERD50TJ102	CARBON	0.5W	5%	1K Ω	
R804	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R805	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R806	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	

Cct Ref	Parts Number	Description				
R807	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R808	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R809	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R810	ERQ12AJ470	FUSIBLE	0.5W	5%	47 Ω	△
R1002	ERD25TJ124	CARBON	0.25W	5%	120K Ω	
R1003	ERD25TJ822	CARBON	0.25W	5%	8K2 Ω	
R1004	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1009	ERD50TJ101	CARBON	0.5W	5%	100 Ω	
R1010	ERD50TJ101	CARBON	0.5W	5%	100 Ω	
VR501	EVNCYAA03B13	VARIABLE	5W	5%	3.13K Ω	
CAPACITORS						
C001	ECKC1H223J	CERAMIC	50V		22nF	
C002	ECA0JM471GB	ELECT	6.3V		470μF	
C003	ECA1HM2R2GB	ELECT	50V		2.2μF	
C101	ECA0JM101G	ELECT	6.3V		100μF	
C102	CS0RB0315K	CERAMIC	25V		0.1μF	
C103	CS0RB0315K	CERAMIC	25V		0.1μF	
C104	ECKC1H181J	CERAMIC	50V		180μF	
C105	ECKC1H181J	CERAMIC	50V		180μF	
C106	ECA0JM101G	ELECT	6.3V		100μF	
C107	CS0RB0315K	CERAMIC	25V		0.1μF	
C108	CS0RB0315K	CERAMIC	25V		0.1μF	
C109	ECA1CM470GB	ELECT	16V		47μF	
C122	ECA1CM100GB	ELECT	16V		10μF	
C401	ECKC1H473KB	CERAMIC	50V		47nF	
C402	ECA1HM102E	ELECT	50V		1nF	
C403	P232W1473J	METAL PO	100V		47nF	
C404	ECKC3D222J	CERAMIC	2kV		2.2nF	
C405	ECKC1H473KB	CERAMIC	50V		47nF	
C406	ECA1EM221GB	ELECT	25V		220pF	
C407	CS0RB0315K	CERAMIC	25V		0.1μF	
C408	ECKC1H104JB	CERAMIC	50V		100nF	
C409	ECA2EM100B	ELECT	250V		10μF	
C416	C0JTSLS5K1J	CAPACITO	500V		27pF	
C417	P232W1103J	METAL PO	100V		0.01μF	
C418	ECA1HM220GB	ELECT	50V		22μF	
C420	C0JTSLS5S1J	CAPACITO	500V		56pF	
C422	E5EZTD2R2M	ELECT	250V		2.2μF	
C423	P4J7F3334J	METAL PO	250V		330nF	
C424	P4N8FJ822H	METAL PO	1.25K		8.2nF	
C431	ECA2EM220B	ELECT	250V		22μF	
C432	P232W1104J	METAL PO	100V		100nF	
C501	P2122B104M	METAL PO	275V		100nF	△
C502	ECQB1H102J	FILM	50V		1nF	
C503	C0PLRR7H2K	CERAMIC	2KV		220pF	
C504	ECQB1H473K	FILM	50V		47nF	
C505	E52DHJ151M	CAPACITO	450V		150μF	
C506	ECKC3D101J	CERAMIC	2KV		100pF	△
C507	ECKC3D101J	CERAMIC	2KV		100pF	△
C508	CD39E0M13M	CAPACITO	250V		100nF	△
C509	ECQB1H223K	FILM	50V		22nF	
C511	ECA1EM470GB	ELECT	25V		47μF	
C513	ECA1HM010GB	ELECT	50V		1μF	
C514	ECA1CM471GB	ELECT	16V		470μF	
C515	ECA1CM102B	ELECT	16V		1000μF	
C516	ECKC2H471J	CERAMIC	500V		470pF	△
C517	ECKW3D681JBN	CERAMIC	2KV		680pF	
C518	ECKC1H103J	CERAMIC	50V		100μF	
C519	ECA1CM2R2	ELECT	16V		2.2μF	
C521	E62NFB101M	ELECT	160V		100μF	
C523	ECA1AHG101B	ELECT	10V		100μF	
C526	P2122B224M	METAL PO	275V		220nF	△
C527	CD39B0MH2K	CAPACITO	250V		220pF	
C533	ECA1AHG471E	ELECT	10V		470pF	
C535	CD39E0MH3M	CAPACITO	250V		2.2nF	△
C541	ECA1EM102E	ELECT	25V		1nF	

Cct Ref	Parts Number	Description		
C601	ECQV1H224JL3	FILM	50V	220nF
C602	ECA1CM101B	ELECT	16V	100µF
C603	CS0RB0315K	CERAMIC	25V	0.1µF
C604	ECQV1H224JL3	FILM	50V	220nF
C605	ECKC1H222J	CERAMIC	50V	2.2nF
C606	CS0RB0216K	CERAMIC	16V	1µF
C607	ECKC1H472J	CERAMIC	50V	4.7nF
C608	ECA1CM220GB	ELECT	16V	22µF
C609	CS0RB0315K	CERAMIC	25V	0.1µF
C610	ECA1HM4R7	ELECT	50V	4R7µF
C611	ECKC1H102J	CERAMIC	50V	1nF
C612	ECKC1H102J	CERAMIC	50V	1nF
C613	ECQV1H104J	FILM	50V	100nF
C614	ECKC1H103J	CERAMIC	50V	100µF
C615	ECKC1H332J	CERAMIC	50V	3.3nF
C616	ECA1HM220GB	ELECT	50V	22µF
C617	ECKC1H331J	CERAMIC	50V	330pF
C618	ECKC1H122J	CERAMIC	50V	1.2nF
C619	ECA1HM100GB	ELECT	50V	10µF
C626	ECA1HM2R2GB	ELECT	50V	2.2µF
C627	ECKC1H102J	CERAMIC	50V	1nF
C628	CS0RB0315K	CERAMIC	25V	0.1µF
C629	ECA1CM101B	ELECT	16V	100µF
C630	CS0RB0315K	CERAMIC	25V	0.1µF
C631	ECA1HM100GB	ELECT	50V	10µF
C632	CS0RB0315K	CERAMIC	25V	0.1µF
C633	ECA1CM101B	ELECT	16V	100µF
C634	ECKC1H473KB	CERAMIC	50V	47nF
C635	ECKC1H473KB	CERAMIC	50V	47nF
C636	ECKC1H102J	CERAMIC	50V	1nF
C637	ECKC1H223J	CERAMIC	50V	22nF
C638	ECKC1H223J	CERAMIC	50V	22nF
C639	ECKC1H223J	CERAMIC	50V	22nF
C640	ECA1VM101B	ELECT	35V	100µF
C641	ECKC1H222J	CERAMIC	50V	2.2nF
C642	ECKC1H561J	CERAMIC	50V	560pF
C646	ECKC1H560JB	CERAMIC	50V	56pF
C647	ECKC1H560JB	CERAMIC	50V	56pF
C648	ECKC1H102J	CERAMIC	50V	1nF
C650	ECKC1H103J	CERAMIC	50V	100µF
C655	ECKC1H102J	CERAMIC	50V	1nF
C656	ECKC1H223J	CERAMIC	50V	22nF
C702	ECKC1H102J	CERAMIC	50V	1nF
C703	ECKC1H471J	CERAMIC	50V	470pF
C704	ECA1CM100GB	ELECT	16V	10µF
C709	ECKC1H102J	CERAMIC	50V	1nF
C802	ECKC1H152J	CERAMIC	50V	1.5nF
C803	P235WB104K	CAPACITO	100V	100nF
C804	E5EZTD100M	CAPACITO	250V	10µF
C819	ECKC3D102J	CERAMIC	2KV	1nF
C1001	ECA1AHG471E	ELECT	10V	470pF
C1002	ECA1HM100GB	ELECT	50V	10µF
C1003	ECKC1H202J	CERAMIC	50V	2nF
C1004	ECA1HM010GB	ELECT	50V	1µF
C1006	ECA1CM101B	ELECT	16V	100µF
C1007	ECA1CM470GB	ELECT	16V	47µF
C1008	ECA1CM470GB	ELECT	16V	47µF
C1009	ECKC1H102J	CERAMIC	50V	1nF
C1010	ECKC1H102J	CERAMIC	50V	1nF
C1011	ECA1AHG471E	ELECT	10V	470pF
C1012	ECKC1H102J	CERAMIC	50V	1nF
C1013	ECKC1H102J	CERAMIC	50V	1nF
TERMINALS AND LINKS				
J701	0350_9982_05	SCART SOCKET		
J702	AV1-06D-3	RCA JACK		
J703	AV1-06D-4	RCA JACK		

Cct Ref	Parts Number	Description	
J801	CVT3275-5101	CRT SOCKET	△
J1001	HTJ-035-28A	RCA JACK	
SWITCHES			
SW101	EVQ21505R	SWITCH	
SW102	EVQ21505R	SWITCH	
SW103	EVQ21505R	SWITCH	
SW104	EVQ21505R	SWITCH	
SW105	EVQ21505R	SWITCH	
SW501	SDKVA30100	MAIN SWITCH	△
DIFFERENCES FOR MODEL TX--21JT2P			
EXPLODED VIEW			
13	702UPA0258	BACKCOVER	△
14	701WPJB983	CABINET	△
15	722576A009	MODEL LABEL	△
16	735WPAA490	POWER BUTTON	△
MISCELLANEOUS COMPONENTS			
.	713WPBA006	FRONT AV COVER	
.	793UCDB071	CARTON	
INSTRUCTION BOOKS			
	TQB8E3861	BU/RO/PO/HU/CZ/SK/ENG	△
DIFFERENCES FOR MODEL TX--21JT2PB			
EXPLODED VIEW			
13	702UPA0263	BACKCOVER	△
14	701WPJB984	CABINET	△
15	722576A012	MODEL LABEL	△
16	735WPAA492	POWER BUTTON	△
MISCELLANEOUS COMPONENTS			
.	713WPBA007	AV FRONT COVER	
.	793UCDB077	CARTON	
INSTRUCTION BOOKS			
	TQB8E3861	BU/RO/PO/HU/CZ/SK/ENG	△

SOUND AMP/21PIN SCHEMATIC DIAGRAM (MAIN PCB)



(AV PCB)

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

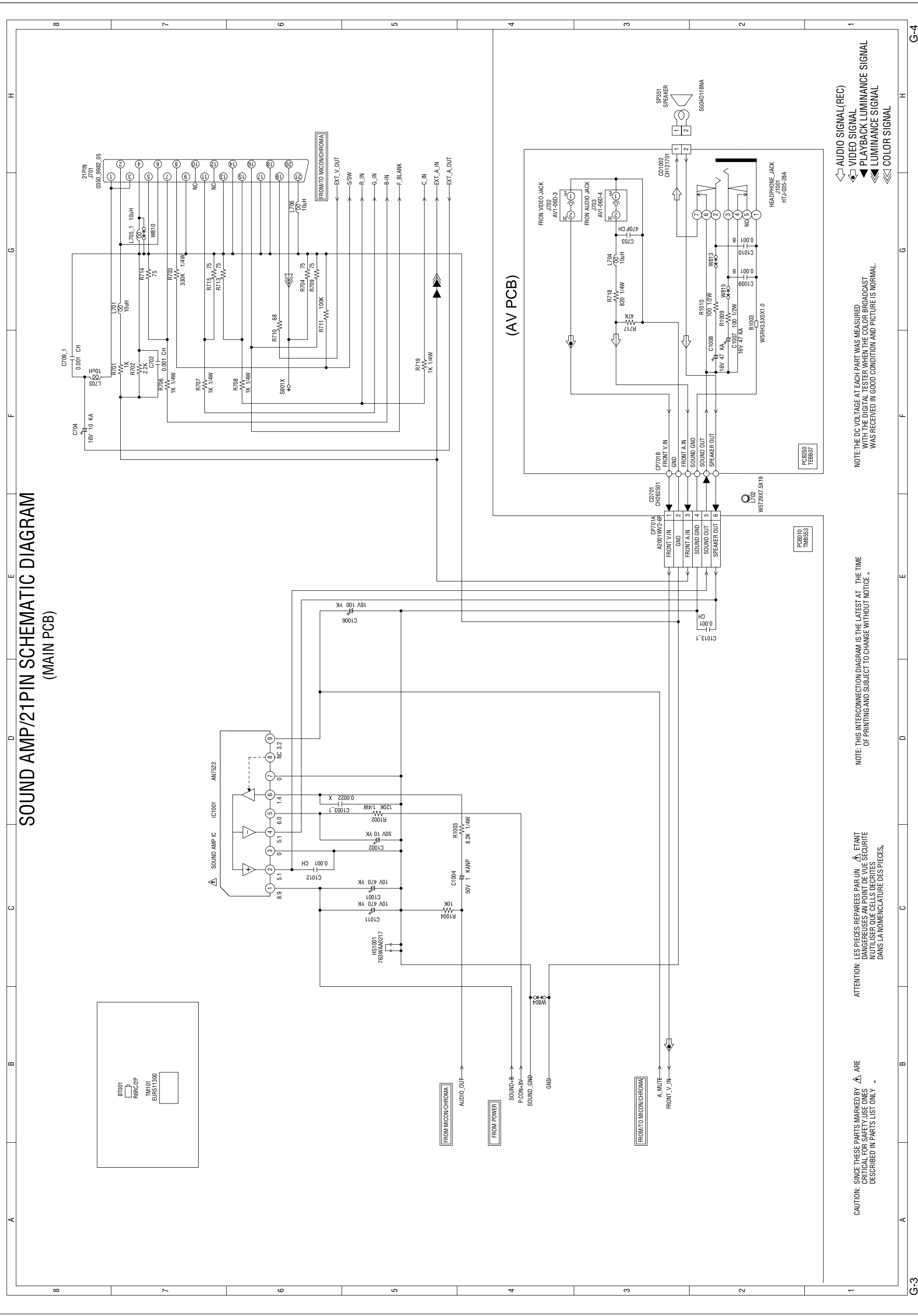
ATTENTION: LES PIÈCES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIÈCES.

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

Legend:

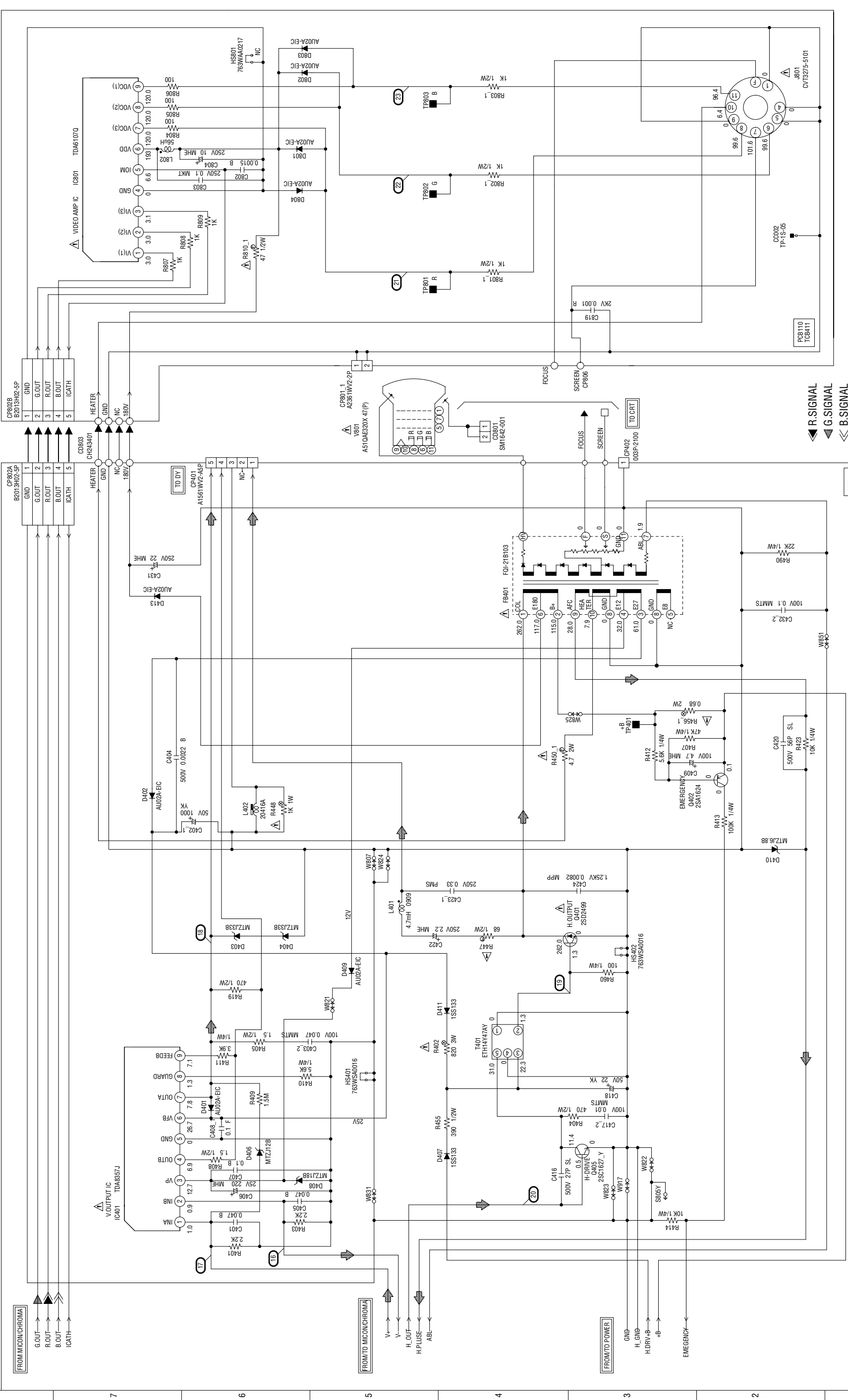
- AUDIO SIGNAL (REC)
- VIDEO SIGNAL
- PLAYBACK LUMINANCE SIGNAL
- LUMINANCE SIGNAL
- COLOR SIGNAL



DEFLECTION/CRT SCHEMATIC DIAGRAM

(MAIN PCB)

(CRT PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY Δ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIÈCES REPAREES PAR UN Δ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRIRES DANS LA NOMENCLATURE DES PIÈCES.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

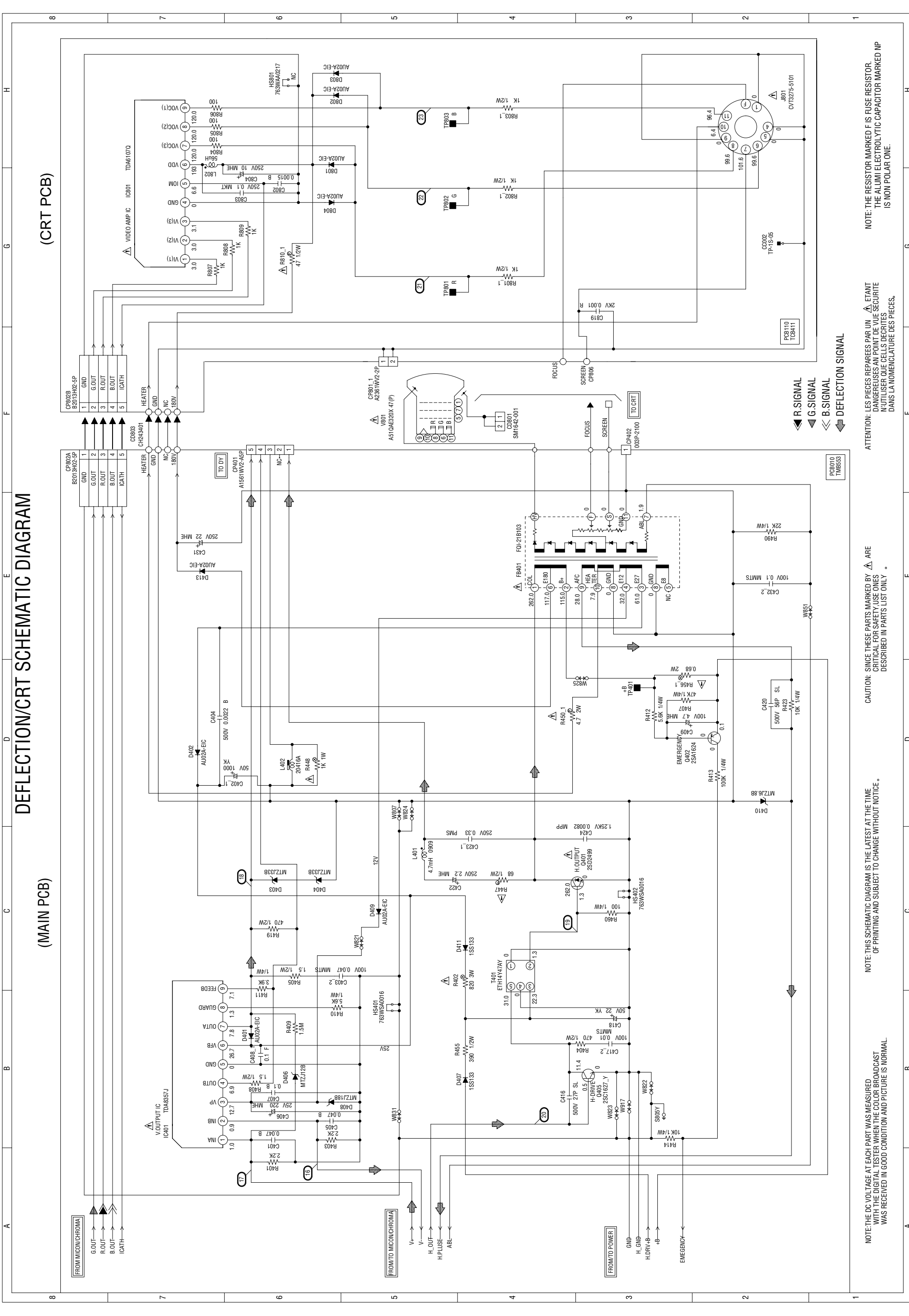
- ◀ R-SIGNAL
- ◀ G-SIGNAL
- ◀ B-SIGNAL
- ◀ DEFLECTION SIGNAL

PCB010
TMB553

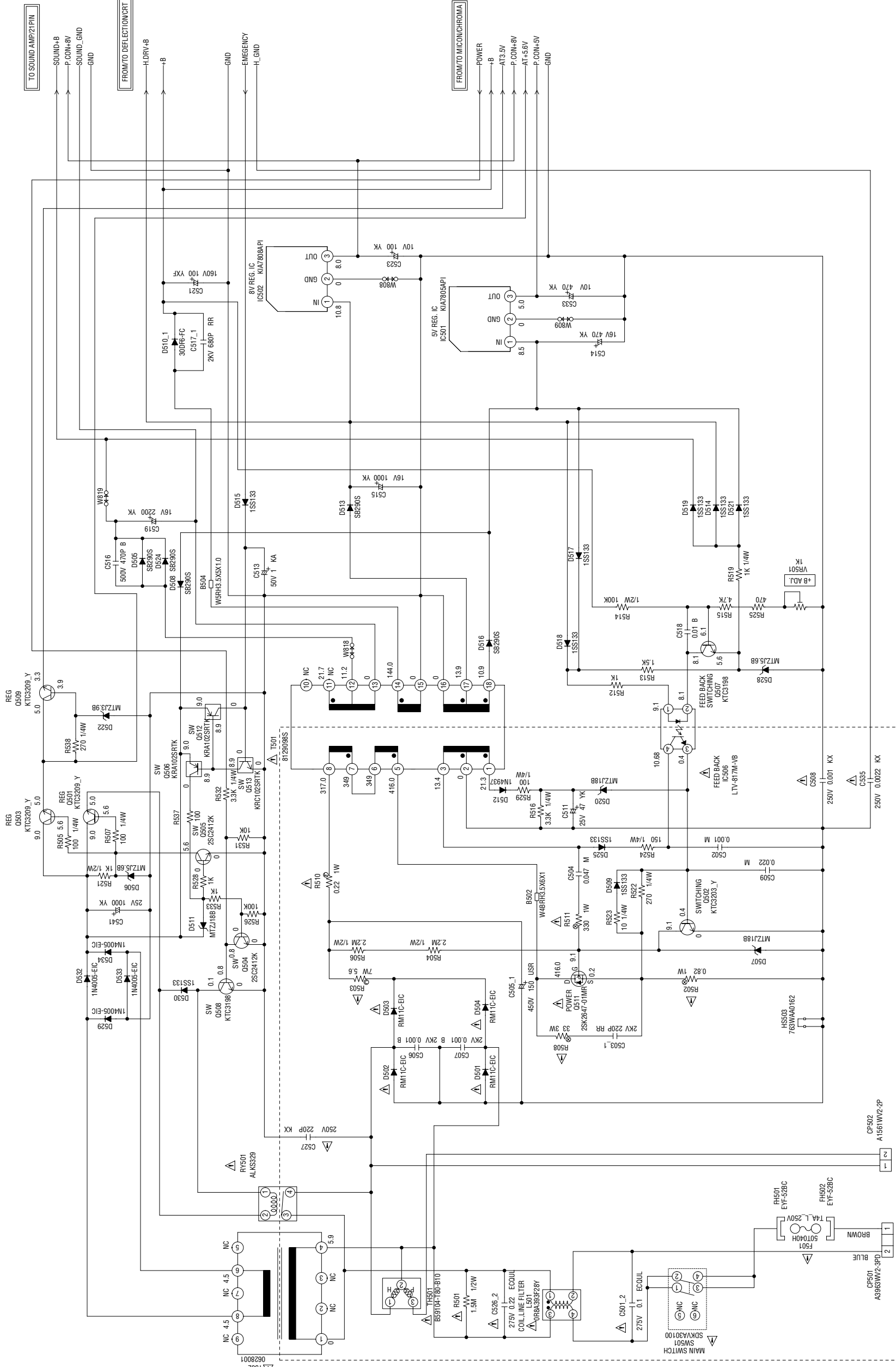
PCB110
TCB411

CV13275-5101

CO002
TP-1S-05



POWER SCHEMATIC DIAGRAM (MAIN PCB)

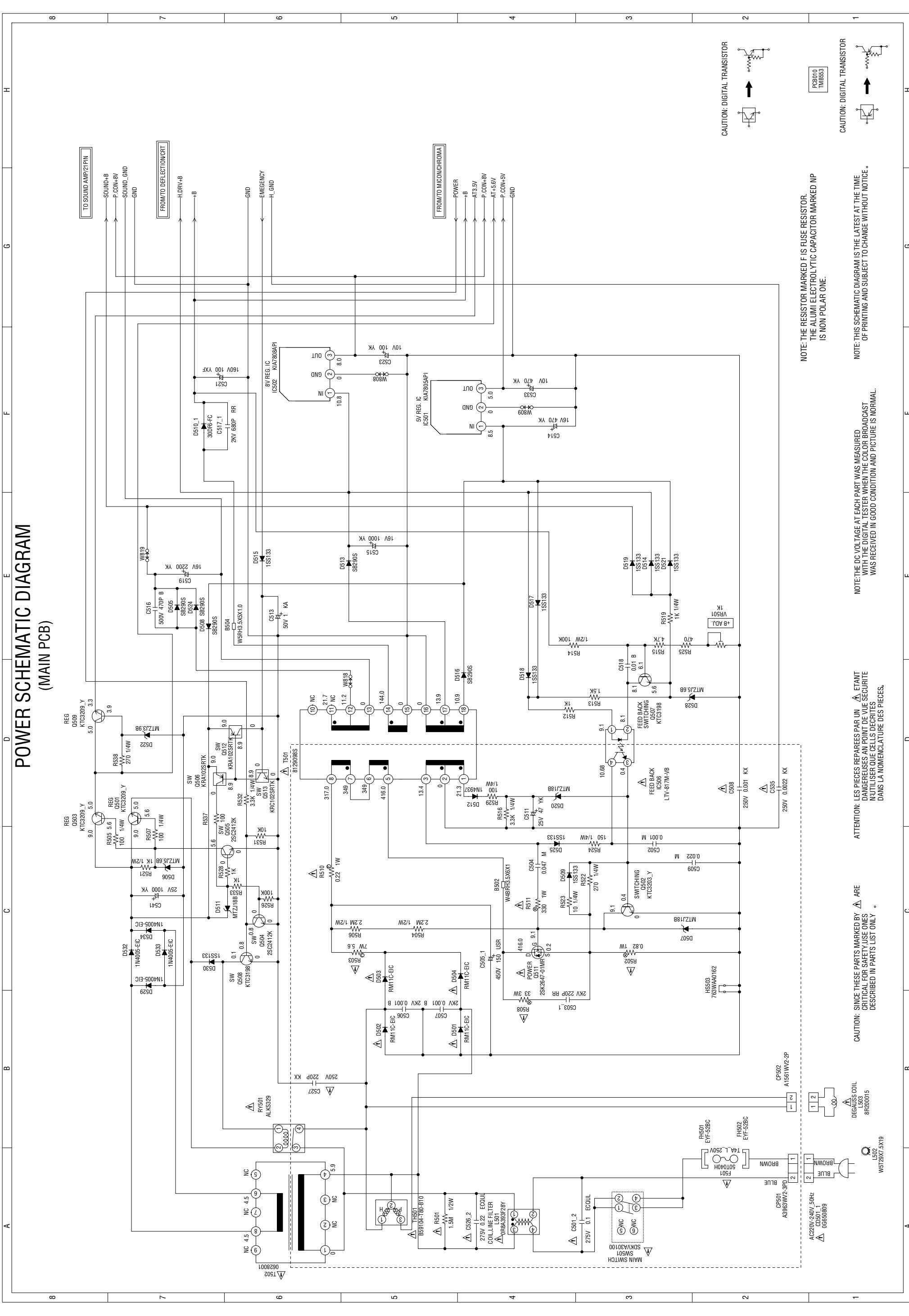
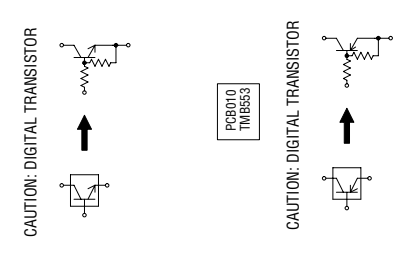


NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP
IS NON POLAR ONE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIÈCES MARQUÉES PAR UN Δ ÉTANT
DANGEREUSES À L'UN POINT DE VUE SÉCURITÉ
N'UTILISER QUE CELLES DÉCRITES
DANS LA NOMÉNCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY Δ ARE
CRITICAL FOR SAFETY USE ONES
DESCRIBED IN PARTS LIST ONLY.



PRINTED CIRCUIT BOARDS
MAIN/CRT/AV (INSERTED PARTS)
SOLDER SIDE

