

# TX-21/14S3TP / TC-21/14S3RP Service Manual

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## Service Support

Service and repair of this product is supported by Panasonic's LUCI interface.

This interface provides a link between the TV and a standard PC to allow a number of diagnostic and control functions to be performed.

For more details contact your local Panasonic company.

  
BACK

EXIT

Video / Audio

Control



BACK

E - PCB

Y - PCB



BACK

E - Schematic

Y - Schematic



BACK

# Service Manual



## Colour Television TX-21S3TP TC-21S3RP TX-14S3TP TC-14S3RP Z-7 Chassis

### Specifications

(Information in brackets {} refer to TX-14S3TP / TC-14S3RP)

**Power Consumption :** 76.5W {47W}

**Standby Power Consumption :** 1W

**Aerial Impedance :** 75Ω unbalanced, Coaxial Type

**Receiving System :** PAL-BG, H, DK, PAL-60,  
SECAM BG, DK  
NTSC (AV Only)

**Receiving Channels :** VHF E2-E12  
VHF H1-H2 (ITALY) VHF A-H (ITALY)  
UHF E21-E69 CATV (S01-S05)  
CATV S1-S10 (M1-M10) CATV S11-S20 (U1-U10)  
CATV S21-S41 (HYPERBAND)

**Intermediate Frequency :**

Video 38.9 MHz  
Sound 33.5 MHz 32.4 MHz  
Colour 34.47 MHz (PAL)  
34.5 MHz (SECAM),  
34.65 MHz (SECAM)

**Video / Audio Terminals :**

AV1 IN Video (21 pin) 1V p-p 75Ω  
Audio (21 pin) 500mV rms 10kΩ  
RGB (21 pin)  
AV1 OUT Video (21 pin) 1V p-p 75Ω  
Audio (21 pin) 500mV rms 1kΩ

RCA IN  
RCA IN

Video 1V p-p 75Ω  
Audio 500mV rms, 10KΩ

**High Voltage :**

27kV + 0.7kV / - 1kV  
{23kV + 0.7kV / -1 kV}

**Picture Tube :**

A51ESF43X191 51 cm  
{A34EACO1X13 34 cm}

**Audio Output :**  
Speaker

6 W (Music Power)  
8 Ω Impedance

Headphones

8 Ω Impedance

**Accessories supplied :**

Remote Control  
2 x R6 (UM3) Batteries

**Dimensions :**

Height : 480 mm {364mm}  
Width : 520 mm {389mm}  
Depth : 485 mm {384mm}

**Net Weight :**

20kg {10kg}

Specifications are subject to change without notice.  
Weight 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 AC4. supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high5. voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short 6. 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 AC outlet.
5. Potentials as high as 28kV 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 picture to the chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

Check each exposed Metallic part and check the voltage at each point.

Reverse the AC plug at the outlet and repeat each of the above measurements.

The potential at any point should not exceed 1.4 Vrms. 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.

### LEAKAGE CURRENT COLD CHECK

1. Unplug the AC 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 1. the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, 2. 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.

### X-RADIATION WARNING

The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.

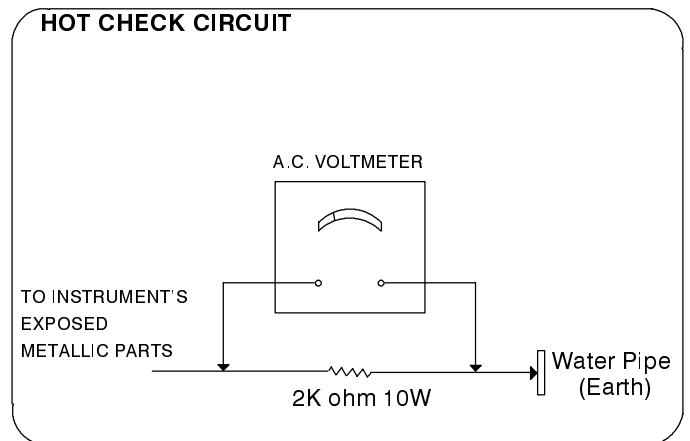
When using a picture tube test jig for service ensure that the jig is capable of handling 28kV without causing X-Radiation.

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

### LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC 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 AC voltmeter with high impedance to measure the potential across the resistor.

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate 27kV + 0.7 / - 1kV {23kV + 0.7kV / - 1 kV} 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.

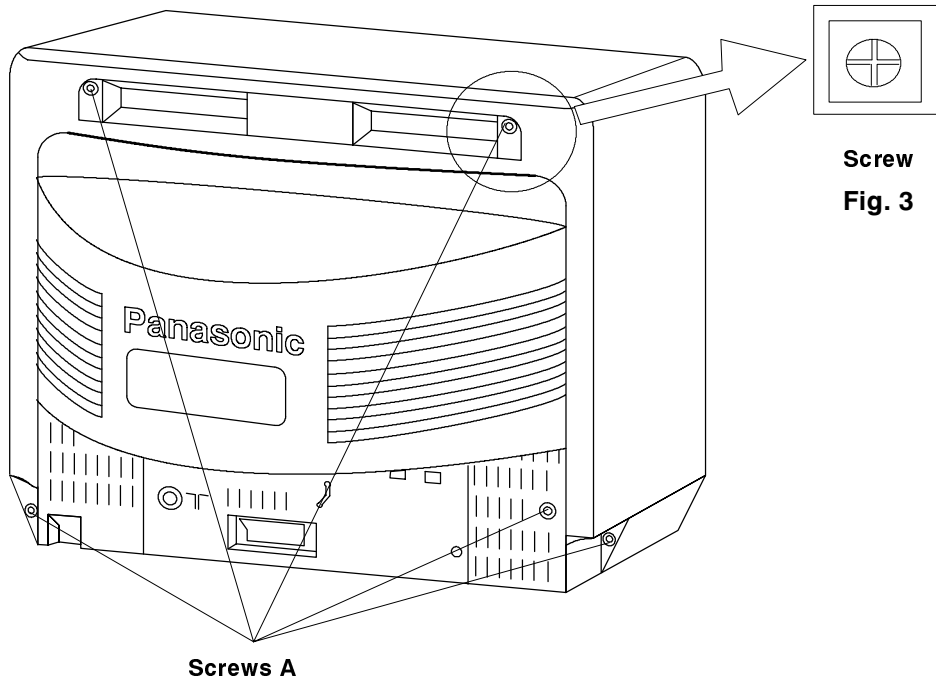


**Fig.1**

## SERVICE HINTS

### HOW TO REMOVE THE REAR COVER

1. Remove the 5 screws (A) as shown in Fig.2/Fig.3.

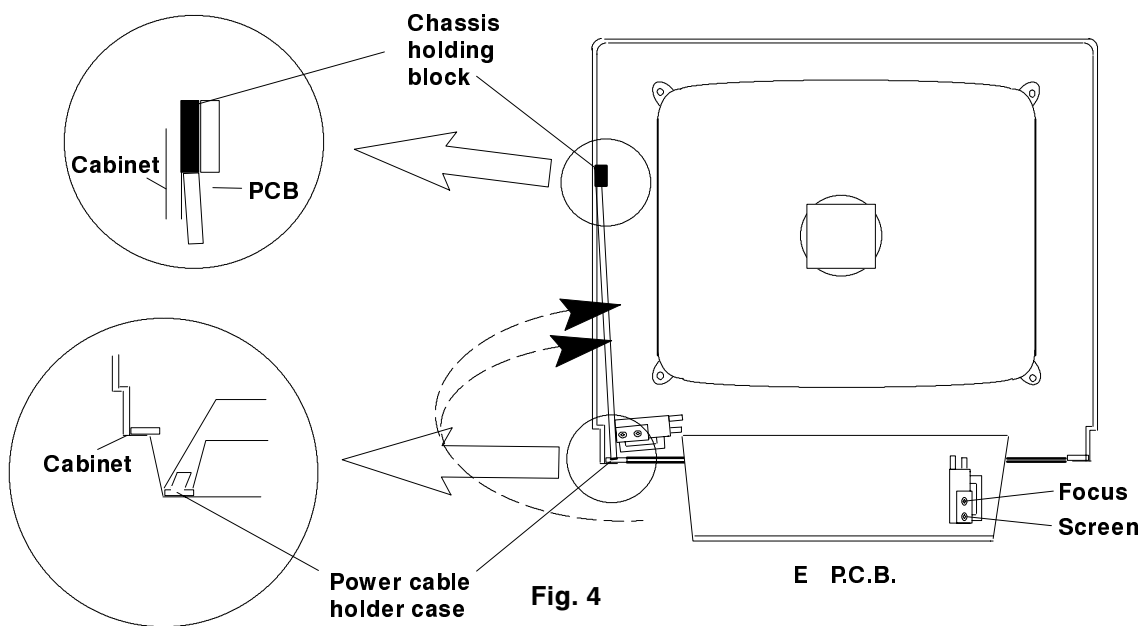


Screws A

Fig. 2

### HOW TO MOVE THE CHASSIS INTO THE SERVICE POSITION

1. Hold and lift the rear of the E- PCB chassis and gently pull the chassis toward you.
2. Release the respective wiring clips and rotate the chassis clockwise, moving the EHT lead around the left side of the CRT neck.
3. Slide the lower edge of the chassis into the power cable holder case whilst sliding the upper edge of the board into the chassis holding block.
4. After servicing ensure all wiring is returned to its original position before returning the receiver to the customer.



## ALIGNMENT SETTINGS

1. Select program position 60 and set the sharpness to minimum.
2. Press the Off Timer button on the remote control and at the same time press the V (down) button on the customer controls at the front of the TV, this will place the TV into Service Mode.
3. Press the  $\wedge$  /  $\vee$  buttons to step up / down through the functions.
4. Press the + / - buttons to alter the function values.
5. Press the STORE button after each adjustment has been made to store the required values.
6. To exit Service Mode press the Normalisation button.

**NOTE :** The figures used below are nominal and used for representative purposes only

Alignment Function		Settings / Special Features
1. Vertical amplitude	V-Amp 27	Optimum setting
2. Vertical position	V-Pos 03	Optimum setting
3. Horizontal centre	H-Ctr 07	Optimum setting
4. Red cutoff	R-Cut 186	Optimum setting
5. Green cutoff	G-Cut 220	Optimum setting
6. Blue cutoff	B-Cut 213	Optimum setting
7. Red drive	R-Drv 46	Optimum setting
8. Blue drive	B-Drv 36	Optimum setting
9. AGC	AGC 33	Optimum setting
10. Sub contrast	S-Con 33	Optimum setting
11. Sub colour	S-Col 39	Optimum setting
12. Sub bright	S-Bri 40	Optimum setting

## ADJUSTMENTS

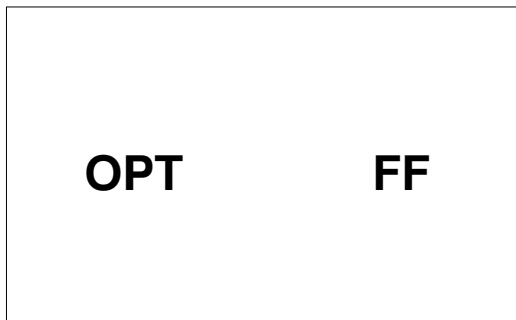
ITEM/PREPARATION	ADJUSTMENT PROCEDURE
<p><b>B VOLTAGE</b></p> <p>1. Operate the TV set.</p> <p>2. Set controls :</p> <p>Bright            minimum</p> <p>Sub Bright        minimum</p> <p>Volume            minimum</p> <p>Beam Current     Zero</p>	<p>1. Confirm the indicated test points for the specified voltage.</p> <p>TPE 1:    9V     ±    1V</p> <p>TPE 2:    5V     ±    0.3V</p> <p>TPE 3:    12V    ±    1V</p> <p>TPE 4:    30V    ±    2.5V</p> <p>TPE 5:    5V     ±    0.3V</p> <p>TPE 6:    9V     ±    0.3V</p> <p>TPE 9:    22V    ±    1V</p> <p>TPE 10:   185V  ±    10V</p> <p>TPE 11:   12V    ±    1V</p> <p>TPE 12:   12V    ±    1.5V</p> <p>TPE 13:   125V  ±    1.5V</p> <p>TPE 14:   8V     ±    1V</p> <p>TPE 18:   8V     ±    1V</p> <p>TPE 19:   31V    ±    1.5V</p>

## SELF CHECK

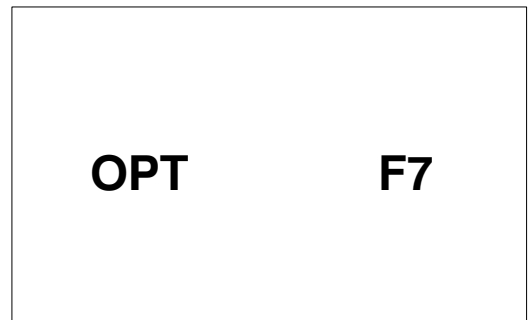
Self check is used to automatically check the Bus Lines Hexadecimal code of the TV set.

To get into the Self Check mode press the Status button on the Remote Control, followed by the V button on the customer controls at the front of the TV, and the screen will show:-

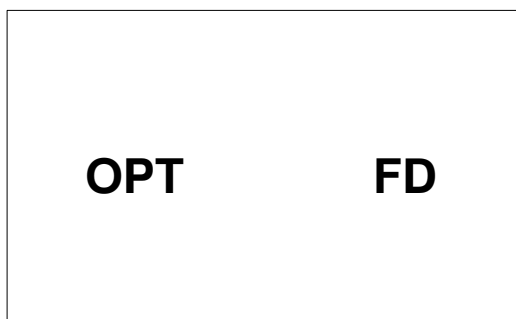
### TX-21S3TP



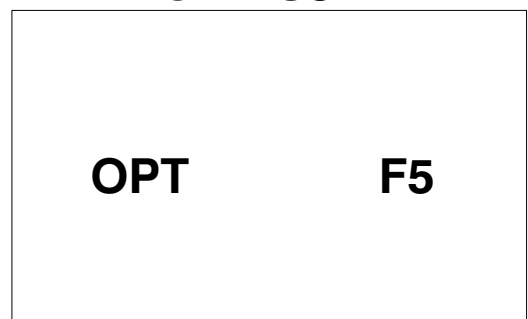
### TC-21S3RP



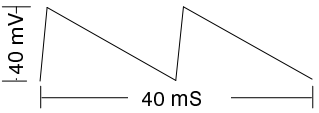
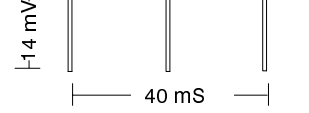
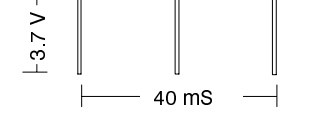
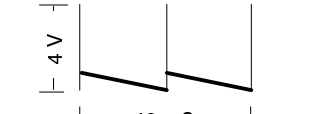
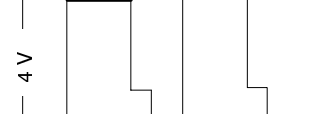
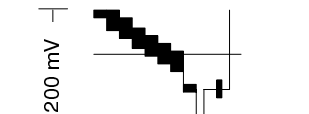
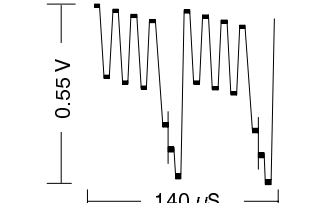
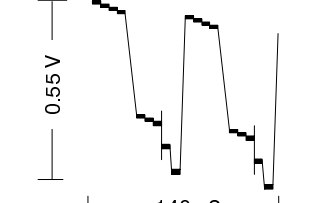
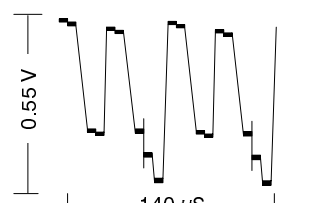
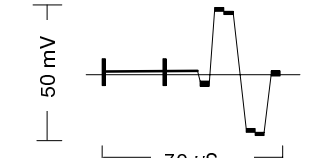
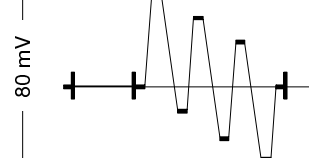
### TX-14S3TP



### TC-14S3RP

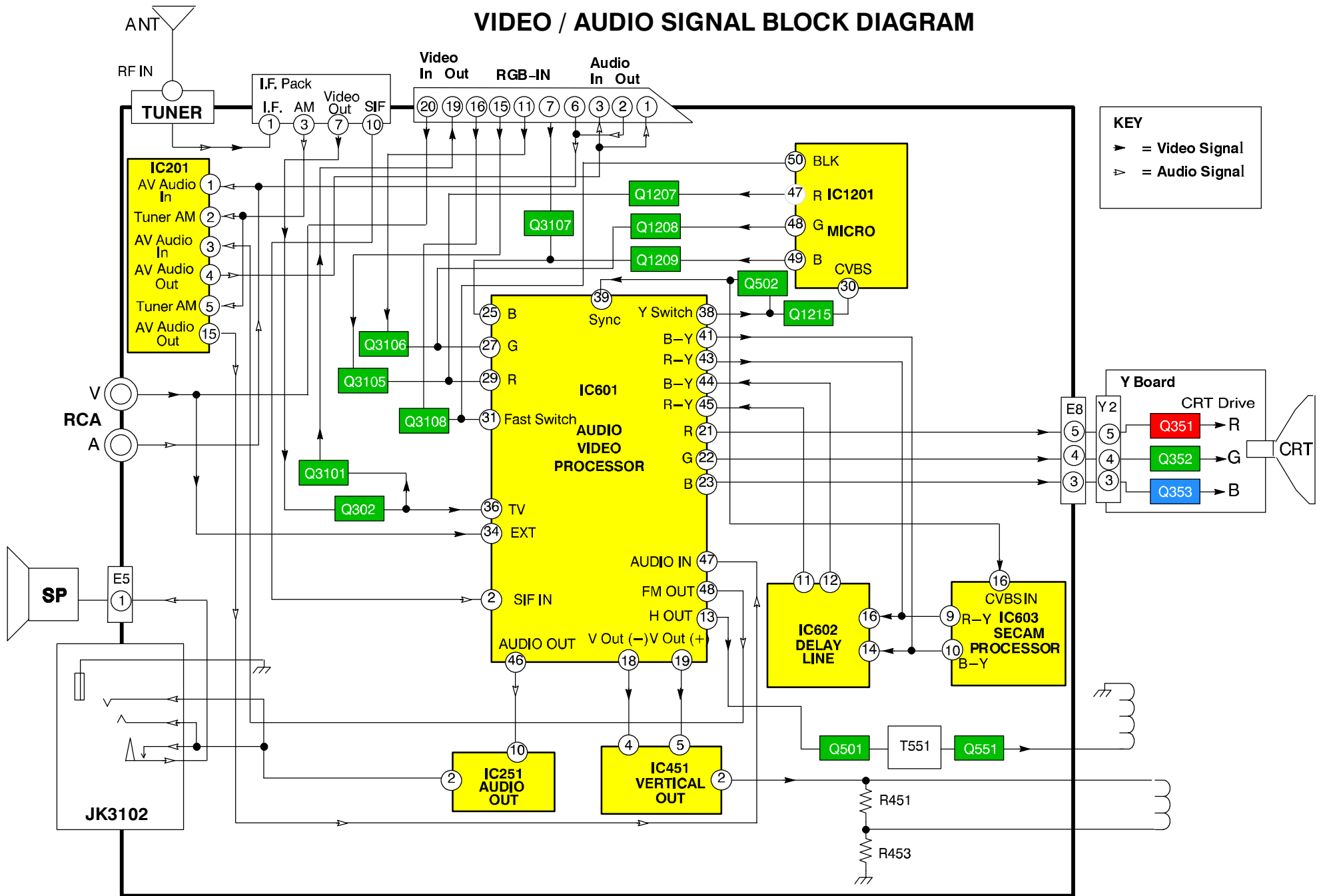


## WAVEFORM PATTERN TABLE

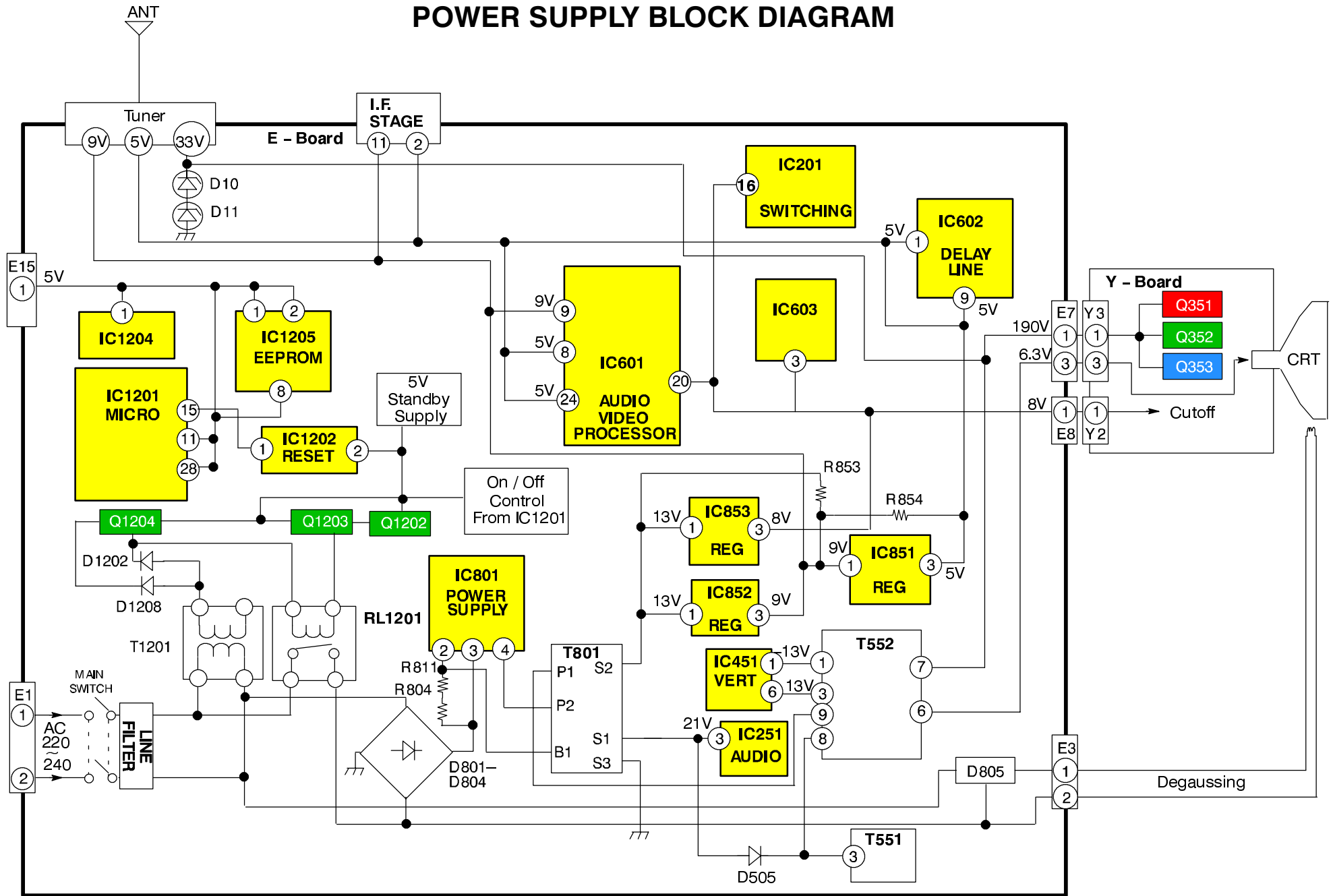
<p>Vert Out IC IN IC451 pin 4 5 mS 20 mV</p> 	<p>SDA IC601 pin 14 5 mS 5 mV</p> 	<p>SCL IC1201 pin 3 5 mS 1 V</p> 
<p>Vert Drive IC451 pin 2 5 mS 1 V</p> 	<p>H. Out IC601 pin 13 20 μS 1 V</p> 	<p>IF VO IC601 pin 52 20 μS 50 mV</p> 
<p>B Out TPE15 20 μS 0.1 V</p> 	<p>G Out TPE16 20 μS 0.1 V</p> 	<p>R Out TPE17 20 μS 0.1 V</p> 
<p>'RY' Out IC601 pin 43 20 μS 20 mV</p> 	<p>'BY' Out IC601 pin 41 20 μS 20 mV</p> 	



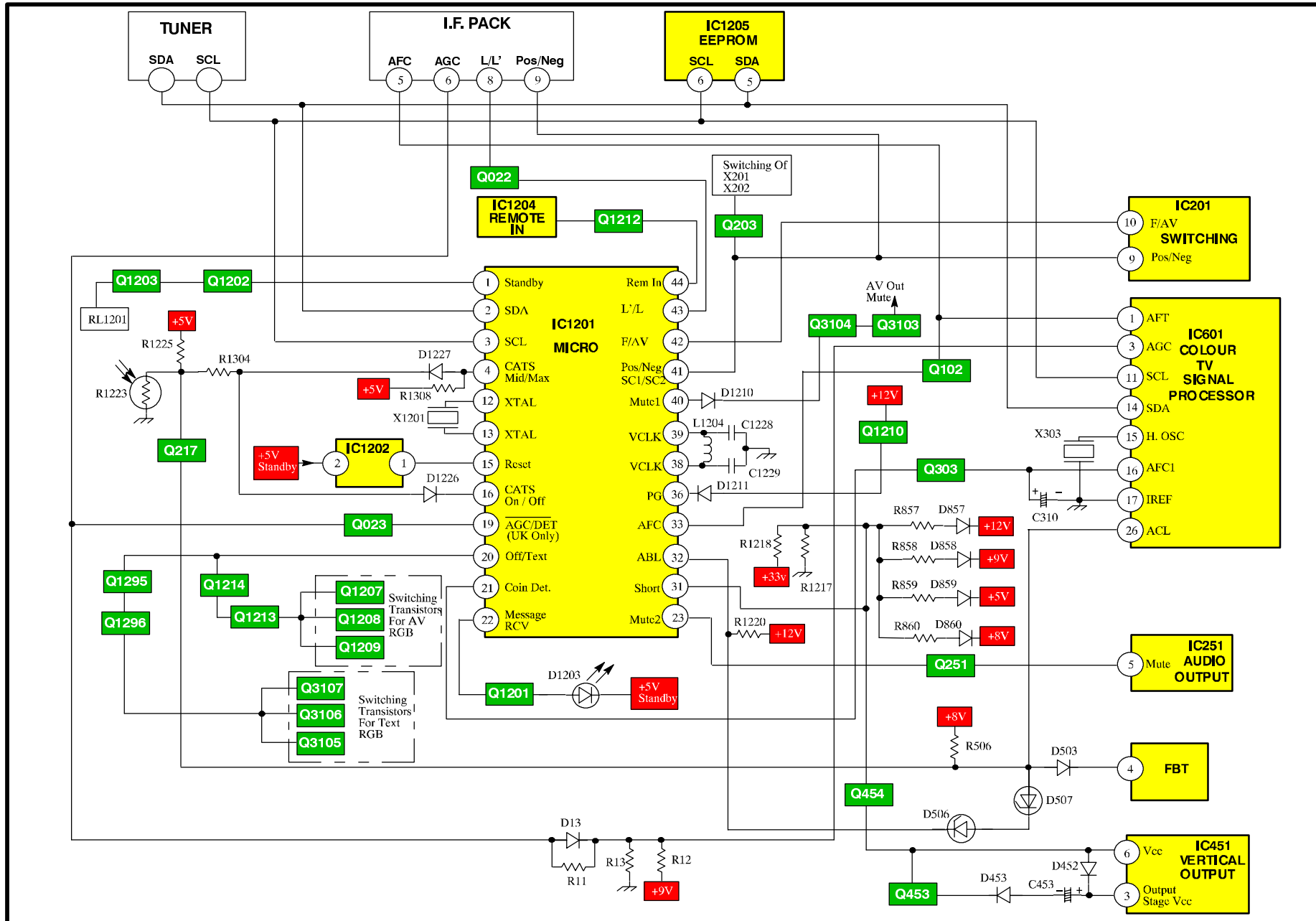
# VIDEO / AUDIO SIGNAL BLOCK DIAGRAM



# POWER SUPPLY BLOCK DIAGRAM



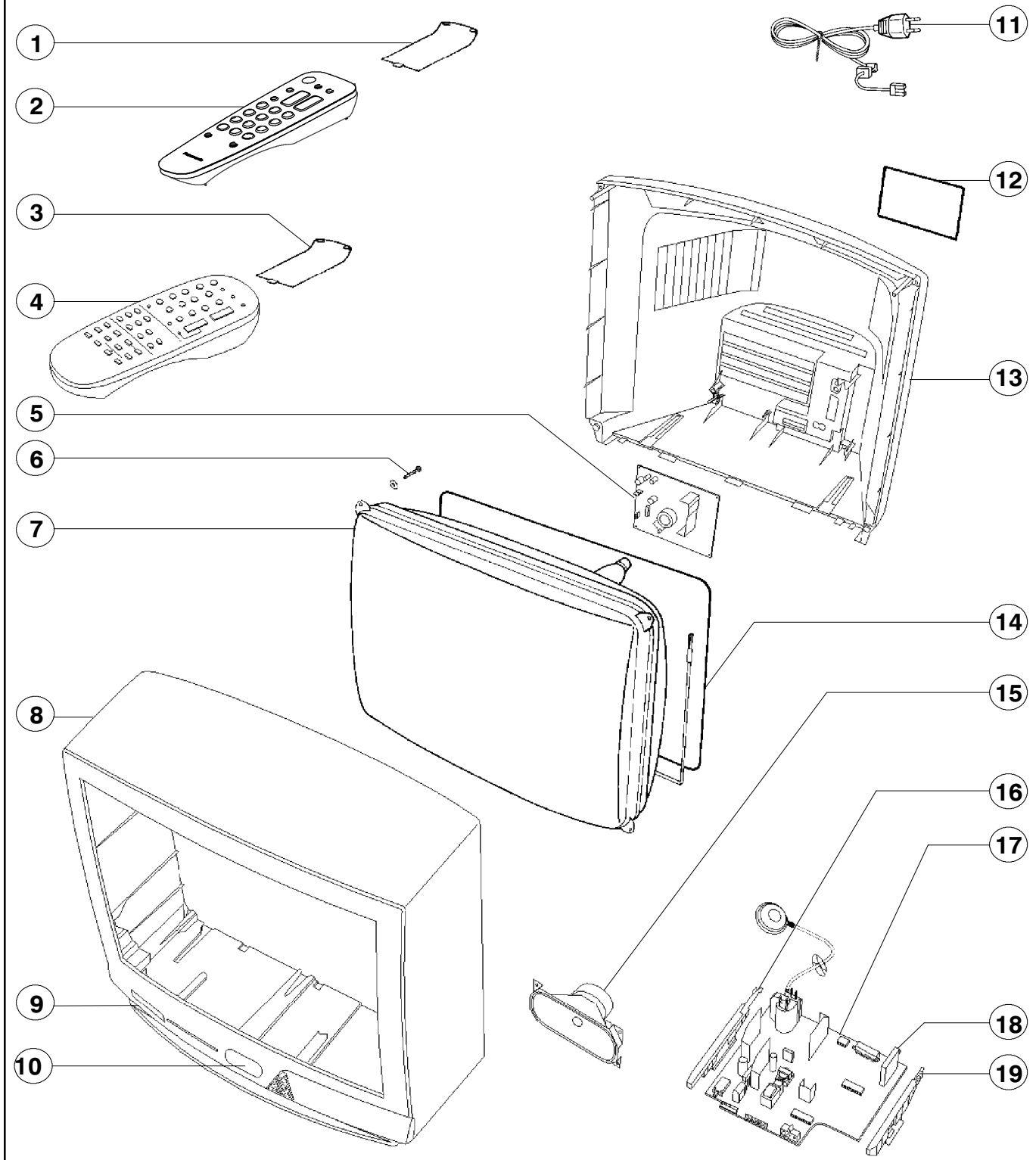
# CONTROL BLOCK DIAGRAM



## PARTS LOCATION

### NOTE :

The numbers on the exploded view below refer to the miscellaneous section of the Replacement Parts List.



## REPLACEMENT PARTS LIST

### Important Safety Notice

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

### COMMON PARTS FOR MODELS TX-21S3TP, TC-21S3RP, TX-14S3TP, TC-14S3RP

Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
1)	*****	REFER TO DIFFERENCE LIST	
2)	*****	REFER TO DIFFERENCE LIST	
3)	*****	REFER TO DIFFERENCE LIST	
4)	*****	REFER TO DIFFERENCE LIST	
5)	*****	REFER TO DIFFERENCE LIST	
6)	*****	REFER TO DIFFERENCE LIST	
7)	*****	REFER TO DIFFERENCE LIST	
8)	*****	REFER TO DIFFERENCE LIST	
9)	*****	REFER TO DIFFERENCE LIST	
10)	*****	REFER TO DIFFERENCE LIST	
11)	TSX8E0020	POWER CORD	$\Delta$
12)	*****	REFER TO DIFFERENCE LIST	
13)	*****	REFER TO DIFFERENCE LIST	
14)	*****	REFER TO DIFFERENCE LIST	
15)	*****	REFER TO DIFFERENCE LIST	
16)	*****	REFER TO DIFFERENCE LIST	
17)	*****	REFER TO DIFFERENCE LIST	
18)	ENV57D13G3	TUNER	$\Delta$
19)	*****	REFER TO DIFFERENCE LIST	
	UM-3DJ-2P	BATTERY-SET	
	TBM8E1727	PANASONIC BADGE	
	TMW8E015-2	LED HOLDER	
<b>CAPACITORS</b>			
C010	ECUV1H103KBX	S.M.CAP 50V 10nF	
C011	ECA1CM100GB	ELECT 16V 10 $\mu$ F	
C012	ECUV1H103KBX	S.M.CAP 50V 10nF	
C014	ECUV1H080DCX	S.M.CAP 50V 80pF	
C015	ECA1HM330B	ELECT 50V 33 $\mu$ F	
C016	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W	
C019	ECUV1H103KBX	S.M.CAP 50V 10nF	
C020	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C022	ECUV1H150JCX	S.M.CAP 50V 15pF	
C023	ECUV1H150JCX	S.M.CAP 50V 15pF	
C101	ECUV1H820JCX	S.M.CAP 50V 82pF	
C102	ECUV1H101JCX	S.M.CAP 50V 100pF	
C103	ECUV1H103KBX	S.M.CAP 50V 10nF	
C105	ECUV1H103KBX	S.M.CAP 50V 10nF	
C107	ECA1HMR22GB	ELECT 50V 0.22 $\mu$ F	
C108	ECUV1H103KBX	S.M.CAP 50V 10nF	
C109	ECA1HMR47GB	ELECT 50V 0.47 $\mu$ F	
C110	ECA1HM0R1B	ELECT 50V 0.1 $\mu$ F	
C111	ECUV1H103KBW	S.M.CAP 50V 10nF	
C112	ECA1HMR47GB	ELECT 50V 0.47 $\mu$ F	
C113	ECUV1H103KBX	S.M.CAP 50V 10nF	
C114	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C116	ECUV1H104KBX	S.M.CAP 50V 100nF	
C203	ECUV1H220JCX	S.M.CAP 50V 22pF	
C204	ECUV1H220JCX	S.M.CAP 50V 22pF	
C207	ECEA1CN100	ELECT 16V 10 $\mu$ F	
C208	ECA1CM100GB	ELECT 16V 10 $\mu$ F	
C216	ECUV1H272KBX	S.M.CAP 50V 2.7nF	
C251	ECA1EM471GB	ELECT 25V 470 $\mu$ F	
C252	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C253	ECEA1EGE470	ELECT 25V 47 $\mu$ F	

Ref No.	Part No.	Description	
C254	ECUV1H272JCX	S.M.CAP 50V 2.7nF	
C255	ECQB1H104J	FILM 50V 100nF	
C256	ECQM1H224J	FILM 50V 220nF	
C257	ECQM1H684J	FILM 50V 680nF	
C258	ECEA1EGE101	ELECT 25V 100 $\mu$ F	
C260	ECA1EM102GB	ELECT 25V 1nF	
C261	ECUV1H471JCX	S.M.CAP 50V 470pF	
C262	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C301	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C302	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C303	ECA1CM471GB	ELECT 16V 470 $\mu$ F	
C304	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C305	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C307	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C308	ECUV1H104ZFW	S.M.CAP 50V 100nF	
C309	ECUV1H103KBX	S.M.CAP 50V 10nF	
C310	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C311	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C312	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C313	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C314	ECEA1HNR47UB	ELECT 50V 0.47 $\mu$ F	
C315	ECEA1HN2R2UB	ELECT 50V 2.2 $\mu$ F	
C316	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C317	ECA1HM101GB	ELECT 50V 100 $\mu$ F	
C318	ECEA1HNR47UB	ELECT 50V 0.47 $\mu$ F	
C319	ECUV1H104ZFX	S.M.CAP 50V 100nF	
C323	ECUV1H680JCX	S.M.CAP 50V 68pF	
C355	ECKC3D152J	CERAMIC 2KV 1.5nF	$\Delta$
C357	ECKC2H152J	CERAMIC 500V 1.5nF	$\Delta$
C362	ECUV1H102ZFX	S.M.CAP 50V 1nF	
C368	ECEA2EU010	ELECT 250V 1 $\mu$ F	
C370	ECA1CM220GB	ELECT 16V 22 $\mu$ F	
C371	ECA1CM221GB	ELECT 16V 220 $\mu$ F	
C401	ECUV1H223KBX	S.M.CAP 50V 22nF	
C402	ECUV1H472KBX	S.M.CAP 50V 4.7nF	
C403	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C404	ECUV1H103ZFX	S.M.CAP 50V 10nF	
C452	ECQM1H274J	FILM 50V 270nF	
C457	ECQM1H394J	FILM 50V 390nF	
C461	ECUV1H100CCX	S.M.CAP 50V 10pF	
C501	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C502	ECUV1H223KBX	S.M.CAP 50V 22nF	
C503	ECUV1H391JCX	S.M.CAP 50V 390pF	
C504	ECEA1HN010UB	ELECT 50V 1 $\mu$ F	
C505	ECUV1H331JCX	S.M.CAP 50V 330pF	
C506	ECQM1273KZW	FILM 100V 27nF	
C507	ECEA1HGE100	ELECT 50V 10 $\mu$ F	
C541	ECEA1EN4R7UB	ELECT 25V 4.7 $\mu$ F	
C550	ECA1VM471GB	ELECT 35V 470 $\mu$ F	
C559	ECKC2H471J	CERAMIC 500V 470pF	$\Delta$
C560	ECKC2H471J	CERAMIC 500V 470pF	$\Delta$
C561	ECEA2EU100	ELECT 250V 10 $\mu$ F	
C562	ECKC2H471J	CERAMIC 500V 470pF	$\Delta$
C563	ECA1VM471GB	ELECT 35V 470 $\mu$ F	
C564	ECA1CM471GB	ELECT 16V 470 $\mu$ F	
C565	ECA1VM471GB	ELECT 35V 470pF	
C566	ECKC2H471J	CERAMIC 500V 470pF	$\Delta$
C601	ECUV1H473KBX	S.M.CAP 50V 47nF	
C602	ECUV1H153KBX	S.M.CAP 50V 15nF	
C603	ECA1HM010GB	ELECT 50V 1 $\mu$ F	
C605	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W	
C606	ECUV1H104ZFX	S.M.CAP 50V 100nF	

Ref No.	Part No.	Description		
C607	ECUV1H104ZFX S.M.CAP	50V 100nF		
C608	ECUV1H470JCX S.M.CAP	50V 47pF		
C609	ECUV1H470JCX S.M.CAP	50V 47pF		
C610	ECA1HM101GB ELECT	50V 100µF		
C611	ECUV1H104ZFX S.M.CAP	50V 100nF		
C612	ECUV1H103KBX S.M.CAP	50V 10nF		
C613	ECUV1H103KBX S.M.CAP	50V 10nF		
C614	ECUV1H104ZFX S.M.CAP	50V 100nF		
C615	B32529-C224 FILM	0.22µF		
C616	222236576104 FILM	760V 100nF		
C617	ECUV1H104ZFX S.M.CAP	50V 100nF		
C618	ECA1HM101GB ELECT	50V 100µF		
C619	ECUV1H103KBX S.M.CAP	50V 10nF		
C620	ECUV1H103KBX S.M.CAP	50V 10nF		
C623	ECUV1H104ZFW S.M.CAP	50V 100nF		
C624	ECUV1H560JCX S.M.CAP	50V 56pF		
C625	ECUV1H560JCX S.M.CAP	50V 56pF		
C626	ECUV1H560JCX S.M.CAP	50V 56pF		
C627	ECUV1H560JCX S.M.CAP	50V 56pF		
C628	ECUV1H390JCX S.M.CAP	50V 39pF		
C630	ECUV1H103JCW S.M.CAP	50V 10nF		
C802	ECQU2A823MNB FILM	200V 82nF		
C803	ECKC2H472J CERAMIC	500V 4.7nF	Δ	
C804	ECKC2H472J CERAMIC	500V 4.7nF	Δ	
C805	ECKC2H472J CERAMIC	500V 4.7nF	Δ	
C806	ECKC2H472J CERAMIC	500V 4.7nF	Δ	
C807	ECOS2GA101BB ELECT	400V 100µF		
C808	ECQB1H333J FILM	50V 33nF		
C809	ECKC3D471JB CERAMIC	2KV 470pF	Δ	
C810	ECA1VM101GB ELECT	35V 100µF		
C812	ECA2CHG221E ELECT	50V 220µF		
C817	ECA1VM101GB ELECT	35V 100µF		
C818	ECKWNA471MBO CERAMIC	250V 470pF		
C820	ECKWNA332MEO CERAMIC	250V 3.3nF		
C821	ECKC3A101J CERAMIC	1.0KV 100pF		
C853	ECA1EM102GB ELECT	25V 1nF		
C854	ECA1HHG471E ELECT	50V 470µF		
C855	ECUV1H104ZFX S.M.CAP	50V 100nF		
C856	ECUV1H104ZFX S.M.CAP	50V 100nF		
C857	ECA1HM101GB ELECT	50V 100µF		
C858	ECA1AM222B ELECT	10V 2.2nF		
C859	ECUV1H104ZFX S.M.CAP	50V 100nF		
C860	ECA1HM101GB ELECT	50V 100µF		
C861	ECA1CM102B ELECT	16V 1.0nF		
C1201	ECA1EM102GB ELECT	25V 1nF		
C1202	ECA1EM101GB ELECT	25V 1µF		
C1203	ECA1EM471GB ELECT	25V 470µF		
C1204	ECUV1H471KBX S.M.CAP	50V 470pF		
C1205	ECUV1H471KBX S.M.CAP	50V 470pF		
C1206	ECUV1H471KBX S.M.CAP	50V 470pF		
C1207	ECUV1H471KBX S.M.CAP	50V 470pF		
C1208	ECUV1H471KBX S.M.CAP	50V 470pF		
C1210	ECUV1H473KBX S.M.CAP	50V 47nF		
C1218	ECA1HM010GB ELECT	50V 1µF		
C1219	ECUV1H104ZFX S.M.CAP	50V 100nF		
C1220	ECA0JM101G ELECT	100pF		
C1221	ECUV1H331JCX S.M.CAP	50V 330pF		
C1226	ECUV1H104ZFX S.M.CAP	50V 100nF		
C1227	ECA1HM101GB ELECT	50V 100µF		
C1229	ECUV1H470GCGS.M.CAP	50V 47pF		
C1232	ECUV1H104ZFX S.M.CAP	50V 100nF		
C1234	ECUV1H104ZFX S.M.CAP	50V 100nF		
C1241	ECA1HM101GB ELECT	50V 100µF		
C1244	ECA1CM100GB ELECT	16V 10µF		
C1249	ECUV1H104ZFX S.M.CAP	50V 100nF		
C1255	ECA1HM101GB ELECT	50V 100µF		
C1256	ECUV1H104KBX S.M.CAP	50V 100nF		
C1257	ECUV1H561JCX S.M.CAP	50V 560pF		
C1258	ECA1CM100GB ELECT	16V 10pF		
C1259	ECUV1H150JCX S.M.CAP	50V 15pF		
C1260	ECUV1H560JCX S.M.CAP	50V 56pF		

Ref No.	Part No.	Description		
C1261	ECA1HM101GB ELECT	50V 100µF		
C1262	ECUV1H390JCX S.M.CAP	50V 39pF		
C1263	ECUV1H390JCX S.M.CAP	50V 39pF		
C1264	ECUV1H390JCX S.M.CAP	50V 39pF		
C1265	ECUV1H560JCX S.M.CAP	50V 56pF		
C1268	ECA1HM101GB ELECT	50V 100µF		
C3101	ECUV1H101JCX S.M.CAP	50V 100µF		
C3102	ECUV1H561KBX S.M.CAP	50V 560µF		
C3104	ECUV1H102KBX S.M.CAP	50V 1nF		
C3105	ECUV1H101JCX S.M.CAP	50V 100µF		
C3109	ECUV1H561JCX S.M.CAP	50V 560µF		
C3110	222236516684 FILM	160V 100nF		
C3113	ECUV1H103KBX S.M.CAP	50V 10nF		
C3115	ECEA1CN100 ELECT	16V 10µF		
C3117	ECUV1H104ZFX S.M.CAP	50V 100nF		
C3118	ECEA1CN100 ELECT	16V 10µF		
C3119	ECEA1CN100 ELECT	16V 10µF		
C3120	ECA1CM471GB ELECT	16V 470µF		
C3121	ECA1HM4R7GB ELECT	50V 4.7µF		

### DIODES

D010	MA4150	DIODE		
D011	MA4150	DIODE		
D201	MA858TA5	DIODE		
D202	MA858TA5	DIODE		
D304	1SS355TE-17	DIODE		
D306	MTZJT-774.7A	DIODE		
D307	MTZJT-774.7A	DIODE		
D351	MA165TA5	DIODE1SS133T-77		
D352	MA165TA5	DIODE1SS133T-77		
D353	MA165TA5	DIODE1SS133T-77		
D354	MA165TA5	DIODE1SS133T-77		
D452	ERA15-02V3	DIODE		
D453	MA165TA5	DIODE1SS133T-77		
D454	MA165TA5	DIODE1SS133T-77		
D455	MA165TA5	DIODE1SS133T-77		
D503	MA165TA5	DIODE1SS133T-77		
D504	MA165TA5	DIODE1SS133T-77		
D505	1SR124-4AT82	DIODE		
D506	MTZJ33B	DIODE		
D541	MA165TA5	DIODE1SS133T-77		
D542	MA165TA5	DIODE1SS133T-77		
D551	TVSRH2F-LFB3	DIODE		
D552	TVSRU2AMLFA5	DIODE		
D553	1SR124-4AT82	DIODE		
D554	1SR124-4AT82	DIODE		
D555	ERA22-02V3	DIODE		
D556	MA165TA5	DIODE1SS133T-77		
D557	1SR124-4AT82	DIODE		
D801	EMO2BMV0	DIODE		
D802	EMO2BMV0	DIODE		
D803	EMO2BMV0	DIODE		
D804	EMO2BMV0	DIODE		
D808	1SR124-4AT82	DIODE		
D809	1SR124-4AT82	DIODE		
D810	RU3LFA1	DIODE		
D811	1SR124-4AT82	DIODE		
D812	R2KNLFA1	DIODE		
D814	MA165TA5	DIODE1SS133T-77		
D815	1SR124-4AT82	DIODE		
D816	1SR124-4AT82	DIODE		
D851	TVSRU3AMLFA5	DIODE		
D852	TVSRU2AMV1	DIODE		
D857	MA165TA5	DIODE1SS133T-77		
D858	MA165TA5	DIODE1SS133T-77		
D859	MA165TA5	DIODE1SS133T-77		
D860	MA165TA5	DIODE1SS133T-77		
D861	MA165TA5	DIODE1SS133T-77		
D1202	1N4150T-77	DIODE		
D1203	SLR56UR3FLF	LED		

Ref No.	Part No.	Description			
D1205	1N4150T-77	DIODE			
D1207	MTZJT-778.2A	DIODE			
D1208	1N4150T-77	DIODE			
D1209	MTZJT-775.1C	DIODE			
D1211	MA165TA5	DIODE1SS133T-77			
D1212	MA165TA5	DIODE1SS133T-77			
D1213	MA165TA5	DIODE1SS133T-77			
D1214	1N4150T-77	DIODE			
D1217	MA165TA5	DIODE1SS133T-77			
D1218	MA165TA5	DIODE1SS133T-77			
D1219	MA165TA5	DIODE1SS133T-77			
D1220	MA165TA5	DIODE1SS133T-77			
D1221	MA165TA5	DIODE1SS133T-77			
D1222	MA165TA5	DIODE1SS133T-77			
D1224	MA165TA5	DIODE1SS133T-77			
D1228	1SS355TE-17	DIODE			
D1301	MTZJT-775.1A	DIODE			
D1311	MA165TA5	DIODE1SS133T-77			
D1312	MA700TA5	DIODE			
D3101	MA165TA5	DIODE1SS133T-77			
<b>FUSES</b>					
F801	2153.15H	FUSE			△
F8011	EYF52BC	FUSE HOLDER			
F8012	EYF52BC	FUSE HOLDER			
<b>INTEGRATED CIRCUITS</b>					
IC251	LA4265	I.C. AUDIO OUTPUT			
IC451	LA7840	I.C. VERTICAL OUTPUT			
IC601	M52778SP-A	I.C. MICROPROCESSOR			
IC602	U3665M-MDP	I.C. DELAY LINE			
IC603	TDA8395PN2	I.C. SECAMDECODER			
IC801	STR58041A	I.C. POWER SUPPLY			
IC851	L78M05MRB	I.C. 5V REGULATOR			
IC852	L78M09MRB	I.C. 9V REGULATOR			
IC853	AN78M08LB	I.C. 8V REGULATOR			
IC1202	MN1280R	I.C. RESET			
IC1204	RPM-637CBRS	I.C. RECEIVER			
<b>TERMINALS AND LINKS</b>					
JC1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC11	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC14	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC20	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC21	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC23	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC24	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC25	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC27	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC28	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC31	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC35	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC7	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JC8	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
JC9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEAKK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEANK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEJK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEPK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEXK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEZK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description			
JK3102	TJB16663	A.V.TERMINAL			
J208	EXCELSA39V	COIL			
<b>COILS</b>					
L010	EXCELSA35T	COIL			
L012	EXCELSA35T	COIL			
L103	EQV7EN211Q	COIL			
L105	TLTR22K991R	COIL			
L106	TLTACT6R8K	COIL			
L107	TLTACT6R8K	COIL			
L201	TLTACT150K	COIL			
L202	TLTACT4R7K	COIL			
L301	TLTACT8R2K	COIL			
L303	TLT100J991R	COIL			
L451	EXCELSA35T	COIL			
L801	ELF18D281A	COIL			
L803	EXCELSA35T	COIL			
L804	EXCELD35V	COIL			
L851	EXCELSA35T	COIL			
L852	EXCELSA35T	COIL			
L1201	EXCELSA35T	COIL			
L1202	TLTACT331K	COIL			
L1203	TLTACT100K	COIL			
L1204	ELJNA6R8GF	SM.CARB.125W	5%	6R8Ω	
L1207	TLTACT100K	COIL			
L1208	TLTACT100K	COIL			
L1209	EXCELSA35T	COIL			
<b>TRANSISTORS</b>					
Q101	BF370-126	TRANSISTOR			
Q102	BC847B	TRANSISTOR OR 2SD601ATX			
Q201	BC847B	TRANSISTOR OR 2SD601ATX			
Q202	BC847B	TRANSISTOR OR 2SD601ATX			
Q203	BC847B	TRANSISTOR OR 2SD601ATX			
Q251	BC847B	TRANSISTOR OR 2SD601ATX			
Q252	BC857B	TRANSISTOR OR 2SB709ATX			
Q253	BC847B	TRANSISTOR OR 2SD601ATX			
Q301	BC847B	TRANSISTOR OR 2SD601ATX			
Q302	BC847B	TRANSISTOR OR 2SD601ATX			
Q303	BC847B	TRANSISTOR OR 2SD601ATX			
Q354	BC857B	TRANSISTOR OR 2SB709ATX			
Q453	BC847B	TRANSISTOR OR 2SD601ATX			
Q454	BC847B	TRANSISTOR OR 2SD601ATX			
Q501	2SD2398-M2	TRANSISTOR			
Q502	BC857B	TRANSISTOR OR 2SB709ATX			
Q503	BC847B	TRANSISTOR OR 2SD601ATX			
Q504	BC847B	TRANSISTOR OR 2SD601ATX			
Q551	BU2506DFRB	TRANSISTOR			
Q801	BC847B	TRANSISTOR OR 2SD601ATX			
Q802	2SD965-R	TRANSISTOR			
Q1201	BC847B	TRANSISTOR OR 2SD601ATX			
Q1202	BC847B	TRANSISTOR OR 2SD601ATX			
Q1203	BC847B	TRANSISTOR OR 2SD601ATX			
Q1204	2SC1317-TA	TRANSISTOR			
Q1205	BC847B	TRANSISTOR OR 2SD601ATX			
Q1207	BC847B	TRANSISTOR OR 2SD601ATX			
Q1208	BC847B	TRANSISTOR OR 2SD601ATX			
Q1209	BC847B	TRANSISTOR OR 2SD601ATX			
Q1210	BC857B	TRANSISTOR OR 2SB709ATX			
Q1211	BC857B	TRANSISTOR OR 2SB709ATX			
Q1212	BC847B	TRANSISTOR OR 2SD601ATX			
Q1213	BC847B	TRANSISTOR OR 2SD601ATX			
Q1240	BC847B	TRANSISTOR OR 2SD601ATX			
Q1295	BC857B	TRANSISTOR OR 2SB709ATX			
Q1296	BC847B	TRANSISTOR OR 2SD601ATX			
Q3101	2SC1318-S	TRANSISTOR			
Q3103	2SD1328STX	TRANSISTOR			
Q3104	BC857B	TRANSISTOR OR 2SB709ATX			

Ref No.	Part No.	Description			
Q3105	BC857B	TRANSISTOR OR 2SB709ATX			
Q3106	BC857B	TRANSISTOR OR 2SB709ATX			
Q3107	BC857B	TRANSISTOR OR 2SB709ATX			
Q3108	BC857B	TRANSISTOR OR 2SB709ATX			
<b>RESISTOR</b>					
RL1201	TSE1885-1	RELAY			
R010	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R011	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R013	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ
R014	ERG2SJS273	METAL	2W	5%	27KΩ
R016	ELJFC6R8KF	CAPACITOR			6R8μF
R017	ELJFC6R8KF	CAPACITOR			6R8μF
R018	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R101	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R103	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7Ω
R104	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2Ω
R105	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22Ω
R106	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω
R107	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R108	ERJ6GEYJ124	S.M.CARB	0.1W	5%	120KΩ
R109	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R110	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω
R112	ERJ8GEY0R00	S.M.CARB	.125W	5%	0Ω
R113	ERJ6GEYJ124	S.M.CARB	0.1W	5%	120KΩ
R114	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R115	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R116	ERJ8GEYJ152	S.M.CARB	.125W	5%	1K5Ω
R117	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R202	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R203	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2Ω
R205	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R206	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R207	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R208	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K0Ω
R209	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R210	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R211	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1Ω
R212	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1Ω
R213	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R221	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω
R226	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R227	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R229	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω
R251	ERJ6GEYJ3R3	S.M.CARB	0.1W	5%	3R3Ω
R252	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R254	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω
R255	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180Ω
R256	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R257	ERQ1CJP120	METAL	1W	5%	12Ω
R259	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω
R260	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R261	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω
R262	ERJ6GEYF104V	SM.CARB0.125W		1%	100KΩ
R263	ERJ6GEYF622V	SM.CARB0.125W		1%	6.2KΩ
R264	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R301	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R302	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R303	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R304	ERJ6ENF2201	SM.CARB0.125W		5%	200Ω
R309	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R310	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R311	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180Ω
R312	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω
R313	ERQ14AJ470	METAL	0.25W	5%	47Ω
R314	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560Ω
R315	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R316	ERQ14AJ470	METAL	0.25W	5%	47Ω
R317	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R318	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R319	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ

Ref No.	Part No.	Description			
R320	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R323	ERJ6GEYJ100	S.M.CARB	0.1W	5%	10Ω
R372	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R373	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R374	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R401	ERJ6ENF9100	SM.CARB0.125W		5%	10Ω
R402	ERJ6ENF8201	SM.CARB0.125W		5%	200Ω
R403	ERJ6ENF6801	SM.CARB0.125W		5%	800Ω
R451	ERDS1TJ331	CARBON	0.5W	5%	330Ω
R452	ERJ6GEYJ1R0	SM.CARB0.125W		5%	1R0Ω
R454	ERJ6GEYF153V	SM.CARB0.125W		1%	15KΩ
R456	ERO25CKF5601	METAL	0.25W	1%	5K6Ω
R457	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R458	ERD25TJ683	CARBON	0.25W	5%	68KΩ
R459	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R460	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R461	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R462	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R501	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R502	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω
R503	ERG3SJS101	METAL	3W	5%	10Ω
R504	ERG2ANJ471	METAL	2W	5%	470Ω
R505	ERJ6GEYJ433	SM.CARB0.125W		5%	43KΩ
R510	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560Ω
R511	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330KΩ
R512	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω
R513	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R514	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω
R515	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R516	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R518	ERJ6ENF1302	SM.CARB0.125W		5%	3.0KΩ
R520	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330KΩ
R521	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R541	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R601	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R602	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R603	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R604	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R605	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R606	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R611	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R612	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R613	ERJ6GEYJ395	SM.CARB0.125W		5%	3.9MΩ
R614	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ
R801	ERF5ZK2R7	WOUND	5W	20%	2.7Ω
R804	ERDS1TJ224	CARBON	0.5W	5%	220KΩ
R805	ERW2PKR33	WIRE	2W	10%	R33Ω
R806	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R807	ERG2ANJ101	METAL	2W	5%	100Ω
R808	ERG12SJ561P	METAL	12W	5%	560Ω
R809	ERG2ANJP560H	METAL	2W	10%	56Ω
R810	ERQ12HJ100	METAL	0.5W	5%	10Ω
R811	ERDS1TJ224	CARBON	0.5W	5%	220KΩ
R813	ERJ6GEYJ202	SM.CARB0.125W		5%	2.0KΩ
R814	ERD75TAJ825	CARBON	0.75W	5%	8M2Ω
R819	ERDS1TJ104	CARBON	0.5W	5%	100KΩ
R853	ERG2ANJ270	METAL	2W	5%	27Ω
R857	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R858	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R859	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R860	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R861	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R1201	ERQ1CJP2R2	FUSABLE	1W	5%	2R2Ω
R1202	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R1203	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R1204	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R1205	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R1206	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R1208	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1211	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1212	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1214	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ



Ref No.	Part No.	Description
R1219	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1220	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1221	ERJ6GEYJ271	S.M.CARB 0.1W 5% 270Ω
R1222	ERJ6GEYJ330	S.M.CARB 0.1W 5% 33Ω
R1226	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1227	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1228	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1229	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1231	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1232	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1233	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1234	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1235	ERJ6GEYJ152	S.M.CARB 0.1W 5% 1K5Ω
R1236	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R1237	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1238	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1239	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1240	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1243	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1244	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1246	ERD25TJ272	CARBON 0.25W 5% 2K7Ω
R1247	ERD25TJ221	CARBON 0.25W 5% 220Ω
R1248	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R1249	ERDS1TJ121	CARBON 0.5W 5% 120Ω
R1250	ERDS1TJ560	CARBON 0.5W 5% 56Ω
R1253	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R1255	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1257	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1258	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1259	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1261	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1263	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1265	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1266	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1267	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1268	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1269	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1270	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1271	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1272	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1273	ERJ6GEYJ333	S.M.CARB 0.1W 5% 33KΩ
R1274	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R1276	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1282	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1283	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1284	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1285	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1286	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1287	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1288	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1289	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1293	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1294	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1295	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1296	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1298	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1303	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1309	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1311	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3101	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R3102	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R3103	ERJ6GEYJ564	S.M.CARB 0.1W 5% 560KΩ
R3104	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R3105	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3106	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3107	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3108	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3109	ERJ6GEYJ221	S.M.CARB 0.1W 5% 220Ω

Ref No.	Part No.	Description
R3110	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R3111	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3114	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3115	ERDS1TJ750	CARBON 0.5W 5% 75Ω
R3120	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3121	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R3122	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
R3123	ERJ6GEYJ221	S.M.CARB 0.1W 5% 220Ω
R3124	ERJ6GEYJ221	S.M.CARB 0.1W 5% 220Ω
R3125	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R3126	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3127	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3128	ERJ6GEYJ273	S.M.CARB 0.1W 5% 27KΩ
R3130	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3132	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3133	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R3134	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3136	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3137	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R3138	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3140	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3141	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R3142	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3143	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180Ω

### SWITCHES

S801	ESB91232A	SWITCH	△
S1201	EVQ23405R	SWITCH	
S1202	EVQ23405R	SWITCH	
S1203	EVQ23405R	SWITCH	
S1204	EVQ23405R	SWITCH	
S1205	EVQ23405R	SWITCH	

### TRANSFORMERS

T551	ETH19Z169AZ	TRANSFORMER	△
T1201	ETP35KAN617U	TRANSFORMER	△

### FILTERS

X101	K2955-M100	SAW FILTER	
X104	EFCV3195T6	CERAMIC FILTER	
X201	EFC56R5MS5	FILTER	
X202	EFC55R5MS5	FILTER	
X301	EFCWS2F11T	CRYSTAL	
X302	EFC56R5MW3	FILTER	
X303	TAFCSB503F6	FILTER	
X601	LN-P-01S	CRYSTAL	
X1201	CSA18.00MXZ	CRYSTAL	

## DIFFERENCES FOR MODEL TC-14S3RP

Ref No.	Part No.	Description
<b>MISCELLANEOUS COMPONENTS</b>		
1)	UR50RC1112	BATTERY COVER (REMOTE)
2)	TNQ8E0460	REMOTE CONTROL
5)	TNP8EY011AB	Y P.C.B. <span style="float:right">▲</span>
6)	THE492-4	CRT FIXING SCREW
7)	A34EAC01X13	C.R.T. <span style="float:right">▲</span>
8)	TKY8E070	CABINET <span style="float:right">▲</span>
9)	TBX8E029-1	POWER BUTTON
10)	TKP8E1147	SMOKE PANEL
12)	TBM8E1787	MODEL LABEL
13)	TKU8E00251	REAR COVER <span style="float:right">▲</span>
14)	TLK8E05134	DEGAUSS COIL <span style="float:right">▲</span>
15)	EASG9D541B2	SPEAKER
17)	TNP8EE007AW	E P.C.B. <span style="float:right">▲</span>
	TPC8E4617	OUTER CARTON
	TPD8E578	TOP CUSHION
	TPD8E579	BOTTOM CUSHION
	TQB8E2442	INSTRUCTION BOOK <span style="float:right">▲</span>
	TQB8E2538	INSTRUCTION BOOK <span style="float:right">▲</span>
<b>CAPACITORS</b>		
C351	ECUV1H151JCX	S.M.CAP 50V 150pF
C352	ECUV1H151JCX	S.M.CAP 50V 150pF
C353	ECUV1H181JCX	S.M.CAP 50V 180pF
C453	ECEA1HU101	ELECT 50V 100µF
C454	ECA1HM2R2GB	ELECT 50V 2.2µF
C551	ECWH12H822J	CERAMIC 1250V 8.2nF <span style="float:right">▲</span>
C552	ECQE6104K	FILM 600V 100nF <span style="float:right">▲</span>
C554	ECKC3D331J	CERAMIC 2KV 330pF <span style="float:right">▲</span>
C557	ECWF2H474J	FILM 500V 470nF <span style="float:right">▲</span>
C558	ECEA2CG010	ELECT 160V 1µF
C567	ECA1VM471GB	ELECT 35V 470pF
C811	ECA1JM100GB	ELECT 50V 10µF
C1228	ECUV1H560GCG	S.M.CAP 50V 56pF
C1230	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
C1245	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
<b>DIODES</b>		
D805	232266296319	THERMISTOR
<b>INTEGRATED CIRCUITS</b>		
IC1201	SDA5222V50	I.C. MICROPROCESSOR
IC1205	XL24C02P-AP1	I.C. EAROM
<b>TERMINALS AND LINKS</b>		
JYAK	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W
<b>TRANSISTORS</b>		
Q351	2SC1473-RN	TRANSISTOR
Q352	2SC1473-RN	TRANSISTOR
Q353	2SC1473-RN	TRANSISTOR

Ref No.	Part No.	Description
<b>RESISTOR</b>		
R305	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R306	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R307	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R351	ERG1SJ123	METAL 1W 5% 12KΩ
R352	ERG1SJ123	METAL 1W 5% 12KΩ
R353	ERG1SJ123	METAL 1W 5% 12KΩ
R366	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R367	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R368	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R369	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R370	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R371	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R375	ERDS1TJ182	CARBON 0.5W 5% 1.8KΩ
R386	ERDS1TJ182	CARBON 0.5W 5% 1.8KΩ
R387	ERDS1TJ182	CARBON 0.5W 5% 1.8KΩ
R453	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R506	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R508	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R519	ERJ6GEYJ754	S.M.CARB 0.1W 5% 750KΩ
R522	ERJ6GEYJ394	S.M.CARB 0.1W 5% 390KΩ
R542	ERJ6GEYJ242	S.M.CARB 0.1W 5% 2K4Ω
R543	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R551	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R552	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R555	ERQ12HKR22	FUSIBLE 0.5W 5% R22Ω <span style="float:right">▲</span>
R557	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R560	ERDS1TJ304	CARBON 0.5W 5% 300KΩ
R1215	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1216	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1217	ERJ6ENF1202	S.M.CARB 0.1W 1% 1K2WΩ
R1218	ERO50PKF6203	METAL 50W 1% 620KΩ <span style="float:right">▲</span>
R1230	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1242	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1252	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1275	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1291	ERJ6GEYJ432	S.M.CARB 0.1W 5% 4.3KΩ
<b>TRANSFORMERS</b>		
T552	ZTFK33004A	F.B.T. <span style="float:right">▲</span>
T801	ETS29AK237AC	CHOPPER TRANSFORMER <span style="float:right">▲</span>

## DIFFERENCES FOR MODEL TX-14S3TP

Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
3)	UR51EC769	BATTERY COVER (REMOTE)	
4)	TNQ8E0461-2	REMOTECONTROL	
5)	TNP8EY011AB	Y P.C.B.	△
6)	THE492-4	CRT FIXING SCREW	
7)	A34EAC01X13	C.R.T.	△
8)	TKY8E070	CABINET	△
9)	TBX8E029-1	POWER BUTTON	
10)	TKP8E1147	SMOKE PANEL	
12)	TBM8E1724	MODEL LABEL	
13)	TKU8E00251	REAR COVER	△
14)	TLK8E05134	DEGAUSS COIL	△
15)	EASG9D541B2	SPEAKER	
17)	TNP8EE007AG	E P.C.B.	△
	TPC8E4617	OUTER CARTON	
	TPD8E578	TOP CUSHION	
	TPD8E579	BOTTOM CUSHION	
	TQB8E2355	INSTRUCTION BOOK	△
	TQB8E2539	INSTRUCTION BOOK	△
<b>CAPACITORS</b>			
C351	ECUV1H151JCX	S.M.CAP 50V 150pF	
C352	ECUV1H151JCX	S.M.CAP 50V 150pF	
C353	ECUV1H181JCX	S.M.CAP 50V 180pF	
C453	ECEA1HU101	ELECT 50V 100 $\mu$ F	
C454	ECA1HM2R2GB	ELECT 50V 2.2 $\mu$ F	
C551	ECWH12H822J	CERAMIC 1250V 8.2nF	△
C552	ECQE6104K	FILM 600V 100nF	△
C554	ECKC3D331J	CERAMIC 2KV 330pF	△
C557	ECWF2H474J	FILM 500V 470nF	△
C558	ECEA2CG010	ELECT 160V 1 $\mu$ F	
C567	ECA1VM471GB	ELECT 35V 470pF	
C811	ECA1JM100GB	ELECT 50V 10 $\mu$ F	
C1228	ECUV1H560GCG	S.M.CAP 50V 56pF	
C1230	ECUV1H333KBX	S.M.CAP 50V 33nF	
C1231	222236516154	FILM 160V 150nF	
C1245	ECUV1H333KBX	S.M.CAP 50V 33nF	
C1251	ECQM1H334J	FILM 50V 330nF	
C1269	ECUV1H151JCX	S.M.CAP 50V 150pF	
<b>DIODES</b>			
D805	232266296319	THERMISTOR	
D1225	MA165TA5	DIODE1SS133T-77	
<b>INTEGRATED CIRCUITS</b>			
IC1201	SDA5254V40	I.C. MICROPROCESSOR	
IC1205	XL24C02P-CAE	I.C. EAROM	
<b>TERMINALS AND LINKS</b>			
JYAK	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$	
<b>COILS</b>			
L1206	EXCELSA35T	COIL	

Ref No.	Part No.	Description	
<b>TRANSISTORS</b>			
Q351	2SC1473-RN	TRANSISTOR	
Q352	2SC1473-RN	TRANSISTOR	
Q353	2SC1473-RN	TRANSISTOR	
Q1214	BC857B	TRANSISTOR OR 2SB709ATX	
Q1215	BC857B	TRANSISTOR OR 2SB709ATX	
Q1216	BC847B	TRANSISTOR OR 2SD601ATX	
<b>RESISTOR</b>			
R305	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470 $\Omega$	
R306	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470 $\Omega$	
R307	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470 $\Omega$	
R351	ERG1SJ123	METAL 1W 5% 12K $\Omega$	
R352	ERG1SJ123	METAL 1W 5% 12K $\Omega$	
R353	ERG1SJ123	METAL 1W 5% 12K $\Omega$	
R366	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560 $\Omega$	
R367	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680 $\Omega$	
R368	ERJ6GEYJ681	S.M.CARB 0.1W 5%680W $\Omega$	
R369	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R370	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R371	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R375	ERDS1TJ182	CARBON 0.5W 5% 1.8K $\Omega$	
R386	ERDS1TJ182	CARBON 0.5W 5% 1.8K $\Omega$	
R387	ERDS1TJ182	CARBON 0.5W 5% 1.8K $\Omega$	
R453	ERDS1TJ1R5	CARBON 0.5W 5% 1R5 $\Omega$	
R506	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75K $\Omega$	
R508	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75K $\Omega$	
R519	ERJ6GEYJ754	S.M.CARB 0.1W 5%750K $\Omega$	
R522	ERJ6GEYJ394	S.M.CARB 0.1W 5%390K $\Omega$	
R542	ERJ6GEYJ242	S.M.CARB 0.1W 5% 2K4 $\Omega$	
R543	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R551	ERDS1TJ1R5	CARBON 0.5W 5% 1R5 $\Omega$	
R552	ERDS1TJ1R5	CARBON 0.5W 5% 1R5 $\Omega$	
R555	ERQ12HKR22	FUSIBLE 0.5W 5% R22 $\Omega$	△
R557	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6 $\Omega$	
R560	ERDS1TJ304	CARBON 0.5W 5%300K $\Omega$	
R1213	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2 $\Omega$	
R1215	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R1216	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R1217	ERJ6ENF1202	S.M.CARB 0.1W 1% 1K2 $\Omega$	
R1218	ERO50PKF6203	METAL 50W 1%620K $\Omega$	△
R1230	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82K $\Omega$	
R1241	ERJ6GEYJ822	S.M.CARB 0.1W 5% 8K2 $\Omega$	
R1242	ERJ6GEYJ434	SM.CARB0.125W 5%430K $\Omega$	
R1252	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6 $\Omega$	
R1256	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2 $\Omega$	
R1275	ERJ6GEYJ225	SM.CARB0.125W 5% 2.2M $\Omega$	
R1277	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K $\Omega$	
R1278	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8 $\Omega$	
R1290	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K $\Omega$	
R1291	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8 $\Omega$	
R1292	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K $\Omega$	
R1306	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$	
R1307	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8 $\Omega$	
<b>TRANSFORMERS</b>			
T552	ZTFK33004A	F.B.T.	△
T801	ETS29AK237AC	TRANSFORMER	△

## DIFFERENCES FOR MODEL TC-21S3RP

Ref No.	Part No.	Description
<b>MISCELLANEOUS COMPONENTS</b>		
1)	UR50RC1112	BATTERY COVER (REMOTE)
2)	TNQ8E0460	REMOTE CONTROL
5)	TNP8EY011AC	Y P.C.B. <span style="float: right;">▲</span>
6)	VP15005-35	CRT FIXING SCREW
7)	A51EAL135X13	C.R.T. <span style="float: right;">▲</span>
8)	TKY8E140	CABINET <span style="float: right;">▲</span>
9)	TBX8E038	POWER BUTTON
10)	TKP8E1164	SMOKED PANEL
12)	TBM8E1626	MODEL LABEL
13)	TKU8E00232	REAR COVER <span style="float: right;">▲</span>
14)	TLK8E05133	DEGAUSS COIL <span style="float: right;">▲</span>
15)	EASG12D546A2	SPEAKER
16)	TMZ8E001	CHASSIS RAIL (RIGHT)
17)	TNP8EE007AX	E P.C.B. <span style="float: right;">▲</span>
19)	TMZ8E002	CHASSIS RAIL (LEFT)
	TPC8E4602	OUTER CARTON
	TPD8E627	TOP CUSHION
	TPD8E628	BOTTOM CUSHION
	TQB8E2442	INSTRUCTION BOOK <span style="float: right;">▲</span>
	TQB8E2538	INSTRUCTION BOOK <span style="float: right;">▲</span>
	TBX8E039	KEY PAD
<b>CAPACITORS</b>		
C351	ECUV1H221JCX	S.M.CAP 50V 220pF
C352	ECUV1H271JCX	S.M.CAP 50V 270pF
C353	ECUV1H221JCX	S.M.CAP 50V 220pF
C369	ECA1HMR47GB	ELECT 50V 0.47 $\mu$ F
C453	ECEA1HGE101	ELECT 50V 100 $\mu$ F
C454	ECEA1HGE2R2	ELECT 50V 2R2 $\mu$ F
C508	ECUV1H102JCX	S.M.CAP 50V 1nF
C551	ECWH12H103J	FILM 1250V 10nF <span style="float: right;">▲</span>
C552	ECQF4273JZH	FILM 400V 0.027 $\mu$ F
C555	ECKC3D152J	CERAMIC 2KV 1.5nF <span style="float: right;">▲</span>
C557	ECWF2H394JZ	CERAMIC 500V 390nF <span style="float: right;">▲</span>
C558	ECEA2CU4R7	ELECT 160V 4.7 $\mu$ F
C567	ECEA1VGE471	ELECT 35V 470 $\mu$ F
C811	ECEA1JGE100	ELECT 63V 10 $\mu$ F
C1228	ECUV1H470GCG	S.M.CAP 50V 47pF
C1230	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W
C1245	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W
C1266	ECA1CM100GB	ELECT 16V 10pF
<b>DIODES</b>		
D805	232266296706	THERMISTOR
D1226	MA700TA5	DIODE
D1227	MA700TA5	DIODE
<b>INTEGRATED CIRCUITS</b>		
IC1201	SDA5222V50	I.C. MICROPROCESSOR
IC1205	XL24C02P-BP1	I.C. EAROM
<b>TERMINALS AND LINKS</b>		
JC13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0W
<b>COILS</b>		
L551	ELH5L429	COIL
L553	ELH16F713	COIL
<b>TRANSISTORS</b>		
Q351	2SC4714RL2	TRANSISTOR
Q352	2SC4714RL2	TRANSISTOR

Ref No.	Part No.	Description
Q353	2SC4714RL2	TRANSISTOR
Q507	BC847B	TRANSISTOR OR 2SD601ATX
Q1217	2SD965-R	TRANSISTOR
<b>RESISTOR</b>		
R305	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180 $\Omega$
R306	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180 $\Omega$
R307	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180 $\Omega$
R351	ERG2ANJ103	METAL 2W 5% 10K $\Omega$
R352	ERG2ANJ103	METAL 2W 5% 10K $\Omega$
R353	ERG2ANJ103	METAL 2W 5% 10K $\Omega$
R366	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430 $\Omega$
R367	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430 $\Omega$
R368	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430 $\Omega$
R369	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 $\Omega$
R370	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 $\Omega$
R371	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 $\Omega$
R375	ERDS1TJ272	CARBON 0.5W 5% 2.7K $\Omega$
R378	ERD25TJ274	CARBON 0.25W 5% 270K $\Omega$
R379	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18K $\Omega$
R380	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680K $\Omega$
R386	ERDS1TJ272	CARBON 0.5W 5% 2.7K $\Omega$
R387	ERDS1TJ272	CARBON 0.5W 5% 2.7K $\Omega$
R453	ERDS1TJ1R0	CARBON 0.5W 5% 1 $\Omega$
R506	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K $\Omega$
R508	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K $\Omega$
R519	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82K $\Omega$
R522	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680K $\Omega$
R523	ERJ6GEYJ154	S.M.CARB 0.1W 5% 150K $\Omega$
R524	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180K $\Omega$
R525	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180K $\Omega$
R542	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3 $\Omega$
R543	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2 $\Omega$
R553	ERQ1CJP102	METAL 1W 5% 1K $\Omega$ <span style="float: right;">▲</span>
R555	ERQ1CJP4R7	FUSABLE 1W 5% 4R7 $\Omega$ <span style="float: right;">▲</span>
R557	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K $\Omega$
R560	ERDS1TJ204	CARBON 0.5W 5% 200K $\Omega$
R1215	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1216	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1217	ERJ6ENF7501	S.M.CARB 0.1W 1% 7K5 $\Omega$
R1218	ERO50PKF5603	METAL 50W 1% 560K $\Omega$ <span style="float: right;">▲</span>
R1223	P1201	SENSOR
R1224	ERJ6GEYJ683	S.M.CARB 0.1W 5% 68K $\Omega$
R1225	ERJ6GEYJ433	S.M.CARB 0.125W 5% 43K $\Omega$
R1230	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K $\Omega$
R1242	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1251	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1252	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 $\Omega$
R1275	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1279	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1280	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 $\Omega$
R1291	ERJ6GEYJ432	S.M.CARB 0.1W 5% 4.3K $\Omega$
R1304	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180K $\Omega$
R1305	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 $\Omega$
R1308	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6 $\Omega$
<b>SWITCHES</b>		
S351	0330550049	CRT SOCKET
<b>TRANSFORMERS</b>		
T552	ZTFK33005A	F.B.T. <span style="float: right;">▲</span>
T801	ETS29AK227AC	CHOPPER TRANSFORMER <span style="float: right;">▲</span>

**DIFFERENCES FOR MODEL TX-21S3TP**

Ref No.	Part No.	Description
<b>MISCELLANEOUS COMPONENTS</b>		
3)	UR51EC769	BATTERY COVER (REMOTE)
4)	TNQ8E0461-2	REMOTECONTROL
5)	TNP8EY011AC	Y P.C.B. ▲
6)	VP15005-35	CRT FIXING SCREW
7)	A51EAL135X13	C.R.T ▲
8)	TKY8E140	CABINET ▲
9)	TBX8E038	POWER BUTTON
10)	TKP8E1164	SMOKED PANEL
12)	TBM8E1626	MODEL LABEL
13)	TKU8E00232	REAR COVER ▲
14)	TLK8E05133	DEGAUSS COIL ▲
15)	EASG12D546A2	SPEAKER
16)	TMZ8E001	CHASSIS RAIL (RIGHT)
17)	TNP8EE007AH	E P.C.B. ▲
19)	TMZ8E002	CHASSIS RAIL (LEFT)
	TPC8E4602	OUTER CARTON
	TPD8E627	TOP CUSHION
	TPD8E628	BOTTOM CUSHION
	TQB8E2355	INSTRUCTION BOOK ▲
	TQB8E2355	INSTRUCTION BOOK ▲
	TBX8E039	KEY PAD
<b>CAPACITORS</b>		
C351	ECUV1H221JCX	S.M.CAP 50V 220pF
C352	ECUV1H271JCX	S.M.CAP 50V 270pF
C353	ECUV1H221JCX	S.M.CAP 50V 220pF
C369	ECA1HMR47GB	ELECT 50V 0.47μF
C453	ECEA1HGE101	ELECT 50V 100μF
C454	ECEA1HGE2R2	ELECT 50V 2R2μF
C508	ECUV1H102JCX	S.M.CAP 50V 1nF
C551	ECWH12H103J	FILM 1250V 10nF ▲
C552	ECQF4273JZH	FILM 400V 0.027μF
C555	ECKC3D152J	CERAMIC 2KV 1.5nF ▲
C557	ECWF2H394JZ	CERAMIC 500V 390nF ▲
C558	ECEA2CU4R7	ELECT 160V 4.7μF
C567	ECEA1VGE471	ELECT 35V 470μF
C811	ECEA1JGE100	ELECT 63V 10μF
C1228	ECUV1H470GCG	S.M.CAP 50V 47pF
C1230	ECUV1H333KBX	S.M.CAP 50V 33nF
C1231	222236516154	FILM 160V 150nF
C1245	ECUV1H333KBX	S.M.CAP 50V 33nF
C1251	ECQM1H334J	FILM 50V 330nF
C1266	ECA1CM100GB	ELECT 16V 10pF
C1269	ECUV1H151JCX	S.M.CAP 50V 150pF
<b>DIODES</b>		
D805	232266296706	THERMISTOR
D1225	MA165TA5	DIODE1S133T-77
D1226	MA700TA5	DIODE
D1227	MA700TA5	DIODE
<b>INTEGRATED CIRCUITS</b>		
IC1201	SDA5254V40	I.C. MICROPROCESSOR
IC1205	XL24C02P-FP1	I.C. EAROM
<b>TERMINALS AND LINKS</b>		
JC13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
<b>COILS</b>		
L551	ELH5L429	COIL
L553	ELH16F713	COIL
L1206	EXCELSA35T	COIL
<b>TRANSISTORS</b>		
Q351	2SC4714RL2	TRANSISTOR
Q352	2SC4714RL2	TRANSISTOR
Q353	2SC4714RL2	TRANSISTOR
Q507	BC847B	TRANSISTOROR2SD601ATX
Q1214	BC857B	TRANSISTOROR2SB709ATX
Q1215	BC857B	TRANSISTOROR2SB709ATX
Q1216	BC847B	TRANSISTOR OR 2SD601ATX
Q1217	2SD965-R	TRANSISTOR

Ref No.	Part No.	Description
<b>RESISTOR</b>		
R305	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180Ω
R306	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180Ω
R307	ERJ6GEYJ181	S.M.CARB 0.1W 5% 180Ω
R351	ERG2ANJ103	METAL 2W 5% 10KΩ
R352	ERG2ANJ103	METAL 2W 5% 10KΩ
R353	ERG2ANJ103	METAL 2W 5% 10KΩ
R366	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R367	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R368	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R369	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R370	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R371	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R375	ERDS1TJ272	CARBON 0.5W 5% 2.7KΩ
R378	ERD25TJ274	CARBON 0.25W 5% 270KΩ
R379	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R380	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680KΩ
R386	ERDS1TJ272	CARBON 0.5W 5% 2.7KΩ
R387	ERDS1TJ272	CARBON 0.5W 5% 2.7KΩ
R453	ERDS1TJ1R0	CARBON 0.5W 5% 1Ω
R506	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R508	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R519	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82KΩ
R522	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680KΩ
R523	ERJ6GEYJ154	S.M.CARB 0.1W 5% 150KΩ
R524	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R525	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R542	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3Ω
R543	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R553	ERQ1CJP102	METAL 1W 5% 1KΩ ▲
R555	ERQ1CJP4R7	FUSABLE 1W 5% 4R7Ω ▲
R557	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R560	ERDS1TJ204	CARBON 0.5W 5% 200KΩ
R1213	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1215	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1216	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1217	ERJ6ENF7501	S.M.CARB 0.1W 1% 7K5Ω
R1218	ERO50PKF5603	METAL 50W 1% 560KΩ ▲
R1223	P1201	SENSOR
R1224	ERJ6GEYJ683	S.M.CARB 0.1W 5% 68KΩ
R1225	ERJ6GEYJ433	S.M.CARB0.125W 5% 43KΩ
R1230	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82KΩ
R1241	ERJ6GEYJ822	S.M.CARB 0.1W 5% 8K2Ω
R1242	ERJ6GEYJ434	S.M.CARB0.125W 5% 430KΩ
R1251	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1252	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1256	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1275	ERJ6GEYJ225	S.M.CARB0.125W 5% 2.2MΩ
R1277	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1278	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
R1279	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1280	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1290	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1291	ERJ6GEYJ752	S.M.CARB 0.1W 5% 7K5Ω
R1292	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1304	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R1305	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1306	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1307	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
R1308	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
<b>SWITCHES</b>		
S351	0330550049	CRT SOCKET
<b>TRANSFORMERS</b>		
T552	ZTFK33005A	F.B.T. ▲
T801	ETS29AK227AC	TRANSFORMER ▲


# SCHEMATIC DIAGRAM FOR MODELS

## TX-21S3TP / TC-21S3RP

## TX-14S3TP / TC-14S3RP


### (Z-7 CHASSIS)

#### 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.









**1. RESISTOR**

All resistors are carbon 1/4W resistor, unless marked. Unit of resistance is OHM ( $\Omega$ ) (K=1,000, M=1,000,000).

- |  |   |
|--|---|
|  : Nonflammable |  : Metal Oxide |
|  : Metal Film   |  : Fuse        |
|  : Wire Wound   |  : Solid       |

**2. CAPACITOR**


All capacitors are ceramic 50V capacitors, unless marked as follows: Unit of capacitance is  $\mu$ F, unless otherwise stated.

- |  |   |
|--|---|
|  : Temperature Compensation |  : Polyester       |
|  : Polypropylene            |  : Dipped Tantalum |
|  : Electrolytic             |  : Bipolar         |
|  : Metallised Polyester     |  : Z-Type          |



**3. COIL**

Unit of inductance is  $\mu$ H, unless otherwise stated.

**4. TEST POINT**

 Test Point position




**5. EARTH SYMBOL**

 Chassis Earth (COLD)       Line Earth (HOT)

**6. VOLTAGE MEASUREMENT**

Voltage is measured by a DC voltmeter. Measurement conditions are as follows:

Power source . . . . . AC 220 / 240V, 50Hz  
 Receiving Signal . . . . . Colour Bar signal (RF)  
 All customer controls . . . . . Maximum position

7.  Indicates the Video signal path
-  Indicates the Audio signal path
-  Indicates the Vertical/Horizontal signal path

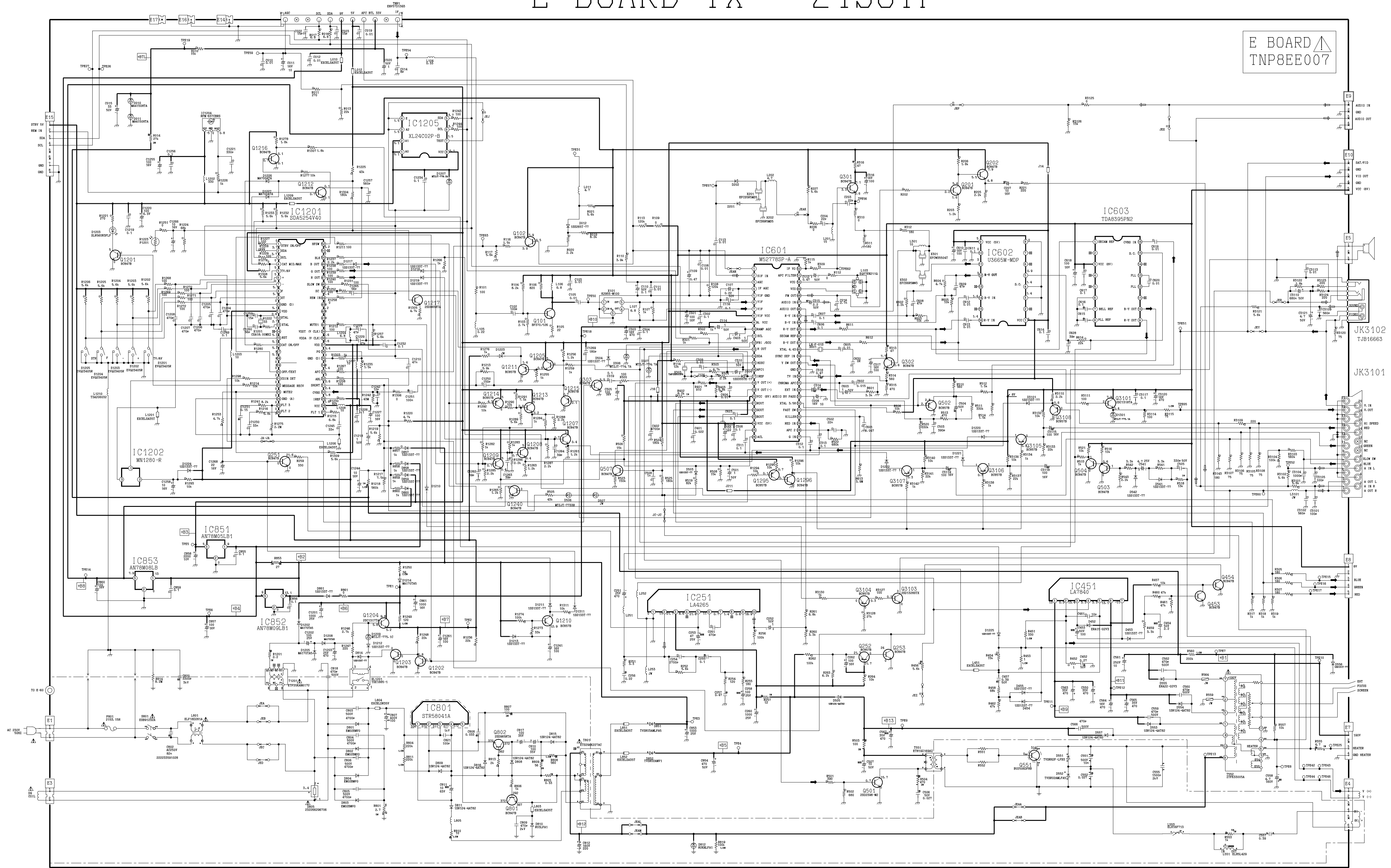
8. This schematic diagram is the latest at the time of printing and is subject to change without notice.

**Remarks:**

1. Care must be taken when servicing this receiver, as it uses a HOT chassis. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions. All circuits except the Audio, Video input circuits are HOT.
2. **Precautions**
  - a. Do not touch the HOT part, or the HOT and COLD parts of the chassis, at the same time, as you are liable to a shock hazard.
  - b. Do not short-circuit the HOT and COLD circuits as electrical components may be damaged.
  - c. Do not connect an instrument, such as an oscilloscope, to the HOT and COLD circuits simultaneously, as this may cause fuse failure. Connect the earth of the instruments to the earth connection of the circuit being measured.
  - d. Make sure to disconnect the power plug before removing the chassis.

# E BOARD TX - 21S3TP

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TNP8EE007

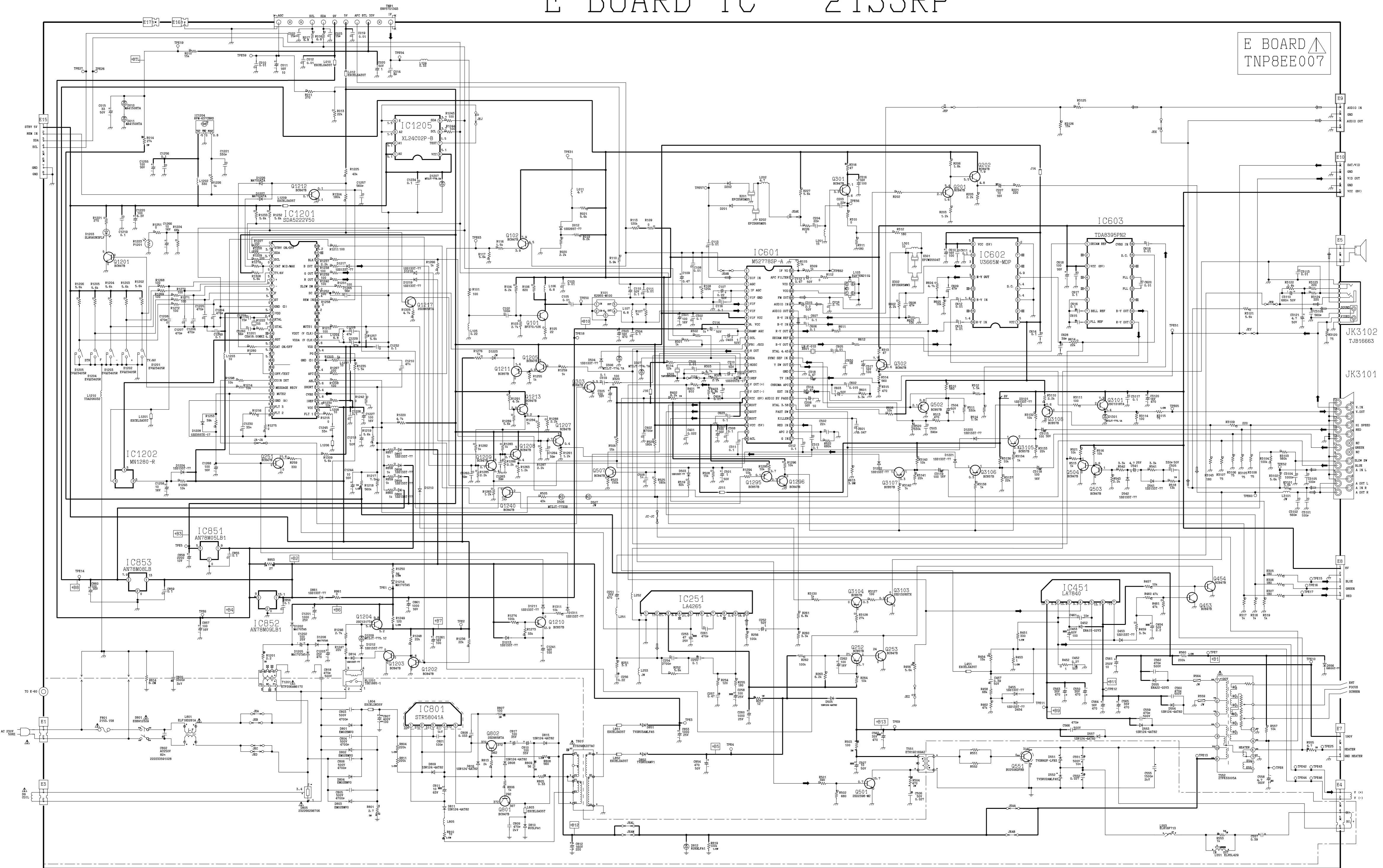






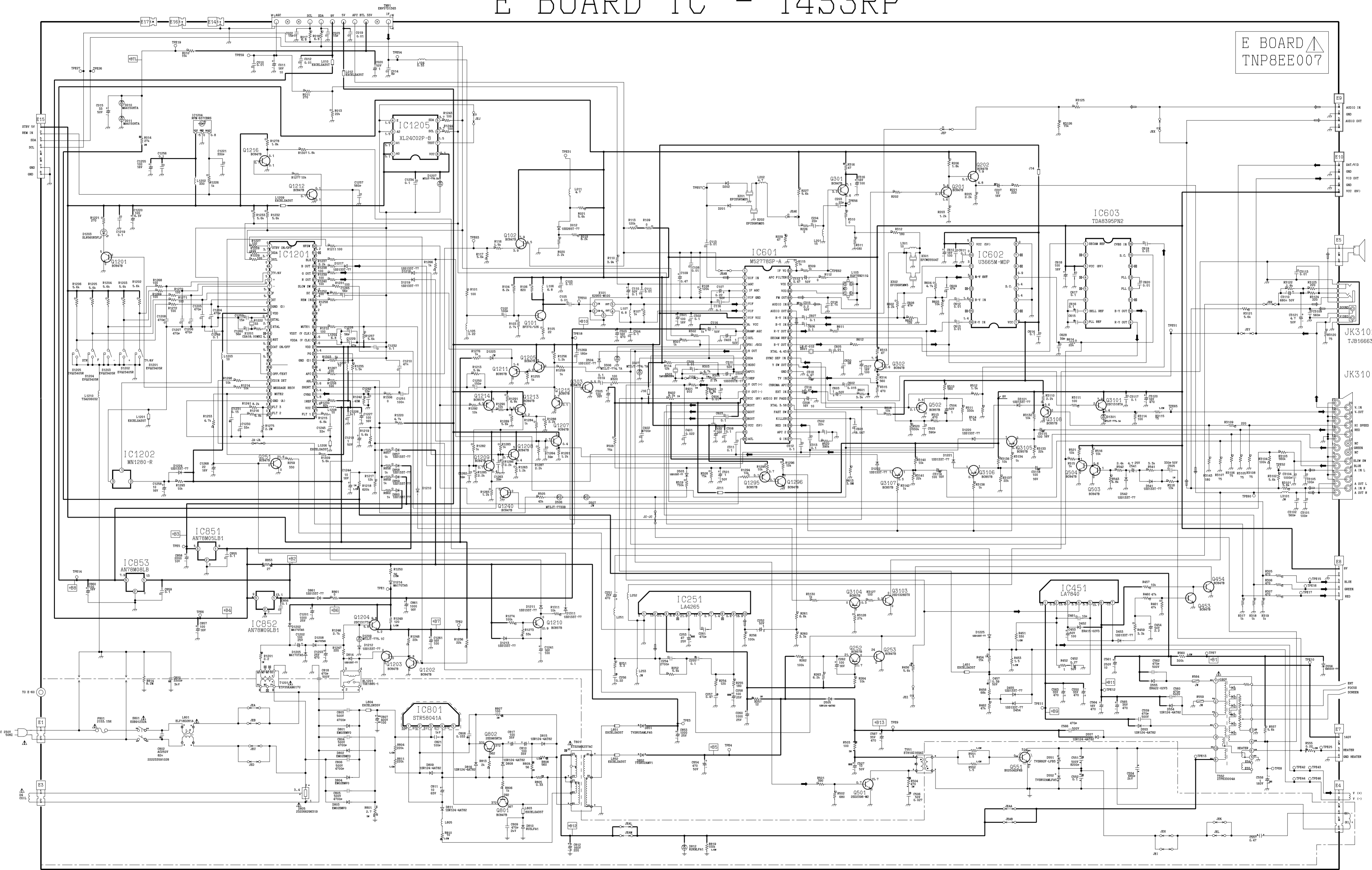
# E BOARD TC - 21S3RP

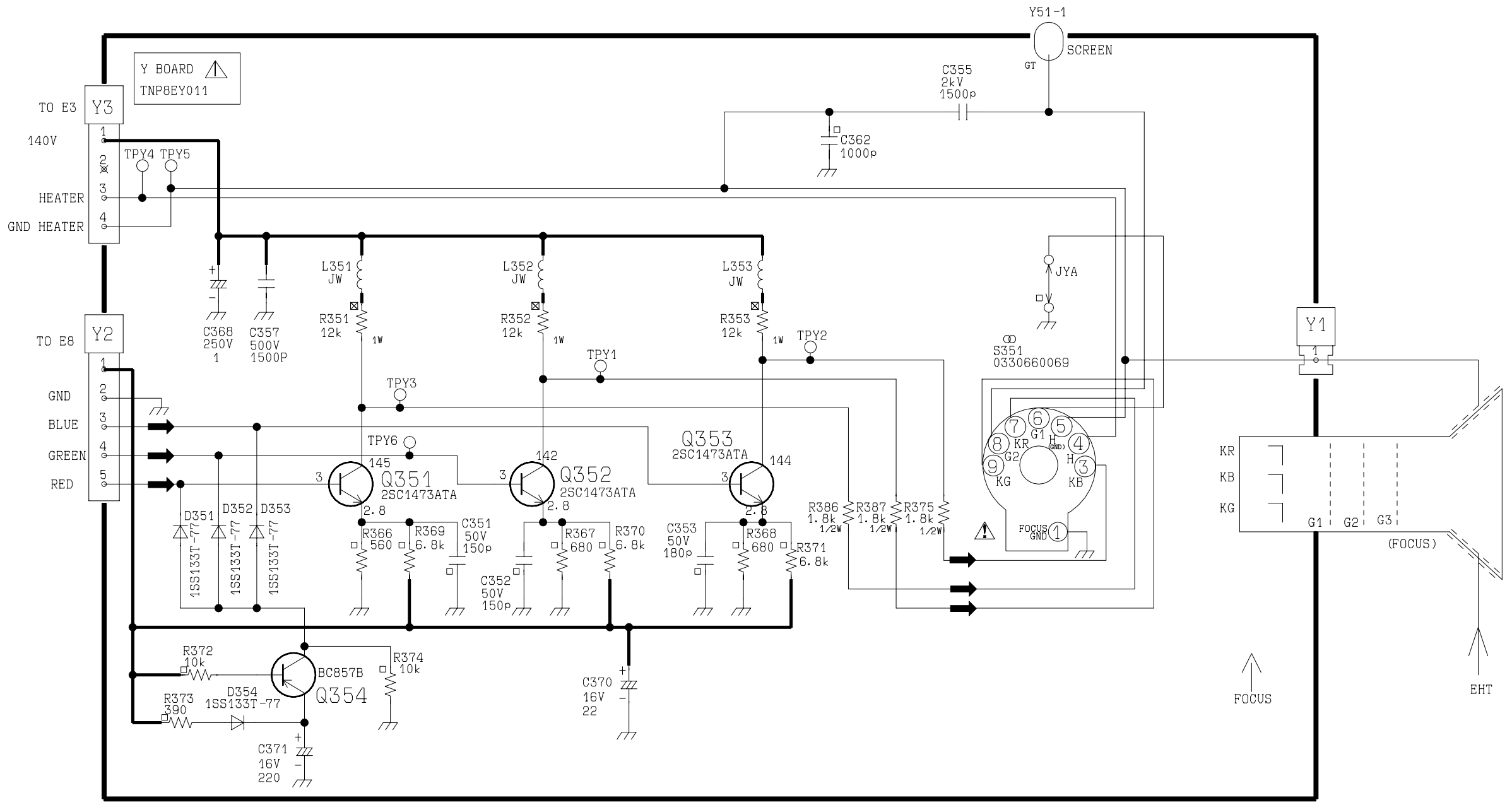
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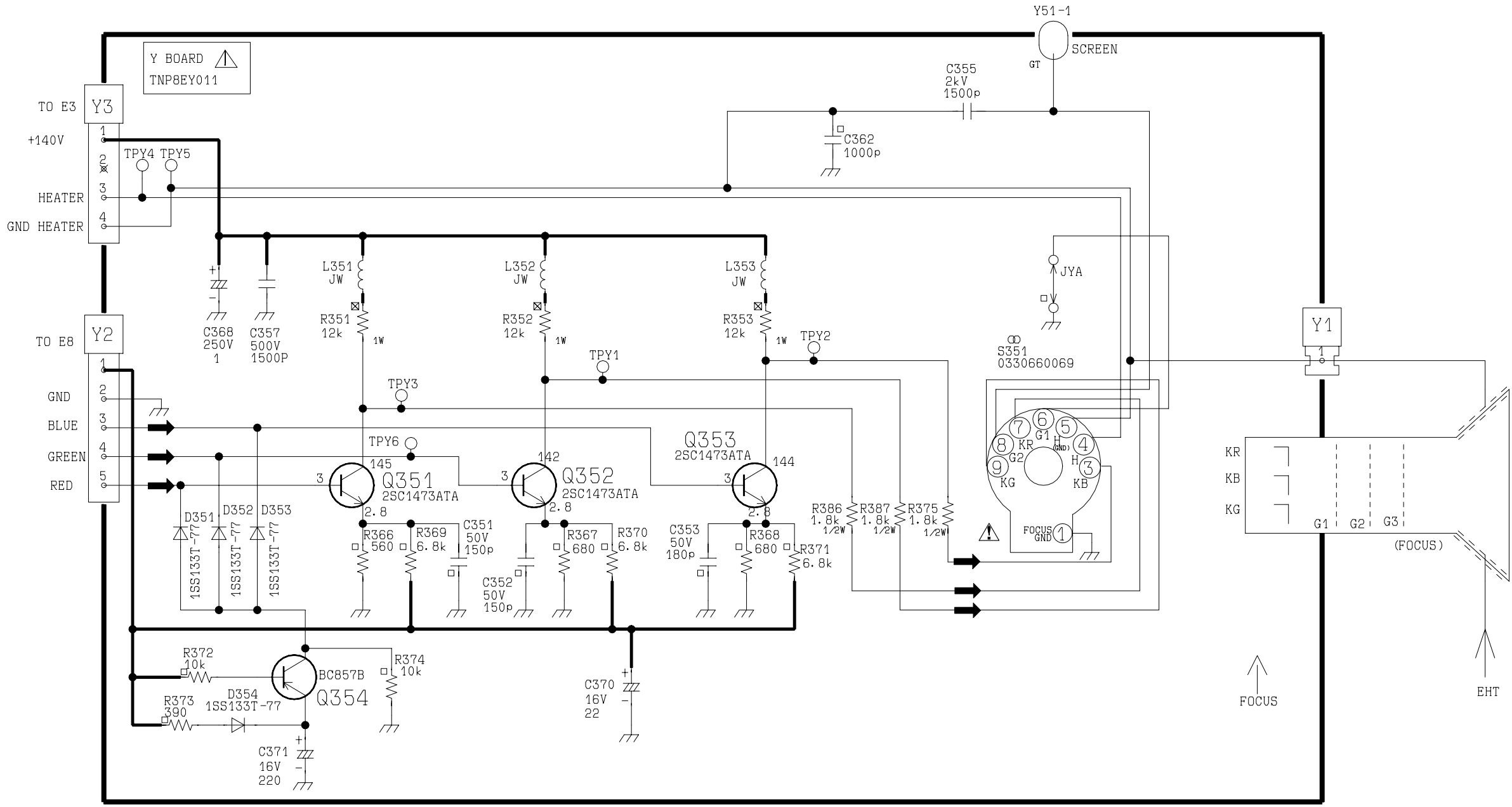


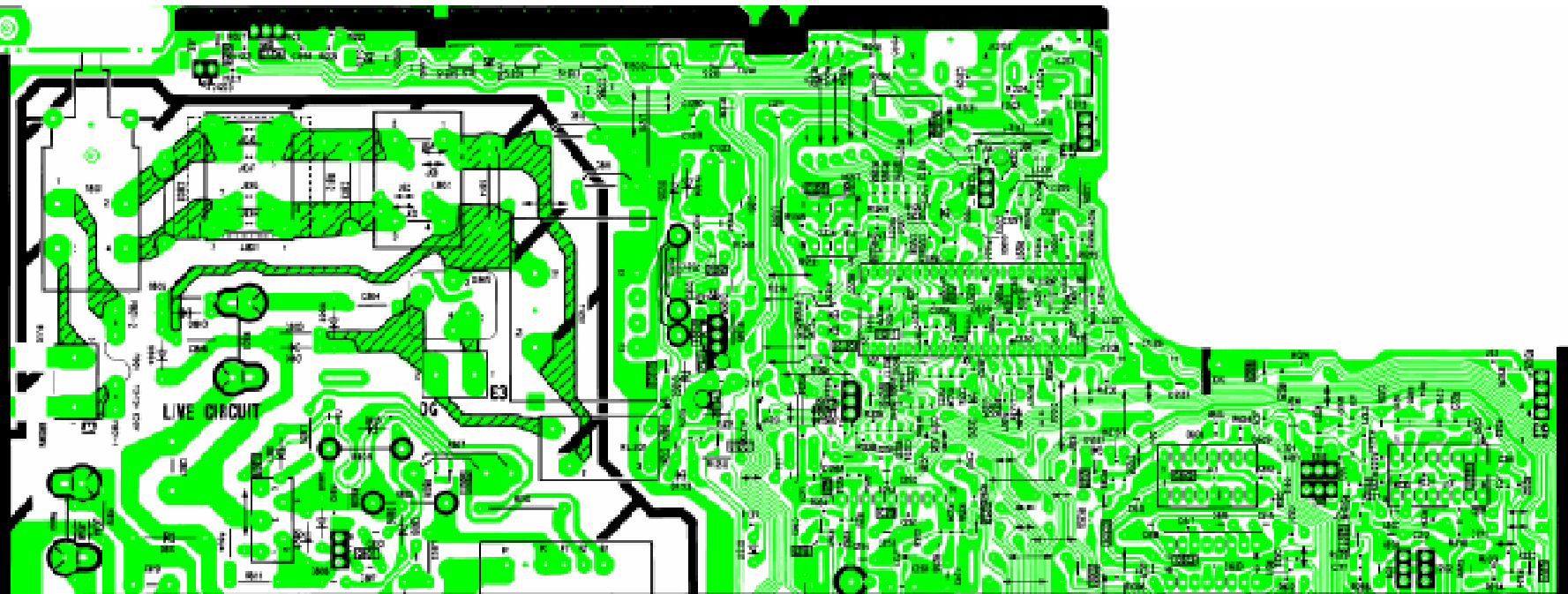
# E BOARD TC - 14S3RP

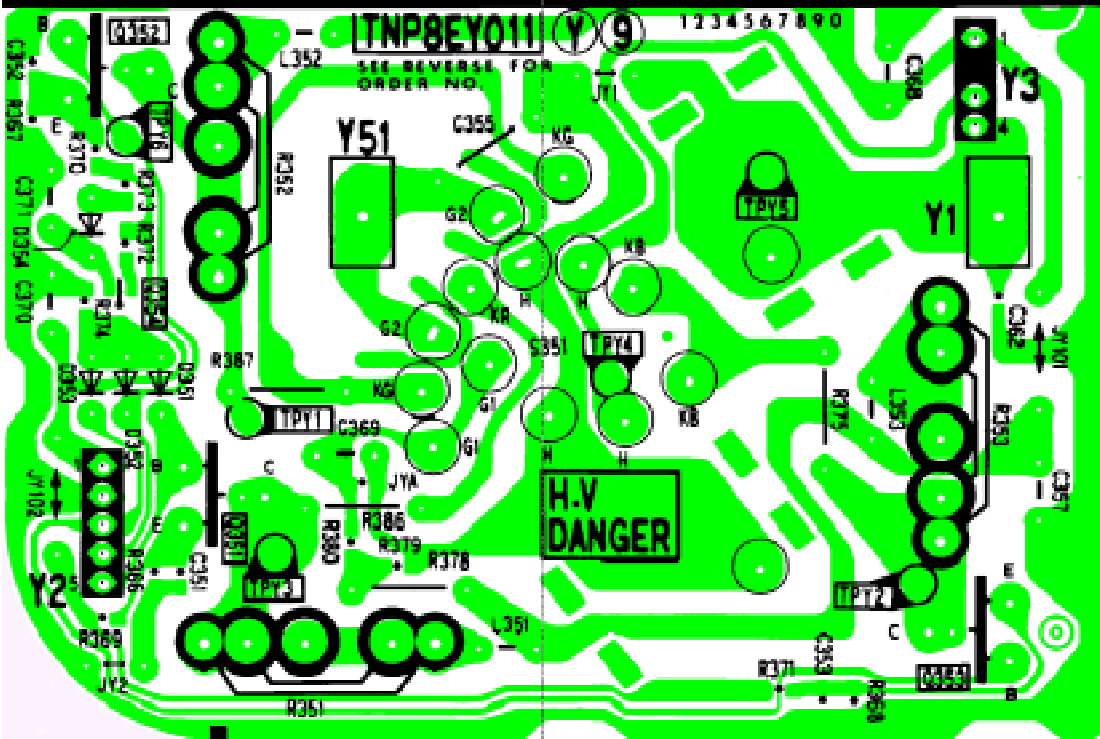
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TNP8EY011 Y 9

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SEE REVERSE FOR ORDER NO.

H.V. DANGER

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