

TX-21AD2/M Service Manual

Safety

Specifications

Parts List

Service
Information

Adjustments

Self Check

Service Hints

Mechanical
View

Disassembly

Location of
Controls

Waveforms

Block Diagrams

Schematic Diagrams

PCB Views

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

B - PCB

E - PCB

Y - PCB

←
BACK

B - Schematic

E - Schematic

P - Schematic

Y - Schematic

←
BACK

Service Manual



Colour Television TX-21AD2/M EURO-2 Chassis

Specifications

Power Source :	220–240V AC 50Hz
Power Consumption :	75W
Standby Power Consumption :	1W
Aerial Impedance :	75Ω unbalanced, Coaxial Type
Receiving System :	PAL I, PAL 525/60,
Receiving Channels :	UHF E21 – E69
Intermediate Frequency :	Video 39.5 MHz Sound 33.5 MHz Colour 35.07 MHz

Video / Audio Terminals :

AUDIO MONITOR OUT	Audio(RCA x 2) 500mV rms, 1kΩ
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
AV2 IN	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms, 10 kΩ S-Video IN Y : 1V p–p 75Ω (21 pin) C : 0.3V p–p 75Ω

AV2 OUT	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms, 1kΩ
AV3 IN	Audio (RCA x 2) 500mV rms, 10kΩ Video (RCA x 1) 1V p–p 75Ω
High Voltage :	27kV ±1kV at zero beam current
Picture Tube :	51 cmV measured diagonally.

Audio Output :	2 x 20W (Music Power) 8Ω Impedance
Internal Speaker	
Headphones	8 Ω Impedance

Accessories supplied :	Remote Control 2 x UM3 Batteries T.V. Stand
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Dimensions :	Height : 465mm Width : 558mm Depth : 495mm
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Net Weight	23kg
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Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

NOTE : This service manual should be used in conjunction with the EURO 2 technical guide.

Panasonic

Panasonic CS (UK)
WILLOUGHBY ROAD,
BRACKNELL
BERKS,
RG12 8FT.

CONTENTS

- Safety Precautions
- Service Hints
- Chassis Service Position
- Service Mode
- Self Check
- Adjustment Procedure
- Alignment Settings
- Waveform Pattern Table
- Block Diagrams
- Parts Location
- Replacement Parts List
- Schematic Diagrams
- P.C.B. Views

Safety Precautions

General Guide Lines

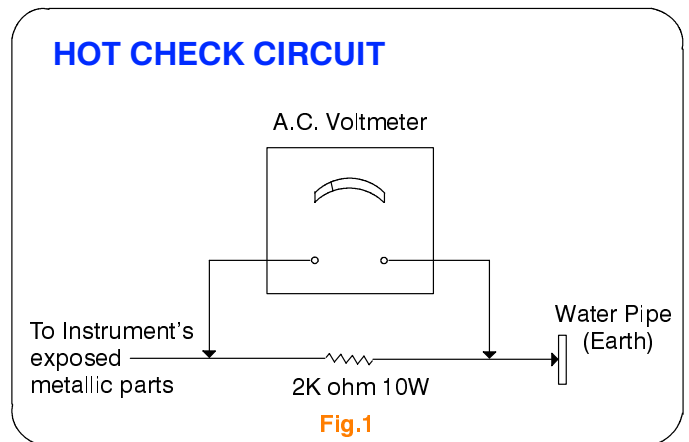
1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, 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 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.
4. Check each exposed Metallic part and check the voltage at each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. 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 the jumpered 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 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 AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2k ohm 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.



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 28kV without causing X–Radiation.

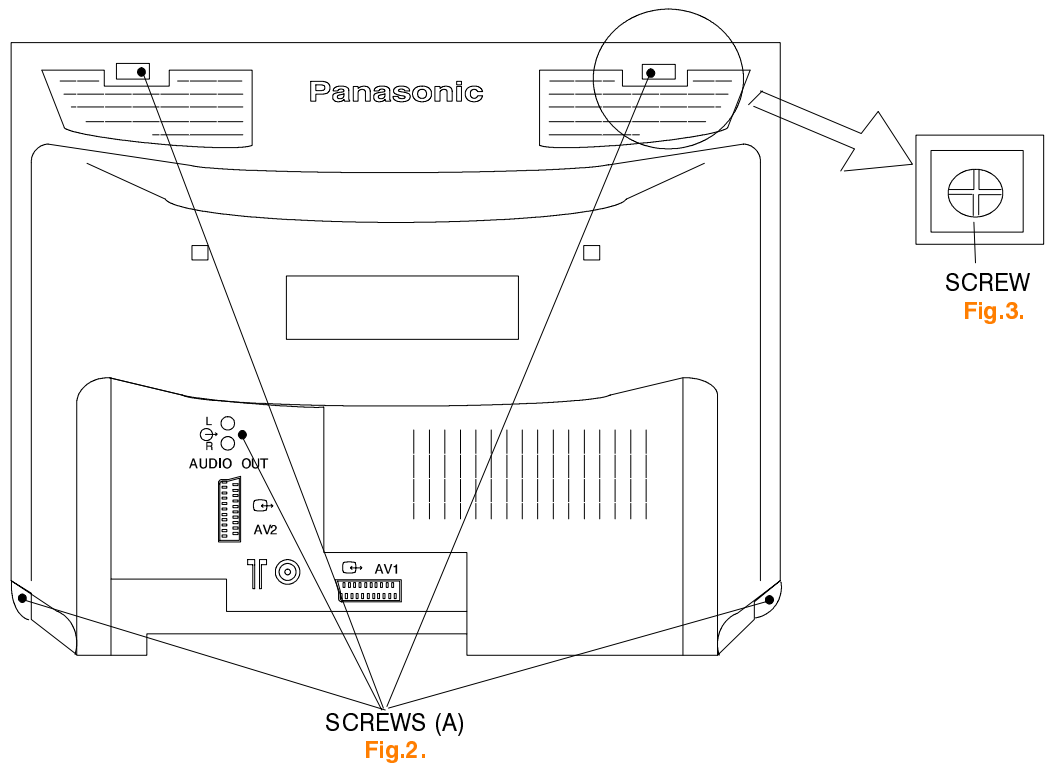
NOTE : It is important to use an accurate periodically calibrated high voltage meter

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate 27kV \pm 1kV at zero beam current 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 an X–Radiation possibility, it is essential to use the specified tube.

SERVICE HINTS

How to remove the rear cover

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



LOCATION OF CONTROLS

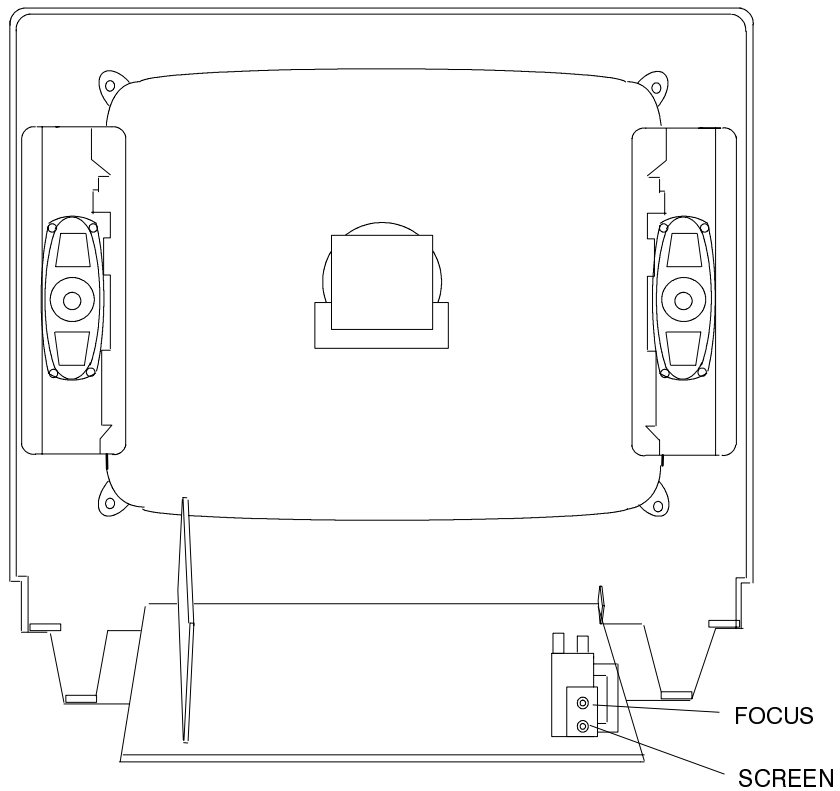


Fig.4.

HOW TO MOVE THE CHASSIS INTO THE SERVICE POSITION

NOTE: To place the chassis into the advised service position the T.V. must be on the T.V. stand provided with the set.

1. To place the chassis into service position hold and lift the rear of the E – PCB chassis and gently pull the chassis toward you as shown in Fig.5.
2. Release the respective wiring clips and rotate the chassis horizontally through 90° anti – clockwise, then lift the front of the chassis as shown in Fig.6.
3. Insert the bead clammer located in the bottom left hand corner of the cabinet (Fig.7.) into the chassis frame shown in Fig.8.
4. After servicing ensure all wiring is returned to its original position before returning the receiver to the customer.

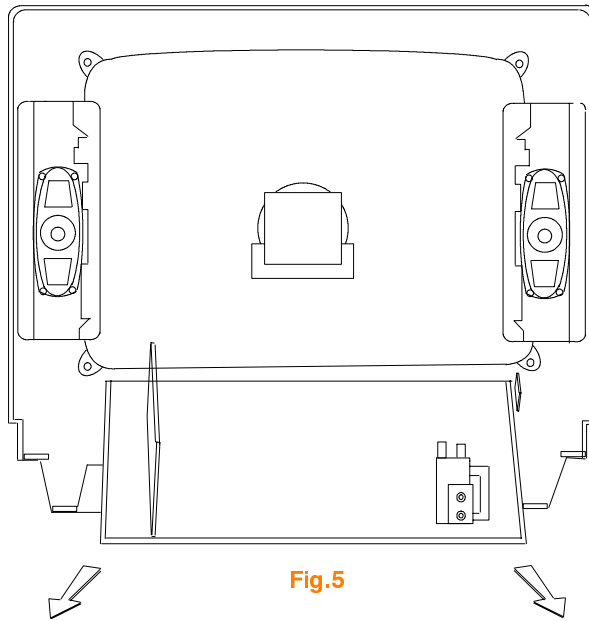


Fig.5

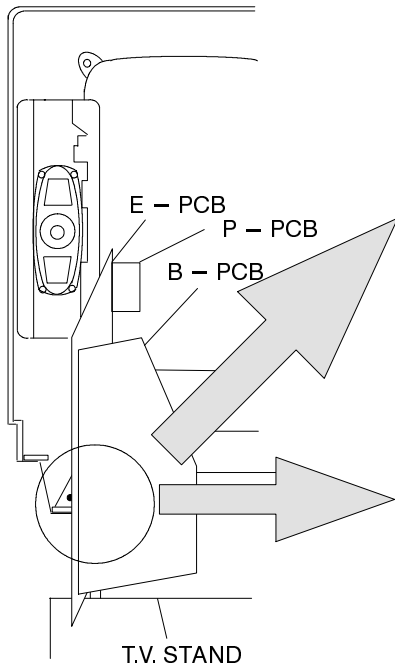


Fig.6.

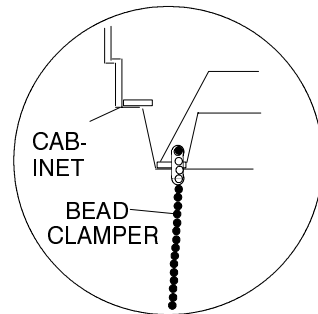


Fig.7.

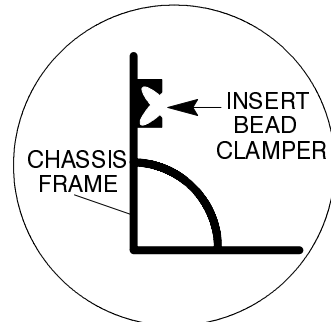


Fig.8.

SERVICE MODE

The remote control is used for entering and storing adjustments, with the exception of cut-off adjustments which must always be done prior to service adjustment. Perform adjustments in accordance with screen display. The display on the screen also specifies the CCU variants as well as the approx. setting values. The adjustment sequence for the service mode is indicated below.

1. Set the Bass to maximum position, set the Treble to minimum position, press the F button followed by the Volume down on the customer controls at the front of the TV and at the same time press the Reveal button on the remote control, this will place the TV into the Service Mode.
2. Press the RED / GREEN buttons to step down / up through the functions.
3. Press the YELLOW / BLUE buttons to alter the function values.
4. Press the STORE button on the preset panel after each adjustment has been made to store the required values.
5. To exit the Service Mode press the Normalisation button.

NOTE: This TV also has the option of using a Memory Pack which enables you to copy the preset TV channels and analogue levels into the Memory Pack and then upload them onto another EURO-2 TV set.

Using the Memory Pack

TV to Memory Pack process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:—

Program
External>>TV

3. Press the blue button on the remote control. The screen will show:—

Program
TV>>External

4. Press the STORE button on the TV. The screen will show:—

Storing

5. All the tuning information stored inside the TV will now be transferred to the Memory Pack. This process will take 2–3 minutes to complete and when finished the screen will show:—

OK!

Memory Pack to TV Process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:—

Program
External>>TV

3. Press the STORE button on the TV. The screen will show:—

Loading

4. All the tuning information stored inside the Memory Pack will now be transferred to the TV. This process will take 2–3 minutes to complete and when finished the screen will show:—

OK!

5. The tuning information from the Memory Pack has now been copied into the TV
6. To exit from the Service Mode switch off the TV.
7. The process has now been completed and the Memory Pack can now be removed.

Errors

If an error occurs while using the Memory Pack the TV will detect this and the screen will show:—

Program
Error!

If this happens then switch off the TV and repeat the process that was being used. If the errors continue to occur then check the connectors between the TV and the memory pack and check the 9V battery inside the memory pack.

SELF CHECK

Self check is used to automatically check the Bus lines and Hexadecimal code of the TV set.
 To enter the Self Check mode press Function down button, on the Preset Panel, at the same time pressing the Status button, on the Remote Control, and the screen will show: –
 When exiting Self Check the customer settings will return to factory setup.

1 — ok	Tuner	11 — --	Dolby IC for C/R	21 — ok	P SBLED	Hex codes 06 CE 34 94 95
2 — ok	VIF	12 — ok	P S MODE	22 — ok	P OFF	
3 — ok	EEPROM	13 — ok	P. TA0	23 — ok	P DEFL	
4 — --	Sound AV switch1	14 — ok	P. TA1	24 — ok	P RAM	
5 — ok	Video AV switch1	15 — ok	P. TA2			
6 — ok	VDP	16 — ok	P. TA3			
7 — ok	TPU	17 — ok	P SDA			
8 — ok	MSP	18 — ok	P SCL1			
9 — --	Dolby Sub	19 — ok	P SCL 3			
10 — --	Dolby IC for L/R	20 — ok	P SCL4			

If the CCU ports have been checked and found to be incorrect or not located then "–" will appear in place of "OK".

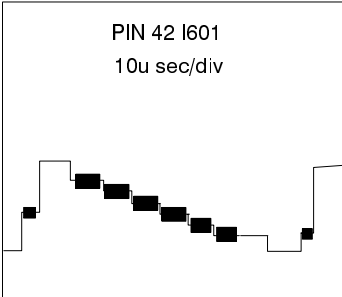
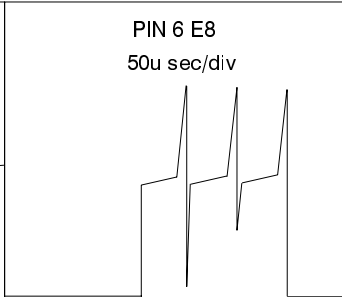
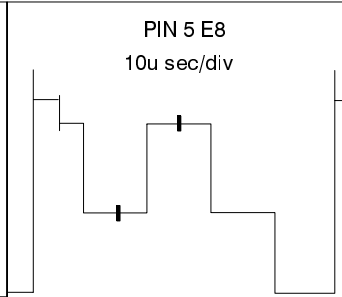
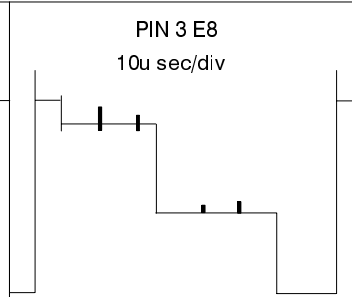
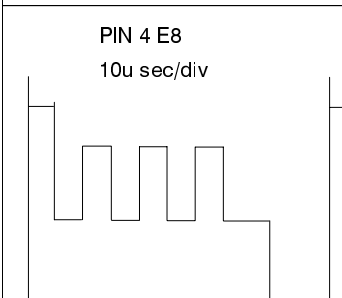
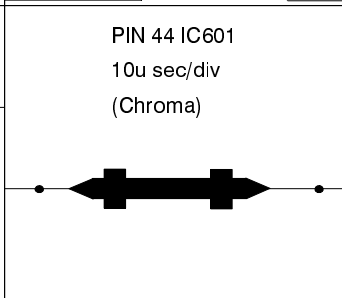
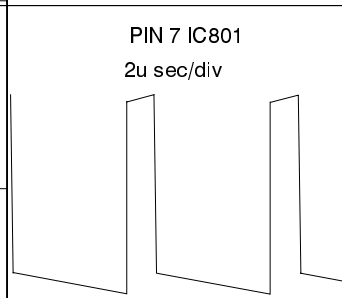
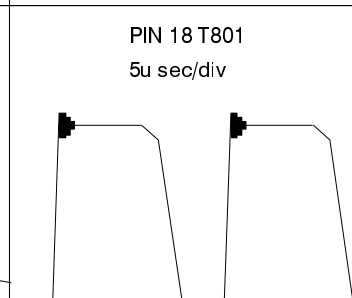
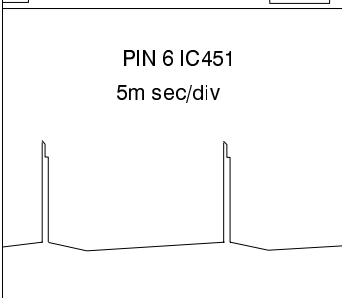
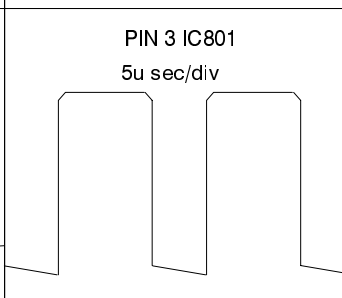
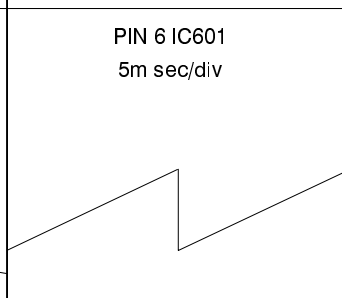
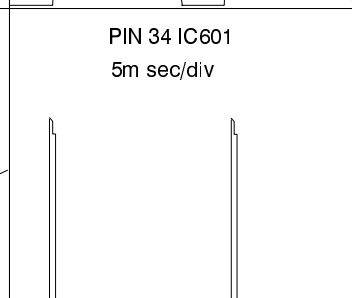
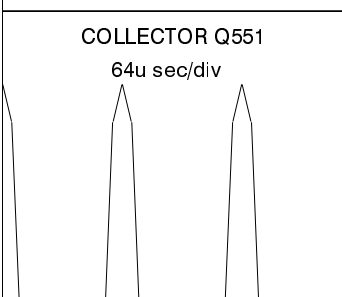
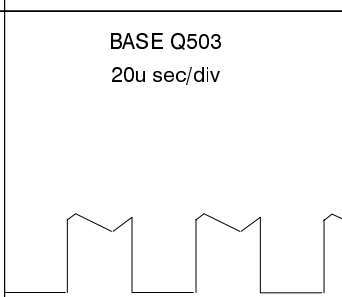
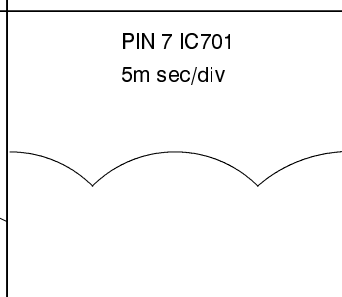
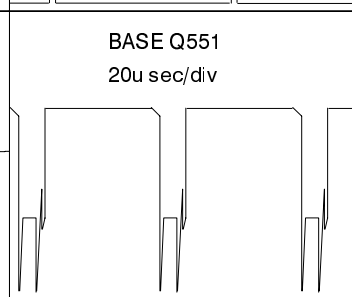
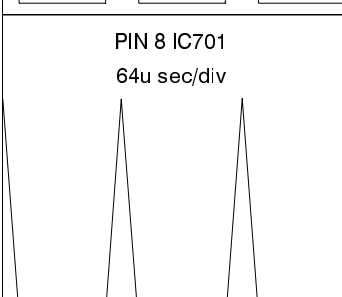
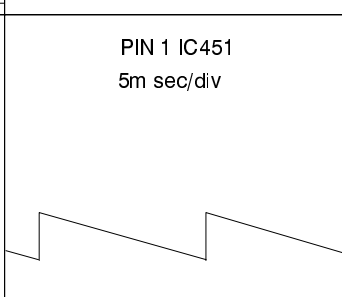
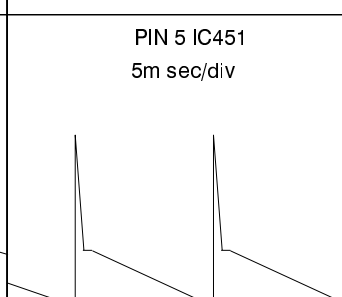
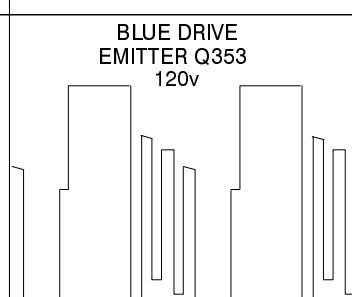
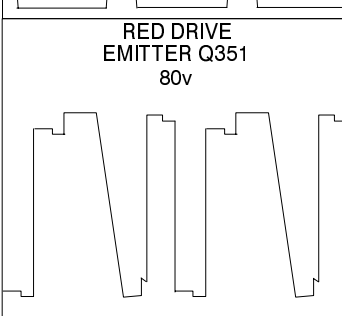
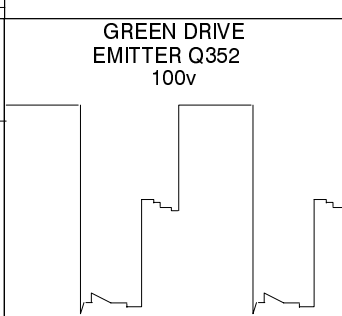
ADJUSTMENT PROCEDURE

Item/Preparation	Adjustments																																						
<p>+B SET-UP</p> <ol style="list-style-type: none"> Receive a window pattern Set the controls: <table style="margin-left: 20px;"> <tr> <td>Brightness</td> <td>minimum</td> </tr> <tr> <td>Contrast</td> <td>minimum</td> </tr> <tr> <td>Volume</td> <td>minimum</td> </tr> </table> 	Brightness	minimum	Contrast	minimum	Volume	minimum	<ol style="list-style-type: none"> Set the +B voltage up as follows: Adjust R811 so that B2 shows $130V \pm 1V$ Confirm the following voltages. <table style="margin-left: 20px;"> <tr> <td>B1</td> <td>200</td> <td>\pm</td> <td>10V</td> <td>B6</td> <td>12</td> <td>\pm</td> <td>0.5V</td> </tr> <tr> <td>B3</td> <td>27</td> <td>\pm</td> <td>1V</td> <td>B7</td> <td>5</td> <td>+</td> <td>0.1/-0.25V</td> </tr> <tr> <td>B4</td> <td>41.0</td> <td>\pm</td> <td>1V</td> <td>B8</td> <td>5</td> <td>\pm</td> <td>0.25V</td> </tr> <tr> <td>B5</td> <td>15.5</td> <td>\pm</td> <td>1V</td> <td>U33</td> <td>31</td> <td>\pm</td> <td>1V</td> </tr> </table> 	B1	200	\pm	10V	B6	12	\pm	0.5V	B3	27	\pm	1V	B7	5	+	0.1/-0.25V	B4	41.0	\pm	1V	B8	5	\pm	0.25V	B5	15.5	\pm	1V	U33	31	\pm	1V
Brightness	minimum																																						
Contrast	minimum																																						
Volume	minimum																																						
B1	200	\pm	10V	B6	12	\pm	0.5V																																
B3	27	\pm	1V	B7	5	+	0.1/-0.25V																																
B4	41.0	\pm	1V	B8	5	\pm	0.25V																																
B5	15.5	\pm	1V	U33	31	\pm	1V																																
<p>RF AGC</p> <ol style="list-style-type: none"> Receive a test pattern. Connect an oscilloscope between the tuner RF AGC and ground. Set the oscilloscope gain range to 1V/div. 	<ol style="list-style-type: none"> Check that the noise becomes large when the RF AGC VR R126 is turned counterclockwise. After the check turn it clockwise. Gradually turn the RF AGC VR anti-clockwise, and set the RF AGC VR to the point where the RF AGC voltage is just falling to a point where this voltage drops by 0.2V from the maximum value. 																																						
<p>CUT OFF</p> <ol style="list-style-type: none"> Receive a window pattern. Degauss the tube externally. Set the TV into Service Mode 1. Select Cutoff DC mode. 	<ol style="list-style-type: none"> Confirm then value is 128 and select Ug2 mode noting colour with largest value Turn the screen VR until a colour reaches 20~30. Connect an oscilloscope to the cathode with the biggest value colour. Select Cutoff DC mode and adjust Cutoff pulse to $169V \pm 5V$. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 70 ± 30 first. 																																						

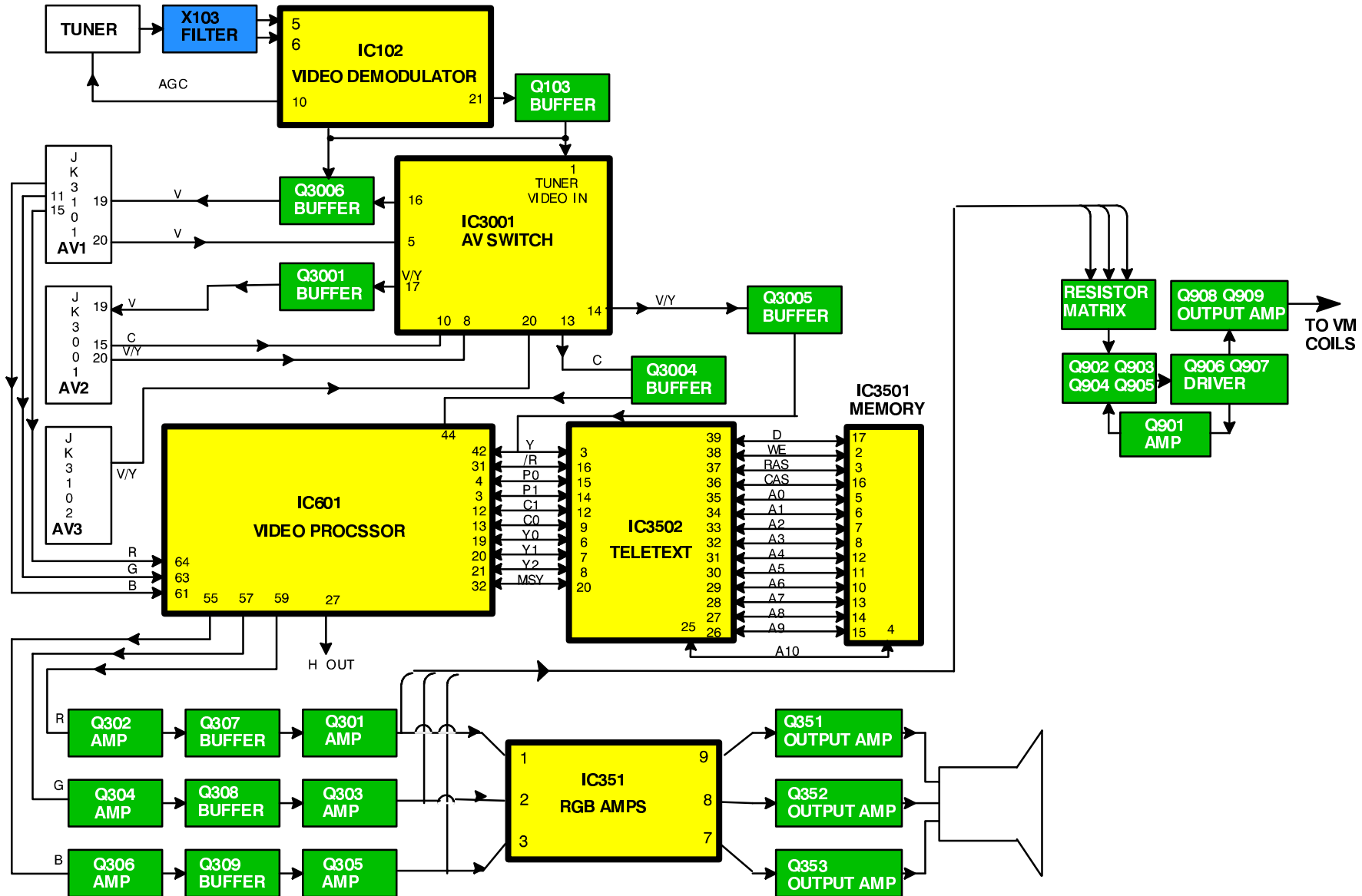
ALIGNMENT SETTINGS (The figures used below are nominal and used for representative purposes only)

Alignment Function	TX-21AD2/M	Settings / Special features
1. Vertical amplitude	V-AMP 063	Optimum setting
2. Vertical symmetry	V-SYM 002	
3. Vertical linearity	V-LIN -020	
4. Vert. D.C.	Vert.D.C. 000	No adjustment
5. V-Pos.	V. Pos 005	Optimum setting
6. Horizontal amplitude	H-AMP -044	Optimum setting
7. Horizontal position	H-POS 542	
8. Text Position	TEXT POSITION 049	Optimum setting
9. EW-amplitude	E-W-AMP 1 -059	Optimum setting
10. EW-amplitude	E-W-AMP 2 044	Optimum setting
11. Trapezium-comp	TRAPEZ-1 000	Optimum setting
12. Trapezium- comp	TRAPEZ-2 -009	Optimum setting
13. Colour VCO	Colour VCO 006	Press either Blue or Yellow buttons to effect automatic adjustment
14. Cut-off DC	Cut-off DC 050	No adjustment
15. Ug2 Test	Ug 2 Test 094 044 020	Select Cutoff DC in Service Mode mode and confirm the value is 128. Select Ug 2 Test noting colour with largest value, adjust on FBT until a colour reaches 20 ~ 30. Connect an oscilloscope to the cathode of the biggest value colour, select Cutoff DC mode and adjust get Cutoff pulse voltage to 169±5V. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 70±30 first.
16. Cutoff	Cutoff 057 064 056	Press the GREEN button to step through the settings. Adjust for optimum.
17. White	White 200 255 246	Press the GREEN button to step through the settings. Adjust for optimum.

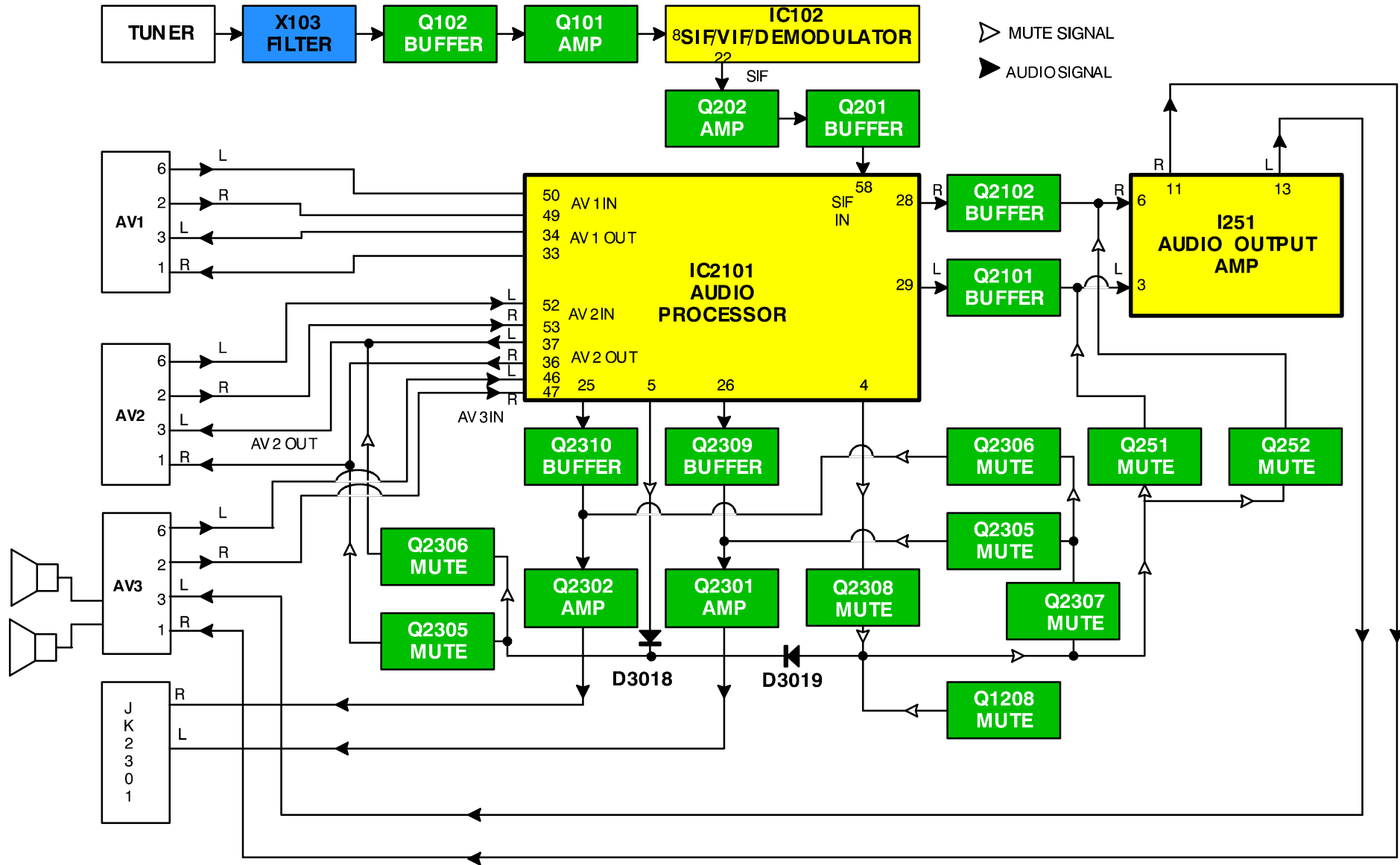
WAVEFORM PATTERN TABLE

<p style="text-align: center;">PIN 42 I601 10u sec/div</p> 	<p style="text-align: center;">PIN 6 E8 50u sec/div</p> 	<p style="text-align: center;">PIN 5 E8 10u sec/div</p> 	<p style="text-align: center;">PIN 3 E8 10u sec/div</p> 
<p style="text-align: center;">PIN 4 E8 10u sec/div</p> 	<p style="text-align: center;">PIN 44 IC601 10u sec/div (Chroma)</p> 	<p style="text-align: center;">PIN 7 IC801 2u sec/div</p> 	<p style="text-align: center;">PIN 18 T801 5u sec/div</p> 
<p style="text-align: center;">PIN 6 IC451 5m sec/div</p> 	<p style="text-align: center;">PIN 3 IC801 5u sec/div</p> 	<p style="text-align: center;">PIN 6 IC601 5m sec/div</p> 	<p style="text-align: center;">PIN 34 IC601 5m sec/div</p> 
<p style="text-align: center;">COLLECTOR Q551 64u sec/div</p> 	<p style="text-align: center;">BASE Q503 20u sec/div</p> 	<p style="text-align: center;">PIN 7 IC701 5m sec/div</p> 	<p style="text-align: center;">BASE Q551 20u sec/div</p> 
<p style="text-align: center;">PIN 8 IC701 64u sec/div</p> 	<p style="text-align: center;">PIN 1 IC451 5m sec/div</p> 	<p style="text-align: center;">PIN 5 IC451 5m sec/div</p> 	<p style="text-align: center;">BLUE DRIVE EMITTER Q353 120v</p> 
<p style="text-align: center;">RED DRIVE EMITTER Q351 80v</p> 	<p style="text-align: center;">GREEN DRIVE EMITTER Q352 100v</p> 		

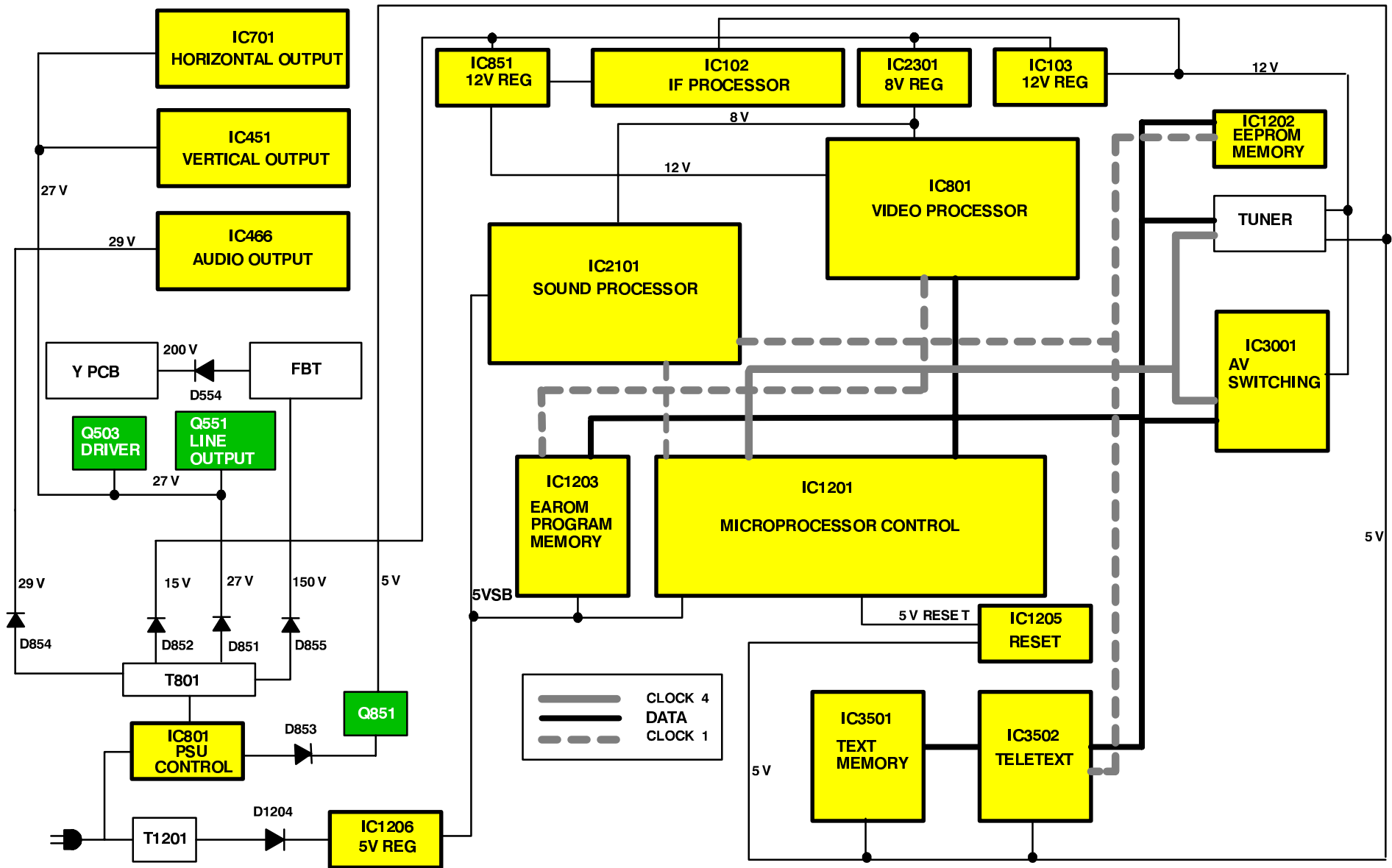
VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM



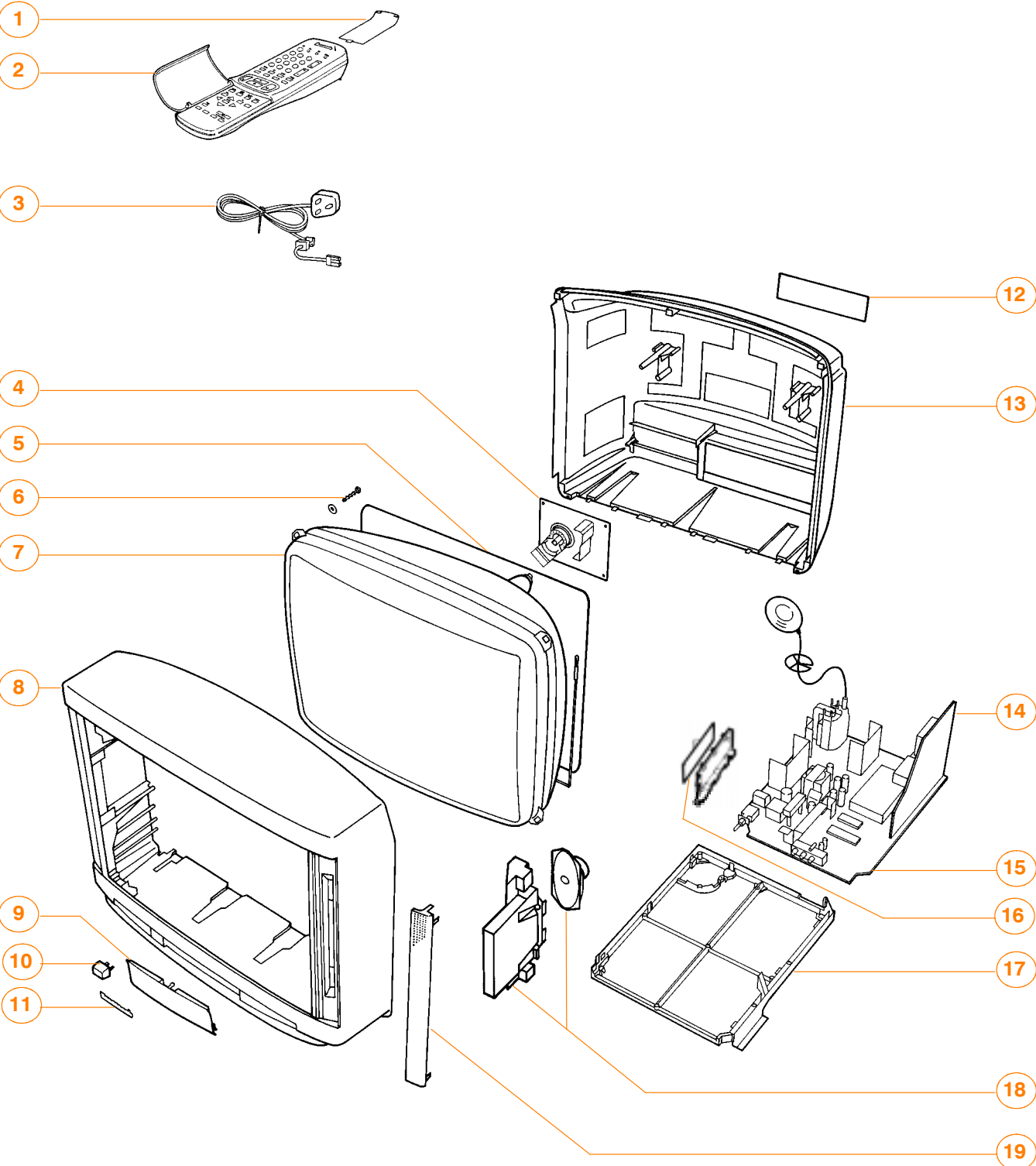
POWER SUPPLY AND CONTROL BLOCK DIAGRAM



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

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
1)	UR51921	BATTERY COVER (REMOTE)
2)	EUR51920	REMOTE CONTROL
3)	TSX8E0017	POWER CORD Δ
4)	TNP117069AE	Y P.C.B. Δ
5)	TLK8E05117	DEGAUSS COIL Δ
6)	VP15005-35	CRT FIXING SCREW
7)	A51ECQ51X01	CRT Δ
8)	TKY8E092	CABINET Δ
9)	TKP8E1138AD2	DOOR LID
10)	TBX8E030	POWER BUTTON
11)	TBM8E1726	PANASONIC BADGE
12)	TBM8E1719	MODEL LABEL
13)	TKU8E00240	BACK COVER Δ
14)	TNP8EB007AA	B P.C.B. Δ
15)	TNP8EE008BK	E P.C.B. Δ
16)	TNP8EP013AB	P .P.C.B. Δ
17)	TMX8E010	CHASSIS BRACKET
18)	EAGG1218D2	SPEAKER
19)	TKP8E1139	SPEAKER NET
	ENG27501G	TUNER
	F9-4-220	RELAY
	TBM8E1535	A.V.LABEL
	TBM8E1605	PRESET LABEL
	TEK6935	LID SWITCH
	TKP8E1140	LED TUBE
	TMW8E022	LED HOLDER
	TPC8E4642	OUTER CARTON
	TPD8E615	CUSHION TOP
	TPD8E616	CUSHION BOTTOM
	TQB8E2347	INST BOOK Δ
	TS-2840	TV STAND
	UM-3DJ-2P	BATTERY SET
	31221212478	FIX CLIP
	TES4537	SPRING
	ERC12GK825	SOLID 0.5W 10% 8M2 Ω
INTEGRATED CIRCUITS		
IC103	L78M12MRB	12V REGULATOR
IC104	AN78L09TA	9V REGULATOR
IC251	LA4280-TV	AUDIO OUTPUT
IC351	TDA6103Q-N3	R.G.B.AMPLIFIER
IC451	LA7845N	VERTICAL OUTPUT
IC601	VDP3108APPA1	VIDEO PROCESSOR
IC701	TEA2031A	HORIZONTAL OUTPUT
IC801	TDA4601	POWER SUPPLY
IC851	L78M12MRB	12V REGULATOR
IC1051	RPM-637CBRL	LED RECEIVER
IC1201	CCU3000I-07	CENTRAL CONTROL UNIT
IC1202	27C010-006AG	EPROM
IC1203	X24LM0402AY	EAROM
IC1205	MN1280R	RESET
IC2101	MSP3410BPPF7	AUDIO PROCESSOR
IC2301	AN78L08TA	8V REGULATOR
IC3001	TEA6415C	VIDEO SWITCH
IC3501	UD61256DC-08	DYNAMIC RAM
IC3502	TPU3040-20	TEXT PROCESSOR

Ref No.	Part No.	Description
CAPACITORS		
C124	ECEA1CKA470	ELECT 16V 47 μ F
C130	ECA1HMR47GB	ELECT 50V 0.47 μ F
C135	ECUV1H103ZFX	S.M.CAP 50V 10nF
C136	ECA1CM100GB	ELECT 16V 10pF
C137	ECA1EM101GB	ELECT 25V 1 μ F
C138	ECUV1H103ZFX	S.M.CAP 50V 10nF
C139	ECUV1H390JCX	S.M.CAP 50V 39pF
C140	ECUV1H390JCX	S.M.CAP 50V 39pF
C141	ECUV1H103ZFX	S.M.CAP 50V 10nF
C144	ECA1HMR33GB	ELECT 50V 0.33 μ F
C145	ECUV1H103ZFX	S.M.CAP 50V 10nF
C146	ECUV1H104ZFX	S.M.CAP 50V 100nF
C147	ECUV1H102KBX	S.M.CAP 50V 1nF
C148	ECEA1HKAR22	ELECT 50V 0.22 μ F
C149	ECA1EM470GB	ELECT 25V 47pF
C150	ECUV1H103ZFX	S.M.CAP 50V 10nF
C151	ECUV1H104ZFX	S.M.CAP 50V 100nF
C154	ECA1CM221GB	ELECT 16V 220pF
C170	ECUV1H331KBX	S.M.CAP 50V 330pF
C201	ECUV1H070DCX	S.M.CAP 50V 7pF
C202	ECUV1H070DCX	S.M.CAP 50V 7pF
C203	ECUV1H470JX	S.M.CAP 50V 47pF
C204	ECUV1H560JCX	S.M.CAP 50V 56pF
C205	ECUV1H100DCX	S.M.CAP 50V 10pF
C207	ECUV1H220JCX	S.M.CAP 50V 22pF
C209	ECUV1H103ZFX	S.M.CAP 50V 10nF
C210	ECUV1H103ZFX	S.M.CAP 50V 10nF
C211	ECUV1H103ZFX	S.M.CAP 50V 10nF
C251	ECA1EM470GB	ELECT 25V 47pF
C252	ECUV1H103KBX	S.M.CAP 50V 10nF
C253	ECA1HM4R7GB	ELECT 50V 4.7 μ F
C254	222236516224	FILM 160V 220nF
C255	ECEA1EGE101	ELECT 25V 100 μ F
C256	ECUV1H103KBX	S.M.CAP 50V 10nF
C257	ECA1HM4R7GB	ELECT 50V 4.7 μ F
C258	ECA1EM470GB	ELECT 25V 47pF
C259	222236516224	FILM 160V 220nF
C260	ECA1VM102GE	ELECT 35V 1nF
C261	ECA1VM102GE	ELECT 35V 1nF
C262	222236516474	FILM 160V 470nF
C263	ECA1HM010GB	ELECT 50V 1pF
C264	ECEA1HGE222	ELECT 50V 2200 μ F
C265	222236516474	FILM 160V 470nF
C266	ECA1HM010GB	ELECT 50V 1pF
C267	ECUV1H104KBX	S.M.CAP 50V 100nF
C268	ECUV1H104KBX	S.M.CAP 50V 100nF
C271	ECUV1H561KBX	S.M.CAP 50V 560pF
C301	ECA1CM470GB	ELECT 16V 47 μ F
C302	ECUV1H104ZFX	S.M.CAP 50V 100nF
C303	ECUV1H104ZFX	S.M.CAP 50V 100nF
C310	ECUV1H104ZFX	S.M.CAP 50V 100nF
C354	ECQM2104KZ	FILM 250V 100nF
C355	ECUV1H222JCX	S.M.CAP 50V 2.2nF
C356	ECUV1H222JCX	S.M.CAP 50V 2.2nF
C357	ECUV1H222JCX	S.M.CAP 50V 2.2nF
C358	222236516224	FILM 160V 220nF
C360	ECKC3D152J	CERAMIC 2KV 1.5nF Δ
C361	ECA1HMR47GB	ELECT 50V 0.47 μ F
C451	ECUV1H102JX	S.M.CAP 50V 1nF
C452	ECUV1H102ZFX	S.M.CAP 50V 1nF
C453	ECUV1H472KBX	S.M.CAP 50V 4.7nF

Ref No.	Part No.	Description		
C454	ECUV1H104ZFX	S.M.CAP	50V	100nF
C455	ECA1VM222GE	ELECT	35V	2.2nF
C456	ECEA1HGE221	ELECT	50V	220µF
C457	ECUV1H103KBX	S.M.CAP	50V	10nF
C458	ECQM1H273J	FILM	50V	27nF
C459	222236516154	FILM	160V	150nF
C460	222236516105	FILM	160V	1µF
C462	ECEA1VGE332	ELECT	35V	3300µF
C463	ECQB1H222J	FILM	50V	2200pF
C501	ECA1AM330GB	ELECT	10V	33pF
C506	ECUV1H103ZFX	S.M.CAP	50V	10nF
C508	222236516105	FILM	160V	1µF
C509	ECEA1HGE101	ELECT	50V	100µF
C510	ECUV1H104ZFX	S.M.CAP	50V	100nF
C511	ECQM2683JZ	FILM	250V	68nF
C551	222237544182	FILM		1.8nF
C552	ECWH12H102J	FILM	1250V	1nF
C555	ECWH12H103J	FILM	1250V	10nF
C556	ECQF4393JZH	FILM	400V	0.039µF
C559	ECWF2H474J	FILM	500V	470nF
C562	ECKC2H101J	CERAMIC	500V	100pF
C563	ECEA2EU220	ELECT	250V	22µF
C564	ECEA2AU2R2	ELECT	100V	2.2µF
C565	ECQP1H273J	FILM	100V	2700µF
C601	ECUV1H271JCX	S.M.CAP	50V	270pF
C602	ECUV1H121JCX	S.M.CAP	50V	120pF
C603	ECUV1H471JCX	S.M.CAP	50V	470pF
C604	ECA0JM102GB	ELECT	6.3V	1nF
C605	ECUV1H103ZFX	S.M.CAP	50V	10nF
C608	ECUV1H683ZFX	S.M.CAP	50V	68nF
C609	ECA1CM470GB	ELECT	16V	47µF
C610	ECUV1H683ZFX	S.M.CAP	50V	68nF
C611	ECUV1H104ZFX	S.M.CAP	50V	100nF
C612	ECUV1H103ZFX	S.M.CAP	50V	10nF
C613	ECUV1H102JCX	S.M.CAP	50V	1nF
C614	ECUV1H104ZFX	S.M.CAP	50V	100nF
C615	ECUV1H103ZFX	S.M.CAP	50V	10nF
C616	ECUV1H103ZFX	S.M.CAP	50V	10nF
C618	ECUV1H473ZFX	S.M.CAP	50V	47nF
C619	ECUV1H104ZFX	S.M.CAP	50V	100nF
C620	ECUV1H104ZFX	S.M.CAP	50V	100nF
C621	ECA1CM100GB	ELECT	16V	10pF
C622	ECA1CM100GB	ELECT	16V	10pF
C623	ECUV1H104ZFX	S.M.CAP	50V	100nF
C624	ECUV1H103ZFX	S.M.CAP	50V	10nF
C625	ECEA1HNR22	ELECT	50V	0.22µF
C626	ECA0JM102GB	ELECT	6.3V	1nF
C627	ECUV1H100DCX	S.M.CAP	50V	10pF
C628	ECUV1H470JCX	S.M.CAP	50V	47pF
C629	ECUV1H101JCX	S.M.CAP	50V	100pF
C630	ECUV1H104ZFX	S.M.CAP	50V	100nF
C631	ECUV1H104ZFX	S.M.CAP	50V	100nF
C632	ECUV1H104ZFX	S.M.CAP	50V	100nF
C633	ECUV1H102JCX	S.M.CAP	50V	1nF
C636	ECUV1H101JCX	S.M.CAP	50V	100pF
C637	ECUV1H102KBX	S.M.CAP	50V	1nF
C638	ECUV1H181JCX	S.M.CAP	50V	180pF
C639	ECUV1H561KBX	S.M.CAP	50V	560pF
C701	ECEA1HU101	ELECT	50V	100µF
C702	ECUV1H103KBX	S.M.CAP	50V	10nF
C703	ECA1HM100GB	ELECT	50V	10pF
C704	ECQB1H223K	FILM	50V	22nF
C705	ECQB1H152K	FILM	50V	1.5nF
C801	ECUV1H101JCX	S.M.CAP	50V	100pF
C802	ECQE6104K	FILM	600V	100nF
C803	ECUV1H560JX	S.M.CAP	50V	56pF
C804	ECA1HM101GB	ELECT	50V	100pF
C805	ECUV1H104ZFX	S.M.CAP	50V	100nF
C806	ECEA1HU101	ELECT	50V	100µF
C807	ECEA1EGE101	ELECT	25V	100µF
C808	ECQB1H103J	FILM	50V	10nF
C809	ECQB1H103J	FILM	50V	10nF

Ref No.	Part No.	Description		
C811	ECEA1HN010	ELECT	50V	1µF
C815	ECKC2H472J	CERAMIC	500V	4.7nF
C816	ECKC3D222JB	CERAMIC	2KV	2200pF
C817	ECQB1H223K	FILM	50V	22nF
C818	ECKC2H472J	CERAMIC	500V	4.7nF
C820	ECOS2GA151CB	ELECT	400V	150pF
C821	ECKWNA332MECC	CERAMIC	250V	3.3nF
C841	222233510224	FILM		0.22µF
C851	ECKC2H681J	CERAMIC	500V	680pF
C852	ECEA1HU102	ELECT	50V	1000µF
C853	ECEA1EGE222	ELECT	25V	2200µF
C854	ECEA1HGE102	ELECT	50V	1000µF
C855	ECKC3D471JB	CERAMIC	2KV	470pF
C856	ECEA1EGE222	ELECT	25V	2200µF
C857	ECA2CM101E	ELECT	160V	100µF
C858	ECUV1H103ZFX	S.M.CAP	50V	10nF
C859	ECUV1H103ZFX	S.M.CAP	50V	10nF
C860	ECA1CM471GB	ELECT	16V	470pF
C861	ECA2CGE221	ELECT	160V	220µF
C862	ECA1CM471GB	ELECT	16V	470pF
C1051	ECA0JM101G	ELECT	6.3V	100pF
C1052	ECUV1H104ZFX	S.M.CAP	50V	100nF
C1201	ECUV1H332KBX	S.M.CAP	50V	3.3nF
C1202	ECUV1H332KBX	S.M.CAP	50V	3.3nF
C1203	ECUV1H332KBX	S.M.CAP	50V	3.3nF
C1204	ECUV1H332KBX	S.M.CAP	50V	3.3nF
C1205	ECUV1H103ZFX	S.M.CAP	50V	10nF
C1206	ECA1HM4R7GB	ELECT	50V	4.7µF
C1207	ECUV1H472KBX	S.M.CAP	50V	4.7nF
C1208	ECUV1H390JCX	S.M.CAP	50V	39pF
C1209	ECUV1H390JCX	S.M.CAP	50V	39pF
C1210	ECUV1H103ZFX	S.M.CAP	50V	10nF
C1211	ECUV1H470JCX	S.M.CAP	50V	47pF
C1212	ECA1CM470GB	ELECT	16V	47µF
C1213	ECUV1H103ZFX	S.M.CAP	50V	10nF
C1214	ECA1CM470GB	ELECT	16V	47µF
C1215	ECUV1H103ZFX	S.M.CAP	50V	10nF
C1217	ECUV1H104ZFX	S.M.CAP	50V	100nF
C1219	ECA1CM471GB	ELECT	16V	470pF
C1220	ECUV1H103ZFX	S.M.CAP	50V	10nF
C1221	ECA0JM102GB	ELECT	6.3V	1nF
C1222	ECUV1H104ZFX	S.M.CAP	50V	100nF
C1223	ECA1HM101GB	ELECT	50V	100pF
C1224	ECA0JM222GB	ELECT	6.3V	2.2nF
C1225	ECA0JM472GE	ELECT	6.3V	4.7nF
C1226	ECA1HM101GB	ELECT	50V	100pF
C1227	ECA1VM221B	ELECT	35V	220pF
C1228	ECA1EM101GB	ELECT	25V	1µF
C2101	ECUV1H223KBX	S.M.CAP	50V	22nF
C2102	ECUV1H391KBX	S.M.CAP	50V	390pF
C2103	ECUV1H102KBX	S.M.CAP	50V	1nF
C2104	ECUV1H102KBX	S.M.CAP	50V	1nF
C2107	ECUV1H391KBX	S.M.CAP	50V	390pF
C2108	ECA1HM101GB	ELECT	50V	100pF
C2109	ECUV1H223KBX	S.M.CAP	50V	22nF
C2110	ECA1CM100GB	ELECT	16V	10pF
C2111	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2112	ECA1CM100GB	ELECT	16V	10pF
C2113	ECUV1H102KBX	S.M.CAP	50V	1nF
C2114	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2115	ECUV1H471KBX	S.M.CAP	50V	470pF
C2116	ECA1HM3R3GB	ELECT	50V	3.3µF
C2117	ECUV1H471KBX	S.M.CAP	50V	470pF
C2118	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2119	ECA1CM100GB	ELECT	16V	10pF
C2120	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2121	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2122	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2123	ECA1CM100GB	ELECT	16V	10pF
C2124	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2125	ECUV1H010CCX	S.M.CAP	50V	1pF
C2126	ECUV1H010CCX	S.M.CAP	50V	1pF

Ref No.	Part No.	Description
C2127	ECA1CM100GB	ELECT 16V 10pF
C2307	ECA1CM470GB	ELECT 16V 47µF
C2308	ECA1CM470GB	ELECT 16V 47µF
C2310	ECA1CM470GB	ELECT 16V 47µF
C2312	ECUV1H104ZFX	S.M.CAP 50V 100nF
C2313	ECUV1H103KBX	S.M.CAP 50V 10nF
C2314	ECUV1H104ZFX	S.M.CAP 50V 100nF
C2315	ECUV1H103KBX	S.M.CAP 50V 10nF
C2316	ECUV1H103ZFX	S.M.CAP 50V 10nF
C2317	ECA1CM470GB	ELECT 16V 47µF
C2318	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C2319	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C2651	ECUV1H103KBX	S.M.CAP 50V 10nF
C2652	ECUV1H103KBX	S.M.CAP 50V 10nF
C3001	ECA1HMR47GB	ELECT 50V 0.47µF
C3002	ECA1HMR47GB	ELECT 50V 0.47µF
C3003	ECA1EM4R7GB	ELECT 25V 4.7µF
C3004	ECA1HM4R7GB	ELECT 50V 4.7µF
C3005	ECA1HM4R7GB	ELECT 50V 4.7µF
C3006	ECUV1H473ZFX	S.M.CAP 50V 47nF
C3007	ECA1HM470GB	ELECT 50V 47µF
C3011	ECUV1H473ZFX	S.M.CAP 50V 47nF
C3012	ECA1CM470GB	ELECT 16V 47µF
C3013	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3014	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3017	ECEA1CN470	ELECT 16V 47µF
C3018	ECUV1H102KBX	S.M.CAP 50V 1nF
C3019	ECUV1H102KBX	S.M.CAP 50V 1nF
C3020	ECCR1H120J	CERAMIC 50V 12pF
C3021	ECUV1H102KBX	S.M.CAP 50V 1nF
C3023	ECA1CM470GB	ELECT 16V 47µF
C3024	ECUV1H473ZFX	S.M.CAP 50V 47nF
C3025	ECUV1H102KBX	S.M.CAP 50V 1nF
C3026	ECA1CM470GB	ELECT 16V 47µF
C3027	ECA1CM470GB	ELECT 16V 47µF
C3028	ECUV1H221JX	S.M.CAP 50V 220pF
C3029	ECUV1H221JX	S.M.CAP 50V 220pF
C3030	ECUV1H221JX	S.M.CAP 50V 220pF
C3031	ECUV1H221JX	S.M.CAP 50V 220pF
C3032	ECA1HMR47GB	ELECT 50V 0.47µF
C3033	ECA1HMR47GB	ELECT 50V 0.47µF
C3034	ECUV1H221JX	S.M.CAP 50V 220pF
C3035	ECUV1H221JX	S.M.CAP 50V 220pF
C3036	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3037	ECUV1H561JCX	S.M.CAP 50V 560pF
C3038	ECA1CM470GB	ELECT 16V 47µF
C3039	ECA1CM470GB	ELECT 16V 47µF
C3040	ECA1HMR47GB	ELECT 50V 0.47µF
C3041	ECA1HMR47GB	ELECT 50V 0.47µF
C3043	ECA1HM4R7GB	ELECT 50V 4.7µF
C3045	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3049	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3050	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3051	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3052	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3053	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3054	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3055	ECUV1H222KBX	S.M.CAP 50V 2.2nF
C3056	ECUV1H101JCX	S.M.CAP 50V 100pF
C3062	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3071	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3151	ECUV1H561JCX	S.M.CAP 50V 560pF
C3152	ECUV1H561JCX	S.M.CAP 50V 560pF
C3501	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3502	ECA1HM101GB	ELECT 50V 100pF
C3503	ECUV1H103ZFX	S.M.CAP 50V 10nF
C3504	ECUV1H102JCX	S.M.CAP 50V 1nF
C3505	ECUV1H104ZFX	S.M.CAP 50V 100nF
C3506	ECA1CM470GB	ELECT 16V 47µF
C3507	ECA1CM470GB	ELECT 16V 47µF
C3508	ECUV1H473ZFX	S.M.CAP 50V 47nF
C3509	ECUV1H103ZFX	S.M.CAP 50V 10nF

Ref No.	Part No.	Description
C3510	ECA0JM102GB	ELECT 6.3V 1nF
C3511	ECUV1H103ZFX	S.M.CAP 50V 10nF
DIODES		
D251	MA2180TP	DIODE
D253	RB721Q40T77	DIODE
D254	RB721Q40T77	DIODE
D310	MA165TA5	DIODE 1SS133T-77
D311	MA29TA5	DIODE
D312	MA29TA5	DIODE
D357	MA165TA5	DIODE 1SS133T-77
D358	MA165TA5	DIODE 1SS133T-77
D359	MA165TA5	DIODE 1SS133T-77
D360	MA4150	DIODE
D451	MA165TA5	DIODE 1SS133T-77
D452	MA165TA5	DIODE 1SS133T-77
D454	ERA15-02V3	DIODE
D456	MA2160BLFS	DIODE
D470	MA4020	DIODE
D501	MA165TA5	DIODE 1SS133T-77
D502	EU02	DIODE
D551	ERD07-15L7	DIODE
D552	TVSRU2AM	DIODE
D554	AU02V0	DIODE
D556	MA165TA5	DIODE 1SS133T-77
D601	MA165TA5	DIODE 1SS133T-77
D602	MA165TA5	DIODE 1SS133T-77
D604	MA165TA5	DIODE 1SS133T-77
D605	MA165TA5	DIODE 1SS133T-77
D606	MA165TA5	DIODE 1SS133T-77
D609	MA165TA5	DIODE 1SS133T-77
D701	MA165TA5	DIODE 1SS133T-77
D702	MTZJT-775.6C	DIODE
D804	ERA15-02V3	DIODE
D805	EU02	DIODE
D806	RBV4-08	DIODE
D807	EU02	DIODE
D809	MA165TA5	DIODE 1SS133T-77
D814	MA165TA5	DIODE 1SS133T-77
D851	EU02	DIODE
D852	ERD32-02L7	DIODE
D853	FML22SLF610	DIODE
D854	RU4AMLF-M1	DIODE
D855	RU4BLF-L1	DIODE
D856	MTZJT-774.7A	DIODE
D857	MTZJ33B	DIODE
D858	MA29TA5	DIODE
D1201	SLR56UR3FLF	LED
D1203	MA170	DIODE
D1205	MA165TA5	DIODE 1SS133T-77
D1207	MA165TA5	DIODE 1SS133T-77
D1208	MA165TA5	DIODE 1SS133T-77
D1209	MA165TA5	DIODE 1SS133T-77
D1211	MTZJT-775.1C	DIODE
D1212	MA170	DIODE
D1213	MA165TA5	DIODE 1SS133T-77
D1214	MA170	DIODE
D1216	MTZJT-778.2C	DIODE
D2303	MA165TA5	DIODE 1SS133T-77
D2304	MTZJT-779.1C	DIODE
D3001	MTZJT-7712C	DIODE
D3003	MTZJT-778.2C	DIODE
D3004	MA4100	DIODE
D3005	MTZJT-7712C	DIODE
D3006	MTZJT-7712C	DIODE
D3007	MTZJT-7712C	DIODE
D3008	MTZJT-778.2C	DIODE
D3009	MTZJT-778.2C	DIODE
D3010	MTZJT-778.2C	DIODE
D3011	MTZJT-778.2C	DIODE

Ref No.	Part No.	Description
D3012	MTZJT-7712C	DIODE
D3013	MTZJT-7712C	DIODE
D3014	MTZJT-7712C	DIODE
D3015	MTZJT-7712C	DIODE
D3016	MTZJT-7712C	DIODE
D3018	MA165TA5	DIODE 1SS133T-77
D3019	MA165TA5	DIODE 1SS133T-77
D3501	MA165TA5	DIODE 1SS133T-77

FUSES

F840	2153.15H	FUSE	△
F851	TR5-T1250	FUSE	△
F852	TR5-T2000	FUSE	△
F853	TR5-T2000	FUSE	△
F8401	EYF52BC	FUSE HOLDER	
F8402	EYF52BC	FUSE HOLDER	

SOCKETS

H1202 832AG11D-ESL I.C.SOCKET

TERMINALS AND LINKS

JA.1	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.11	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.12	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.14	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.15	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.16	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.17	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.18	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.19	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.2	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.20	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.21	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.22	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.24	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.25	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.27	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.28	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.29	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.3	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.30	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.4	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.5	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.6	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.7	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA.8	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA.9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA33	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA34	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA35	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA36	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB11	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB14	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB15	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB16	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB17	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB18	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB19	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JB2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description
JB20	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB21	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB22	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB23	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB24	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB25	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB26	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB27	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB28	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB29	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB3	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB30	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB31	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB32	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB33	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB34	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB35	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB36	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB37	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB38	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB39	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB40	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB41	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB42	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB43	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB44	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB45	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB46	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB47	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB48	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB49	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB50	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB51	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB52	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB53	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB54	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB55	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB56	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB57	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB58	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB59	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB6	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB61	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB62	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB63	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB64	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB65	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB66	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB67	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB68	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB69	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB7	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB70	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB71	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB72	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB73	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB74	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB75	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB77	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB79	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB8	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB80	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB81	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB9	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JK2301	TJB18644	AV TERMINAL
JK3001	TJS8E007	21PIN TERMINAL
JK3101	TJS8E007	21PIN TERMINAL
JK3102	TJB16673	AV TERMINAL
JSB1	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSB12	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSB13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSB14	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω

Ref No.	Part No.	Description
JSB2	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSB4	EXCELSA35T	COIL
JSB6	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSB7	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE011	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE012	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE013	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE014	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE015	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE016	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE031	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE032	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE036	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JSE038	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
J104	EXCELSA35T	COIL
J106	EXCELSA35T	COIL
J107	EXCELSA35T	COIL
J169	EXCELSA35T	COIL

COILS

L001	TLT100K991R	COIL
L111	TLT101K991R	COIL
L112	EXCELSA35T	COIL
L113	EXCELSA35T	COIL
L114	TLT100K991R	COIL
L130	ELESN8R2KA	COIL
L132	ELESN8R2KA	COIL
L202	TLT068K991R	COIL
L251	EXCELSA35T	COIL
L301	TLT047K991R	COIL
L302	EXCEMT101BT	COIL
L303	EXCEMT101BT	COIL
L304	EXCEMT101BT	COIL
L552	ELH5L429	COIL
L601	TLT047K991R	COIL
L602	EXCELD35V	COIL
L603	TLT047K991R	COIL
L604	EXCELD35V	COIL
L606	TLT015K991R	COIL
L607	EXCELSA35T	COIL
L701	ELC10D006	COIL
L801	EXCELSA24T	COIL
L802	TLT022K991R	COIL
L804	ELESN4R7KA	COIL
L805	298-82858002	COIL
L841	ELF18D490F	COIL
L851	EXCELD35V	COIL
L852	EXCELSA35T	COIL
L853	ELEIE470KA	COIL
L854	ELEIN470KA	COIL
L855	ELEIN470KA	COIL
L856	ELEIN470KA	COIL
L1051	TLT331K991R	COIL
L1201	TLT047K991R	COIL
L1202	TLT047K991R	COIL
L1203	TLT047K991R	COIL
L1204	EXCELD35V	COIL
L2101	TLT100K991R	COIL
L2102	TLT039K991R	COIL
L2103	EXCELSA35T	COIL
L2104	EXCELSA35T	COIL
L3151	EXCEMT101BT	COIL
L3152	EXCEMT101BT	COIL
L3153	EXCEMT101BT	COIL
L3154	EXCEMT101BT	COIL
L3155	ELEBT6R8KA	COIL
L3156	ELEBT6R8KA	COIL
L3158	EXCELSA39V	COIL
L3501	EXCELD35V	COIL
L3502	EXCELD35V	COIL

Ref No.	Part No.	Description
L3503	ELESN4R7KA	COIL
L3504	EXCELSA35T	COIL

TRANSISTORS

Q201	BC847B	TRANSISTOR OR 2SD601ATX
Q202	BC847B	TRANSISTOR OR 2SD601ATX
Q251	2SD1328STX	TRANSISTOR
Q252	2SD1328STX	TRANSISTOR
Q301	BC857B	TRANSISTOR OR 2SB709ATX
Q302	BC847B	TRANSISTOR OR 2SD601ATX
Q303	BC857B	TRANSISTOR OR 2SB709ATX
Q304	BC847B	TRANSISTOR OR 2SD601ATX
Q305	BC857B	TRANSISTOR OR 2SB709ATX
Q306	BC847B	TRANSISTOR OR 2SD601ATX
Q307	BC847B	TRANSISTOR OR 2SD601ATX
Q308	BC847B	TRANSISTOR OR 2SD601ATX
Q309	BC847B	TRANSISTOR OR 2SD601ATX
Q310	BC847B	TRANSISTOR OR 2SD601ATX
Q311	BC847B	TRANSISTOR OR 2SD601ATX
Q351	2SA1767	TRANSISTOR
Q352	2SA1767	TRANSISTOR
Q353	2SA1767	TRANSISTOR
Q451	BC847B	TRANSISTOR OR 2SD601ATX
Q501	BC847B	TRANSISTOR OR 2SD601ATX
Q502	BC847B	TRANSISTOR OR 2SD601ATX
Q503	2SD836-AL	TRANSISTOR
Q504	BC847B	TRANSISTOR OR 2SD601ATX
Q551	BU2506DXLB	TRANSISTOR
Q552	2SC1473-RN	TRANSISTOR
Q701	BC857B	TRANSISTOR OR 2SB709ATX
Q802	S2000NLBMA	TRANSISTOR
Q851	2SD1273PLB	TRANSISTOR OR 2SD2396/JM3
Q852	TFD312SOF632	DIODE
Q1202	BC847B	TRANSISTOR OR 2SD601ATX
Q1205	BC847B	TRANSISTOR OR 2SD601ATX
Q1206	BC847B	TRANSISTOR OR 2SD601ATX
Q1207	BC847B	TRANSISTOR OR 2SD601ATX
Q1208	BC857B	TRANSISTOR OR 2SB709ATX
Q1211	BC547B	TRANSISTOR
Q1212	BC847B	TRANSISTOR OR 2SD601ATX
Q1213	BC847B	TRANSISTOR OR 2SD601ATX
Q2101	BC860B	TRANSISTOR
Q2102	BC860B	TRANSISTOR
Q2301	BC857B	TRANSISTOR OR 2SB709ATX
Q2302	BC857B	TRANSISTOR OR 2SB709ATX
Q2305	2SD1328STX	TRANSISTOR
Q2306	2SD1328STX	TRANSISTOR
Q2307	BC860B	TRANSISTOR
Q2308	BC857B	TRANSISTOR OR 2SB709ATX
Q2309	BC860B	TRANSISTOR
Q2310	BC860B	TRANSISTOR
Q3001	2SC1318-S	TRANSISTOR
Q3004	BC847B	TRANSISTOR OR 2SD601ATX
Q3005	BC847B	TRANSISTOR OR 2SD601ATX
Q3006	2SC1318-S	TRANSISTOR
Q3011	BC857B	TRANSISTOR OR 2SB709ATX
Q3012	2SD1328STX	TRANSISTOR
Q3013	2SD1328STX	TRANSISTOR

RESISTOR

RL1201	TSE1885-1	RELAY
R.604	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R.622	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R130	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R131	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R132	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R133	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R134	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω

Ref No.	Part No.	Description			
R136	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R201	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R203	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R204	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R205	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R206	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω
R207	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R208	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R209	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R210	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R251	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R252	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7Ω
R253	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R254	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R255	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R256	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R257	ERJ6GEYJ2R2	SM.CARBO.125W		5%	2R2Ω
R258	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7Ω
R259	ERJ6GEYJ2R2	SM.CARBO.125W		5%	2R2Ω
R260	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R261	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R262	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R265	ERD25TJ2R2	CARBON	0.25W	5%	2R2Ω
R266	ERD25TJ2R2	CARBON	0.25W	5%	2R2Ω
R267	ERF7ZK4R7	WOUND	7W	10%	4R7Ω Δ
R271	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R272	ERF7ZK5R6	WOUND	7W	10%	5R6Ω Δ
R273	ERD25TJ273	CARBON	0.25W	5%	27KΩ
R301	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R302	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R303	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R305	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R306	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R307	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R308	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R309	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R310	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R311	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R312	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R313	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R314	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R315	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R316	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R321	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R322	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R323	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R324	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R351	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R352	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R353	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R354	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R355	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R356	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R357	ERG1FJ563	METAL	1W	5%	56KΩ Δ
R358	ERG2FJ563	METAL	2W	5%	56KΩ Δ
R359	ERG1FJ563	METAL	1W	5%	56KΩ Δ
R363	ERDS1TJ103	CARBON	0.5W	5%	10KΩ
R364	ERDS1TJ103	CARBON	0.5W	5%	10KΩ
R365	ERDS1TJ103	CARBON	0.5W	5%	10KΩ
R366	ERDS1TJ392	CARBON	0.5W	5%	3K9Ω
R367	ERDS1TJ392	CARBON	0.5W	5%	3K9Ω
R368	ERDS1TJ392	CARBON	0.5W	5%	3K9Ω
R369	ERD25TJ223	CARBON	0.25W	5%	22KΩ
R370	ERD25TJ103	CARBON	0.25W	5%	10KΩ
R372	ERQ12AJ121	FUSIBLE	0.5W	5%	120Ω Δ
R373	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22Ω
R374	ERDS1TJ274	CARBON	0.5W	5%	270KΩ
R375	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680KΩ
R376	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ
R377	ERQ12HJ1R2	METAL	0.5W	5%	1R2Ω Δ
R378	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description			
R379	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R380	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R451	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R452	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R453	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R455	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R456	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R457	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R458	ERD25TJ1R5	CARBON	0.25W	5%	1R5Ω
R459	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω
R460	ERJ6GEYJ513	S.M.CARB	0.1W	5%	51KΩ
R461	ERDS1TJ471	CARBON	0.5W	5%	470Ω
R462	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R463	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R464	ERW12PK1R5	WIRE	12W	10%	1R5Ω
R465	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R466	ERO25CKF1801	METAL	0.25W	1%	1K8Ω Δ
R467	ERO25CKF1201	METAL	0.25W	1%	1K2Ω Δ
R470	ERD25TJ512	CARBON	0.25W	5%	5K1Ω
R471	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω
R472	ERDS1TJ4R7	CARBON	0.5W	5%	4R7Ω
R501	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω
R502	ERJ6GEYJ560	S.M.CARB	0.1W	5%	56Ω
R503	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R504	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R506	ERD25TJ560	CARBON	0.25W	5%	56Ω
R507	ERQ14AJW3R3	FUSIBLE	0.25W	5%	3R3Ω Δ
R509	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω
R510	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω
R511	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R512	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R513	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R514	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R551	ERW2PKR47	WIREWOUND2W		10%	0R47Ω Δ
R553	ERG1SJ152	METAL	1W	5%	1K5Ω
R558	ERDS1TJ124	CARBON	0.5W	5%	120KΩ
R561	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R562	ERJ6GEYJ225	SM.CARBO.125W		5%	2.2MΩ
R563	ERJ6GEYJ225	SM.CARBO.125W		5%	2.2MΩ
R564	ERJ6GEYJ623	SM.CARBO.125W		5%	62KΩ
R566	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R567	ERJ6GEYJ274	S.M.CARB	0.1W	5%	270KΩ
R601	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω
R602	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω
R603	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R605	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ
R606	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R607	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R608	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R609	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R610	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R611	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R612	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R613	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R614	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω
R615	ERJ6GEYJ333	S.M.CARB	0.1W	5%	33KΩ
R616	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R618	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω
R619	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R623	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω
R701	ERQ12AJ101	FUSIBLE	0.5W	5%	100Ω Δ
R702	ERQ12HJ220	METAL	0.5W	5%	22Ω Δ
R703	ERG2FJ821	METAL	2W	5%	820Ω Δ
R704	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R705	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R706	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7Ω
R707	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2Ω
R708	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ
R709	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ
R710	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R711	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω
R712	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω

Ref No.	Part No.	Description				
R713	ERG1SJ101	METAL	1W	5%	100Ω	
R801	ERG3FJ682H	METAL	3W	5%	6K8Ω	△
R802	ERG2FJ472	METAL	2W	5%	4K7Ω	△
R803	ERX12SJWR47	METAL	12W	5%	R47Ω	
R804	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R805	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R807	ERO25CKF1201	METAL	0.25W	1%	1K2Ω	△
R808	232266296319	THERMISTOR				
R809	ERO25CKF1302	METAL	0.25W	1%	13KΩ	△
R810	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R811	EVMEASA00B33	CONTROL			3KΩ	
R812	ERDS1TJ220	CARBON	0.5W	5%	22Ω	
R813	ERD50FJ274	CARBON	0.5W	5%	270KΩ	
R814	ERF7ZK2R7	WOUND	7W	20%	2R7Ω	△
R815	ERDS1TJ563	CARBON	0.5W	5%	56KΩ	
R817	ERG3FJ470	METAL	3W	5%	47Ω	△
R818	ERD50FJ104	CARBON	0.5W	5%	100KΩ	
R819	ERD50FJ184	CARBON	0.5W	5%	180KΩ	
R820	ERD75TAJ825	CARBON	0.75W	5%	8M2Ω	△
R841	ERC12ZGK335D	SOLID	0.5W	10%	3M3Ω	
R852	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R853	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R854	ERDS1TJ474	CARBON	0.5W	5%	470KΩ	
R855	ERG2FJ223	METAL	2W	5%	22KΩ	△
R856	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R1201	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R1202	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1203	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1204	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1205	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1206	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1208	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R1209	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1210	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1212	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1213	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1214	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1215	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1216	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1217	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1218	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1219	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1220	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1221	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1222	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1224	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1225	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1226	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1227	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1229	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R1230	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R1231	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1232	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1233	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1235	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1236	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1237	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1238	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R1239	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω	
R1240	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω	
R1241	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1242	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1244	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R1245	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R1246	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1247	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1249	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1250	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1251	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R1252	ERX1SJ3R3	METAL	1W	5%	3R3Ω	
R1253	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1254	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	


Ref No.	Part No.	Description				
R1255	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R1256	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R1257	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1258	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1260	ERDS1FJ121	CARBON	0.5W	5%	120Ω	△
R1261	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω	
R1262	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R1263	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R1264	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R1265	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R1266	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R1277	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R2101	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2102	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2103	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2104	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2105	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2106	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R2107	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2108	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2109	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2110	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2111	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R2301	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2302	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2303	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2313	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2314	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2315	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R2316	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2318	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2321	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2322	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2323	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2324	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2325	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R2326	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2327	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2328	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R2329	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2330	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2331	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R2332	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2333	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2334	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R2335	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R2651	ERG2FJ221	METAL	2W	5%	220Ω	△
R2652	ERG2FJ221	METAL	2W	5%	220Ω	△
R2653	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R2654	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R3001	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3002	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3003	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3004	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3005	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R3006	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R3007	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3008	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R3009	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R3010	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560Ω	
R3011	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3012	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3013	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560Ω	
R3014	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R3015	ERJ6GEYOR00	S.M.CARB	0.1W	5%	0Ω	
R3016	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3017	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R3019	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3020	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3022	ERD2FCG560	CARBON	2W	2%	56Ω	
R3024	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	

Ref No.	Part No.	Description
R3025	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3026	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3027	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3029	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3030	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3032	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3034	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3036	ERJ6GEYJ220	S.M.CARB 0.1W 5% 22Ω
R3037	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3038	ERD2FCG100	CARB 2W 2% 10Ω
R3039	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3040	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3041	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3042	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R3043	ERD2FCG100	CARB 2W 2% 10Ω
R3044	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3045	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3046	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3047	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3048	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3049	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3050	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3051	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3052	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3053	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3054	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3055	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3056	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3057	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3058	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3059	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3060	ERJ6GEYJ470	S.M.CARB 0.1W 5% 47Ω
R3062	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3063	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3064	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3065	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R3066	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R3067	ERJ6GEYJ273	S.M.CARB 0.1W 5% 27KΩ
R3068	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3069	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3070	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3071	ERJ6GEYJ470	S.M.CARB 0.1W 5% 47Ω
R3150	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω

Ref No.	Part No.	Description
R3151	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3152	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3153	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3154	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R3155	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3156	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3157	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R3158	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3502	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3504	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3505	ERJ6GEYOR00	S.M.CARB 0.1W 5% 0Ω
R3508	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R3511	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3512	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
SWITCHES		
S351	0330550049	CRT SOCKET
S801	ESB91232A	SWITCH ▲
S1201	EVQ23405R	SWITCH
S1202	EVQ23405R	SWITCH
S1203	EVQ23405R	SWITCH
S1204	EVQ23405R	SWITCH
S1205	EVQ23405R	SWITCH
TRANSFORMERS		
T501	5270103200	TRANSFORMER
T551	ZTFH44010A	F.B.T. ▲
T801	TLP8E1003	CHOPPER TRANSFORMER ▲
T1201	ETP35KAN61ZU	TRANSFORMER
FILTERS		
X601	TSS2169-B	CRYSTAL
X1201	TSS120M2	CRYSTAL
X2101	4730007158	CRYSTAL

SCHEMATIC DIAGRAM FOR MODELS TX-21AD2/M (EURO-2 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.

Notes

1. RESISTOR
All resistors are carbon 1/4W resistor, unless marked.
Unit of resistance is OHM (Ω) (K=1,000, M=1,000,000).
2. CAPACITOR
All capacitors are ceramic 50V capacitors, unless marked, the unit of capacitance is μ F unless otherwise stated.
3. COIL
Unit of inductance is μ 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.

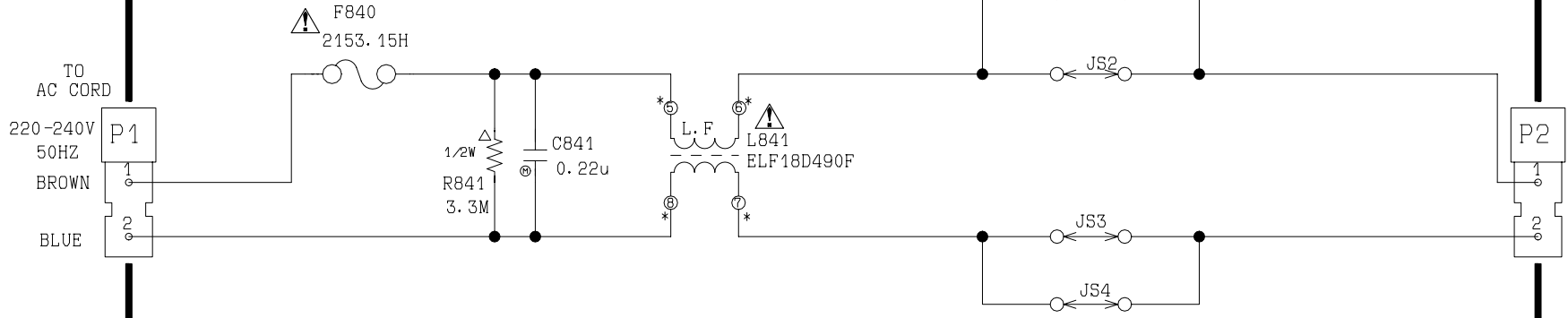
Precautions

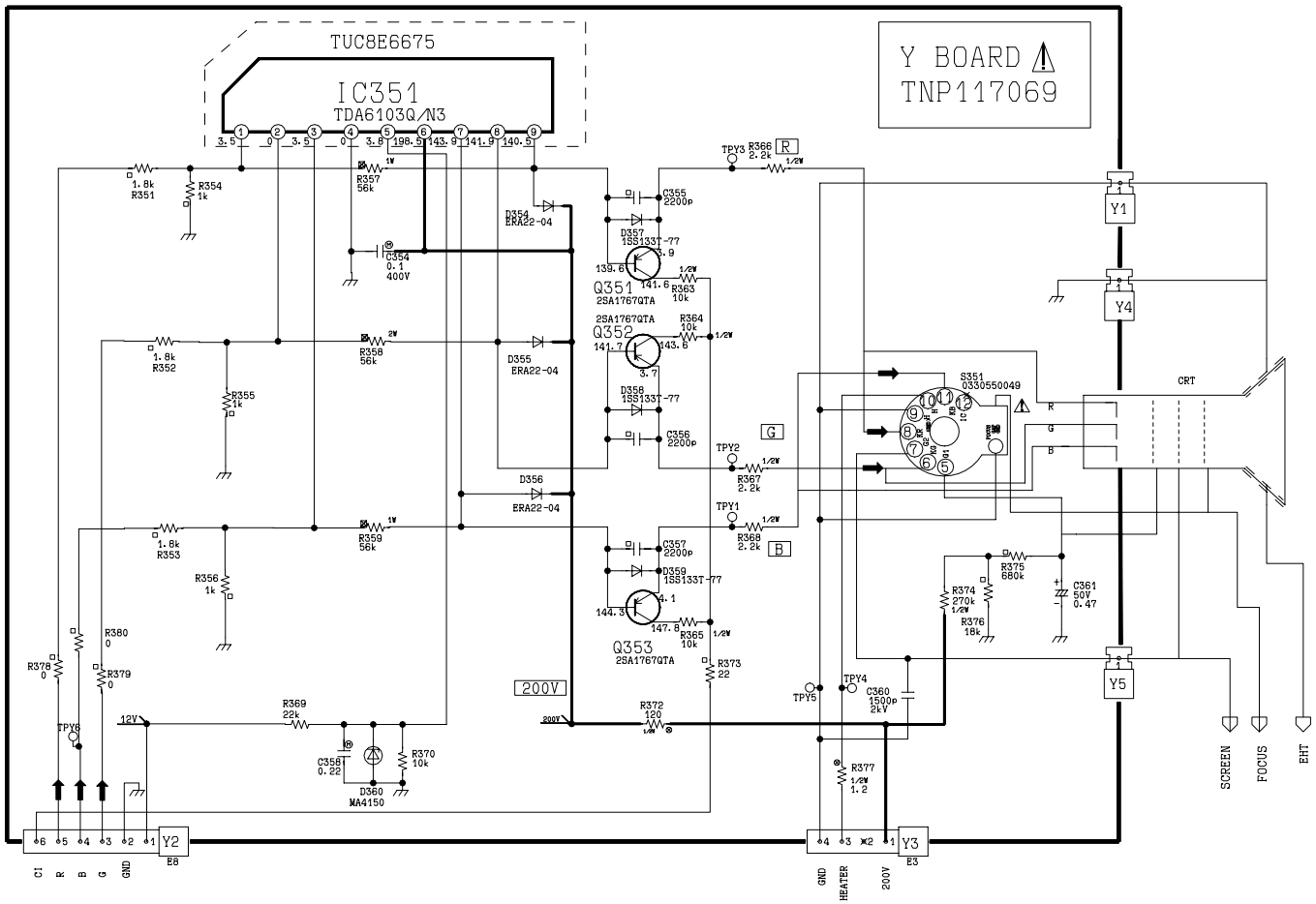
- a. Do not touch the hot part, or the hot and cold parts at the same time, as you are liable to a shock hazard.
- b. Do not short-circuit the hot and cold circuits as electrical components may be damaged.
- c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously, 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.

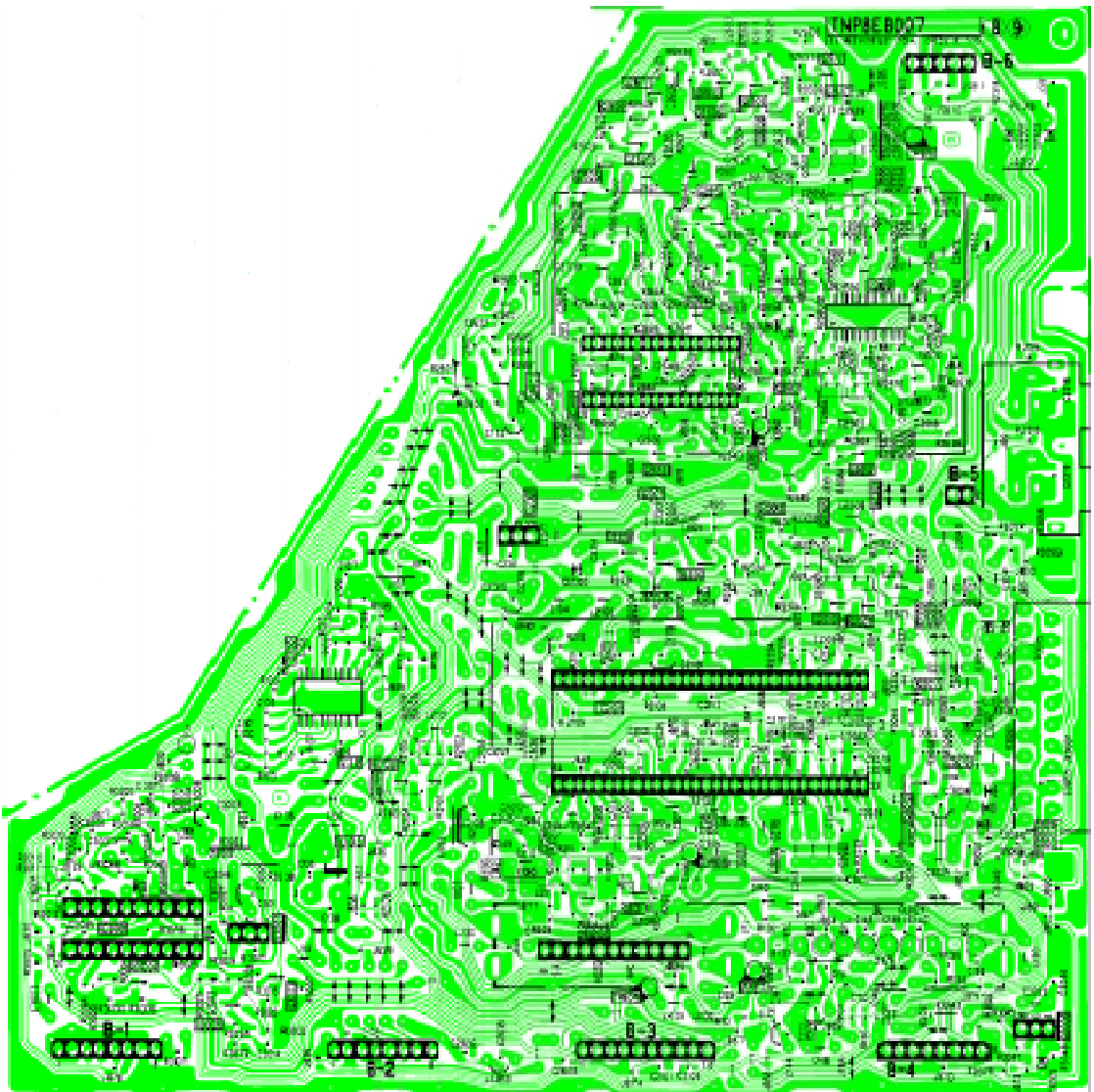
Remarks

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection. The circuit is defined by HOT and COLD indications in the schematic diagram. All circuits, except the Power Circuit, are COLD.

P BOARD ⚠
TNP8EP013







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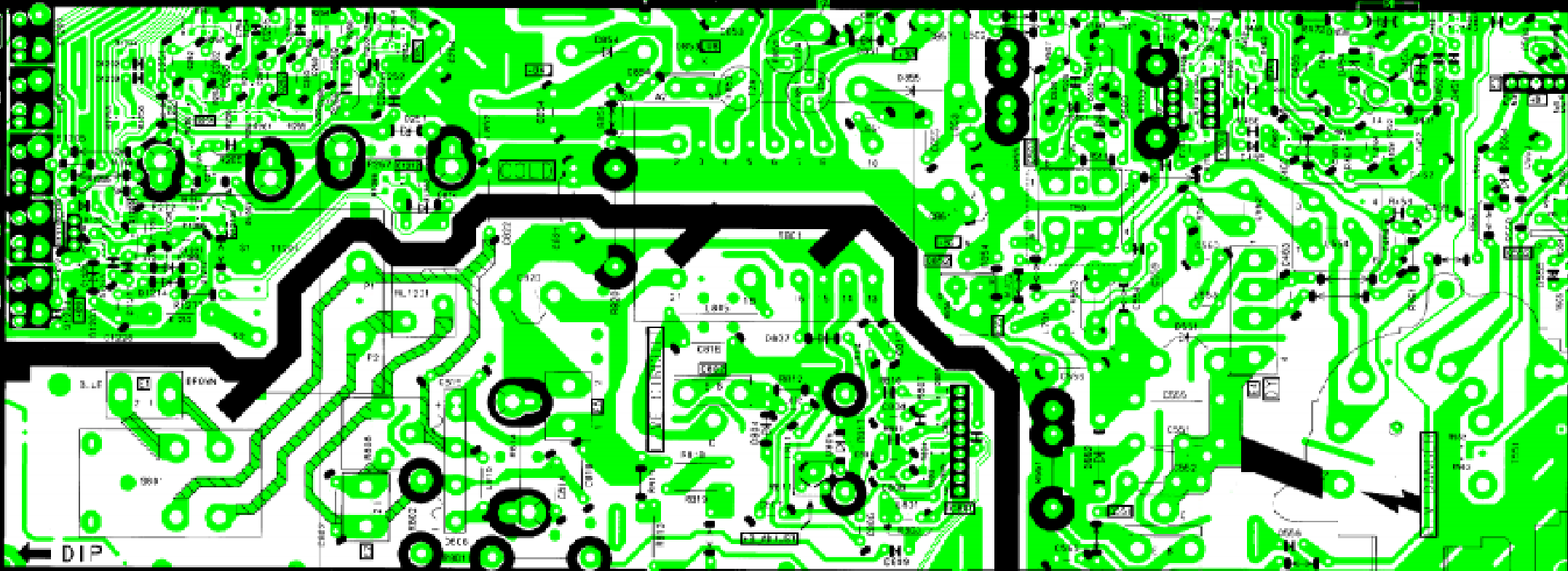
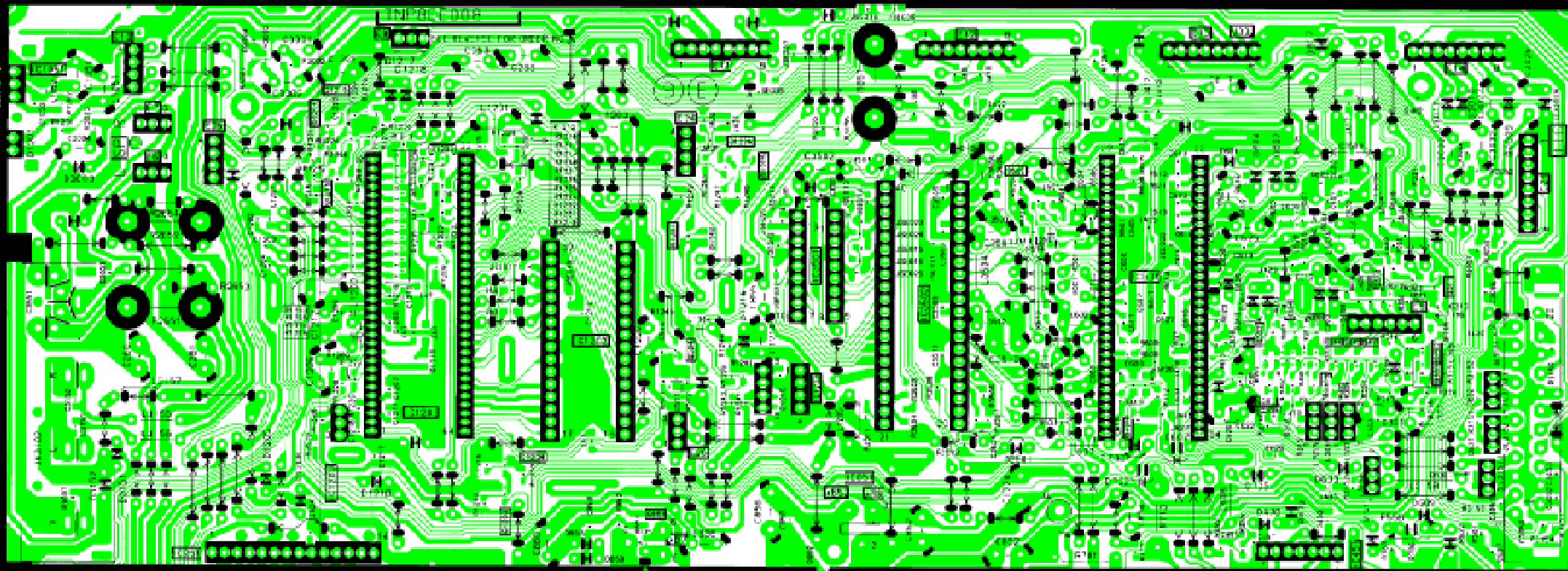
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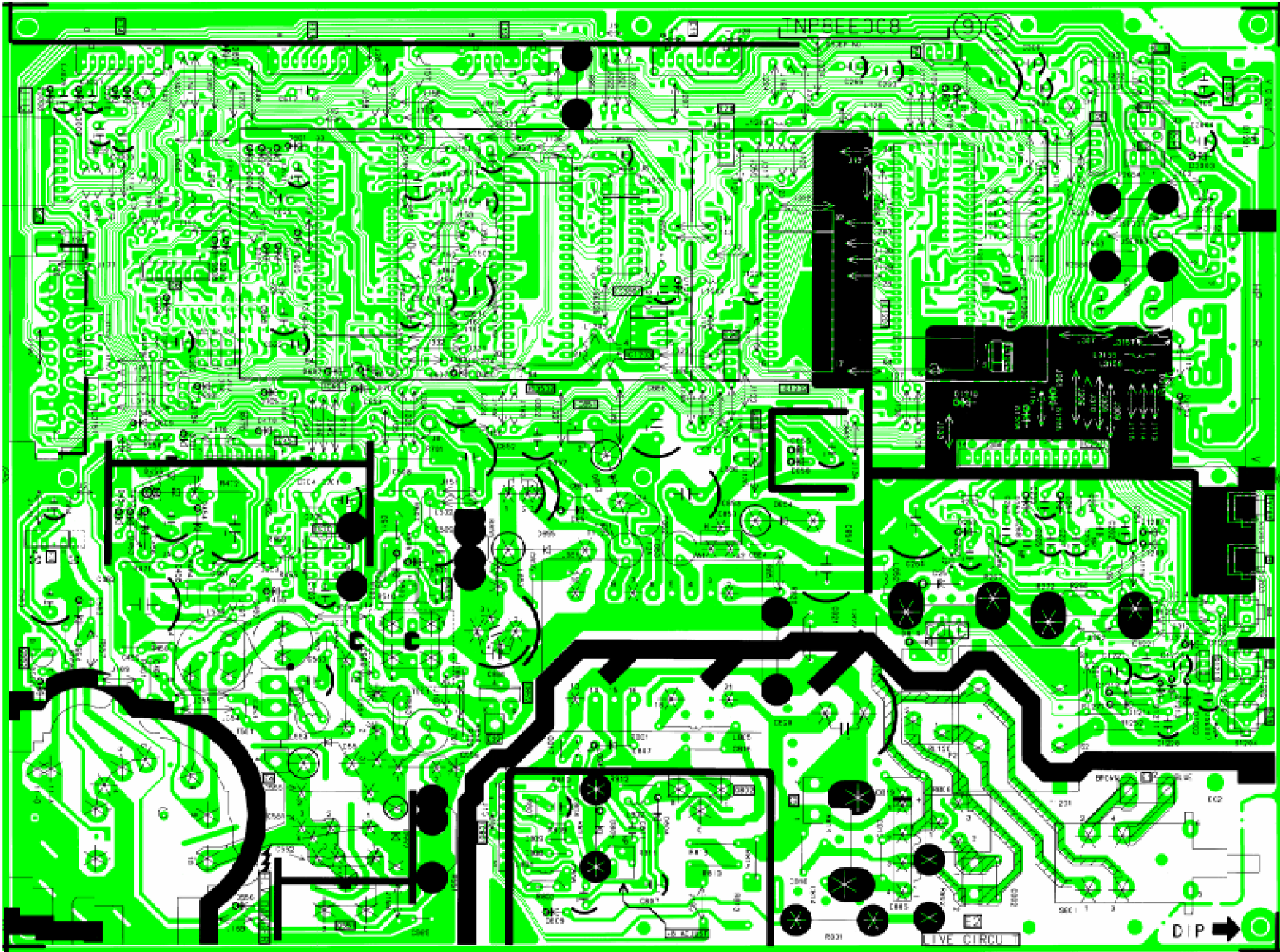
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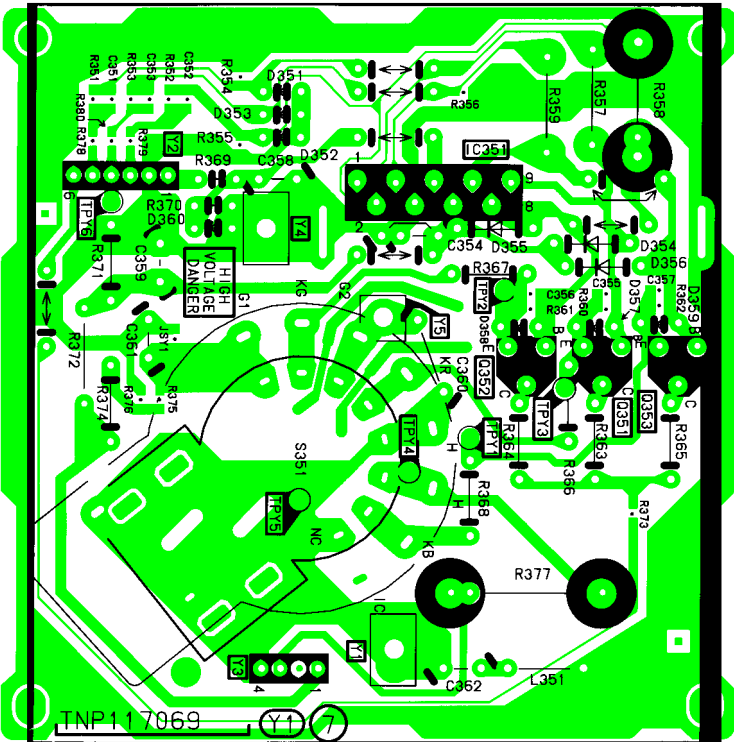


INP5EE3C8

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LIVE CIRCU

DIP →



INP117069

(Y1) (7)

HIGH
VOLTAGE
DANGER