

Service Manual



Colour Television

TX-21JTP3

Z7 Chassis

SPECIFICATION

Power Source:	220-240V a.c., 50Hz	AV1 OUT	Video (21 pin) 1V p-p 75Ω Audio (21 pin) 500mV rms 1kΩ
Power Consumption:	80W	RCA IN	Video 1V p-p 75Ω
Stand-by Power Consumption:	1,1W	RCA IN	Audio 500mV rms 10kΩ
Aerial Impedance:	75Ω unbalanced, Coaxial Type	High Voltage:	26,7kV ±1kV
Receiving System:	PAL B/G, D/K, PAL-60 SECAM B/G, D/K	Picture Tube:	A51EAL155X13 51cm
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) VHF R1-R2 VHF R3-R5 VHF R6-R12	Audio Output:	2 x 3,5W (M.P.O.) 2 x 2,5W (R.M.S.) 4Ω Impedance
Intermediate Frequency:		Headphones:	8Ω Impedance
Video/Audio		Accessories supplied :	Remote Control 2 x R6 (UM3) Batteries
Video	38,9 MHz	Dimensions:	
Audio	33,4 MHz, 32,4 MHz	Height:	476mm
Colour	34,47 MHz(PAL) 34,5 MHz(SECAM) 34,65 MHz(SECAM)	Width:	512mm
		Depth:	470mm
Terminals:		Net weight:	20,6kg
AV1 IN	Video (21 pin) 1V p-p 75Ω Audio (21 pin) 500mVrms 10kΩ RGB (21 pin)	Specifications are subject to change without notice. Weights and dimensions shown are approximate.	
		NOTE: This Service Manual should be used in conjunction with the Z7 Technical guide.	

CONTENTS

SAFETY PRECAUTIONS.....	2
SERVICE HINTS.....	3
ADJUSTMENT PROCEDURE AND FACTORY SETTINGS	4
WAVEFORM PATTERN TABLE	5
ALIGNMENT SETTINGS.....	6
BLOCK DIAGRAMS	7
PARTS LOCATION	10
REPLACEMENT PARTS LIST	11
SCHEMATIC DIAGRAMS	17
CONDUCTOR VIEWS.....	19

SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the a.c. supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts that have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the a.c. outlet.
5. Potentials as high as 27,7kV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

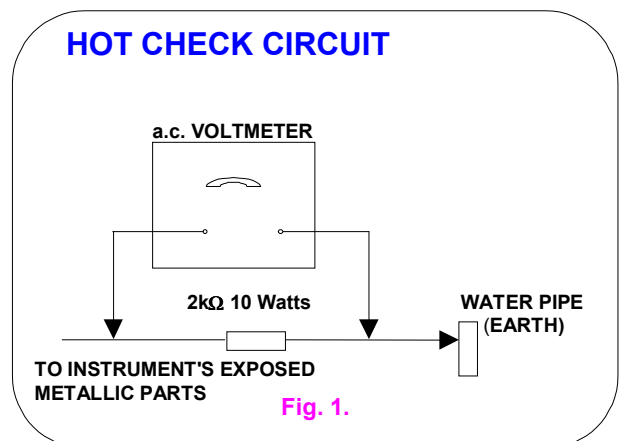
LEAKAGE CURRENT COLD CHECK

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

LEAKAGE CURRENT HOT CHECK

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

5. Reverse the a.c. plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1,4Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.



X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that the jig is capable of handling 27,7kV without causing X-Radiation.

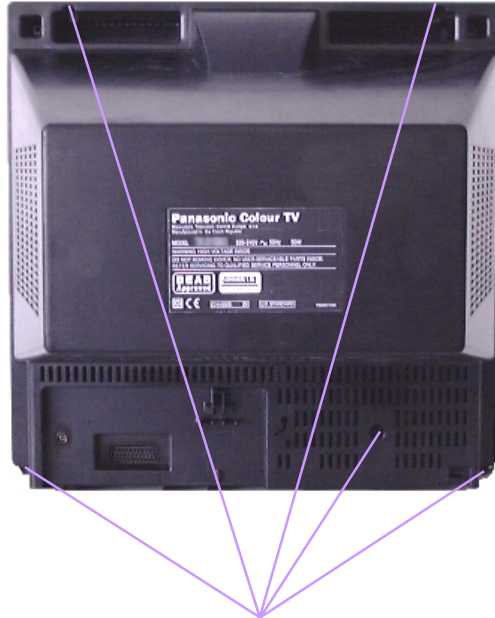
NOTE: It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate 26,7kV \pm 1kV.
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

SERVICE HINTS

How to remove the rear cover

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



Screws

Fig.2.

LOCATION OF CONTROLS

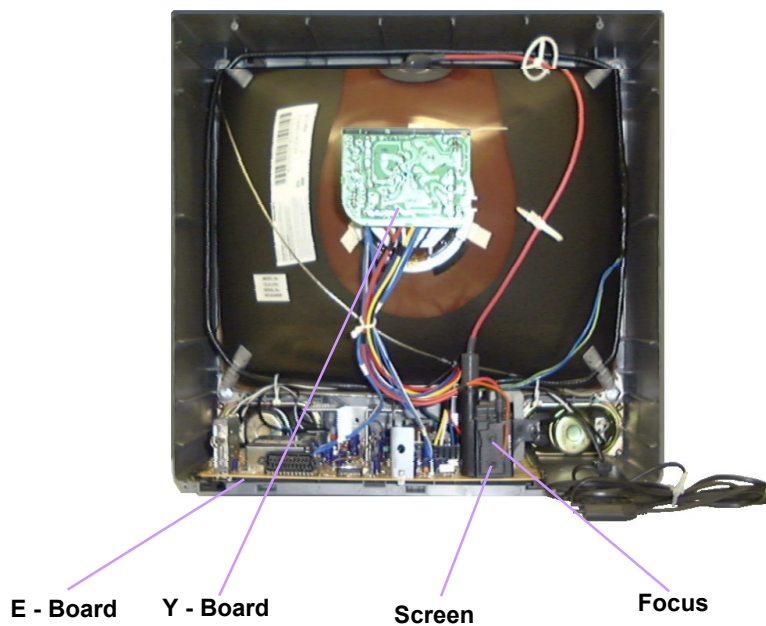



Fig.3.

ADJUSTMENT PROCEDURE

Item / Preparation	Adjustments
+B SET-UP 1. Operate the TV set, pattern crosshatch. 2. Set the controls :	Confirm the following voltages.
Brightness Minimum	TPE1 10 ± 1V TPE10 191 ± 10V
Contrast Minimum	TPE2 5,2 ± 0,3V TPE11 -13,2 ± 1V
Volume Minimum	TPE3 13 ± 1V TPE12 13,2 ± 1,5V
	TPE4 21,5 ± 1,5V TPE13 125 ± 1,5V
	TPE5 5 ± 0,3V TPE14 7,9 ± 1V
	TPE6 9 ± 1V TPE18 8,2 ± 1V
	TPE9 30,4 ± 2,5V TPE19 31 ± 1V

FACTORY SETTINGS

To return customer settings to factory settings and clear owner ID of all information input by the customer, enter Self-Check mode. Press the down (**-V**) button on the customer controls at the front of the TV set, at the same time pressing the **STATUS** button  on the remote control. To exit Self Check, switch off the TV set at the power button.

NOTE: Self Check should only be used when refurbishing the TV set and not during normal repair work.

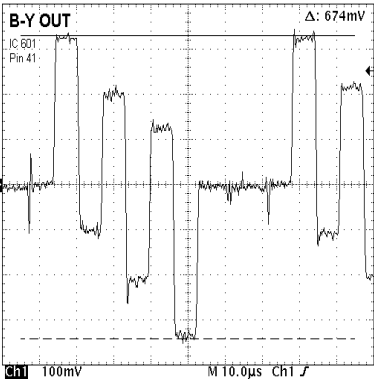
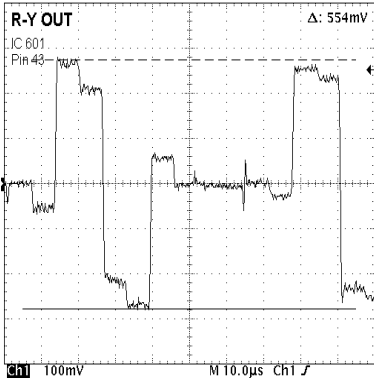
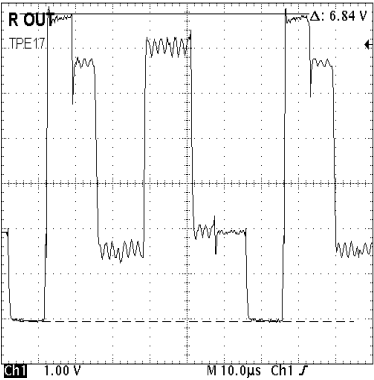
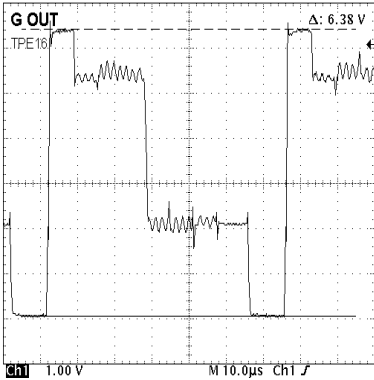
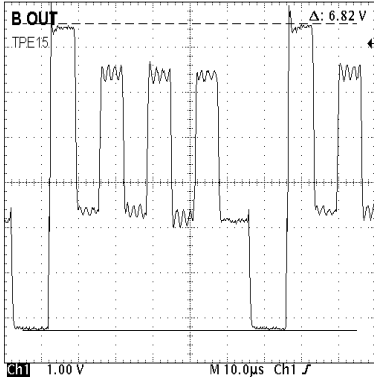
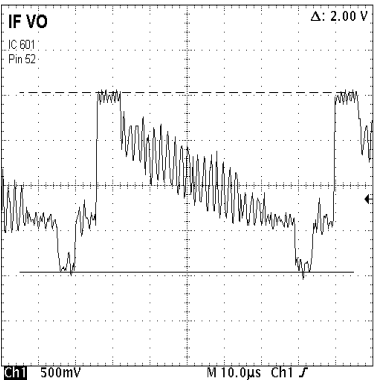
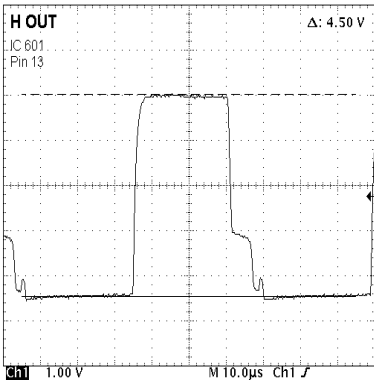
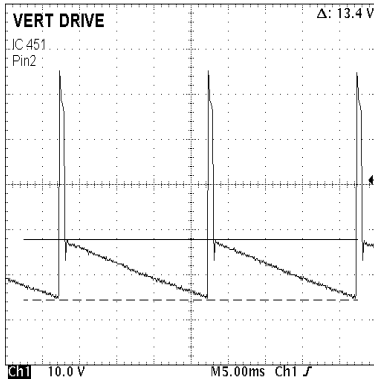
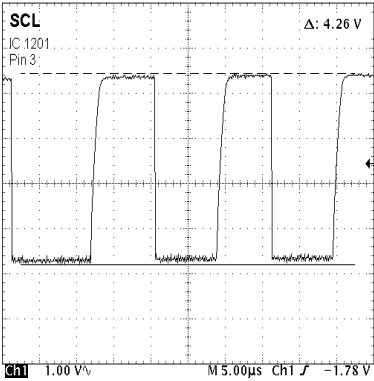
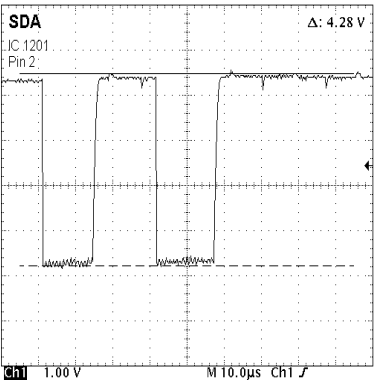
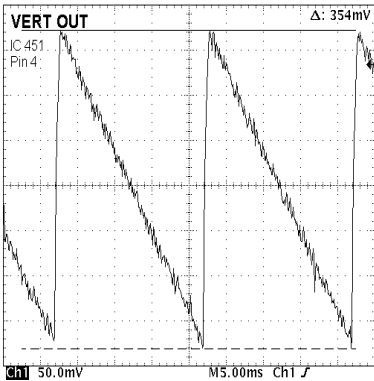
OPTION F7

Service Aids

To aid in the service of our current chassis there are a number of Service Aids which have been made available.

- **LUCI** interface kit (Linked Utility Computer Interface)
Part number: TZS6EZ002
This contains interface and cables for connecting TV service connector and a PC as well as diagnostic software. As new models are introduced upgrade software will become available.
- **VICI** (Visual Interactive Computer Information)
These C.D.'s contain multimedia documentation providing quick access to service information.
Part No. TZS7EZ006, TZS7EZ005, TZS8EZ001& TZS9EZ001
 1. Service Manuals
 2. Instruction Books
 3. Technical Information
- **TASMIN** (Technically Advanced System for Multimedia Interactive Notes)
As well as providing a first step towards more interactive training this product also achieves quick access to Technical Information.

WAVEFORM PATTERN TABLE



CONDITIONS:

Contrast: MAX
Brightness: MID
Colour: MID
CATS: OFF
Sharpness: MID

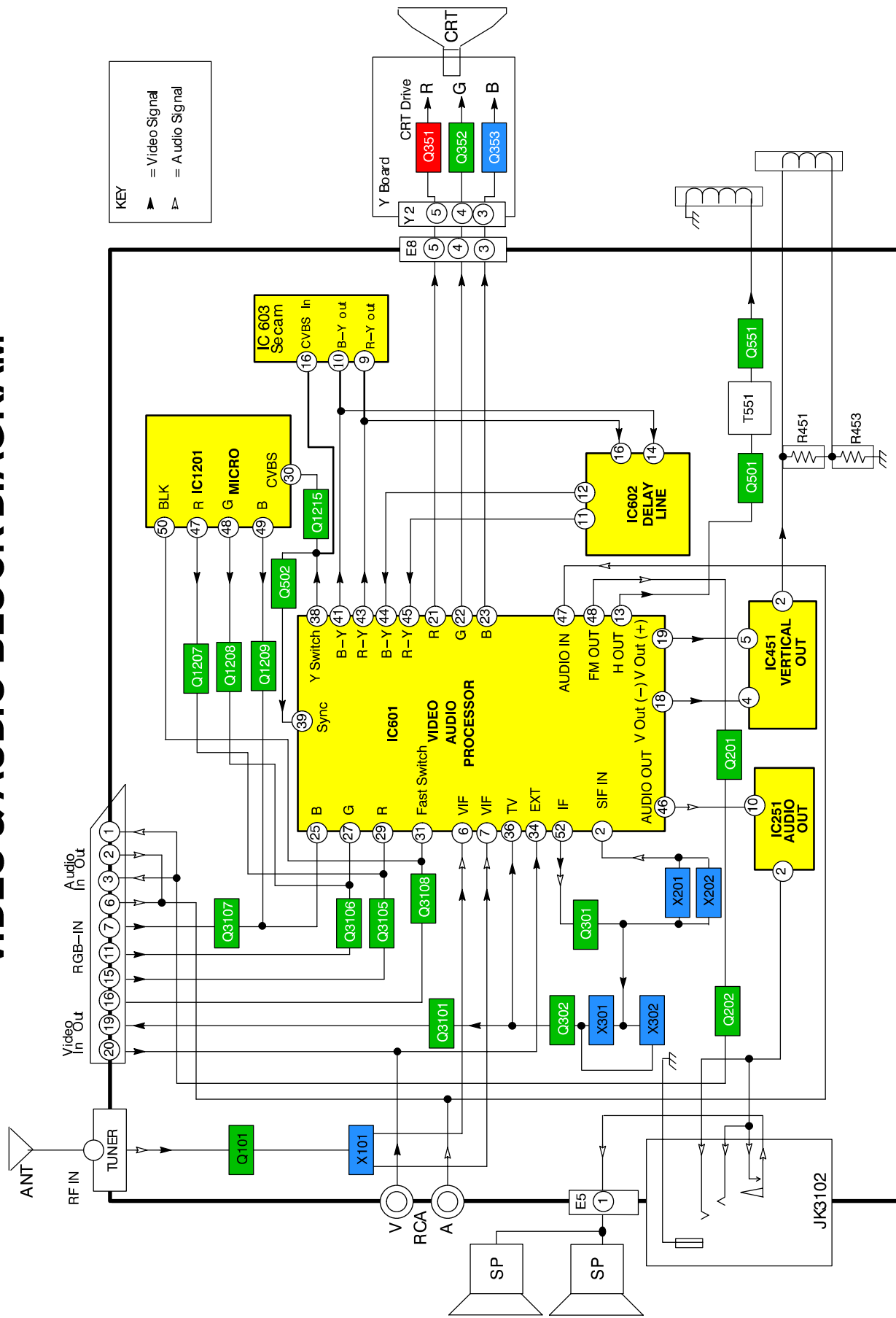
ALIGNMENT SETTINGS

1. Select program position 60 and set the sharpness to minimum.
1. Press the **Off Timer** button on the remote control and at the same time press the **▼** (down) button on the customer controls at the front of the TV, this will place the TV into Service Mode.
3. Press the **▲ / ▼** 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 Normalization button.

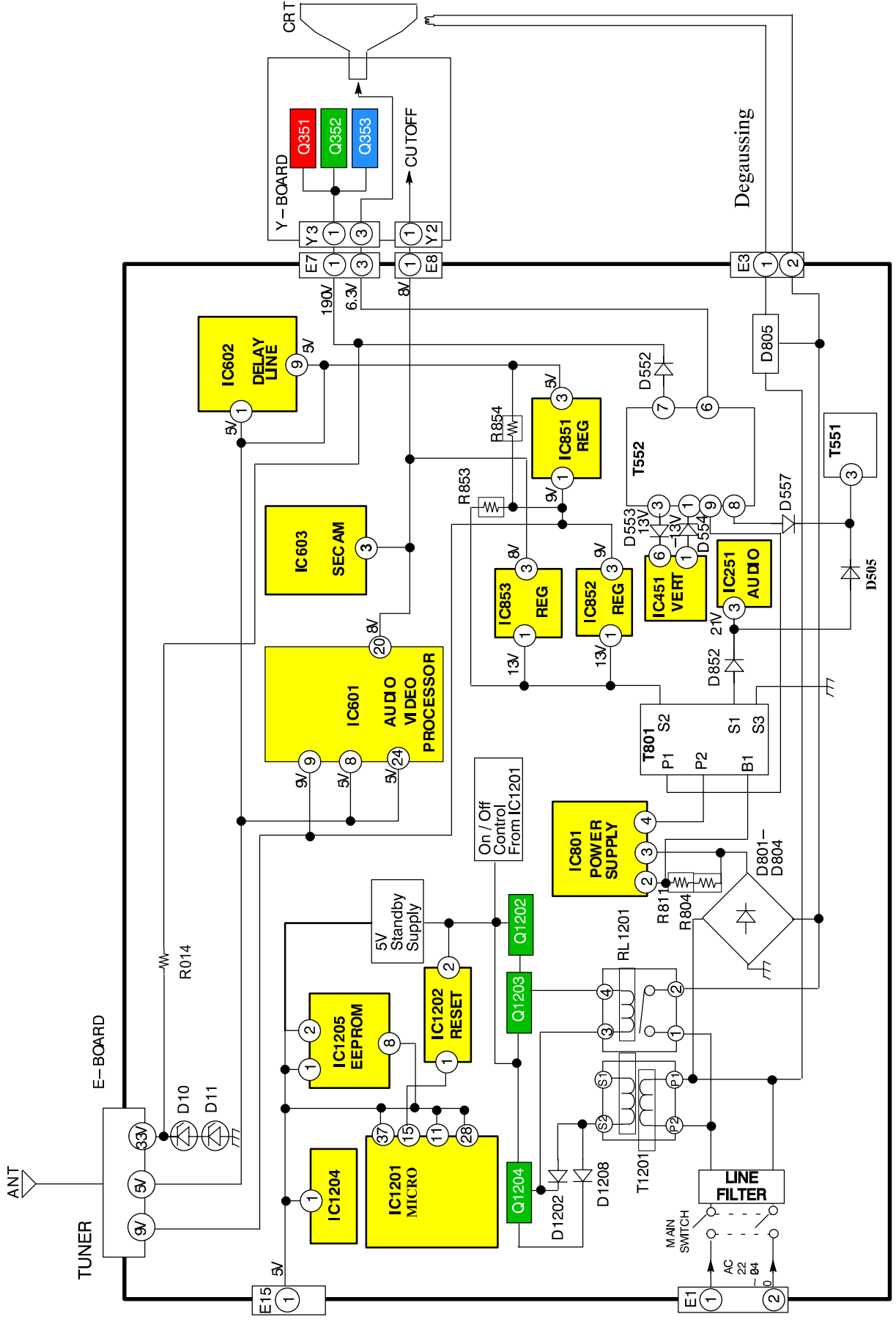
NOTE : The figures used below are nominal and used for representative purposes only.

Alignment Function	Setting indication Note: All setting values are approximate	Settings / Special features
1. Vertical amplitude	V-Amp 31	Optimum setting
2. Vertical position	V-Pos 22	Optimum setting
3. Horizontal centre	H-Ctr 07	Optimum setting.
4. Red cutoff	R-Cut 148	Optimum setting.
5. Green cutoff	G-Cut 146	Optimum setting.
6. Blue cutoff	B-Cut 163	Optimum setting.
7. Red drive	R-Drv 37	Optimum setting.
8. Blue drive	B-Drv 25	Optimum setting.
9. AGC	AGC 29	Optimum setting.
10. Sub contrast	S-Con 26	Optimum setting.
11. Sub colour	S-Col 49	Optimum setting.
12. Sub bright	S-Bri 43	Optimum setting.

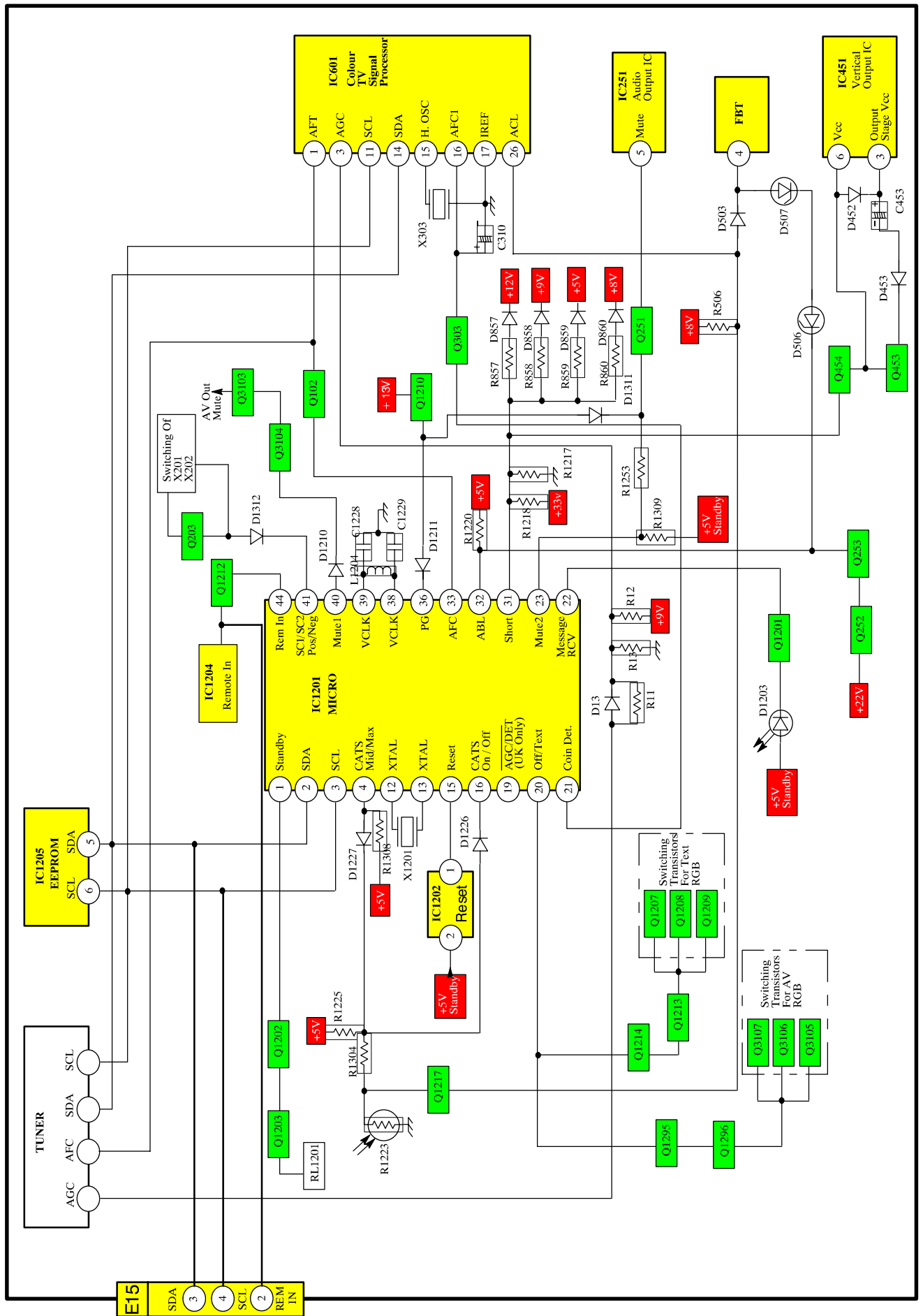
VIDEO & AUDIO BLOCK DIAGRAM



POWER SUPPLY BLOCK DIAGRAM



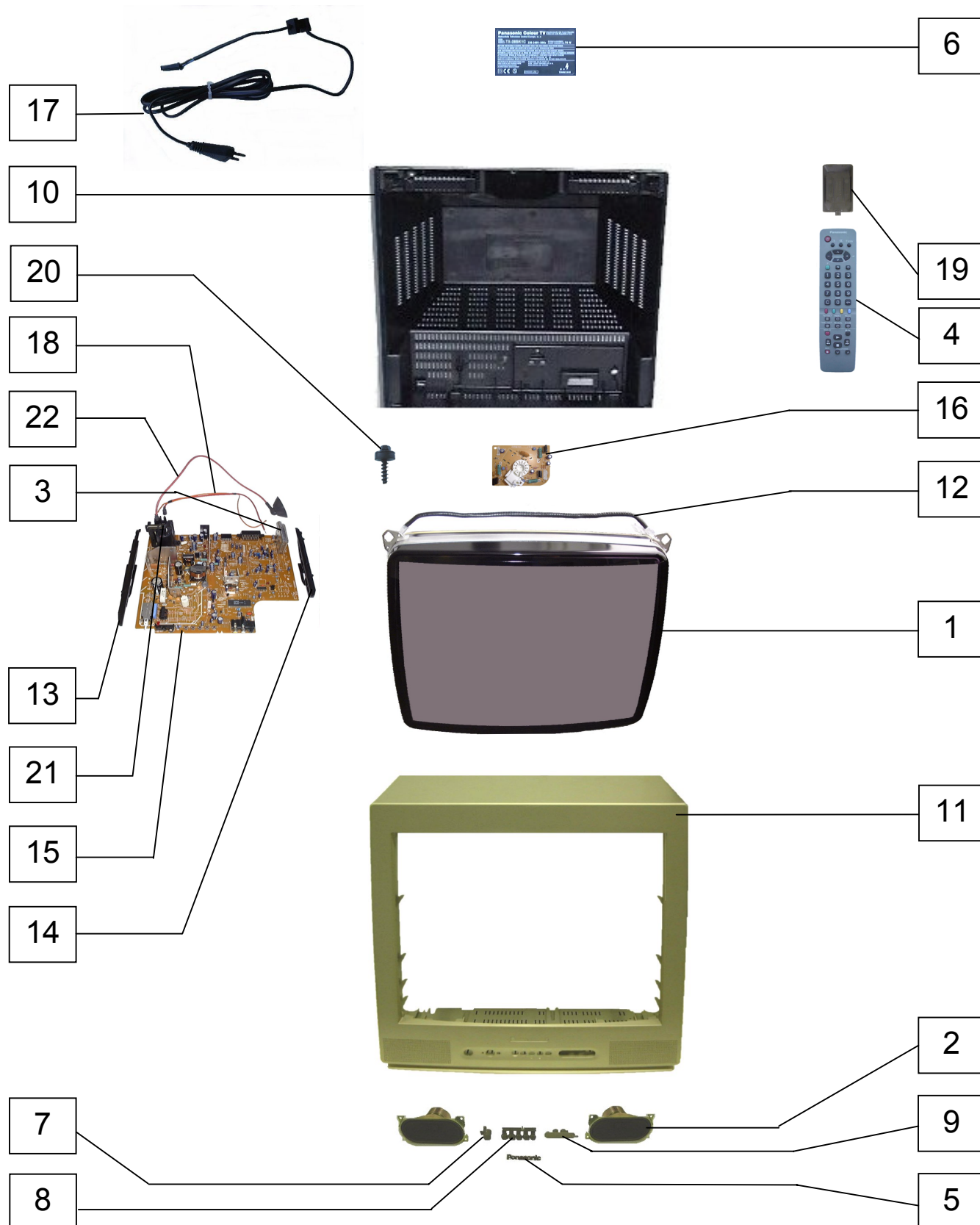
CONTROL BLOCK DIAGRAM



PARTS LOCATION


NOTE:













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



REPLACEMENT PARTS LIST

Important Safety Notice

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

Cct Ref	Parts Number	Description	
EXPLODED VIEW			
1	A51EAL155X13	C.R.T.	
2	EASG12D552A2	SPEAKER	
3	ENV57D13G3R	TUNER	
4	EUR511300	REMOTE CONTROL	
5	TBM8E1928	PANASONIC BADGE	
6	TBM8E2087	MODEL LABEL	
7	TBX8E071	POWER BUTTON	
8	TBX8E072	5-KEY BUTTON	
9	TKK8E037	AV COVER	
10	TKU8E00490	BACK COVER	
11	TKY8E412-1	CABINET	
12	TLK8E05143	DEGAUSS COIL	
13	TMZ8E001	CHASSIS RAIL RIGHT	
14	TMZ8E002	CHASSIS RAIL LEFT	
15	TNP8EE007EK	E P.C.B.	
16	TNP8EY011AH	Y P.C.B.	
17	TSX8E0043	POWER CORD	
18	TXAJTF01BZAG	FOCUS LEAD ASSY	
19	UR51EC924	BATTERY COVER (REMOTE)	
20	VP15005-35	CRT FIXING SCREW	
21	ZTFM23002A	F.B.T.	
22	ZTUZAE450A	ANODE LEAD	
MISCELLANEOUS COMPONENTS			
D805	59209T80B110	THERMISTOR	
POE3	TMW8E015-2	LED HOLDER	
R1223	P1201	SENSOR	
S351	TJSC00300	CRT SOCKET	
I.C.s			
IC251	LA4265	AUDIO OUTPUT	
IC451	LA7840	VERTICAL OUTPUT	
IC601	M52778SP-A	AUDIO VIDEO PROCESSOR	
IC602	U3666M-MDP	DELAY LINE	
IC603	TDA8395PN2	SECAM DECODER	
IC801	STR58041A	POWER SUPPLY	
IC851	L78M05MRB	5V REGULATOR	
IC852	L78M09MRB	9V REGULATOR	
IC853	AN78M08LB	8V REGULATOR	
IC1201	SDA5254V41	MICRO PROCESSOR	
IC1202	MN1280R	RESET	
IC1204	RPM-6937	LED RECEIVER	
IC1205	X24S11-3FP	EAROM	
FUSES			
F801	19181-3.15	FUSE	
F801-2	EYF52BC	FUSE HOLDER	
F801-1	EYF52BC	FUSE HOLDER	
DIODES			
D010	MA4150	DIODE	
D011	MA4150	DIODE	
D201	MA858TA5	DIODE	
D202	MA858TA5	DIODE	

Cct Ref	Parts Number	Description
D304	1SS355TE-17	DIODE
D306	MTZJT-774.7A	DIODE
D307	MTZJT-774.7A	DIODE
D351	MA165TA5	DIODE
D352	MA165TA5	DIODE
D353	MA165TA5	DIODE
D354	MA165TA5	DIODE
D452	ERA15-02V3	DIODE
D453	MA165TA5	DIODE
D454	MA165TA5	DIODE
D455	MA165TA5	DIODE
D503	MA165TA5	DIODE
D504	MA165TA5	DIODE
D505	1SR124-4AT82	DIODE
D506	MTZJ33B	DIODE
D541	MA165TA5	DIODE
D542	MA165TA5	DIODE
D551	TVSRH2FV1	DIODE
D552	RU2AMLFA1	DIODE
D553	1SR124-4AT82	DIODE
D554	1SR124-4AT82	DIODE
D555	ERA22-02V3	DIODE
D556	MA165TA5	DIODE
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	DIODE
D815	1SR124-4AT82	DIODE
D816	1SR124-4AT82	DIODE
D851	TVSRU3AMLFA5	DIODE
D852	TVSRU2AMV1	DIODE
D857	MA165TA5	DIODE
D858	MA165TA5	DIODE
D859	MA165TA5	DIODE
D860	MA165TA5	DIODE
D861	MA165TA5	DIODE
D1202	1N4150T-77	DIODE
D1203	SLR56UR3FLF	LED
D1205	1N4150T-77	DIODE
D1207	MTZJT-778.2A	DIODE
D1208	1N4150T-77	DIODE
D1209	MTZJT-775.1C	DIODE
D1211	MA165TA5	DIODE
D1212	MA165TA5	DIODE
D1213	MA165TA5	DIODE
D1214	1N4150T-77	DIODE

Cct Ref	Parts Number	Description
D1217	MA165TA5	DIODE
D1218	MA165TA5	DIODE
D1219	MA165TA5	DIODE
D1220	MA165TA5	DIODE
D1221	MA165TA5	DIODE
D1222	MA165TA5	DIODE
D1224	MA165TA5	DIODE
D1225	1SS133T-77	DIODE
D1226	MA700TA5	DIODE
D1227	MA700TA5	DIODE
D1228	1SS355TE-17	DIODE
D1301	MTZJT-775.1A	DIODE
D1311	MA165TA5	DIODE
D1312	MA700TA5	DIODE
D3101	MA165TA5	DIODE
TRANSISTORS		
Q101	BF370-126	TRANSISTOR
Q102	BC847B	TRANSISTOR
Q201	BC847B	TRANSISTOR
Q202	BC847B	TRANSISTOR
Q203	BC847B	TRANSISTOR
Q251	BC847B	TRANSISTOR
Q301	BC847B	TRANSISTOR
Q302	BC847B	TRANSISTOR
Q303	BC847B	TRANSISTOR
Q351	2SC5147/D-M1	TRANSISTOR
Q352	2SC5147/D-M1	TRANSISTOR
Q353	2SC5147/D-M1	TRANSISTOR
Q354	BC857B	TRANSISTOR
Q453	BC847B	TRANSISTOR
Q454	BC847B	TRANSISTOR
Q501	2SD2398-M2	TRANSISTOR
Q502	BC857B	TRANSISTOR
Q503	BC847B	TRANSISTOR
Q504	BC847B	TRANSISTOR
Q507	BC847B	TRANSISTOR
Q551	BU4506DFRB	TRANSISTOR
Q801	BC847B	TRANSISTOR
Q802	2SD965-R	TRANSISTOR
Q1201	BC847B	TRANSISTOR
Q1202	BC847B	TRANSISTOR
Q1203	BC847B	TRANSISTOR
Q1204	2SC1317-TA	TRANSISTOR
Q1205	BC847B	TRANSISTOR
Q1207	BC847B	TRANSISTOR
Q1208	BC847B	TRANSISTOR
Q1209	BC847B	TRANSISTOR
Q1210	BC857B	TRANSISTOR
Q1211	BC857B	TRANSISTOR
Q1212	BC847B	TRANSISTOR
Q1213	BC847B	TRANSISTOR
Q1214	BC857B	TRANSISTOR
Q1215	BC857B	TRANSISTOR
Q1216	BC847B	TRANSISTOR
Q1217	2SD965-R	TRANSISTOR
Q1240	BC847B	TRANSISTOR
Q1295	BC857B	TRANSISTOR
Q1296	BC847B	TRANSISTOR
Q3101	2SC1318-S	TRANSISTOR
Q3103	2SD1328STX	TRANSISTOR
Q3104	BC857B	TRANSISTOR
Q3105	BC857B	TRANSISTOR
Q3106	BC857B	TRANSISTOR
Q3107	BC857B	TRANSISTOR
Q3108	BC857B	TRANSISTOR

Cct Ref	Parts Number	Description
TRANSFORMERS		
T551	ETH19Z169AZ	TRANSFORMER
T801	ETS29AK227AC	TRANSFORMER
T1201	ETP35KAN617U	TRANSFORMER
COILS		
J208	EXCELSA39V	COIL
JEY	EXCELD35V	COIL
L010	EXCELSA35T	COIL
L012	EXCELSA35T	COIL
L103	EQV7EN211Q	COIL
L105	ELESNR22KA	COIL
L106	TLTACT6R8K	COIL
L107	TLTACT6R8K	COIL
L201	TLTACT150K	COIL
L202	TLTACT4R7K	COIL
L301	TLTACT8R2K	COIL
L303	ELESN100JA	COIL
L451	EXCELSA35T	COIL
L551	ELH5L4104	COIL
L553	ELH16F713	COIL
L803	EXCELSA35T	COIL
L804	EXCELD35V	COIL
L851	EXCELSA35T	COIL
L852	EXCELSA35T	COIL
L1201	EXCELSA35T	COIL
L1202	TLTACT331K	COIL
L1203	TLTACT100K	COIL
L1204	ERJNA6R8GF	COIL
L1206	EXCELSA35T	COIL
L1207	TLTACT100K	COIL
L1208	TLTACT100K	COIL
L1209	EXCELSA35T	COIL
R016	ELJFC6R8KF	COIL
R017	ELJFC6R8KF	COIL
FILTERS		
C205	EFCT7004BF	CERAMIC FILTER
L101	EFCVA3195A	CERAMIC FILTER
L801	ELF15N005A	LINE FILTER
X101	K2955-M100	SAW FILTR
X104	EFCVA3195T	CERAMIC FILTER
X201	EFCS6R5MS5	FILTER
X202	EFCS5R5MS5	FILTER
X302	EFCS6R5MW3	FILTER
X303	TAFC5B503F6	FILTER
CRYSTALS		
X301	EFCWS2F11T	CRYSTAL
X601	LN-P-01S	CRYSTAL
X1201	CSA18.00MXZ	CRYSTAL
RESISTORS		
C016	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
C605	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC1	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC3	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC7	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC8	ERJ8GEY0R00	S.M.CARB .125W 5% 0 Ω
JC9	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC11	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC12	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC14	ERJ8GEY0R00	S.M.CARB .125W 5% 0 Ω
JC20	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC21	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC22	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC23	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0 Ω
JC24	ERJ8GEY0R00	S.M.CARB .125W 5% 0 Ω

Cct Ref	Parts Number	Description			
JC25	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JC26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JC28	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JC31	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JC35	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JEAK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEAN	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEJ	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEN	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEP	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEX	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JEZ	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R010	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R011	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270 Ω
R013	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R014	ERG2SJS273	METAL	2W	5%	27K Ω ^Δ
R018	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R101	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R103	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7 Ω
R104	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2 Ω
R105	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22 Ω
R106	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820 Ω
R107	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R108	ERJ6GEYJ124	S.M.CARB	0.1W	5%	120K Ω
R109	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R110	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9 Ω
R112	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
R113	ERJ6GEYJ124	S.M.CARB	0.1W	5%	120K Ω
R114	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12K Ω
R115	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R116	ERJ8GEYJ152	S.M.CARB	.125W	5%	1K5 Ω
R117	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω
R202	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R203	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω
R205	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R206	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω
R207	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R208	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R209	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω
R210	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R211	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1 Ω
R212	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1 Ω
R213	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R215	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R221	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω
R226	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R227	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω
R251	ERJ6GEYJ3R3	S.M.CARB	0.1W	5%	3R3 Ω
R252	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω
R254	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150 Ω
R255	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω
R256	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R257	ERQ2CJP8R2S	FUSIBLE	2W	5%	8R2 Ω
R259	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R260	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω
R261	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω
R301	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R302	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R303	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R304	ERJ6ENF2201	S.M.CARB	0.1W	1%	2K2 Ω
R305	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω
R306	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω
R307	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω
R309	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R310	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R311	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω

Cct Ref	Parts Number	Description			
R312	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150 Ω
R313	ERQ14AJ470	METAL	0.25W	5%	47 Ω ^Δ
R314	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560 Ω
R315	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R316	ERQ14AJ470	METAL	0.25W	5%	47 Ω ^Δ
R317	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R318	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R319	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R320	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R323	ERJ6GEYJ100	S.M.CARB	0.1W	5%	10 Ω
R351	ERG2ANJP103H	METAL	2W	5%	10K Ω
R352	ERG2ANJP103H	METAL	2W	5%	10K Ω
R353	ERG2ANJP103H	METAL	2W	5%	10K Ω
R366	ERJ6GEYJ431	S.M.CARB	0.1W	5%	430 Ω
R367	ERJ6GEYJ431	S.M.CARB	0.1W	5%	430 Ω
R368	ERJ6GEYJ431	S.M.CARB	0.1W	5%	430 Ω
R369	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R370	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R371	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R372	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R373	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R374	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R375	ERDS1TJ272	CARBON	0.5W	5%	2K7 Ω
R378	ERD25TJ274	CARBON	0.25W	5%	270K Ω
R379	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω
R380	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680K Ω
R386	ERDS1TJ272	CARBON	0.5W	5%	2K7 Ω
R387	ERDS1TJ272	CARBON	0.5W	5%	2K7 Ω
R401	ERJ6ENF9100	S.M.CARB	0.1W	1%	910 Ω
R402	ERJ6ENF8201	S.M.CARB	0.1W	1%	8K2 Ω
R403	ERJ6ENF6801	S.M.CARB	0.1W	1%	6K8 Ω
R451	ERDS1TJ331	CARBON	0.5W	5%	330 Ω
R452	ERJ6GEYJ1R0	S.M.CARB	0.1W	5%	1 Ω
R453	ERDS1TJ1R0	CARBON	0.5W	5%	1 Ω
R454	ERJ6GEYF153V	S.M.CARB	0.1W	5%	15K Ω
R456	ERO25CKF5601	METAL	0.25W	1%	6K1 Ω ^Δ
R457	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R458	ERDS2TJ683T	CARBON	2W	5%	68K Ω
R459	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω
R460	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R461	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R462	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R501	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R502	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680 Ω
R503	ERG3SJS151	METAL	3W	5%	150 Ω
R504	ERG2ANJP471H	METAL	2W	5%	470 Ω
R505	ERJ6GEYJ433	S.M.CARB	0.1W	5%	43K Ω
R506	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R508	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R510	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560 Ω
R511	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330K Ω
R512	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R513	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R514	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R515	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R516	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R518	ERJ6ENF1302	S.M.CARB	0.1W	1%	13K Ω
R519	ERJ6GEYJ823	S.M.CARB	0.1W	5%	82K Ω
R520	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330K Ω
R521	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R522	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680K Ω
R523	ERJ6GEYJ154	S.M.CARB	0.1W	5%	150K Ω
R524	ERJ6GEYJ184	S.M.CARB	0.1W	5%	180K Ω
R525	ERJ6GEYJ184	S.M.CARB	0.1W	5%	180K Ω
R541	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω
R542	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω

Cct Ref	Parts Number	Description				
R543	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R551	ERDS1TJ1R5	CARBON	0.5W	5%	1R5 Ω	
R552	ERDS1TJ1R5	CARBON	0.5W	5%	1R5 Ω	
R553	ERQ1CJP102	FUSIBLE	1W	5%	1K Ω	△
R555	ERQ1CJP4R7	FUSIBLE	1W	5%	4R7 Ω	△
R557	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R559	ERQ1CJP4R7	FUSIBLE	1W	5%	4R7 Ω	△
R560	ERDS1TJ224T	CARBON	0.5W	5%	220K Ω	
R601	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12K Ω	
R602	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R603	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R604	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω	
R605	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R606	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R607	ERJ6GEYJ475	S.M.CARB	0.1W	5%	4M5 Ω	
R611	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R612	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R613	ERJ6GEYJ395	S.M.CARB	0.1W	5%	3M9 Ω	
R614	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R801	ERF5ZK2R7	WOUND	5W	20%	2R7 Ω	△
R804	ERDS1TJ224T	CARBON	0.5W	5%	220K Ω	
R805	ERW2PKR33	WOUND	2W	20%	R33 Ω	△
R806	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R807	ERG3FJ101	METAL	3W	5%	100 Ω	△
R808	ERG12SJ561P	METAL	0.5W	5%	650 Ω	
R809	ERG2ANJP560H	METAL	2W	5%	56 Ω	△
R810	ERQ12HJ100	FUSIBLE	0.5W	5%	10 Ω	△
R811	ERDS1TJ224T	CARBON	0.5W	5%	220K Ω	
R813	ERJ6GEYJ202	S.M.CARB	0.1W	5%	2K Ω	
R814	ERD75TAJ825	CARBON	0.75W	5%	8M2 Ω	△
R819	ERDS1TJ104	CARBON	0.5W	5%	100K Ω	
R853	ERG2ANJP270H	METAL	2W	5%	27 Ω	
R857	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R858	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R859	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R860	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R861	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1201	ERQ1CJP2R2	FUSIBLE	1W	10%	2R2 Ω	△
R1202	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1203	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1204	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1205	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1206	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1208	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1211	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1212	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1213	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω	
R1214	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1215	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω	
R1216	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω	
R1217	ERJ6ENF7501	S.M.CARB	0.1W	1%	7K5 Ω	
R1218	ERO50PKF5603	METAL	0.5W	1%	560K Ω	△
R1219	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1220	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω	
R1221	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270 Ω	
R1222	ERJ6GEYJ330	S.M.CARB	0.1W	5%	33 Ω	
R1224	ERJ6GEYJ683	S.M.CARB	0.1W	5%	68K Ω	
R1225	ERJ6GEYJ433	S.M.CARB	0.1W	5%	43K Ω	
R1226	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1227	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1228	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1229	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1230	ERJ6GEYJ823	S.M.CARB	0.1W	5%	82K Ω	
R1231	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1232	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1233	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	

Cct Ref	Parts Number	Description				
R1234	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1235	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω	
R1236	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R1237	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R1238	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1239	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1240	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1241	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2 Ω	
R1242	ERJ6GEYJ434	S.M.CARB	0.1W	5%	43K Ω	
R1243	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1244	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1246	ERD25TJ272F	CARBON	0.25W	5%	2K7 Ω	
R1247	ERDS2TJ221T	CARBON	0.5W	5%	220 Ω	
R1248	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R1249	ERDS1TJ121	CARBON	0.5W	5%	120 Ω	
R1250	ERDS1TJ560	CARBON	0.5W	5%	56 Ω	
R1251	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1252	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1253	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39K Ω	
R1255	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1256	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω	
R1257	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1258	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1259	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1261	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω	
R1263	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω	
R1265	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω	
R1266	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1267	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1268	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1269	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1270	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1271	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1272	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R1273	ERJ6GEYJ333	S.M.CARB	0.1W	5%	33K Ω	
R1274	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω	
R1275	ERJ6GEYJ225	S.M.CARB	0.1W	5%	2M2 Ω	
R1276	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1277	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1278	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω	
R1279	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1280	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1282	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1283	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1284	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1285	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R1286	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R1287	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R1288	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R1289	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1290	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1291	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω	
R1292	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1293	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1294	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1295	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1296	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1298	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R1303	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R1304	ERJ6GEYJ184	S.M.CARB	0.1W	5%	180K Ω	
R1305	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω	
R1306	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R1307	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω	
R1308	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1309	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R1311	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	

Cct Ref	Parts Number	Description				
R3101	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R3102	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R3103	ERJ6GEYJ564	S.M.CARB	0.1W	5%	560K Ω	
R3104	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω	
R3105	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R3106	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R3107	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R3108	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R3109	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R3110	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω	
R3111	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3114	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3115	ERDS1TJ750	CARBON	0.5W	5%	75 Ω	
R3120	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω	
R3121	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω	
R3122	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω	
R3123	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R3124	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω	
R3125	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R3126	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω	
R3127	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3128	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω	
R3130	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R3132	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R3133	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R3134	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R3136	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R3137	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R3138	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R3140	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω	
R3141	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω	
R3142	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R3143	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180 Ω	
CAPACITORS						
C010	ECJ2VB1H103K	ELECT	350V		10nF	
C011	ECEA1CU100	ELECT	16V		10μF	
C012	ECJ2VB1H103K	ELECT	350V		10nF	
C014	ECUV1H080DCX	S.M. CAP	50V		80pF	
C015	ECA1HM330B	ELECT	50V		33μF	
C019	ECJ2VB1H103K	ELECT	350V		10nF	
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	ECJ2VB1H103K	ELECT	350V		10nF	
C105	ECJ2VB1H103K	ELECT	350V		10nF	
C107	ECA1HMR22GB	ELECT	50V		0.22μF	
C108	ECJ2VB1H103K	ELECT	350V		10nF	
C110	ECA1HMO1B	ELECT	50V		0R1μF	
C111	ECUV1H103KBW	S.M. CAP	50V		10nF	
C113	ECJ2VB1H103K	ELECT	350V		10nF	
C116	ECJ2YB1H104K	ELECT	350V		100nF	
C203	ECUV1H220JCX	S.M. CAP	50V		22pF	
C204	ECUV1H220JCX	S.M. CAP	50V		22pF	
C207	ECEA1CN100	ELECT	16V		10μF	
C208	ECEA1CU100	ELECT	16V		10μF	
C251	ECA1EM471GB	ELECT	25V		470μF	
C253	ECA1EHG470B	ELECT	50V		47pF	
C254	ECUV1H272JCX	S.M. CAP	50V		2.7nF	
C255	ECQV1H104JL3	FILM	50V		0.1μF	
C258	ECA1EHG101B	ELECT	50V		100nF	
C260	ECA1EM102GB	ELECT	25V		100μF	
C261	ECUV1H471JCX	S.M. CAP	50V		470pF	
C301	ECEA1HU101	ELECT	50V		100μF	
C302	ECJ2VF1H104Z	ELECT	350V		100nF	
C304	ECJ2VF1H104Z	ELECT	350V		100nF	

Cct Ref	Parts Number	Description				
C305	ECEA1HU101	ELECT	50V		100μF	
C307	ECEA1HU101	ELECT	50V		100μF	
C308	ECJ2VF1H104Z	ELECT	350V		100nF	
C309	ECJ2VB1H103K	ELECT	350V		10nF	
C311	ECJ2VF1H104Z	ELECT	350V		100nF	
C312	ECJ2VF1H104Z	ELECT	350V		100nF	
C313	ECJ2VF1H104Z	ELECT	350V		100nF	
C314	ECEA1HNR47UB	ELECT	50V		0.47μF	
C315	ECEA1HN2R2UB	ELECT	50V		2.2μF	
C316	ECEA1HU101	ELECT	50V		100μF	
C317	ECEA1HU101	ELECT	50V		100μF	
C318	ECEA1HNR47UB	ELECT	50V		0.47μF	
C319	ECJ2VF1H104Z	ELECT	350V		100nF	
C323	ECUV1H680JCX	S.M. CAP	50V		68pF	
C351	ECUV1H221JCX	S.M. CAP	50V		220pF	
C352	ECUV1H271JCX	S.M. CAP	50V		270pF	
C353	ECUV1H221JCX	S.M. CAP	50V		220pF	
C355	ECKC3D152J	CERAMIC	2KV		1.5nF	⚠
C357	ECKC2H152J	CERAMIC	500V		1.5nF	⚠
C362	ECUV1H102ZFX	S.M. CAP	50V		1nF	
C368	ECEA2EU010	ELECT	250V		1μF	
C369	ECA1HMR47B	ELECT	50V		470nF	
C370	ECA1CM220GB	ELECT	16V		22μF	
C401	ECJ2VB1H223K	ELECT	350V		22nF	
C402	ECJ2VB1H472K	ELECT	350V		4.7nF	
C404	ECJ2VF1H103Z	ELECT	350V		10nF	
C453	ECA1HHG101B	ELECT	50V		100μF	
C454	ECA1HHG2R2B	ELECT	50V		100μF	
C461	ECUV1H100CCX	S.M. CAP	50V		10pF	
C502	ECJ2VB1H223K	ELECT	350V		22nF	
C503	ECUV1H391JCX	S.M. CAP	50V		390pF	
C504	ECEA1HN010UB	ELECT	50V		1μF	
C505	ECUV1H331JCX	S.M. CAP	50V		330pF	
C506	ECQB1273JF3	FILM	100V		27nF	
C507	ECA1HHG100B	ELECT	50V		10μF	
C508	ECUV1H102JCX	S.M. CAP	50V		1nF	
C541	ECEA1EN4R7UB	ELECT	25V		4.7μF	
C550	ECA1CM471B	ELECT	16V		470μF	
C551	ECWH12H103JR	FILM	1250V		10nF	⚠
C552	ECQF4273JZH	FILM	400V		27nF	⚠
C555	ECKC3D152J	CERAMIC	2KV		1.5nF	⚠
C557	ECWF2H394JZ	FILM	500V		390nF	⚠
C558	ECA2CM4R7B	ELECT	160V		390nF	
C559	ECKC2H471J	CERAMIC	500V		470pF	⚠
C560	ECKC2H471J	CERAMIC	500V		470pF	⚠
C561	ECEA2EU100	ELECT	250V		10μF	
C562	ECKC2H471J	CERAMIC	500V		470pF	⚠
C563	ECA1CM471B	ELECT	16V		470μF	
C565	ECA1VM471GB	ELECT	35V		470μF	
C566	ECKC2H471J	CERAMIC	500V		470pF	⚠
C567	ECA1VHG471B	ELECT	35V		47μF	
C601	ECJ2YB1H473K	ELECT	350V		47nF	
C602	ECJ2VB1H153K	ELECT	350V		15nF	
C606	ECJ2VF1H104Z	ELECT	350V		100nF	
C607	ECJ2VF1H104Z	ELECT	350V		100nF	
C608	ECUV1H470JCX	S.M. CAP	50V		47pF	
C609	ECUV1H470JCX	S.M. CAP	50V		47pF	
C610	ECEA1HU101	ELECT	50V		100μF	
C611	ECJ2VF1H104Z	ELECT	350V		100nF	
C612	ECJ2VB1H103K	ELECT	350V		10nF	
C613	ECJ2VB1H103K	ELECT	350V		10nF	
C614	ECJ2VF1H104Z	ELECT	350V		100nF	
C616	222236576104	FILM	760V		100nF	
C617	ECJ2VF1H104Z	ELECT	350V		100nF	
C618	ECEA1HU101	ELECT	50V		100μF	
C619	ECJ2VB1H103K	ELECT	350V		10nF	

Cct Ref	Parts Number	Description		
C620	ECJ2VB1H103K	ELECT	350V	10nF
C623	ECJ2VF1H104Z	ELECT	350V	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	ECUY1H103JCW	S.M. CAP	50V	10nF
C802	222233591028	FILM	250V	28nF
C803	ECKC2H472J	CERAMIC	500V	4.7nF
C804	ECKC2H472J	CERAMIC	500V	4.7nF
C805	ECKC2H472J	CERAMIC	500V	4.7nF
C806	ECKC2H472J	CERAMIC	500V	4.7nF
C807	ECOS2GA101BB	ELECT	400V	100μF
C808	ECQB1H333J	FILM	50V	33nF
C810	ECA1VM101GB	ELECT	35V	100μF
C811	ECA1JHG100B	ELECT	6.3V	100μF
C812	ECA2CHG221E	ELECT	160V	220μF
C817	ECA1VM101GB	ELECT	35V	100μF
C818	ECKWNA471MB	CERAMIC	250V	470pF
C820	ECKWNA332MEC	CERAMIC	250V	3.3nF
C853	ECA1EM102GB	ELECT	25V	100μF
C854	ECA1HHG471E	ELECT	50V	470μF
C855	ECJ2VF1H104Z	ELECT	350V	100nF
C856	ECJ2VF1H104Z	ELECT	350V	100nF
C857	ECEA1HU101	ELECT	50V	100μF
C858	ECA1AM222B	ELECT	10V	2200μF
C859	ECJ2VF1H104Z	ELECT	350V	100nF
C860	ECEA1HU101	ELECT	50V	100μF
C861	ECA1CM102B	ELECT	16V	1000μF
C1201	ECA1EM102GB	ELECT	25V	100μF
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	ECJ2YB1H473K	ELECT	350V	47nF
C1219	ECJ2VF1H104Z	ELECT	350V	100nF
C1221	ECUV1H331JCX	S.M. CAP	50V	330pF
C1226	ECJ2VF1H104Z	ELECT	350V	100nF
C1227	ECEA1HU101	ELECT	50V	100μF
C1228	ECUV1H470GCG	S.M. CAP	50V	47pF
C1229	ECUV1H470GCG	S.M. CAP	50V	47pF
C1230	ECJ2VB1H333K	ELECT	350V	33nF
C1231	222236516154	FILM	160V	150nF
C1232	ECJ2VF1H104Z	ELECT	350V	100nF
C1234	ECJ2VF1H104Z	ELECT	350V	100nF
C1241	ECEA1HU101	ELECT	50V	100μF
C1244	ECEA1CU100	ELECT	16V	10μF
C1245	ECJ2VB1H333K	ELECT	350V	33nF
C1249	ECJ2VF1H104Z	ELECT	350V	100nF
C1251	ECQV1H334JL3	FILM	50V	330nF
C1256	ECJ2YB1H104K	ELECT	350V	100nF
C1257	ECUV1H561JCX	S.M. CAP	50V	560pF
C1258	ECEA1CU100	ELECT	16V	10μF
C1259	ECUV1H150JCX	S.M. CAP	50V	15pF
C1260	ECUV1H560JCX	S.M. CAP	50V	56pF
C1261	ECEA1HU101	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
C1266	ECEA1CU100	ELECT	16V	10μF
C1268	ECEA1HU101	ELECT	50V	100μF
C1269	ECUV1H151JCX	S.M. CAP	50V	150pF


Cct Ref	Parts Number	Description		
C3101	ECUV1H101JCX	S.M. CAP	50V	100pF
C3102	ECUV1H561KBX	S.M. CAP	50V	560pF
C3104	ECJ2VB1H102K	ELECT	350V	1nF
C3105	ECUV1H101JCX	S.M. CAP	50V	100pF
C3109	ECUV1H561JCX	S.M. CAP	50V	560pF
C3110	222236516684	FILM	160V	680nF
C3113	ECJ2VB1H103K	ELECT	350V	10nF
C3115	ECEA1CN100	ELECT	16V	10μF
C3117	ECJ2VF1H104Z	ELECT	350V	100nF
C3118	ECEA1CN100	ELECT	16V	10μF
C3119	ECEA1CN100	ELECT	16V	10μF
TERMINALS AND LINKS				
JK3101	TJB8E011	SCART SOCKET		
JK3102	TJB16663	A.V. TERMINAL		
SWITCHES				
S801	ESB91232A	SWITCH		
S1201	EVQ21405R	SWITCH		
S1202	EVQ21405R	SWITCH		
S1203	EVQ21405R	SWITCH		
S1204	EVQ21405R	SWITCH		
S1205	EVQ21405R	SWITCH		
RELAYS				
RL1201	TSE1885-1	RELAY		
MISCELLANEOUS COMPONENTS				
	TKP8E1291	LIGHT TUBE		
	TKP8E1292	IR WINDOW		
	TPC8E4871	OUTER CARTON		
	TPD8E697	TOP CUSHION		
	TPD8E698	BOTTOM CUSHION		
	UM-3DJ-2P	BATTERY PACK		
INSTRUCTION BOOKS				
	TQB8E3053MN1	ROMANIAN, BULGARIAN		
	TQB8E3053PQ1	POLISH, HUNGARIAN		
	TQB8E3053RU1	CZECH, ENGLISH		

SCHEMATIC DIAGRAMS FOR MODEL

TX-21JTP3


(Z7 CHASSIS)



IMPORTANT SAFETY NOTICE

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



NOTE

1. RESISTOR
All resistors are carbon 1/4W resistor, unless marked otherwise.
Unit of resistance is OHM (Ω) (k=1,000, M=1,000,000)
2. CAPACITORS
All capacitors are ceramic 50V unless marked otherwise.
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 d.c. voltmeter.
Measurement conditions are as follows:
Power source a.c. 220V-240V, 50Hz
Receiving Signal Colour Bar signal (RF)
All customer controls Maximum position

7.
 Indicates the Video signal path
 Indicates the Audio signal path

These schematic diagrams are the latest at time of printing and are subject to change without notice.

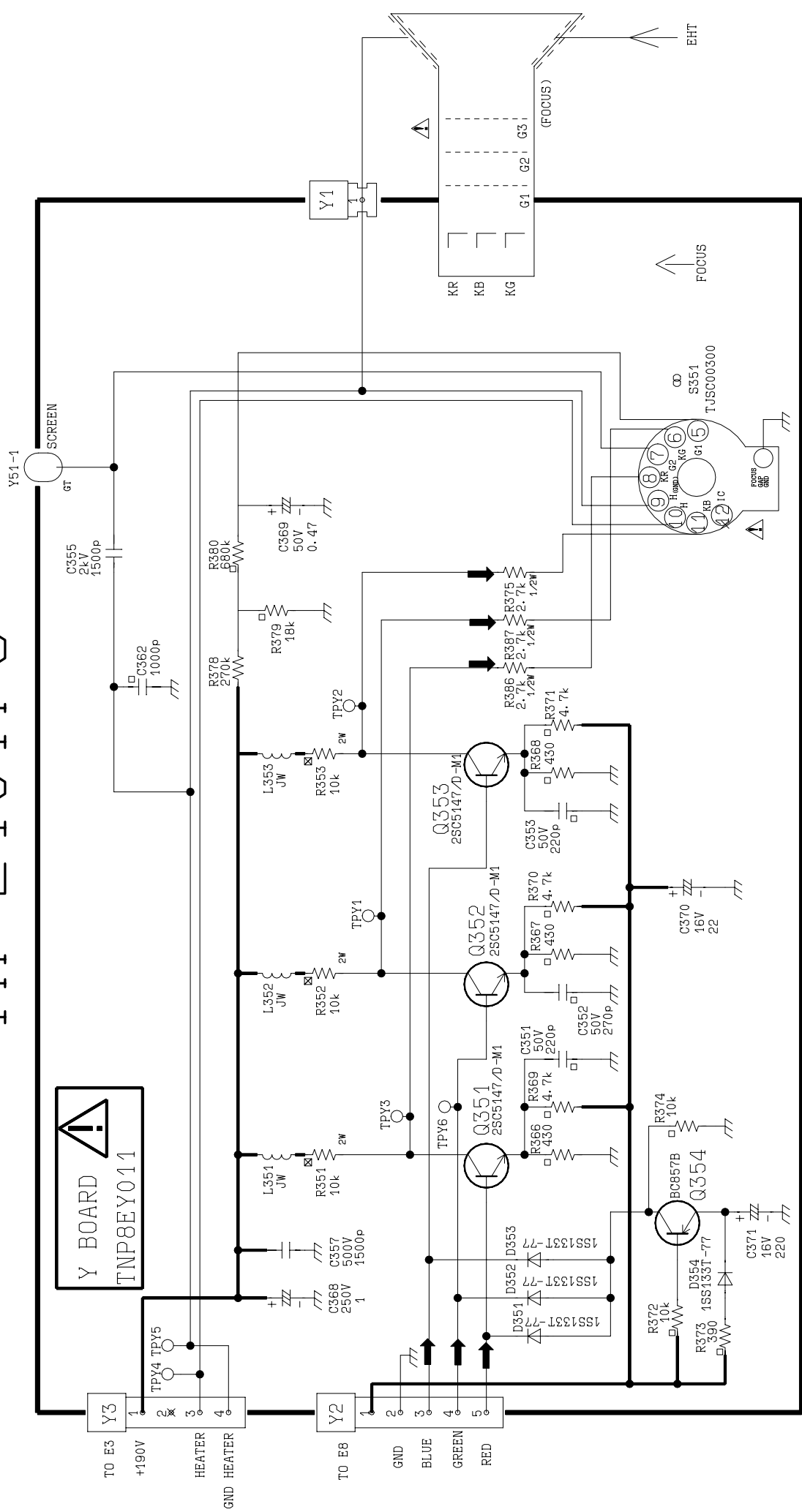
REMARKS

- 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.

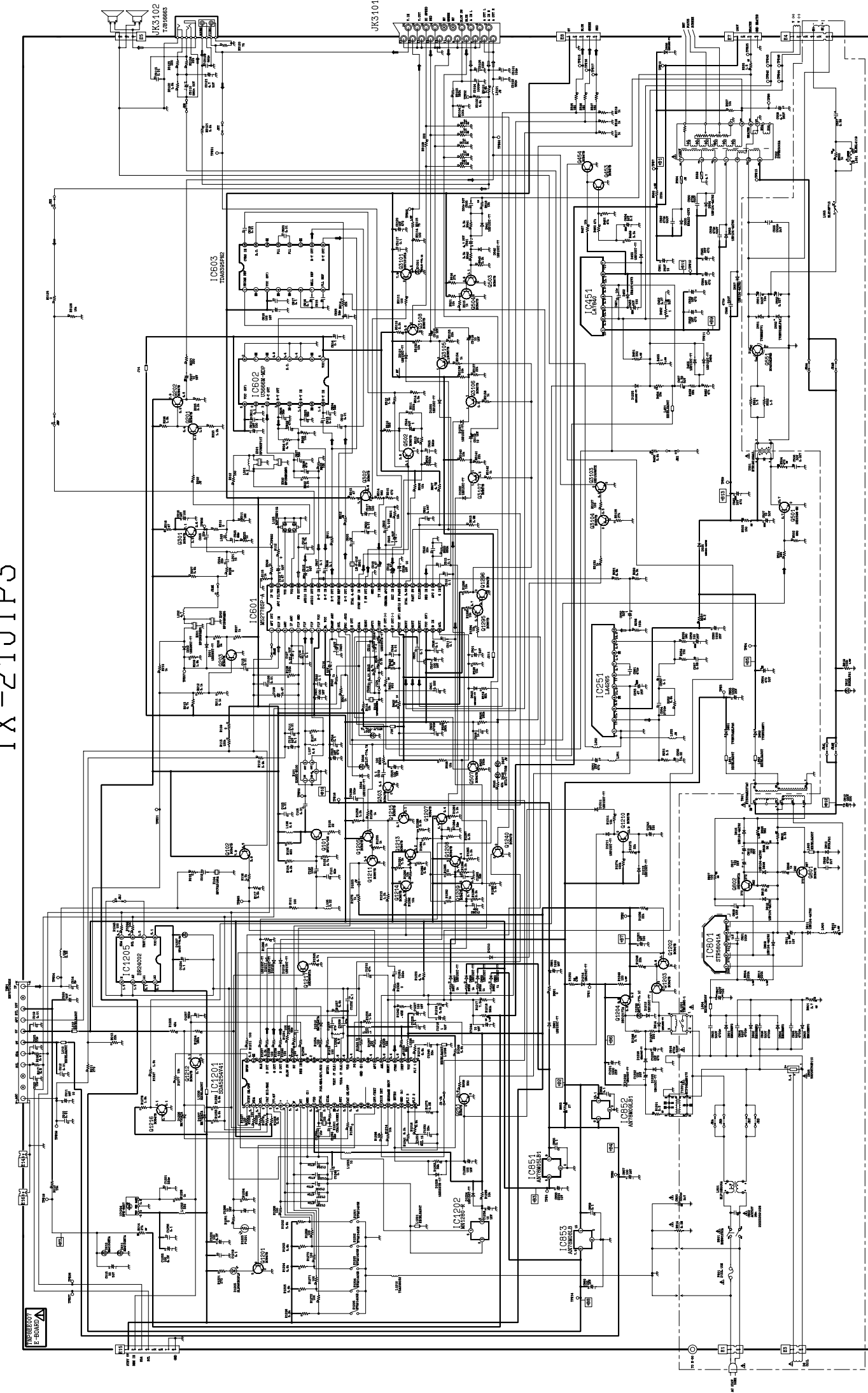
NOTE

1. The Power Supply 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.

TX-21JTP3



TNP8EE007
E-BOARD

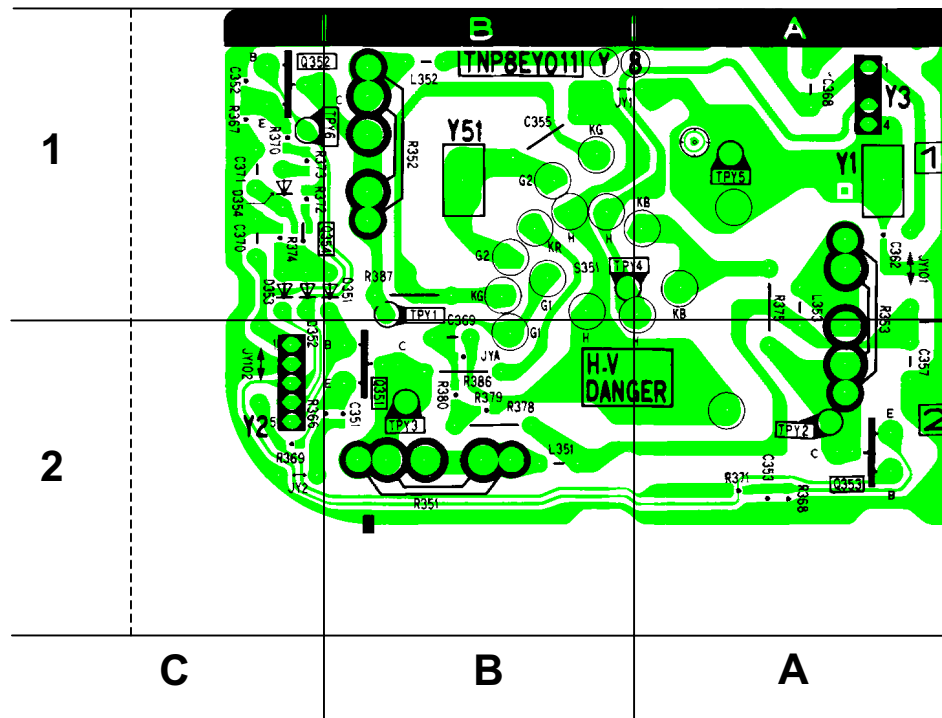


CONDUCTOR VIEWS FOR MODEL

TX-21JTP3

Y-BOARD TNP8EY011

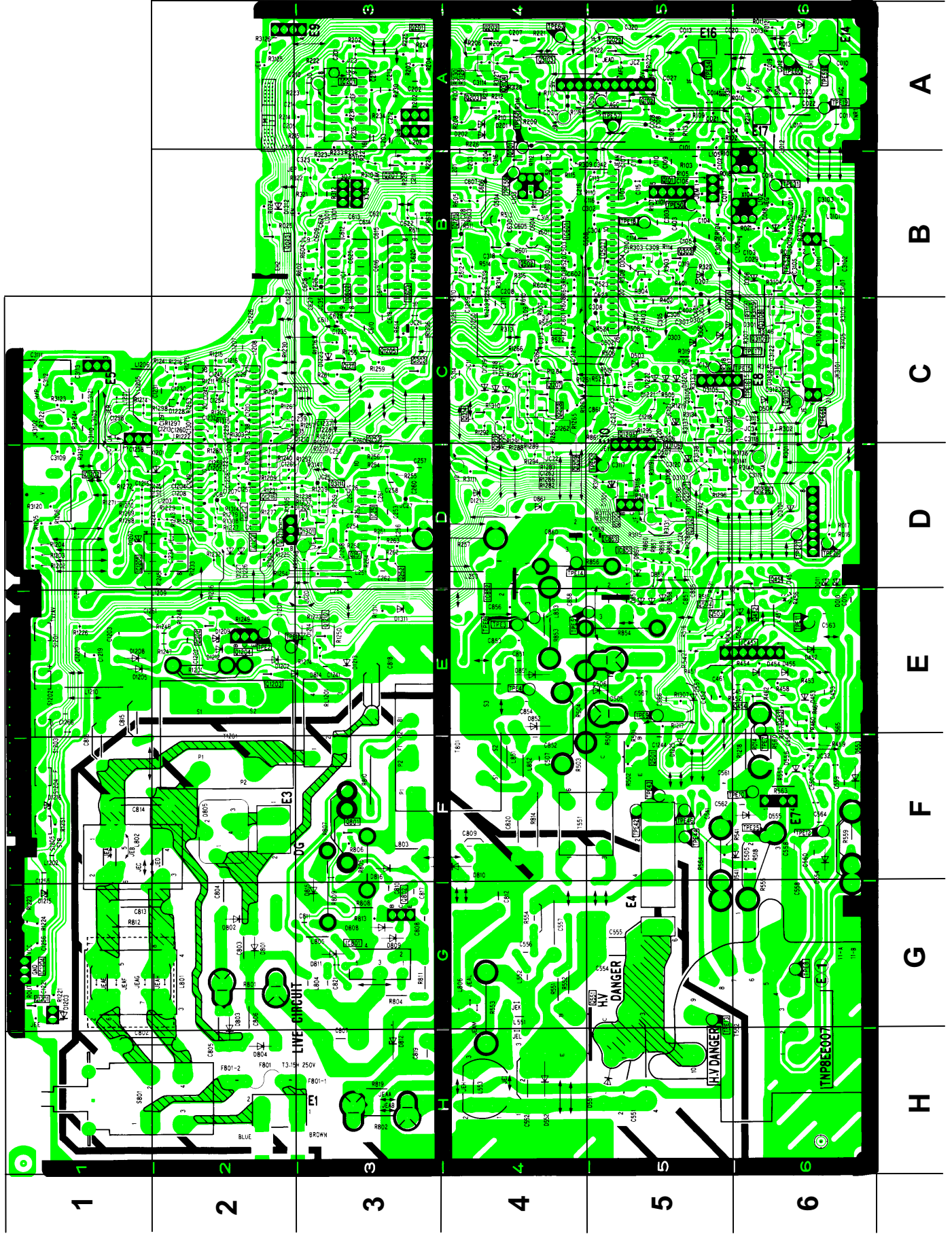
TRAN'S	
Q351	B2
Q352	C1
Q353	A2
Q354	C1
DIODES	
D351	C1
D352	C1
D353	C1
D354	C1
T.P.'S	
TPY4	B2
TPY5	B1



E-BOARD TNP8EE007

TRAN'S		D202	A4	D1213	E3
Q101	B5	D304	B5	D1214	E3
Q201	A3	D306	B6	D1217	C4
Q202	A4	D307	B5	D1218	C4
Q203	A4	D452	E6	D1219	C4
Q251	D3	D453	E6	D1220	C5
Q301	B4	D454	E6	D1221	C5
Q302	C3	D455	E6	D1222	C5
Q303	B5	D503	C5	D1223	C3
Q453	E6	D504	C6	D1224	D2
Q454	E6	D505	E5	D1225	F5
Q501	F5	D506	C5	D1226	D2
Q502	B4	D507	D5	D1227	D2
Q503	E5	D541	F6	D1228	C2
Q504	E5	D542	E6	D1301	D5
Q507	B5	D551	H5	D1311	E3
Q551	H4	D552	H4	D1312	B2
Q801	F3	D553	F6	D3101	D6
Q802	G3	D554	G6	D3108	C6
Q1201	G1	D555	F6		
Q1202	E2	D556	F6	I.C.'S	
Q1203	E2	D557	E5	IC251	D3
Q1204	E2	D801	G2	IC451	E6
Q1205	C3	D802	G2	IC601	B4
Q1207	C4	D803	H2	IC602	B3
Q1208	C4	D804	H2	IC603	B3
Q1209	C4	D805	F2	IC801	G3
Q1210	E3	D808	G3	IC851	E5
Q1211	C3	D809	G3	IC852	E4
Q1212	D2	D810	G4	IC853	D5
Q1213	C4	D811	G3	IC1201	D2
Q1214	C4	D812	G3	IC1202	D1
Q1215	B4	D814	E2	IC1204	G1
Q1216	D2	D815	G3	IC1205	D2
Q1217	D2	D816	G3		
Q1240	C6	D851	E4	T.P.'S	
Q1295	C5	D852	F4	TPE1	E2
Q1296	D6	D857	E5	TPE2	E2
Q3101	D5	D858	E5	TPE3	E4
Q3103	A4	D859	E5	TPE4	E4
Q3104	A4	D860	D5	TPE5	E5
Q3105	C5	D861	D4	TPE6	E4
Q3106	D5	D1202	E2	TPE9	E5
Q3107	D5	D1205	E1	TPE10	F6
Q3108	C6	D1207	D1	TPE11	E6
		D1208	E1	TPE12	F6
DIODES		D1209	E2	TPE13	G5
D010	E6	D1210	D2	TPE14	D4
D011	E6	D1211	D4	TPE18	B5
D201	A4	D1212	E2	TPE19	A6

E – BOARD TNP8EE007



This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.