TX-28/25XD4P/A Service Manual

Service Support

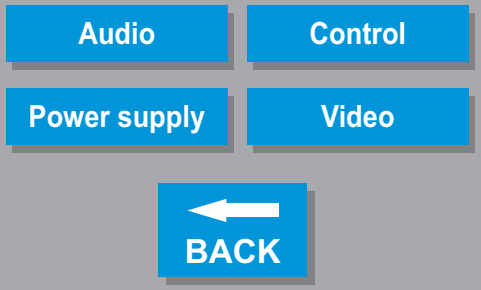
Service and repair of this product is supported by Panasonic's LUCI interface.

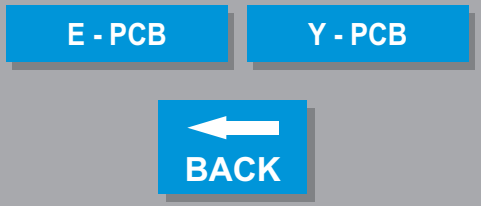
This interface provides a link between the TV and a standard PC to allow a number of diagnostic and control functions to be performed.

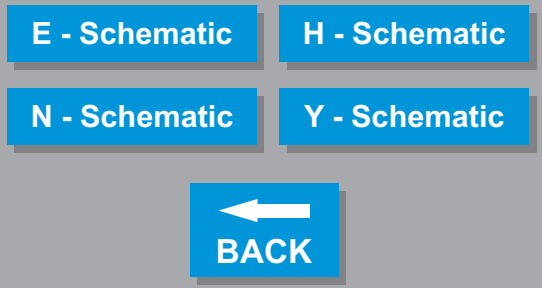
For more details contact your local Panasonic company.

BACK

EXIT


Audio
Control
Power supply
Video
BACK


E - PCB
Y - PCB
BACK


E - Schematic
H - Schematic
N - Schematic
Y - Schematic
BACK

ORDER No. SM-98088

Service Manual

Colour Television

TX-28XD4P /A
TX-25XD4P /A

EURO-4 Chassis

SPECIFICATIONS

(Information in brackets { } refers to model TX-25XD4P /A)

Power Source:	220-240V a.c., 50Hz	
Power Consumption:	130W {120W}	
Aerial Impedance:	75Ω unbalanced, Coaxial Type	
Stand-by Power Consumption:	1,8W	
Receiving System:	PAL B/G, H, D/K, PAL-525/60 SECAM B/G, D/K M.NTSC NTSC (AV only)	
Receiving Channels:	VHF E2-E12	
VHF H1-H2 (ITALY)	VHF A-H (ITALY)	
VHF R1-R2	VHF R3-R5	
VHF R6-R12	UHF E21-E69	
CATV (S01-S05)	CATV S1-S10 (M1-M10)	
CATV S11-S20 (U1-U10)	CATV S21-S41 (HYPERBAND)	
Intermediate Frequency:		
Video	38,9MHz	
Audio	33,4MHz, 33,16MHz 32,4MHz, 33,05MHz 32,66MHz	
Colour	34,47MHz (PAL) 34,5MHz, 34,65MHz (SECAM)	
Video/Audio Terminals:		
AUDIO MONITOR OUT	Audio (RCAx2)	500mV rms1kΩ
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 10kΩ
	S-Video IN (21 pin)	Y: 1V p-p 75Ω C: 0,3V p-p 75Ω
AV2 OUT	Video (21 pin)	1V p-p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
	Selectable Output (21 pin)	
AV3 IN	Audio (RCAx2)	500mV rms10kΩ
	Video (RCAx1)	1V p-p 75Ω
High Voltage:	28,5kV ±1kV	{28,2kV ±1kV}
Picture Tube:	A66ECF50X42	66cm
	{A59ECF50X42	59cm}
Audio Output:	2 x 20W (Music Power) 8Ω Impedance	
Headphones:	8Ω Impedance 3,5 mm	
Accessories supplied:	Remote Control 2 x R6 (UM3) Batteries	
Dimensions:		
Height:	596,5 mm	{550 mm}
Width:	778 mm	{730 mm}
Depth:	481,5 mm	{479 mm}
Net weight:	35kg	{29kg}

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

NOTE: This Service Manual should be used in conjunction with the EURO-4 Technical Guide.

Panasonic

CONTENTS

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 29,5kV {29,2kV} are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

LEAKAGE CURRENT COLD CHECK

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

LEAKAGE CURRENT HOT CHECK

1. Plug the a.c. cord directly into the a.c outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth, such as a water pipe.
3. Use an a.c. voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed metallic part and check the voltage at each point.
5. Reverse the a.c. plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1,4 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.

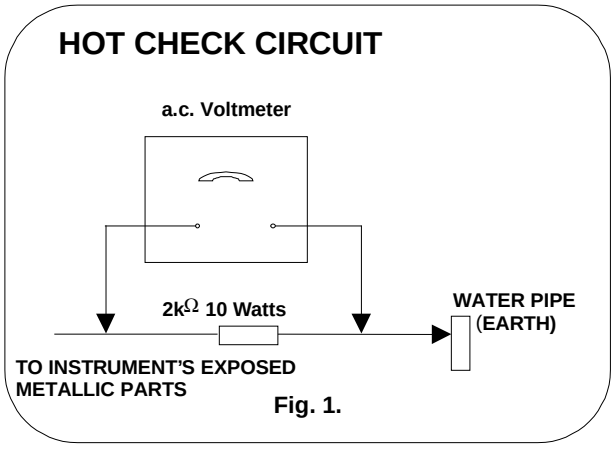


Fig. 1.

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 29,5kV without causing X-Radiation.

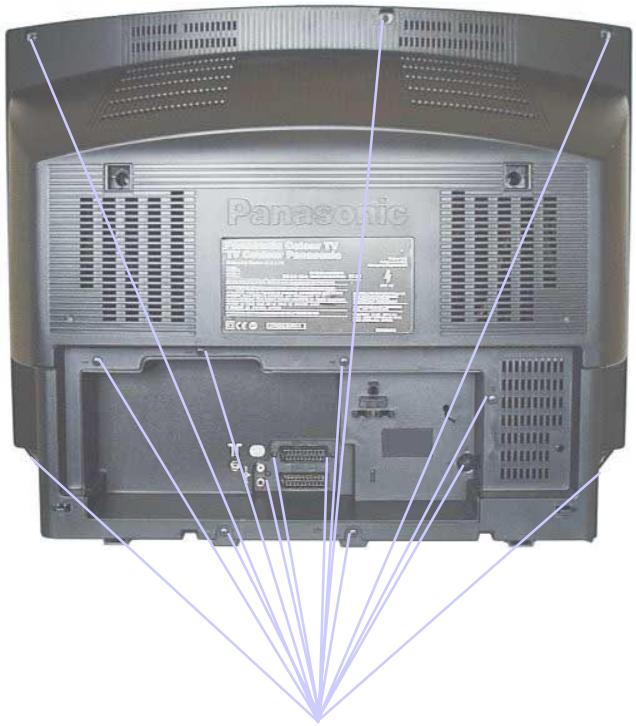
NOTE: It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate: - 28,5kV ± 1kV {28,2kV ± 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 15 screws as shown in **Fig.2.**



SCREWS
Fig.2.

LOCATION OF CONTROLS

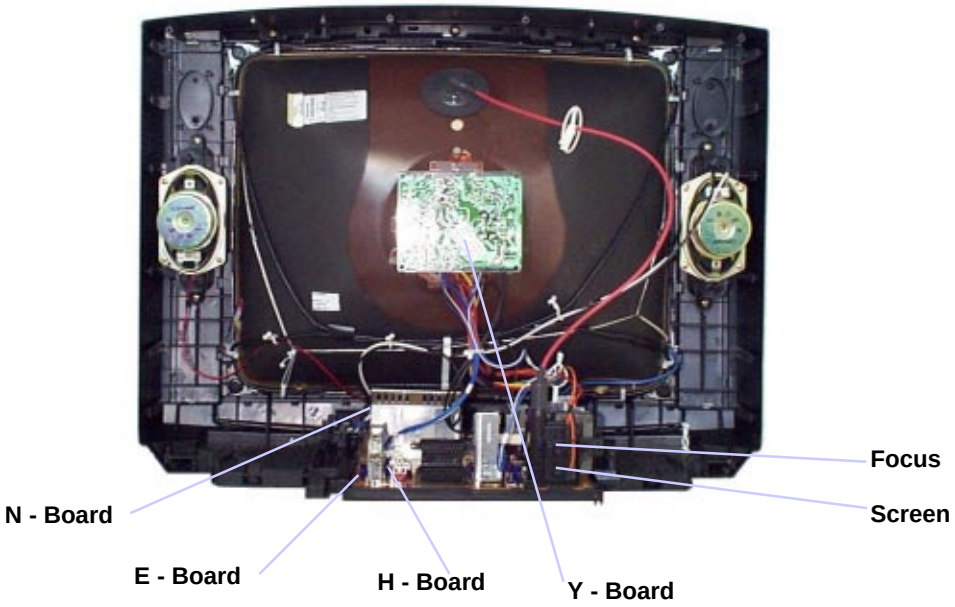


Fig.3.

HOW TO MOVE THE CHASSIS INTO SERVICE POSITION

1. Remove the bead clamper from the mains lead and attach to the degauss coil, shown in **Fig.5**.
2. Hold and lift the rear of the E-PCB chassis and gently pull the chassis toward you, as shown in **Fig.4**.
3. Release the respective wiring clips and rotate the chassis horizontally through 90°, anti-clockwise.
4. Move the EHT lead around to the left side of the CRT neck.
5. Elevate the front of the chassis.
6. Clip the chassis frame onto the bead clamper, on the degauss coil, as shown in **Fig.5**.
7. Locate the base of the chassis frame into the hole **(A)**, shown in **Fig.6**.
8. After servicing replace the bead clamper and ensure all wiring is returned to its original position before returning the receiver to the customer.

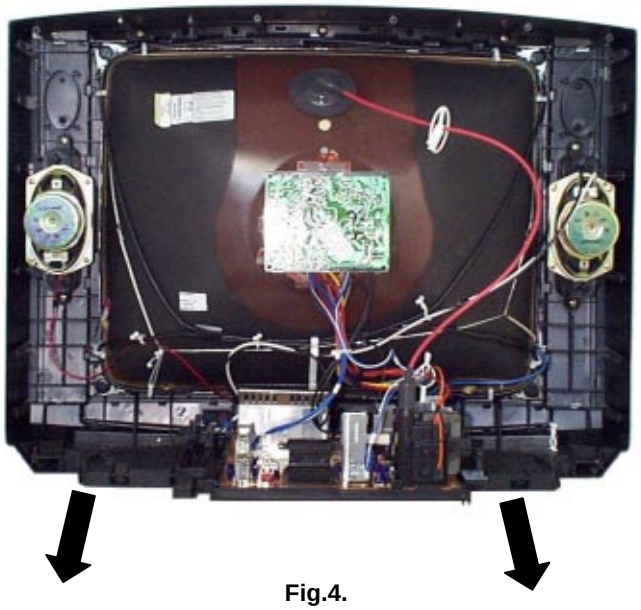
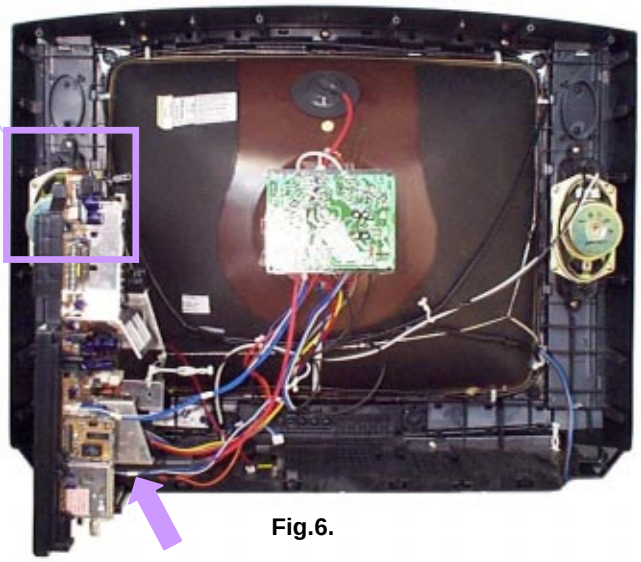


Fig.4.

Fig.5.



(A)

Fig.6.

ADJUSTMENT PROCEDURE

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 software version 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 button on the customer controls at the front of the TV and at the same time press the "**INDEX**" button on the remote control, this will place the TV into the Service Mode.
2. Press the **RED** / **GREEN** buttons to step up / down through the functions.
3. Press the **YELLOW** / **BLUE** buttons to alter the function values.
4. Press the **STR** button after each adjustment has been made to store the required values.
5. To exit the Service Mode, press the "**N"** button.

NOTE: This TV also has the option of using a Memory Pack which enables you to copy the preset TV channels into the Memory Pack and then download them onto this or any other EURO-4 TV set.

TV to Memory Pack process

1. Plug the memory pack into the AV1 21 pin terminal at the back of the TV and switch the TV on.
2. Go into 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 **STR** button on the TV.
   The screen will show :-

Please Wait

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 :-

Complete

Memory Pack to TV process

1. Plug the memory pack into the AV1 21 pin terminal at the back of the TV and switch the TV on.
2. Go into Service Mode as explained above.
   The screen will show :-

Program External>>TV

3. Press the **STR** button on the TV.
   The screen will show :-

Please Wait

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 :-

Complete

5. The tuning information from the Memory Pack has now been copied into the TV.
6. To exit from the Service Mode press the **"N"** button.
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: -

Error !!

If this happens then press the **"N"** button 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.

ADJUSTMENT PROCEDURE

Item / Preparation	Adjustments
+B SET-UP 1. Receive a Greyscale signal. 2. Set the controls :- Brightness Minimum Contrast Minimum Volume Minimum	1. Set the +B voltage up as follows: - Adjust **R811** so that **B2** shows 148V±1V. 2. Confirm the following voltages. **B9** 5 ± 0,25V **B10** 5 ± 0,25V **B5** 12 ± 0,5V **B11** 33 ± 1,5V **B4** 16 ± 1V **B7** 8 ± 0,5V **B12** 26 ± 1V **B8** 5,5 ± 0,5V **B3** 41 ± 1,5V **B13** 15 ± 1V **B1** 200 ± 10V **B14** -15 ± 1V
CUT OFF / Ug2 Test 1. Receive a Greyscale signal. 2. Degauss the tube externally. 3. Set the TV into Service Mode 1. 4. Select Cut off mode.	To adjust Cutoff connect an oscilloscope to the Blue cathode, adjust "cutoff" value using the "**Yellow**" and "**Blue**" buttons until the black level is 160V±5V press "**STR**" to store the value. Remove the oscilloscope. Select Ug2 adjustment and adjust the screen VR until the display shows "O.K."

SELF CHECK

Self-check is used to automatically check the bus lines and hexadecimal code of the TV set. To get into the Self-Check mode press the down **(-/v)** button on the customer controls at the front of the set,at the same time pressing the **STATUS** button [+] on the remote control, and the screen will show :-

VDP	O.K.	PCB	O.K.
TUN	O.K.	Cab	O.K.
E2	O.K.	Sum	Factory use only
MSP	O.K.		
DPL	- -		
OPTION 1	3D		
OPTION 2	0C		
OPTION 3	1F		
OPTION 4	00		
OPTION 5	EF		
OPTION 6	21		

Self Check is also used to automatically check the bus lines and hexadecimal code of the TV set. If the CCU ports have been checked and found to be incorrect or not located then " - - " will appear in place of "O.K.". For more in-depth TV diagnostics use the **LUCI** interface as listed below.

Service Aids

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

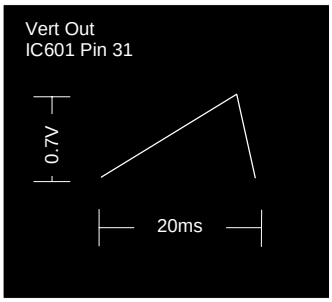
- **LUCI** interface kit (**L**inked **U**tility **C**omputer **I**nterface)
  Part number: TZS6EZ002
  This contains interface and cables for connecting TV service connector and a PC as well as diagnostic software. As new models are introduced upgrade software will become available.

- **VICI** (**V**isual **I**nteractive **C**omputer **I**nformation)
  These C.D.'s contain multimedia documentation providing quick access to service information.
  Part No. TZS7EZ006 & TZS7EZ005
  1. Service Manuals
  2. Instruction Books
  3. Technical Information

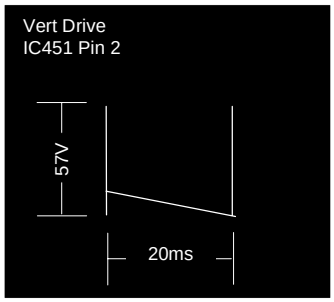
- **TASMIN** (**T**echnically **A**dvanced **S**ystem for **M**ultimedia **I**nteractive **N**otes)
  As well as providing a first step towards more interactive training this product also achieves quick access to Technical Information.

WAVEFORM PATTERN TABLE

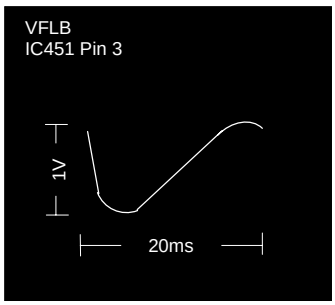
Vert Out
IC601 Pin 31



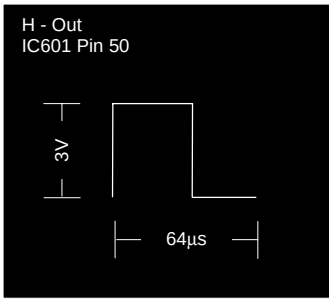
Vert Drive
IC451 Pin 2



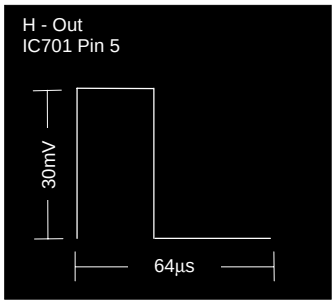
VFLB
IC451 Pin 3



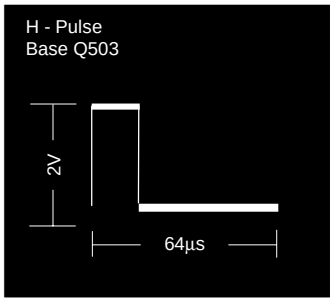
H - Out
IC601 Pin 50



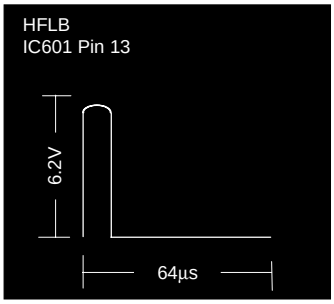
H - Out
IC701 Pin 5



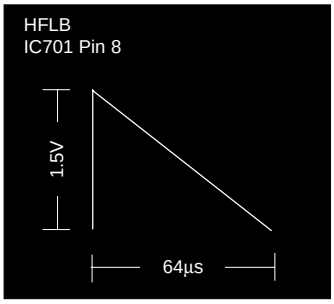
H - Pulse
Base Q503



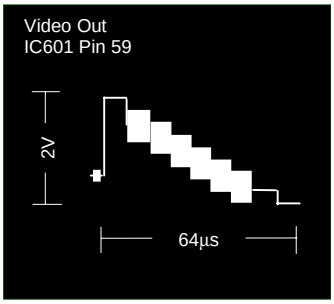
HFLB
IC601 Pin 13



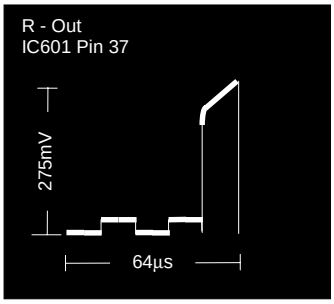
HFLB
IC701 Pin 8



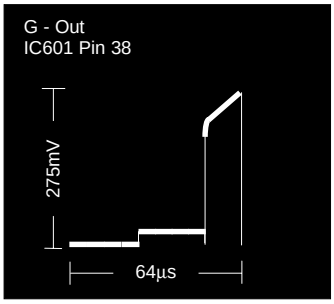
Video Out
IC601 Pin 59



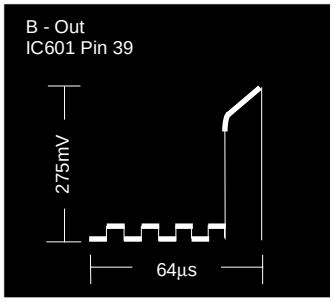
R - Out
IC601 Pin 37



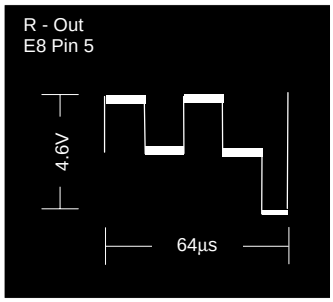
G - Out
IC601 Pin 38



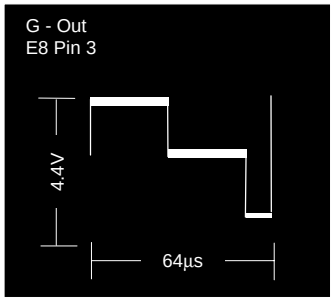
B - Out
IC601 Pin 39



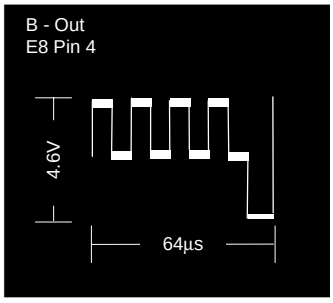
R - Out
E8 Pin 5



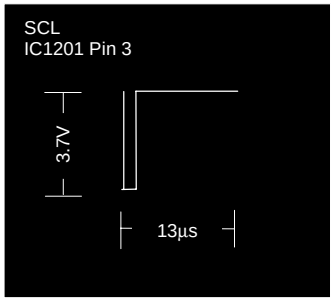
G - Out
E8 Pin 3



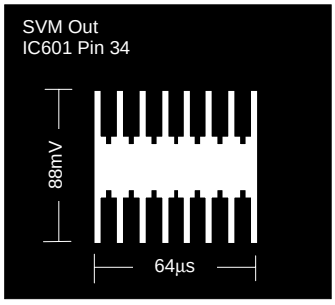
B - Out
E8 Pin 4



SCL
IC1201 Pin 3

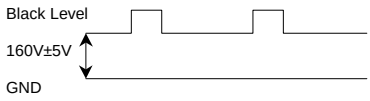


SVM Out
IC601 Pin 34

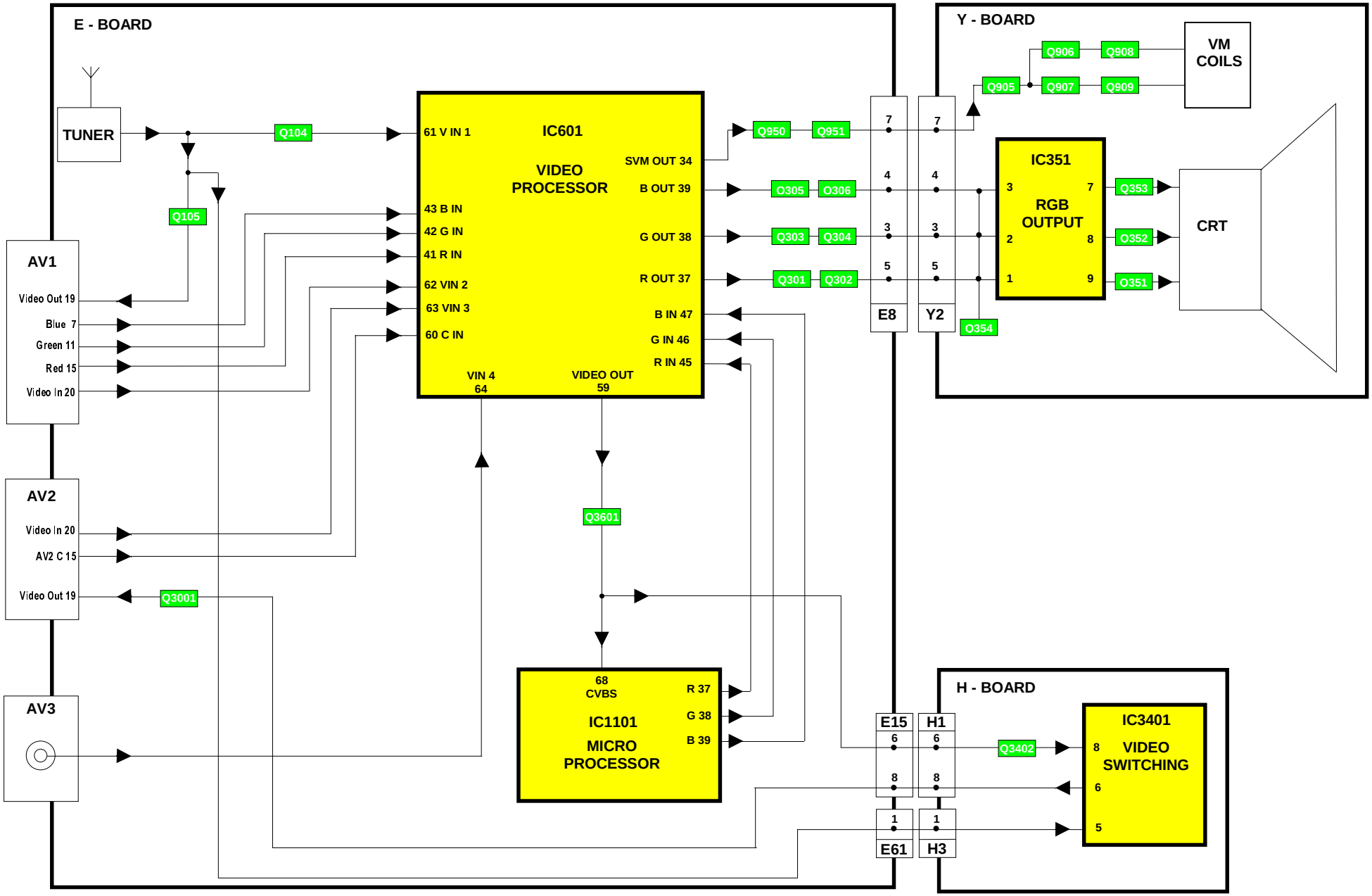


ALIGNMENT SETTINGS

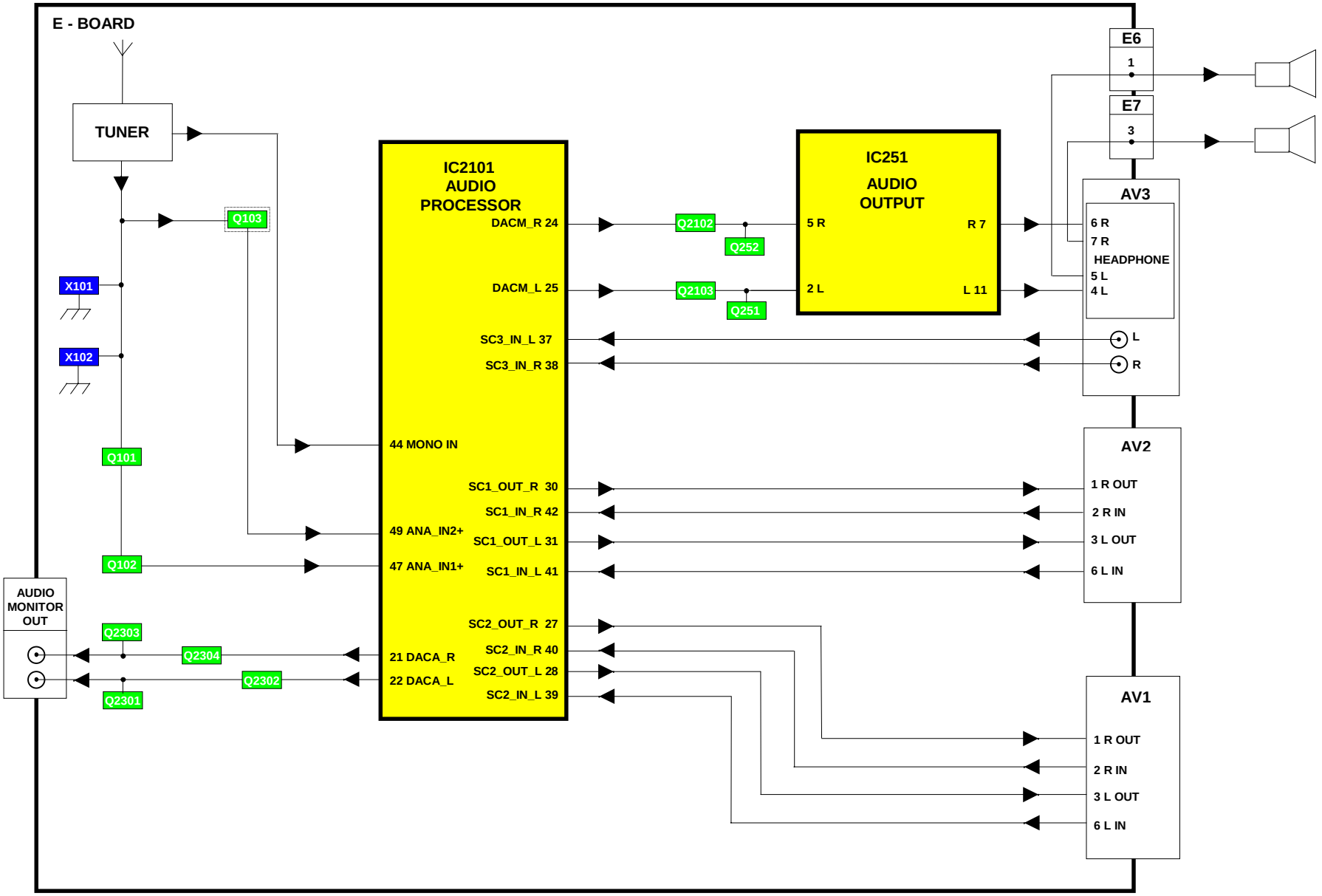
(The figures below are nominal and used for representative purposes only.)

Alignment Function		Settings / Special features
Horizontal Position	H-Pos 061	Optimum setting.
Vertical Position	V-Pos 005	Optimum setting.
Horizontal Amplitude	H-Amp 055	Optimum setting.
Vert. Amplitude	V-Amp 054	Optimum setting.
EW-amplitude	E/W-Amp1 -128	Optimum setting.
EW-amplitude	E/W-Amp2 006	Optimum setting.
Trapezium-comp	Trapez-1 047	Optimum setting.
Trapezium-comp	Trapez-2 -128	Optimum setting.
Vertical Linearity	V-Lin 006	Optimum setting.
Vertical Symmetry	V-Sym 002	Optimum setting.
DVCO	DVCO -005	Receive a PAL Colour Bar Pattern. For DVCO alignment press **"Blue"** button, wait until the colours are changing slowly and press **"STR".**
Cut-off DC	Cut-off 0171	To adjust Cutoff connect an oscilloscope to the blue cathode, adjust "cutoff" value using the "**Yellow**" and "**Blue**" buttons until the black level is 160V±5V press "**STR**" to store the value. Remove the oscilloscope. Select Ug2 adjustment and adjust the screen VR until the display shows "O.K."
Ug2 Test	Ug2 055 O.K.	
Highlight Lowlight	High 0902 0777 0864 Low 0117 0132 0112	Optimum setting.
Sub-Brightness	Sub-Brightness 255	Optimum setting.

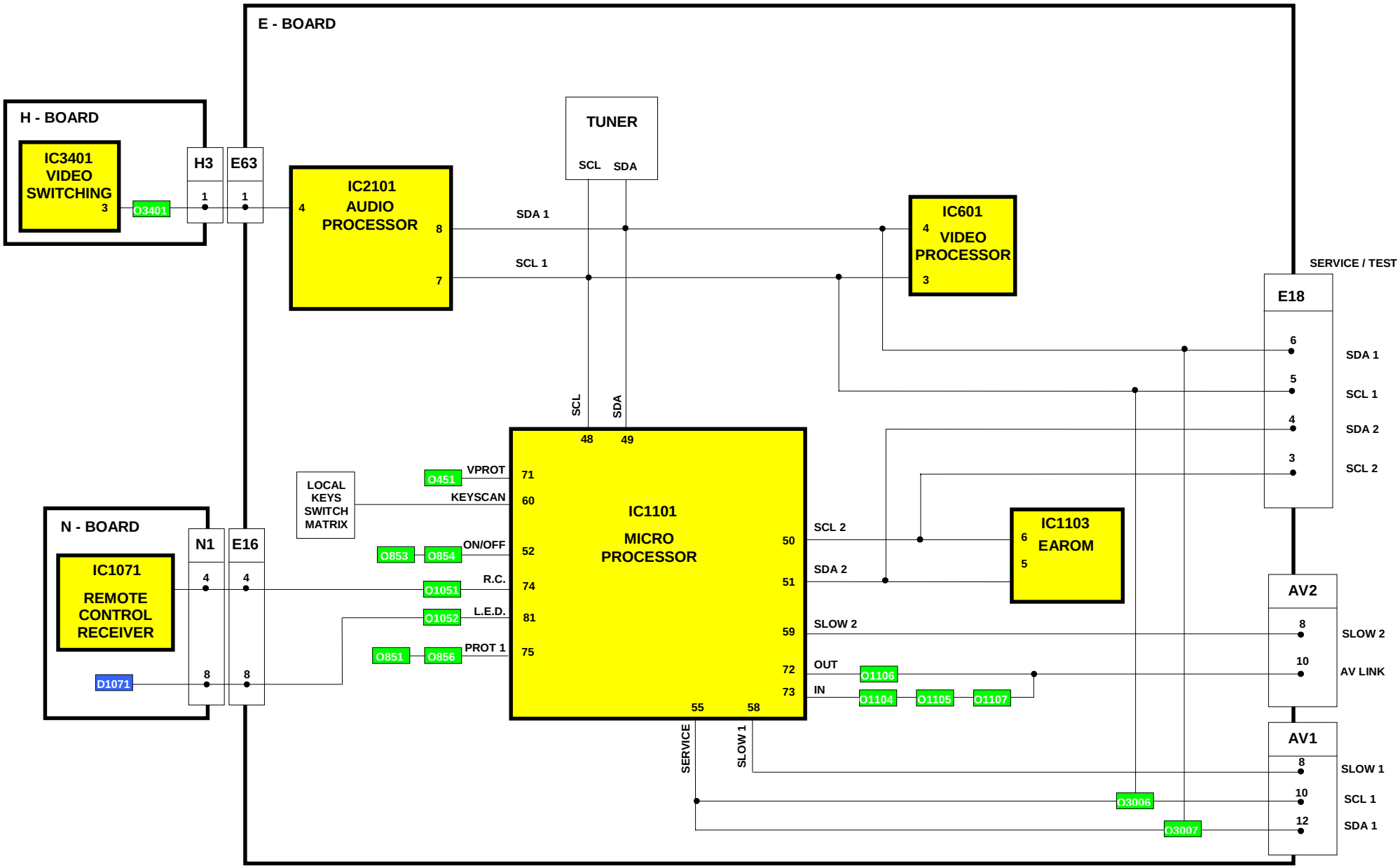
VIDEO BLOCK DIAGRAM



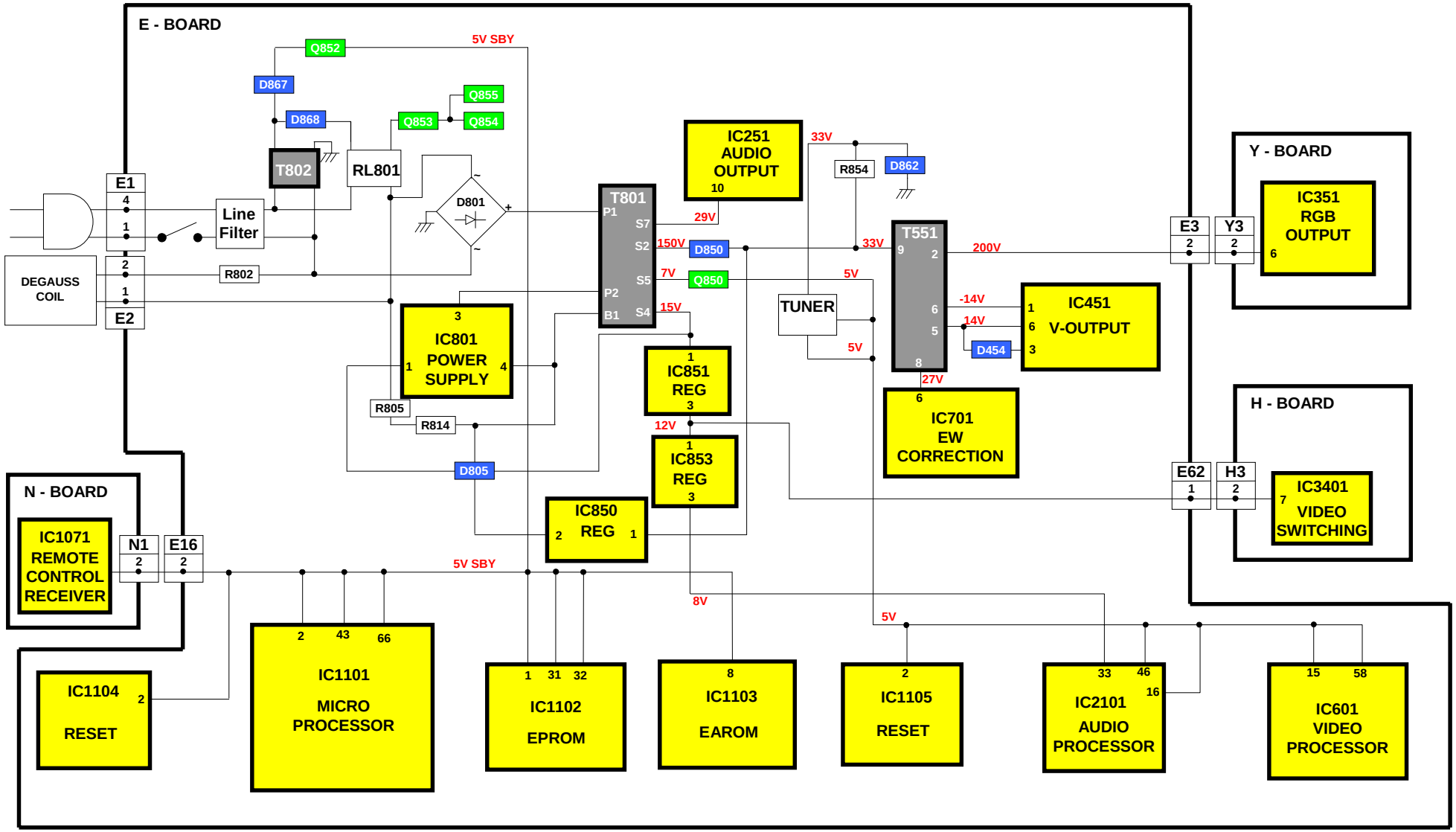
AUDIO BLOCK DIAGRAM



CONTROL BLOCK DIAGRAM

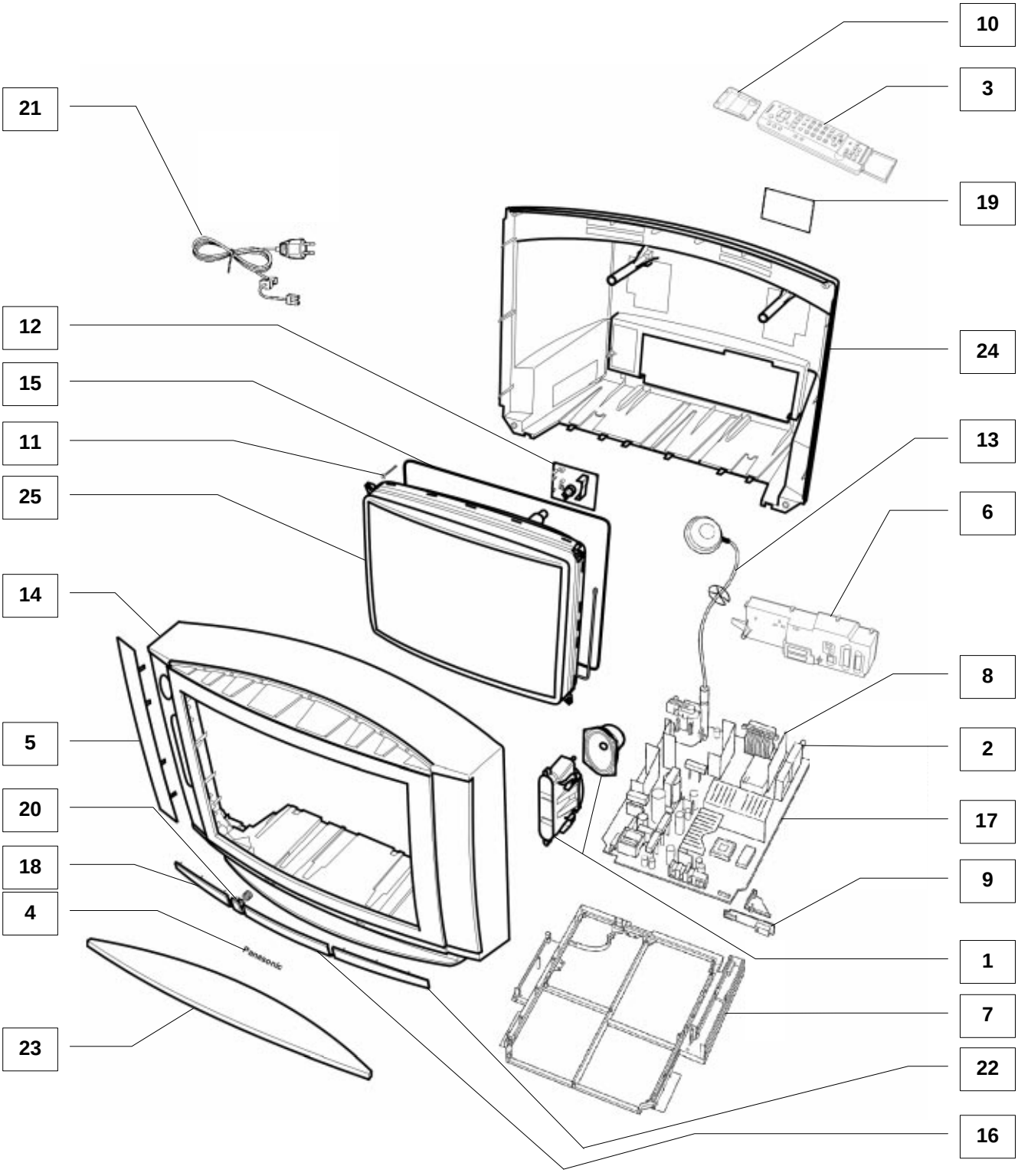


POWER SUPPLY BLOCK DIAGRAM



PARTS LOCATION

NOTE:
The numbers on the exploded view below refer to the mechanical 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 manufacturer's specified parts.

Ref No.	Part No.	Description	
MECHANICAL PARTS			
1	EAGG1216C2	SPEAKER	
2	ENG27507G	TUNER	
3	EUR511200	REMOTE CONTROL	
4	TBM8E1728	PANASONIC BADGE	
5	TKP8E1169	SPEAKER NET	
6	TKP8E1222	REAR AV COVER	
7	TMX8E020	CHASSIS FRAME	
8	TNP8EH002AA	H P.C.B.	⚠
9	TNP8EN015AA	N P.C.B.	⚠
10	UR51EC904A	BATTERY COVER (REMOTE)	
11	VP17005−32	CRT FIXING SCREW	
12	TNP8EY012AF	Y P.C.B.	⚠
13	ZTUZAE550A	ANODE CABLE	⚠
MISCELLANEOUS COMPONENTS			
	PLCC−84−T	84 PIN IC SOCKET	
	2SA1767	TRANSISTOR	
	31221212478	FIX CLIP	
	ERC12GK825	SOLID 0.5W 10% 8M2Ω	
	F9−4−220	RELAY	
	TBM8E1781	REAR AV LABEL	
	TBM8E1615	PRESET LABEL	
	TEK6940	LID CATCHER	
	TES8E015	POWER BUTTON SPRING	
	TMW8E020−1	LED HOLDER	
	UM−3DJ−2P	BATTERY−SET	
	TKP8E1296	AV COVER	
S351	0330550049	CRT SOCKET	⚠
INSTRUCTION BOOKS			
	TQB8E2622MN2	BULG./ROMANIAN	⚠
	TQB8E2622PQ2	POLISH/HUNG.	⚠
	TQB8E2622RU2	CZECH/ENGLISH	⚠
INTEGRATED CIRCUITS			
IC251	LA4282	AUDIO OUTPUT	
IC351	TDA6103Q−N3	R.G.B. AMPLIFIER	
IC451	LA7845N	VERTICAL OUTPUT	
IC601	VDP3108BPPB1	VIDEO PROCESSOR	
IC701	TEA2031A	HORIZONTAL OUTPUT	
IC801	STRF6654LF51	POWER SUPPLY	
IC850	SE140N	ERROR AMPLIFIER	
IC851	L78M12MRB	12V REGULATOR	
IC853	AN78L08TA	8V REGULATOR	
IC1071	RPM−637CBRL	LED RECEIVER	
IC1101	SDA5450C47	MICRO PROCESSOR	
IC1102	27C2001−G06	EPROM *	
IC1104	MN1381−R(TA)	RESET	
IC1105	MN1381−T(TA)	RESET	
IC2101	MSP3410DPOB4	AUDIO PROCESSOR	
IC3401	TEA2114	VIDEO SWITCHING	

Ref No.	Part No.	Description	
FUSES			
F802	19181−3.15	FUSE	⚠
F8021	EYF52BC	FUSE HOLDER	
F8022	EYF52BC	FUSE HOLDER	
DIODES			
D253	MA700TA5	DIODE	
D254	MA700TA5	DIODE	
D354	1SR124−4AT82	DIODE	
D355	1SR124−4AT82	DIODE	
D356	1SR124−4AT82	DIODE	
D357	MA165TA5	DIODE	
D358	MA165TA5	DIODE	
D359	MA165TA5	DIODE	
D360	MTZJT−7715A	DIODE	
D361	MA165TA5	DIODE	
D362	MA165TA5	DIODE	
D363	MA165TA5	DIODE	
D364	MA165TA5	DIODE	
D453	MA165TA5	DIODE	
D454	ERA15−02V3	DIODE	
D456	MTZJT−775.6C	DIODE	
D457	MA165TA5	DIODE	
D501	MA165TA5	DIODE	
D502	1SR124−4AT82	DIODE	
D511	MA4047	DIODE	
D551	ERD07−15L7	DIODE	
D552	RU3LFA1	DIODE	
D553	1SR124−4AT82	DIODE	
D554	1SR124−4AT82	DIODE	
D556	MA165TA5	DIODE	
D557	EU02	DIODE	
D558	1SR124−4AT82	DIODE	
D601	DAN217T146	DIODE	
D603	DAN217T146	DIODE	
D605	DAN212KT146	DIODE	
D606	MA165TA5	DIODE	
D607	MA4051	DIODE	
D609	1SR124−4AT82	DIODE	
D615	STZ6.2NT146	DIODE	
D616	STZ6.2NT146	DIODE	
D701	MA165TA5	DIODE	
D702	MTZJT−775.1C	DIODE	
D704	MA29TA5	DIODE	
D705	MTZJT−775.6C	DIODE	
D801	RBV4−08	DIODE	
D803	1SR124−4AT82	DIODE	
D804	1SR124−4AT82	DIODE	
D805	TLP621GR−LF2	PHOTO COUPLER	⚠
D806	1SR124−4AT82	DIODE	
D850	RU4BLF−L1	DIODE	
D851	MTZJT776.2B	DIODE	
D852	MA165TA5	DIODE	
D853	MA2180BLFS	DIODE	
D854	TVSRU2AMLFA5	DIODE	
D855	FML22SLF610	DIODE	
D856	RU4AMLF−M1	DIODE	
D857	MTZJT−775.1C	DIODE	
D858	MA165TA5	DIODE	
D859	MA165TA5	DIODE	
D861	MA165TA5	DIODE	

Ref No.	Part No.	Description
D862	MTZJT−7736A	DIODE
D863	MA165TA5	DIODE
D865	MA165TA5	DIODE
D866	MA165TA5	DIODE
D867	EK06−V0	DIODE
D868	1N4150T−77	DIODE
D869	1N4150T−77	DIODE
D870	MA165TA5	DIODE
D871	1N4150T−77	DIODE
D873	MTZJT−775.6C	DIODE
D874	1SR124−4AT82	DIODE
D875	BZX79A75A26A	DIODE
D901	MA165TA5	DIODE
D902	MA165TA5	DIODE
D904	MA165TA5	DIODE
D905	MA165TA5	DIODE
D906	RLS72TE−11	DIODE
D1071	SLR56UR3FLF	LED
D1072	MTZJT−778.2C	DIODE
D1101	MA165TA5	DIODE
D1102	MA165TA5	DIODE
D2101	MA723TA5	DIODE
D2102	MA723TA5	DIODE
D2103	MA723TA5	DIODE
D2104	MA723TA5	DIODE
D2105	MTZJT−778.2C	DIODE
D2303	MA723TA5	DIODE
D2304	MA723TA5	DIODE
D3101	MTZJT−778.2C	DIODE
D3102	MTZJT−778.2C	DIODE

TRANSISTORS

Q101	BC847B	TRANSISTOR
Q102	BC847B	TRANSISTOR
Q104	BC847B	TRANSISTOR
Q105	BC847B	TRANSISTOR
Q251	2SD1328STX	TRANSISTOR
Q252	2SD1328STX	TRANSISTOR
Q253	BC847B	TRANSISTOR
Q254	BC847B	TRANSISTOR
Q301	BC847B	TRANSISTOR
Q302	FMY4T148	TRANSISTOR
Q303	BC847B	TRANSISTOR
Q304	FMY4T148	TRANSISTOR
Q305	BC847B	TRANSISTOR
Q306	FMY4T148	TRANSISTOR
Q351	TYMQ0002	TRANSISTOR
Q352	TYMQ0002	TRANSISTOR
Q353	TYMQ0002	TRANSISTOR
Q354	BC857B	TRANSISTOR
Q451	BC857B	TRANSISTOR
Q503	2SD2398−M2	TRANSISTOR
Q551	BU2508AXLB	TRANSISTOR
Q552	2SC1473−RN	TRANSISTOR
Q701	BC857B	TRANSISTOR
Q850	2SD1273PLB	TRANSISTOR
Q851	BC857B	TRANSISTOR
Q852	2SC1383−S	TRANSISTOR
Q853	BC847B	TRANSISTOR
Q854	BC847B	TRANSISTOR
Q855	BC847B	TRANSISTOR
Q856	BC847B	TRANSISTOR
Q857	2SA1018QTA	TRANSISTOR
Q905	BC847B	TRANSISTOR
Q906	BC847B	TRANSISTOR
Q907	BC857B	TRANSISTOR
Q908	2SA1535ARLB	TRANSISTOR
Q909	2SC3944ARLB	TRANSISTOR
Q950	BC847B	TRANSISTOR
Q951	FMY4T148	TRANSISTOR

Ref No.	Part No.	Description
Q1051	BC847B	TRANSISTOR
Q1072	BC847B	TRANSISTOR
Q1101	BC847B	TRANSISTOR
Q1104	BC847B	TRANSISTOR
Q1105	BC847B	TRANSISTOR
Q1106	BC847B	TRANSISTOR
Q1107	BC847B	TRANSISTOR
Q1108	BC847B	TRANSISTOR
Q2101	BC857B	TRANSISTOR
Q2102	BC857B	TRANSISTOR
Q2103	BC857B	TRANSISTOR
Q2301	BC847B	TRANSISTOR
Q2302	BC857B	TRANSISTOR
Q2303	BC847B	TRANSISTOR
Q2304	BC857B	TRANSISTOR
Q3001	BC847B	TRANSISTOR
Q3006	BC847B	TRANSISTOR
Q3007	BC847B	TRANSISTOR
Q3401	BC847B	TRANSISTOR
Q3402	BC847B	TRANSISTOR
Q3601	BC847B	TRANSISTOR

TRANSFORMERS

T501	ETH19Y173AY	TRANSFORMER	
T551	ZTFL94002A	F.B.T.	⚠
T801	ETS39AG1H7AD	TRANSFORMER	⚠
T802	ETP35KAN619U	TRANSFORMER	⚠

COILS

L104	EXCELSA35T	COIL
L106	TLTACT100K	COIL
L107	TLTACT6R8K	COIL
L301	TLTACT4R7K	COIL
L302	TLTACT4R7K	COIL
L451	EXCELSA35T	COIL
L501	EXCELSA35T	COIL
L552	ELH5L4105	COIL
L553	ELC08D682E	COIL
L554	ELC18B102L	COIL
L601	TLTACT4R7K	COIL
L602	TLTACT4R7K	COIL
L603	TLTACT4R7K	COIL
L604	TLTACT4R7K	COIL
L606	TLTACT4R7K	COIL
L607	ELJFC2R2KF	COIL
L701	ELC10D822E	COIL
L804	ELF18N010A	LINE FILTER
L850	EXCELSA35T	COIL
L851	EXCELSA35T	COIL
L852	ELEIE470KA	COIL
L853	EXCELSA35T	COIL
L854	EXCELSA35T	COIL
L855	EXCELSA35T	COIL
L856	EXCELSA39V	COIL
L901	EXCELSA24T	COIL
L902	EXCELSA24T	COIL
L1103	TLTACT100K	COIL
L1104	EXCELSA35T	COIL
L1105	ELJFC2R2KF	COIL
L2101	TLTACT100K	COIL
L2103	EXCELSA35T	COIL
L2104	TLTACT4R7K	COIL
L3001	ELEMV1R5MA	COIL
L3002	ELEMV1R5MA	COIL
L3003	ELEMV1R5MA	COIL
L3004	ELEMV1R5MA	COIL
L3005	ELEBR2R2KA	COIL
L3006	ELEBR2R2KA	COIL
L3007	TLTACT2R2K	COIL

Ref No.	Part No.	Description				
L3101	ELEBT6R8KA	COIL				
L3102	ELEBT6R8KA	COIL				
L3401	ELESN2R2KA	COIL				
L3402	ELESN2R2KA	COIL				

FILTERS

X601	4730007267	CRYSTAL				
X1101	TSSA121	CRYSTAL				
X2101	4730007158	CRYSTAL				

RESISTOR

RL801	TSE1885-1	RELAY				⚠
R101	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R102	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R103	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R104	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R106	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R107	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R111	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R112	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R113	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R114	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R115	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R116	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R117	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R118	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R120	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R121	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R251	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R252	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
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	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
R258	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R259	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
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	
R263	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R264	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	⚠
R268	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R269	ERQ14AJ101	METAL	0.25W	5%	100Ω	⚠
R271	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R272	ERF7ZK4R7	WOUND	7W	10%	4R7Ω	⚠
R301	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R302	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R303	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R304	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R305	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R306	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R307	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R308	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R309	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R310	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R311	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R312	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R351	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K0Ω	
R352	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K0Ω	
R353	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K0Ω	
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	ERDS1TJ114	CARBON	0.5W	5%	110KΩ	
R358	ERDS1TJ114	CARBON	0.5W	5%	110KΩ	
R359	ERDS1TJ114	CARBON	0.5W	5%	110KΩ	
R363	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R364	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R365	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R366	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R367	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R368	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R369	ERD25TJ472	CARBON	0.25W	5%	4K7Ω	
R370	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R372	ERQ12AJ121	FUSIBLE	0.5W	5%	120Ω	⚠
R373	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22Ω	
R374	ERD25TJ274	CARBON	0.25W	5%	270KΩ	
R375	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680KΩ	
R376	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R377	ERQ1ABJP5R1	FUSIBLE	1W	5%	5R1Ω	⚠
R381	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R451	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R452	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R453	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R454	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5Ω	
R455	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R456	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R457	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R458	ERD25TJ1R5	CARBON	0.25W	5%	1R5Ω	
R459	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R460	ERDS1TJ331	CARBON	0.5W	5%	330Ω	
R461	ERW2PK1R2	WIRE	2W	10%	1R2Ω	
R463	ERD25TJ222	CARBON	0.25W	5%	2K2Ω	
R464	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω	
R465	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R502	ERJ6GEYJ511	S.M.CARB	0.1W	5%	510Ω	
R506	ERD25TJ560	CARBON	0.25W	5%	56Ω	
R507	ERG1FJ271P	METAL	1W	5%	270Ω	⚠
R509	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R510	ERDS1FJ152	CARBON	0.5W	5%	1K5Ω	⚠
R553	ERG1SJ152	METAL	1W	5%	1K5Ω	
R554	ERG1SJ101	METAL	1W	5%	100Ω	
R555	ERQ12HKR33	METAL	0.5W	5%	R33Ω	⚠
R558	ERDS1TJ124	CARBON	0.5W	5%	120KΩ	
R559	ERQ12HKR33	METAL	0.5W	5%	R33Ω	⚠
R560	ERJ6GEYJ274	S.M.CARB	0.1W	5%	270KΩ	
R561	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R563	ERJ6GEYJ474	S.M.CARB	0.1W	5%	470KΩ	
R564	ERJ6GEYJ623	SM.CARB	0.125W	5%	62KΩ	
R566	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R567	ERF7ZK1R0	WIREWOUND	7W	10%	1Ω	⚠
R601	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R602	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω	
R603	ERJ8GEYJ103	S.M.CAR	.125W	5%	10KΩ	
R604	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R605	ERD25TJ331	CARBON	0.25W	5%	330Ω	
R606	ERD25TJ331	CARBON	0.25W	5%	330Ω	
R607	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω	
R608	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R609	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2Ω	
R610	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R611	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R612	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R613	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R622	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R636	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R645	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R647	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R648	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R650	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R651	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R652	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R654	ERJ6GEYJ622	SM.CARB	0.125W	5%	6.2KΩ	
R655	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R658	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	

Ref No.	Part No.	Description				
R659	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R660	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R701	ERQ12AJ101	FUSIBLE	0.5W	5%	100Ω	⚠
R702	ERQ12HJ8R2	METAL	0.5W	5%	8R2Ω	⚠
R703	ERG2FJ821	METAL	2W	5%	820Ω	⚠
R704	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R705	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R706	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R707	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
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	ERG1SJ101	METAL	1W	5%	100Ω	
R712	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R802	232266296706	THERMISTOR				
R803	ERC12ZGK335D	SOLID	0.5W	10%	3M3Ω	
R805	ERD25TJ473	CARBON	0.25W	5%	47KΩ	
R806	ERD25TJ100	CARBON	0.25W	5%	10Ω	
R807	ERD25TJ332	CARBON	0.25W	5%	3K3Ω	
R809	ERD25TJ681	CARBON	0.25W	5%	680Ω	
R810	ERW2PKR27	WIRE	2W	10%	R27Ω	
R811	ERW2PKR33	WIRE	2W	10%	R33Ω	
R812	ERD75TAJ825	CARBON	0.75W	5%	8M2Ω	⚠
R813	ERF7ZK2R7	WOUND	7W	20%	2R7Ω	⚠
R814	ERD25TJ473	CARBON	0.25W	5%	47KΩ	
R815	ERD25TJ222	CARBON	0.25W	5%	2K2Ω	
R850	ERD25TJ122	CARBON	0.25W	5%	1K2Ω	
R852	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R853	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R854	ERG2FJ223	METAL	2W	5%	22KΩ	⚠
R855	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5Ω	
R857	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5Ω	
R858	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5Ω	
R859	ERJ6GEYJ753	S.M.CARB	0.1W	5%	75KΩ	
R860	ERQ1CJP2R2	FUSIBLE	1W	5%	2R2Ω	⚠
R861	ERD25TJ221	CARBON	0.25W	5%	220Ω	
R862	ERD25TJ272	CARBON	0.25W	5%	2K7Ω	
R863	ERDS1TJ560	CARBON	0.5W	5%	56Ω	
R864	ERDS1TJ680	CARBON	0.5W	5%	68Ω	
R865	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R867	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R868	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R869	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R870	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7Ω	
R871	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R872	ERG1SJ183	METAL	1W	5%	18KΩ	⚠
R873	ERG1SJ223	METAL	1W	5%	22KΩ	⚠
R874	ERD25TJ104	CARBON	0.25W	5%	100KΩ	
R876	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R877	ERW2PKR56	WIRE	2W	10%	R56Ω	⚠
R878	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R913	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R914	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2Ω	
R915	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R916	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R919	ERQ14AJW390	FUSIBLE	14W	5%	39Ω	⚠
R920	ERQ14AJW390	FUSIBLE	14W	5%	39Ω	⚠
R921	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R922	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R923	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R924	ERDS1FJ390	CARBON	0.5W	5%	39Ω	⚠
R925	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R926	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R927	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R928	ERD25TJ5R6	CARBON	0.25W	5%	5R6Ω	
R929	ERDS1FJ471	CARBON	0.5W	5%	470Ω	⚠
R930	ERD25TJ5R6	CARBON	0.25W	5%	5R6Ω	
R931	ERDS1FJ390	CARBON	0.5W	5%	39Ω	⚠
R935	ERQ14AJW3R9	FUSIBLE	14W	5%	3R9Ω	⚠
R936	ERQ1CJP331	METAL	1W	5%	330Ω	⚠
R951	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	

Ref No.	Part No.	Description			
R952	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R953	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R954	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R1051	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R1071	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R1073	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R1074	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R1101	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1102	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R1103	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω
R1104	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω
R1105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1106	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R1107	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R1108	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R1109	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1110	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1111	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R1112	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R1113	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1115	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R1116	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1117	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1118	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1119	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1120	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1121	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1123	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1125	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1126	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1127	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1128	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω
R1129	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω
R1130	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R1131	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R1132	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1133	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R1136	ERJ6GEYJ823	S.M.CARB	0.1W	55	82KΩ
R1137	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R1138	ERJ6GEYJ474	S.M.CARB	0.1W	5%	470KΩ
R1139	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R1140	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R1141	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R1145	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1146	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1147	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1148	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1149	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ
R1151	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1152	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1156	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1157	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R1158	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R1159	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R1160	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ
R1161	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R1162	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R1163	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R1164	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R1165	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1Ω
R1166	ERJ6GEYJ912	SM.CARB	0.125W	5%	9.1KΩ
R1167	ERJ6GEYJ100	S.M.CARB	0.1W	5%	10Ω
R1168	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R1169	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R1170	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R1171	ERJ6GEYJ224	S.M.CARB	0.1W	5%	220KΩ
R1172	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ
R1173	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R1174	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω
R1175	ERJ6GEYJ225	SM.CARB	0.125W	5%	2.2MΩ
R1177	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R1178	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description				
R2101	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2102	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2103	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2104	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2106	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2107	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2108	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2109	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R2110	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R2111	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R2112	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R2113	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R2114	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2115	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2116	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2117	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2118	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2119	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2120	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2302	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2303	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2305	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R2306	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2308	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2309	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2310	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2311	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R2312	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3001	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3002	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3003	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3004	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3005	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3006	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3007	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3008	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3009	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3010	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3011	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3012	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3013	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3014	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3015	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3016	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3017	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3018	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3019	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3020	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3021	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3022	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R3023	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R3024	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R3025	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3026	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3044	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3046	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3047	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3048	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3049	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3050	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3057	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3101	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R3102	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R3103	ERG2FJ221	METAL	2W	5%	220Ω	⚠
R3104	ERG2FJ221	METAL	2W	5%	220Ω	⚠
R3105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3106	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3107	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3108	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3402	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	

Ref No.	Part No.	Description				
R3403	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3404	ERJ6GEYJ242	S.M.CARB	0.1W	5%	2K4Ω	
R3405	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R3406	ERJ6GEYJ301	SM.CARB	0.125W	5%	300Ω	
R3407	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R3408	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R3409	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3601	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3602	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3603	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3604	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3605	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3606	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3607	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R3608	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5Ω	
R3609	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
R3610	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	

CAPACITORS

C101	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω	
C102	ECUV1H103ZFX	S.M.CAP	50V	10nF		
C103	ECJ2VF1H104Z	ELECT	350V	0.10μF		
C106	ECUV1H560JCX	S.M.CAP	50V	56pF		
C107	ECJ2VF1H104Z	ELECT	350V	0.10μF		
C108	ECA1CM100GB	ELECT	16V	10pF		
C109	ECUV1H102JCX	S.M.CAP	50V	1nF		
C110	ECUV1H103ZFX	S.M.CAP	50V	10nF		
C111	ECA1HMR33GB	ELECT	50V	0.33μF		
C117	ECUV1H103ZFX	S.M.CAP	50V	10nF		
C118	ECJ2VF1H104Z	ELECT	350V	0.10μF		
C119	ECA1CM221GB	ELECT	16V	220pF		
C120	ECA1CM221GB	ELECT	16V	220pF		
C121	ECUV1H561KBX	S.M.CAP	50V	560pF		
C122	ECUV1H102KBX	S.M.CAP	50V	1nF		
C123	ECUV1H102KBX	S.M.CAP	50V	1nF		
C124	ECUV1H220JCX	S.M.CAP	50V	22pF		
C125	ECUV1H100DCX	S.M.CAP	50V	10pF		
C251	ECA1EM330B	ELECT	25V	33pF		
C252	ECUV1H223KBX	S.M.CAP	50V	22nF		
C253	ECA1HM4R7GB	ELECT	50V	4.7μF		
C254	ECQM1H334J	FILM	50V	330nF		
C255	ECA1EM101GB	ELECT	25V	1μF		
C256	ECUV1H223KBX	S.M.CAP	50V	22nF		
C257	ECA1HM4R7GB	ELECT	50V	4.7μF		
C258	ECA1EM330B	ELECT	25V	33pF		
C259	ECQM1H334J	FILM	50V	330nF		
C260	ECA1VM102GB	ELECT	35V	1nF		
C261	ECA1VM102GB	ELECT	35V	1nF		
C262	ECQM1H224J	FILM	50V	220nF		
C263	ECA1HM010GB	ELECT	50V	1pF		
C264	ECA1HHG222E	ELECT	50V	2.2nF		
C265	ECQM1H224J	FILM	50V	220nF		
C266	ECA1HM010GB	ELECT	50V	1pF		
C267	ECJ2VB1H104K	ELECT	350V	0.10μF		
C268	ECJ2VB1H104K	ELECT	350V	0.10μF		
C270	ECJ2VB1H104K	ELECT	350V	0.10μF		
C301	ECJ2VB1C104K	ELECT	350V	0.10μF		
C302	ECJ2VB1C104K	ELECT	350V	0.10μF		
C303	ECJ2VB1C104K	ELECT	350V	0.10μF		
C304	ECA1CM100GB	ELECT	16V	10pF		
C354	ECQM2104KZ	FILM	250V	100nF		
C355	ECUV1H471JCX	S.M.CAP	50V	470pF		
C356	ECUV1H471JCX	S.M.CAP	50V	470pF		
C357	ECUV1H471JCX	S.M.CAP	50V	470pF		
C358	ECQM1H224J	FILM	50V	220nF		
C360	ECKC3D152J	CERAMIC	2KV	1.5nF		⚠
C361	ECA1HMR47GB	ELECT	50V	0.47μF		
C363	ECA1VM471GB	ELECT	35V	470pF		
C364	ECJ2VF1H103Z	ELECT	350V	10nF		
C366	ECA1CM100GB	ELECT	16V	10pF		

Ref No.	Part No.	Description			
C451	ECUV1H102JX	S.M.CAP	50V	1nF	
C453	ECUV1H152KBX	S.M.CAP	50V	1.5pF	
C454	ECUV1H223KBM	S.M.CAP	50V	22nF	
C455	ECA1HM100GB	ELECT	50V	10pF	
C456	ECA1HHG221B	ELECT	50V	220pF	
C458	ECQB1222JF3	FILM	100V	2.2nF	
C459	222236516154	FILM	160V	150nF	
C461	ECCR2H270J	CERAMIC	500V	27pF	
C508	ECQV1H105JZ	FILM	50V	1μF	
C509	ECA1VM470B	ELECT	35V	47pF	
C510	ECUV1H104KBX	S.M.CAP	50V	100nF	
C511	ECQM2683JZ	FILM	250V	68nF	
C551	ECKC3D152J	CERAMIC	2KV	1.5nF	⚠
C552	ECWH15H102JN	FILM	1500V	1nF	
C554	ECWF2H514J	FILM	500V	510nF	⚠
C555	ECWH15H103JN	FILM	1500V	10nF	
C556	ECQM4333JC	FILM	400V	33nF	
C557	ECKC2H471J	CERAMIC	500V	470pF	⚠
C558	ECA1HHG471E	ELECT	50V	470pF	
C559	ECWF2H684J	FILM	500V	680nF	⚠
C560	ECA2GHG2R2B	ELECT	400V	2R2μF	
C561	ECA1EHG102B	ELECT	25V	1nF	
C562	ECKC2H101J	CERAMIC	500V	100pF	⚠
C563	ECA2EHG220B	ELECT	250V	22pF	
C564	ECEA2AU2R2	ELECT	100V	2.2μF	
C565	ECQP1H273J	FILM	100V	2700μF	
C566	ECKC2H471J	CERAMIC	500V	470pF	⚠
C567	ECA1EHG102B	ELECT	25V	1nF	
C568	ECKC2H471J	CERAMIC	500V	470pF	⚠
C569	ECKC2H102J	CERAMIC	500V	1nF	⚠
C601	ECUV1H104KBX	S.M.CAP	50V	100nF	
C602	ECA1HM101GB	ELECT	50V	100pF	
C603	ECUV1H102JCX	S.M.CAP	50V	1nF	
C604	ECJ2VF1H223Z	ELECT	350V	22nF	
C605	ECA1HM101GB	ELECT	50V	100pF	
C606	ECA1HM3R3GB	ELECT	50V	3.3μF	
C607	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C608	ECUV1H153KBX	S.M.CAP	50V	15nF	
C609	ECUV1H153KBX	S.M.CAP	50V	15nF	
C610	ECUV1H153KBX	S.M.CAP	50V	15nF	
C611	ECUV1H153KBX	S.M.CAP	50V	15nF	
C612	ECUV1H153KBX	S.M.CAP	50V	15nF	
C613	ECUV1H153KBX	S.M.CAP	50V	15nF	
C614	ECUV1H050CCX	S.M.CAP	50V	5pF	
C615	ECUV1H050CCX	S.M.CAP	50V	5pF	
C616	ECA1HM101GB	ELECT	50V	100pF	
C617	ECUV1H223KBX	S.M.CAP	50V	22nF	
C618	ECA1CM221GB	ELECT	16V	220pF	
C619	ECJ2VB1H473K	ELECT	350V	47nF	
C620	ECA1HM101GB	ELECT	50V	100pF	
C621	ECJ2VB1C104K	ELECT	350V	0.10μF	
C622	ECUV1H683KBX	S.M.CAP	50V	68nF	
C623	ECUV1H102JCX	S.M.CAP	50V	1nF	
C624	ECJ3VB1C474K	ELECT	3.5KV	0.47μF	
C625	ECJ3VB1C474K	ELECT	3.5KV	0.47μF	
C626	ECJ3VB1C474K	ELECT	3.5KV	0.47μF	
C627	ECJ3VB1C474K	ELECT	3.5KV	0.47μF	
C628	ECA1CM100GB	ELECT	16V	10pF	
C629	ECUV1H104KBX	S.M.CAP	50V	100nF	
C630	ECUV1H100DCX	S.M.CAP	50V	10pF	
C631	ECUV1H683ZFX	S.M.CAP	50V	68nF	
C632	ECUV1H270JCX	S.M.CAP	50V	27pF	
C633	ECUV1H271JCX	S.M.CAP	50V	270pF	
C634	ECUV1H271JCX	S.M.CAP	50V	270pF	
C635	ECUV1H180JCX	S.M.CAP	50V	18pF	
C636	ECUV1H271JCX	S.M.CAP	50V	270pF	
C637	ECUV1H101JCX	S.M.CAP	50V	100pF	
C638	ECUV1H471JCX	S.M.CAP	50V	470pF	
C639	ECUV1H332KBM	S.M.CAP	50V	3.3nF	
C701	ECA1HHG101B	ELECT	50V	100pF	
C702	ECUV1H103KBX	S.M.CAP	50V	10nF	
C703	ECEA1HGE100	ELECT	50V	10μF	

Ref No.	Part No.	Description			
C704	ECQB1H223K	FILM	50V	22nF	
C705	ECQB1H222J	FILM	50V	2200pF	
C804	ECQE2A474MWB	FILM	100V	0.47μF	
C806	ECKWNA101MBC	CERAMIC	400V	100pF	
C807	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C808	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C809	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C810	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C811	ECOS2GG181NG	ELECT	400V	180μF	⚠
C814	ECKC3D102J	CERAMIC	2KV	1nF	⚠
C815	ECKC1H471J	CERAMIC	50V	470pF	
C816	ECA1EM101GB	ELECT	25V	1μF	
C817	ECQE6104K	FILM	600V	100nF	⚠
C818	ECKWNA332MEC	CERAMIC	250V	3.3nF	⚠
C819	ECQB1H152K	FILM	50V	1.5nF	
C850	ECKC3D471JB	CERAMIC	2KV	470pF	⚠
C851	ECA2CM221E	ELECT	160V	220pF	
C852	ECA2CHG101E	ELECT	160V	100pF	
C853	ECKC2H471J	CERAMIC	500V	470pF	⚠
C854	ECA1EM102GB	ELECT	25V	1nF	
C855	ECKC2H471J	CERAMIC	500V	470pF	⚠
C856	ECA1AHG222B	ELECT	10V	2.2nF	
C857	ECKC2H471J	CERAMIC	500V	470pF	⚠
C858	ECEA1HGE102	ELECT	50V	1000μF	
C859	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C860	ECA1HM101GB	ELECT	50V	100pF	
C862	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C863	ECA1HM101GB	ELECT	50V	100pF	
C866	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C867	ECA1CM100GB	ELECT	16V	10pF	
C868	ECA1CM100GB	ELECT	16V	10pF	
C869	ECA1EM101GB	ELECT	25V	1μF	
C870	ECA1EM471GB	ELECT	25V	470pF	
C871	ECA1CM102B	ELECT	16V	1nF	
C872	ECA1CM471GB	ELECT	16V	470pF	
C873	ECA1CM100GB	ELECT	16V	10pF	
C875	ECA2CM4R7B	ELECT		4R7μF	
C876	ECA1AHG471E	ELECT	10V	470pF	
C902	ECA1VM101GB	ELECT	35V	100pF	
C903	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C904	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C906	ECUV1H471KBX	S.M.CAP	50V	470pF	
C908	ECUV1H151JCX	S.M.CAP	50V	150pF	
C909	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C910	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C911	ECUV1H151JCX	S.M.CAP	50V	150pF	
C912	ECEA2CU100	ELECT	160V	10μF	
C913	ECA1HM101GB	ELECT	50V	100pF	
C914	ECA1HM101GB	ELECT	50V	100pF	
C916	ECEA2CGE100	ELECT	160V	10μF	
C950	ECJ2VB1C104K	ELECT	350V	0.10μF	
C1071	ECUV1H331JCX	S.M.CAP	50V	330pF	
C1072	ECUV1H103KBX	S.M.CAP	50V	10nF	
C1073	ECA1HM101GB	ELECT	50V	100pF	
C1101	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C1102	ECA0JM101G	ELECT	6.3V	100pF	
C1103	ECUV1H220JCX	S.M.CAP	50V	22pF	
C1104	ECUV1H220JCX	S.M.CAP	50V	22pF	
C1105	ECUV1H101JCX	S.M.CAP	50V	100pF	
C1108	ECJ2VB1H333K	ELECT	350V	33nF	
C1111	ECA1CM100GB	ELECT	16V	10pF	
C1112	ECUV1H103KBX	S.M.CAP	50V	10nF	
C1115	ECJ3VB1C474K	ELECT	3.5KV	0.47μF	
C1116	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C1117	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C1118	ECUV1H103KBX	S.M.CAP	50V	10nF	
C1119	ECUV1H221JCX	S.M.CAP	50V	220pF	
C1120	ECJ2VF1H104Z	ELECT	350V	0.10μF	
C1121	ECUV1H221JCX	S.M.CAP	50V	220pF	
C1123	ECUV1H101JCX	S.M.CAP	50V	100pF	
C1124	ECUV1H101JCX	S.M.CAP	50V	100pF	

Ref No.	Part No.	Description		
C1125	ECUV1H101JCX	S.M.CAP	50V	100pF
C1126	ECUV1H101JCX	S.M.CAP	50V	100pF
C1127	ECUV1H221JCX	S.M.CAP	50V	220pF
C1128	ECUV1H223KBX	S.M.CAP	50V	22nF
C1129	ECUV1H270JCX	S.M.CAP	50V	27pF
C2101	ECUV1H102JCX	S.M.CAP	50V	1nF
C2102	ECUV1H102JCX	S.M.CAP	50V	1nF
C2103	ECUV1H102JCX	S.M.CAP	50V	1nF
C2104	ECUV1H102JCX	S.M.CAP	50V	1nF
C2105	ECUV1H102JCX	S.M.CAP	50V	1nF
C2106	ECUV1H102JCX	S.M.CAP	50V	1nF
C2107	ECUV1H102JCX	S.M.CAP	50V	1nF
C2108	ECUV1H102JCX	S.M.CAP	50V	1nF
C2109	ECUV1H102JCX	S.M.CAP	50V	1nF
C2110	ECUV1H102JCX	S.M.CAP	50V	1nF
C2111	ECA1CM100GB	ELECT	16V	10pF
C2112	ECA1CM100GB	ELECT	16V	10pF
C2113	ECA1HM3R3GB	ELECT	50V	3.3μF
C2114	ECJ2VF1H104Z	ELECT	350V	0.10μF
C2115	ECUV1H221JCX	S.M.CAP	50V	220pF
C2116	ECUV1H221JCX	S.M.CAP	50V	220pF
C2117	ECUV1H221JCX	S.M.CAP	50V	220pF
C2118	ECUV1H221JCX	S.M.CAP	50V	220pF
C2119	ECUV1H221JCX	S.M.CAP	50V	220pF
C2120	ECUV1H221JCX	S.M.CAP	50V	220pF
C2121	ECA1CM100GB	ELECT	16V	10pF
C2122	ECJ2VF1H104Z	ELECT	350V	0.10μF
C2123	ECUV1H221JCX	S.M.CAP	50V	220pF
C2124	ECUV1H070DTX	S.M.CAP	50V	70pF
C2125	ECUV1H470JCX	S.M.CAP	50V	47pF
C2126	ECUV1H070DTX	S.M.CAP	50V	70pF
C2127	ECUV1H010CCX	S.M.CAP	50V	1pF
C2128	ECUV1H010CCX	S.M.CAP	50V	1pF
C2129	ECA1CM102B	ELECT	16V	1nF
C2130	ECA1CM331B	ELECT	16V	330pF
C2131	ECUV1H103ZFX	S.M.CAP	50V	10nF
C2132	ECUV1H103ZFX	S.M.CAP	50V	10nF
C2134	ECUV1H103ZFX	S.M.CAP	50V	10nF
C2135	ECA1HM101GB	ELECT	50V	100pF
C2136	ECJ2VF1H104Z	ELECT	350V	0.10μF
C2137	ECA1CM100GB	ELECT	16V	10pF
C2138	ECUV1H471KBX	S.M.CAP	50V	470pF
C2139	ECUV1H221JCX	S.M.CAP	50V	220pF
C2140	ECA1HM101GB	ELECT	50V	100pF
C2141	ECUV1H152JCX	S.M.CAP	50V	1.5pF
C2301	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C2302	ECA1CM470GB	ELECT	16V	47μF
C2303	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C2304	ECA1CM470GB	ELECT	16V	47μF
C3001	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3002	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3003	ECA1CM470GB	ELECT	16V	47μF
C3005	ECUV1H561JCX	S.M.CAP	50V	560pF
C3006	ECJ3VB1C474K	ELECT	3.5KV	0.47μF
C3007	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3008	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3009	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3010	ECA1CM470GB	ELECT	16V	47μF
C3012	ECUV1H561JCX	S.M.CAP	50V	560pF
C3013	ECJ3VB1C474K	ELECT	3.5KV	0.47μF
C3014	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3015	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3016	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3017	ECA1CM470GB	ELECT	16V	47μF
C3019	ECUV1H561JCX	S.M.CAP	50V	560pF
C3020	ECJ3VB1C474K	ELECT	3.5KV	0.47μF
C3021	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3022	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3023	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3024	ECA1CM470GB	ELECT	16V	47μF
C3026	ECUV1H561JCX	S.M.CAP	50V	560pF
C3027	ECJ3VB1C474K	ELECT	3.5KV	0.47μF

Ref No.	Part No.	Description		
C3028	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C3029	ECA1HM101GB	ELECT	50V	100pF
C3032	ECUV1H271JCX	S.M.CAP	50V	270pF
C3033	ECUV1H271JCX	S.M.CAP	50V	270pF
C3034	ECUV1H271JCX	S.M.CAP	50V	270pF
C3035	ECUV1H271JCX	S.M.CAP	50V	270pF
C3101	ECUV1H104KBX	S.M.CAP	50V	100nF
C3102	ECUV1E104KBX	S.M.CAP	25V	0.10μF
C3103	ECUV1H561JCX	S.M.CAP	50V	560pF
C3104	ECUV1H561JCX	S.M.CAP	50V	560pF
C3105	ECUV1H561JCX	S.M.CAP	50V	560pF
C3106	ECUV1H561JCX	S.M.CAP	50V	560pF
C3107	ECA1HM470GB	ELECT	50V	47μF
C3108	ECA1HM470GB	ELECT	50V	47μF
C3111	ECUV1H391JCX	S.M.CAP	50V	390pF
C3112	ECUV1H271JCX	S.M.CAP	50V	270pF
C3401	ECQM1H224J	FILM	50V	220nF
C3402	ECUV1H101JCX	S.M.CAP	50V	100pF
C3403	ECA1HM101GB	ELECT	50V	100pF
C3404	ECQM1H224J	FILM	50V	220nF
C3405	ECUV1H180JCX	S.M.CAP	50V	18pF
C3406	ECUV1H271JCX	S.M.CAP	50V	270pF
C3407	ECUV1H271JCX	S.M.CAP	50V	270pF
C3408	ECA1HM101GB	ELECT	50V	100pF
C3601	ECA1HM101GB	ELECT	50V	100pF

TERMINALS AND LINKS

JA1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA1	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA2	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA5	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA8	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA11	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA14	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA15	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA16	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA17	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA18	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA21	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA23	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA25	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA27	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA28	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA29	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA30	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA31	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA32	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA33	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA34	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA35	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA36	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA37	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA38	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA39	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA40	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA43	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA44	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA45	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA46	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA47	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA48	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA49	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description			
JA50	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA51	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA52	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA53	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA54	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA55	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA56	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA57	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA58	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA59	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JA60	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JA61	ERJ8GEY0R00	S.M.CAR	.125W	5%	0Ω
JK2301	JPJ841101320	RCA PIN JACK			
JK3101	TJB16673	AV TERMINAL			
JSE3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE4	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE5	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE18	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

Ref No.	Part No.	Description			
JSE22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE28	ECUV1H104KBX	S.M.CAP	50V	100nF	
JSE33	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE35	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSE43	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSH001	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JSN1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω

SWITCHES

S801	ESB92S11B	SWITCH	⚠
S1201	EVQ21405R	SWITCH	
S1202	EVQ21405R	SWITCH	
S1203	EVQ21405R	SWITCH	
S1204	EVQ21405R	SWITCH	
S1205	EVQ21405R	SWITCH	

NOTE:
For models with the dark walnut finish please refer to the TX−28XD4P/A and TX−25XD4P/A Difference Lists.

Ref No.	Part No.	Description	
DIFFERENCES FOR MODEL TX−28XD4P			
MECHANICAL PARTS			
14	TKY8E160	CABINET	⚠
15	TLK8E05140	DEGAUSS COIL	⚠
16	TKP8E1170	DOOR LID	
17	TNP8EE009BV	E P.C.B.	⚠
18	TKP8E1175	LEFT PANEL	
19	TQF8E2722	MODEL LABEL	⚠
20	TBX8E040	POWER BUTTON	
21	TSX8E0027	POWER CORD	⚠
22	TKP8E1176	RIGHT PANEL	
23	TKP8E1172	TOP PANEL	
24	TKU8E00320	BACK COVER	⚠
25	A66ECF50X42	CRT	⚠
MISCELLANEOUS COMPONENTS			
	TPC8E4659	OUTER CARTON	
	TPD8E633	TOP CUSHION	
	TPD8E634	BOTTOM CUSHION	
DIODES			
D251	MA2180BLFS	DIODE	
INTEGRATED CIRCUITS			
IC1103	XGL2−01HP	EAROM *	
DIFFERENCES FOR MODEL TX−25XD4P			
MECHANICAL PARTS			
13	A59ECF50X42	C.R.T.	
14	TKY8E150	CABINET	⚠
15	TLK8E05138	DEGAUSS COIL	⚠
16	TKP8E1170	DOOR LID	
17	TNP8EE009BU	E P.C.B.	⚠
18	TKP8E1173	LEFT PANEL	
19	TQF8E2721	MODEL LABEL	⚠
20	TBX8E040	POWER BUTTON	
21	TSX8E0028	POWER CORD	⚠
22	TKP8E1174	RIGHT PANEL	
23	TKP8E1171	TOP PANEL	
24	TKU8E00310	BACK COVER	⚠
MISCELLANEOUS COMPONENTS			
	TPC8E4660−1	OUTER CARTON	
	TPD8E631	TOP CUSHION	
	TPD8E632	BOTTOM CUSHION	
INTEGRATED CIRCUITS			
IC1103	XGL2−01GP	EAROM *	

Ref No.	Part No.	Description	
DIFFERENCES FOR MODEL TX−28XD4P/A			
MECHANICAL PARTS			
14	TKY8E160	CABINET	⚠
15	TLK8E05140	DEGAUSS COIL	⚠
16	TKP8E1180	DOOR LID	
17	TNP8EE009BV	E P.C.B.	⚠
18	TKP8E1184	LEFT PANEL	
19	TQF8E2724	MODEL LABEL	⚠
20	TBX8E045	PQWER BUTTON	
21	TSX8E0027	POWER CORD	⚠
22	TKP8E1186	RIGHT PANEL	
23	TKP8E1182	TOP PANEL	
24	TKU8E00320	BACK COVER	⚠
25	A66ECF50X42	CRT	⚠
MISCELLANEOUS COMPONENTS			
	TPC8E4659	OUTER CARTON	
	TPD8E633	TOP CUSHION	
	TPD8E634	BOTTOM CUSHION	
DIODES			
D251	MA2180BLFS	DIODE	
INTEGRATED CIRCUITS			
IC1103	XGL2−01HP	EAROM *	
DIFFERENCES FOR MODEL TX−25XD4P/A			
MECHANICAL PARTS			
13	A59ECF50X42	C.R.T.	
14	TKY8E150	CABINET	⚠
15	TLK8E05138	DEGAUSS COIL	⚠
16	TKP8E1180	DOOR LID	
17	TNP8EE009BU	E P.C.B.	⚠
18	TKP8E1192	LEFT PANEL	
19	TQF8E2723	MODEL LABEL	⚠
20	TBX8E045	POWER BUTTON	
21	TSX8E0028	POWER CORD	⚠
22	TKP8E1194	RIGHT PANEL	
23	TKP8E1190	TOP PANEL	
24	TKU8E00310	BACK COVER	⚠
MISCELLANEOUS COMPONENTS			
	TPC8E4660−1	OUTER CARTON	
	TPD8E631	TOP CUSHION	
	TPD8E632	BOTTOM CUSHION	
INTEGRATED CIRCUITS			
IC1103	XGL2−01GP	EAROM *	

NOTES

SCHEMATIC DIAGRAMS FOR MODELS

TX-28XD4P /A
TX-25XD4P /A

(EURO-4 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.

NOTE

1. RESISTOR
   All resistors are carbon ¼W 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 µF unless otherwise stated.
3. COIL
   Unit of inductance is µH, 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.

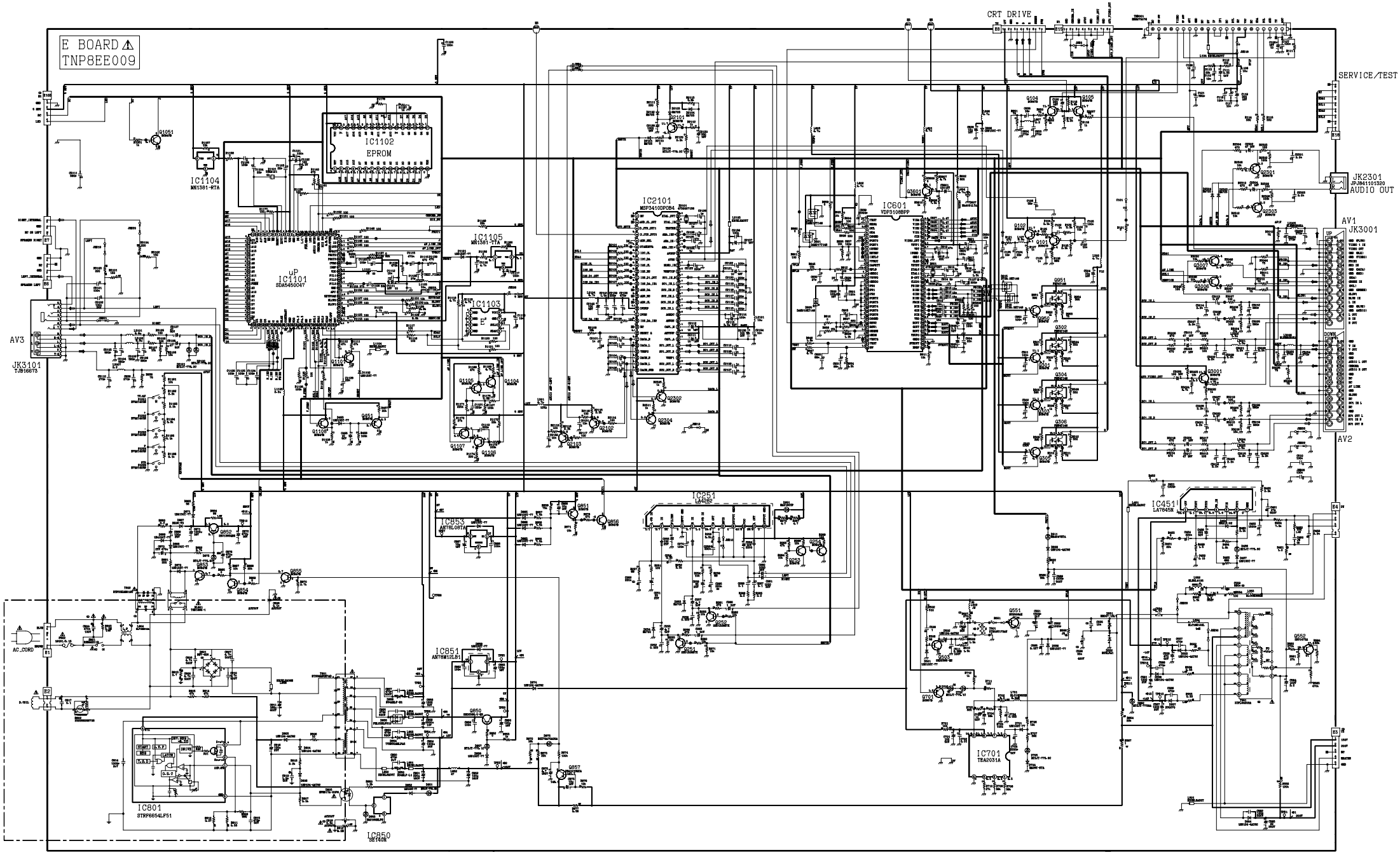
b. Do not short circuit the hot and cold circuits as electrical components may be damaged.

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.


E BOARD ⚠
TNP8EE009
CRT DRIVE
SERVICE/TEST
JK2301
JR-JA4151320
AUDIO OUT
AV1
JK3001
AV2
AV3
JK3101
TJB16673
IC1102
EPROM
IC1104
MN1381-RTA
IC1105
MN1381-TTA
IC1101
uP
SDA5450047
IC1103
IC2101
MSP3410DPCB4
IC601
VDP3108BPP
IC251
LA4282
IC853
AN78L08TA
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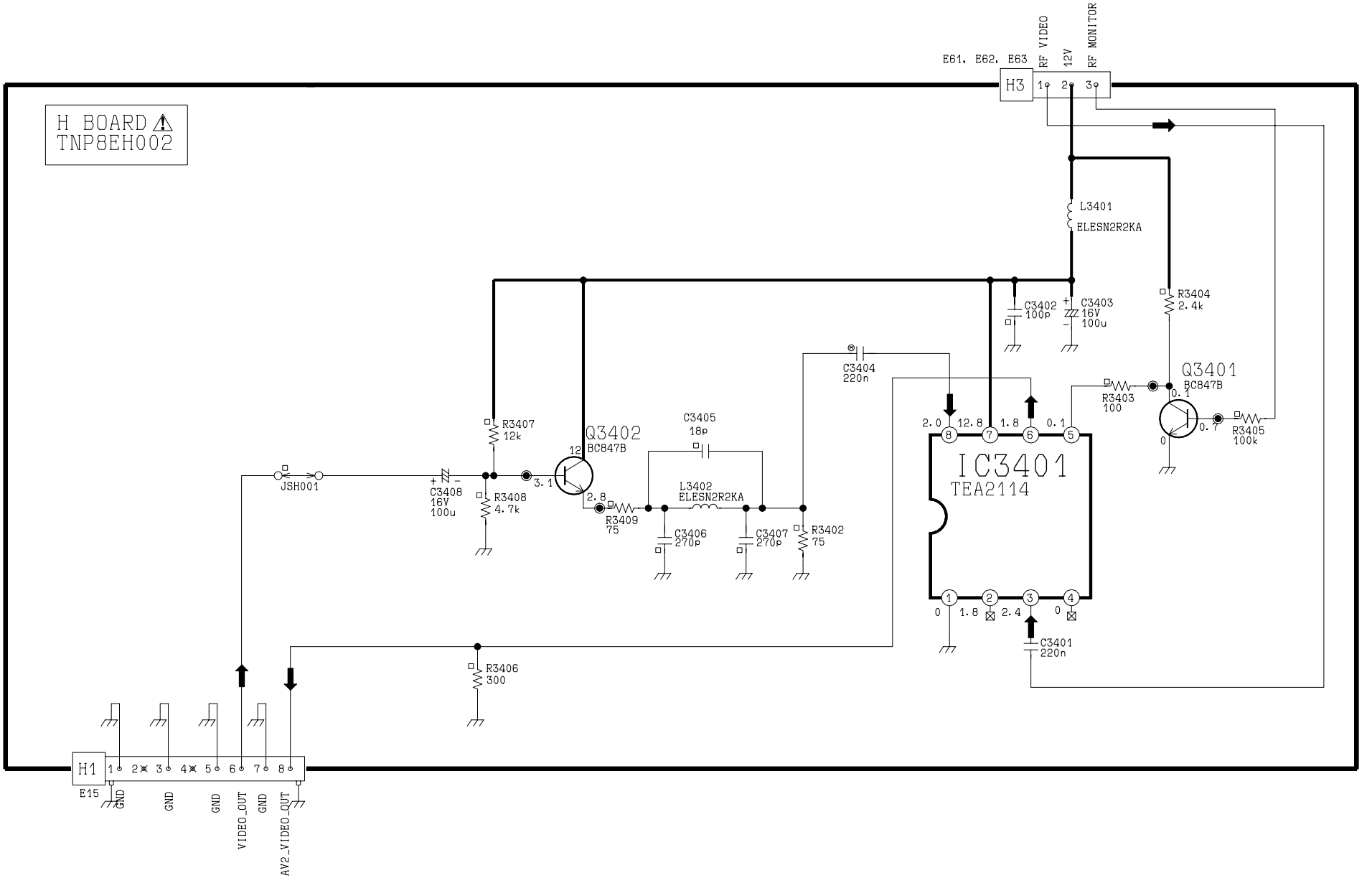
AC_CORD


H BOARD ⚠
TNP8EH002
E61, E62, E63
H3
RF VIDEO
12V
RF MONITOR
L3401
ELESN2R2KA
C3402
100p
C3403
16V
100u
R3404
2.4k
C3404
220n
Q3401
BC847B
R3403
100
R3405
100k
R3407
12k
Q3402
BC847B
C3405
18p
JSH001
C3408
16V
100u
R3408
4.7k
L3402
ELESN2R2KA
R3409
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C3406
270p
C3407
270p
R3402
75
IC3401
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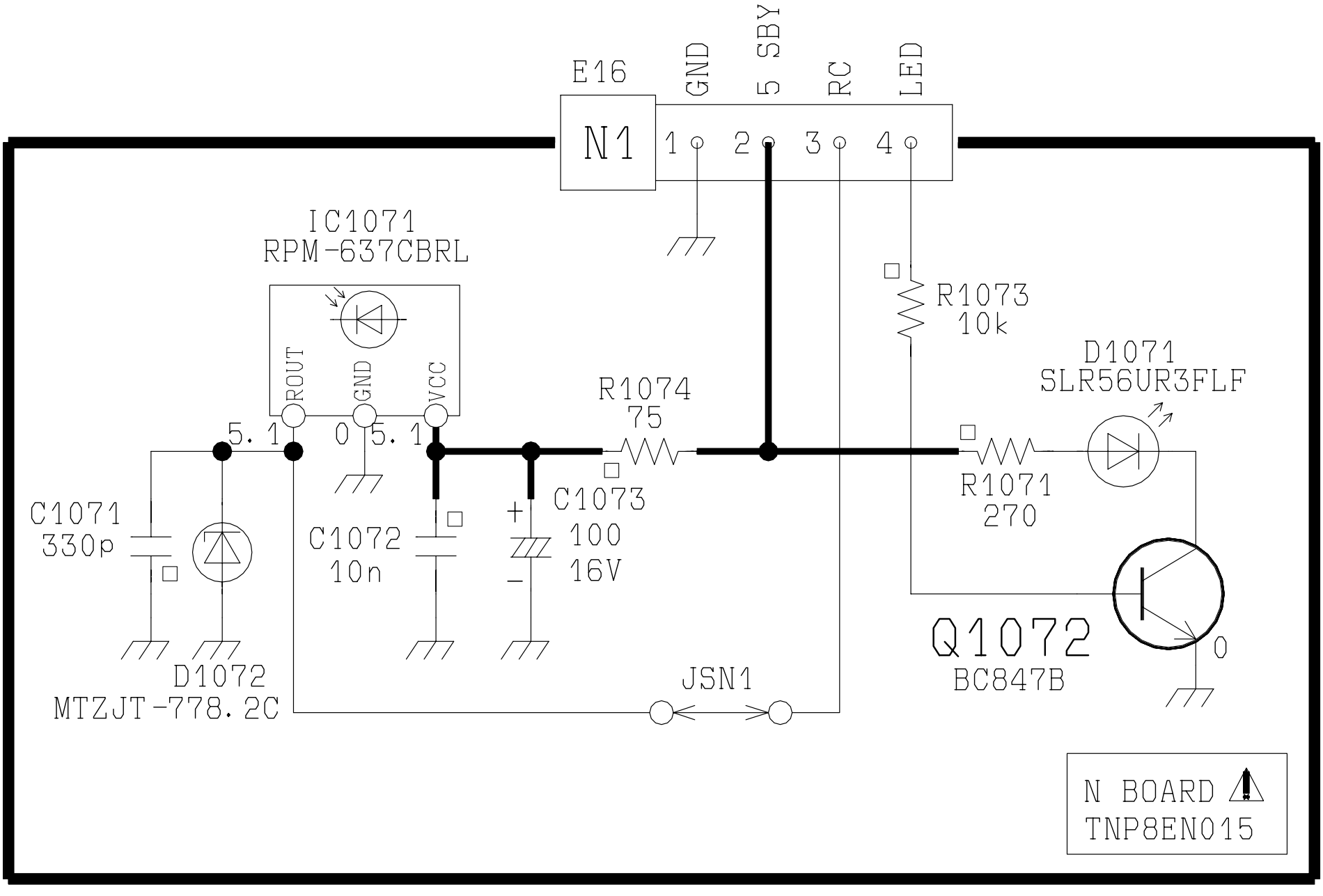
GND
GND
VIDEO_OUT
GND
AV2_VIDEO_OUT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5 SBY
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2
3
4
IC1071
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ROUT
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0
5.1
R1073
10k
D1071
SLR56UR3FLF
R1074
75
R1071
270
C1071
330p
C1072
10n
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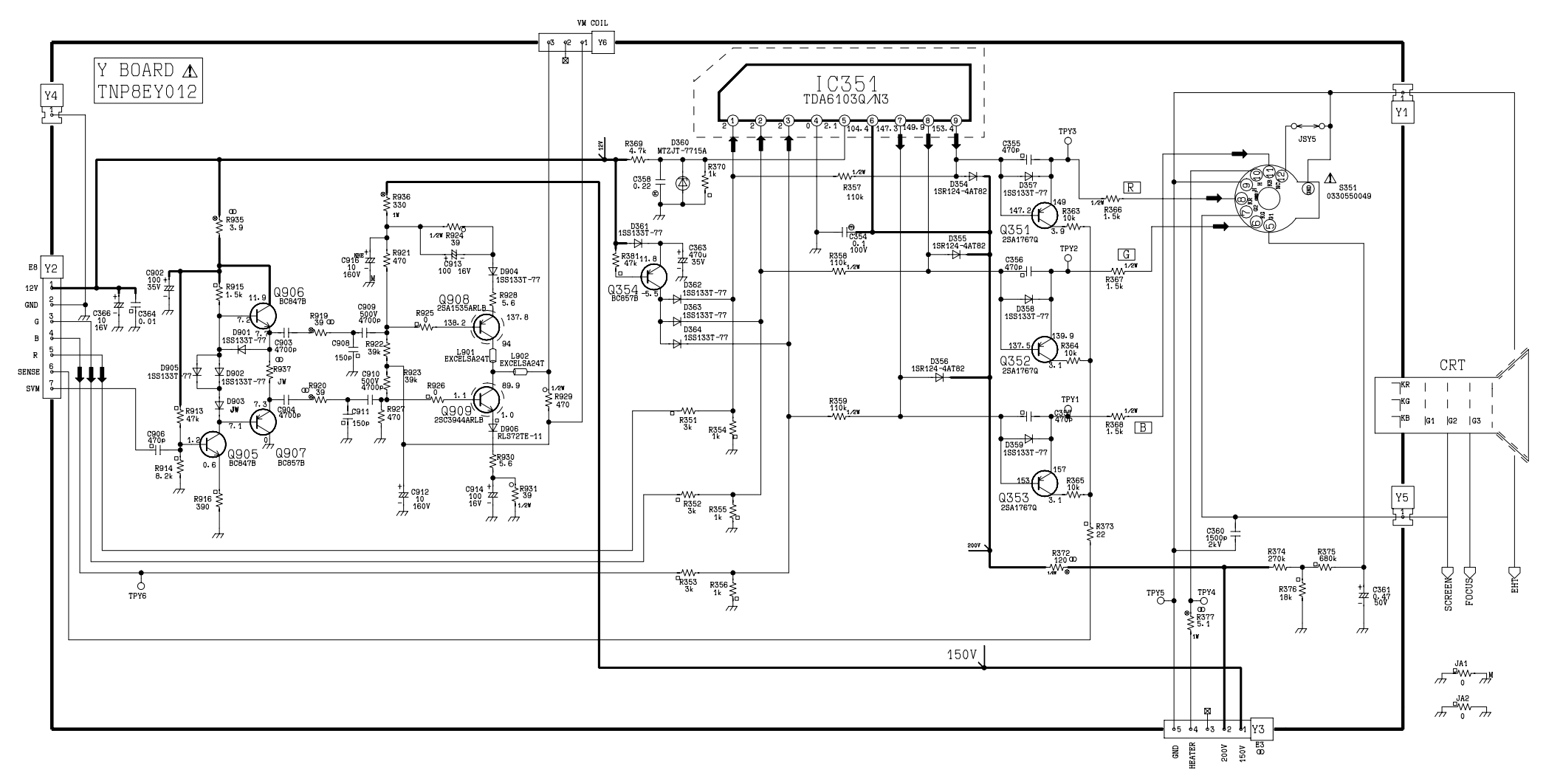
N BOARD
TNP8EN015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VM COIL
Y6
Y4
Y2
E8
12V
GND
G
B
R
SENSE
SVM
IC351
TDA6103Q/N3
Q906
BC847B
Q905
BC847B
Q907
BC857B
Q908
2SA1535ARLB
Q909
2SC3944ARLB
Q354
BC857B
Q351
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Q352
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Q353
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MTZJT-7715A
D354
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D361
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D905
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D906
RLS72TE-11
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D358
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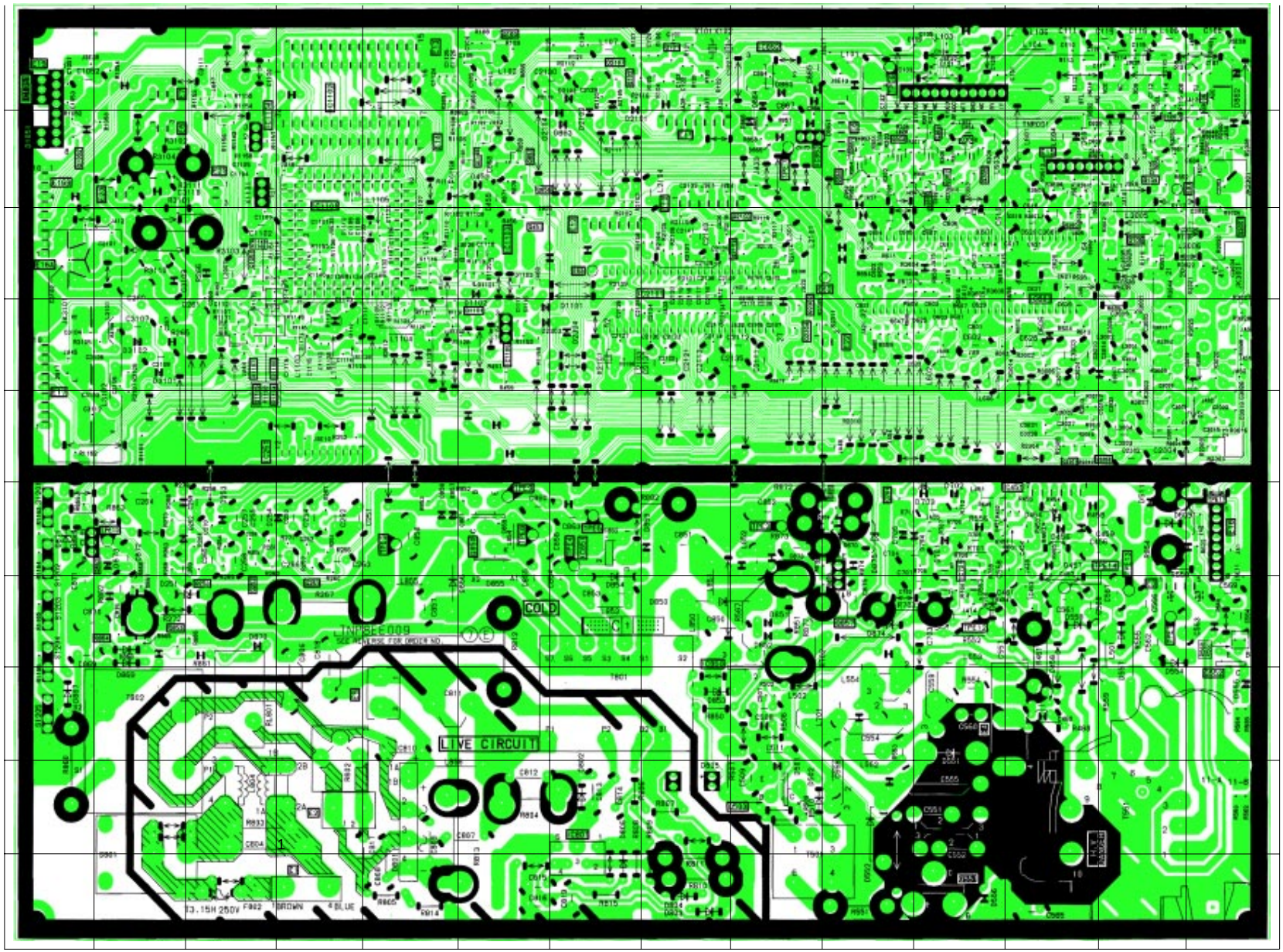
D359
1SS133T-77
L901
EXCELSA24T
L902
EXCELSA24T
JSY5
S351
0330550049
CRT
KR
KG
KB
G1
G2
G3
SCREEN
FOCUS
EHT
Y1
Y5
Y3
TPY1
TPY2
TPY3
TPY4
TPY5
TPY6
R
G
B
150V
200V
GND
HEATER
200V
150V
E3
JA1
JA2

E-BOARD TNP8EE009

TRAN'S		DIODES		D558	L4
Q3601	L8	D3103	B7	D557	M4
Q3007	M9	D3101	B7	D556	K1
Q3001	N8	D3102	B7	D555	N3
Q3006	N10	D2161	G9	D554	M4
Q2304	I7	D2105	G10	D553	K4
Q2303	M6	D2104	F9	D552	J2
Q2301	I7	D2103	G10	D551	K3
Q2103	I8	D2102	G9	D511	M5
Q2102	H8	D1103	F8	D502	I2
Q2101	G10	D1102	F7	D501	I2
Q1108	F9	D1101	G7	D457	L5
Q1107	C7	D1051	A9	D456	L5
Q1106	C7	D875	J5	D454	L5
Q1105	C7	D874	J4	D453	F9
Q1104	C7	D873	B5	D254	C5
Q1101	F7	D871	A5	D253	C5
Q1052	A9	D870	871	D252	B5
Q1051	C8	D869	B4	D251	B4
Q951	J9	D868	B4	**IC'S**	
Q950	J9	D867	A3	IC2101	H8
Q857	J4	D866	I9	IC1105	F7
Q856	F9	D865	I9	IC1104	C9
Q855	J5	D864	I10	IC1103	F8
Q854	B4	D863	G9	IC1102	D10
Q853	B4	D862	N10	IC1101	D8
Q852	B5	D861	J9	IC1051	A10
Q850	F5	D860	I10	IC852	I10
Q701	J5	D859	H5	IC851	G5
Q552	N3	D858	E5	IC850	H4
Q551	K1	D857	E5	IC801	G2
Q503	I2	D855	F4	IC701	K5
Q451	F8	D854	G4	IC601	L7
Q394	K9	D853	H3	IC451	L5
Q305	K9	D852	I4	IC251	D6
Q303	K9	D851	I4	**TP'S**	
Q302	J9	D850	H4	TPE14	M5
Q301	K9	D806	G2	TPE13	M4
Q253	C4	D805	H2	TPE12	K4
Q252	C4	D804	H1	TPE11	N5
Q252	C4	D803	H1	TPE10	B5
Q251	D4	D802	G2	TPE9	E5
Q105	M8	D801	E1	TPE8	F5
Q104	M9	D705	J5	TPE7	I9
Q103	F10	D704	K5	TPE6	J10
Q102	G10	D703	K5	TPE5	G5
Q101	H10	D702	K5	TPE4	G5
		D701	K5	TPE3	E5
		D609	M5	TPE2	I5
		D607	L9	TPE1	M4



Y - BOARD TNP8EY012

TRANSISTORS	
Q909	E1
Q908	C2
Q907	F4
Q906	G3
Q905	F5
Q354	A7
Q353	G6
Q352	F6
Q351	F6
DIODES	
D906	F1
D905	G4
D904	D3
D902	G4
D901	G3
D364	C9
D363	C8
D362	B9
D361	B7
D360	D8
D359	G6
D358	E7
D357	F7
D356	G7
D355	F7
D354	G7
TEST POINTS	
TPY6	B8
TPY5	D5
TPY4	E5
TPY3	F6
TPY2	E7
TPY1	G6
IC'S	
IC351	E8