

TX-21/14S3TF / TC-21/14S3RF Service Manual

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Service Support

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

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

For more details contact your local Panasonic company.


BACK

EXIT

Video / Audio

Control



BACK

E - PCB

Y - PCB



BACK

E - Schematic

Y - Schematic



BACK

Service Manual



Colour Television TX-21S3TF TC-21S3RF TX-14S3TF TC-14S3RF Z-7 Chassis

SPECIFICATIONS

(Information in brackets {} refer to TX-14S3TF/TC-14S3RF)

Power Source :	220-240V AC, 50Hz	
Power Consumption :	50W {33W}	
Standby Power Consumption :	1W	
Aerial Impedance :	75Ω unbalanced, Coaxial Type	
Receiving System :	PAL-BG, H, PAL 525/60 SECAM BG, L/L'	
Receiving Channels :	VHF E2 - E12 VHF H1 - H2 (ITALY) VHF A - H (ITALY) UHF E21 - E69 CATV (S01 - S05) CATV S1 - S10 (M1 - M10) CATV S11 - S20 (U1 - U10) CATV S21 - S41 (HYPERBAND)	
Intermediate Frequency :	Video 38.9 MHz, 34MHz Sound 33.4 MHz, 33.16MHz 32.4MHz, 40.4MHz Colour 34.47 MHz, 34.5MHz, 34.65MHz	
Video / Audio Terminals :		
AV1 IN	Video (21 pin)	1V p-p 75Ω
	Audio (21 pin)	500mV rms 10kΩ
	RGB (21 pin)	
AV1 OUT	Video (21 pin)	1V p-p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
RCA IN	Video	1V p-p 75Ω
RCA IN	Audio	500mV rms, 10KΩ
High Voltage :	26kV + 0.7kV / - 1kV	
(zero beam current)	{23kV + 0.7kV / - 1kV}	
Picture Tube :	A51EAL135X13 51 cm {A34EAC01X13 34cm}	
Audio Output :	6 W (Music Power)	
Speaker	8 Ω Impedance	
Headphones	8 Ω Impedance	
Accessories supplied :	Remote Control 2 x R6 (UM3) Batteries	
Dimensions :		
Height :	480 mm	{364mm}
Width :	520 mm	{389mm}
Depth :	485 mm	{384mm}
Net Weight :	20kg	{10kg}

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

Panasonic

CARACTÉRISTIQUES

(Les informations entre parenthèses {} concernent le TX-14S3TF/TC-14S3RF)

Alimentation :	220-240V AC, 50Hz	
Consommation :	50W {33W}	
Standby Consommation :	1W	
Impédance d'antenne :	75Ω asymétrique sur prise coaxiale	
Système de réception :	PAL-BG, H, PAL 525/60 SECAM BG, L/L'	
Canaux de réception :	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)	
Fréquence Intermédiaire :	Video 38.9 MHz, 34MHz Audio 33.4 MHz, 33.16MHz 32.4MHz, 40.4MHz Couleur 34.47 MHz, 34.5MHz, 34.65MHz	
Les bornes vidéo/audio :		
Entrée AV1 (21 broches)	Video (21 pin)	1V p-p 75Ω
	Audio (21 pin)	500mV rms 10kΩ
	RGB (21 pin)	
Sortie AV1 (21 broches)	Video (21 pin)	1V p-p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
Entrée RCA	Video	1V p-p 75Ω
Entrée RCA	Audio	500mV rms, 10KΩ
Tension d'anode :	26kV + 0.7kV / - 1kV {23kV + 0.7kV / - 1kV}	
Tube image :	A51EAL135X13 51 cm {A34EAC01X13 34cm}	
Sortie Audio :	6 W (Music Power) 8 Ω Impédance	
Casque d'écoute	8 Ω Impédance	
Accessoires fournis	Télécommande R6 (UM3) Piles x 2	
Dimensions :		
Hauteur :	480 mm	{364mm}
Largeur :	520 mm	{389mm}
Profondeur :	485 mm	{384mm}
Poids (NET) :	20kg	{10kg}

Les caractéristiques techniques sont susceptibles de modification sans Préavis.
Le poids et les dimensions indiqués sont approximatifs.

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SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R—C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the AC outlet.
5. Potentials as high as 27kV {24kV} are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture to the chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

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

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PRECAUTIONS DE SECURITE

CONSEILS GENERAUX

1. Avant d'effectuer toute révision d'un châssis sous tension il est recommandé d'installer un transformateur d'isolation.
2. Il est important, lors des réparations, de conserver la position initial de tous les fils et faisceaux, surtout dans le circuit de la haute tension. Remplacer toutes les pièces affectées par la chaleur dégagée lors d'un court-circuit.
3. Après les réparations, s'assurer que toutes les pièces protectrices telles que barrières ou papiers isolants, blindages et réseaux d'isolation R—C soient convenablement placées.
4. Il est préférable de débrancher le fil d'alimentation si la télé—couleur ne doit pas être utilisée pendant un certain temps.
5. Une tension élevée, de l'ordre de 27kV {24kV}, est présente en plusieurs endroits lorsque l'appareil est en circuit. Il y a danger de chocs électriques lorsque le contact est établi en absence du panneau arrière. Toute personne qui tente de réparer cet appareil doit d'abord être consciente des précautions à observer avant de travailler sur un circuit à haute tension. Toujours décharger l'anode du tube cathodique au châssis avant de manipuler.
6. Après tout réparation, on doit effectuer les tests de courant de fuite dans le but d'éviter tout choc.

VERIFICATION DES COURANTS DE FUITE SANS ALIMENTATION

1. Débrancher le fil d'alimentation et installer un fil STRAP entre les deux broches de la fiche.
2. Placer l'interrupteur comme pour établir le contact sur l'appareil.
3. Mesurer la résistance entre les branches de la fiche d'alimentation et les pièces métalliques visibles telles que têtes de vis, antennes, arbre des commandes, support des poignées, etc. Certaines de ces pièces sont en contact avec le châssis et la résistance mesurée devrait se situer entre 4MΩ, et 20MΩ. La résistance des pièces qui ne sont pas en contact avec le châssis doit être infinie.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed Metallic part and check the voltage at each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4 Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

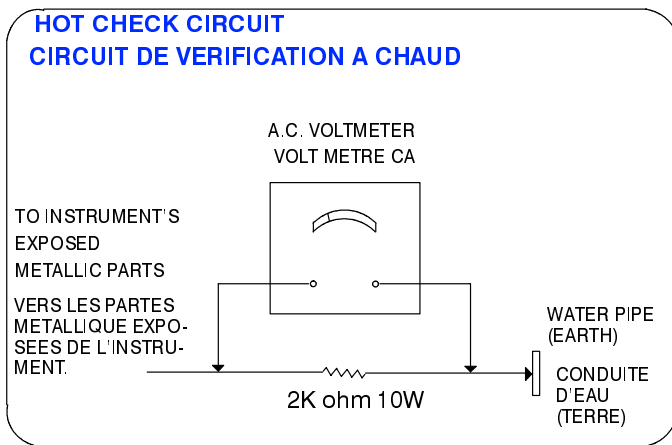


Fig.1

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 27kV {24kV} 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 26kV + 0.7 / - 1kV {23kV + 0.7 / - 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.

VERIFICATION A CHAUD DU COURANT DE FUITE

1. Brancher le cordon secteur directement à une prise secteur. Ne pas utiliser de transformateur d'isolation pour cette vérification.
2. Raccorder une résistance de 2kΩ, 10W, en série avec une partie métallique exposée du récepteur et une terre comme une conduite d'eau.
3. Utiliser un voltmètre CA, de type à impédance élevée, pour mesurer le potentiel à travers la résistance.
4. Vérifier toutes les parties métalliques exposées et mesurer la tension à chaque point.
5. Retourner la fiche CA dans la prise secteur et répéter toutes les mesures ci—dessus.
6. Le potentiel à tous les points ne doit pas dépasser 1.4 volt RMS. AU cas où une mesure est supérieure à cette limite spécifiée, il y a un risque de décharge électrique et le récepteur doit être réparé et revérifié avant d'être rendu au client.

IRRADIATION AUX RAYONS X ATTENTION:

1. Les parties de la haute tension et du tube—cathodique d'une télé—couleur sont des sources possible d'émissions de rayons X.
2. Si un tube cathodique témoin est utilisé pour la réparation, s'assurer que son assemblage pourra supporter 27kV {24kV} sans émettre de radiations.

REMARQUE : Il est important que le multimètre à haute tension utilisé soit étalonné périodiquement.

1. Tourner entièrement vers la gauche la commande de lumière.
2. Mesurer la haute tension à l'aide du multimètre approprié. La valeur nominale est de 26kV + 0.7 / - 1kV {23kV + 0.7 / - 1kV}. Si la lecture est hors des tolérances, une réparation immédiate s'impose afin de prévenir toute panne prématurée.
3. Il est essentiel d'utiliser le tube cathodique d'origine pour prévenir toute émission de rayons X.

SERVICE HINTS

HOW TO REMOVE THE REAR COVER

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

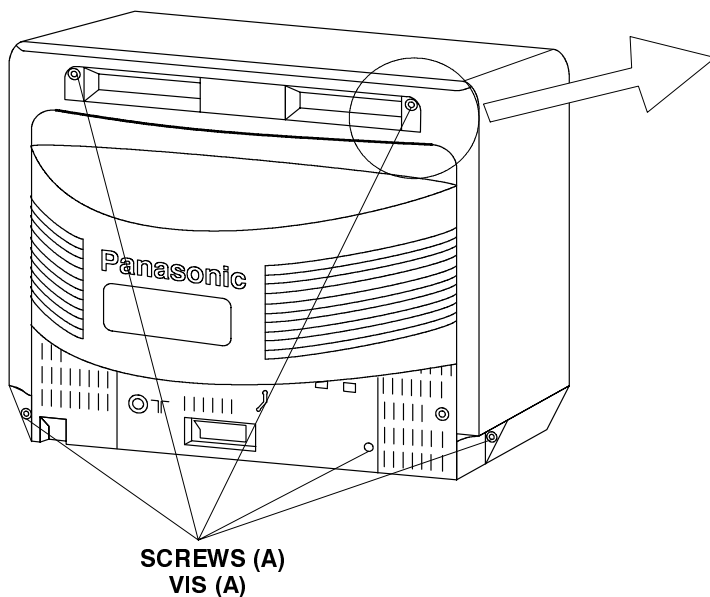
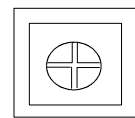


Fig. 2.



SCREW
VIS

Fig. 3.

SUGGESTIONS DE DEPANNAGE

COMMENT RETIRER LE PENNEAU ARRIERE

1. Retirer les 5 vis (A) comme sur la Fig.2. / Fig.3.

LOCATION OF CONTROLS

EMPLACEMENT DES COMMANDES

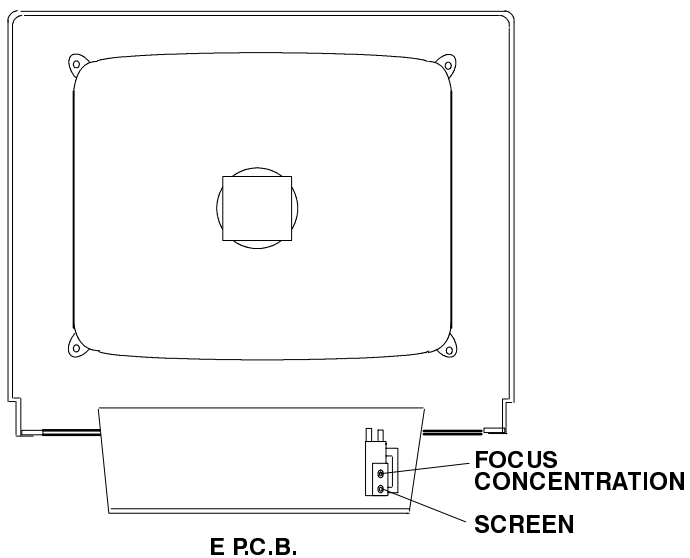


Fig. 4.

ADJUSTMENTS

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

RÉGLAGES

Préparation	Réglages
<p>+B</p> <p>1. Appliquer une mire à carreaux N/B</p> <p>2. Régler les contrôles suivants</p> <p>Lumière Minimum</p> <p>Contraste Minimum</p> <p>Volume Minimum</p> <p>Beam Current Zero</p>	<p>1.</p> <p>TPE 1: 9V ± 1V</p> <p>TPE 2: 5V ± 0.3V</p> <p>TPE 3: 12V ± 1V</p> <p>TPE 4: 30V ± 2.5V</p> <p>TPE 5: 5V ± 0.3V</p> <p>TPE 6: 9V ± 0.3V</p> <p>TPE 9: 22V ± 1V</p> <p>TPE 10: 185V ± 10V</p> <p>TPE 11: 12V ± 1V</p> <p>TPE 12: 12V ± 1.5V</p> <p>TPE 13: 125V ± 1.5V</p> <p>TPE 14: 8V ± 1V</p> <p>TPE 18: 8V ± 1V</p> <p>TPE 19: 31V ± 1.5V</p>

ALIGNMENT SETTINGS

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

NOTE :

The figures used below are nominal and used for representative purposes only

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

RÉGLAGES

1. Sélectionner le programme 60 et régler la netteté au minimum.
2. Appuyer la touche minuterie (Off Timer) de la télécommande et simultanément presser la touche V (–) sur le clavier de commande à l'avant du téléviseur en mode Service.
3. Appuyer sur la touche \wedge (+) ou V (–) pour sélectionner la fonction désirée.
4. Appuyer sur la touche + ou – pour modifier les valeurs des réglages.
5. Mettre en mémoire après chaque réglage, en appuyant sur la touche STORE.
6. Pour sortir de la position SERVICE MODE arrêter le TV.

(Les figures ci-dessous sont fictives et utilisées uniquement à des fins représentatives)

Fonctions		Réglages/Points particuliers
1. Amplitude verticale	V–Amp 27	Optimiser les réglages
2. Vertical position	V–Pos 03	Optimiser les réglages
3. Centrage horizontal	H–Ctr 07	Optimiser les réglages
4. Red cutoff	R–Cut 186	Optimiser les réglages
5. Green cutoff	G–Cut 220	Optimiser les réglages
6. Blue cutoff	B–Cut 213	Optimiser les réglages
7. Red drive	R–Drv 46	Optimiser les réglages
8. Blue drive	B–Drv 36	Optimiser les réglages
9. AGC	AGC 33	Optimiser les réglages
10. Sub contrast	S–Con 33	Optimiser les réglages
11. Sub colour	S–Col 39	Optimiser les réglages
12. Sub bright	S–Bri 40	Optimiser les réglages

SELF CHECK

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

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

When exiting Self Check the customer settings will return to factory settings.

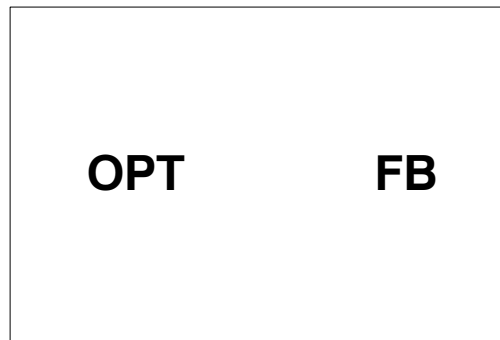


AUTO TEST

L'auto test est utilisé pour vérifier le BUS et les codes Hexadécimaux du TV.

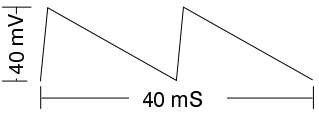
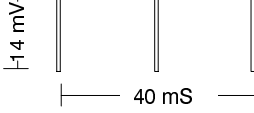
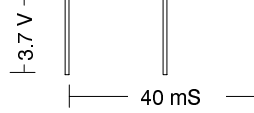
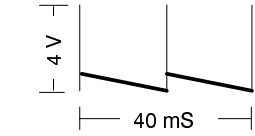
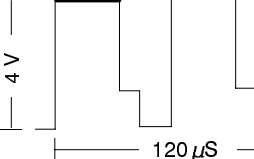
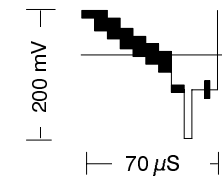
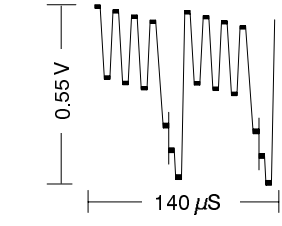
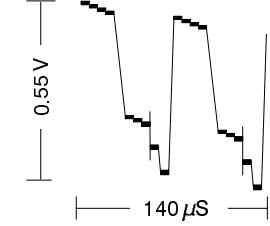
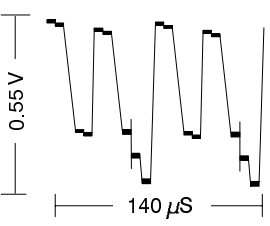
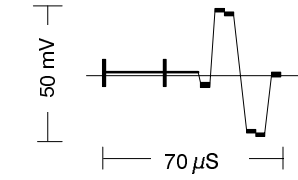
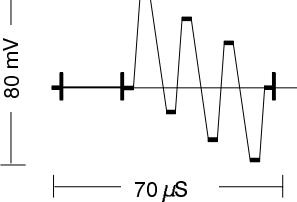
Pour passer en mode test ,il faut appuyé simultanément sur : VOLUME MOINS sur le tiroir en face avant et: OFF TIMER sur la télécommande Infra–rouge: –

Après un Auto Test (Self Check) le téléviseur retourne en position réglages usine.



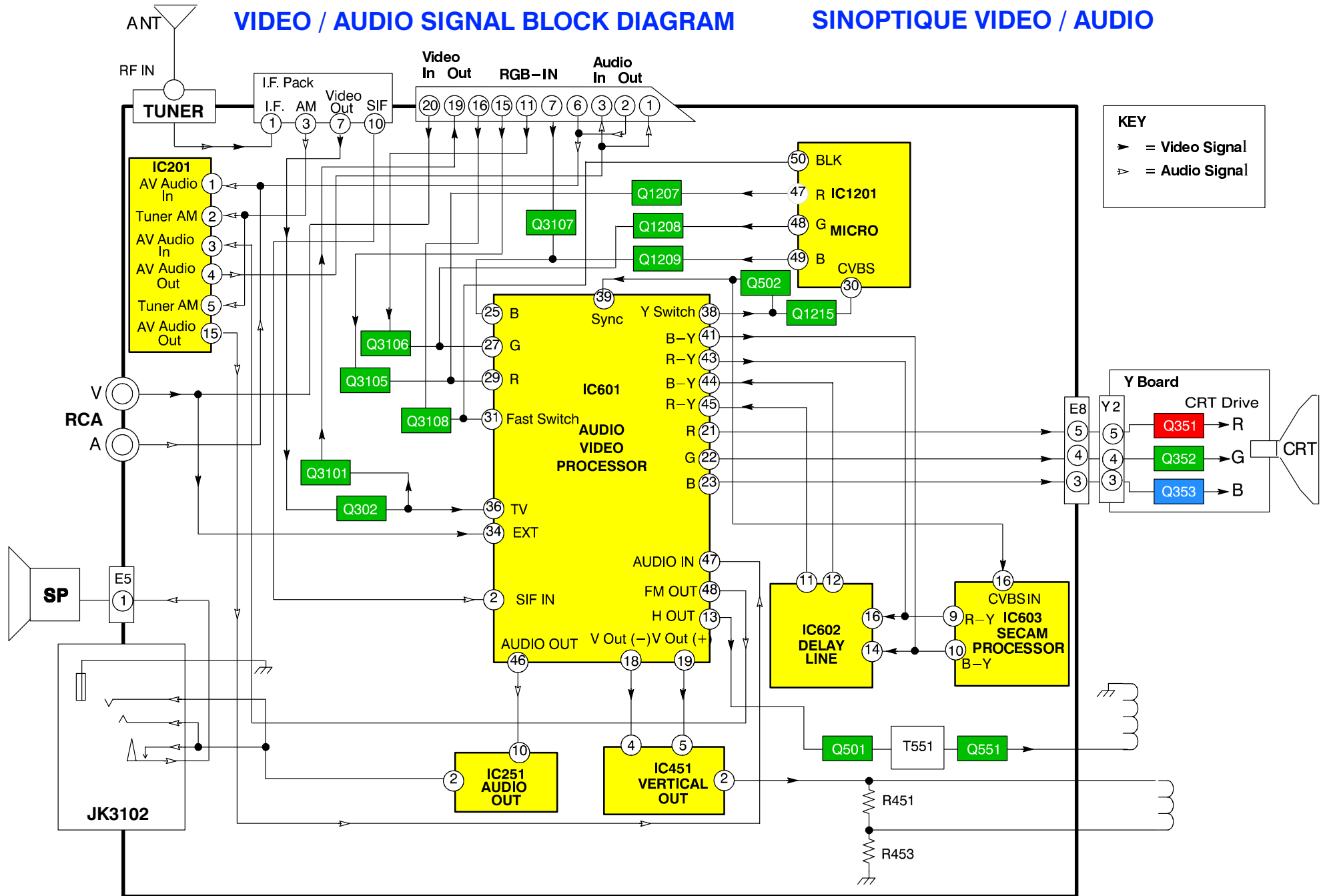
WAVEFORM PATTERN TABLE

TABLEAU DE MIRES DE FORMA D'ONDES

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

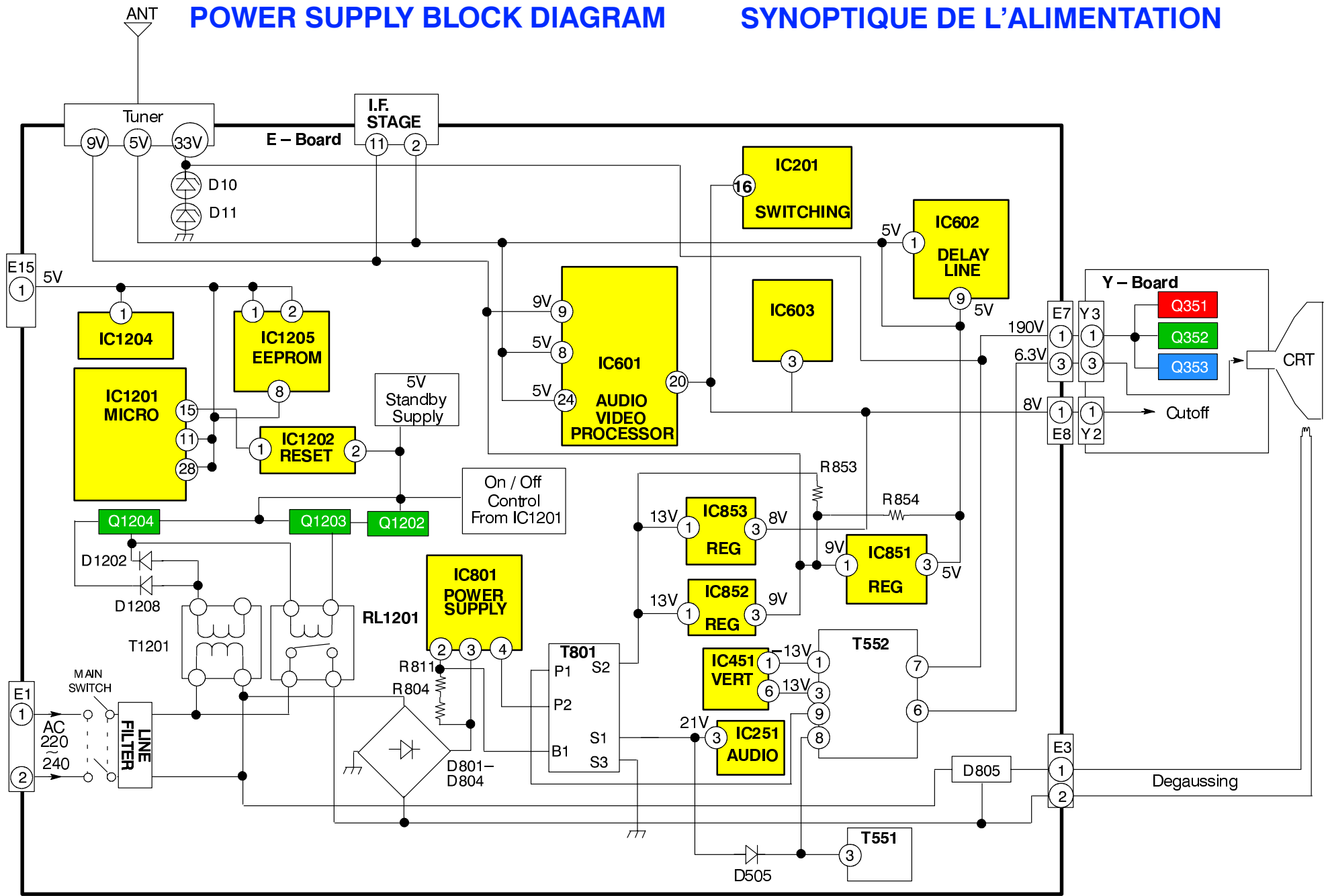
VIDEO / AUDIO SIGNAL BLOCK DIAGRAM

SINOPTIQUE VIDEO / AUDIO



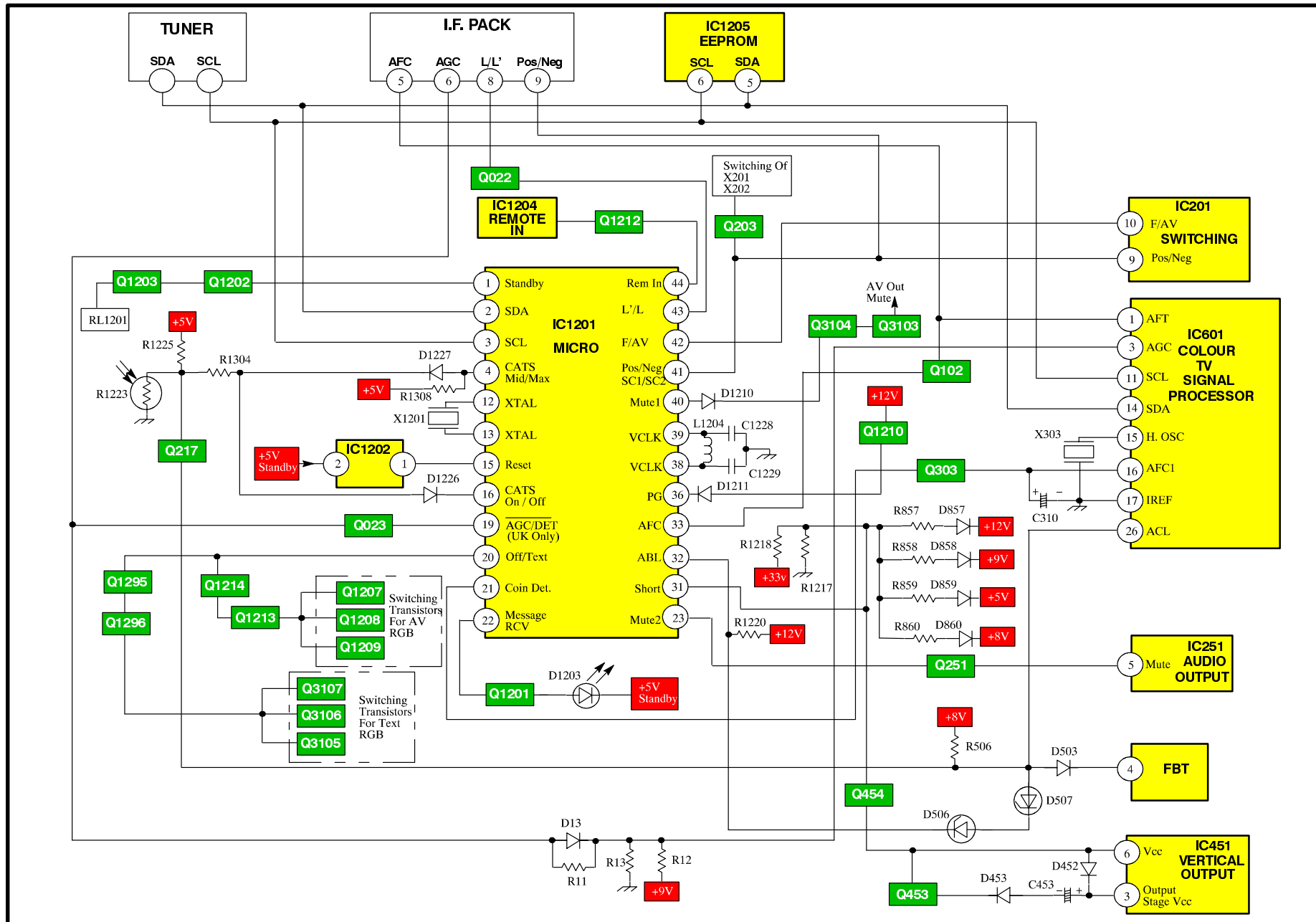
POWER SUPPLY BLOCK DIAGRAM

SYNOPTIQUE DE L'ALIMENTATION



CONTROL BLOCK DIAGRAM

SYNOPTIQUE DU SIGNAL DE CONTROLE



PARTS LOCATION

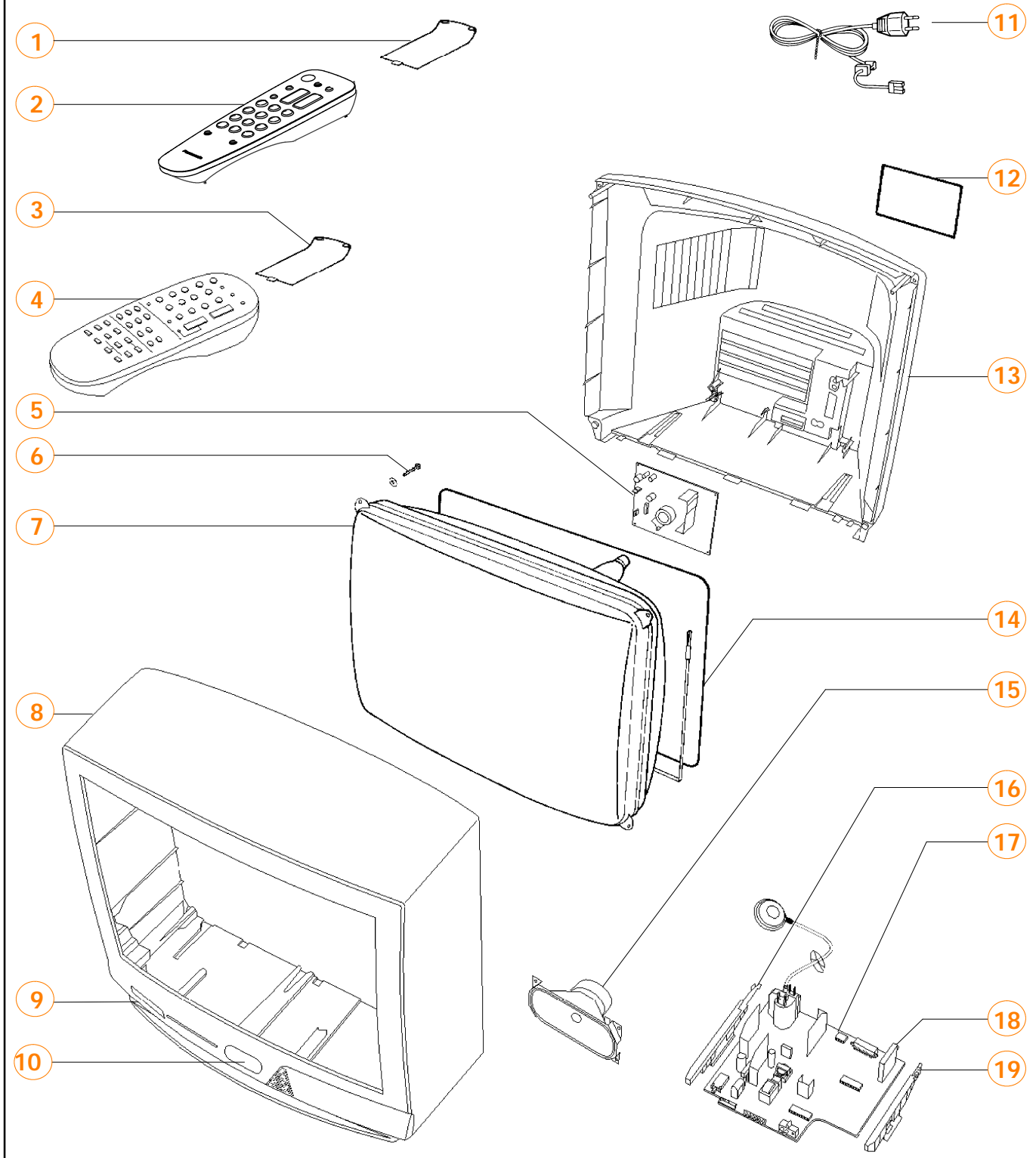
NOTE :

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

EMPLACEMENT DES PIÈCES

REMARQUE :

Les numéros sur les pièces mécaniques indiquent les NO. de réf. de la liste des pièces de rechange.



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.

COMMON PARTS FOR MODELS TX-21S3TF, TC-21S3RF, TX-14S3TF AND TC-14S3RF

LISTE DES PIÈCES DE RECHANGE

Remarque importante pour la sécurité

Les éléments portant la indication **▲** possèdent des caractéristiques de sécurité spéciales. Lors du remplacement de l'une quelconque des ces pièces, n'utiliser que celles spécifiées par la fabricant.

Ref No.	Part No.	Description	
MISCELLANEOUS COMPONENTS			
1)	*****	REFER TO DIFFERENCE LIST	
2)	*****	REFER TO DIFFERENCE LIST	
3)	*****	REFER TO DIFFERENCE LIST	
4)	*****	REFER TO DIFFERENCE LIST	
5)	*****	REFER TO DIFFERENCE LIST	
6)	*****	REFER TO DIFFERENCE LIST	
7)	*****	REFER TO DIFFERENCE LIST	
8)	*****	REFER TO DIFFERENCE LIST	
9)	*****	REFER TO DIFFERENCE LIST	
10)	*****	REFER TO DIFFERENCE LIST	
11)	TSX8E0020	POWER CORD	▲
12)	*****	REFER TO DIFFERENCE LIST	
13)	*****	REFER TO DIFFERENCE LIST	
14)	*****	REFER TO DIFFERENCE LIST	
15)	*****	REFER TO DIFFERENCE LIST	
16)	*****	REFER TO DIFFERENCE LIST	
17)	*****	REFER TO DIFFERENCE LIST	
18)	ENG29501G	TUNER	
19)	*****	REFER TO DIFFERENCE LIST	
	UM-3DEP-2P	BATTERY	
	F9-4-220	RELAY	
	TMW8E015-2	LED HOLDER	
	31221212478	FIX CLIP	
INTEGRATED CIRCUITS			
IC201	HEF4053B	SWITCHING I.C.	
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	AN7809LB	9V REGULATOR	
IC853	AN78M08LB	8V REGULATOR	
IC1202	MN1280R	RESET	
IC1204	RPM-637CBRS	RECEIVER	
CAPACITORS			
C010	ECUV1H103KBX	S.M.CAP	50V 10nF
C011	ECA1CM100GB	ELECT	16V 10pF
C012	ECUV1H103KBX	S.M.CAP	50V 10nF
C014	ECUV1H080DCX	S.M.CAP	50V 80pF
C015	ECA1HM330B	ELECT	50V 33pF
C019	ECUV1H103KBX	S.M.CAP	50V 10nF
C020	ECA1HM010GB	ELECT	50V 1pF
C022	ECUV1H150JCX	S.M.CAP	50V 15pF
C023	ECUV1H150JCX	S.M.CAP	50V 15pF
C112	ECA1HMR47GB	ELECT	50V 0.47µF
C113	ECUV1H103KBX	S.M.CAP	50V 10nF
C114	ECA1HM010GB	ELECT	50V 1pF
C205	ECEA1HN2R2	ELECT	50V 2.2µF
C206	ECEA1HN2R2	ELECT	50V 2.2µF
C207	ECEA1CN100	ELECT	16V 10µF
C208	ECA1CM100GB	ELECT	16V 10pF
C210	ECEA1HN2R2	ELECT	50V 2.2µF
C213	ECA1HM010GB	ELECT	50V 1pF
C214	ECEA1HN2R2	ELECT	50V 2.2µF
C215	ECUV1H104ZFX	S.M.CAP	50V 100nF
C216	ECUV1H272KBX	S.M.CAP	50V 2.7nF
C251	ECA1EM471GB	ELECT	25V 470pF
C252	ECA1HM010GB	ELECT	50V 1pF
C253	ECA1EM470GB	ELECT	25V 47pF
C254	ECUV1H272JCX	S.M.CAP	50V 2.7nF
C255	ECQB1H104J	FILM	50V 100nF
C256	ECQM1H224J	FILM	50V 220nF
C257	ECQM1H474J	FILM	50V 470nF
C258	ECA1EM101GB	ELECT	25V 1µF
C260	ECA1EM102GB	ELECT	25V 1nF

Ref No.	Part No.	Description	
C261	ECUV1H471JCX	S.M.CAP	50V 470pF
C262	ECA1HM101GB	ELECT	50V 100pF
C301	ECA1HM101GB	ELECT	50V 100pF
C302	ECUV1H104ZFX	S.M.CAP	50V 100nF
C303	ECA1CM471GB	ELECT	16V 470pF
C304	ECUV1H104ZFX	S.M.CAP	50V 100nF
C305	ECA1HM101GB	ELECT	50V 100pF
C307	ECA1HM101GB	ELECT	50V 100pF
C308	ECUV1H104ZFW	S.M.CAP	50V 100nF
C309	ECUV1H103KBX	S.M.CAP	50V 10nF
C310	ECA1HM010GB	ELECT	50V 1pF
C311	ECUV1H104ZFX	S.M.CAP	50V 100nF
C312	ECUV1H104ZFX	S.M.CAP	50V 100nF
C313	ECUV1H104ZFX	S.M.CAP	50V 100nF
C314	ECEA1HNR47UB	ELECT	50V 0.47µF
C315	ECEA1HN2R2UB	ELECT	50V 2.2µF
C317	ECA1HM101GB	ELECT	50V 100pF
C318	ECEA1HNR47UB	ELECT	50V 0.47µF
C319	ECUV1H104ZFX	S.M.CAP	50V 100nF
C320	ECA1HM010GB	ELECT	50V 1pF
C355	ECKC3D152J	CERAMIC	2KV 1.5nF ▲
C357	ECKC2H152J	CERAMIC	500V 1.5nF ▲
C362	ECUV1H102ZFX	S.M.CAP	50V 1nF
C368	ECEA2EU010	ELECT	250V 1µF
C370	ECA1CM220GB	ELECT	16V 22µF
C371	ECA1CM221GB	ELECT	16V 220pF
C401	ECUV1H223KBX	S.M.CAP	50V 22nF
C402	ECUV1H472KBX	S.M.CAP	50V 4.7nF
C403	ECA1HM010GB	ELECT	50V 1pF
C404	ECUV1H103ZFX	S.M.CAP	50V 10nF
C452	ECQM1H274J	FILM	50V 270nF
C453	ECEA1HU101	ELECT	50V 100µF
C454	ECA1HM2R2GB	ELECT	50V 2.2µF
C457	ECQM1H394J	FILM	50V 390nF
C461	ECUV1H100CCX	S.M.CAP	50V 10pF
C501	ECA1HM010GB	ELECT	50V 1pF
C502	ECUV1H223KBX	S.M.CAP	50V 22nF
C503	ECUV1H391JCX	S.M.CAP	50V 390pF
C504	ECEA1HN010UB	ELECT	50V 1µF
C505	ECUV1H331JCX	S.M.CAP	50V 330pF
C506	ECQM1273KZW	FILM	100V 27nF
C507	ECA1HM100GB	ELECT	50V 10pF
C541	ECEA1EN4R7UB	ELECT	25V 4.7µF
C550	ECA1VM471GB	ELECT	35V 470pF
C559	ECKC2H471J	CERAMIC	500V 470pF ▲
C560	ECKC2H471J	CERAMIC	500V 470pF ▲
C561	ECEA2EU100	ELECT	250V 10µF
C562	ECKC2H471J	CERAMIC	500V 470pF ▲
C563	ECA1VM471GB	ELECT	35V 470pF
C564	ECA1CM471GB	ELECT	16V 470pF
C565	ECA1VM471GB	ELECT	35V 470pF
C566	ECKC2H471J	CERAMIC	500V 470pF ▲
C567	ECA1VM471GB	ELECT	35V 470pF
C601	ECUV1H473KBX	S.M.CAP	50V 47nF
C602	ECUV1H153KBX	S.M.CAP	50V 15nF
C603	ECA1HM010GB	ELECT	50V 1pF
C605	ERJ6GEY0R00	S.M.CARB	0.1W 5% Ω
C606	ECUV1H104ZFX	S.M.CAP	50V 100nF
C607	ECUV1H104ZFX	S.M.CAP	50V 100nF
C608	ECUV1H470JCX	S.M.CAP	50V 47pF
C609	ECUV1H470JCX	S.M.CAP	50V 47pF
C610	ECA1HM101GB	ELECT	50V 100pF
C611	ECUV1H104ZFX	S.M.CAP	50V 100nF
C612	ECUV1H103KBX	S.M.CAP	50V 10nF
C613	ECUV1H103KBX	S.M.CAP	50V 10nF
C614	ECUV1H104ZFX	S.M.CAP	50V 100nF
C615	222236576104	FILM	50V 0.1µF
C616	222236576104	FILM	50V 0.1µF
C617	ECUV1H104ZFX	S.M.CAP	50V 100nF
C618	ECA1HM101GB	ELECT	50V 100pF
C619	ECUV1H103KBX	S.M.CAP	50V 10nF
C620	ECUV1H103KBX	S.M.CAP	50V 10nF
C623	ECUV1H104ZFW	S.M.CAP	50V 100nF

Ref No.	Part No.	Description			
C630	ECUY1H103JCW	S.M.CAP	50V	10nF	
C802	ECQU2A823MNB	FILM	200V	82nF	
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	
C809	ECKC3D471JB	CERAMIC	2KV	470pF	△
C810	ECA1VM101GB	ELECT	35V	100pF	
C811	ECA1JM100GB	ELECT	63V	10pF	
C812	ECA2CHG221E	ELECT	160V	220pF	
C817	ECA1VM101GB	ELECT	35V	100pF	
C818	ECKWNA471MBCC	CERAMIC	250V	470pF	
C820	ECKWNA332MECC	CERAMIC	250V	3.3nF	
C821	ECKC3A101J	CERAMIC	1KV	100pF	
C853	ECEA1EGE102	ELECT	25V	1000µF	
C854	ECA1VM471E	ELECT	35V	470pF	
C855	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C856	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C857	ECA1HM101GB	ELECT	50V	100pF	
C858	ECA1AM222B	ELECT	10V	2.2nF	
C859	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C860	ECA1HM101GB	ELECT	50V	100pF	
C861	ECA1CM102B	ELECT	16V	1nF	
C1201	ECA1EM102GB	ELECT	25V	1nF	
C1202	ECA1EM101GB	ELECT	25V	1µF	
C1203	ECA1EM471GB	ELECT	25V	470pF	
C1204	ECUV1H471KBX	S.M.CAP	50V	470pF	
C1205	ECUV1H471KBX	S.M.CAP	50V	470pF	
C1206	ECUV1H471KBX	S.M.CAP	50V	470pF	
C1207	ECUV1H471KBX	S.M.CAP	50V	470pF	
C1208	ECUV1H471KBX	S.M.CAP	50V	470pF	
C1210	ECUV1H473KBX	S.M.CAP	50V	47nF	
C1218	ECA1HM010GB	ELECT	50V	1pF	
C1219	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1220	ECA0JM101G	ELECT	6.3V	100pF	
C1221	ECUV1H331JCX	S.M.CAP	50V	330pF	
C1226	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1227	ECA1HM101GB	ELECT	50V	100pF	
C1229	ECUV1H470GCG	S.M.CAP	50V	47pF	
C1232	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1234	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1241	ECA1HM101GB	ELECT	50V	100pF	
C1244	ECA1CM100GB	ELECT	16V	10pF	
C1249	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1255	ECA1HM101GB	ELECT	50V	100pF	
C1256	ECUV1H104KBX	S.M.CAP	50V	100nF	
C1257	ECUV1H561JCX	S.M.CAP	50V	560pF	
C1258	ECA1CM100GB	ELECT	16V	10pF	
C1259	ECUV1H150JCX	S.M.CAP	50V	15pF	
C1260	ECUV1H560JCX	S.M.CAP	50V	56pF	
C1261	ECA1HM101GB	ELECT	50V	100pF	
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	
C3101	ECUV1H101JCX	S.M.CAP	50V	100pF	
C3102	ECUV1H561KBX	S.M.CAP	50V	560pF	
C3104	ECUV1H102KBX	S.M.CAP	50V	1nF	
C3105	ECUV1H101JCX	S.M.CAP	50V	100pF	
C3109	ECUV1H561JCX	S.M.CAP	50V	560pF	
C3110	222236516684	FILM	160V	100nF	
C3113	ECUV1H103KBX	S.M.CAP	50V	10nF	
C3115	ECEA1CN101	ELECT	16V	100µF	
C3117	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C3118	ECEA1CN101	ELECT	16V	100µF	
C3119	ECEA1CN101	ELECT	16V	100µF	
C3120	ECA1CM471GB	ELECT	16V	470pF	
C3121	ECA1HM4R7GB	ELECT	50V	4.7µF	

DIODES

D010	MA4150	DIODE
D011	MA4150	DIODE
D304	1SS355TE-17	DIODE
D306	MTZJT-774.7A	DIODE
D307	MTZJT-774.7A	DIODE
D351	MA165TA5	DIODE 1SS133T-77
D352	MA165TA5	DIODE 1SS133T-77
D353	MA165TA5	DIODE 1SS133T-77
D354	MA165TA5	DIODE 1SS133T-77
D452	ERA15-02V3	DIODE
D453	MA165TA5	DIODE 1SS133T-77
D454	MA165TA5	DIODE 1SS133T-77
D455	MA165TA5	DIODE 1SS133T-77

Ref No.	Part No.	Description		
D503	MA165TA5	DIODE 1SS133T-77		
D504	MA165TA5	DIODE 1SS133T-77		
D505	1SR124-4AT82	DIODE		
D506	MTZJ33B	DIODE		
D541	MA165TA5	DIODE 1SS133T-77		
D542	MA165TA5	DIODE 1SS133T-77		
D551	TVSRH2F-LFB3	DIODE		
D552	TVSRU2AMLFA5	DIODE		
D553	1SR124-4AT82	DIODE		
D554	1SR124-4AT82	DIODE		
D555	ERA22-02V3	DIODE		
D556	MA167TA5	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 1SS133T-77		
D815	1SR124-4AT82	DIODE		
D816	1SR124-4AT82	DIODE		
D851	TVSRU3AMLFA5	DIODE		
D852	TVSRU2AMV1	DIODE		
D857	MA165TA5	DIODE 1SS133T-77		
D858	MA165TA5	DIODE 1SS133T-77		
D859	MA165TA5	DIODE 1SS133T-77		
D860	MA165TA5	DIODE 1SS133T-77		
D861	MA165TA5	DIODE 1SS133T-77		
D1202	MA170	DIODE		
D1203	SLR56UR3FLF	LED		
D1205	MA170	DIODE		
D1207	MTZJT-778.2A	DIODE		
D1208	MA170	DIODE		
D1209	MTZJT-775.1C	DIODE		
D1211	MA165TA5	DIODE 1SS133T-77		
D1212	MA165TA5	DIODE 1SS133T-77		
D1213	MA165TA5	DIODE 1SS133T-77		
D1214	MA170	DIODE		
D1217	MA165TA5	DIODE 1SS133T-77		
D1218	MA165TA5	DIODE 1SS133T-77		
D1219	MA165TA5	DIODE 1SS133T-77		
D1220	MA165TA5	DIODE 1SS133T-77		
D1221	MA165TA5	DIODE 1SS133T-77		
D1222	MA165TA5	DIODE 1SS133T-77		
D1224	MA165TA5	DIODE 1SS133T-77		
D1301	MTZJT-775.1A	DIODE		
D1311	MA165TA5	DIODE 1SS133T-77		
D1312	MA700TA5	DIODE		
D3101	MA165TA5	DIODE 1SS133T-77		

FUSES

F801	2153.15H	FUSE	△
F8011	EYF52BC	FUSE HOLDER	
F8012	EYF52BC	FUSE HOLDER	

TERMINALS AND LINKS

JC1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC11	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC14	ERJ8GEY0R00	S.M.CARB	.125W	5%	Ω
JC2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC20	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC21	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC23	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC24	ERJ8GEY0R00	S.M.CARB	.125W	5%	Ω
JC25	ERJ8GEY0R00	S.M.CARB	.125W	5%	Ω
JC26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC27	ERJ8GEY0R00	S.M.CARB	.125W	5%	Ω
JC28	ERJ8GEY0R00	S.M.CARB	.125W	5%	Ω
JC3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC30	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC31	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC7	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC8	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JC9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JEADK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JEAKK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JEFK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JEJK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω

Ref No.	Part No.	Description			
JENK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEXK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JEZK	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
JK3102	TJB16663	A.V.TERMINAL			
J305	EXCELSA39V	COIL			
COILS					
L010	EXCELSA35T	COIL			
L012	EXCELSA35T	COIL			
L202	ECCR1H560J	CERAMIC	50V	56pF	
L451	EXCELSA35T	COIL			
L801	ELF18D281A	COIL			
L803	EXCELSA35T	COIL			
L804	EXCELDLR35V	COIL			
L851	EXCELSA35T	COIL			
L852	EXCELSA35T	COIL			
L1201	EXCELSA35T	COIL			
L1202	TLTACT331K	COIL			
L1203	TLTACT100K	COIL			
L1204	ELJNA6R8GF	SM.CARBO.125W		5%	6R8Ω
L1207	TLTACT100K	COIL			
L1208	TLTACT100K	COIL			
L1209	EXCELSA35T	COIL			
TRANSISTORS					
Q102	BC847B	TRANSISTOR OR 2SD601ATX			
Q201	BC847B	TRANSISTOR OR 2SD601ATX			
Q202	BC847B	TRANSISTOR OR 2SD601ATX			
Q251	BC847B	TRANSISTOR OR 2SD601ATX			
Q252	BC857B	TRANSISTOR OR 2SB709ATX			
Q253	BC847B	TRANSISTOR OR 2SD601ATX			
Q302	BC847B	TRANSISTOR OR 2SD601ATX			
Q303	BC847B	TRANSISTOR OR 2SD601ATX			
Q354	BC857B	TRANSISTOR OR 2SB709ATX			
Q453	BC847B	TRANSISTOR OR 2SD601ATX			
Q454	BC847B	TRANSISTOR OR 2SD601ATX			
Q501	2SD2398-M2	TRANSISTOR			
Q502	BC857B	TRANSISTOR OR 2SB709ATX			
Q503	BC847B	TRANSISTOR OR 2SD601ATX			
Q504	BC847B	TRANSISTOR OR 2SD601ATX			
Q551	BU2506DFRB	TRANSISTOR			
Q801	BC847B	TRANSISTOR OR 2SD601ATX			
Q802	2SD965-R	TRANSISTOR			
Q1201	BC847B	TRANSISTOR OR 2SD601ATX			
Q1202	BC847B	TRANSISTOR OR 2SD601ATX			
Q1203	BC847B	TRANSISTOR OR 2SD601ATX			
Q1204	2SC1317-TA	TRANSISTOR			
Q1205	BC847B	TRANSISTOR OR 2SD601ATX			
Q1207	BC847B	TRANSISTOR OR 2SD601ATX			
Q1208	BC847B	TRANSISTOR OR 2SD601ATX			
Q1209	BC847B	TRANSISTOR OR 2SD601ATX			
Q1210	BC857B	TRANSISTOR OR 2SB709ATX			
Q1211	BC857B	TRANSISTOR OR 2SB709ATX			
Q1212	BC847B	TRANSISTOR OR 2SD601ATX			
Q1213	BC847B	TRANSISTOR OR 2SD601ATX			
Q1240	BC847B	TRANSISTOR OR 2SD601ATX			
Q1295	BC857B	TRANSISTOR OR 2SB709ATX			
Q1296	BC847B	TRANSISTOR OR 2SD601ATX			
Q3101	2SC1318-S	TRANSISTOR			
Q3103	2SD1328STX	TRANSISTOR			
Q3104	BC857B	TRANSISTOR OR 2SB709ATX			
Q3105	BC857B	TRANSISTOR OR 2SB709ATX			
Q3106	BC857B	TRANSISTOR OR 2SB709ATX			
Q3107	BC857B	TRANSISTOR OR 2SB709ATX			
Q3108	BC857B	TRANSISTOR OR 2SB709ATX			
RESISTOR					
RL1201	TSE1885-1	TRANSISTOR			
R010	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R011	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R014	ERG2SJS273	METAL	2W	5%	27KΩ
R016	ELJFC6R8KF	COIL			
R017	ELJFC6R8KF	COIL			
R107	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R112	ERJ8GEYJ122	S.M.CAR	.125W	5%	1K2Ω
R114	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ
R116	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω
R117	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R203	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2Ω
R205	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R206	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω
R214	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R215	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R221	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω

Ref No.	Part No.	Description			
R222	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R223	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R226	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R230	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R231	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R232	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R233	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R234	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R235	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ
R251	ERJ6GEYJ3R3	S.M.CARB	0.1W	5%	3R3Ω
R252	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω
R254	ERJ6GEYJ121	S.M.CARB	0.1W	5%	120Ω
R255	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180Ω
R256	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R257	ERQ1CJP120	METAL	1W	5%	12Ω
R259	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω
R260	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R261	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω
R262	ERJ6GEYF104V	SM.CARBO.125W		1%	100KΩ
R263	ERJ6GEYF622V	SM.CARBO.125W		1%	6K2Ω
R264	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R301	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R302	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R303	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R304	ERJ6ENF2201	SM.CARBO.125W		5%	200Ω
R305	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R306	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R307	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω
R313	ERQ14AJ470	METAL	0.25W	5%	47Ω
R314	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R315	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R317	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R318	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R319	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R320	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R321	ERJ6GEYJ243	SM.CARBO.125W		5%	24KΩ
R322	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R372	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R373	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R374	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R401	ERJ6ENF9100	SM.CARBO.125W		5%	10Ω
R402	ERJ6ENF8201	SM.CARBO.125W		5%	200Ω
R403	ERJ6ENF6801	SM.CARBO.125W		5%	800Ω
R451	ERDS1TJ331	CARBON	0.5W	5%	330Ω
R452	ERJ6GEYJ1R0	SM.CARBO.125W		5%	1RΩ
R454	ERJ6GEYF153V	SM.CARBO.125W		1%	15KΩ
R456	ERO25CKF5601	METAL	0.25W	1%	5K6Ω
R457	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R458	ERD25TJ683	CARBON	0.25W	5%	68KΩ
R459	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R460	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R461	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R462	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ
R501	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω
R502	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω
R503	ERG3SJS101	METAL	3W	5%	10Ω
R504	ERG2ANJ471	METAL	2W	5%	470Ω
R505	ERJ6GEYJ433	SM.CARBO.125W		5%	43KΩ
R510	ERJ6GEYJ561	S.M.CARB	0.1W	5%	560Ω
R511	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330KΩ
R512	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω
R513	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R514	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω
R515	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R516	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R518	ERJ6ENF1302	SM.CARBO.125W		5%	3KΩ
R520	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330KΩ
R521	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R522	ERJ6GEYJ334	S.M.CARB	0.1W	5%	330KΩ
R541	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R601	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω
R602	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω
R603	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R604	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R605	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R606	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R611	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R612	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0Ω
R613	ERJ6GEYJ395	SM.CARBO.125W		5%	3M9Ω
R801	ERF5ZK2R7	WOUND	5W	20%	2R7Ω
R804	ERDS1TJ224	CARBON	0.5W	5%	220KΩ
R805	ERW2PKR33	WIRE	2W	10%	R33Ω
R806	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R807	ERG2ANJ101	METAL	2W	5%	100Ω
R808	ERG12SJ561P	METAL	12W	5%	560Ω

Ref No.	Part No.	Description
R809	ERG2SJ560P	METAL 2W 5% 56Ω Δ
R810	ERQ12HJ100	METAL 0.5W 5% 10Ω Δ
R811	ERDS1TJ224	CARBON 0.5W 5% 220KΩ
R813	ERJ6GEYJ202	S.M.CARB. 0.125W 5% 2KΩ
R814	ERD75TAJ825	CARBON 0.75W 5% 8M2Ω Δ
R819	ERDS1TJ104	CARBON 0.5W 5% 100KΩ
R853	ERG2ANJ270	METAL 2W 5% 27Ω
R854	ERG2ANJ330	METAL 2W 5% 33Ω
R857	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R858	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R859	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R860	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R861	ERJ6GEYOR00	S.M.CARB. 0.1W 5% 0Ω
R1201	ERQ1CJP2R2	FUSIBLE 1W 5% 2R2Ω Δ
R1202	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1203	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1204	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1205	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1206	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1208	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1209	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1210	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1211	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1212	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1214	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1219	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1220	ERJ6GEYJ472	S.M.CARB. 0.1W 5% 4K7Ω
R1221	ERJ6GEYJ271	S.M.CARB. 0.1W 5% 270Ω
R1222	ERJ6GEYJ330	S.M.CARB. 0.1W 5% 33Ω
R1226	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1227	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1228	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1229	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1231	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1232	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1233	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1234	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1235	ERJ6GEYJ152	S.M.CARB. 0.1W 5% 1K5Ω
R1236	ERJ6GEYJ223	S.M.CARB. 0.1W 5% 22KΩ
R1237	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R1238	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1239	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1240	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1243	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1244	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1246	ERD25TJ272	CARBON 0.25W 5% 2K7Ω
R1247	ERD25TJ221	CARBON 0.25W 5% 220Ω
R1248	ERJ6GEYJ223	S.M.CARB. 0.1W 5% 22KΩ
R1249	ERDS1TJ121	CARBON 0.5W 5% 120Ω
R1250	ERDS1TJ560	CARBON 0.5W 5% 56Ω
R1255	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1257	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1258	ERJ6GEYOR00	S.M.CARB. 0.1W 5% 0Ω
R1259	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1261	ERJ6GEYJ122	S.M.CARB. 0.1W 5% 1K2Ω
R1263	ERJ6GEYJ122	S.M.CARB. 0.1W 5% 1K2Ω
R1265	ERJ6GEYJ122	S.M.CARB. 0.1W 5% 1K2Ω
R1266	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1267	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1268	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1269	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1270	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1271	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1272	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R1273	ERJ6GEYJ333	S.M.CARB. 0.1W 5% 33KΩ
R1274	ERJ6GEYJ104	S.M.CARB. 0.1W 5% 100KΩ
R1276	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1282	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ

Ref No.	Part No.	Description
R1283	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1284	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1285	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R1286	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R1287	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R1288	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R1289	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1293	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1294	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1295	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1296	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1298	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R1303	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R1309	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R1311	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R3101	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R3102	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R3103	ERJ6GEYJ564	S.M.CARB. 0.1W 5% 560KΩ
R3104	ERJ6GEYJ104	S.M.CARB. 0.1W 5% 100KΩ
R3105	ERJ6GEYJ750	S.M.CARB. 0.1W 5% 75Ω
R3106	ERJ6GEYJ750	S.M.CARB. 0.1W 5% 75Ω
R3107	ERJ6GEYJ750	S.M.CARB. 0.1W 5% 75Ω
R3108	ERJ6GEYJ750	S.M.CARB. 0.1W 5% 75Ω
R3109	ERJ6GEYJ221	S.M.CARB. 0.1W 5% 220Ω
R3110	ERJ6GEYJ222	S.M.CARB. 0.1W 5% 2K2Ω
R3111	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R3114	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R3115	ERDS1TJ750	CARBON 0.5W 5% 75Ω
R3120	ERJ6GEYJ750	S.M.CARB. 0.1W 5% 75Ω
R3121	ERJ6GEYJ562	S.M.CARB. 0.1W 5% 5K6Ω
R3122	ERJ6GEYJ182	S.M.CARB. 0.1W 5% 1K8Ω
R3123	ERJ6GEYJ221	S.M.CARB. 0.1W 5% 220Ω
R3124	ERJ6GEYJ221	S.M.CARB. 0.1W 5% 220Ω
R3125	ERJ6GEYOR00	S.M.CARB. 0.1W 5% 0Ω
R3126	ERJ6GEYJ153	S.M.CARB. 0.1W 5% 15KΩ
R3127	ERJ6GEYJ101	S.M.CARB. 0.1W 5% 100Ω
R3128	ERJ6GEYJ273	S.M.CARB. 0.1W 5% 27KΩ
R3130	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R3132	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R3133	ERJ6GEYJ223	S.M.CARB. 0.1W 5% 22KΩ
R3134	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R3136	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R3137	ERJ6GEYJ223	S.M.CARB. 0.1W 5% 22KΩ
R3138	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R3140	ERJ6GEYJ103	S.M.CARB. 0.1W 5% 10KΩ
R3141	ERJ6GEYJ223	S.M.CARB. 0.1W 5% 22KΩ
R3142	ERJ6GEYJ102	S.M.CARB. 0.1W 5% 1KΩ
R3143	ERJ6GEYJ181	S.M.CARB. 0.1W 5% 180Ω

SWITCHES

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

TRANSFORMERS

T551	ETH19Z169AZ	TRANSFORMER
T1201	ETP35KAN617U	TRANSFORMER

FILTERS

X201	EFCS5R5MS5	FILTER
X303	TAFCSB503F6	FILTER
X601	LN-P-01S	CRYSTAL
X1201	CSA18.00MXZ	CRYSTAL

DIFFERENCES FOR MODEL TX-21S3TF

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
3)	UR51EC769	BATTERY COVER (REMOTE)
4)	TNQ8E0461-2	REMOTE CONTROL
5)	TNP8EY011AC	Y PC.B. Δ
6)	VP15005-35	CRT FIXING SCREW
7)	A51EAL135X13	C.R.T. Δ
8)	TKY8E140	CABINET Δ
9)	TBX8E038	POWER BUTTON
10)	TKP8E1164	SMOKED PANEL
12)	TBM8E1708	MODEL LABEL
13)	TKU8E00232	REAR COVER Δ

Ref No.	Part No.	Description
14)	TLK8E05133	DEGAUSS COIL Δ
15)	EASG12D546A2	SPEAKER
16)	TMZ8E001	CHASSIS RAIL (RIGHT)
17)	TNP8EE007AS	E PC.B. Δ
19)	TMZ8E002	CHASSIS RAIL (LEFT)
	TBM8E1626	LABEL
	TBX8E039	KEY PAD
	TQB8E2323A	GERMAN INST BOOK Δ
	TQB8E2323C	ITALIAN INST BOOK Δ
	TQB8E2323D	FRENCH INST BOOK Δ
	TQB8E2456B	DUTCH INST BOOK Δ
	TQB8E2456E	SPANISH INST BOOK Δ

Ref No.	Part No.	Description
	TPC8E4602	OUTER CARTON
	TPD8E627	CUSHION
	TPD8E628	CUSHION
CAPACITORS		
C351	ECUV1H221JCX	S.M.CAP 50V 220pF
C352	ECUV1H271JCX	S.M.CAP 50V 270pF
C353	ECUV1H221JCX	S.M.CAP 50V 220pF
C369	ECA1HMR47GB	ELECT 50V 0.47 μ F
C508	ECUV1H102JCX	S.M.CAP 50V 1nF
C551	ECWH12H103J	FILM 1250V 10nF Δ
C552	ECQF4273JZH	FILM 400V 0.027 μ F
C555	ECKC3D152J	CERAMIC 2KV 1.5nF Δ
C557	ECWF2H394JZ	CERAMIC 500V 390nF Δ
C558	ECEA2CU4R7	ELECT 160V 4.7 μ F
C1228	ECUV1H470GCG	S.M.CAP 50V 47pF
C1230	ECUV1H333KBX	S.M.CAP 50V 33nF
C1231	222236516154	FILM 160V 150nF
C1242	ECUV1H120JCX	S.M.CAP 50V 12pF
C1245	ECUV1H333KBX	S.M.CAP 50V 33nF
C1250	ECUV1H151JCX	S.M.CAP 50V 150pF
C1251	ECQM1H104J	FILM 50V 100nF
C1266	ECA1CM100GB	ELECT 16V 10pF
C1268	ECA1CM220GB	ELECT 16V 22 μ F
C1269	ECUV1H181JCX	S.M.CAP 50V 180pF
DIODES		
D805	232266296706	THERMISTOR
D1225	MA165TA5	DIODE 1SS133T-77
D1226	MA700TA5	DIODE
D1227	MA700TA5	DIODE
INTEGRATED CIRCUITS		
IC1201	SDA5254V31	MICROPROCESSOR
IC1205	XL24C02P-BAX	EAROM
TERMINALS AND LINKS		
JC13	ERJ6GEY0R00	S.M.CARB 0.1W 5% Ω
COILS		
L551	ELH5L429	COIL
L553	ELH16F713	COIL
L1206	EXCELSA35T	COIL
TRANSISTORS		
Q351	2SC4714RL2	TRANSISTOR
Q352	2SC4714RL2	TRANSISTOR
Q353	2SC4714RL2	TRANSISTOR
Q507	BC847B	TRANSISTOR OR 2SD601ATX
Q1214	BC857B	TRANSISTOR OR 2SB709ATX
Q1215	BC857B	TRANSISTOR OR 2SB709ATX
Q1216	BC847B	TRANSISTOR OR 2SD601ATX
Q1217	2SD965-R	TRANSISTOR
RESISTOR		
R351	ERG2ANJ103	METAL 2W 5% 10K Ω
R352	ERG2ANJ103	METAL 2W 5% 10K Ω

Ref No.	Part No.	Description
R353	ERG2ANJ103	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
R375	ERDS1TJ272	CARBON 0.5W 5% 2.7K Ω
R378	ERD25TJ274	CARBON 0.25W 5% 2.70K 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
R453	ERDS1TJ1R0	CARBON 0.5W 5% 1 Ω
R506	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K Ω
R508	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15K Ω
R519	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82K 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
R542	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3 Ω
R543	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2 Ω
R553	ERQ1CJP102	METAL 1W 5% 1K Ω Δ
R555	ERQ1CJP4R7	FUSIBLE 1W 5% 4R7 Ω Δ
R557	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10K Ω
R560	ERDS1TJ204	CARBON 0.5W 5% 200K Ω
R1213	ERJ6GEYJ392	S.M.CARB 0.1W 5% 3K9 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 50W 1% 560K Ω Δ
R1223	P1201	SENSOR
R1224	ERJ6GEYJ683	S.M.CARB 0.1W 5% 68K Ω
R1225	ERJ6GEYJ433	S.M.CARB 0.125W 5% 43K Ω
R1230	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82K Ω
R1241	ERJ6GEYJ822	S.M.CARB 0.1W 5% 8K2 Ω
R1242	ERJ6GEYJ434	S.M.CARB 0.125W 5% 430K Ω
R1252	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100 Ω
R1253	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7 Ω
R1256	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2 Ω
R1275	ERJ6GEYJ225	S.M.CARB 0.125W 5% 2M2 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% Ω
R1280	ERJ6GEY0R00	S.M.CARB 0.1W 5% 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
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% Ω
R1307	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8 Ω
R1308	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6 Ω
SWITCHES		
S351	0330550049	CRT SOCKET
TRANSFORMERS		
T552	ZTFK33005A	F.B.T. Δ
T801	ETS29AK227AC	TRANSFORMER Δ

DIFFERENCES FOR MODEL TC-21S3RF

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
1)	UR50RC1112	BATTERY COVER (REMOTE)
2)	TNQ8E0460	REMOTE CONTROL
5)	TNP8EY011AC	Y PC.B. Δ
6)	VP15005-35	CRT FIXING SCREW
7)	A51EAL135X13	C.R.T. Δ
8)	TKY8E140	CABINET Δ
9)	TBX8E038	POWER BUTTON
10)	TKP8E1164	SMOKED PANEL
12)	TBM8E1650	MODEL LABEL
13)	TKU8E00232	REAR COVER Δ
14)	TLK8E05133	DEGAUSS COIL Δ
15)	EASG12D546A2	SPEAKER
16)	TMZ8E001	CHASSIS RAIL (RIGHT)
17)	TNP8EE007AF	E PC.B. Δ
19)	TMZ8E002	CHASSIS RAIL (LEFT)
	TBM8E1626	LABEL
	TBX8E039	KEY PAD

Ref No.	Part No.	Description
	TQB8E2450A	GERMAN INST BOOK Δ
	TQB8E2450B	DUTCH INST BOOK Δ
	TQB8E2450D	FRENCH INST BOOK Δ
	TQB8E2450E	SPANISH INST BOOK Δ
	TPC8E4602	OUTER CARTON
	TPD8E627	CUSHION
	TPD8E628	CUSHION
CAPACITORS		
C351	ECUV1H221JCX	S.M.CAP 50V 220pF
C352	ECUV1H271JCX	S.M.CAP 50V 270pF
C353	ECUV1H221JCX	S.M.CAP 50V 220pF
C369	ECA1HMR47GB	ELECT 50V 0.47 μ F
C508	ECUV1H102JCX	S.M.CAP 50V 1nF
C551	ECWH12H103J	FILM 1250V 10nF Δ
C552	ECQF4273JZH	FILM 400V 0.027 μ F
C555	ECKC3D152J	CERAMIC 2KV 1.5nF Δ
C557	ECWF2H394JZ	CERAMIC 500V 390nF Δ
C558	ECEA2CU4R7	ELECT 160V 4.7 μ F

Ref No.	Part No.	Description
C1228	ECUV1H470GCG	S.M.CAP 50V 47pF
C1230	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
C1245	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
C1266	ECA1CM100GB	ELECT 16V 10pF
C1268	ECA1HM101GB	ELECT 50V 100pF
DIODES		
D805	232266296706	THERMISTOR
D1226	MA700TA5	DIODE
D1227	MA700TA5	DIODE
D1228	1SS355TE-17	DIODE
INTEGRATED CIRCUITS		
IC1201	SDA5223V22	MICROPROCESSOR
IC1205	XL24C02P-BAZ	EAROM
TERMINALS AND LINKS		
JC13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
COILS		
L551	ELH5L429	COIL
L553	ELH16F713	COIL
TRANSISTORS		
Q351	2SC4714RL2	TRANSISTOR
Q352	2SC4714RL2	TRANSISTOR
Q353	2SC4714RL2	TRANSISTOR
Q507	BC847B	TRANSISTOR OR 2SD601ATX
Q1217	2SD965-R	TRANSISTOR
RESISTOR		
R351	ERG2ANJ103	METAL 2W 5% 10KΩ
R352	ERG2ANJ103	METAL 2W 5% 10KΩ
R353	ERG2ANJ103	METAL 2W 5% 10KΩ
R366	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R367	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R368	ERJ6GEYJ431	S.M.CARB 0.1W 5% 430Ω
R369	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R370	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R371	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R375	ERDS1TJ272	CARBON 0.5W 5% 2K7Ω
R378	ERD25TJ274	CARBON 0.25W 5% 270KΩ

Ref No.	Part No.	Description
R379	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R380	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680KΩ
R386	ERDS1TJ272	CARBON 0.5W 5% 2K7Ω
R387	ERDS1TJ272	CARBON 0.5W 5% 2K7Ω
R453	ERDS1TJ1R0	CARBON 0.5W 5% 1Ω
R506	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R508	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R519	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82KΩ
R523	ERJ6GEYJ154	S.M.CARB 0.1W 5% 150KΩ
R524	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R525	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R542	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3Ω
R543	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R553	ERQ1CJP102	METAL 1W 5% 1KΩ ▲
R555	ERQ1CJP4R7	FUSIBLE 1W 5% 4R7Ω ▲
R557	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R560	ERDS1TJ204	CARBON 0.5W 5% 200KΩ
R1215	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1216	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1217	ERJ6ENF7501	S.M.CARB 0.1W 1% 7K5Ω
R1218	ERO50PKF5603	METAL 50W 1% 560KΩ ▲
R1223	P1201	SENSOR
R1224	ERJ6GEYJ683	S.M.CARB 0.1W 5% 68KΩ
R1225	ERJ6GEYJ433	S.M.CARB 0.125W 5% 43KΩ
R1230	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1242	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1252	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1253	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R1275	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1279	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1280	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1291	ERJ6GEYJ432	S.M.CARB 0.1W 5% 4K3Ω
R1304	ERJ6GEYJ184	S.M.CARB 0.1W 5% 180KΩ
R1305	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1308	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1313	ERD25TJ393	CARBON 0.25W 5% 39KΩ
SWITCHES		
S351	0330550049	CRT SOCKET
TRANSFORMERS		
T552	ZTFK33005A	F.B.T ▲
T801	ETS29AK227AC	TRANSFORMER ▲

DIFFERENCES FOR MODEL TX-14S3TF

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
3)	UR51EC769	BATTERY COVER (REMOTE)
4)	TNQ8E0461-2	REMOTE CONTROL
5)	TNP8EY011AB	Y PC.B. ▲
6)	THE492-4	CRT FIXING SCREW
7)	A34EAC01X13	C.R.T. ▲
8)	TKY8E070	CABINET ▲
9)	TBX8E018	POWER BUTTON
12)	TBM8E1707	MODEL LABEL
13)	TKU8E00251	REAR COVER ▲
14)	TLK8E05134	DEGAUSS COIL ▲
15)	EASG9D541B2	SPEAKER
17)	TNP8EE007AR	E PC.B. ▲
	TBM153023	PANASONIC BADGE
	TKP8E1147	LID
	TBX8E029-1	5 KEY BLOCK
	TQB8E2323A	GERMAN INST BOOK ▲
	TQB8E2323C	ITALIAN INST BOOK ▲
	TQB8E2323D	FRENCH INST BOOK ▲
	TPC8E4617	OUTER CARTON
	TPD8E578	TOP CUSHION
	TPD8E579	BOTTOM CUSHION
	TSA120026	MONOPOLE ANTENNA
CAPACITORS		
C351	ECUV1H151JCX	S.M.CAP 50V 150pF
C352	ECUV1H151JCX	S.M.CAP 50V 150pF
C353	ECUV1H181JCX	S.M.CAP 50V 180pF
C551	ECWH12H822J	CERAMIC 1250V 8.2nF ▲
C552	ECQE6104K	FILM 600V 100nF ▲
C554	ECKC3D331J	CERAMIC 2KV 330pF ▲
C557	ECWF2H474J	FILM 500V 470nF ▲
C558	ECEA2CG010	ELECT 160V 1μF
C1228	ECUV1H560GCG	S.M.CAP 50V 56pF

Ref No.	Part No.	Description
C1230	ECUV1H333KBX	S.M.CAP 50V 33nF
C1231	222236516154	FILM 160V 150nF
C1242	ECUV1H120JCX	S.M.CAP 50V 12pF
C1245	ECUV1H333KBX	S.M.CAP 50V 33nF
C1250	ECUV1H151JCX	S.M.CAP 50V 150pF
C1251	ECQM1H104J	FILM 50V 100nF
C1268	ECA1CM220GB	ELECT 16V 22μF
C1269	ECUV1H181JCX	S.M.CAP 50V 180pF
DIODES		
D805	232266296319	THERMISTOR
D1225	MA165TA5	DIODE 1SS133T-77
INTEGRATED CIRCUITS		
IC1201	SDA5254V31	MICROPROCESSOR
IC1205	XL24C02P-BAY	EAROM
TERMINALS AND LINKS		
JYAK	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
COILS		
L1206	EXCELSA35T	COIL
TRANSISTORS		
Q351	2SC1473-RN	TRANSISTOR
Q352	2SC1473-RN	TRANSISTOR
Q353	2SC1473-RN	TRANSISTOR
Q1214	BC857B	TRANSISTOR OR 2SB709ATX
Q1215	BC857B	TRANSISTOR OR 2SB709ATX
Q1216	BC847B	TRANSISTOR OR 2SD601ATX

Ref No.	Part No.	Description
RESISTOR		
R351	ERG1SJ123	METAL 1W 5% 12KΩ
R352	ERG1SJ123	METAL 1W 5% 12KΩ
R353	ERG1SJ123	METAL 1W 5% 12KΩ
R366	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R367	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R368	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R369	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R370	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R371	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R375	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R386	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R387	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R453	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R506	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R508	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R519	ERJ6GEYJ754	S.M.CARB 0.1W 5% 750KΩ
R542	ERJ6GEYJ242	S.M.CARB 0.1W 5% 2K4Ω
R543	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R551	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R552	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R555	ERQ12HKR22	FUSIBLE 0.5W 5% R22Ω ▲
R557	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R560	ERDS1TJ304	CARBON 0.5W 5% 300KΩ
R1213	ERJ6GEYJ392	S.M.CARB 0.1W 5% 3K9Ω

Ref No.	Part No.	Description
R1215	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1216	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1217	ERJ6ENF1202	S.M.CARB 0.1W 1% 1K2Ω
R1218	ERO50PKF6203	METAL 50W 1% 620KΩ ▲
R1230	ERJ6GEYJ823	S.M.CARB 0.1W 5% 82KΩ
R1241	ERJ6GEYJ822	S.M.CARB 0.1W 5% 8K2Ω
R1242	ERJ6GEYJ434	S.M.CARB 0.125W 5% 430KΩ
R1252	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1253	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1256	ERJ6GEYJ122	S.M.CARB 0.1W 5% 1K2Ω
R1275	ERJ6GEYJ225	S.M.CARB 0.125W 5% 2M2Ω
R1277	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1278	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
R1290	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1291	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1292	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1306	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1307	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
SWITCHES		
S351	0330660069	CRT SOCKET
TRANSFORMERS		
T552	ZTFK33004A	F.B.T. ▲
T801	ETS29AK237AC	TRANSFORMER ▲

DIFFERENCES FOR MODEL TC-14S3RF

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
1)	UR50RC1112	BATTERY COVER (REMOTE)
2)	TNQ8E0460	REMOTE CONTROL
5)	TNP8EY011AB	Y P.C.B. ▲
6)	THE492-4	CRT FIXING SCREW ▲
7)	A34EAC01X13	C.R.T. ▲
8)	TKY8E070	CABINET ▲
9)	TBX8E018	POWER BUTTON
12)	TBM8E1694	MODEL LABEL
13)	TKU8E00251	REAR COVER ▲
14)	TLK8E05134	DEGAUSS COIL ▲
15)	EASG9D541B2	SPEAKER
17)	TNP8EE007AE	E P.C.B. ▲
	TBM153023	PANASONIC BADGE
	TKP8E1147	LID
	TBX8E029-1	5 KEY BLOCK
	TQB8E2450A	GERMAN INST BOOK ▲
	TQB8E2450B	DUTCH INST BOOK ▲
	TQB8E2450D	FRENCH INST BOOK ▲
	TQB8E2450E	SPANISH INST BOOK ▲
	TPC8E4617	OUTER CARTON
	TPD8E578	TOP CUSHION
	TPD8E579	BOTTOM CUSHION
	TSA120026	MONOPOLE ANTENNA
CAPACITORS		
C351	ECUV1H151JCX	S.M.CAP 50V 150pF
C352	ECUV1H151JCX	S.M.CAP 50V 150pF
C353	ECUV1H181JCX	S.M.CAP 50V 180pF
C551	ECWH12H822J	CERAMIC 1250V 8.2nF ▲
C552	ECQE6104K	FILM 600V 100nF ▲
C554	ECKC3D331J	CERAMIC 2KV 330pF ▲
C557	ECWF2H474J	FILM 500V 470nF ▲
C558	ECEA2CG010	ELECT 160V 1μF
C1228	ECUV1H560GCG	S.M.CAP 50V 56pF
C1230	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
C1245	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
C1268	ECA1HM101GB	ELECT 50V 100pF
DIODES		
D805	232266296319	THERMISTOR
D1228	1SS355TE-17	DIODE
INTEGRATED CIRCUITS		
IC1201	SDA5223V22	MICROPROCESSOR
IC1205	XL24C02P-BAW	EAROM

Ref No.	Part No.	Description
JYAK	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
TRANSISTORS		
Q351	2SC1473-RN	TRANSISTOR
Q352	2SC1473-RN	TRANSISTOR
Q353	2SC1473-RN	TRANSISTOR
RESISTOR		
R351	ERG1SJ123	METAL 1W 5% 12KΩ
R352	ERG1SJ123	METAL 1W 5% 12KΩ
R353	ERG1SJ123	METAL 1W 5% 12KΩ
R366	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R367	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R368	ERJ6GEYJ681	S.M.CARB 0.1W 5% 680Ω
R369	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R370	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R371	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R375	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R386	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R387	ERDS1TJ182	CARBON 0.5W 5% 1K8Ω
R453	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R506	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R508	ERJ6GEYJ753	S.M.CARB 0.1W 5% 75KΩ
R519	ERJ6GEYJ754	S.M.CARB 0.1W 5% 750KΩ
R542	ERJ6GEYJ242	S.M.CARB 0.1W 5% 2K4Ω
R543	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R551	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R552	ERDS1TJ1R5	CARBON 0.5W 5% 1R5Ω
R555	ERQ12HKR22	FUSIBLE 0.5W 5% R22Ω ▲
R557	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R560	ERDS1TJ304	CARBON 0.5W 5% 300KΩ
R1215	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1216	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1217	ERJ6ENF1202	S.M.CARB 0.1W 1% 1K2Ω
R1218	ERO50PKF6203	METAL 50W 1% 620KΩ ▲
R1230	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1242	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1252	ERJ6GEYJ562	S.M.CARB 0.1W 5% 5K6Ω
R1253	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R1275	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1291	ERJ6GEYJ432	S.M.CARB 0.1W 5% 4K3Ω
R1313	ERD25TJ393	CARBON 0.25W 5% 39KΩ
SWITCHES		
S351	0330660069	CRT SOCKET
TRANSFORMERS		
T552	ZTFK33004A	F.B.T. ▲
T801	ETS29AK237AC	TRANSFORMER ▲


SCHEMATIC DIAGRAM FOR MODELS

TX-21S3TF/TC-21S3RF







TX-14S3TF/TC-14S3RF

(Z-7 Chassis)

IMPORTANT SAFETY NOTICE

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

Notes

- RESISTOR**
All resistors are carbon 1/4W resistor, unless marked as follows:
Unit of resistance is OHM (Ω) (K=1,000, M=1,000,000).
- CAPACITORS**
All capacitors are ceramic 50V, unless marked as follows:
Unit of capacitance is μ F, unless otherwise stated.
- COIL**
Unit of inductance is μ H, unless otherwise stated.
- Components marked 'L' on the schematic diagram shows leadless parts.
- TEST POINT**
 : Test Point position
- EARTH SYMBOL**
 : Chassis Earth (Cold)  : Line Earth (Hot)
- VOLTAGE MEASUREMENT**
Voltage is measured by a DC voltmeter.
Measurement conditions are as follows:
Power source AC 220V-240V, 50Hz
Receiving Signal Colour Bar signal (RF)
All customer controls Maximum position
-  : Indicates the Video signal path
 : Indicates the Audio signal path
 : Indicates the Vertical/Horizontal signal path
- This schematic diagram is the latest at the time of printing and is subject to change without notice.

Remarks

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

Precautions

- Do not touch the hot part, or the hot and cold parts at the same time, as you are liable to a shock hazard.
- Do not short-circuit the hot and cold circuits as electrical components may be damaged.
- 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.
- Make sure to disconnect the power plug before removing the chassis.


SCHEMA TECHNIQUE POUR MODELE

TX-21S3TF/TC-21S3RF







TX-14S3TF/TC-14S3RF

(Z-7 Chassis)

REMARQUE IMPORTANTE POUR LA SÉCURITÉ

Les éléments portant la marque  possèdent des caractéristiques de sécurité spéciales. Lors du remplacement de l'une quelconque de ces pièces n' utiliser que celles spécifiées par la fabricant.

Nota :

- RESISTOR**
Toutes les résistance sont des résistance au carbone 1/4W, sauf indication contraire par les indications suivantes
L'unité de résistance est l' OHM (Ω) (K=1,000, M=1,000,000).
- CONDENSATEUR**
Toutes les condensateurs sont des condensateurs céramique 50V, sauf indication contraire par les indications suivantes :
L'unité de capacité est le μ F, sauf indication contraire.
- BOBINE**
L'unité d'inductance est le μ H, sauf indication contraire
- Les composants entourés de pointillés, sur le schéma, représentent des éléments non câblés.
- POINT D'ESSAI**
 Position du point d'essai
- SYMBOL DE TERRE**
 : Terre du châssis (froid)  : Terre de ligne (chaud)
- MESURE DE TENSION**
La tension est mesurée avec un voltmètre c.c.
Les conditions de mesure sont les suivantes:
Source d'alimentation CA 220V-240V, 50Hz
Signal de réception Signal barre couleur (RF)
Toutes les commandes utilisateur Position maximum
-  : Vidéo
 : Audio
 : Vertical / Horizontal
- Ce schéma est à jour moment de l'impression et modifiable sans préavis.

Remarque

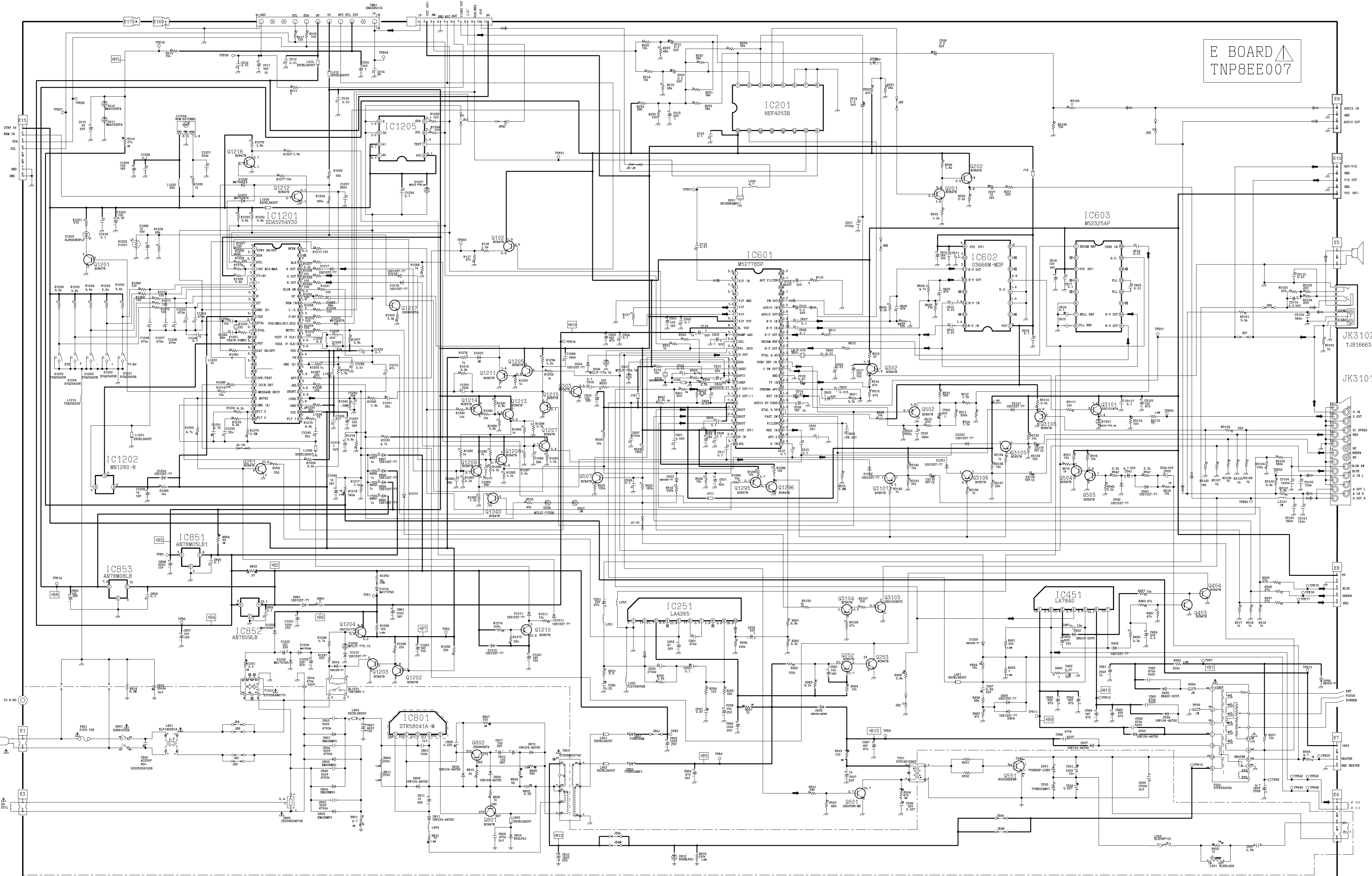
- Le circuit d'alimentation contient une zone de qui utilise une alimentation séparée pour isoler la connexion à la terre. Le circuit est défini par les indications chaud (HOT) et froid (COLD) dans le diagramme schématique. Prendre les précautions suivantes. Tous les circuits, sauf le circuit d'alimentation, sont froids.

Précautions

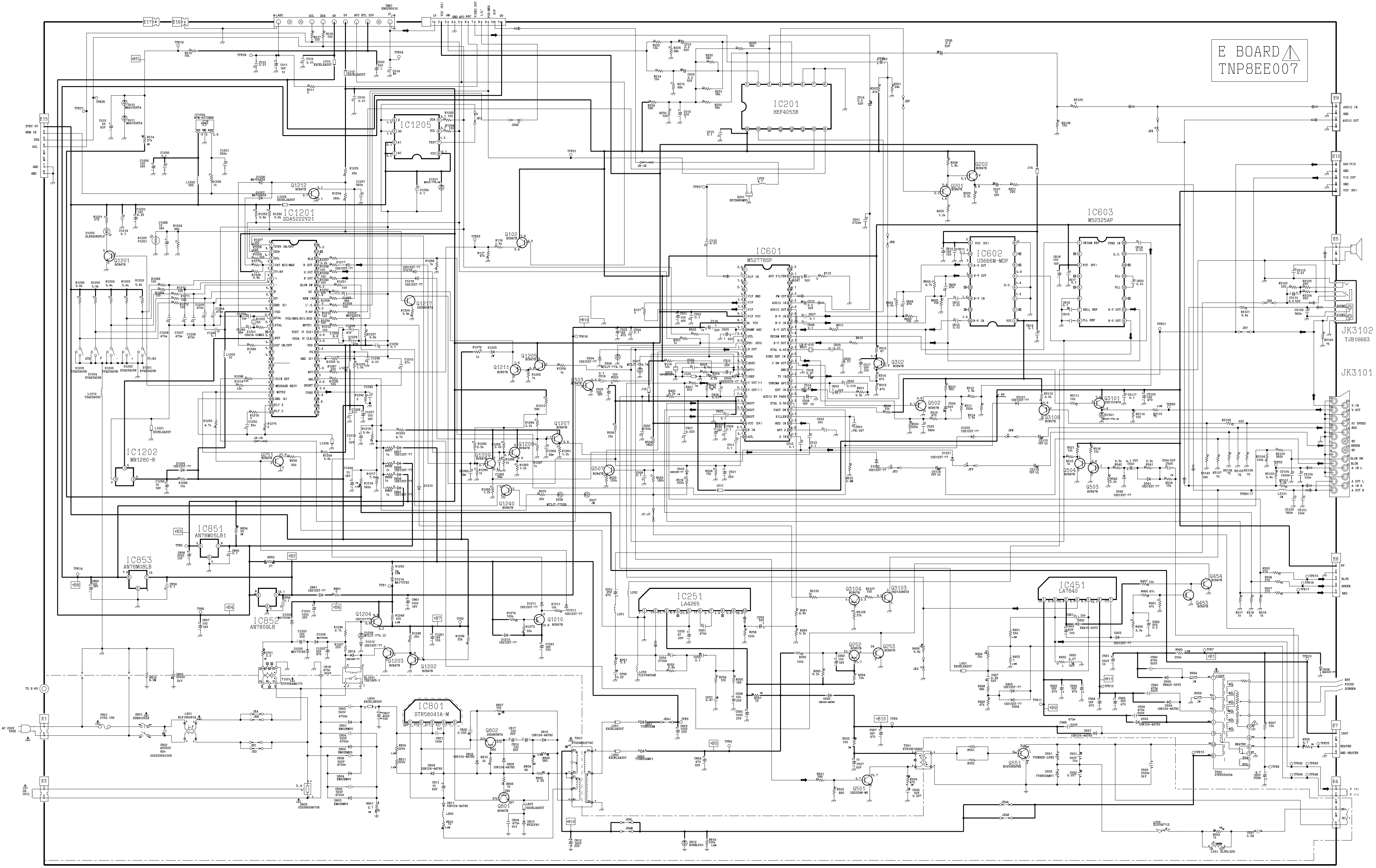
- Ne pas toucher la partie chaude ou en même temps les parties chaud et froide. Cela présente un risque de décharge électrique.
- Ne pas court-circuit les circuits chaud et froid car un fusible peut sauter et des pièces se casser.
- Ne pas raccorder un instrument, comme un oscilloscope, simultanément aux circuits chaud et froid car un fusible peut sauter. Raccorder la terre des instruments à la connexion de terre du circuit mesuré.
- Toujours débrancher la fiche d'alimentation avant de déposer le châssis.

E - BOARD TX - 21S3TF

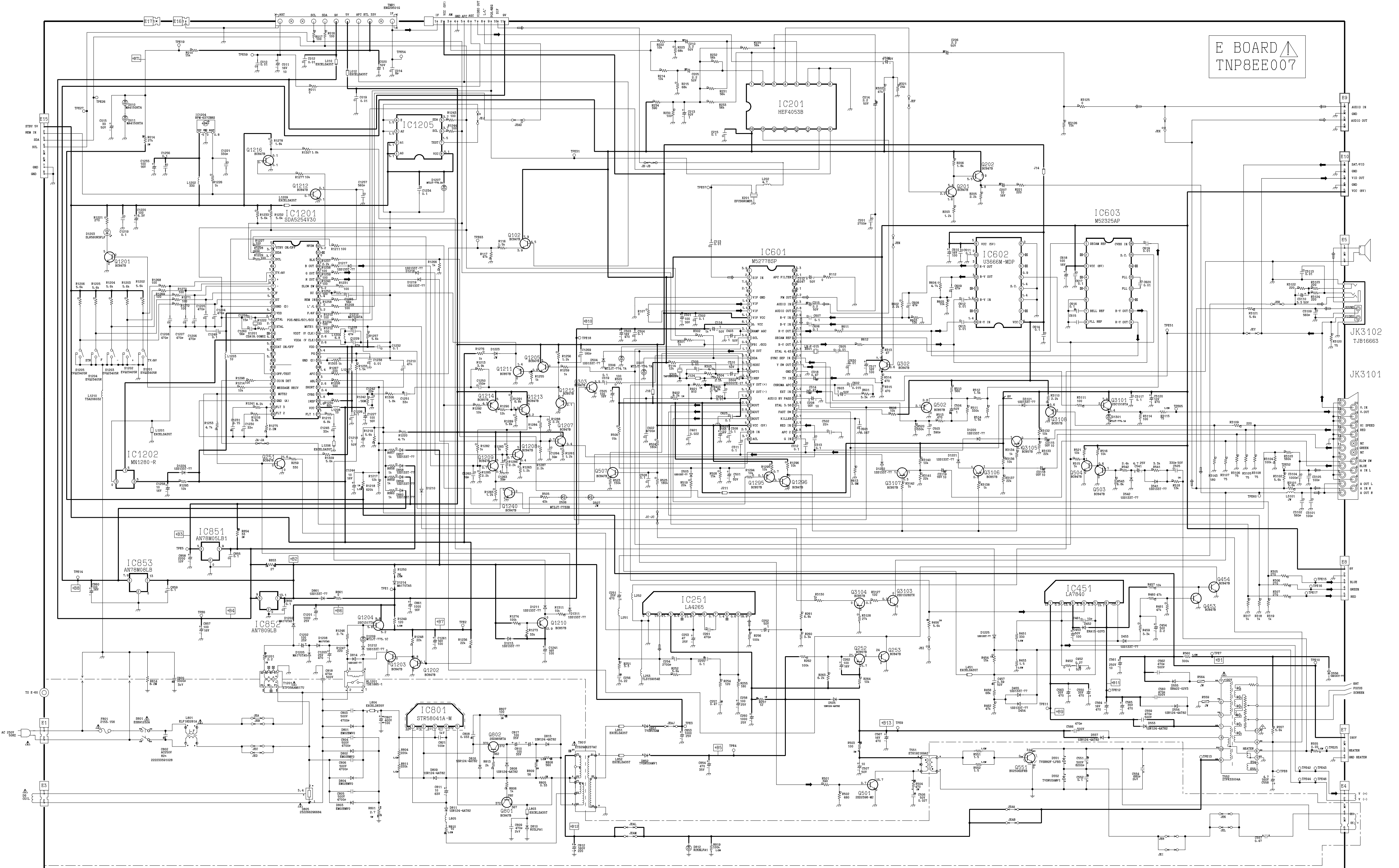
E BOARD
TNP8EE007



E - BOARD TC - 21S3RF



E - BOARD TX - 14S3TF



E BOARD
TNP8EE007

JK3102
TJB16663
JK3101

V. IN
V. OUT
HI SPEED
RED
GREEN
NC
BLUE
YELLOW
A IN L
A IN R
A OUT L
A OUT R

B7
BY
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GREEN
RED

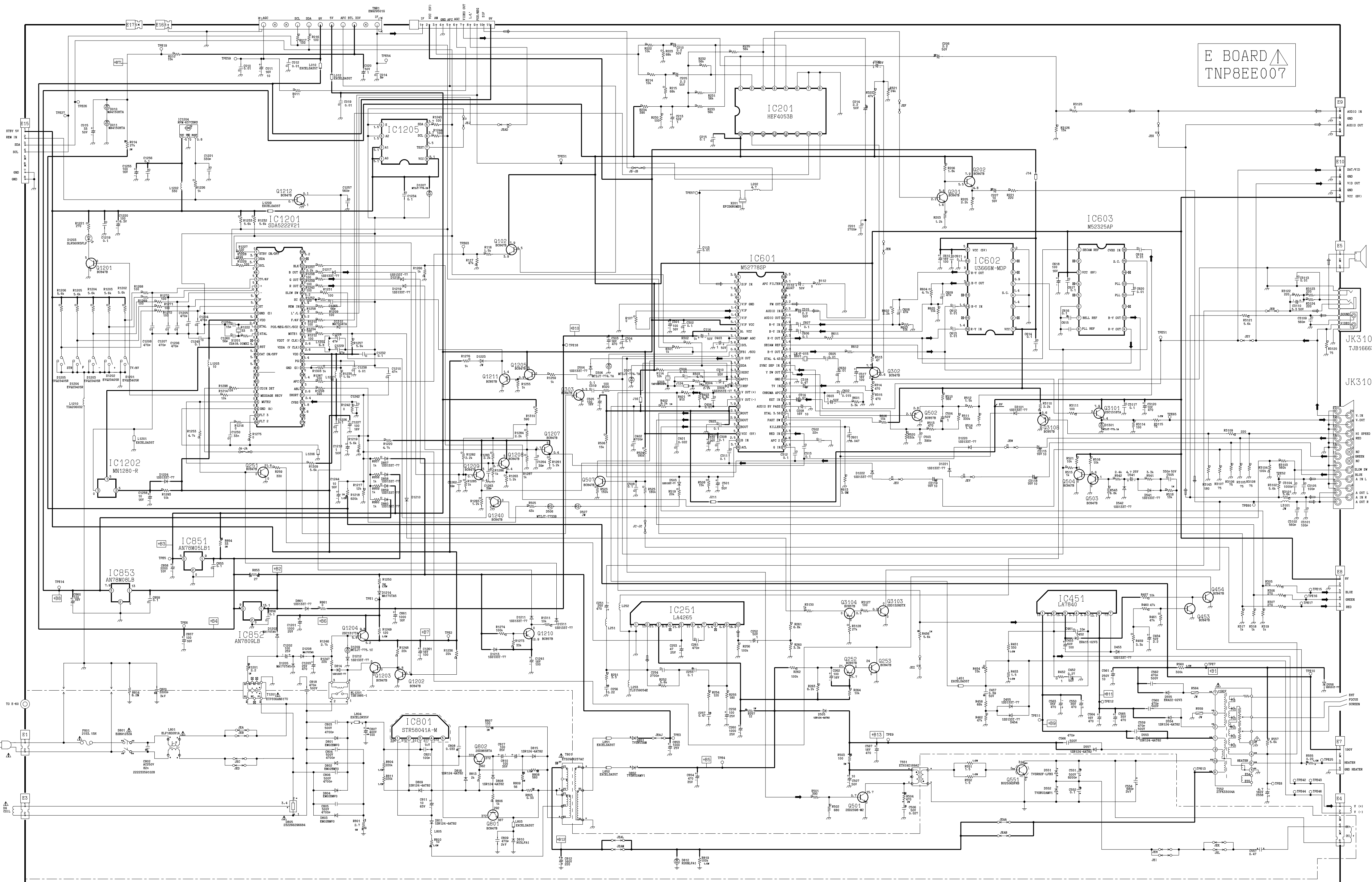
BNT
FOCUS
SCREEN

100V
HEATER
AND HEATER

B4
B5
B6

E - BOARD TC - 14S3RF

E BOARD
TNP8EE007



JK3102
TJB16663
JK3101

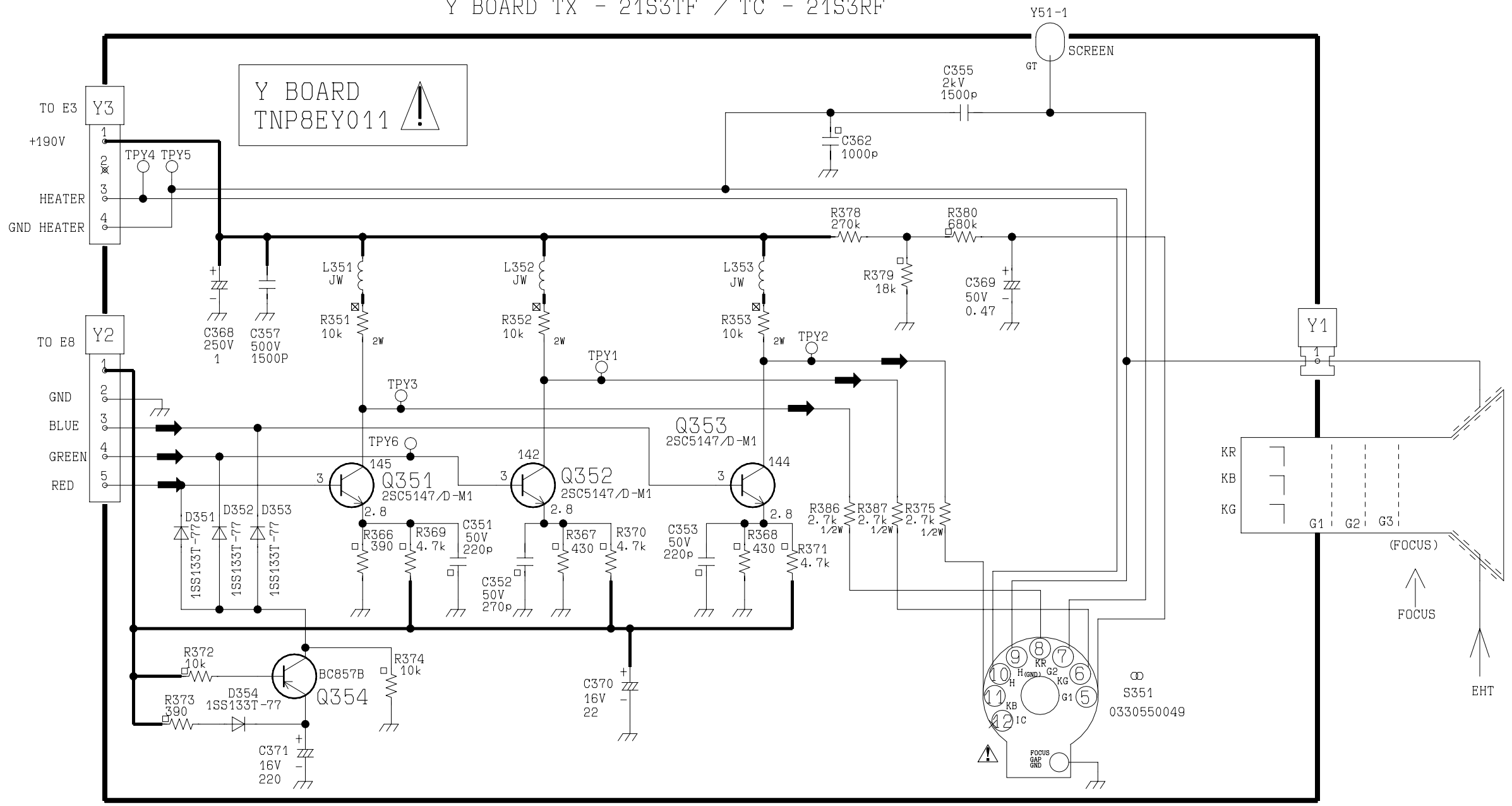
V. IN
V. OUT
A. OUT L
A. OUT R

RED
BLUE
GREEN
BLACK

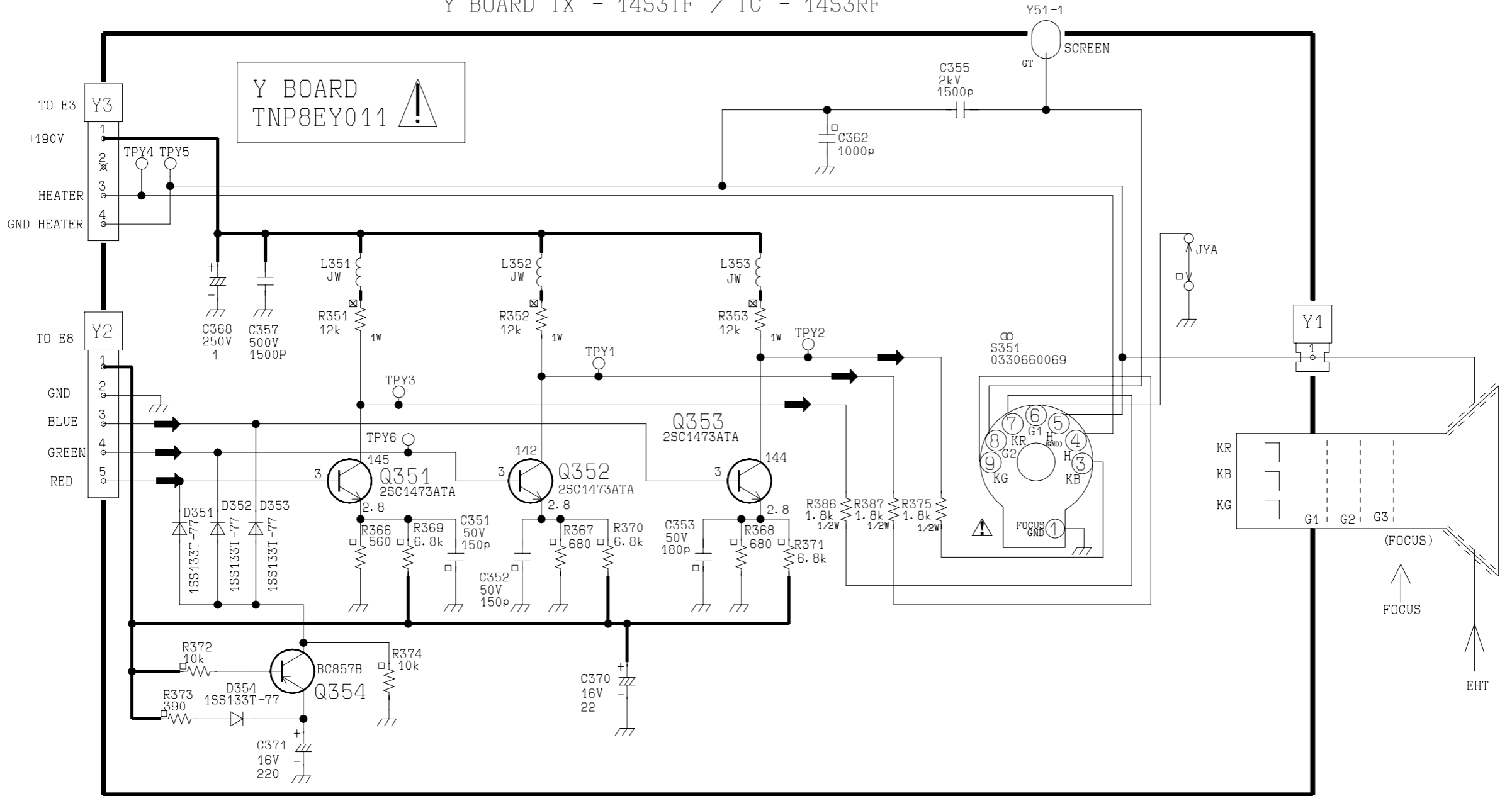
EXT. POWER
POWER

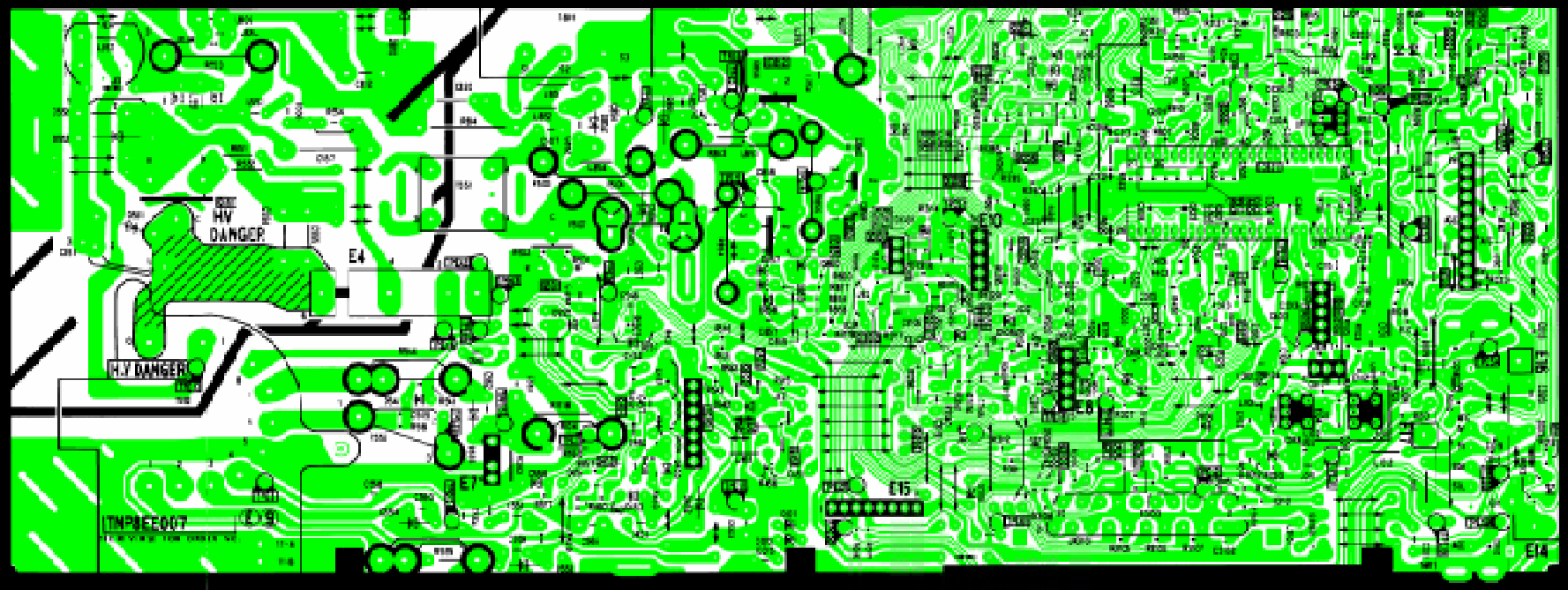
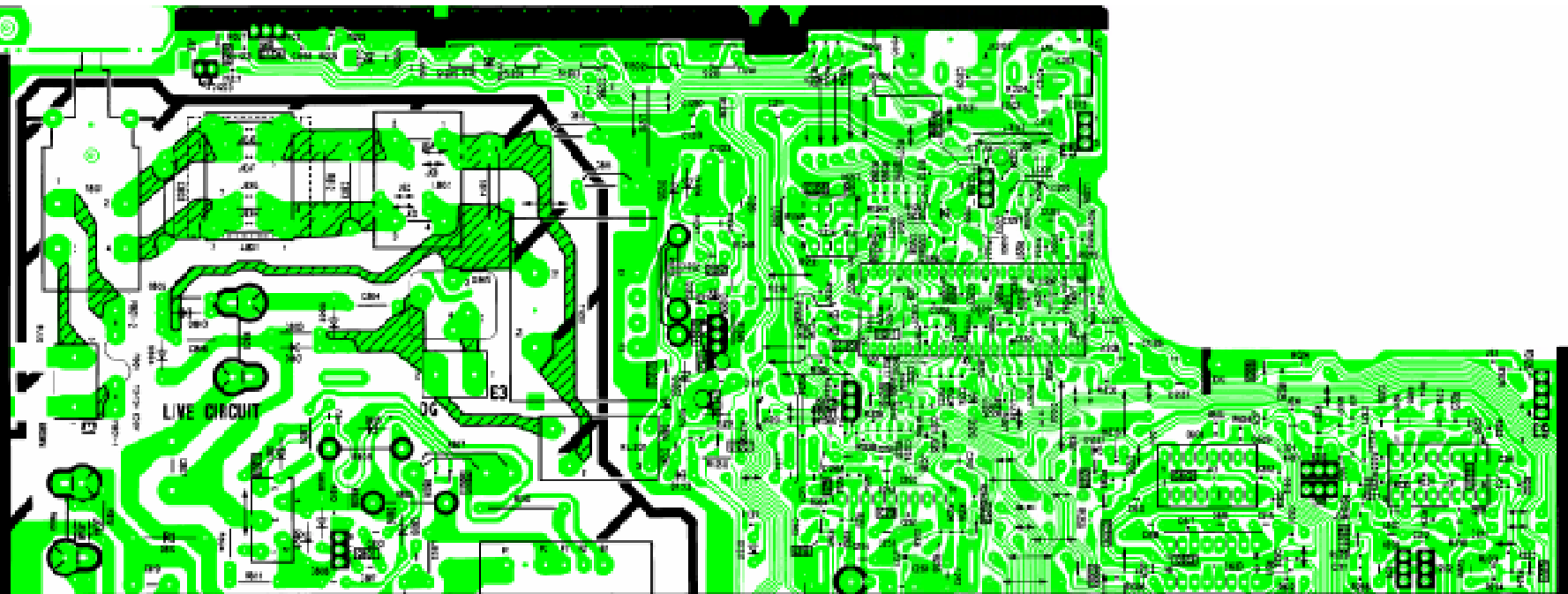
HEATER
HEATER

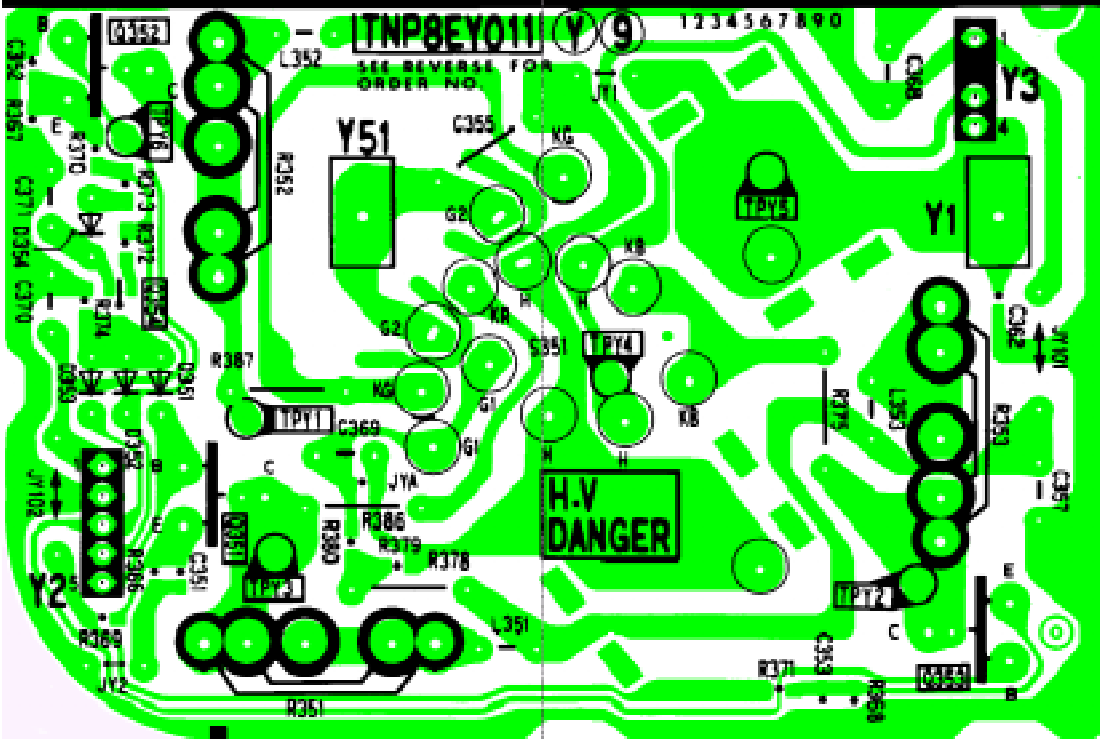
Y BOARD TX - 21S3TF / TC - 21S3RF



Y BOARD TX - 14S3TF / TC - 14S3RF







TNP8EY011 Y 9

1 2 3 4 5 6 7 8 9 0

SEE REVERSE FOR ORDER NO.

H.V.
DANGER

C352 R367
C371 C354 C370
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