

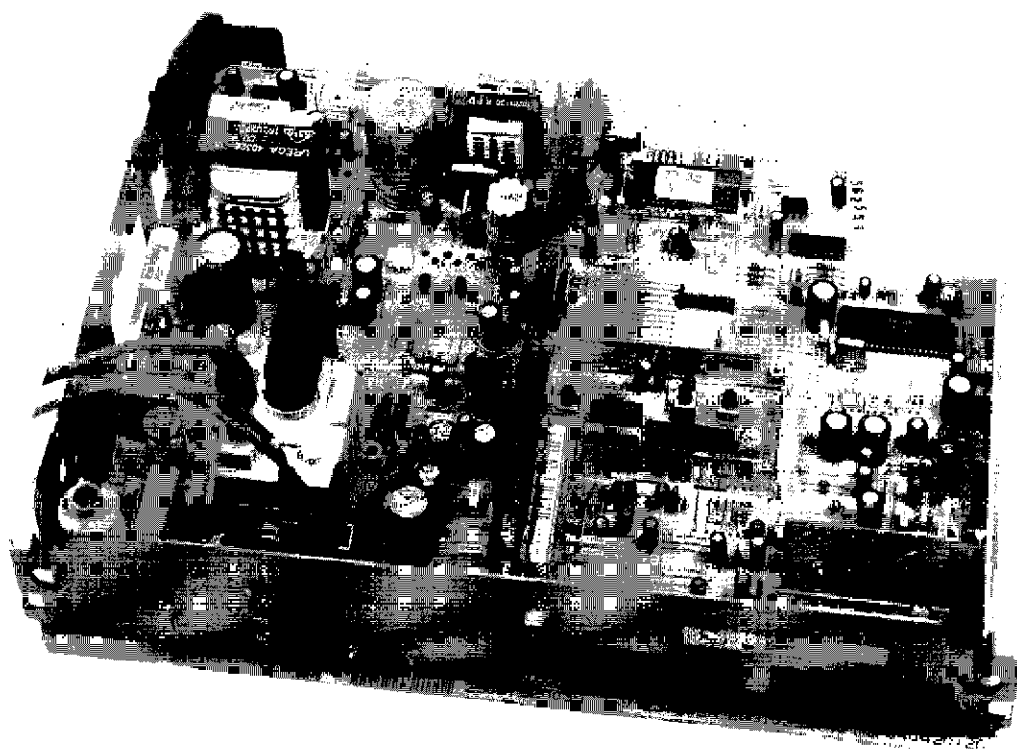


SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

TX92F

2. VERSION

[Click here to go to the index page](#)



WARNING : Before servicing this chassis read the safety recommendations.
ATTENTION : Avant toute intervention sur ce châssis, lire les recommandations de sécurité.
ACHTUNG : Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.
ATTENZIONE : Prima di intervenire sullo chassis, leggere le norme di sicurezza.
IMPORTANTE : Antes de cualquier intervención, leer las recomendaciones de seguridad.

Index for TX92 Chassis

Circuit Diagrams

Power Supply PSX 2151.20
Video Amplifier CRT.X.2111.00
Microprocessor CLX 2110.00
CLX2110.10 CLX2150.00 CLX2150.10
CLX2150.40 CLX2150.50
Power Supply PSX2111.00
PSX2151.00 PSX2112.00 PSX2152.00

Complete PCB Diagram Edition 1

Complete PCB Diagram Edition 2

Keyboard Modules - Infrared receiver modules

Front Connector boards edition 1 –Keyboard Module

Front Connector boards edition 2 – Headphone Jack

Front Connector boards edition 3

Front Connector board edition 4

Tuner TELE 9X 009A - Tuner CTT5000.

Other Info

Informations

Location of controls

Adjustment -Service Mode

Components Location

Abbreviations

**Applied study of TX92
Chassis - Maintenance
guide.**

**Tuner – IF Part & Scart
Interface Edition 1.**

**Tuner - IF Part & Scart
Interface Edition 2.**



Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'à travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen!
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare i moduli quando sono alimentati!
Effettuare riparazioni sulla sezione alimentatore solo con trasformatore separatore.

No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be guaranteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraîne la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione degli elementi di sicurezza (marcati con il segno ⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformità dell'apparecchio. In tal caso è "esclusa la responsabilità" del costruttore.

La sustitución de elementos de seguridad (marcados con el símbolo ⚠) por componentes no homologados según la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER

On UHF, input level: 1 mV, partest pattern
- PAL, 1 standard, 100% white.

Via the scart socket, input level: 1 Vpp, partest pattern.

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected: PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RICEVITORE

In UHF, livello d'entrata: 1 mV, monocolor con barre
- PAL, norma G, bianco 100%.

Per la presa SCART, livello d'entrata: 1 Vpp, monocolor con barre.

Colore, Contrasto, luce a metà corsa. Suono minimo.
Programma designato PR 01.

Tensioni continue rilevate rispetto alla massa con un voltmetro digitale.

RECEPTEUR

En UHF, niveau d'entrée: 1 mV, mire de bandes
- SECAM, Norm. J, Blanc 100%.

Par la prise "Pente vision", niveau d'entrée: 1 Vcc, mire de bandes.

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER

Bei UHF Eingangspegel: 1 mV, Farbbalken
- PAL, Norm. G, Weiss 100%.

Über die Scartbörse: Eingangspegel 1 Vss, Farbbalken.

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs. Ton auf Minimum.
Zugeordnetes Programm: PR 01.

Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

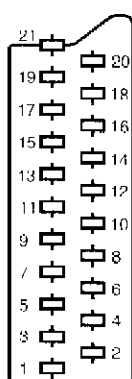
RECEPTOR

En UHF, nivel de entrada: 1 mV, mira de barras
- PAL, norma G, blanco 100%.

Por la toma Per-television, nivel de entrada: 1 Vpp mira de barra.

Color, Contraste, luz a mitad de carrera. Sonido mínimo.
Programa asignado PR 01.

Tensiones continuas marcadas en relación a la masa con un voltímetro digital.



NOTE: (MAIN) ... etc. identifies each pcb module.

NOTE: (MAIN) ... etc. repères des platines constituant l'appareil.

HINWEIS: (MAIN) ... usw. Kennzeichnung der Platinen, aus denen das Gerät zusammengesetzt ist.

NOTA: (MAIN) ... ecc. indicazioni delle piastre che costituiscono l'apparecchio.

NOTA: (MAIN) ... etc. marcas de las placas que constituyen el aparato.

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO	ESPAÑOL
1	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
2	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
3	AUDIO "L"	AUDIO "G"	AUDIO "L"	AUDIO "S"	AUDIO "L"
4	AUDIO	AUDIO	AUDIO	AUDIO	AUDIO
5	"BLUE"	"BLEU"	"BLAU"	"BLU"	AZUL
6	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "L" MONO
7	"BLUE"	"BLEU"	"BLAU"	BLU	AZUL
8	SLOW SWITCH- AV	COMMUT. LENTE	JMSCHALTUNG	COMUTAZIONE "LENTA"	COMUTACION "LENTA"
9	GREEN	"VERT"	"GRÜN"	"VERDE"	VERDE
10	NC				
11	"GREEN"	"VERT"	"GRÜN"	"VERDE"	VERDE
12	NC				
13	"RED"	"ROUGE"	"ROT"	ROSSO	ROJO
14	NC				
15	"RED"	"ROUGE"	"ROT"	ROSSO	ROJO
16	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	COMUTAZIONE "RAPIDA"	"COMUTACION RAPIDA"
17	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
18	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	COMUTAZIONE "RAPIDA"	"COMUTACION RAPIDA"
19	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
20	VIDEO OR "SYNC"	VIDEO SYNCHRO	VIDEO O "FSR SYNCHRO"	VIDEO O SINCR	VIDEO O SINCR
21	PLUS SCREEN BOX	BLINDAGE PROSE	ABSCHIRMUNG DES STECKERS	SCHEMATURA METALLICA	BLINDAJE DEL ENCHUFE

⊕: INPUT - ENTREE - EINGANG - ENTRATA - ENTRADA • ⊖: OUTPUT - SORTIE - AUSGANG - USCITA - SALIDA • —: EARTH - MASSE - MASSE - MASSA - MASA

INFORMATION - INFORMATIONS - INFORMATIONEN - INFORMAZIONE - INFORMACIONES

(GB) Chassis groupe table

- 1 - The electronic chassis configuration (modules) and schematic diagram page numbers.
- 2 - The chassis configuration.

(F) Le tableau ci-dessous regroupe :

- 1 - L'environnement électronique de chaque chassis (modules) et le numéro de page où il est décrit.
- 2 - La désignation des chassis

(D) Die nachstehende Tabelle umfaßt:

- 1 - Die elektronischen Baugruppen (Module) der Chassis und die Seitenzahl auf der sie beschrieben werden
- 2 - Die Chassisbezeichnung

(I) La tabella qui di seguito contiene:

- 1 - l'ambiente elettronico di ogni telaio (moduli) e il numero di pagina nella quale è descritto.
- 2 - La descrizione dei telai

(E) El cuadro siguiente agrupa:

- 1 - El entorno electrónico de cada chasis (módulos) y el número de página donde está descrito.
- 2 - La designación de los chasis

TX92F Mono

DESCRIPTION	ADJUST- MENT	CRT	SCHEMATIC MAIN	MICRO POWER S. (CLX/PSX)	TUNER	HF-FI (I) (RFX)	AUDIO (AUX)	SCART (SCX)	TELETEXT (VTX)	VIDEO / CHR. (VCX)	SCANNING (DFX/DLX)	KDB/KBX /FCB
Schematic Pages:	4 to 14	21	22to26	22	50to52	23,38	24to25	26	23	23to24	25to26	39to49
PCB Pages:	-	20to21	15to19	15to19	-	35to38	-	-	-	-	-	-
TX92 F4C300509B TX92 F4C00506B	(I) (2) (2)	TX92 F4C700602B TX92 F4C300006B	(I) (2) (2)	TX92 F3C700002B TX92 F4C300506B	(I) (3) (2)	TX92 F4C700601B TX92 F3C700006B	(I) (2) (3)					

TX92F Stereo

DESCRIPTION	ADJUST- MENT	CRT	SCHEMATIC MAIN	MICRO POWER S. (CLX/PSX)	TUNER	HF-FI (I) (RFX)	AUDIO (AUX)	SCART (SCX)	TELETEXT (VTX)	VIDEO / CHR. (VCX)	SCANNING (DFX/DLX)	KDB/KBX /FCB
Schematic Pages:	4 to 14	21	30to34	30	50to52	27, 31	32to33	33to34	31	31to32	32to34	39to49
PCB Pages:	-	20to21	15to19	15to19	-	35to38	-	-	-	-	-	-
TX92 FCC302007C	(I) (8)			(I) (7)			(I) (5)			(I) (7)		(I) (6)
TX92 576 1A	(5)		TX92 F38502507A	(7)	TX92 F3C702501A	(5)	TX92 F68501507A	(7)	TX92 F6C301503A	(6)	TX92 F6C3025070	(6)
TX92 F0C7715020	(11)		TX92 F39002507A	(5)	TX92 F3C702501D	(5)	TX92 F6C3015040	(6)	TX92 F6C3015070	(6)	TX92 F6C7015020	(8)
TX92F28572507AES/	(10)		TX92 F3C302503A	(5)	TX92 F3C702502A	(5)	TX92 F6C3015070	(6)	TX92 F6C301507A	(7)	TX92 F6C7025010	(6)
TX92 F2C372503A	(10)		TX92 F3C302504A	(5)	TX92 F3C7025054	(4)	TX92 F6C3016070	(6)	TX92 F6C3016070	(6)	TX92 F6H3025020	(7)
TX92 F2C3725063	(9)		TX92 F3C3025063	(5)	TX92 F3F002507A	(5)	TX92 F6C3025040	(6)	TX92 F6C3025043	(6)	TX92 F6H302506A	(7)
TX92 F2C372507A	(10)		TX92 F3C302506D	(5)	TX92 F3H3025064	(4)	TX92 F6C3025063	(4)				
TX92F2C770501BES/	(1)		TX92 F3C3025070	(4)	TX92 F3H302506A	(5)						
TX92 F2C772501D	(10)		TX92 F3C3025073	(4)	TX92 F4C301007A	(7)						
TX92 F2H3725064	(9)		TX92 F3C302507A	(5)	TX92 F4C700502B	(2)						
			TX92 F3C7025010	(4)	TX92 F67015020	(6)						

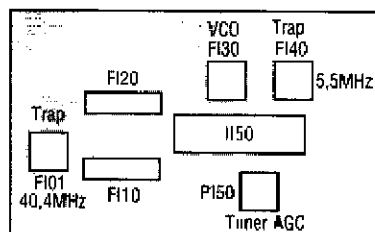
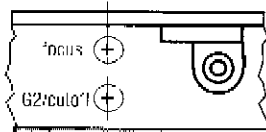
(I)

- | | | | |
|--------------------------|--------------------------|----------------------------|---------------------------|
| (1) RFX 2:17.00 Page: 38 | (4) RFX 2155.00 Page: 35 | (7) RFX 2156.10 Page: 27 | (10) RFX 2157.10 Page: 36 |
| (2) RFX 2:22.00 Page: 23 | (5) RFX 2155.10 Page: 31 | (8) RFX 2156.40 Page: 27 | (11) RFX 2151.00 Page: 36 |
| (3) RFX 2:35.00 Page: 38 | (6) RFX 2156.00 Page: 35 | (9) RFX 2157.00 Page: | |

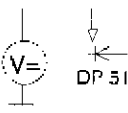
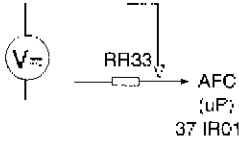
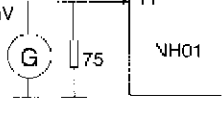
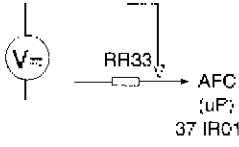
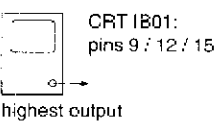
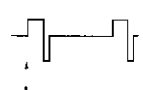
ABBREVIATIONS - ABREVIATIONS - ABKÜRZUNGEN - ABBREVIAZIONI - ABREVIACIONES

● AF	AUDIO FREQUENCY FREQUENCE AUDIO
● BCL	BEAM CURRENT INFORMATION INFORMATION COURANT DE FAISCEAU
● CVBS	COMPOSITE VIDEO / LUMINANCE SIGNAL SIGNAL VIDEO COMPOSITE
● DEGAUSS	DEGAUSS SIGNAL SIGNAL DE COMMANDE DE DEMAGNETISATION
● EWDRIVE	DRIVE SIGNAL FOR EAST-WEST CORRECTION SIGNAL DE COMMANDE CORRECTION EST-OUEST
● EWSENSE	FEED BACK SIGNAL OF EAST-WEST CORRECTION SIGNAL DE CONTRE-REACTION EST-OUEST
● FORMAT	COMMAND USED TO CHANGE THE PICTURE FORMAT COMMANDE UTILISEE POUR CHANGER LE FORMAT
● FB	FAST BLANKING COMMUTATION RAPIDE
● HDRV	HORIZONTAL DEFLECTION SIGNAL SIGNAL DE COMMANDE DE BALAYAGE HORIZONTAL
● + H	POSITION FLY BACK PULSE IMPULSION DE RETOUR LIGNE DE REFERENCE
● HEATER	HEATER VOLTAGE TENSION DE FILAMENT
● I-CUT	CUTOFF CURRENT COURANT DE CUTOFF
● IR	DATA FROM INFRARED RECEIVER DONNEES ISSUES DU RECEPTEUR INFRAROUGE
● OSCIN / OSCOUT	OSCILLATOR INPUT / OUTPUT ENTREE / SORTIE OSCILLATEUR
● S	VERTICAL S - CORRECTION CORRECTION S VERTICALE
● SAFETY	SIGNAL FOR DETECT. OF ERRORS ON THE DEFLEC.PART SIGNAL DE DETECT. D'ERREURS PARTIE DEFLECTION
● SCL	SERIAL CLOCK SIGNAL HORLOGE SERIE
● SDA	SERIAL DATA DONNEE SERIE
● SIF	SOUND IF FI SON
● VSYNC	VERTICAL DEFLECTION SIGNAL SIGNAL DE COMMANDE BALAYAGE VERTICAL

SITUACIÓN DE LOS AJUSTES



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys	PP 66	Contrast, brightness and volume to minimum		125V - Tube 33" (4/3) (A79 ECU 13x41) JL52 130V - all tubes tous tubes JL51
IF Alignment Alignement FI VCO : IF RFX (stereo) Standard BG / I	FI 30	Switch set to standard BG or L Commuter le TV au standard BG ou L		Adjust FI30 / PI54 for 2,5VDC +/-0.1V Régler FI30 / PI54 pour 2,5VDC +/-0.1V
Standard L	PI54	IF Signal 38.9 MHz (BG) 33.9 MHz (L)		
IF Alignment Alignement FI VCO : IF RFX (mono) Standard BG / LL / I	FI 02	30 mV 		Adjust FI02 for 2.5VDC +/-0.1V Régler FI02 pour avoir 2,5VDC +/-0.1V
U G2 / cutoff	SCRFFN	AV (no Signal, black screen)		 Tube type Cutoff AXX EAS : 150V AXX ECV : 180V A79 ECU : 160V W56 EGV : 160V W66 EDX : 160V W76 EGC : 160V
FOCUS	FOCUS	 Test pattern (standard values)		Sharp picture

SERVICE-MODE



It is necessary to enter the Service Mode in order to carry out alignment of the TV set. Most adjustments can be made with the RCU, except the Ussystem, Focus and Screen voltages.

1. Service Mode Access

- 1.1 With the RCU, switch the TV set into the "Standby" mode.
- 1.2 Switch "Off" the TV set by mains supply switch (wait until LED is dark).
- 1.3 Whilst depressing the RCU "Blue (VT)" button, switch "On" the TV set using the mains supply switch.
- 1.4 Release and press once again the RCU "Blue (VT)" button, the following "Set-Up" menu should be displayed:

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Important : The Service Mode cannot be entered if any equipment is connected to the Scart socket, i.e. pin 8 switching voltage present.

2. Function or Page Selection (GEOM)

- 2.1 With the RCU Volume "+" and "-" buttons, highlight the menu containing the function to be aligned.
- 2.2 Press the RCU "Blue (VT)" button to highlight the function to be aligned, or selected the page (1, 2, 3...).

3. Switching between Service and TV modes

- 3.1 Whilst in the Service Mode, normal TV controls are disabled, to enable these controls whilst in the Service Mode (i.e. for channel changing etc.) press the "TV" button on the RCU. To return to the Service Mode, press the "Blue (VT)" button on the RCU.

4. Alignment and storing new function value

- 4.1 The current value of the selected function is displayed in a hexadecimal form to the right of the function name. This value is adjusted by means of the RCU Volume "+" and "-" buttons.
- 4.2 To STORE the function new value, highlight **MEMO** and press the RCU Volume "+" button.
- 4.3 To RESTORE the functions original value, highlight **R-STO(RE)** and press the RCU Volume "+" button.
- 4.4 Selection the ROM functions downloads the production software default values, these are not very accurate and should only be used in very special cases.
Whilst in the «Service-Mode», a long press (more than 3s) of the RCU «0» button, will reset the TV to the «factory default conditions».

5. Leaving the Service Mode

- 5.1 To leave the Service mode either, switch the TV set into "Standby" or switch "Off" the mains supply

MODE SERVICE



Le mode service sert au réglage de l'appareil. Toutes les opérations de réglage s'effectuent à l'aide de la télécommande (sauf la tension de système, les réglages de Focus et de tension de grille-écran).

1. Accès au mode service

- 1.1 Commuter le téléviseur en position de veille avec la télécommande
- 1.2 Eteindre le téléviseur par l'interrupteur secteur (attendre l'extinction complète du voyant).
- 1.3 Maintenir la touche bleue enfoncée et mettre simultanément le téléviseur en marche avec l'interrupteur secteur.
- 1.4 Le menu suivant apparaît après avoir appuyé à nouveau sur la touche bleue. (VT).

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Attention : Le mode service n'est pas accessible si un appareil est connecté à la prise per télévision.

2. Sélection de la fonction ou de la page (GEOM)

Par les touches +/- de la télécommande vous pouvez choisir le menu correspondant (SET UP, VIDEO ou GEOM) et le "feuilleter" ou la page (1, 2, 3...) avec la touche bleue (VT).

3. Inversion entre modes service et TV

Les fonctions télévision normales ne sont pas utilisables en mode service. Si elles sont nécessaires en mode service (p. ex. changement de programme), la touche (TV) permet de commuter en mode TV. Vous pouvez revenir au mode service en appuyant sur la touche bleue.

4. Réglage des fonctions sélectionnées; mémorisation

La valeur momentanée de la fonction sélectionnée est indiquée sous forme hexadécimale à droite, à côté de la position à régler et peut être modifiée avec la télécommande par la touche + ou -.

La ligne MEMO permet de mémoriser les nouvelles valeurs de réglage avec la touche +.

La ligne R-STO(RE) permet de rappeler les valeurs mémorisées en NVM.

Les valeurs par défaut du logiciel peuvent être chargées en sélectionnant la fonction ROM. Elles ne constituent cependant qu'une approximation du réglage et ne doivent être utilisées qu'en cas de nécessité.

En mode service une longue pression (plus de 3s) sur la touche «0» reset le TV aux valeurs par défaut des réglages usine.

5. Sortie du mode service

Pour sortir du mode service, commuter le téléviseur en position de veille ou le mettre hors service par l'interrupteur secteur.

TV mono :

SET-UP				
Software code and configuration				
CHAND	1	2	3	NONE
TUNER	A		B	
NORM	I	B	BD	BLD BIL
SUB-VOL	- 2 / 2		1	
- R-STO	+ MEMO		O ROM	

TV stereo :

SET-UP				
Software code and configuration				
BRAND	1	2	3	NONE
TUNER	A		C	
NORM	I	B	BD	BLD BIL
DEC PR04	On		Off	
- R-STO	+ MEMO		O ROM	

VIDEO		
page 1		
SUB-BRT	7 / 7	0
VIDEO		
page 2		
R-DC	00-3F	24
G-DC	00-3F	12

VIDEO		
page 3		
R-DRV	00-3F	1F
G-DRV	00-3F	1E
VIDEO		
page 4		
B-DRV	00-3F	1C
PEAK	- / +	

VIDEO		
page 5		
SUB-COL	- 7 / 7	2
- RESTORE	- MEMO	O ROM

GEOM			
V - POS	00 - 11	10	
V - AMP	00 - 7F	40	
V - LIN	00 - 0F	07	
H - PHA	00 - 3F	1F	
H - AMP	00 - 3F	1F	

GEOM			
EW - TILT	00 - 1F	0F	
EW - AMP	00 - 1F	0F	
EW - SHP	00 - 01	07	
- RESTORE	MEMO	O ROM	

Test Bar pattern used : 4/3 with geometric circle.
Mira utilisée : 4/3 avec un cercle de géométrie.
Testbild : 4/3 mit geometrischem Kreis.
Generatore segnale usato : formato 4/3 con cerchi
Mira utilizada : 4/3 con círculo geométrico

adjust separate for 4/3 and 16/9 format
régler séparément pour les formats 4/3 et 16/9
getrennt für 4/3 and 16/9 einstellen
regolare separatamente per 4/3 e 16/9
ajustar por separado para 4/3 y 16/9

SET-UP	
BRANDT	Brand Selection 1 : TELEFUNKEN 2 : SABA/FERGUSON/ BRANDT 3 : THOMSON/ NORDMENDE
TUNER	Tuner Type Selection A = Alps Selection C = CTT5000
NORM	Standards B = BG PAL SECAM (Sound FM 5.5MHz) I = I PAL (UK/IRF AND) (Sound FM 6MHz) L = L SECAM (France) (Sound AM 6.5MHz) D = DKK SECAM (Sound AM 6.5 MHz) M = NTSC M (Sound FM 4.5MHz)
DEC PR4 (TX92 stereo)	On : Enable OFF : Disable NICAM from Canal+ decoder on PR04 program. NICAM desde el descodificador de Canal+ en el programa PR04
SUB-VOL (TX92 mono)	Volume offset adjustment V = 50% Ve (AV) = 500mV : 1kHz Adjust SUB-VOL Vs (Z = 2) = 545mV

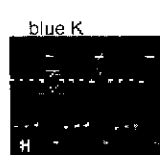
VIDEO	
SUB-BRT	Black, noir
R - DC*	grau, grey
G - DC*	grau, grey
R - DRV	weiß, white
G - DRV	weiß, white
B - DRV	weiß, white
PEAK**	CRT Pin 6,8,11 Oscillo. or colorimeter
SUB-COL	75% PAL Colour-bar Test pattern

Notes :
* adjust separate for PAL/NTSC/SECAM and RGB
* régler séparément pour PAL/NTSC/SECAM et RGB
* separat für PAL/NTSC/SECAM und RGB einstellen.
* regolare separatamente per PAL/NTSC/SECAM e RGB
* ajustar por separado PAL/NTSC/SECAM y RGB.

** After PEAK white adjustment control brightness and cut off setting. Repeat the adjustments if necessary.
Après le réglage de PEAK white contrôlez les réglages de lumière et de cut-off. Réglez si nécessaire.
Nach der Spitzenweiß-Einstellung, Helligkeit und Cut off Einstellung überprüfen. Wenn nötig, Abgleich wiederholen.
Dopo la regolazione PEAK controllare luminosità e regolazioni cut off. Ripetere le regolazioni se necessario.
Después de ajustar el "PEAK" del blanco controlar el brillo y ajustar el cut off. Repetir el ajuste si es necesario.

Oscillos.1

blue K



incorrect

GEOM		
V - Pos		
V - Amp		
V - Lin		
H - PHA		
H - AMP		

EW - TILT		
EW - AMP		
EW - SHP		

Software Code :

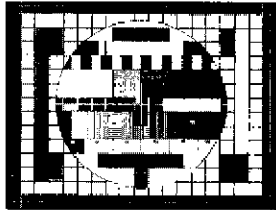
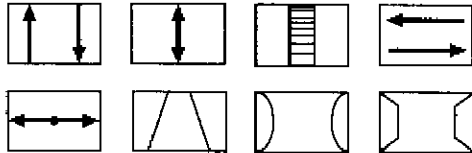
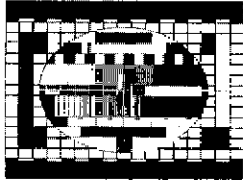
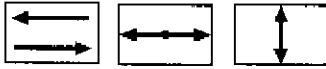
Software Release Code	Description
TX92NM - (V V)	TX92F Mono Software
TX92NS - (V V)	TX92F Stereo Software

TV Configuration Code :

T	TEXT MODULE
S	STEREO MODULE
M	MONO SET

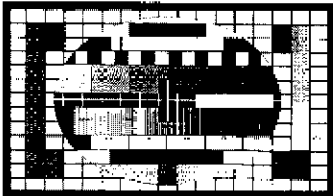
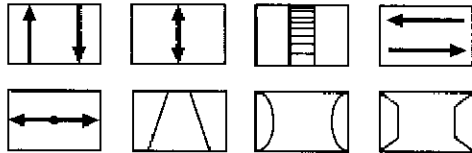
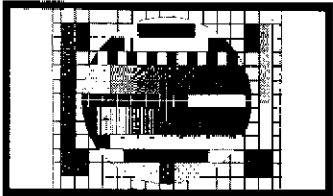
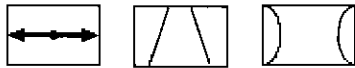
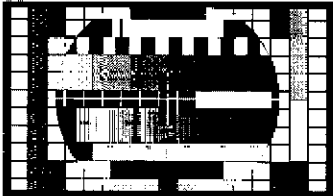
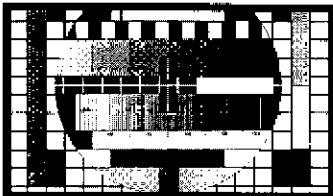
GEOMETRY MODE ALIGNMENT - RECEIVER : TV WITH 4/3 TUBE

Signal : 4/3 test pattern

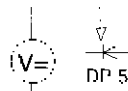
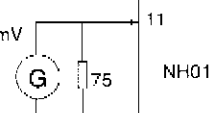
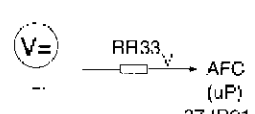
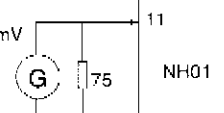
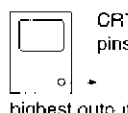
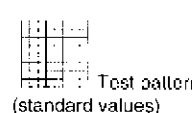
4 / 3 standard mode		overscan V=107% . H=107% 
16 / 9 standard mode		 1 - Adjust the horizontal overscan (reference : screen edge) 2 - Adjust the vertical amplitude until the oval height is 75% of the oval width.

GEOMETRY MODE ALIGNMENT - RECEIVER : TV WITH 16/9 TUBE

Signal : 4/3 test pattern

16 / 9 Full screen mode (zoom 3)		overscan V=107% . H=107% 
4/3 Centered (curtain) (zoom 1)		overscan V=107% , H=77% of the screen  1 - V-pos, V-amp, V-LIN, H-PHA, EW-SHP : default data 2 - Adjust H-AMP, EW-TILT, EW-AMP
< 4/3 > wide (zoom 2)		overscan V=133% , H=107%  1 - V-LIN, H-PHA, EW-TILT, EW-AMP : default data 2 - Adjust V-POS, V-AMP, H-AMP
4/3 PANNING (zoom 2)		overscan V=133% , H=107%  1 - V-LIN, H-PHA, EW-TILT, EW-AMP : default data 2 - Adjust V-POS, V-AMP, H-AMP

ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys	PP 66	Contrast, brightness and volume to minimum		125V - Tube 33" (4:3) (A79 ECU 13x41) ! JL52 130V - all tubes tous tubes JL51
IF Alignment Alignement FI VCO : IF RFX (stereo) Standard BG / L'	FI 50 PI54	Switch set to standard BG or L' Commuter le TV au standard BG ou L' IF Signal 38.9 MHz (BG) 39.9 MHz (L') 		Adjust: FI30 / PI54 for 2.5VDC +/-0.1V Régler: FI30 / PI54 pour 2.5VDC +/-0.1V
IF Alignment Alignement FI VCO : IF RFX (mono) Standard BG :LL/!	FI 02			Adjust FI02 for 2.5VDC +/-0.1V Régler FI02 pour avoir 2.5VDC +/- 0.1V
U G2 / cutoff	SCREEN	AV (no Signal, black screen)		 Tube type Cutoff AXX EAS 150V AXX ECV 160V A79 ECU 160V W56 ECV 150V W66 EDX 160V W76 EGC 160V
FOCUS	FOCUS	 Test pattern (standard values)		Sharp picture

SERVICE-MODE



It is necessary to enter the Service Mode in order to carry out alignment of the TV set. Most adjustments can be made with the RCU, except the Ussystem, Focus and Screen voltages.

1. Service Mode Access

- 1.1 With the RCU, switch the TV set into the "Standby" mode.
- 1.2 Switch "Off" the TV set by mains supply switch (wait until LED is dark).
- 1.3 Whilst depressing the RCU "Blue (VT)" button, switch "On" the TV set using the mains supply switch.
- 1.4 Release and press once again the RCU "Blue (VT)" button, the following "Set-Up" menu should be displayed.

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Important : The Service Mode cannot be entered if any equipment is connected to the Scart socket, i.e. pin 8 switching voltage present.

2. Function or Page Selection (GEOM)

- 2.1 With the RCU Volume "+" and "-" buttons, highlight the menu containing the function to be aligned.
- 2.2 Press the RCU "Blue (VT)" button to highlight the function to be aligned, or selected the page (1, 2, 3..).

3. Switching between Service and TV modes

- 3.1 Whilst in the Service Mode, normal TV controls are disabled, to enable these controls whilst in the Service Mode (i.e. for channel changing etc.) press the "TV" button on the RCU. To return to the Service Mode, press the "Blue (VT)" button on the RCU.

4. Alignment and storing new function value

- 4.1 The current value of the selected function is displayed in a hexadecimal form to the right of the function name. This value is adjusted by means of the RCU Volume "+" and "-" buttons.
- 4.2 To STORE the functions new value, highlight MEMO and press the RCU Volume "+" button.
- 4.3 To RESTORE the functions original value, highlight R-STO(RE) and press the RCU Volume "+" button.
- 4.4 Selection the ROM functions downloads the production software default values, these are not very accurate and should only be used in very special cases.
Whilst in the "Service-Mode", a long press (more than 3s) of the RCU «0» button, will reset the TV to the «factory default conditions».

5. Leaving the Service Mode

- 5.1 To leave the Service mode either, switch the TV set into "Standby" or switch "Off" the mains supply.

MODE SERVICE



Le mode service sert au réglage de l'appareil. Toutes les opérations de réglage s'effectuent à l'aide de la télécommande (sauf la tension de système, les réglages de Focus et de tension de grille-écran).

1. Accès au mode service

- 1.1 Commuter le téléviseur en position de veille avec la télécommande
- 1.2 Eteindre le téléviseur par l'interrupteur secteur (attendre l'extinction complète du voyant).
- 1.3 Maintenir la touche bleue enfoncée et mettre simultanément le téléviseur en marche avec l'interrupteur secteur.
- 1.4 Le menu suivant apparaît après avoir appuyé à nouveau sur la touche bleue, (VT).

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Attention : Le mode service n'est pas accessible si un appareil est connecté à la prise péritélévision.

2. Sélection de la fonction ou de la page (GEOM)

Par les touches +/- de la télécommande vous pouvez choisir le menu correspondant (SET-UP, VIDEO ou GEOM) et le "feuilleter" ou la page (1, 2, 3...) avec la touche bleue (VT).

3. Inversion entre modes service et TV

Les fonctions télévision normales ne sont pas utilisables en mode service. Si elles sont nécessaires en mode service (p. ex. changement de programme), la touche (TV) permet de commuter en mode TV. Vous pouvez revenir au mode service en appuyant sur la touche bleue.

4. Réglage des fonctions sélectionnées; mémorisation

La valeur momentanée de la fonction sélectionnée est indiquée sous forme hexadécimale à droite, à côté de la position à régler et peut être modifiée avec la télécommande par la touche + ou -.
La ligne MEMO permet de mémoriser les nouvelles valeurs de réglage avec la touche +.
La ligne R-STO(RE) permet de rappeler les valeurs mémorisées en NVM.
Les valeurs par défaut du logiciel peuvent être chargées en sélectionnant la fonction ROM. Elles ne constituent cependant qu'une approximation du réglage et ne doivent être utilisées qu'en cas de nécessité.
En mode service une longue pression (plus de 3s) sur la touche «0» reset le TV aux valeurs par défaut des réglages usine.

5. Sortir du mode service

Pour sortir du mode service, commuter le téléviseur en position de veille ou le mettre hors service par l'interrupteur secteur.

TV mono :

SET-UP

Software code and configuration

B-BAND	1	2	3	NONE
TUNER	A			B
NORM	I	B	BD	BLD BIL
SUB VOL	- 2 / 2			1
- R-STO	+ MEMO			O ROM

TV stereo :

SET-UP

Software code and configuration

BRAND	1	2	3	NONE
TUNER	A			C
NORM	I	B	BD	BLD BIL
DLC PR04	On			Off
- R-STO	+ MEMO			O ROM

VIDEO

page 1

SUB-BRT	7 / 7	0
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VIDEO

page 2

R-DC	00-3F	24
G-DC	00-3F	12

VIDEO

page 3

R-DRV	00-3F	1F
G-DRV	00-3F	1E

VIDEO

page 4

B-DRV	00-3F	1C
PEAK		- / +

VIDEO

page 5

SUB-COL	- 7 / 7	2
- RESTORE	- MEMO	O ROM

GEOM

V - POS	00 - 1F	10
V - AMP	00 - 7F	40
V - LIN	00 - 0F	07
H - PHA	00 - 3F	1F
H - AMP	00 - 3F	1F

GEOM

EW - TILT	00 - 1F	0F
EW - AMP	00 - 1F	0F
EW - SHP	00 - 0F	07
- RESTORE	- MEMO	O ROM

Test Bar pattern used : 4/3 with geometric circle.
Mire utilisée : 4/3 avec un cercle de géométrie.
Testbild : 4/3 mit geometrischem Kreis.
Generatore segnale usato : formato 4/3 con cerchio
Mira utilizada : 4/3 con círculo geométrico

adjust separate for 4/3 and 16/9 format
régler séparément pour les formats 4/3 et 16/9
getrennt für 4/3 and 16/9 einstellen
regolare separatamente per 4/3 e 16/9
ajustar por separado para 4/3 y 16/9

SET-UP

BRANDT	Brand Selection 1 : TELEFUNKEN 2 : SABA/HERGUSON/ BRANDT 3 : THOMSON/ NORDMENDE
TUNER	Tuner Type Selection A = Alps Selection C = CTT5000
NORM	Standards B = DG PAL SECAM (Sound FM 5.5MHz) I = I PAL (UK/IRELAND) (Sound FM 6MHz) L = L SECAM (France) (Sound AM 6.5MHz) D = DK SECAM (Sound AM 6.5 MHz) M = NTSC M (Sound FM 4.5MHz)
DEC PR4 (TX92 stereo)	On : Enable OFF : Disable NICAM from Canal+ decoder on PR04 program. NICAM desde el descodificador de Canal+ en el programa PR04
SUB-VOL (TX92 mono)	Volume offset adjustment: V - 50% Ve (AV) = 500mV / 1kHz Adjust SUB-VOL Vs (Z = 8) = 545mV

Software Code :

Software Release Code	Description
TX92NM - (V V)	TX92F Mono Software
TX92NS - (V V)	TX92F Stereo Software

TV Configuration Code :

T S M	TEXT MODULE STEREO MODULE MONO SET
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VIDEO

SUB-BRT + = 50%		 black, noir
R - DC*		 grau, grey
G - DC*		 grau, grey
R - DRV		 weiß, white
G - DRV		 weiß, white
B - DRV		 weiß, white
PEAK** + = 50% = 100%		 CRT Pin 6,8,11 Oscillo. or colorimeter
SUB-COL	75% PAL Colour-bar Test pattern	Saturation=100% CRT Pin 11(B) (Oscillo. 1)

Notes :

* adjust separate for PAL/NTSC/SECAM and RGB
* régler séparément pour PAL/NTSC/SECAM et RGB
* separat für PAL/NTSC/SECAM und RGB einstellen.
* regolare separatamente per PAL/NTSC/SECAM e RGB.
* ajustar por separado PAL/NTSC/SECAM y RGB.

* After PEAK white adjustment control brightness and cut off setting. Repeat the adjustments if necessary.
Après le réglage de PEAK white contrôler les réglages de lumière et de cut-off. Répétez si nécessaire.
Nach der Spitzenweißeinstellung, Helligkeit und Cut off Einstellung überprüfen. Wenn nötig, Abgleich wiederholen.
Dopo la regolazione PEAK controllare luminosità e regolazione cut off. Ripetere le regolazioni se necessario.
Después de ajustar el "PEAK" del blanco controlar el brillo y ajustar el cut off. Repetir el ajuste si es necesario.

Csillos.1

blue K



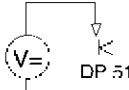
blue K



incorrect

GEOM

V - Pos		
V - Amp		
V - Lin		
H - PHA		
H - AMP		
EW - TILT		
EW - AMP		
EW - SHP		

U Sys	PP 66	Contrast, brightness and volume to minimum		125V - Tube 33" (4/3) (A79 ECU 13x41) JL52 130V - all tubes tous tubes JL51																												
U G2 / cutoff	SCREEN	AV (no Signal, black screen)	 highest output	<table><tr><td></td><td></td><td>Tube type</td><td>Cutoff</td></tr><tr><td></td><td></td><td>AXX EAS</td><td>150V</td></tr><tr><td></td><td></td><td>AXX EGY</td><td>160V</td></tr><tr><td></td><td></td><td>A79 ECU</td><td>160V</td></tr><tr><td></td><td></td><td>W56 EGV</td><td>160V</td></tr><tr><td></td><td></td><td>W66 LDX</td><td>160V</td></tr><tr><td></td><td></td><td>W76 EGC</td><td>160V</td></tr></table>			Tube type	Cutoff			AXX EAS	150V			AXX EGY	160V			A79 ECU	160V			W56 EGV	160V			W66 LDX	160V			W76 EGC	160V
		Tube type	Cutoff																													
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		W76 EGC	160V																													
FOCUS	FOCUS	 Test pattern (standard values)		Sharp picture																												

SERVICE-MODE



is necessary to enter the Service Mode in order to carry out alignment of the TV set. Most adjustments can be made with the RCU, except the system, Focus and Screen voltages.

Service Mode Access

- 1 With the RCU, switch the TV set into the "Standby" mode.
- 2 Switch "Off" the TV set by mains supply switch (wait until LED is dark).
- 3 Whilst depressing the RCU "Blue (VT)" button, switch "On" the TV set using the mains supply switch.
- 4 Release and press once again the RCU "Blue (VT)" button, the following "Set-Up" menu should be displayed."

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Important : The Service Mode cannot be entered if any equipment is connected to the Scart socket, i.e. pin 8 switching voltage present.

Function or Page Selection (GEOM)

- 1 With the RCU Volume "+" and "-" buttons, highlight the menu containing the function to be aligned.
- 2 Press the RCU "Blue (VT)" button to highlight the function to be aligned, or selected the page (1, 2, 3...).

Switching between Service and TV modes

- 1 Whilst in the Service Mode, normal TV controls are disabled, to enable these controls whilst in the Service Mode (i.e. for channel changing etc.) press the "TV" button on the RCU. To return to the Service Mode, press the "Blue (VT)" button on the RCU.

Alignment and storing new function value

- 1 The current value of the selected function is displayed in a hexadecimal form to the right of the function name. This value is adjusted by means of the RCU Volume "+" and "-" buttons.
 - 2 To STORE the functions new value, highlight **MEMO** and press the RCU Volume "+" button.
 - 3 To RESTORE the functions original value, highlight **R-STO(RE)** and press the RCU Volume "+" button.
 - 4 Selection the ROM functions downloads the production software default values, these are not very accurate and should only be used in very special cases.
- Whilst in the «Service-Mode», a long press (more than 3s) of the RCU «0» button, will reset the TV to the «factory default conditions».

Leaving the Service Mode

- 1 To leave the Service mode either, switch the TV set into "Standby" or switch "Off" the mains supply.

SERVICE MODE



Der Service-Mode wird für den Geräteabgleich benötigt. Alle Einstellungen erfolgen mit der Fernbedienung (bis auf Systemspannung, Fokuseinstellung und Schirmgitterspannung).

1. Service-Mode einschalten

- 1.1 Mit der Fernbedienung das Fernsehgerät in Stand-by schalten.
- 1.2 Das Gerät mit dem Netzschalter ausschalten (warten bis LED dunkel ist).
- 1.3 Die blaue Taste der Fernbedienung gedrückt halten und gleichzeitig das Gerät mit dem Netzschalter einschalten.
- 1.4 Das folgende Menü erscheint nach erneutem Drücken der blauen Taste

SET-UP	VIDEO	GEOM
TX92 NM		Configuration

Achtung : Der Service-Mode läßt sich nicht einschalten, wenn an einer Euro-AV-Buchse ein Gerät aktiviert ist, d.h. die Schallspannung anliegt.

2. Funktionswahl oder Seitenwahl (GEOM)

Mit den Tasten +/- wird das entsprechende Menü gewählt, welches mit der blauen Taste durchgeblättert wird oder die Seite ausgewählt wird (1,2 oder 3...).

3. Umschalten zwischen Service- und TV-Betrieb

Im Service-Mode sind die normalen Fernsehfunktionen nicht bedienbar. Werden diese im Service-Mode benötigt (z.B. Programmwechsel), kann mit der Taste (TV) in den normalen TV-Betrieb geschaltet werden. Durch Drücken der blauen Taste gelangt man zurück zum Service Mode.

4. Abgleich der gewählten Funktion und Speichern

Der momentane Wert der gewählten Funktion wird hexadezimal rechts neben der abzugleichenden Position angegeben und kann mit der Taste + bzw. - auf der Fernbedienung verändert werden. Die Änderungen des jeweiligen Menüs können unter MEMO mit der + Taste gespeichert, bzw. unter R-STO(RE) rückgängig gemacht werden. Im Menüpunkt ROM kann man die Software-Defaultwerte laden. Sie sind aber nur eine grobe Annäherung an den noch vorzunehmenden Abgleich und sollten nur im Notfall verwendet werden. Im Service-Menü : Durch längeren Druck auf die "0" Taste auf der Fernbedienung wird das Gerät auf die "Factory default" Werte zurückgesetzt.

5. Service-Mode verlassen

Zum Verlassen des Service-Mode das Gerät in Stand By schalten oder mit dem Netzschalter ausschalten.

COMPONENTS LOCATION - LOCALISATION DES ELEMENTS - LAGE DER BAUTEILE LOCALIZZAZIONE DEGLI ELEMENTI - LOCALIZACION DE LOS COMPONENTES

* SOLDER SIDE - COTE CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE

D349* P9 DS41* N9 DT07* L1 DT03* M1 DT07* M1 DT13* M0 DV03* K5 DX07* K10 JX13* L11	JL03 D9 JL05 F7 JL07 B11 JL08 A8 JL10 C5 JL11 B8 JL12 E7 JL13 F7 JL14 C7 JL15 F6 JL16 F6 JL17 G6 JL18 G6 JL19 G6 JL20 C7 JL21 G7 JL21 G10 JL51* B4 JL52* B4 JL53* B4 JL55* G6 JL56* G6 JM01 C9 JM02 C8 JM52* Q4 JP01 F3 JP02 D3 JP03 D2 JP04 C3 JP05 F3 JP07 C2 JP09 F5 JP10 F1 JP12 C5 JP15 H4 JP16 H4 JP17 H4 JP18 H4 JP19 F5 JP20 F4 JP21 F4 JP22 F6 JP23 H0 JP24 H4 JP27 E1 JP28 G4 JP29 E5 JP30 E5 JP35 E4 JP51* D1 JP53* B0 JP56* C2 JP56* L1 JP57* D3 JP60* F4 JP01 H2 JP03 H3 JP08 H4 JP50* K3 JP51* J2 JP53* V2 JP54* L1 JP55* L1 JP57* M1 JP58* J3 JS01 L8 JS02 N5 JS03 N5 JS04 M7 JS05 P6 JS06 P7 JS07 N7 JS08 N8 JS09 M8 JS10 L5 JS12 L8 JS14 L8 JS15 K8 JS16 K8 JS17 K8 JS18 K9 JS21 K9 JS30* M11 JS51* M11 JS52* M10 JS53* L9 JS54* M9 JS55* M9 JS56* M9 JS59* M6 JS60* N6 JS61* N5 JS62* P9 JS63* P9 JS64* H10 JS65* M9 JS66* M9 JS67* N9 JS68* M7	JS69* J10 JS70* N11 JT50* K0 J151* K0 JT52* L5 JV01 P4 JV02 P4 JV03 M8 JV04 L4 JV05 L4 JV06 L5 JV07 L4 JV09 J4 JV10 J4 JV11 J4 JV12 J4 JV13 J4 JV14 J4 JV15 J6 JV16 J5 JV18 J6 JV19 J5 JV50* N3 JV51* M4 JV52* M4 JV53* P5 JV54* P5 JV55* L4 JV56* C5 JV58* M5 JV60* L4 JX04 K9 JX05 K9 JX07 K8 JX08 K8 JX09 M5 JX10 M5 JX11 L5 JX14 L5 JX15 K9 JX16 K9 JX52* K11 JX53* K1 JX54* K1 JX55* N11 JX56* N11 JX57* J5 JX58* L10 JX59* K6 JX60* K6 JX63* K10 JX55* P6	QC01 M5 QC02 L5 Q170 K8 QR01 K3 QS10 P10 QT01 J1 QVC1 N3	RC02* L3 RC06* M5 RC07 K4 RC10* L3 RC11 L2 RC12* M2 RC13* L2 RC20* L1 RF03* D10 RF04* G11 RF06* F9 RF07* E10 RF09* F11 RF11 E10 RF12 F10 RF15 E9 RF20 F10 RF23* F10 RF24* F10 RF25* G10 RF26* F10 RF29* G9 RF30 G9 RF33* G9 RF36* F10 RF37* G10 RF38* F9 RF41* H5 RF42* G10 RF43* G11 RH01 F6 RH09* H10 RH03* H10 RH06* J8 RH12* G8 RH13* J9 RH14* H8 RH02* J6 RH03* J6 RH04* H8 RH05* H6 RH06* H6 RH07* H6 RH08* G8 RH20* H7 RH21* H0 RH22* H6 RH23* J7 RH24* J7 RH40* J6 RH41* J6 RH42* H5 RH42* H6 RH43* H6 RH44* J7 RH50* J8 RH52* K5 RH53* K8 RH54* L7 RH55* K7 RH56* L6 RH58* K6 RH59* L6 RH60* H9 RH61* L6 RH64* J8 RH70* L7 RH71* K7 RH73* K8 RH74* L7 RH77* K7 RH78* J8 RH79* K6 RH82* L7 RH83* L7 RH84* L7 RH02* D8 RH03* D7 RH04* D8 RH05* D8 RH06* D8 RH07* C9 RH08* D9 RH10 F7 RH12 E8 RH13 E8 RH15* E9	HL16 G8 RL19 A8 RL19* A7 RL20* A7 RL21* A7 RL25 D8 RL26 B7 RL30 B6 RL31 B7 RL32 A6 RL33* B8 RL34* B8 RL35* B8 RL36* B8 RL37* B7 RL38* B6 RL39* B6 RL40 C7 RL41* D10 RL42* G11 RL43* D11 RL44* C11 HL46* D11 RL48* C11 RL51* B8 RL52 D6 RL54 E6 RL55* C6 RL56* E6 RL57* E6 RL61* F7 RL62* F7 RL63* F7 RL64* F7 RL65 F7 RL66* G7 RL68* G7 RL69 F5 RL90 F5 RL01 F9 RL02 F7 RL03 R9 RL04 R10 RL05 R10 RL06 R9 RL10* R8 RL11* R6 RL12* H8 RL13* G6 RL14* G3 RV15* Q8 RP01 D1 RP02 E0 RP03 G3 RP03* G3 RP04 D0 RP05 C0 RP06 D0 RP07 D7 RP08 B0 RP09 A0 RP10 D1 RP11 C0 RP12 A0 RP13 B2 RP14 B0 RP15* A1 RP16* B1 RP17* A3 RP18 C0 RP19 D0 RP22 C1 RP24 B1 RP26 B1 RP28 C1 RP29 B1 RP30* B1 RP31* D3 RP32 C2 RP33* D7 RP34* C0 RP36* C0 RP38* C0 RP40 D3 RP41 F3 RP42* F3 RP44* C2 RP45* C1 RP47* C1 RP48* C1 RP49 A4 RP50 A5 RP52* D4 RP53 D5 RP54 E4 RP56* J0 RP60* E4 RP61 F4 RP62* F4	RP63* F5 RP64 F4 RP65* E4 RH66 F5 RP66* F5 RP67* E5 RP74* H4 RP76* G4 RP77* G4 RP78* G4 RP91* F4 RP92* G5 RP95* F5 RP97* G4 RP98 F4 RP01* H1 RP02* H3 RR03 K3 RR04 K1 RR05 K1 RR06 K1 RR08 K1 RR09 J1 RR10 J1 RR11 J1 RR12 J1 RR13 J1 RR14 J1 RR16 J3 RR17 J1 RR18 J1 RR19 J1 RR20 J1 RR21* L1 RR22* M1 RR23 L2 RR24 L2 RR25 K1 RR27 J1 RR29* K2 RR31* L2 RR32* K3 RR33* K3 RR38 K3 RR39* K2 RR40* K2 RR41* J2 RR42* J3 RR43* J3 RR44 J3 RR45 J2 RR46* H3 RR47* K3 RR48* H3 RR49 J2 RR50* K2 RR53* H1 RR54 J3 RR55* J1 RR57* K1 RR58 J3 RR59 J3 RR60* H3 RR62* J3 RR72* J2 RR71* J2 RR90 H0 RR96* L1 RS12 L9 RS25 J8 RS27* M8 RS28* M8 RS29* N7 RS40* N8 RS41* N8 RS50* J10 RS51* J10 RS52* N10 RS53* N10 RS54* L10 RS55* L10 RS56* L10 RS57* J11 RS57* N7 RS77* N7 RS78* N7 RS79* P7 RS80* P7 RS81* M7 RS82* P6 RS83 N7 RS84 N7 RS85* N7 RS86* N7	RS87 N8 RS88 P8 RS90* P8 RS91* N6 RS92* P6 RS93* P7 RS94 N5 RS95* P6 RT07* K0 RT02* L0 RT05* N0 RT06* N0 RT07* M1 RT08* M1 RT09* L0 RV01* L4 RV15 L4 RV16 M3 RV17 M3 RV18 K3 RV20* B6 RV23* N5 RV24* N5 RV25* L4 RV26* N3 RV29* N3 RV30* M4 RV31* G6 RV33* L4 RV35* L4 RV62* L1 RV63* L1 RV64 L1 RV65 L4 RX01* K10 RX02* J10 RX03* K10 RX04* K10 RX06* L11 RX07* L11 RX08* K11 RX09* K11 RX10* L11 RX11* L11 RX12* L11 RX13* L11 RX14 L10 RX15 L10 RX16* K10 RX17* L9 RX18* L10 RX19* N10 RX20* J11 RX21* H11 RX25* P10 RX26* P10 RX27* F10 RX28* F10 RX29* F10 RX30* P11 RX31* Q11 RX32 P10 RX33* L10 RX36* K10 RX36* N10 RX38* K10 RX39* K10 RX40* P11 RX42* C5 RX43* Q6 RX44* L1 RX50* J2 RX55* P4 RX57* L2 RX58* K2	TL52 D5 TL52* D5 TL53 E6 TL53* E6 TL61* F7 TP16 A2 TP16* A1 TP22 C1 TP22* C1 TP40 F3 TP40 F3 TF48* A0 TP60 E4 TP60* E4 TP61 F4 TP61* F4 TP70 H5 TP91 G5 TP96* F5 TR01* J0 TR02* H3 TS20* N6 TS20* N6 TS31* N6 TS30* N6 TT01* M0 TV62 L4 TX01* J10 TX10 L11 TX10* M11 TX30 P10 TX30* Q10 TX31* P11 TX35* K1 TX56* J1 TX56* L4	TF29 G9 TF29* G9 TF07* J5 TF07* J6 TF20* J8 TF45* J5 TF45* J6 TF50* H6 TF07* L7 TL19 A8 TL19* A9 TL30 A6 TL30* A6 TL31* A6 TL38 B5 TL41 B11 TL41* B11 TL51 B6 TL51 C5 TL51 D5
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110° TELEVISION SETS EQUIPPED WITH THE TX92 FRAME STRUCTURE

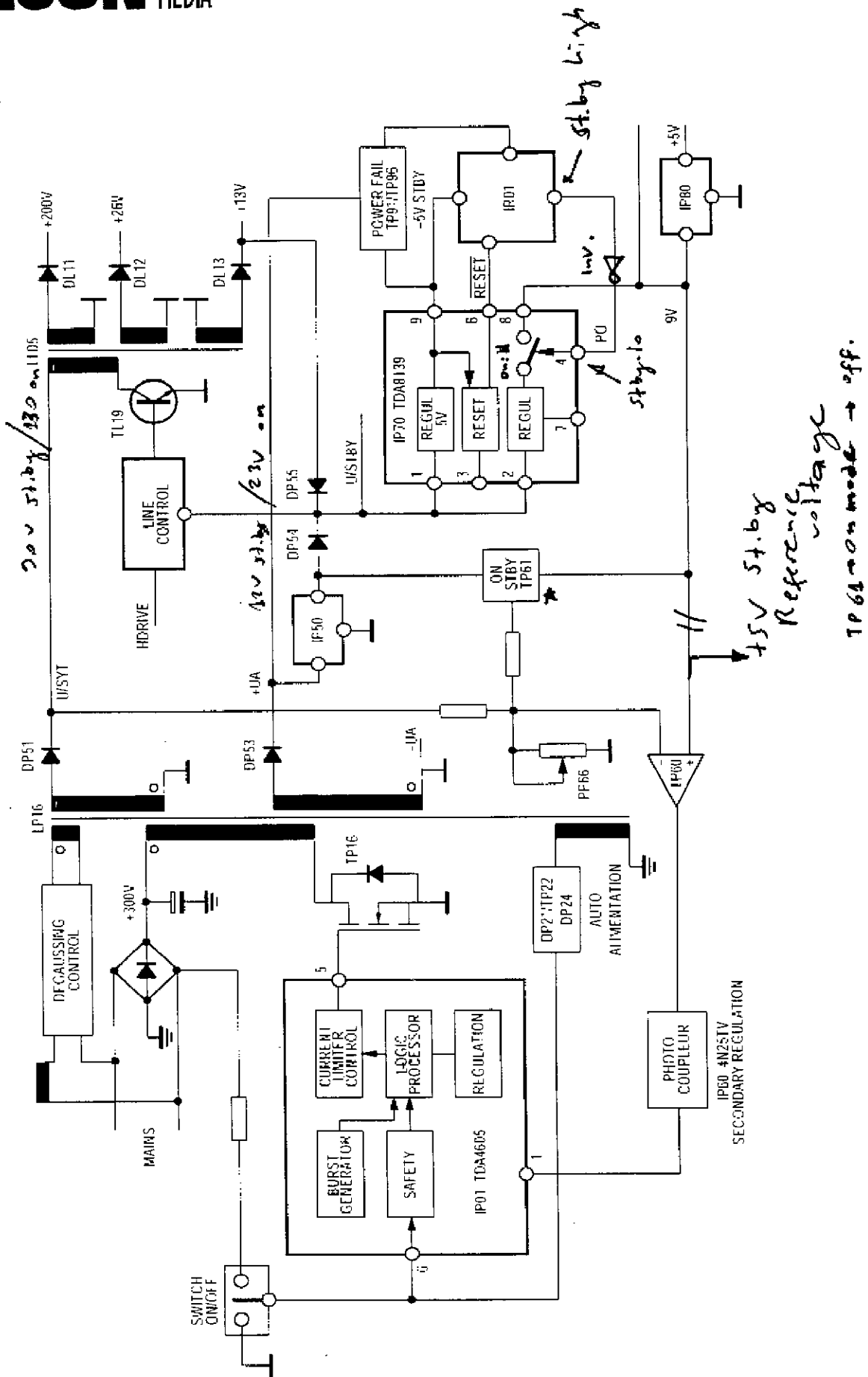
[Click Here to go to the
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Repair Method for the
Power Supply

POWER SUPPLY



GENERAL

The power supply of TX92 is elaborated from the TDA4605 integrated circuit, developed to control a MOSFET type power transistor.

The power supply functions in two quite distinct phases:

- In burst mode at start-up and during standby
- Continuously, in steady-state

This self-oscillating, flyback type power supply has a frequency range between 30 and 70Khz. The integrated circuit controls the chopper.

Stand-by and operational regulation is carried out from the secondary. Measurement on stand-by is carried out on UA voltage (50% of its value on stand-by). In steady state it is taken on U_{sys}. The information is transferred from the primary side via the photocoupler, IP60, which determines the energy stored in the transformer and allows galvanic insulation.

The U_{stby} voltage powers the IP70 (TDA8139) regulator and the line driver.

Back-up on NVM is carried out by the microcontroller through the power-fail information when the power supply voltage is too low.

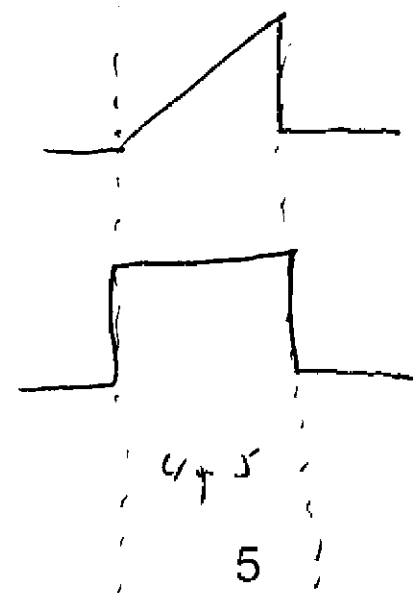
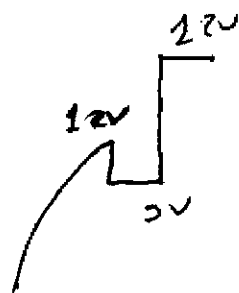
- The secondary voltages are:
 - U_{sys} 130 volts
 - UA 22 volts
 - 5 volts in 9 of IP70
 - 9 volts in 8 of IP70 (after operating control by IR01).

This product does not use a general switch but a small switch which cuts off the IP01 power supply. Consequently, only the diode bridge and head chemical are powered with the switch open.

En standby, on TDA4605, le transistor MOSFET est en mode de repos. L'oscillateur est arrêté. La tension UA (22V) est maintenue par le condensateur de l'oscillateur. La tension U_{sys} (130V) est maintenue par le condensateur de l'oscillateur. La tension U_{stby} (22V) est maintenue par le condensateur de l'oscillateur. La tension U_{sys} (130V) est maintenue par le condensateur de l'oscillateur. La tension U_{stby} (22V) est maintenue par le condensateur de l'oscillateur.

Clapnet on 62p
100 division

Start up.



1.8V
3

6

5

Ref.

supply input

PRIMARY
VOLTAGE
SAFETY
SAMPLE

PULSE
GENERATOR

CONTROL
AND
LIMITER

OVERCHARGE
SAFETY
SIMULATION

PAUSE
DETECTOR

LOGIC

IP01 TDA4605

SECONDARY
VOLTAGE
REGULATION

DETECTOR
0

S. Start

7

0.4 volts
ref. volt

1

4

8

Pin 6: 12V Start up / stop 2.5V ↓.
An opk 169 divider for 2.5V.

DESCRIPTION OF THE TDA4605 PINS

Pin 1.

This is the start of regulation. The voltage on this pin is compared to an internal reference (400 millivolts). If this voltage is exceeded, the chopper control is blocked. For a lower voltage, regulation is active.

Pin 2.

This is the safety mechanism input in case of an overcharge.

A voltage ramp is obtained on this pin by RP10/11/12 CP10 and CP48 and simulates the drain current coming from TP16.

When the voltage of pin 2 is greater than (3V) the regulation voltage (pin 1), output 5 of IP01 moves to 0 and the chopper is blocked.

Pin 3.

This takes into account variations across 300 volts. Through an internal reference, current correction can be determined. If the voltage on this pin is less than 1.4 volts, indicating a mains voltage less than 160 volts, the circuit becomes inactive.

Pin 5.

This output, coming from a push-pull, controls the MOSFET power transistor when powered up.

Pin 6.

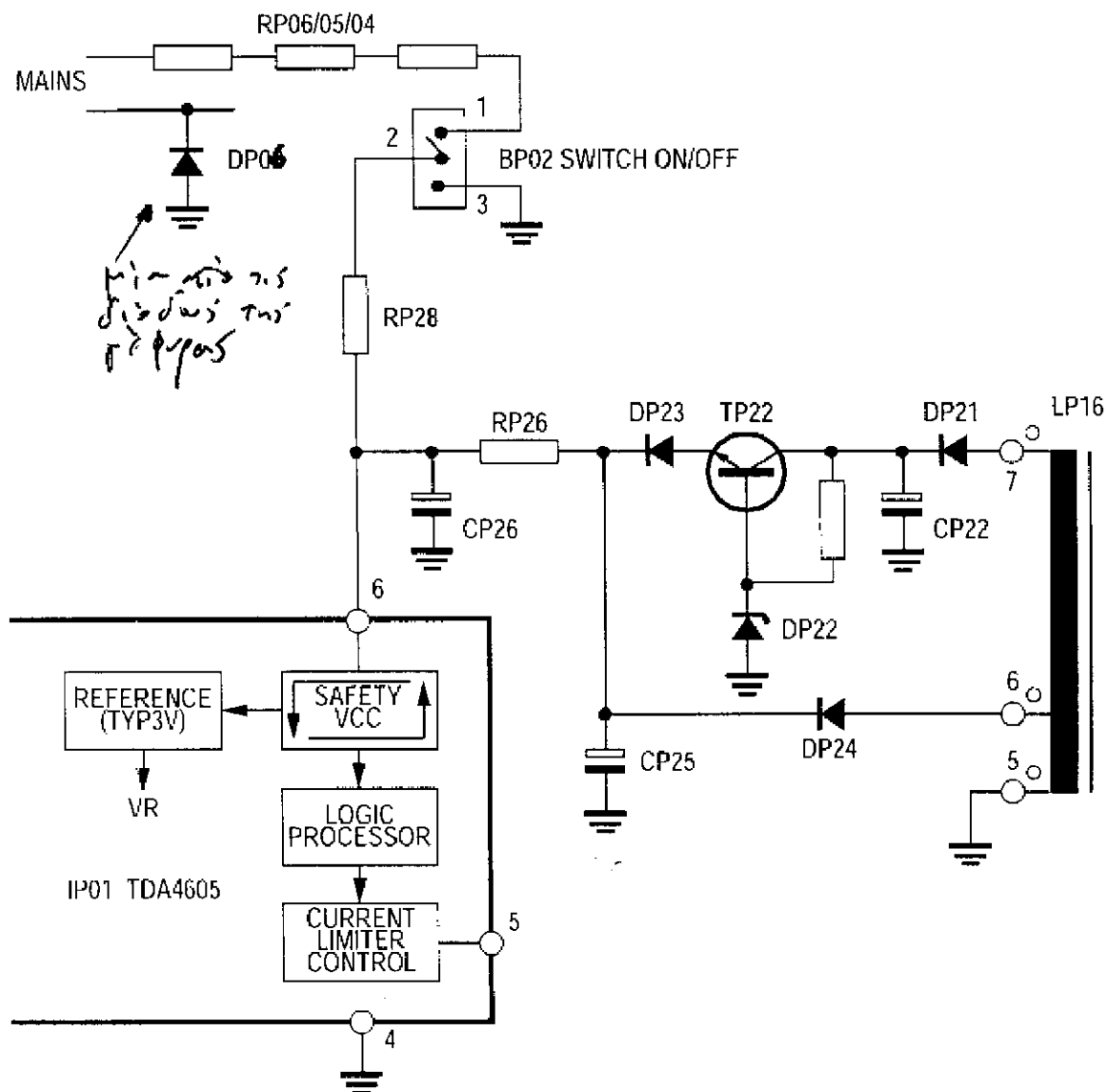
This pin is the VCC power supply of the circuit, which functions on 12 or more volts. If the voltage is less than 7.25 volts or exceeds 16 volts, the circuit stops.

Pin 7.

To ensure a gradual start-up, a time constant (CP37) is applied, which determines the gradual development of the cyclic relation of the output signal.

Pin 8.

Through this pin, the integrated circuit receives a signal indicating the end of transformer demagnetisation; this front is negative, and is taken from RP29 RP30; at each return to 0 a new chopper instruction will be confirmed.



POWER SUPPLY START-UP

When the commutator (connected to BP02) changes to operating mode, the CP25/26 capacitors are charged with the current coming from the diode bridge via the RP04/05/06 resistors. The TDA4605 starts up when the voltage on pin 6 reaches 12 volts. This then begins to generate an impulse on its pin 5 output.

This operation means that a current of approximately 11ma is needed, and a drop in CP25/26 CAPACITOR voltage occurs. If the voltage falls below 7.25 volts, the circuit stops.

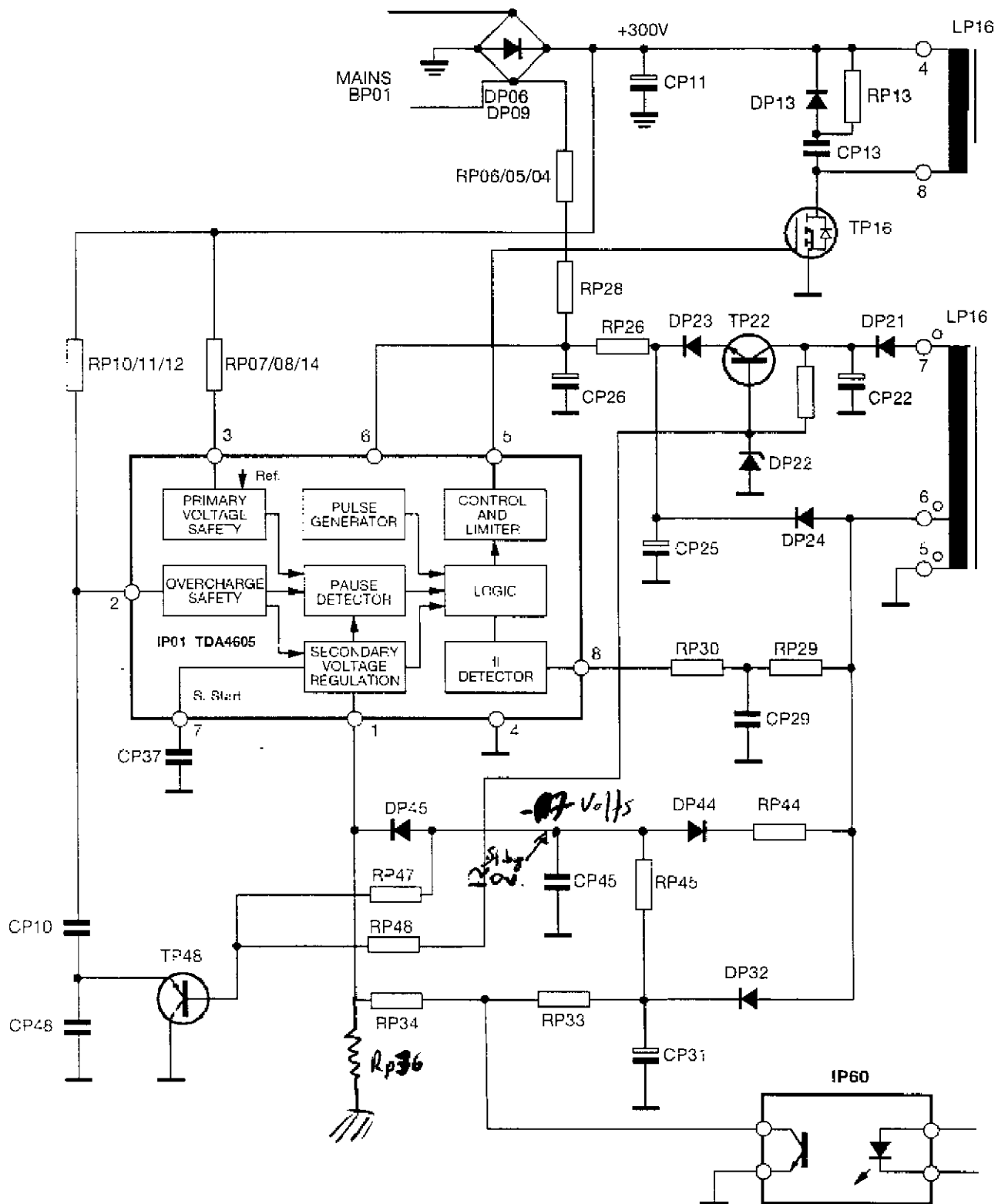
Before the drop in voltage reaches this value, the power supply is relayed by transformer winding 57.

In standby mode, voltage is reduced by 50% in order to limit power consumption.

Pin 6 voltage is supplied by TP22 and is regulated by the DP22 Zener diode (9.6 V on RP26).

When the television set is on, the voltages increase, and the one transmitted by winding 56 and rectified by DP24, becomes greater than the preceding one thus taking over by blocking the DP23 diode.

In order to stop the TDA4605, pin 6 is earthed via RP26/28, which reduces the voltage to 4V, thus causing the circuit to stop.



POWER SUPPLY OPERATIONS

When the switch moves to ON mode, the CP25/26 Capacitors are charged when pin voltage reaches 12 volts; the circuit sends a high level to pin 5 which makes the TP16 transistor a conductor.

Thanks to an external RC circuit, (RP10/11/12 and CP10/48), connected to 2 of IP01, a simulation of the development of the current collector transmitter of TP16 (saw-tooth voltage) is created.

The regulation voltage from DP32, RP33, RP34 and the IP60 optocoupler reaches pin 1 of IP01.

This voltage is compared to the saw-tooth (Br1) via a regulation error comparator.

When the saw-tooth voltage is greater than the regulation error voltage, output 5 of IP01 returns to 0 and will cause TP16 to block.

The following conduction is established when pin 8 of IP01 moves to low state.

On stand-by, the regulation voltage (Pin 1) is greater than 400 mv, which cuts off the control signal on pin 5 (or pause mode).

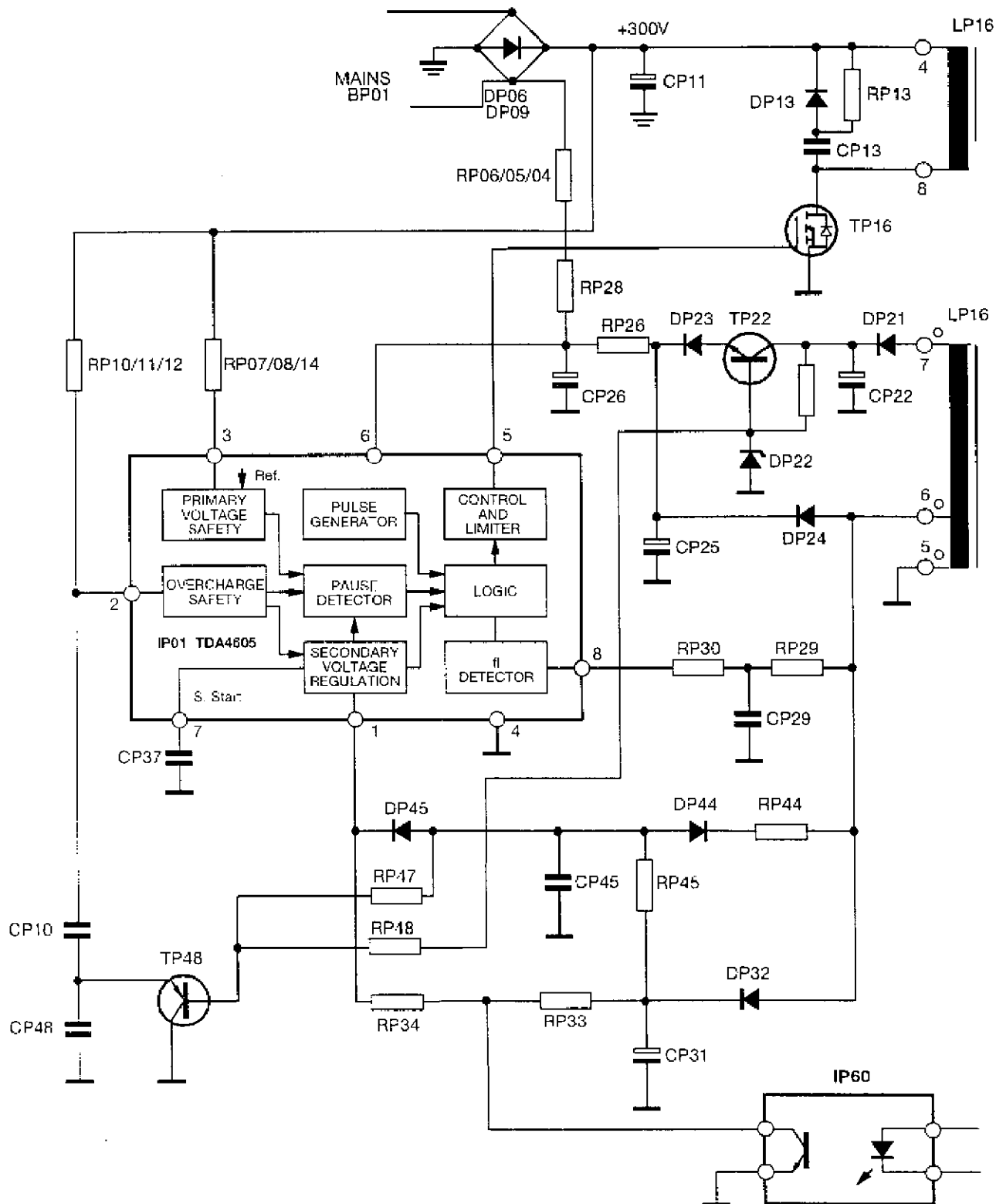
When the level drops below 400 mv again, the chopper control reappears. Burst functioning is thus brought about.

Consequently, power consumption on standby moves to 2.5 Watts.

REDUCTION OF TP16 CONDUCTION TIME

This function is obtained by blocking the TP48 transistor. Consequently, the equivalent capacity in 2 of IP01 is reduced, and it charges more rapidly.

At start-up and at each burst, the change in voltage on pin 7 is taken into account in order to modify the internal comparison threshold which is carrying out a soft start-up.

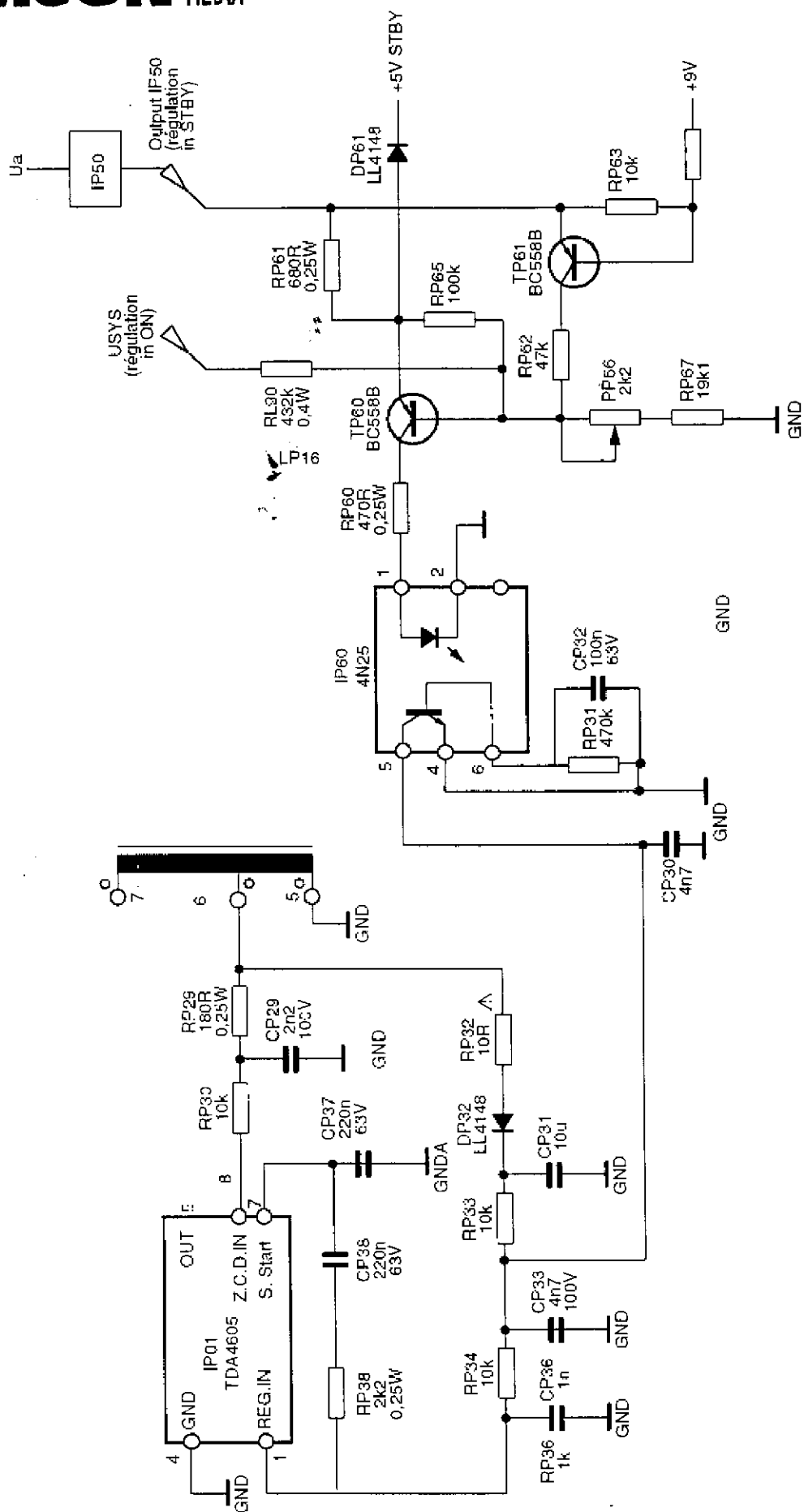


BURST MODE

When operational, the voltage at the CP45 terminals is about -14 volts. It is the sum of UCP31 and the negative voltage rectified by DP44. DP45 is thus blocked. It has no effect on regulation.

However, on standby, the voltage rectified by DP44 is very weak (RP44 10K Ω CP45 10nf) as there are few bursts. UCP31 is thus predominant and DP45 becomes transient.

This causes an excess of information on pin 1, which brings about a pause in the circuit. It only starts up again when DP45 blocks; i.e. when UCP31 is reduced.



SECONDARY REGULATION

Two phases can be distinguished

- Burst mode which is active on standby and during the start-up phase.
- Functioning in steady state.

On standby the voltages are reduced by 50%. The output voltages are:

- IP50 +10, 5 volts
- U_{sys} +90 volts
- UA +12 volts.

On stand-by, regulation is carried out from pin 3 of IP50, as TP61 is a conductor, since the 9V in operation is absent (8 of IP70). This voltage, via TP61 and the resistive divider (RP62, PP66, RP67), is applied at the base of TP60.

A reference voltage based on the 5v STBY (9 of IP70) by DP61 is present on the transmitter of TP60. The current collector transmitter of TP60 informs the optocoupler of IP60 and then pin 1 of IP01.

The current in TP61/60 is modified and controls IP60. We now pass to steady state, the voltages move to :

- 3 IP50 12 volts
- U_{sys} +130 volts
- UA + 23 volts

When operational, TP61 being blocked, regulation is assured from U_{SYS}. This voltage informs the base of TP60 via RL90, PP66, RP67.



SAFEGUARDS

Short-circuit on UA

If the charge of the secondary is too great and exceeds the point of maximum charge (160W), the circuit reduces the width of the impulses and the voltage falls.

When the UA plus falls below + 15.5 volts the power-fail signal is activated and the television set moves to stand-by mode via IR01.

Short-circuit on U_{sys}

If there is a short-circuit in the voltage on pin 6 of IP01, the voltage falls below 7.25 volts and the circuit stops; it then tries to start up again by emitting bursts at a frequency of 0.5Hz. This mode is called "request mode". The surcharge amplifier reduces the impulse width at T_{pk} (impulse width in case of short circuit) which is sufficient to start up again.

Protection against drops in mains voltage.

Drops in mains voltage are detected at pin 3 of the integrated circuit.

In the case of a significant drop (U_{mains} 160 volts) the bursts are interrupted and the integrated circuit moves to request mode.

Protection against overvoltage

When there is a regulation problem, voltages may increase. If U pin 6 exceeds 16 volts, then we move to request mode.

Protection against heat.

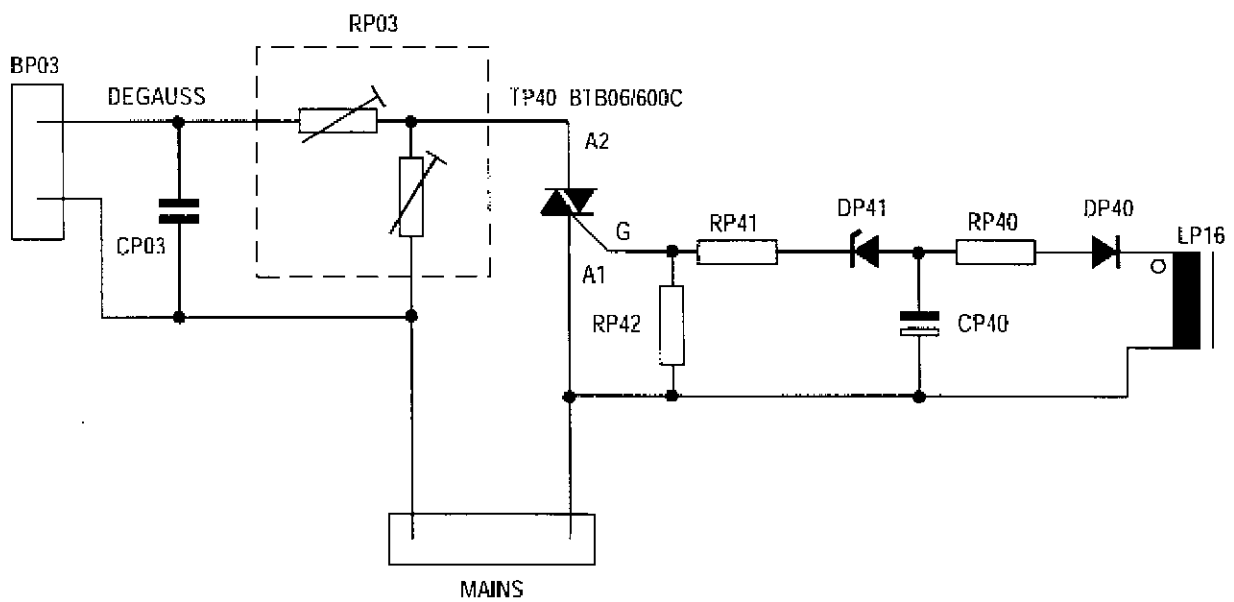
The logical part of TDA4605 is disconnected when the temperature is too high and starts up again when the temperature becomes acceptable.

Protection of TP16

The three components, DP17, CP17 and RP17, are present in order to protect TP16 from electrostatic voltages, CP17 RP15 allow the slope of the signal to be reduced in order to limit interference.

DP13, RP13 and CP13 limit peaks when TP16 is switched on and reduce the transconductance of the signal powered on the drain.

Dépend des conditions de montage : y compris les résistances de TP48



DEMAGNETISATION

Demagnetisation takes place between the stop function and the operation function, provided the RP03 is cold.

A strong current flows in the demagnetisation loop for 300 ms, the posistor resistance moves from 18 Ω cold to about 2 M Ω hot.

The posistor is disconnected by TP40 in order to reduce the power consumption on standby.

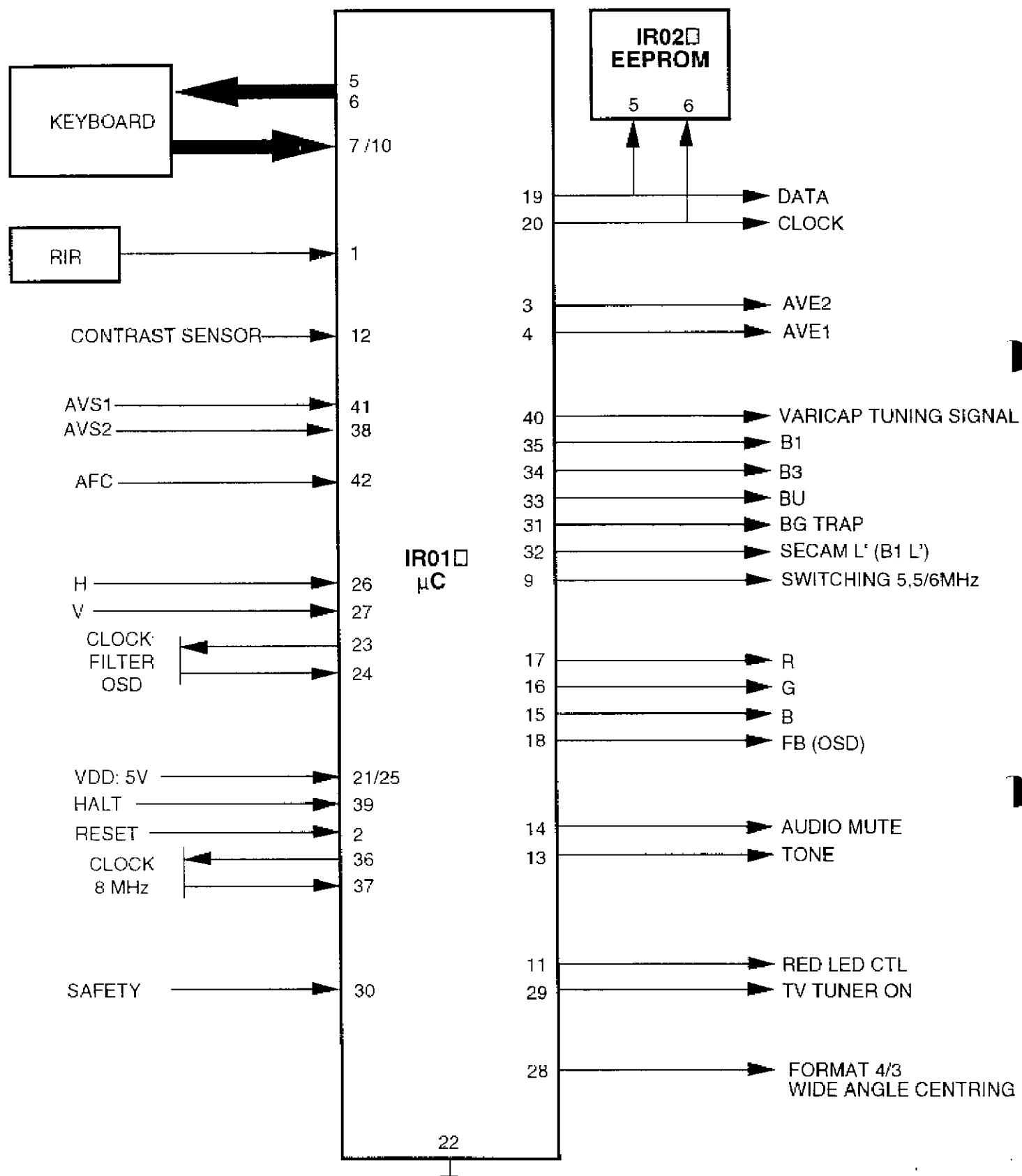
When the set is in operating mode, a voltage of -5 volts is present at the terminals of CP40.

The DP41 Zener diode is therefore transient and the gate of the TP40 triac is negatively charged. The triac becomes a conductor and triggers the demagnetisation loop.

On standby mode, the voltage at the terminals of CP40 is -2 volts, consequently TP40 remains blocked.

MANAGEMENT





EAST/WEST CORRECTION STAGE

This is the IF02 integrated circuit which includes the E/W antenna generator, synchronised by the vertical ramp generator.

Different adjustments are carried out by μ C management through the IIC bus.

The EWDRIVE control, available on output 13 of IF02, is applied to the TL41 amplifier. This Darlington transistor ensures power is extracted from the diode modulator via the LL22 self-induction coil.

CL42 and CL43 capacitors prevent oscillations.

General feedback and the operating point are assured by the RL48, RL44 and RL42 networks, with the EWSENSE return on pin 12 of IF02. At this level, far-reaching dynamic correction information based on the beam current image is injected (S, DL41, CL41 and RL43).

GENERAL

The management of TX92 is similar to that of TX91 television sets. The particular characteristics of this management are as follows:

- pin 3 and 4, AVE1 and AVE2 outputs
- pin 9, SIFSW
- pin 28, format control
- pin 30, safety mechanism
- pin 31, trap
- pin 38, AV2 control
- pin 41, AV1 control



TIME BASE

POWER LINE STAGE

The THT transformer primary (LL05) is connected to USYS and the TL19 power transistor line.

The CL21/22 capacitors along with the deflector line define the line return time ($T=12\mu s$).

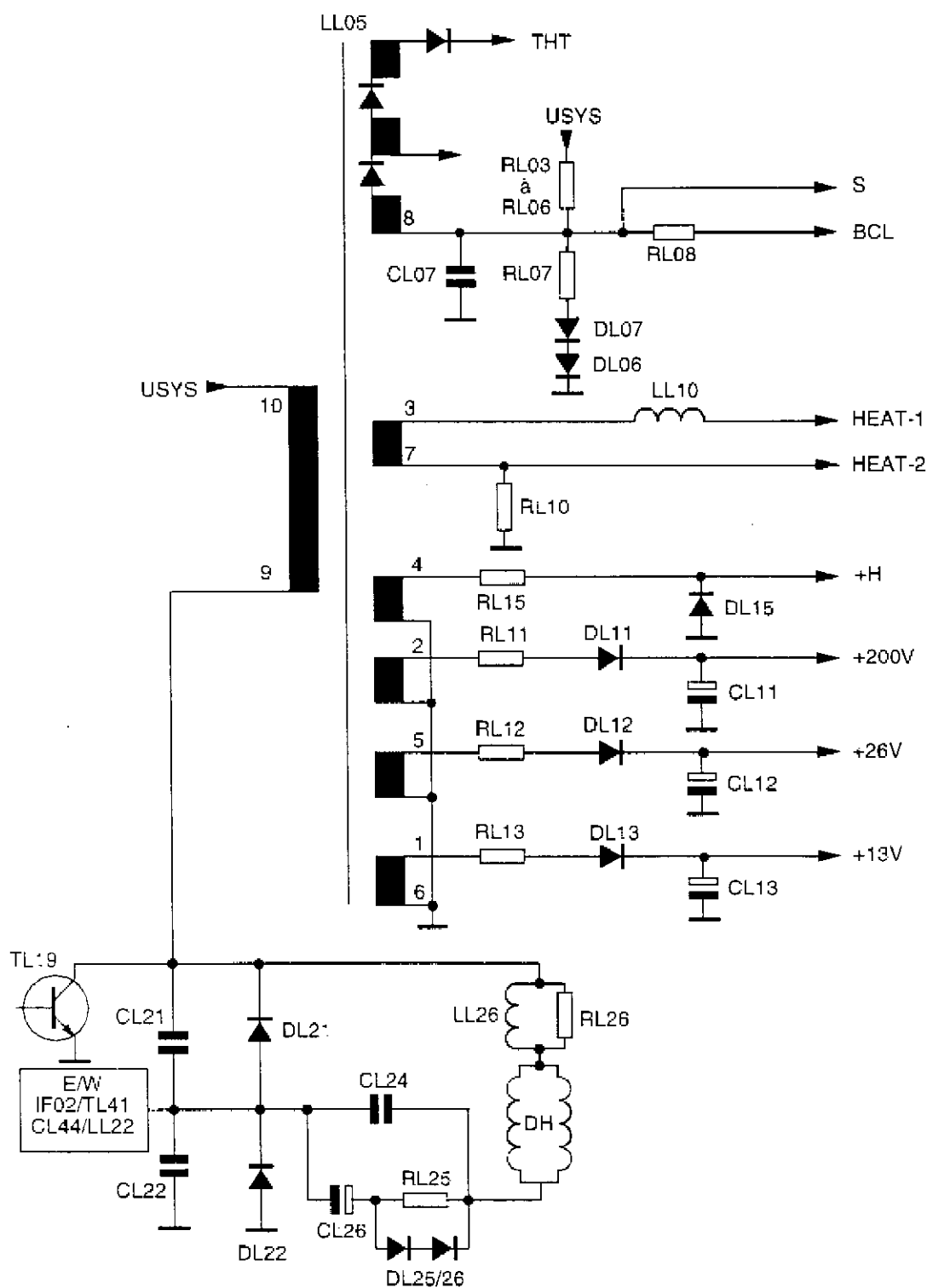
The "S" CL24 capacitor, the average voltage of which is equal to USYS, supplies power to the horizontal deflector in line with the LL26 linear self induction coil and its RL26 reducing resistance.

As with CL24, CL26/DL25/DL26/RL25 circuits are used to deaden parasitic oscillations which appear during strong increases in beam currents.

On the LL05 secondaries, the following voltages and signals are recorded:

- pin 3, a 27Vd/c line return impulse, in positive momentum for filament heating.
- pin 4, a 35Vd/c line return impulse, in positive momentum for service signals (phase and sandcastle) and the OSD horizontal line.
- pin 2, a 230Vd/c line return impulse, in positive momentum. A 200V voltage required to supply power to RVB stages is obtained via RL11 and the DL11 diode.
- pin 5, a 230Vd/c line return impulse, in positive momentum. A 26V voltage is obtained via RL12 and the DL12 diode. This assures power is supplied to the frame power stages as well as the tuner.
- pin 1, a 125Vd/c line return impulse, in negative momentum. A 13V voltage is obtained via RL13 and the DL13 diode. This assures power is supplied to the frame stage and the tuner, and is relayed to start-up voltage coming from the IP50 regulator.
- BCL information (beam current image) is taken from the bottom of the split diode. This refers to the IV01 contrast and luminance controls (BCL varies from 6.4V to 4.8V for minimum and maximum contrast and luminance controls).
- S information, taken from the bottom of the split diode, ensures image format compensation according to the beam current.





ELABORATION OF LINE AND RASTER SIGNALS VIA IV01

LINE GENERATION

The horizontal synchro is extracted from the composite video, present at input 20 of the circuit, and is applied, as a point of reference, to a first phase comparator providing a filtered error voltage on pin 33 by RV/29/30 and CV26/27 components. The error voltage controls a VCO, the frequency centre at 503 KHz, which is defined by the QV01 crystal on pin 32. A divide by 32 counter sends back 15625 Hz, by comparing with the horizontal synchro (PLL loop). The VCO can function according to two modes: either in locked mode via synchronisation during transmission or in FREE RUN mode when the television set is used only in OSD. Control signals are released from the divide by 32 counter, through a phase off-set and a beam forming stage. Those signals marked HDRIVE are available on pin 36. Phase correction is performed by a second phase detector activity, receiving a submultiple of the VCO frequency as well as delay line information via pin 37 of the circuit.

The HDRIVE output (pin 36) is at high level when the supply voltage (pin 42) is less than 6.8V. A power supply of +9V, sent to 22 of IV01 via the TV62 transistor, is used to lengthen the conduction time of the power transistor line from 14 μ s to 36 μ s.

RASTER GENERATION

A sorter stage extracts the vertical synchro from the CVBS signal entering pin 20 via the SYNCHRO SEPARATOR. This new signal repeatedly validates the raster time base, instructed from a VCO line synchro counter. At the output of the raster time base, VSYNC raster delay in pulses (pin 35) are available. When in FREE RUN mode, scanning is controlled via the VCO free frequency. Vertical synchro is also used for 50/60Hz automatic recognition.

MUTE GENERATION

The video identification stage analyses the line synchro presence and supplies mute information. This is transmitted to IR01 via the IIC bus. Should there be no line synchro, the TV switches to STANDBY after 5 minutes.

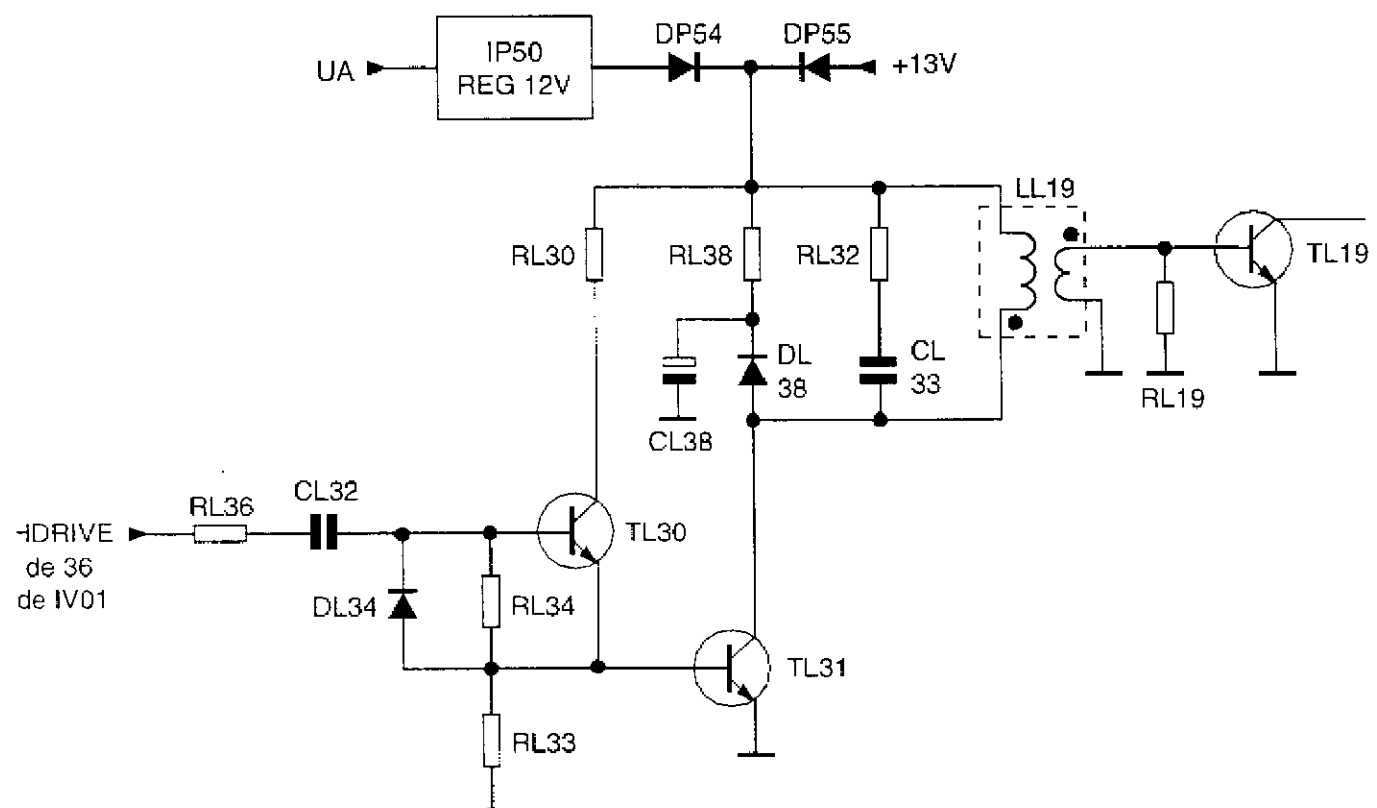
LINE TIME BASE CONTROL

The driver stage is made up of TL30/31 transistors. The RL32/CL33 and RL38/DL38/CL38 cells limit the overvoltage peak which appears on the TL31 collector when it is blocked.

The LL19 driver transformer, used in alternating mode, assures the saturation of the TL19 power transistor line for every driver stage blockage.

The power supply for this part is assured:

- at start-up, by the output voltage of the 12V regulator (IP50) via the DP54 diode.
- during steady state, by the +13V voltage, released from the THT via the DP55 diode.



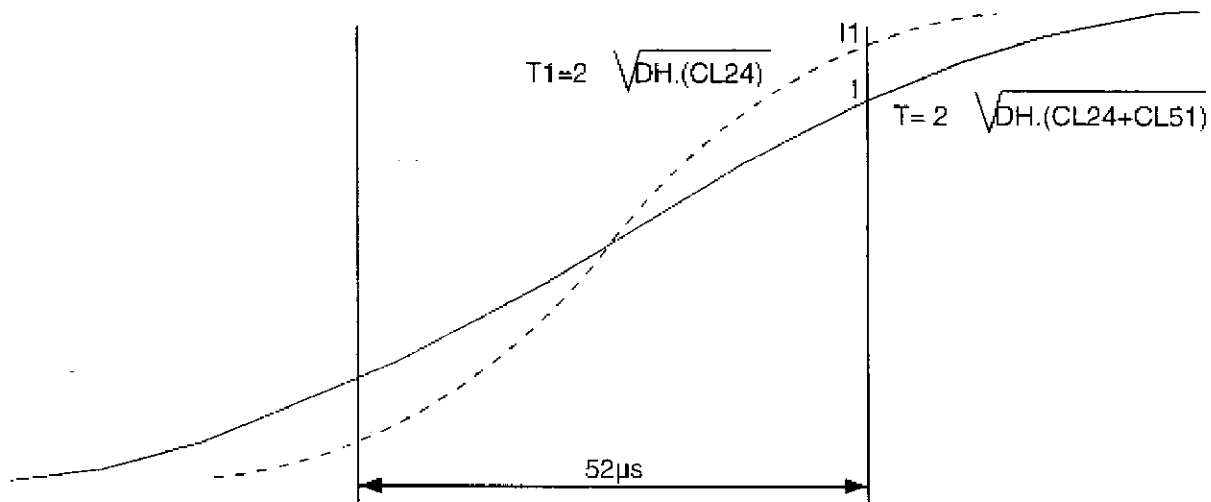
FRAME WIDTH CORRECTION

Television sets fitted with a 16/9 tube are equipped with this circuit. The frame width is altered to 4/3, 16/9 and ZOOM 4/3, by commutation of the CL51 capacitor. This is connected in parallel on the "S" CL24 capacitor.

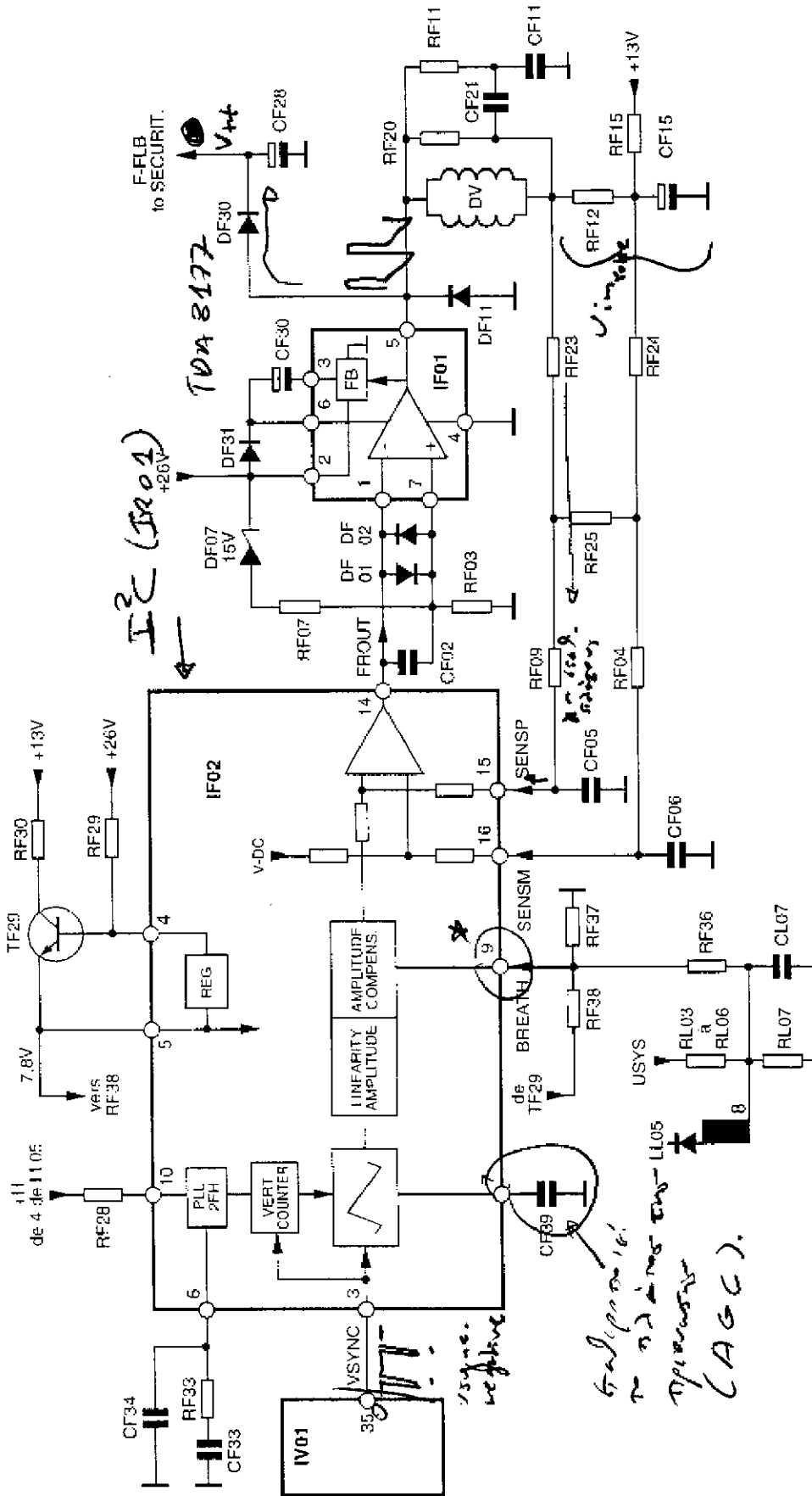
In 4/3, TL51, TL52 and TL53 are saturated. CL51 is operational.

In 16/9 and in ZOOM4/3, TL51, TL52 and TL53 are blocked. CL51 is disconnected.

In 4/3, the signal period is greater. The maximum current value, I , for the visible part of the image ($52\mu s$) is smaller and leads to a reduction in the frame width.



For delay lines, the TL51 thyristor is deactivated but the DL51 diode is transient. This leads to the implementation of the CL51 capacitor, and subsequently avoids return time modification.



Appliquez les adaptations de l'ensemble de
ces principes pour l'ensemble des
pin de l'ensemble.

V_{im} = V_{image} Total

FRAME SCANNING

Three circuits intervene for frame scanning.

- IV01 (STV2118) elaborates vertical synchronisation (VSYNC).
- IF02 (STV2145) elaborates the saw tooth frame.
- IF01 (TDA8177) amplifies this saw tooth frame and supplies the current to the vertical deflector.

IF02 consists of:

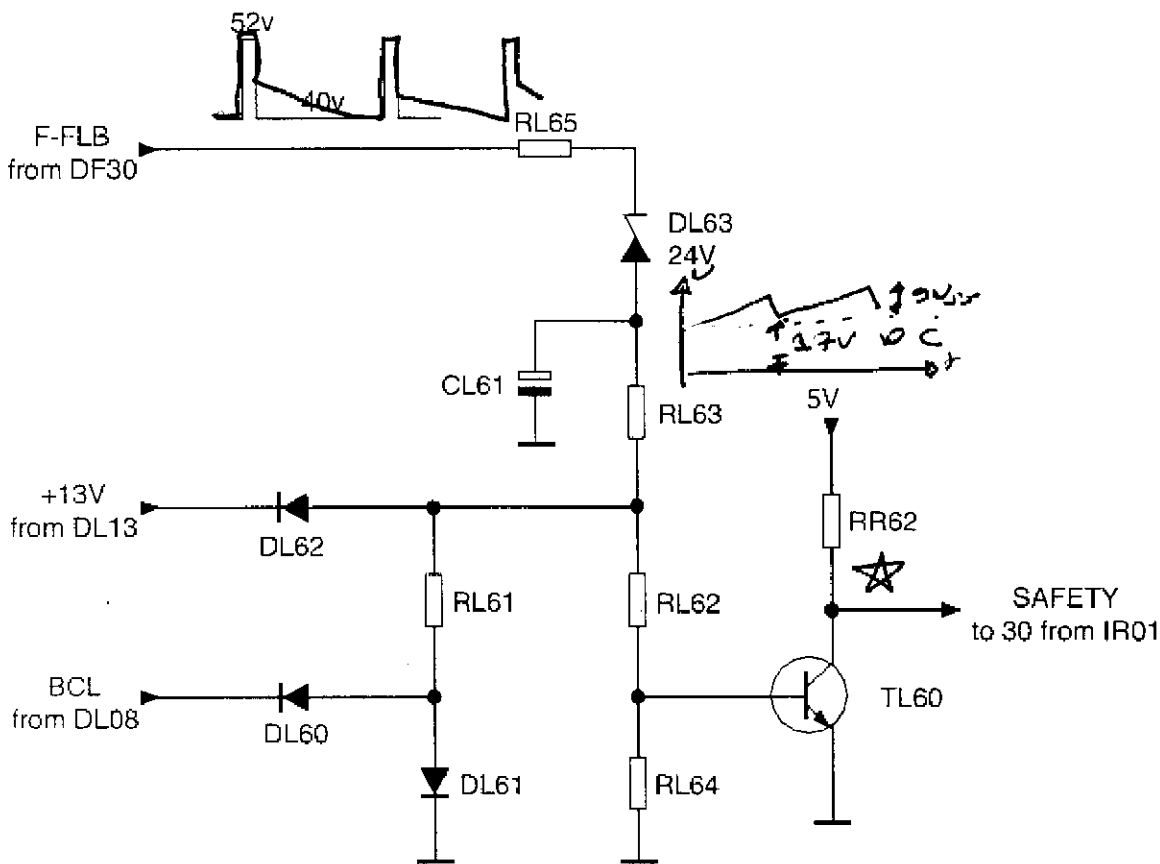
- A ramp generator triggered by a PLL 2FH via a vertical counter. The ramp generator and vertical counter are reinitialised by vertical synchronisation arriving at 3.
- Amplitude adjustment and adjustable linearity via the I2C bus.
- An amplitude compensation stage according to beam currents (BREATHING).

The resulting signal, linked to the alternative feedback information (SENSP pin 15), is applied to an operational amplifier input. The second input receives continuous feedback information (SENSM pin 16) linked to adjustable continuous internal framing voltage via the I2C bus. This amplifier supplies the FROUT vertical control signal to pin 14.

The IF01 circuit receives the previous control on pin 1. Polarisation is assured by the DF07/RF07/RF03 bridge, the CF02 capacitor preventing oscillations. Power supply to pin 6 is assured by the +26V linked to a fly-back generator (pin 3), allowing the voltage to be doubled during the frame delay (correction due to the self-induction coil effect of the deflector).

Pin 5 output supplies the current to the deflector. In line with this, RF12 resistor develops an image of the current for feedback at its terminals (RF09, SENSP).

RF11/CF11/CF21 components limit the frequency operating range in order to prevent any oscillation.



- * Όταν είναι 0.4, βέβαιον C του TL60 έχουμε πάλι 0. Όταν δηλαδή έχουμε 5V που πάλι πρ. Proc.
- Αντίστοιχα, αν έχουμε 13V ή 13V πρ. TL του K60, τότε το Beam Current αυξάνει υπερβολικά.
- * Όταν έχουμε high beam current, τότε το πηνίο του BCL δίνει την αντίσταση BCL να είναι 0.

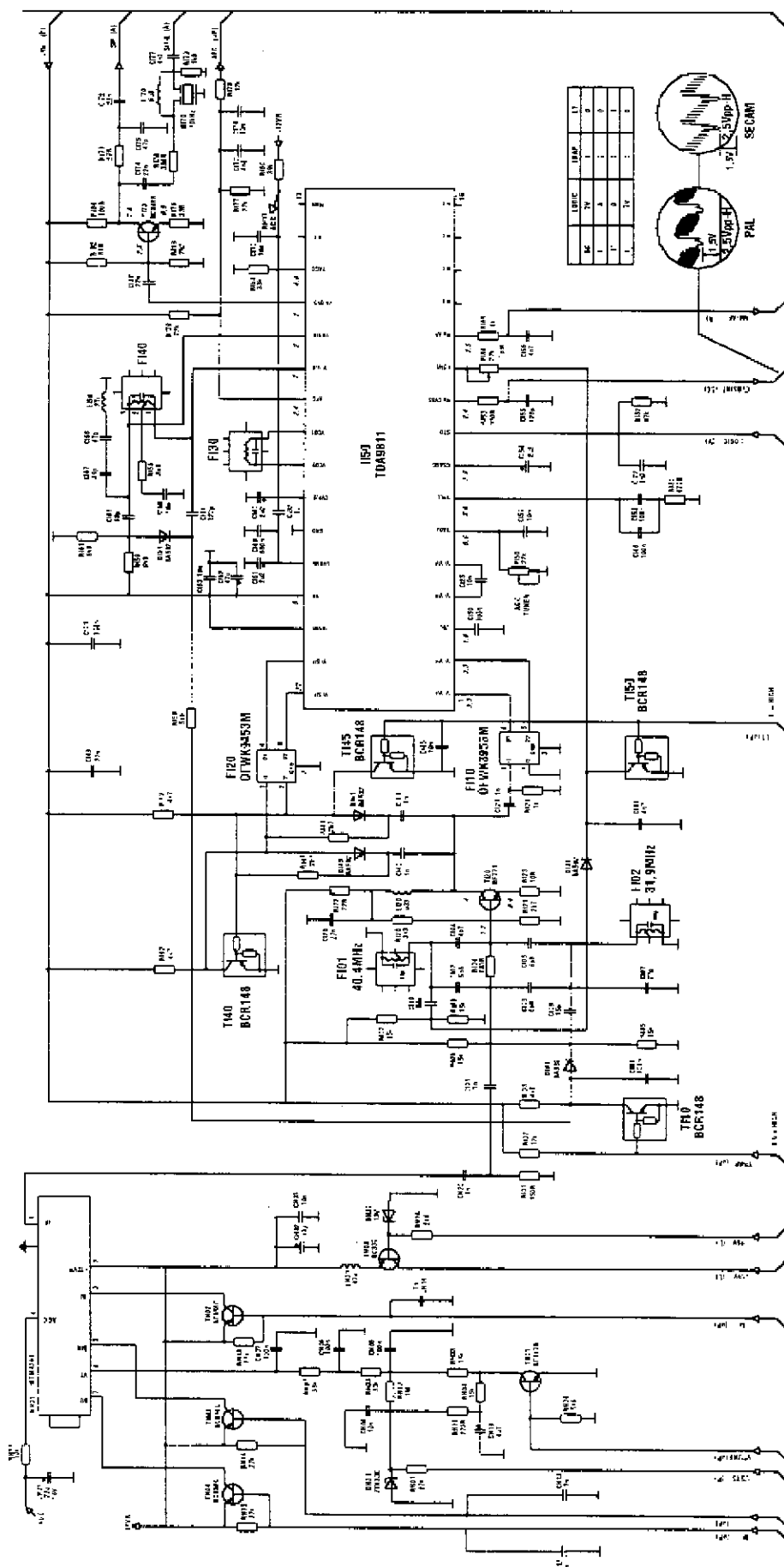
SAFETY CIRCUIT

This circuit monitors the following parameters:

- Horizontal scanning operations and the presence of +13V
- Beam current (BCL)
- Vertical scanning operations (F-FLB).

All this information is sent to the base of the TL60 transistor. If one of these does not function correctly, the TL60 transistor gets blocked and the television set switches to standby via μ c management of IR01.

IF STEREO



IF OF TX 92 STEREO TELEVISION SETS

Demodulation is performed by I150 TDA9811

Reminder:

In B G L standards the picture carrier is demodulated in the same direction at 38.9 MHz. In L' standard. This reduces to 33.9 MHz

- B/G/L standards. The signal comes out of pin 2 of the tuner and passes through an interference trap at 31.9 MHz, rejection of the adjacent channel picture carrier active for the B/G standards by pin 12 of the management, IR01.

An interference trap at 40.4 MHz for rejection of the underlying sound carrier. In L standard, the 40.9 MHz frequency is deactivated by the instruction coming from pin 31 of the management microcontroller (L' line).

-The signal is amplified by the TI20 transistor before passing into the FOS FI10 and FI20 filters.

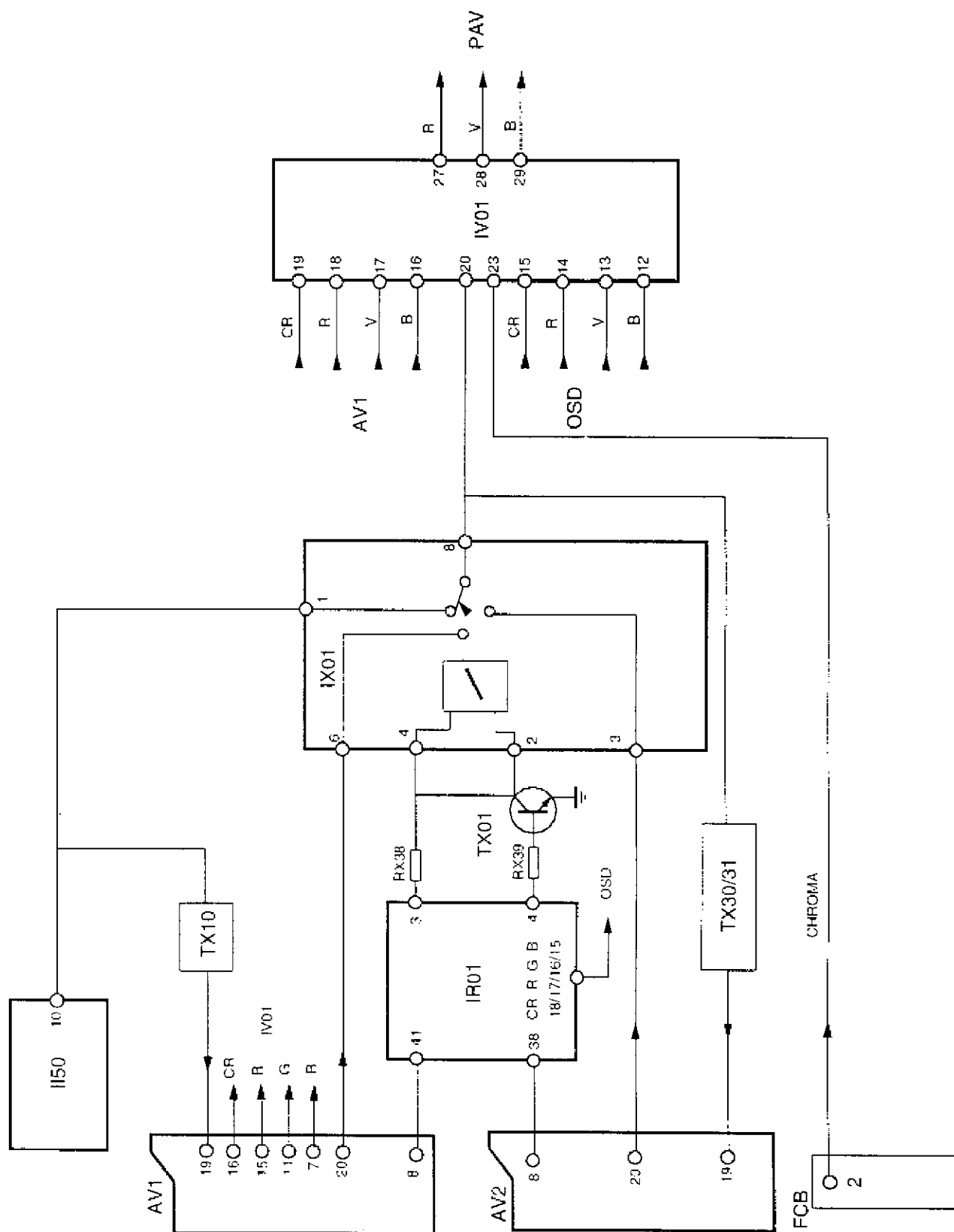
-The FOS FI10 filter selects the picture carrier in the B/G/L standards for the L' standard. This is the opposite slope of the filter which acts as a Nyquist panel at a frequency of 33.9 MHz.

-This signal is then demodulated by the TDA9811. Afterwards, the base band signal goes back through an interference trap at 5.5 MHz I.F. 40, which is activated TI10, whose instruction comes from pin 12 of the management.

-The FOS FI 20 filter selects the audio carriers for all the standards. In L' standard, the filter is commutated by the TI40 and TI45 transistors, which enables the sound carrier to be selected at 40.4 MHz and the interference trap to be deactivated at 40.4 MHz. A signal is given out which is amplified by TI70. In B/G standards, the signal is routed by the SIF line onto pin 58 of IS50 to be demodulated, and the NICAM L signal arrives on pin 60 via the SIF-L line.

Αν αλλὰ λὸγος Τῦνος ἡ ἀντιμετώπιση
τῆς παρεμβολῆς (αὐτὴν εἰς «C») τὸτε πρὶν
νὰ ἐπιλέγῃς αὐτὴν τὸ service menu τὸν
τῦνον [] τὸν Τῦνον.
Αν βὰ λὸγος C εἰς A, δὲ πρὶν UHF.

COMMUTATIONS



VIDEO and RVB COMMUTATION

Four main functions are to be distinguished.

- Normal operation of the television set,
- AV1 SCART in compliance with standards, RVB input, video input and output,
- AV2, video input and output, the video output signal comes from the video commuted by IX01, this enables a video recorder to possibly be connected to this socket,
- External RGB inlet and OSD.

T.V. FUNCTION

The composite video signal arrives from the I150 demodulation circuit. This signal is available pin 19 of the AV1 SCART via the TX10 impedance adaptor, as well as on pin 1 of IX01 (LA7221). The signal is routed onto pin 8 of the same circuit by the commutation control, and is available on pin 20 of IV01. This signal also goes towards the TX30 and TX31 adaptor, and it is present on pin 19 of AV2.

AV1 FUNCTION

When we have a slow commutation request (pin 8) coming from AV1, this comes in on pin 38 of IR01, and the management microcontroller then validates output 4. This instruction comes in on pin 2 of IX01 and validates the video coming from AV1. This video emerges from pin 8 of IX01 and is available on pin 20 of IV01. The video signal is also present on pin 19 of AV2. The effect of the instruction which comes from 4 of IR01 is to saturate TX01, preventing a possible AV2 commutation from being validated.

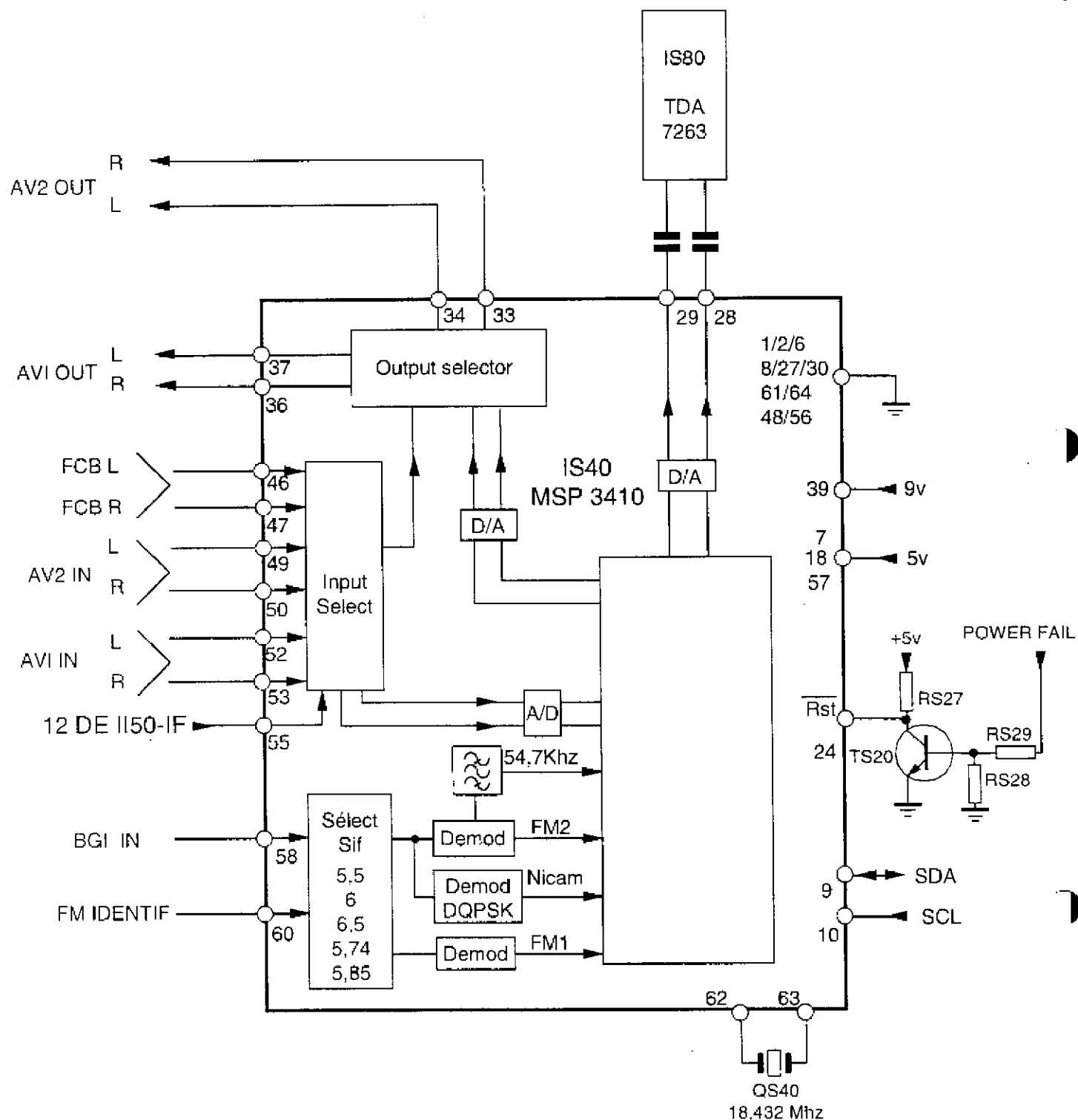
AV2 FUNCTION

The slow commutation coming from AV2 is routed towards pin 38 of IR01. The microcontroller responds with a high level on its pin 3. This instruction then comes in on pin 4 of IR01, and therefore the video signal coming from pin 20 of AV2 passes through IX01 and comes in on pin 20 of IV01 to be processed.

RGB FUNCTION

The RGB signals coming from the AV1 SCART socket are validated on IV01 by the presence of high-speed switching on pin 16 of AV1.

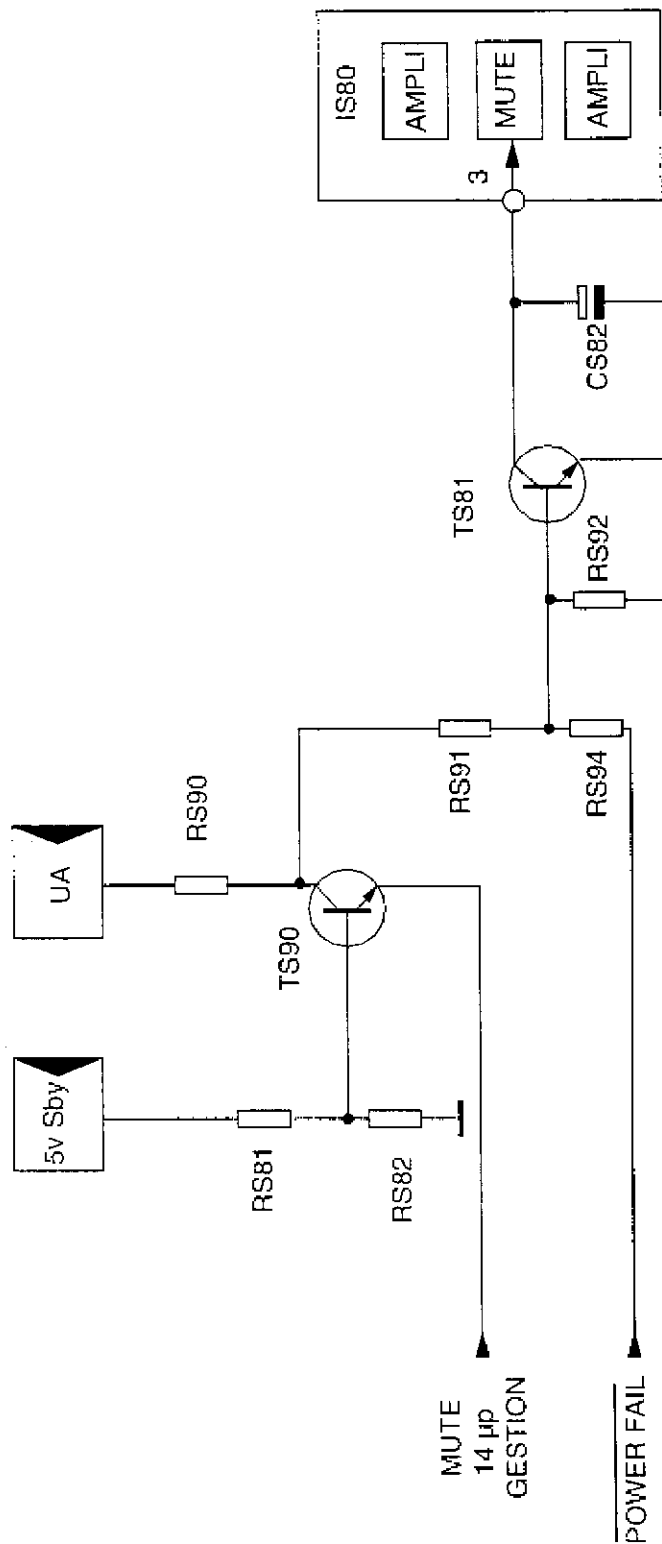
The OSD function has priority over the other functions. The OSD functions are displayed each time a sound, brightness, contrast or colour instruction is sent out and with each change of channel.



AUDIO COMMUTATION

All the audio commutations are performed through IS40, the instruction for which comes from IR01 via the I2C bus (input pin 9 10).

- The sources are:
 - the AM/AF sound (input pin 55)
 - the NICAM (input pin 60)
 - the FM BGI sound (input pin 58)
 - AV1 (input pins 52 and 53)
 - AV2 (input pins 49 and 50)
 - FCB (input pins 46 and 47)
- The signals come out:
 - for the power amplifier (output pins 28 and 29)
 - AV1 (output pins 36 and 37)
 - AV2 (output pins 33 and 34)

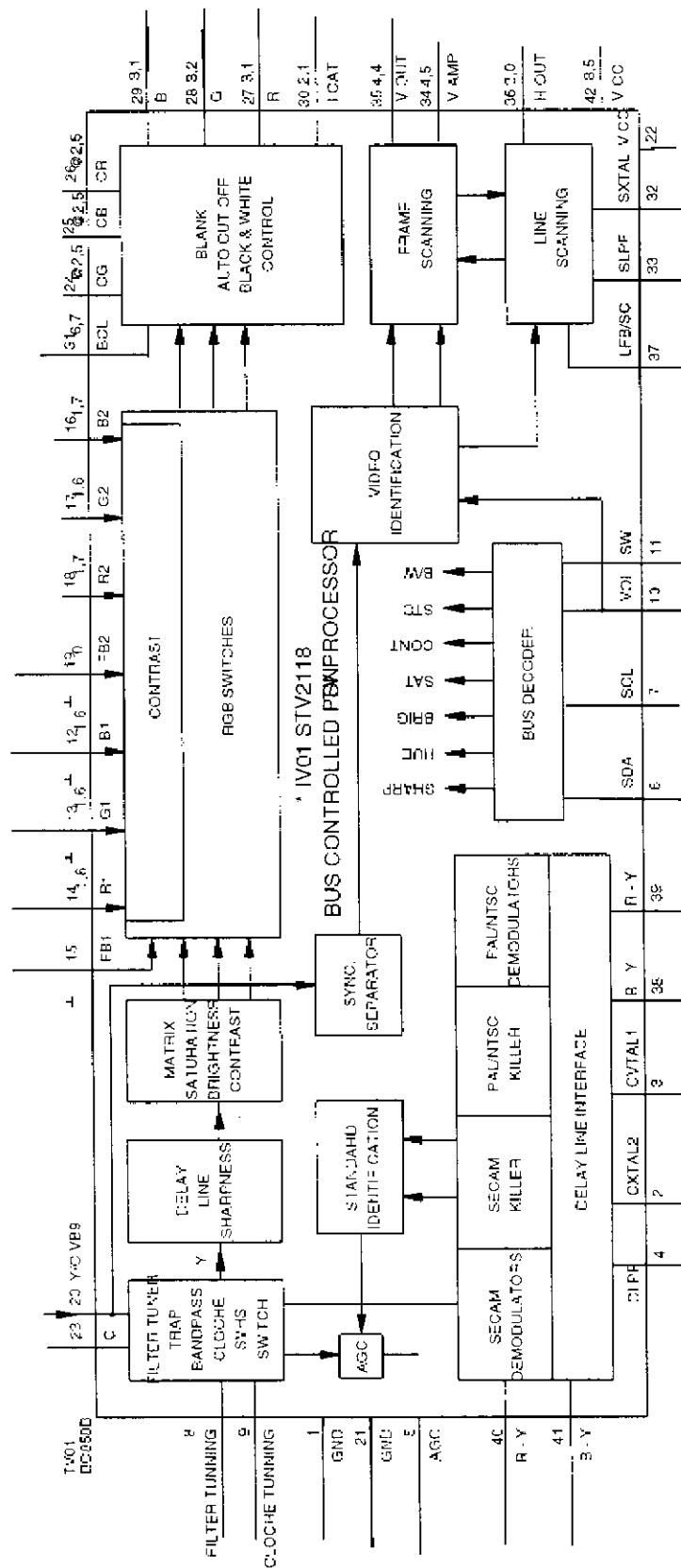


BF SOUND SQUELCH

With each change of channel, a sound squelch is performed through the control of pin 14 of the management μ p. Because the latter passes to high level, the TS90 transistor blocks and the TS81 transistor gets saturated by RS90, imposing a low level on pin 3 of IS80 and activating the squelch.

Via the POWER FAIL information, a high level is applied to the base of TS81, through RS94, each time the appliance is switched on and off.

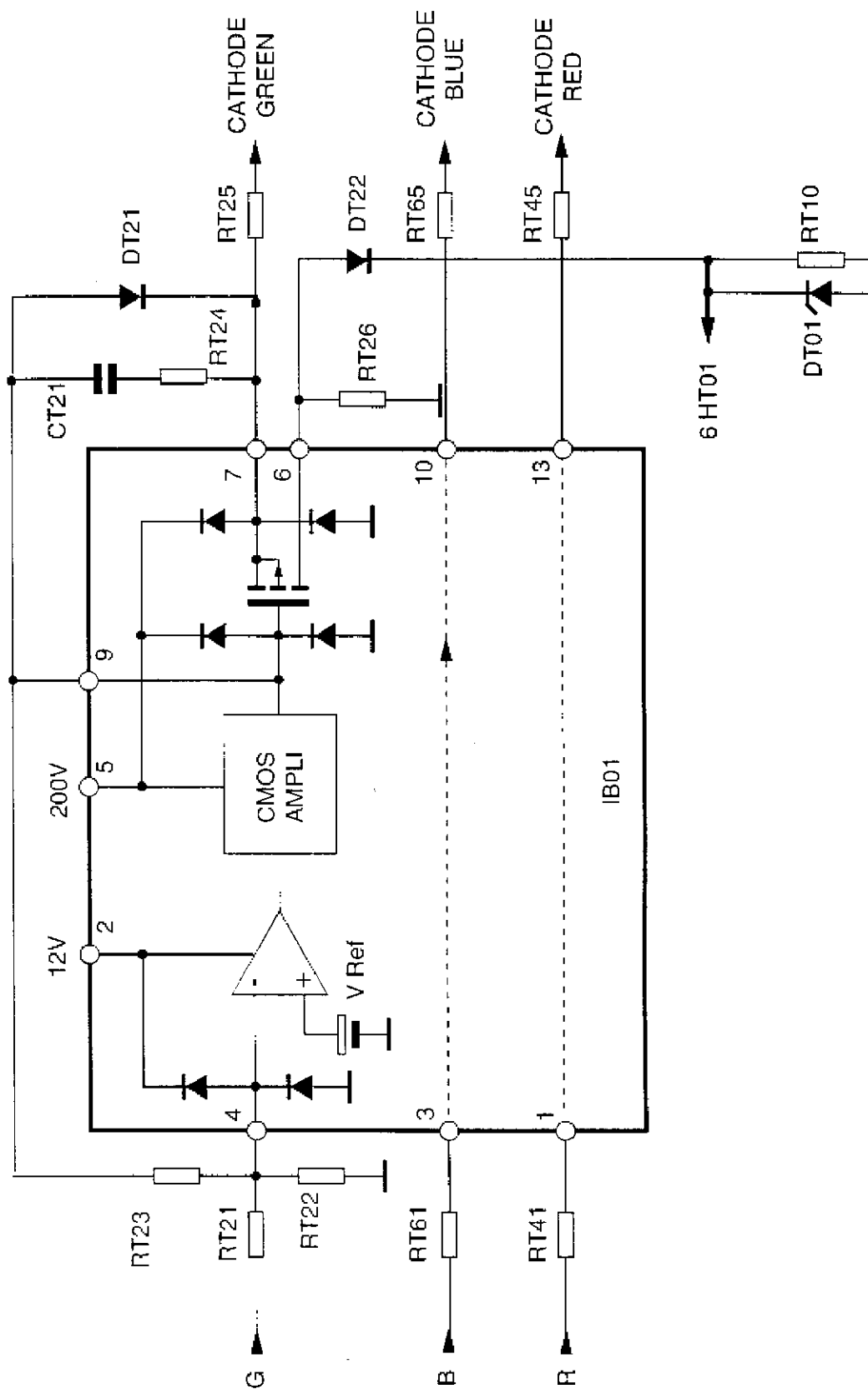
LUMINANCE - CHROMINANCE



LUMINANCE - CHROMINANCE

The luminance and chrominance signal is processed in the same way as for the TX91.

PAV



CRT MODULE

The CRT module of the TX92 is the same as that of the TX91 (see page 99).

REPAIR METHOD FOR THE TX92

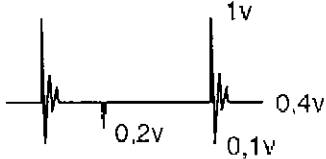
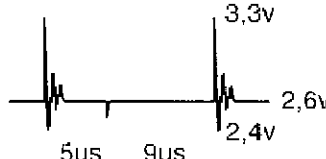
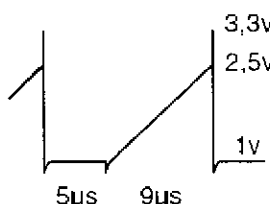
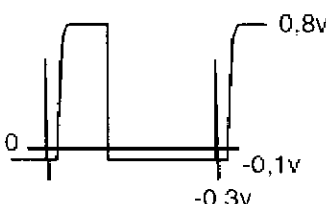
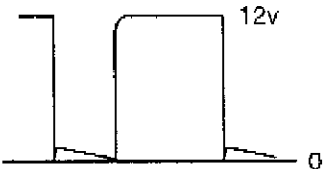


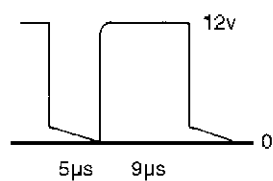
POWER SUPPLY REPAIR METHOD

POWER SUPPLY MONITORING BY LOW VOLTAGE METHOD

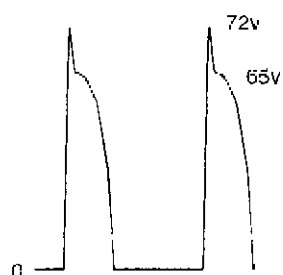
- Discharge the CP11 capacitor
- Disconnect BP02
- Connect the DP07/09 cathode to 6 of IP01 and to 1 of IP50
- Wire up a 22K Ω 1/8W resistor between the DP07/09 cathode and 3 of IP01
- Connect the primary and secondary masses
- Feed the television set with a continuous voltage of 15V via the mains socket

SIGNALS AND VOLTAGES ON IP01

PROBES	SIGNALS/VOLTAGES	PROBES	SIGNALS/VOLTAGES
1		7	
2		8	
5		3	2V
		6	13,6V



GATE DE TP16



DRAIN DE TP16

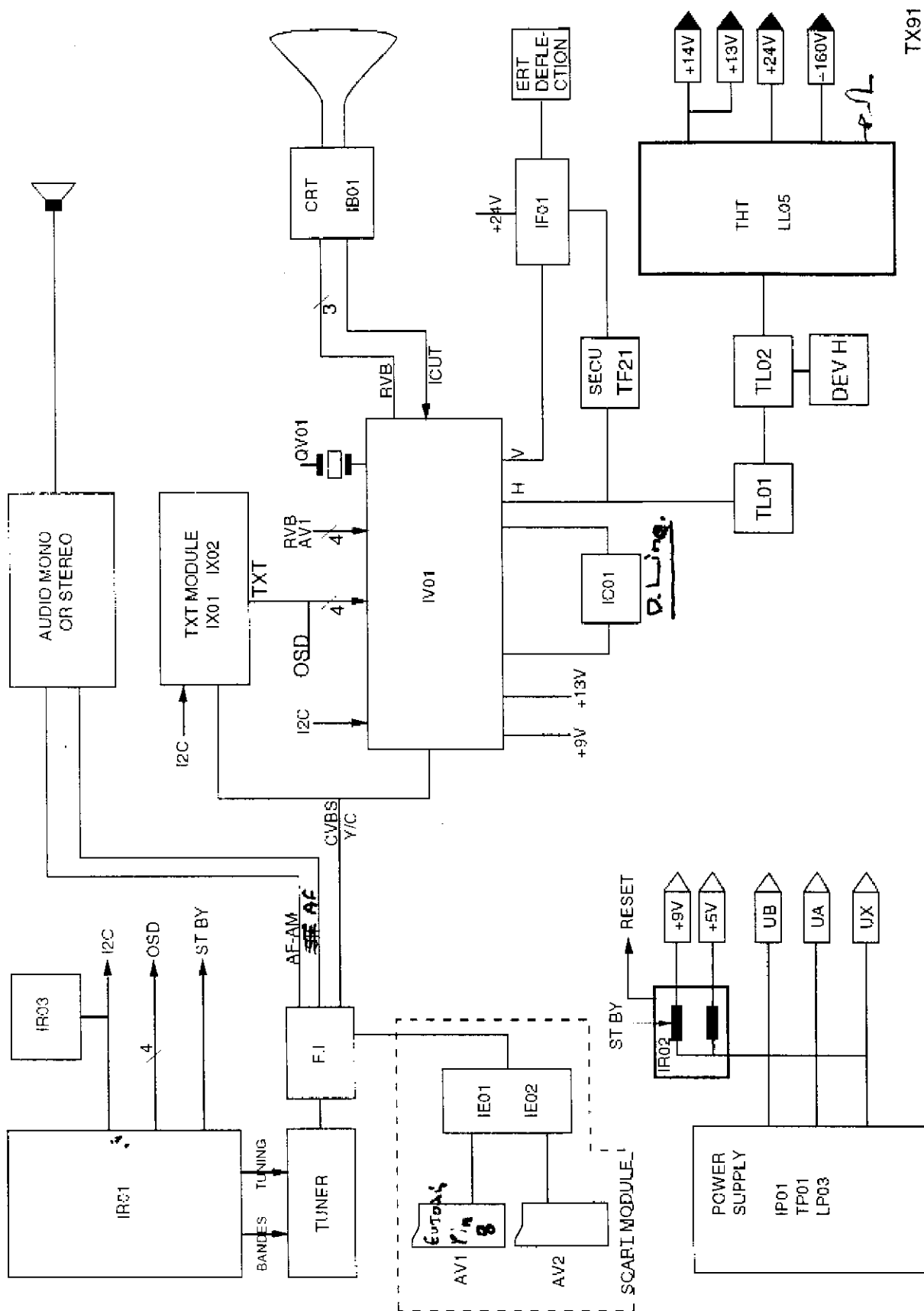
USYS= 74V

CONTROLLING THE 220V AC POWER SUPPLY WITH A CHARGING RESISTOR

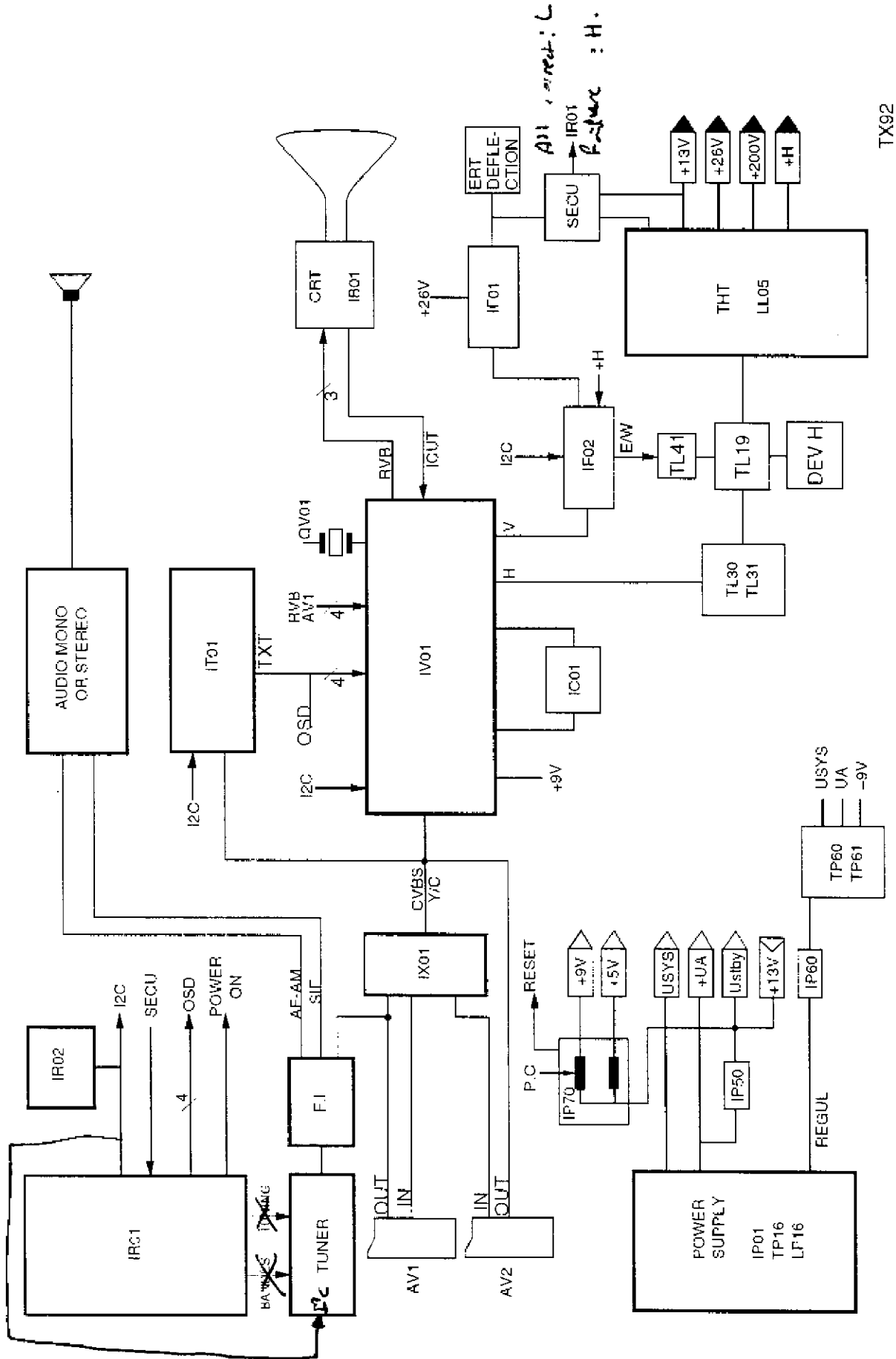
- Disconnect pin 10 of LL05
- Charge USYS with a resistor of 300Ω / 20W

In these conditions, USYS = 75V.

dur: 12p5ec.

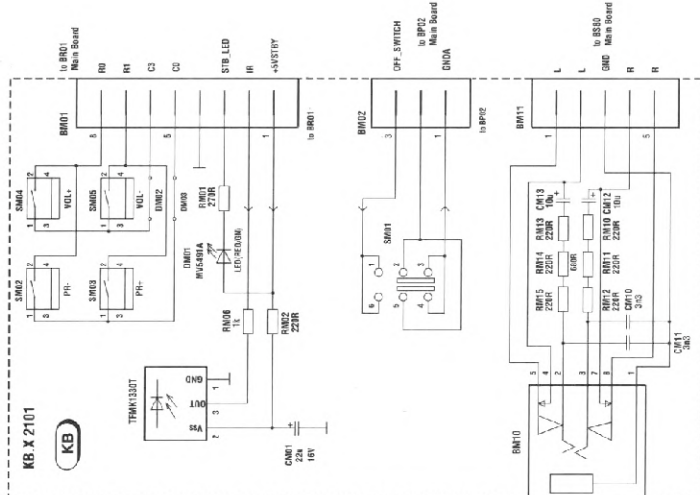


TX91

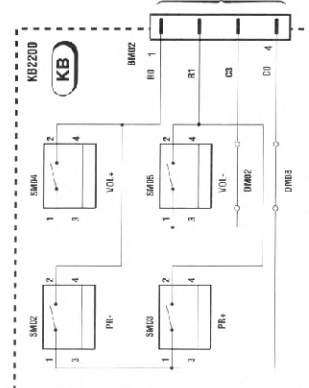


TX92

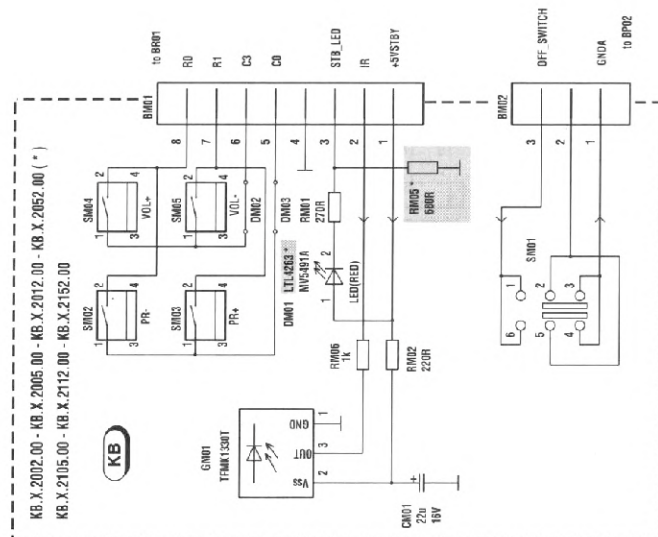
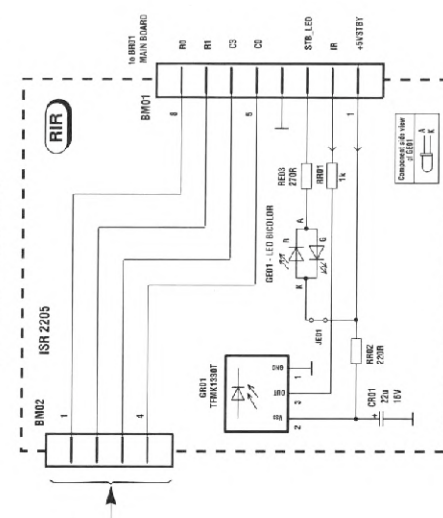
KEYBOARD MODULE - PLATINE CLAVIER - BEDIENSTEILPLATTE -
PIASTRA COMANDI - PLATINA TECLADO

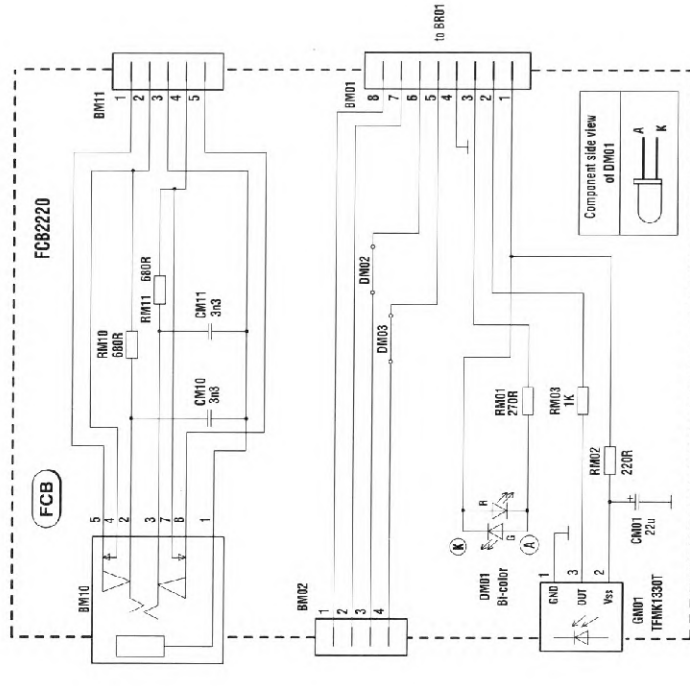


**KEYBOARD MODULE - PLATINE CLAVIER
BEDIENTEILPLATTE - PIASTRA COMANDI
PLATINA TECLADO**

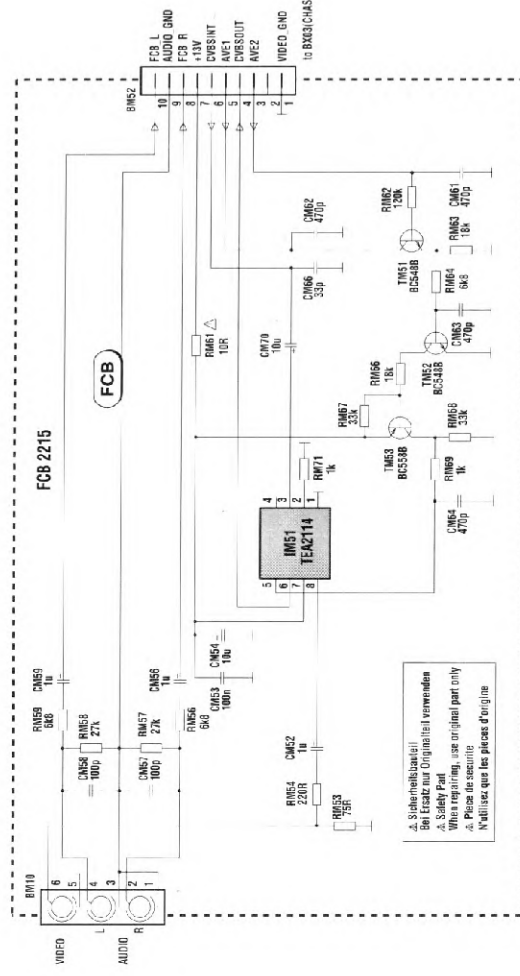
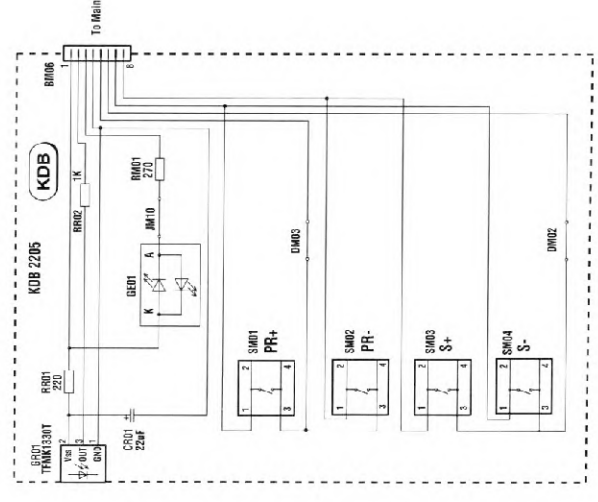


INFRARED RECEIVER MODULE - RECEPTEUR INFRAROUGE
INFRAROTEMPFÄNGER-PLATTE - PIASTRA RICEVITORE INFRAROSSI
PLATINA INFRARROJOS

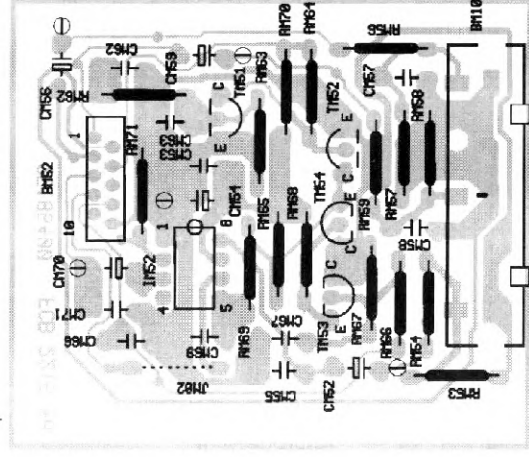




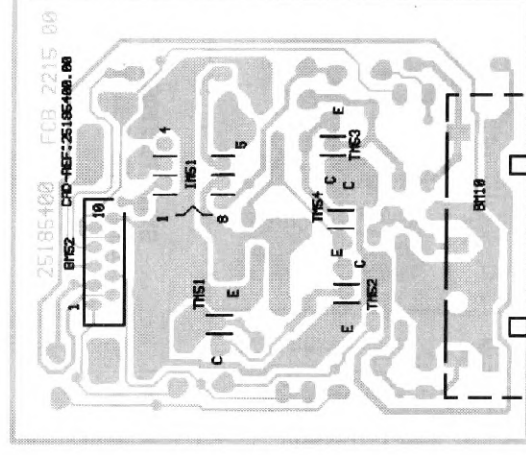
KEYBOARD MODULE - PLATINE CLAVIER - BEDIENTEILPLATTE -
PIASTRA COMANDI - PLATINA TECLADO

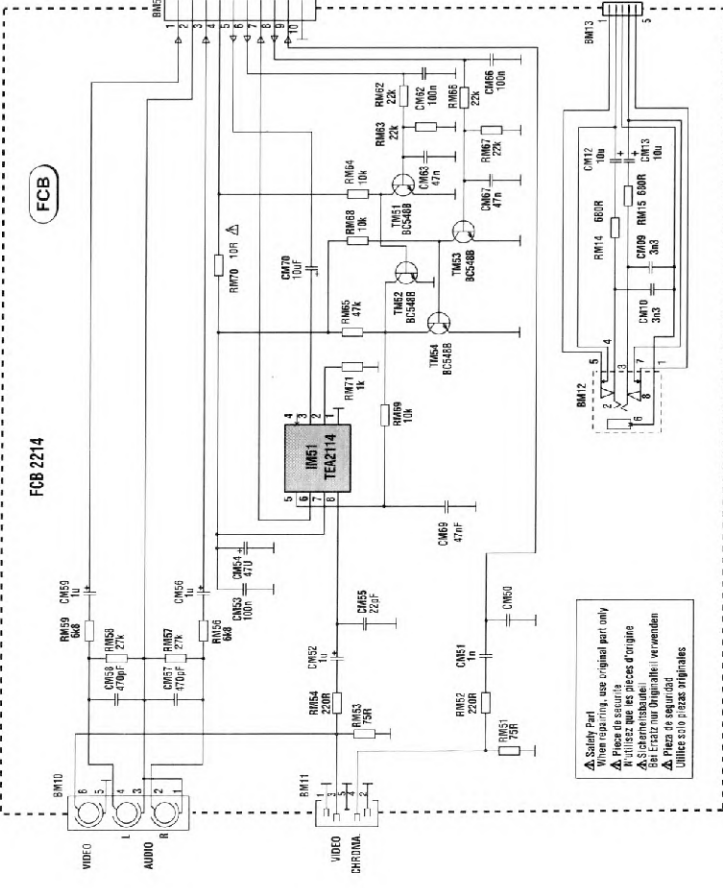
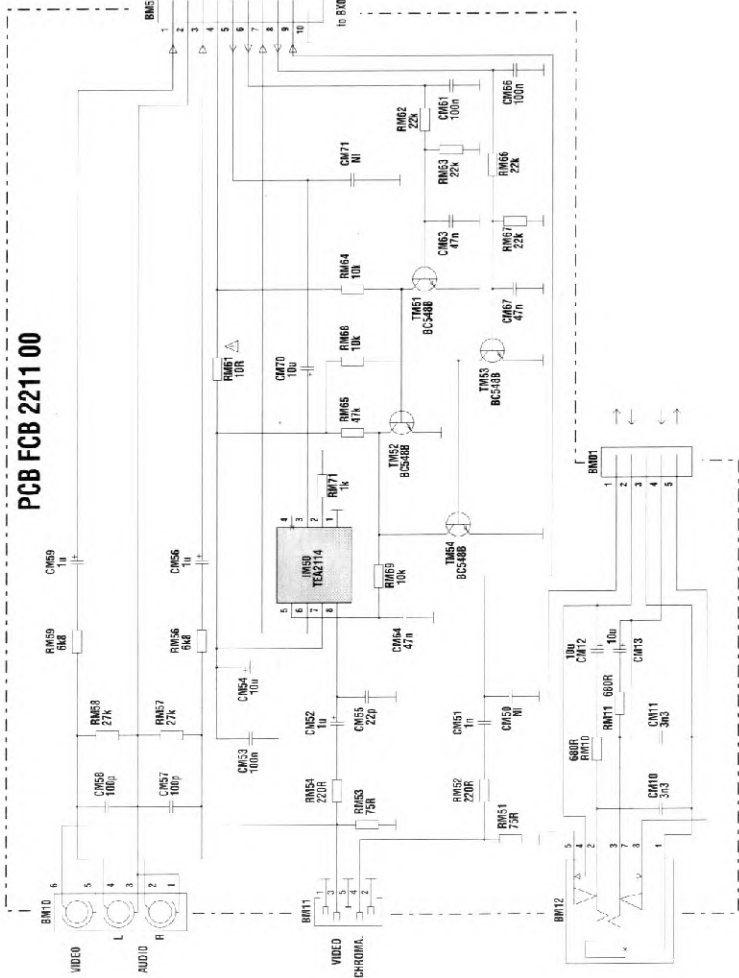


COMPONENT SIDE - COTE COMPOSANTS -
BESTÜCKUNGSSEITE -
LATO COMPONENTI - LADO COMPONENTES



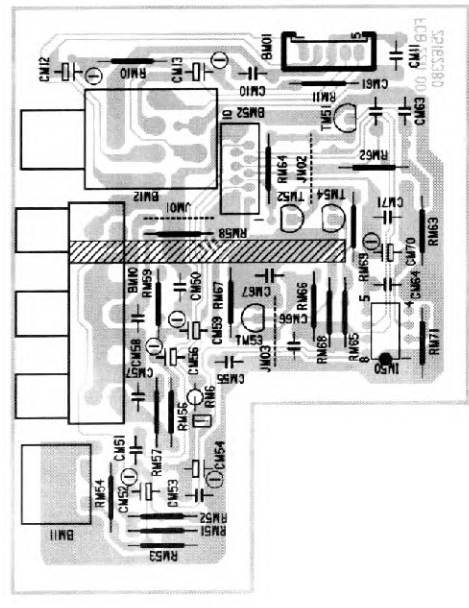
SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE -
LATO SOLDATURE - LADO SOLDADURAS



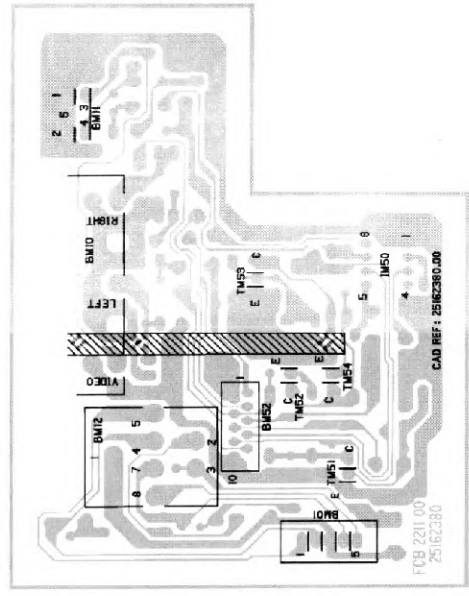


FCB 2211

COMPONENT SIDE CÔTE COMPOSANTS -
BESTÜCKUNGSSEITE - LATO COMPONENTI -
LADO COMPONENTES

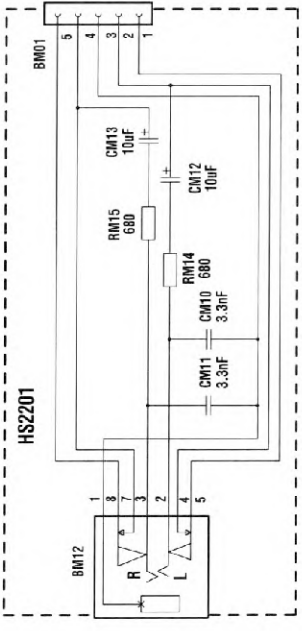


SOLDER SIDE - CÔTE SOUDURES - LÔTSEITE -
LATOSALDATURE - LADO SOLDADURAS

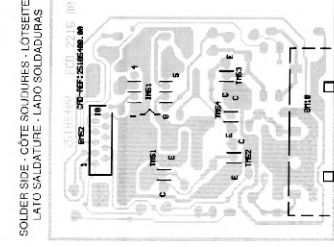
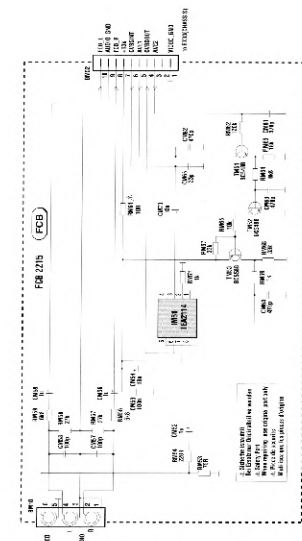
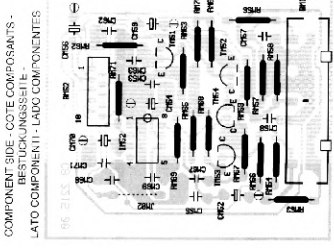
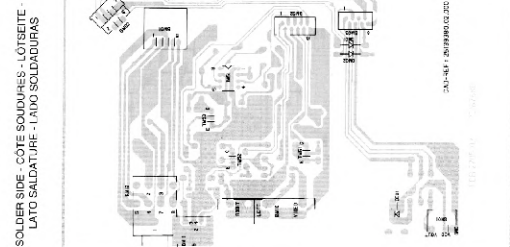
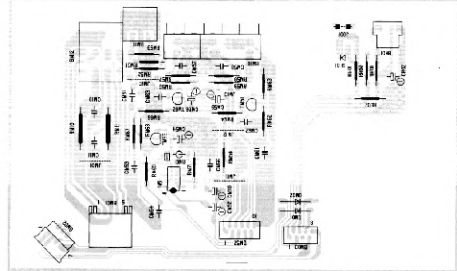
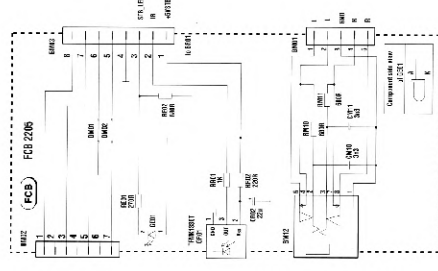
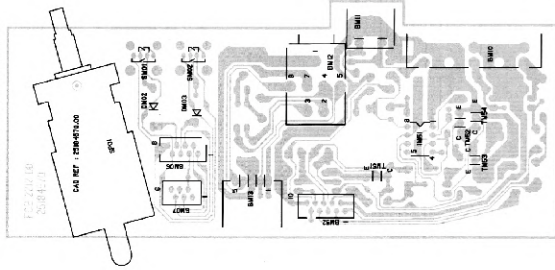
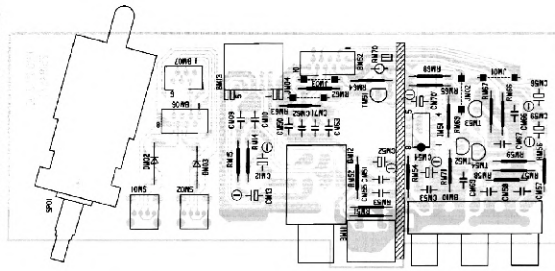
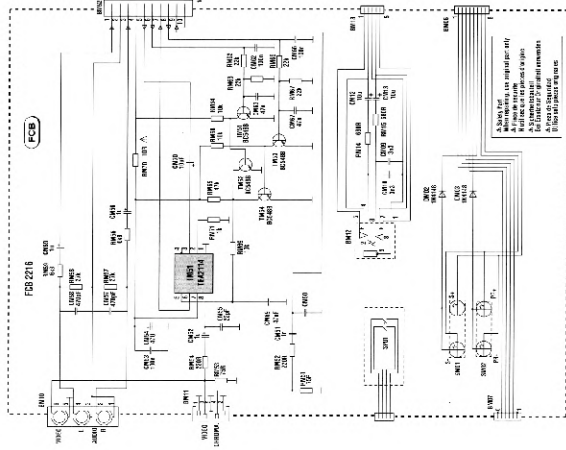


HEADPHONE-JACK SCHEMATIC DIAGRAM

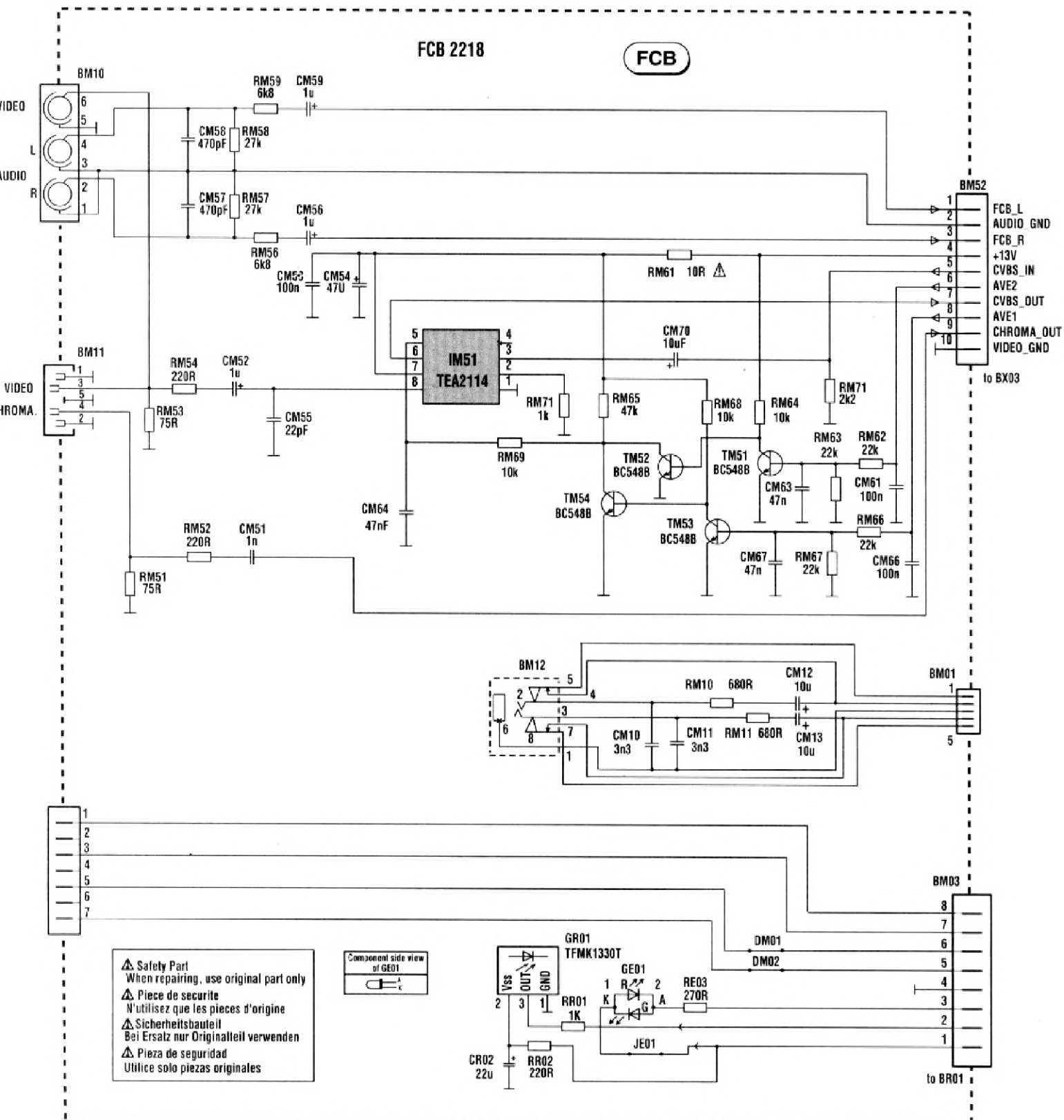
SCHEMA DE LA PRISE CASQUE
SCHALTBILD KOPFHÖRBUCHSE
SCHEMA PRESA PER CUFFIA
ESQUEMA TOMA AURICULARES



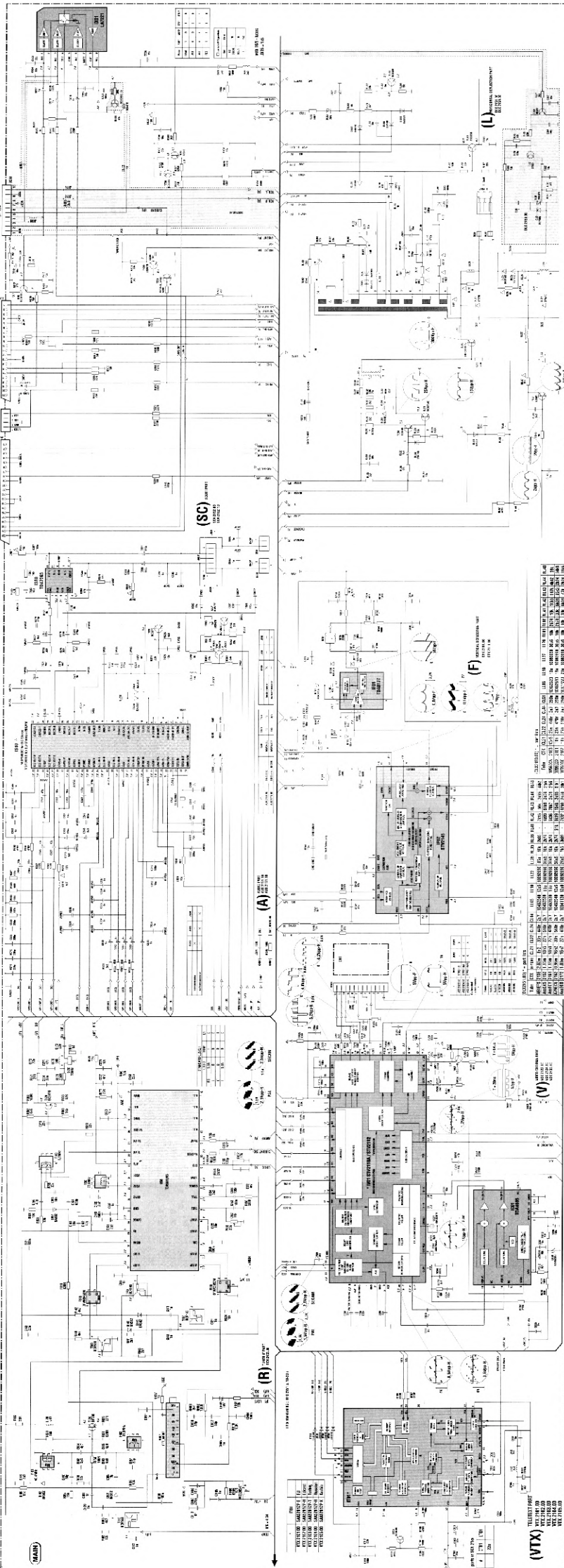
FRONT CONNECTOR BOARD - MODULE PRISE EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE - PLATINA MANDOS FRONTAL
SOLDER SIDE - CÔTE SOUDURES - LOTSEITE -
COMPONENT SIDE - CÔTE COMPOSANTS -
BESTÜCKUNGSSSEITE -
LATO COMPONENTI - LADO COMPONENTES



FRONT CONNECTOR BOARD - MODULE PRISE EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE - PLÁTINA MANDOS FRONTAL



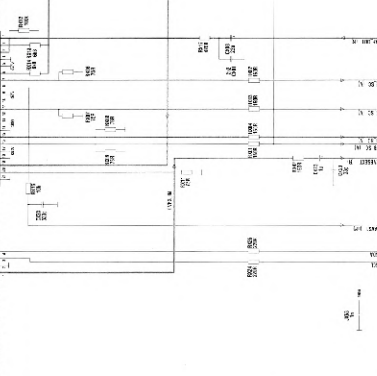
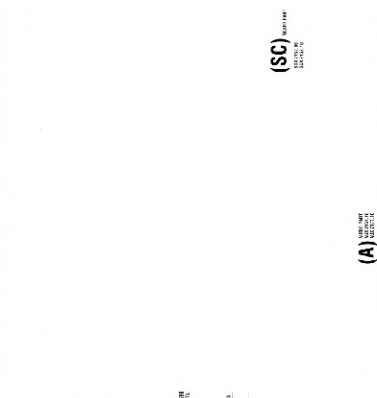
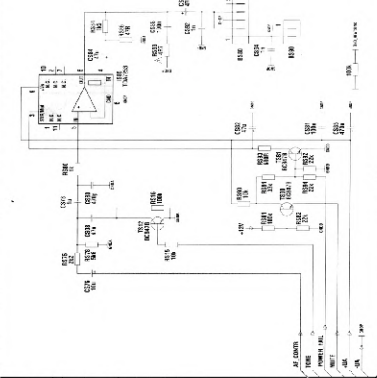
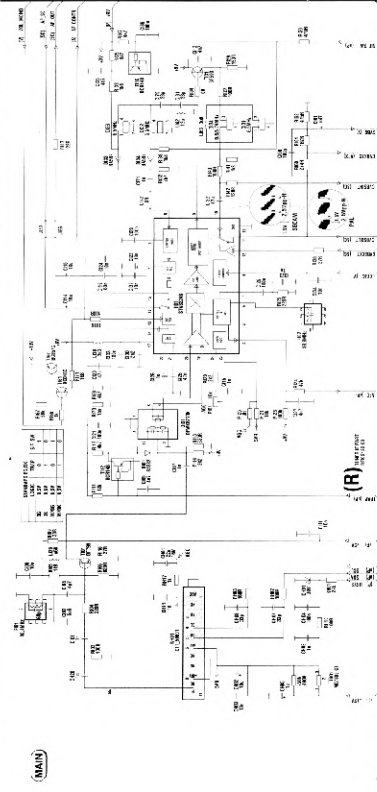
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHEMA PIASTRA COMPLETA KPL - SCHEMA PLATINA EQUIPADA (STEREO)



COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA (MONO)

SEITE

(MAN)

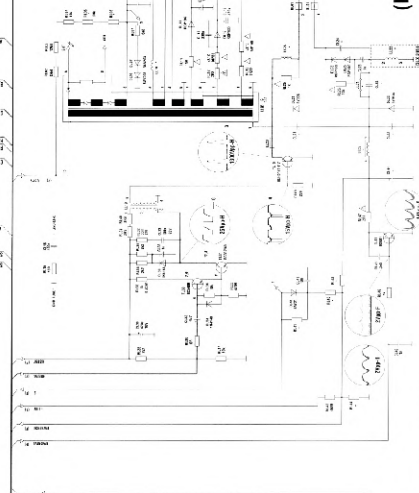
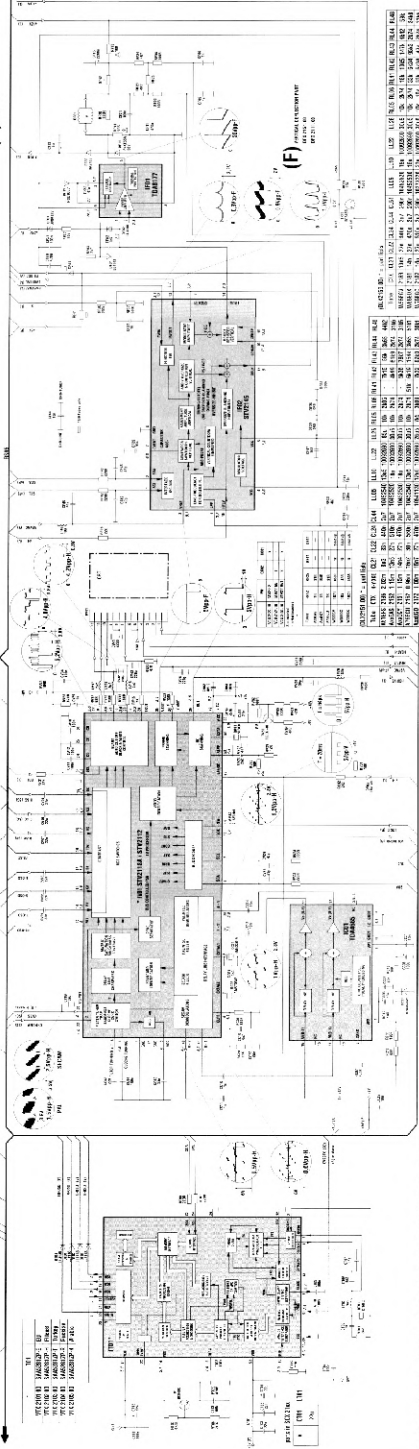


(SC) 6X4

(R)

(A)

(L)



T390F

Final test 02/98

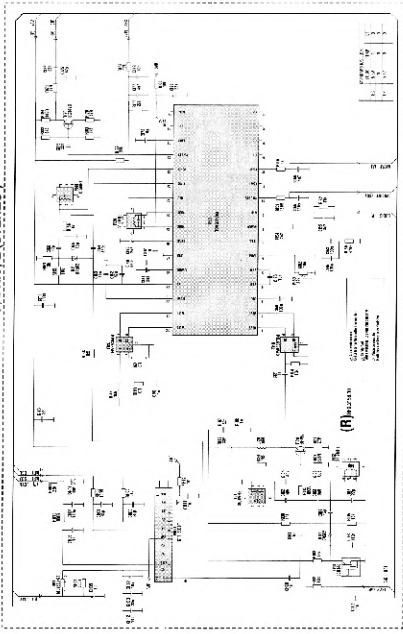
23

24

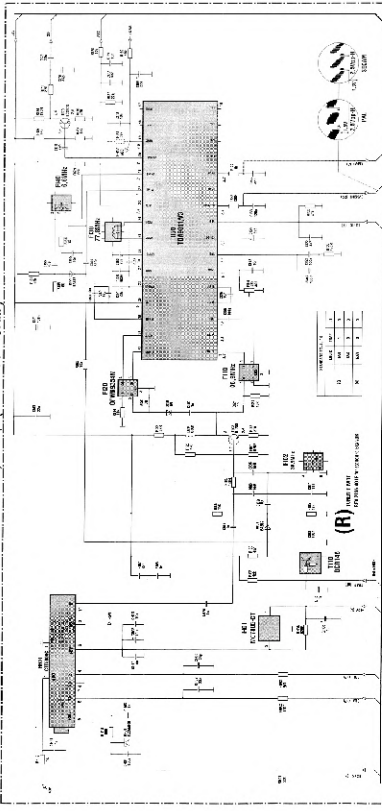
25

26

RF2156.10 - TUNER IF PART (O FOR STANDARD BG, DKK, L (STEREO))

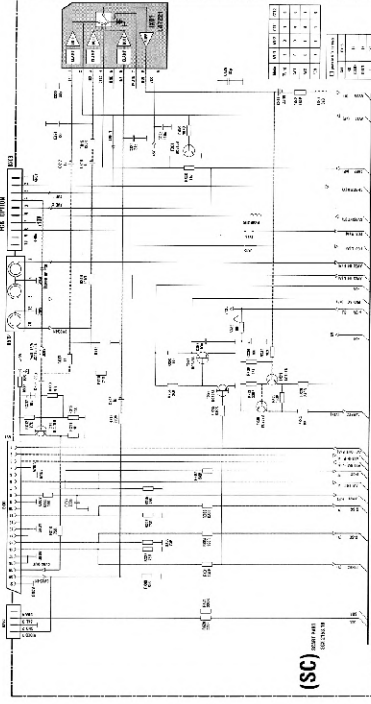


RF2156.40 - TUNER IF PART (O FOR STANDARD BG, DKK, L (STEREO / NICAM))

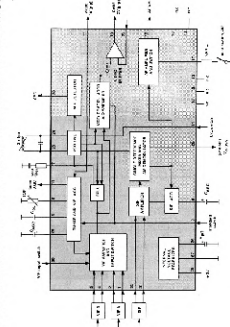


27

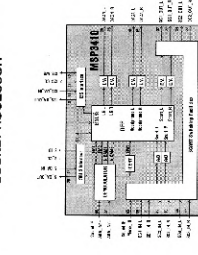
SCART INTERFACE MODULE - MODULE INTERFACE PERITELEVISION -
SCART INTERFACE - MODULO PRESA PERITEL - MODULO EUROATOMA



TD9811 BLOCK DIAGRAM
MULTISTANDARD VIF - PLL WITH OSS-IF AND AM DEMODULATOR

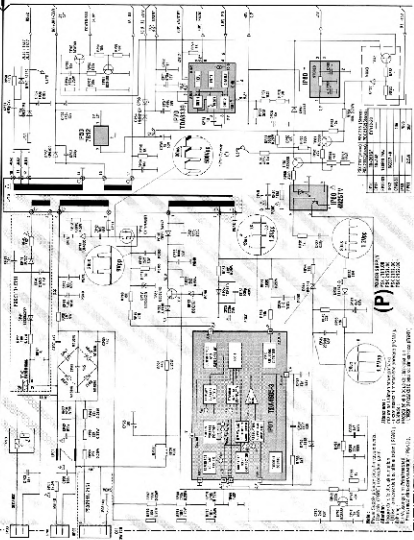
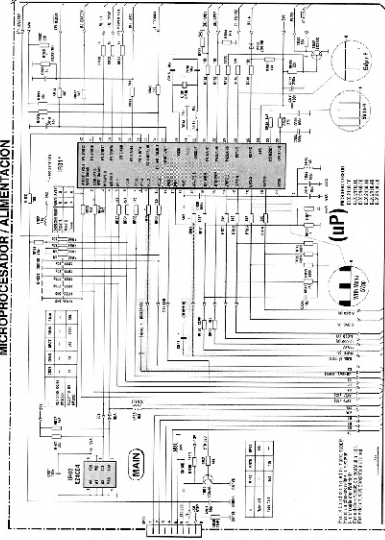


MSP3400 / MSP3410 BLOCK DIAGRAM
SOUNDPROCESSOR



29

MICROPROCESSOR / POWER SUPPLY - MICROPROCESSEUR / ALIMENTATION -
MIKROPROZESSOR / NETZTEIL - MICROPROCESSORE / ALIMENTAZIONE -
MICROPROCESADOR / ALIMENTACION



30

28

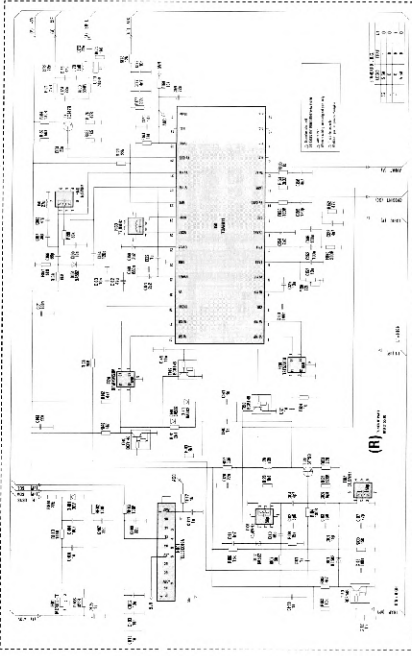
27

29

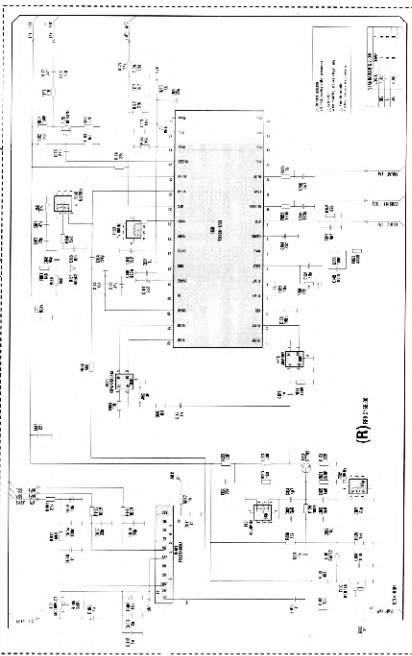
30

TX92F

RF2135.00 - TUNER IF PART I/O FOR STANDARD LL, BG, (STEREO / NICAM)

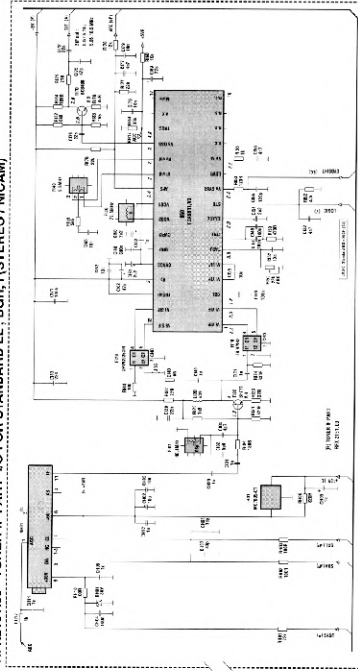


RF2136.00 - TUNER IF PART I/O FOR STANDARD BG, DKS, L (STEREO / NICAM)

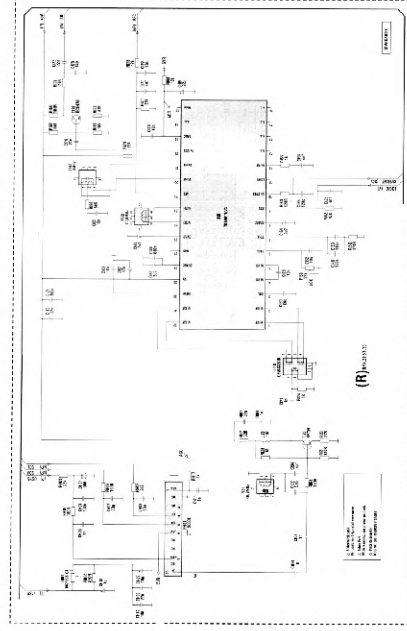


35

RF2151.00 - TUNER IF PART I/O FOR STANDARD LL, BGH, I (STEREO / NICAM)

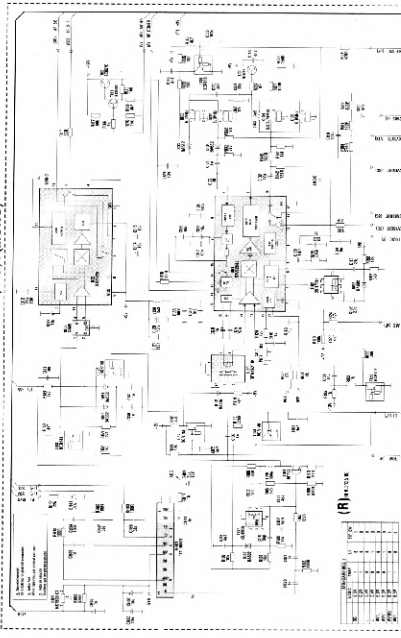


RF2157.10 - TUNER IF PART I/O FOR STANDARD (STEREO / NICAM)

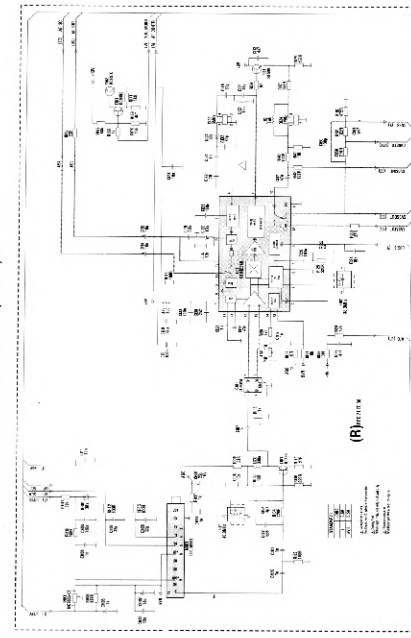


37

RF2135.00 - TUNER IF PART I/O FOR STANDARD LL, BG, I (MONO)

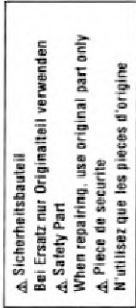


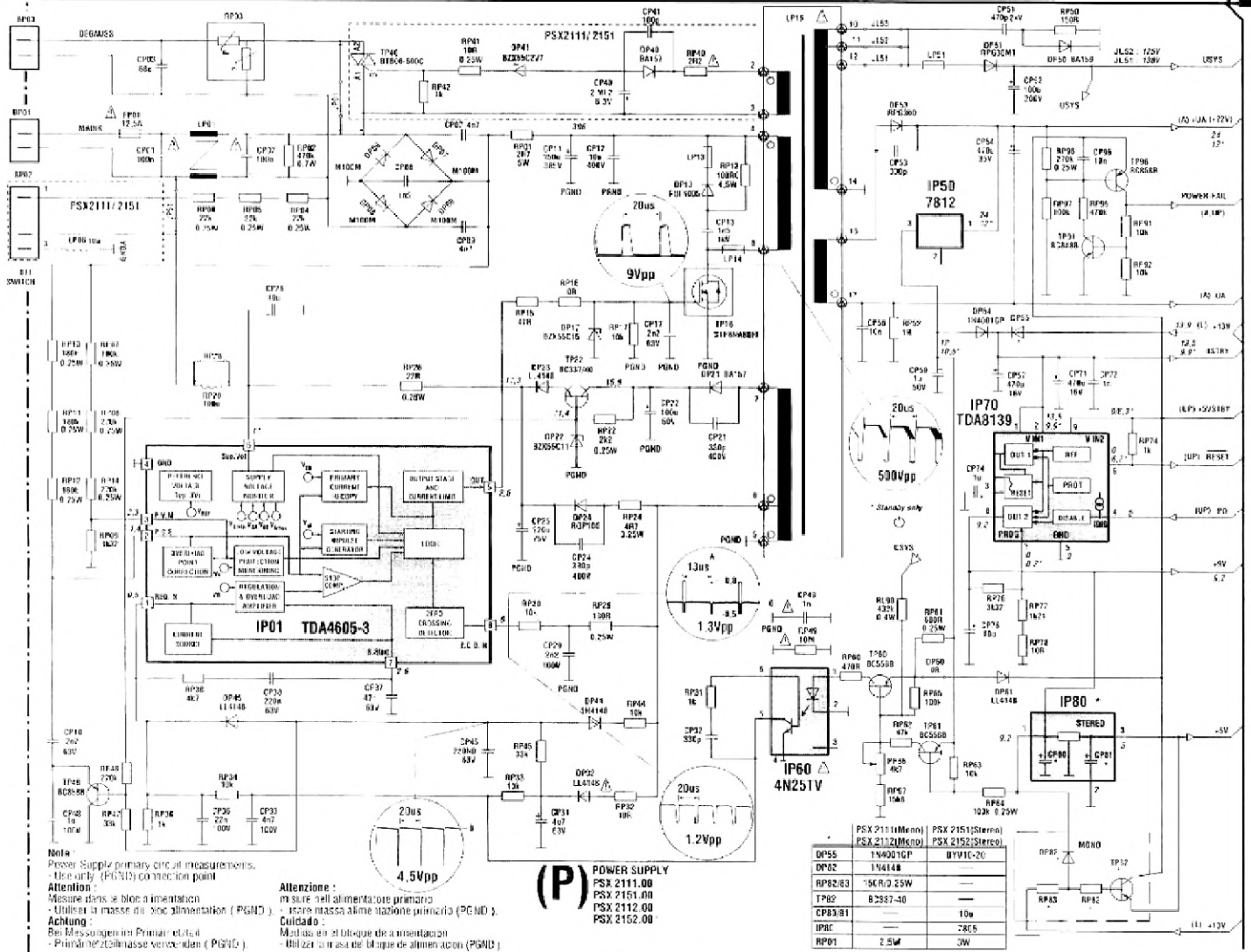
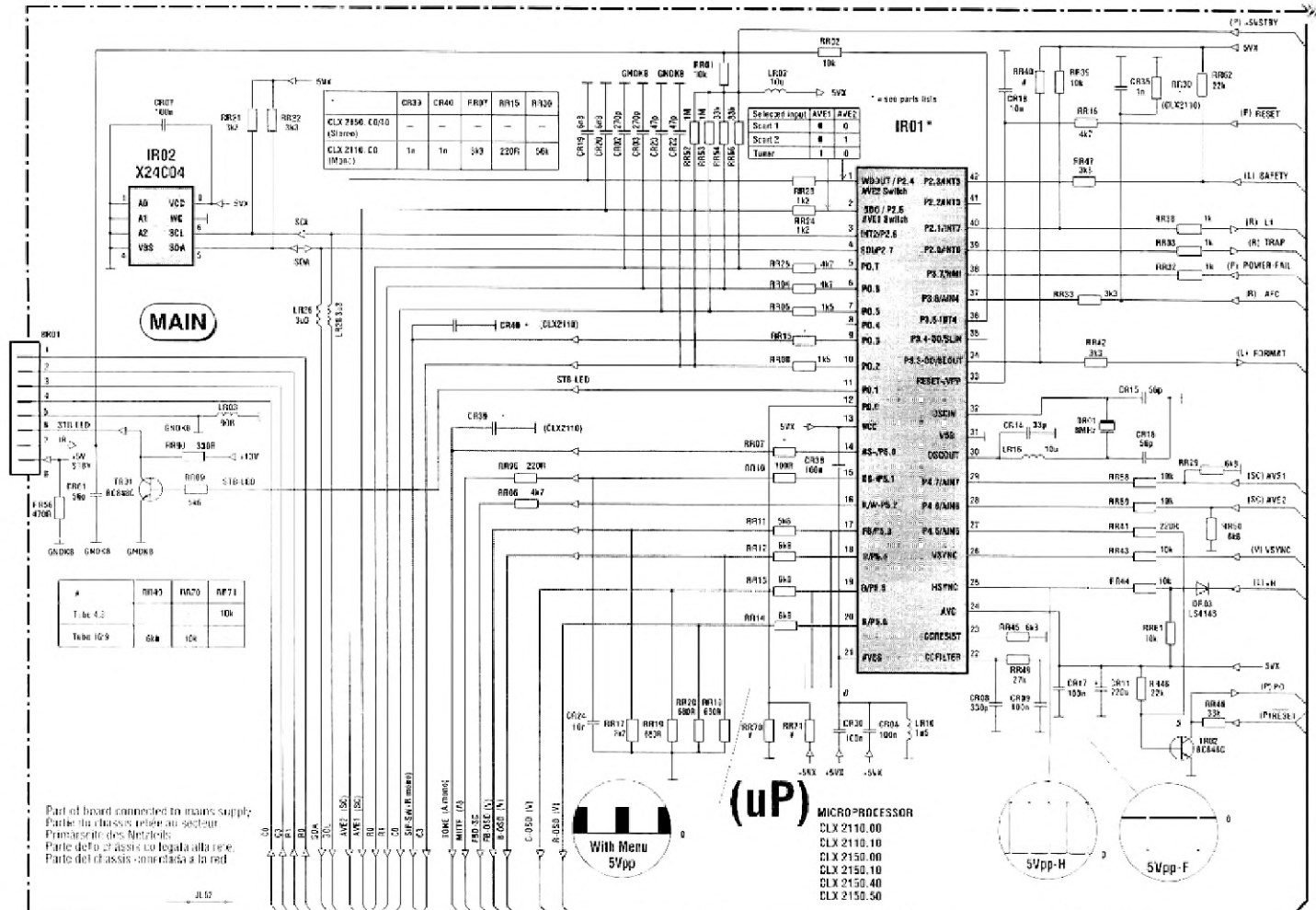
RF2117.00 - TUNER IF PART I/O FOR STANDARD I (MONO)

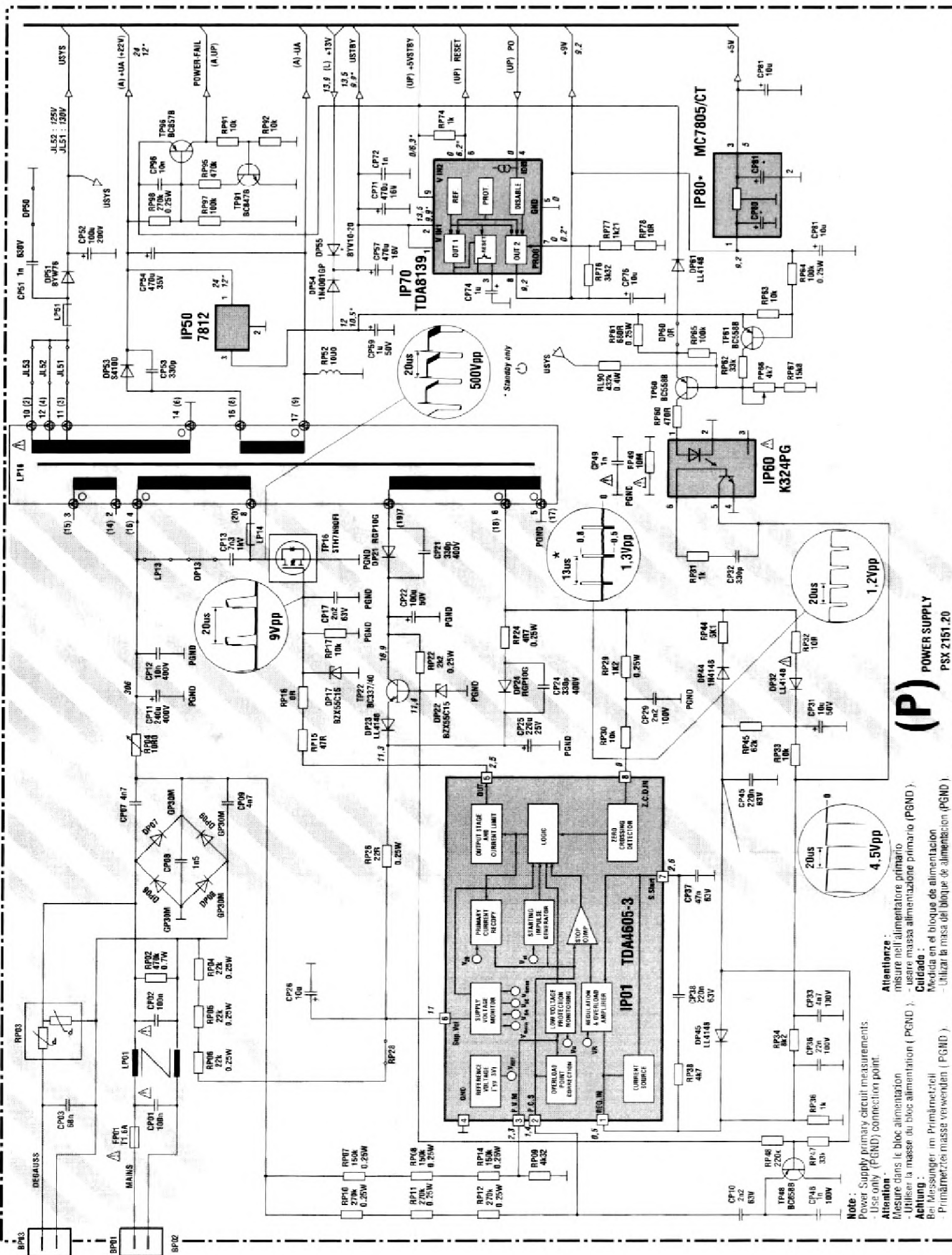


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CRT.X.2111.00







(P) POWER SUPPLY PSX 2151.20

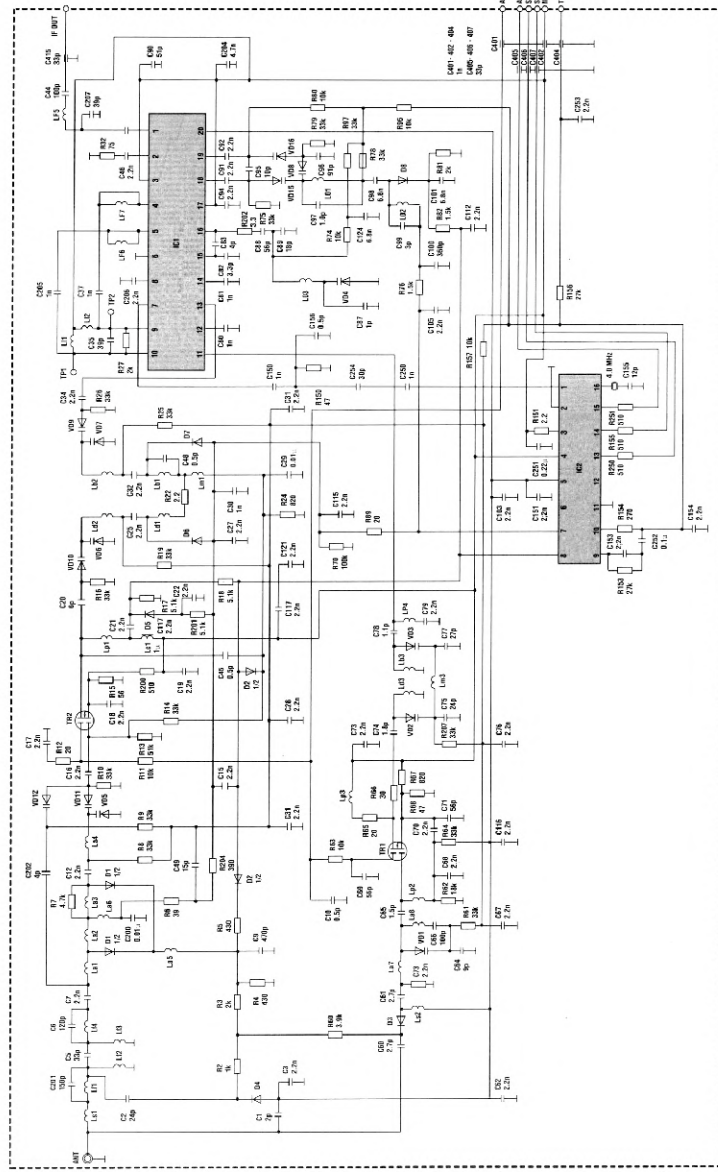
Note:
Power Supply primary circuit measurements
- Use only (PGND) connection point.

Attention:
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (PGND).
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (PGND).

Attenzione:
misure nell'alimentatore primario
- usare massa alimentazione primario (PGND).
Cuidado:
Medida en el bloque de alimentación
- Utilizar la masa del bloque de alimentación (PGND).

VHF / UHF TUNER TELE 9X 009A

(For information only)



TELE SCHALTUNGEN UND TRANSISTOREN - CIRCUITI INTEGRATI TRANSISTOR - CIRCUITOS INTEGRADOS Y TRANSISTORES

VHF / UHF TUNER CTT5000

(For information only)

