

HITACHI

SERVICE MANUAL

PAL/NTSC

12

YS

No.

CPT-2950SR -691

V1 Chassis

CPT-2950SR

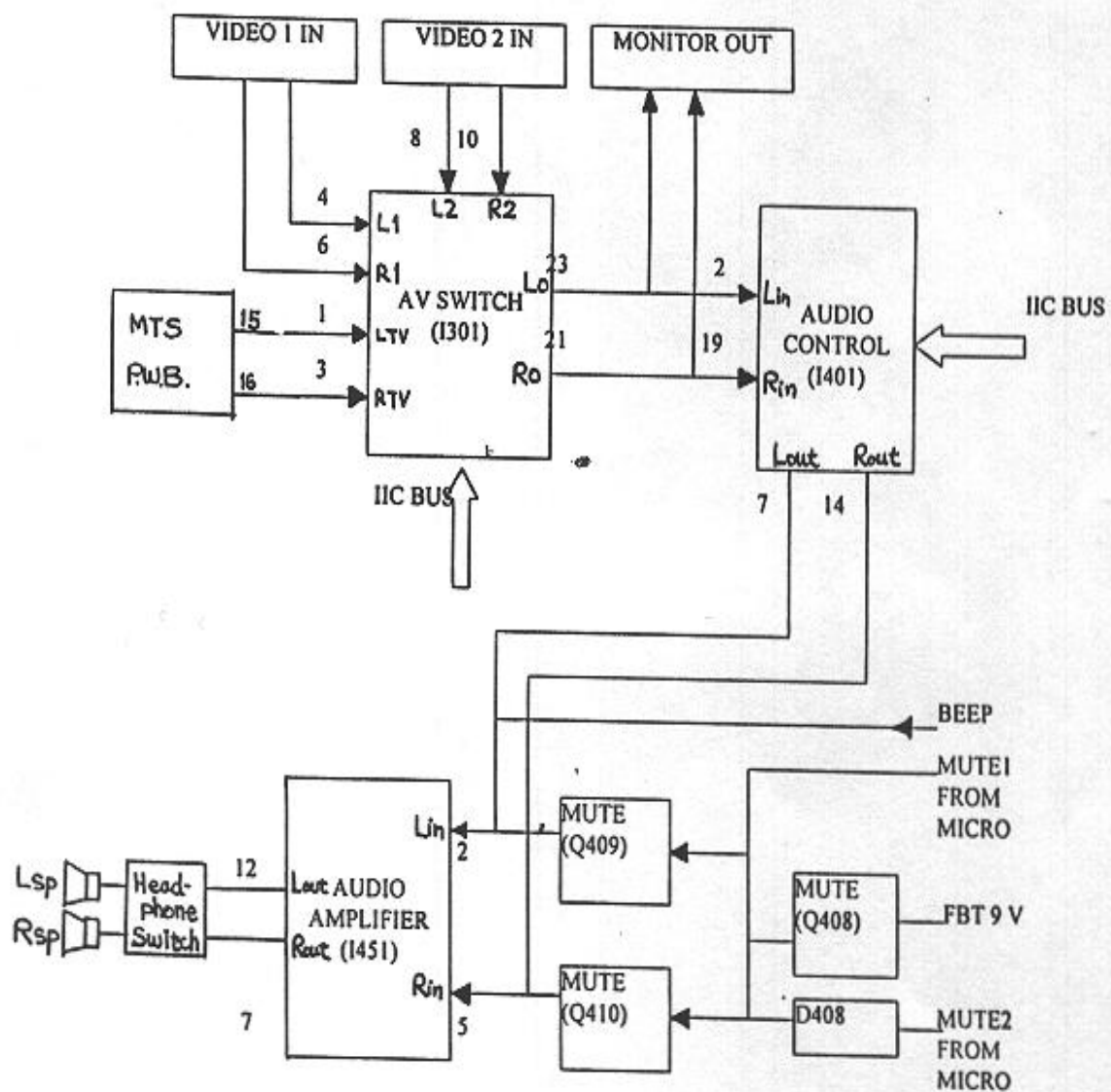
CAUTION: Before servicing this chassis, it is important that the service technician reads the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

CONTENTS

SAFETY PRECAUTIONS	
PRODUCT SAFETY NOTICE	
SPECIFICATIONS	
CONTROLS	
REMOTE CONTROL UNIT	
CIRCUIT DESCRIPTION	
ADJUSTMENT INSTRUCTIONS	
BASIC CIRCUIT DIAGRAM	
PRINTED WIRING BOARD	
REPLACEMENT PARTS LIST	

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

COLOR TELEVISION



CIRCUIT DESCRIPTION

Selection and CPU circuitry

IC type, M37221MA, performs functions like IIC controls, channel selection, on-screen displays, search tuning, systems selection amongst others. The pin functions of M37221MA is presented in table form as shown below :

PIN NO.	NAME	I/O	FUNCTION
1	H.BLK	Input	Horizontal synchronous signal i/p pin for OSD
2	V.BLK	Input	Vertical synchronous signal i/p pin for OSD
3	RETURN1	Input	Return signal of front panel matrix
4	RETURN2	Input	Return signal of front panel matrix
5	COMB	Output	Output for NTSC and VIDEO signal
6	TIMER	Output	Output for timer LED. H : timer set, L : normal
7	N.C.		
8	ON OFF MUTE	Output	Mute control during power on/off
9	V.M Cont.	Output	Velocity Modulation control on/off
10	R/C	Input	Remocon serial data i/p from receiver unit
11	SYNC	Input	Horizontal signal i/p. Used to detect presence of RF signal after A/D conversion
12	50/60	Output	Forced output to control frequency of receiving picture
13	SCAN1	Output	Output signal at front panel to control program up/down
14	SCAN2	Output	Output signal at front panel to control volume up/down
15	SCAN3	Output	Output signal at front panel to control Function & TV/VIDEO keys
16	POWER	Output	Power ON/OFF control. H: ON, L : OFF
17	BEEP	Output	BEEP sound o/p. L:off, PWM 50% duty cycle : ON
18	GND		
19	X.IN	Input	Clock in
20	X.OUT	Output	Clock out
21	GND		
22	Vcc		
23	S-DET	Input	S VIDEO input detect.
24	N.C.		
25	RESET	Input	Resets MCU via RESET IC, I003. H: normal, L : RESET
26	CH.MUTE	Output	Mute control during channel change
27	SPATIALIZER	Output	Spatializer control o/p
28	N.C.		
29	AFC	Input	AFC voltage i/p. Used together with SYNC to detect presence of RF signal after A/D conversion
30	N.C.		
31	SW1	Output	Select main signal system
32	SDA_1	I/O	IIC data i/o
33	SW2	Output	Select main signal system
34	SCL_1	I/O	IIC clock select
35	SW3	Output	Select main signal system
36	SW4	Output	Select main signal system
37	SDA	I/O	IIC data i/o for EEPROM
38	SCL	I/O	IIC clock select for EEPROM
39	BLK	Output	OSD blanking output signal
40	B	Output	Blue output for OSD
41	G	Output	Green output for OSD
42	R	Output	Red output for OSD

TABLE 1. IIC BUS CONTROL/ADDRESS

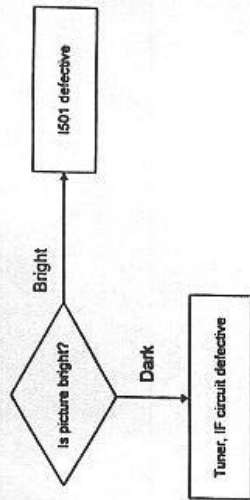
ADJ No.	NAME OF ADJUSTMENT	DATA	INITIALIZE	DJUST WHEN CHANG		
		DISPLAY	DATQA	EMOR	CPT	V/C IC
1	R CUT OFF	0~255	0	○	○	○
2	G CUT OFF	0~255	0	○	○	○
3	B CUT OFF	0~255	0	○	○	○
4	G DRIVE GAIN	0~255	80	○	○	○
5	B DRIVE GAIN	0~255	80	○	○	○
6	HORIZONTAL POSITION	0~31	10	○	○	○
7	SUB-COLOUR	-127~+127	0	○	X	X
8	SUB-TINT	-63~+63	0	○	X	X
9	SUB-BRIGHT	-127~+127	0	○	X	X
10	SUB-CONTRAST	-127~+127	0	○	X	X
11	SUB-SHARPNESS	-31~+31	0	○	X	X
12	Y-SUB-CONTRAST	-16~+16	0	○	X	X
13	P/N KILL	0, 1	0	○	X	X
14	DTrp-SWITCH	0, 1	1	○	X	X
15	R-MON	0, 1	0	○	X	X
16	B-MON	0, 1	0	○	X	X
17	SUB-RGB-CONTRAST	-127~+127	0	○	X	X
18	AUDIO-ATT GAIN	0~127	0	○	X	X
19	γ ON/OFF	0, 1	0	○	X	X
20	WHITE PEAK LIMIT SWITCH	0, 1	0	○	X	X
21	PEAK ACL SWITCH	0, 1	0	○	X	X
22	BLUE BACK MODE SELECT	0~3	0	○	X	X
23	Y-DELAY TIME	0~7	4	○	X	X
24	APC MODE	0~3	0	○	X	X
25	H-OUT CLOCK SWITCH	0, 1	0	○	X	X
26	B.S. OFF	0, 1	0	○	X	X
27	CHROMA TRAP ON/OFF SW	0, 1	0	○	X	X
28	BLACK OFFSET SECAM JUDGESW	0, 1	0	○	X	X
29	P/N TOP ON/OFF SW	0, 1	0	○	X	X
30	PAL GATE POSITION	0, 1	0	○	X	X
31	COLOUR LIMIT ON/OFF	0, 1	0	○	X	X
32	WIDE V-BLK ON/OFF	0, 1	0	○	X	X
33	WIDE PICTURE MUTE ON/OFF	0, 1	0	○	X	X
34	SECAM DETECT	0, 1	0	○	X	X
35	3.58TRAP	0, 1	0	○	X	X
36	FORCE B/WSWITCH	0, 1	0	○	X	X
37	X' TAL MODE	0~7	0	○	X	X
38	R-Y SECAM W/B	0~15	8	○	X	X
39	B-Y SECAM W/B	0~15	8	○	X	X
40	COLOUR LIMIT LEVEL	0~3	2	○	X	X
41	P/N COLOR AMPLITUDE ADJUST	0~3	0	○	X	X
42	TOF Q ADJUSTMENT	0~3	2	○	X	X
43	TOF FO ADJUSTMENT	0~3	0	○	X	X
44	CHROMA TRAP Q CONTROL	0~3	2	○	X	X
45	CHROMA TRAP FO CONTROL	0~3	2	○	X	X
46	BLACK STRETCH START POINT	0~7	4	○	X	X
47	DC CORECTION LEVEL SW	0~7	0	○	X	X
48	APA-CON PEAK FO SWITCH	0~3	2	○	X	X
49	APL DETECT VOLTAGE	0~7	4	○	X	X
50	APL SENSITIVITY	0~7	0	○	X	X
51	HALF TON GAIN SW	0~3	2	○	X	X
52	H BLK POSITION	0~7	0	○	X	X
53	V. FREQUENCY	0~3	0	○	X	X

TABLE 1. IIC BUS CONTROL/ADDRESS(CONTINUE)

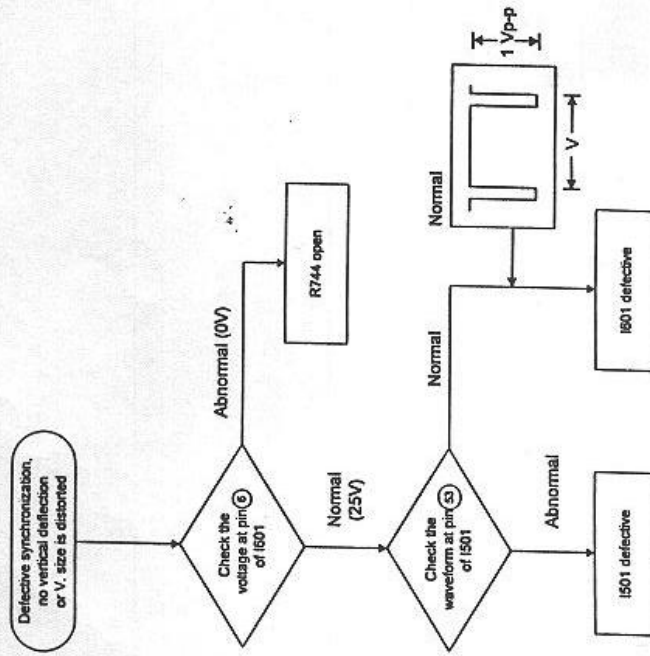
54	V. POSITION	0~7	0	○	○	○
55	V. SIZE	0~127	40	○	○	○
56	SW FOR SIGNAL OF DET	0~3	2	○	X	X
57	V. S CORRECTION	0~127	40	○	○	○
58	SELECT FOR BASE LINE OF DRIVE	0, 1	0	○	○	○
59	V LINEARITY	0~31	0	○	○	○
60	V-COUNT DOWN MODE SW	0, 1	0	○	X	X
61	ALL DRIVEGAIN FORCE CENTRE SW	0, 1	0	○	X	X
62	SW FOR TIME CONSTANT OF V RAMP	0, 1	1	○	X	X
63	SELECT FOR POSITION OF FRONT OF VERTIC	0~63	3F	○	X	X
64	BLANKING ON/OFF	0, 1	0	○	X	X
65	SELECT FOR POSITION OF BACK OF VERTICA	0~127	0	○	X	X
66	SW FOR DET LEVEL OF NOIZE	0~3	2	○	X	X
67	SELECT FOR PRE-MUTE OF PICTURE	0~63	3F	○	X	X
68	SELECT FOR MATRIX AT 1H	0, 1	0	○	X	X
69	SELECT FOR AFTER MUTE OF PICTURE	0~127	0	○	X	X
70	SW FOR COLOR & Q OF SECAM ON WEEK SIGN	0, 1	0	○	X	X
71	ADJUSTMENT FOR AMPRITUD OF COLOR ON SE	0, 1	0	○	X	X
72	SELECT FOR TIME CONSTANT OF DE-EMPHASI	0, 1	0	○	X	X
73	SECAM GATE POSITION SW	0, 1	0	○	X	X
74	SECAM V-ID ON/OFF SWITCH	0, 1	0	○	X	X
75	SECAM KILLER SENSITIVITY	0, 1	0	○	X	X
76	BELL FILTER ADJUST	0~3	1	○	X	X
77	INT/EXT SW	0, 1	0	○	X	X
78	AUDIO MUTE ON/OFF	0, 1	0	○	X	X
79	COLOR SYSTEM SW	0~3	0	○	X	X
80	MUTE MODE	0~3	0	○	X	X
93	OPERATE AT PICK UP NOIZE	0, 1	0	○	X	X
94	INPUT LEVEL ADJUST	0~63	20	○	X	X
95	5FH MONITOR ON/OFF	0, 1	0	○	X	X
96	STEREO VCO ADJUST	0~63	20	○	X	X
97	PILOT CANCELER ON/OFF	0, 1	0	○	X	X
98	FILTER ADJUST	0~63	3F	○	X	X
99	FILTER ADJUST	0~63	20	○	X	X
100	LOW FREQ. SEPARATION ADJUST	0~63	20	○	X	X
101	HIGH FREQ. SEPARATION ADJUST	0, 1	0	○	X	X
102	5FH MONITOR	0~63	20	○	X	X
103	SAP VCO ADJUST	0, 1	1	○	X	X
104	MUTE ON/OFF	0~63	15	○	X	X

TROUBLESHOOTING

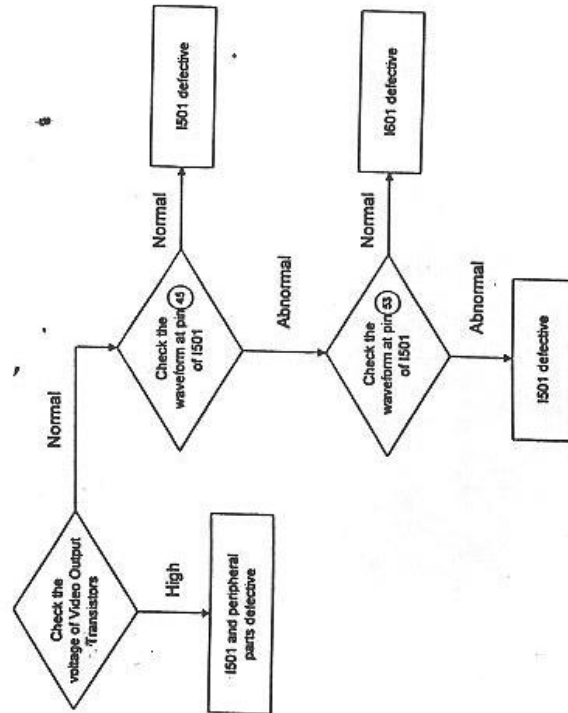
④ NO SYNC.



⑥ DEFECTIVE SYNCHRONIZATION, NO VERTICAL DEFLECTION OR V. SIZE IS DISTORTED

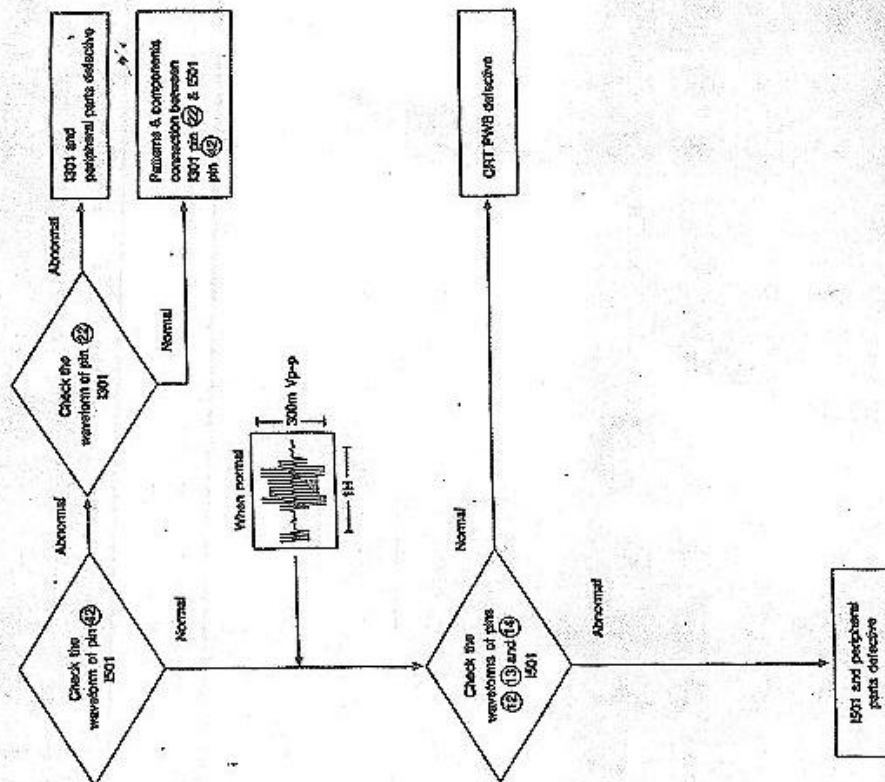


⑤ ONLY RASTER OR FLYBACK TRACE APPARENT ON PICTURE

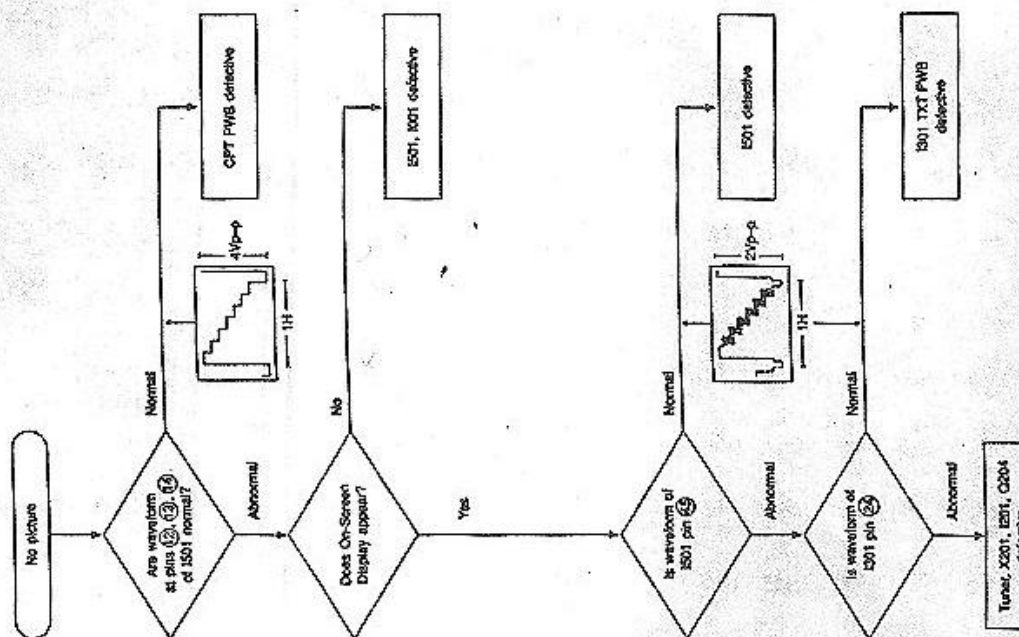


TROUBLESHOOTING

⑥ NO COLOR



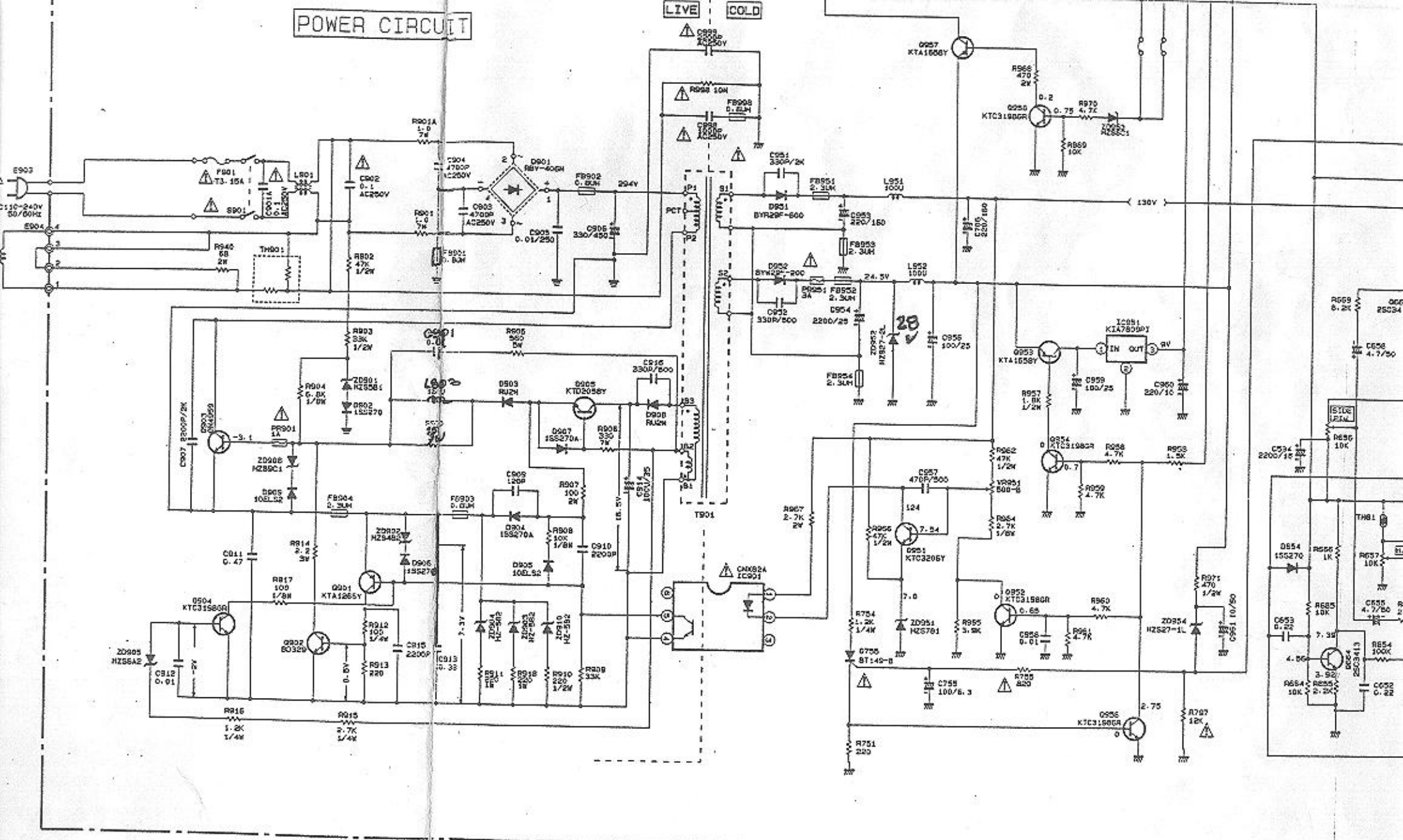
⑦ NO PICTURE

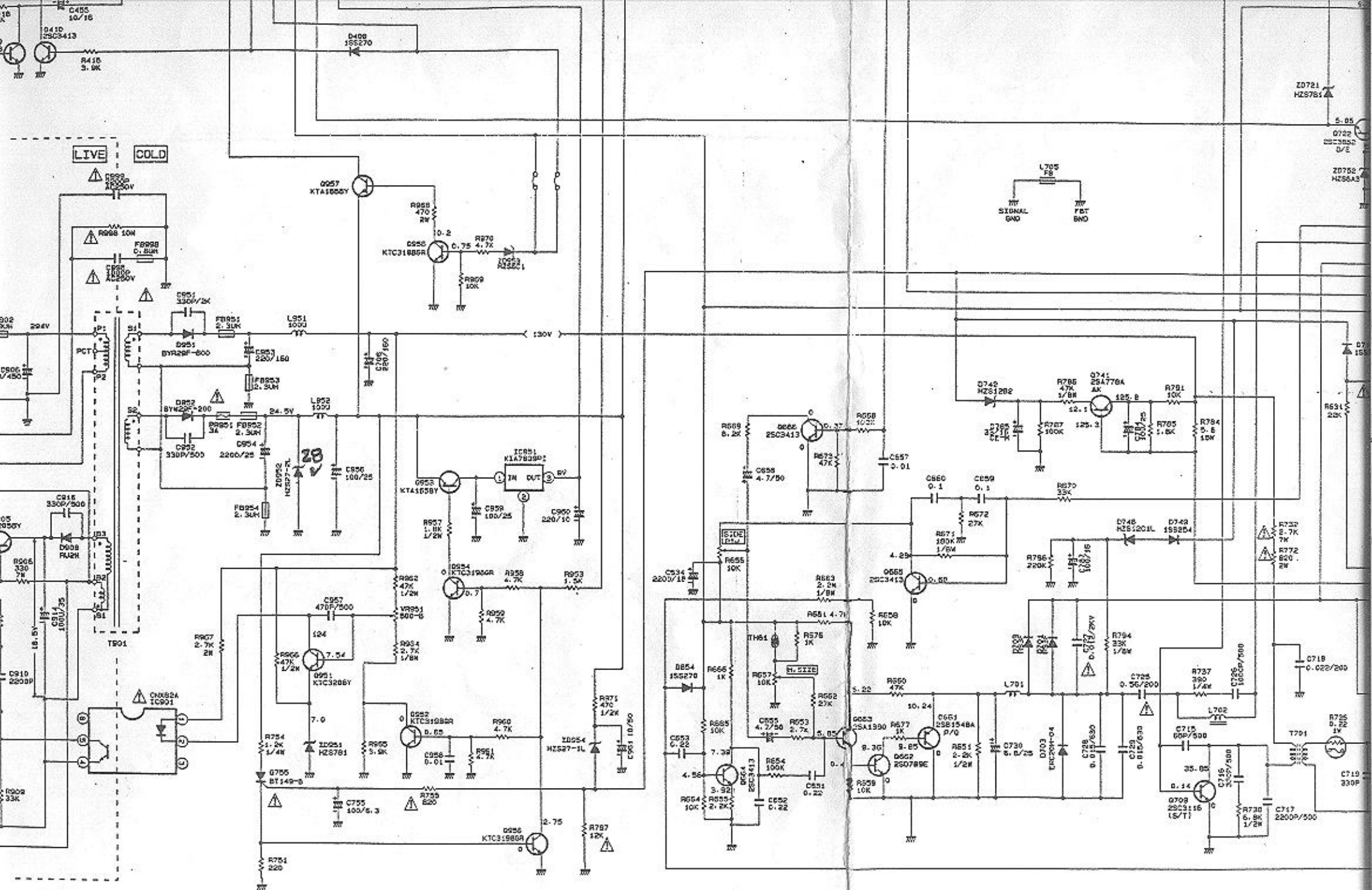


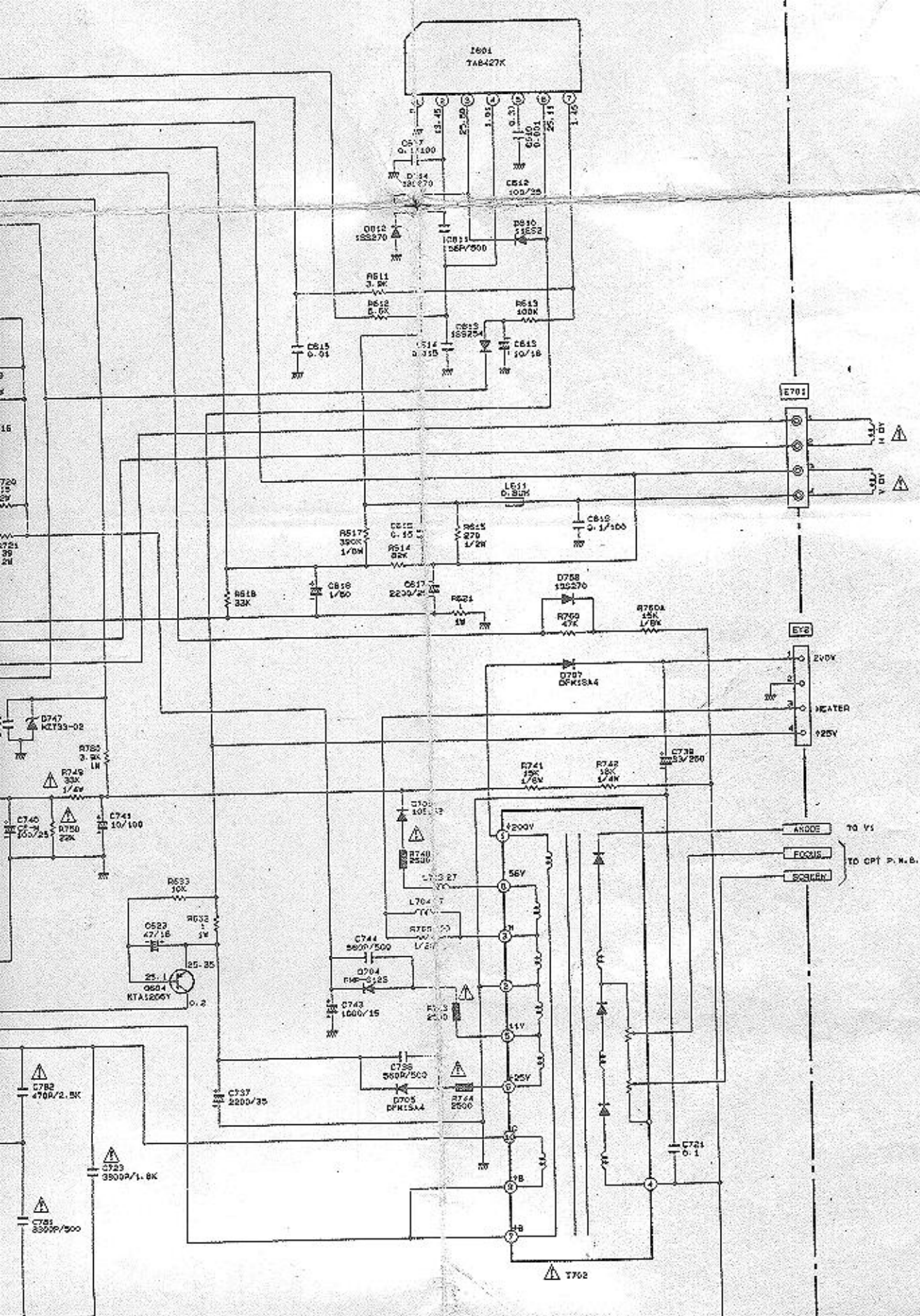
Desarme del modelo CPT-2950SR	
Codigo	Detalle
2004022	CIRC.INT.AN7147N
2122652M	FERRITE
2123461M	ANILLOS DE FERRITE
2123462M	FERRITE 2,3UHY
2123468M	FERRITE 0,8UHY
2123781R	BOB.PEAK 100UHY
2124183	BOBINA CHOQUE
2165404	BOBINA DE LINEALIDAD
2312171	TTOR 2SC3852
2314792	TTOR. BUT12AF/ON4959/BUH417
2315933	TTOR 2SB1548A
2320663M	2SC1213AC
2321112M	2SA778AK-02
2326216	TTOR 2SC3116 S/T
2326872R	TTOR DTC114EC
2326873R	TTOR. DTC144ES
2327752M	TTOR 2SA1390
2327753M	TTOR.2SA1390
2327773M	TTOR 2CS3413C/D
2338314	DIODO RBV-406M
2340371	TERMISTOR
2349983	DIODO BYR 29F-600
2357605-A	TRC 29" A68AGA20X401 (RCA)
2410800	PARLANTE ELIPTICO
2634731	LLAVE SWP
2672041	JACK DE AURICULARES
2693853	TERMINAL SVIDEO
2693884	JACK RCA
2698673	ZOCALO TRC
2723102J	CONECTOR
2742082-A	CABLE DE ALIMENTACION
2791754R	BOBINA FILTRO
2917783	CIRC.INT.CNX82A
3308407-A	TECLADO
3453094-A	TAPA TRASERA
3512113-A	CAJA DE EMBALAJE
3785043	TRABA DE PUERTA
3792871-A	BOTON DE ENCENDIDO
7012235-A	LIST.SERVICE OFICIAL
7012442-A	MANUAL DE INST.
AL00095	CEL 330UF 450V
BG01391	SAW FILTER
BH00206R	BOBINA FL-11Z 27UHY
BH00615	BOBINA VCO L203

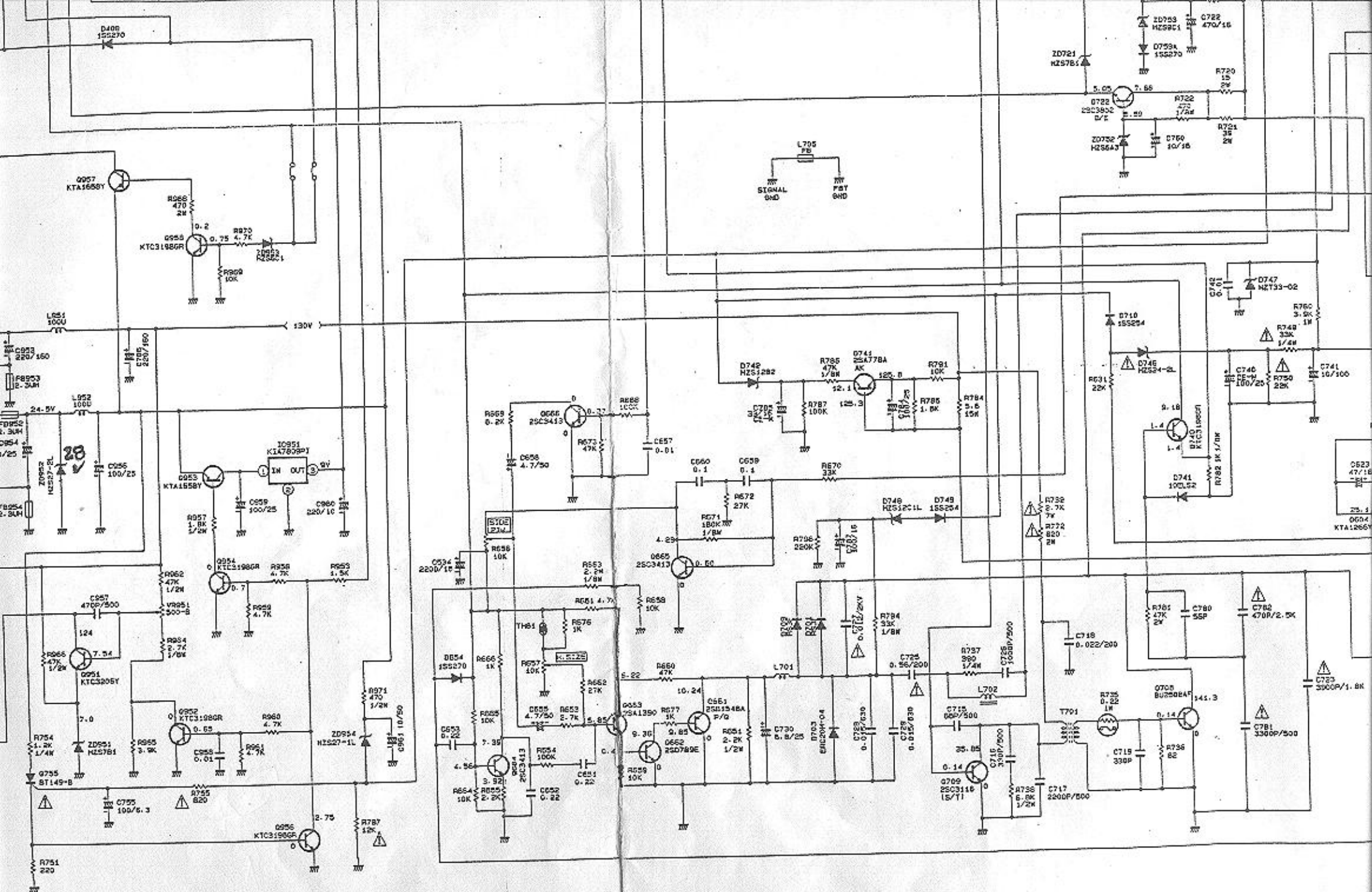
BH00734R	BOBINA PEEK 100UHY
BH00737R	BOBINA CHOQUE 180UHY
BP00661	CRISTAL 16.2 MHZ
BP00791	SAW FILTER
BS00011	TRANSF.DRIVER HORIZONTAL
BT00952	TRANSF.SWITCHING
BW00444	FLYBACK
BZ02121	FILTRO DE LINEA
CF01221	TTOR BD329
CF01421R	TTOR KTC3198GR
CF01431R	TTOR KTA1266Y
CF01831	TTOR KTD2058Y
CF01851	TTOR KTA 1658Y
CH00681M	DIODO 11ES2 200V .
CJ00131	TERMISTOR PTC
CJ00161R	TTOR BT149-B
CP01831	CIRC.INT.M62420SP
CP02411	CIRC.INT.KIA7805PI
CP03651	I.C. TA8427K
CP03771	I.C. LA7566
CP03821	I.C. TB1226AN
CP03981	I.C. S24C08A
CP04041	CIRC.INT.UPC1854BCT
CP04771	CIRC.INT.KIA7809PI
CP04802U	CIRC.INT.M37221M (MICRO)
CP04971	CIRC.INT.MM1250XD
CZ00461R	CIRC.INT.BMR 4201FT
CZ00522	RECEPTOR REMOTO
EF01672	CONECTOR C/CABLE
FE00281	PULSADOR DE TACTO X 3
HJ00136	SINTONIZADOR BPT-ABX
HL01071	CONTROL REMOTO CLE-935
TC-295000	CONJUNTO RECEPTOR TERMINADO
TC-295001	SUB.PARL.DERECHO
TC-295002	SUB.PARL.IZQUIERDO
TC-295004	SUB.CIRC.PRINCIPAL
TC-295024	SUB.CI.IF SOLDADO
TC-2950GA	CONJUNTO GAB.ENSAMBLADO

POWER CIRCUIT









Microprocesador

