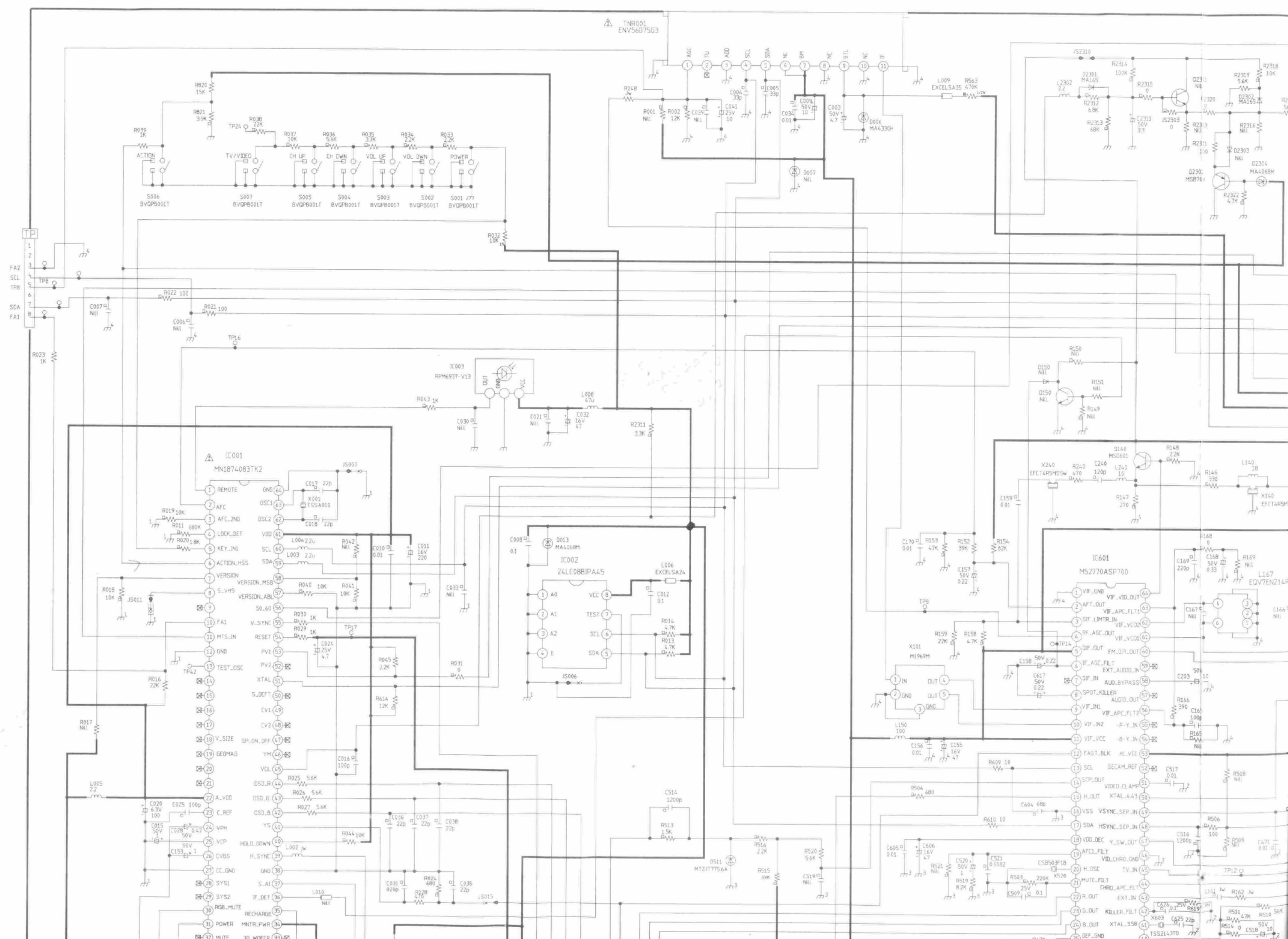
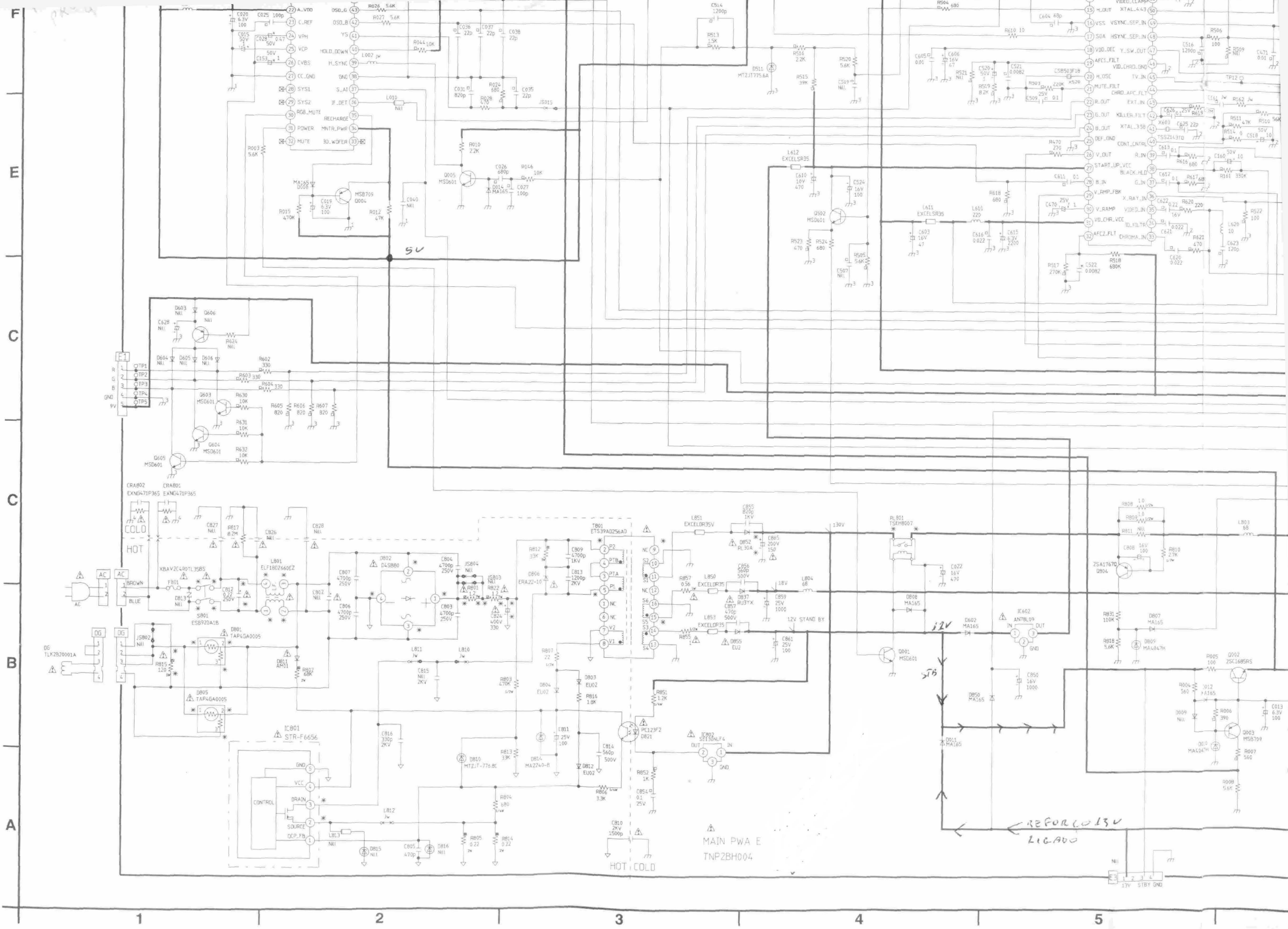


## CHASSI BR

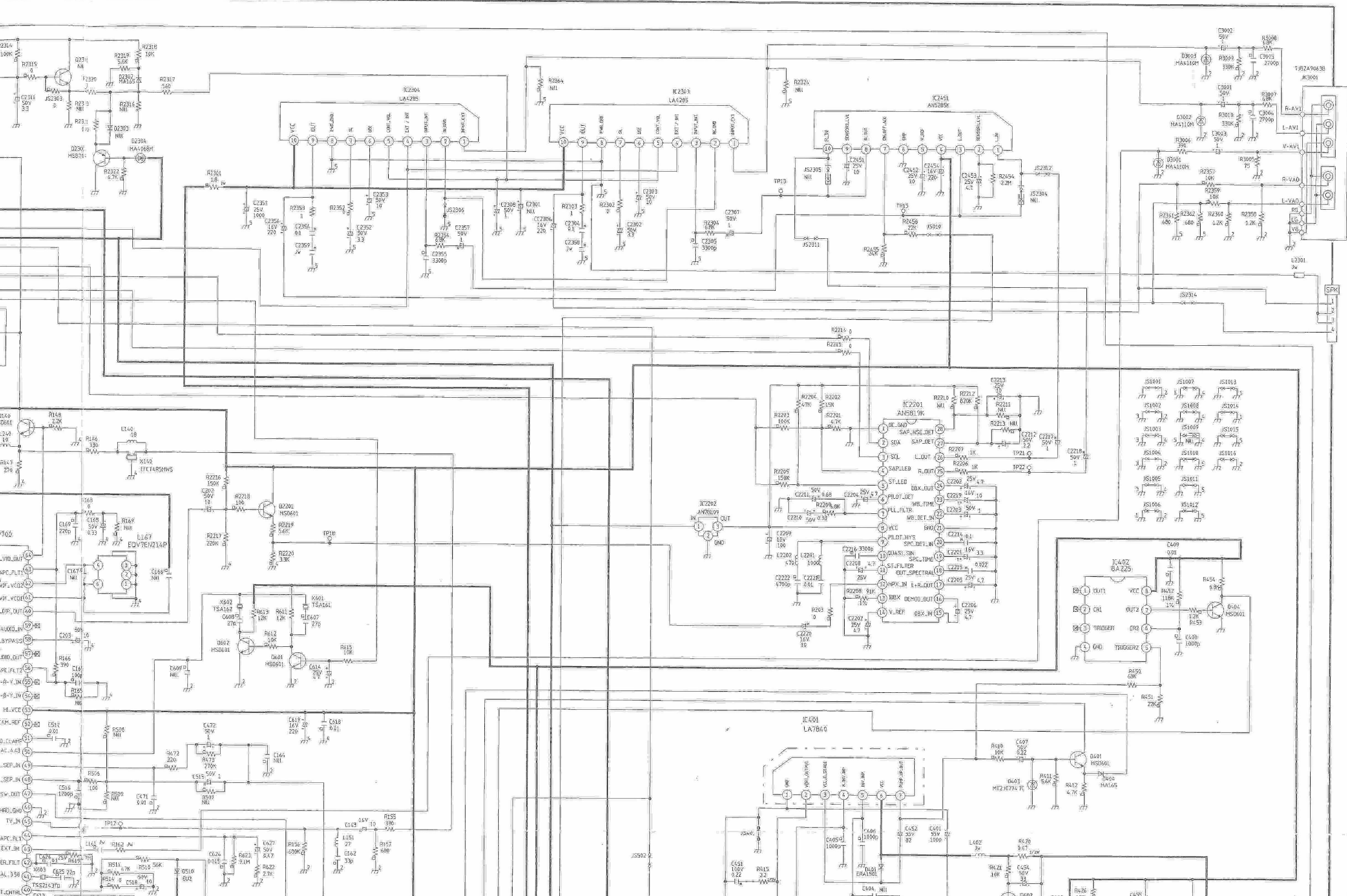




MAIN PWA E  
TNP2BH004

REFOR 13V  
LIGABO





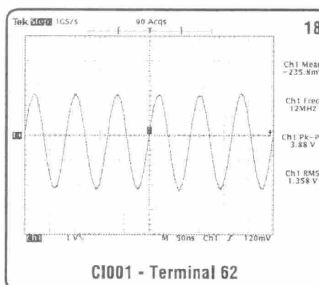
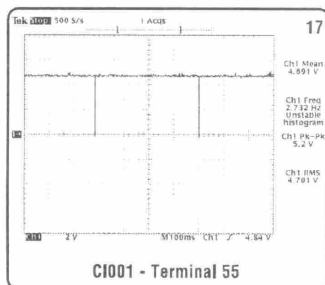
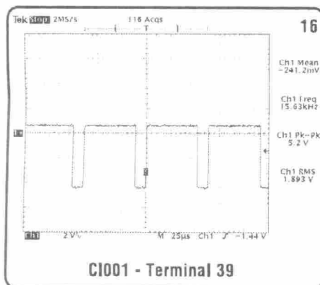


# FORMAS DE ONDA

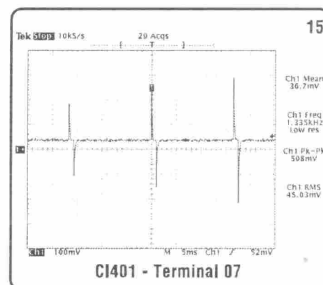
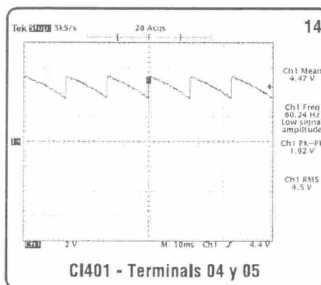
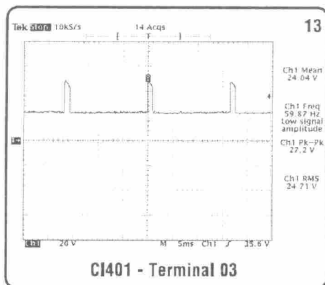
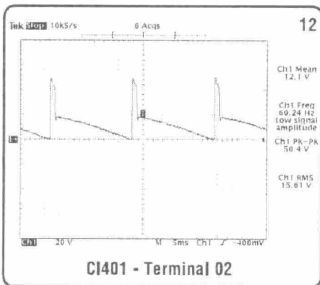
## COMO OBTEN AS FORMAS DE ONDA

1. Conecte um gerador de sinal colorbar NTSC ao terminal da antena (RF).
2. Ajuste os controles do televisor (áudio/picture) para normal.
3. Todas as formas de onda do sinal de vídeo devem ser visualizadas em osciloscópio de banda larga e ponta de prova de baixa capacitância (1 a 10). A forma e a amplitude de pico poderão variar dependendo do osciloscópio utilizado.

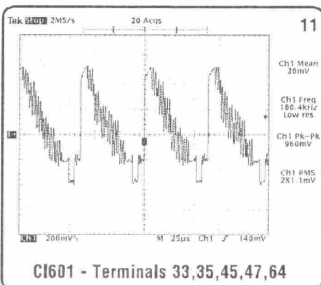
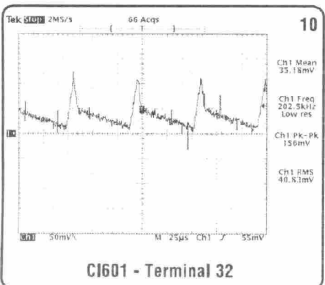
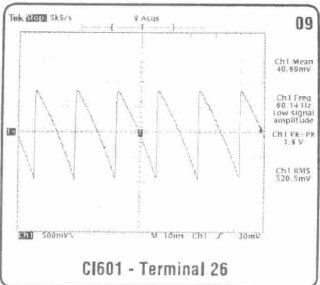
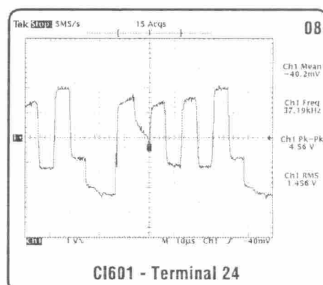
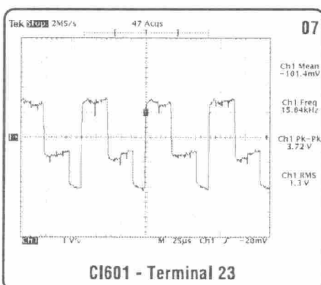
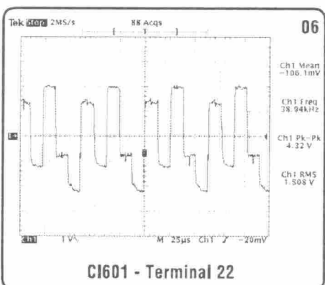
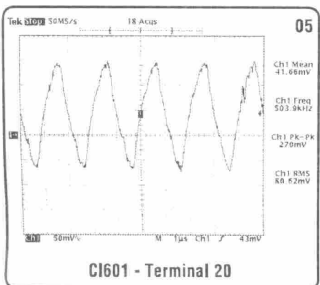
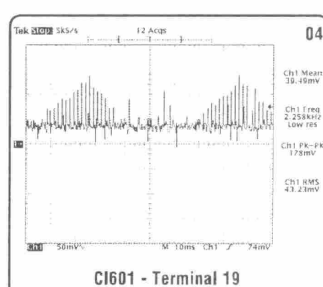
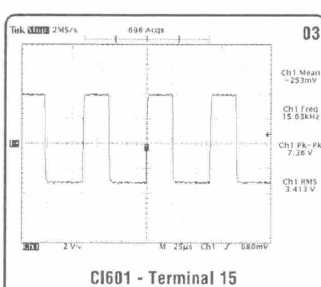
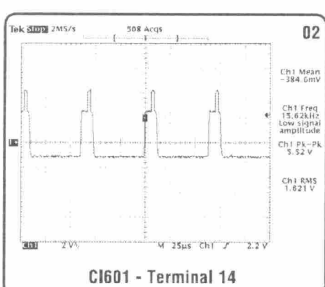
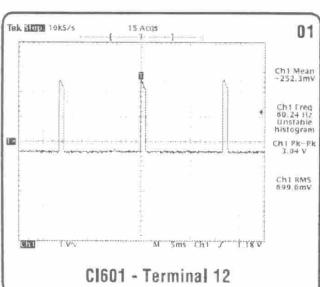
### CI001



### CI401



### CI601



## TABELA DE DAC PADRÃO - CHASSI BR2

ITEM	DAC	FAIXA	VALOR	MEMORY
B0	SUB COLOR	0 - 127	60	0DA
B1	SUB TINT	0 - 127	58	0DB
B2	SUB BRIGHT	0 - 255	112	0DC
B3	SUB CONTRAST	0 - 127	90	0DD
B4	SUB SHARPNESS	0 - 31	[xx]	0DE
B5	V-SIZE	0 - 127	80	0C7
B6	V-CENTER	0 - 7	2	0C8
B7	V-CENTER offset	0 - 3	2	0EB
C0	R CUT OFF	0 - 511	64	0CF/0C9
C1	G CUT OFF	0 - 511	128	0CE/0C9
C2	B CUT OFF	0 - 511	64	0CD/0C9
C3	R DRIVE	0 - 127	64	0CC
C4	B DRIVE	0 - 127	64	0CB
C5	R-DRIVE (warm)	0 - 127	15	0B7
C6	B-DRIVE (warm)	0 - 127	15	0B8
C7	R-DRIVE (cool)	0 - 127	15	0B9

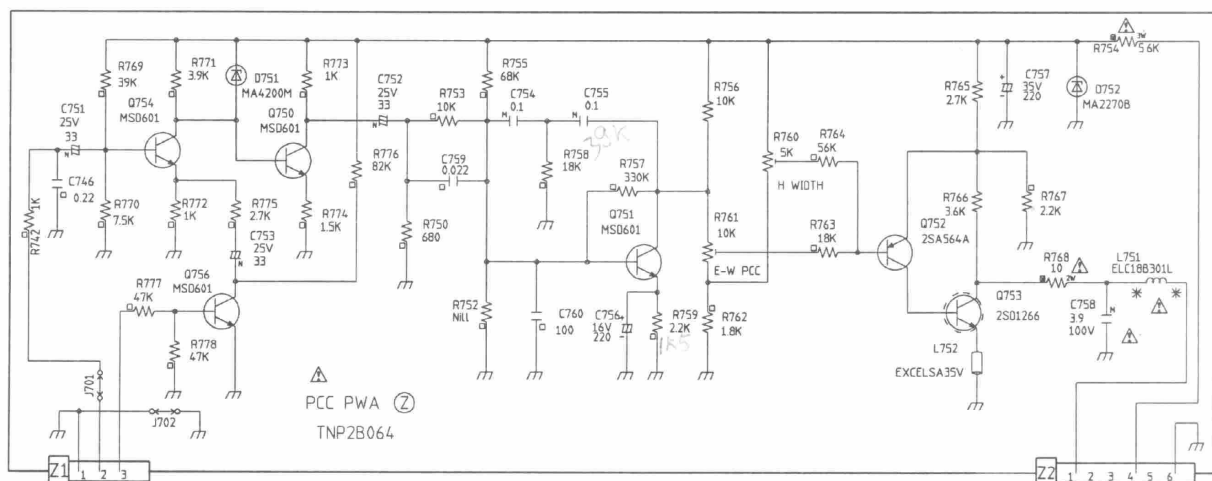
ITEM	DAC	FAIXA	VALOR	MEMORY
C8	B-DRIVE (cool)	0 - 127	15	0BA
C9	AFT	0 - 255	128	0F1
Ca	RF AGC	0 - 127	64	0F2
Cb	RF AGC offset	0 - 15	9	0F3
Cc	H-CENTER	0 - 15	6	0CA
Cd	H-CENTER offset	0 - 15	4	0F4
Ce	VIDEO OUT GAIN	0 - 7	4	0F5

S0	CLOCK ADJUST	0 - 255	128	09A
S1	LOUDNESS COMP	0 - 63	52	0DF

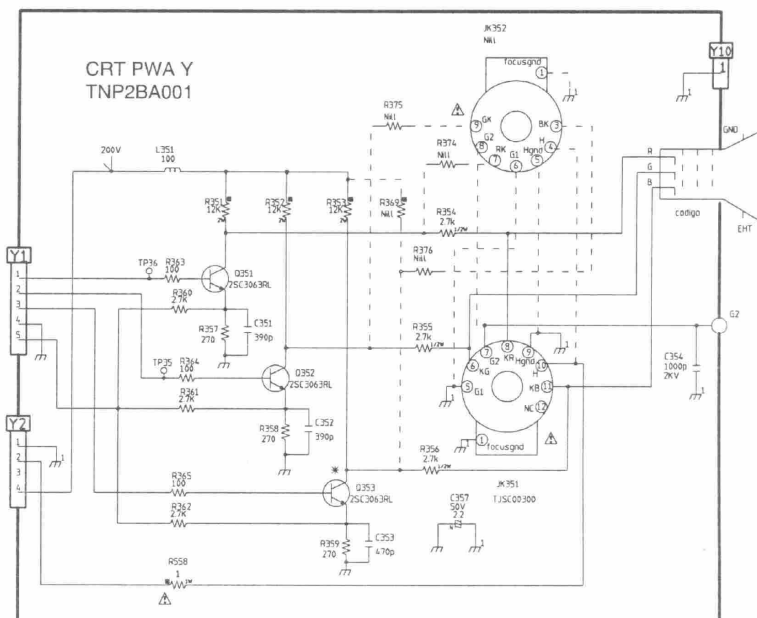
M0	INPUT LEVEL	0 - 63	31	096
M1	STEREO PLL VCO	0 - 63	31	098
M2	FILTER	0 - 63	31	099
M3	LOW LEVEL SEP	0 - 63	31	09C
M4	HIGH LEVEL SEP	0 - 63	31	09D

Valor de [xx] para B4 SUB SHARPNESS: TC-20G11 = 31 / TC-29A11 = 28 / TC-29G11 = 28

## ESQUEMA ELÉTRICO DA PLACA "Z" - PINCUSHION



## ESQUEMA ELÉTRICO DA PLACA Y - CRT



## AJUSTE E CALIBRAÇÃO

### Para ENTRAR no MODO DE SERVIÇO:

1. Selecione o canal 124 CATV.
2. Ajuste o volume no mínimo com a tecla **VOL (-)** no painel do aparelho.
3. Ajuste **SLEEP** para 30 e pressione a tecla **VOL (-)** no painel do aparelho.
4. Para alternar entre os CHQs pressione “**POWER**” no controle remoto
5. Para alternar entre os DAC's (B0 → C0 → M0...) pressione **CH(+)** ou **CH(-)** e para alterar os valores pressione **VOL(+)** ou **VOL(-)**.
6. Para acessar o conteúdo dos endereços de memória descritos abaixo, selecione o DAC “S0” e pressione a tecla “**MUTE**”, no controle remoto, por 3 segundos.

### Para SAIR do MODO DE SERVIÇO:

1. Pressione no painel do aparelho, as teclas “**ACTION**” e “**⏻/STAND BY**” simultaneamente por 3 segundos.

### DADOS INICIAIS GRAVADOS NA MEMÓRIA (EEPROM)

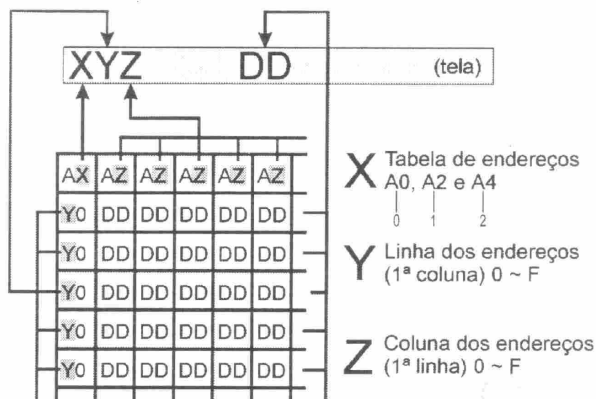
1. Os dados iniciais devem ser gravados antes de instalar a memória na placa de circuito impresso.
2. O dado do endereço “A0” é individual para cada modelo. Os dados dos endereços (A2) e (A4) são comuns para todos os modelos.

#### Endereço A0

A0	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
40	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
90	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
B0	5A	5A	17	07	17	07	43	0F	0F	0F	0F	00	01	00	00	50
C0	1A	1A	00	FF	FF	FF	0C	@1	02	00	08	40	40	40	80	40
D0	1F	1F	1F	00	00	00	00	00	18	08	3C	@2	@3	@4	@5	34
E0	00	00	00	00	00	03	A5	50	50	50	52	02	A5	5A	50	03
F0	00	80	40	09	04	04	00	00	00	00	00	0C	50	00	5A	

Modelo	@1	@2	@3	@4	@5
TC-20G11	50	3A	70	5A	1F
TC-29A11	50	3A	70	5A	1C
TC-29G11	46	40	6C	64	1C

### Apresentação dos valores da memória na tela:



#### Endereço A2

A2	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	70	70	70	70	00	70	70	70	70	00	70	70	70	70	00
10	70	70	70	70	00	70	70	70	70	00	70	70	70	70	00	70
20	70	70	70	00	70	70	70	70	00	70	70	70	70	00	70	70
30	70	70	00	70	70	70	00	70	70	70	70	00	70	70	70	70
40	70	00	70	70	70	00	70	70	70	00	70	70	70	70	70	70
50	00	70	70	70	70	00	70	70	70	00	70	70	70	70	70	70
60	70	70	70	70	00	70	70	70	70	00	70	70	70	70	70	70
70	70	70	70	00	70	70	70	70	00	70	70	70	70	00	70	70
80	70	70	00	70	70	70	00	70	70	70	70	70	70	70	70	70
90	70	00	70	70	70	00	00	00	00	00	00	00	00	00	00	00
A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
C0	00	00	00	00	00	00	00	00	00	00	00	00	54	4B	31	15
D0	84	A4	16	84	2A	8C	87	61	DC	88	92	12	2D	1C	83	95
E0	5F	CA	1A	1D	CB	1A	93	91	72	04	FF	FF	FF	FF	FF	FF
F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	DC

#### Endereço A4

A4	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	1F	1F	1F	3F	24	1F	1F	1F	35	1F	1C	1F	1F	2C	10	1F
10	1F	1F	30	1F	1F	1F	1F	3F	24	1F	1F	1F	35	1F	1C	1F
20	1F	2C	10	1F	1F	1F	30	1F	00	00	00	00	52	00	00	00
30	1F	1F	7F	00	00	00	00	00	00	00	00	00	00	00	00	1F
40	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
90	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
C0	00	00	00	00	00	00	00	00	00	00	00	00	54	4B	32	78
D0	3A	12	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	AF

## IC001 - DESCRIÇÃO DA PINAGEM

Remote signal in →	1	RMIN P06	VSS	64	— GND
AFC (1° Tuner) →	2	ADIN0	OSC2	63	→ 12MHz X-tal
Não usado/GND →	3	ADIN1(AFC(2° Tuner)	OSC1	62	← 12MHz X-tal
Lock Detect ←	4	P50	VDD	61	— +5V
Key in →	5	ADIN3	P00	60	→ SCL
Action/HHS →	6	ADIN4	V	59	↔ SDA
Version LSB →	7	ADIN5	P02	58	← Version MSB
S-VHS →	8	P54	P03	57	← Version GM
Não usado/aberto →	9	P55	P04 / IRQ0	56	→ 50/60Hz
FA1 →	10	ADIN8	VSYNC / IRQ1	55	← V-pulse(neg.)
MTS in →	11	ADIN9	P07 / RST	54	← Reset
GND —	12	CM	P60	53	→ Main AV select 1
Test OSC —	13	SYNC	P61	52	→ Main AV select 2
Não usado/aberto ←	14	PWM1(bass)	(mate clock) P62	51	→ X'tal (PAL-M/PAL-N)
Não usado/aberto ←	15	PWM(treble)	P63	50	→ Sound defeat
Não usado/aberto ←	16	PWM3(balance)	(PIP AV s1) P64	49	→ (Não usado/aberto)
Não usado/aberto ←	17	PWM4(surround)	(PIP AV s2) P65	48	→ (Não usado/aberto)
V-size ←	18	PWM5	P66	47	→ Speaker on(L)off(H)
No usado/aberto ←	19	PWM6	VOI	46	→ OSD Semi-trans
Geomagnetic corr.	20	PWM7	SPWM	45	→ Volume
Não usado/aberto ←	21	PWM8	VOW1	44	→ OSD red
+5V —	22	AVDD	VOW2	43	→ OSD green
(for CC) ←	23	CREF	VOW3	42	→ OSD blue
(for CC) ←	24	VPH	VO8	41	→ OSD blank
(for CC) ←	25	VCP	P16	40	← Hold down detect
Video signal for CC →	26	CVBS	HSYNC	39	← H-plus(neg.)
GND —	27	AVSS	VSS	38	— GND
Color Sys 1 ←	28	P47	P20	37	→ AI Sound
Color Sys 2 ←	29	P46	P21	36	→ IF Defeat
Video Defeat ←	30	P45 (clone det.)	P40	35	→ Recharge
Relay on (H) off (L) ←	31	P44	P41	34	← Power Down
Mute Defeat ←	32	P43 (clone sw.)	(mate data) P42	33	→ 3D WOOFER

## IC601 - DESCRIÇÃO DA PINAGEM

PINO	NOMBRE	TENSIÓN	DESCRIPCIÓN	PINO	NOMBRE	TENSIÓN	DESCRIPCIÓN
01	VIF GND	0V	GND for VIF/SIF Block	31	Video Chroma VCC	5V	5V blocos de vídeo e cromas
02	AFT OUT	DC 0.3 - 8.7V	AFT OUT	32	AFC2 FILTER	DC 4.5V	AFC2 FILTER
03	SIF LIMITER IN	DC 0.5 - 4.5V	SIF det. IN	33	CHROMA IN	DC 3.5V	CHROMA input
04	RF AGC OUT	DC 0.3 - 8.7V	RF AGC OUT	34	ID FILTER		Identification filter
05	QIF OUT	DC 3.2V	QIF det. OUT	35	VIDEO IN	DC 2.7V	Video input
06	IF AGC filter	DC 1.8 - 4.6V	IF AGC filter pin	36	X-RAY IN	DC 0V	X-RAY in
07	QIF IN	DC 1.8 - 4.6V	QIF sound carrier input pin	38	BLACK HOLD	DC 3.1V	Black level hold pin for black stretch function
08	Spot Killer	DC 7.5V	Spot killer capacitor pin	40	CONTRAST		Detection ACL filter
09	VIF IN (1)	DC 1.5V	VIF det. input pin	41	X-TAL 3.58	DC 3.3V	Crystal NTSC
10	VIF IN (2)	DC 1.5V	VIF det. input pin	42	KILLER FILTER	DC 3.7V	Killer filter
11	VIF Vcc (5V)	DC 5.0V	5V to VIF/SIF Block	43	EXT IN	DC 1.95V	External video input
12	FAST BLK	DC 0.0V	TV/Half Tone/EXT RGB SW control	44	CHROMA APC	DC 3.0V typ	CHROMA APC FILTER
13	SCL		SCL pin for IIC BUS	45	TV IN	DC 1.95V	Video input
14	SCP		Sand castle pulse output pin	46	VIDEO/CHROMA GND	0V	GND for Video and Chroma blocks
15	HOUT		H pin pre-drive output	47	Y SW OUT		Video tuner output TV/EXT
16	VSS	0V	Ground pin of CMOS	48	H-SYNC SEP IN		H-SYNC SEP IN
17	SDA		SDA pin of IIC BUS	49	V-SYNC SEP IN		V-SYNC SEP IN
18	VDD	DC 5.0V	VDD decoupling pin	50	X-TAL PAL	DC 3.3V	Crystal PAL
19	AFC1 FILTER		AFC-1 filter pin of 32Hz VCO	51	VIDEO CLAMP	DC 3V	Video Clamp
20	H OSC	DC 2.45V	Pino H OSC	52	SECAM REF		SECAM REF
21	MUTE FILTER	DC 0.3 - 8.7V	Mute Filter	53	Hi Vcc (9V)	9.0V	9V for output (RGB, AF, AFT/RF AGC)
22	R OUT		"R" output	54	-(B-Y) IN	DC 2.9V	SECAM signal input
23	G OUT		"G" output	55	-(R-Y) IN	DC 2.9V	SECAM signal input
24	B OUT		"B" output	56	VIF APC FILTER2	DC 3.0V	VIF APC filter
25	DEFLECTION GND	0V	Deflection GND	57	AUDIO OUT	DC 2.8V	Audio output
26	V OUT		Vertical output	58	AUDIO BYPASS	DC 2.3 ~ 3.0V	Audio Bypass
29	V RAMP feedback		V RAMP feedback	59	EXT AUDIO IN	DC 2.5V	External Audio input
30	V RAMP C		V RAMP capacitor	60	FM DIRECT OUT	DC 2.5V	Audio output
27	START UP	9V (VCC)	Deflection 9V, IIC BUS and VDD control	61	VIF VCO(1)	DC 4.2V	Coil VIF VCO
28	B IN	DC 2.5V		62	VIF VCO(2)	DC 4.2V	Coil VIF VCO
37	G IN	DC 2.5V		63	VIF APC FILTER1	DC 3.0V	VIF APC filter
39	R IN	DC 2.5V		64	VIF VIDEO OUT	2.2Vp-p	Video Detector output