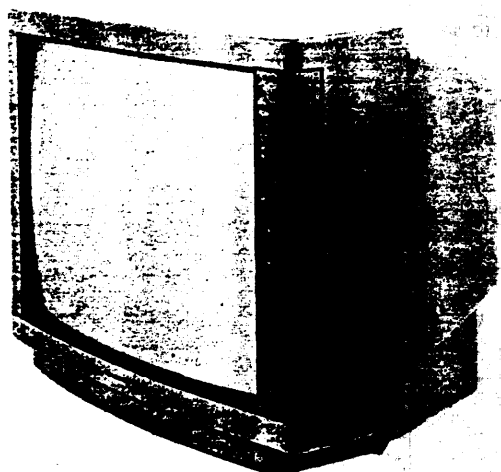


Service Manual



Colour Television TX-28X1C / TX-25XIC TX-28X1CP / TX-25X1CP ALPHA - 4 Chassis

SPECIFICATIONS

(Information in brackets refer to TX-25X1C)

Power Source :	230 V AC, 50Hz
Power Consumption :	103W (98W)
Aerial Impedance :	75Ω unbalanced, Coaxial Type
Receiving System :	PAL B,G SECAM B,G (D,K X1CP ONLY)
Receiving Channels :	VHF E2 - E12 VHF H1 - H2 (ITALY) VHF A - H (ITALY) (VHF R1 - R12 - X1CP ONLY) UHF E21 - E89 CATV (S01 - S05) CATV S1 - S10 (M1 - M10) CATV S11 - S20 (U1 - U10) CATV S21 - S41 (HYPERBAND)
Intermediate Frequency :	Video 38.9 MHz Sound 33.4 MHz Colour 34.47 MHz (PAL) 34.5 MHz (SECAM) 34.65 MHz (SECAM)
Video / Audio Terminals :	
AV1 IN	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 10kΩ RGB (21 pin)
AV1 OUT	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 1kΩ
AV2 IN	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 10 kΩ S-Video IN (21 pin) Y : 1 Vp-p 75Ω C : 0.3 Vp-p 75Ω
AV2 OUT	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 1kΩ Audio (RCA x 2) 500mV rms 1KΩ
AV3 IN	S-Video IN (4-pin) Y : 1 Vp-p 75Ω C : 0.3 Vp-p 75Ω Audio (RCA x 2) 500 mV rms 10kΩ Video (RCA x 1) 1 Vp-p 75Ω
High Voltage :	28.0kV (+ 0.7 / - 1.0) KV at zero beam current (27.3KV (+ 0.7 / - 1.0) KV at zero beam current)
Picture Tube :	70 cm (83cm) FST 110°
Visible screen size:	66 cm (80cm) FST 110°
Audio Output :	
Internal Speaker	2 x 10 W (Music Power) 8 Ω Impedance
Speakers	2 x 12.5cm x 7.5cm Oval
Headphones	1 x 8 Ω Impedance
Accessories supplied :	Remote Control R6 (UM3) Battery
Dimensions :	Height : 551mm (507mm) Width : 688mm (635mm) Depth : 488mm (467mm)
Net Weight	38kg (32.5kg)

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

TECHNISCHE DATEN

(Werte in Klammern gelten nur für TX-25X1C)

Netzspannung :	230 V AC, 50Hz
Leistungsaufnahme :	103W (98W)
Antennenimpedanz :	75Ω asymmetrisch, Koaxial- Typ
Empfangssystem :	PAL B,G SECAM B,G (D,K X1CP)
Empfangsbereiche :	VHF E2 - E12 VHF H1 - H2 (ITALY) VHF A - H (ITALY) (VHF R1 - R12 - X1CP) UHF E21 - E89 CATV (S01 - S05) CATV S1 - S10 (M1 - M10) CATV S11 - S20 (U1 - U10) CATV S21 - S41 (HYPERBAND)
Zwischenfrequenz :	Bild 38.9 MHz Ton 33.4 MHz Farbe 34.47 MHz (PAL) 34.5 MHz (SECAM) 34.65 MHz (SECAM)
Video / Audio Anschlüsse :	
AV1 EINGANG	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 10kΩ RGB (21 pin)
AV1 AUSGANG	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 1kΩ
AV2 EINGANG	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 10 kΩ S-Video IN (21 pin) Y : 1 Vp-p 75Ω C : 0.3 Vp-p 75Ω
AV2 AUSGANG	Video (21 pin) 1 Vp-p 75Ω Audio (21 pin) 500 mV rms 1kΩ Audio (RCA x 2) 500 mV rms 1KΩ
AV3 EINGANG	S-Video IN (4-pin) Y : 1 Vp-p 75Ω C : 0.3 Vp-p 75Ω Audio (RCA x 2) 500 mV rms 10kΩ Video (RCA x 1) 1 Vp-p 75Ω
Hochspannung :	28.0kV bei Nullstrahlstrom (27.3kV bei Nullstrahlstrom)
Bildrohre :	70 cm (83 cm) 110° Ablenkung
Visuelle Diagonale :	66 cm (80 cm) 110° Ablenkung
Ton Ausgangsleistung :	
Einbauleutsprecher	2 x 10W (Musikleistung) 8 Ω Impedanz
Lautsprecher	2 x 12.5 cm x 7.5 cm Oval
Kopfhörer	1 x 8 Ω Impedanz
Mittel, Zubehör	Fernbedienung R6 (UM3) Batterien
Abmessungen :	Höhe : 551mm (507mm) Breite : 688mm (635mm) Tiefe : 488mm (467mm)
Gewicht :	38 kg (32.5kg)

Änderungen der technischen Daten vorbehalten.
Gewichte und Abmessungen sind Näherungsangaben.

Panasonic

ADJUSTMENTS

SUB CONTRAST

1. Receive a Colour Bar pattern.
(Input level 75dB).
2. Connect an oscilloscope to TPC15 (TPE15).
3. Set controls to :

Brightness	minimum
Contrast	maximum
Sub colour (VR)	minimum
Sharpness	minimum
4. Connect a short jump wire between (TPC7) TPE7 and earth.

1. Adjust Sub brightness (R321) to set the black level to 0.2V.
2. Adjust the Sub contrast (R317) to set the drive voltage to $2.8V \pm 0.1V$.
3. Remove the earth from TPE7.

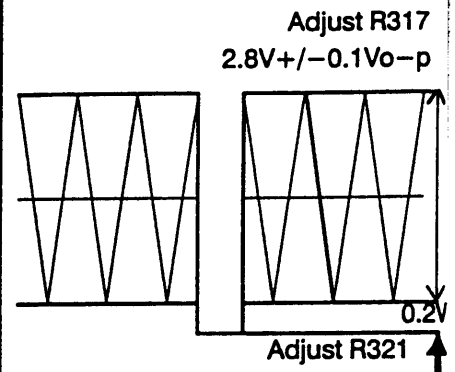


Fig.9.

PAL APC

1. Receive a Philips pattern.
2. Connect a short jumper between TPC76 and earth.
3. Connect an oscilloscope to TPC15.

1. Adjust APC trimmer (C637) to obtain the waveform at TPC15 as shown in Fig.10.
2. Remove the earth link and confirm the bars are stationary.

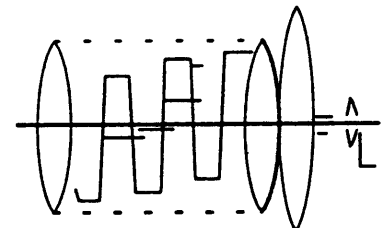


Fig.10.

SUB COLOUR

1. Receive a PAL colour bar pattern.
2. Set controls to:

Brightness	minimum
Contrast	maximum
Colour	centre
Sharpness	minimum
3. Connect an oscilloscope to TPC15 (TPE15).

1. Connect a short jumper between TPC6 and earth.
2. Adjust the sub colour (R606) for $1.6Vp-p \pm 0.1V$ at TPC15 (TPE15) as shown in Fig.11.
3. Remove the earth jumper wire.

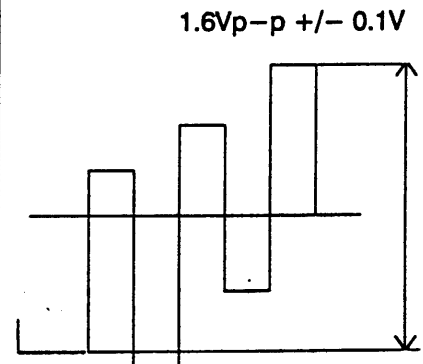


Fig.11.

TEXT CONTRAST

1. Receive a teletext signal.
2. Connect an oscilloscope to H1 pin 6.

NOTE:

If the H-board is disconnected from the E-board a $10K\Omega$ resistor has to be connected between H1 pin 6 and earth.

1. Adjust R3514 to obtain the waveform as shown in Fig.12.

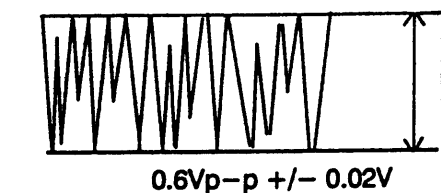


Fig.12.

BELL FILTER

1. Receive a Phillips pattern (SECAM)
2. Connect an oscilloscope to TPC69

1. Adjust L600 to obtain the waveform as shown in Fig.13.

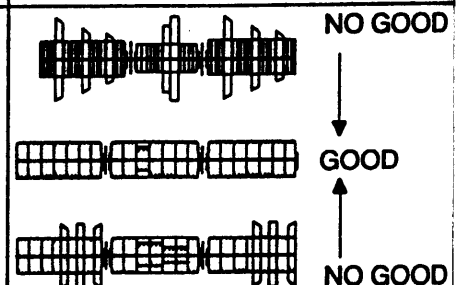
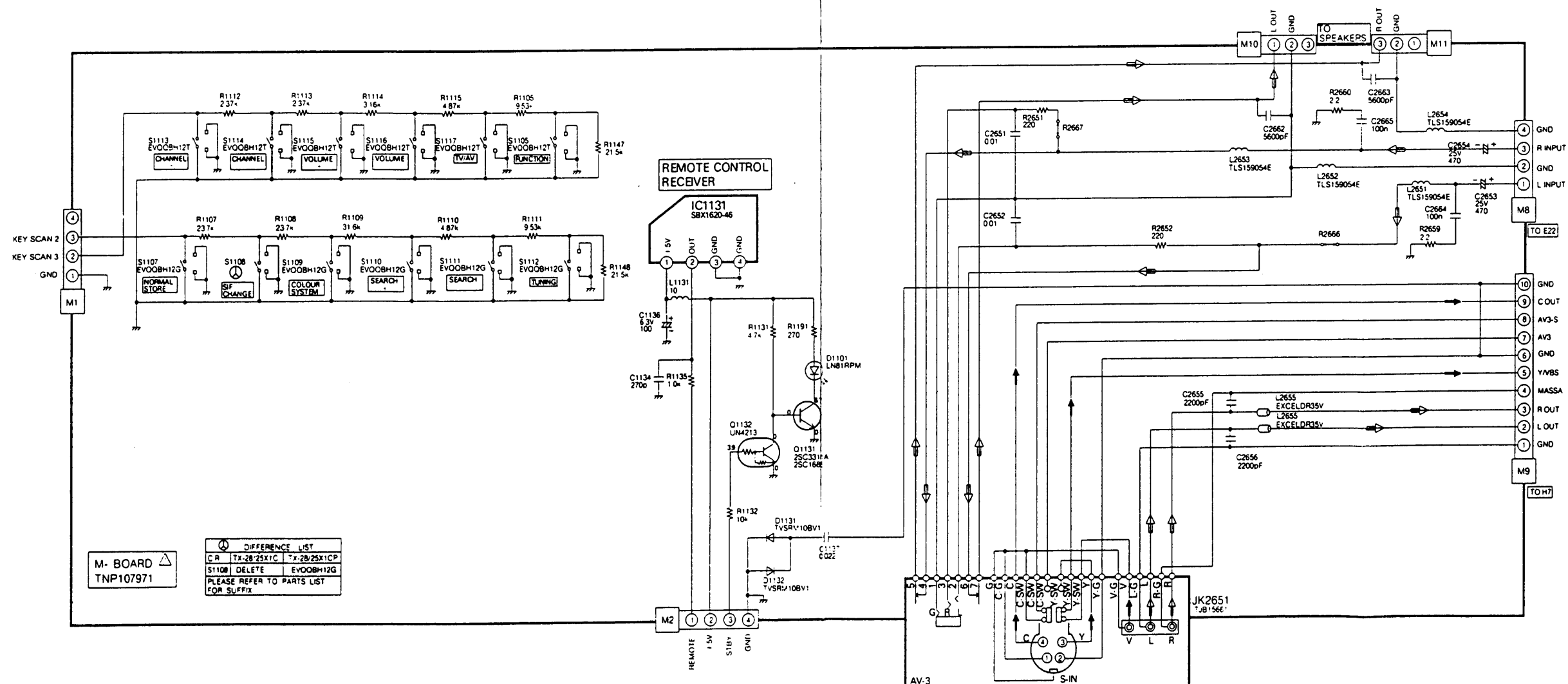
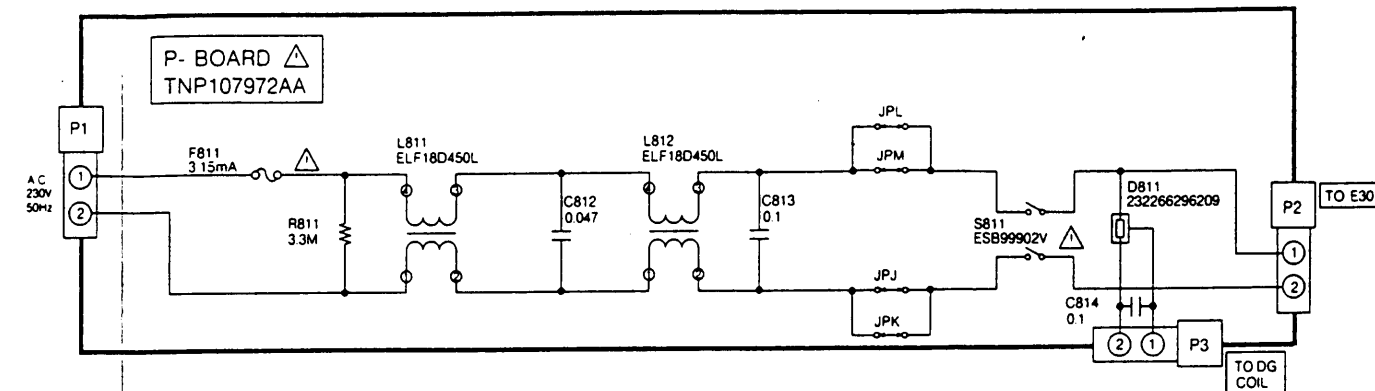
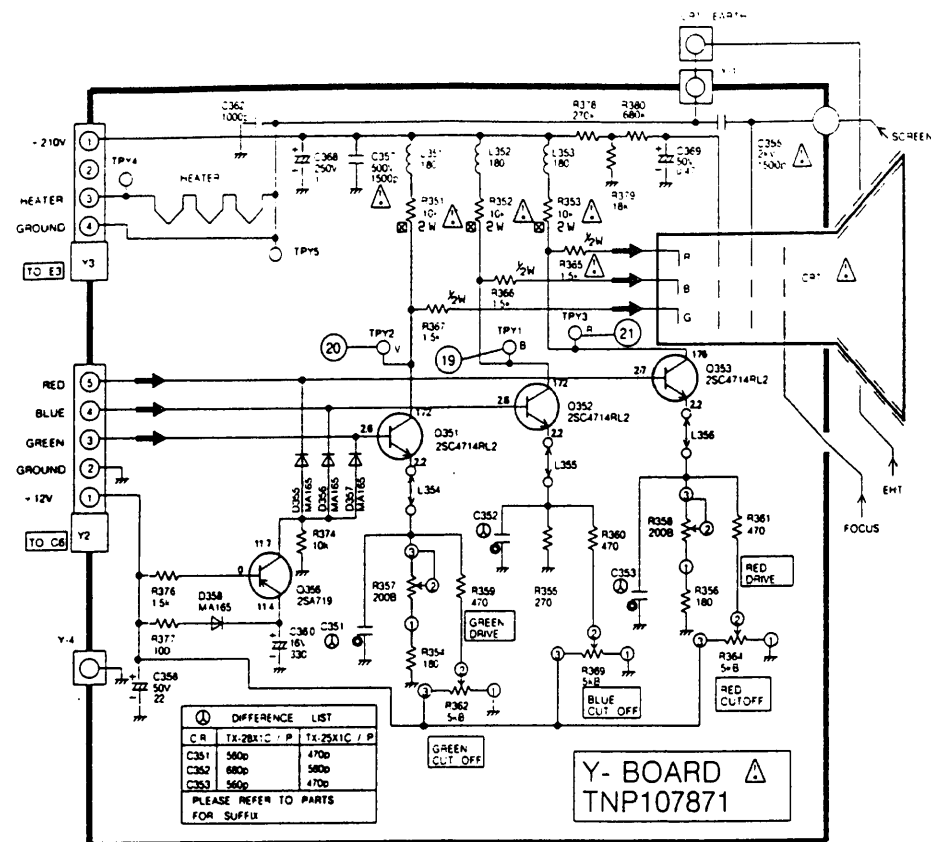


Fig.13.



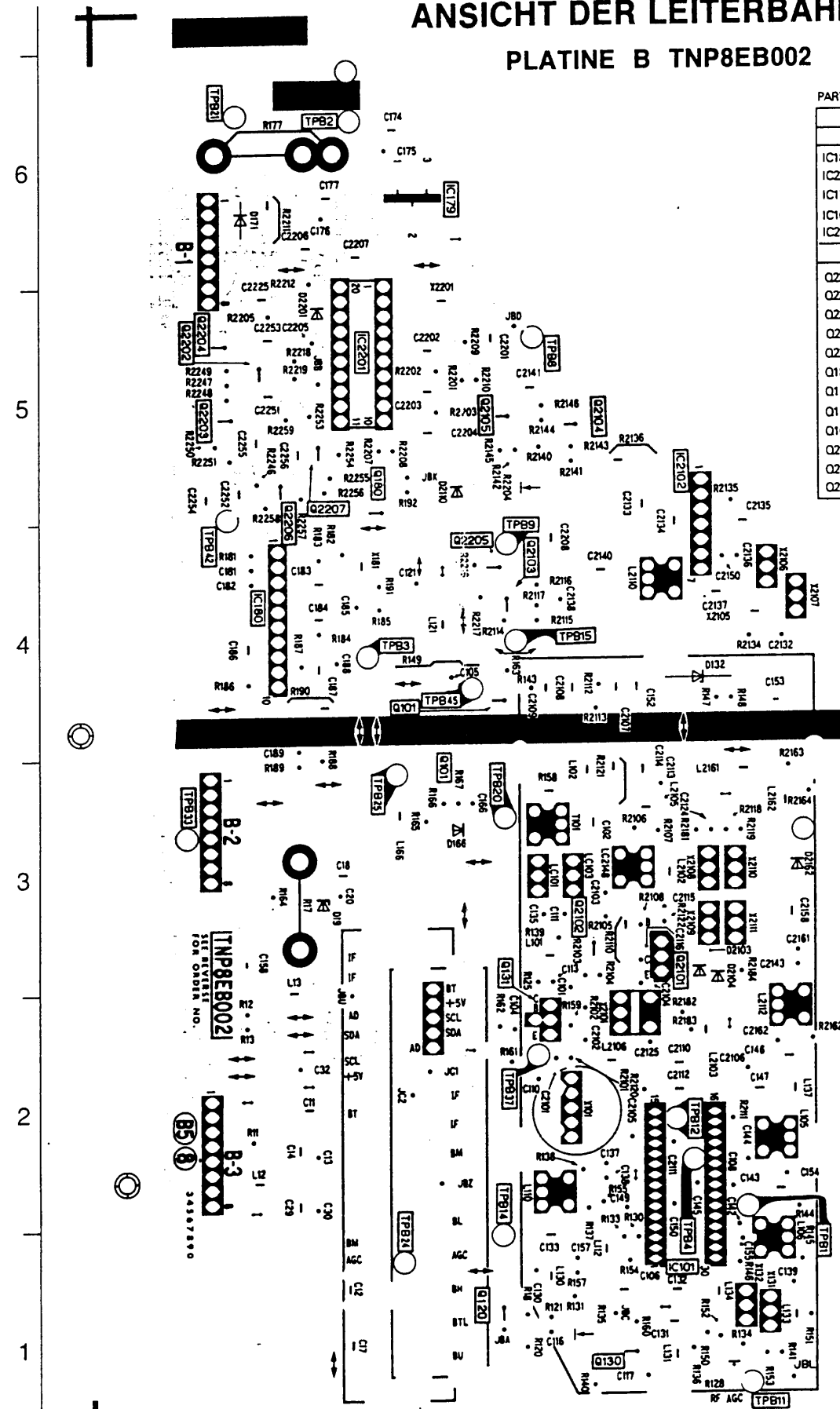
TX-28X1C/TX25X1C
TX-28X1CP/TX25X1CP

CONDUCTOR VIEWS

B-BOARD TNP8EB002

ANSICHT DER LEITERBAHNEN

PLATINE B TNP8EB002



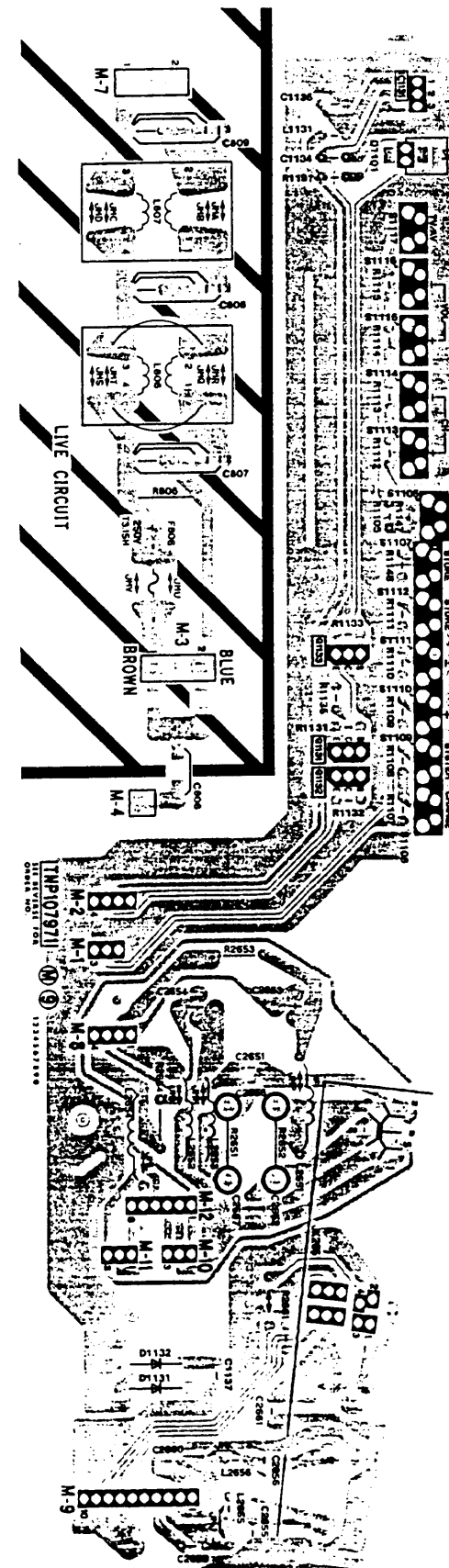
PARTS LOCATION

B-BOARD	
IC	
IC180	A4
IC2210	A5
IC179	B6
IC101	C2
IC2102	C4
Transistor	
Q2206	A4
Q2207	A4
Q2202	A5
Q2204	A5
Q2203	A5
Q180	A5
Q130	B1
Q131	B2
Q101	B3
Q2102	B3
Q2103	B4
Q2101	C3

B-BOARD	
Diode	
D19	A3
D2201	A5
D171	A6
D166	B3
D2210	B5
D2103	C3
D2104	C3
D132	C4
D2162	C4
Test Points	
TPB33	A3
TPB24	A4
TPB3	A4
TPB2	A6
TPB21	A6
TPB24	B1
TPB37	B2
TPB20	B3
TPH25	B3
TPB45	B4
TPB9	B4
TPB8	B5
TPB14	B5
TPB11	C1
TPB12	C2
TPB4	C2
TPB1	C3

M-BOARD TNP107971

P-BOARD TNP107972



PLATINE M TNP107971

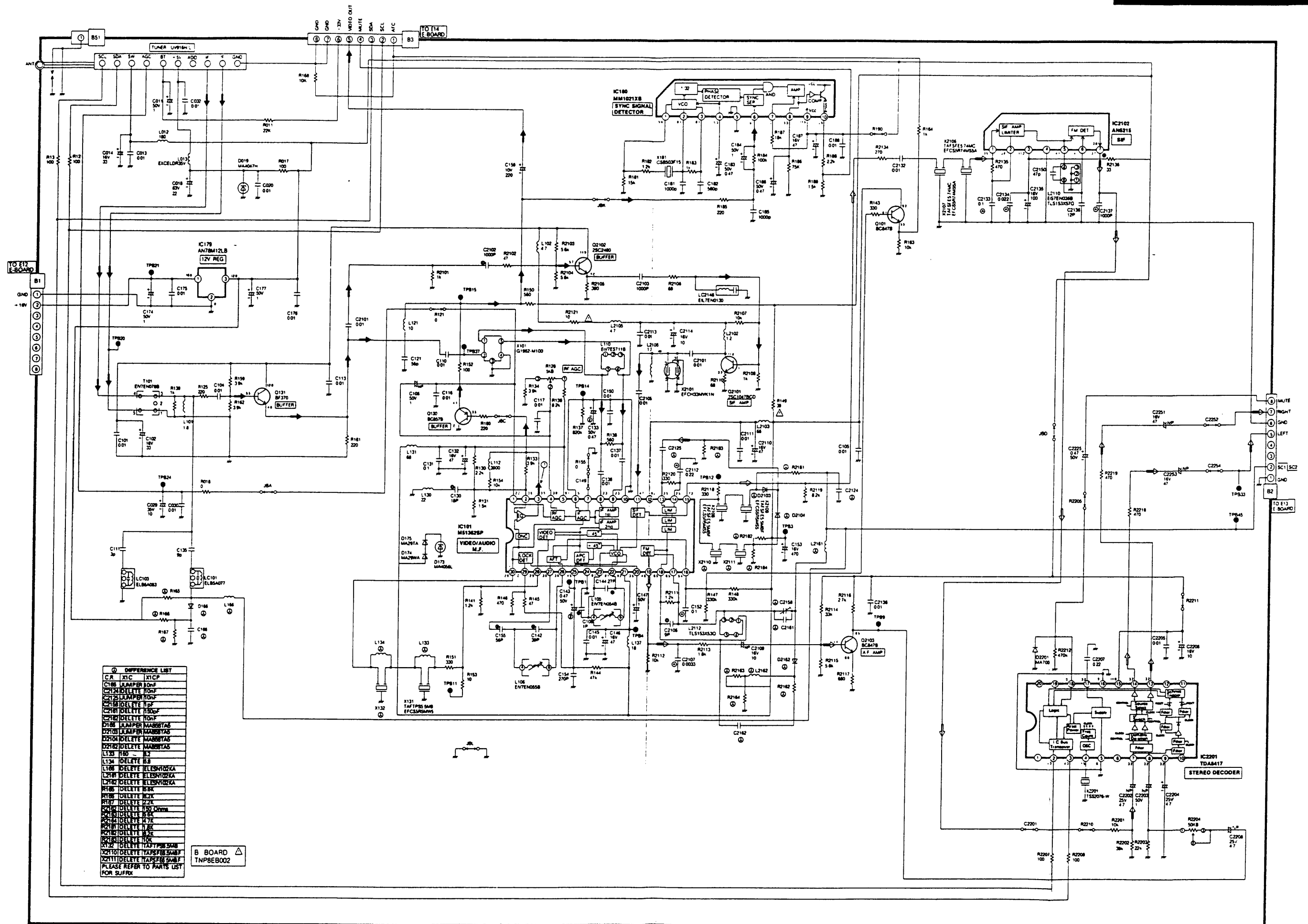
PLATINE P TNP107972

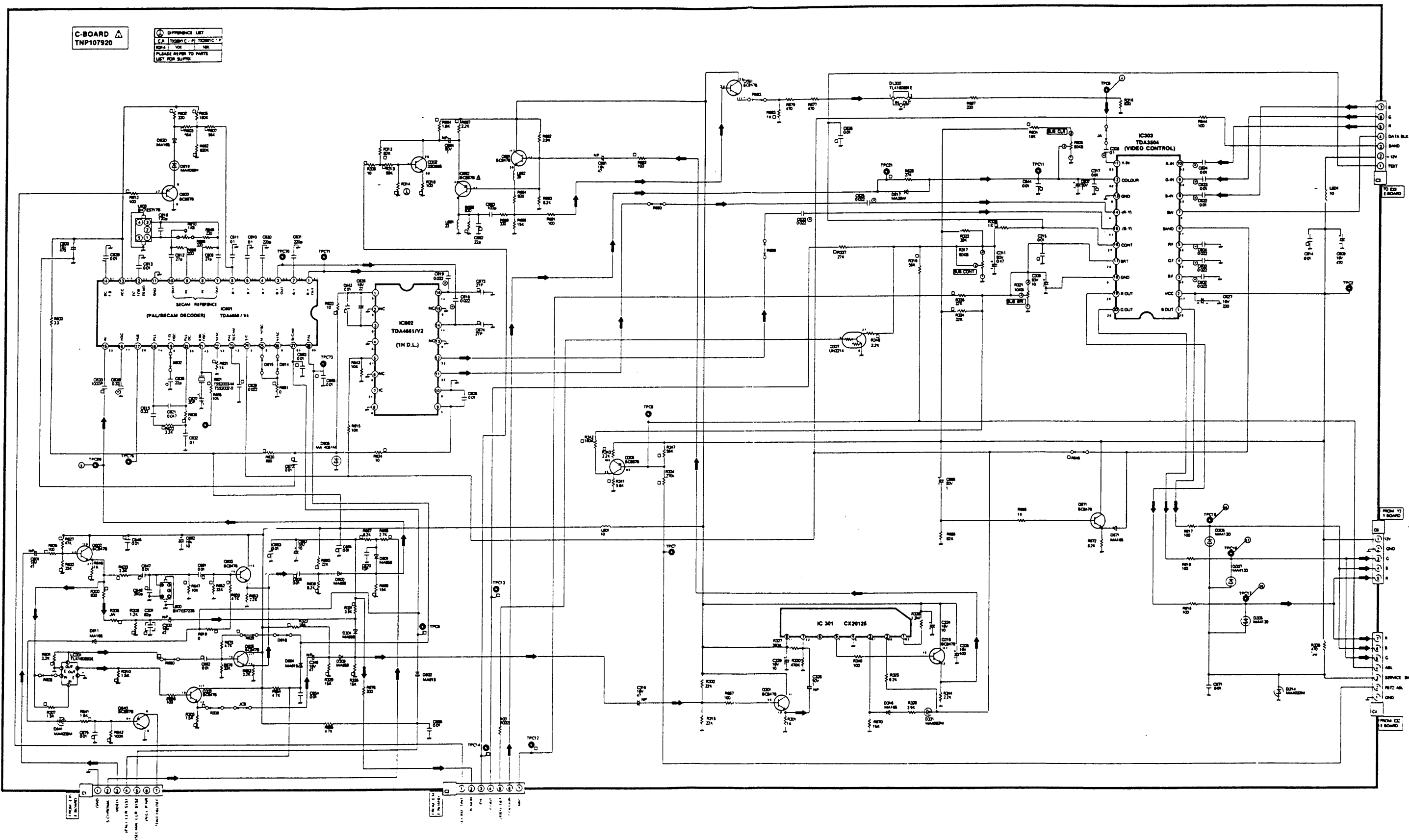
PARTS LOCATION

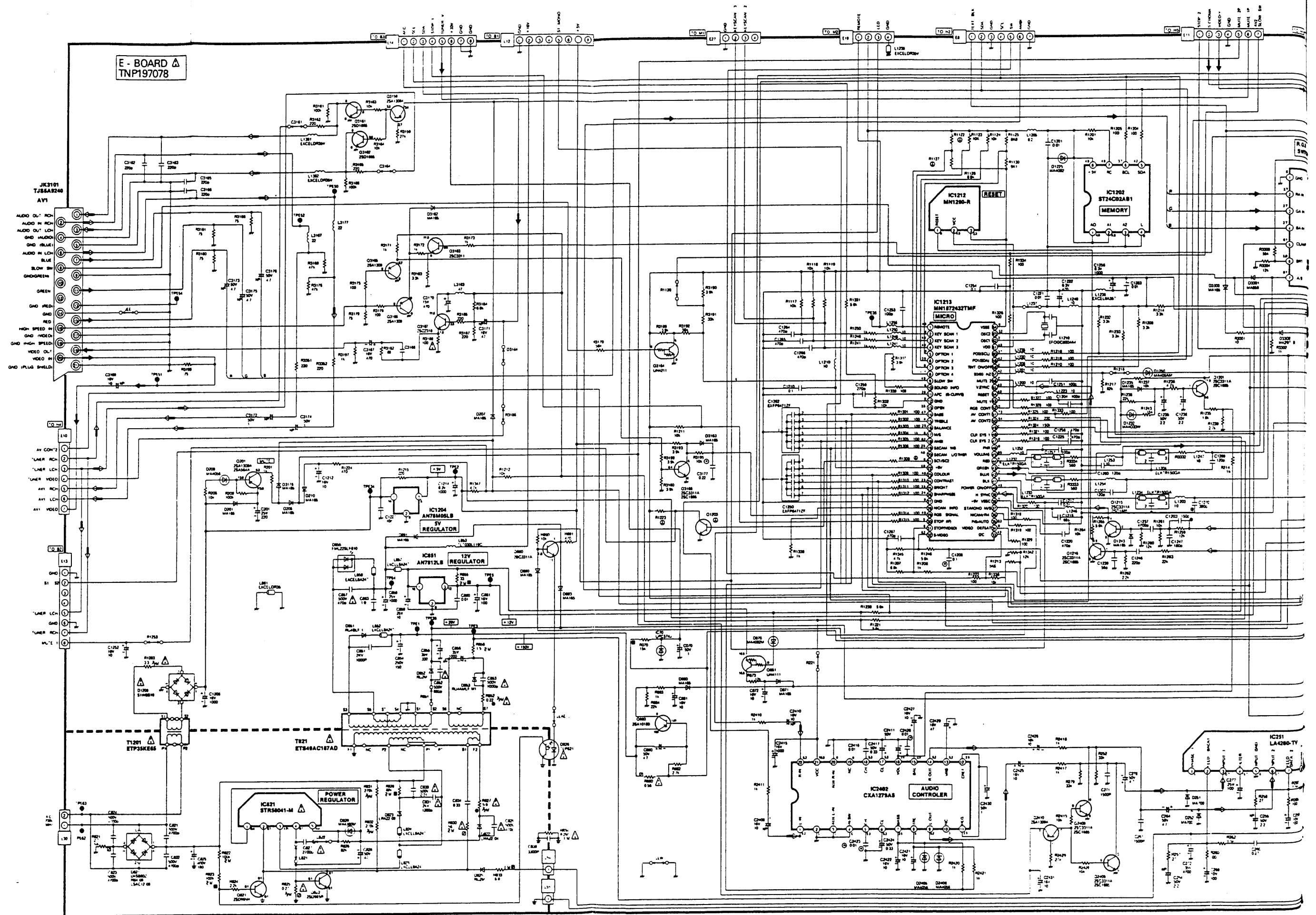
M-BOARD	
Transistor	
Q1132	B3
Q1131	B4
Q1133	B4
Diodes	
D1131	A1
D1132	A1

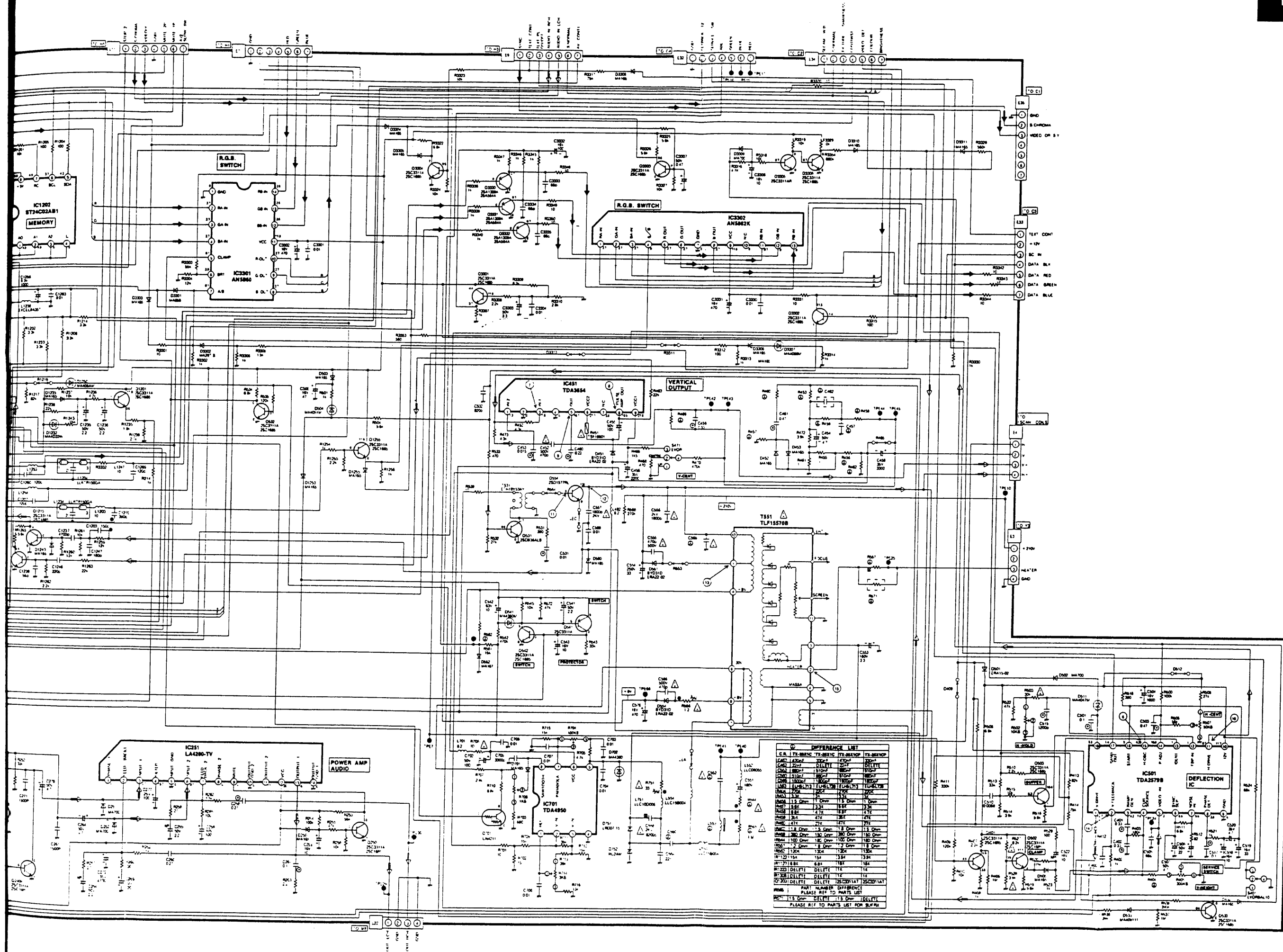
PARTS LOCATION

P-BOARD	
Diodes	
D811	C3



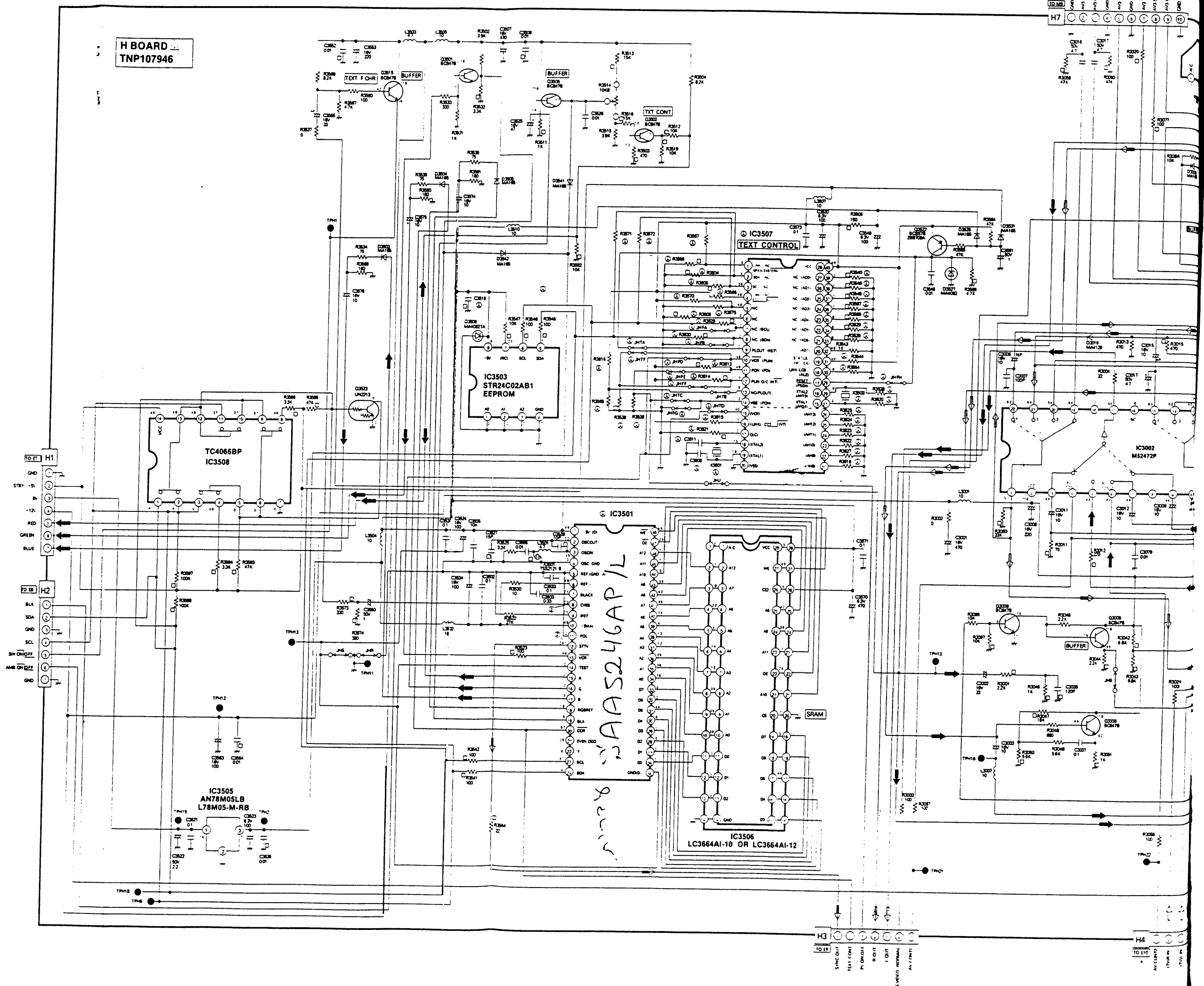


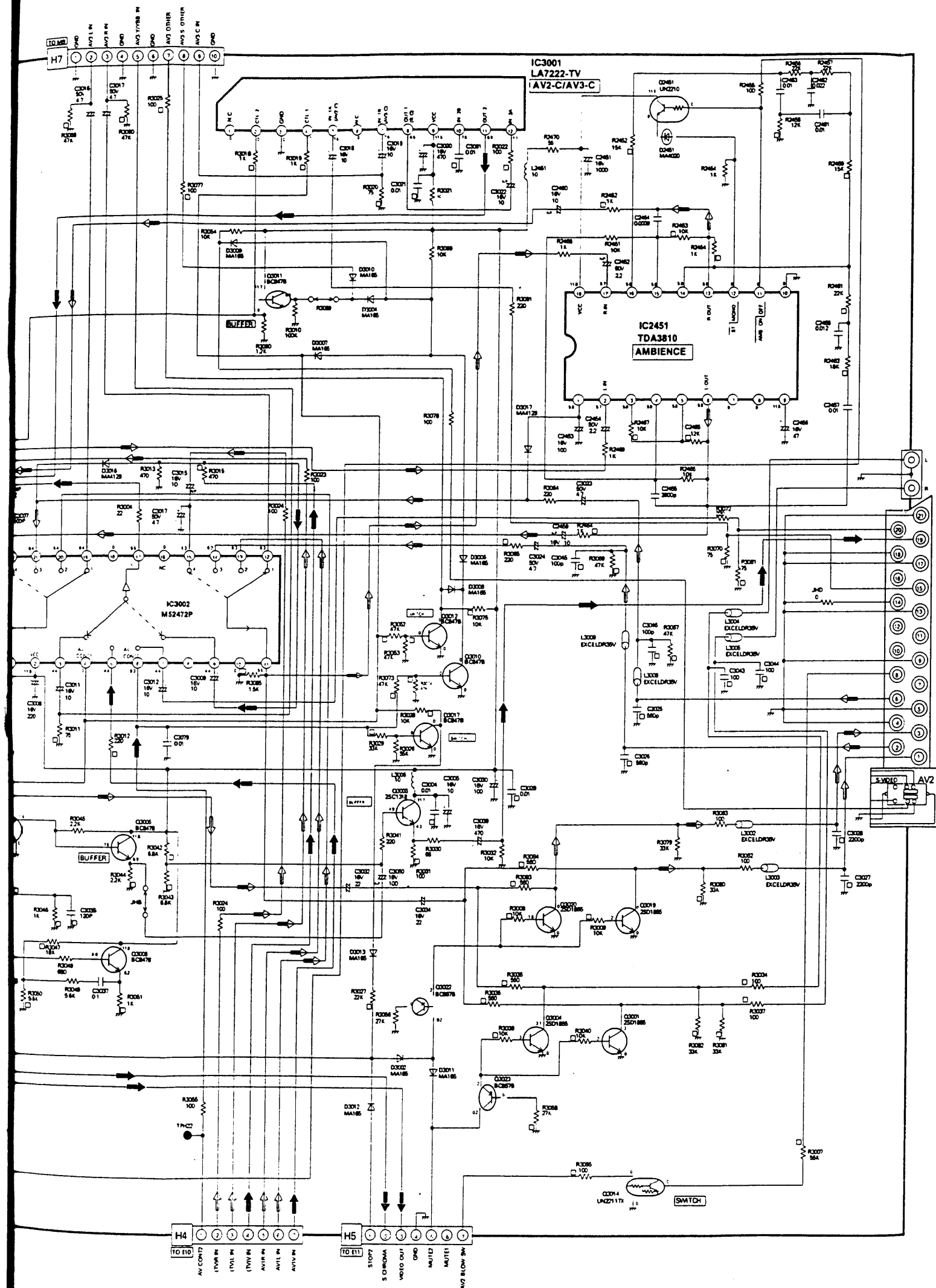




DIFFERENCE LIST		
C.R	X1C	X1CP
C3518	10nF	10pF
C3509	180pF	DELETE
C3511	180pF	DELETE
IC3501	SAAS246APM6	SAAS246APM6
IC3507	PC883054028	PCF84C01P076
JHFA	DELETE	SM Jumper
JHFB	DELETE	SM Jumper
JHFC	DELETE	SM Jumper
JHFE	DELETE	SM Jumper
JHFF	DELETE	SM Jumper
JHFG	DELETE	SM Jumper
JHFI	DELETE	SM Jumper
JHFA	SM Jumper	DELETE
JHFC	SM Jumper	DELETE
JHFD	SM Jumper	DELETE
JHFE	SM Jumper	DELETE
R3528	1K	SM Jumper
R3529	1K	SM Jumper
R3530	10K	DELETE
R3538	SM Jumper	100 Ohm
R3540	1K	SM Jumper
R3544	1K	10K
R3548	1K	SM Jumper
R3549	1K	SM Jumper
R3554	DELETE	100 Ohm
R3555	1K	DELETE
R3567	DELETE	1K
R3568	1K	SM Jumper
R3569	1K	10K
R3570	DELETE	10K
R3571	DELETE	100 Ohm
R3572	DELETE	100 Ohm
R3575	1K	DELETE
R3587	1K	SM Jumper
R3588	1K	SM Jumper
R3604	1K	DELETE
R3605	1K	DELETE
R3608	1K	SM Jumper
R3613	1K	DELETE
R3614	1K	DELETE
R3615	1K	DELETE
R3616	1K	DELETE
R3618	1K	DELETE
R3620	1K	DELETE
R3621	1K	DELETE
R3622	1K	DELETE
R3623	1K	DELETE
R3624	1K	DELETE
R3625	1K	DELETE
R3627	1K	DELETE
R3628	1K	DELETE
R3629	1K	DELETE
R3630	1K	DELETE
X3503	DELETE	TSS2001.M1
X3501	TSS2001.M1	DELETE

PLEASE REFER TO PARTS LIST FOR SUFFIX





WAVEFORM PATTERN TABLE SIGNAL TABELLE

1 3.1Vp-p (20µs)	2 2.8Vp-p (20µs)	3 2.8Vp-p (20µs)
4 0.4Vp-p (20µs)	5 1.2Vp-p (20µs)	6 3.0Vp-p (20µs)
7 3.6Vp-p (5ms)	8 22Vp-p (5ms)	9 45Vp-p (5ms)
10 2Vp-p (20µs)	11 15Vp-p (10µs)	12 1500Vp-p (10µs)
13 100Vp-p (20µs)	14 100Vp-p (20µs)	15 25.2Vp-p (20µs)
16 4.5Vp-p (20µs)	17 4.5Vp-p (20µs)	18 4.5Vp-p (20µs)
19 150Vp-p (20µs)	20 150Vp-p (20µs)	21 150Vp-p (20µs)