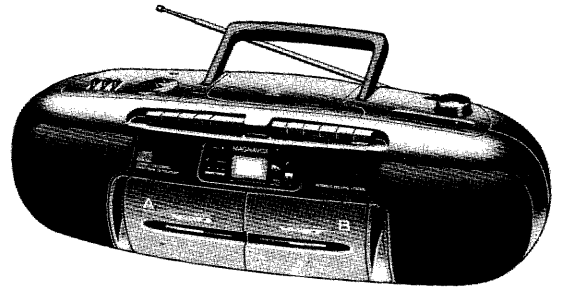


Service Service Service

←
Volta ao Menu



Service Manual

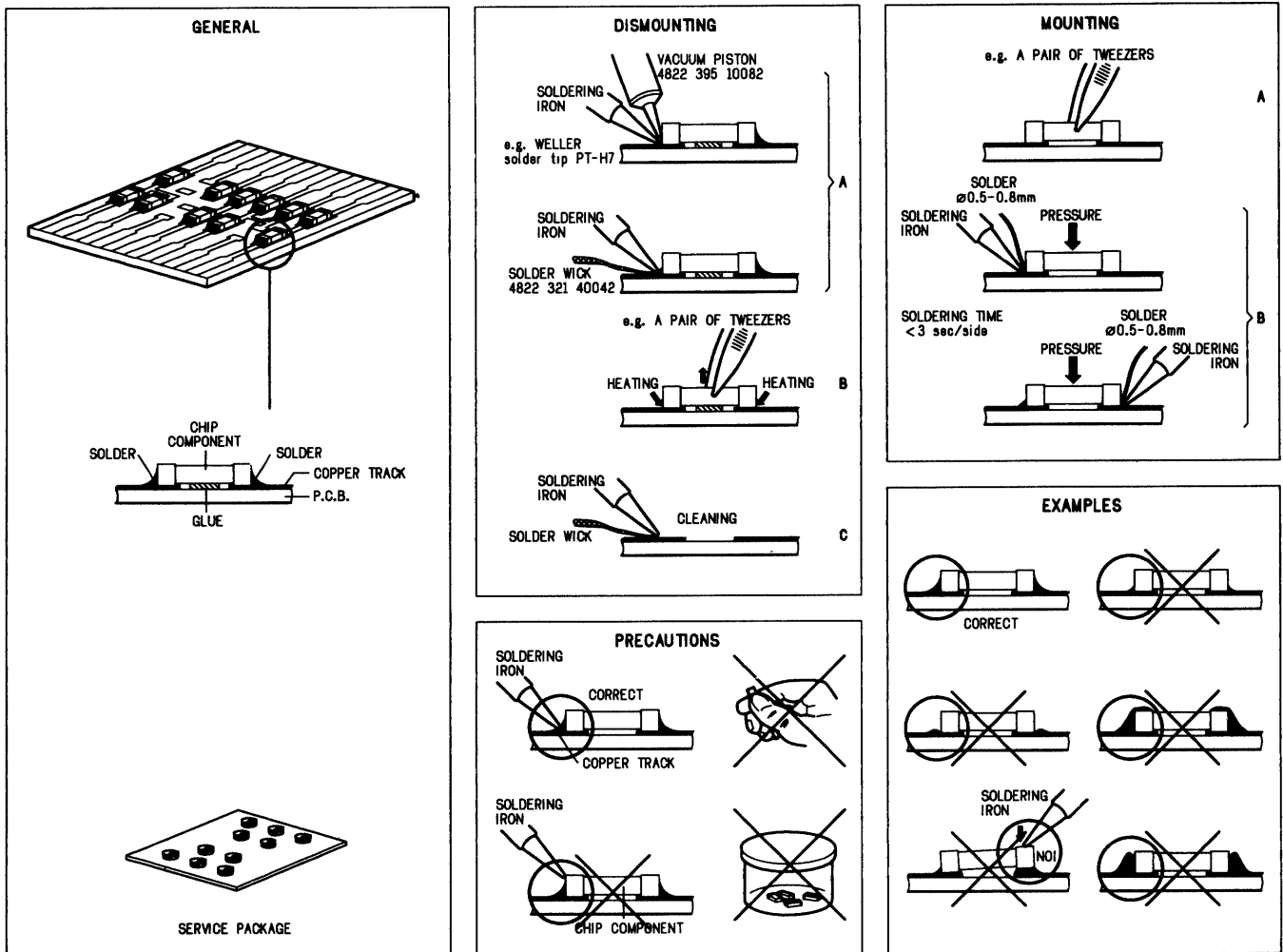
ÍNDICE

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SUGESTÕES PARA REPARAÇÃO



ESD



1. E.S.D. (Descargas Eletrostáticas)

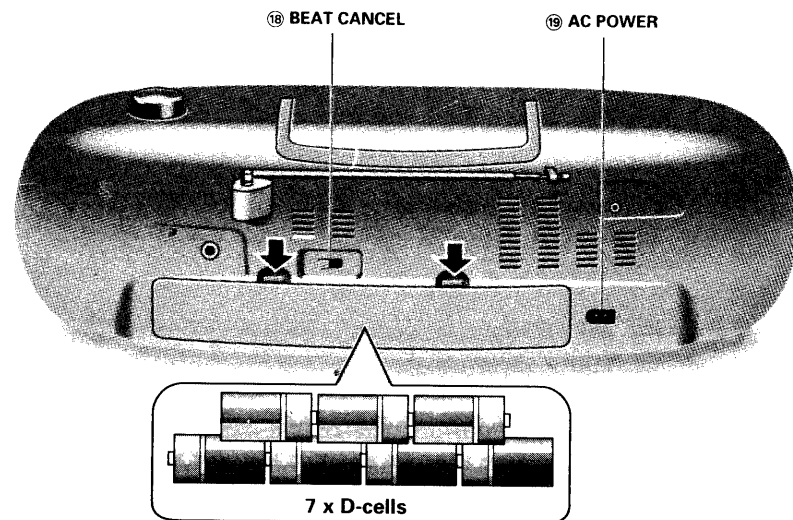
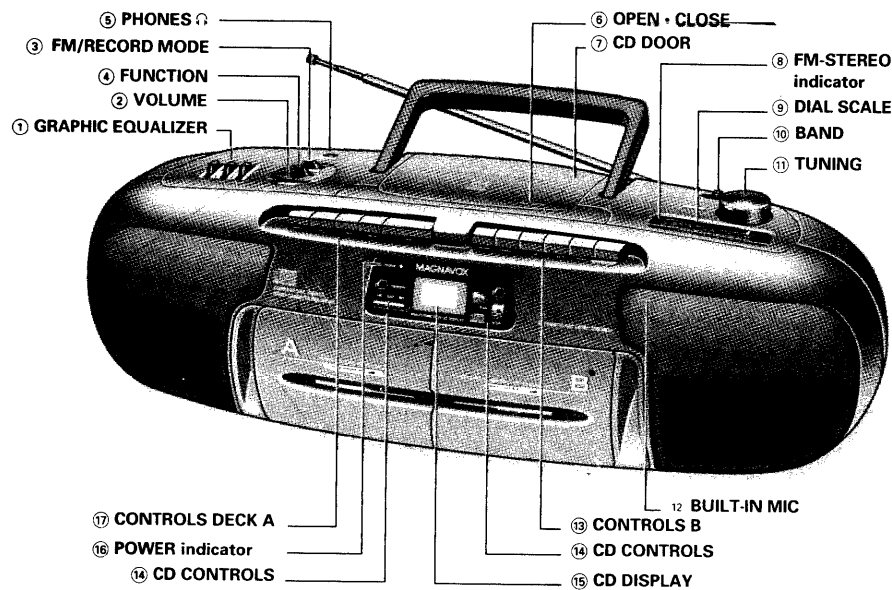
Todos os C.I.'s e outros semicondutores são suscetíveis às descargas eletrostáticas (ESD). A falta de cuidado durante uma intervenção técnica, pode reduzir drasticamente a vida útil destes componentes.

Durante o conserto, assegure-se bem de todos os procedimentos necessários a se evitar as E.S.D.'s.

2. Circuitos Integrados

Todos os I.C.'s MOS, geralmente são muito suscetíveis a sobrecargas e alta tensões, portanto, todas as medições devem ser efetuadas com o máximo cuidado.

CONNECTIONS AND CONTROLS



TOP AND FRONT PANEL

- 1 **Three band graphic equalizer** – To adjust the tone.
- 2 **VOLUME** – To adjust the volume.
- 3 **FM MODE/RECORD MODE**
FM MODE – To switch the radio to mono/stereo mode.
RECORD MODE – To switch to the desired dubbing mode:
 – HIGH SPEED;
 – NORMAL REC;
 – MIC REC.
- 4 **FUNCTION**
 – CD: to switch to CD mode/power ON.
 – TAPE: to switch to TAPE mode/power OFF.
 – RADIO: to switch to RADIO mode/power ON.
- 5 **PHONES** – Connection for headphones (impedance 8-32 ohms).
- 6 **OPEN · CLOSE** – To open the CD door.
- 7 **CD DOOR**
- 8 **FM STEREO Indicator *** – Lights up when receiving FM stereo stations.
- 9 **Dial scale**
- 10 **BAND** – To select between AM and FM.
- 11 **TUNING** – To tune to a radio station.
- 12 **Built-in microphone** – Under the speaker grill.
- 13 **Controls deck B**
PAUSE – To interrupt playback/recording.
STOP/EJ(ect) – To stop and eject the cassette.
F.FWD – Fast forward.
REWIND – Fast rewind.
PLAY – To start cassette playback.
REC(ord)/CD SYNCHRO – To start recording.
- 14 **CD controls**
PLAY/PAUSE – To start and interrupt playback.
STOP – To stop playback.
REPEAT – To repeat one/all tracks.
SKIP – To skip and search backward/forward.
MEMORY – To program track numbers in the memory.
- 15 **CD DISPLAY** – To indicate what function the unit is performing
 ►: PLAY
 ► (flashing): PAUSE
 PGM: Programming
 REPEAT: Repeat one
 REPEAT (flashing): Repeat all
 ER: Error
- 16 **POWER Indicator *** – Lights up when power supply is on.
- 17 **Controls deck A**
PAUSE – To interrupt playback.
STOP/EJ(ect) – To stop and eject the cassette.
F.FWD – Fast forward.
REWIND – Fast rewind.
PLAY – To start cassette playback.

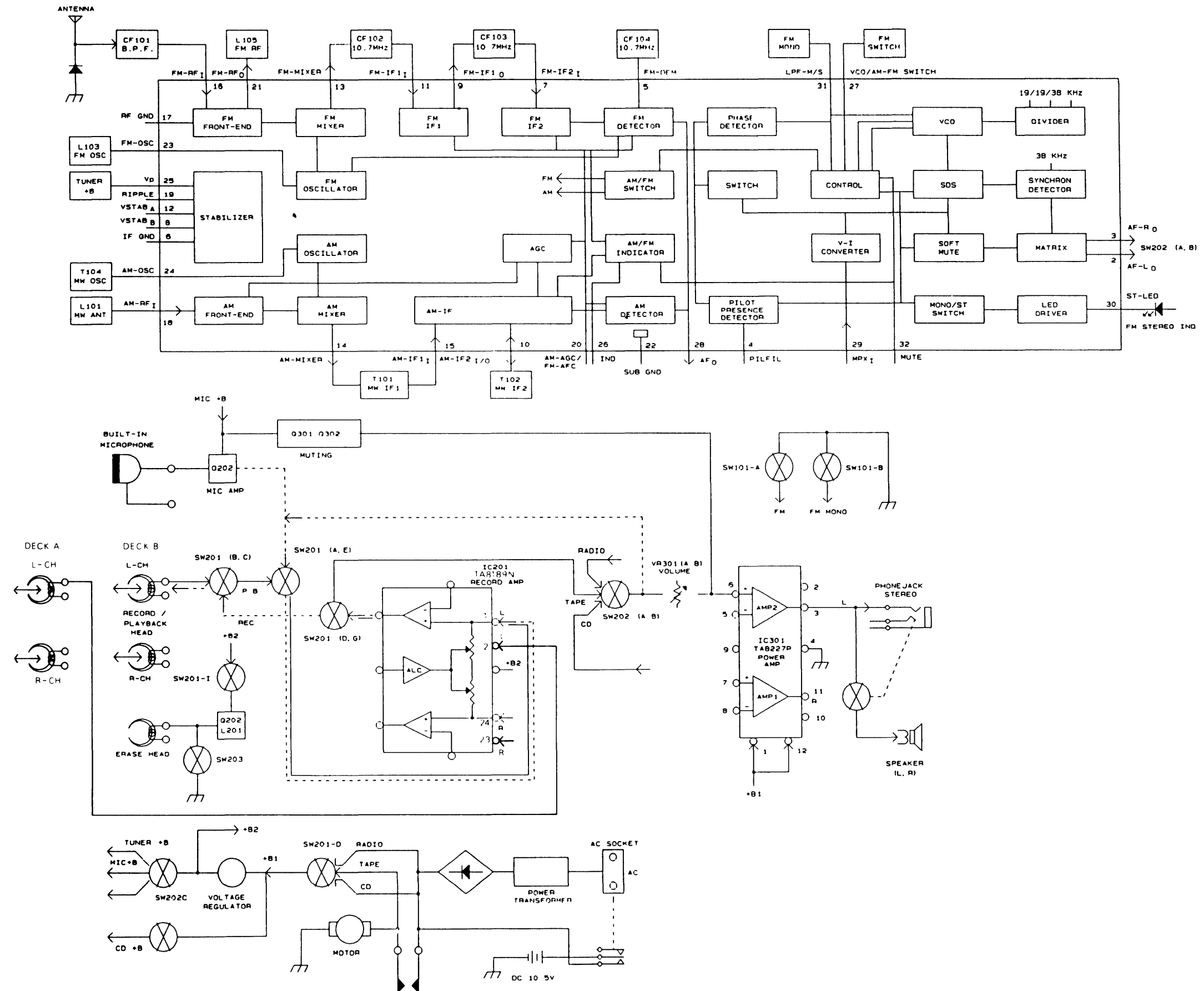
BACK PANEL

- 18 **BEAT CANCEL** – For eliminating possible whistle tones during AM recordings.
- 19 **AC POWER** – Socket for the power cord.

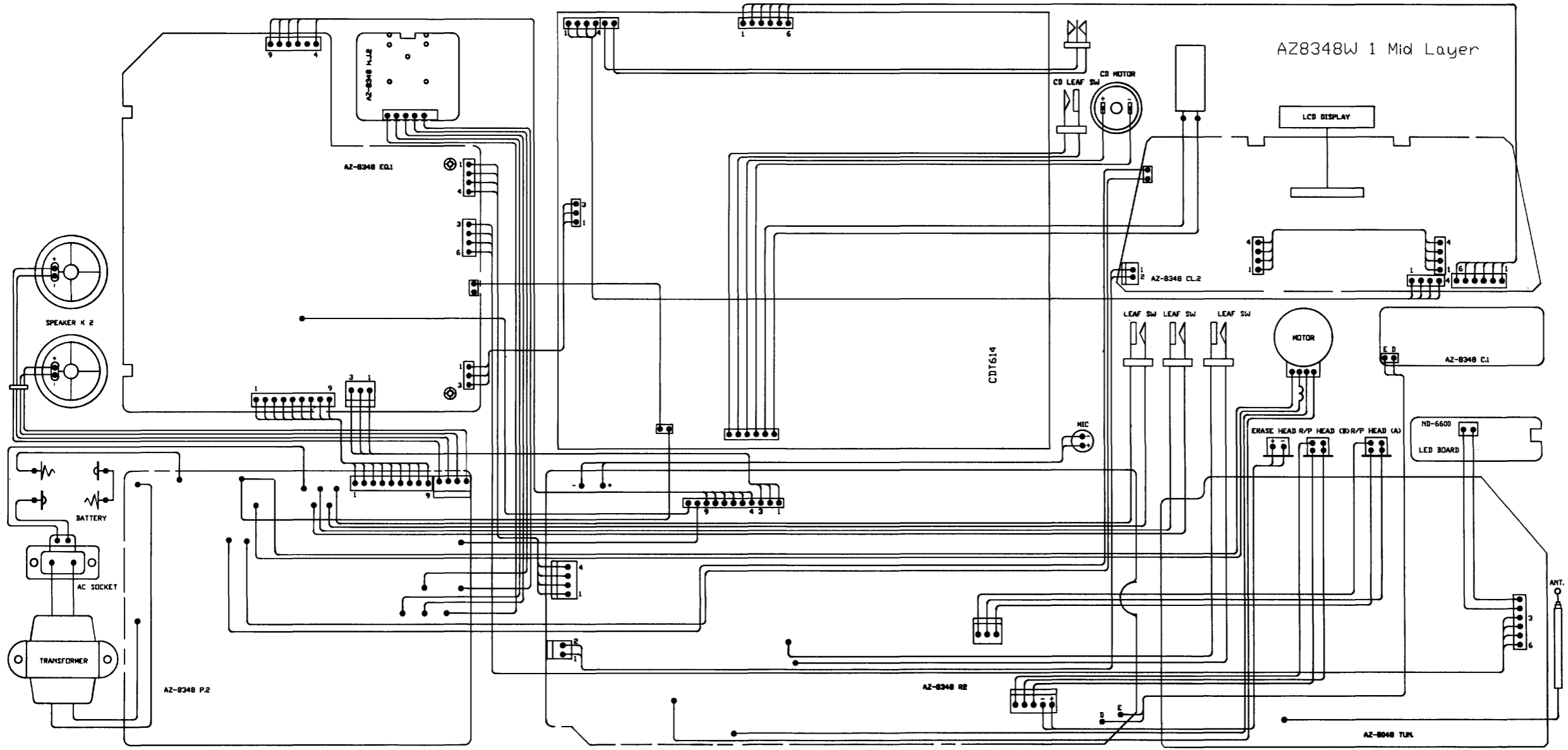
GERAIS

Tensão / Frequência de rede	: 110 / 220 Vac / 60 Hz
Bateria	: 10,5 V (R20 x 7)
Consumo	: 35 W max.
Dimensões (L x P x A)	: 550 x 220 x 160 mm
Peso	: 3,4 Kg
TUNER : FM	
Range de sintonia	: 87,3 MHz ~ 108,3 MHz
Frequência de FI	: 10,7 MHz
Sensibilidade a 26 dB S/N	: < 22 dBf
Seletividade a 600kHz B.W.	: > 20 dB
Rejeição de FI	: > 60 dB
Rejeição de Imagem	: > 26 dB
Separação Estéreo (1kHz)	: > 20 dB
Supressão de AM	: > 23 dB
TUNER : AM	
Range de sintonia	MW : 520 KHz ~ 1620 KHz
Frequência de FI	: 468 KHz ± 3 KHz
Sensibilidade a 26 dB S/N	MW : < 2000 µV/ m
Seletividade a 18 KHz B.W.	MW : > 23 dB
Rejeição de FI	MW : > 34 dB
Rejeição de Imagem	: > 36 dB
AMPLIFICADOR	
Potência de saída	Rede : 2 x 2 W
	Bateria : 2 x 2 W
Impedância dos falantes	: 2 x 6 Ω
Resposta em Frequência (-3dB)	: 100 Hz ~ 8 KHz
DECK	
Wow & Flutter	: < 0,5 %
Bias	: 60 KHz ± 10 KHz
Resposta de Freq. na gravação	: 125 Hz ~ 10 KHz (± 6 dB)
Relação Sinal/Ruído (S/N)	: > 40 dB
Relação de apagamento	: > 50 dB (w / BPF)
C D	
Resposta de Frequência (± 3 dB)	: 63 Hz ~ 14 KHz
Relação Signal/Hiss	: > 62 dB
Distorção a 1kHz	: < 1,0 %
Diferença entre canais a 1kHz	: < 3 dB
Crosstalk a 1 KHz	: > 36 dB

BLOCK DIAGRAM



WIRING DIAGRAM



RADIO ALIGNMENT

AM IF										
AM or MW	468KHz		min.	T101 T102		1				max.
AM RF										
MW *	516.5KHz		max.	T4		1				max.
	+ 1631.5KHz		min.	CT4			max.			
	600KHz					L101		max.		
	1400KHz					CT3		max.		
FM RF										
FM #	87.35MHz		max.	L3		1				max.
	108.35MHz		min.	TC2			max.			
	90MHz					L2		max.		
	106MHz					CT1		max.		

* Mod. 1KHz 30%
10nF + 15E
+ 1710KHz for -17 version

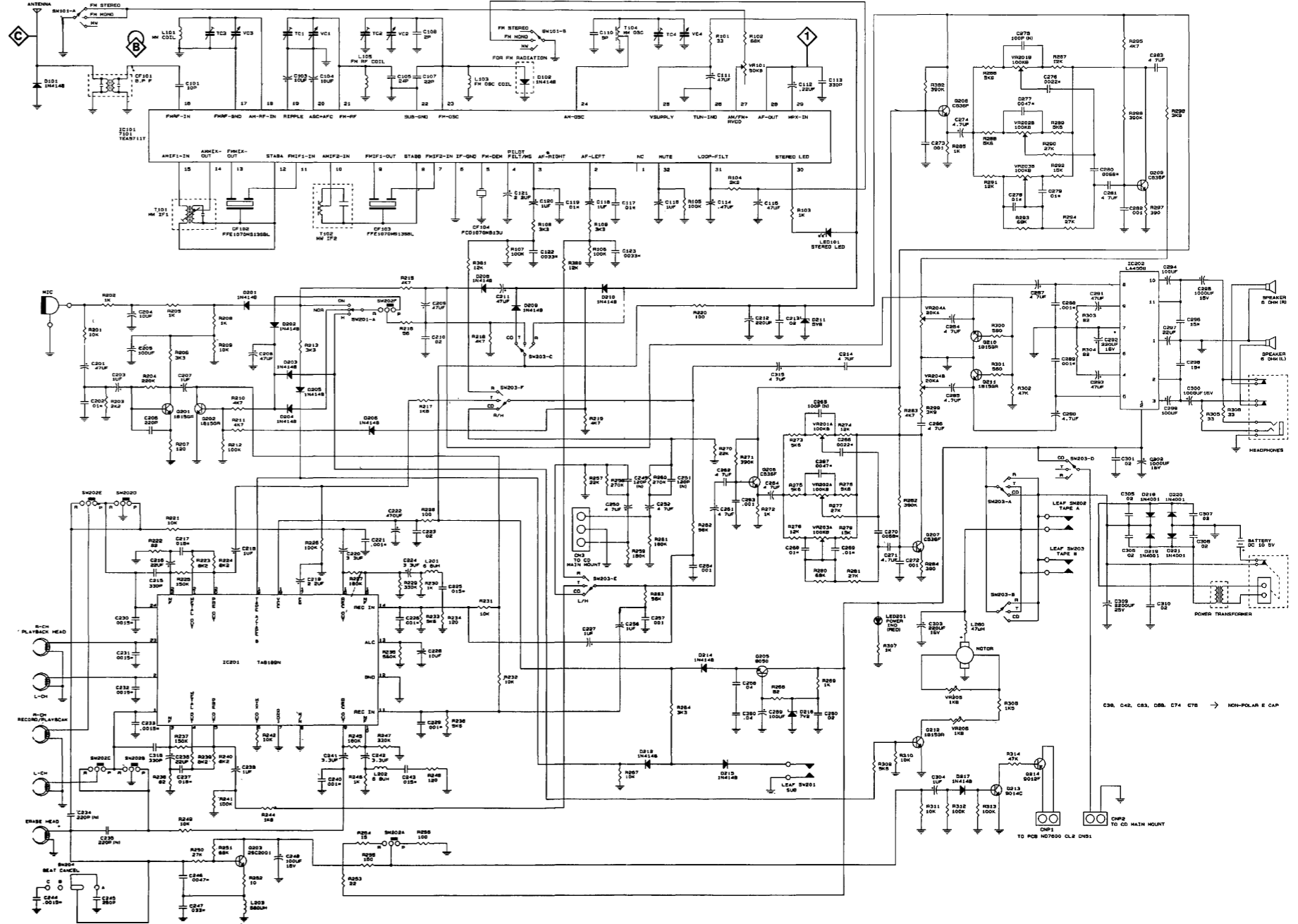
Repeat

CASSETTE ADJUSTMENT

Adjustment	Cassette	Recorder position			Measure on	Read on	Adjust with	Adjust to
		SK	Deck 1	Deck 2				
Head Azimuth	8KHz SBC420*	Tape	Play	--	H/P Socket	mV meter	Left screw of R/P head on Deck 1	max.
		Tape	--	Play	H/P Socket	mV meter	Left screw of R/P head on Deck 2	L = R
Tape Speed	3150Hz SBC420*	Tape /Nor. speed	Play	--	H/P Socket	Wow and flutter meter	SVR 205 SVR 206	**a
		Tape /High speed	Play	Record	H/P Socket	Wow and flutter meter	--	4.3-5.3KHz

**a The maximum permissible speed deviation is ± 3%.
Moreover, the wow and flutter value can be read.

CIRCUIT DIAGRAM



VOLTAGE CHART

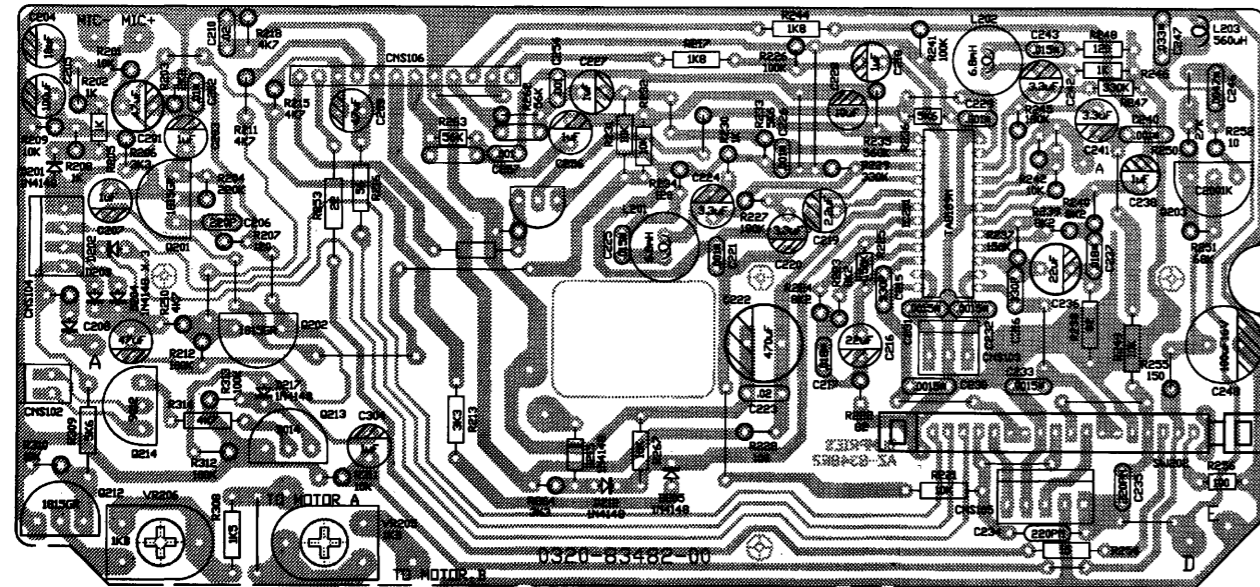
IC 101							
PIN	FM	PIN	FM	PIN	AM	PIN	AM
1	0	17	0	1	0	17	0
2	0.5	18	0	2	0.6	18	0
3	0.5	19	2.1	3	0.6	19	2.1
4	1	20	0.5	4	1	20	0.6
5	1	21	0	5	0.1	21	0
6	0	22	0	6	0	22	0
7	0.7	23	0	7	1.2	23	0
8	1.4	24	0	8	1.5	24	0
9	0.7	25	4.8	9	1	25	4.9
10	1.4	26	0	10	1.5	26	0
11	0.7	27	1	11	0	27	1.1
12	1.4	28	0.5	12	1.5	28	0.5
13	1	29	1.3	13	1	29	1.3
14	1.4	30	4.4	14	1.5	30	4.4
15	1.4	31	0	15	1.5	31	0.2
16	0.7	32	0.8	16	0	32	0.7

IC 201							
PIN	PLAY	PIN	PLAY	PIN	REC	PIN	REC
1	0.001	13	0.83	1	0.004	13	0.83
2	0.001	14	0.003	2	0.004	14	0.006
3	1.29	15	1.29	3	1.29	15	1.29
4	1.36	16	2	4	1.35	16	2
5	1.36	17	1.44	5	1.35	17	1.44
6	1.32	18	5.1	6	1.32	18	5.1
7	0.001	19	4.1	7	0.004	19	4.1
8	0.001	20	1.35	8	0.004	20	1.35
9	2	21	1.35	9	2	21	1.35
10	1.29	22	1.28	10	1.29	22	1.28
11	0.003	23	0.001	11	0.008	23	0.004
12	0.001	24	0.001	12	0.004	24	0.004

IC 202	
PIN	VOLT
1	GND
2	0.008
3	0.56
4	11.8
5	6.6
6	12.6
7	1.48
8	6.6
9	11.8
10	0.56
11	0.009
12	12.6

	Q201	Q202	Q203	Q205	Q206	Q207	Q208	Q209	Q210	Q211	Q212	Q213	Q214		
	MIC REC	VOLT	PLAY	REC	VOLT	VOLT	VOLT	VOLT	VOLT	VOLT	NORMAL	HI. SPEED	VOLT	VOLT	
B	0.73	0.71	0.001	-1.92	7.5	2.1	0.88	2.1	0.89	0.8m	0.8m	0.001	0.72	0.34	0.001
C	1.34	0.004	0.001	6.29	12.6	5.4	2.3	5.4	2.3	0.8m	0.8m	11.8	0.019	0	0.2
E	0.1	0.001	0.001	0.52	6.8	1.5	0.25	1.5	0.25	0	0	GND	GND	0	0.001

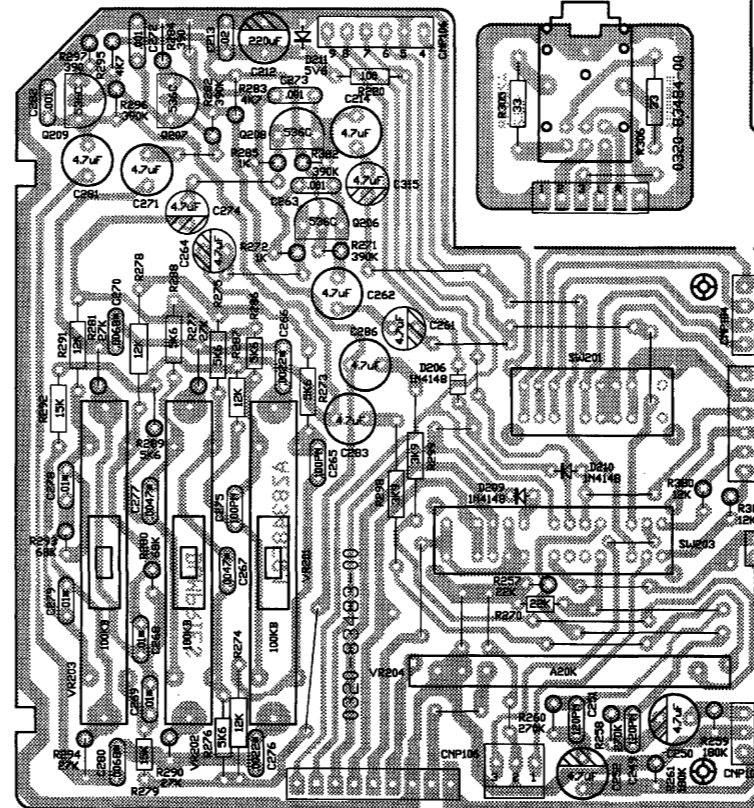
POWER & RECORD BOARD



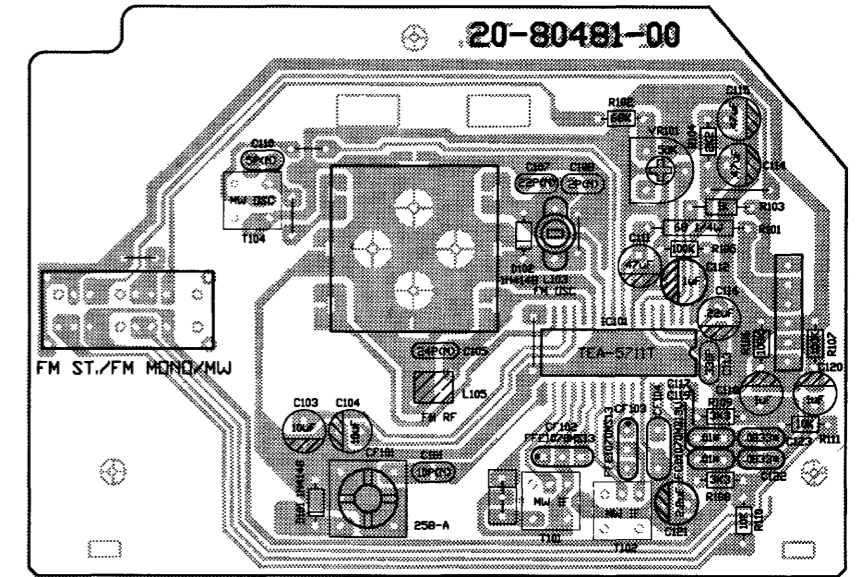
BEAT CUT



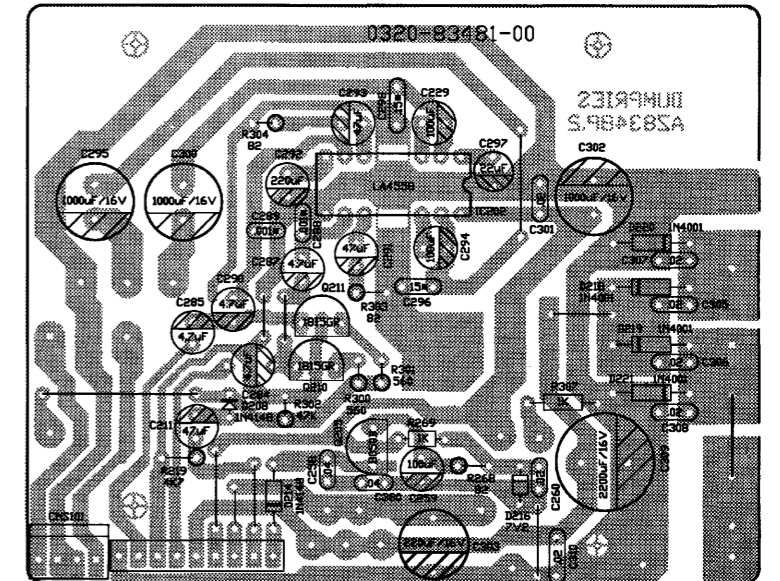
EQ & HEADPHONE BOARD



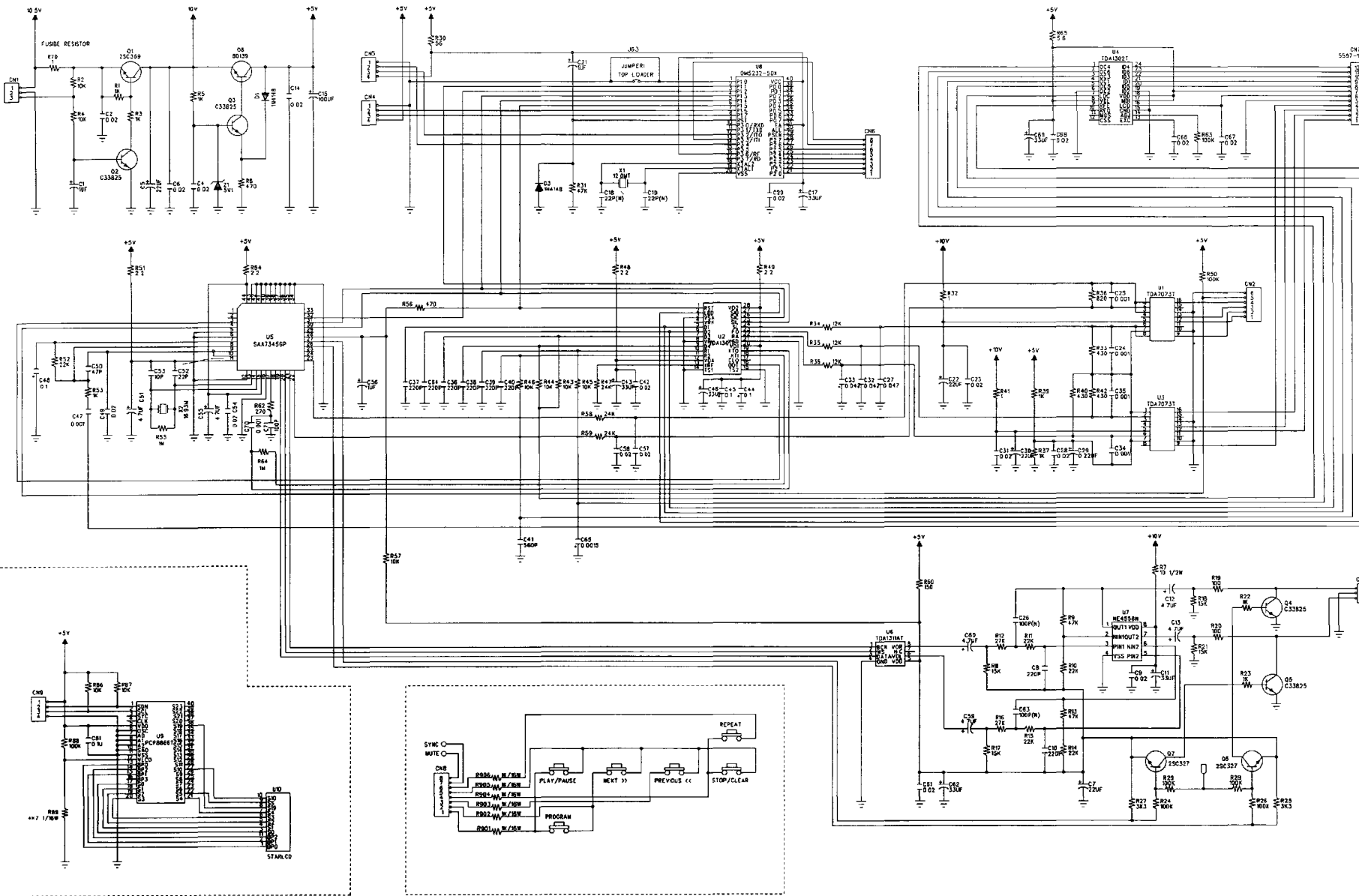
TUNER BOARD



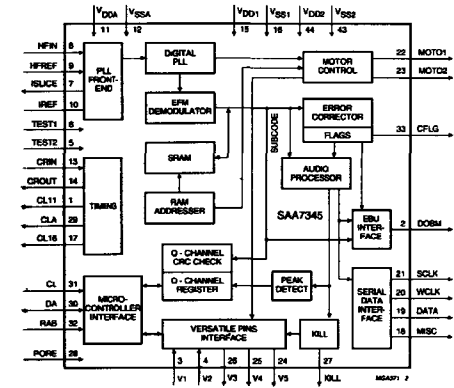
POWER AMP BOARD



CD - CIRCUIT DIAGRAM



SAA7345



TDA1311AT

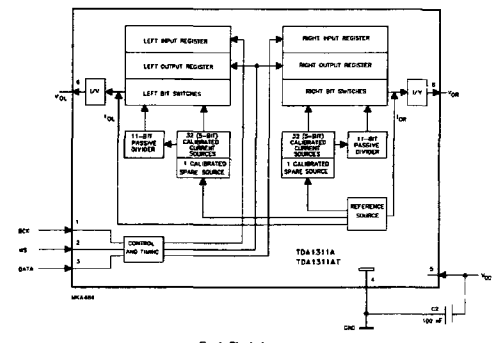
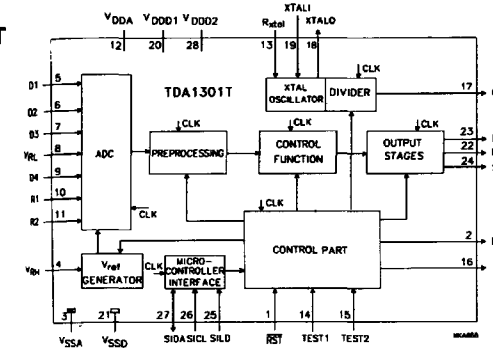
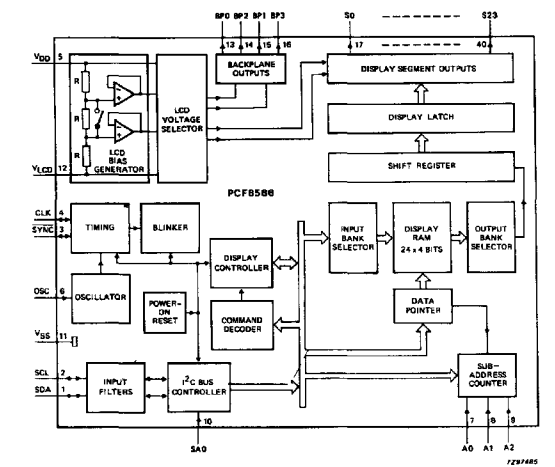


Fig 1 Block diagram

TDA1301T



PCF8566

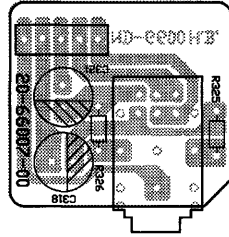


LAYOUT DIAGRAM

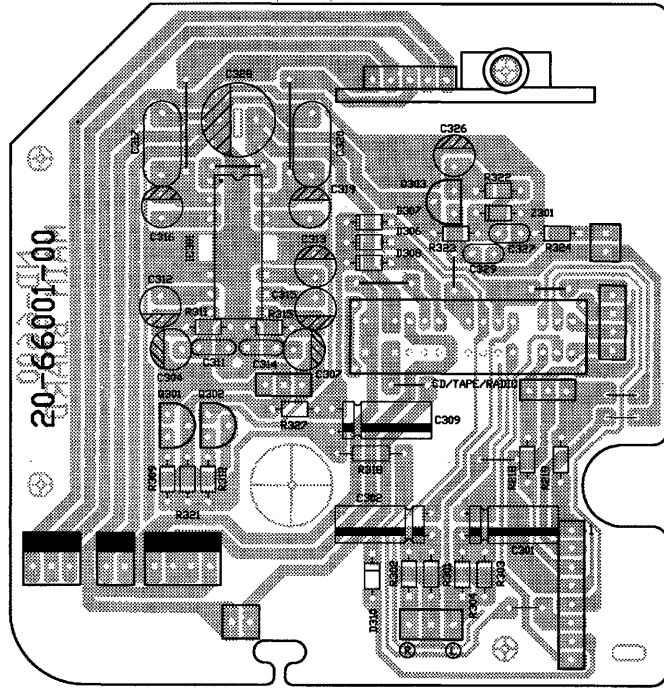
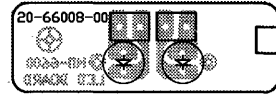
VOLTAGE CHART

IC 101				TEA5711T			
PIN	FM	PIN	FM	PIN	AM	PIN	AM
1	NIL	17	GND	1	NIL	17	GND
2	0.5	18	0	2	0.66	18	0
3	0.5	19	2.09	3	0.66	19	2.1
4	1	20	0.43	4	1	20	0.14
5	1.02	21	0	5	0.02	21	0
6	GND	22	GND	6	GND	22	GND
7	0.74	23	0	7	1	23	0
8	1.41	24	0	8	1.45	24	0
9	0.67	25	6.58	9	0.94	25	6.76
10	1.41	26	GND	10	1.45	26	GND
11	0.69	27	0.99	11	0.96	27	1.12
12	0.39	28	0.6	12	1.42	28	0.82
13	1.03	29	1.23	13	0	29	1.24
14	1.39	30	6.23	14	1.42	30	6.31
15	1.39	31	0	15	1.42	31	0.15
16	0.71	32	0.76	16	0.02	32	0.7

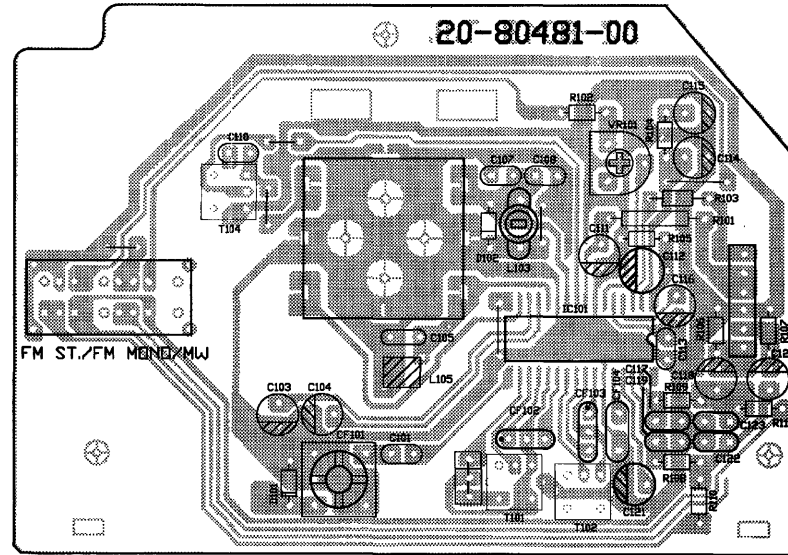
HEADPHONE BOARD



LED BOARD

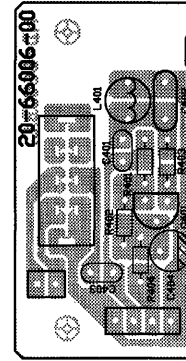


MAIN BOARD

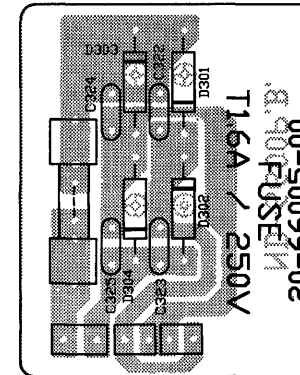
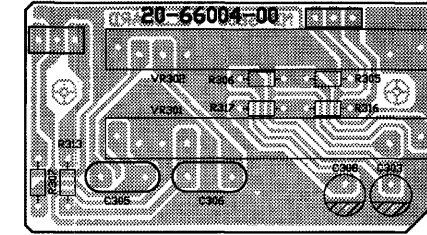


TUNER BOARD

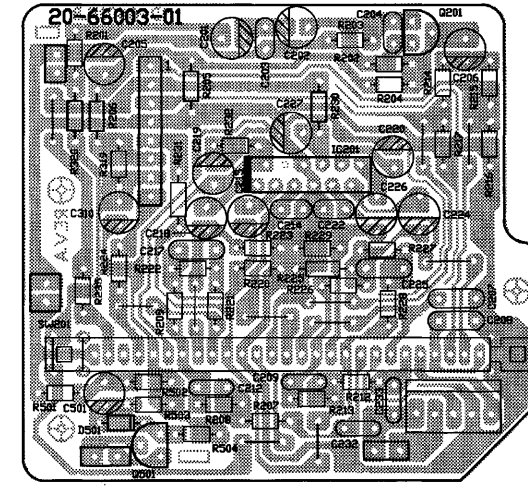
BEAT CUT



VOLUME BOARD



POWER BOARD



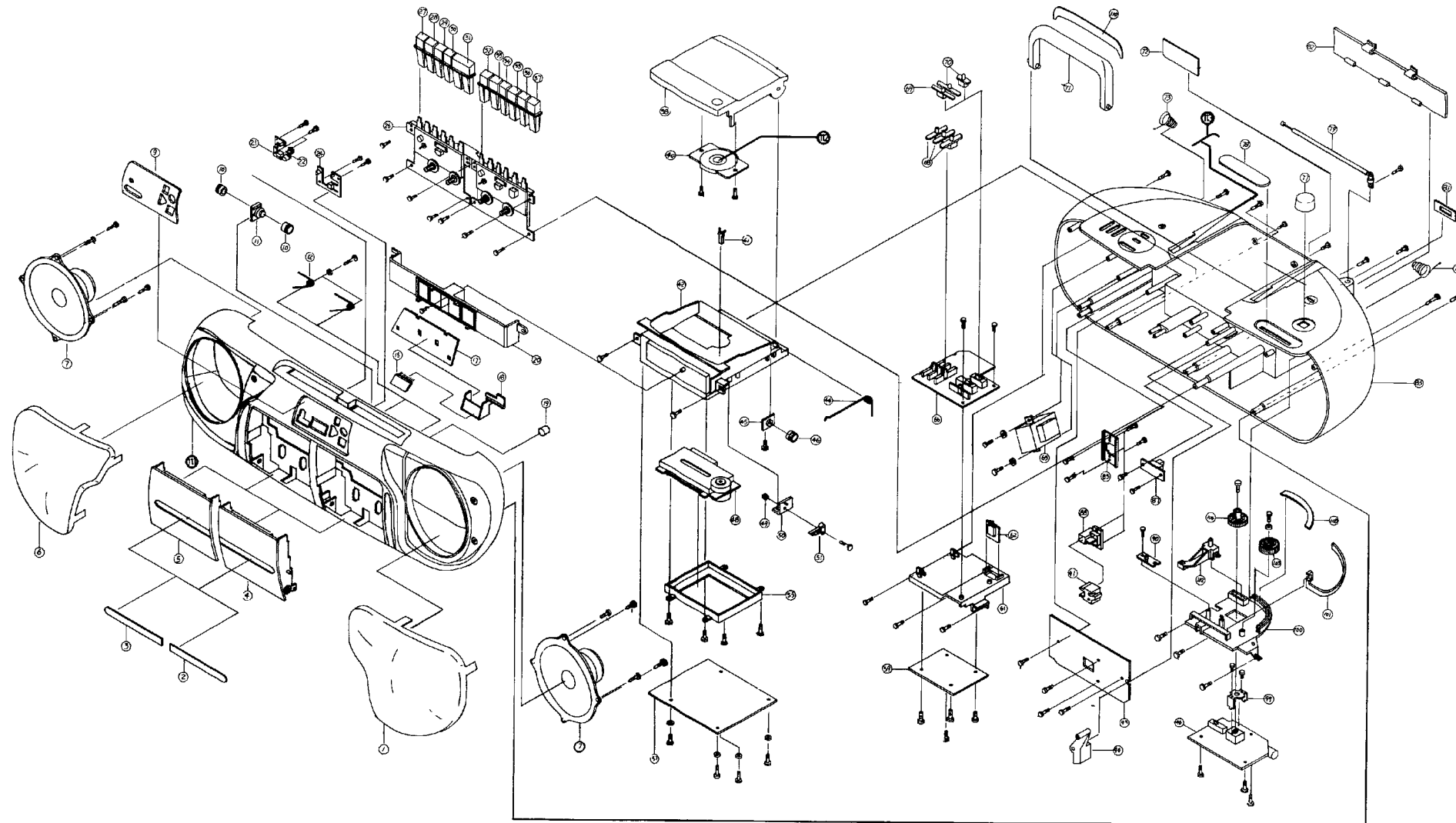
RECORD BOARD

IC103	
PIN	VOLT
1	13.25
2	6.95
3	12.84
4	7.03
5	0.59
6	6.2m
7	6.2m
8	0.59
9	GND
10	12.84
11	6.95
12	13.25

IC201 BA3313L		
PIN	PLAY	REC
1	3.26	2.98
2	0	0.79
3	0.6	0.61
4	NIL	NIL
5	0	0
6	GND	GND
7	GND	GND
8	7.43	6.89
9	0	0
10	7.35	6.82
11	0.6	0.61
12	3.26	2.98

	B	C	E
Q201	0.74	1.86	0.1
Q301	1.2m	GND	0.4m
Q302	1.2m	GND	0.4m
Q303	13.25	8.71	8.08
Q401	0.8m	1m	0.7m
Q501	0.45	0.7m	0.7m

EXPLODED VIEW DIAGRAM - CABINET



LISTA DE PEÇAS MECÂNICAS DO APARELHO

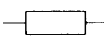
- | | |
|---------------------|-------------------------------|
| 01 - 4822 458 20219 | 44 - 4822 492 42768 |
| 02 - 4822 450 62432 | 45 - 4822 256 92298 |
| 03 - 4822 450 62431 | 46 - 4822 522 33561 |
| 04 - 4822 443 64445 | 48 - 4822 691 30278 - CDM12.1 |
| 05 - 4822 443 64444 | 49 - não disponível |
| 06 - 4822 458 20218 | 50 - não disponível |
| 07 - 4822 240 30747 | 51 - não disponível |
| 09 - 4822 450 62417 | 53 - não disponível |
| 10 - 4822 522 33562 | 57 - não disponível |
| 11 - 4822 256 92299 | 59 - não disponível |
| 12 - 4822 492 42765 | 61 - não disponível |
| 15 - 4822 130 91472 | 62 - não disponível |
| 17 - não disponível | 65 - 4822 146 31474 |
| 18 - 4822 404 10888 | 66 - não disponível |
| 19 - não disponível | 68 - 4822 411 62022 |
| 20 - não disponível | 69 - 4822 411 62021 |
| 21 - 4822 410 63701 | 70 - 4822 411 62019 |
| 22 - 4822 410 63699 | 71 - 4822 498 10533 |
| 24 - 4822 410 63698 | 72 - não disponível |
| 26 - 4822 691 21023 | 73 - 4822 290 81619 |
| 27 - 4822 410 63697 | 76 - 4822 290 81621 |
| 28 - 4822 410 63695 | 77 - 4822 413 41906 |
| 29 - 4822 410 63695 | 78 - 4822 450 61437 |
| 30 - 4822 410 63695 | 79 - 4822 303 30448 |
| 31 - 4822 410 63724 | 81 - não disponível |
| 32 - 4822 410 63697 | 82 - 4822 443 64437 |
| 33 - 4822 410 63695 | 83 - não disponível |
| 34 - 4822 410 63695 | 85 - não disponível |
| 35 - 4822 410 63695 | 87 - não disponível |
| 36 - 4822 410 63695 | 88 - não disponível |
| 37 - 4822 410 63696 | 90-100- não disponíveis |
| 38 - 4822 444 61049 | 101 - 4822 450 81227 |
| 40 - 4822 402 61412 | 102 - 4822 411 62006 |
| 41 - 4822 276 13594 | 103 - 4822 522 33554 |
| 42 - não disponível | 104 - 4822 522 33553 |
| | 108 - não disponível |
| | 110 - não disponível |
| | 111 - 4822 423 51198 |
| | 112 - 4822 402 61412 |
| | 113 - 4822 290 81703 |

LISTA DE PEÇAS MECÂNICAS DO DECK

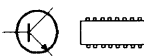
- 4822 691 21023 - T. Deck TK20FX-VW708
- 20 - 4822 278 90744 - Chave "Leaf" (MSW-17820MVD)
- 23 - 4822 278 90596 - Chave "Leaf" (MSW-1541T)
- 35 - 4822 403 20244 - Rolo pressor
- 58 - 4822 528 81546 - Polia p/ motor
- 59 - 4822 358 31322 - Correia p/ volante
- 62 - 4822 403 71219 - Alavanca "EJECT"
- 65 - 4822 249 10475 - Cabeça REC/Pb (Deck A e B)
- 67 - 4822 249 40312 - Cabeça apagadora
- 68 - 4822 361 21592 - Motor DC

Obs. : As peças relacionadas acima, são as únicas disponíveis para reposição.

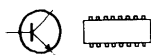
LISTA ELÉTRICA




RV101	4822 101 11292	Semi-fix Res 50KOhm
VR201	4822 411 62024	Slide Volume B100K
VR202	4822 411 62024	Slide Volume B100K
VR203	4822 411 62024	Slide Volume B100K
VR204	4822 411 62023	Slide Volume A20K
VR205	4822 117 11679	Semi-fixed RST 1K
VR206	4822 117 11679	Semi-fixed RST 1K



IC101	4822 209 32746	IC TEA5711T
IC201	4822 209 31388	IC TA8189N
IC202	4822 209 90235	IC LA4558

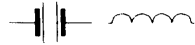


Q1	5322 130 44593	Trans. BC369
Q2	4806 130 47332	Trans. BC338-25
Q3		Trans. BC338-25
Q4		Trans. BC338-25
Q5		Trans. BC338-25
Q6	4806 130 47333	Trans. BC327-25
Q7		Trans. BC327-25
Q8	4806 130 47057	Trans. BD138
Q201	4822 130 41319	Trans. 2SC1815GR
Q202	4822 130 41319	Trans. 2SC1815GR
Q203	4822 130 60258	Trans. 2SC2001K
Q205	4822 130 63664	Trans. 8050B
Q206	4822 130 42298	Trans. 2SC536F
Q207		Trans. 2SC536F
Q208		Trans. 2SC536F
Q209		Trans. 2SC536F
Q210	4822 130 41319	Trans. 2SC1815GR
Q211	4822 130 41319	Trans. 2SC1815GR
Q212	4822 130 41319	Trans. 2SC1815GR
Q213	4822 130 60644	Trans. 9014C
Q214	4822 130 63686	Trans. 9012G
U1	5322 209 32077	IC TDA7073AT
U2	4822 209 32763	IC TDA1301T
U3	5322 209 32077	IC TDA7073AT
U4	4822 209 33992	IC TDA1302T
U5	4822 209 33339	IC SAA7345GP/M5
U6	4822 209 33993	IC TDA1311AT
U7	4822 209 32659	IC BA4558
U8	4822 209 90214	IC OM5232/FBP/518
U9	4822 209 72893	IC PCF8566T



D1	4806 130 37078	Diode 1N4148
D3		Diode 1N4148
D101		Diode 1N4148
D102		Diode 1N4148
D201		Diode 1N4148
D202		Diode 1N4148
D203		Diode 1N4148
D204		Diode 1N4148
D205		Diode 1N4148
D206		Diode 1N4148
D208		Diode 1N4148
D209		Diode 1N4148
D210		Diode 1N4148
D211	4806 130 37049	Zener 5.6V 1/2W
D212		Diode 1N4148
D214		Diode 1N4148
D215		Diode 1N4148
D216	4822 130 83886	Zener 7.1V 1/2W
D217		Diode 1N4148
D218	4806 130 37075	Diode 1N4001
D219		Diode 1N4001
D220		Diode 1N4001
D221		Diode 1N4001
Z1	4806 130 37048	Zener 5.1V 1/2W
LED201	4822 130 83466	LED LN28RP
	4822 130 83467	LED

LISTA ELÉTRICA



Variável

T101	4822 157 71595	I.F.T. AM-1860
T102	4822 157 71596	I.F.T. AM-1861
T103	4822 157 71597	AM Osc AO-1862
L101	4822 157 71566	AM Coil 105T
L103	4822 157 71567	FM OS Coil
CF101	4822 157 71571	Coil A-258A
CF102	4822 157 71569	FFE 1070 MS 13
CF103	4822 157 71569	FFE 1070 MS 13
CF104	4822 157 71568	FCD1070MB13U
→PVC	4822 157 71572	P.V.C FAT-16B2C
L201	4822 157 71602	Choke Coil 6.8mH
L202	4822 157 71602	Choke Coil 6.8mH
L203	4822 157 70806	Choke Coil 560uA
L280	4822 157 70805	Choke Coil 47uH

- DIVERSOS -

SW101	4822 277 21786	Slide Switch 4P3T
SW202	4822 276 13598	Push Swi PS-62D06-NS
SW203	4822 277 21787	Slide Switch 6P3T
SW204	4822 277 30941	Slide Switch
	4822 277 21784	Slide Switch
	4822 276 13443	Tact Switch
LCD1	4822 130 91472	LCD Display TCM-498
	4822 158 60645	Ferrite Bar D10x80
CD Sw	4822 278 90739	Quick Action Switch
	4822 240 30747	Speaker 4"x2 6 Ohm
	4822 267 31889	E/P Jack TC38-063-03
MIC	4822 242 30282	Condenser Mic
	⚠ 4822 267 31891	AC Socket VDE (for -/00/01)
	⚠ 4822 277 30971	Volt. Selector (for -/01)
	4806 321 17067	Cabo de rede
	⚠ 4822 146 31474	Transf. 120/230V (for -/01)

Obs. : As peças relacionadas acima, são as únicas disponíveis para reposição.

