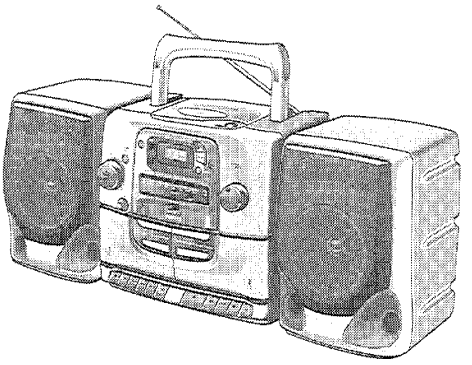
CD Stereo Radio Recorder AZ2710 /01/11/14/17

Service
Service
Service

Manual #1867
AZ27101701



Service Manual

COMPACT disc DIGITAL AUDIO

TABLE OF CONTENTS

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

CLASS 1
LASER PRODUCT

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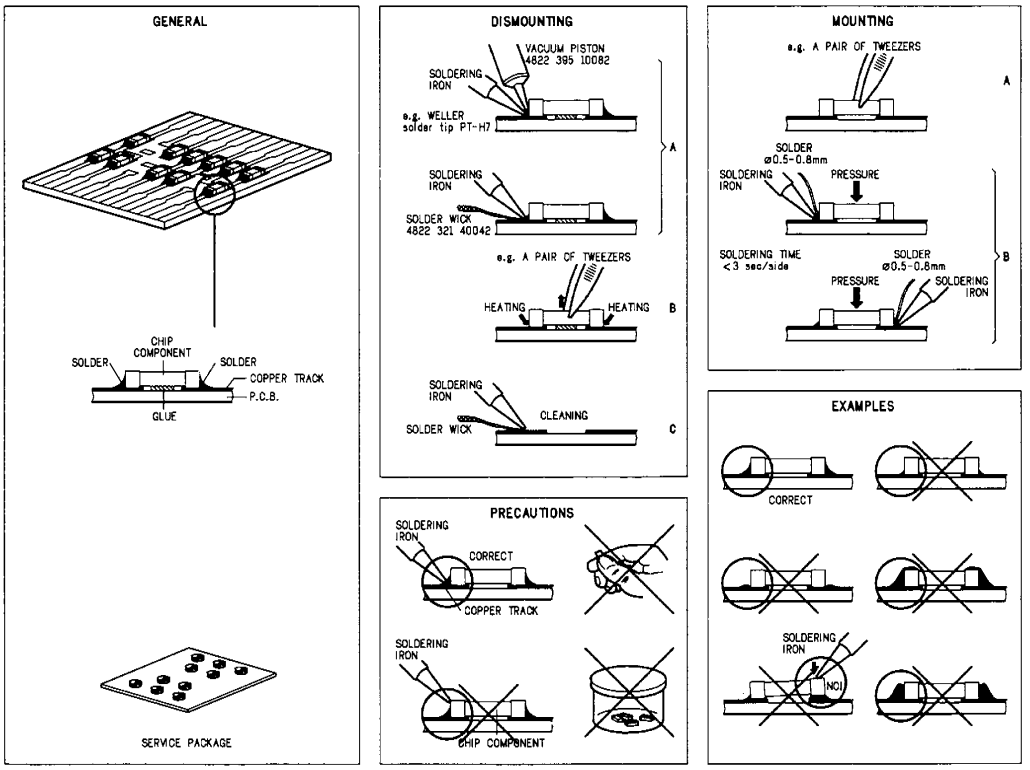
PCS 97 379

PHILIPS

HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

ESD

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, dab sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met wererstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statische (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

Anti-static table mat large 1200x650x1.25mm	4822 466 10953
small 600x650x1.25mm	4822 466 10958
Anti-static wrist band	4822 395 10223
Connection box (1MOhm)	4822 320 11307
Extendible cable (to connect wrist band to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect any product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 310 10671
Wristband tester	4822 344 13999

(GB)

After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)

"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

(GB)

Safety regulations require that the set be restored to its originial condition and that parts which are identical with those specified be used.
Safety components are marked by those symbol. ⚠

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(GB) WARNING

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(F) ATTENTION

Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(D) WARNUNG

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Original-ersatzteile zu verwenden.

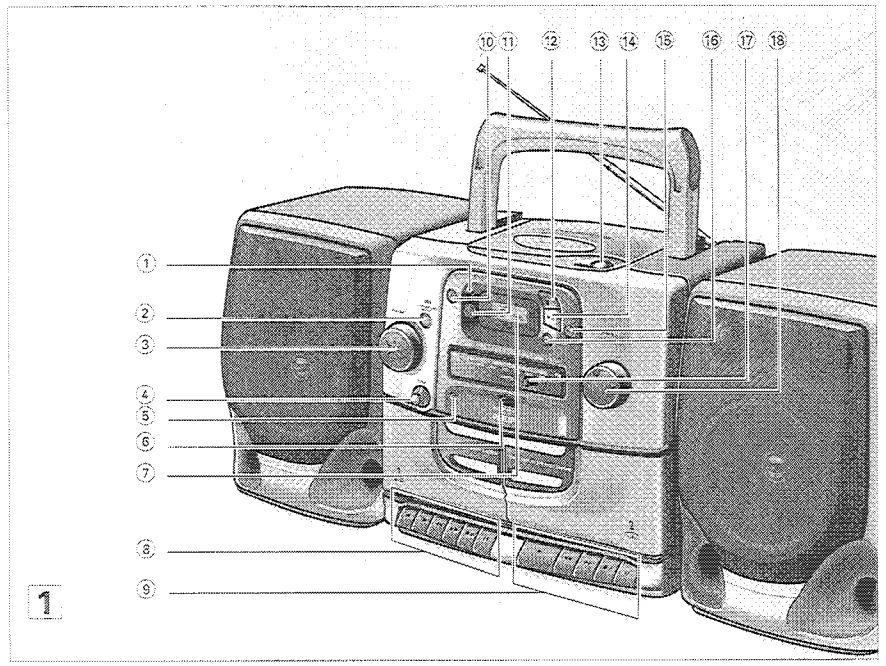
(NL) WAARSCHUWING

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(I) AVVERTIMENTO

Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni orginali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

CONNECTIONS AND CONTROLS



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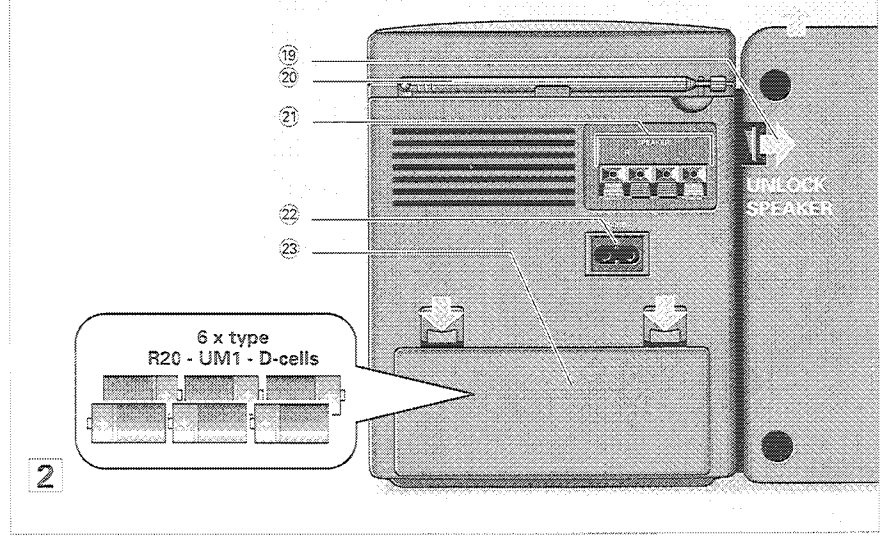


2

TOP and FRONT PANEL

① **IR SENSOR** - Infrared remote sensor for remote control reception.
② **DBB Dynamic Bass Boost** - To increase the bass level.
③ **VOLUME ▲▼** - To adjust the volume level.
④ **TONE CONTROL** - To adjust the emphasis on high or low tones.
⑤ 🎧 - 3.5 mm headphone socket.
⑥ **SOURCE SELECTOR** - To select the source of sound: CD-TUNER-TAPE/OFF and to switch the POWER ON/OFF.
⑦ **DISPLAY**

CASSETTE RECORDER

⑧ **DECK 1**
RECORD ● - To start recording.
PLAY ▶ - To start playback.
◀◀ - To fast rewind the tape.
▶▶ - To fast forward the tape.
STOP•OPEN ■ ▲ - To stop playback and open the cassette compartment.
PAUSE ▮▮ - To interrupt recording or playback.
⑨ **DECK 2**
PLAY ▶ - To start playback.
◀◀ - To fast rewind the tape.
▶▶ - To fast forward the tape.
STOP•OPEN ■ ▲ - To stop playback and open the cassette compartment.
PAUSE ▮▮ - To interrupt recording or playback.

CD PLAYER

⑩ **MODE** - e.g. to SHUFFLE or REPEAT playback.
⑪ **PROGRAM** - To program track numbers and to review the program.
⑫ **STOP ■** - To stop playback or erase a program.
⑬ **OPEN** - To open the CD door.
⑭ **PLAY•PAUSE ▶▮** - To start or interrupt CD playback.
⑮ **SEARCH ▶▶** - To skip or search forwards to a passage or a track.
⑯ **SEARCH ◀◀** - To skip or search backwards to a passage or a track.

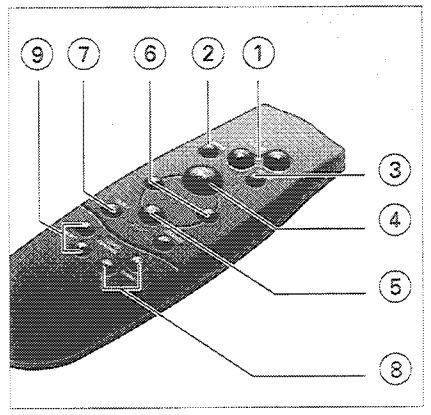
RADIO

⑰ **BAND** - To select the wave band (FM2/FM1/MW).
⑱ **TUNING** - To tune to radio stations.

BACK PANEL

⑲ **SPEAKER LEVERS** - To unlock the loudspeaker boxes.
⑳ **TELESCOPIC AERIAL** - To improve FM reception.
㉑ **SPEAKERS** - Loudspeaker terminals.
㉒ **AC MAINS** - Socket for mains lead.
㉓ **BATTERY DOOR** - To open the battery compartment.

REMOTE CONTROL



① **VOLUME ▲▼** - To adjust the volume level.
② **SHUFFLE** - To select playback of tracks in random order.
③ **REPEAT** - To repeat a track, a CD programme or an entire CD.
④ **▶▮** - To start or interrupt CD playback
⑤ **■** - to stop playback or erase a CD programme
⑥ **⏮** or **⏭** - To skip to the beginning of a current/previous or subsequent track
⑦ **SEARCH ⏮** or **⏭** - To skip or search backwards and forwards within a track
⑧ **TUNING** - **⏮ / ⏭** (down / up)
- To tune to radio stations.
⑨ **PRESET** - **▼ / ▲** (down / up)
- To select a preset station.

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/01/11	: 120 /
	-/14	: 240 \
	-/17	: 120 \
Mains frequency	-/14	: 50 Hz
	-/01/11	: 50 / 6
	-/17	: 60 Hz
Battery	mains	: 9 V (I
	remote	: 3 V (I
Power consumption		: 35 W
Dimension (W x H x D)		: 502 x
Weight		: 6.3 K

AMPLIFIER

Output power	mains	: 2 x 2
	battery	: 2 x 2
Speaker impedance		: 2 x 4
Frequency response		: 60 Hz

TUNER - FM SECTION

Tuning range	: 87 -
IF frequency	: 10.7
Sensitivity	: < 22
Selectivity	: > 20
IF rejection	: > 50
Image rejection	: > 20

SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150
TORX screwdriver set SBC 163 .....

Audio signal disc SBC 429 .....
Playability test disc SBC 444 .....
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, blac
SBC 426/426A .....
Burn in test disc (65 min. 1kHz signal at -3

Universal test cassette Fe SBC 420 .....

TOP and FRONT PANEL

① **IR SENSOR** - Infrared remote sensor for remote control reception.
② **DBB Dynamic Bass Boost** - To increase the bass level.
③ **VOLUME ▲ ▼** - To adjust the volume level.
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PAUSE ❚❚ - To interrupt recording or playback.
⑨ **DECK 2**
PLAY ▶ - To start playback.
◀◀ - To fast rewind the tape.
▶▶ - To fast forward the tape.
STOP•OPEN ■ ▲ - To stop playback and open the cassette compartment.
PAUSE ❚❚ - To interrupt recording or playback.

CD PLAYER

⑩ **MODE** - e.g. to SHUFFLE or REPEAT playback.
⑪ **PROGRAM** - To program track numbers and to review the program.
⑫ **STOP ■** - To stop playback or erase a program.
⑬ **OPEN** - To open the CD door.
⑭ **PLAY•PAUSE ▶❚❚** - To start or interrupt CD playback.
⑮ **SEARCH ▶▶|** - To skip or search forwards to a passage or a track.
⑯ **SEARCH |◀◀** - To skip or search backwards to a passage or a track.

RADIO

⑰ **BAND** - To select the wave band (FM2/FM1/MW).
⑱ **TUNING** - To tune to radio stations.

BACK PANEL

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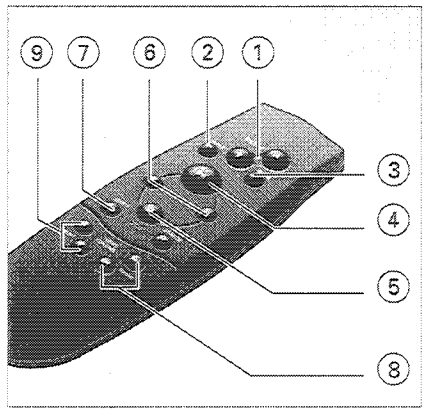
REMOTE CONTROL



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⑧ **TUNING** - **|◀◀ / ▶▶|** (down / up) - To tune to radio stations.
⑨ **PRESET** - **▼ / ▲** (down / up) - To select a preset station.

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/01/11	:	120 / 230 V
	-/14	:	240 V
	-/17	:	120 V
Mains frequency	-/14	:	50 Hz
	-/01/11	:	50 / 60 Hz
	-/17	:	60 Hz
Battery	mains	:	9 V (R20 x 6)
	remote	:	3 V (R6 x 2)
Power consumption		:	35 W
Dimension (W x H x D)		:	502 x 310 x 390mm
Weight		:	6.3 Kg

AMPLIFIER

Output power	mains	:	2 x 2 W
	battery	:	2 x 2 W
Speaker impedance		:	2 x 4 ohm
Frequency response		:	60 Hz - 20 kHz (±3dB)

TUNER - FM SECTION

Tuning range	:	87 - 108.5 MHz
IF frequency	:	10.7 MHz
Sensitivity	:	< 22 dB at 26dB S/N
Selectivity	:	> 20 dB at ±300kHz
IF rejection	:	> 50 dB
Image rejection	:	> 20 dB

TUNER - AM SECTION

Tuning range	MW	:	512 - 1635 kHz
Tuning range	LW	:	153 - 279 kHz
Sensitivity	MW	:	< 4000 µV/m 26dB S/N
	LW	:	< 6000 µV/m
Selectivity	MW	:	> 20 dB
	LW	:	> 20 dB
IF rejection ratio	MW	:	> 24 dB
	LW	:	> 27 dB
Image rejection ratio	MW	:	> 28 dB
	LW	:	> 30 dB

AUDIO CASSETTE RECORDER

Number of tracks		:	2 stereo
Tape speed		:	4.76 cm/sec ± 3%
Wow & flutter		:	< 0.48 % JIS UWTD
Fast wind/rewind C60		:	< 130 sec.
Frequency response	P/B	:	250 - 6300 Hz
S/N ratio		:	> 45 dB

COMPACT DISC

Frequency response		:	30 Hz - 16 kHz
S/N ratio		:	> 80 dB
Channel difference	1 kHz	:	< 2 dB
Channel crosstalk	1 kHz	:	> 50 dB
Laser wavelength		:	780 ± 20nm
Laser light power		:	< 0.3 mW

SERVICE TOOLS

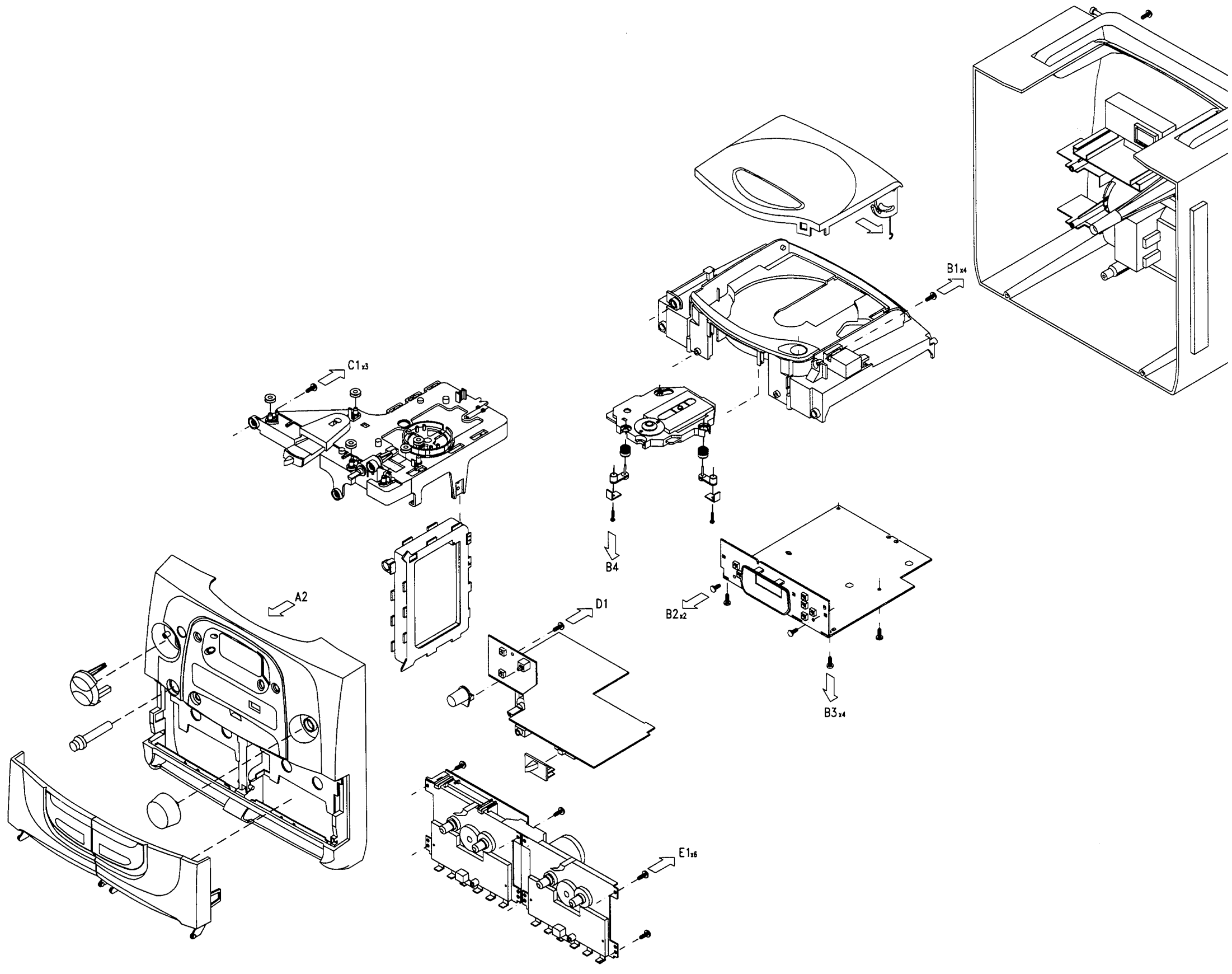
TORX T10 screwdriver with shaftlength 150mm 4822 395 50423
TORX screwdriver set SBC 163 .....4822 295 50145

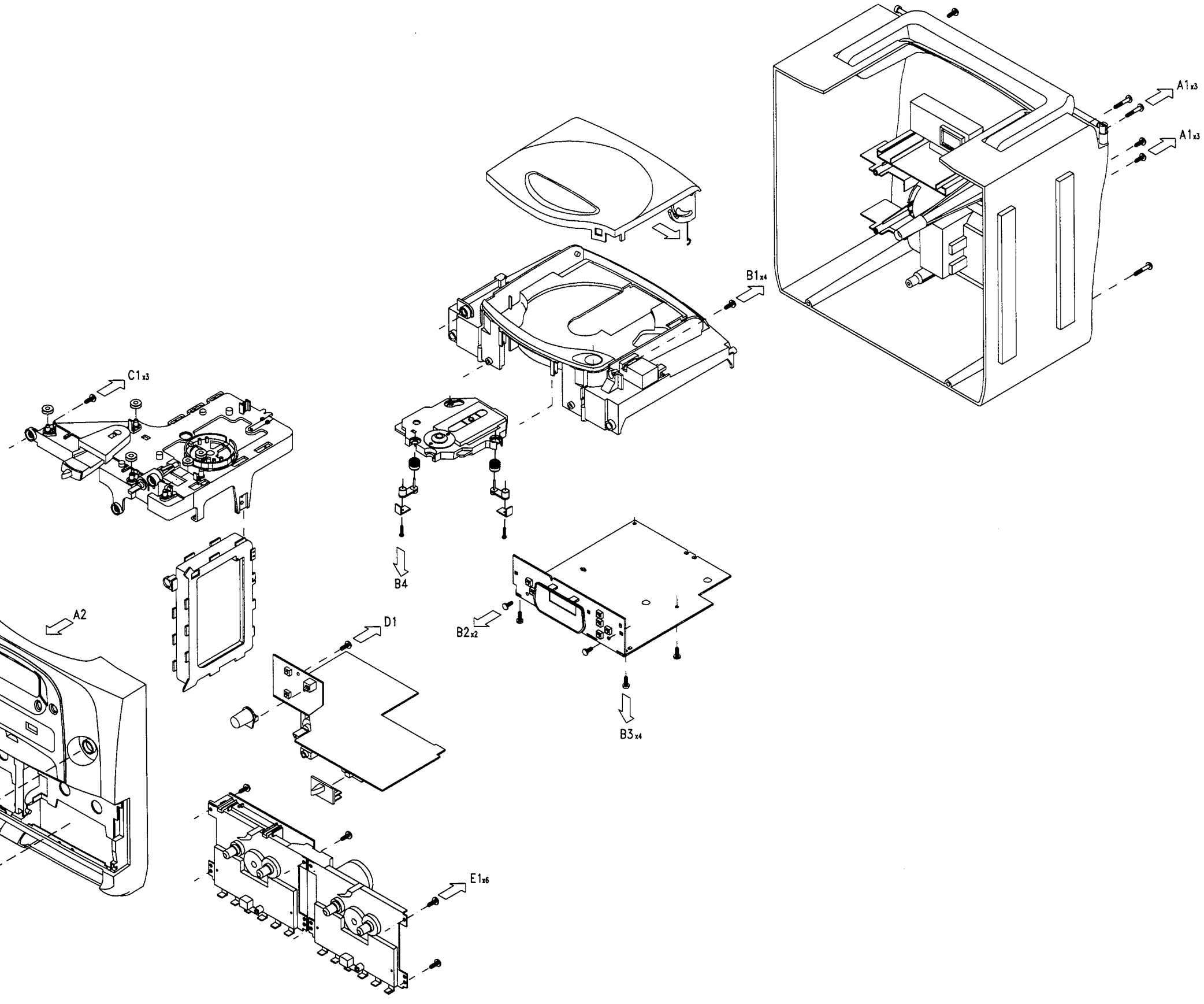
Audio signal disc SBC 429 .....4822 397 30184
Playability test disc SBC 444 .....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A 4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause") ...4822 397 30155

Universal test cassette Fe SBC 420 .....4822 397 30071

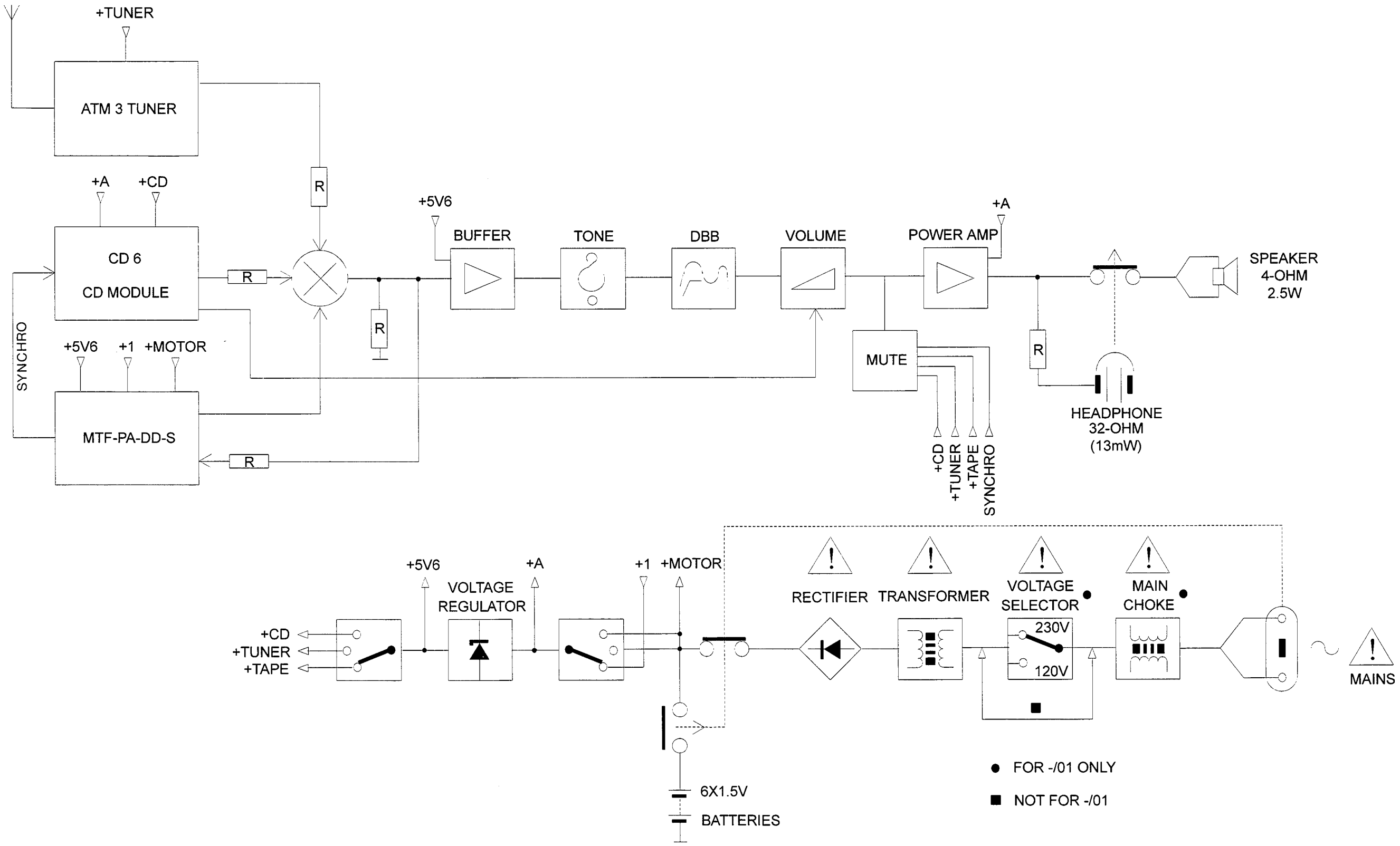
DISASSEMBLY DIAGRAM

A. To remove Front Cabinet Assembly
B. To remove CD6 Assembly
C. To remove Tuner Board Assembly
D. To remove Control Board Assembly
E. To remove Tape Deck

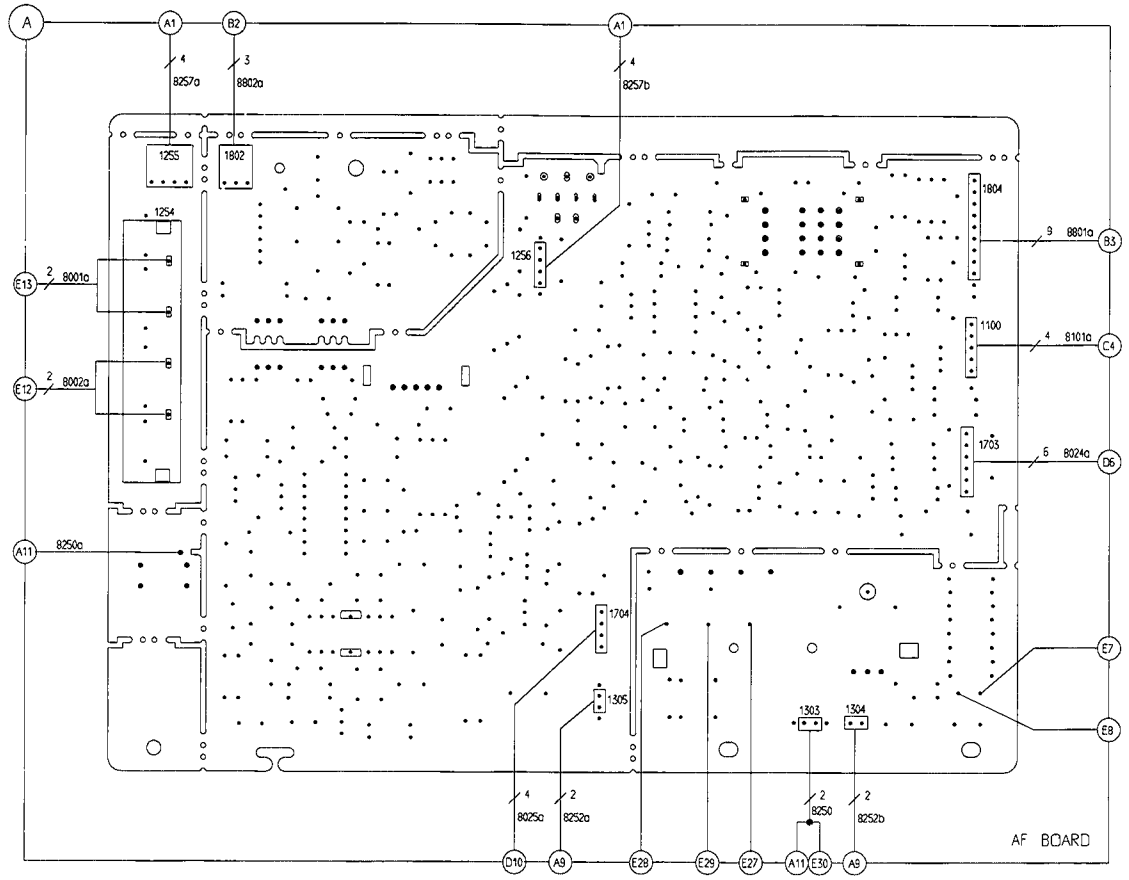


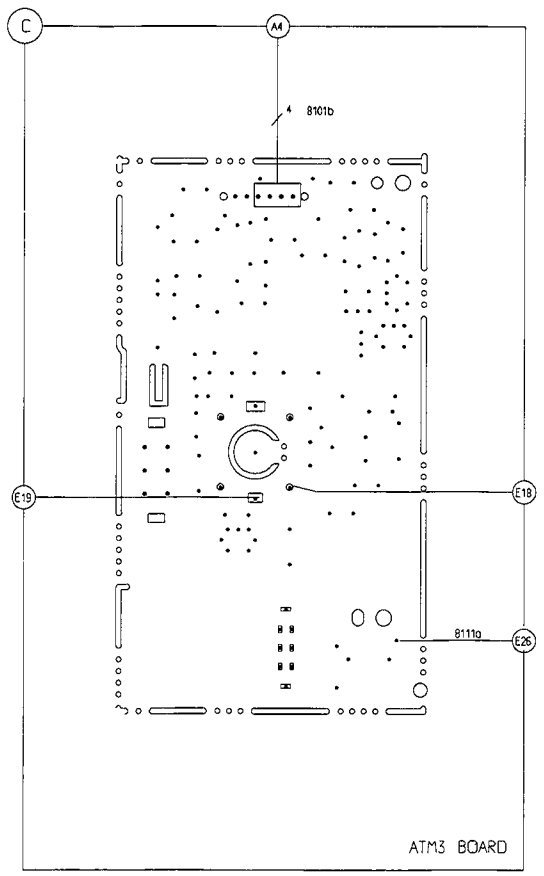

A1x3
A1x3
B1x4
C1x3
B4
B2x2
B3x4
D1
A2
E1x6

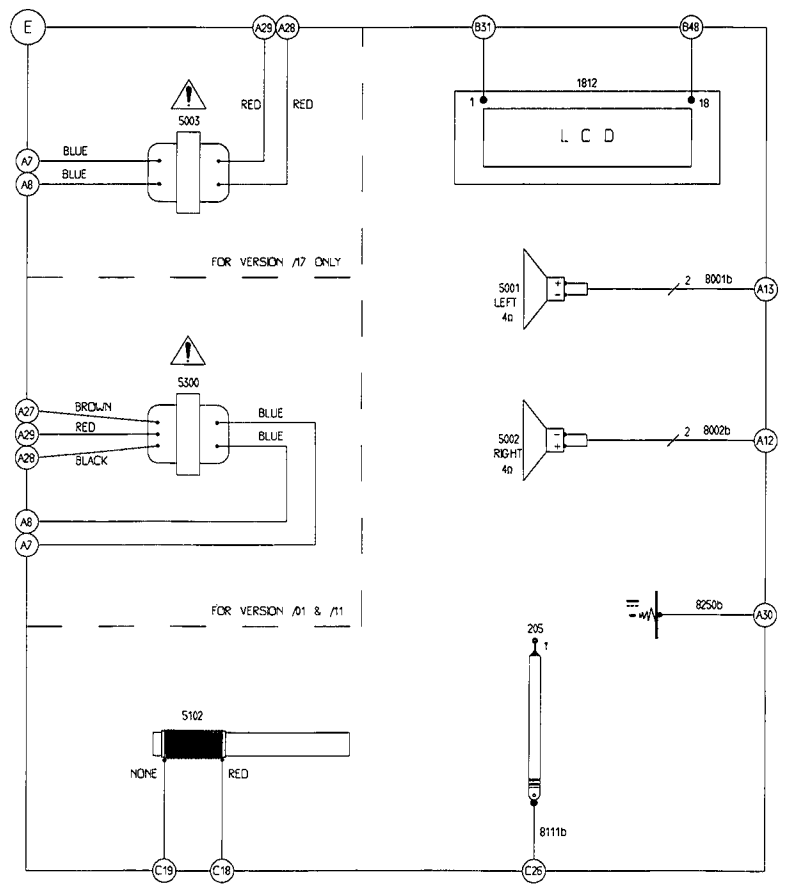
BLOCK DIAGRAM

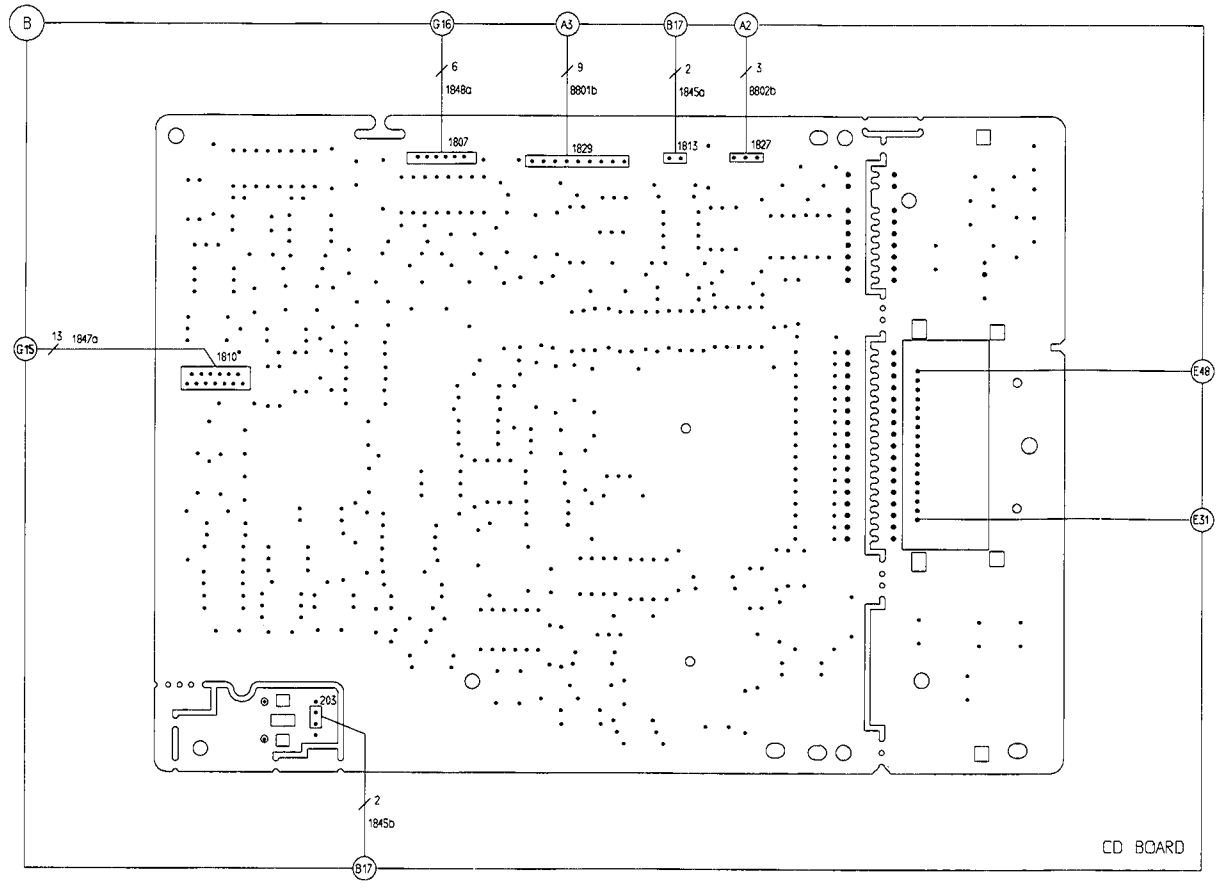


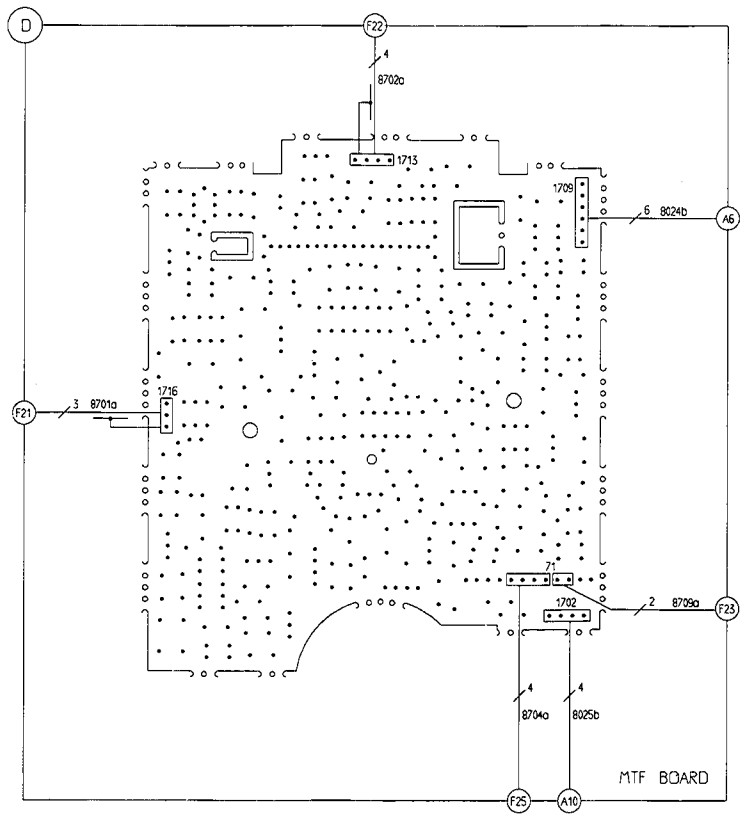
WIRING DIAGRAM

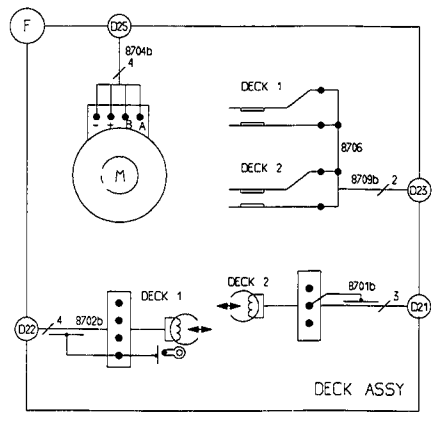


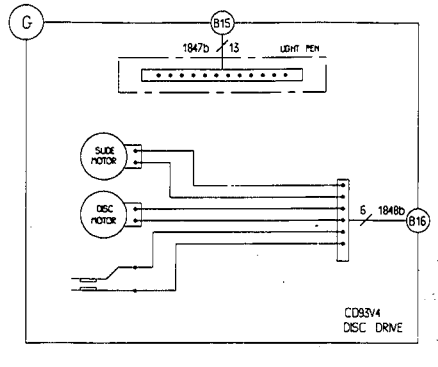




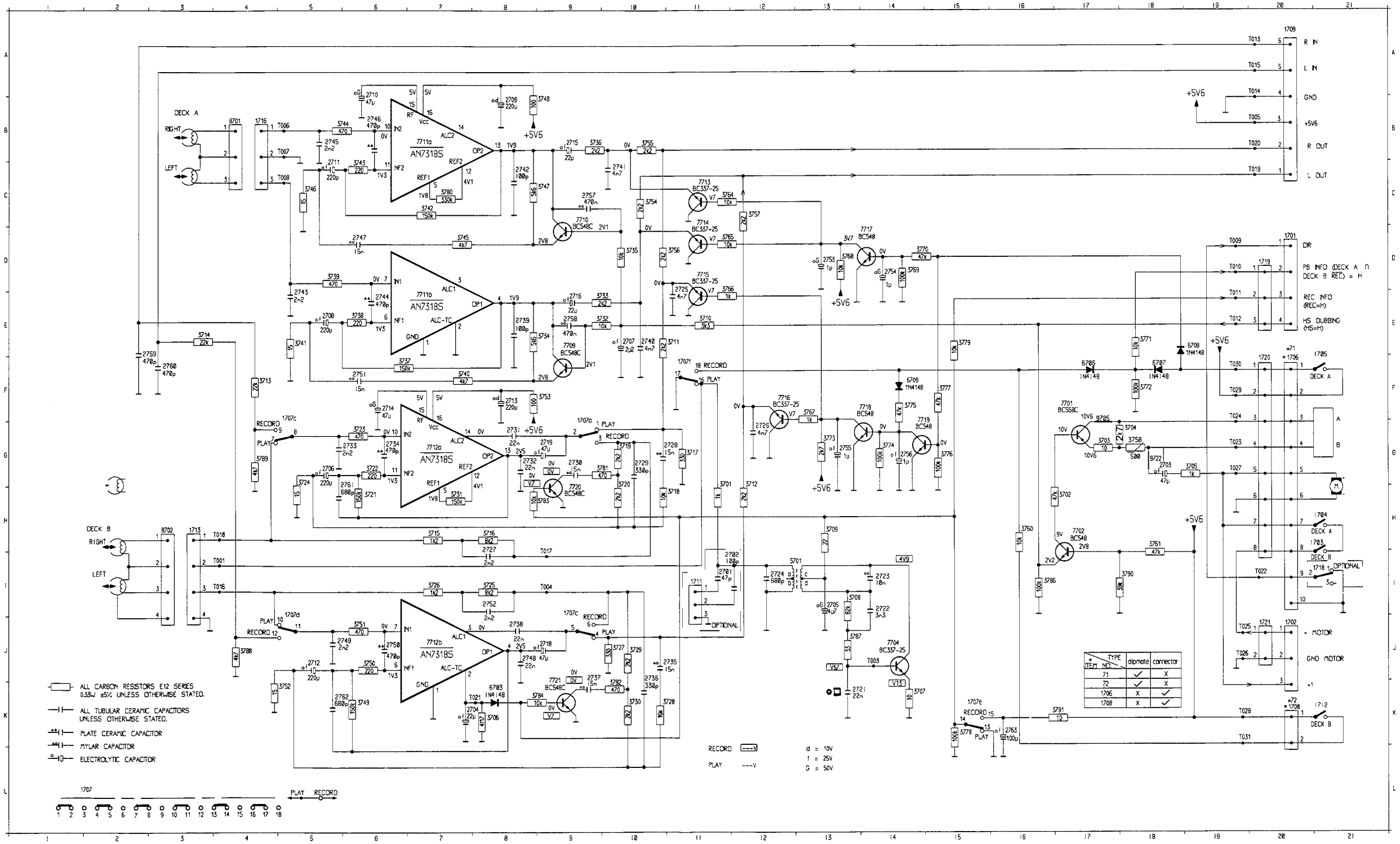


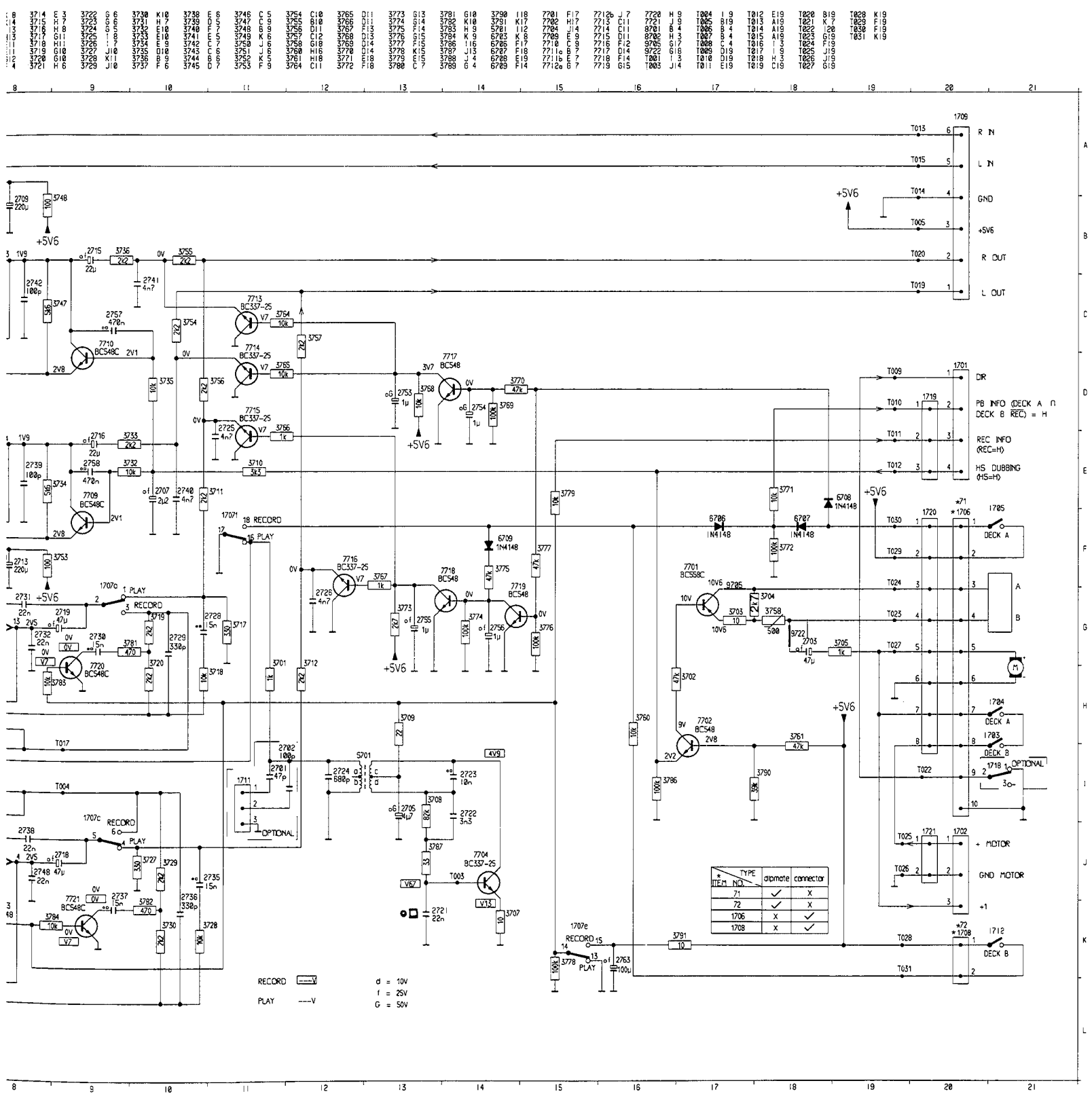




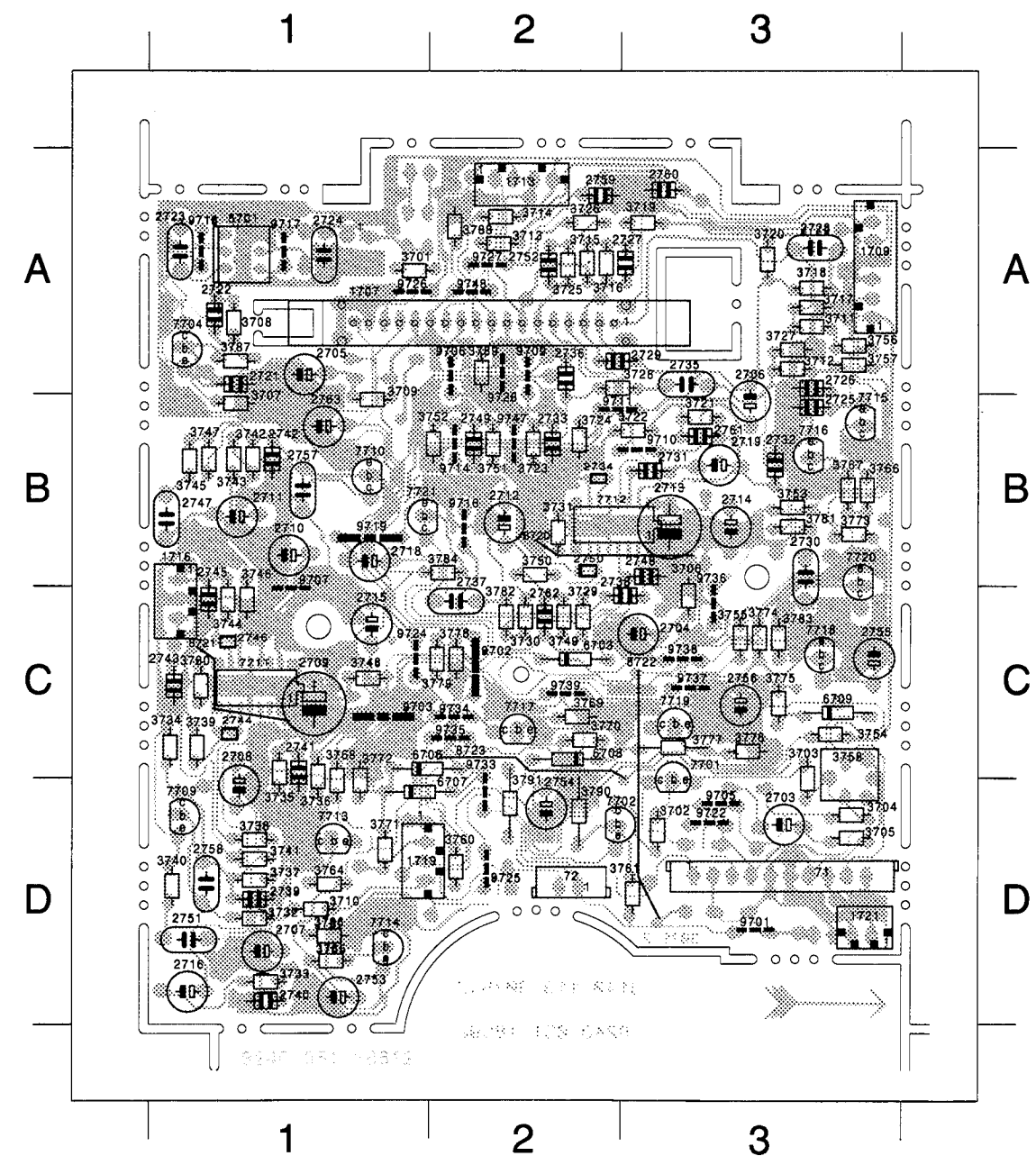


TAPE BOARD - CIRCUIT DIAGRAM

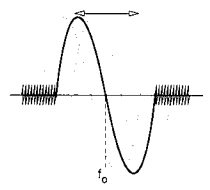
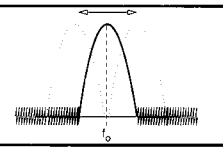
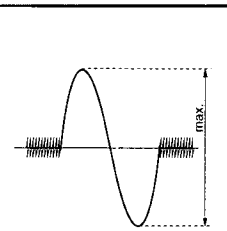
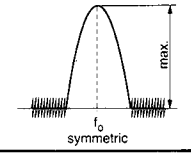
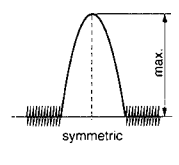




TAPE BOARD - LAYOUT DIAGRAM



TUNER ADJUSTMENT TABLE (ATM3 FM/FM$_{OIRT}$/MW- versions with AM-frame aerial)

Waverange	Input Frequency	Input	Set tuned to	Adjust	Measure on	Scope / Counter
OSCILLATOR						
FM **step 1** 87,5 - 108 MHz	87,00 MHz	A $\Delta f = \pm 500kHz$ $V_{RF} = 100\mu V$	lower band end	5104 [1] (pre-adjust)	1 or 2	
	108,50 MHz		upper band end	2106 C1		
step 2 65,2 - 75,1 MHz	64,70 MHz		lower band end	5104		
	75,00 MHz		upper band end	check if 75 ±0,8 MHz		
step 3 87,5 - 108 MHz	87,00 MHz		lower band end	5121		
	108,50		upper band end	check if 108,5±0,3 MHz		
MW 525 - 1607 kHz	516 kHz	C $\Delta f = \pm 30kHz$ $V_{RF} = 100\mu V$	lower band end	5105	1 or 2	
	1620 kHz		upper band end	2106 C3		
FM - RF						
step 1 87,5 - 108 MHz	87,00 MHz	A $\Delta f = \pm 500kHz$ $V_{RF} = 10\mu V$	87,00 MHz	5101 [2] (pre-adjust)	1 or 2	
	108,50 MHz		108,50 MHz	2106 C2		
step 2 64,7 - 75 MHz	70,00 MHz		70,00 MHz	5101		
step 3 87,5 - 108 MHz	87,00 MHz		87,00 MHz	5120		
	108,50 MHz		108,50 MHz	check if max.		
VCO						
FM	98 MHz	A continuous wave $V_{RF} = 1$ mV	98 MHz	3101	3 (7101 pin 30, 2k2, 4k7, V_{CC})	152 ±1 kHz [3]
AM - IF						
MW	468 kHz connect pin 24 of IC 7101 (AM Osc) with short wire to ground	C $\Delta f = \pm 15kHz$ $V_{RF} = 10mV$	IC 7101 10, 100nF, 220R; see remark [4]	5106	1 or 2	
			IC 7101 14, 100nF, 220R; see remark [4]	5108		
AM -RF [5]						
MW	550 kHz	B $\Delta f = \pm 30kHz$ V_{RF} as low as possible	550 kHz	5111	1 or 2	
	1500 kHz		1500 kHz	2106 C4		

Tuner Adj. ATM3 FM/FMoirt/MW frame: 110697

repeat

[1] If necessary, pre-adjust 5121 first.

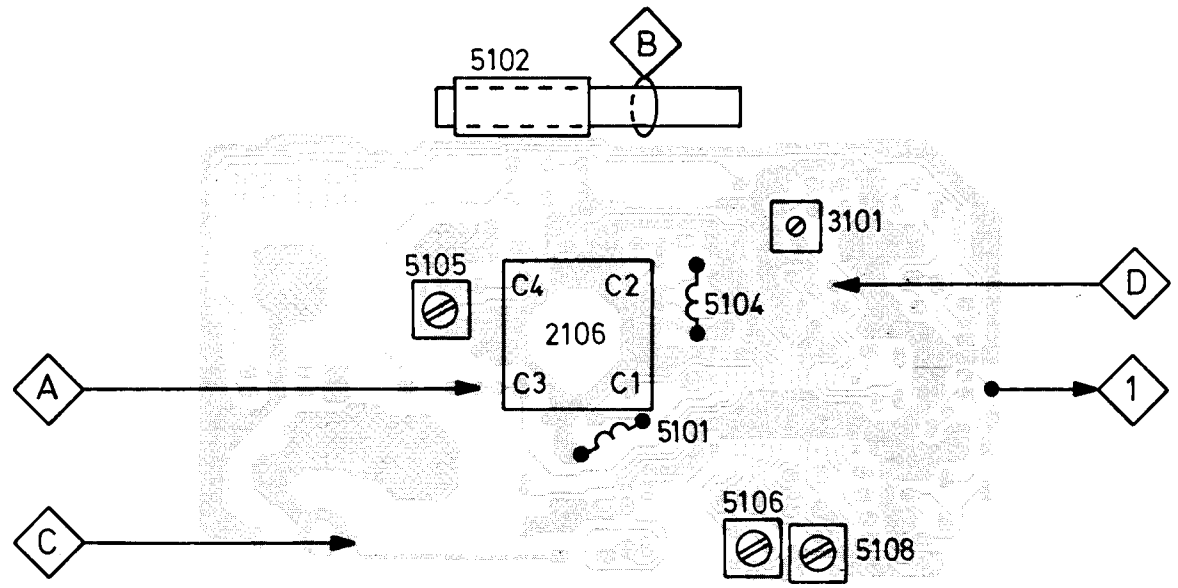
[2] If necessary, pre-adjust 5120 first.

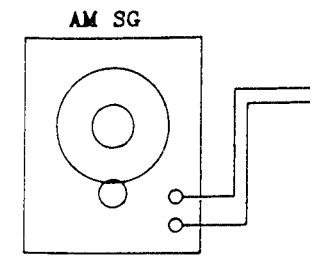
[3] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

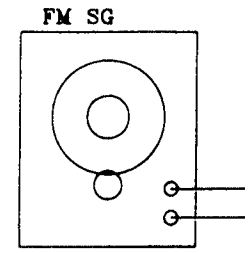
[4] RC-network serves for damping the IF-filter while adjusting the other one.

[5] For MW adjustments the original frame aerial has to be used.

ALIGNMENT LOCATION (-/01/17)

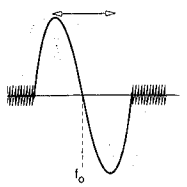


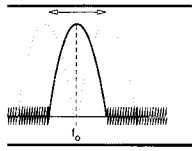


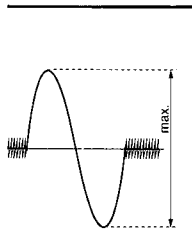


)

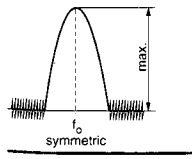
Scope / Counter

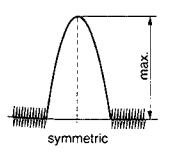






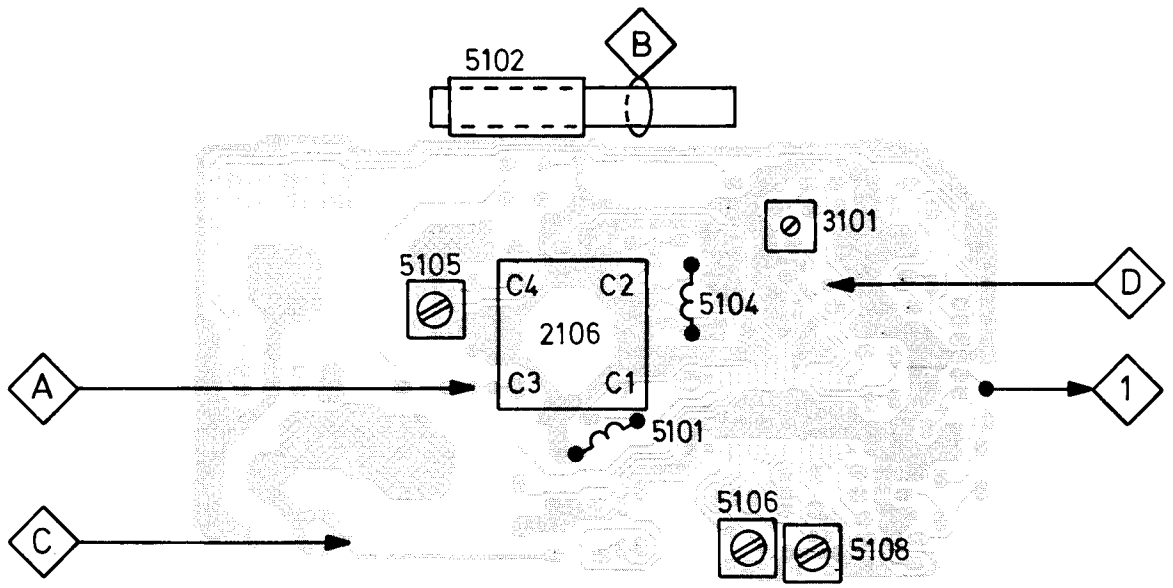
152 ±1 kHz [3)]





Tuner Adj. ATM3 FM/FMcom/MW frame 110697

ALIGNMENT LOCATION (-/01/17)



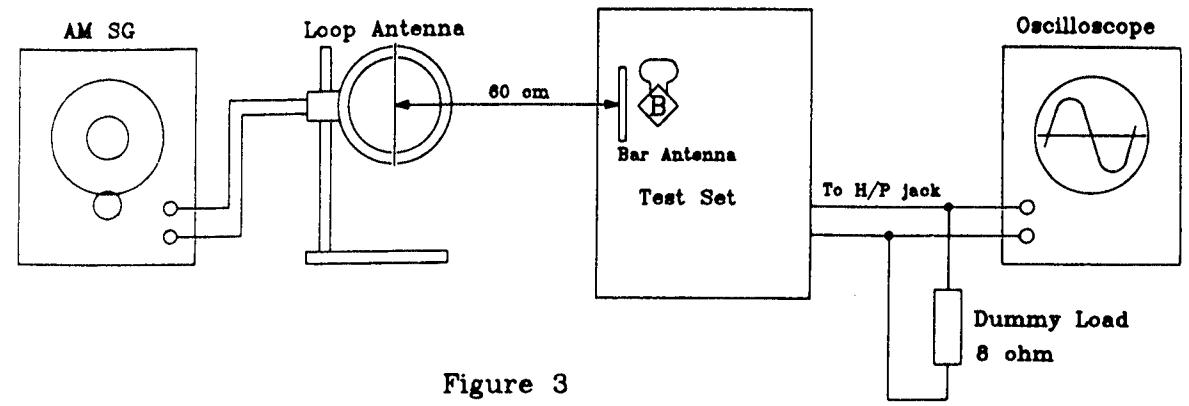


Figure 3

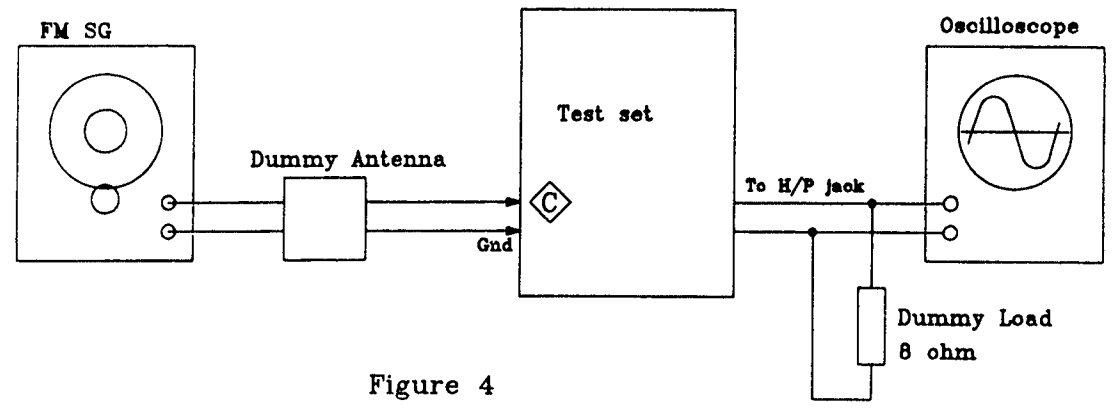


Figure 4

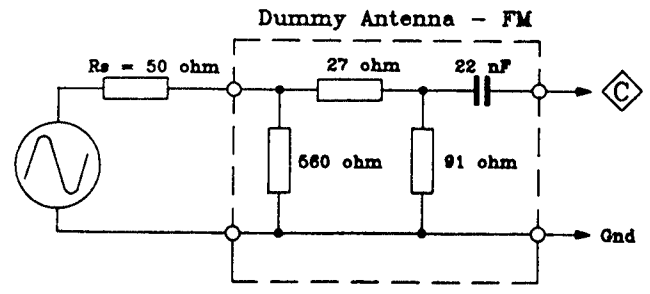
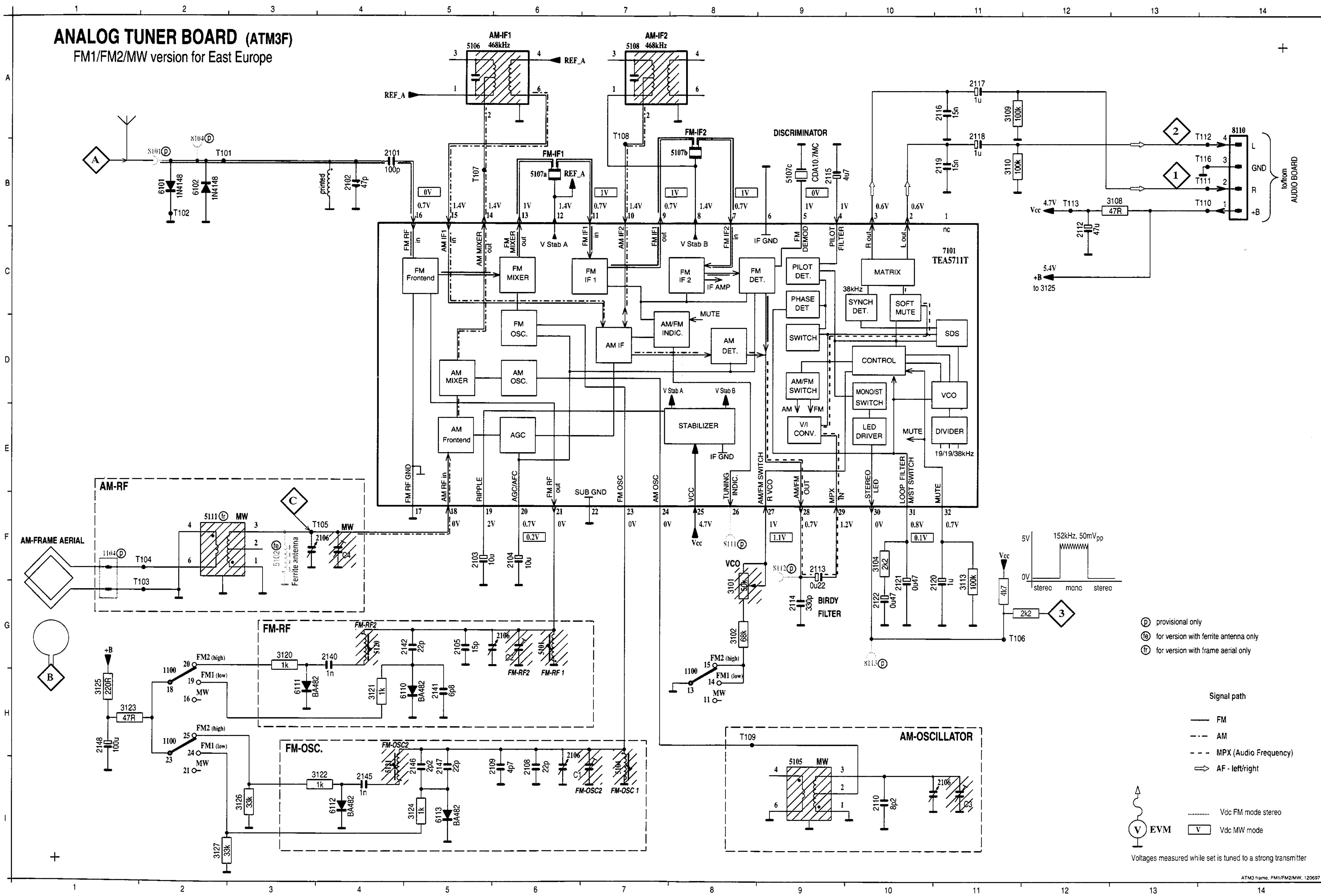


Fig. 5

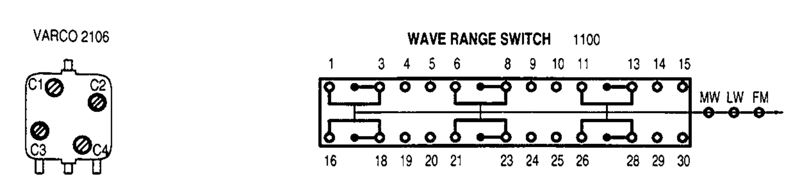
ANALOG TUNER BOARD (ATM3F)

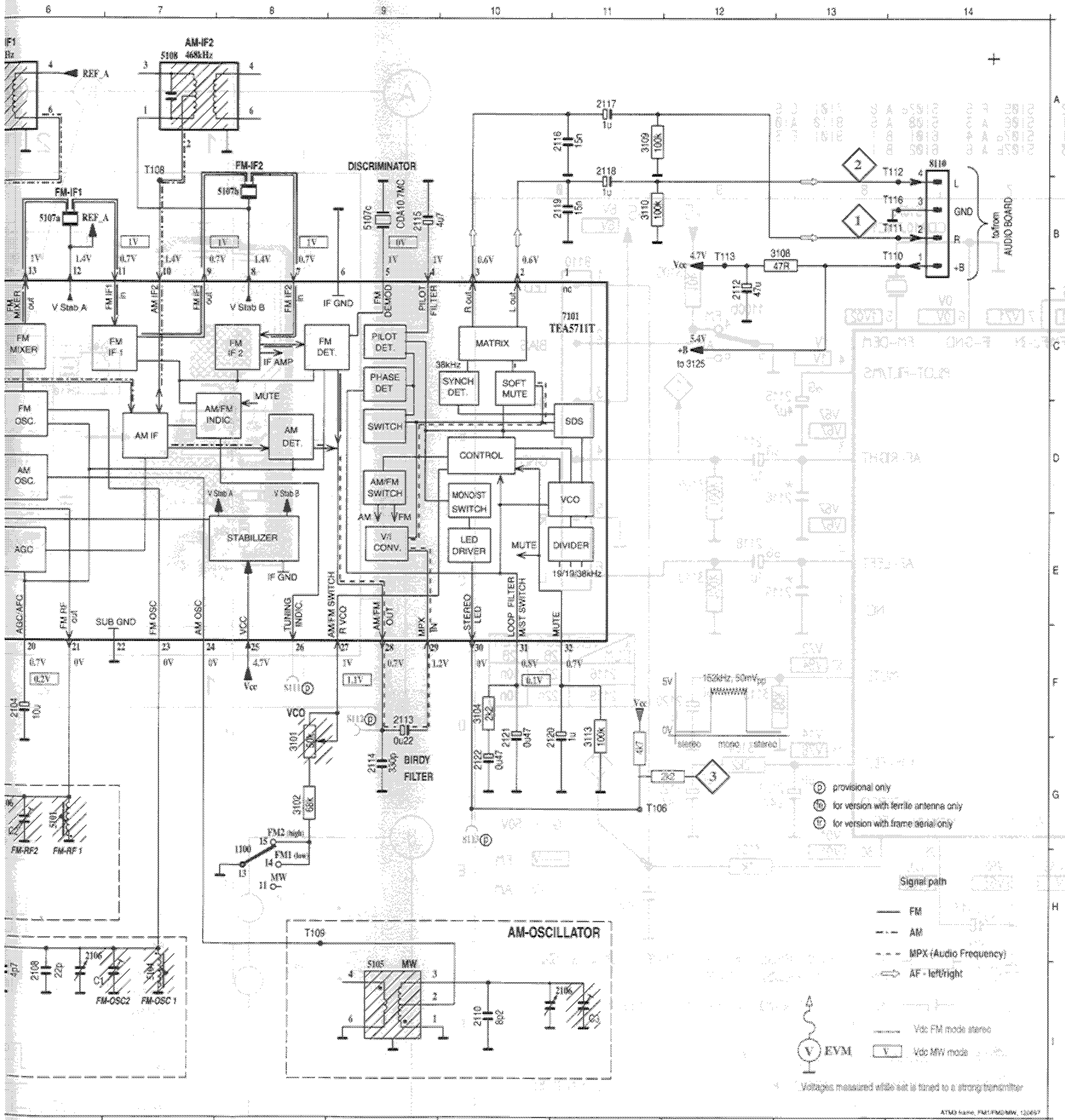
FM1/FM2/MW version for East Europe



AM-IF1 5106 468kHz
AM-IF2 5108 468kHz
REF_A
FM-IF1 5107a
FM-IF2 5107b
DISCRIMINATOR 5107c CDA10.7MC
AM-RF
AM-FRAME AERIAL
Ferrite antenna
FM-RF
FM-OSC.
AM-OSCILLATOR
VCO
BIRDY FILTER
7101 TEA5711T
FM Frontend
FM MIXER
FM IF 1
FM IF 2
FM DET.
PILOT DET.
PHASE DET
SWITCH
MATRIX
SYNCH DET.
SOFT MUTE
SDS
CONTROL
VCO
DIVIDER
AM/FM SWITCH
MONO/ST SWITCH
V/I CONV.
LED DRIVER
AM/FM INDIC.
AM DET.
AM IF
FM OSC.
AM MIXER
AM OSC.
AM Frontend
AGC
STABILIZER
FM RF GND
AM RF in
RIPPLE
AGC/AFC
FM RF out
SUB GND
FM OSC
AM OSC
VCC
TUNING INDIC.
AM/FM SWITCH R VCO
AM/FM OUT
MPX IN
STEREO LED
LOOP FILTER M/ST SWITCH
MUTE
to/from AUDIO BOARD
8110
L
GND
R
+B
5.4V +B to 3125
152kHz, 50mVpp
stereo
mono
stereo
provisional only
for version with ferrite antenna only
for version with frame aerial only
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right
EVM
Vdc FM mode stereo
Vdc MW mode
Voltages measured while set is tuned to a strong transmitter

1100	H 8
1100	H 2
1100	H 2
1104	F 1
2101	B 4
2102	B 4
2103	F 5
2104	F 6
2105	G 5
2106	H 6
2106	I11
2106	F 4
2106	G 6
2108	I 6
2109	I 6
2110	I10
2112	B12
2113	F 9
2114	G 9
2115	B 9
2116	A11
2117	A11
2118	A11
2119	B11
2120	F11
2121	F10
2122	G10
2140	G 4
2141	H 5
2142	G 5
2145	I 4
2146	I 5
2147	I 5
2148	H 1
3101	G 8
3102	G 8
3104	F10
3108	B13
3109	A11
3110	B11
3113	F11
3120	G 3
3121	H 4
3122	I 4
3123	H 1
3124	I 5
3125	H 1
3126	I 3
3127	I 2
5101	G 6
5102	F 3
5104	I 7
5105	I 9
5106	A 5
5107a	B 6
5107b	B 8
5107c	B 9
5108	A 7
5111	F 2
5120	G 4
5121	I 4
6101	B 2
6102	B 2
6110	H 5
6111	H 3
6112	I 4
6113	I 5
7101	C11
8101	B 2
8104	A 2
8110	A14
8111	F 8
8112	F 9
8113	G10



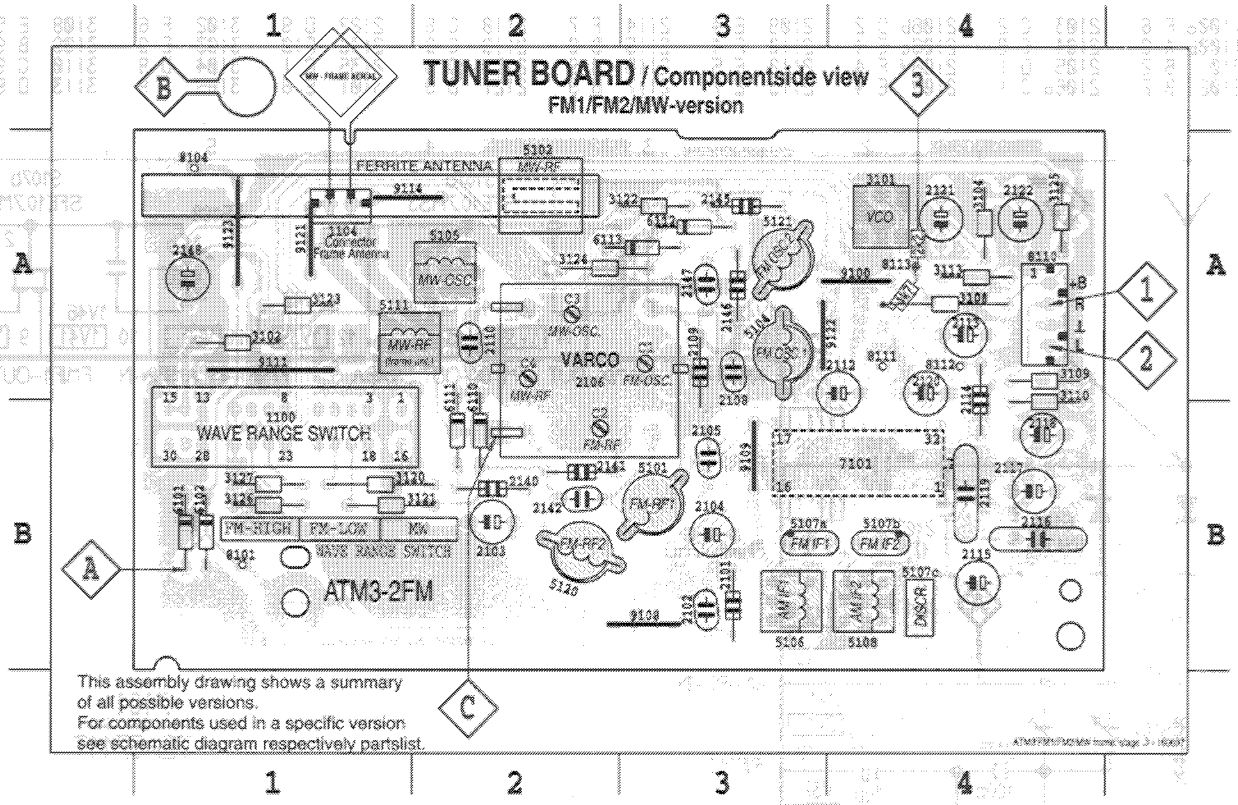


1100	H 8
1100	H 2
1100	H 2
1104	F 1
2101	B 4
2102	B 4
2103	F 5
2104	F 6
2105	G 5
2106	H 6
2106	I11
2106	F 4
2106	G 6
2108	I 6
2109	I 6
2110	I10
2112	B12
2113	F 9
2114	G 9
2115	B 9
2116	A11
2117	A11
2118	A11
2119	B11
2120	F11
2121	F10
2122	G10
2140	G 4
2141	H 5
2142	G 5
2145	I 4
2146	I 5
2147	I 5
2148	H 1
3101	G 8
3102	G 8
3104	F10
3108	B13
3109	A11
3110	B11
3113	F11
3120	G 3
3121	H 4
3122	I 4
3123	H 1
3124	I 5
3125	H 1
3126	I 3
3127	I 2
5101	G 6
5102	F 3
5104	I 7
5105	I 9
5106	A 5
5107a	B 6
5107b	B 8
5107c	B 9
5108	A 7
5111	F 2
5120	G 4
5121	I 4
6101	B 2
6102	B 2
6110	H 5
6111	H 3
6112	I 4
6113	I 5
7101	C11
8101	B 2
8104	A 2
8110	A14
8111	F 8
8112	F 9
8113	G10

1100 B 1	2108 A 3	2117 B 4	2142 B 2	3108 A 4	3124 A 2	5106 B 3	6101 B 1	8104 A 1	9111 A 1
1104 A 1	2109 A 3	2118 B 4	2145 A 3	3109 A 4	3125 A 4	5107a B 3	6102 B 1	8110 A 4	9114 A 1
2101 B 3	2110 A 2	2119 B 4	2146 A 3	3110 B 4	3126 B 1	5107b B 4	6110 B 2	8111 A 4	9121 A 1
2102 B 3	2112 A 4	2120 A 4	2147 A 3	3113 A 4	3127 B 1	5107c B 4	6111 B 2	8112 A 4	9122 A 3
2103 B 2	2113 A 4	2121 A 4	2148 A 1	3120 B 1	5101 B 3	5108 B 4	6112 A 3	8113 A 4	9123 A 1
2104 B 3	2114 A 4	2122 A 4	3101 A 4	3121 B 1	5102 A 2	5111 A 1	6113 A 3	9100 A 4	
2105 B 3	2115 B 4	2140 B 2	3102 A 1	3122 A 3	5104 A 3	5120 B 3	7101 B 4	9108 B 3	
2106 A 2	2116 B 4	2141 B 2	3104 A 4	3123 A 1	5105 A 2	5121 A 4	8101 B 1	9109 B 3	

TUNER BOARD / Componentside view

FM1/FM2/MW-version

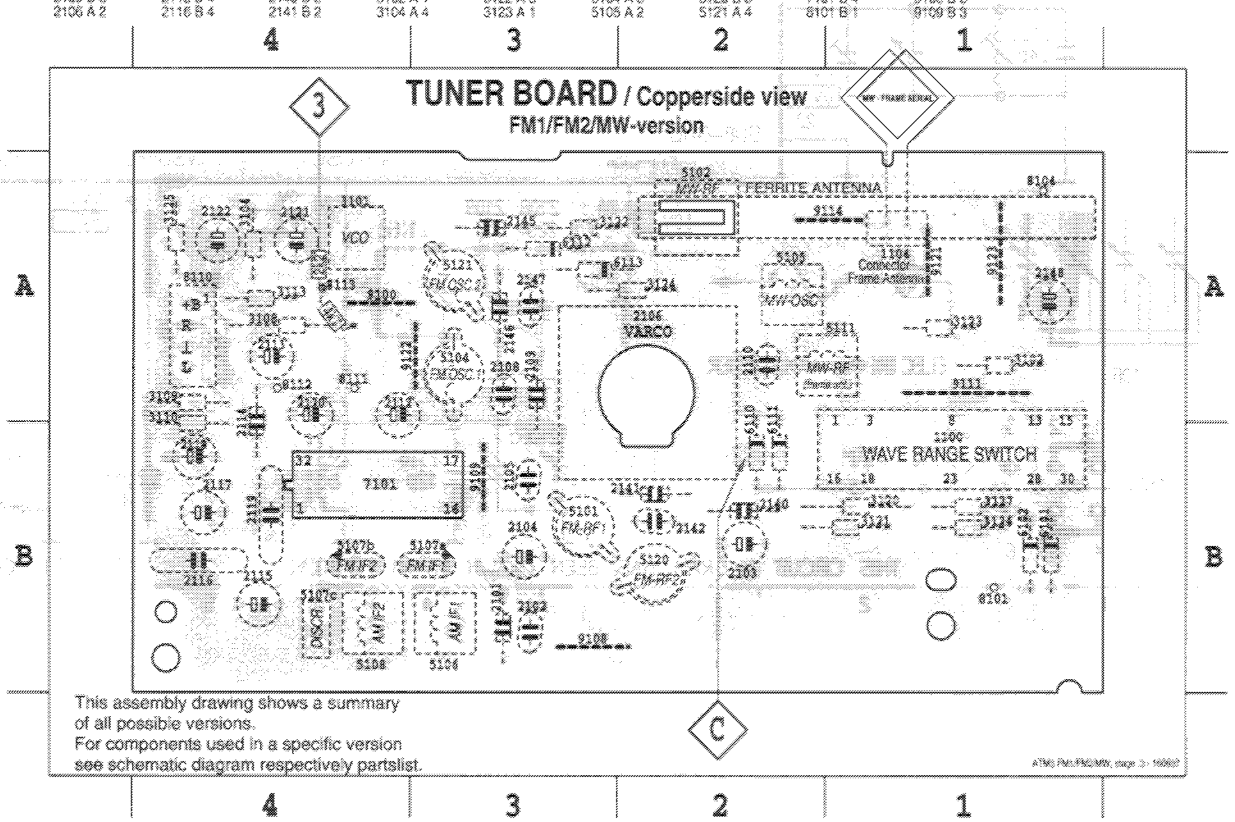


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1100 B 1	2108 A 3	2117 B 4	2142 B 2	3108 A 4	3124 A 2	5106 B 3	6101 B 1	8104 A 1	9111 A 1
1104 A 1	2109 A 3	2118 B 4	2145 A 3	3109 A 4	3125 A 4	5107a B 3	6102 B 1	8110 A 4	9114 A 1
2101 B 3	2110 A 2	2119 B 4	2146 A 3	3110 B 4	3126 B 1	5107b B 4	6110 B 2	8111 A 4	9121 A 1
2102 B 3	2112 A 4	2120 A 4	2147 A 3	3113 A 4	3127 B 1	5107c B 4	6111 B 2	8112 A 4	9122 A 3
2103 B 2	2113 A 4	2121 A 4	2148 A 1	3120 B 1	5101 B 3	5108 B 4	6112 A 3	8113 A 4	9123 A 1
2104 B 3	2114 A 4	2122 A 4	3101 A 4	3121 B 1	5102 A 2	5111 A 1	6113 A 3	9100 A 4	
2105 B 3	2115 B 4	2140 B 2	3102 A 1	3122 A 3	5104 A 3	5120 B 3	7101 B 4	9108 B 3	
2106 A 2	2116 B 4	2141 B 2	3104 A 4	3123 A 1	5105 A 2	5121 A 4	8101 B 1	9109 B 3	

TUNER BOARD / Copperside view

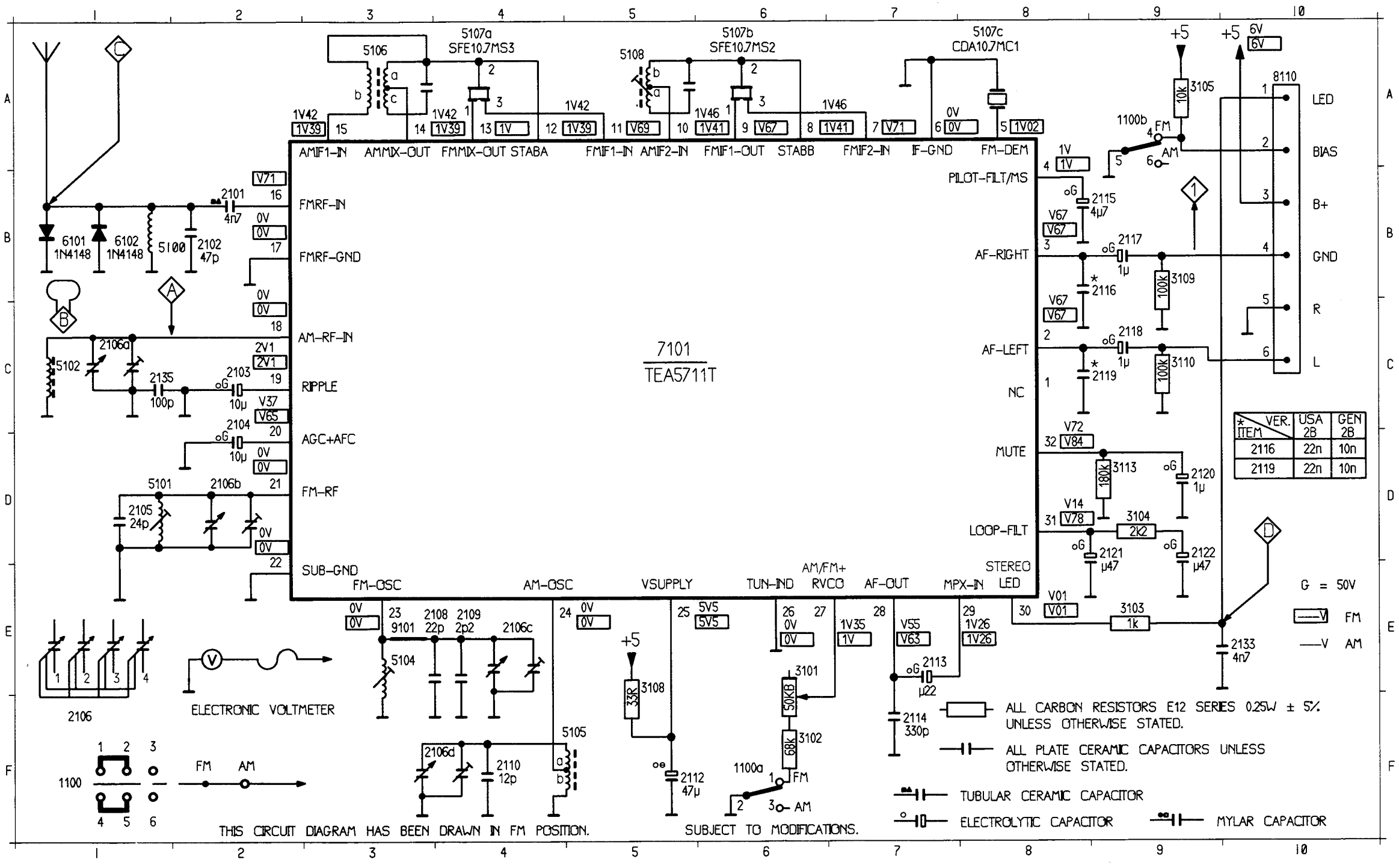
FM1/FM2/MW-version



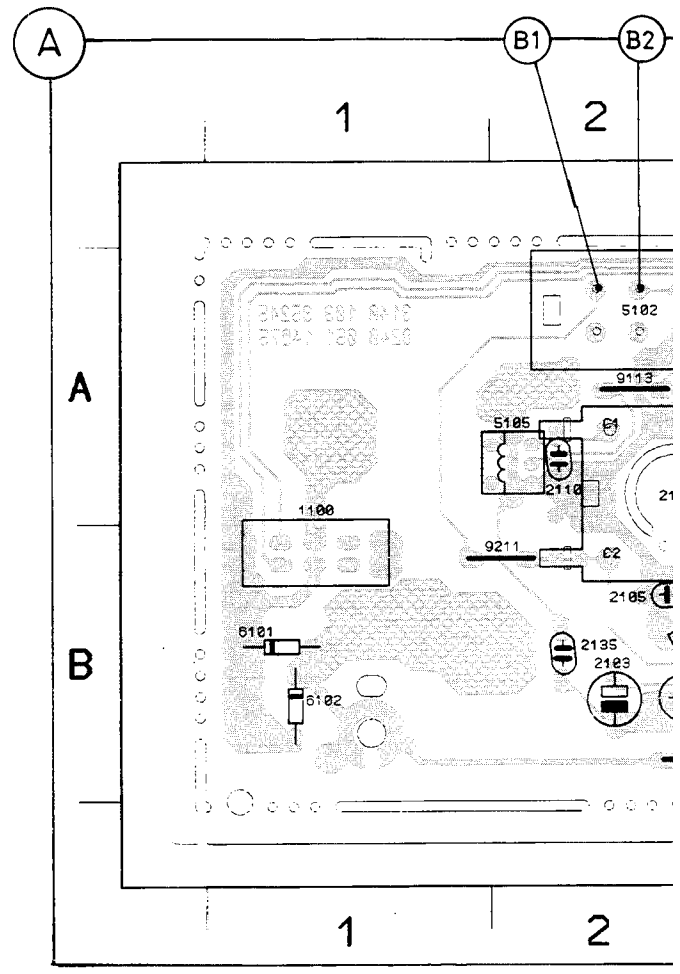
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

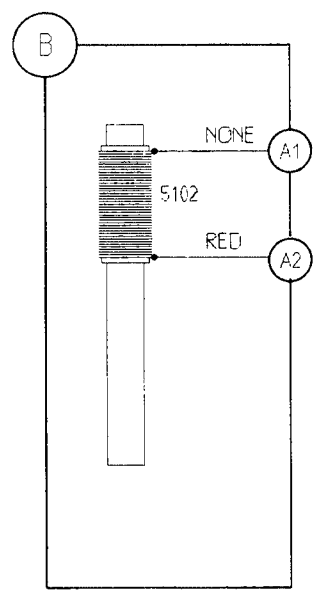
TUNER BOARD (/01/17) - CIRCUIT DIAGRAM

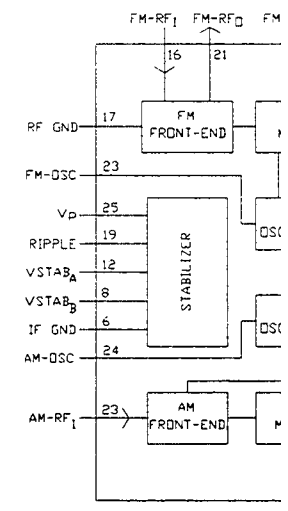
1100a	F 6	2103	C 2	2106b	D 2	2109	E 4	2114	F 7	2118	C 9	2122	D 9	3102	F 6	3108	E 5	5100	B 2	5105	F 5	5107c	A 8	7101	C 5
1100b	A 9	2104	C 2	2106c	E 4	2110	F 4	2115	B 9	2119	C 9	2133	E10	3103	E 9	3109	B 9	5101	D 1	5106	A 3	5108	A 5	8110	A10
2101	B 2	2105	D 1	2106d	F 4	2112	F 5	2116	B 9	2120	D 9	2135	C 1	3104	D 9	3110	C 9	5102	C 1	5107a	A 4	6101	B 1	9101	E 3
2102	B 2	2106a	C 1	2108	E 4	2113	E 7	2117	B 9	2121	D 9	3101	E 6	3105	A 9	3113	D 9	5104	E 3	5107b	A 6	6102	B 1		

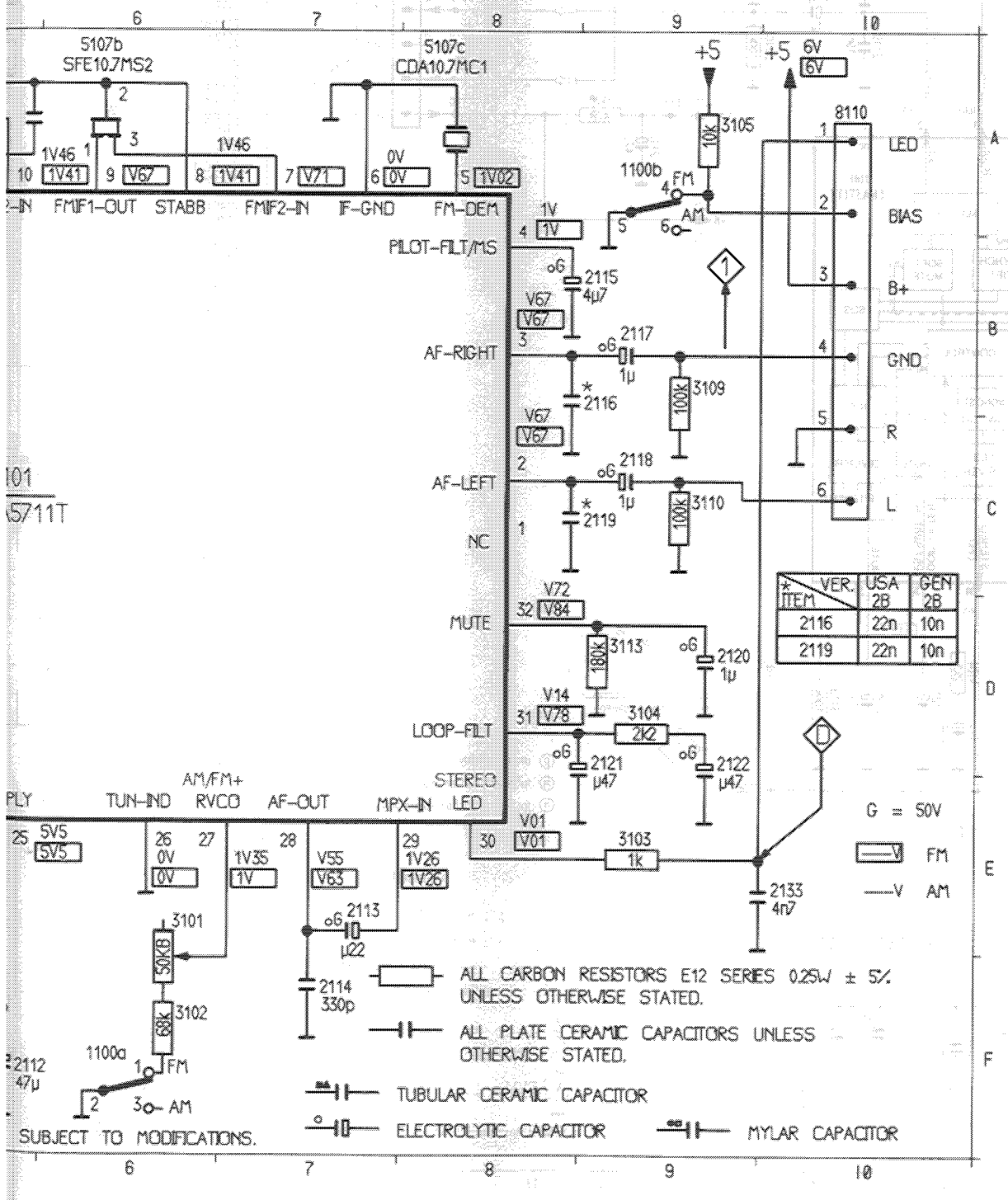


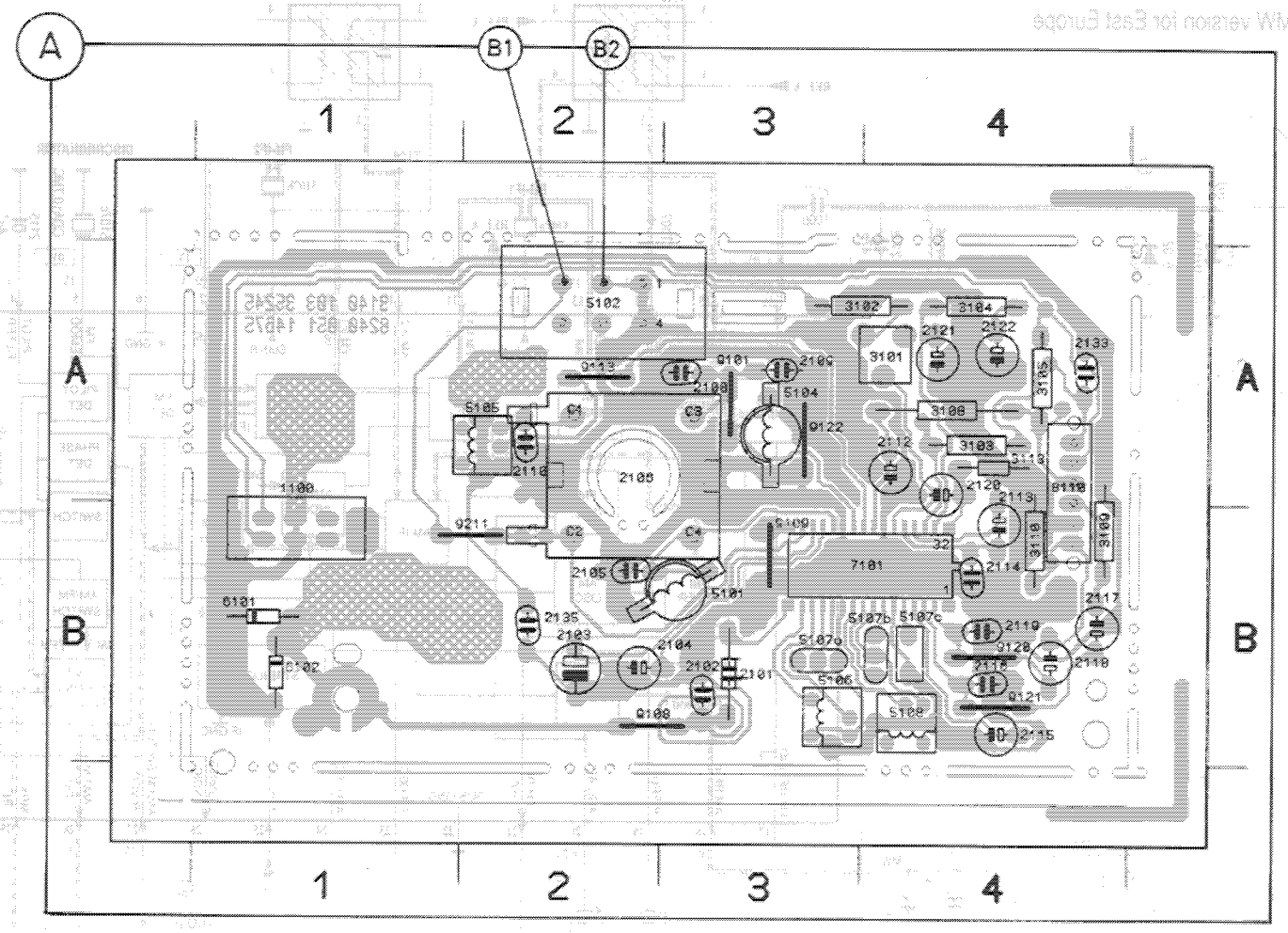
ITEM \ VER.	USA 2B	GEN 2B
2116	22n	10n
2119	22n	10n









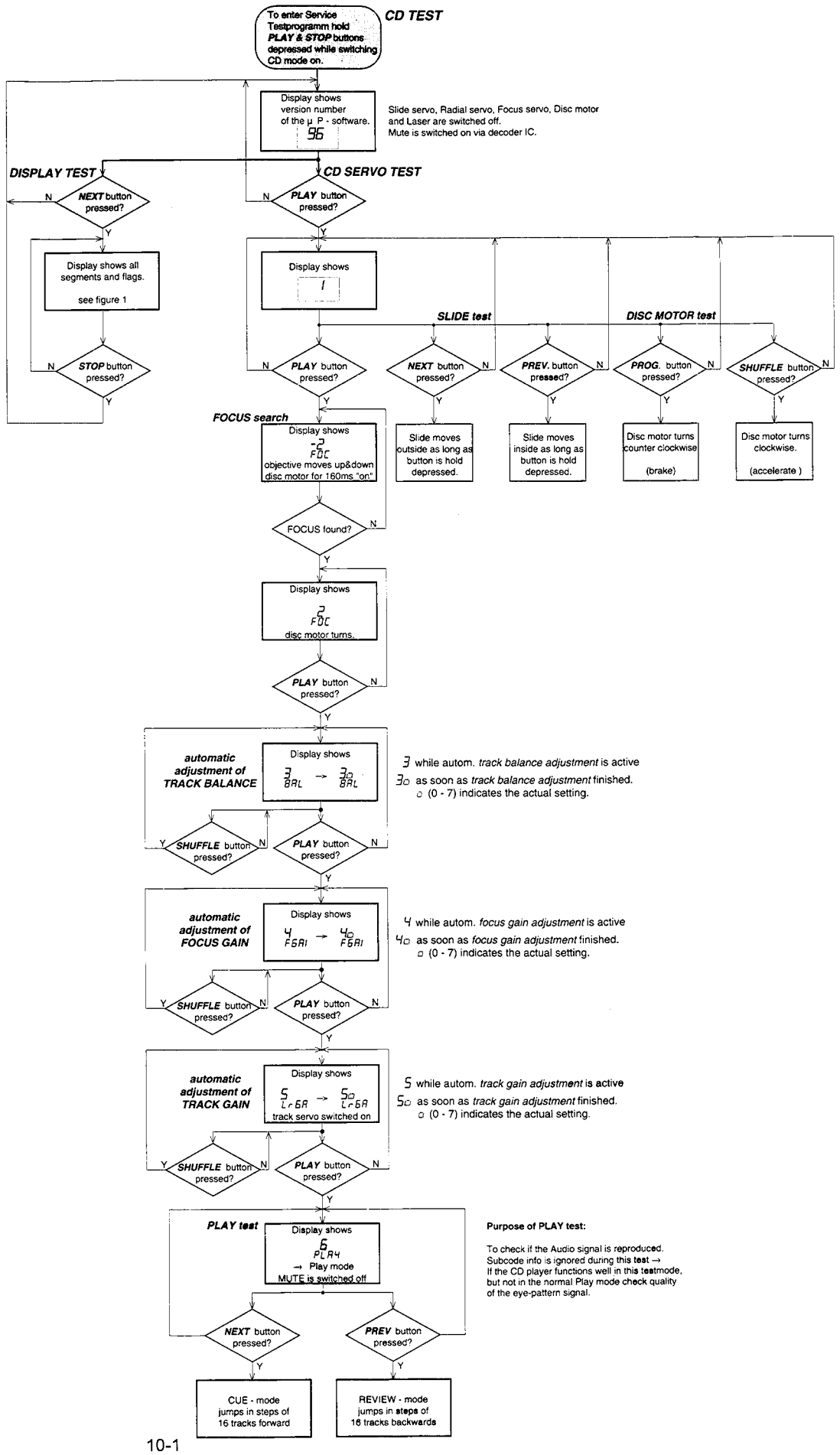


6	3108 E 5	5100 B 2	5105 F 5	5107c A 8	7101 C 5
9	3109 B 9	5101 D 1	5106 A 3	5108 A 5	8110 A10
9	3110 C 9	5102 C 1	5107a A 4	6101 B 1	9101 E 3
9	3113 D 9	5104 E 3	5107b A 6	6102 B 1	

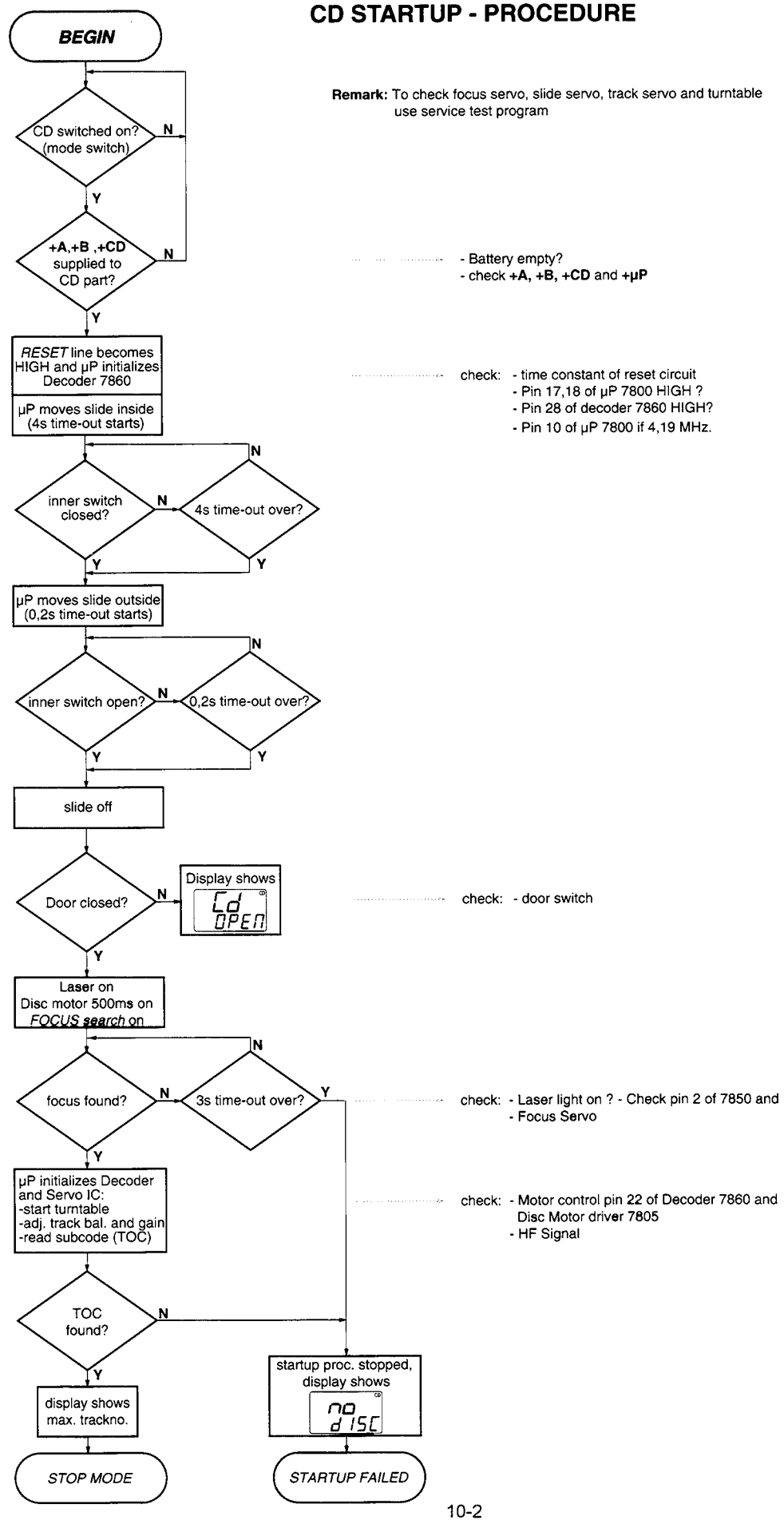
1100 B 1	5106 B 3
2101 B 3	5107a B 3
2102 B 3	5107b B 4
2103 B 2	5107c B 4
2104 B 2	5108 B 4
2105 B 2	6101 B 1
2106 A 2	6102 B 1
2108 A 3	7101 B 4
2109 A 3	8110 A 4
2110 A 2	9101 A 3
2112 A 4	9108 B 2
2113 B 4	9109 B 3
2114 B 4	9113 A 2
2115 B 4	9120 B 4
2116 B 4	9121 B 4
2117 B 4	9122 A 3
2118 B 4	9211 B 2
2119 B 4	
2120 A 4	
2121 A 4	
2122 A 4	
2133 A 4	
2135 B 2	
3101 A 4	
3102 A 3	
3103 A 4	
3104 A 4	
3105 A 4	
3108 A 4	
3109 B 4	
3110 B 4	
3113 A 4	
5101 B 3	
5102 A 2	
5104 A 3	
5105 A 2	

SERVICE TESTPROGRAM

- *STOP* button pressed in any step returns to begin of Service Testprogram.
- To leave Service Testprogram switch mode switch to off-position.
- Door switch is ignored → CD door can be opened.
- *Volume up/down* buttons function independentely of the service testprogram.



CD STARTUP - PROCEDURE



Remark: To check focus servo, slide servo, track servo and turntable use service test program

..... - Battery empty?
- check **+A, +B, +CD** and **+µP**

..... check: - time constant of reset circuit
- Pin 17,18 of µP 7800 HIGH ?
- Pin 28 of decoder 7860 HIGH?
- Pin 10 of µP 7800 if 4,19 MHz.

..... check: - door switch

..... check: - Laser light on ? - Check pin 2 of 7850 and *LASER CONTROL* circuit
- Focus Servo

..... check: - Motor control pin 22 of Decoder 7860 and Disc Motor driver 7805
- HF Signal

Abbreviatio

SERVO PROC

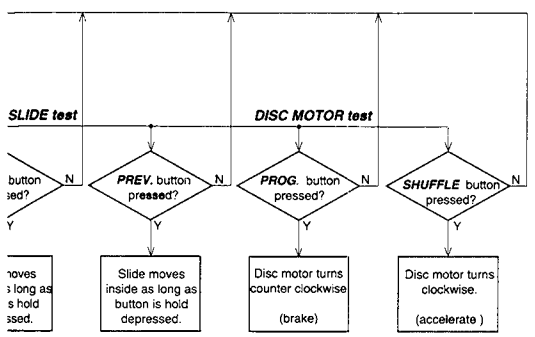
Pin	*Name*
1-3	A, B, C
4-5	E, F
6	SGT
7	TE -
8	TEGain
9	TG1
10	TE out
11	TC/Shock
12	TS +
13	TG2
14	TS -
15	TS out
16	SS +
17	SS -
18	Slide out
19	DETFIL
20	BIAS
21	GND
22	MLA/DIS
23	JP1/SG
24	MCK
25	MSD
26	Dout
27	CLPF
28	IREF
29	VCC
30	FSout
31	FS -
32	FEGain
33	FE -
34	SGF
35	CFSR
36	APC +
37	APC -
38	APC out
39	MRC
40	HF
41	HFI
42	ABC

SIGNAL PROC

Pin	*Name*
1	CL11
2	DOBM
3	V1
4	V2
5	Test2
6	Test1
7	ISLICE
8	HFIN
9	HFREF
10	IREF
11	VDDA
12	VSSA
13	CRIN
14	CROUT
15	VDD1
16	VSS1
17	CL16
18	MISC
19	DATA
20	WCLK
21	SCLK
22	MOTOR1
23	MOTOR2
24	V5
25	V4
26	V3
27	KILL
28	PORE
29	CLA
30	DA
31	CL
32	RAB
33	CFLG
34-42	not used
43	VSS2
44	VDD2

T

, Radial servo, Focus servo, Disc motor
re switched off.
tched on via decoder IC.



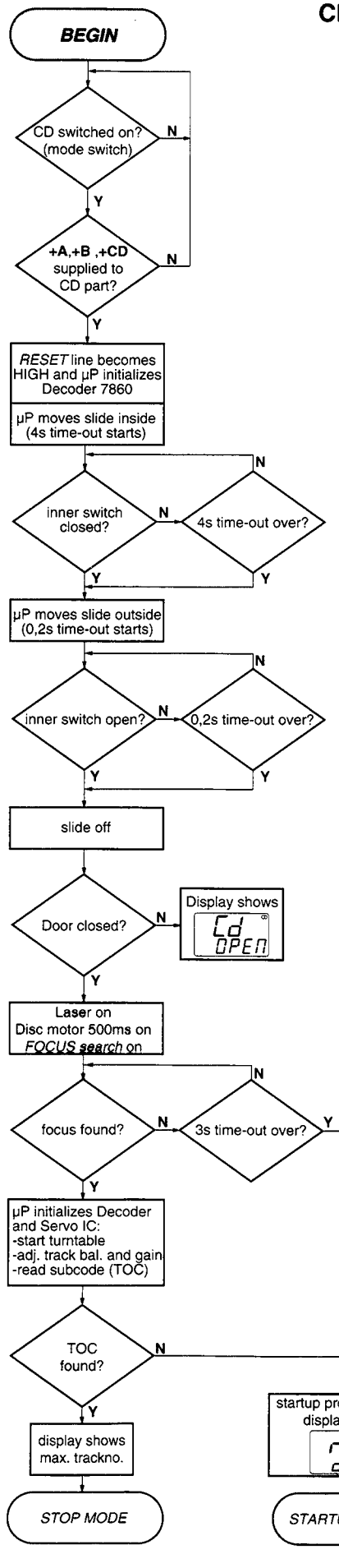
autom. *track balance adjustment* is active
on as *track balance adjustment* finished.
- 7) indicates the actual setting.

autom. *focus gain adjustment* is active
on as *focus gain adjustment* finished.
- 7) indicates the actual setting.

autom. *track gain adjustment* is active
on as *track gain adjustment* finished.
- 7) indicates the actual setting.

Purpose of PLAY test:

To check if the Audio signal is reproduced.
Subcode info is ignored during this **test** →
If the CD player functions well in this **test**mode, but not in the normal Play mode check quality of the eye-pattern signal.



CD STARTUP - PROCEDURE

Remark: To check focus servo, slide servo, track servo and turntable use service test program

- Battery empty?
- check **+A, +B, +CD** and **+µP**

check:
- time constant of reset circuit
- Pin 17,18 of µP 7800 HIGH ?
- Pin 28 of decoder 7860 HIGH?
- Pin 10 of µP 7800 if 4,19 MHz.

check: - door switch

check: - Laser light on ? - Check pin 2 of 7850 and *LASER CONTROL* circuit
- Focus Servo

check: - Motor control pin 22 of Decoder 7860 and Disc Motor driver 7805
- HF Signal

Abbreviations and Pin-descriptions of CD ICs

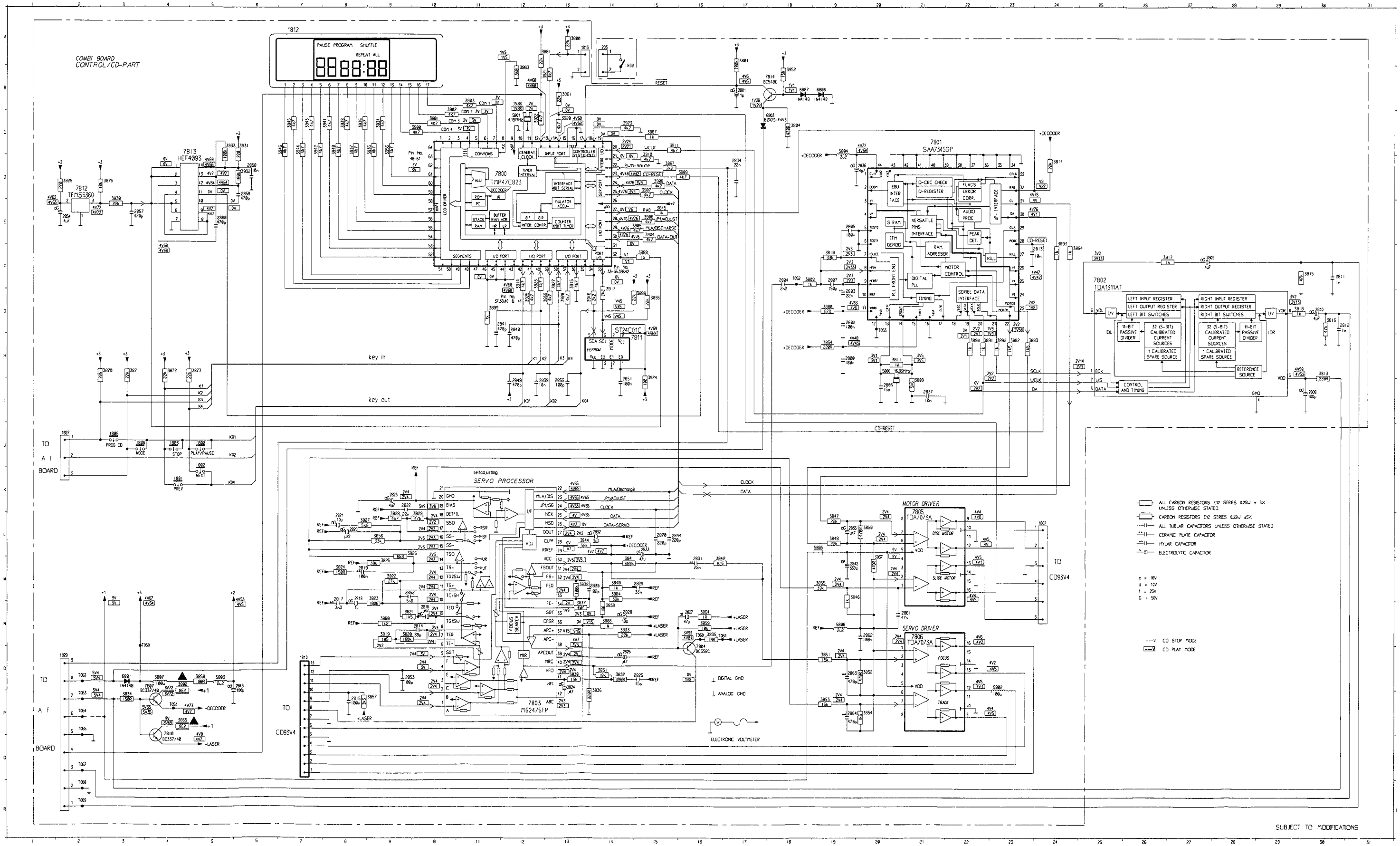
SERVO PROCESSOR M62475FP

Pin	*Name*	*DirectionDescription*	
1-3	A, B, C	Diode array -> Servo processor	Current input (central photo diode signal input)
4-5	E, F	Diode array -> Servo processor	Current input (satellite photo diode signal input)
6	SGT	Servo processor -> Track servo	Signal generator output to track servo, sends 1700Hz for adjustment procedure
7	TE -	-	Inverting input of trackerror amplifier
8	TEGain	-	Gain control pin of track error amplifier
9	TG1	-	Track Gain 1 - switch: controls the gain of the track servo amplifier
10	TE out	-	Track Error amplifier output
11	TC/Shock	-	Track Cross/Shock detector input
12	TS +	-	Non inverting input of track servo amplifier
13	TG2	not connected	Track Gain 2 - switch: controls the gain of the track servo amplifier
14	TS -	-	Inverting input of track servo amplifier
15	TS out	Servo processor -> Servo driver	Output of track servo amplifier
16	SS +	-	Non inverting input of slide servo amplifier
17	SS -	-	Inverting input of slide servo amplifier
18	Slide out	Servo processor -> Motor driver	Output of slide servo amplifier
19	DETFIL	-	Pin for connection of DETection FILter capacitor of *ADJUST LOGIC*
20	BIAS	Servo processor -> external electronic	Reference Voltage output Vcc/2 of internal BIAS-generator
21	GND	-	Ground connection pin (negative supply)
22	MLA/DIS	µP -> Servo processor	Serial interface Microprocessor LAtch control / DIScharge control for adjustment
23	JP1/SG	µP -> Servo processor	Serial interface Jump control line / Signal Generator input line for adjustment
24	MCK	µP -> Servo processor	Serial interface Clock input line
25	MSD	µP -> Servo processor	Serial interface Data input line
26	Dout	Servo processor -> µP	Serial interface Data output line
27	CLPF	-	Pin for connection of Low Pass Filter capacitor for *ADJUST LOGIC*
28	IREF	-	Reference current input
29	Vcc	-	Positive supply connection pin (4V - 5.5V)
30	FSout	Servo processor -> Servo driver	Output of focus servo amplifier
31	FS -	-	Inverting input of focus servo amplifier
32	FEGain	-	Gain control pin of focus error amplifier
33	FE -	-	Inverting input of focus error amplifier
34	SGF	Servo processor -> Focus servo	Signal generator output to focus servo, sends 1300Hz for adjust. procedure
35	CFSR	-	Charge capacitor for Focus Search triangle-generator
36	APC +	-	Non inverting input of Automatic laser Power Control amplifier
37	APC -	-	Inverting input of Automatic laser Power Control amplifier
38	APC out	Servo processor -> Laser driver	Output of Automatic laser Power Control amplifier
39	MRC	-	Connection pin for capacitor of Mirror detector
40	HF	Servo processor -> Decoder	Output of HF amplifier
41	HFI	-	Inverting input of HF amplifier
42	ABC	-	Sum output of amplified A, B and C input (central photo diode signal input) to external ac-coupling capacitor

SIGNAL PROCESSOR SAA7345GP/M5

Pin	*Name*	*DirectionDescription*	
1	CL11	not connected	11.2896MHz clock output (3-state)
2	DOBM	signal processor -> Digital out (n.c.)	digital bi-phase mark output (3-state)
3	V1	not connected	versatile input pin of signal processor
4	V2	not connected	versatile input pin of signal processor
5	Test2	GND	test input of signal processor
6	Test1	GND	test input of signal processor
7	ISLICE	signal processor -> signal processor	current feedback from internal data slicer
8	HFIN	HF Pre-amp -> signal processor	comparator signal input
9	HFREF	HF Pre-amp -> signal processor	comparator signal input
10	IREF	-> signal processor	reference current pin (nom. VDD/2)
11	VDDA	-	+ supply (analog) of signal processor
12	VSSA	-	- supply (analog) of signal processor
13	CRIN	X-tal -> signal processor	crystal/resonator input of signal processor
14	CROUT	signal processor -> X-Tal	crystal/resonator output of signal processor
15	VDD1	-	+ supply for I/O-buffers of signal processor
16	VSS1	-	- supply for I/O-buffers of signal processor
17	CL16	signal processor -> DSIC2	16.9844MHz clock output of signal processor
18	MISC	not connectedgeneral purpose DAC output (3-state)	
19	DATA	signal processor -> DAC	serial data output of signal processor (3-state)
20	WCLK	signal processor -> DAC	word clock output of signal processor (3-state)
21	SCLK	signal processor -> DAC	serial bit clock output of signal processor (3-state)
22	MOTOR1	signal processor -> Disc motor driver	motor output1 of signal processor; versatile (3-state)
23	MOTOR2	not connected	motor output 2 of signal processor; versatile (3-state)
24	V5	not connected	versatile output pin of signal processor
25	V4	not connected	versatile output pin of signal processor
26	V3	not connected	versatile output pin of signal processor (open drain)
27	KILL	not connected	Mute output; programmable (open drain)
28	PORE	µP -> signal processor	power-on reset enable input (active low)
29	CLA	signal processor -> µP	4.2336MHz microprocessor clock output
30	DA	µP <-> signal processor	interface data I/O-line
31	CL	µP -> signal processor	interface clock input line
32	RAB	µP -> signal processor	interface R/W and acknowledge input
33	CFLG	not connected	correction flag output (open drain)
34-42	not used	-	
43	VSS2	-	Positive supply for internal logic of signal processor
44	VDD2	GND	Negative supply for internal logic of signal processor

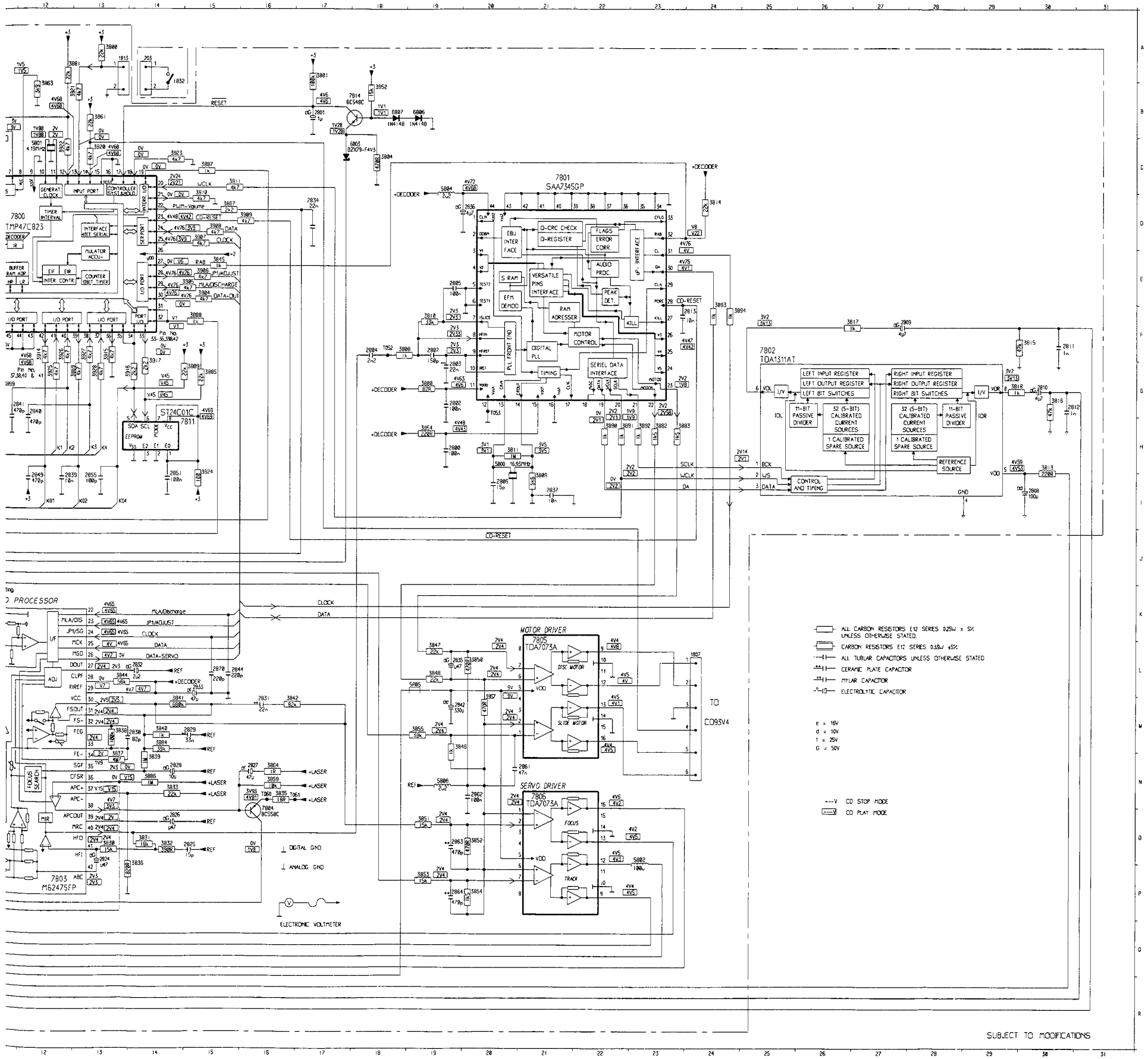
CD 6 - CIRCUIT DIAGRAM



ALL CARBON RESISTORS E12 SERIES 0,25W ± 5%
UNLESS OTHERWISE STATED.
CARBON RESISTORS E12 SERIES 0,5W ±5%
ALL TUBULAR CAPACITORS UNLESS OTHERWISE STATED
CERAMIC PLATE CAPACITOR
MYLAR CAPACITOR
ELECTROLYTIC CAPACITOR

e = 16V
d = 10V
f = 25V
G = 50V

---V CD STOP MODE
——V CD PLAY MODE



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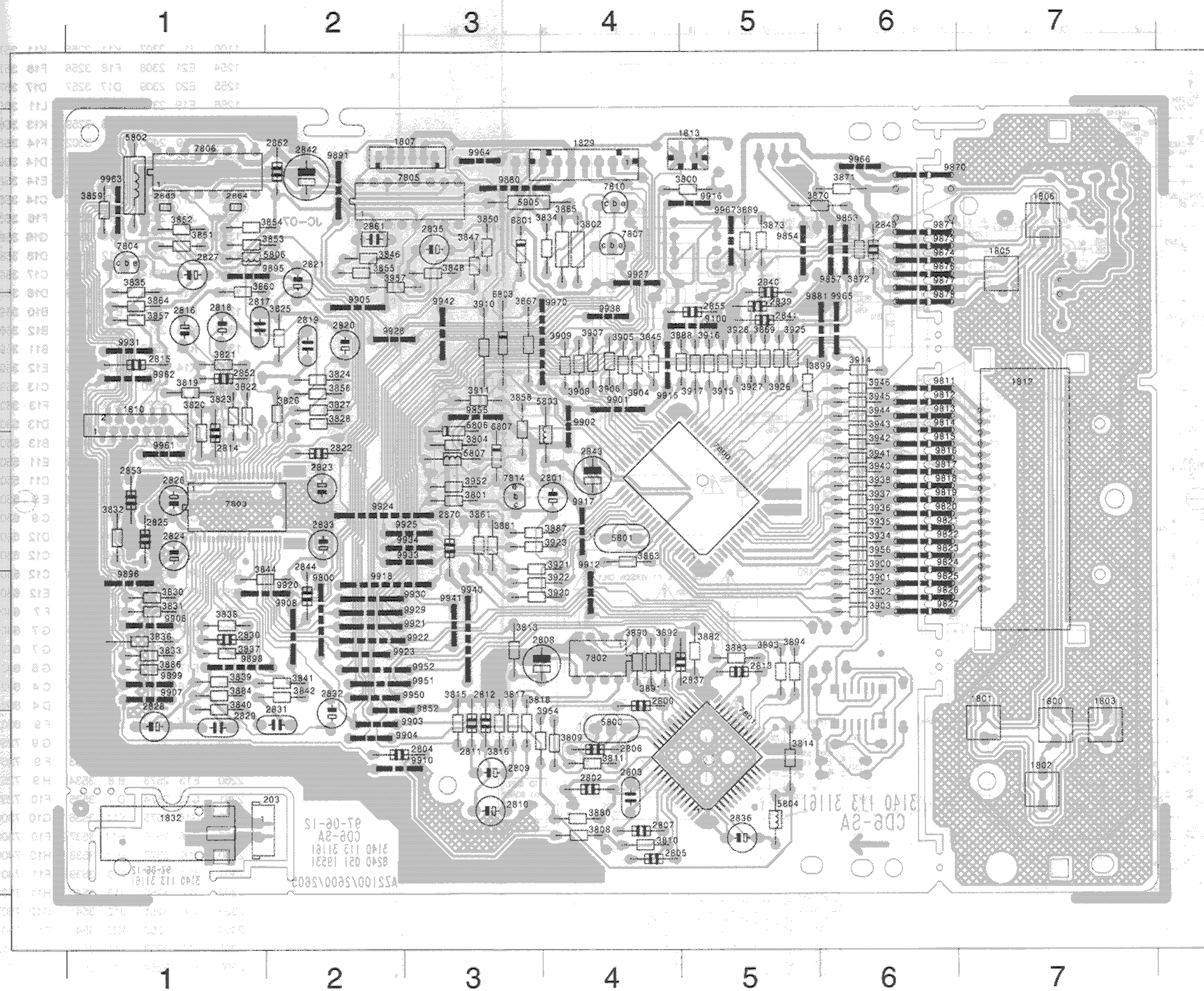
1800	J 5	2841	G12	3839	N14	3906	E15	7801	C21
1801	K 4	2842	M19	3840	M14	3907	D15	7802	F25
1802	J 5	2843	O 6	3841	M14	3908	D15	7803	P12
1803	J 4	2844	L15	3842	M16	3909	D16	7804	O16
1805	J 3	2849	I12	3844	L13	3910	D15	7805	L21
1806	J 3	2851	I14	3845	E15	3911	C15	7806	N21
1807	L24	2852	M 9	3846	M19	3914	F12	7807	O 4
1810	O 7	2853	O 9	3847	L19	3915	F13	7810	P 4
1812	A 7	2854	E 2	3848	L19	3916	G14	7811	H14
1813	A13	2855	I13	3850	L20	3917	G14	7812	D 2
1827	J 2	2857	E 3	3851	O19	3920	C13	7813	C 4
1829	O 2	2858	D 6	3852	O20	3921	B13	7814	B18
1832	A14	2859	D 6	3853	P19	3922	C12	T050	O 4
2800	H19	2860	E 5	3854	P20	3923	C14	T051	P 4
2801	B17	2861	N21	3855	M19	3924	I15	T052	F18
2802	G19	2862	N20	3856	L 9	3925	G12	T053	G20
2803	G19	2863	O19	3857	P 9	3926	F12	T060	N16
2804	F18	2864	P19	3858	O 5	3927	F13	T061	N16
2805	E19	2870	L15	3859	N16	3928	G13	T062	O 2
2806	I20	3800	A13	3860	N 9	3929	D 2	T063	P 2
2807	F19	3801	A17	3861	B13	3930	E 3	T064	P 2
2808	I30	3802	O 4	3863	B12	3931	C 6	T065	P 2
2809	F27	3804	C18	3864	N16	3932	D 6	T067	Q 2
2810	G30	3808	F18	3865	P 4	3933	C 5	T068	R 2
2811	F30	3809	I21	3867	D15	3934	C 9		
2812	G30	3810	F19	3869	G13	3935	C 9		
2813	F24	3811	H20	3870	H 3	3936	C 8		
2814	N10	3813	H30	3871	H 3	3937	C 8		
2815	P 8	3814	D24	3872	H 4	3938	C 8		
2816	N10	3815	F30	3873	H 5	3940	C 8		
2817	M 8	3816	G30	3875	D 3	3941	C 8		
2818	M 8	3817	F27	3880	G19	3942	C 7		
2819	M 8	3818	G29	3881	A13	3943	C 7		
2820	L 8	3819	N 9	3882	H23	3944	C 7		
2821	L 8	3820	N 9	3883	H23	3945	C 7		
2822	K 9	3821	N 9	3884	M14	3946	C 7		
2823	K 9	3822	M 9	3885	G15	3952	B18		
2824	O13	3823	M 9	3886	N14	3954	H19		
2825	O15	3824	M 8	3887	C15	3956	C 9		
2826	O14	3825	M 9	3888	F15	3957	M20		
2827	N16	3826	L10	3889	G15	5800	H20		
2828	N14	3827	L 8	3890	H22	5801	C12		
2829	M15	3828	L 9	3891	H22	5802	O23		
2830	M14	3829	L10	3892	H23	5803	O 5		
2831	M16	3830	O13	3893	F24	5804	C19		
2832	L14	3831	O14	3894	F24	5805	L19		
2833	L15	3832	O14	3899	G11	5806	N19		
2834	D17	3833	N14	3900	C10	5807	O 4		
2835	L19	3834	P 3	3901	C10	6801	O 3		
2836	D20	3835	N16	3902	C10	6803	C18		
2837	I21	3836	P14	3903	B11	6806	B19		
2839	I12	3837	N13	3904	E15	6807	B18		

CD 6 - LAYOUT DIAGRAM



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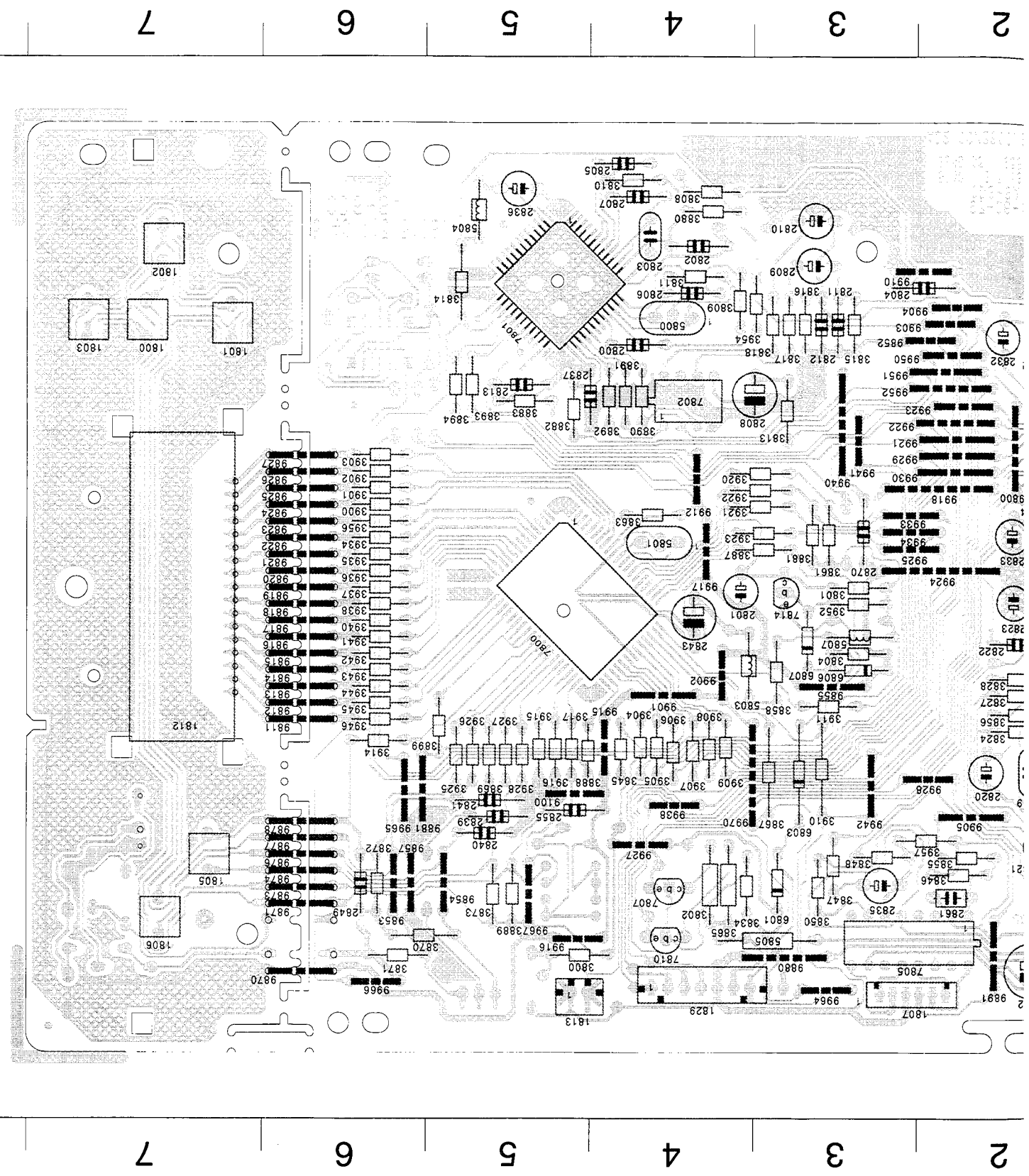
1801	E	7	3808	E	4	3889	A	5
1802	E	7	3809	E	4	3890	D	4
1803	E	7	3810	E	4	3891	D	4
1805	A	7	3811	E	4	3892	D	4
1806	A	7	3813	D	3	3893	D	5
1807	A	3	3814	E	5	3894	D	5
1810	B	1	3815	E	3	3899	B	5
1812	C	7	3816	E	3	3900	D	6
1813	A	5	3817	E	3	3901	D	6
1829	A	4	3818	E	3	3902	D	6
1832	E	1	3819	B	1	3903	D	6
2800	D	4	3820	C	1	3904	B	4
2801	C	4	3821	B	1	3905	B	4
2802	E	4	3822	B	1	3906	B	4
2803	E	4	3823	B	1	3907	B	4
2804	E	2	3824	B	2	3908	B	4
2805	E	4	3825	B	2	3909	B	4
2806	E	4	3826	B	2	3910	B	3
2807	E	4	3827	B	2	3911	B	3
2808	D	3	3828	B	2	3914	B	6
2809	E	3	3830	D	1	3915	B	5
2810	E	3	3831	D	1	3916	B	5
2811	E	3	3832	C	1	3917	B	5
2812	E	3	3833	D	1	3920	D	3
2813	D	5	3834	A	4	3921	C	3
2814	C	1	3835	B	1	3922	D	3
2815	B	1	3836	D	1	3923	C	3
2816	B	1	3837	D	1	3925	B	5
2817	B	1	3838	D	1	3926	B	5
2818	B	1	3839	D	1	3927	B	5
2819	B	2	3840	D	1	3928	B	5
2820	B	2	3841	D	2	3934	C	6
2821	A	2	3842	D	2	3935	C	6
2822	C	2	3844	D	1	3936	C	6
2823	C	2	3845	B	4	3937	C	6
2824	C	1	3846	A	2	3938	C	6
2825	C	1	3847	A	3	3940	C	6
2826	C	1	3848	A	3	3941	C	6
2827	A	1	3850	A	3	3942	C	6
2828	E	1	3851	A	1	3943	C	6
2829	E	1	3852	A	1	3944	B	6
2830	D	1	3853	A	1	3945	B	6
2831	E	2	3854	A	1	3946	B	6
2832	E	2	3855	A	2	3952	C	3
2833	C	2	3856	B	2	3954	E	3
2835	A	3	3857	B	1	3956	C	6
2836	E	5	3858	B	3	3957	A	2
2837	D	4	3859	A	1	5800	E	4
2839	B	5	3860	A	1	5801	C	4
2840	B	5	3861	C	3	5802	A	1
2841	B	5	3863	C	4	5803	C	4
2842	A	2	3864	B	1	5804	E	5
2843	C	4	3865	A	4	5805	A	3
2844	D	2	3867	B	3	5806	A	1
2849	A	6	3869	B	5	5807	C	3
2852	B	1	3870	A	6	6801	A	3
2853	C	1	3871	A	6	6803	B	3
2855	B	5	3872	A	6	6806	C	3
2861	A	2	3873	A	5	6807	C	3
2862	A	2	3880	E	4	7800	C	5
2863	A	1	3881	C	3	7801	E	5
2864	A	1	3882	D	5	7802	D	4
2870	C	3	3883	D	5	7803	C	1
3800	A	5	3884	D	1	7804	A	1
3801	C	3	3886	D	1	7805	A	3



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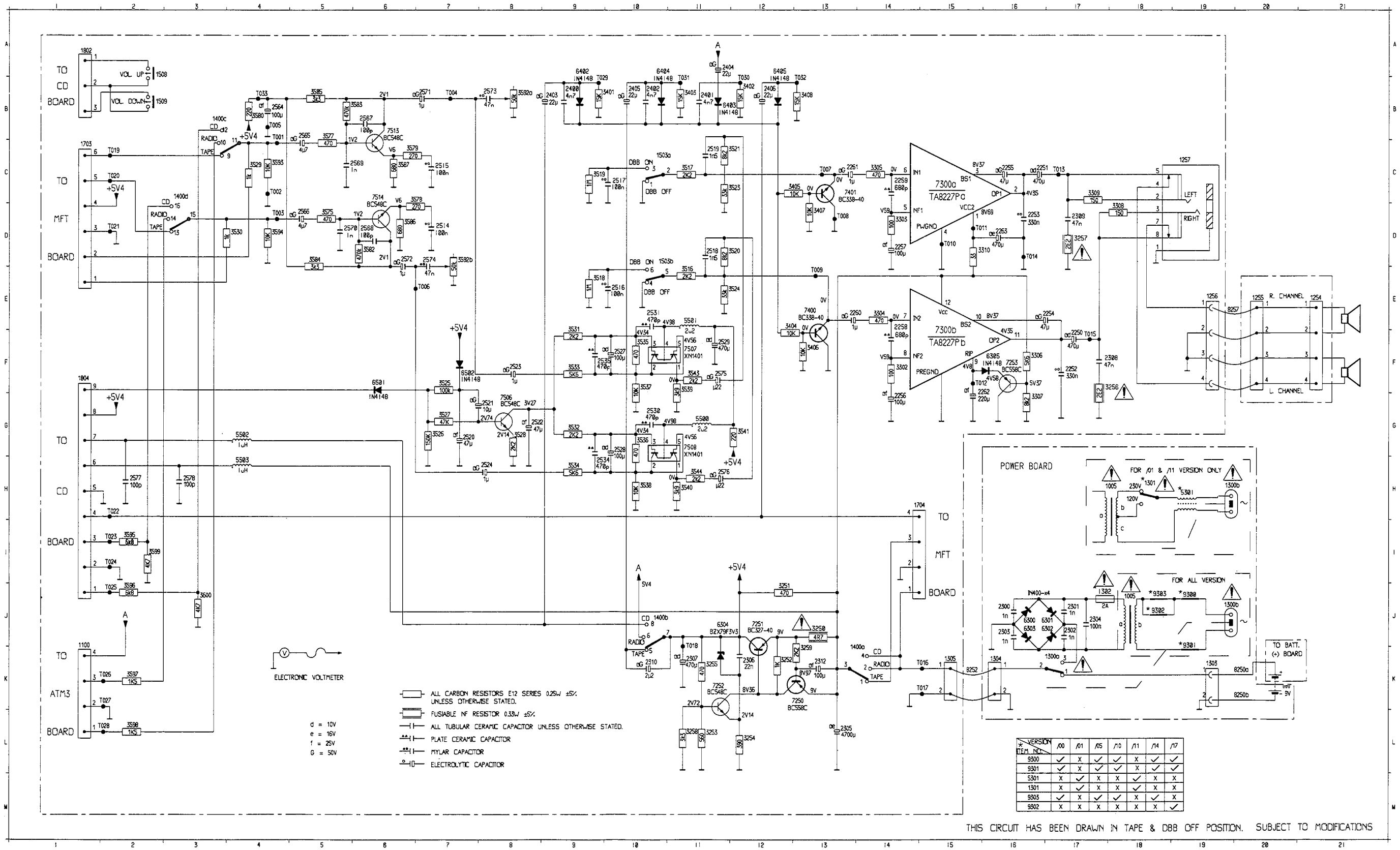
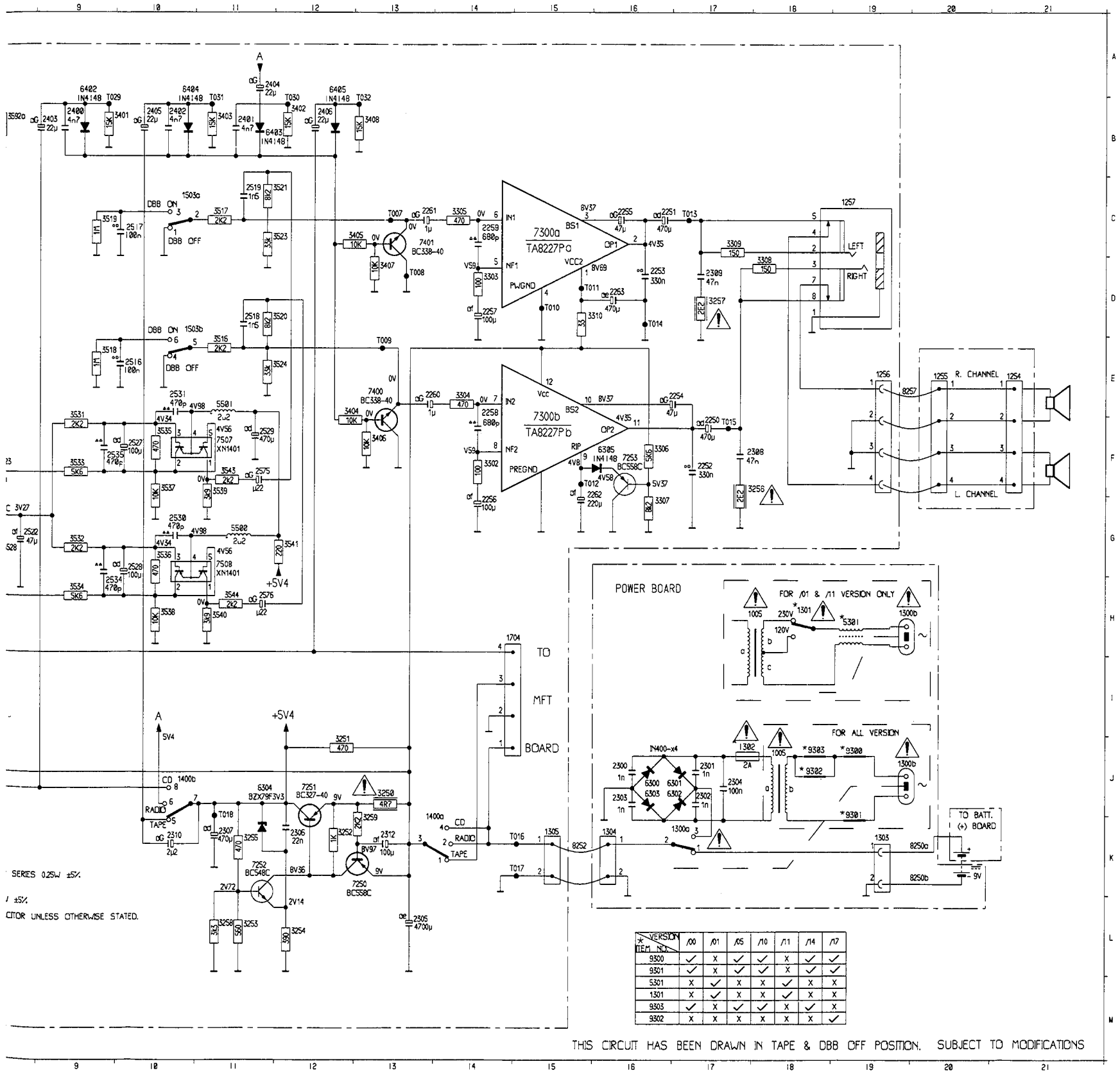
1800	E	7	3804	C	3	3888	B	5	7807	A	4	9934	C	3
1801	E	7	3808	E	4	3889	A	5	7810	A	4	9938	B	4
1802	E	7	3809	E	4	3890	D	4	7814	C	3	9940	D	3
1803	E	7	3810	E	4	3891	D	4	9100	B	5	9941	D	3
1805	A	7	3811	E	4	3892	D	4	9800	D	2	9942	B	3
1806	A	7	3813	D	3	3893	D	5	9811	B	6	9950	D	2
1807	A	3	3814	E	5	3894	D	5	9812	B	6	9951	D	2
1810	B	1	3815	E	3	3899	B	5	9813	B	6	9952	D	2
1812	C	7	3816	E	3	3900	D	6	9814	C	6	9961	C	1
1813	A	5	3817	E	3	3901	D	6	9815	C	6	9962	B	1
1829	A	4	3818	E	3	3902	D	6	9816	C	6	9963	A	1
1822	E	1	3819	B	1	3903	D	6	9817	C	6	9964	A	3
2801	C	4	3821	B	1	3905	B	4	9819	C	6	9966	B	6
2800	D	4	3820	C	1	3904	B	4	9818	C	6	9965	B	6
2802	E	4	3822	B	1	3906	B	4	9820	C	6	9967	A	5
2803	E	4	3823	B	1	3907	B	4	9821	C	6	9970	B	4
2804	E	2	3824	B	2	3908	B	4	9822	C	6			
2805	E	4	3825	B	2	3909	B	4	9823	C	6			
2806	E	4	3826	B	2	3910	B	3	9824	D	6			
2807	E	4	3827	B	2	3911	B	3	9825	D	6			
2808	D	3	3828	B	2	3914	B	6	9826	D	6			
2809	E	3	3830	D	1	3915	B	5	9827	D	6			
2810	E	3	3831	D	1	3916	B	5	9852	E	2			
2811	E	3	3832	C	1	3917	B	5	9853	A	6			
2812	E	3	3833	D	1	3920	D	3	9854	A	5			
2813	D	5	3834	A	4	3921	C	3	9855	B	3			
2814	C	1	3835	B	1	3922	D	3	9857	A	4			
2815	B	1	3836	D	1	3923	C	3	9870	A	6			
2816	B	1	3837	D	1	3925	B	5	9871	A	4			
2817	B	1	3838	D	1	3926	B	5	9873	A	6			
2818	B	1	3839	D	1	3927	B	5	9874	A	6			
2819	B	2	3840	D	1	3928	B	5	9876	A	6			
2820	B	2	3841	D	2	3934	C	6	9877	A	6			
2821	A	2	3842	D	2	3935	C	6	9878	B	6			
2822	C	2	3844	D	1	3936	C	6	9880	A	3			
2823	C	2	3845	B	4	3937	C	6	9881	B	6			
2824	C	1	3846	A	2	3938	C	6	9891	A	2			
2825	C	1	3847	A	3	3940	C	6	9895	A	1			
2826	C	1	3848	A	3	3941	C	6	9896	D	1			
2827	A	1	3850	A	3	3942	C	6	9898	D	1			
2828	E	1	3851	A	1	3943	C	6	9899	D	1			
2829	E	1	3852	A	1	3944	B	6	9901	B	4			
2830	D	1	3853	A	1	3945	B	6	9902	B	4			
2831	E	2	3854	A	1	3946	B	6	9903	E	2			
2832	E	2	3855	A	2	3952	C	3	9904	E	2			
2833	C	2	3856	B	2	3954	E	3	9905	B	2			
2835	A	3	3857	B	1	3956	C	6	9906	D	1			
2836	E	5	3858	B	3	3957	A	2	9907	D	1			
2837	D	4	3859	A	1	5800	E	4	9908	D	2			
2839	B	5	3860	A	1	5801	C	4	9910	E	2			
2840	B	5	3861	C	3	5802	A	1	9912	D	4			
2841	B	5	3863	C	4	5803	C	4	9915	B	4			
2842	A	2	3864	B	1	5804	E	5	9916	A	5			
2843	C	4	3865	A	4	5805	A	3	9917	C	4			
2844	D	2	3867	B	3	5806	A	1	9918	D	2			
2849	A	6	3869	B	5	5807	C	3	9920	D	1			
2852	B	1	3870	A	6	6801	A	3	9921	D	2			
2853	C	1	3871	A	6	6803	B	3	9922	D	2			
2855	B	5	3872	A	6	6806	C	3	9923	D	2			
2861	A	2	3873	A	5	6807	C	3	9924	C	2			
2862	A	2	3880	E	4	7800	C	5	9925	C	3			
2863	A	1	3881	C	3	7801	E	5	9927	A	4			
2864	A	1	3882	D	5	7802	D	4	9928	B	2			
2870	C	3	3883	D	5	7803	C	1	9929	D	2			
3800	A	5	3884	D	1	7804	A	1	9930	D	2			
3801	C	3	3886	D	1	7805	A	3	9931	B	1			

COMBI BOARD - CIRCUIT DIAGRAM



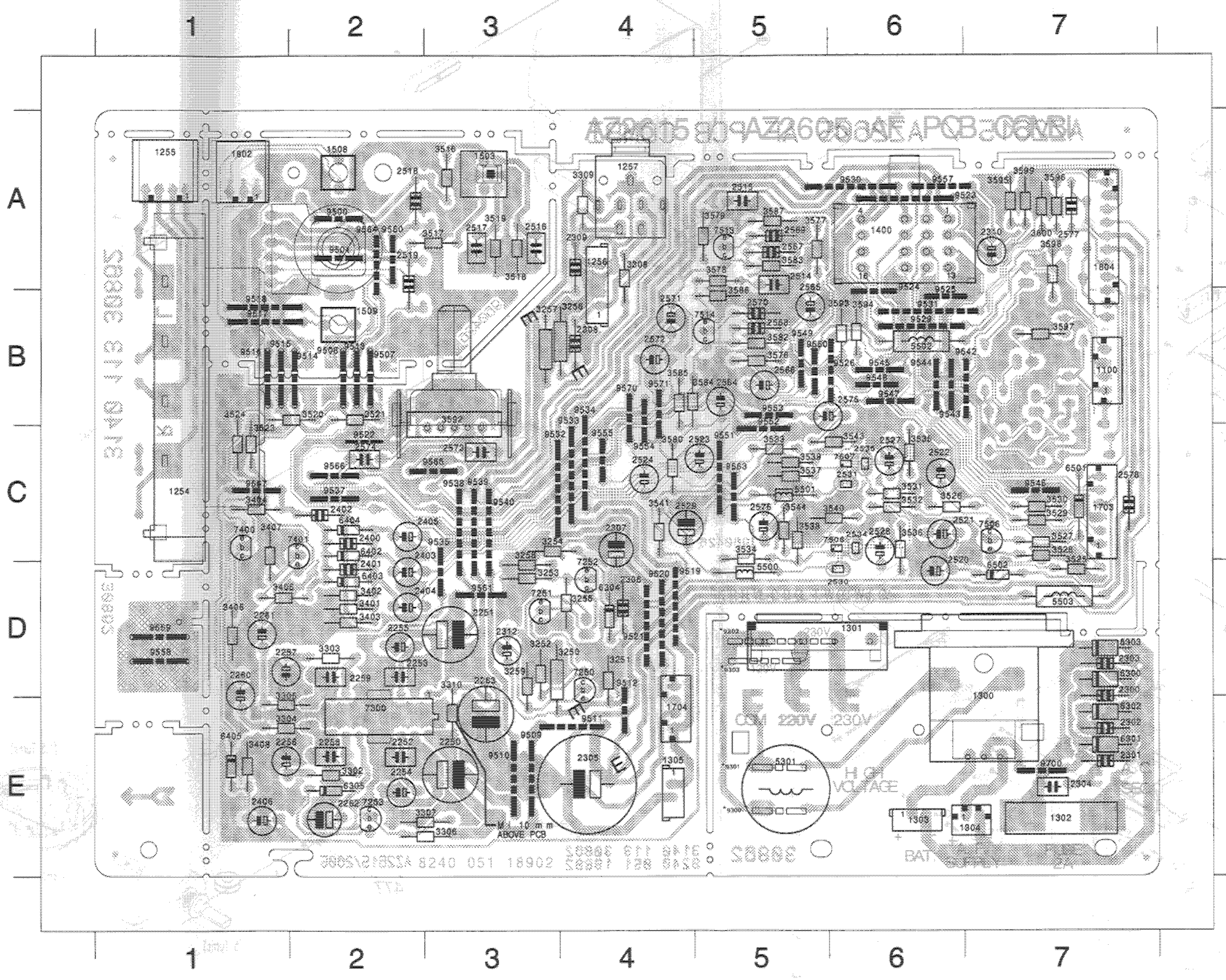
VERSION / ITEM NO.	/00	/01	/05	/10	/11	/14	/17
9300	✓	X	✓	✓	X	✓	✓
9301	✓	X	✓	✓	X	✓	✓
5301	X	✓	X	X	✓	X	X
1301	X	✓	X	X	✓	X	X
9303	✓	X	✓	✓	X	✓	X
9302	X	X	X	X	X	X	✓



ITEM NO. \ VERSION	/00	/01	/05	/10	/11	/14	/17
9300	✓	X	✓	✓	X	✓	✓
9301	✓	X	✓	✓	X	✓	✓
5301	X	✓	X	X	✓	X	X
1301	X	✓	X	X	✓	X	X
9303	✓	X	✓	✓	X	✓	X
9302	X	X	X	X	X	X	✓

1100	J1	2307	K11	3255	K11	3577	B 5	9300	J19
1254	E21	2308	F18	3256	F18	3578	C 7	9301	K19
1255	E20	2309	D17	3257	D17	3579	C 6	9302	J18
1256	E19	2310	K10	3258	L11	3580	B 4	9303	J18
1256	F19	2312	K13	3259	K13	3582	D 6	T001	B 4
1256	F19	2400	B 9	3302	F14	3583	B 6	T002	C 4
1256	E19	2401	B11	3303	D14	3584	D 5	T003	D 4
1257	C19	2402	B10	3304	E14	3585	B 5	T004	B 7
1300a	K17	2403	B 9	3305	C14	3586	D 6	T005	B 4
1300b	J19	2404	A11	3306	F16	3587	C 6	T006	E 7
1300b	H19	2405	B10	3307	G16	3592a	C6	T007	C13
1301	H18	2406	B12	3308	D18	3592b	D7	T008	D13
1302	J17	2514	D 7	3309	C17	3593	C 4	T009	E13
1303	K19	2515	C 7	3310	D16	3594	D 4	T010	D15
1303	K19	2516	E10	3401	B10	3595	I 2	T011	D15
1304	K16	2517	C10	3402	B12	3596	J 2	T012	F15
1305	K15	2518	D11	3403	B11	3597	K 2	T013	C17
1400a	K14	2519	C11	3404	E12	3598	L 3	T014	D16
1400b	J10	2520	G 7	3405	C13	3599	I 2	T015	F17
1400c	B3	2521	G 8	3406	F13	3600	J 3	T016	K14
1400d	C3	2522	G 8	3407	D13	5301	H19	T017	K14
1503a	C10	2523	F 8	3408	B13	5500	G11	T018	K11
1503b	D10	2524	H 8	3516	E11	5501	E11	T019	C 2
1508	A 2	2527	F10	3517	C11	5502	G 4	T020	C 2
1509	B 2	2528	G10	3518	E 9	5503	H 4	T021	D 2
1703	C 1	2529	F11	3519	C 9	6300	J16	T022	H 2
1704	H14	2530	G10	3520	D12	6301	J17	T023	I 2
1802	A 1	2531	E10	3521	C12	6302	J17	T024	I 2
1804	F1	2534	H 9	3523	C12	6303	J16	T025	J 2
2250	F17	2535	F 9	3524	E12	6304	J11	T026	K 1
2251	C16	2564	B 4	3525	F 7	6305	F16	T027	K 1
2252	F17	2565	B 5	3526	G 7	6402	A 9	T028	L 1
2253	D16	2566	D 5	3527	G 7	6403	B11	T029	B 9
2254	E17	2567	B 6	3528	G 8	6404	A10	T030	B12
2255	C16	2568	D 6	3529	C 4	6405	A12	T031	B11
2256	G14	2569	C 6	3530	D 4	6501	F 6	T032	B13
2257	D14	2570	D 5	3531	F 9	6502	F 7	T033	B 4
2258	E14	2571	B 7	3532	G 9	7250	K13		
2259	C14	2572	D 6	3533	F 9	7251	J12		
2260	E13	2573	B 8	3534	H 9	7252	K11		
2261	C13	2574	D 7	3535	F10	7253	F16		
2262	G16	2575	F11	3536	G10	7300a	C15		
2263	D16	2576	H11	3537	F10	7300b	F15		
2300	J16	2577	H 2	3538	H10	7400	E13		
2301	J17	2578	H 3	3539	F11	7401	C13		
2302	J17	3250	J13	3540	H11	7506	G 8		
2303	J16	3251	J12	3541	G12	7507	F11		
2304	J17	3252	K12	3543	F11	7508	G11		
2305	L13	3253	L11	3544	H11	7513	B 6		
2306	K12	3254	L12	3575	D 5	7514	C 6		

COMBI BOARD - LAYOUT DIAGRAM



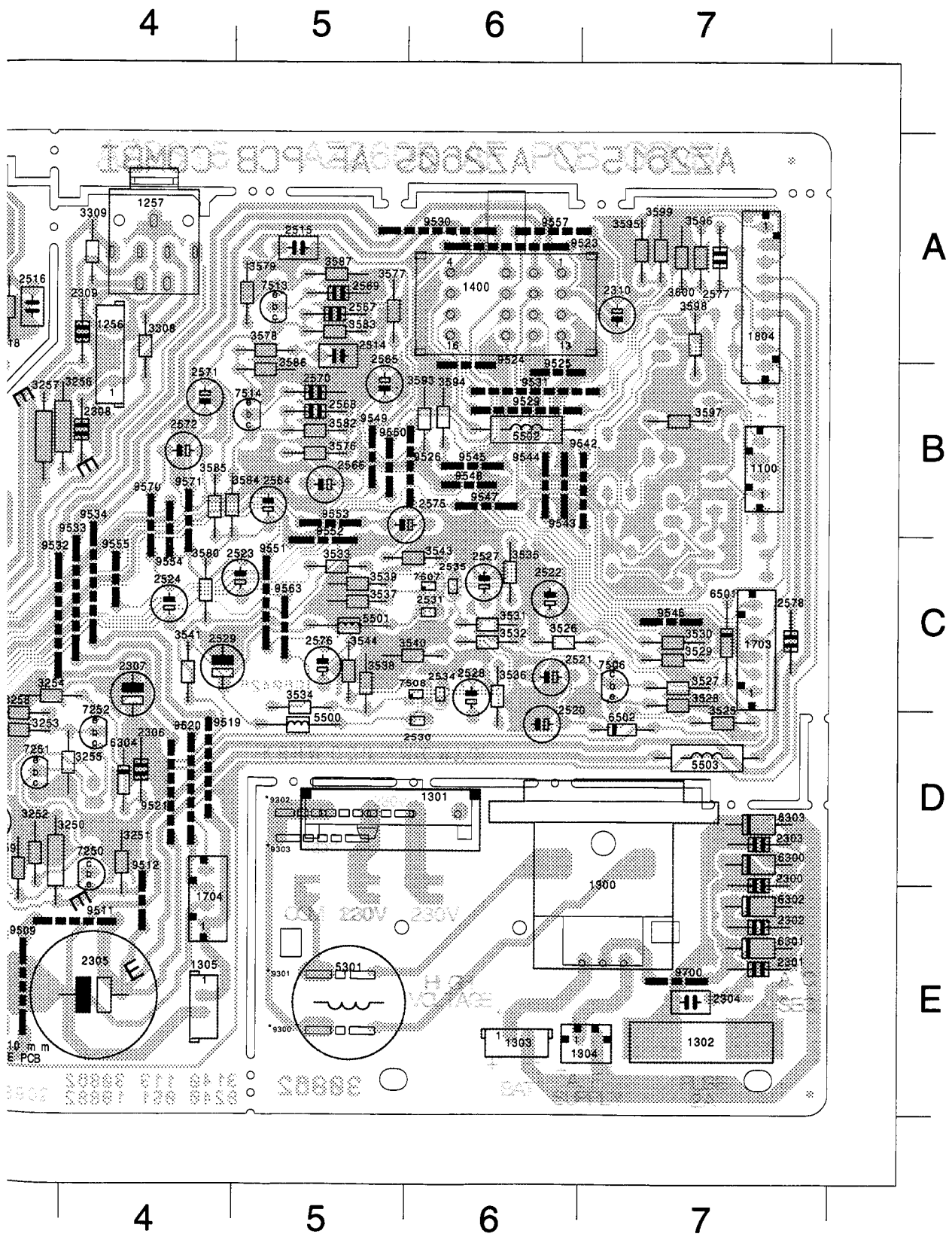
1256	A4	1415	A6	2300	E7
1257	A4	1416	A6	2301	E7
1300	E7	1417	A6	2302	E7
1301	D5	1418	A7	2303	D7
1302	E7	1509	B2	2304	E7
1303	E6	1703	C7	2305	E4
1304	E7	1704	E4	2306	D4
1305	E4	1802	A1	2307	C4
1400	A6	1804	A7	2312	D3
1401	A6	2250	E3	2400	C2
1402	A6	2251	D3	2401	D2
1403	A6	2252	E2	2402	C2
1407	A6	2253	D2	2403	D2
1408	A6	2254	E2	2404	D2
1409	A6	2255	D2	2405	C2
1410	A6	2256	E1	2406	E1
1411	A6	2260	D1	2514	A5
1412	A6	2261	D1	2515	A5
1413	A6	2262	E2	2516	A3
1414	A6	2263	E3	2517	A3

*9300 Not for version /01
*9301 Not for version /01
*9302 For version /00/05/10/14
*9303 For version /17

CASSETTE ADJUSTMEN

Adjustment	Cassette	SK
Azimuth	10KHz SBC420*	T
		T
Motor Speed	3150Hz SBC420*	T

* SBC420 : 4822 397 30071
**a The maximum permissible
Morever, the wow and flutt



1256	A4	1415	A6	2300	E7	2521	C6	2576	C5	3405	D1	3539	C5	3599	A7	7506	C7	9526	B6	9553	B5
1257	A4	1416	A6	2301	E7	2522	C6	2577	A7	3406	D1	3540	C6	3600	A7	7507	C6	9529	B6	9554	B4
1300	E7	1417	A6	2302	E7	2523	C5	2578	C7	3407	C1	3541	C4	5301	E5	7508	C6	9530	A6	9555	C4
1301	D5	1418	A7	2303	D7	2524	C4	3250	D3	3408	E1	3543	C6	5500	D5	7513	A5	9531	B6	9557	A6
1302	E7	1509	B2	2304	E7	2527	C6	3254	C3	3516	A3	3544	C5	6300	D7	7514	B5	9532	C3	9561	D3
1303	E6	1703	C7	2305	E4	2528	C6	3255	D4	3517	A3	3576	B5	6301	E7	9500	A2	9533	C4	9563	C5
1304	E7	1704	E4	2306	D4	2529	C4	3256	B3	3518	A3	3577	A5	6302	E7	9501	A2	9534	C4	9564	A2
1305	E4	1802	A1	2307	C4	2530	D6	3257	B4	3519	A3	3578	A5	6303	D7	9507	B2	9535	D3	9565	C3
1400	A6	1804	A7	2312	D3	2531	C6	3258	D3	3524	C1	3579	A5	6304	D4	9511	E4	9537	C2	9566	C2
1401	A6	2250	E3	2400	C2	2534	C6	3259	D3	3525	D7	3580	C4	6305	E2	9512	E4	9538	C3	9567	C1
1402	A6	2251	D3	2401	D2	2535	C6	3302	E2	3526	C6	3582	B5	6402	C2	9513	B2	9539	C3	9570	B4
1403	A6	2252	E2	2402	C2	2564	B5	3303	D2	3527	C7	3583	A5	6403	D2	9514	B2	9540	C3	9571	B4
1407	A6	2253	D2	2403	D2	2568	B5	3304	E1	3528	C7	3587	A5	6404	C2	9515	B1	9545	B6	9700	E7
1408	A6	2254	E2	2404	D2	2569	A5	3305	E1	3529	C7	3592	C3	6405	E1	9516	B1	9546	C7		
1409	A6	2255	D2	2405	C2	2570	B5	3306	E3	3530	C7	3593	B6	6501	C7	9517	B1	9547	B6		
1410	A6	2256	E1	2406	E1	2571	B4	3307	E3	3531	C6	3594	B6	6502	D7	9518	B1	9548	B6		
1411	A6	2260	D1	2514	A5	2572	B4	3401	D2	3532	C6	3595	A7	7253	E2	9519	D4	9549	B5		
1412	A6	2261	D1	2515	A5	2573	C3	3402	D2	3533	C5	3596	A7	7300	E2	9520	D4	9550	B5		
1413	A6	2262	E2	2516	A3	2574	C2	3403	D2	3534	C5	3597	B7	7400	C1	9521	D4	9551	C5		
1414	A6	2263	E3	2517	A3	2575	B5	3404	C1	3535	C6	3598	A7	7401	C2	9522	C2	9552	C5		

CASSETTE ADJUSTMENT

Adjustment	Cassette	Recorder position			Measure on	Read on	Adjust with	Adjust to
		SK	Deck 1	Deck2				
Azimuth	10KHz SBC420*	Tape	Play	--	3758 H/P Jack	mV meter	Left screw of P. head on Deck 1	max. output
		Tape	--	Play	3758	mV meter	Left screw of P. head on Deck 2	L = R
Motor Speed	3150Hz SBC420*	Tape	Play	--	3758	Wow and flutter meter	3758	**a

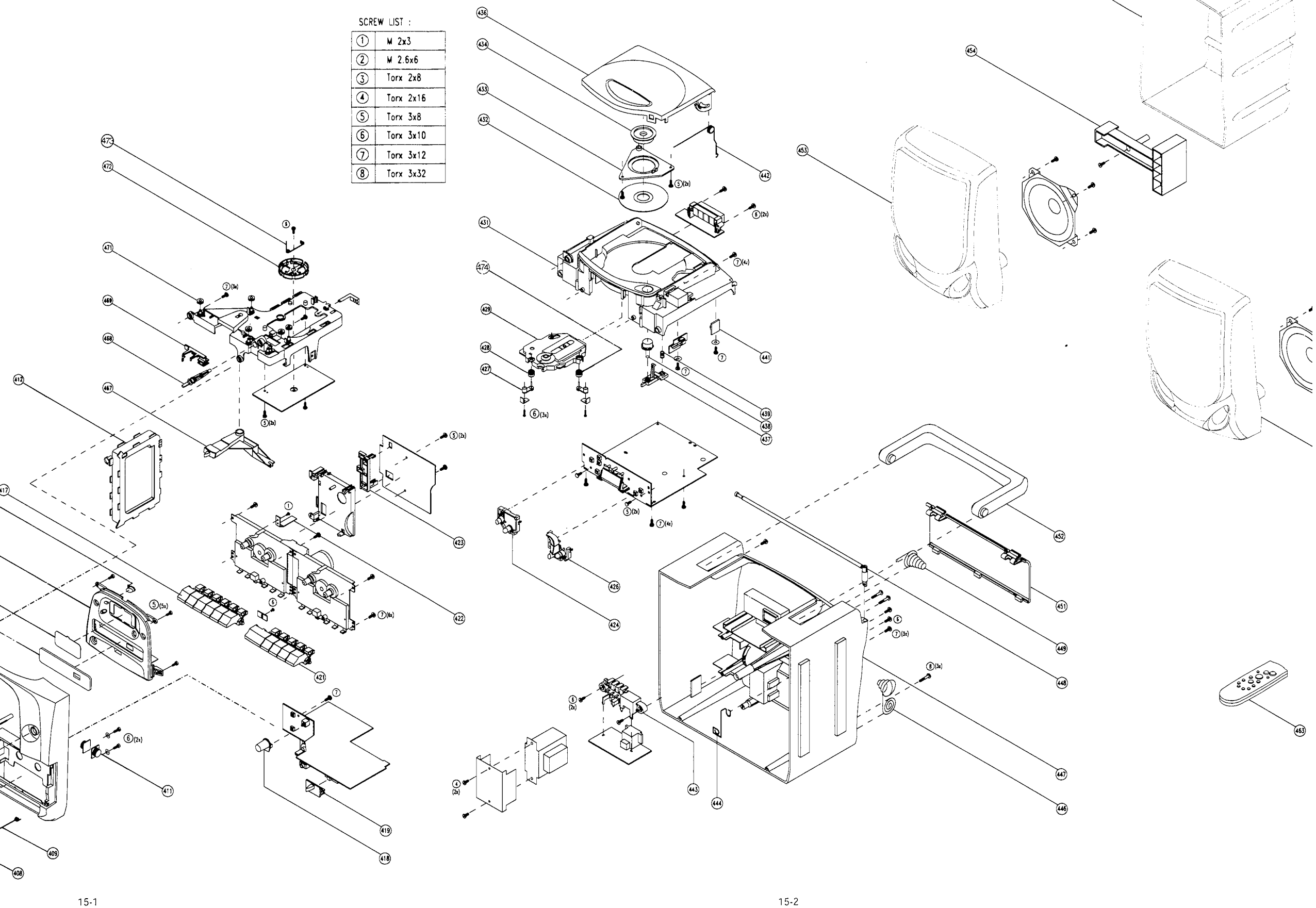
* SBC420 : 4822 397 30071

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

EXPLODED VIEW DIAGRAM - CABINET

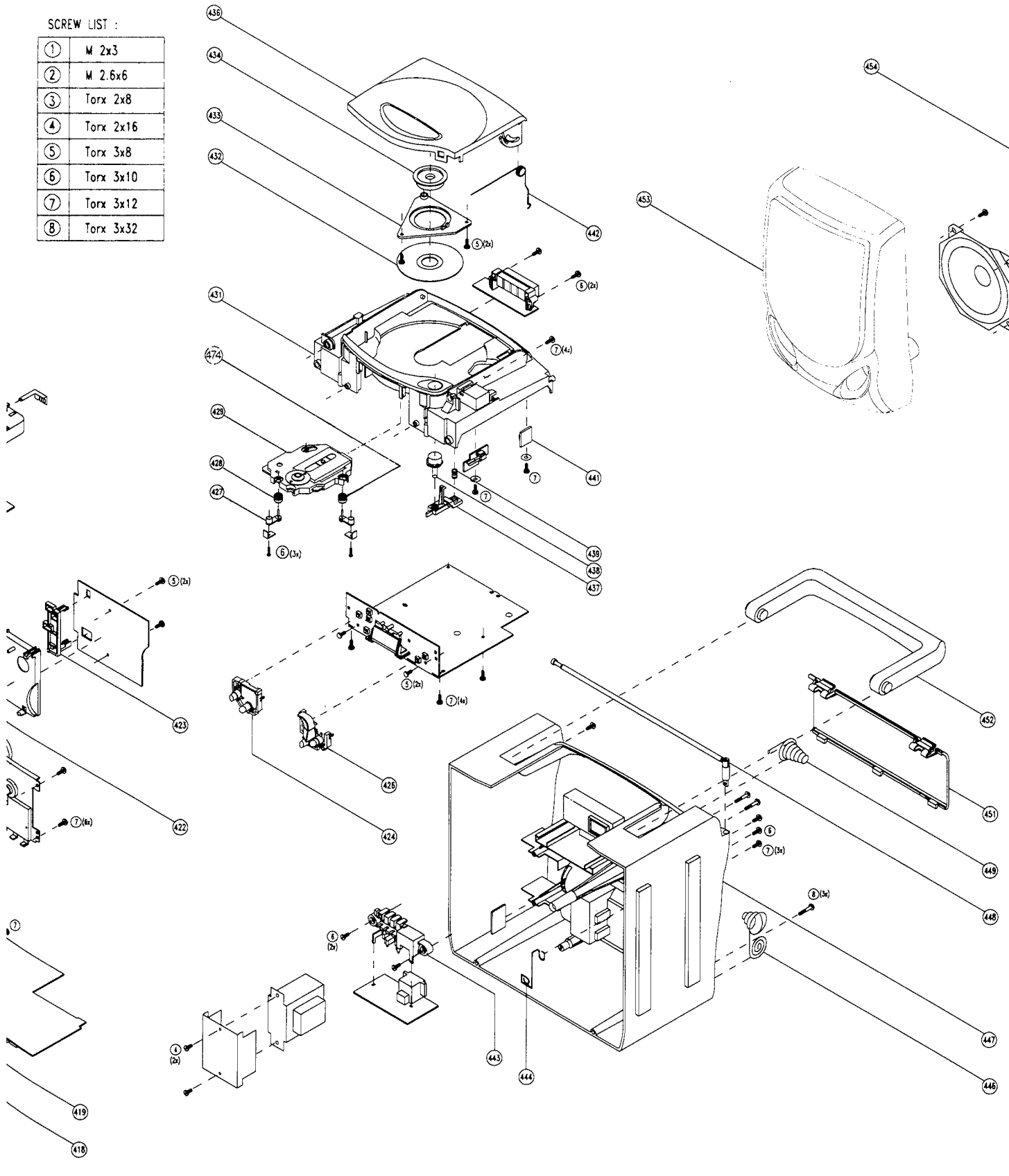
SCREW LIST :

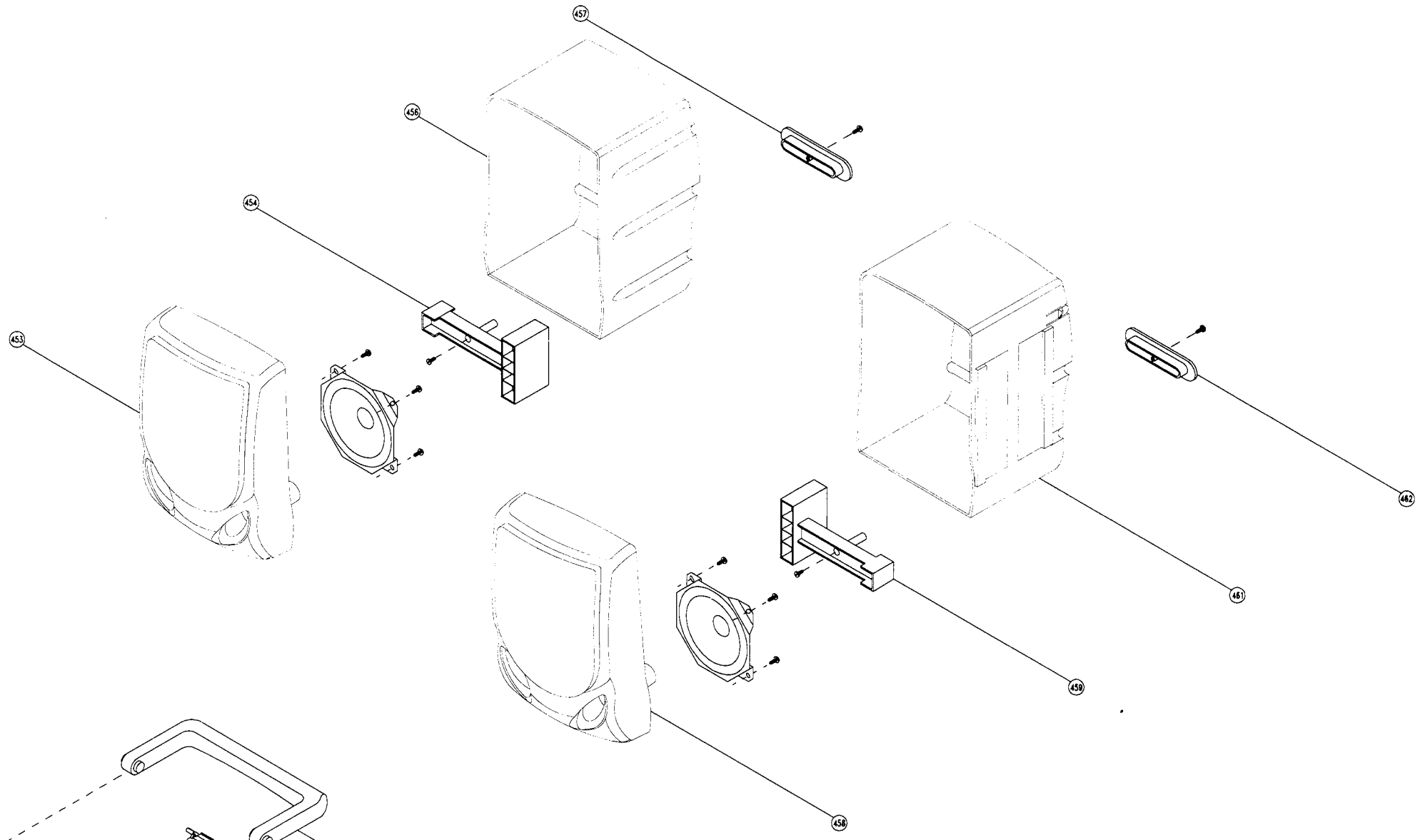
①	M 2x3
②	M 2.6x6
③	Torx 2x8
④	Torx 2x16
⑤	Torx 3x8
⑥	Torx 3x10
⑦	Torx 3x12
⑧	Torx 3x32

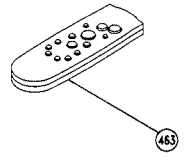


SCREW LIST :

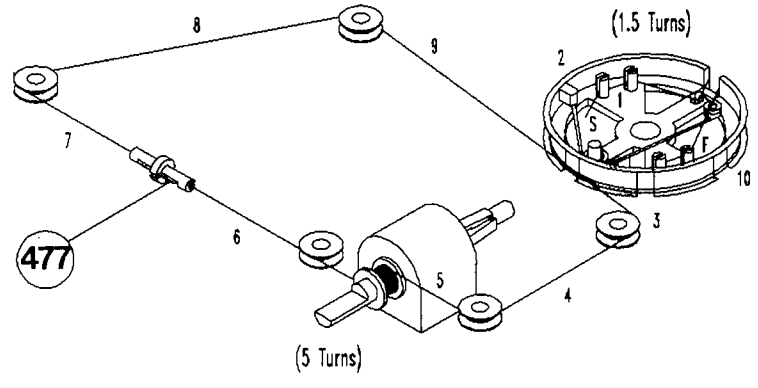
①	M 2x3
②	M 2.6x6
③	Torx 2x8
④	Torx 2x16
⑤	Torx 3x8
⑥	Torx 3x10
⑦	Torx 3x12
⑧	Torx 3x32







DIAL STRINGING



MECHANICAL PARTSLIAT - CABINET

401	4822 450 10463	Lens Cassette (L) ((Not for -/17)
401	4822 450 10465	Lens Cassette (L) (For -/17)
402	4822 443 10905	Door Cassette (L)
403	4822 410 11716	Knob Tuning (Not for -/17)
403	4822 410 11718	Knob Tuning (For -/17)
404	4822 454 13288	Insert Volume
406	4822 410 11719	Knob Volume
407	4822 450 10464	Lens Cassette (R) ((Not for -/17)
407	4822 450 10466	Lens Cassette (R) (For -/17)
408	4822 443 10906	Door Cassette (R)
409	4822 492 71143	Spring
411	4822 529 10322	Damper Assy
412	4822 402 10227	Frame AM Loop (For -/14)
413	4822 459 04924	Cabinet Front
414	4822 381 11959	Lens Tuning (For -/01)
414	4822 381 11956	Lens Tuning (For -/11)
414	4822 381 11958	Lens Tuning (For -/14)
414	4822 381 11974	Lens Tuning (For -/17)
416	4822 381 11952	Lens CD
417	4822 410 11707	Knob Cassette (L)
418	4822 410 11709	Knob DBB
419	4822 410 10264	Knob Mode
421	4822 410 11711	Knob Cassette (R)
422	4822 492 11061	Spring Recording
423	4822 402 10126	Lever Recording
424	4822 410 11708	Buttonset Mode (Not for -/17)
424	4822 410 11778	Buttonset Mode (For -/17)
426	4822 410 11715	Buttonset Play (Not for -/17)
426	4822 410 11724	Buttonset Play (For -/17)
427	4822 256 10255	CD Drive Holder
428	4822 529 10355	Shock Absorber
429	4822 691 10535	CD rive CD93
431	4822 418 10336	Tray CD
432	4822 535 60096	Disc
433	4822 402 61508	Bracket CD
434	4822 532 12798	Ring Pressure Assy
436	4822 443 10903	Door CD
437	4822 402 10132	Lever Eject
438	4822 410 11725	Knob Open
439	4822 492 11058	Spring Eject
441	4822 529 10322	Damper Assy
442	4822 492 52332	Spring CD
443	4822 404 10881	Bracket Power
444	4822 492 11059	Spring Wire Aerial
446	4822 492 51733	Spring Compression
447	4822 426 10602	Cabinet Rear
448	4822 303 14038	Telescopic Aerial
449	4822 492 51961	Spring Compression
451	4822 443 10904	Door Battery
452	4822 498 10695	Handle
453	4822 459 04917	Cabinet Speaker Front Assy
454	4822 402 10131	Bracket Speaker
456	4822 426 10603	Cabinet Speaker Rear (L)
457	4822 402 10967	Cord Winder
458	4822 459 04917	Cabinet Speaker Front Assy
459	4822 402 10131	Bracket Speaker
461	4822 426 10604	Cabinet Speaker Rear (R)
462	4822 402 10967	Cord Winder
463	4822 219 10355	Remote RC0786/01
464	4822 459 04923	Front Panel (Analog) (For -/01)
464	4822 459 04921	Front Panel (Analog) (For -/11)
464	4822 459 04922	Front Panel (Analog) (For -/14)
464	4822 459 04954	Front Panel (Analog) (For -/17)
466	4822 381 11957	Lens Remote Sensor
467	4822 410 10322	Knob Band
469	4822 450 10467	Pointer
471	4822 528 80907	Pulley Pom
472	4822 528 40208	Drum
473	4822 492 40854	Torsion Spring
474	4822 529 10354	Shock Absorber
476	4822 410 11717	Knob Treble (Not for -/17)
476	4822 410 11723	Knob Treble (For -/17)
477	4822 535 10254	Catch
	4822 462 10671	Rubber Foot
	4822 321 10249	Mains Cord (Not for -/17)
	4822 321 10882	Mains Cord (For-/17)
	4822 736 15961	Instruction Manual (For -/01/11)
	4822 736 15962	Instruction Manual (For -/14)
	4822 736 16031	Instruction Manual (For -/17)

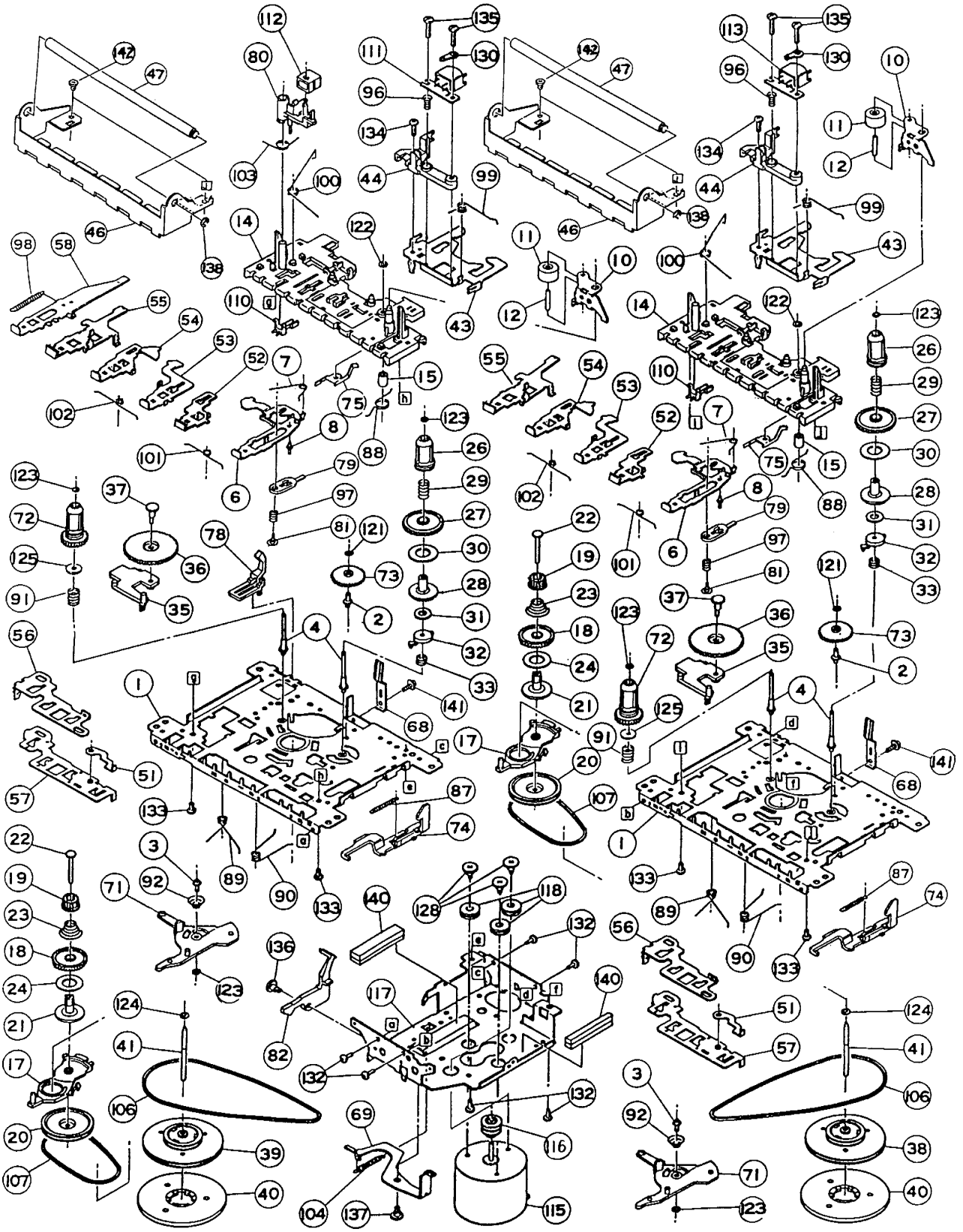
Note: Only those parts mentioned in the list are normal service parts.

MECHANICAL PARTSLIAT - TAPE DECK

10	4822 528 70849	Pinch Roller Arm
11	4822 528 70695	Pinch Roller Assy
74	4822 403 30792	Eject Hook
106	4822 358 31125	Main Belt
107	4822 358 31124	Sub Belt
110	4822 278 90663	Leaf Switch
111	4822 249 30218	R/P Head
112	4822 249 40306	Erase Head
113	4822 249 30218	R/P Head
115	4822 361 21592	Motor
116	4822 528 91493	Motor Pulley
	4822 691 10481	Tape Deck CDs-83WP

EXPLODED VIEW DIAGRAM - TAPE DECK

CDS-83WPB



2703	4822 124 41397	47µF 25V
2704	4822 124 41596	22µF 20% 50V
2705	4822 124 40246	4,7µF 20% 63V
2706	4822 124 41397	220µF 20% 10V
2708	4822 124 41397	220µF 20% 10V
2709	4822 124 80144	220µF 20% 25V
2710	4822 124 41397	47µF 20% 25V
2713	4822 124 80144	220µF 20% 25V
2714	4822 124 41397	47µF 20% 25V
2715	4822 124 41596	22µF 20% 50V
2716	4822 124 41596	22µF 20% 50V
2718	4822 124 41397	47µF 20% 25V
2719	4822 124 41397	47µF 20% 25V
2721	4822 126 11585	22NF +80-20% Y5V 25V
2722	4822 122 10577	3,3nF 10% 16V
2723	4822 121 51304	10nF 10% 50V
2727	4822 122 10577	3,3nF 10% 16V
2728	4822 121 51305	15nF 10% 50V
2729	4822 126 12787	330pF 10% Y5V 50V
2730	4822 121 43898	8,2nF 5% 250V
2731	4822 126 11585	22nF +80-20% Y5V 25V
2732	4822 126 11585	22nF +80-20% Y5V 25V
2733	4822 126 12339	2,2nF 10% Y5R
2734	5322 122 32311	470pF 10% 100V
2735	4822 121 51305	15nF 10% 50V
2736	4822 126 12787	330pF 10% Y5V 50V
2737	4822 121 43898	8,2nF 5% 250V
2738	4822 126 11585	22nF +80-20% Y5V 25V
2739	4822 122 33195	100pF 10% 50V
2740	4822 122 33197	1nF 10% 50V
2741	4822 122 33197	1nF 10% 50V
2742	4822 122 33195	100pF 10% 50V
2743	4822 126 12339	2,2nF 10% Y5R
2744	5322 122 32311	470pF 10% 100V
2745	4822 126 12339	2,2nF 10% Y5R
2746	5322 122 32311	470pF 10% 100V
2747	4822 121 51305	15nF 10% 50V
2748	4822 126 11585	22nF +80-20% Y5V 25V
2749	4822 126 12339	2,2nF 10% Y5R
2750	5322 122 32311	470pF 10% 100V

2751	4822 121 51305	15nF 10% 50V
2752	4822 122 10577	3,3nF 10% 16V
2759	4822 122 33519	470pF 10% 50V
2760	4822 122 33519	470pF 10% 50V
2761	4822 122 33169	680pF 10% 50V
2762	4822 122 33169	680pF 10% 50V
2763	4822 124 41584	100µF 20% 10V

3701	4822 116 83863	1K 5% 0,5W
3704	4822 116 52176	10R 5%
3705	4822 116 83863	1K 5%
3706	4822 111 30893	4M7 5% 0,2W
3707	4822 116 52176	10R 5% 0,5W
3708	4822 116 52297	68K 5%
3709	4822 116 52186	22R 5% 0,5W
3711	4822 116 52244	15K 5% 0,5W
3712	4822 116 52244	15K 5% 0,5W
3713	4822 116 52297	68K 5% 0,5W
3714	4822 116 52297	68K 5% 0,5W
3715	4822 116 52207	1K2 5% 0,5W
3716	4822 116 52303	8K2 5% 0,5W
3717	4822 116 52219	330R 5% 0,5W
3718	4822 116 83864	10K 5% 0,5W
3719	4822 116 52269	3K3 5% 0,5W
3720	4822 116 52269	3K3 5% 0,5W
3721	4822 116 52245	150K 5% 0,5W
3722	4822 116 83872	220R 5% 0,5W
3723	4822 116 52224	470R 5% 0,5W
3724	4822 116 52186	22R 5% 0,5W
3725	4822 116 52303	8K2 5% 0,5W
3726	4822 116 52207	1K2 5% 0,5W
3727	4822 116 52219	330R 5% 0,5W
3728	4822 116 83864	10K 5% 0,5W
3729	4822 116 52269	3K3 5% 0,5W
3730	4822 116 52269	3K3 5% 0,5W
3731	4822 116 52245	150K 5% 0,5W
3733	4822 116 52244	15K 5% 0,5W
3734	4822 116 52289	5K6 5% 0,5W

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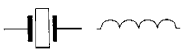
6703	

CASSETTE MTF-DD-S

3736	4822 116 52244	15K	5%	0,5W
3737	4822 116 52245	150K	5%	0,5W
3738	4822 116 83872	220R	5%	0,5W
3739	4822 116 52224	470R	5%	0,5W
3740	4822 116 52283	4K7	5%	0,5W
3741	4822 116 52186	22R	5%	0,5W
3742	4822 116 52245	150K	5%	0,5W
3743	4822 116 83872	220R	5%	0,5W
3744	4822 116 52224	470R	5%	0,5W
3745	4822 116 52283	4K7	5%	0,5W
3746	4822 116 52186	22R	5%	0,5W
3747	4822 116 52289	5K6	5%	0,5W
3748	4822 116 83872	220R	5%	
3749	4822 116 52245	150K	5%	0,5W
3750	4822 116 83872	220R	5%	0,5W
3751	4822 116 52224	470R	5%	0,5W
3752	4822 116 52186	22R	5%	0,5W
3753	4822 116 83872	220R	5%	
3758	4822 100 20165	Potm Trim	500R	
3759	4822 116 52176	10R	5%	0,5W
3760	4822 116 83864	10K	5%	0,5W
3780	4822 116 52245	150K	5%	0,5W
3781	4822 116 52224	470R	5%	0,5W
3782	4822 116 52224	470R	5%	0,5W
3783	4822 116 83864	10K	5%	0,5W
3784	4822 116 83864	10K	5%	0,5W
3787	4822 116 52191	33R	5%	0,5W
3788	4822 116 52256	2K2	5%	0,5W
3789	4822 116 52256	2K2	5%	0,5W



5701	4822 157 10371	Coil

6703	4822 130 30621	1N4148

7704	4822 130 40981	BC337-25
7711	4822 209 32918	AN7318S
7712	4822 209 32918	AN7318S
7720	4822 130 44196	BC548C
7721	4822 130 44196	BC548C

- MISCELLANEOUS -

1707	4822 277 11504	RSD-62D01N-TA

Note : Only those parts mentioned in the list are normal service parts.

COMBI BOARD

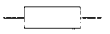
2250	4822 126 13678	470µF 10V
2251	4822 126 13678	470µF 10V
2252	5322 121 42661	330nF 5% 63V
2253	5322 121 42661	330nF 5% 63V
2254	4822 124 80196	47µF 20% 50V
2255	4822 124 80196	47µF 20% 50V
2256	4822 124 81136	100µF 25V
2257	4822 124 81136	100µF 25V
2258	5322 122 32052	680pF 10% 100V
2259	5322 122 32052	680pF 10% 100V
2260	4822 124 40242	1µF 20% 63V
2261	4822 124 40242	1µF 20% 63V
2262	4822 124 80144	220µF 20% 25V
2263	4822 124 80791	470µF 20% 16V
2300	4822 122 33197	1nF 10% 50V
2301	4822 122 33197	1nF 10% 50V
2302	4822 122 33197	1nF 10% 50V
2303	4822 122 33197	1nF 10% 50V
2304	5322 121 42386	100nF 5% 63V
2305	4822 124 11878	4700µF 16V
2306	4822 126 11585	22nF +80-20% Y5V 25V
2307	4822 126 13678	470µF 10V
2308	4822 126 12785	47nF Y5V TUB 50V
2309	4822 126 12785	47nF Y5V TUB 50V
2310	4822 124 41576	2,2µF 20% 50V
2312	4822 124 81136	100µF 25V
2400	4822 126 11714	4,7nF 20%
2401	4822 126 11714	4,7nF 20%
2402	4822 126 11714	4,7nF 20%
2403	4822 124 81151	22µF 50V
2404	4822 124 81151	22µF 50V
2405	4822 124 81151	22µF 50V
2406	4822 124 81151	22µF 50V
2514	5322 121 42386	100nF 5% 63V
2515	5322 121 42386	100nF 5% 63V
2516	5322 121 42386	100nF 5% 63V
2517	5322 121 42386	100nF 5% 63V
2518	4822 126 12878	1,5nF 10% 16V
2519	4822 126 12878	1,5nF 10% 16V
2520	4822 124 40433	47µF 20% 25V

2521	4822 124 40248	10µF 20% 63V
2522	4822 124 40433	47µF 20% 25V
2523	4822 124 40242	1µF 20% 63V
2524	4822 124 40242	1µF 20% 63V
2527	4822 124 42446	100µF 20% 10V
2528	4822 124 42446	100µF 20% 10V
2529	4822 126 13678	470µF 10V
2530	5322 122 32311	470pF 10% 100V
2531	5322 122 32311	470pF 10% 100V
2534	5322 122 32311	470pF 10% 100V
2535	5322 122 32311	470pF 10% 100V
2564	4822 124 81136	100µF 25V
2565	4822 124 40246	4,7µF 20% 63V
2566	4822 124 40246	4,7µF 20% 63V
2567	4822 122 33195	100pF 10% 50V
2568	4822 122 33195	100pF 10% 50V
2569	4822 122 33197	1nF 10% 50V
2570	4822 122 33197	1nF 10% 50V
2571	4822 124 40242	1µF 20% 63V
2572	4822 124 40242	1µF 20% 63V
2573	4822 121 51399	47nF 10% 50V
2574	4822 121 51399	47nF 10% 50V
2575	4822 126 13581	0.22µF 20% 50V
2576	4822 126 13581	0.22µF 20% 50V
2577	4822 122 33195	100pF 10% 50V
2578	4822 122 33195	100pF 10% 50V

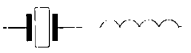
3250	4822 052 10478	4R7 5% 0,33W
3251	4822 116 83883	470R 5% 0,5W
3252	4822 050 21002	1K 1% 0,6W
3253	4822 116 52226	560R 5% 0,5W
3254	4822 116 83881	390R 5% 0,5W
3255	4822 116 83883	470R 5% 0,5W
3256	4822 052 10228	2R2 5% 0,33W
3257	4822 052 10228	2R2 5% 0,33W
3258	4822 116 52269	3K3 5% 0,5W
3259	4822 116 52256	2K2 5% 0,5W

COMBI BOARD

3302	4822 116 52175	100R	5%	0,5W
3303	4822 116 52175	100R	5%	0,5W
3304	4822 116 83883	470R	5%	0,5W
3305	4822 116 83883	470R	5%	0,5W
3306	4822 116 52289	5K6	5%	0,5W
3307	4822 116 52303	8K2	5%	0,5W
3308	4822 116 83868	150R	5%	0,5W
3309	4822 116 83868	150R	5%	0,5W
3310	4822 116 52191	33R	5%	0,5W
3401	4822 116 52244	15K	5%	0,5W
3402	4822 116 52244	15K	5%	0,5W
3403	4822 116 52244	15K	5%	0,5W
3404	4822 116 83864	10K	5%	0,5W
3405	4822 116 83864	10K	5%	0,5W
3406	4822 116 83864	10K	5%	0,5W
3407	4822 116 83864	10K	5%	0,5W
3408	4822 116 52244	15K	5%	0,5W
3516	4822 116 52256	2K2	5%	0,5W
3517	4822 116 52256	2K2	5%	0,5W
3518	4822 116 52235	1M	5%	0,5W
3519	4822 116 52235	1M	5%	0,5W
3520	4822 116 52303	8K2	5%	0,5W
3521	4822 116 52303	8K2	5%	0,5W
3523	4822 116 52271	33K	5%	0,5W
3524	4822 116 52271	33K	5%	0,5W
3525	4822 116 52234	100K	5%	0,5W
3526	4822 116 52245	150K	5%	0,5W
3527	4822 116 83884	47K	5%	0,5W
3528	4822 116 52256	2K2	5%	0,5W
3529	4822 050 21002	1K00	1%	0,6W
3530	4822 050 21002	1K00	1%	0,6W
3531	4822 116 52256	2K2	5%	0,5W
3532	4822 116 52256	2K2	5%	0,5W
3533	4822 116 52289	5K6	5%	0,5W
3534	4822 116 52289	5K6	5%	0,5W
3535	4822 116 83883	470R	5%	0,5W
3536	4822 116 83883	470R	5%	0,5W
3537	4822 116 83864	10K	5%	0,5W
3538	4822 116 83864	10K	5%	0,5W
3539	4822 116 52276	3K9	5%	0,5W



3540	4822 116 52276	3K9	5%	0,5W
3541	4822 116 83872	220R	5%	0,5W
3543	4822 116 52256	2K2	5%	0,5W
3544	4822 116 52256	2K2	5%	0,5W
3576	4822 116 83883	470R	5%	0,5W
3577	4822 116 83883	470R	5%	0,5W
3578	4822 116 83876	270R	5%	0,5W
3579	4822 116 83876	270R	5%	0,5W
3580	4822 116 83872	220R	5%	0,5W
3582	4822 116 52285	470K	5%	0,5W
3583	4822 116 52285	470K	5%	0,5W
3584	4822 116 52269	3K3	5%	0,5W
3585	4822 116 52269	3K3	5%	0,5W
3586	4822 116 52228	680R	5%	0,5W
3587	4822 116 52228	680R	5%	0,5W
3592	4822 115 10161	50K	20%	0,5W
3593	4822 116 83864	10K	5%	0,5W
3594	4822 116 83864	10K	5%	0,5W
3595	4822 116 83961	6K8	5%	
3596	4822 116 83961	6K8	5%	
3597	4822 116 52276	3K9	5%	0,5W
3598	4822 116 52276	3K9	5%	0,5W
3599	4822 116 52283	4K7	5%	0,5W
3600	4822 116 52283	4K7	5%	0,5W



5301	4822 157 71285	Coil 400µH 30%
5500	4822 157 11477	Coil LAL02TB2R2J
5501	4822 157 11477	Coil LAL02TB2R2J
5502	4822 157 51195	Coil 1µH 20%
5503	4822 157 51195	Coil 1µH 20%

6300	4822 130 31878	Diode 1N4003G
6301	4822 130 31878	Diode 1N4003G
6302	4822 130 31878	Diode 1N4003G
6303	4822 130 31878	Diode 1N4003G
6304	5322 130 31504	Diode BZX79-B3V3

COMBI BOARD

6305	4822 130 30621	Diode 1N4148
6402	4822 130 30621	Diode 1N4148
6403	4822 130 30621	Diode 1N4148
6404	4822 130 30621	Diode 1N4148
6405	4822 130 30621	Diode 1N4148
6501	4822 130 30621	Diode 1N4148
6502	4822 130 30621	Diode 1N4148

7250	4822 130 42231	Trans BC557C
7251	4822 130 41327	Trans BC327-40
7252	4822 130 44503	Trans BC547C
7253	4822 130 42231	Trans BC557C
7300	4822 209 31544	IC TA8227P
7400	5322 130 44779	Trans BC338-40
7401	5322 130 44779	Trans BC338-40
7506	4822 130 44503	Trans BC547C
7507	4822 130 61067	Trans XN1401
7508	4822 130 61067	Trans XN1401
7513	4822 130 44503	Trans BC547C
7514	4822 130 44503	Trans BC547C

- MISCELLANEOUS -

1005	⚠	4822 146 10397	Transf (For -/01/11)
1005	⚠	4822 146 10768	Transf (For -/14)
1005	⚠	4822 146 10947	Transf (For -/17)
1254		4822 267 31176	Conn YKD21-0026B
1257		4822 267 31468	Headphone Socket
1300		4822 265 20287	Socket Mains (Not for -/17)
1300		4822 265 30986	Socket Mains (For -/17)
1301		4822 272 10366	Switch
1302	⚠	4822 070 32002	Fuse 2A (Not for -/17)
1302	⚠	5322 253 30116	Fuse 2A (For -/17)
1400		4822 277 30689	Slide Switch
1503		4822 276 12648	Push Switch
1508		4822 276 13114	Tact Switch
1509		4822 276 13114	Tact Switch
5001		4822 240 10094	Loudspeaker 4 Ohm 4W

- MISCELLANEOUS -

5002	4822 240 10094	Loudspeaker 4 Ohm 4W

Note : Only those parts mentioned in the list are normal service parts.

CD 6

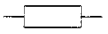
2800	4822 126 12882	100nF +80-20% 50V
2801	4822 124 40242	1µF 20% 63V
2802	4822 126 12882	100nF +80-20% 50V
2803	4822 121 43144	22nF 10% 50V
2804	4822 126 12339	2,2nF 10% Y5R
2805	4822 126 12882	100nF +80-20% 50V
2806	4822 122 10462	15pF 5% NP0
2807	4822 122 33849	150pF 10%Y5P 50V
2808	4822 124 42446	100UF20% 10V
2809	4822 124 40246	4,7µF 20% 63V
2810	4822 124 40246	4,7µF 20% 63V
2811	4822 122 33197	1nF 10% 50V
2812	4822 122 33197	1nF 10% 50V
2813	4822 121 51387	10nF 20% 16V
2814	4822 126 13677	39pF 5% 50V
2815	4822 126 12882	100nF +80-20% 50V
2816	4822 124 40239	0,47µF 20% 63V
2817	4822 121 42687	3,3nF 10% 63V
2818	4822 124 40242	1µF 20% 63V
2819	5322 121 42386	100nF 5% 63V
2820	4822 126 13581	0.22µF 20% 50V
2820	4822 121 51399	47nF 10% 50V
2821	4822 124 40248	10µF 20% 63V
2822	4822 126 11585	22nF +80-20% Y5V 25V
2823	4822 124 40246	4,7µF 20% 63V
2824	4822 124 40239	0,47µF 20% 63V
2825	4822 122 10462	15pF 5% NP0
2826	4822 124 40239	0,47µF 20% 63V
2827	4822 124 11958	47µF 20% 25V
2828	4822 124 40248	10µF 20% 63V
2829	4822 121 43145	33nF 10% 50V
2830	4822 122 10319	82pF 5% 50V
2831	4822 121 43144	22nF 10% 50V
2832	4822 124 41576	2,2µF 20% 50V
2833	4822 124 11958	47µF 20% 25V
2834	4822 126 11585	22nF +80-20% Y5V 25V
2835	4822 124 40239	0,47µF 20% 63V
2836	4822 124 40246	4,7µF 20% 63V
2837	4822 121 51387	10nF 20% 16V
2839	4822 121 51387	10nF 20% 16V

2840	4822 122 33519	470pF 10% 50V
2841	4822 122 33519	470pF 10% 50V
2842	4822 124 22225	330µF 20% 16V
2843	4822 124 11959	100µF 20% 10V
2844	4822 122 10466	220pF 10% 50V
2849	4822 122 33519	470pF 10% 50V
2851	4822 126 12882	100nF +80-20% 50V
2852	4822 126 13098	5,6nF 20% 16V
2853	4822 122 33195	100pF 10% 50V
2855	4822 122 33195	100pF 10% 50V
2857	4822 122 33519	470pF 10% 50V
2858	4822 121 51387	10nF 20% 16V
2859	4822 122 33519	470pF 10% 50V
2860	4822 122 33519	470pF 10% 50V
2861	4822 122 33449	47nF 30% 50V
2862	4822 126 12882	100nF +80-20% 50V
2863	5322 122 32311	470pF 10% 100V
2864	5322 122 32311	470pF 10% 100V
2870	4822 122 10466	220pF 10% 50V

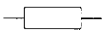
3800	4822 116 52257	22K 5% 0,5W
3801	4822 116 52234	100K 5% 0,5W
3802	4822 052 10828	8R2 5% 0,33W
3804	4822 116 83883	470R 5% 0,5W
3808	4822 050 21002	1K 1% 0,6W
3809	4822 116 52289	5K6 5% 0,5W
3810	4822 116 52271	33K 5% 0,5W
3811	4822 116 52235	1M 5% 0,5W
3813	4822 116 83872	220R 5% 0,5W
3814	4822 116 52257	22K 5% 0,5W
3815	4822 116 83884	47K 5% 0,5W
3816	4822 116 83884	47K 5% 0,5W
3817	4822 050 21002	1K 1% 0,6W
3818	4822 050 21002	1K 1% 0,6W
3819	4822 117 11825	1M5 5%
3820	4822 116 52252	180K 5% 0,5W
3821	4822 116 52243	1K5 5% 0,5W
3822	4822 116 52264	27K 5% 0,5W
3823	4822 116 52234	100K 5% 0,5W
3824	4822 116 83868	150R 5% 0,5W

CD

CD 6



3825	4822 116 83882	39K	5% 0,5W
3826	4822 116 83961	6K8	5%
3827	4822 116 52289	5K6	5% 0,5W
3828	4822 116 52283	4K7	5% 0,5W
3829	4822 116 83884	47K	5% 0,5W
3830	4822 116 52244	15K	5% 0,5W
3831	4822 116 52251	18K	5% 0,5W
3832	4822 116 83881	390R	5% 0,5W
3833	4822 116 52257	22K	5% 0,5W
3834	4822 116 83868	150R	5% 0,5W
3835	4822 116 52184	18R	5% 0,5W
3836	4822 116 52231	820R	5% 0,5W
3837	4822 111 30893	4M7	5% 0,2W
3838	4822 116 52234	100K	5% 0,5W
3839	4822 116 52235	1M	5% 0,5W
3840	4822 050 21002	1K	1% 0,6W
3841	4822 116 52298	680K	5% 0,5W
3842	4822 116 52304	82K	5% 0,5W
3844	4822 116 52291	56K	5% 0,5W
3845	4822 050 21002	1K	1% 0,6W
3846	4822 050 21002	1K	1% 0,6W
3847	4822 116 52271	33K	5% 0,5W
3848	4822 116 52271	33K	5% 0,5W
3850	4822 116 83883	470R	5% 0,5W
3851	4822 116 52244	15K	5% 0,5W
3852	4822 116 83883	470R	5% 0,5W
3853	4822 116 52244	15K	5% 0,5W
3854	4822 116 52243	1K5	5% 0,5W
3855	4822 116 83882	39K	5% 0,5W
3855	4822 116 83884	47K	5% 0,5W
3856	4822 116 52271	33K	5% 0,5W
3857	4822 116 52269	3K3	5% 0,5W
3858	4822 116 52175	100R	5% 0,5W
3859	4822 116 83864	10K	5% 0,5W
3860	4822 116 52207	1K2	5% 0,5W
3861	4822 116 52257	22K	5% 0,5W
3863	4822 116 52276	3K9	5% 0,5W
3864	4822 116 80176	1R	5% 0,5W
3865	4822 052 10828	8R2	5% 0,33W
3867	4822 116 52256	2K2	5% 0,5W



3867	4822 116 52283	4K7	5% 0,5W
3869	4822 116 52283	4K7	5% 0,5W
3870	4822 116 52257	22K	5% 0,5W
3871	4822 116 52257	22K	5% 0,5W
3872	4822 116 52257	22K	5% 0,5W
3873	4822 116 52257	22K	5% 0,5W
3875	4822 116 83864	10K	5% 0,5W
3880	4822 116 52202	82R	5% 0,5W
3881	4822 116 52257	22K	5% 0,5W
3882	4822 116 52243	1K5	5% 0,5W
3883	4822 116 52243	1K5	5% 0,5W
3884	4822 116 83882	39K	5% 0,5W
3885	4822 116 52257	22K	5% 0,5W
3886	4822 116 52235	1M	5% 0,5W
3887	4822 050 21002	1K	1% 0,6W
3888	4822 050 21002	1K	1% 0,6W
3888	4822 116 83864	10K	5% 0,5W
3889	4822 116 52257	22K	5% 0,5W
3890	4822 050 21002	1K	1% 0,6W
3891	4822 050 21002	1K	1% 0,6W
3892	4822 050 21002	1K	1% 0,6W
3893	4822 050 21002	1K	1% 0,6W
3894	4822 050 21002	1K	1% 0,6W
3899	4822 050 21002	1K	1% 0,6W
3900	4822 116 52283	4K7	5% 0,5W
3901	4822 116 52283	4K7	5% 0,5W
3902	4822 116 52283	4K7	5% 0,5W
3903	4822 116 52283	4K7	5% 0,5W
3904	4822 116 52283	4K7	5% 0,5W
3905	4822 116 52283	4K7	5% 0,5W
3906	4822 116 52283	4K7	5% 0,5W
3907	4822 116 52283	4K7	5% 0,5W
3908	4822 116 52283	4K7	5% 0,5W
3909	4822 116 52283	4K7	5% 0,5W
3910	4822 116 52283	4K7	5% 0,5W
3911	4822 116 52283	4K7	5% 0,5W
3914	4822 116 52283	4K7	5% 0,5W
3915	4822 116 52283	4K7	5% 0,5W
3916	4822 116 52256	2K2	5% 0,5W
3917	4822 116 52256	2K2	5% 0,5W

CD 6

3917	4822 116 52257	22K 5% 0,5W	
3920	4822 116 52283	4K7 5% 0,5W	
3921	4822 116 52283	4K7 5% 0,5W	
3922	4822 116 52283	4K7 5% 0,5W	
3923	4822 116 52283	4K7 5% 0,5W	
3924	4822 116 52175	100R 5% 0,5W	
3925	4822 116 52283	4K7 5% 0,5W	
3926	4822 116 52283	4K7 5% 0,5W	
3927	4822 116 52283	4K7 5% 0,5W	
3928	4822 116 52283	4K7 5% 0,5W	
3929	4822 116 83872	220R 5% 0,5W	
3930	4822 116 52257	22K 5% 0,5W	
3931	4822 116 83872	220R 5% 0,5W	
3932	4822 116 52234	100K 5% 0,5W	
3933	4822 116 52234	100K 5% 0,5W	
3934	4822 116 52283	4K7 5% 0,5W	
3935	4822 116 52283	4K7 5% 0,5W	
3936	4822 116 52283	4K7 5% 0,5W	
3937	4822 116 52283	4K7 5% 0,5W	
3938	4822 116 52283	4K7 5% 0,5W	
3940	4822 116 52283	4K7 5% 0,5W	
3941	4822 116 52283	4K7 5% 0,5W	
3942	4822 116 52283	4K7 5% 0,5W	
3943	4822 116 52283	4K7 5% 0,5W	
3944	4822 116 52283	4K7 5% 0,5W	
3945	4822 116 52283	4K7 5% 0,5W	
3946	4822 116 52283	4K7 5% 0,5W	
3952	4822 116 52244	15K 5% 0,5W	
3954	4822 116 83872	220R 5% 0,5W	
3956	4822 116 52283	4K7 5% 0,5W	
3957	4822 116 83883	470R 5% 0,5W	

5800	4822 242 81865	CST16,93MXW0C3-TF01
5801	4822 242 73769	CST4,19MGW
5802	4822 157 53941	Coil 100µH 10%
5803	4822 156 21721	Coil 2,2µH 10%
5804	4822 156 21721	Coil 2,2µH 10%
5805	4822 526 10494	Ferrite Bead
5806	4822 156 21721	Coil 2,2µH 10%
5807	4822 157 52333	Coil 100µH

6801	4822 130 30621	Diode 1N4148
6803	4822 130 31554	Diode BZX79-B4V3
6806	4822 130 30621	Diode 1N4148
6807	4822 130 30621	Diode 1N4148

7800	4822 209 15793	IC TMP47C623F - R641Z
7801	4822 209 33339	IC SAA7345GP/S5
7802	4822 209 32421	IC TDA1311A/N2
7803	4822 209 90496	IC M62475FP
7804	4822 130 42231	Trans BC557C
7805	4822 209 32852	IC TDA7073A/N2
7806	4822 209 32852	IC TDA7073A/N2
7807	4822 130 41344	Trans BC337-40
7810	4822 130 41344	Trans BC337-40
7811	4822 209 31508	IC ST24C01B1
7813	5322 209 11147	IC HEF4093BT
7814	4822 130 44503	Trans BC547C

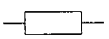
- MISCELLANEOUS -

1800	4822 276 13114	Tact Switch
1801	4822 276 13114	Tact Switch
1802	4822 276 13114	Tact Switch
1803	4822 276 13114	Tact Switch
1805	4822 276 13114	Tact Switch
1806	4822 276 13114	Tact Switch
1812	4822 130 91335	LCD Display LPH6197-1
1832	4822 276 13625	Door Switch
1847	4822 320 12052	Cable 13W 140mm
7812	4822 212 30842	Receiver TSOP1736SB1
7812	4822 218 11745	Receiver TSOP1736

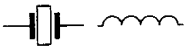
Note : Only those parts mentioned in the list are normal service parts.

TUNER BOARD - /01/10/17

2101		4822 122 32764	4,7nF 20% 50V
2102		4822 126 12812	47pF 5% 50V
2103		4822 124 40248	10µF 20% 63V
2104		4822 124 40248	10µF 20% 63V
2105		4822 126 12814	24pF 5% N220 50V
2106		4822 125 50681	Polyvaricon
2108		4822 122 32147	22pF 2% 100V N470
2109		4822 126 12809	2,2pF 5% 50V N470
2110	*	4822 126 13592	10pF ±0,5pF N750
2110	#	4822 126 12229	8,2P 50V N750
2112		4822 124 41397	47µF 20% 25V
2113		4822 126 13581	0,22µF 50V
2114		4822 126 12671	330pF 10% 50V
2115		4822 124 40246	4,7µF 20% 63V
2116	*	4822 124 80141	10nF 10% 50V
2116	#	4822 121 43144	22nF 50V
2117		4822 124 40242	1µF 20% 63V
2118		4822 124 40242	1µF 20% 63V
2119	*	4822 124 80141	10nF 10% 50V
2119	#	4822 121 43144	22nF 50V
2120		4822 124 40242	1µF 20% 63V
2121		4822 124 40239	0,47µF 20% 63V
2122		4822 124 40239	0,47µF 20% 63V
2133		4822 126 12672	4,7nF 10% 50V
2134	#	4822 126 10777	100pF 50V
2135	*	4822 126 10777	100pF 50V

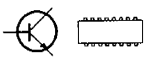


3101	4822 100 20167	50K 30% 0,1W
3102	4822 116 52297	68K 5% 0,5W
3103	4822 116 83863	1K 5% 0,5W
3104	4822 116 52256	2K2 5% 0,5W
3105	4822 116 83864	10K 5% 0,5W
3108	4822 116 52191	33R 5% 0,5W
3109	4822 116 52234	100K 5% 0,5W
3110	4822 116 52234	100K 5% 0,5W
3113	4822 116 52252	180K 5% 0,5W



5101	4822 157 70513	Coil - FM ant
5102	4822 157 70731	Coil - AM ant
5104	4822 156 30947	Coil - FM osc
5105	4822 157 71145	Coil - AM osc
5106	4822 157 70499	IFT - AM
5107	4822 242 81154	FM cer. filter kits
5108	4822 156 11146	IFT - AM

6101	4822 130 30621	1N4148
6102	4822 130 30621	1N4148



7101	4822 209 32746	TEA5711T/N2

- MISCELLANEOUS -

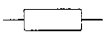
1100	4822 277 21698	Switch - slide
1201	4822 526 10176	Ferrite bar 5x13x55

* For /01/10 only
\# For /17 only

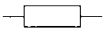
Note : Only the parts mentioned in this list are normal service parts.

ATM 3 (2 FM for /14 version)

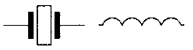
2101	4822 122 33195	100PF 10% 50V
2102	4822 126 12812	47pF 5% SL 50V
2103	4822 124 40248	10µF 20% 63V
2104	4822 124 40248	10µF 20% 63V
2105	4822 126 12669	15pF 5% N750 50V
2106	4822 125 50681	Vari Capacitor
2108	4822 122 32147	22pF 2%N470 100V
2109	4822 122 10465	4,7pF10% 50V
2110	4822 126 12229	8,2pF N750 50V
2112	4822 124 41397	47µF 20% 25V
2113	4822 126 13581	0.22µF 20% 50V
2114	4822 126 12787	330pF 10% Y5V 50V
2115	4822 124 40246	4,7µF 20% 63V
2116	4822 126 12077	15nF 10% 25V
2117	4822 124 40242	1µF 20% 63V
2118	4822 124 40242	1µF 20% 63V
2119	4822 126 12077	15nF 10% 25V
2120	4822 124 40242	1µF 20% 63V
2121	4822 124 40239	0,47µF 20% 63V
2122	4822 124 40239	0,47µF 20% 63V
2140	4822 122 33197	1nF 10% 50V
2141	4822 126 12572	6,8pF 5% 50V
2142	4822 126 12112	22pF 5% N220 50V
2145	4822 122 33197	1nF 10% 50V
2146	4822 126 12939	2,2pF 10% 50V
2147	4822 126 12112	22pF 5% N220 50V
2148	4822 124 41584	100µF 20% 10V



3101	4822 100 20167	50K 30%LIN 0,1W
3102	4822 116 52297	68K 5% 0,5W
3104	4822 116 52256	2K2 5% 0,5W
3108	4822 116 52195	47R 5% 0,5W
3109	4822 116 52234	100K 5% 0,5W
3110	4822 116 52234	100K 5% 0,5W
3113	4822 116 52234	100K 5% 0,5W
3120	4822 050 11002	1K00 1% 0,4W
3121	4822 050 11002	1K00 1% 0,4W
3122	4822 050 11002	1K00 1% 0,4W



3123	4822 116 52195	47R 5% 0,5W
3124	4822 050 11002	1K00 1% 0,4W
3125	4822 116 83872	220R 5% 0,5W
3126	4822 116 52271	33K 5% 0,5W
3127	4822 116 52271	33K 5% 0,5W



5101	4822 157 70033	FM-RF Coil
5104	4822 157 11347	FM-OSC Coil
5105	4822 157 71145	MW OSC Coil 270UH
5106	4822 157 70499	AM-IF FILTER, 468KHZ
5107	4822 242 81154	KMFC5058-Z
5108	4822 156 11146	AM-IF FILTER, 468KHZ
5111	4822 156 21738	F7BRS-12645X
5120	4822 157 11348	FM-RF Coil
5121	4822 157 63859	FM-OSC Coil

6101	4822 130 30621	1N4148
6102	4822 130 30621	1N4148
6110	5322 130 34955	BA482
6111	5322 130 34955	BA482
6112	5322 130 34955	BA482
6113	5322 130 34955	BA482

7101	4822 209 32746	TEA5711T/N2

- MISCELLANEOUS -

1100	4822 277 30933	Switch, FM2/FM1/MW