CD Stereo Radio Recorder AZ1202/00/01/05/10/11/11H/17

Service
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Manual #1859
AZ12021701

Service Manual

COMPACT disc DIGITAL AUDIO

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CLASS 1
LASER PRODUCT

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PHILIPS

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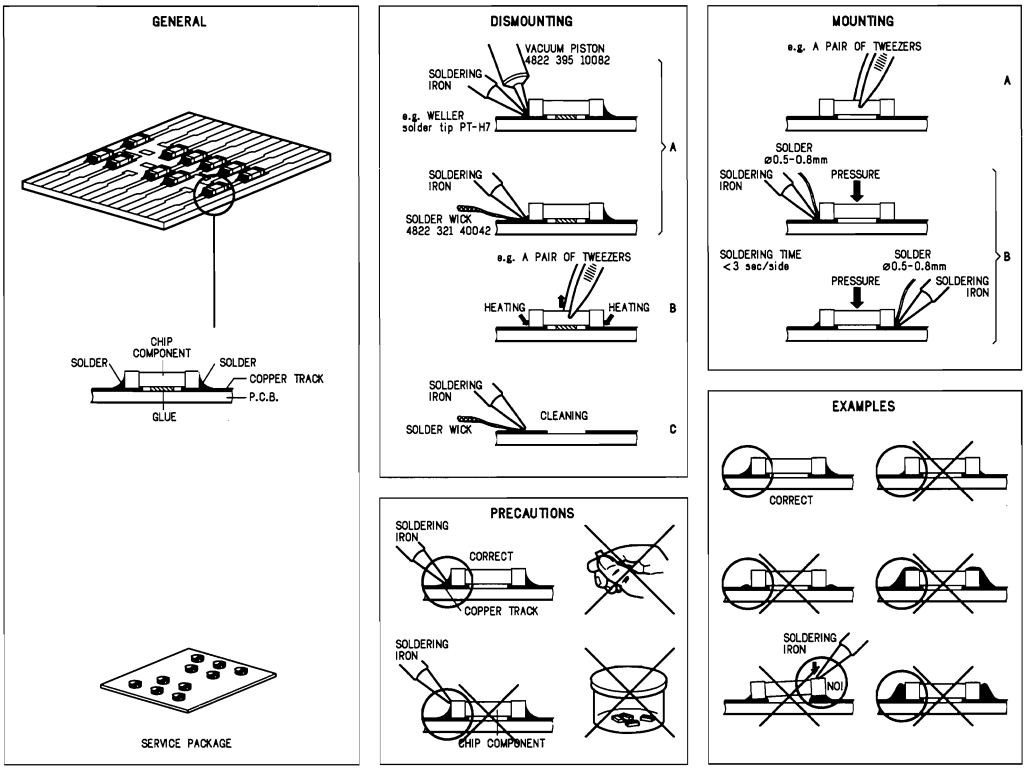
PHILIPS

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.

Anti-static table mat	large 1200x650x1.25mm
	small 600x650x1.25mm
Anti-static wrist band	
Connection box (1MOhm)	
Extendible cable (to connect wrist band to conn. box)	
Connecting cable (to connect table mat to conn. box)	
Earth cable (to connect any product to mat or box)	
Complete kit ESD3 (combining all above products)	
Wristband tester	

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.

4822 466 10953	
4822 466 10958	
4822 395 10223	
4822 320 11307	
4822 320 11305	
4822 320 11306	
4822 320 11308	
4822 310 10671	
4822 344 13999	

(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 statiche (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.

(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 Originaizustand 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.

(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 !

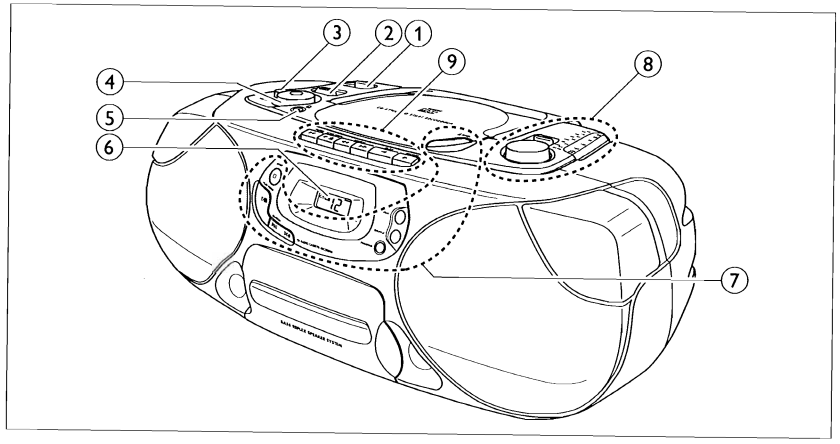
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(GB)

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".



BASIC FUNCTIONS

① POWER:
CD, TUNER, TAPE...selects the sound source

② INCREDIBLE
SURROUND .....creates a phenomenal stereo effect

③ DBB.....enhances the bass

④ VOLUME .....adjusts the volume level

⑤ 🎧.....3.5mm headphone socket

Note: Connecting the headphones will switch off the speakers.

⑥ Display

⑦ CD PLAYER

≙ OPEN.....opens the CD compartment

STOP □.....stops CD play and erases the program

PLAY·PAUSE ▷II...starts and interrupts CD play

SEARCH ⏮ ⏭.....skips and searches forward and backward

PROGRAM .....programs track numbers and reviews the program

SHUFFLE .....plays CD tracks in random order

REPEAT .....repeats a track, the entire CD, or the program

⑧ RADIO

TUNING .....tunes to radio stations

BAND.....selects the wave band

⑨ CASSETTE RECORDER

PAUSE II.....interrupts recording or playback

STOP·OPEN □≙ ...stops the tape and opens the cassette compartment

SEARCH ⏩ .....rewinds the tape

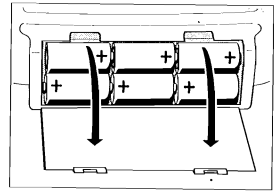
SEARCH ⏪ .....fast forwards the tape

PLAY ◁.....starts playback

RECORD ○ .....starts recording

Batteries

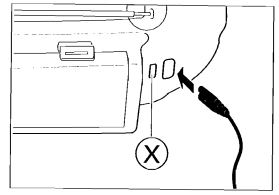
For the set (optional)
Open the battery compartment of the set and insert 6 batteries, type **R20**, **UM-1** or **D**-cells (preferably alkaline).



Remove batteries if they are flat or the set is not going to be used for a longer period of time.

Batteries contain chemical substances, so they should be disposed of properly.

Mains



1 Check whether the mains voltage as shown on the type plate corresponds to your local mains voltage. If it does not, consult your dealer or service organisation. ***The type plate is located on the bottom side of the set.***

2 If the set is equipped with a VOLTAGE selector Ⓧ, set this selector to the local mains voltage.

3 Connect the mains cable to the AC MAINS inlet and the wall socket. This switches on the mains supply. ***The mains cable is inside the battery compartment.***

The battery supply will be switched off when the set is connected to the mains. To change over to battery supply, pull out the plug from the unit's AC MAINS socket.

To disconnect the set from the mains completely, remove the mains plug from the wall socket.

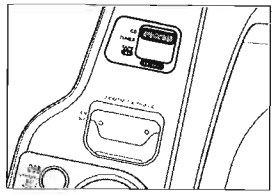
For users in the U.K.: please follow the instructions on page 2.

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

Switching on and off

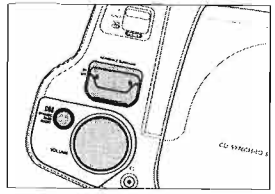


Set the POWER slider to the desired sound source: CD, TUNER, or TAPE.

The set is switched off when the POWER slider is in position OFF/TAPE and the keys of the tape deck are released.

Note: If you run the set on batteries, always be sure to switch the set off after use. This will avoid unnecessary power consumption.

Adjusting volume and sound



Adjust the volume using the VOLUME ▽ △ control.

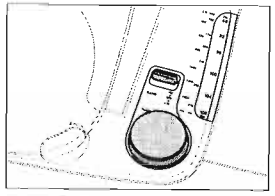
Increase and decrease the bass level by pressing DBB.

Switch the surround sound effect on and off by pressing INCREDIBLE SURROUND.

The bass level can also be emphasised if you place the set against a wall or shelf. Do not cover any vents and leave sufficient room around the unit for ventilation.

Note: The effect of INCREDIBLE SURROUND may vary with different types of music.

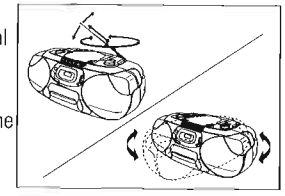
Radio – tuning to radio stations



1 Set the POWER slider to TUNER.

2 Select the wave band by using the BAND selector.

3 Tune to the desired radio station by using the TUNING knob.

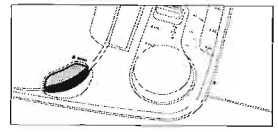


Improving RADIO reception

For **FM** stations, pull out the telescopic antenna. To improve the signal, incline and turn the antenna. Reduce its length if the signal is too strong (very close to a transmitter).

For **MW** and **LW** stations, direct the built-in antenna by turning the whole set. The telescopic antenna is not needed.

Playing a CD

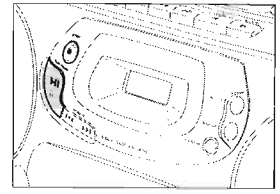


1 Set the POWER slider to CD.

2 Press ≙ OPEN to open the CD compartment.

3 Insert an audio CD (printed side up) and close the CD compartment.
→ The CD player starts and scans the contents list of the CD. Then, the CD player stops. Display indication: the total number of tracks.

4 Press the PLAY·PAUSE ▷II button to start CD play.
→ Display indication: the current track number.



5 Press the STOP □ button to stop CD play.
→ Display indication: the total number of tracks.

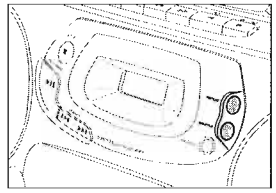
You can interrupt CD play by pressing PLAY·PAUSE ▷II. Continue CD play by pressing the button again.
→ Display indication: the current track number flashes.

Note: CD play will also stop if:
– you open the CD compartment,
– the end of the CD is reached, or
– you move the POWER *slider to* TUNER *or* TAPE.

If you make a mistake when operating the CD player, or the CD player cannot read the CD, the display shows *E* or *no*. (See chapter "TROUBLESHOOTING".)

If you press PLAY·PAUSE ▷II and there is no CD inserted the display shows *no*.

Different playing modes: SHUFFLE / REPEAT



SHUFFLE – Playing in random order

1 Press SHUFFLE before or during CD play.
→ All the tracks of the CD (or program if available) will now be played in random order.

2 Press SHUFFLE again to return to normal CD play.

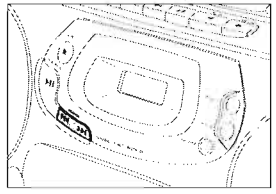
REPEAT – Repeating the entire CD or one track of the CD

1 Before or during CD play, press REPEAT repeatedly to cause the display to show the different repeating modes.
→ **REPEAT**: the current track is played repeatedly.
→ **REPEAT ALL**: the entire CD or program is played repeatedly.

2 Press REPEAT until the display indication disappears to return to normal CD play.

*Note: You can activate the different playing modes at the same time, e. g. you can repeatedly play the entire CD or program in random order (***SHUFFLE REPEAT ALL***).*

Search backward ⏮ and forward ⏭



Selecting another track

Briefly press the SEARCH ⏮ or ⏭ button once/several times to skip to the beginning of the current/previous or subsequent track(s).

During play:
CD play continues automatically with the selected track.

When CD playback is stopped:
Press PLAY·PAUSE ▷II to start CD play.
→ Display indication: the selected track number.

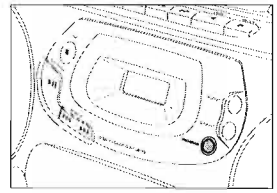
Searching for a passage during CD play

1 Hold down the SEARCH ⏮ or ⏭ button to find a particular passage in a forward or backward direction.
→ CD play continues at a low volume.

2 Release the button when you have reached the desired passage.

Note: In the SHUFFLE *and* REPEAT *modes or when playing a program, searching is only possible within the particular track.*

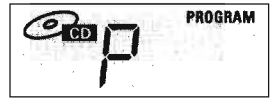
Programming track numbers



You can select a number of tracks and store these in the memory in the desired sequence. You can store any track more than once. A maximum of 20 tracks can be stored in the memory.

1 Select the desired track with SEARCH ⏮ or ⏭.

2 As soon as the number of the desired track is displayed, press the PROGRAM button to store the track in the memory.
→ **PROGRAM** appears in the display and *P* lights up briefly. Then, the number of the stored track is shown.



3 Select and store all desired tracks in this way.

You can review your settings by pressing the PROGRAM button for more than 2 seconds.
→ The display shows all stored track numbers in sequence.

If you try to store more than 20 tracks the display shows *F*.

Playing the program

If you have selected the tracks in the stop position, press PLAY·PAUSE ▷II.

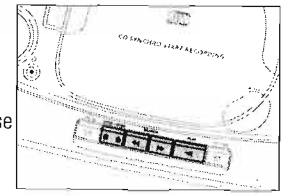
If you have selected the tracks during CD play, first press STOP □, then press PLAY·PAUSE ▷II.

Erasing the program when CD playback is stopped

From the stop position, press STOP □.
→ *no* lights up briefly, **PROGRAM** disappears and your program is erased.

Note: The program will also be erased if you
– interrupt the power supply,
– open the CD compartment, or
– move the POWER *slider to* TUNER *or* TAPE.

Playing a cassette



1 Set the POWER slider to TAPE.

2 Press STOP·OPEN □△ to open the cassette compartment.

3 Insert a recorded cassette with the open side upwards and close the cassette compartment.

4 Press PLAY ◁ to start playback.

5 Press ▷▷ or ◁◁ to rewind or fast forward the tape.

6 To stop the tape press STOP·OPEN □△.

Note: The keys are released at the end of the tape.

General information on recording

Recording is permissible insofar as copyright or other rights of third parties are not infringed upon.

For recording on this set you should use a cassette of the type NORMAL (IEC type I). This deck is not suitable for recording on cassettes of the type CHROME (IEC type II) or METAL (IEC type IV).

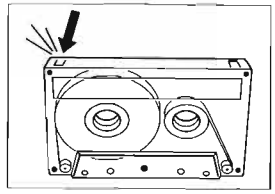
The recording level is set automatically. The controls VOLUME, INCREDIBLE SURROUND and DBB do not affect the recording.

At the very beginning and end of the tape, no recording will take place in the 7 seconds during which the leader tape passes the recorder heads.

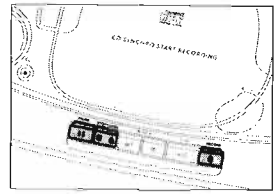
Protecting tapes from accidental erasure

Keep the cassette side to be protected in front of you and snap off the left tab. Now, recording on this side is no longer possible.

To record again on this side of the cassette, cover the aperture with a piece of adhesive tape.



Recording from the CD player – CD synchro start



1 Set the POWER slider to CD.

2 Insert a CD and, if desired, program track numbers.

3 Press STOP·OPEN □△ to open the cassette compartment.

4 Insert a blank, unprotected cassette and close the cassette compartment.

5 Press RECORD ○ to start recording.
→ Playing of the CD or program starts automatically. It is not necessary to start the CD player separately.

6 For brief interruptions press PAUSE ▯▯. Press the PAUSE ▯▯ key again to resume recording.

7 To stop recording, press STOP·OPEN □△.

Note: the recording can be started from different positions:
– if the CD player is in pause mode, recording will start from this very position (use SEARCH ⏮ *or* ⏭*);*
– if the CD player is in stop mode, recording will start from the beginning of the CD or program.

Recording from the radio

1 Set the POWER slider to TUNER.

2 Tune to the desired radio station (see chapter "RADIO").

3 Press STOP·OPEN □△ to open the cassette compartment.

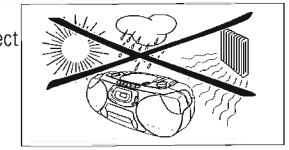
4 Insert a blank, unprotected cassette and close the cassette compartment.

5 Press RECORD ○ to start recording.

6 For brief interruptions press PAUSE ▯▯. To resume recording press the PAUSE ▯▯ key again.

7 To stop recording, press STOP·OPEN □△.

General maintenance

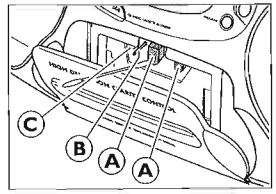


Do not expose the set, batteries, CDs or tapes to humidity, rain, sand or excessive heat (caused by heating equipment or direct sunlight).

The mechanical parts of the set contain self-lubricating bearings and must not be oiled or lubricated!

You can clean the set with a soft, slightly dampened lint-free cloth. Do not use any cleaning agents as they may have a corrosive effect.

Tape deck maintenance



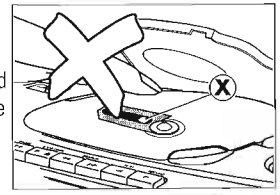
To ensure proper recording and playback quality, clean the parts Ⓐ, Ⓑ and Ⓒ after approx. 50 hours of operation. Use a cotton swab slightly moistened with alcohol or head-cleaner fluid.

Press PLAY ◁ and clean the rubber pressure rollers Ⓒ.

Press PAUSE ▯▯ and clean the capstans Ⓑ and the heads Ⓐ.

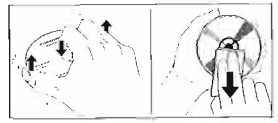
Note: Cleaning of the heads Ⓐ can also be done by playing a cleaning tape once.

CD player and CD handling



The lens Ⓧ of the CD player should never be touched. Always keep the CD compartment closed to avoid dust on the lens.

The lens may cloud over when the set is suddenly moved from cold to warm surroundings. Playing a CD is not possible then. Leave the CD player in a warm environment until the moisture evaporates.



To take the CD out of its box easily, press the centre spindle while lifting the CD. Always pick up the CD by the edge and put it back in its box after use.

To clean the CD, wipe it in a straight line from the center toward the edge using a soft, lint-free cloth. A cleaning agent may damage the disc!

Never write on a CD or attach a sticker to it.

This set complies with the radio interference requirements of the European Community

WARNING

Under no circumstance should you try to repair the set yourself as this will invalidate the guarantee.

If a fault occurs, first check the points listed below before taking the set for repair.

If you are unable to solve a problem by following these hints, consult your dealer or service center.

Problem	Possible cause	Solution
No sound, no power	VOLUME is not adjusted.	Adjust volume.
	Headphone is connected.	Disconnect headphone.
	Mains cable is not securely connected.	Connect mains cable properly.
	Batteries are flat.	Insert fresh batteries.
	Batteries are inserted incorrectly.	Insert batteries correctly.
	Trying to change over from mains to battery supply without removing the plug.	Remove the mains plug from the unit's AC MAINS inlet.
No reaction to operation of any keys	Electrostatic discharge.	Disconnect the set from power supply, reconnect after a few seconds.
Poor radio reception	Weak radio signal.	Direct the antenna for optimum reception.
	Interference caused by vicinity of electrical equipment like TVs, computers, engines, etc..	Keep the radio away from electrical equipment.
no or E indication	The CD is badly scratched or dirty.	Replace or clean the CD.
	No CD is inserted.	Insert a CD.
	The CD is inserted upside down.	Insert CD with label upwards.
	The laser lens is steamed up.	Wait until the lens has cleared.
The CD skips tracks	The CD is damaged or dirty.	Replace or clean the CD.
	SHUFFLE or **PROGRAM** is active.	Switch off **SHUFFLE** or **PROGRAM** play.
Poor cassette sound quality	Dust and dirt on the heads, capstans or pressure rollers.	Clean heads, capstans, and pressure rollers.
	Use of unsuitable cassette types (METAL or CHROME) for recording.	Only use NORMAL type cassettes for recording.
Recording does not work	Cassette tab(s) may be snapped off.	Apply a piece of adhesive tape over the aperture.

SPECIFICATIONS

GENERAL

Mains voltage	-/00	:	230 V
	-/01/11/11H	:	120/230 V
	-/05/10	:	240 V
	-/17	:	120 V
Mains frequency	-/00/05/10	:	50 Hz
	-/01/11/11H	:	50/60 Hz
	-/17	:	60 Hz
Battery		:	R20 x 6 (9 V)
Power consumption		:	16 W
Dimension (W x H x D)		:	470 x 175 x 250 mm
Weight		:	4.5 Kg

AMPLIFIER

Output power	mains	:	2 x 1.6 W
	battery	:	2 x 1.6 W
Speaker impedance		:	2 x 4 Ω
Frequency response		:	100 Hz - 100 kHz

TUNER - FM SECTION

Tuning range	:	87.5 - 108 MHz
IF frequency	:	10.7 MHz ± 0.2 MHz
Sensitivity	:	< 22 dBf at 26 dB S/N
Selectivity	:	< 20 dB at 1kHz ± 300 kHz
IF rejection	:	< 50 dB
Image rejection	:	< 20 dB

TUNER - AM SECTION

Tuning range	MW	:	522 - 1611 kHz
Tuning range	LW	:	153 - 279 kHz
IF frequency		:	468 kHz ± 3 kHz
Sensitivity	MW	:	< 4000 µV/m at 26dB S/N
	LW	:	< 6000 µV/m at 26dB S/N
Selectivity	MW	:	< 16 dB
	LW	:	< 20 dB
IF rejection ratio	MW	:	< 24 dB
	LW	:	< 26 dB
Image rejection ratio	MW	:	< 28 dB
	LW	:	< 30 dB

AUDIO CASSETTE RECORDER

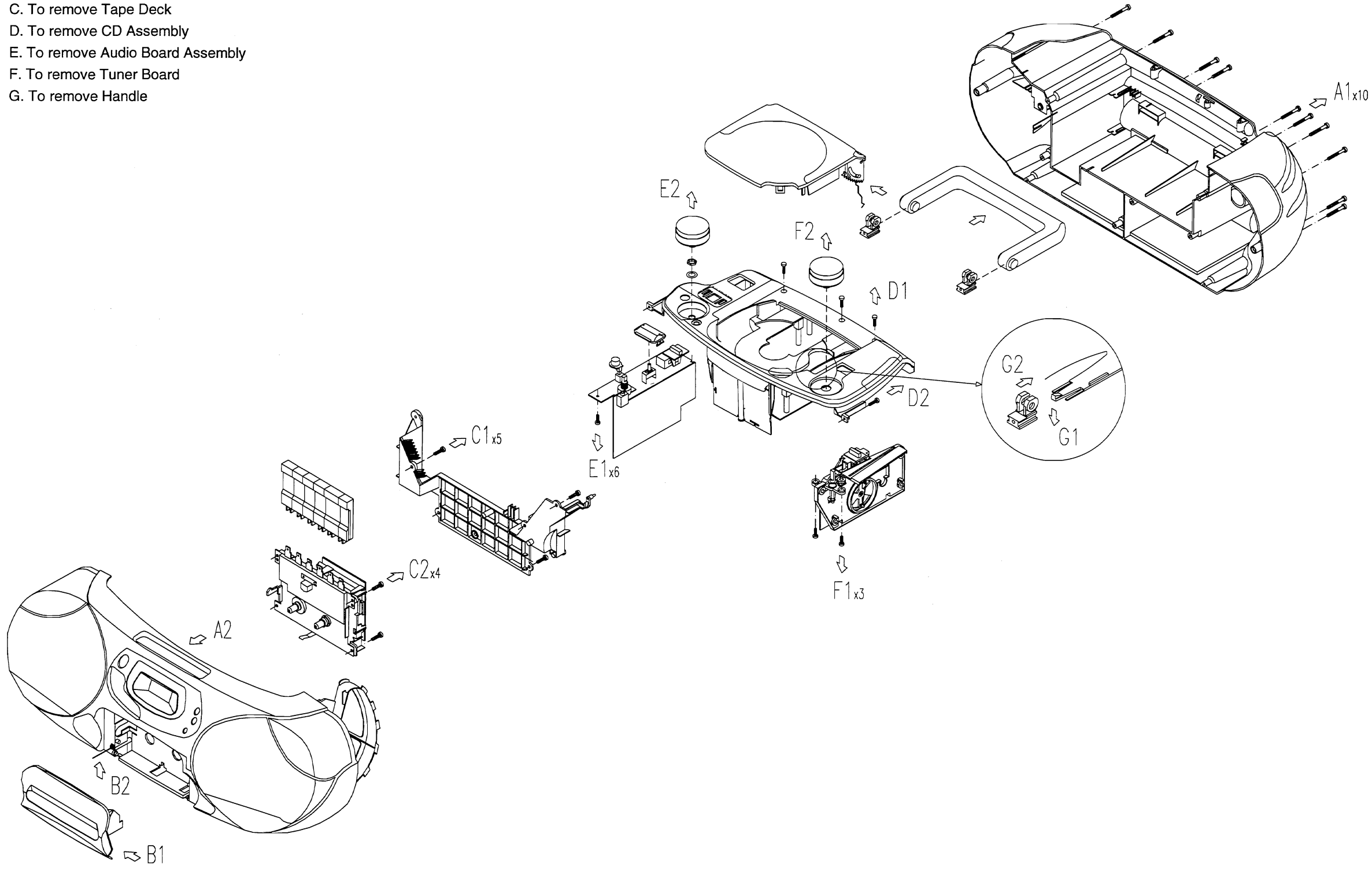
Number of tracks		:	1 stereo
Tape speed		:	4.76 cm/sec ± 3 %
Wow & flutter		:	< 0.48 % JIS UWTD
Fast wind/rewind C60		:	< 110 sec
Frequency response	P/B	:	125 - 6300 Hz
S/N ratio		:	≥ 38 dB

COMPACT DISC

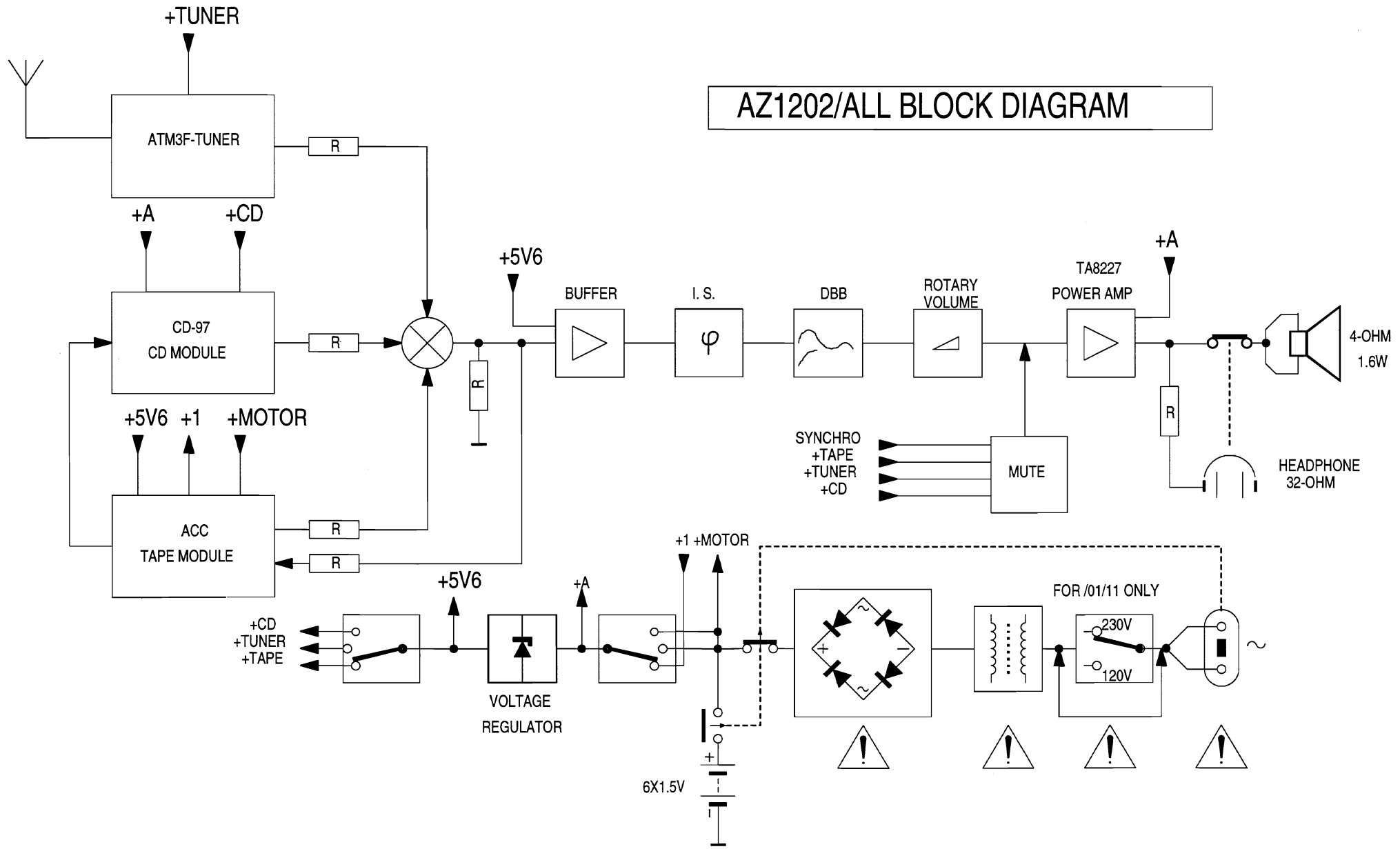
Frequency response		:	100 Hz - 10 kHz
S/N ratio		:	< 60 dB
Channel difference	1 kHz	:	< 3 dB
Channel crosstalk	1 kHz	:	> 15dB
Laser wavelength		:	780 ± 20 nm
Laser light power		:	< 0.3 mW

DISASSEMBLY DIAGRAM

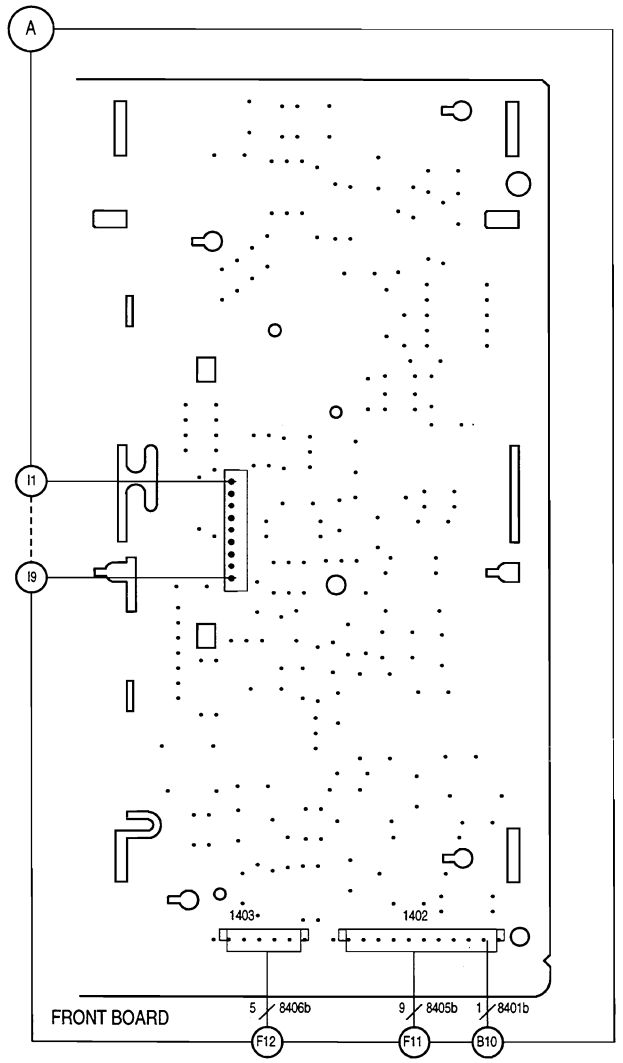
A. To remove Front Cabinet Assembly
B. To remove Cassette Door
C. To remove Tape Deck
D. To remove CD Assembly
E. To remove Audio Board Assembly
F. To remove Tuner Board
G. To remove Handle

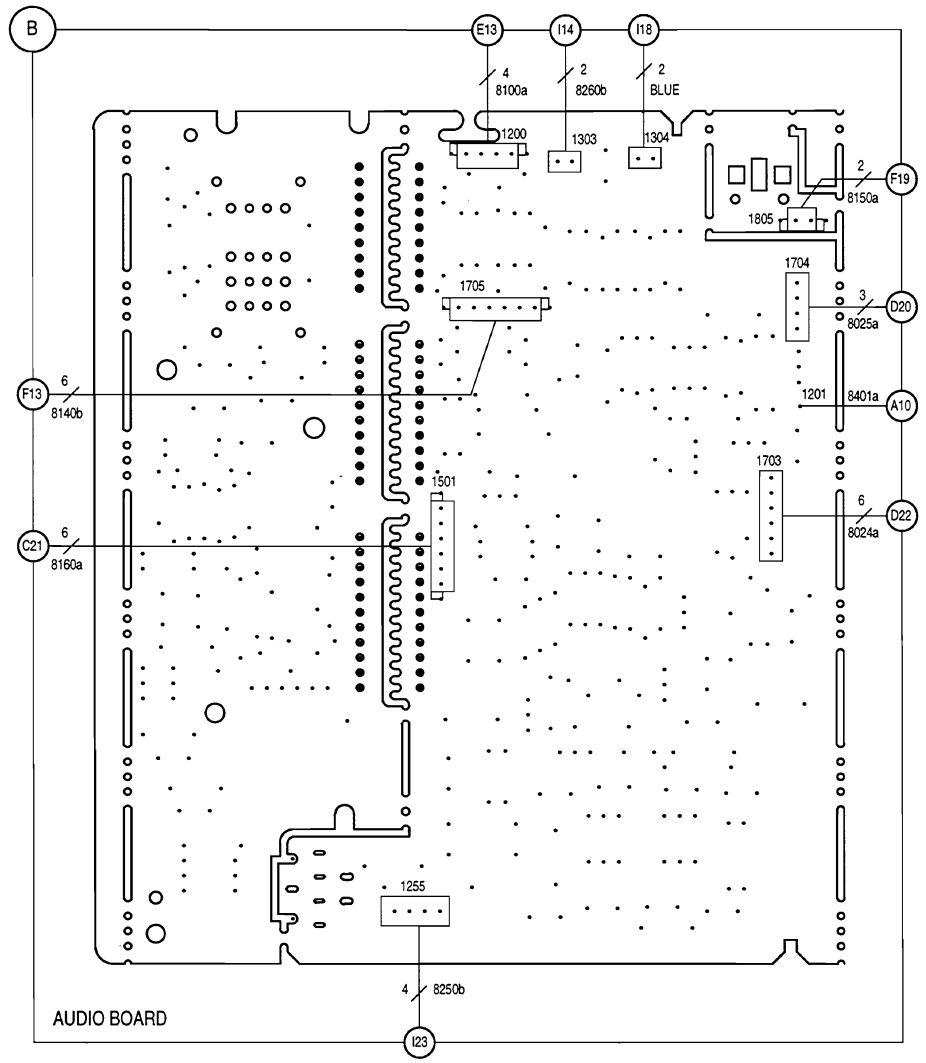


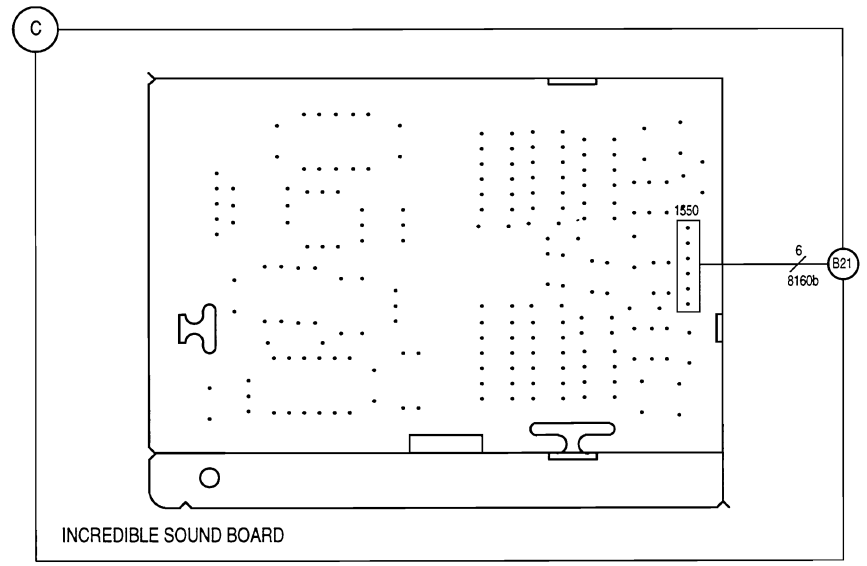
BLOCK DIAGRAM

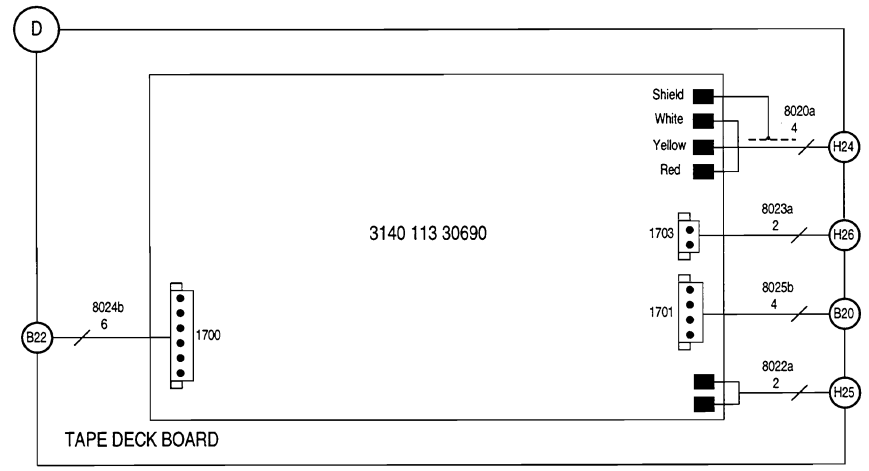


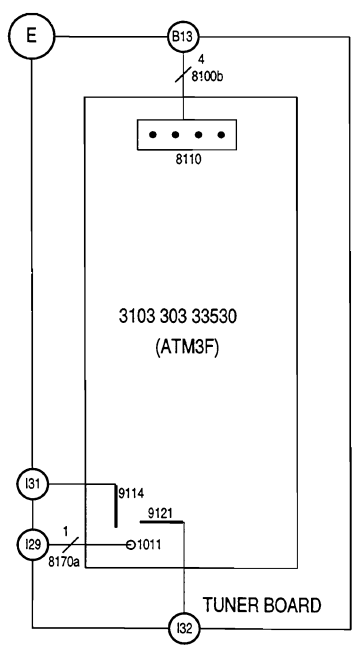
WIRING DIAGRAM

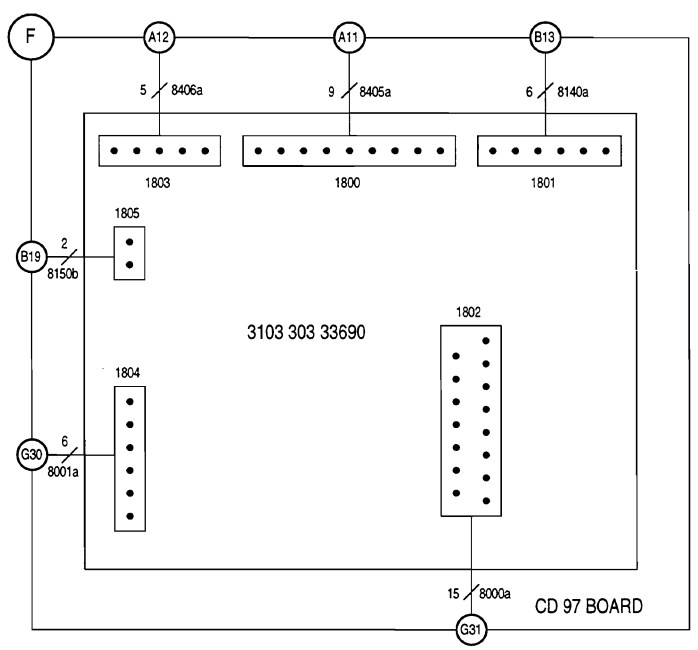


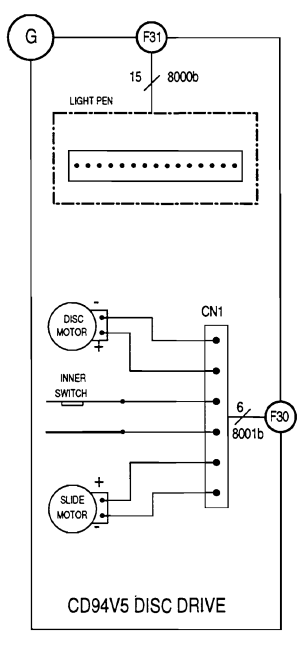


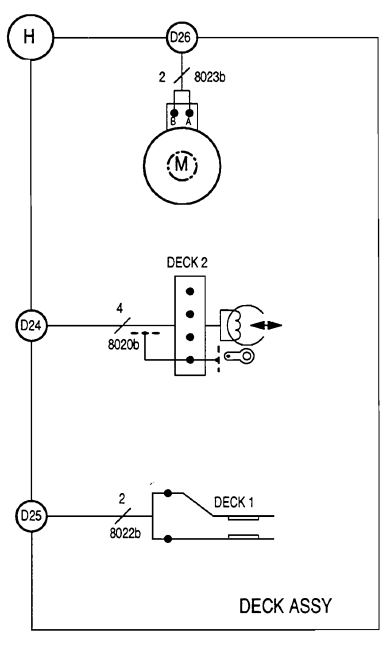


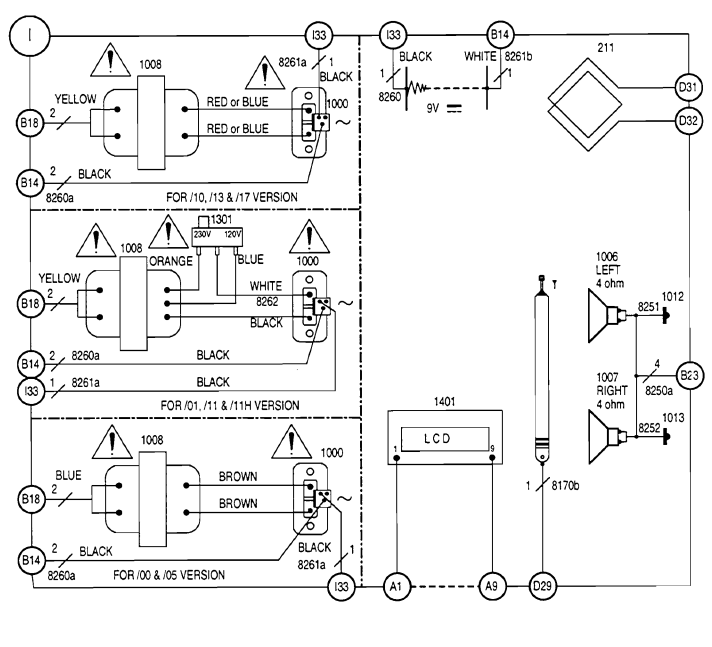






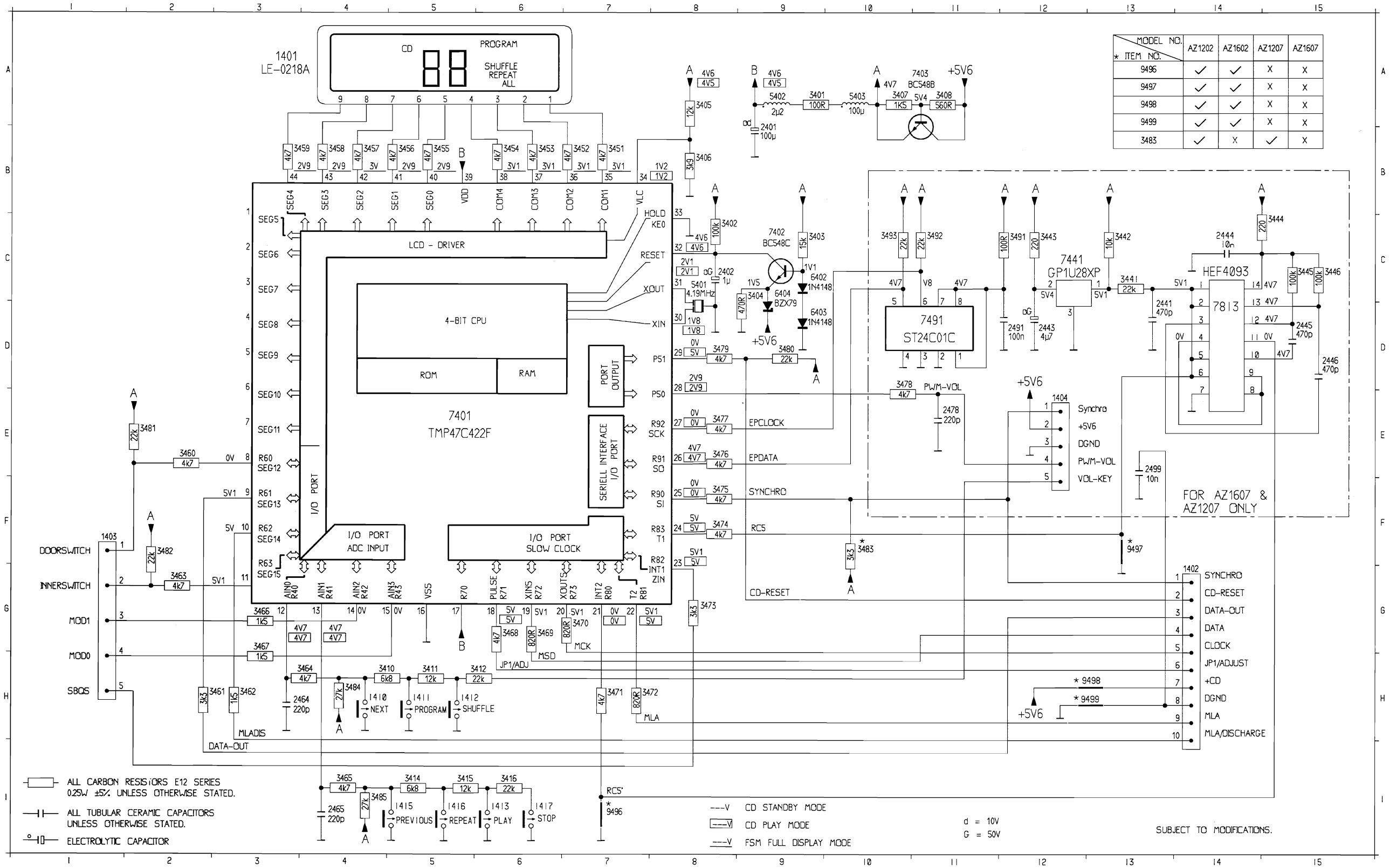






FRONT BOARD - CIRCUIT DIAGRAM

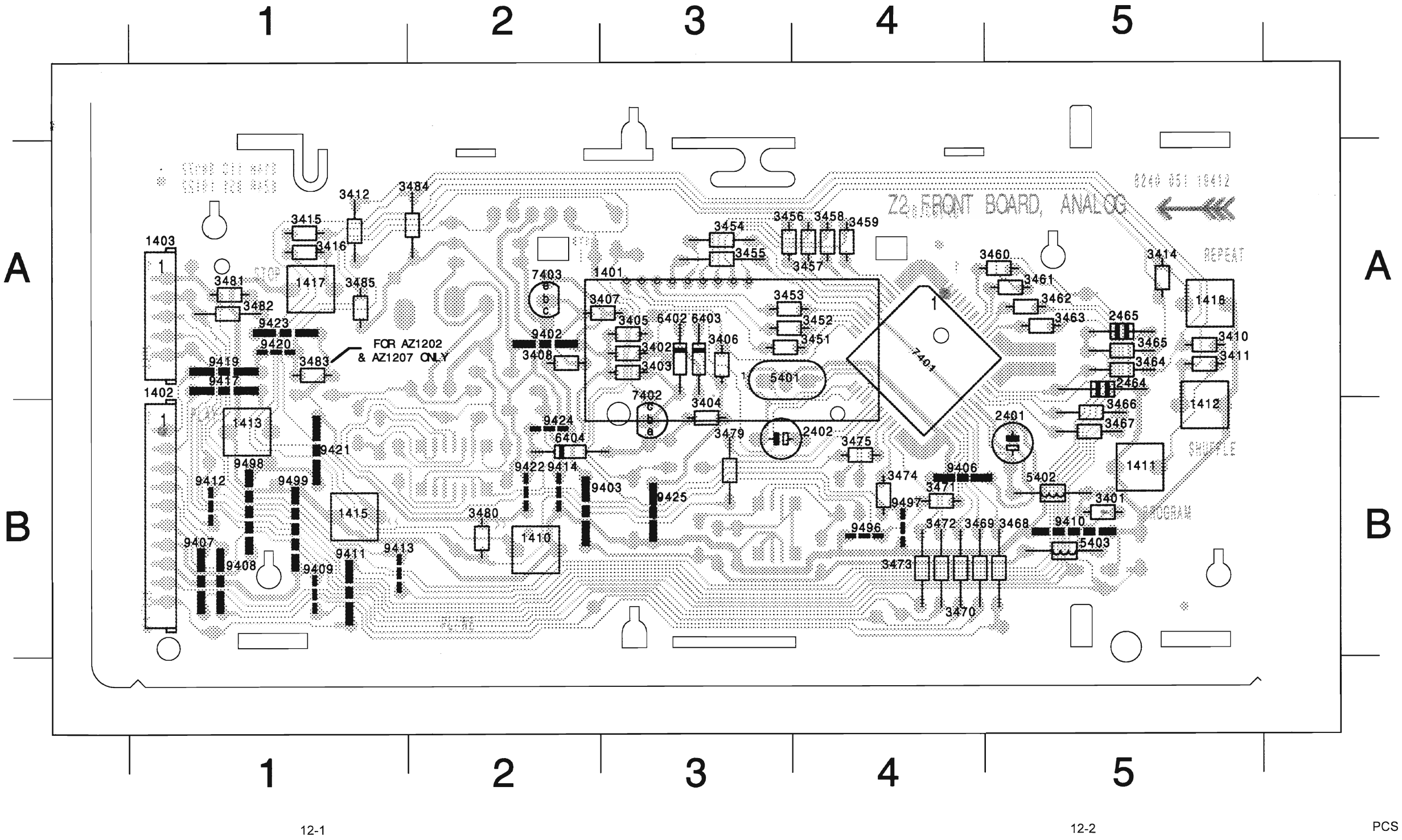
1401	A 3	1411	H 5	1417	I 6	2444	C14	2478	E11	3403	C 9	3408	A11	3415	I 5	3444	C15	3453	B 6	3458	B 4	3463	G 2	3468	G 6	3473	G 8	3478	D10	3483	F10	3493	C10	6403	D 9	7441	C12	9498	H13
1402	G14	1412	H 5	2401	B 9	2445	D15	2491	D12	3404	C 9	3410	H 4	3416	I 6	3445	C15	3454	B 6	3459	B 4	3464	H 4	3469	G 6	3474	F 8	3479	D 8	3484	H 4	5401	C 8	6404	C 9	7491	D11	9499	H13
1403	F 1	1413	I 6	2402	C 8	2446	D15	2499	E13	3405	A 8	3411	H 5	3441	C13	3446	C15	3455	B 5	3460	E 2	3465	I 4	3470	G 7	3475	F 8	3480	D 9	3485	I 4	5402	A 9	7401	E 5	7813	D14		
1404	E12	1415	I 5	2441	D13	2464	H 4	3401	A 9	3406	B 8	3412	H 6	3442	C13	3451	B 7	3456	B 5	3461	H 3	3466	G 3	3471	H 7	3476	E 8	3481	F 2	3491	C12	5403	A10	7402	C 9	9496	I 7		
1410	H 4	1416	I 5	2443	D12	2465	I 4	3402	C 8	3407	A10	3414	I 5	3443	C12	3452	B 7	3457	B 4	3462	H 3	3467	G 3	3472	H 8	3477	E 8	3482	F 2	3492	C11	6402	C 9	7403	A10	9497	F13		



MODEL NO. / * ITEM NO.	AZ1202	AZ1602	AZ1207	AZ1607
9496	✓	✓	X	X
9497	✓	✓	X	X
9498	✓	✓	X	X
9499	✓	✓	X	X
3483	✓	X	✓	X

FRONT BOARD - LAYOUT DIAGRAM

1401 A 3	1415 B 1	3401 B 5	3408 A 2	3451 A 3	3458 A 4	3465 A 5	3472 B 4	3482 A 1	6402 A 3	9403 B 2	9412 B 1	9422 B 2	9499 B 1
1402 B 1	1416 A 5	3402 A 3	3410 A 5	3452 A 3	3459 A 4	3466 B 5	3473 B 4	3483 A 1	6403 A 3	9406 B 4	9413 B 1	9423 A 1	
1403 A 1	1417 A 1	3403 A 3	3411 A 5	3453 A 3	3460 A 5	3467 B 5	3474 B 4	3484 A 2	6404 B 2	9407 B 1	9414 B 2	9424 B 2	
1410 B 2	2401 B 5	3404 B 3	3412 A 1	3454 A 3	3461 A 5	3468 B 5	3475 B 4	3485 A 1	7401 A 4	9408 B 1	9417 A 1	9425 B 3	
1411 B 5	2402 B 3	3405 A 3	3414 A 5	3455 A 3	3462 A 5	3469 B 4	3479 B 3	5401 A 3	7402 B 3	9409 B 1	9419 A 1	9496 B 4	
1412 B 5	2464 A 5	3406 A 3	3415 A 1	3456 A 3	3463 A 5	3470 B 4	3480 B 2	5402 B 5	7403 A 2	9410 B 5	9420 A 1	9497 B 4	
1413 B 1	2465 A 5	3407 A 3	3416 A 1	3457 A 4	3464 A 5	3471 B 4	3481 A 1	5403 B 5	9402 A 2	9411 B 1	9421 B 1	9498 B 1	



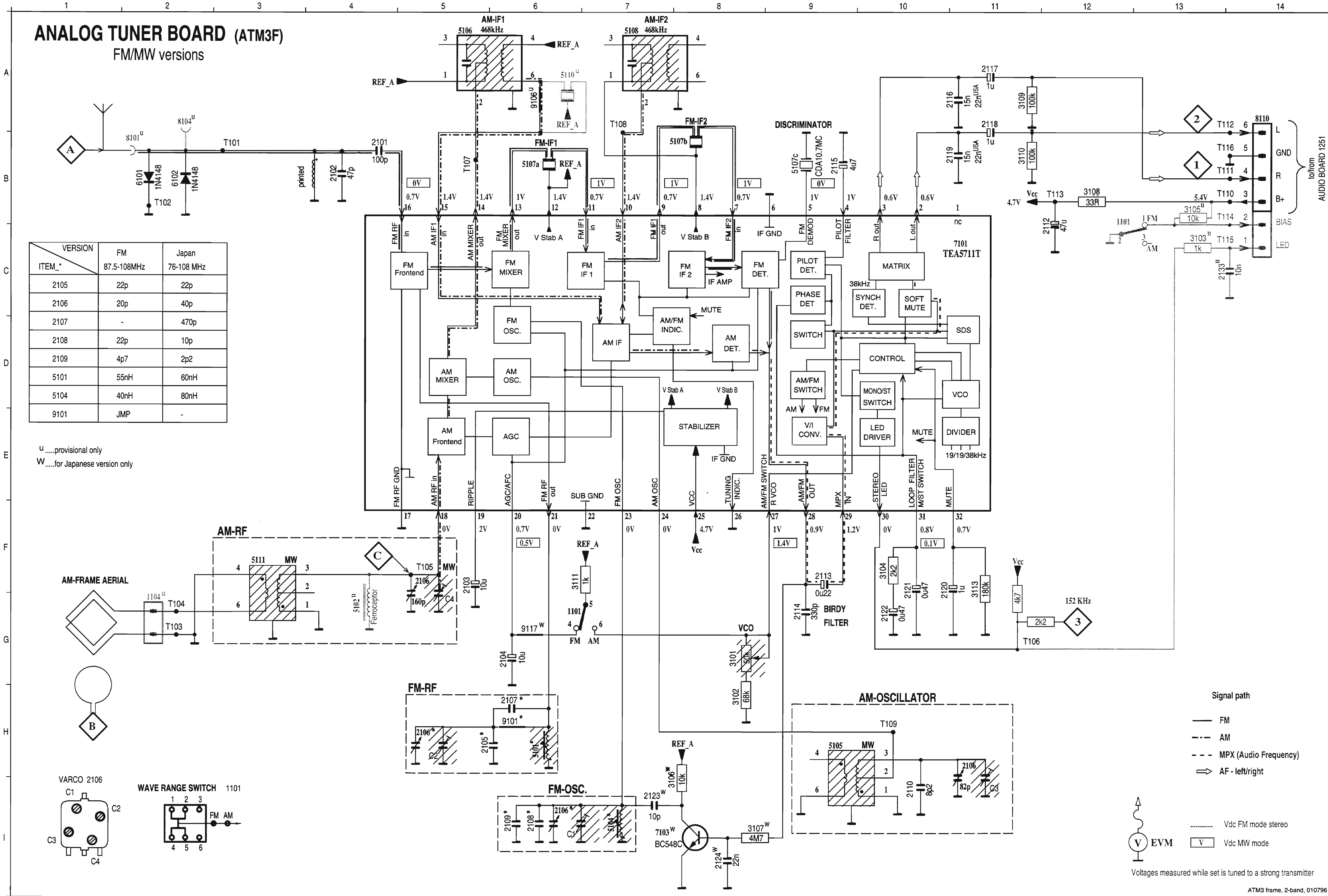
ANALOG TUNER BOARD (ATM3F)

FM/MW versions

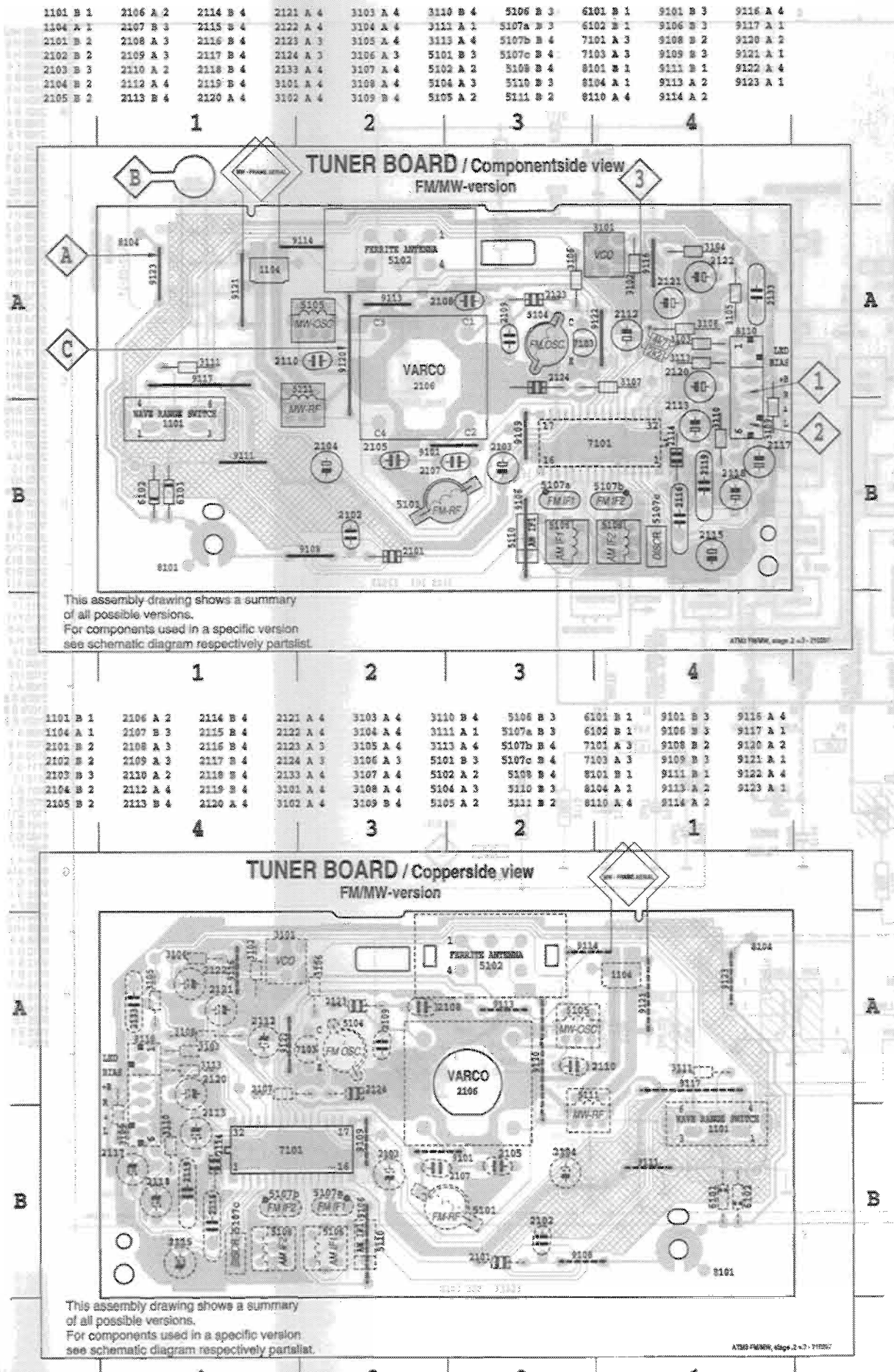
VERSION / ITEM_*	FM 87.5-108MHz	Japan 76-108 MHz
2105	22p	22p
2106	20p	40p
2107	-	470p
2108	22p	10p
2109	4p7	2p2
5101	55nH	60nH
5104	40nH	80nH
9101	JMP	-

u.....provisional only

W.....for Japanese version only



1101 B12
1101 G 6
1104 G 2
2101 B 4
2102 B 4
2103 F 5
2104 G 6
2105 H 5
2106 I 6
2106 H11
2106 F 5
2106 H 5
2107 H 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 F10
2121 F10
2122 G10
2123 I 7
2124 I 8
2133 C13
3101 G 8
3102 H 8
3103 C13
3104 F10
3105 B13
3106 I 8
3107 I 8
3108 B12
3109 A11
3110 B11
3111 F 6
3113 F11
5101 H 6
5102 G 4
5104 I 7
5105 I 9
5106 A 5
5107a B 6
5107b B 8
5107c B 9
5108 A 7
5110 A 6
5111 F 3
6101 B 2
6102 B 2
7101 C11
7103 I 7
8101 B 2
8104 A 2
8110 A14
9101 H 6
9106 A 6
9117 G 6



TUNER ADJUSTMENT TABLE (ATM3 FM/AM - versions with AM-frame aerial)

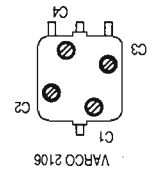
Waverange	Input Frequency	Input	Set tuned to	Adjust	Measure on	Scope / Counter
OSCILLATOR						
FM 87,5 - 108 MHz	87,35 MHz	A	lower band end	5104	1 or 2	
	108,25 MHz	$\Delta f = \pm 500kHz$ $V_{RF} = 100\mu V$	upper band end	2106 C1		
MW 525 - 1607 kHz (530 - 1710 kHz) [1]	512 kHz (520 kHz)	C	lower band end	5105	1 or 2	
	1635 kHz (1730 kHz)	$\Delta f = \pm 30kHz$ $V_{RF} = 100\mu V$	upper band end	2106 C3		
FM - RF						
FM 87,5 - 108 MHz	87,5 MHz	A	87,5 MHz	5101	1 or 2	
	108 MHz	$\Delta f = \pm 500kHz$ $V_{RF} = 10\mu V$	108 MHz	2106 C2		
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
AM - IF						
AM	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 pin 10 (220R, 100nF) IC 7101 pin 14 (220R, 100nF) see remark [2]	5106 5108	1 or 2	max, t_0, symmetric
AM -RF						
MW	560 kHz	B	560 kHz	5111	1 or 2	max, symmetric
	1500 kHz	$\Delta f = \pm 30kHz$ V_{RF} as low as possible	1500 kHz	2106 C4		

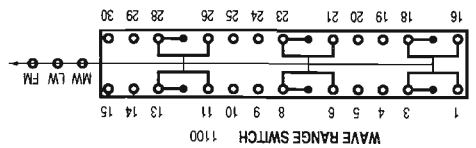
Tuner Adj. ATM3 FM/AM 060796

repeat

[1] for USA /17

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





ANALOG TUNER BOARD (ATM3F)

FM/LW/MW and FM/SW/MW versions

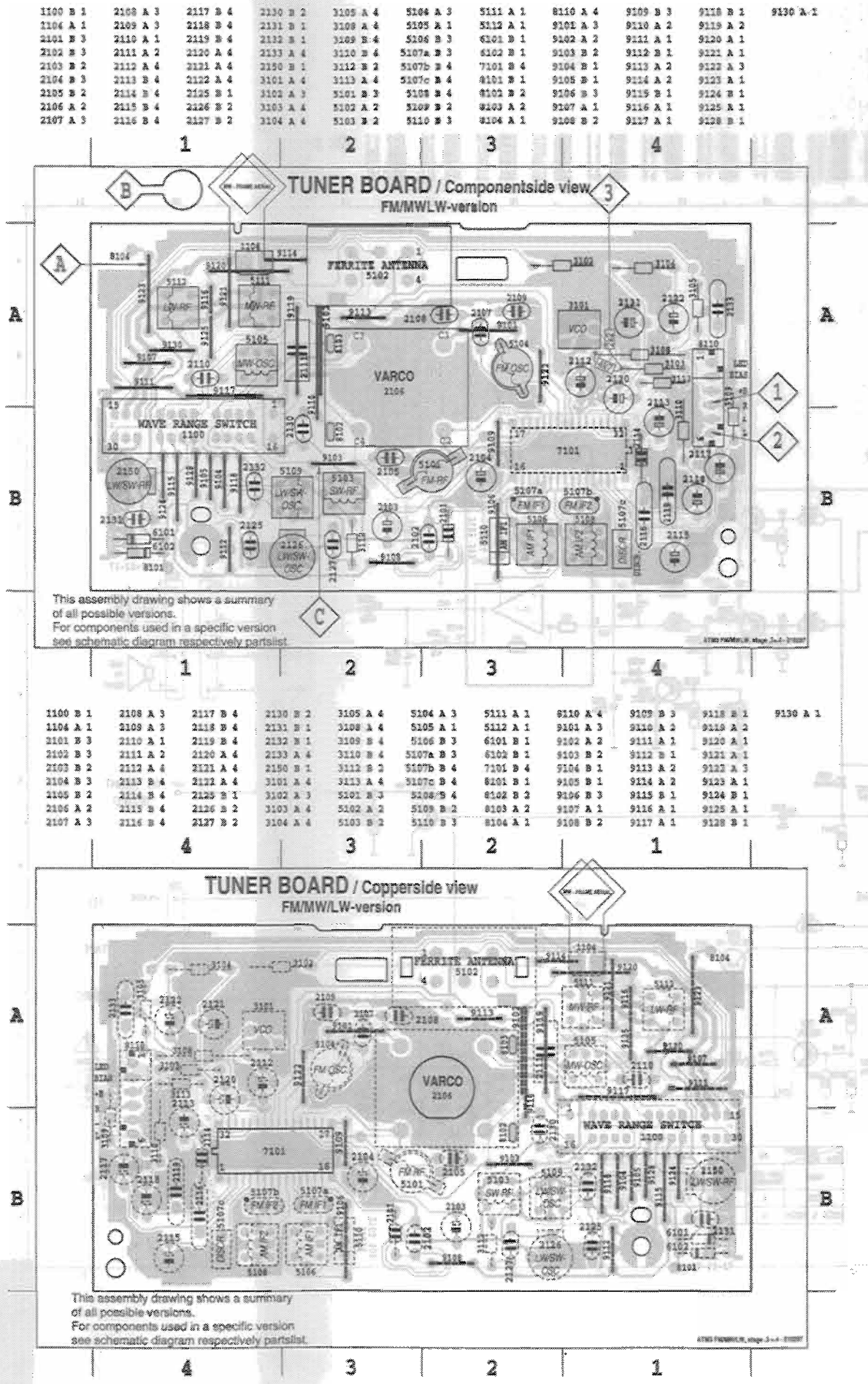
VERSION / ITEM *	FM 87.5-108MHz	EAST EUROPE 65-108 MHz
2105	22p	8p2
2106	20p	40p
2107	-	390p
2108	22p	5p6
2109	4p7	2p2
5101	55nH	91nH
5104	40nH	72nH
9101	JMP	-

u .....provisional only
y .....value for SW-Eu (5.9-18.1MHz)
SW .....only for FM/SW/MW version
LW .....only for FM/LW/MW version

1100	H12
1100	H 8
1100	H 2
1100	F 4
1100	B 3
1100	H 5
1104	H 1
2101	B 4
2102	B 4
2103	F 5
2104	F 6
2105	G 5
2106	G 7
2106	G 5
2106	I12
2106	G 5
2106	I11
2106	G 3
2107	G 7
2108	H 6
2109	H 6
2110	I10
2111	I11
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
2125	H10
2126	H10
2127	I 7
2130	G 4
2131	I 5
2132	H11
2133	C14
2150	I 5
3101	G 8
3102	G 8
3103	C13
3104	F10
3105	B13
3108	B13
3109	A11
3110	B11
3112	I 7
3113	F11
5101	H 6
5102	H 4
5103	I 6
5104	G 6
5105	I10
5106	A 5
5107a	B 6
5107b	B 8
5107c	B 9
5108	A 7
5109	H 9
5110	A 6
5111	G 2
5112	I 2
6101	B 2
6102	B 2
7101	C11
8101	B 2
8102	G 3
8103	I11
8104	A 2
8110	A14
9101	G 7
9102	G 4
9103	F 4
9104	H10
9105	H10
9106	A 6
9110	G 4
9112	B 3
9115	B 3
9118	H11
9119	I11
9124	I 3
9125	I 3
9128	B 3
9130	H 1

VARCO 2106

WAVE RANGE SWITCH 1100



TUNER ADJUSTMENT TABLE (ATM3 FM/LW/MW- versions with AM-frame aerial)

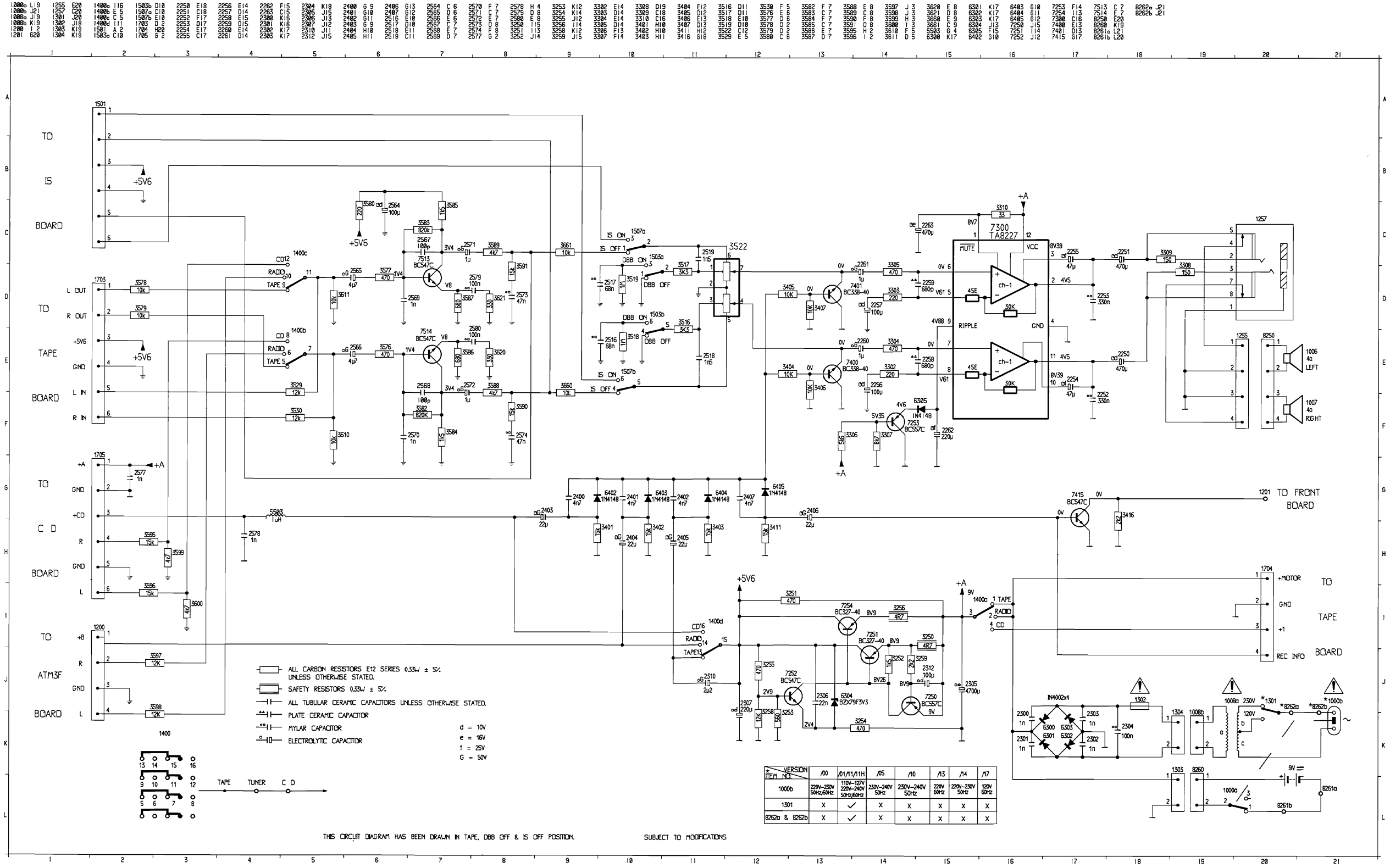
Waverange	Input Frequency	Input	Set tuned to	Adjust	Measure on	Scope / Counter
OSCILLATOR						
FM 87,5 - 108 MHz (65 - 108 MHz) [1]	87,35 MHz (64,7 MHz)	A Δf = ±500kHz V_{RF} = 100µV	lower band end	5104	1 or 2	
	108,25 MHz		upper band end	2106 C1		
MW 525 - 1607 kHz (530 - 1710 kHz) [2]	512 kHz (520 kHz)	C Δf = ±30kHz V_{RF} = 100µV	lower band end	5105	1 or 2	
	1635 kHz (1730 kHz)		upper band end	2106 C3		
LW [3] 148,5 - 284 kHz	147 kHz		lower band end	5109		
	291 kHz		upper band end	2126		
FM - RF						
FM 87,5 - 108 MHz (65 - 108 MHz) [1]	87,5 MHz (65 MHz)	A Δf = ±500kHz V_{RF} = 10µV	87,5 MHz (65 MHz)	5101	1 or 2	
	108 MHz		108 MHz	2106 C2		
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
AM - IF						
AM	468 kHz connect pin 24 of IC 7101 (AM Osc) with short wire to ground	C Δf = ±15kHz V_{RF} = 10mV	IC 7101 10 100nF 220R IC 7101 14 100nF 220R see remark 4	5106 5108	1 or 2	max symmetric
AM -RF						
MW	560 kHz	B Δf = ±30kHz V_{RF} as low as possible	560 kHz	5111	1 or 2	max symmetric
	1500 kHz		1500 kHz	2106 C4		
LW [3]	170 kHz		170 kHz	5112		
	260 kHz		260 kHz	2150		

Tuner Adj. ATM3 FM/LW/MW 080796

repeat

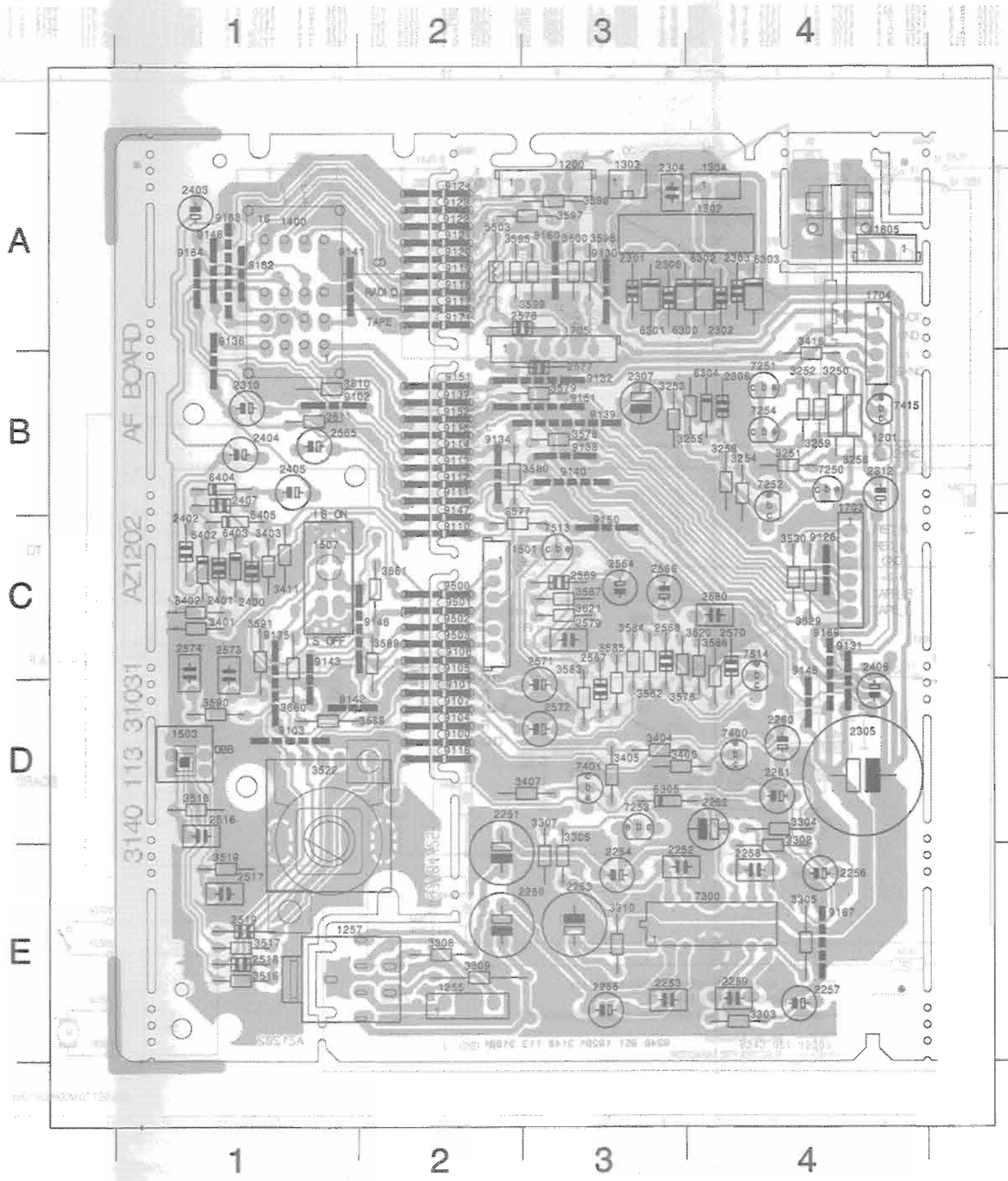
[1] for East Europe /14 [2] for USA /17 [3] LW not for all versions
[4] RC-network serves for damping the IF-filter while adjusting the other one.

AUDIO BOARD - CIRCUIT DIAGRAM



ITEM \ VERSION	/00	/01/11/11H	/05	/10	/13	/14	/17
1000b	220V~230V 50Hz/60Hz	110V~127V 220V~240V 50Hz/60Hz	230V~240V 50Hz	250V~240V 50Hz	220V 60Hz	220V~230V 50Hz	120V 60Hz
1301	X	✓	X	X	X	X	X
8262a & 8262b	X	✓	X	X	X	X	X

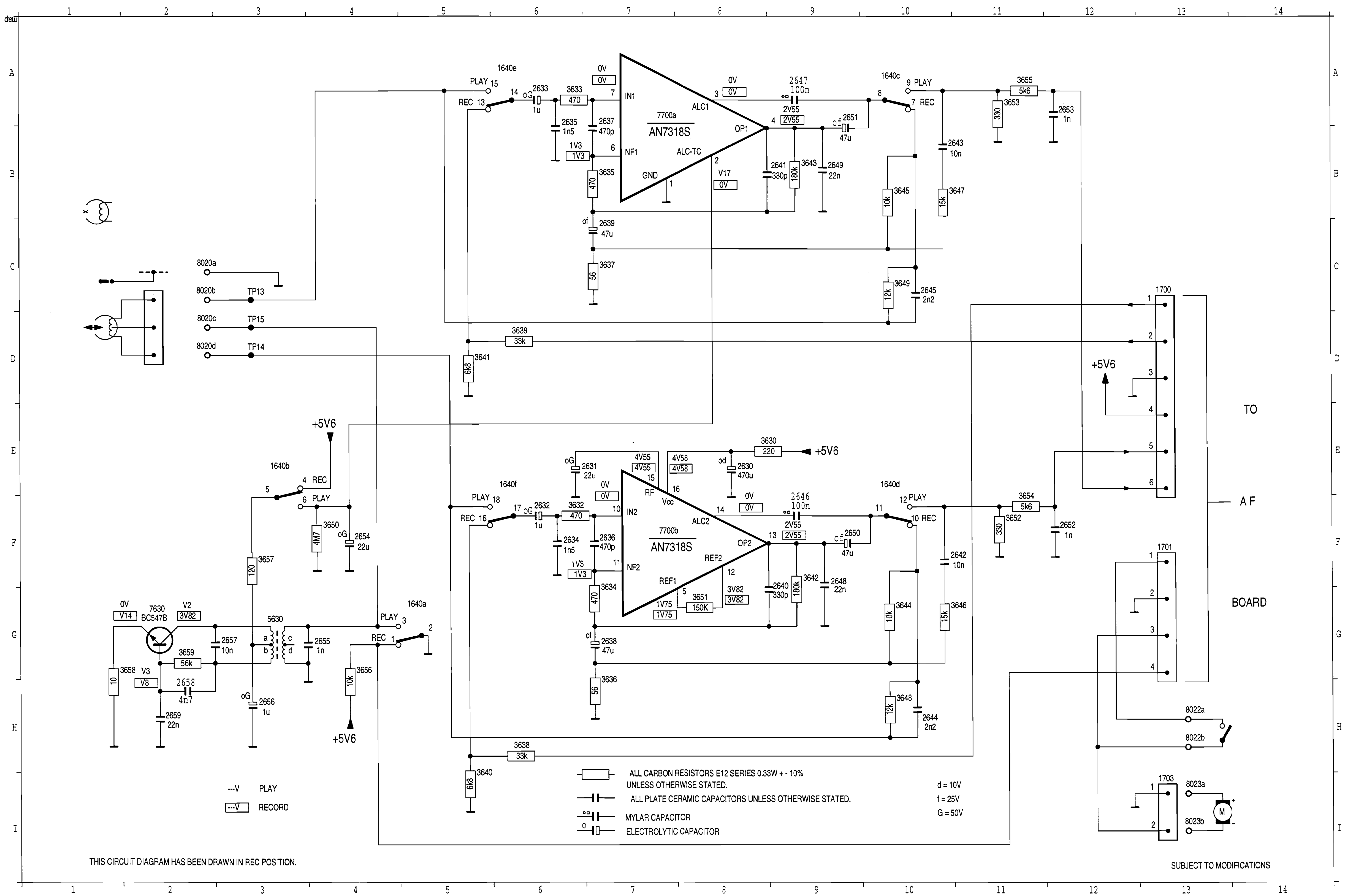
AUDIO BOARD - LAYOUT DIAGRAM

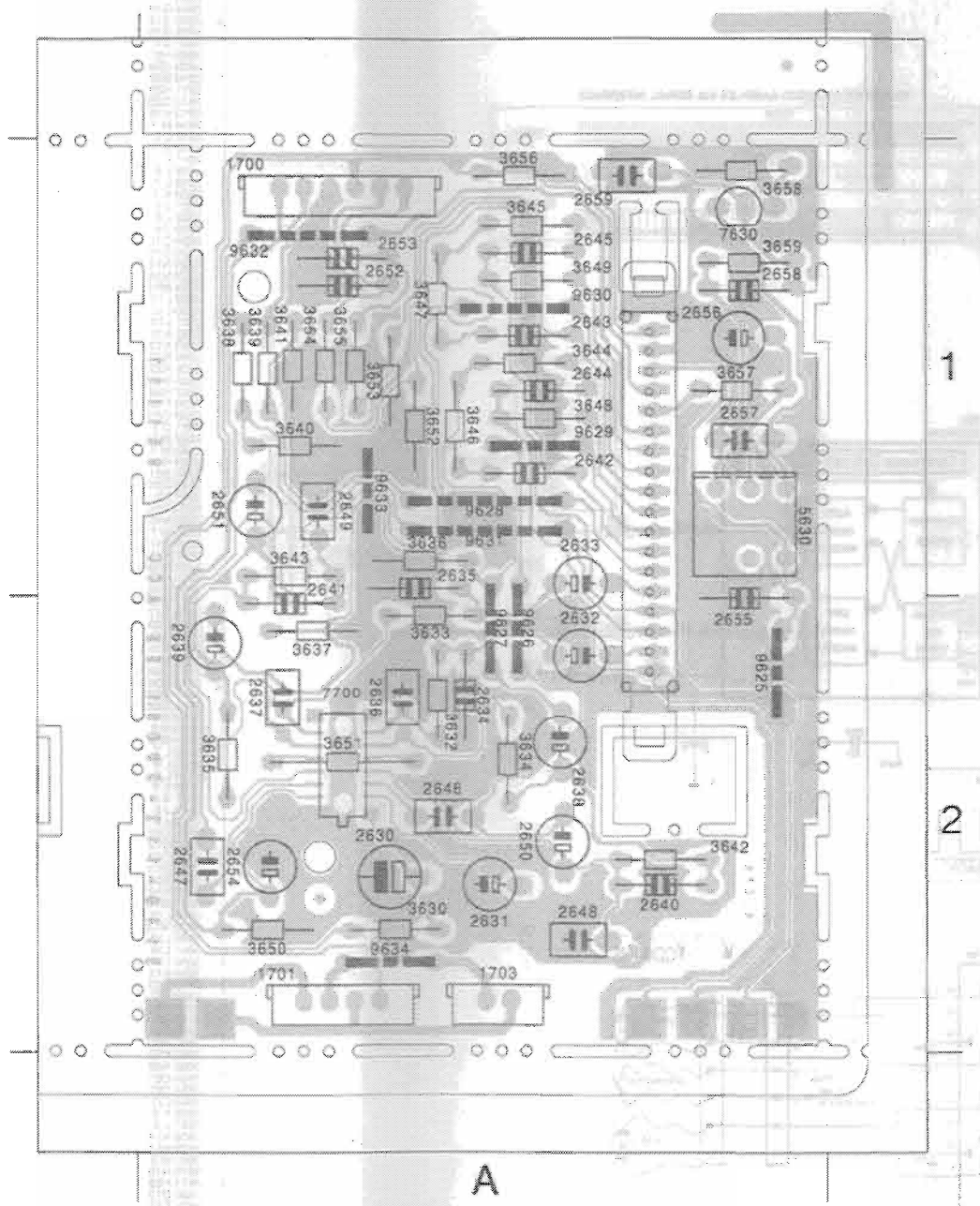


1200	A 3	3253	B 3	6404	B 1	9502	C 2
1255	E 2	3254	B 4	6405	C 1	9503	C 2
1257	E 2	3255	B 4	7250	B 4		
1302	A 4	3256	B 4	7251	B 4		
1303	A 3	3258	B 4	7252	B 4		
1304	A 4	3259	B 4	7253	D 3		
1501	C 2	3302	E 4	7254	B 4		
1503	D 1	3303	E 4	7300	E 4		
1507	C 1	3304	E 4	7400	D 4		
1703	C 4	3305	D 4	7401	D 3		
1704	A 4	3306	E 3	7415	B 4		
1705	A 3	3307	E 3	7513	C 3		
1805	A 4	3308	E 2	7514	C 4		
2250	E 2	3309	E 2	9100	D 2		
2251	E 2	3310	E 3	9101	D 2		
2252	E 3	3401	C 1	9102	B 1		
2253	E 3	3402	C 1	9103	D 1		
2254	E 3	3403	C 1	9104	D 2		
2255	E 3	3404	D 3	9105	C 2		
2256	E 4	3405	D 3	9106	C 2		
2257	E 4	3406	D 3	9107	D 2		
2258	E 4	3407	D 3	9110	C 2		
2259	E 4	3411	C 1	9111	B 2		
2260	D 4	3416	B 4	9112	B 2		
2261	D 4	3516	E 1	9113	B 2		
2262	D 4	3517	E 1	9114	B 2		
2263	E 3	3518	D 1	9115	B 2		
2300	A 3	3519	E 1	9116	D 2		
2301	A 3	3522	D 1	9117	A 2		
2302	A 4	3529	C 4	9118	A 2		
2303	A 4	3530	C 4	9119	A 2		
2304	A 3	3576	C 3	9120	A 2		
2305	D 4	3577	C 2	9121	A 2		
2306	B 4	3578	B 3	9122	A 2		
2307	B 3	3579	B 3	9123	A 2		
2310	B 1	3580	B 2	9124	A 2		
2312	B 4	3582	C 3	9126	C 4		
2400	C 1	3583	D 3	9130	A 3		
2401	C 1	3584	C 3	9131	D 4		
2402	C 1	3585	D 3	9132	B 3		
2403	A 1	3586	C 4	9134	B 2		
2404	B 1	3587	C 3	9135	D 1		
2405	B 1	3588	D 1	9136	B 1		
2406	D 4	3589	C 2	9137	B 2		
2407	B 1	3590	D 1	9138	B 3		
2516	D 1	3591	C 1	9139	B 3		
2517	E 1	3595	A 2	9140	B 3		
2518	E 1	3596	A 3	9141	A 1		
2519	E 1	3597	A 3	9142	D 1		
2564	C 3	3598	A 3	9143	D 1		
2565	B 1	3599	A 3	9145	D 4		
2566	C 3	3600	A 3	9146	C 2		
2567	D 3	3610	B 1	9147	C 2		
2568	C 3	3611	B 1	9148	A 1		
2569	C 3	3620	C 4	9150	C 3		
2570	C 4	3621	C 3	9151	B 2		
2571	D 3	3660	C 1	9152	B 2		
2572	D 3	3661	C 2	9160	A 3		
2573	C 1	5503	A 2	9161	B 3		
2574	C 1	6300	A 3	9162	A 1		
2577	B 3	6301	A 3	9163	A 1		
2578	A 3	6302	A 4	9164	A 1		
2579	C 3	6303	A 4	9167	E 4		
2580	C 4	6304	B 4	9169	C 4		
3250	B 4	6305	D 3	9171	A 2		
3251	B 4	6402	C 1	9500	C 2		
3252	B 4	6403	C 1	9501	C 2		

TAPE DECK BOARD - CIRCUIT DIAGRAM

1640a G 5	1640e A 6	1703 I13	2633 A 6	2637 A 7	2641 B 9	2645 C10	2649 B 9	2653 A12	2657 G 3	3632 F 6	3636 H 7	3640 I 5	3644 G10	3648 H10	3652 F11	3656 G 4	5630 G 3	8020a C 3	8022a H13	TP13 C 3
1640b E 3	1640f E 6	2630 E 8	2634 F 6	2638 G 7	2642 F11	2646 F 9	2650 F 9	2654 F 4	2658 H 2	3633 A 6	3637 C 7	3641 D 5	3645 B10	3649 C10	3653 A11	3657 F 3	7630 G 2	8020b C 3	8022b H13	TP14 D 3
1640c A10	1700 C13	2631 E 7	2635 A 6	2639 C 7	2643 B11	2647 A 9	2651 A 9	2655 G 4	2659 H 2	3634 G 7	3638 H 6	3642 F 9	3646 G11	3650 F 4	3654 F11	3658 G 2	7700a A 7	8020c D 3	8023a I13	TP15 D 3
1640d E10	1701 F13	2632 F 6	2636 F 7	2640 G 9	2644 H10	2648 F 9	2652 F12	2656 H 3	3630 E 9	3635 B 7	3639 D 6	3643 B 9	3647 B11	3651 G 8	3655 A11	3659 G 2	7700b F 7	8020d D 3	8023b I13	





TAPE DECK BOARD - LAYOUT DIAGRAM

1619	A 1	1629	A 1	1639	A 2	2635	A 1	2645	A 1	2655	A 2	3636	A 1	3646	A 1	3656	A 1	9628	A 1	PAD4	A 2
1620	A 1	1630	A 1	1640	A 2	2636	A 2	2646	A 2	2656	A 1	3637	A 2	3647	A 1	3657	A 1	9629	A 1	PAD5	A 2
1621	A 2	1631	A 1	1700	A 1	2637	A 2	2647	A 2	2657	A 1	3638	A 1	3648	A 1	3658	A 1	9630	A 1	PAD6	A 2
1622	A 2	1632	A 1	1701	A 2	2638	A 2	2648	A 2	2658	A 1	3639	A 1	3649	A 1	3659	A 1	9631	A 1		
1623	A 1	1633	A 1	1703	A 2	2639	A 2	2649	A 1	2659	A 1	3640	A 1	3650	A 2	5630	A 1	9632	A 1		
1624	A 1	1634	A 1	2630	A 2	2640	A 2	2650	A 2	3630	A 2	3641	A 1	3651	A 2	7630	A 1	9633	A 1		
1625	A 1	1635	A 1	2631	A 2	2641	A 2	2651	A 1	3632	A 2	3642	A 2	3652	A 1	7700	A 2	9635	A 2		
1626	A 1	1636	A 1	2632	A 2	2642	A 1	2652	A 1	3633	A 2	3643	A 1	3653	A 1	9625	A 2	PAD1	A 2		
1627	A 1	1637	A 2	2633	A 1	2643	A 1	2653	A 1	3634	A 2	3644	A 1	3654	A 1	9626	A 2	PAD2	A 2		
1628	A 1	1638	A 2	2634	A 2	2644	A 1	2654	A 2	3635	A 2	3645	A 1	3655	A 1	9627	A 2	PAD3	A 2		

INCREDIBLE SOUND BOARD - CIRCUIT DIAGRAM

CASSETTE ADJUSTMENT

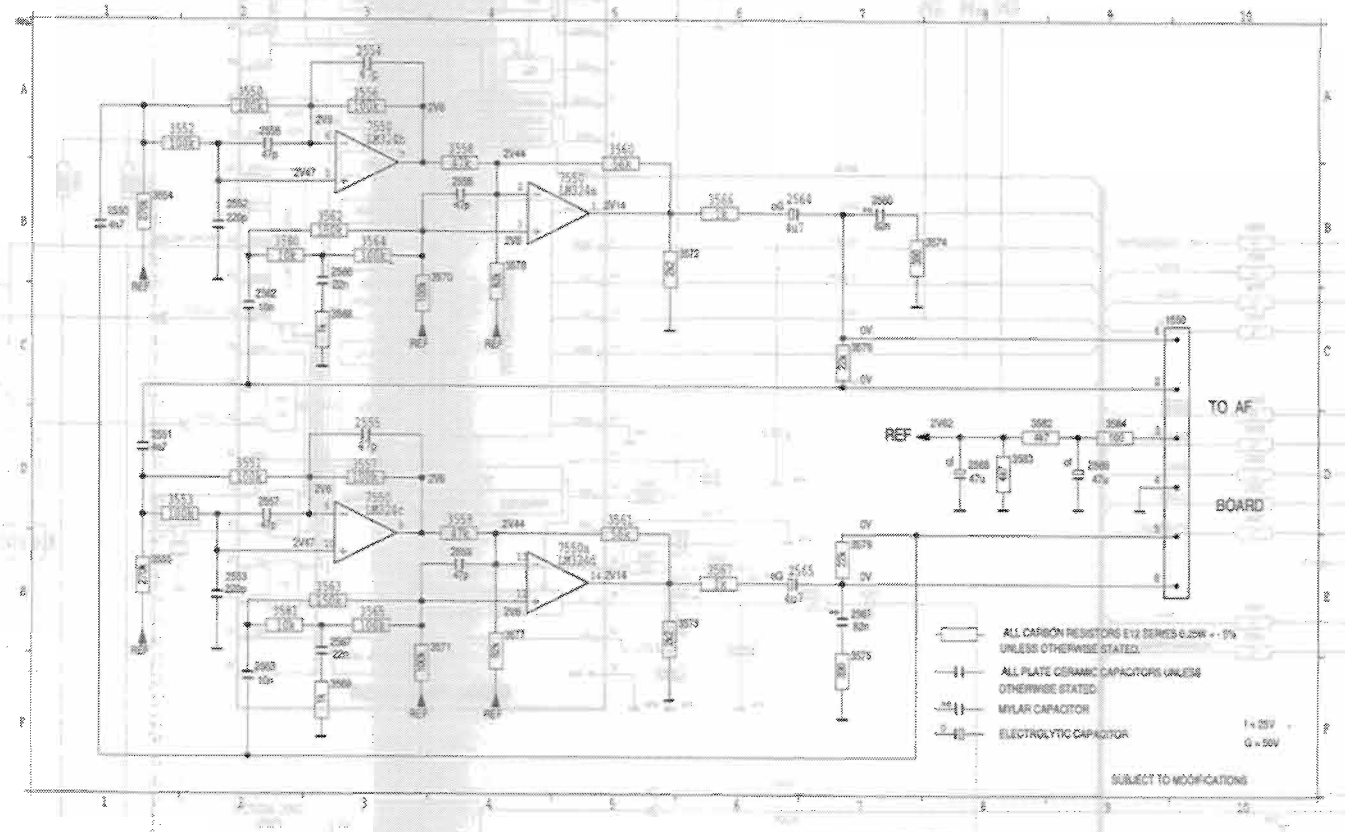
Adjustment	Cassette	SK	Tape Deck	Measure on	Read on	Adjust with	Adjust to
Head Azimuth	SBC420* 10KHz	Tape	Play	H/P jack	mV meter	Left hand Screw R/P Head	max. L = R
Tape speed Wow & flutter	SBC420* 3150Hz	Tape	Play	H/P jack	Wow and flutter meter	Preset VR in motor	**a

* SBC420 : 4822 397 30071

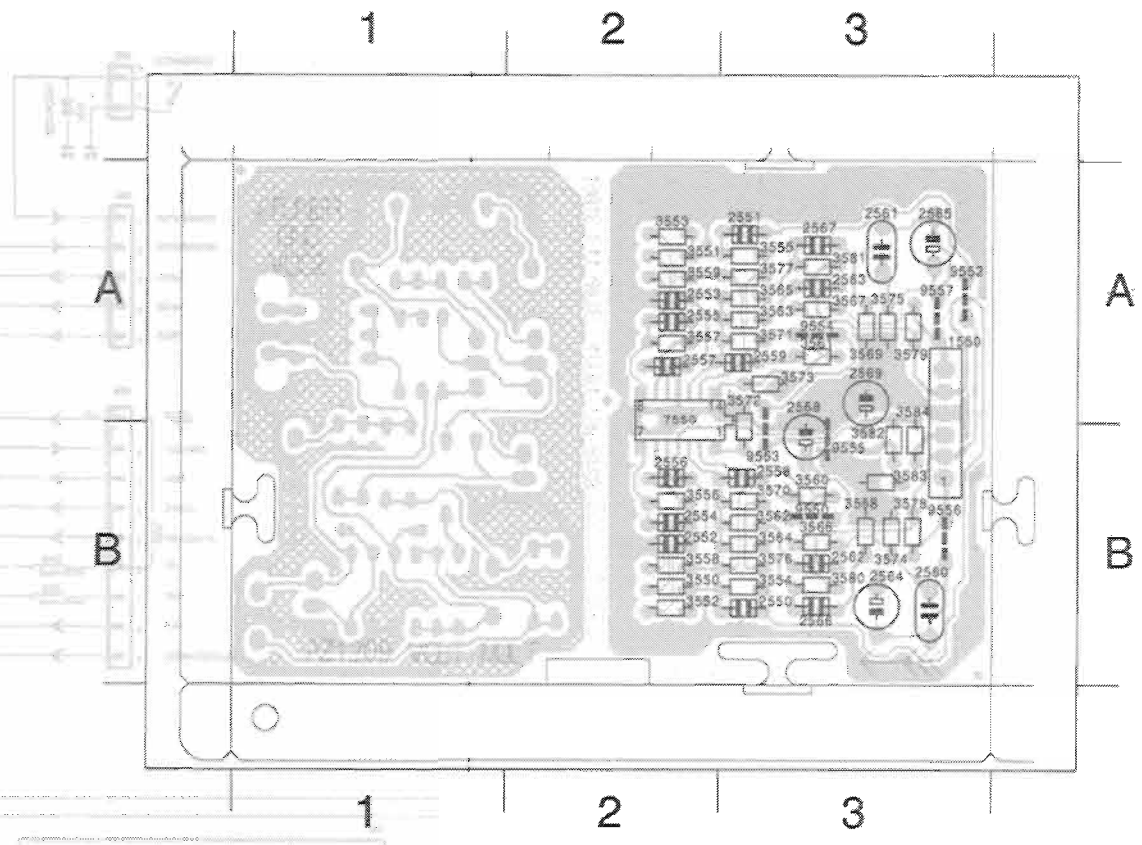
**a The maximum permissible speed deviation is ± 3%.
Morever, the wow and flutter value can be read.

INCREDIBLE SC

INCREDIBLE SOUND BOARD - CIRCUIT DIAGRAM



INCREDIBLE SOUND BOARD - LAYOUT DIAGRAM



1550 B 3	3563 A 3	2550 B 3	3564 B 3
2551 A 3	3565 A 3	2552 B 2	3566 B 3
2553 A 2	3567 A 3	2554 B 2	3568 B 3
2555 A 2	3569 A 3	2556 B 2	3570 B 3
2557 A 2	3571 A 3	2558 B 3	3572 B 3
2559 A 3	3573 A 3	2560 B 3	3574 B 3
2561 A 3	3575 A 3	2562 B 3	3576 B 3
2583 A 3	3577 A 3	2564 B 3	3578 B 3
2565 A 3	3579 A 3	2566 B 3	3580 B 3
2567 A 3	3581 A 3	2568 B 3	3582 B 3
2569 A 3	3583 B 3	3550 B 2	3584 B 3
3551 A 2	7550 A 2	3552 B 2	9550 B 3
3553 A 2	9552 A 3	3554 B 3	9553 B 3
3555 A 3	9554 A 3	3556 B 2	9555 B 3
3557 A 2	9556 B 3	3558 B 2	9557 A 3
3559 A 2		3560 B 3	
3561 A 3		3562 B 3	

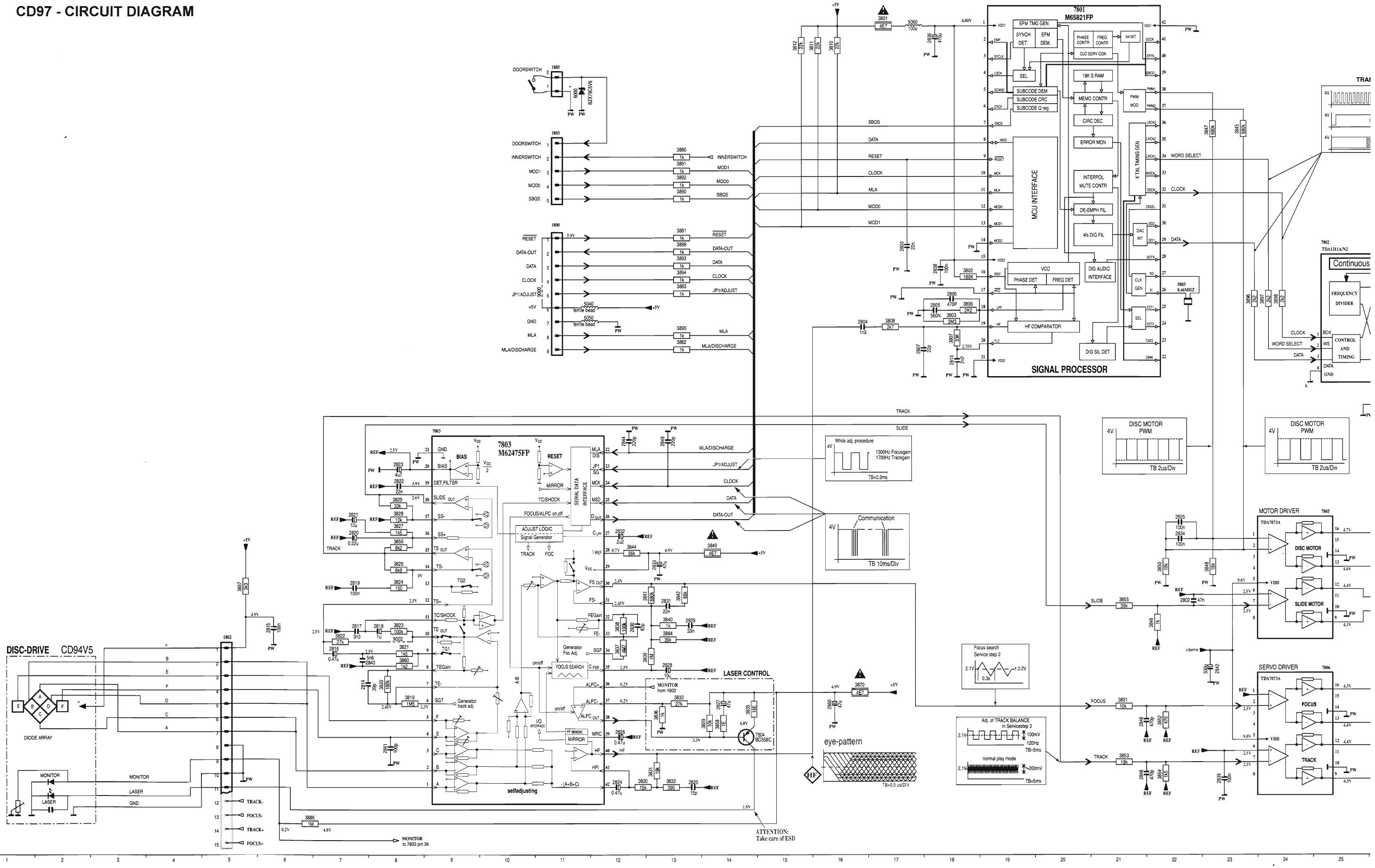
CASSETTE ADJUSTMENT

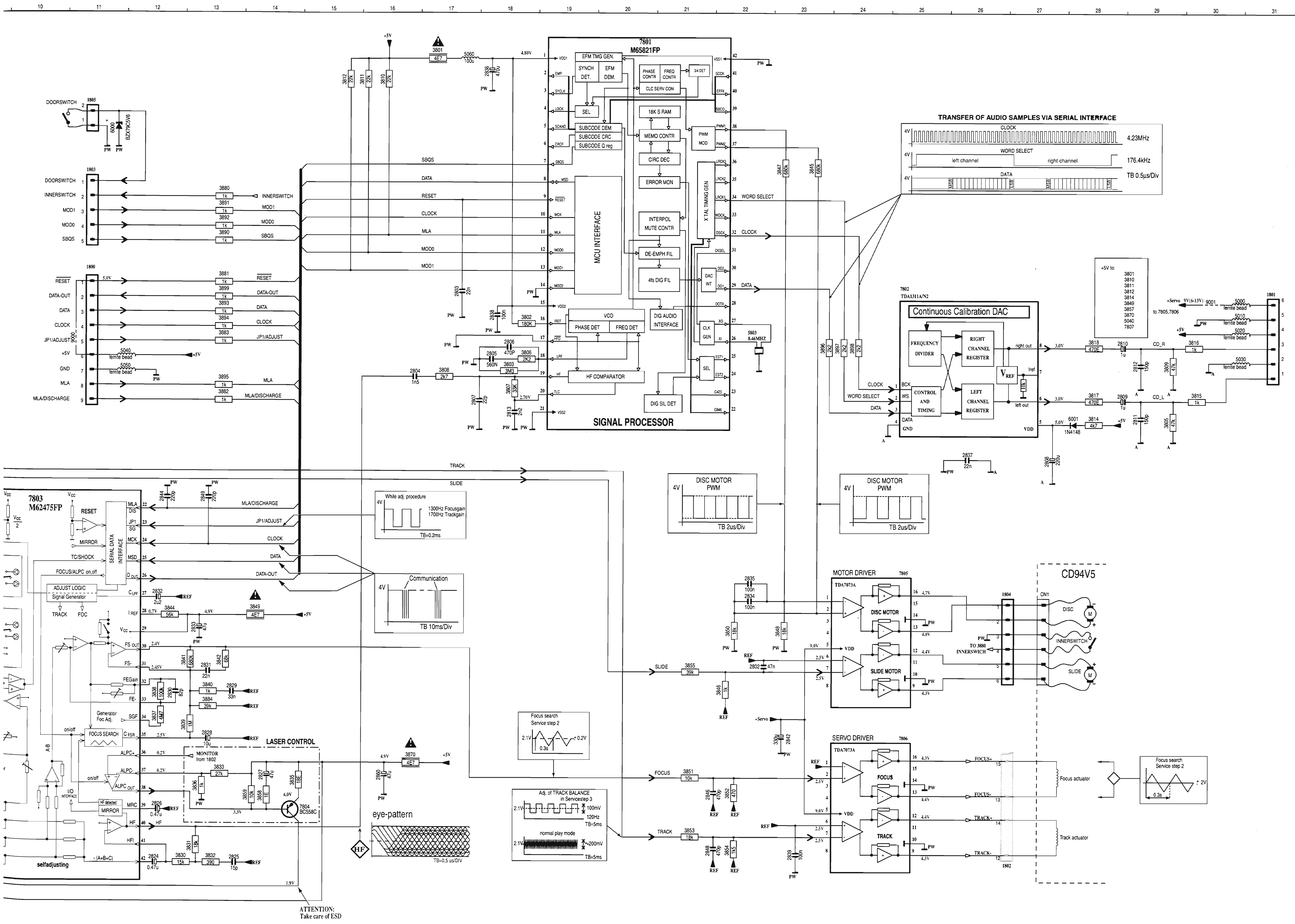
Adjustment	Cassette	SK	Tape Deck	Measure on	Read on	Adjust with	Adjust to
Head Azimuth	SBC420* 10KHz	Tape	Play	H/P jack	mV meter	Left hand Screw R/P Head	max. L = R
Tape speed Wow & flutter	SBC420* 3150Hz	Tape	Play	H/P jack	Wow and flutter meter	Preset VR in motor	**a

* SBC420 : 4822 397 30071

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

CD97 - CIRCUIT DIAGRAM

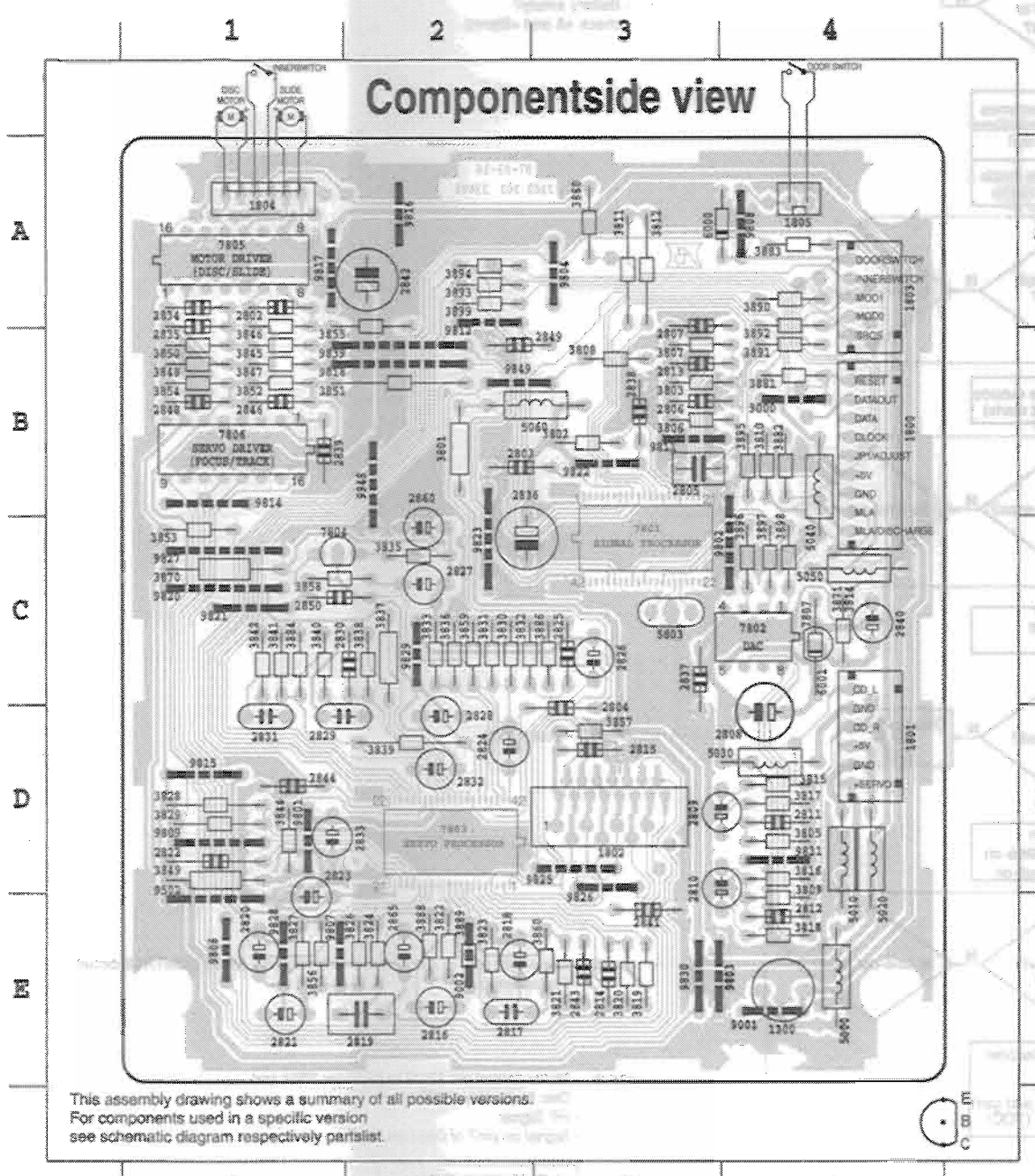




1300 E29
1800 E11
1801 F31
1802 Q 5
1803 D11
1804 K26
1805 D 8
2802 L22
2803 F17
2804 G16
2805 G18
2806 G18
2807 G17
2808 H27
2809 G28
2810 G28
2811 H29
2812 G29
2813 H18
2814 M 7
2815 L 6
2816 M 7
2817 L 7
2818 L 8
2819 L 7
2820 K 7
2821 J 7
2822 J 8
2823 J 8
2824 O12
2825 O13
2826 N12
2827 N14
2828 M13
2829 L13
2830 L12
2831 L13
2832 K12
2833 K13
2834 K22
2835 K22
2836 B18
2837 H26
2838 F18
2839 O23
2841 O 8
2842 M23
2843 M 7
2844 I12
2846 N21
2848 O21
2849 I13
2850 O14
2860 N16
2865 M 7
3801 B17
3802 F18
3803 G18
3805 H29
3806 G18
3807 G18
3808 G17
3809 G29
3810 B16
3811 B16
3812 B15
3815 G30
3816 G30
3817 G28
3818 G28
3819 N 8
3820 M 8
3821 M 8
3822 L 7
3823 L 8
3824 L 8
3826 K 8
3827 K 8
3828 J 8
3829 J 8
3830 O12
3831 O13
3832 O13
3833 N13
3835 N14
3836 N13
3837 M12
3838 L12
3839 M13
3840 L13
3841 L13
3842 L13
3844 K12
3845 D23
3846 L22
3847 D23
3848 K23
3849 K14
3850 M22
3851 N21
3852 N22
3853 O21
3854 O22
3855 L21
3856 K 8
3857 L 5
3858 N14
3859 N14
3860 M 8
3870 N16
3871 H28
3880 D13
3881 E13
3882 G13
3883 F13
3884 M13
3886 P 6
3888 M 8
3889 L 8
3890 E13
3891 D13
3892 D13
3893 F13
3894 F13
3895 G13
3896 G23
3897 G24
3898 G24
3899 F13
5000 F30
5010 F30
5020 F30
5030 G30
5040 G11
5050 G11
5060 A18
5803 F22
6000 E11
6001 H28
7801 A19
7802 F25
7803 I 9
7804 N14
7805 J25
7806 M25
9000 F10
9001 F29
9002 M 8

CD97 - LAYOUT DIAGRAM

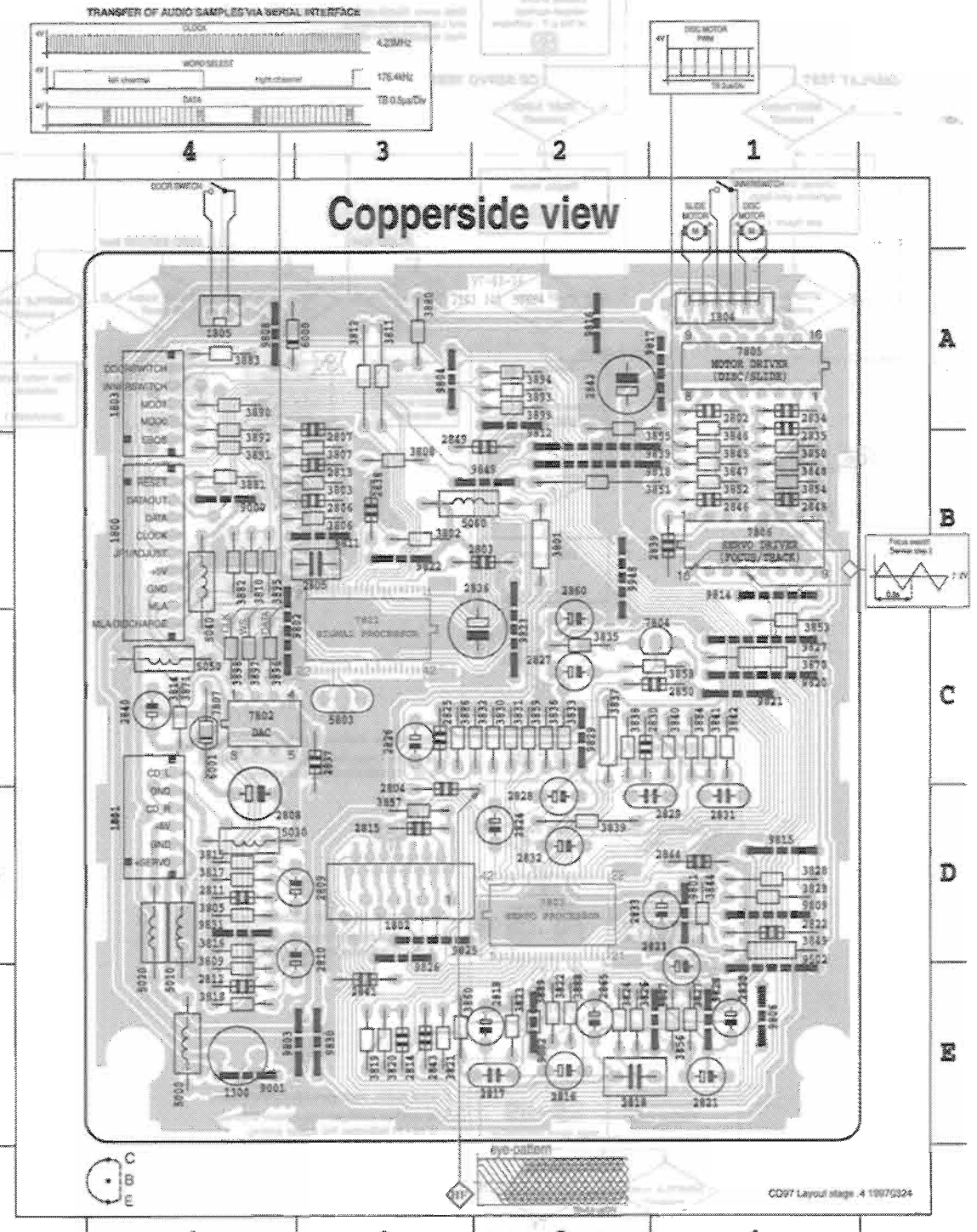
Componentside view



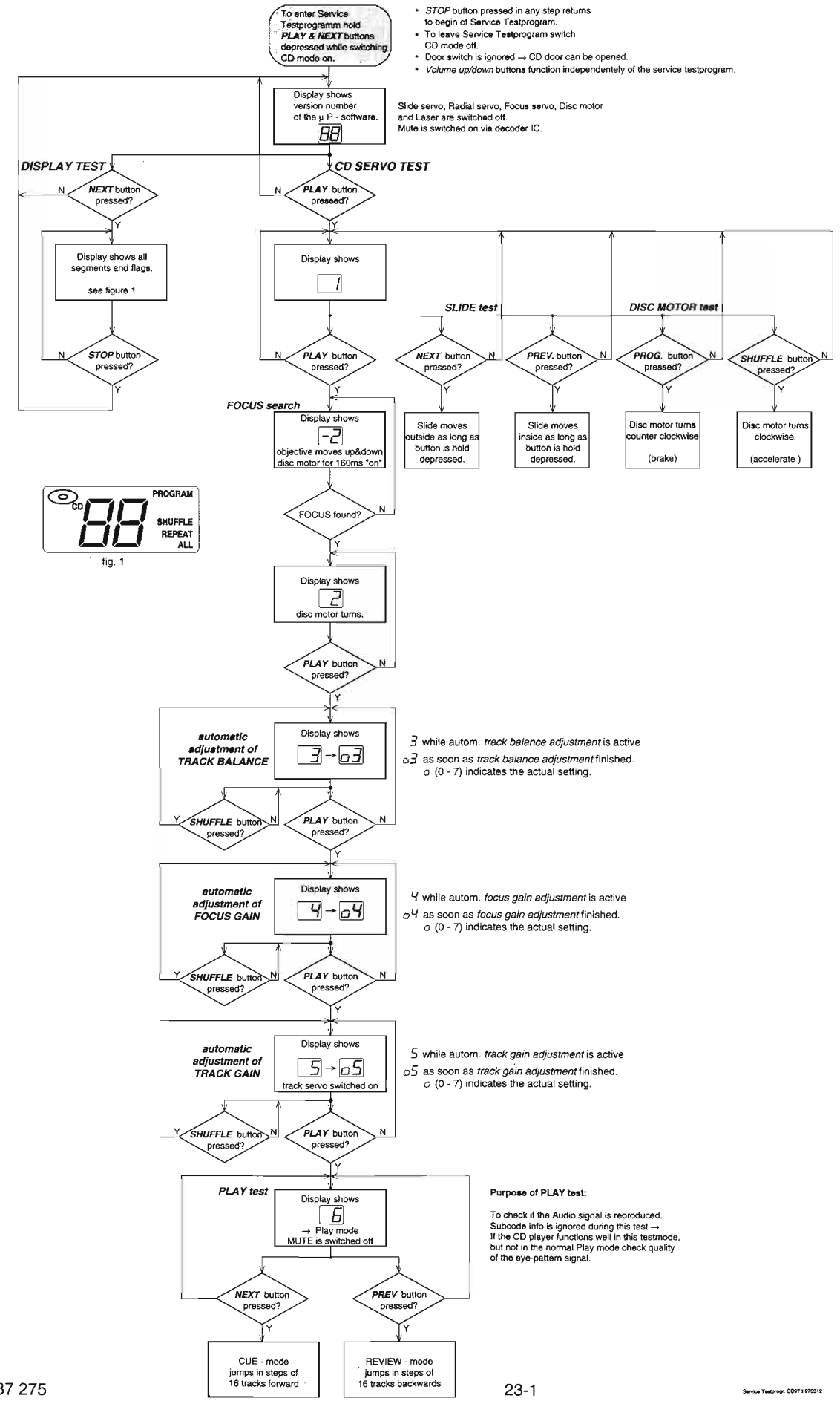
This assembly drawing shows a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

1300	E 4	3807	B 3	3891	B 4		
1800	B 4	3808	B 3	3892	A 4		
1801	D 4	3809	E 4	3893	A 2		
1802	D 3	3810	B 4	3894	A 2		
1803	A 4	3811	A 3	3895	B 4		
1804	A 1	3812	A 3	3896	C 4		
1805	A 4	3814	C 4	3897	C 4		
2802	A 1	3815	D 4	3898	C 4		
2803	B 2	3816	D 4	3899	A 2		
2804	D 3	3817	D 6	5000	E 4		
2805	B 3	3818	E 4	5010	D 4		
2806	B 3	3819	E 3	5020	D 4		
2807	A 3	3820	E 3	5030	D 4		
2808	D 4	3821	E 3	5040	B 4		
2809	D 4	3822	E 2	5050	C 4		
2810	D 4	3823	E 2	5060	B 3		
2811	D 4	3824	E 2	5803	C 3		
2812	E 4	3826	E 2	6000	A 4		
2813	B 3	3827	E 1	6001	C 4		
2814	E 3	3828	D 1	7802	C 4		
2815	D 3	3829	D 1	7804	C 1		
2816	E 2	3830	C 2	7805	A 1		
2817	E 2	3831	C 2	7806	B 1		
2818	E 2	3832	C 2	7807	C 4		
2819	E 2	3833	C 2	9000	B 4		
2820	E 1	3835	C 2	9001	E 4		
2821	E 1	3836	C 2	9002	E 2		
2822	D 1	3837	C 2	9502	E 1		
2823	E 1	3838	C 2	9801	D 1		
2824	D 2	3839	D 2	9802	C 4		
2825	C 3	3840	C 1	9803	E 3		
2826	C 3	3841	C 1	9804	A 3		
2827	C 2	3842	C 1	9806	E 1		
2828	D 2	3844	D 1	9807	E 1		
2829	D 1	3845	B 1	9808	A 4		
2830	C 2	3846	A 1	9809	D 1		
2831	D 1	3847	B 1	9811	B 3		
2832	D 2	3848	B 1	9812	A 2		
2833	D 1	3849	D 1	9814	B 1		
2834	A 1	3850	B 1	9815	D 1		
2835	A 1	3851	B 2	9816	A 2		
2836	C 2	3852	B 1	9817	A 1		
2837	C 3	3853	C 1	9818	B 2		
2838	B 3	3854	B 1	9820	C 1		
2839	B 1	3855	A 2	9821	C 1		
2840	C 4	3856	E 1	9822	B 3		
2841	E 3	3857	D 3	9823	C 2		
2842	A 2	3858	C 1	9825	D 3		
2843	E 3	3859	C 2	9826	D 3		
2844	D 1	3860	E 3	9827	C 1		
2846	B 1	3870	C 1	9828	E 1		
2848	B 1	3871	C 4	9829	C 2		
2849	B 2	3880	A 3	9830	E 3		
2850	C 1	3881	B 4	9831	D 4		
2860	C 2	3882	B 4	9839	B 2		
2865	E 2	3883	A 4	9849	B 2		
3801	B 2	3884	C 1	9968	B 2		
3802	E 3	3886	C 3	7801	C 3		
3803	E 3	3888	E 2	7803	D 2		
3805	D 4	3889	E 2				
3806	B 3	3890	A 4				

Copperside view



CD - SERVICE TESTPROGRAM

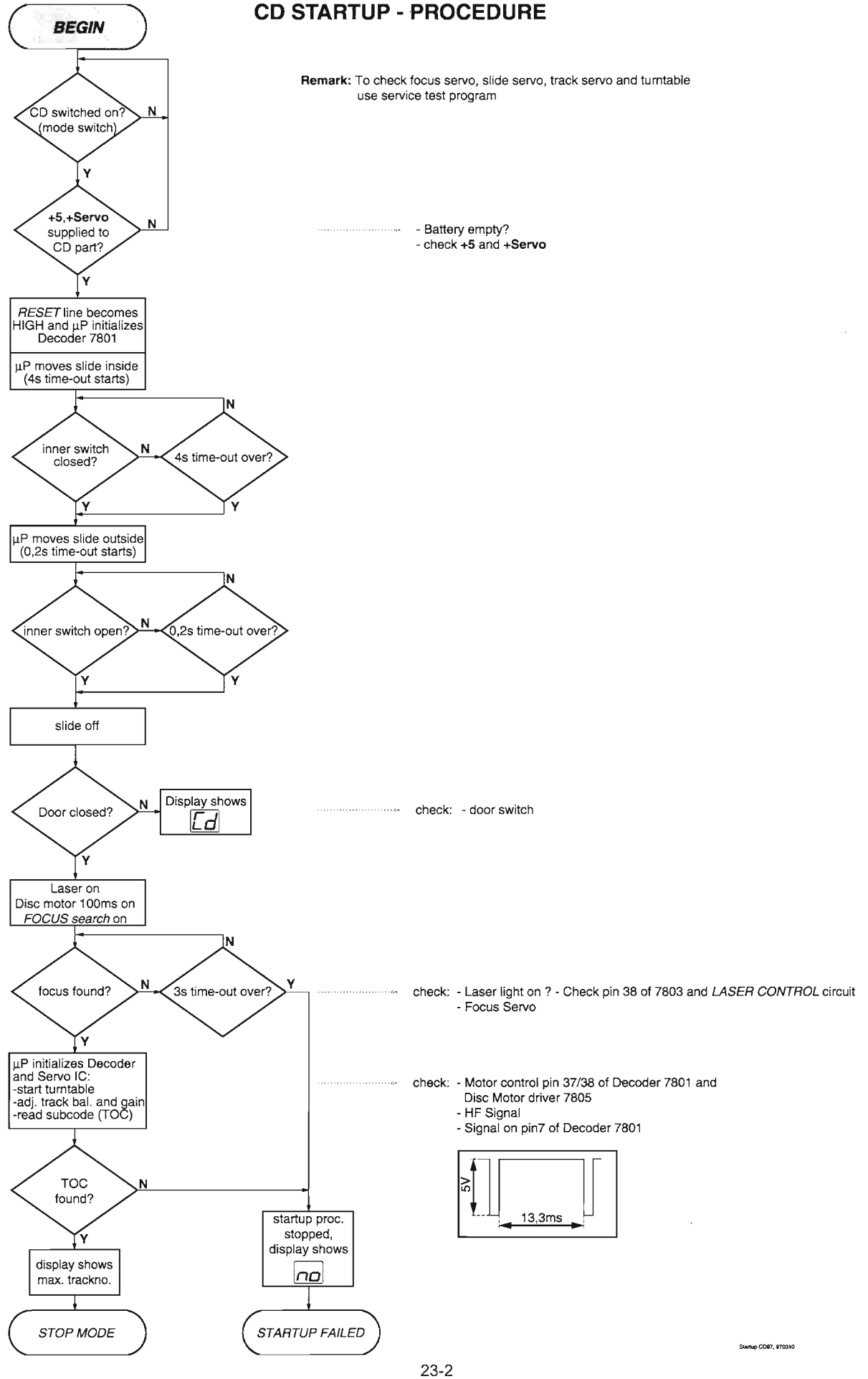


- *STOP* button pressed in any step returns to begin of Service Testprogram.
- To leave Service Testprogram switch CD mode off.
- Door switch is ignored → CD door can be opened.
- *Volume up/down* buttons function independentely of the service testprogram.

fig. 1

CD STARTUP - PROCEDURE

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



..... - Battery empty?
- check **+5** and **+Servo**

..... check: - door switch

..... check: - Laser light on ? - Check pin 38 of 7803 and *LASER CONTROL* circuit
- Focus Servo

..... check: - Motor control pin 37/38 of Decoder 7801 and Disc Motor driver 7805
- HF Signal
- Signal on pin7 of Decoder 7801

Startup CD97, 970310

Abbreviations and Pin-descriptions of CD ICs

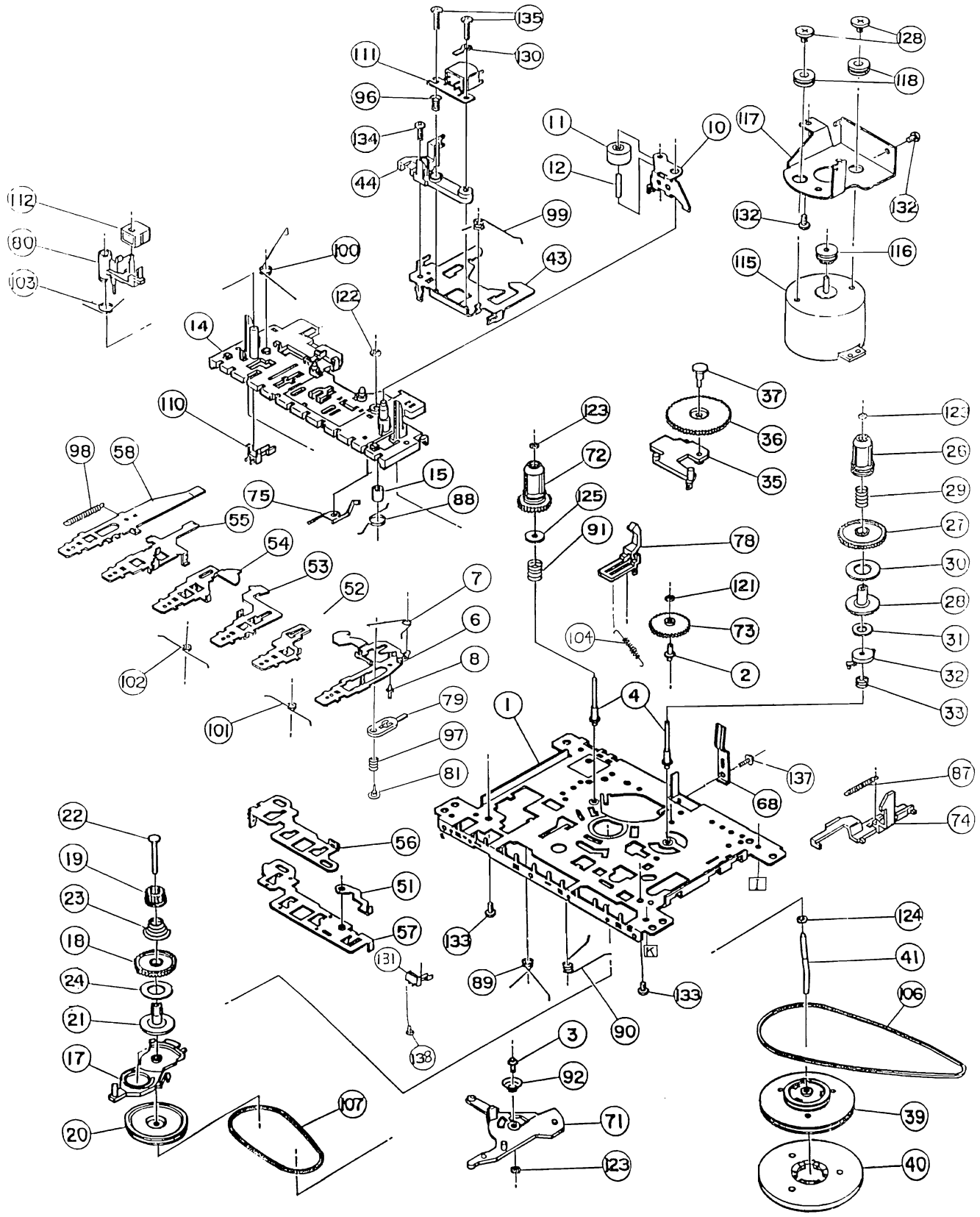
SERVO PROCESSOR M62475FP

Pin	*Name*	*Direction*	*Description*
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 M65821FP

Pin	*Name*	*Direction*	*Description*
1	VDD1	-	+supply for signal processor
2	EMP	not connected	Emphasis flag output
3	SYCLK	not connected	Frame synchronize output
4	LOCK	not connected	Low disc rotation detect output
5	SCAND	not connected	Subcode sync signal detection
6	CRCF	not connected	Subcode Q CRC check flag output
7	SBQS	Signal processor → µP	Interrupt signal to read out subcode Q data
8	MSD	µP ↔ Signal processor	Data line
9	RESET	Reset circuit → Signal processor	System reset
10	MCK	µP → Signal processor	Clock input
11	MLA	µP → Signal processor	Latch clock input
12-14	MODx	µP → Signal processor	Mode setting inputs (0,1,2)
15	VDD2	-	+supply for data slicer and VCO
16	IREF	-	Current reference
17	HFD	Signal processor → µP	HF signal detect
18	LPF	-	PLL loop filter
19	HF	Servo processor → Signal processor	HF signal input
20	TLC	-	Output from slice level control
21	VSS2	-	Ground
22	C846	not connected	8,4672MHz clock output
23	C423	Signal processor → µP	4,2336MHz clock outout
24	EST2	not connected	Error monitor output2
25	EST1	not connected	Error monitor output1
26	XI	X-Tal → Signal processor	Crystal oscillator input
27	XO	Signal processor → X-Tal	Crystal oscillator output
28	DOTX	not connected	Output of digital interface
29	DO1	Signal processor → DAC	Serial data output to DAC
30	DO2	not connected	Serial data output to Dual DAC
31	CKSEL	not connected	Crystal selector input. H=8MHz, L=16MHz
32	DSCK	Signal processor → DAC	Data shift clock
33	WDCK	Signal processor → DAC	Word clock
34	LRCK1	Signal processor → DAC	Left/Right clock
35-36	not used		Left/Right clock
37	PWM1	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output1
38	PWM2	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output2
39-41	not used		
42	VSS1	GND	Digital system ground

EXPLODED VIEW DIAGRAM - TAPE DECK



EXPLODED VIEW DIAGRAM - CABINET

401	4822 459 04629	Front Panel	448	4822 492 40854	Torsion Spring
402	4822 450 10364	Lens CD (Not for -/17)	449	4822 528 40208	Drum
402	4822 450 10365	Lens CD (For -/17)	451	4822 528 80907	Pulley Pom
403	4822 450 10361	Window LCD	452	4822 450 10322	Pointer
404	4822 450 10362	Cassette Door Lens	453	4822 529 10386	Damper Rubber (30 Deg)
406	4822 443 10733	Cassette Door	456	4822 529 10322	Damper Assy
407	4822 492 42709	Spring Door	457	4822 450 10363	Lens Tuning (For -/00/05)
408	4822 459 04631	Front Cabinet Assy	457	4822 450 10359	Lens Tuning (Not for -/00/05)
409	4822 410 11243	Button Set Search	458	4822 410 11126	Knob Tuning
411	4822 410 11242	Button Set Play	459	4822 402 10724	Bracket Handle
413	4822 402 10722	Bracket LCD	462	4822 492 11418	Spring CD
414	4822 410 11239	Cassette Knob	463	4822 426 10473	Cabinet Rear
416	4822 492 11061	Spring Recording	464	4822 265 20318	Socket Main (Not for -/17)
417	4822 402 10126	Lever Recording	464	4822 265 20706	Socket Main (For -/17)
418	4822 410 11237	Button Set Shuffle	466	4822 492 51733	Spring Compression
419	4822 529 10322	Damper Assy	467	4822 492 51961	Spring Compression
422	4822 402 10784	Bracket Sound Box	468	4822 290 80313	Contact Plate
423	4822 691 10612	Tape Deck Mechanism	469	4822 443 10655	Battery Door
428	4822 529 10387	Damper Rubber (40 Deg)	471	4822 303 14038	Telescopic Aerial
429	4822 410 11124	Knob DBB		4822 321 10249	Mains Cord (For -/00/01/11)
431	4822 410 11241	Knob IS		4822 321 10886	Mains Cord (For -/05/11H)
432	4822 410 11123	Knob Mode		4822 321 10954	Mains Cord (For -/10)
434	4822 402 10723	Lever Eject		4822 321 10882	Mains Cord (For -/17)
436	4822 492 11058	Spring Eject		4822 736 15477	Instr Manual (For -/01/10/11/11H)
437	4822 418 10272	Tray CD (For -/00/05)		4822 736 15482	Instr Manual (For -/00/05)
437	4822 418 10269	Tray CD (For -/01)		4822 736 15478	Instr Manual (For -/17)
437	4822 418 10269	Tray CD (For -/10)			
437	4822 418 10269	Tray CD (For -/11/11H)			
437	4822 418 10271	Tray CD (For -/17)			
438	4822 410 11132	Knob Volume			
439	4822 410 11128	Knob Open			
441	4822 535 60096	Disc			
443	4822 532 12798	Pressure Ring Assy			
446	4822 410 11238	Knob Band			
447	4822 464 10294	Frame Tuning			

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

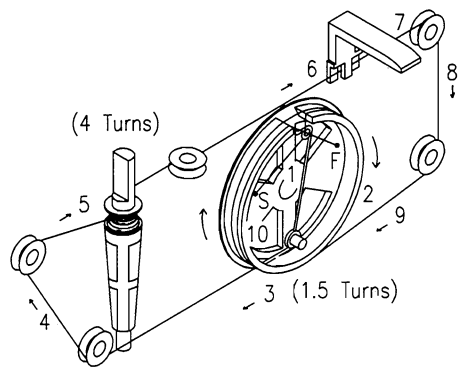
EXPLODED VIEW DIAGRAM - TAPE DECK

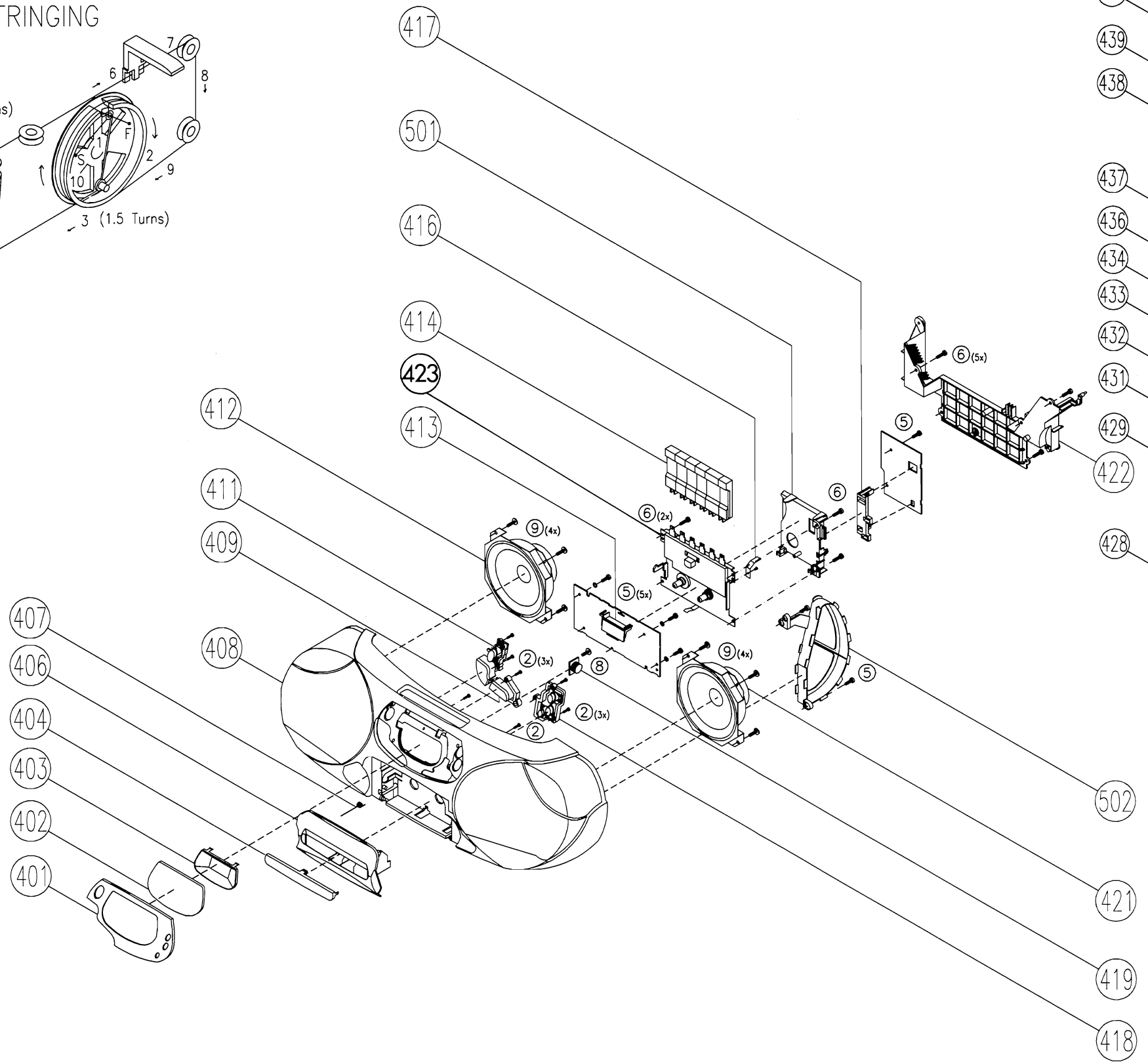
10	4822 528 70849	Pinch Roller Arm (B)	110	4822 278 90721	Leaf Switch
11	4822 528 70695	Pinch Roller Assy	111	4822 249 30218	MS18R-AKONI
74	4822 403 70968	Eject Hook (A)	112	4822 249 40306	E. Head
106	4822 358 31325	Main Belt 45.2 x 1.2	115	4822 361 21656	Motor EG-530AD-9B
107	4822 358 31124	Sub Belt 44.7 x 1.2	116	4822 528 81497	Motor Pulley

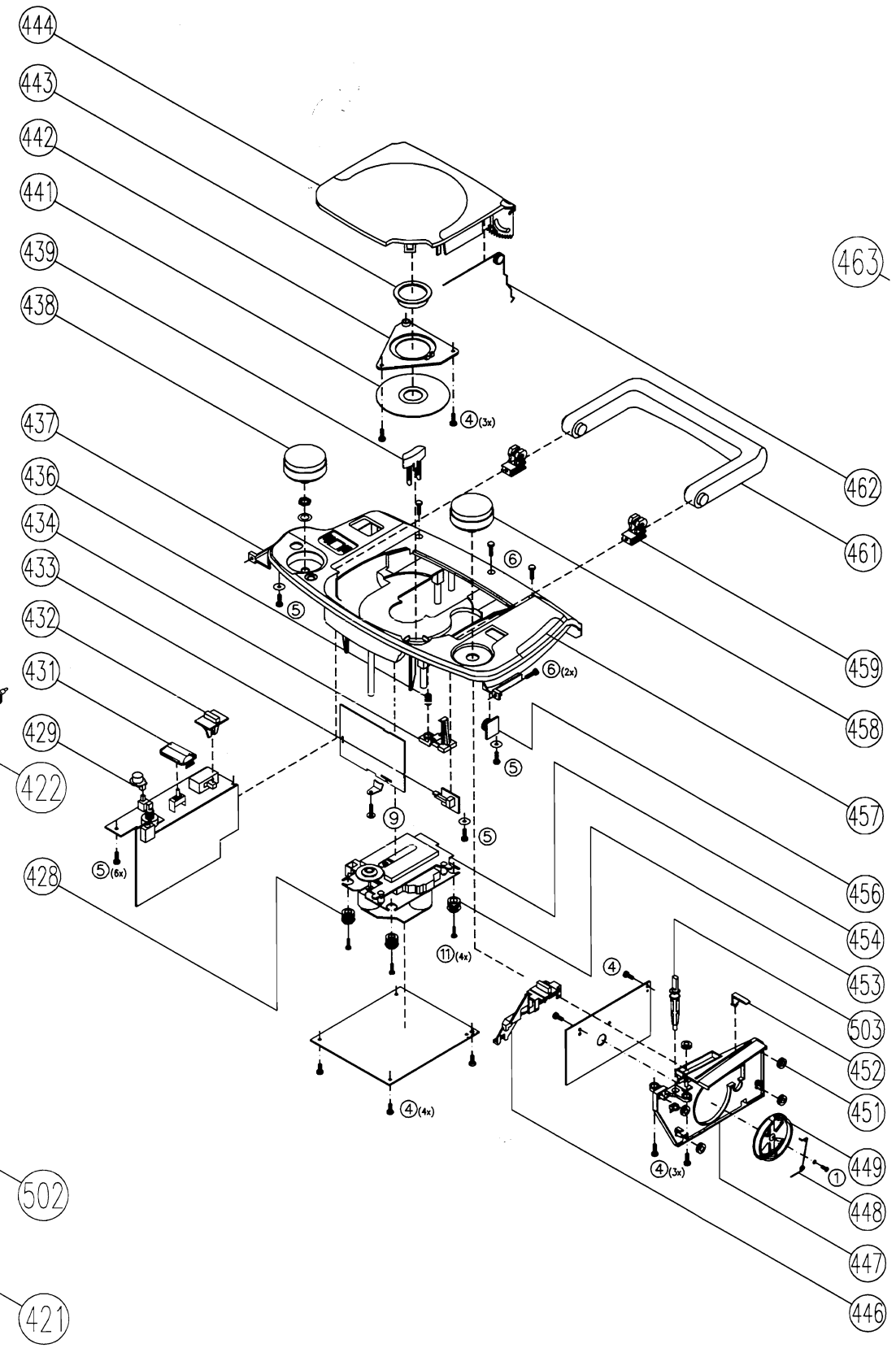
Note : Only those parts mentioned in the list are normal service parts.

EXPLODED VIEW DIAGRAM- CABINET

DIAL STRINGING







SCREW LIST :

①	M 2.6x6
②	Torx 2x8
③	Torx 2.5x10
④	Torx 3x8
⑤	Torx 3x10
⑥	Torx 3x12
⑦	Torx 3x25
⑧	Torx P/W 3x10
⑨	Torx P/W 3x12
⑩	Torx P/W 3x16
⑪	Plus P/W 2.6x10

AUDIO BOARD

2250	4822 126 13678	470µF	20% 10V
2251	4822 126 13678	470µF	20% 10V
2252	5322 121 42661	330nF	5% 63V
2253	5322 121 42661	330nF	5% 63V
2254	4822 124 11958	47µF	20% 25V
2255	4822 124 11958	47µF	20% 25V
2256	4822 124 11959	100µF	20% 10V
2257	4822 124 11959	100µF	20% 10V
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 12011	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 12012	4700µF	20% 25V
2306	4822 126 11585	22nF	+80-20% Y5V 25V
2307	4822 124 11972	220µF	20% 10V
2310	4822 124 41576	2,2µF	20% 50V
2312	4822 124 11959	100µF	20% 10V
2400	4822 126 11714	4,7nF	20% 16V
2401	4822 126 11714	4,7nF	20% 16V
2402	4822 126 11714	4,7nF	20% 16V
2403	4822 124 41596	22µF	20% 50V
2404	4822 124 41596	22µF	20% 50V
2405	4822 124 41596	22µF	20% 50V
2406	4822 124 41596	22µF	20% 50V
2407	4822 126 11714	4,7nF	20% 16V
2516	5322 121 42465	68nF	5% 63V
2517	5322 121 42465	68nF	5% 63V
2518	4822 126 12878	1,5nF	10% 16V
2519	4822 126 12878	1,5nF	10% 16V
2564	4822 124 11959	100µF	20% 10V
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
2577	4822 122 33197	1nF	10% 50V
2578	4822 122 33197	1nF	10% 50V
2579	5322 121 42386	100nF	5% 63V
2580	5322 121 42386	100nF	5% 63V

3250	4822 052 10478	4R7	5% 0,33W
3251	4822 116 83883	470R	5% 0,5W
3252	4822 116 52243	1K5	5% 0,5W
3253	4822 116 52226	560R	5% 0,5W
3254	4822 116 83883	470R	5% 0,5W
3255	4822 116 83883	470R	5% 0,5W
3256	4822 052 10478	4R7	5% 0,33W
3258	4822 116 52238	12K	5% 0,5W
3259	4822 116 52256	2K2	5% 0,5W
3302	4822 116 83872	220R	5% 0,5W
3303	4822 116 83872	220R	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

AUDIO BOARD

3411	4822 116 52244	15K	5% 0,5W
3416	4822 116 52304	82K	5% 0,5W
3516	4822 116 52269	3K3	5% 0,5W
3517	4822 116 52269	3K3	5% 0,5W
3518	4822 116 52235	1M	5% 0,5W
3519	4822 116 52235	1M	5% 0,5W
3522	4822 102 10447	Rot 50KB x 2	
3529	4822 116 83863	1K	5% 0,5W
3530	4822 116 83863	1K	5% 0,5W
3576	4822 116 83883	470R	5% 0,5W
3577	4822 116 83883	470R	5% 0,5W
3578	4822 116 52238	12K	5% 0,5W
3579	4822 116 52238	12K	5% 0,5W
3580	4822 116 83872	220R	5% 0,5W
3582	4822 116 52305	820K	5% 0,5W
3583	4822 116 52305	820K	5% 0,5W
3584	4822 116 52243	1K5	5% 0,5W
3585	4822 116 52243	1K5	5% 0,5W
3586	4822 116 52228	680R	5% 0,5W
3587	4822 116 52228	680R	5% 0,5W
3588	4822 116 52283	4K7	5% 0,5W
3589	4822 116 52283	4K7	5% 0,5W
3590	4822 116 52244	15K	5% 0,5W
3591	4822 116 52244	15K	5% 0,5W
3595	4822 116 83961	6K8	5% 0,5W
3596	4822 116 83961	6K8	5% 0,5W
3597	4822 116 52238	12K	5% 0,5W
3598	4822 116 52238	12K	5% 0,5W
3599	4822 116 52283	4K7	5% 0,5W
3600	4822 116 52283	4K7	5% 0,5W
3610	4822 116 83864	10K	5% 0,5W
3611	4822 116 83864	10K	5% 0,5W
3620	4822 116 52219	330R	5% 0,5W
3621	4822 116 52219	330R	5% 0,5W
3660	4822 116 83864	10K	5% 0,5W
3661	4822 116 83864	10K	5% 0,5W

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	4822 130 32806	BZX79-F3V3
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

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
7254	4822 130 41327	Trans BC327-40
7300	4822 209 31544	IC TA8227P
7400	5322 130 44779	Trans BC338-40
7401	5322 130 44779	Trans BC338-40
7415	4822 130 44503	Trans BC547C
7513	4822 130 44503	Trans BC547C
7514	4822 130 44503	Trans BC547C

- MISCELLANEOUS -

1006	4822 240 10248	Loudspeaker 6W
1007	4822 240 10248	Loudspeaker 6W
1008 ⚠	4822 146 10825	Transf (For -/00/0510)
1008 ⚠	4822 146 10821	Transf (For -/01)
1008 ⚠	4822 146 10821	Transf (For -/11/11H)

AUDIO BOARD

- MISCELLANEOUS

1008 ⚠	4822 146	
1257	4822 267	
1301 ⚠	4822 277	
1301 ⚠	4822 277	
1302 ⚠	4822 070	
1400	4822 277	
1503	4822 276	
1507	4822 277	
1800	4822 276	
	4822 280	
	4822 280	

Note : Only those pa
normal servic

AUDIO BOARD

%	50V	3411	4822 116 52244	15K 5% 0,5W	
	50V	3416	4822 116 52304	82K 5% 0,5W	
	50V	3516	4822 116 52269	3K3 5% 0,5W	
	63V	3517	4822 116 52269	3K3 5% 0,5W	
	63V	3518	4822 116 52235	1M 5% 0,5W	
	50V	3519	4822 116 52235	1M 5% 0,5W	
	50V	3522	4822 102 10447	Rot 50KB x 2	
	50V	3529	4822 116 83863	1K 5% 0,5W	
	50V	3530	4822 116 83863	1K 5% 0,5W	
	63V	3576	4822 116 83883	470R 5% 0,5W	
	63V	3577	4822 116 83883	470R 5% 0,5W	
		3578	4822 116 52238	12K 5% 0,5W	
		3579	4822 116 52238	12K 5% 0,5W	
		3580	4822 116 83872	220R 5% 0,5W	
		3582	4822 116 52305	820K 5% 0,5W	
0,33W		3583	4822 116 52305	820K 5% 0,5W	
0,5W		3584	4822 116 52243	1K5 5% 0,5W	
0,5W		3585	4822 116 52243	1K5 5% 0,5W	
0,5W		3586	4822 116 52228	680R 5% 0,5W	
0,5W		3587	4822 116 52228	680R 5% 0,5W	
0,5W		3588	4822 116 52283	4K7 5% 0,5W	
0,33W		3589	4822 116 52283	4K7 5% 0,5W	
0,5W		3590	4822 116 52244	15K 5% 0,5W	
0,5W		3591	4822 116 52244	15K 5% 0,5W	
0,5W		3595	4822 116 83961	6K8 5% 0,5W	
0,5W		3596	4822 116 83961	6K8 5% 0,5W	
0,5W		3597	4822 116 52238	12K 5% 0,5W	
0,5W		3598	4822 116 52238	12K 5% 0,5W	
0,5W		3599	4822 116 52283	4K7 5% 0,5W	
0,5W		3600	4822 116 52283	4K7 5% 0,5W	
0,5W		3610	4822 116 83864	10K 5% 0,5W	
0,5W		3611	4822 116 83864	10K 5% 0,5W	
0,5W		3620	4822 116 52219	330R 5% 0,5W	
0,5W		3621	4822 116 52219	330R 5% 0,5W	
0,5W		3660	4822 116 83864	10K 5% 0,5W	
0,5W		3661	4822 116 83864	10K 5% 0,5W	
0,5W					
0,5W					
0,5W					
0,5W					

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	4822 130 32806	BZX79-F3V3	
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	
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	
7254	4822 130 41327	Trans BC327-40	
7300	4822 209 31544	IC TA8227P	
7400	5322 130 44779	Trans BC338-40	
7401	5322 130 44779	Trans BC338-40	
7415	4822 130 44503	Trans BC547C	
7513	4822 130 44503	Trans BC547C	
7514	4822 130 44503	Trans BC547C	

- MISCELLANEOUS -

1006		4822 240 10248	Loudspeaker 6W
1007		4822 240 10248	Loudspeaker 6W
1008	⚠	4822 146 10825	Transf (For -/00/0510)
1008	⚠	4822 146 10821	Transf (For -/01)
1008	⚠	4822 146 10821	Transf (For -/11/11H)

AUDIO BOARD

- MISCELLANEOUS -

1008	⚠	4822 146 10822	Transf (For -/17)
1257		4822 267 31468	Phone Socket 3.5mm
1301	⚠	4822 277 21794	Volt Sel (For -/01)
1301	⚠	4822 277 21794	Volt Sel (For -/11/11H)
1302	⚠	4822 070 32002	Fuse 2A
1400		4822 277 30689	Slide Switch
1503		4822 276 12648	Push Switch
1507		4822 277 21698	Slide Switch
1800		4822 276 13625	Push Switch
		4822 280 10336	Loudspeaker Piezo
		4822 280 10336	Loudspeaker Piezo

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

TAPE DECK

2630	4822 126 13678	470µF 10V
2631	4822 124 41596	22µF 20% 50V
2632	4822 124 40242	1µF 20% 63V
2633	4822 124 40242	1µF 20% 63V
2634	4822 126 12878	1,5nF 10% 16V
2635	4822 126 12878	1,5nF 10% 16V
2636	5322 122 32311	470pF 10% 100V
2637	5322 122 32311	470pF 10% 100V
2638	4822 124 11958	47µF 20% 25V
2639	4822 124 11958	47µF 20% 25V
2640	4822 126 12787	330pF 10% Y5V 50V
2641	4822 126 12787	330pF 10% Y5V 50V
2642	4822 121 51304	10nF 10% 50V
2643	4822 121 51304	10nF 10% 50V
2644	4822 126 12339	2,2nF 10% Y5R
2645	4822 126 12339	2,2nF 10% Y5R
2646	5322 121 42386	100nF 5% 63V
2647	5322 121 42386	100nF 5% 63V
2648	4822 126 11167	22nF 20% 50V
2649	4822 126 11167	22nF 20% 50V
2650	4822 124 11958	47µF 20% 25V
2651	4822 124 11958	47µF 20% 25V
2652	4822 122 33197	1nF 10% 50V
2653	4822 122 33197	1nF 10% 50V
2654	4822 124 41596	22µF 20% 50V
2655	4822 122 33197	1nF 10% 50V
2656	4822 124 40242	1µF 20% 63V
2657	4822 121 51304	10nF 10% 50V
2658	4822 126 11714	4,7nF 20%
2659	4822 126 12147	22nF 10% Y5R 25V

3630	4822 116 83872	220R 5% 0,5W
3632	4822 116 83883	470R 5% 0,5W
3633	4822 116 83883	470R 5% 0,5W
3634	4822 116 83883	470R 5% 0,5W
3635	4822 116 83883	470R 5% 0,5W
3636	4822 116 52197	56R 5% 0,5W
3637	4822 116 52197	56R 5% 0,5W
3638	4822 116 52271	33K 5% 0,5W
3639	4822 116 52271	33K 5% 0,5W
3640	4822 116 83961	6K8 5%
3641	4822 116 83961	6K8 5%
3642	4822 116 52252	180K 5% 0,5W
3643	4822 116 52252	180K 5% 0,5W
3644	4822 116 83864	10K 5% 0,5W
3645	4822 116 83864	10K 5% 0,5W
3646	4822 116 52244	15K 5% 0,5W
3647	4822 116 52244	15K 5% 0,5W
3648	4822 116 52238	12K 5% 0,5W
3649	4822 116 52238	12K 5% 0,5W
3650	4822 111 30893	4M7 5% 0,2W
3651	4822 116 52245	150K 5% 0,5W
3652	4822 116 52219	330R 5% 0,5W
3653	4822 116 52219	330R 5% 0,5W
3654	4822 116 52289	5K6 5% 0,5W
3655	4822 116 52289	5K6 5% 0,5W
3656	4822 116 83864	10K 5% 0,5W
3657	4822 116 52206	120R 5% 0,5W
3658	4822 116 52176	10R 5% 0,5W
3659	4822 116 52291	56K 5% 0,5W

5630	4822 156 20946	Osc Coil 100 KHz

7630	4822 130 40959	Trans BC547B
7700	4822 209 32918	IC AN7318S

- MISCELLANEOUS -

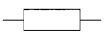
1640	4822 277 11504	Push Switch

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

INCREDIBLE SOUND BOARD

2550	4822 126 11714	4,7nF 20%
2551	4822 126 11714	4,7nF 20%
2552	4822 122 10466	220pF 10% 50V
2553	4822 122 10466	220pF 10% 50V
2554	4822 122 33848	47pF 5% SL 50V
2555	4822 122 33848	47pF 5% SL 50V
2556	4822 122 33848	47pF 5% SL 50V
2557	4822 122 33848	47pF 5% SL 50V
2558	4822 122 33848	47pF 5% SL 50V
2559	4822 122 33848	47pF 5% SL 50V
2560	4822 121 51379	82nF 5% 63V
2561	4822 121 51379	82nF 5% 63V
2562	4822 121 51387	10nF 20% 16V
2563	4822 121 51387	10nF 20% 16V
2564	4822 124 40246	4,7µF 20% 63V
2565	4822 124 40246	4,7µF 20% 63V
2566	4822 126 12339	2,2nF 10% Y5R
2567	4822 126 12339	2,2nF 10% Y5R
2568	4822 124 11958	47µF 20% 25V
2569	4822 124 11958	47µF 20% 25V

3550	4822 116 52234	100K 5% 0,5W
3551	4822 116 52234	100K 5% 0,5W
3552	4822 116 52234	100K 5% 0,5W
3553	4822 116 52234	100K 5% 0,5W
3554	4822 116 83878	270K 5% 0,5W
3555	4822 116 83878	270K 5% 0,5W
3556	4822 116 52234	100K 5% 0,5W
3557	4822 116 52234	100K 5% 0,5W
3558	4822 116 83884	47K 5% 0,5W
3559	4822 116 83884	47K 5% 0,5W
3560	4822 116 52291	56K 5% 0,5W
3561	4822 116 52291	56K 5% 0,5W
3562	4822 116 52245	150K 5% 0,5W
3563	4822 116 52245	150K 5% 0,5W
3564	4822 116 52234	100K 5% 0,5W



3565	4822 116 52234	100K 5% 0,5W
3566	4822 116 83863	1K 5% 0,5W
3567	4822 116 83863	1K 5% 0,5W
3568	4822 116 83863	1K 5% 0,5W
3569	4822 116 83863	1K 5% 0,5W
3570	4822 116 52234	100K 5% 0,5W
3571	4822 116 52234	100K 5% 0,5W
3572	4822 116 52256	2K2 5% 0,5W
3573	4822 116 52256	2K2 5% 0,5W
3574	4822 116 52222	390R 5% 0,5W
3575	4822 116 52222	390R 5% 0,5W
3576	4822 116 52304	82K 5% 0,5W
3577	4822 116 52304	82K 5% 0,5W
3578	4822 116 52257	22K 5% 0,5W
3579	4822 116 52257	22K 5% 0,5W
3580	4822 116 83864	10K 5% 0,5W
3581	4822 116 83864	10K 5% 0,5W
3582	4822 116 52283	4K7 5% 0,5W
3583	4822 116 52283	4K7 5% 0,5W
3584	4822 116 52175	100K 5% 0,5W

7550	4822 209 63709	IC LM324DTR

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

CD 97

2802	4822 126 12785	47nF +80-20% 50V
2803	4822 126 11585	47nF +80-20% 50V
2804	4822 126 12878	1,5nF 10% 16V
2805	4822 121 51412	560nF 10% 50V
2806	4822 122 33519	470pF 10% 50V
2807	4822 122 33191	18pF 5% 50V
2808	4822 124 22263	220µF 20% 25V
2809	4822 124 40242	1µF 20% 50V
2810	4822 124 40242	1µF 20% 50V
2811	4822 122 33849	150pF 10% 50V
2812	4822 122 33849	150pF 10% 50V
2813	4822 126 12339	2,2nF 10% 16V
2814	4822 126 13677	39pF 5% 50V
2815	4822 126 12882	100nF 8.2% 50V
2816	4822 124 41407	0,47µF 20% 50V
2817	4822 121 42687	3,3nF 10% 50V
2818	4822 124 40242	1µF 20% 50V
2819	5322 121 42386	100nF 10% 50V
2820	4822 124 40746	0,22µF 20% 50V
2821	4822 124 41579	10µF 20% 50V
2822	4822 122 10167	22nF 30% 50V
2823	4822 124 40246	4,7µF 20% 50V
2824	4822 124 41407	0,47µF 20% 50V
2825	4822 122 10462	15pF 5% NP0
2826	4822 124 41407	0,47µF 20% 50V
2827	4822 124 40433	47µF 20% 25V
2828	4822 124 41579	10µF 20% 50V
2829	5322 121 42489	33nF 10% 50V
2830	4822 122 10319	82pF 10% 50V
2831	4822 121 41856	22nF 10% 50V
2832	4822 124 41576	2,2µF 20% 50V
2833	4822 124 40433	47µF 20% 25V
2834	4822 126 12882	100nF +80-20% 50V
2835	4822 126 12882	100nF +80-20% 50V
2836	4822 124 80791	470µF 20% 16V
2837	4822 126 11585	22nF +80-20% 25V
2838	4822 126 12882	100nF +80-20% 50V
2839	4822 126 12882	100nF +80-20% 50V
2841	4822 122 33195	100pF 10% 50V
2842	4822 124 40849	330µF 20% 16V

2843	4822 126 13098	5,6nF 20% 16V
2844	4822 122 10466	220pF 10% 50V
2846	4822 122 33519	470pF 10% 50V
2848	4822 122 33519	470pF 10% 50V
2849	4822 122 10466	220pF 10% 50V
2860	4822 124 40433	47µF 20% 25V

3801	4822 052 10478	4R7 5% 0,33W
3802	4822 116 52252	180K 5% 0,16W
3803	4822 111 50499	3M3 5%
3805	4822 116 83884	47K 5% 0,16W
3806	4822 116 52256	2K2 5% 0,16W
3807	4822 116 52271	33K 5% 0,16W
3808	4822 116 52263	2K7 5% 0,16W
3809	4822 116 83884	47K 5% 0,16W
3810	4822 116 52257	22K 5% 0,16W
3811	4822 116 52257	22K 5% 0,16W
3812	4822 116 52257	22K 5% 0,16W
3815	4822 050 11002	1K 5% 0,16W
3816	4822 050 11002	1K 5% 0,16W
3817	4822 116 83883	470R 5% 0,16W
3818	4822 116 83883	470R 5% 0,16W
3819	4822 117 11825	1M5 5%
3820	4822 116 52252	180K 5% 0,16W
3821	4822 116 52243	1K5 5% 0,16W
3822	4822 116 52264	27K 5% 0,16W
3823	4822 116 52234	100K 5% 0,16W
3824	4822 116 83868	150R 5% 0,16W
3826	4822 116 83961	6K8 5% 0,16W
3827	4822 116 52243	1K5 5% 0,16W
3828	4822 116 83864	10K 5% 0,16W
3829	4822 116 52271	33K 5% 0,16W
3830	4822 116 52244	15K 5% 0,16W
3831	4822 116 52251	18K 5% 0,16W
3832	4822 116 52222	390R 5% 0,16W
3833	4822 116 52264	27K 5% 0,16W
3835	4822 116 52184	18R 5% 0,16W

CD

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CD 97

3836	4822 050 11002	1K 5% 0,16W
3837	4822 111 30893	4M7 5%
3838	4822 11652234	100K 5% 0,16W
3839	4822 116 52235	1M 5% 0,16W
3840	4822 050 11002	1K 5% 0,16W
3841	4822 116 52298	680K 5% 0,16W
3842	4822 116 52297	68K 5% 0,16W
3844	4822 116 52291	56K 5% 0,16W
3845	4822 116 52298	680K 5% 0,16W
3846	4822 050 11002	1K 5% 0,16W
3847	4822 116 52298	680K 5% 0,16W
3848	4822 116 52251	18K 5% 0,16W
3849	4822 052 10478	4R7 5%
3850	4822 116 52251	18K 5% 0,16W
3851	4822 116 52244	15K 5% 0,16W
3852	4822 116 83883	470R 5% 0,16W
3853	4822 116 52251	18K 5% 0,16W
3854	4822 116 52243	1K5 5% 0,16W
3855	4822 116 83882	29K 5% 0,16W
3856	4822 116 52303	8K2 5% 0,16W
3857	4822 116 52269	3K3 5% 0,16W
3858	4822 116 80176	1R 5% 0,16W
3859	4822 116 83864	10K 5% 0,16W
3860	4822 116 52207	1K2 5% 0,16W
3870	4822 052 10478	4R7 5%
3871	4822 116 52283	4K7 5% 0,5W
3880	4822 050 11002	1K 5% 0,16W
3881	4822 050 11002	1K 5% 0,16W
3882	4822 050 11002	1K 5% 0,16W
3883	4822 050 11002	1K 5% 0,16W
3884	4822 116 83882	39K 5% 0,16W
3886	4822 116 52235	1M 5% 0,16W
3890	4822 050 11002	1K 5% 0,16W
3891	4822 050 11002	1K 5% 0,16W
3892	4822 050 11002	1K 5% 0,16W
3893	4822 050 11002	1K 5% 0,16W
3894	4822 050 11002	1K 5% 0,16W
3895	4822 050 11002	1K 5% 0,16W
3896	4822 116 52256	2K2 5% 0,16W
3897	4822 116 52256	2K2 5% 0,16W
3898	4822 116 52256	2K2 5% 0,16W
3899	4822 050 11002	1K 5% 0,16W

5000	4822 526 10494	Ind Fxd 100MHz
5010	4822 526 10494	Ind Fxd 100MHz
5020	4822 526 10494	Ind Fxd 100MHz
5030	4822 526 10494	Ind Fxd 100MHz
5040	4822 526 10494	Ind Fxd 100MHz
5050	4822 526 10494	Ind Fxd 100MHz
5060	4822 157 50964	Coil 100µH 15%
5803	4822 242 73557	Filter 8MHz467

6001	4822 130 30621	Diode 1N4148

7801	4822 209 13703	IC M65821FP
7802	4822 209 32421	IC TDA1311A
7803	4822 209 90496	IC M62475FP
7804	5322 130 60068	Trans BC558C
7805	4822 209 32852	IC TDA7073A
7806	4822 209 32852	IC TDA7073A

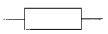
- MISCELLANEOUS -

1802	4822 265 10925	Connector
8000	4822 265 10926	Connector

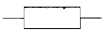
Note : Only those parts mentioned in the list are normal service parts.

FRONT BOARD

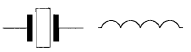
2401	4822 124 11959	100µF 20% 10V
2402	4822 124 40242	1µF 20% 63V
2464	4822 122 10466	220pF 10% 50V
2465	4822 122 10466	220pF 10% 50V



3401	4822 116 52175	100R 5% 0,5W
3402	4822 116 52234	100K 5% 0,5W
3403	4822 116 52244	15K 5% 0,5W
3404	4822 116 83883	470R 5% 0,5W
3405	4822 116 52238	12K 5% 0,5W
3406	4822 116 52276	3K9 5% 0,5W
3407	4822 116 52243	1K5 5% 0,5W
3408	4822 116 52226	560R 5% 0,5W
3410	4822 116 83961	6K8 5% 0,5W
3411	4822 116 52238	12K 5% 0,5W
3412	4822 116 52257	22K 5% 0,5W
3414	4822 116 83961	6K8 5% 0,5W
3415	4822 116 52238	12K 5% 0,5W
3416	4822 116 52257	22K 5% 0,5W
3451	4822 116 52283	4K7 5% 0,5W
3452	4822 116 52283	4K7 5% 0,5W
3453	4822 116 52283	4K7 5% 0,5W
3454	4822 116 52283	4K7 5% 0,5W
3455	4822 116 52283	4K7 5% 0,5W
3456	4822 116 52283	4K7 5% 0,5W
3457	4822 116 52283	4K7 5% 0,5W
3458	4822 116 52283	4K7 5% 0,5W
3459	4822 116 52283	4K7 5% 0,5W
3460	4822 116 52283	4K7 5% 0,5W
3461	4822 116 52269	3K3 5% 0,5W
3462	4822 116 52243	1K5 5% 0,5W
3463	4822 116 52283	4K7 5% 0,5W
3464	4822 116 52283	4K7 5% 0,5W
3465	4822 116 52283	4K7 5% 0,5W
3466	4822 116 52243	1K5 5% 0,5W
3467	4822 116 52243	1K5 5% 0,5W
3468	4822 116 52283	4K7 5% 0,5W
3469	4822 116 52231	820R 5% 0,5W
3470	4822 116 52231	820R 5% 0,5W
3471	4822 116 52283	4K7 5% 0,5W

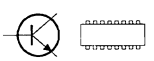


3472	4822 116 52231	820R 5% 0,5W
3473	4822 116 52269	3K3 5% 0,5W
3474	4822 116 52283	4K7 5% 0,5W
3475	4822 116 52283	4K7 5% 0,5W
3479	4822 116 52283	4K7 5% 0,5W
3480	4822 116 52257	22K 5% 0,5W
3481	4822 116 52257	22K 5% 0,5W
3482	4822 116 52257	22K 5% 0,5W
3483	4822 116 52257	22K 5% 0,5W
3484	4822 116 52264	27K 5% 0,5W
3485	4822 116 52264	27K 5% 0,5W



5401	4822 242 73769	Filter CST4,19MGW
5402	4822 156 21721	Inductor 2,2µH 10%
5403	4822 157 52333	Inductor 100µH 10%

6402	4822 130 30621	Diode 1N4148
6403	4822 130 30621	Diode 1N4148
6404	4822 130 31554	Diode BZX79-B4V3



7401	4822 209 15568	IC TMP47C422F
7402	4822 130 44503	Trans BC547C
7403	4822 130 40959	Trans BC547B

- MISCELLANEOUS -

1401	4822 135 00124	LCD Display
1410	4822 276 13114	Tact Switch
1411	4822 276 13114	Tact Switch
1412	4822 276 13114	Tact Switch
1413	4822 276 13114	Tact Switch
1415	4822 276 13114	Tact Switch
1416	4822 276 13114	Tact Switch
1417	4822 276 13114	Tact Switch

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

ATM 3

2101		4822 122 33195	100pF 10% 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 12112	22pF 5% N220 50V
2106		4822 125 50681	Var Capacitor
2108		4822 122 32147	22pF 2% N470 100V
2109		4822 122 31821	3,3pF 0,25% 100V
2110		4822 126 12284	5,6pF 0,5% N1500 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
2116		4822 126 12147	22nF 10% Y5R 25V
2117		4822 124 40242	1µF 20% 63V
2118		4822 124 40242	1µF 20% 63V
2119		4822 126 12077	15nF 10% 25V
2119		4822 126 12147	22nF 10% Y5R 25V
2120		4822 124 40242	1µF 20% 63V
2121		4822 124 40239	0,47µF 20% 63V
2122		4822 124 40239	0,47µF 20% 63V
2125	β	4822 126 12826	120pF 50% N750 50V
2126	β	4822 125 50045	1p8-22p 250V
2150	β	4822 125 50045	1p8-22p 250V

3101		4822 100 20167	50K 30% 0,1W
3102		4822 116 52297	68K 5% 0,5W
3104		4822 116 52256	2K2 5% 0,5W
3108		4822 116 52191	33R 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
3111	α	4822 116 83863	1K 5% 0,5W
3113		4822 116 52252	180K 5% 0,5W

5101		4822 157 70513	FM-RF Coil
5101		4822 157 53789	FM-RF Coil
5104		4822 156 30947	FM-Osc Coil
5105		4822 157 71145	Coil 270µH
5106		4822 157 70499	AM-IF Filter 468KHz
5107		4822 242 81154	Filter KMFC5058-Z
5108		4822 156 11146	AM-IF Filter 468KHz
5109	β	4822 157 71144	Coil 280µH
5111		4822 156 21738	Coil F7BRS-12645X
5112	β	4822 156 21739	Coil F126ANS-8402Y

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

7101		4822 209 32746	IC TEA5711T/N2

- MISCELLANEOUS -

1100	β	4822 277 30933	Switch FM/LW/MW
1101	α	4822 277 21698	Switch FM/AM

α for FM/MW only
β for FM/MW/LW only

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