CD Clock Radio

AJ3970

MCR220BK

all versions

Service
Service
Service

Service Manual

ReWritable CD COMPATIBLE COMPACT disc DIGITAL AUDIO

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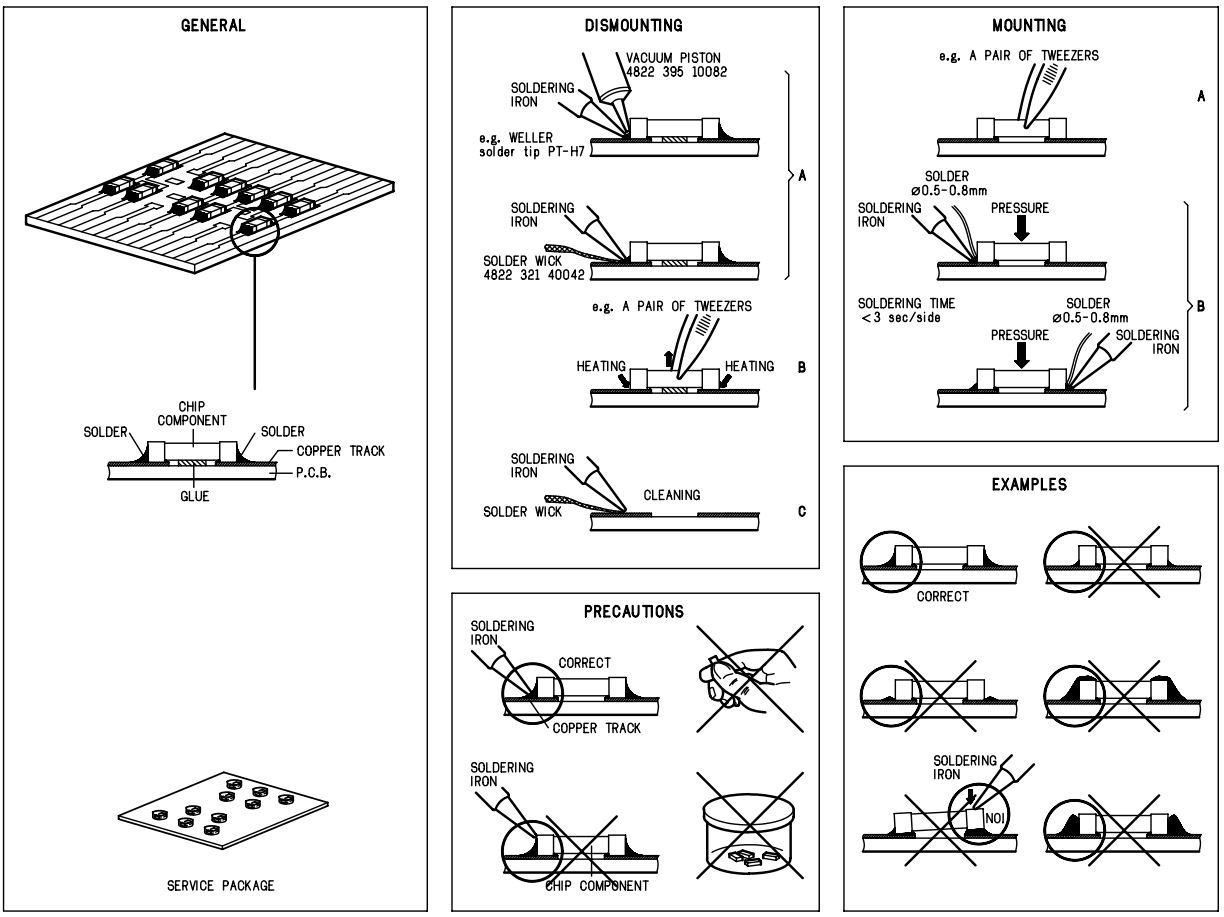
CLASS 1
LASER PRODUCT

Published by LX 0222 Service Audio Printed in The Netherlands Subject to modification

GB 3140 785 22940

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 wristband with resistance. Keep components and tools at this potential.

ESD

(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 weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(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.

(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, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(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.

SAFETY

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

(F)
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.
Les composants de sécurité sont marqués ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

CLASS 1 LASER PRODUCT

(GB) **DANGER**: Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

(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.

(FIN) 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 agréés, seuls habilités à réparer votre appareil en panne".

TECHNICAL SPECIFICATION

GENERAL

Mains voltage	-/00	:	230 V
	-/05	:	240V
	-/17	:	120 V
Mains frequency	-/00/05	:	50 Hz
	-/17	:	60 Hz
Power consumption	Max.	:	< 15 W
	Standby	:	< 5 W
Dimension (W x H x D)		:	326.5 x 75 x 190 mm
Weight		:	1.3 Kg

AMPLIFIER

Output power	:	2 x 0.8 W
Speaker impedance	:	2 x 8 ohm
Frequency response	:	100 Hz - 10 kHz (±3dB)

COMPACT DISC

Frequency response		:	100 Hz - 10 kHz ± 2dB
S/N ratio		:	60 dB
Channel difference	1 kHz	:	2 dB
Channel crosstalk	1 kHz	:	40 dB
Laser wavelength		:	780 ± 20 nm
Laser light power		:	< 0.5mW

TUNER - FM SECTION

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

TUNER - AM SECTION

Tuning range	MW	:	525 - 1602 kHz
	-/17	:	530 - 1710 kHz
IF frequency		:	468 kHz ± 1 kHz
Sensitivity	MW	:	4000 µV/m at 26dB S/N
Selectivity	MW	:	16 dB
IF rejection	MW	:	24 dB
Image rejection	MW	:	28 dB

SERVICE TOOLS

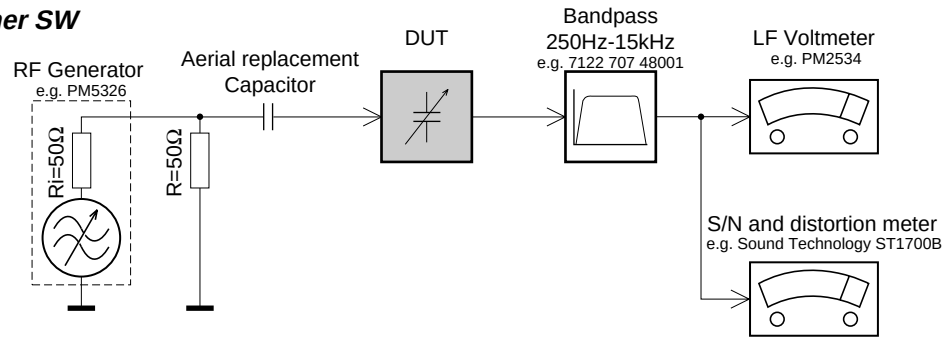
Audio signal disc SBC 429.....4822 397 30184
Playability test disc SBC 444.....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A.....4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without “pause”).....4822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

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25m	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1MΩ)		4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)		4822 320 11306
earth cable (1MΩ, to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

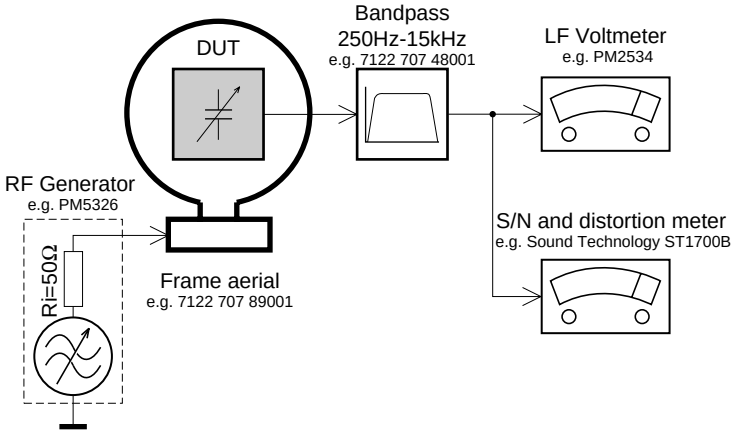
SERVICE MEASUREMENT

Tuner SW



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday«s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

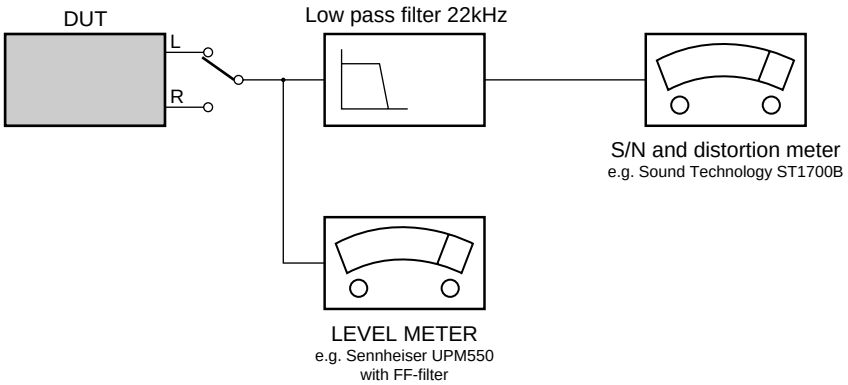
Tuner AM (MW,LW)

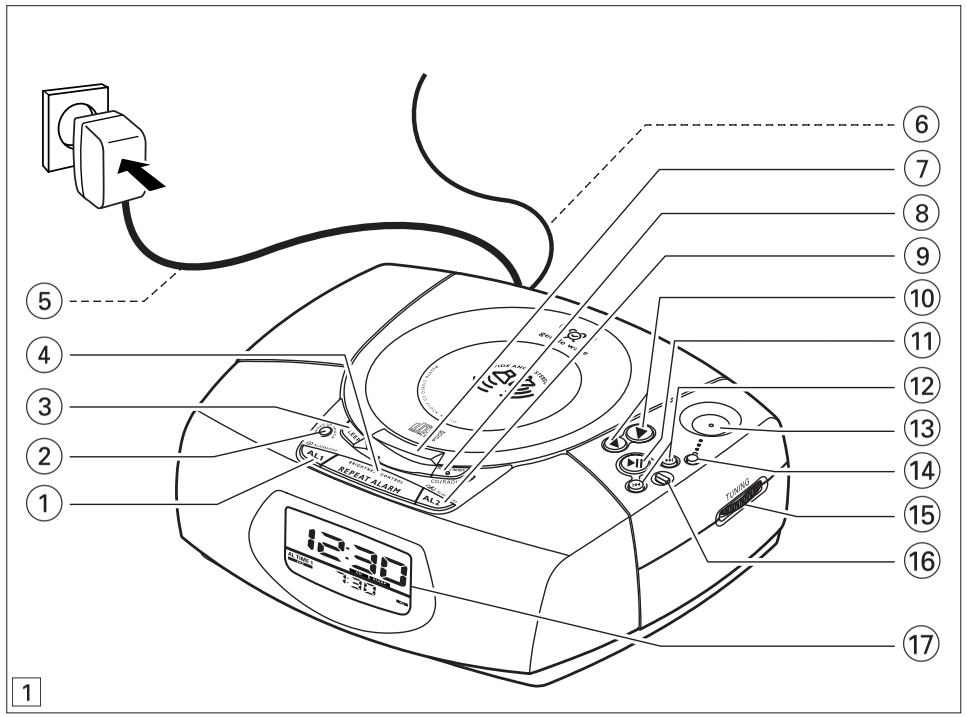


To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday«s cage.

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13 th order filter 4822 395 30204





CONTROLS (see figure 1)

① **AL 1 (ALARM/ OFF)**
- selects CD alarm;
- to cancel or switch off CD alarm.

② **WAKE-UP TRACK**
- to program to your favorite CD track for wake-up track alarm option.

③ **SLEEP**
- adjusts timer options for CD / radio;
- switch on radio for timer mode.

④ **REPEAT ALARM/ BRIGHTNESS CONTROL**
-changes the brightness of the display window;
-switches off the alarm for a 9 minute period;
-switches off radio / CD timer (SLEEP).

⑤ **Power cord**
-connect AC-DC adapter plug to wall outlet.

⑥ **Coil antenna**
-antenna to improve FM reception.

⑦ **CD door**
- lift here to open / close CD door

⑧ **ALARM RESET (CD/ RADIO OFF)**
- stops CD / radio playback;
- switches off radio / CD timer (SLEEP);
- stops the active buzzer, radio or CD alarms for 24 hours.

⑨ **AL 2 (ALARM/ OFF)**
- selects radio / buzzer alarm mode;
- to cancel or switch off radio / buzzer alarm.

⑩ **VOLUME ▲, ▼**
- adjusts the sound level.

⑪ **PLAY / PAUSE ⏯**
- starts / pauses CD playback.

⑫ **DOWN, UP ⏮, ⏭**
- adjusts clock / alarm times
- skips CD tracks / searches for a particular passage.

⑬ **Tuning indicator**
- shows the radio frequency of your selected waveband.

⑭ **RADIO ON (FM/ AM)**
- switches on the radio;
- selects the radio waveband.

⑮ **TUNING**
- tunes to a radio station.

⑯ **TIME/ ALARM**
- toggle to set the times for the clock time, or alarm 1 or 2.

⑰ **Display**
- shows the clock / alarm times and status of the unit.

POWER SUPPLY

1. Check if the power voltage, shown on the AC-DC adapter plug, corresponds to your local power supply. If it does not, consult your dealer or service center.
2. Connect the AC-DC adapter plug to the wall outlet.
3. To disconnect the set completely from the power supply, withdraw the AC-DC adapter plug from the wall outlet.

The serial and production number are located on the bottom of the set.

Standby power consumption (clock mode)**.....2W**

MEMORY BACKUP

The memory backup conveniently allows your clock and alarm time settings to be stored for up to 3 minutes when there is a power interruption e.g. AC power failure.
The complete CD clock radio and lighted display will be switched off. As soon as the power supply returns, the display will indicate the correct time.

- If power supply returns after 3 minutes you will need to re-enter the clock and alarm time settings.

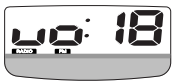
BASIC FEATURES

Display brightness

1. Toggle **REPEAT ALARM/ BRIGHTNESS CONTROL.**
   →The brightness of the display toggles between:
   low → bright → low

Volume

Press ▼ or ▲ to adjust the volume level. The volume level ⊔⊙: is indicated as a number from 0-32.



SETTING THE CLOCK AND ALARM TIMES

The time is displayed using the 12 hour clock (**PM indicator** lights up = PM, off = AM).

1. Press and hold down **TIME/ ALARM** until the clock or alarm time display flashes, then release **TIME/ ALARM**.

- Press **TIME/ ALARM** repeatedly to toggle between the time or alarm displays

2. Press and hold down ⏮ / ⏭ to fast adjust both the hours and minutes settings.
3. Release ⏮ / ⏭ when you have reached the desired setting.
   →If you need to adjust the time slowly, minute by minute, press and release ⏮ / ⏭ repeatedly.

   →After several seconds, the time setting is confirmed when the display stops flashing.
4. Repeat steps 1-3 for each of the clock or alarm (**AL1, AL2**) settings.

Alarm time display
If you have set both alarms, the standby alarm time display will show the earlier of the two alarm times as priority.
E.g. if **AL1** = 6:00 and **AL2** = 5:45, then the standby alarm display will show the **AL2** time 5:45.

CD PLAYBACK

1. Insert a CD with the printed side facing up, and close the door.
2. Press **PLAY/ PAUSE ⏯** to start playback.
   →Display shows:
   'Cd: - - ' and the total number of tracks, then your current track number, before returning to clock time.

   Other possible CD indications before returning to clock time:
   →door is shown if the CD door is not closed.
   →noCd is shown if no CD has been inserted / inserted incorrectly.
   →nFCd is shown if the CD-R(W) is non-finalized
   →Err indicates a general error in operation of the set.
3. Adjust the sound with ▼ or ▲.
4. To interrupt, press ⏯
   →CD icon flashes.
5. Press ⏯ again to resume playback.
6. Press **ALARM RESET** to stop playback.

Note: *If CD playback is paused for more than 15 minutes and no controls are pressed, the set automatically goes to standby mode.*

Selecting a different track during playback

The track number appears briefly in the display when you press ⏮ or ⏭ to skip tracks.

- Press ⏭ once or more to skip to the next track(s).
- Press ⏮ once and playback will return to the beginning of the current track.
- Press ⏮ more than once to skip to previous tracks.

Finding a passage within a track

1. During playback, press and hold down ⏮ or ⏭
   —►The CD is played at high speed and low volume; the display will show 'CD:' and your current track number.
2. Release ⏮ or ⏭ when you recognize the passage you want.
   —►Normal CD playback and standby clock time resumes.

RADIO

1. Press **RADIO ON (FM/ AM)** to switch on the radio.
   —►Display shows 'tU' before returning to clock time.
2. Press **RADIO ON (FM/ AM)** again if you wish to change waveband.
3. Adjust the sound using ▼ or ▲
4. Adjust the **TUNING** wheel to tune to a radio station.

To improve reception:

FM: Extend coil antenna at the back of the unit fully for optimum reception.

AM: Uses a built-in antenna. Direct the antenna by adjusting the position of your set.

5. Press **ALARM RESET** to switch off.

SETTING THE ALARM OPTIONS

GENERAL

Two different alarm times, **AL 1** and **AL 2** can be set in the CD, radio or buzzer modes.

Selecting the Alarm Mode Options

When selected, the selected alarm mode is shown in the display, and the respective **AL 1** or **2** button lights up.

1. Select your choice of alarm mode.
   Either press briefly:
- **AL1** once for CD alarm ⊙. This enables CD playback from the first track as your alarm call.
- **AL2** once or more for radio ♫ / buzzer 🔔 alarm

♫ Radio Alarm:

If you have selected the radio alarm, make sure you have tuned properly to a station.

2. Read the following section if you want to select the **WAKE-UP TRACK** alarm option.

Selecting CD WAKE-UP Alarm Mode

You can program and select a CD track number between 1-99, when the set is in the standby or radio playback mode. However, if the track number programmed does not exist on your CD, the CD will start playback from the first track during the alarm call.

1. Set the alarm time for **AL1**.
2. Insert a CD into the CD compartment.
3. Press **AL 1** to select CD alarm mode.
4. Press **WAKE-UP TRACK** to activate favorite track programming.
5. Press ⏮ or ⏭ until the desired track number is shown.
6. Press **WAKE-UP TRACK** to confirm the selected track number.
   —►The display returns to standby clock time.
7. If you want to review your programmed track number, press **WAKE-UP TRACK**

Note:

- The buzzer alarm option will automatically replace the CD alarm if you have:
  – inserted a CD incorrectly;
  – inserted a damaged CD;
  – forgotten to insert any CD;
  – not closed the CD door properly.

Gentle Wake Volume

A sure way of getting up in the mornings, the **gentle wake** volume for the alarm begins from a fixed gentle volume (10) and gradually increases to a maximum higher setting of (25.)

- The default low volume is Lo : 10, and the maximum volume is HI : 25.
- During the alarm call, if you press ▼ or ▲, the volume stops increasing immediately.
- The gentle wake volume settings do not affect normal CD and radio playback volume level, unless you have pressed ▼ or ▲ during the alarm call.

SWITCHING OFF THE ALARM

There are three ways to switch off the alarm. Unless you cancel the alarm completely, the **24 HOUR ALARM RESET** will be automatically selected after 59 minutes, from the time your alarm time first goes off.

24 HOUR ALARM RESET

If you want the alarm mode to be stopped immediately but also wish to retain the same alarm setting for the following day:

- Press **ALARM RESET.**
  —►You will hear a beep tone to confirm the 24 hour alarm is reset.

REPEAT ALARM

This will repeat your alarm call at 9-minute intervals.

- During the alarm call, press **REPEAT ALARM/ BRIGHTNESS CONTROL**.
- Repeat if desired up to an hour.

Note:

- The selected alarm mode ⊙, ♫ or 🔔 indicators flashes throughout the repeat alarm duration.
- If you are using the CD alarm mode, CD playback resumes at the point where the repeat alarm interrupted.
- During the CD alarm, CD playback continues for up to an hour unless you cancel / reset the alarm.

CANCELING THE ALARM COMPLETELY

To cancel the set alarm time before it goes off, or during the alarm call:

- Press **AL1** or **AL 2** once or more until the selected alarm indicator disappears from the display.
  —►You will hear a beep tone to confirm the alarm has been cancelled.

SLEEP

About Sleep

The CD clock radio has a built-in sleep timer which enables the set to be automatically switched off during radio or CD playback after a set period of time. There are 3 sleep times: 60, 30 and 15 minutes.
The sleep function does not change the operation of your alarm settings.

Setting SLEEP

1. Press ⏯ (CD) or **RADIO ON** (radio) to switch on the desired mode.
- You can also press **SLEEP** if you want the timer in radio mode.
2. Select your timer option by pressing **SLEEP** once or more until the desired option is shown.

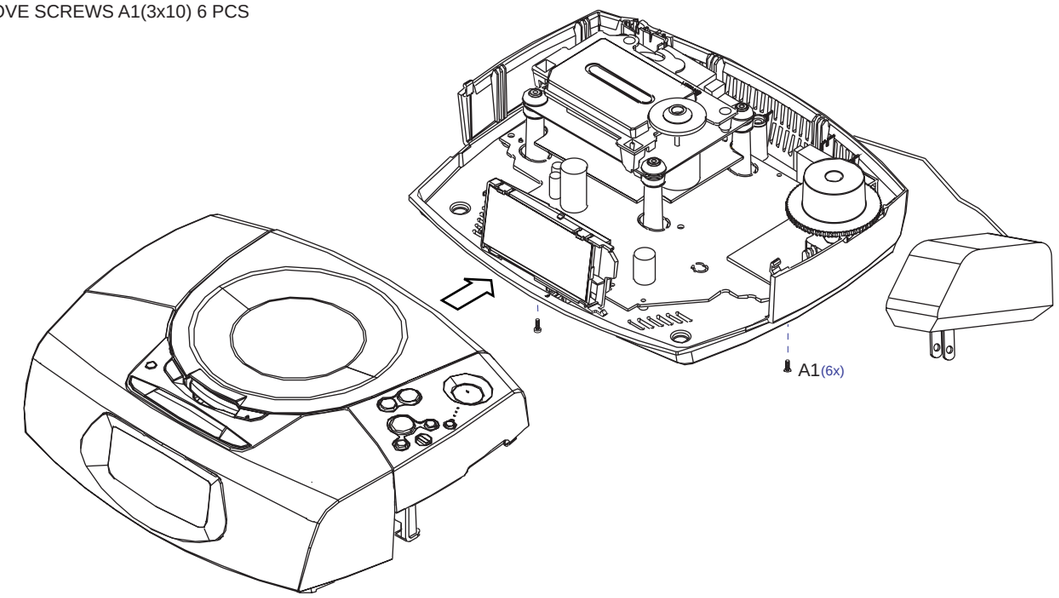
- Display shows SL : and the timer options:
  60➟ 30➟ 15 minutes ➟ 60➟ 30...
3. To cancel the timer function you can either:
- Press **ALARM RESET**.
- Press **REPEAT ALARM/ BRIGHTNESS CONTROL**.
- Press **SLEEP** once or more until the sleep function is no longer shown.

4 - 1

DISASSEMBLY DIAGRAM

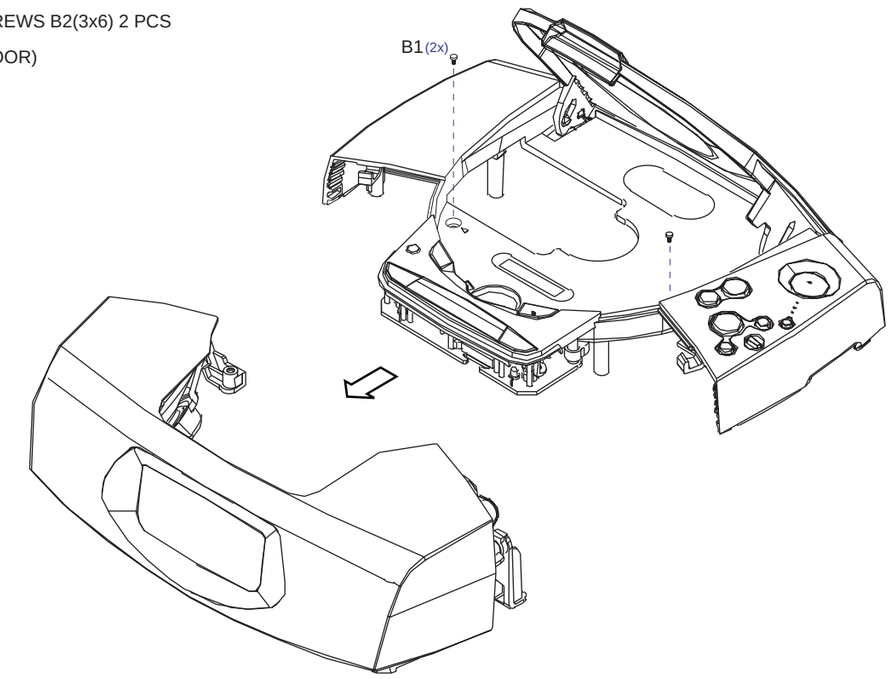
A. REMOVE BACK CABINET ASSEMBLY

- REMOVE SCREWS A1(3x10) 6 PCS



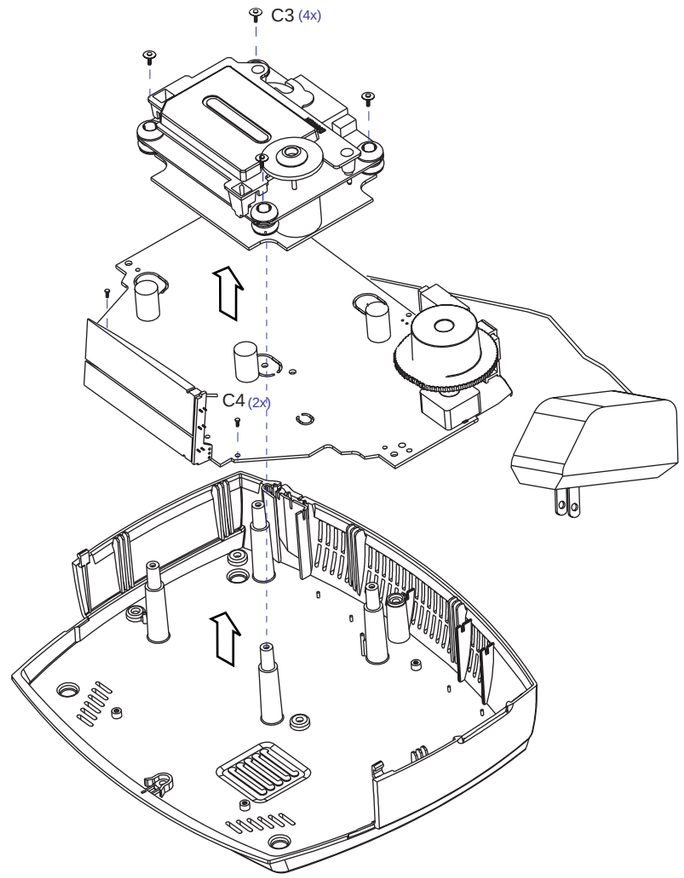
B. REMOVE FRONT CABINET ASSEMBLY

- REMOVE SCREWS B2(3x6) 2 PCS
(INSIDE CD DOOR)



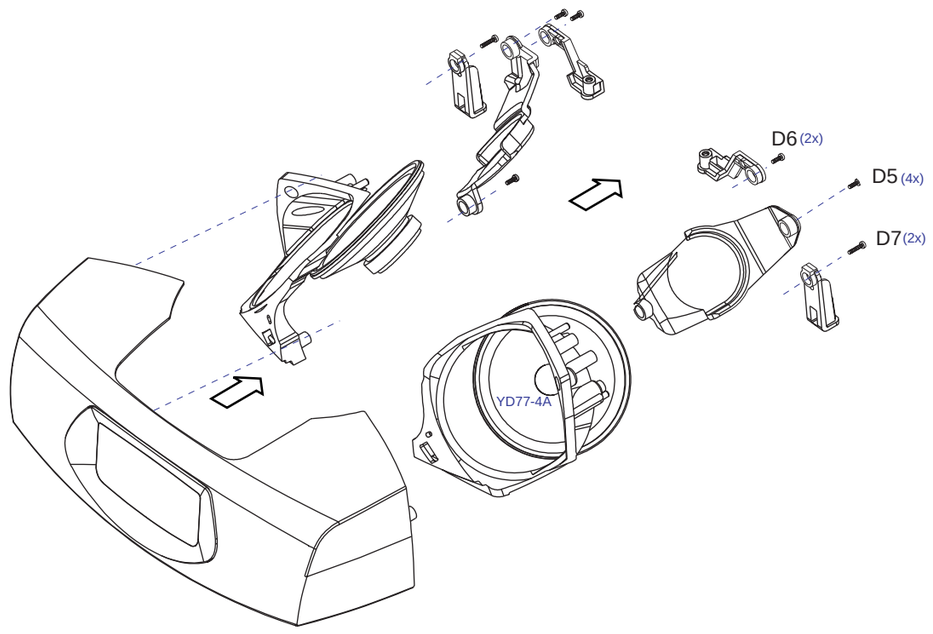
C. REMOVE COMBI BOARD ASSEMBLY

- REMOVE SCREWS C3 (2.5x10) 4 PCS
- REMOVE SCREWS C4 (2x8) 2 PCS



D. REMOVE LOUDSPEAKER

- REMOVE SCREWS D5 (3x10) 4 PCS
- REMOVE SCREWS D6 (3x10) 2 PCS
- REMOVE SCREWS D7 (3x16) 2 PCS



4 - 2

SERVICE TEST PROGRAM

* *STOP* button pressed in any step returns to begin of Service Testprogram.
* To leave Service Testprogram disconnect the power supply.
* Door switch is ignored → CD door can be opened.

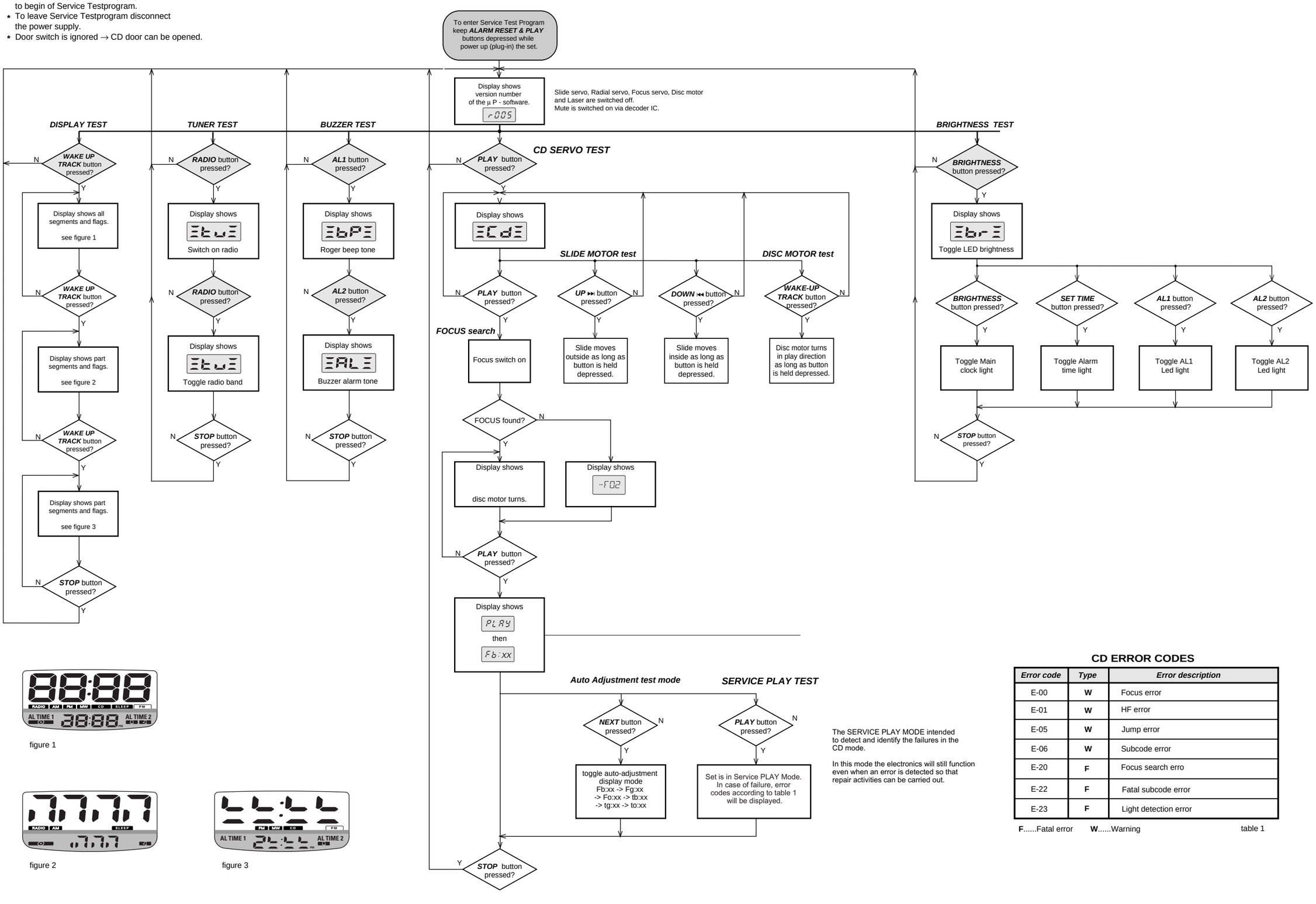


figure 1

figure 2

figure 3

The SERVICE PLAY MODE intended to detect and identify the failures in the CD mode.

In this mode the electronics will still function even when an error is detected so that repair activities can be carried out.

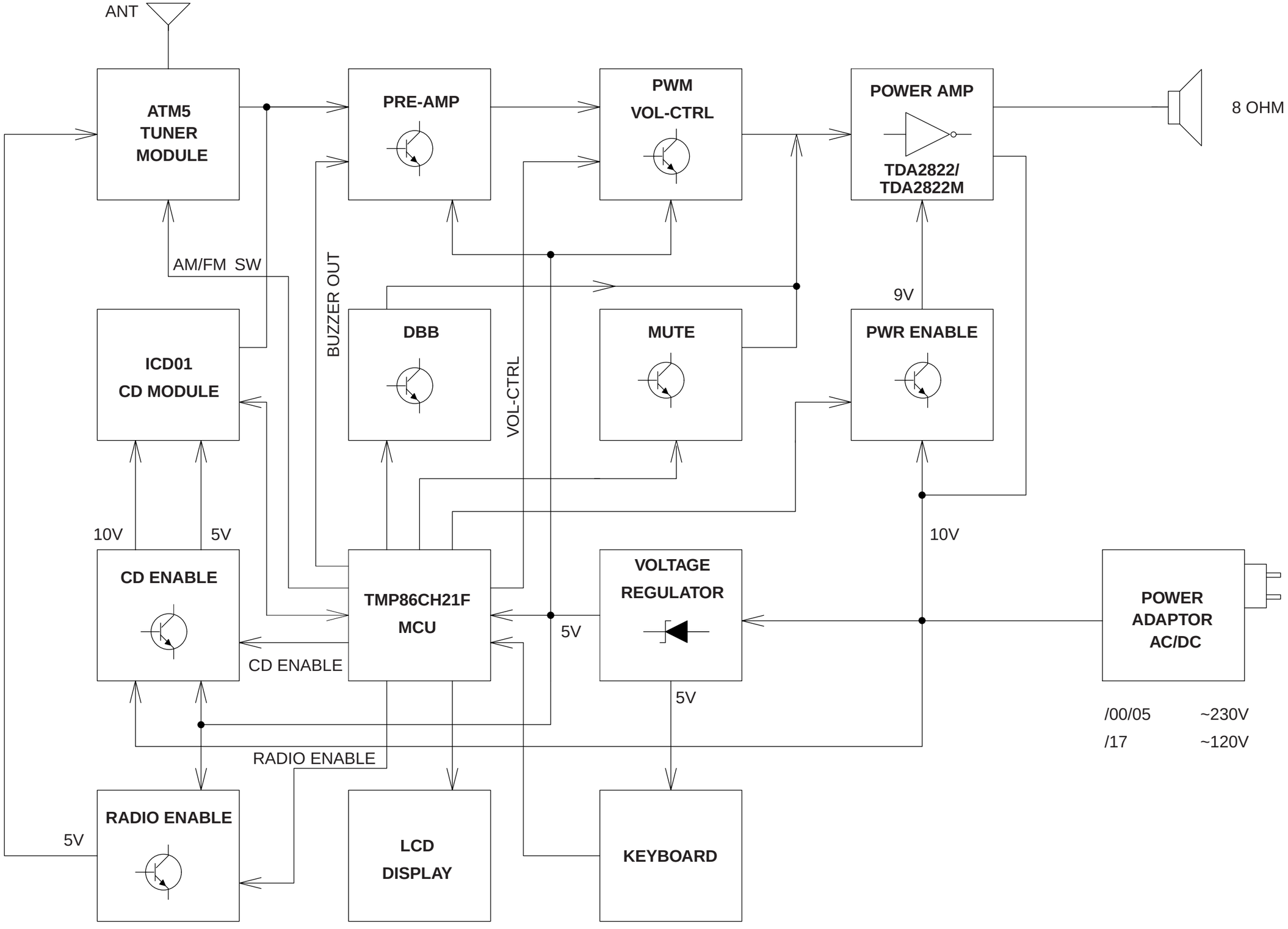
CD ERROR CODES

Error code	*Type*	*Error description*
E-00	**W**	Focus error
E-01	**W**	HF error
E-05	**W**	Jump error
E-06	**W**	Subcode error
E-20	**F**	Focus search erro
E-22	**F**	Fatal subcode error
E-23	**F**	Light detection error

F.....Fatal error **W**.....Warning table 1

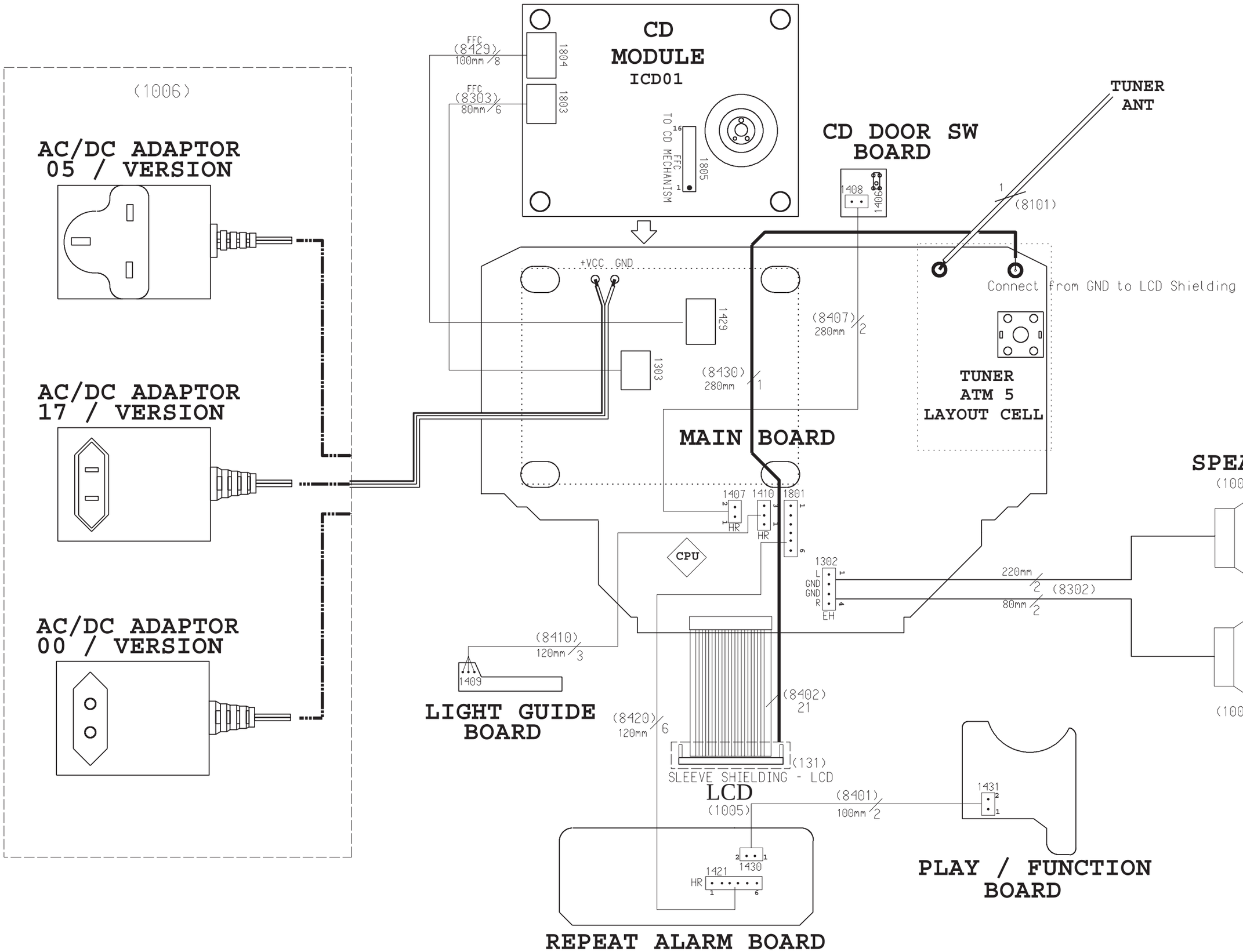
5 - 1

BLOCK DIAGRAM



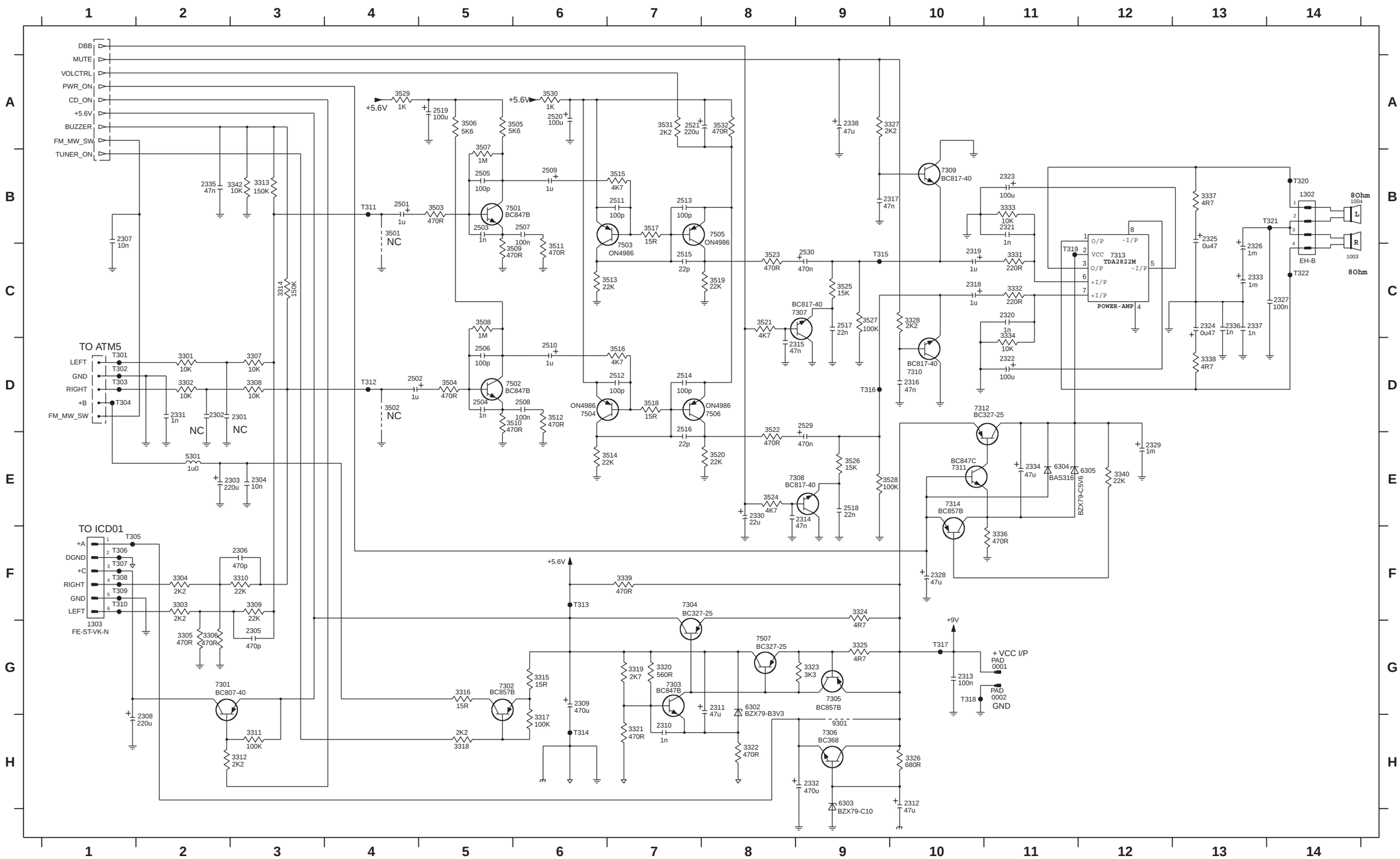
6 - 1

WIRING DIAGRAM



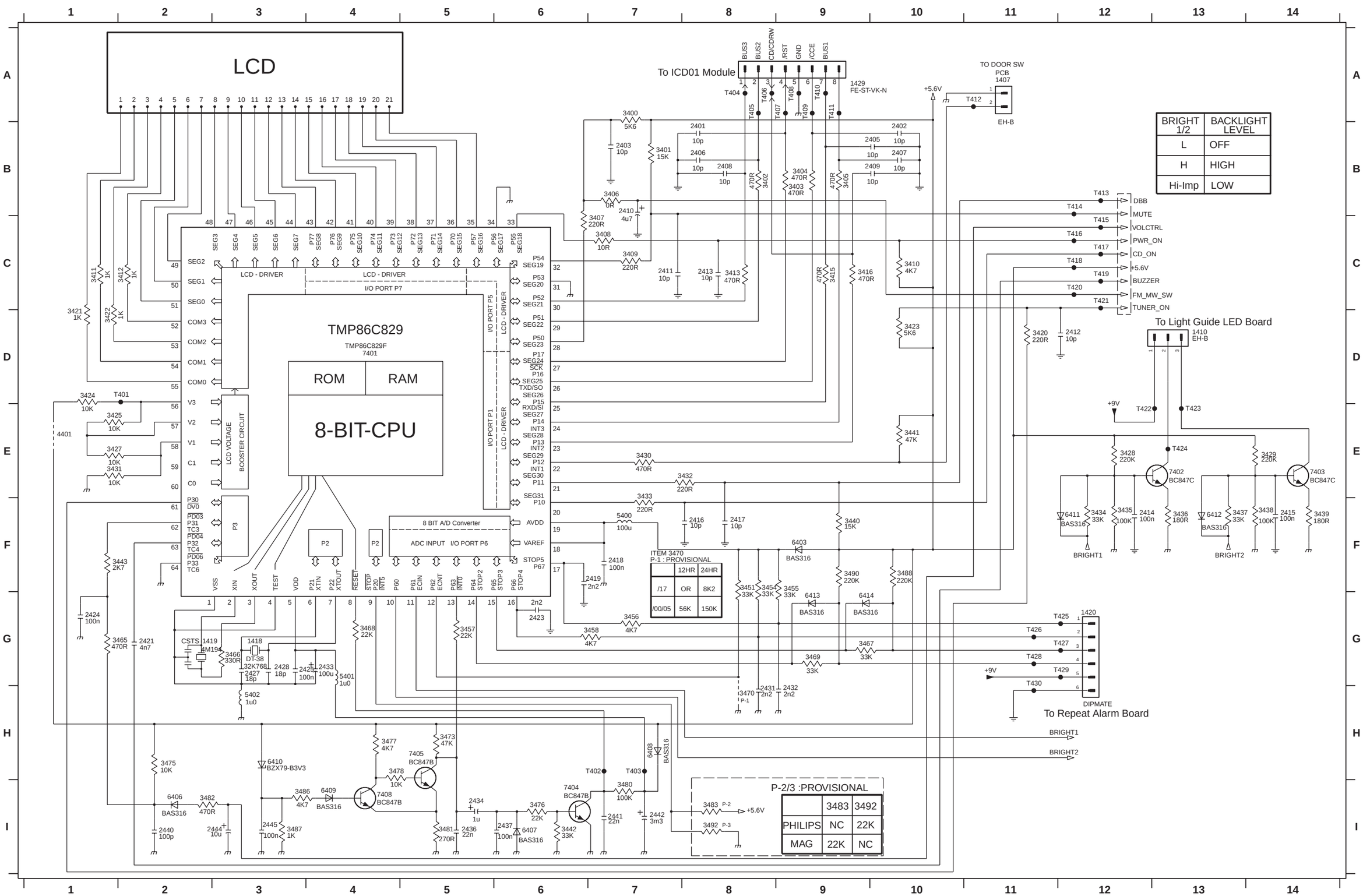
7 - 1

MAIN BOARD- CIRCUIT DIAGRAM (AF PART)



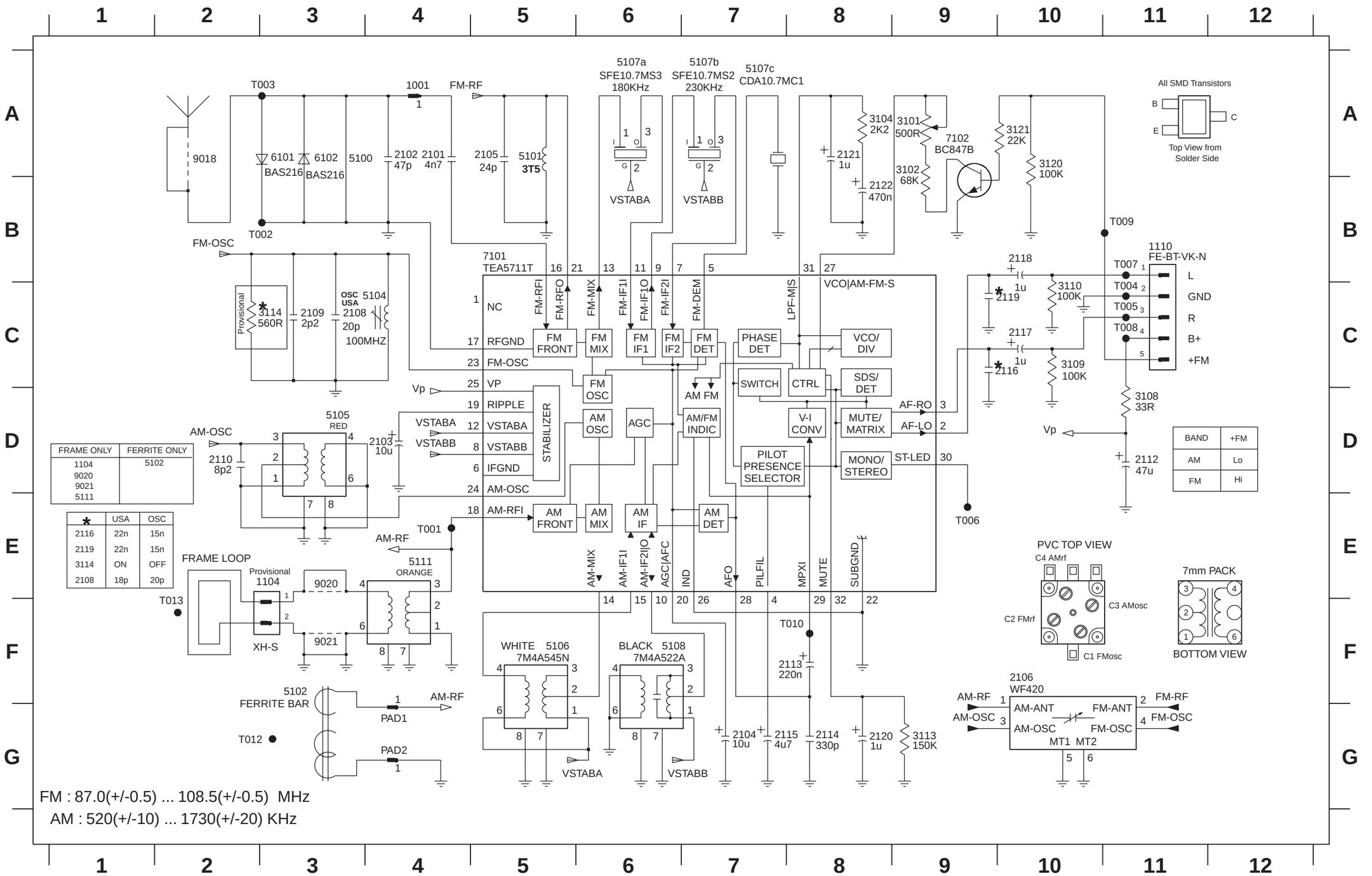
7 - 2

MAIN BOARD - CIRCUIT DIAGRAMI (CONTROL PART)



7 - 3

MAIN BOARD - CIRCUIT DIAGRAM (TUNER PART)



FRAME ONLY	FERRITE ONLY
1104 9020 9021 5111	5102

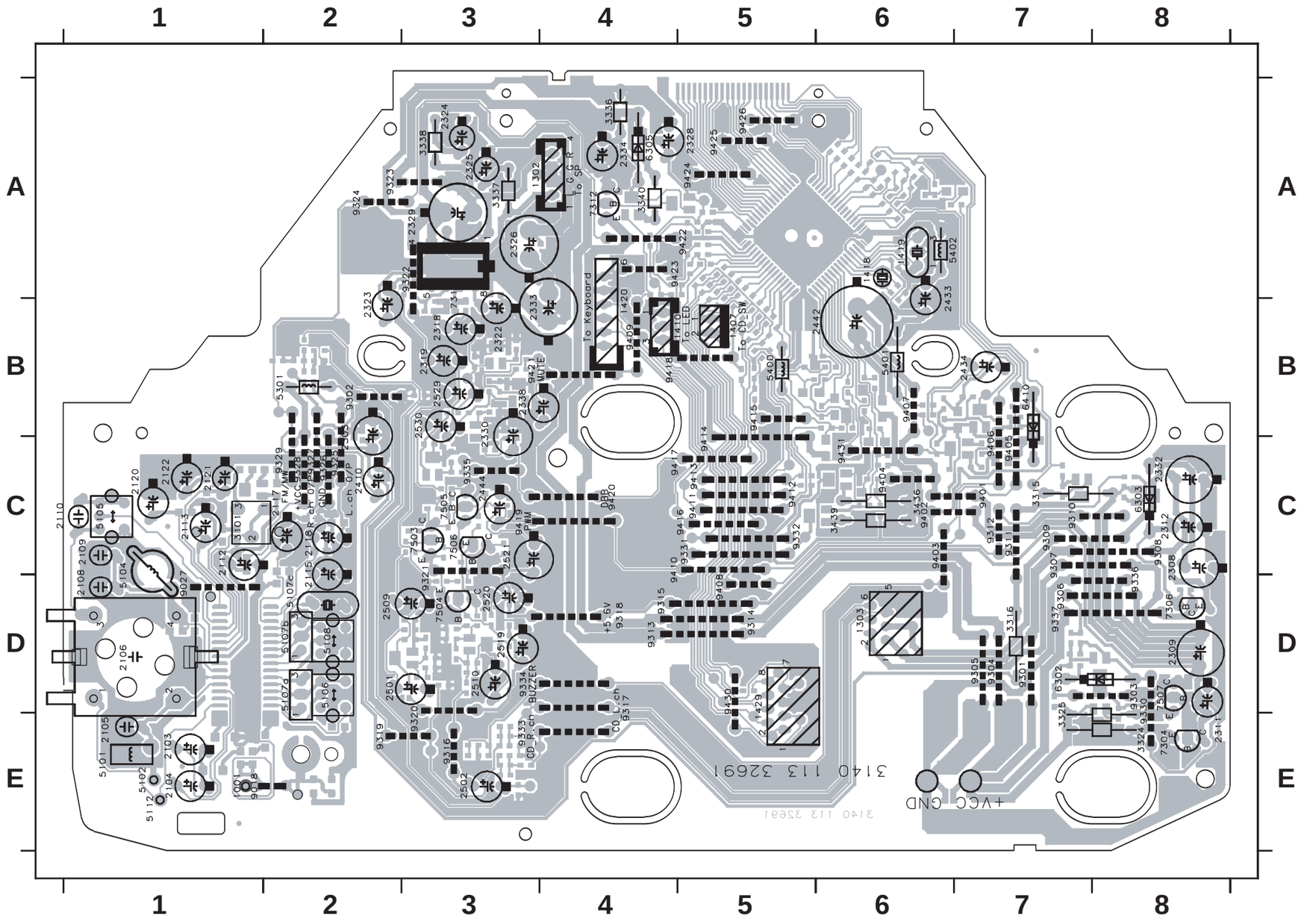
*	USA	OSC
2116	22n	15n
2119	22n	15n
3114	ON	OFF
2108	18p	20p

BAND	+FM
AM	Lo
FM	Hi

1001 A4
1104 E3
1110 B11
2101 A4
2102 A4
2103 D4
2104 G7
2105 A5
2106 F10
2108 C3
2109 C3
2110 D2
2112 D11
2113 F8
2114 G8
2115 G7
2116 C9
2117 C10
2118 B10
2119 C9
2120 G8
2121 A8
2122 B8
3101 A9
3102 B9
3104 A8
3108 D11
3109 C10
3110 C10
3113 G9
3114 C2
3120 A10
3121 A9
5100 A3
5101 A5
5102 G3
5104 C4
5105 D3
5106 F5
5107a A6
5107b A7
5107c A7
5108 F7
5111 E4
6101 A2
6102 A3
7101 B5
7102 A9
9018 A2
9020 E3
9021 F3
T001 E4
T002 B3
T003 A3
T004 B11
T005 C11
T006 E9
T007 B11
T008 C11
T009 B11
T010 F8
T012 G2
T013 F2

8 - 1

MAIN BOARD - LAYOUT DIAGRAM (COMPONENT SIDE)



1001	E1	2434	B7	7503	C3	9402	C6
1302	A3	2442	B6	7504	D3	9403	C6
1303	D6	2444	C3	7505	C3	9404	C6
1407	B5	2501	D2	7506	C3	9405	C7
1410	B4	2502	E3	7507	D8	9406	C7
1418	A6	2509	D2	9018	E2	9407	B6
1419	A6	2510	D3	9027	D1	9408	D5
1420	B4	2519	D3	9301	D7	9409	B4
1429	D5	2520	D3	9302	B2	9410	C4
2103	E1	2521	C3	9303	D8	9411	C5
2104	E1	2529	B3	9304	D7	9412	C5
2105	E1	2530	B3	9305	D7	9413	C5
2106	D1	3101	C1	9306	D7	9414	C5
2108	D1	3315	C7	9307	C7	9415	B5
2109	C1	3316	D7	9308	C8	9416	C5
2110	C1	3324	E8	9309	C7	9417	C4
2112	C1	3325	E7	9310	C7	9418	B4
2113	C1	3336	A4	9311	C7	9419	C3
2115	D2	3337	A3	9312	C7	9420	C4
2117	C2	3338	A3	9313	D4	9421	B3
2118	C2	3340	A4	9314	D5	9422	A4
2120	C1	3436	C6	9315	D4	9423	A4
2121	C1	3439	C6	9316	E3	9424	A5
2122	C1	5101	E1	9317	D4	9425	A5
2303	C2	5102	E1	9318	D4	9426	A5
2308	C8	5104	D1	9319	E2	9430	D5
2309	D8	5105	C1	9320	E3	9431	C6
2311	E8	5106	D2	9321	D3		
2312	C8	5107a	D2	9322	A3		
2318	B3	5107b	D2	9323	A2		
2319	B3	5107c	D2	9324	A2		
2322	B3	5108	D2	9325	C2		
2323	B2	5112	E1	9326	C2		
2324	A3	5301	B2	9327	C2		
2325	A3	5400	B5	9328	C2		
2326	A3	5401	B6	9329	C2		
2328	A5	5402	A6	9330	D8		
2329	A3	6302	D7	9331	C5		
2330	B3	6303	C8	9332	C5		
2332	C8	6305	A4	9333	E3		
2333	B3	6410	B7	9334	D3		
2334	A4	7304	E8	9335	C3		
2338	B3	7306	D8	9336	D8		
2410	C2	7312	A4	9337	D7		
2433	B6	7313	A3	9401	C7		

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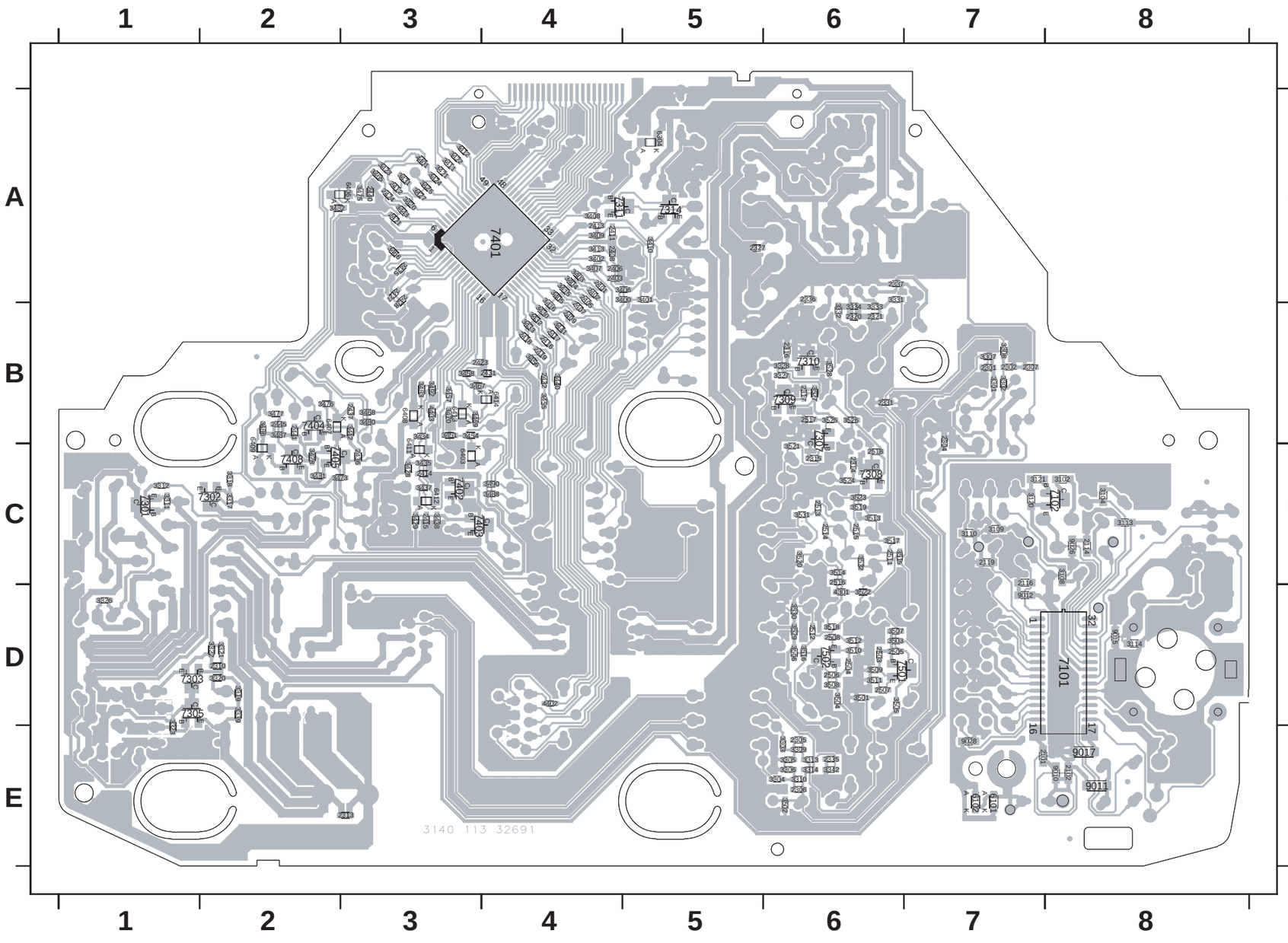
MAIN BOARD - CIRCUIT DIAGRAM
(COPPER SIDE)



2101 E7	2407 B4	3311 C1	3434 B3	3516 D6
2102 E8	2408 A4	3312 C1	3435 C3	3517 C6
2114 C8	2409 B4	3313 E6	3437 C3	3518 D6
2116 C7	2411 A4	3314 E6	3438 C3	3519 C6
2119 C7	2412 A3	3317 C2	3440 B4	3520 C6
3102 C7	2413 A4	3318 C2	3441 B4	3521 C6
3104 C8	2414 C3	3319 D2	3442 B3	3522 D6
3108 D7	2415 C3	3320 D2	3443 A3	3523 C6
3109 C7	2416 B4	3321 D2	3451 B3	3524 C6
3110 C7	2417 B4	3322 D2	3454 B3	3525 B6
3113 C8	2418 B4	3323 E1	3455 B4	3526 B6
3114 D8	2419 B4	3326 D1	3456 B4	3527 B6
3120 C7	2421 A3	3327 B6	3457 B3	3528 B6
3121 C7	2423 B3	3328 B6	3458 B3	3529 D6
6101 E7	2424 A3	3331 A6	3465 A3	3530 D6
6102 E7	2425 A3	3332 B6	3466 A3	3531 C6
7101 D7	2427 A3	3333 B6	3467 B3	3532 C6
7102 C7	2428 A3	3334 B6	3468 B3	4301 D6
9010 E7	2431 B4	3339 D2	3469 B3	4401 A3
9011 E8	2432 B4	3342 E6	3470 B3	4402 E4
9012 D7	2436 C3	3400 A5	3473 C2	4403 B3
9015 D8	2437 B3	3401 A5	3475 A3	6304 A5
9017 E8	2440 A3	3402 A4	3476 B2	6403 C3
9026 C8	2441 B2	3403 A4	3477 B2	6406 A2
9028 E7	2445 B2	3404 A4	3478 C2	6407 B2
2301 B7	2503 D6	3405 A4	3480 B3	6408 B3
2302 B7	2504 D6	3406 A5	3481 C2	6409 C2
2304 B7	2505 D6	3407 A4	3482 A2	6411 B3
2305 E6	2506 D6	3408 A4	3483 B3	6412 C3
2306 E6	2507 D6	3409 A4	3486 B2	6413 B3
2307 B7	2508 D6	3410 A5	3487 B2	6414 B4
2310 D2	2511 C6	3411 A3	3488 C4	7301 C1
2313 E3	2512 D6	3412 A3	3490 C4	7302 C2
2314 C6	2513 C6	3413 A4	3492 B3	7303 D1
2315 C6	2514 C6	3415 A4	3501 D6	7305 D1
2316 B6	2515 C6	3416 B4	3502 E6	7307 B6
2317 B6	2516 C6	3420 A3	3503 D6	7308 C6
2320 B6	2517 B6	3421 A3	3504 D6	7309 B6
2321 B6	2518 C6	3422 A3	3505 D6	7310 B6
2327 A5	3301 B7	3423 A3	3506 D6	7311 A4
2331 B6	3302 B7	3424 A3	3507 D6	7314 A5
2335 E6	3303 E6	3425 A3	3508 D6	7401 A4
2336 A6	3304 E6	3427 A3	3509 D6	7402 C3
2337 A6	3305 E6	3428 C3	3510 D6	7403 C3
2401 A4	3306 E6	3429 C3	3511 D6	7404 B2
2402 A4	3307 B7	3430 B4	3512 D6	7405 C2
2403 A4	3308 B7	3431 A3	3513 C6	7408 C2
2405 A4	3309 E6	3432 B4	3514 C6	7501 D6
2406 A4	3310 E6	3433 B4	3515 C6	7502 D6

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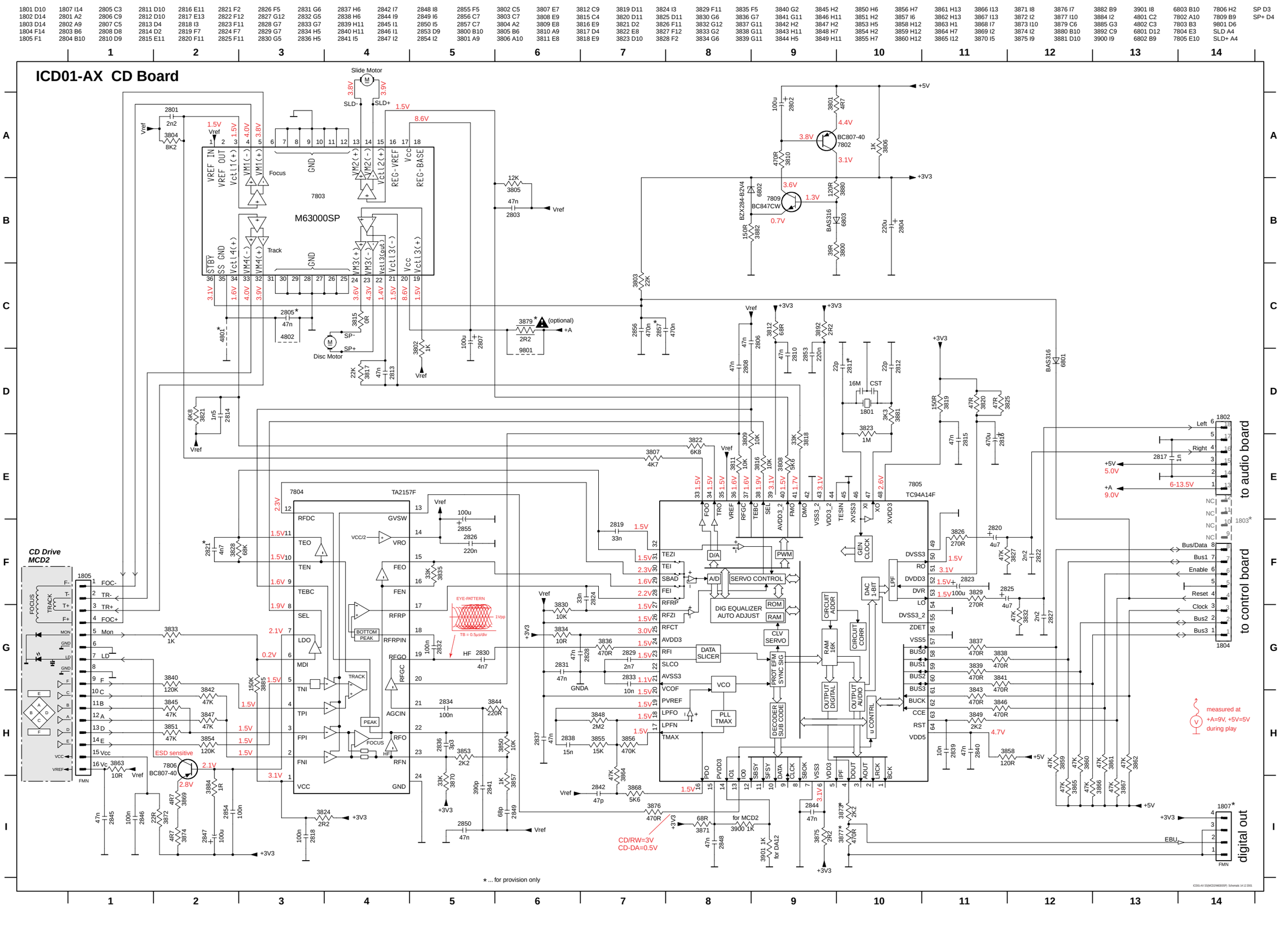
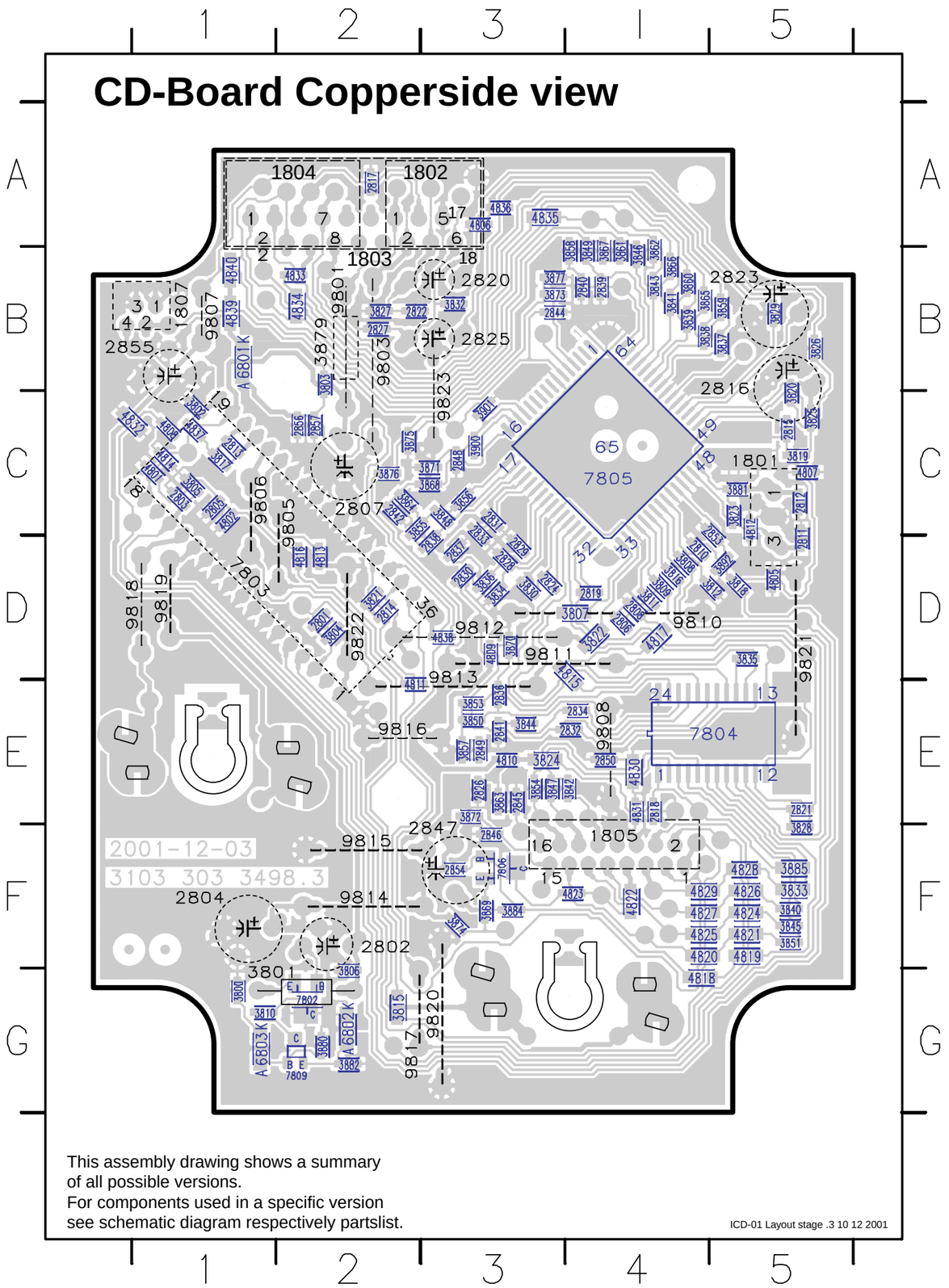
IC D01-AX CD Board - CIRCUIT DIAGRAM



9 - 2

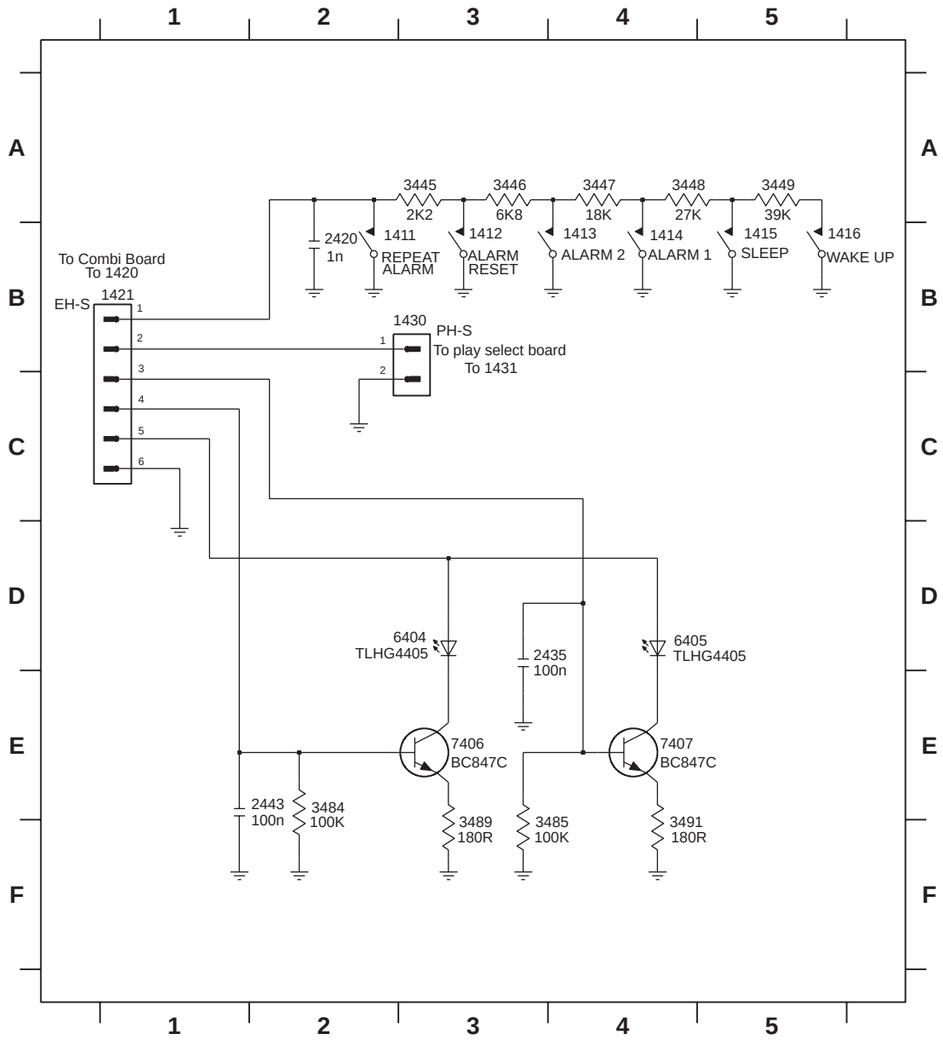
IC D01-AX CD Board - LAYOUT DIAGRAM



1801	C5	3812	D5	3901	C3
1802	A3	3815	G2	4801	C1
1803	B2	3816	D4	4802	C1
1804	A2	3817	C1	4805	D5
1805	F4	3818	D5	4806	A3
1807	B1	3819	C5	4807	C5
2801	D2	3820	C5	4808	C1
2802	F2	3821	D2	4809	D3
2803	C1	3822	D4	4810	E3
2804	F1	3823	C5	4811	E2
2805	C1	3824	E3	4812	C5
2806	D4	3825	C5	4813	D2
2807	C2	3826	B5	4814	C1
2808	D4	3827	B2	4815	D4
2810	D4	3828	F5	4816	D2
2811	D5	3829	B5	4817	D4
2812	C5	3830	D3	4818	G4
2813	C1	3832	B3	4819	F5
2814	D2	3833	F5	4820	F4
2815	C5	3834	D3	4821	F5
2816	B5	3835	D5	4822	F4
2817	A2	3836	D3	4823	F4
2818	E4	3837	B5	4824	F5
2819	D4	3838	B4	4825	F4
2820	B3	3839	B4	4826	F5
2821	E5	3840	F5	4827	F4
2822	B2	3841	B4	4828	F5
2823	B5	3842	E4	4829	F4
2824	D3	3843	B4	4830	E4
2825	B3	3844	E3	4831	E4
2826	E3	3845	F5	4832	C1
2827	B2	3846	B4	4833	B2
2828	D3	3847	E3	4834	B2
2829	D3	3848	C3	4835	A3
2830	D3	3849	B4	4836	A3
2831	C3	3850	E3	4837	C1
2832	E4	3851	F5	4838	D3
2833	C3	3853	E3	4839	B1
2834	E4	3854	E3	4840	B1
2836	E3	3855	C2	6801	B1
2837	D3	3856	C3	6802	G2
2838	D3	3857	E3	6803	G1
2839	B4	3858	B4	7802	G2
2840	B4	3859	B5	7803	D1
2841	E3	3860	B4	7804	E5
2842	C2	3861	B4	7805	C4
2844	B3	3862	B4	7806	F3
2845	E3	3863	E3	7809	G2
2846	F3	3864	C2	9801	B2
2847	F3	3865	B4	9803	B2
2848	C3	3866	B4	9805	C2
2849	E3	3867	B4	9806	C1
2850	E4	3868	C3	9807	B1
2853	C5	3869	F3	9808	E4
2854	F3	3870	D3	9810	D4
2855	C1	3871	C3	9811	D3
2856	C2	3872	E3	9812	D3
2857	C2	3873	B3	9813	D3
3800	G1	3874	F3	9814	F2
3801	G2	3875	C2	9815	F2
3802	C1	3876	C2	9816	E2
3803	B2	3877	B3	9817	G2
3804	D2	3879	B2	9818	D1
3805	C1	3880	G2	9819	D1
3806	G2	3881	C5	9820	G3
3807	D4	3882	G2	9821	D5
3808	D4	3884	F3	9822	D2
3809	D4	3885	F5	9823	C3
3810	G1	3892	D5		
3811	D4	3900	C3		

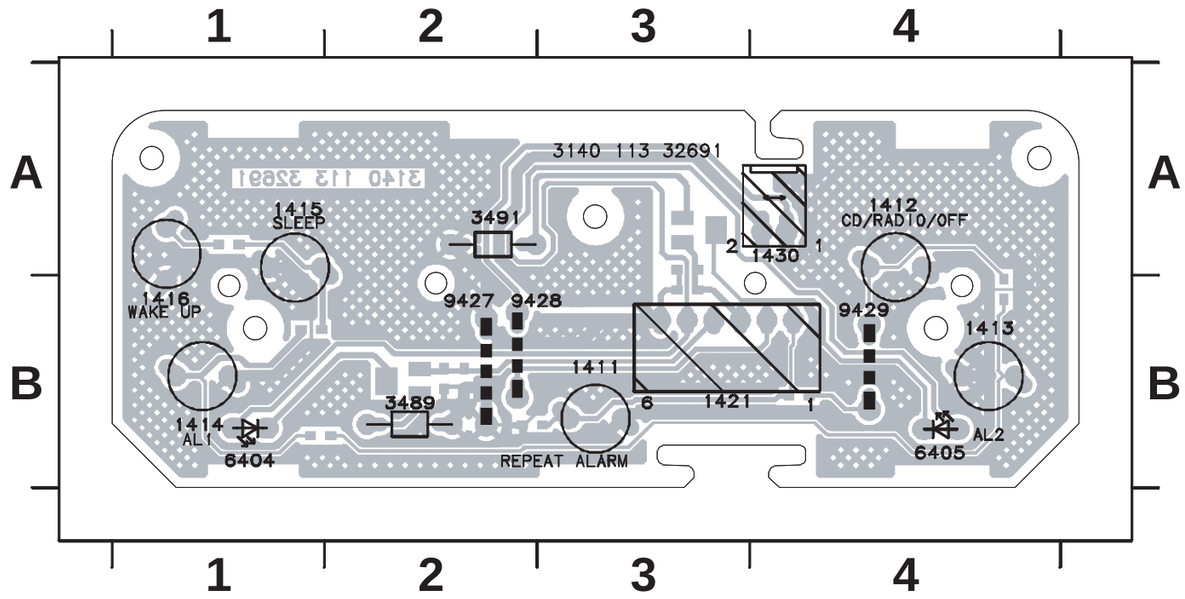
ALARM BOARD - CIRCUIT DIAGRAM

1411 B3	1414 B4	1421 B1	2435 D4	3446 A3	3449 A5	3489 F3	6405 D4
1412 B3	1415 B5	1430 B2	2443 E2	3447 A4	3484 E2	3491 F4	7406 E3
1413 B4	1416 B5	2420 B2	3445 A3	3448 A4	3485 F4	6404 D3	7407 E4

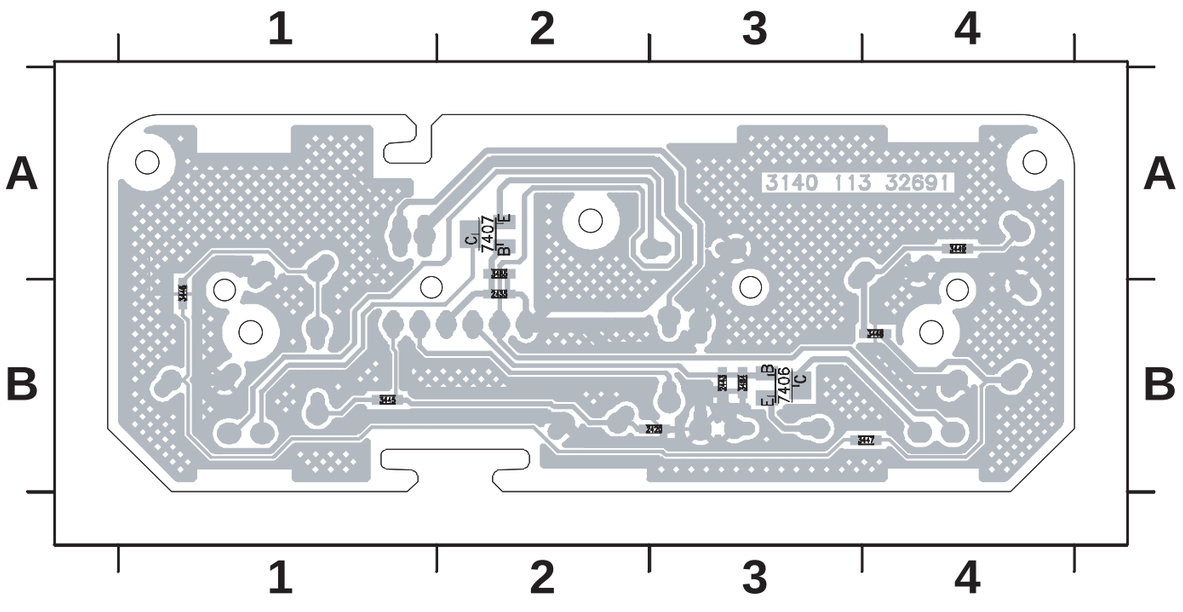


ALARM BOARD - LAYOUT DIAGRAM

1411	B3	1414	B1	1421	B3	3491	A2	9427	B2
1412	A4	1415	A1	1430	A4	6404	B1	9428	B2
1413	B4	1416	B1	3489	B2	6405	B4	9429	B4

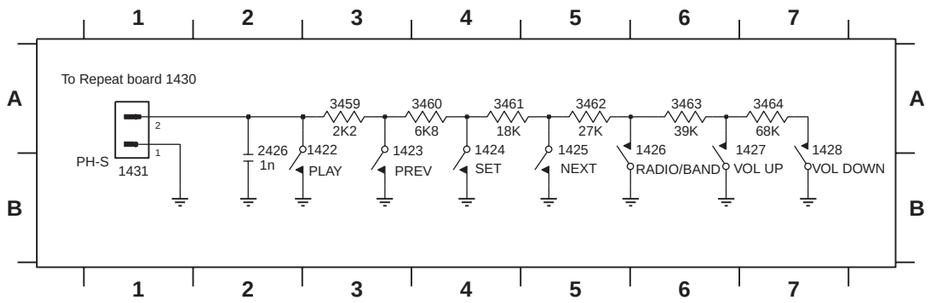


2420	B3	2443	B3	3446	B1	3448	B4	3484	B3	7406	B3
2435	B2	3445	B1	3447	B4	3449	A4	3485	A2	7407	A2



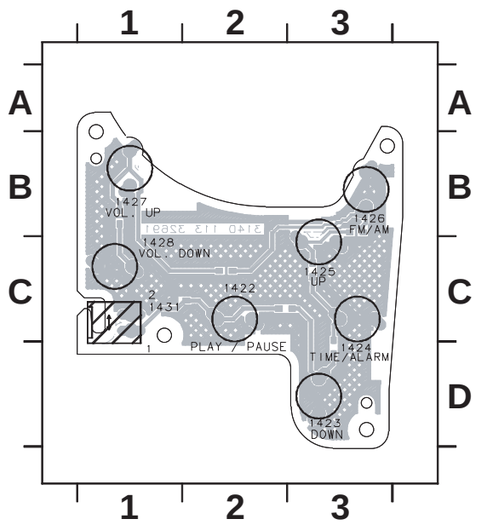
PLAY SELECT BOARD -CIRCUIT DIAGRAM

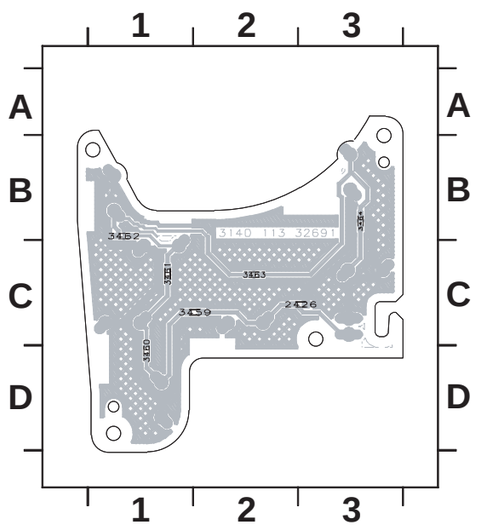
1422 A3 1424 A4 1426 A6 1428 A7 2426 A2 3460 A4 3462 A5 3464 A7
1423 A3 1425 A5 1427 A7 1431 B1 3459 A3 3461 A4 3463 A6



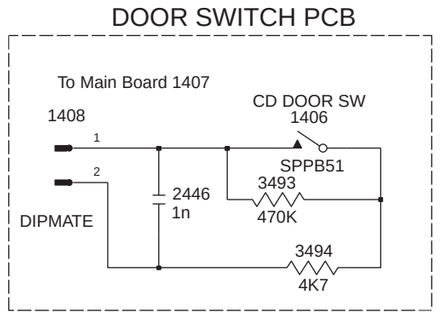
PLAY SELECT BOARD - LAYOUT DIAGRAM

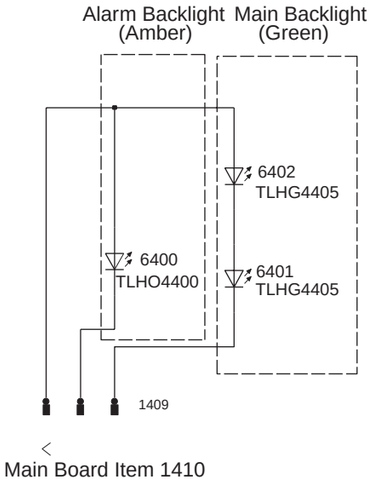
1422 C2 1423 D3 1424 D3 1425 C3
1426 B3 1427 B1 1428 C1 1431 C1
2426 C3 3459 C2 3460 D1 3461 C1
3462 B1 3463 C2 3464 B3



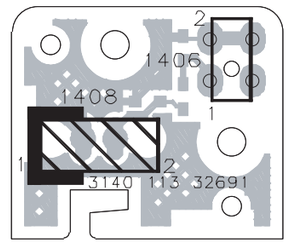


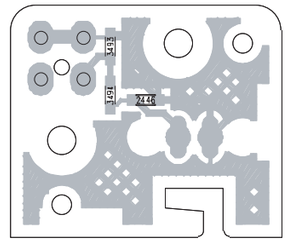
CD DOOR SWITCH BOARD - CIRCUIT DIAGRAM

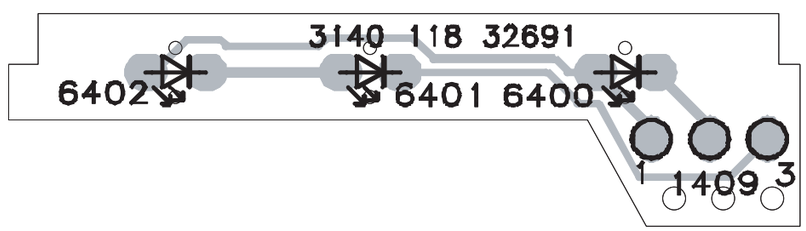




CD DOOR SWITCH BOARD - LAYOUT DIAGRAM





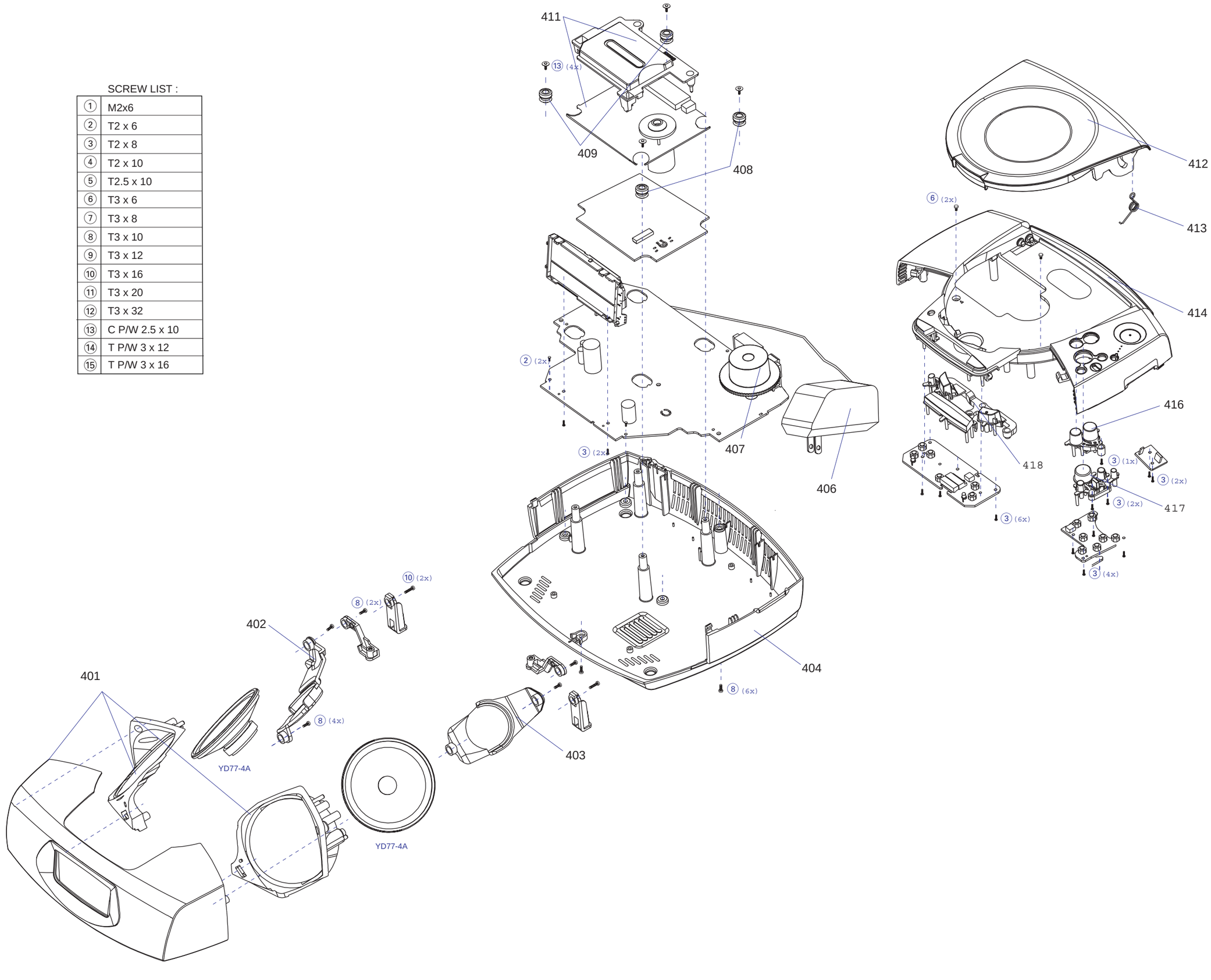


EXPLODED VIEW DIAGRAM - CABINET

SCREW LIST :

①	M2x6
②	T2 x 6
③	T2 x 8
④	T2 x 10
⑤	T2.5 x 10
⑥	T3 x 6
⑦	T3 x 8
⑧	T3 x 10
⑨	T3 x 12
⑩	T3 x 16
⑪	T3 x 20
⑫	T3 x 32
⑬	C P/W 2.5 x 10
⑭	T P/W 3 x 12
⑮	T P/W 3 x 16

12 - 1



MECHANICAL PARTSLIST - CABINET

401	3140 117 62850	FRONT CABINET ASS'Y
401	3140 117 62610	FRONT CABINET ASS'Y(for MCR220BK/17 only)
402	3140 114 41780	BRACKET - MOUNTING SPEAKER (L)
403	3140 114 41790	BRACKET - MOUNTING SPEAKER (R)
404	3140 114 44160	CABINET-BOTTOM(for AJ3970/00 only)
404	3140 114 44170	CABINET-BOTTOM(for AJ3970/05 only)
404	3140 114 41730	CABINET - BOTTOM(for MCR220BK/17 only)
406	3140 118 33340	AC/DC ADAPTER(for AJ3970/00 only)
406	3140 118 33350	AC/DC ADAPTER(for AJ3970/05 only)
406	3140 118 33270	AC/DC ADAPTER(for MCR220BK/17 only)
407	3140 114 41590	KNOB - TUNING
407	3140 114 44110	KNOB -TUNING(for MCR220BK/17 only)
408	4822 529 10386	DAMPER - RUBBER (30 DEG)
409	4822 529 10387	DAMPER - RUBBER (40 DEG)
411	3103 309 05410	CD MCD2-SC ASSY
412	3140 114 41660	DOOR - CD
412	3140 114 45000	DOOR - CD(for MCR220BK/17 only)
413	3140 111 01200	SPRING - CD DOOR
414	3140 117 62840	TOP CABINET ASS'Y
414	3140 117 62600	TOP CABINET ASS'Y(for MCR220BK/17 only)
416	3140 114 41680	BUTTONSET - VOLUME
417	3140 114 41690	BUTTONSET - PLAY
418	3140 114 41700	BUTTONSET - REPEAT ALARM

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

ELECTRICAL PARTSLIST - COMBI BOARD

- MISCELLANEOUS -

1003		4822 240 10041	LOUDSPEAKER D77 8 OHM
1004		4822 240 10041	LOUDSPEAKER D77 8 OHM
1005		3140 110 51590	LCD DISPLAY
1006	⚠	3140 118 33340	AC/DC ADAPTER/00
1006	⚠	3140 118 33350	AC/DC ADAPTER /05
1006	⚠	3140 118 33270	AC/DC ADAPTER /17
1201		2422 549 44211	FERRITE BAR 5X13X55
1303		4822 265 11207	CONNECTOR SOCKET 6P
1406		4822 276 12889	SWITCH SPPB51
1411		2422 128 02917	SWITCH-TACT 1P
1412		2422 128 02917	SWITCH-TACT 1P
1413		2422 128 02917	SWITCH-TACT 1P
1414		2422 128 02917	SWITCH-TACT 1P
1415		2422 128 02917	SWITCH-TACT 1P
1416		2422 128 02917	SWITCH-TACT 1P
1418		4822 242 81598	CRYSTAL 32,768KHZ
1419		2422 540 98455	RES CER 4,194MHZ
1422		2422 128 02917	SWITCH-TACT 1P
1423		2422 128 02917	SWITCH-TACT 1P
1424		2422 128 02917	SWITCH-TACT 1P
1425		2422 128 02917	SWITCH-TACT 1P
1426		2422 128 02917	SWITCH-TACT 1P
1427		2422 128 02917	SWITCH-TACT 1P
1428		2422 128 02917	SWITCH-TACT 1P
1429		4822 265 11535	CONNECTOR SOCKET 8P
8303		3139 110 35210	FFC FOIL 06P/080/06P AD
8402		3140 110 22150	LCD HEAT SEAL CABLE
8429		3139 110 34840	FFC FOIL 08P/100/08P AD

- CAPACITORS -

2101	4822 126 13193	4,7nF 10% X7R 63V
2102	4822 122 33777	47pF 5% NP0 63V
2103	4822 124 40248	10µF 20% 63V
2104	4822 124 40248	10µF 20% 63V
2105	4822 126 12814	24pF 5% N220 50V
2106	2020 801 00085	CAP TUN LAI-160B82
2108	2020 552 92746	20pF 5% N1000 50V
2109	2020 552 95949	2,2pF 0,25%N1000 50V
2110	4822 126 12229	8,2pF 1% N750 50V
2112	4822 124 40433	47µF 20% 25V
2113	4822 124 40746	0,22µF 20% 63V
2114	4822 126 14241	330pF 10% NP0 50V
2115	4822 124 40769	4,7µF 20% 100V
2116	3198 017 31530	15nF 10% X7R 50V
2117	4822 124 21913	1µF 20% 63V
2118	4822 124 21913	1µF 20% 63V
2119	3198 017 31530	15nF 10% X7R 50V
2120	4822 124 21913	1µF 20% 63V
2121	4822 124 21913	1µF 20% 63V
2122	4822 124 41407	0,47µF 20% 63V

- CAPACITORS -

2303	4822 124 40196	220µF 20% 16V
2304	5322 126 11583	10nF 10% X7R 50V
2305	4822 126 13881	470pF 5% 50V
2306	4822 126 13881	470pF 5% 50V
2307	5322 126 11583	10nF 10% X7R 50V
2308	4822 124 40196	220µF 20% 16V
2309	4822 124 80195	470µF 20% 10V
2310	5322 126 11578	1nF 10% X7R 50V
2311	4822 124 40433	47µF 20% 25V
2312	4822 124 40433	47µF 20% 25V
2313	2238 586 59812	100nF +80-20% Y5V 50V
2314	3198 024 44730	47nF Y5V 50V 0603
2315	3198 024 44730	47nF Y5V 50V 0603
2316	3198 024 44730	47nF Y5V 50V 0603
2317	3198 024 44730	47nF Y5V 50V 0603
2318	4822 124 21913	1µF 20% 63V
2319	4822 124 21913	1µF 20% 63V
2320	5322 126 11578	1nF 10% X7R 50V
2321	5322 126 11578	1nF 10% X7R 50V
2322	4822 124 40207	100µF 20% 25V
2323	4822 124 40207	100µF 20% 25V
2324	4822 124 41407	0,47µF 20% 63V
2325	4822 124 41407	0,47µF 20% 63V
2326	4822 124 81144	1000U 20% 16V
2327	2238 586 59812	100nF +80-20% Y5V 50V
2328	4822 124 40433	47µF 20% 25V
2329	4822 124 81144	1000U 20% 16V
2330	4822 124 81151	22µF 20% 50V
2331	5322 126 11578	1nF 10% X7R 50V
2332	4822 124 80791	470µF 20% 16V
2333	4822 124 81144	1000U 20% 16V
2334	4822 124 40433	47µF 20% 25V
2335	3198 024 44730	47nF Y5V 50V 0603
2336	4822 126 13193	4,7nF 10% X7R 63V
2336	5322 126 11578	1nF 10% X7R 50V
2337	4822 126 13193	4,7nF 10% X7R 63V
2337	5322 126 11578	1nF 10% X7R 50V
2338	4822 124 81151	22µF 20% 50V
2401	4822 122 33741	10pF 10% NP0 50V
2402	4822 122 33741	10pF 10% NP0 50V
2403	4822 122 33741	10pF 10% NP0 50V
2405	4822 122 33741	10pF 10% NP0 50V
2406	4822 122 33741	10pF 10% NP0 50V
2407	4822 122 33741	10pF 10% NP0 50V
2408	4822 122 33741	10pF 10% NP0 50V
2410	4822 124 40769	4,7µF 20% 100V
2411	4822 122 33741	10pF 10% NP0 50V
2412	4822 122 33741	10pF 10% NP0 50V
2413	4822 122 33741	10pF 10% NP0 50V
2414	2238 586 59812	100nF +80-20% Y5V 50V

ELECTRICAL PARTSLIST - COMBI BOARD

- CAPACITORS -

2415	2238 586 59812	100nF +80-20% Y5V 50V
2416	4822 122 33741	10pF 10% NP0 50V
2417	4822 122 33741	10pF 10% NP0 50V
2418	2238 586 59812	100nF +80-20% Y5V 50V
2419	4822 126 14238	2,2nF 10% X7R 50V
2420	5322 126 11578	1nF 10% X7R 50V
2421	4822 126 13193	4,7nF 10% X7R 63V
2423	4822 126 14238	2,2nF 10% X7R 50V
2424	2238 586 59812	100nF +80-20% Y5V 50V
2425	2238 586 59812	100nF +80-20% Y5V 50V
2426	5322 126 11578	1nF 10% X7R 50V
2427	4822 126 14507	18pF 5% NP0 50V
2428	4822 126 14507	18pF 5% NP0 50V
2431	4822 126 14238	2,2nF 10% X7R 50V
2432	4822 126 14238	2,2nF 10% X7R 50V
2433	4822 124 41584	100µF 20% 10V
2434	4822 124 21913	1µF 20% 63V
2435	2238 586 59812	100nF +80-20% Y5V 50V
2436	3198 017 42230	22nF 20% Y5V 50V
2437	2238 586 59812	100nF +80-20% Y5V 50V
2440	4822 122 31765	100pF 2%NP0 63V 1206
2441	3198 017 42230	22nF 20% Y5V 50V
2442	4822 124 40784	3300µF 20% 16V
2443	2238 586 59812	100nF +80-20% Y5V 50V
2444	4822 124 40248	10µF 20% 63V
2445	2238 586 59812	100nF +80-20% Y5V 50V
2446	5322 126 11578	1nF 10% X7R 50V
2501	4822 124 21913	1µF 20% 63V
2502	4822 124 21913	1µF 20% 63V
2503	5322 126 11578	1nF 10% X7R 50V
2504	5322 126 11578	1nF 10% X7R 50V
2505	4822 122 31765	100pF 2%NP0 63V 1206
2506	4822 122 31765	100pF 2%NP0 63V 1206
2507	2238 586 59812	100nF +80-20% Y5V 50V
2508	2238 586 59812	100nF +80-20% Y5V 50V
2509	4822 124 21913	1µF 20% 63V
2510	4822 124 21913	1µF 20% 63V
2511	4822 122 31765	100pF 2%NP0 63V 1206
2512	4822 122 31765	100pF 2%NP0 63V 1206
2513	4822 122 31765	100pF 2%NP0 63V 1206
2514	4822 122 31765	100pF 2%NP0 63V 1206
2515	4822 122 33761	22pF 5% NP0 50V
2516	4822 122 33761	22pF 5% NP0 50V
2517	3198 017 42230	22nF 20% Y5V 50V
2518	3198 017 42230	22nF 20% Y5V 50V
2519	4822 124 41584	100µF 20% 10V
2520	4822 124 41584	100µF 20% 10V
2521	4822 124 40196	220µF 20% 16V
2529	4822 124 41407	0,47µF 20% 63V
2530	4822 124 41407	0,47µF 20% 63V

- RESISTORS -

3101	4822 100 20167	50K 30% LIN 0,1W
3102	4822 051 30683	68K 5% 0,062W
3104	4822 051 30222	2,2K 5% 0,062W
3108	4822 051 20339	33R 5% 0,1W
3109	4822 117 13632	100K 1% 0,62W
3110	4822 117 13632	100K 1% 0,62W
3113	4822 051 30154	150K 5% 0,062W
3120	4822 117 13632	100K 1% 0,62W
3121	4822 051 30223	22K 5% 0,062W
3301	4822 051 30103	10K 5% 0,062W
3302	4822 051 30103	10K 5% 0,062W
3303	4822 051 30222	2,2K 5% 0,062W
3304	4822 051 30222	2,2K 5% 0,062W
3305	4822 051 30471	470R 5% 0,062W
3306	4822 051 30471	470R 5% 0,062W
3307	4822 051 30103	10K 5% 0,062W
3308	4822 051 30103	10K 5% 0,062W
3309	4822 051 30223	22K 5% 0,062W
3310	4822 051 30223	22K 5% 0,062W
3311	4822 117 13632	100K 1% 0,62W
3312	4822 051 30222	2,2K 5% 0,062W
3313	4822 051 30154	150K 5% 0,062W
3314	4822 051 30154	150K 5% 0,062W
3315	4822 116 52182	15R 5% 0,5W
3316	4822 116 52182	15R 5% 0,5W
3317	4822 117 13632	100K 1% 0,62W
3318	4822 051 30222	2,2K 5% 0,062W
3319	4822 051 30272	2,7K 5% 0,062W
3320	4822 051 30561	560R 5% 0,062W
3321	4822 051 30471	470R 5% 0,062W
3322	4822 051 30471	470R 5% 0,062W
3323	4822 051 30332	3,3K 5% 0,062W
3324	4822 050 24708	4,7R 1% 0,6W
3325	4822 050 24708	4,7R 1% 0,6W
3326	4822 051 30681	680R 5% 0,062W
3327	4822 051 30222	2,2K 5% 0,062W
3328	4822 051 30222	2,2K 5% 0,062W
3331	4822 051 30221	220R 5% 0,062W
3332	4822 051 30221	220R 5% 0,062W
3333	4822 051 30103	10K 5% 0,062W
3334	4822 051 30103	10K 5% 0,062W
3336	4822 116 83883	470R 5% 0,5W
3337	4822 050 24708	4,7R 1% 0,6W
3338	4822 050 24708	4,7R 1% 0,6W
3339	4822 051 30471	470R 5% 0,062W
3340	4822 116 52257	22K 5% 0,5W
3342	4822 051 30103	10K 5% 0,062W
3400	4822 051 30562	5,6K 5% 0,063W
3401	4822 051 30153	15K 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3403	4822 051 30471	470R 5% 0,062W
3404	4822 051 30471	470R 5% 0,062W
3405	4822 051 30471	470R 5% 0,062W
3406	4822 051 30223	22K 5% 0,062W
3407	4822 051 30221	220R 5% 0,062W
3408	4822 051 30008	0R JUMPER (0603)
3409	4822 051 30221	220R 5% 0,062W
3410	4822 051 30472	4,7K 5% 0,062W
3411	4822 051 30102	1K 5% 0,062W
3412	4822 051 30102	1K 5% 0,062W
3413	4822 051 30471	470R 5% 0,062W
3415	4822 051 30471	470R 5% 0,062W
3416	4822 051 30471	470R 5% 0,062W
3420	4822 051 30221	220R 5% 0,062W
3421	4822 051 30102	1K 5% 0,062W
3422	4822 051 30102	1K 5% 0,062W
3423	4822 051 30562	5,6K 5% 0,063W
3424	4822 051 30123	12K 5% 0,062W
3425	4822 051 30103	10K 5% 0,062W
3427	4822 051 30103	10K 5% 0,062W
3428	4822 051 30334	330K 5% 0,062W
3429	4822 051 30334	330K 5% 0,062W
3430	4822 051 30471	470R 5% 0,062W
3431	4822 051 30103	10K 5% 0,062W
3432	4822 051 30221	220R 5% 0,062W
3433	4822 051 30221	220R 5% 0,062W
3434	4822 051 30333	33K 5% 0,062W
3435	4822 117 13632	100K 1% 0,62W
3436	4822 116 52213	180R 5% 0,5W
3437	4822 051 30333	33K 5% 0,062W
3438	4822 117 13632	100K 1% 0,62W
3439	4822 116 52213	180R 5% 0,5W
3440	4822 051 30153	15K 5% 0,062W
3441	4822 117 12925	47K 1% 0,063W
3442	4822 051 30333	33K 5% 0,062W
3443	4822 051 30272	2,7K 5% 0,062W
3445	4822 051 30222	2,2K 5% 0,062W
3446	4822 051 30682	6,8K 5% 0,062W
3447	4822 051 30183	18K 5% 0,062W
3448	4822 051 30273	27K 5% 0,062W
3449	4822 051 30393	39K 5% 0,062W
3451	4822 051 30333	33K 5% 0,062W
3454	4822 051 30333	33K 5% 0,062W
3455	4822 051 30333	33K 5% 0,062W
3456	4822 051 30472	4,7K 5% 0,062W
3457	4822 051 30223	22K 5% 0,062W
3458	4822 051 30472	4,7K 5% 0,062W
3459	4822 051 30222	2,2K 5% 0,062W
3460	4822 051 30682	6,8K 5% 0,062W
3461	4822 051 30183	18K 5% 0,062W

- RESISTORS -

3462	4822 051 30273	27K 5% 0,062W
3463	4822 051 30393	39K 5% 0,062W
3464	4822 051 30683	68K 5% 0,062W
3465	4822 051 30471	470R 5% 0,062W
3466	4822 051 30331	330R 5% 0,062W
3467	4822 051 30333	33K 5% 0,062W
3468	4822 051 30223	22K 5% 0,062W
3469	4822 051 30333	33K 5% 0,062W
3470	4822 051 30154	150K 5% 0,062W
3473	4822 117 12925	47K 1% 0,063W
3475	4822 051 30103	10K 5% 0,062W
3476	4822 051 30223	22K 5% 0,062W
3477	4822 051 30472	4,7K 5% 0,062W
3478	4822 051 30103	10K 5% 0,062W
3480	4822 117 13632	100K 1% 0,62W
3481	4822 051 30271	270R 5% 0,062W
3482	4822 051 30471	470R 5% 0,062W
3484	4822 117 13632	100K 1% 0,62W
3485	4822 117 13632	100K 1% 0,62W
3486	4822 051 30472	4,7K 5% 0,062W
3487	4822 051 30102	1K 5% 0,062W
3488	4822 117 12891	220K 1% ERJ3E
3489	4822 116 52213	180R 5% 0,5W
3490	4822 117 12891	220K 1% ERJ3E
3491	4822 116 52213	180R 5% 0,5W
3492	4822 051 30223	22K 5% 0,062W
3493	4822 051 30474	470K 5% 0,062W
3494	4822 051 30472	4,7K 5% 0,062W
3503	4822 051 30471	470R 5% 0,062W
3504	4822 051 30471	470R 5% 0,062W
3505	4822 051 30562	5,6K 5% 0,063W
3506	4822 051 30562	5,6K 5% 0,063W
3507	4822 051 30105	1M 5% 0,062W
3508	4822 051 30105	1M 5% 0,062W
3509	4822 051 30471	470R 5% 0,062W
3510	4822 051 30471	470R 5% 0,062W
3511	4822 051 30471	470R 5% 0,062W
3512	4822 051 30471	470R 5% 0,062W
3513	4822 051 30223	22K 5% 0,062W
3514	4822 051 30223	22K 5% 0,062W
3515	4822 051 30472	4,7K 5% 0,062W
3516	4822 051 30472	4,7K 5% 0,062W
3517	4822 117 12971	15R 5% 0,62W
3518	4822 117 12971	15R 5% 0,62W
3519	4822 051 30223	22K 5% 0,062W
3520	4822 051 30223	22K 5% 0,062W
3521	4822 051 30472	4,7K 5% 0,062W
3522	4822 051 30471	470R 5% 0,062W
3523	4822 051 30471	470R 5% 0,062W
3524	4822 051 30472	4,7K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3525	4822 051 30153	15K 5% 0,062W
3526	4822 051 30153	15K 5% 0,062W
3527	4822 117 13632	100K 1% 0,62W
3528	4822 117 13632	100K 1% 0,62W
3529	4822 051 30102	1K 5% 0,062W
3530	4822 051 30102	1K 5% 0,062W
3531	4822 051 30222	2,2K 5% 0,062W
3532	4822 051 30471	470R 5% 0,062W
4301	4822 051 30008	0R JUMPER (0603)
4401	4822 051 30008	0R JUMPER (0603)
4402	4822 051 30008	0R JUMPER (0603)
4403	4822 051 30008	0R JUMPER (0603)
9010	4822 051 30008	0R JUMPER (0603)
9011	4822 051 20008	0R JUMPER (0805)
9012	4822 051 30008	0R JUMPER (0603)
9015	4822 051 30008	0R JUMPER (0603)
9017	4822 051 20008	0R JUMPER (0805)
9026	4822 051 30008	0R JUMPER (0603)

- COILS & FILTERS -

5101	4822 157 70513	FM ANT COIL 3.5T
5102	2422 535 94985	AM ANT COIL 64UH
5104	9965 000 07706	FM OSC COIL 2.5T
5105	4822 157 71145	AM OSC COIL 270UH
5106	4822 157 70499	AM IFT WHITE
5107	4822 242 81154	KMFC5058-Z
5108	4822 156 11146	AM IFT BLACK
5301	4822 157 11231	LAN02TB1R0J
5400	4822 157 11228	100UH 5%
5401	4822 157 11231	LAN02TB1R0J
5402	4822 157 11231	LAN02TB1R0J

- DIODES -

6101	4822 130 11397	BAS316
6102	4822 130 11397	BAS316
6302	3198 010 53380	BZX79-B3V3
6303	4822 130 61219	BZX79-B10
6305	4822 130 34173	BZX79-B5V6
6400	9322 182 20682	LED LTL-1CHKSKNN
6401	9322 182 19682	LED LTL-1CHKSKNN
6402	9322 182 19682	LED LTL-1CHKSKNN
6403	4822 130 11397	BAS316
6404	9322 182 20682	LED LTL-1CHKSKNN
6405	9322 182 20682	LED LTL-1CHKSKNN
6406	4822 130 11397	BAS316
6407	4822 130 11397	BAS316
6408	4822 130 11397	BAS316
6409	4822 130 11397	BAS316

- DIODES -

6410	3198 010 53380	BZX79-B3V3
6413	4822 130 11397	BAS316
6414	4822 130 11397	BAS316

- IC & TRANSISTORS -

7101	4822 209 32746	TEA5711T/N2
7301	5322 130 60123	BC807-40
7302	4822 130 60373	BC856B
7303	4822 130 60511	BC847B
7304	4822 130 41246	BC327-25
7305	4822 130 60373	BC856B
7306	5322 130 44647	BC368
7307	4822 130 42615	BC817-40
7308	4822 130 42615	BC817-40
7309	4822 130 42615	BC817-40
7310	4822 130 42615	BC817-40
7311	5322 130 42755	BC847C
7312	4822 130 41246	BC327-25
7313	5322 209 83002	TDA2822M
7314	4822 130 60373	BC856B
7401	8240 009 50640	TMP86CH21F
7402	5322 130 42755	BC847C
7403	5322 130 42755	BC847C
7404	4822 130 60511	BC847B
7405	4822 130 60511	BC847B
7406	5322 130 42755	BC847C
7407	5322 130 42755	BC847C
7408	4822 130 60511	BC847B
7501	4822 130 60511	BC847B
7502	4822 130 60511	BC847B
7503	4822 130 44568	BC557B
7504	4822 130 44568	BC557B
7505	4822 130 44568	BC557B
7506	4822 130 44568	BC557B
7507	4822 130 41246	BC327-25

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

ELECTRICAL PARTSLIST - CD BOARD (ICD01-AX)

- MISCELLANEOUS -

1801	4822 242 81865	CER. FLTR CST16,93MXW0C3
1802	4822 265 11207	CONNECTOR 6P
1804	4822 265 11535	CONNECTOR 8P
1805	2422 025 17389	CONNECTOR 16P FFC
8001	3103 308 92890	FFC CABLE 16P/80/16P BD

- CAPACITORS -

2801	4822 126 14238	2,2nF 10% X7R 50V
2802	4822 124 41584	100µF 20% 10V
2803	3198 017 34730	47nF 10% X7R 16V
2804	4822 124 40196	220µF 20% 16V
2805	3198 017 34730	47nF 10% X7R 16V
2806	3198 017 34730	47nF 10% X7R 16V
2807	4822 124 40207	100µF 20% 25V
2808	3198 017 34730	47nF 10% X7R 16V
2810	3198 017 34730	47nF 10% X7R 16V
2812	4822 122 33761	22pF 5% NP0 50V
2813	3198 017 34730	47nF 10% X7R 16V
2814	4822 126 14247	1,5nF 10% X7R 50V
2815	3198 017 34730	47nF 10% X7R 16V
2816	3198 017 34730	47nF 10% X7R 16V
2818	4822 126 14305	100nF 10% X7R 16V
2819	4822 126 14549	33nF 10% X7R 16V
2820	4822 124 40769	4,7µF 20% 100V
2822	4822 126 14238	2,2nF 10% X7R 50V
2823	4822 124 41584	100µF 20% 10V
2824	4822 126 14549	33nF 10% X7R 16V
2825	4822 124 40769	4,7µF 20% 100V
2826	4822 126 13879	220nF +80-20% 16V
2827	4822 126 14238	2,2nF 10% X7R 50V
2828	3198 017 34730	47nF 10% X7R 16V
2829	2020 552 96137	2,7nF 10% X7R 50V
2830	4822 126 13193	4,7nF 10% X7R 63V
2831	3198 017 34730	47nF 10% X7R 16V
2832	4822 126 14305	100nF 10% X7R 16V
2833	5322 126 11583	10nF 10% X7R 50V
2834	4822 126 14305	100nF 10% X7R 16V
2836	3198 016 33380	3,3pF 1% NP0 50V
2837	3198 017 34730	47nF 10% X7R 16V
2838	3198 017 31530	15nF 10% X7R 50V
2839	5322 126 11583	10nF 10% X7R 50V
2840	3198 017 34730	47nF 10% X7R 16V
2841	4822 126 14315	390pF 5% NP0 50V
2842	4822 122 33777	47pF 5% NP0 63V
2844	3198 017 34730	47nF 10% X7R 16V
2845	3198 017 34730	47nF 10% X7R 16V
2846	4822 126 14305	100nF 10% X7R 16V

- CAPACITORS -

2847	4822 124 41584	100µF 20% 10V
2848	3198 017 34730	47nF 10% X7R 16V
2849	4822 126 14225	56pF 5% NP0 50V
2850	3198 017 34730	47nF 10% X7R 16V
2851	4822 126 13879	220nF +80-20% 16V
2853	4822 126 13879	220nF +80-20% 16V
2854	4822 126 14305	100nF 10% X7R 16V
2855	4822 124 41584	100µF 20% 10V

- RESISTORS -

3800	2120 108 91909	39R 5% ERJ3G
3801	4822 116 83082	4,7R 5% 0,21W
3804	4822 117 12902	8,2K 1% 0,063W
3805	4822 051 30123	12K 5% 0,062W
3806	4822 051 30102	1K 5% 0,062W
3807	4822 117 11507	6,8K 1% 0,1W
3808	4822 051 30332	3,3K 5% 0,062W
3809	4822 051 30103	10K 5% 0,062W
3810	4822 051 30471	470R 5% 0,062W
3811	4822 051 30103	10K 5% 0,062W
3812	4822 051 30689	68R 5% 0,063W
3815	4822 051 20008	0R JUMPER (0805)
3816	4822 051 30103	10K 5% 0,062W
3817	4822 051 30223	22K 5% 0,062W
3818	4822 051 30153	15K 5% 0,062W
3819	4822 051 30151	150R 5% 0,062W
3820	4822 117 13613	2,2R 5% 0603
3821	4822 051 30682	6,8K 5% 0,062W
3822	4822 117 10833	10K 1% 0,1W
3823	4822 051 30105	1M 5% 0,062W
3824	4822 051 20228	2,2R 5% 0,1W
3826	4822 051 30271	270R 5% 0,062W
3827	4822 117 12925	47K 1% 0,063W
3828	4822 051 30683	68K 5% 0,062W
3829	4822 051 30271	270R 5% 0,062W
3830	4822 051 30103	10K 5% 0,062W
3832	4822 117 12925	47K 1% 0,063W
3833	4822 051 10102	1K 2% 0,25W
3834	4822 051 30109	10R 5% 0,062W
3835	4822 051 30333	33K 5% 0,062W
3836	4822 126 13881	470pF 5% 50V
3837	4822 051 30471	470R 5% 0,062W
3838	4822 051 30471	470R 5% 0,062W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 051 30124	120K 5% 0,062W
3841	4822 051 30471	470R 5% 0,062W
3842	4822 117 12925	47K 1% 0,063W
3843	4822 051 30471	470R 5% 0,062W
3844	4822 051 30221	220R 5% 0,062W
3845	4822 117 12925	47K 1% 0,063W

ELECTRICAL PARTSLIST - CD BOARD (ICD01-AX)

- RESISTORS -

3846	4822 051 30471	470R 5% 0,062W
3847	4822 117 12925	47K 1% 0,063W
3848	3198 021 32250	2,2M 5%
3849	4822 051 30222	2,2K 5% 0,062W
3850	4822 051 30103	10K 5% 0,062W
3851	4822 117 12925	47K 1% 0,063W
3853	4822 051 30222	2,2K 5% 0,062W
3854	4822 051 30124	120K 5% 0,062W
3855	4822 051 30153	15K 5% 0,062W
3856	4822 051 30474	470K 5% 0,062W
3857	4822 051 30102	1K 5% 0,062W
3858	4822 051 30121	120R 5% 0,062W
3859	4822 117 12925	47K 1% 0,063W
3860	4822 117 12925	47K 1% 0,063W
3861	4822 117 12925	47K 1% 0,063W
3862	4822 117 12925	47K 1% 0,063W
3863	4822 051 30109	10R 5% 0,062W
3864	4822 117 12925	47K 1% 0,063W
3865	4822 117 12925	47K 1% 0,063W
3866	4822 117 12925	47K 1% 0,063W
3867	4822 117 12925	47K 1% 0,063W
3868	4822 051 30562	5,6K 5% 0,063W
3869	4822 117 13608	4,7R 5% 0,0016W
3870	4822 051 30333	33K 5% 0,062W
3871	4822 051 30689	68R 5% 0,063W
3872	4822 117 12139	22R 5% 0,062W
3874	4822 117 13608	4,7R 5% 0,0016W
3875	4822 117 13613	2,2R 5% 0603
3876	4822 051 30471	470R 5% 0,062W
3880	4822 051 30121	120R 5% 0,062W
3881	4822 051 30332	3,3K 5% 0,062W
3882	4822 051 30151	150R 5% 0,062W
3883	4822 051 30151	150R 5% 0,062W
3884	4822 117 12917	1R 5% 0,062W
3885	4822 051 20154	150K 5% 0,1W
3886	4822 117 12891	220K 1% ERJ3E
3892	4822 117 13613	2,2R 5% 0603
3900	4822 051 30102	1K 5% 0,062W
3901	4822 051 30102	1K 5% 0,062W
4801	4822 051 30008	0R JUMPER (0603)
4805	4822 051 30008	0R JUMPER (0603)
4806	4822 051 30008	0R JUMPER (0603)
4807	4822 051 30008	0R JUMPER (0603)
4808	4822 051 30008	0R JUMPER (0603)
4809	4822 051 30008	0R JUMPER (0603)
4810	4822 051 30008	0R JUMPER (0603)
4811	4822 051 30008	0R JUMPER (0603)
4812	4822 051 30008	0R JUMPER (0603)
4813	4822 051 30008	0R JUMPER (0603)
4814	4822 051 30008	0R JUMPER (0603)

- RESISTORS -

4815	4822 051 20008	0R JUMPER (0805)
4816	4822 051 30008	0R JUMPER (0603)
4817	4822 051 20008	0R JUMPER (0805)
4818	4822 051 20008	0R JUMPER (0805)
4819	4822 051 20008	0R JUMPER (0805)
4820	4822 051 20008	0R JUMPER (0805)
4821	4822 051 20008	0R JUMPER (0805)
4822	4822 051 20008	0R JUMPER (0805)
4823	4822 051 30008	0R JUMPER (0603)
4824	4822 051 20008	0R JUMPER (0805)
4825	4822 051 20008	0R JUMPER (0805)
4826	4822 051 20008	0R JUMPER (0805)
4827	4822 051 20008	0R JUMPER (0805)
4828	4822 051 20008	0R JUMPER (0805)
4829	4822 051 20008	0R JUMPER (0805)
4830	4822 051 20008	0R JUMPER (0805)
4831	4822 051 30008	0R JUMPER (0603)
4832	4822 051 20008	0R JUMPER (0805)
4833	4822 051 30008	0R JUMPER (0603)
4834	4822 051 20008	0R JUMPER (0805)
4835	4822 051 20008	0R JUMPER (0805)
4836	4822 051 30008	0R JUMPER (0603)
4837	4822 051 30008	0R JUMPER (0603)

- DIODES -

6802	9340 402 30115	BZX284-B2V4
6803	4822 130 11397	BAS316
6804	9340 402 30115	BZX284-B2V4

- IC & TRANSISTORS -

7802	5322 130 60123	BC807-40
7803	9322 158 56682	M63000SP
7804	9322 172 18668	TA2157F
7805	9322 177 87671	TC94A14F
7806	5322 130 60123	BC807-40
7808	9340 218 60115	BC857CW
7809	9340 217 80115	BC857CW

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