

Service
Service
Service

AZ2425

AZ2420

all versions



Service Manual

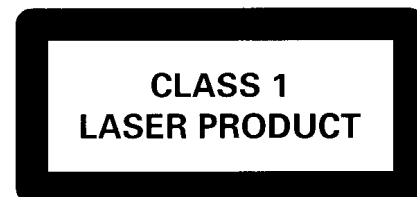


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Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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TECHNICAL SPECIFICATIONS

GENERAL

| | |
|-----------------------|------------------------------|
| Mains voltage | -/00 : 230 V |
| | -/01/11/11H/16 : 120 / 230 V |
| | -/05/10/14 : 240 V |
| | -/17 : 120 V |
| Mains frequency | -/00/05/10/14 : 50 Hz |
| | -/01/11/11H/16 : 50 / 60 Hz |
| | -/17 : 60 Hz |
| Battery | mains : 9 V (R20 x 6) |
| | remote : 3 V (R6 x 2) |
| Power consumption | : 35 W |
| Dimension (W x H x D) | : 500 x 225 x 265 mm |
| Weight | : 5.8 Kg |

AMPLIFIER

| | | |
|--------------------|---------|-------------------------------|
| Output power | mains | 2 x 2.5 W |
| | battery | 2 x 2.5 W |
| Speaker impedance | | 2 x 4 ohm |
| Frequency response | | 100 Hz - 10 kHz (± 4 dB) |

TUNER - FM SECTION

| | |
|-----------------|--------------------------|
| Tuning range | 87.5 - 108 MHz |
| IF frequency | 10.7 MHz |
| Sensitivity | < 22 dB at 26dB S/N |
| Selectivity | > 33 dB at ± 300 kHz |
| IF rejection | > 60 dB |
| Image rejection | > 25 dB |

SERVICE TOOLS

| | |
|--|-----------------|
| TORX T10 screwdriver with shaftlength 150mm..... | .4822 395 50423 |
| TORX screwdriver set SBC 163..... | .4822 295 50145 |
| Audio signal disc SBC 429..... | .4822 397 30184 |
| Playability test disc SBC 444..... | .4822 397 30245 |
| Test disc 5 (disc without errors) + | |
| Test disc 5A (disc with dropout errors, black spots and fingerprints) | |
| SBC 426/426A..... | .4822 397 30096 |
| Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause")..... | .4822 397 30155 |
| Universal test cassette Fe SBC 420. | .4822 397 30071 |

TUNER - AM SECTION

| | | |
|-----------------------|----|---------------------------|
| Tuning range | MW | 530 - 1602 kHz |
| Tuning range | LW | 153 - 279 kHz |
| Sensitivity | MW | < 1500 μ V/m 26dB S/N |
| | LW | < 3000 μ V/m |
| Selectivity | MW | > 18 dB |
| | LW | > 24 dB |
| IF rejection ratio | MW | > 24 dB |
| | LW | > 26 dB |
| Image rejection ratio | MW | > 28 dB |
| | LW | > 30 dB |

AUDIO CASSETTE RECORDER

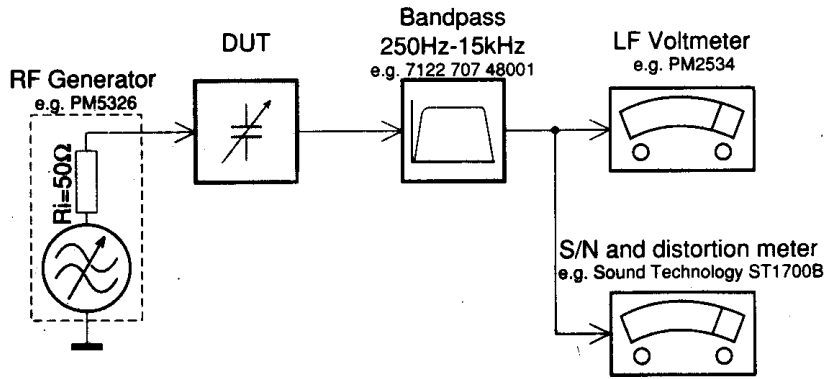
| | |
|----------------------|-------------------------|
| Number of tracks | : 2 stereo |
| Tape speed | : 4.76 cm/sec $\pm 3\%$ |
| Wow & flutter | : < 0.48 % JIS UWTD |
| Fast wind/rewind C60 | : < 110 sec. |
| Frequency response | P/B : 125 - 8000 Hz |
| S/N ratio | : > 40 dB |

COMPACT DISC

| | |
|--------------------|-------------------|
| Frequency response | : 100 Hz - 10 kHz |
| S/N ratio | : > 50 dB |
| Channel difference | kHz : < 3 dB |
| Channel crosstalk | kHz : > 26 dB |
| Laser wavelength | : 780 \pm 20nm |
| Laser light power | : < 0.3 mW |

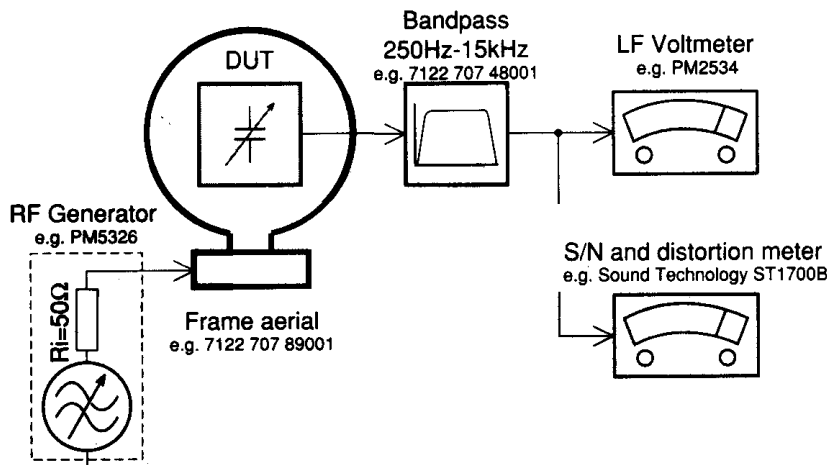
SERVICE MEASUREMENTS

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

Tuner AM (MW,LW)



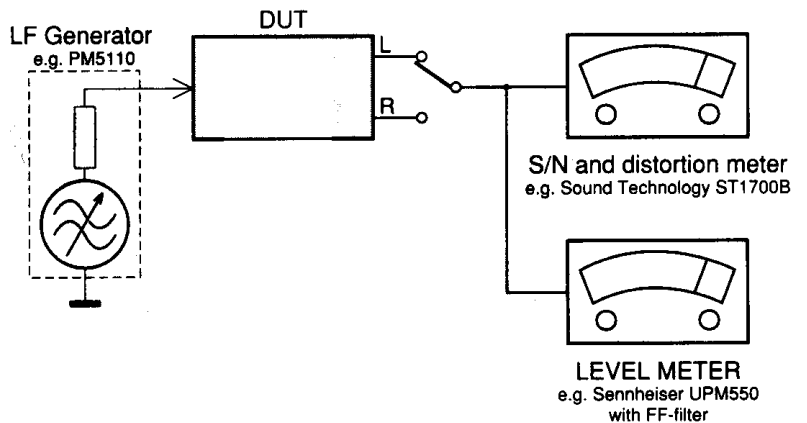
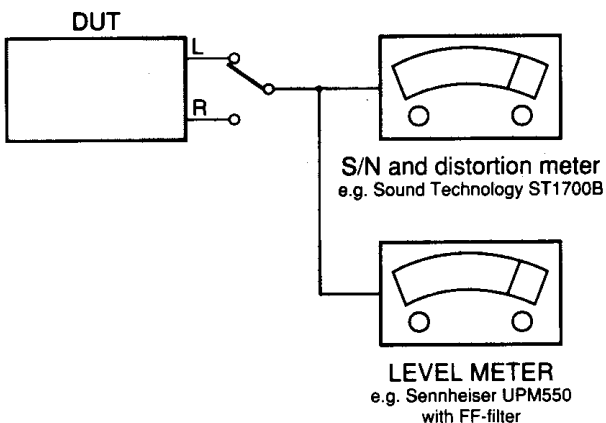
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)

RECORDER

Use Universal Test Cassette Fe SBC420 4822 397 30071



TOP AND FRONT PANEL See fig. 1

- ① **DBB, JAZZ, POP** - DSC indicators. The chosen DSC mode lights up when selected
- ② **INCREDIBLE SURROUND** - To create a super enhanced surround sound
- ③ **CD TAPE TUNER** - To select the sound source
- ④ **POWER** - To switch the set on/off
- ⑤ **CD PLAYER:**
STOP ■ - To stop playback or cancel a programme
PLAY•PAUSE II - To start or interrupt CD playback
SEARCH ⏮ or ⏭ - To skip or search backwards and forwards within a track
To skip to the beginning of a current/previous or subsequent track
SHUFFLE - To select playback of tracks in random order.
PROGRAM - To programme tracks and to review the programme.
REPEAT - To repeat a track, a CD programme or an entire CD.
OPEN / CLOSE - To open / close the CD door.
- ⑥ **Display** - to show the status of the set.
- ⑦ **REMOTE SENSOR** - infrared sensor for remote control
- ⑧ **VOLUME** ▲ ▼ - To adjust the volume level.
- ⑨ **DSC (DIGITAL SOUND CONTROL)** - To enhance the type of music you are listening to: **DBB-JAZZ-POP**
- ⑩ **DIGITAL TUNER:**
PROGRAM - To programme preset stations.
BAND
- To select wave band (FM/MW).
- To select 9/10 KHz tuning step for MW band (not all versions).
PRESET - ▼ / ▲ (down / up)
- To select a preset station.
Tuning - ⏮ / ⏭ (down / up)
- To tune to radio stations.

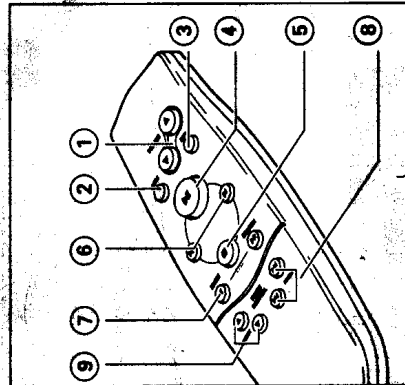
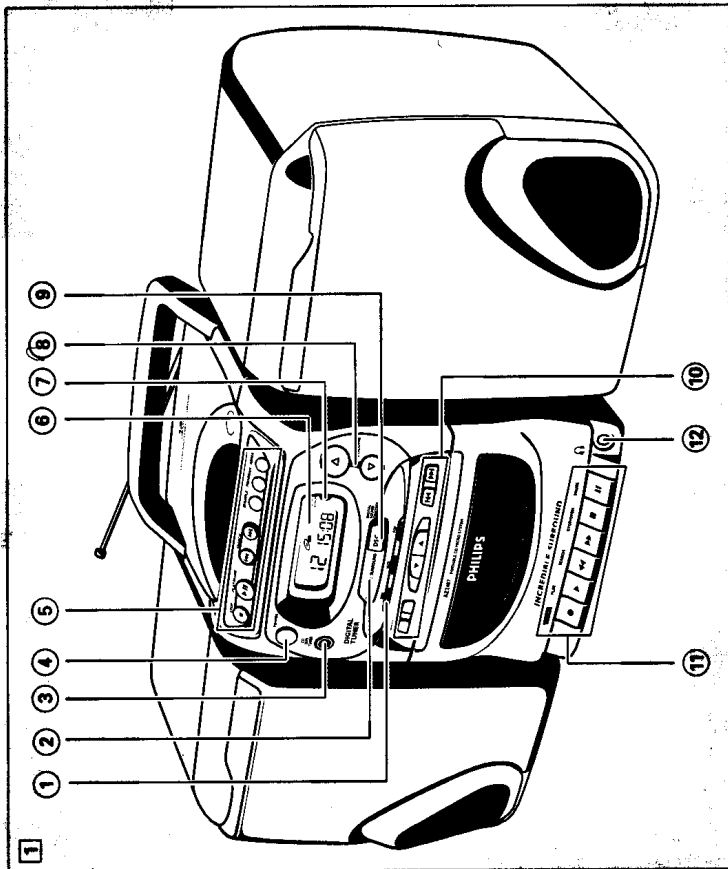
- ⑪ **CASSETTE RECORDER keys:**
RECORD ● - To start recording.
PLAY ▶ - To start playback.
SEARCH ⏮ / ⏭ - To fast rewind/wind the tape.
STOP•OPEN ■ - To stop playback and open the cassette compartment.
PAUSE II - To interrupt recording or playback.
- ⑫ ⏪ - 3.5 mm stereo headphone socket

BACK PANEL See fig. 2

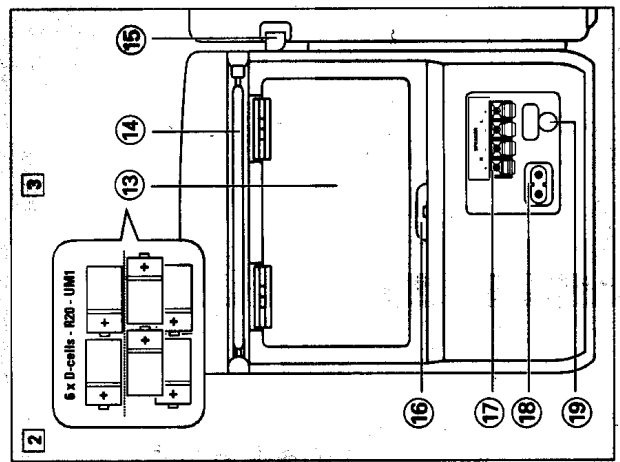
- ⑬ **Battery compartment**
- ⑭ **Telescopic aerial** - To improve FM reception.
- ⑮ **Speaker lever** - To unlock the loudspeaker boxes.
- ⑯ **BEAT SWITCH** - To eliminate any whistle tones during MW (AM)
- ⑰ **Speakers** - Loudspeaker terminals.
- ⑱ **AC MAINS** - Socket for mains lead.
- ⑲ **Voltage selector**

REMOTE CONTROL See fig. 3

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



Remote Control
& DSC Knob are
for AZ2425 only.



REMOVABLE SPEAKERS

Attaching the speakers
 • Slide the speakers down into the sleeves on the sides of the set cabinet. The speakers will click into position.

Taking off the speakers

• Keep the lever (found on the back corner of the speaker) pressed and slide the speaker upwards.

Connecting the speakers

1. Connect the right speaker to the terminal R, with the red marked wire to (+) and the black wire to (-).
2. Clip the exposed portion of wire into the corresponding colour terminal.
3. Repeat the wiring procedure for the left speaker to terminal L, making sure that you connect the red marked wire to + and the black wire to -.

Note: – Speakers with an impedance of 4 ohms or higher other than as supplied may be used instead. Do not, however, use speakers with a lower impedance as this will result in damage to your set.

- When headphones are connected to the headphone socket the speakers are disconnected.

Switching POWER on/off: Save energy

Whether you are using mains or battery supply, to avoid unnecessary energy consumption *always push the POWER button to the off position after using the set.*

Environmental information

All redundant packaging material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), expandable polystyrene (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 packaging materials, exhausted batteries and old equipment.

BATTERIES

Whenever convenient, use the mains supply if you want to conserve battery life. Make sure you remove the mains plug from the set and wall socket before inserting batteries.

Batteries (optional)

1. Open the battery compartment and insert as shown six batteries, type R20, UM1 or D-cells (preferably alkaline) with the correct polarity as indicated by the (+) and (-) symbols inside the compartment.

Remote control batteries (included)

1. Open the battery compartment and insert as shown two batteries, type R03, UM4 or AAA (preferably alkaline).
2. Replace the compartment door, making sure the batteries are firmly and correctly in place. The set is now ready to operate.
3. Remove the batteries if exhausted or if they will not be used again for a long period.

– The incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst. Therefore:

- Do not mix battery types, e.g. alkaline with zinc carbonate.
- When inserting new batteries, replace all batteries at the same time.

MAINS

1. Check if the mains voltage as shown on the type plate (on the base of the set) corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.

2. Connect the mains lead (packed inside the battery compartment) to the MAINS ~ socket and the wall socket.
 → The set is now ready to use.

3. To switch off the mains supply completely, pull the mains plug out of the wall socket.

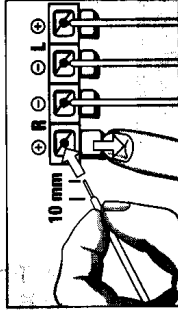
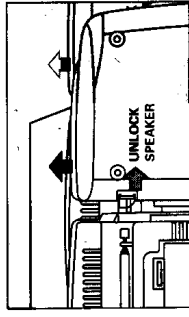
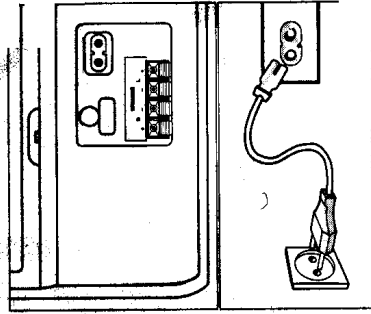
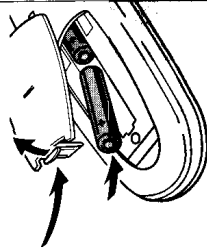
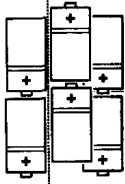
Note: If the set is connected to the mains and in the POWER off position, a very small amount of power, 2 Watts, will be drawn from the mains supply.

POWER SAVING BACKLIGHT DISPLAY

- The lighting of the display only functions if the set is connected to the mains supply.
- As a power-saving feature, the lighting for the display is automatically turned down shortly after the set is switched on, and also within a short time after activating or adjustment of any of the set's controls.

IMPORTANT NOTE FOR USERS IN THE U.K.: SEE PAGE 2

6 x D-cells - R20 - UM1



GENERAL OPERATION

1. To switch on the set, press the **POWER** button.
2. To select your sound source press the **CD TAPE TUNER** button until the desired mode is shown in the display.
3. Adjust the volume using the **VOLUME** ▲, ▼ buttons.
→ Display indication shows the level, 0-32 and VOL.
4. Adjust the sound effect by pressing the **DSC** button once or more.
→ **DBB**, **JAZZ** or **POP** lights up when activated.
5. Create an enhanced surround sound by pressing the **INCREDIBLE SURROUND** button.
→ The **INCREDIBLE SURROUND** button lights up when activated.
6. To switch off the set, press the **POWER** button to the off position.

Note:

When the set is switched off:

- The last source selected and tuner presets will be retained in the set's memory
- the volume will automatically adjust to level 12.

TUNING TO RADIO STATIONS

1. Press the **CD TAPE TUNER** button repeatedly until the **TUNER** mode is displayed.
→ **FM** appears briefly on the display to indicate that you have entered the tuner mode.
2. Press **BAND** to select your wave band.
To tune to radio stations, press the **TUNING** control ◀◀ or ▶▶ on the set until the frequency on the display starts running, before releasing your finger from the control.
→ The radio automatically tunes to a station of sufficient reception and **5 r c h** appears on the display.
3. Repeat if necessary until you find the desired station.
– To tune to a weak transmitter, briefly press **TUNING** ◀◀ or ▶▶ until you have found optimum reception or the correct frequency is shown on the display.
– When **STEREO** appears on the display, you are receiving a FM-stereo transmitter.

To improve radio reception:

- For **FM**, pull out the telescopic aerial. Incline and turn the aerial. Reduce its length if the signal is too strong (very close to a transmitter).
- For **MW (AM)** and **LW**, the set is provided with a built-in aerial so the telescopic aerial is not needed. Direct the aerial by turning the whole set.

PROGRAMMING RADIO STATIONS

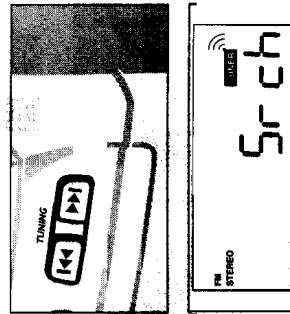
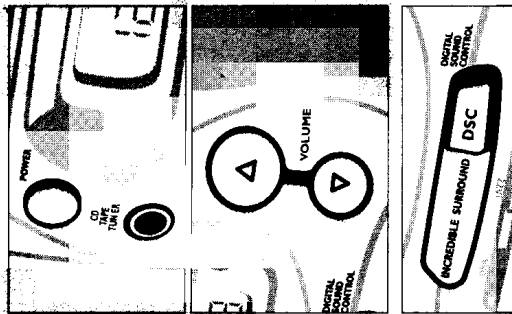
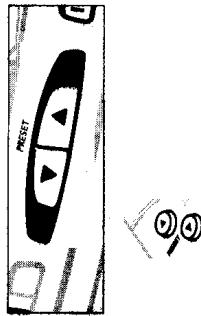
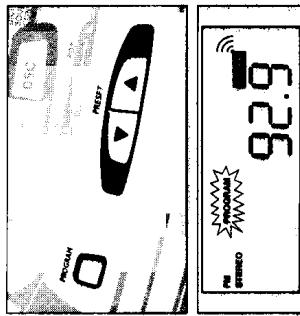
You can store up to 29 radio stations in the memory. When tuning to the preset station, the preset number (1 to 29) is indicated in the display.

1. Tune to your desired station, following the three steps given under **TUNING TO RADIO STATIONS**.
→ If the frequency is already stored in the memory, the preset number will be displayed.
2. Press **PROGRAM** to activate programming.
→ **PROGRAM** will start flashing on the display.
3. Press the **PRESET** control (up or down) to allocate a preset station number from 1 to 29.
4. Press **PROGRAM** again to confirm the setting.
5. Repeat the above four steps to store other frequencies and presets in the memory.
– You can clear a preset number by storing another frequency in its place.

Tuning to preset stations

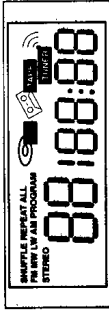
There are two ways possible in which you can tune to preset stations:

- Press the **PRESET** ▼, ▲ control (down, up) on the set.
- By remote control, press **PRESET** ▼, ▲ (down, up), until the desired preset number appears on the display.



CD DISPLAY INDICATION

- OPEN:** When you open the CD compartment.
- READ:** When the CD player scans the contents of a CD
- *Total track number and playing time:* in stop mode
 - **no disc:** when no disc inserted, or error in CD operation or with the CD (see Troubleshooting)
 - *Current track number and elapsed playing time:* during CD playback. In PAUSE position, the display freezes and the elapsed playing time flashes.
 - **SHUFFLE/REPEAT (ALL) modes:** when the respective mode is activated
 - **SHUF:** appears briefly before playing a random track when you select SHUFFLE mode / skip to the next or previous track(s) in SHUFFLE mode
 - **PROGRAM:** flashes when you programme tracks
 - **Prog:** and the number (1-20) indicating the position of a selected track within a programme
 - **FULL:** no further tracks can be programmed
 - **CLr:** when you cancel a CD programme
 - *Playing time and total number of programmed tracks:* in stop position or at the end of a CD programme.



SEARCH ◀◀ or ▶▶

Selecting a different track

- On the set, press SEARCH ◀◀ or ▶▶ once or repeatedly until the required track number appears in the display.
- Alternatively, on the remote control press ◀ or ▶ once or more to skip tracks.
- If you have selected a track number shortly after loading a CD or in the PAUSE position, you will need to press PLAY • PAUSE ▶▶ to start playback.



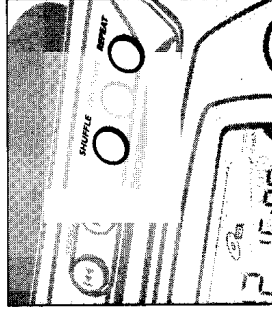
Searching for a passage within a track

1. With your finger on the control, press SEARCH ◀◀ or ▶▶
 - The CD is played at high speed and low volume.
2. When you recognize the passage you want, release the SEARCH ◀◀ or ▶▶ button.
 - Normal CD playback will resume at this point.

Different play modes: SHUFFLE/REPEAT

You can select and change the different play modes before or during playback.

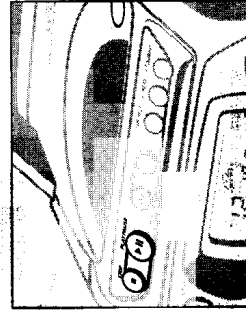
- The play modes can also be combined with PROGRAM
- 1. Press SHUFFLE/REPEAT until the desired function appears on the display.
 - SHUFFLE** - Tracks of the entire CD or the programme are played in random order.
 - SHUFFLE REPEAT ALL** - To repeat the entire CD or programme continuously in random order.
 - REPEAT ALL** - Repeats the entire CD.
 - REPEAT (SHUFFLE REPEAT)** - Plays the current (random) track continuously.
 - Except for REPEAT, it is also possible to skip tracks by holding down the SEARCH ◀◀ or ▶▶ control continuously until you reach your desired track.
- 2. To leave the REPEAT/SHUFFLE mode, press the respective SHUFFLE or REPEAT button repeatedly until the various REPEAT/SHUFFLE modes are no longer shown on the display.
 - You can also press STOP ■ to quit playback.



PLAYING A CD

1. Press the CD TAPE TUNER button repeatedly until the CD mode is displayed.
2. Press OPEN • CLOSE to open the CD player compartment
3. Insert the CD, printed side facing up and press OPEN • CLOSE to close the CD door.
4. Start playback by pressing PLAY • PAUSE ▶▶.
5. To interrupt playback, press PLAY • PAUSE ▶▶. Press PLAY • PAUSE ▶▶ again to continue playback.
6. Press STOP ■ to stop CD playback.
7. To switch off the set press the POWER button.

- Note:** CD playback will also stop when:
- the CD door is opened;
 - the CD has reached the end;
 - you press the CD TAPE TUNER button to TAPE or TUNER mode;
 - you press the POWER button



PROGRAMMING TRACK NUMBERS

In the stop position, programme your CD tracks in the desired sequence. You can store any track more than once. Up to 20 tracks can be stored in the memory.

- When the programme memory is full, the display will show FULL and it will not be possible to add further tracks to your current programme.

1. Press PROGRAM to enter the programming mode.

→ The display will show PROGRAM and the track number '1'.
 2. Select the desired track using SEARCH ◀◀ or ▶▶ until the display shows the desired track number.

3. Store the desired track by pressing PROGRAM once.

→ The display will briefly show the number of the track according to the programme sequence and the playing time of the programme, followed by confirmation of your selected track number and **Prog.**

4. Repeat steps 2 and 3 to select and store all desired tracks in this way.

5. To start playback of your CD programme, press PLAY ◻ PAUSE ▶▶.

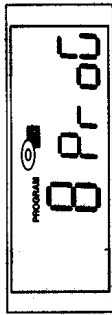
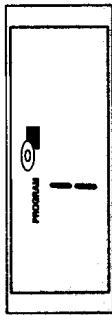
Reviewing your programme

- To review your set programme, keep PROGRAM pressed for a few seconds until the display changes to show your stored track numbers in sequence.

Erasing a programme

You can erase a programme by:

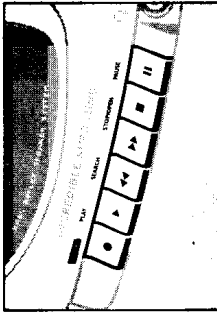
- pressing STOP ◻ twice;
- opening the CD door;
- pressing the POWER button.



CASSETTE PLAYBACK

1. Press STOP ◻ OPEN ◻ to open the cassette holder.
2. Insert a recorded cassette and shut the cassette holder.
3. Press PLAY ▶ and playback will start.
4. For brief interruptions, press PAUSE ◻. Press PAUSE ◻ again to resume playback.
5. By pressing ◀◀ or ▶▶, fast winding of the tape is possible in both directions.
6. To stop playback, press STOP ◻ OPEN ◻.
 → The keys are automatically released at the end of the tape, except if PAUSE ◻ has been activated.
7. To switch off the set, press the POWER button.

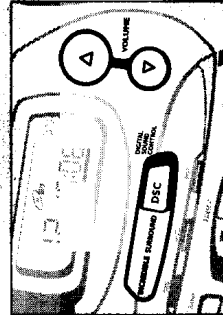
Note: During CD playback or TUNER mode, if the cassette holder is already loaded you can switch directly to the TAPE mode by pressing the PLAY ▶ key.



CASSETTE RECORDING

General information on cassette recording

- Recording is permissible insofar as copyright or other rights of third parties are not infringed.
- This deck is not suited for recording on CHROME (IEC II) or METAL (IEC IV) type cassettes. For recording you should use NORMAL type cassettes (IEC I) on which the tabs have not been broken.
- The recording level is set automatically. Altering the VOLUME, INCREDIBLE SURROUND or DSC controls will not affect the recording in progress.
- No recording will take place during the first 7 seconds, when the leader tape passes the recorder heads.
- To prevent the accidental erasure of a recording, keep the cassette side to be safeguarded in front of you and break out the left tab. Recording on this side is no longer possible. To render this safeguard ineffective, cover the tabs with a piece of adhesive tape.
- As long as PLAY ▶ or RECORD ● keys are pressed on the set, it will not be possible to change to another source.

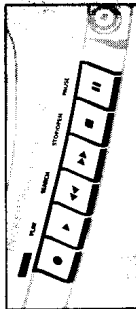


If a fault occurs, first check the points listed below before taking the set for repair. If you are unable to remedy a problem by following these hints, consult your dealer or service centre.

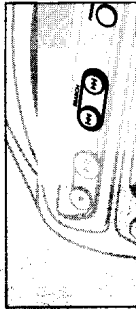
WARNING: Under no circumstances should you try to repair the set yourself, as this would invalidate the guarantee.

SYNCHRO START CD RECORDING

1. Press the CD TAPE TUNER button repeatedly until the CD mode is displayed.
2. Insert a CD and if desired, programme track numbers.
3. Press STOP•OPEN ■ to open the cassette holder.
4. Insert a blank cassette into the cassette deck and shut the cassette holder.



5. Press RECORD ● to start recording.
 → Playing of the CD programme starts automatically from the beginning of the programme. It is not necessary to start the CD player separately.



- To select and record a particular passage within a track
- a. press the SEARCH controls ◀◀ or ▶▶ to find your passage
 - b. put the CD player on PAUSE at the selected passage.
 - c. recording will begin from this exact point in the track when you press RECORD ●.
6. For brief interruptions, press PAUSE ■ deck key. To resume recording, press PAUSE ■ again.
 7. To stop recording press STOP•OPEN ■.

RECORDING FROM THE RADIO

1. Press the CD TAPE TUNER button repeatedly until the TUNER mode is displayed.

2. Tune to the desired radio station using the TUNING control (See TUNING TO RADIO STATIONS).

3. Press STOP•OPEN ■ to open the cassette holder.

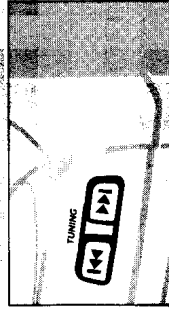
4. Insert a blank tape into the cassette deck and shut the cassette holder.

5. Press RECORD ● to start recording.

→ If you hear a whistling sound during recording of an MW/LW radio station, this can be suppressed by setting the BEAT switch to another position.

6. For brief interruptions, press PAUSE ■. To resume recording, press PAUSE ■ again.

7. To stop recording, press STOP•OPEN ■.



PROBLEM

- POSSIBLE CAUSE
- REMEDY

No sound/power

- VOLUME is not adjusted.
- Adjust the VOLUME.
- Headphones are connected.
- Disconnect headphones.
- Batteries are exhausted.
- Insert fresh batteries.
- Batteries are incorrectly inserted.
- Insert the batteries correctly.
- Mains lead is not securely connected.
- Connect the mains lead properly.
- Batteries loaded but mains lead still plugged in and connected.
- Pull out the mains plug from the MAINS socket and the set.

Reversed left and right sound/no sound from one speaker

- Speakers incorrectly connected
- Connect properly: L to left, R to right

Poor bass sound

- Speakers not in phase.
- Connect speaker poles correctly, '+' pole (red marked wire) to '+'; '-' pole (black/unmarked wire) to '-'.

CD playback does not work

- CD is badly scratched or dirty.
- Replace or clean the CD, see Maintenance.
- Laser lens steamed up
- Wait until lens has acclimatized

The CD skips tracks

- CD is damaged or dirty.
- Replace or clean the CD.
- PROGRAM/SHUFFLE is active.
- Switch off the PROGRAM/SHUFFLE function.

Poor cassette sound quality

- Dust and dirt on the heads, capstan or pressure roller.
- Clean the heads etc., see Maintenance.
- Use of incompatible cassette types (METAL or CHROME)
- Only use NORMAL (IEC 1) for recording.

Recording does not work

- Cassette tab(s) may be broken out.
- Apply a piece of adhesive tape over the missing tab space.

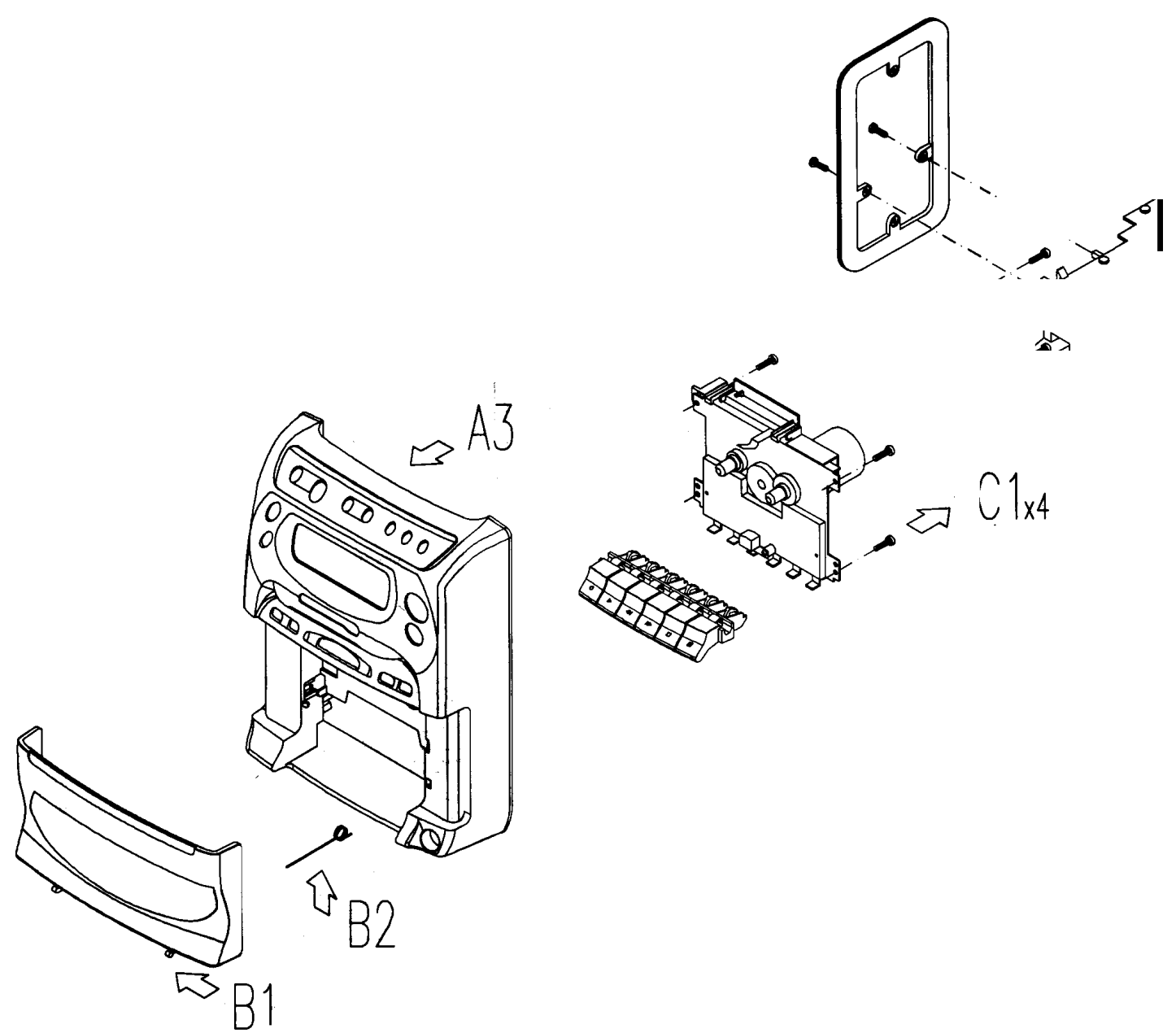
Remote control does not function properly

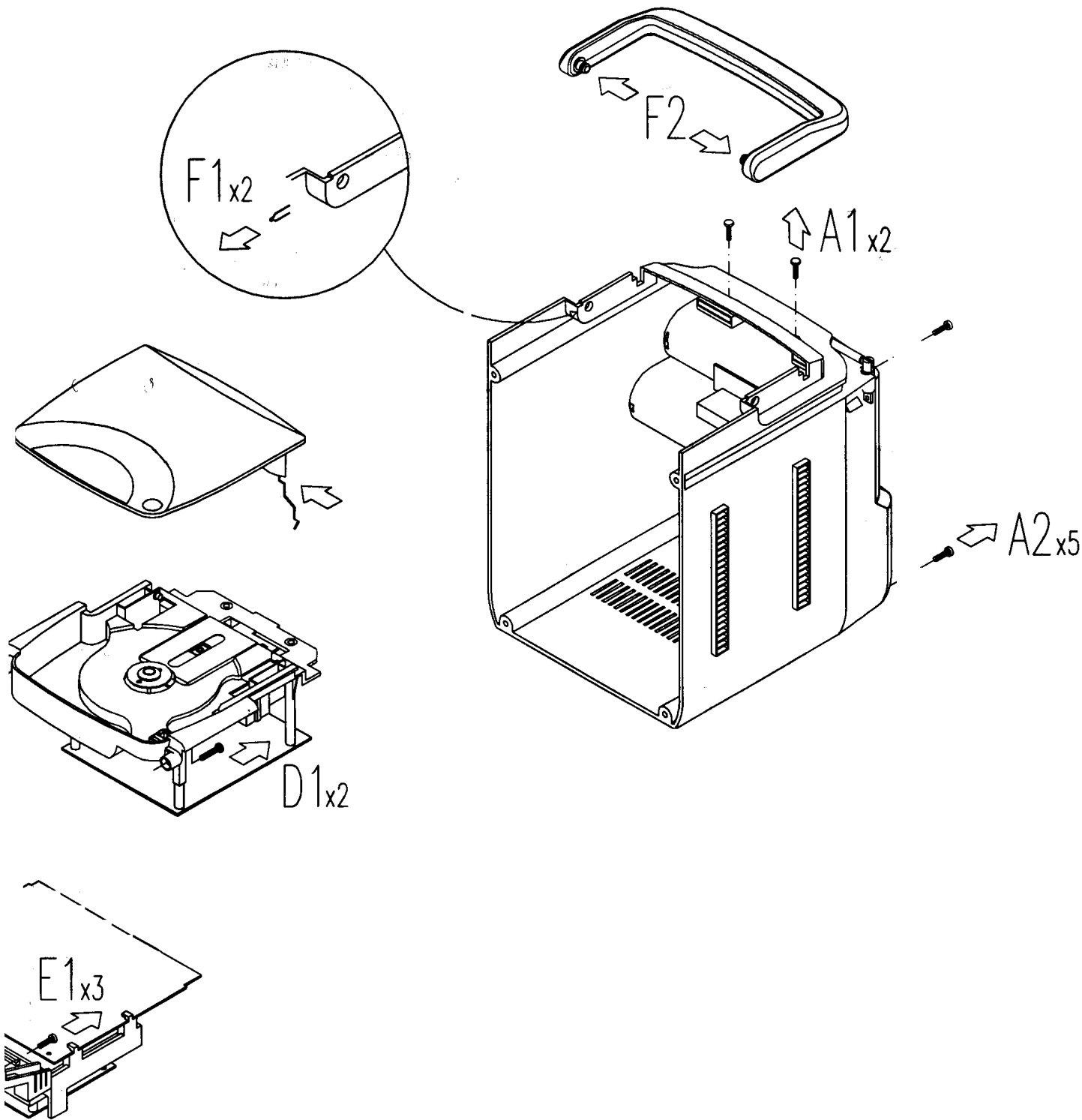
- Batteries are exhausted.
- Insert new batteries.
- Batteries are incorrectly inserted.
- Insert batteries correctly.
- Distance or angle between the set is too large.
- Reduce the distance or angle.

This set complies with the radio interference requirements of the European Community. The type plate is located on the base of the set.

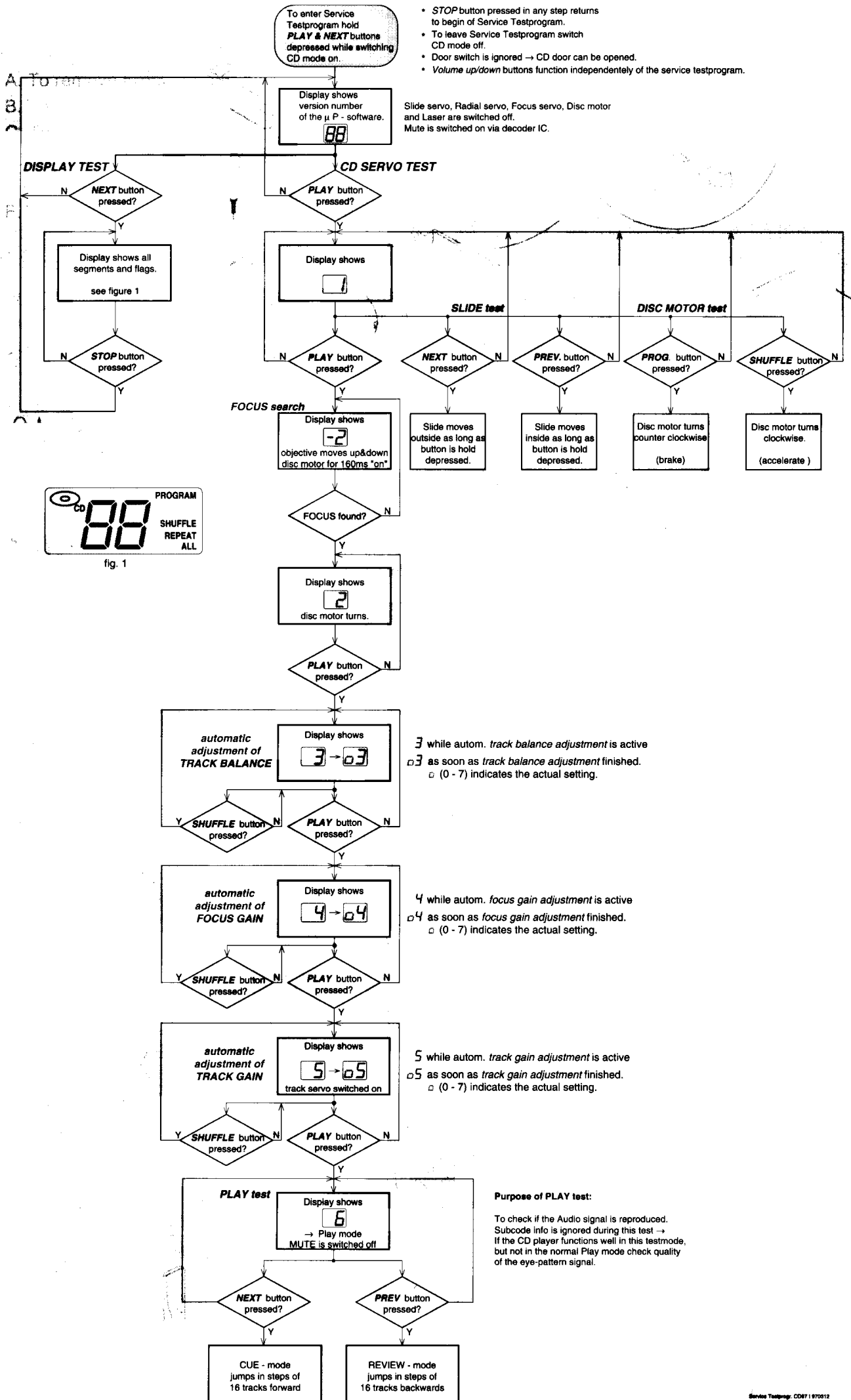
DISASSEMBLY DIAGRAM

- A. To remove Front Cabinet Assembly
- B. To remove Cassette Door
- C. To remove Tape Deck
- D. To remove CD Assembly
- E. To remove Bracket Support
- F. To remove Handle



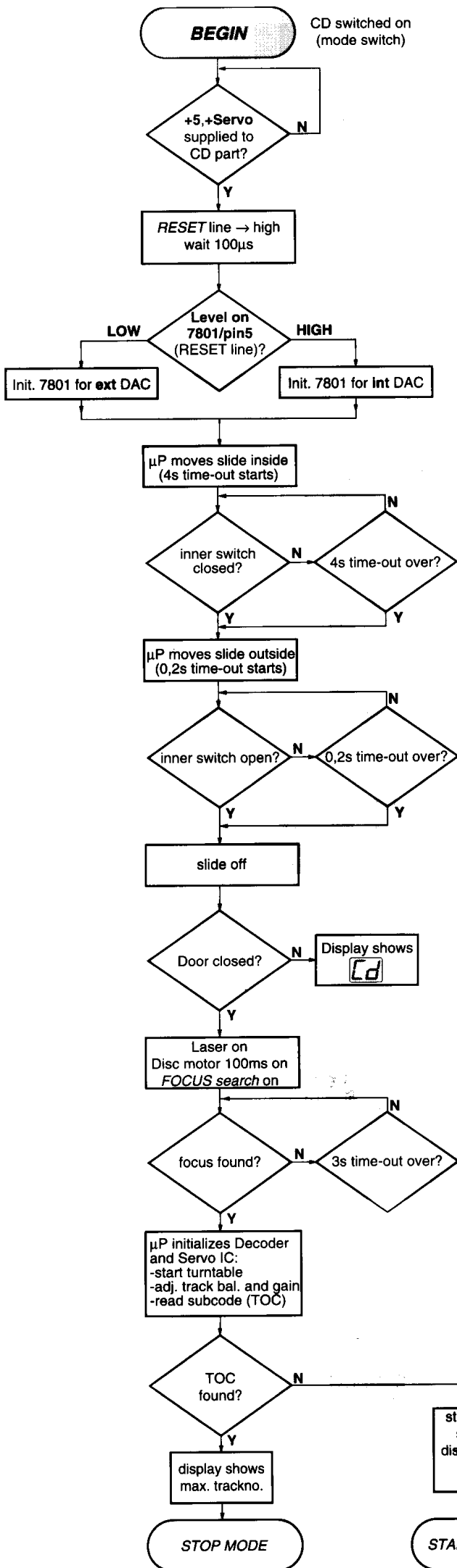


CD - SERVICE TESTPROGRAM



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 27 of Decoder 7801 and
Disc Motor driver 7805
- HF Signal

Pin-descriptions of CD ICs

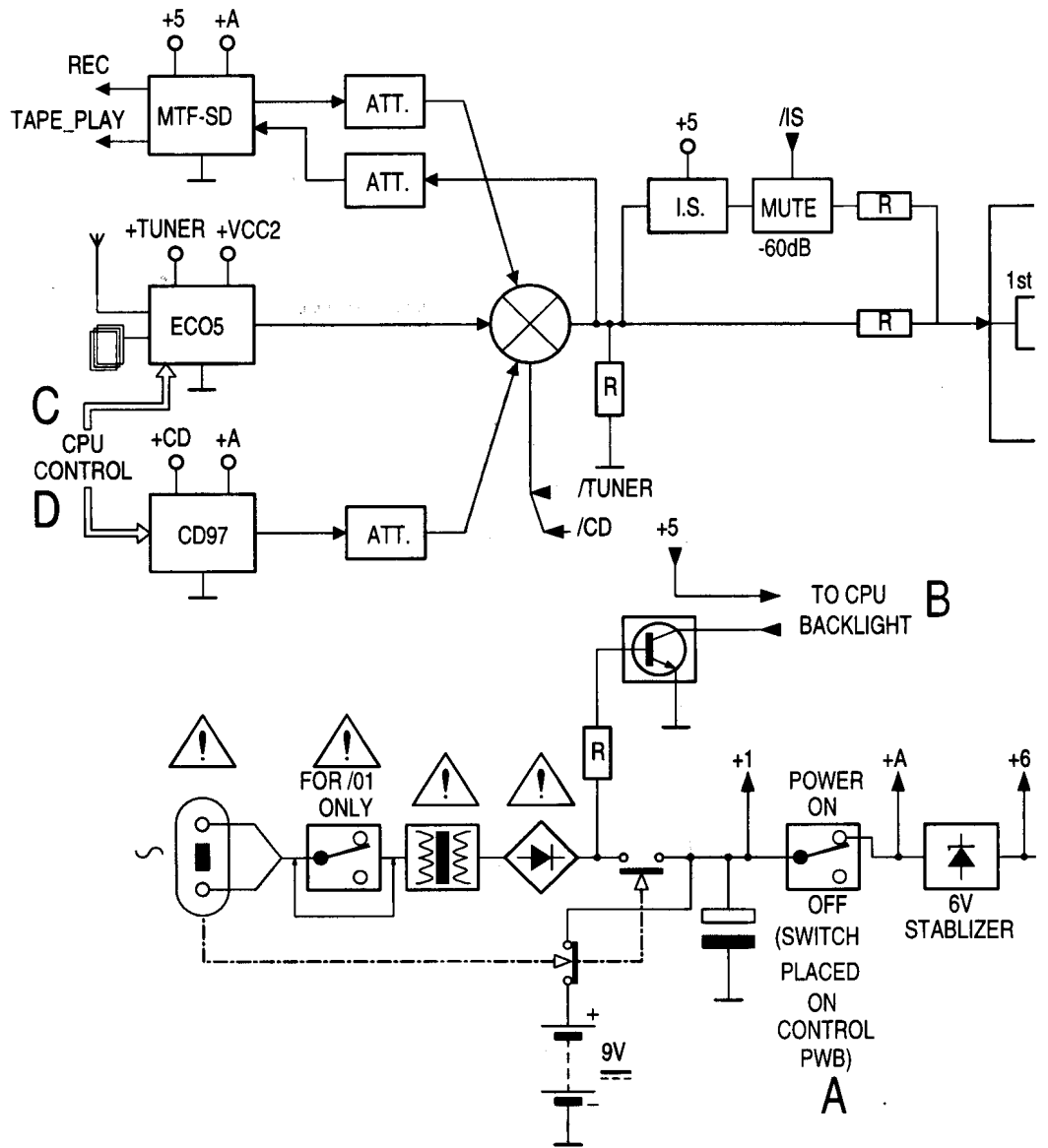
SERVO PROCESSOR M62475FP

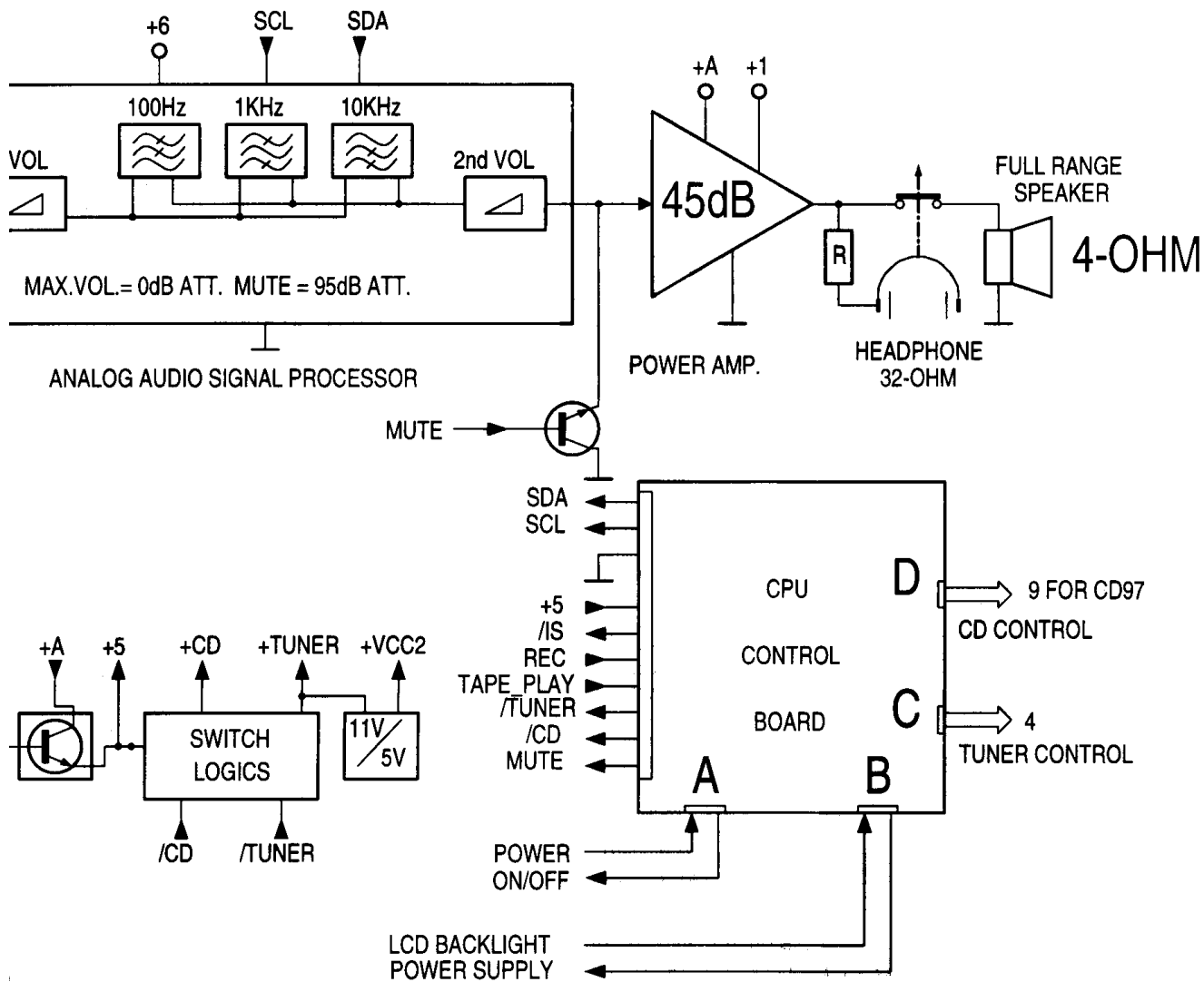
| Pin | Name | Direction | Description |
|-----|-------------------|---|--|
| 1-3 | A, B, C | Diode array → Servo processor | Current input (central photo diode signal input) |
| 4-5 | E, F | Diode array → Servo processor | Current input (satellite photo diode signal input) |
| 6 | SGT | Servo processor → Track error ampl. input | Signal generator output to track servo, sends 1700Hz for adjustment procedure |
| 7 | TE - | - | Inverting input of track error 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 | DET.FILTER | - | Pin for connection of DETection FILter capacitor of <i>ADJUST LOGIC</i> |
| 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 | C _{LPF} | - | Pin for connection of Low Pass Filter capacitor for <i>ADJUST LOGIC</i> |
| 28 | I _{REF} | - | Reference current input |
| 29 | V _{CC} | - | Positive supply connection pin (4V - 5.5V) |
| 30 | FS _{OUT} | 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 error ampl. input | Signal generator output to focus servo, sends 1300Hz for adjust. procedure |
| 35 | C _{FSR} | - | Charge capacitor for Focus Search triangle-generator |
| 36 | ALPC + | - | Non inverting input of Automatic Laser Power Control amplifier |
| 37 | ALPC - | - | Inverting input of Automatic Laser Power Control amplifier |
| 38 | ALPC 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 M65824FP

| Pin | Name | Direction | Description |
|-----|-----------------------|------------------------------------|--|
| 1 | AVSS | - | Analog system ground |
| 2 | ADJCLK | not connected | Clock output for servo adjustment; f=88.2kHz |
| 3 | LOCK | not connected | Lock monitor / low disc rotation output |
| 4 | CKSEL | - | System clock selection. Low=8.4672MHz, high=16.9344MHz |
| 5 | RESET | Reset circuit → Signal processor | System reset |
| 6 | C423 | not connected | 4.2336MHz clock output |
| 7 | C846 | not connected | 8.4672MHz clock output |
| 8 | XI | X-Tal → Signal processor | Crystal oscillator input |
| 9 | DVSS | - | Digital system ground |
| 10 | XO | Signal processor → X-Tal | Crystal oscillator output |
| 11 | TEST | - | Normal / Test selection input. Testmode = high |
| 12 | SBCO | not connected | Subcode serial output |
| 13 | SCCK | - | Shift clock input for subcode data read |
| 14 | SYCLK | not connected | Frame lock status output. Lock = high |
| 15 | EFFK | not connected | EFM frame clock output. Duty = 50% |
| 16 | KILLB | Signal processor → Mute circuit | Digital silence mute output. Digital zero = low |
| 17 | EST1 | not connected | Error monitor output1 |
| 18 | EST2 | not connected | Error monitor output2 |
| 19 | HF | Servo processor → Signal processor | HF signal input |
| 20 | TLC | - | Slice level control signal output |
| 21 | LPF | - | PLL loop filter |
| 22 | Dig.V _{DD} | - | Digital interface power supply |
| 23 | DSPS | - | Digital system power supply |
| 24 | SBQS | not connected | Interrupt signal to read out subcode Q data. Read = low |
| 25 | CRCF | not connected | Subcode Q-channel Cyclic Redundance Check Flag output. CRC o.k.=high level |
| 26 | SCAND | not connected | Subcode sync signal detection. Sync = high |
| 27 | PWM | Signal processor → Motor driver | Disc motor driving (Pulse Width Modulation) output |
| 28 | DVDD2 | - | Digital interface power supply 2 |
| 29 | DVSS2 | - | Digital system ground2 |
| 30 | MCK | μP → Signal processor | μP interface shift Clock input |
| 31 | MSD | μP ↔ Signal processor | μP interface Serial Data I/O line |
| 32 | MLAB | μP → Signal processor | μP interface Latch clock input (internal 22k pull up resistor) |
| 33 | EXP1 | → Signal processor | Versatile input pin (internal 4.7k pull up resistor) |
| 34 | EXP2 | → Signal processor | Versatile input pin (internal 4.7k pull up resistor) |
| 35 | CGREF | → Signal processor | Charge-pump for LPF reference current input |
| 36 | AMPREF | not connected | Op-amp for LPF reference voltage setting |
| 37 | LOUT/DO | Signal processor → | Audio signal output (left channel) / Ext. DAC mode: Audio serial data output |
| 38 | LNEG | Signal processor → | Charge pump output (left channel) / Ext. DAC mode: Wordclock output |
| 39 | ROUT/DSCK | Signal processor → | Audio signal output (right channel) / Ext. DAC mode: Data shift clock output |
| 40 | RNEG/LRCK | Signal processor → | Charge pump output (right channel) / Ext. DAC mode: L/R clock output |
| 41 | I _{REF} | - | Current reference |
| 42 | Anal. V _{DD} | - | Analog System power supply |

BLOCK DIAGRAM

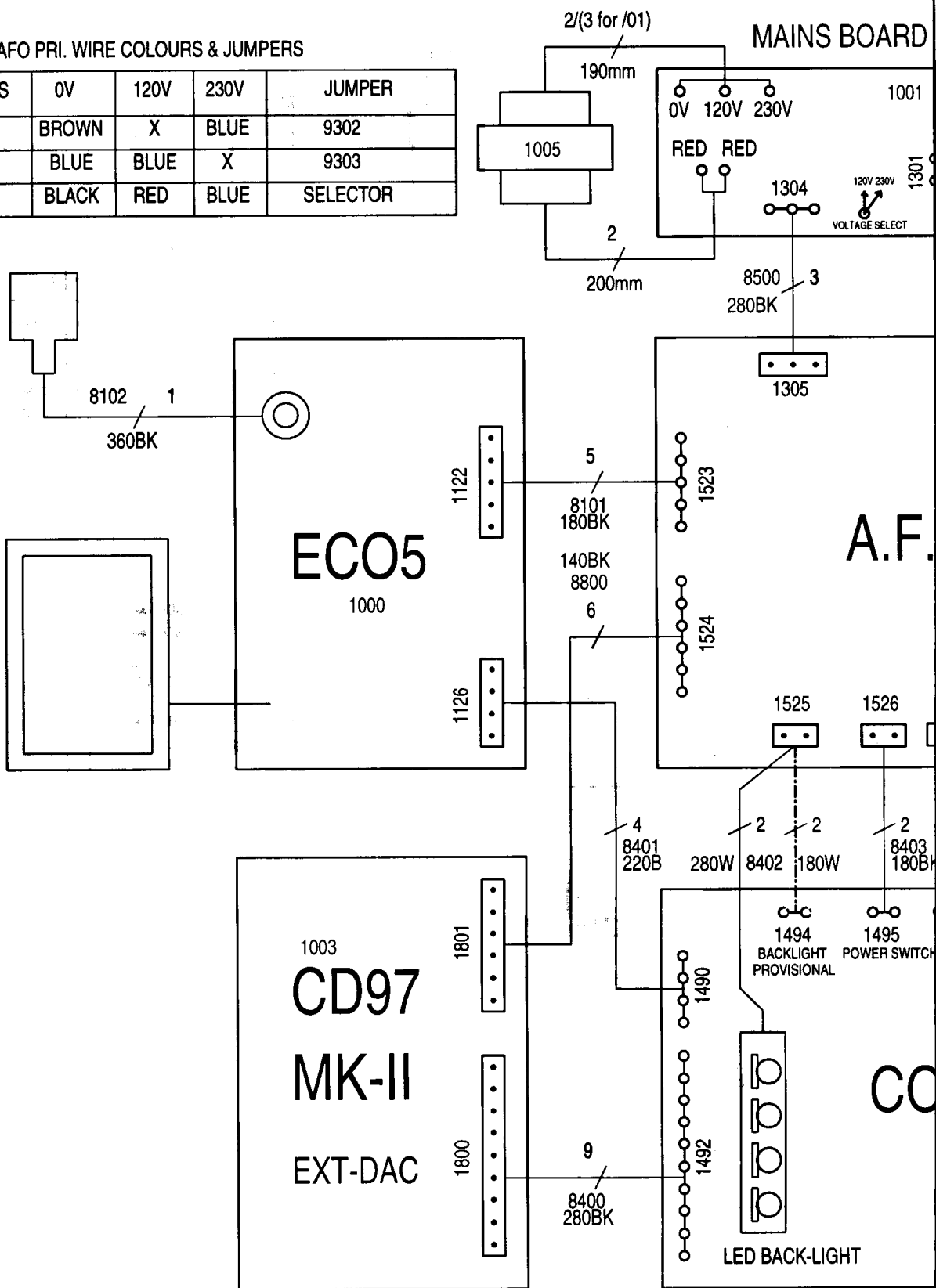


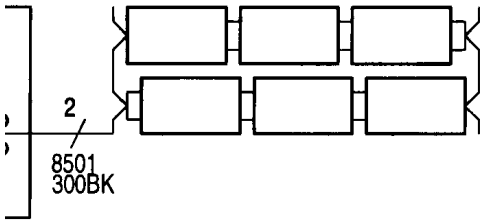


WIRING DIAGRAM

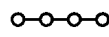
MAINS TRAF0 PRI. WIRE COLOURS & JUMPERS

| VERSIONS | 0V | 120V | 230V | JUMPER |
|----------|-------|------|------|----------|
| /00 | BROWN | X | BLUE | 9302 |
| /17 | BLUE | BLUE | X | 9303 |
| /01 | BLACK | RED | BLUE | SELECTOR |

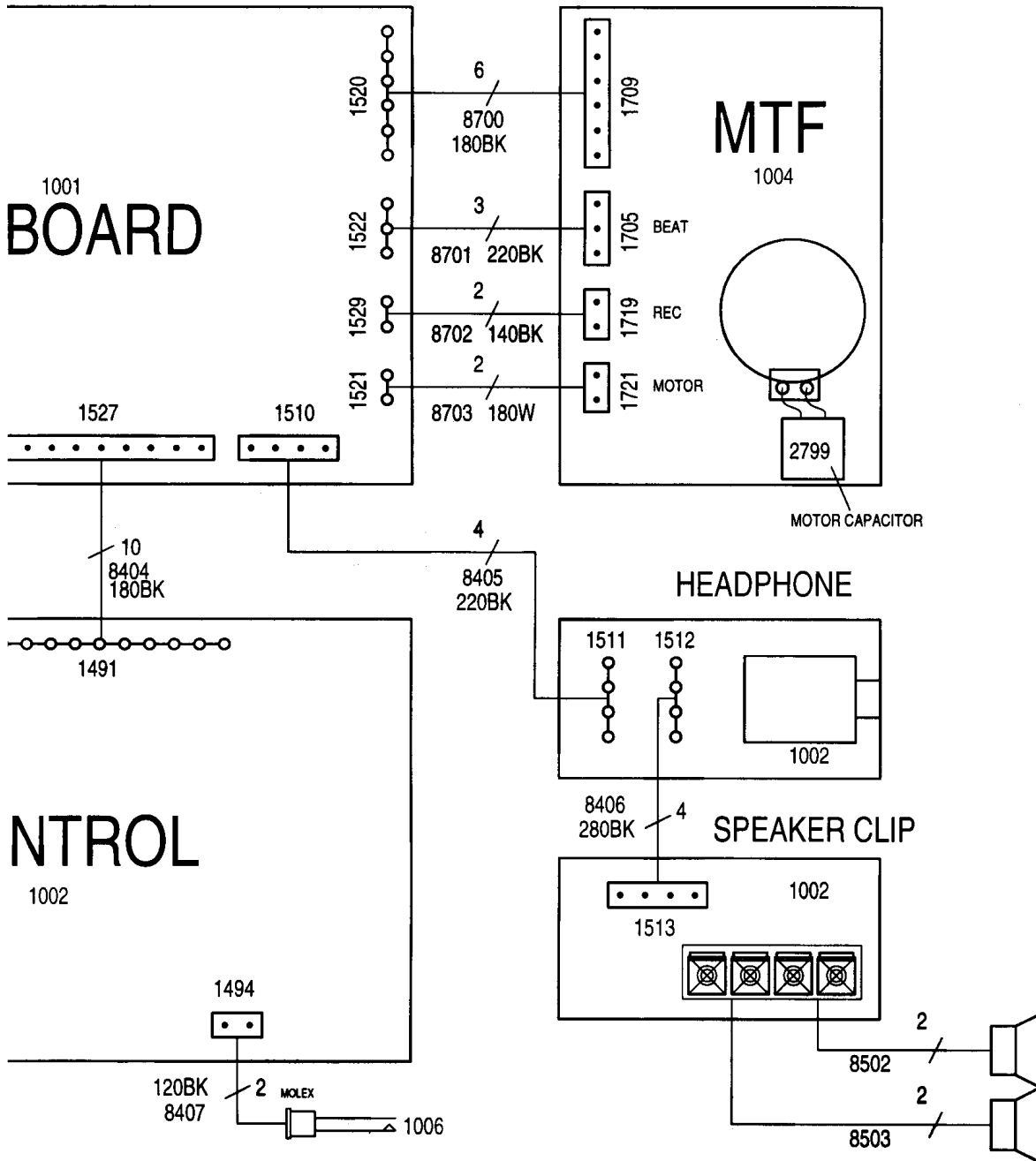




JST



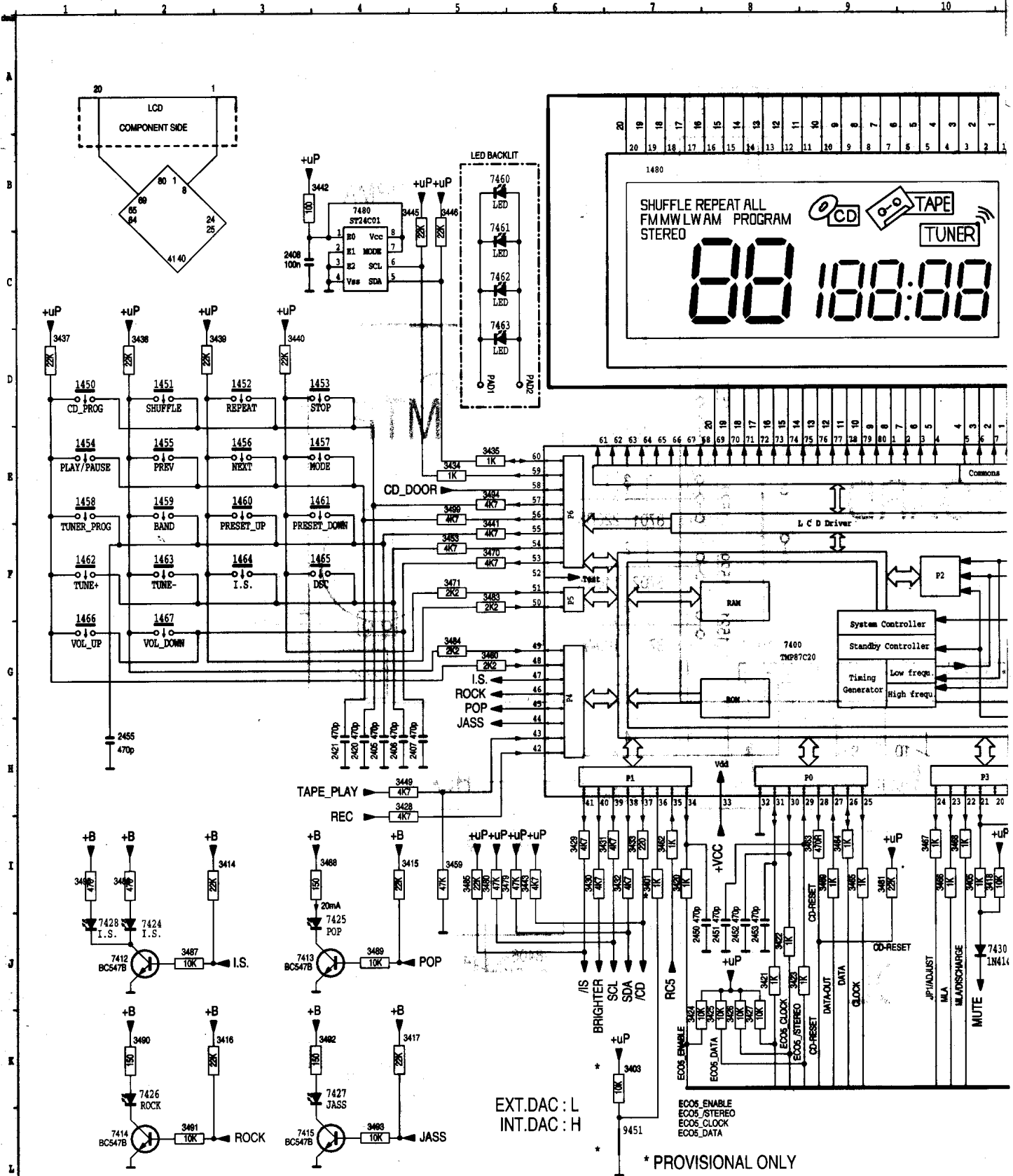
DIPMATE



FRONT BOARD - CIRCUIT DIAGRAM (AZ2425)

7-1

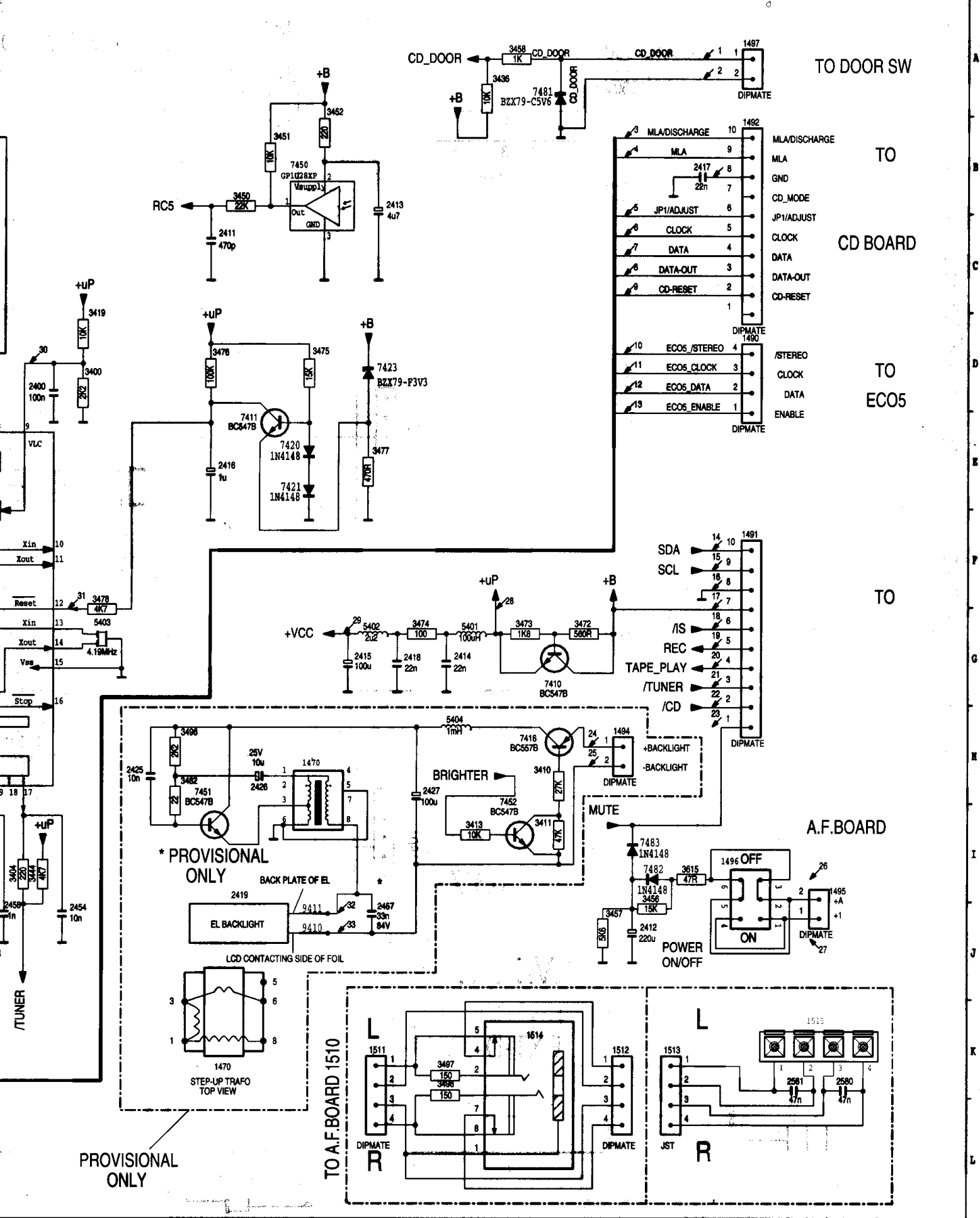
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 1450 | D 1 | 1457 | F 4 | 1464 | P 3 | 1491 | F18 | 1512 | K17 | 2407 | H 5 | 2416 | E13 | 2427 | H15 | 2457 | J14 | 3404 | I11 | 3416 | K 4 | 3423 | I 6 | 3430 | I 6 | 3437 | D 1 | 3444 | I11 | 3453 | I11 |
| 1451 | D 2 | 1458 | F 4 | 1465 | P 4 | 1492 | F18 | 1513 | K18 | 2408 | C 3 | 2417 | B18 | 2450 | J 7 | 2458 | K19 | 3405 | I11 | 3417 | K 4 | 3424 | I 6 | 3431 | I 6 | 3438 | D 2 | 3445 | I11 | 3454 | I11 |
| 1452 | D 3 | 1459 | F 4 | 1466 | P 4 | 1493 | F17 | 1514 | K18 | 2409 | C 3 | 2418 | G15 | 2451 | J 7 | 2459 | K19 | 3406 | I11 | 3418 | K 4 | 3425 | I 6 | 3432 | I 6 | 3439 | D 2 | 3446 | I11 | 3455 | I11 |
| 1453 | D 3 | 1460 | F 4 | 1467 | P 4 | 1494 | F17 | 1515 | K19 | 2410 | C 3 | 2419 | H 4 | 2452 | J 7 | 2460 | K19 | 3407 | I11 | 3419 | K 4 | 3426 | I 6 | 3433 | I 6 | 3440 | D 2 | 3447 | I11 | 3456 | I11 |
| 1454 | D 1 | 1461 | F 4 | 1468 | P 4 | 1495 | F17 | 1516 | K19 | 2411 | C 3 | 2420 | H 4 | 2453 | J 7 | 2461 | K19 | 3408 | I11 | 3420 | K 4 | 3427 | I 6 | 3434 | I 6 | 3441 | D 2 | 3448 | I11 | 3457 | I11 |
| 1455 | D 1 | 1462 | F 4 | 1469 | P 4 | 1496 | F18 | 1517 | K19 | 2412 | C 3 | 2421 | H 4 | 2454 | J 7 | 2462 | K19 | 3409 | I11 | 3421 | K 4 | 3428 | I 6 | 3435 | I 6 | 3442 | D 2 | 3449 | I11 | 3458 | I11 |
| 1456 | D 3 | 1463 | F 4 | 1470 | P 4 | 1497 | F18 | 1518 | K19 | 2413 | C 3 | 2422 | H 4 | 2455 | J 7 | 2463 | K19 | 3410 | I11 | 3422 | K 4 | 3429 | I 6 | 3436 | I 6 | 3443 | D 2 | 3450 | I11 | 3459 | I11 |



- ALL CARBON RESISTORS E12 SERIES 0.33W ±10% UNLESS OTHERWISE STATED.
- CARBON RESISTORS E12 SERIES 0.2W ±5%
- METAL RESISTORS E12 SERIES 0.33W ±5%
- ALL PLATE CERAMIC CAPACITORS UNLESS OTHERWISE STATED.
- TUBULAR CERAMIC CAPACITOR c = 6.3V
- FILM POLYESTERENE CAPACITOR d = 10V
- ELECTROLYTIC CAPACITOR F = 35V G = 50V

| | | | | | | | | | | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 3463 | I 9 | 3470 | F 5 | 3477 | E14 | 3484 | G 5 | 3491 | L 2 | 3498 | K15 | 7400 | G 8 | 7416 | H16 | 7427 | K 3 | 7461 | C 5 | 9410 | J14 |
| 3464 | I 9 | 3471 | F 5 | 3478 | F12 | 3485 | I 5 | 3492 | L 2 | 3499 | E 5 | 7410 | G16 | 7420 | E14 | 7428 | J 1 | 7462 | C 5 | 9411 | J14 |
| 3465 | I 9 | 3472 | G17 | 3479 | I 5 | 3486 | I 5 | 3493 | L 2 | 3500 | F18 | 7411 | E13 | 7421 | E14 | 7430 | J10 | 7463 | D 5 | 9451 | L 7 |
| 3466 | I10 | 3473 | G16 | 3480 | I 5 | 3487 | J 2 | 3494 | L 2 | 3501 | G15 | 7412 | J 2 | 7423 | D14 | 7450 | E14 | 7480 | B 4 | PAD1 | D 5 |
| 3467 | I10 | 3474 | G15 | 3481 | I 5 | 3488 | I 3 | 3495 | L 2 | 3502 | G14 | 7413 | J 2 | 7424 | J 2 | 7451 | H13 | 7481 | A16 | PAD2 | D 6 |
| 3468 | I10 | 3475 | D14 | 3482 | H15 | 3489 | K 2 | 3496 | H15 | 3503 | G12 | 7414 | L 2 | 7425 | J 3 | 7452 | I16 | 7482 | I17 | | |
| 3469 | I 9 | 3476 | D13 | 3483 | F 5 | 3490 | K 2 | 3497 | H15 | 3504 | H15 | 7415 | L 4 | 7426 | K 2 | 7460 | B 5 | 7483 | I17 | | |

11 12 13 14 15 16 17 18 19 20



TO DOOR SW

TO CD BOARD

TO ECO5

TO

A.F. BOARD

TO A.F. BOARD 1510

PROVISIONAL ONLY

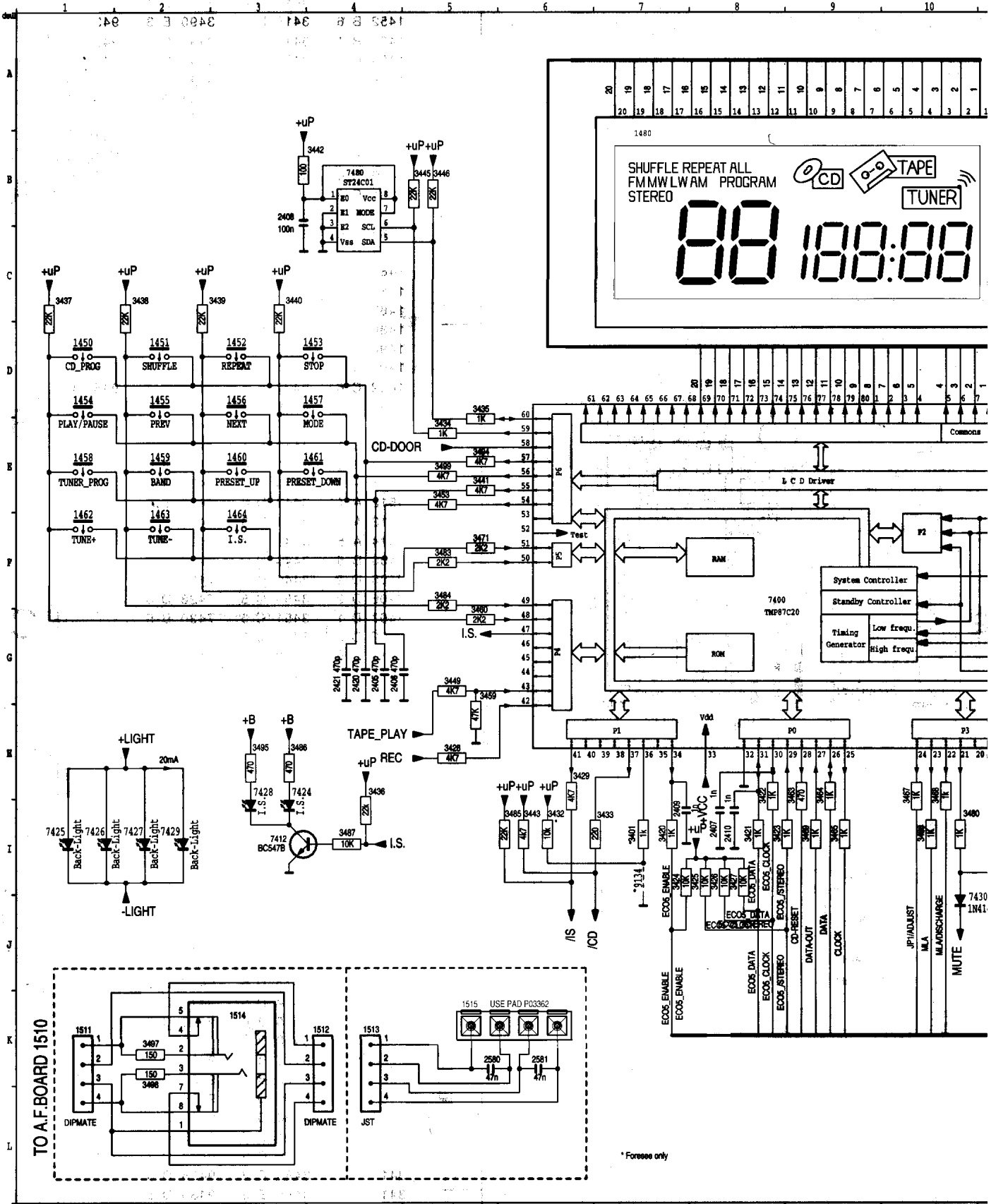
* PROVISIONAL ONLY

STEP-UP TRAF0 TOP VIEW

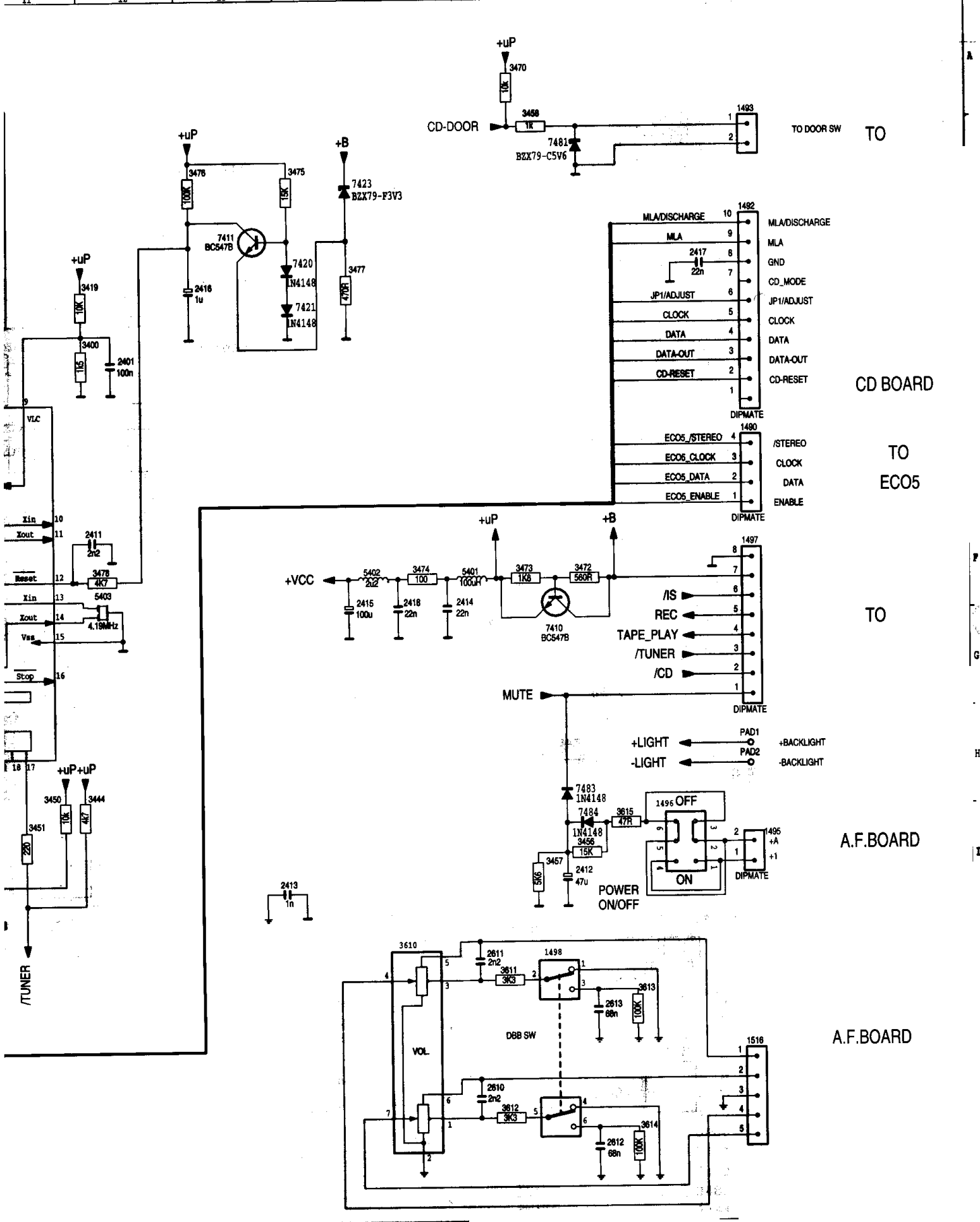
JST R

FRONT BOARD - CIRCUIT DIAGRAM (AZ2420)

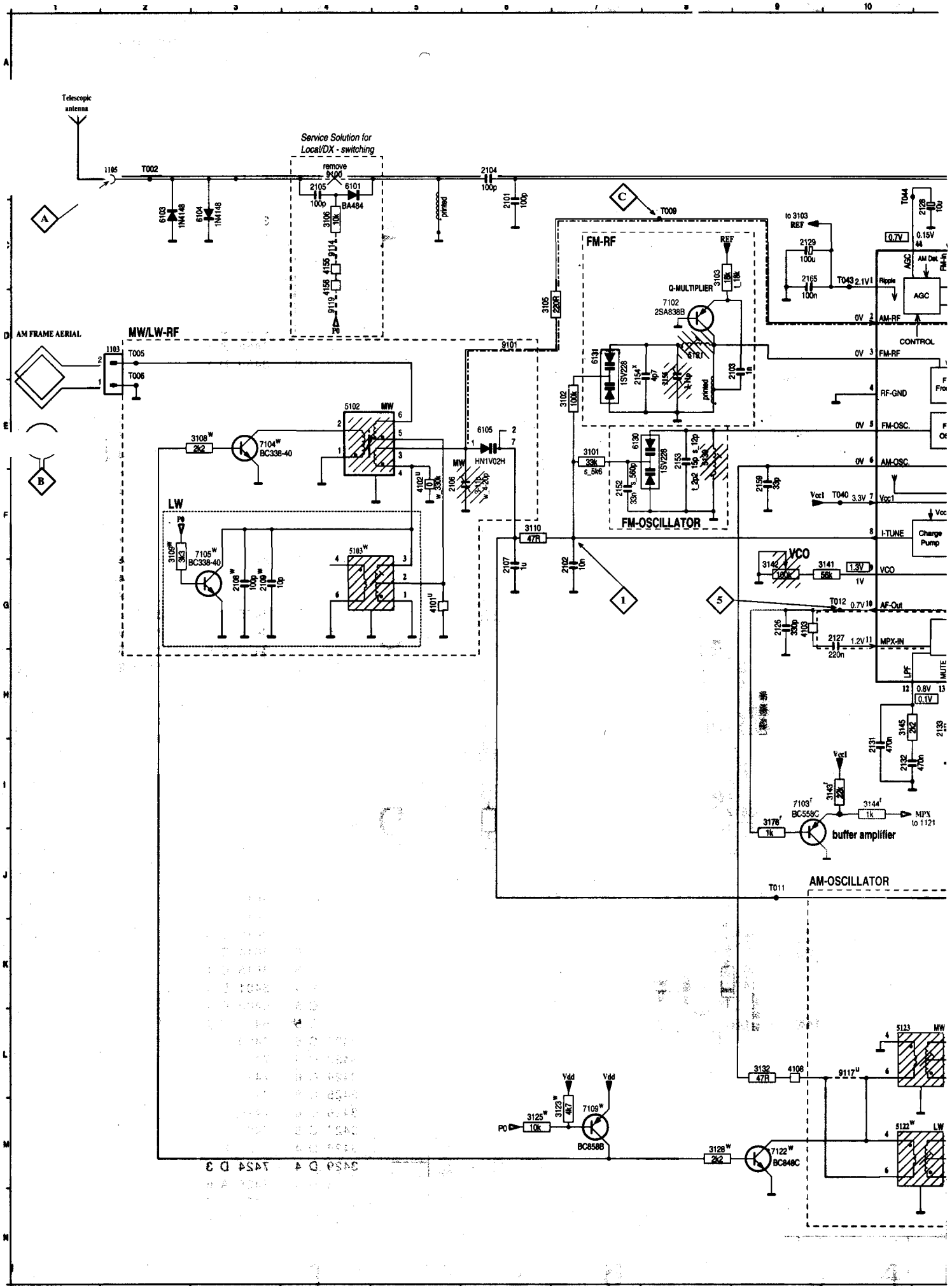
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|------|-----|------|-----|------|-----|------|------|------|------|-------|-----|-------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|-----|------|------|------|
| 1450 | D 1 | 1455 | D 2 | 1460 | B 3 | 1480 | B 7 | 1496 | I 17 | 1513 | K 4 | 1515d | K 6 | 2407 | I 8 | 2412 | I 16 | 2417 | C 18 | 2581 | K 6 | 3400 | D 11 | 3422 | H 8 | 3427 | I 8 | 3434 | D 5 | 3439 |
| 1451 | D 2 | 1456 | D 3 | 1461 | B 4 | 1490 | B 18 | 1497 | E 18 | 1514 | K 5 | 1516 | K 8 | 2408 | B 3 | 2413 | I 14 | 2418 | F 15 | 2610 | K 15 | 3401 | I 7 | 3423 | H 8 | 3428 | H 5 | 3435 | D 5 | 3440 |
| 1452 | D 3 | 1457 | D 4 | 1462 | F 1 | 1492 | B 18 | 1498 | J 16 | 1515 | K 5 | 2401 | D 12 | 2409 | I 7 | 2414 | F 15 | 2420 | C 11 | 2611 | L 17 | 3419 | C 11 | 3424 | I 7 | 3429 | H 5 | 3436 | D 5 | 3441 |
| 1453 | D 4 | 1458 | F 2 | 1463 | F 2 | 1493 | A 18 | 1511 | K 1 | 1515b | K 5 | 2405 | G 4 | 2410 | I 8 | 2415 | F 14 | 2421 | K 6 | 2612 | L 17 | 3420 | I 8 | 3425 | I 8 | 3432 | I 8 | 3437 | D 5 | 3442 |
| 1454 | D 1 | 1459 | F 2 | 1464 | F 3 | 1495 | I 18 | 1512 | K 4 | 1515c | K 6 | 2406 | G 4 | 2411 | F 12 | 2416 | C 13 | 2580 | K 6 | 2613 | K 17 | 3421 | I 8 | 3426 | I 8 | 3433 | I 8 | 3438 | C 11 | 3443 |

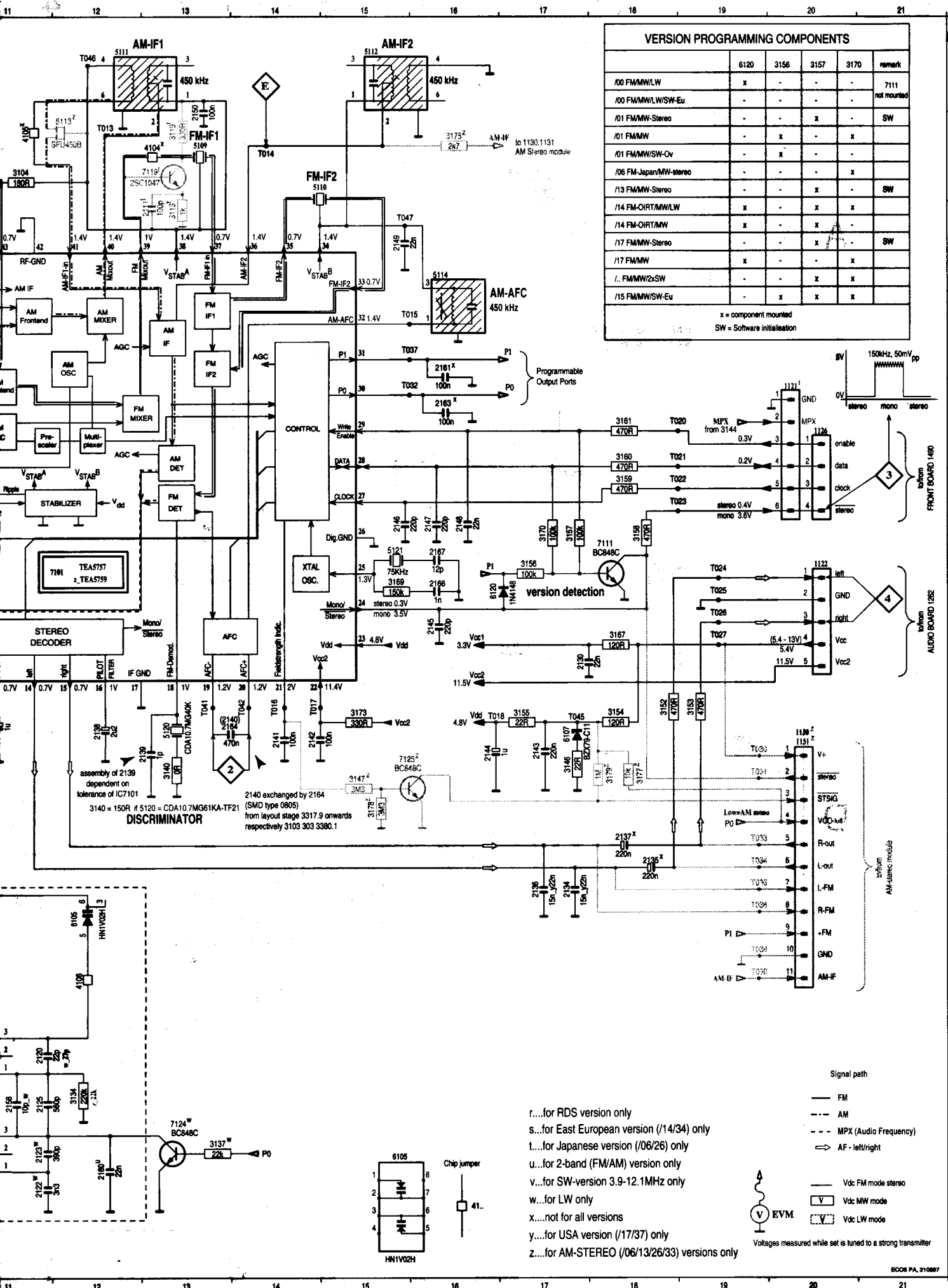


| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 3444 | I11 | 3451 | I11 | 3459 | H 5 | 3466 | I10 | 3471 | P 5 | 3476 | B13 | 3484 | F 5 | 3495 | H 3 | 3611 | J16 | 5401 | F15 | 7411 | C13 | 7424 | I 3 | 7429 | I 2 | 7484 | I17 |
| 3445 | I11 | 3453 | E 5 | 3460 | H10 | 3467 | H10 | 3472 | F17 | 3477 | C14 | 3485 | I 6 | 3497 | K 2 | 3612 | L16 | 5402 | F14 | 7412 | I 3 | 7425 | I 1 | 7430 | J10 | 7434 | I 7 |
| 3446 | B B5 | 3456 | I17 | 3463 | H10 | 3470 | H10 | 3473 | F16 | 3478 | F12 | 3486 | H 3 | 3498 | L 2 | 3613 | K17 | 5403 | F12 | 7420 | C14 | 7426 | I 2 | 7480 | B 4 | 9134 | I 7 |
| 3449 | C U5 | 3457 | I16 | 3464 | H10 | 3474 | I 9 | 3474 | F15 | 3480 | I10 | 3487 | I 4 | 3499 | E 5 | 3614 | L17 | 7400 | F 8 | 7421 | C14 | 7427 | I 2 | 7481 | B16 | PAD1 | H18 |
| 3450 | I11 | 3458 | A16 | 3465 | I 9 | 3470 | A16 | 3475 | B14 | 3483 | F 5 | 3494 | E 5 | 3610 | J15 | 3615 | I17 | 7410 | G16 | 7423 | B14 | 7428 | I 3 | 7483 | H16 | PAD2 | H18 |



ECO5 TUNER BOARD - CIRCUIT DIAGRAM





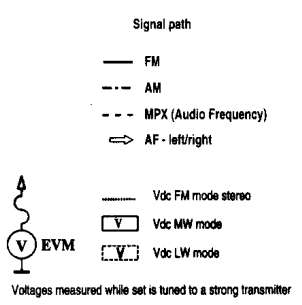
VERSION PROGRAMMING COMPONENTS

| | 6120 | 3156 | 3157 | 3170 | remark |
|------------------------|------|------|------|------|-------------|
| /00 FMMW/LW | x | - | - | - | 7111 |
| /00 FMMW/LW/SW-Eu | - | - | - | - | not mounted |
| /01 FMMW-Stereo | - | - | x | - | SW |
| /01 FMMW | - | x | - | x | |
| /01 FMMW/SW-Ov | - | x | - | - | |
| /06 FM-Japan/MW-stereo | - | - | - | x | |
| /13 FMMW-Stereo | - | - | x | - | SW |
| /14 FM-ORTM/LW | x | - | x | x | |
| /14 FM-ORTM/MW | x | - | x | - | |
| /17 FMMW-Stereo | - | - | x | - | SW |
| /17 FMMW | x | - | - | x | |
| /1 FMMW/2xSW | - | - | x | x | |
| /15 FMMW/SW-Eu | - | x | x | x | |

x = component mounted
SW = Software initialisation

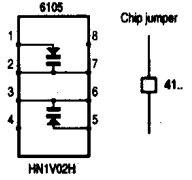
- A 1109 D 2
- 1108 B 2
- 1121 E 20
- 1122 G 20
- 1126 E 20
- 1130 I 20
- 1131 I 20
- 2101 C 6
- 2102 G 7
- 2103 D 9
- 2104 B 6
- 2105 F 5
- 2107 G 5
- 2108 G 3
- 2108 G 3
- 2109 G 3
- 2111 C 13
- 2120 L 11
- 2122 G 11
- 2123 M 11
- 2125 M 11
- 2126 G 9
- 2127 G 10
- 2128 C 11
- 2129 C 9
- 2130 H 17
- 2131 I 10
- 2132 I 10
- 2133 H 11
- 2134 I 17
- 2135 J 16
- 2136 J 17
- 2137 I 18
- 2138 H 12
- 2138 I 13
- 2140 G 16
- 2141 H 14
- 2142 H 14
- 2143 I 17
- 2144 I 17
- 2145 F 16
- 2147 F 16
- 2148 F 16
- 2149 C 15
- 2150 B 13
- 2152 F 7
- 2153 E 8
- 2154 E 7
- 2155 D 8
- 2158 M 11
- 2159 F 9
- 2160 H 12
- 2161 D 16
- 2163 E 16
- 2164 H 14
- 2165 C 9
- 2166 F 16
- 2167 F 16
- 3101 E 7
- 3102 E 7
- 3103 C 8
- 3104 B 11
- 3106 E 3
- 3108 F 2
- 3109 F 2
- 3110 F 6
- 3113 C 13
- 3118 B 13
- 3121 F 9
- 3125 M 6
- 3128 M 6
- 3132 L 9
- 3134 M 12
- 3137 M 13
- 3140 I 13
- 3141 G 10
- 3142 G 9
- 3143 I 10
- 3144 H 16
- 3145 H 10
- 3146 I 17
- 3147 H 15
- 3152 H 18
- 3153 H 18
- 3155 H 17
- 3156 G 17
- 3157 F 17
- 3158 F 17
- 3159 F 18
- 3161 E 18
- 3167 G 18
- 3168 G 15
- 3170 F 17
- 3171 B 15
- 3175 B 16
- 3176 J 9
- 3177 H 18
- 3178 I 15
- 3179 H 18
- 4101 G 5
- 4102 F 5
- 4103 G 9
- 4104 B 13
- 4105 B 11
- 4108 K 12
- 4108 L 9
- 5102 E 4
- 5103 F 4
- 5108 B 13
- 5109 E 7
- 5111 A 13
- 5112 A 15
- 5113 B 12
- 5114 C 16
- 5120 H 13
- 5121 F 15
- 5122 M 11
- 5123 L 11
- 5130 E 8
- 5131 D 8
- 6103 C 2
- 6104 C 3
- 6105 K 12
- 6105 E 6
- 6107 H 17
- 6120 G 16
- 6130 E 7
- 7101 G 11
- 7102 D 8
- 7103 I 9
- 7104 E 3
- 7105 F 2
- 7108 M 7
- 7111 F 18
- 7119 B 13
- 7122 M 9
- 7124 M 13
- 9100 B 4
- 9101 D 6
- 9117 L 10
- N

r....for RDS version only
s....for East European version (/14/34) only
t....for Japanese version (/06/26) only
u....for 2-band (FM/AM) version only
v....for SW-version 3.9-12.1MHz only
w....for LW only
x....not for all versions
y....for USA version (/17/37) only
z....for AM-STEREO (/06/13/26/33) versions only

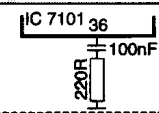
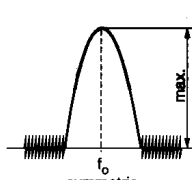
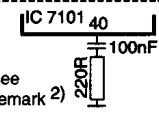
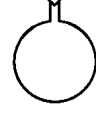
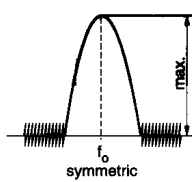


3140 = 150R # 5120 = CDA10.7MG61KA-TF21
DISCRIMINATOR

2140 exchanged by 2164 (SMD type 0805) from layout stage 3317.9 onwards respectively 3103 303 3380.1



TUNER ADJUSTMENT TABLE (ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial

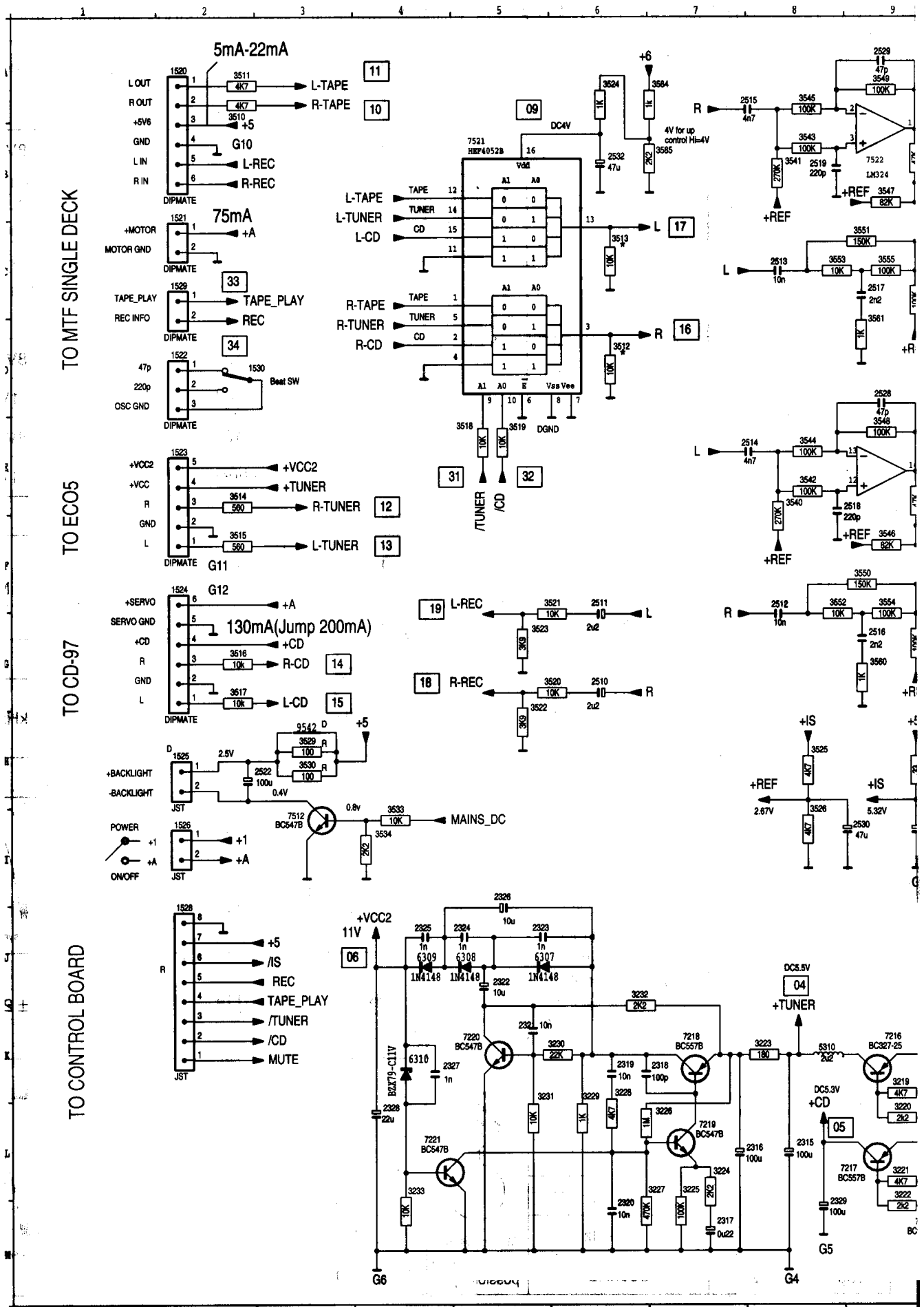
| Waverange | Input frequency | Input | Tuned to | Adjust | Output | Scope/Voltmeter |
|--|---|--|--|---------|------------|---|
| VARICAP ALIGNMENT | | | | | | |
| FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz) | | | 108MHz | 5130 | ◇ 1 | 8V ±0.2V |
| | | | 87.5MHz (65.81MHz) | check | | 4.3V ±0.5V (1.2V ±0.5V) |
| MW FM/AM-version, 10kHz grid 530 - 1700kHz | | | 1700kHz | 5123 | | 8V ±0.2V |
| | | | 530kHz | check | | 1.1V ±0.4V |
| FM/MW-version, 9kHz grid 531 - 1602kHz | | | 1602kHz | 5123 | | 6.9V ±0.2V |
| | | | 531kHz | check | | 1.1V ±0.4V |
| LW 153 - 279kHz | | | 279kHz | 5122 | 8V ±0.2V | |
| | | | 153kHz | check | 1.1V ±0.4V | |
| MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz | | | 1602kHz | 5123 | 8V ±0.2V | |
| | | | 531kHz | check | 1.1V ±0.4V | |
| FM RF | | | | | | |
| FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz) | 108MHz | ◇ A | 108MHz | 2155 | ◇ 4 | MAX |
| | 87.5MHz (65.81MHz) | mod=1kHz $\Delta f = \pm 22.5\text{kHz}$ | 87.5MHz (65.81MHz) | 5131 | | |
| VCO | | | | | | |
| FM | 98MHz, 1mV continuous wave | ◇ A | 98MHz | 3142 | ◇ 3 | 152kHz ±1kHz ¹⁾ |
| AM IF | | | | | | |
| MW | 450kHz connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4) | ◇ C $\Delta f = \pm 15\text{kHz}$ $V_{RF} = 3\text{mV}$ |  | 5111 | ◇ 4 |  |
| | | |  see remark 2) | 5112 | | |
| AM AFC MW | | ◇ C continuous wave $V_{RF} = 10\text{mV}$ | | 5114 | ◇ 2 | 0 ± 2 mV DC |
| AM RF ³⁾ | | | | | | |
| MW ⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz | 1494kHz | ◇ B  | 1494kHz | 2106 | ◇ 4 |  |
| | 558kHz | | 558kHz | 5102 | | |
| LW | 198kHz | | 198kHz | 5103 | | |
| MW FM/AM-version, 10kHz grid 530 - 1700kHz | 1500kHz | | $\Delta f = \pm 30\text{kHz}$ V_{RF} as low as possible | 1500kHz | | |
| | 560kHz | 560kHz | | 5102 | | |

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

ECO5, 180497

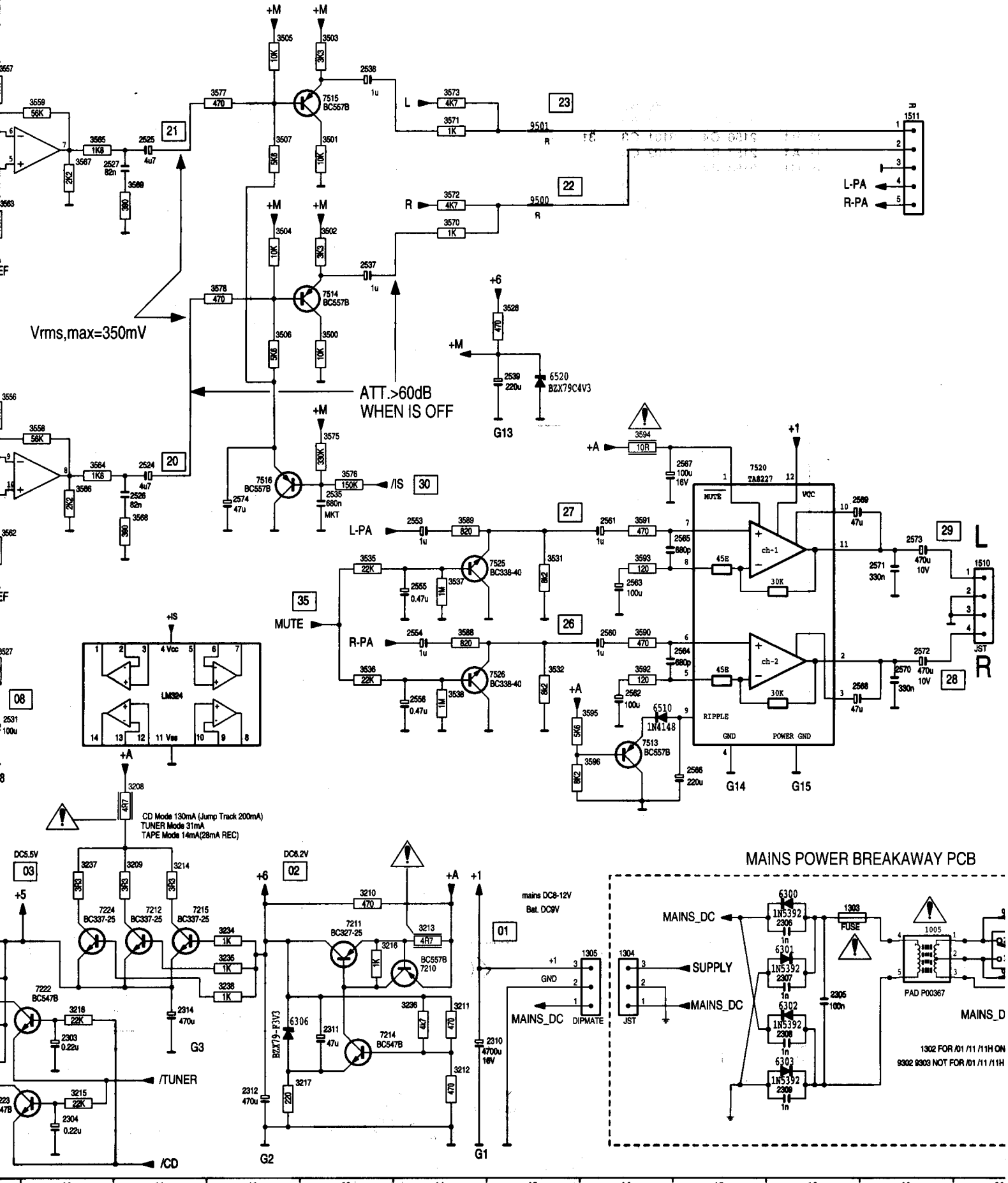
- 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)
- 2) RC network serves for damping the IF-filter while adjusting the other one.
- 3) For AM RF adjustments the original frame antenna has to be used !
- 4) MW has to be aligned before LW.

AUDIO BOARD - CIRCUIT DIAGRAM



NOTE:
 D: FOR UP/DOWN VOL. VERSIONS ONLY.
 R: FOR ROTARY VOL. VERSIONS ONLY.
 *: PROVISIONAL ONLY

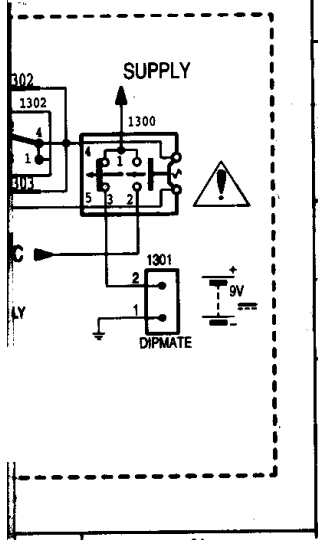
TO ROTARY CONTROL BOARD



VERSION TABLE

| VERSIONS | 1302 | 9302 | 9303 |
|----------------|------|------|------|
| /0006/10/13/14 | OFF | ON | OFF |
| /01/11/11H | ON | OFF | OFF |
| /17 | OFF | OFF | ON |

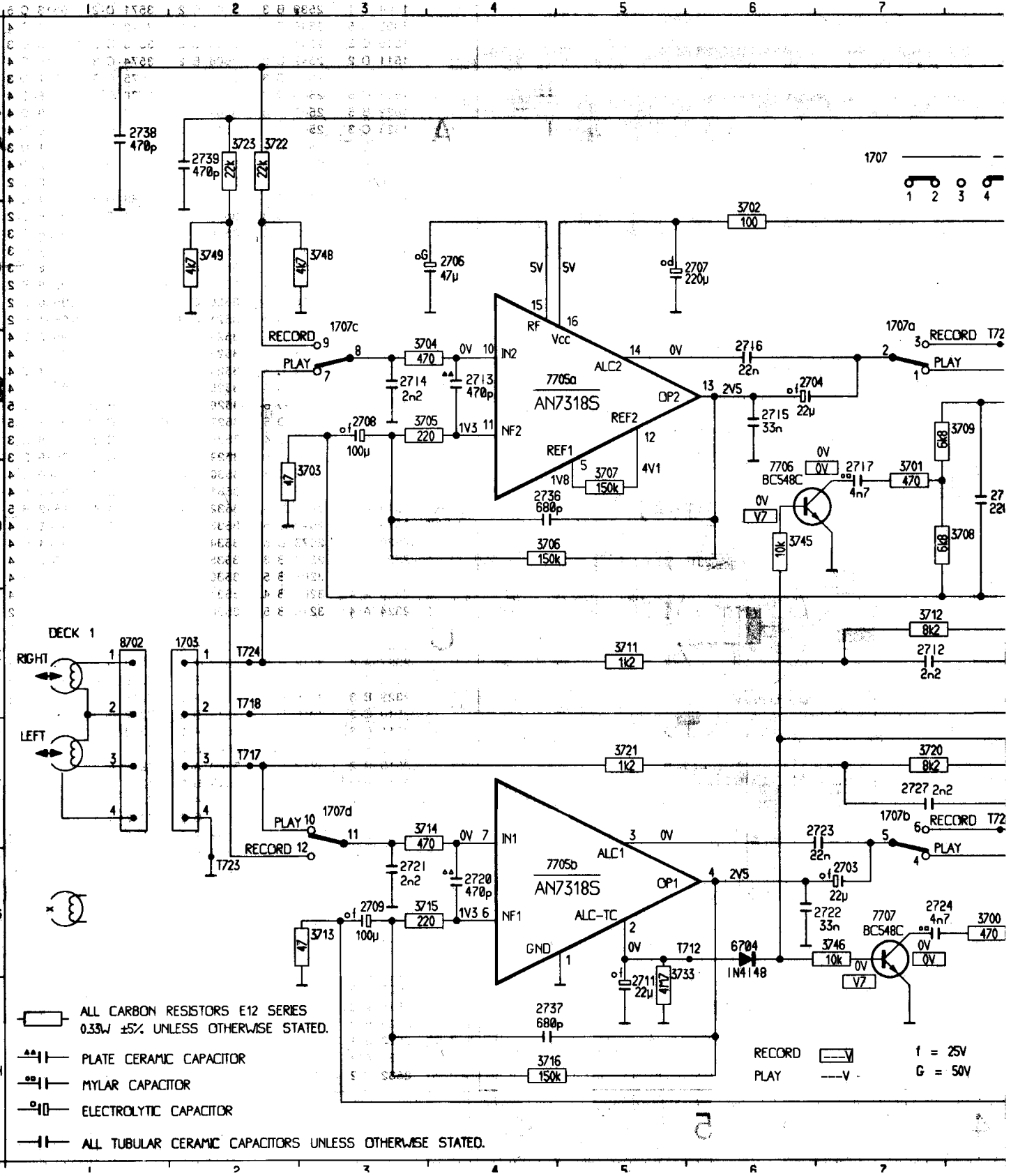
TO HEADPHONE PCB



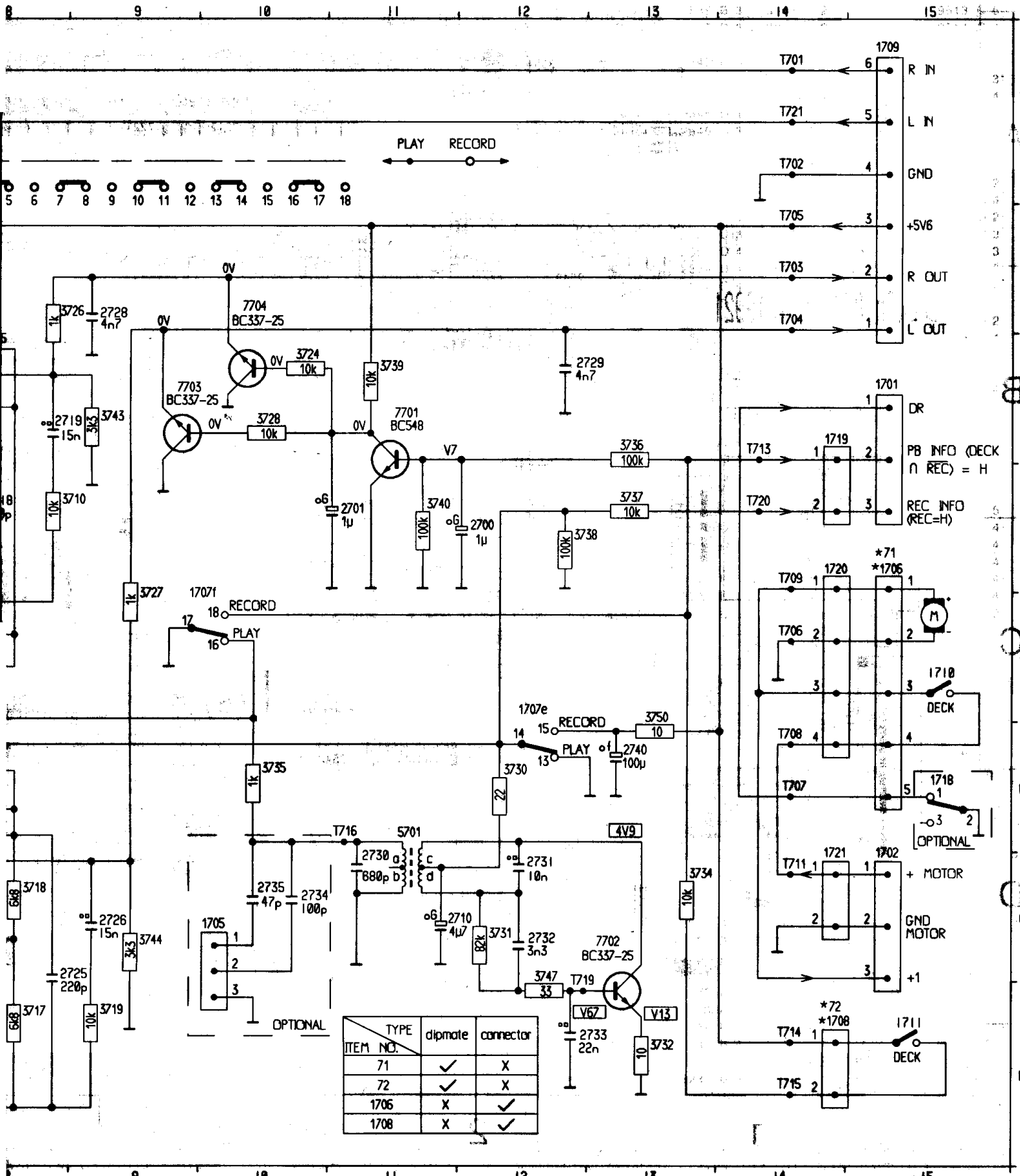
| | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|
| 1005 | K19 | 2555 | G14 | 3525 | H 8 | 6309 | J 4 |
| 1300 | K21 | 2556 | H14 | 3526 | I 8 | 6310 | K 4 |
| 1301 | L21 | 2560 | H16 | 3527 | H 9 | 6510 | I16 |
| 1302 | K20 | 2561 | G16 | 3528 | D15 | 6520 | E15 |
| 1303 | K18 | 2562 | H16 | 3529 | H 3 | 7210 | K14 |
| 1304 | K16 | 2563 | G16 | 3530 | H 3 | 7211 | K13 |
| 1305 | K16 | 2564 | H17 | 3531 | G15 | 7212 | K11 |
| 1510 | G20 | 2565 | G17 | 3532 | H15 | 7214 | L14 |
| 1511 | B19 | 2566 | I17 | 3533 | I 4 | 7215 | K12 |
| 1520 | A 2 | 2567 | F17 | 3534 | I 4 | 7216 | K 9 |
| 1521 | B 2 | 2568 | H19 | 3535 | G13 | 7217 | L 9 |
| 1522 | D 2 | 2569 | F19 | 3536 | H13 | 7218 | K 7 |
| 1523 | E 2 | 2570 | H19 | 3537 | G14 | 7219 | L 7 |
| 1524 | F 2 | 2571 | G19 | 3538 | H14 | 7220 | K 5 |
| 1525 | H 2 | 2572 | H19 | 3540 | E 8 | 7221 | L 4 |
| 1526 | I 2 | 2573 | G19 | 3541 | B 8 | 7222 | L10 |
| 1528 | J 2 | 2574 | F12 | 3542 | E 8 | 7223 | M 9 |
| 1529 | C 2 | 3208 | I11 | 3543 | B 8 | 7224 | K11 |
| 1530 | D 3 | 3209 | J11 | 3544 | E 8 | 7512 | I 3 |
| 2303 | L10 | 3210 | K13 | 3545 | A 8 | 7513 | I16 |
| 2304 | M10 | 3211 | L14 | 3546 | F 9 | 7514 | D13 |
| 2305 | L18 | 3212 | L14 | 3547 | B 9 | 7515 | B13 |
| 2306 | K18 | 3213 | K14 | 3548 | E 9 | 7516 | F12 |
| 2307 | K18 | 3214 | J11 | 3549 | A 9 | 7520 | F17 |
| 2308 | L18 | 3215 | M10 | 3550 | F 9 | 7521 | B 5 |
| 2309 | M18 | 3216 | K13 | 3551 | C 9 | 7522 | B 9 |
| 2310 | L15 | 3217 | M13 | 3552 | F 8 | 7525 | G15 |
| 2311 | L13 | 3218 | L10 | 3553 | C 8 | 7526 | H15 |
| 2312 | M12 | 3219 | K 9 | 3554 | F 9 | 9302 | K20 |
| 2314 | L11 | 3220 | L 9 | 3555 | C 9 | 9303 | K20 |
| 2315 | L 8 | 3221 | L 9 | 3556 | E 9 | 9500 | C15 |
| 2316 | L 8 | 3222 | L 9 | 3557 | B 9 | 9501 | B15 |
| 2317 | M 7 | 3223 | K 8 | 3558 | F10 | 9542 | H 3 |
| 2318 | K 7 | 3224 | L 7 | 3559 | B10 | | |
| 2319 | K 6 | 3225 | L 7 | 3560 | G 9 | | |
| 2320 | M 6 | 3226 | L 7 | 3561 | D 9 | | |
| 2321 | K 5 | 3227 | L 7 | 3562 | G 9 | | |
| 2322 | J 5 | 3228 | K 6 | 3563 | C 9 | | |
| 2323 | J 5 | 3229 | K 6 | 3564 | F10 | | |
| 2324 | J 5 | 3230 | K 6 | 3565 | B10 | | |
| 2325 | J 4 | 3231 | K 5 | 3566 | F10 | | |
| 2326 | I 5 | 3232 | J 6 | 3567 | C10 | | |
| 2327 | K 4 | 3233 | L 4 | 3568 | G11 | | |
| 2328 | L 4 | 3234 | K12 | 3569 | C11 | | |
| 2329 | M 8 | 3235 | K12 | 3570 | C14 | | |
| 2510 | G 6 | 3236 | L14 | 3571 | B14 | | |
| 2511 | F 6 | 3237 | J10 | 3572 | C14 | | |
| 2512 | F 8 | 3238 | L12 | 3573 | B14 | | |
| 2513 | C 8 | 3500 | E13 | 3575 | F13 | | |
| 2514 | E 8 | 3501 | B13 | 3576 | F13 | | |
| 2515 | A 8 | 3502 | C13 | 3577 | B12 | | |
| 2516 | G 9 | 3503 | A13 | 3578 | D12 | | |
| 2517 | C 9 | 3504 | C12 | 3584 | A 7 | | |
| 2518 | E 9 | 3505 | A12 | 3585 | B 7 | | |
| 2519 | B 8 | 3506 | E12 | 3588 | H14 | | |
| 2522 | H 3 | 3507 | B12 | 3589 | G14 | | |
| 2524 | F11 | 3510 | A 2 | 3590 | H16 | | |
| 2525 | B11 | 3511 | A 2 | 3591 | G16 | | |
| 2526 | F11 | 3512 | D 6 | 3592 | H16 | | |
| 2527 | C10 | 3513 | C 6 | 3593 | G16 | | |
| 2528 | D 9 | 3514 | E 2 | 3594 | F16 | | |
| 2529 | A 9 | 3515 | F 2 | 3595 | I16 | | |
| 2530 | I 9 | 3516 | G 2 | 3596 | I16 | | |
| 2531 | I 9 | 3517 | G 2 | 5310 | K 8 | | |
| 2532 | B 6 | 3518 | E 5 | 6300 | K18 | | |
| 2535 | F13 | 3519 | E 5 | 6301 | K18 | | |
| 2537 | D13 | 3520 | G 6 | 6302 | L18 | | |
| 2538 | B13 | 3521 | F 6 | 6303 | L18 | | |

RECORDER BOARD - CIRCUIT DIAGRAM

| | | | | | | | | | | | | | | | | | | | | | | |
|-------|-----|-------|------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|------|-----|
| 1701 | C15 | 1707c | B 3 | 1711 | H15 | 2703 | G 7 | 2711 | H 5 | 2718 | D 8 | 2725 | G 9 | 2732 | G12 | 2739 | A 2 | 3705 | C 3 | 3712 | 3719 | H 9 |
| 1702 | G15 | 1707d | F 4 | 1710 | F15 | 2704 | C 6 | 2712 | F 7 | 2719 | C 8 | 2726 | G 9 | 2733 | H13 | 2740 | F13 | 3706 | D 4 | 3713 | 3720 | F 7 |
| 1703 | F 2 | 1707e | E 10 | 1719 | C14 | 2706 | B 4 | 2713 | C 6 | 2720 | G 6 | 2727 | F 9 | 2734 | G10 | 3700 | G 6 | 3707 | D 5 | 3714 | 3721 | F 7 |
| 1705 | G10 | 1707f | E10 | 1720 | D14 | 2707 | B 6 | 2714 | C 6 | 2721 | G 6 | 2728 | B 9 | 2735 | G10 | 3701 | D 6 | 3708 | D 8 | 3715 | 3722 | A 2 |
| 1706 | D15 | 1708 | H14 | 1721 | G14 | 2708 | C 3 | 2715 | C 6 | 2722 | F 7 | 2729 | C13 | 2736 | D 4 | 3702 | B 6 | 3709 | C 8 | 3716 | 3723 | A 2 |
| 1707a | B 7 | 1709 | A15 | 2700 | D12 | 2709 | G 3 | 2716 | C 6 | 2723 | F 7 | 2730 | G11 | 2737 | H 4 | 3703 | D 3 | 3710 | D 9 | 3717 | 3724 | C10 |
| 1707b | F 7 | 1710 | E15 | 2701 | D11 | 2710 | G12 | 2717 | D 7 | 2724 | G 7 | 2731 | G12 | 2738 | A 1 | 3704 | C 3 | 3711 | E 5 | 3718 | 3725 | B 9 |



| | | | | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|-------|-----|-------|-----|------|-----|------|-----|------|-----|
| 3727 | E 9 | 3735 | F10 | 3744 | G 9 | 5701 | F11 | 7705b | G 4 | T704 | B14 | T712 | G 6 | T719 | H13 |
| 3728 | C10 | 3736 | C13 | 3745 | D 6 | 6704 | G 6 | 7706 | D 6 | T705 | B14 | T713 | C14 | T720 | D14 |
| 3730 | F12 | 3737 | D13 | 3746 | G 7 | 7701 | C11 | 7707 | G 7 | T706 | E14 | T714 | H14 | T721 | A14 |
| 3731 | G12 | 3738 | D12 | 3747 | G12 | 7702 | G13 | 8702 | E 1 | T707 | F14 | T715 | H14 | T722 | F 8 |
| 3732 | H13 | 3739 | C11 | 3748 | B 3 | 7703 | C 9 | T701 | A14 | T708 | F14 | T716 | F11 | T723 | G 2 |
| 3733 | H 5 | 3740 | D11 | 3749 | B 2 | 7704 | B10 | T702 | A14 | T709 | D14 | T717 | F 2 | T724 | E 2 |
| 3734 | G13 | 3743 | C 9 | 3750 | E13 | 7705a | C 4 | T703 | B14 | T711 | G14 | T718 | E 2 | T725 | C 8 |

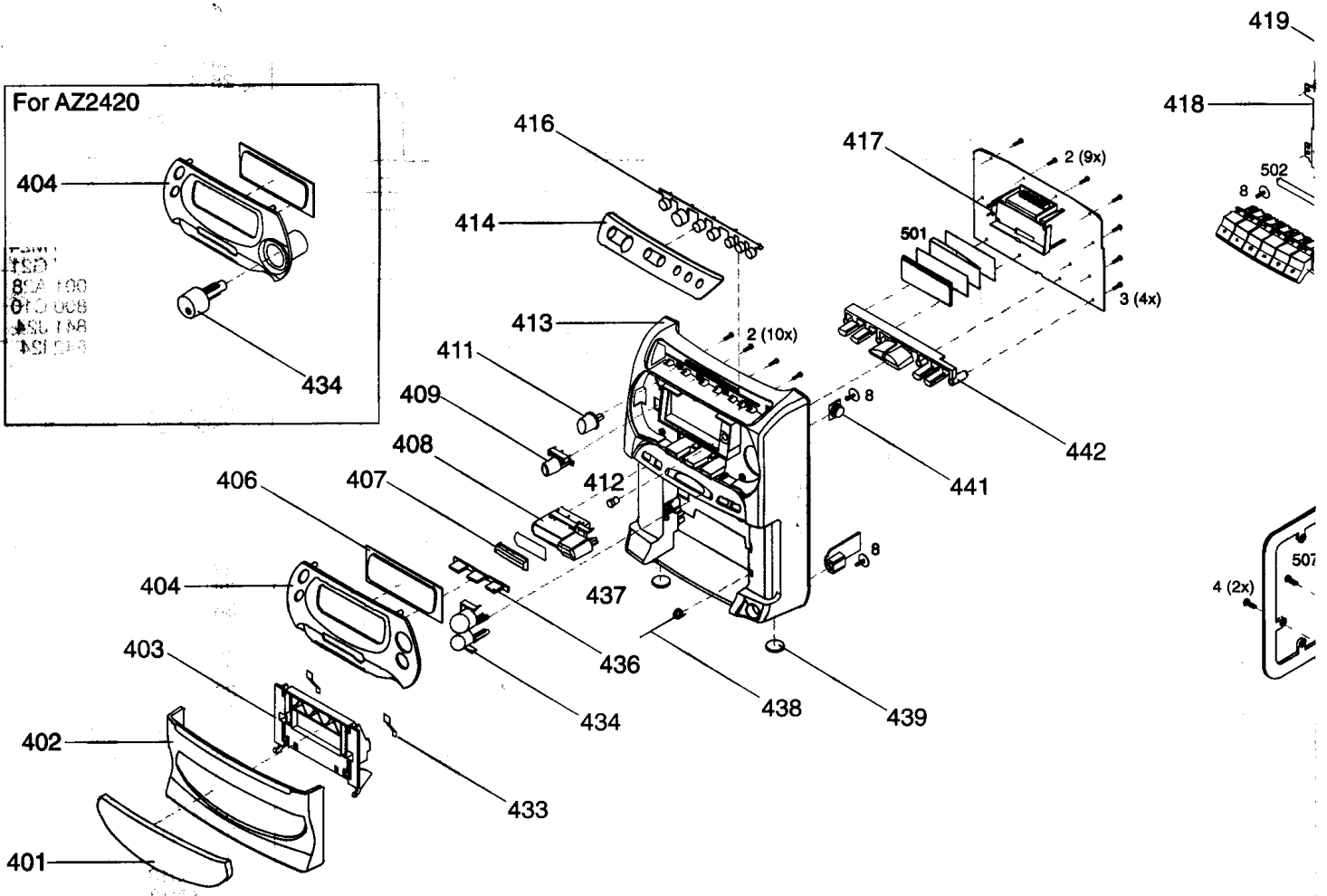


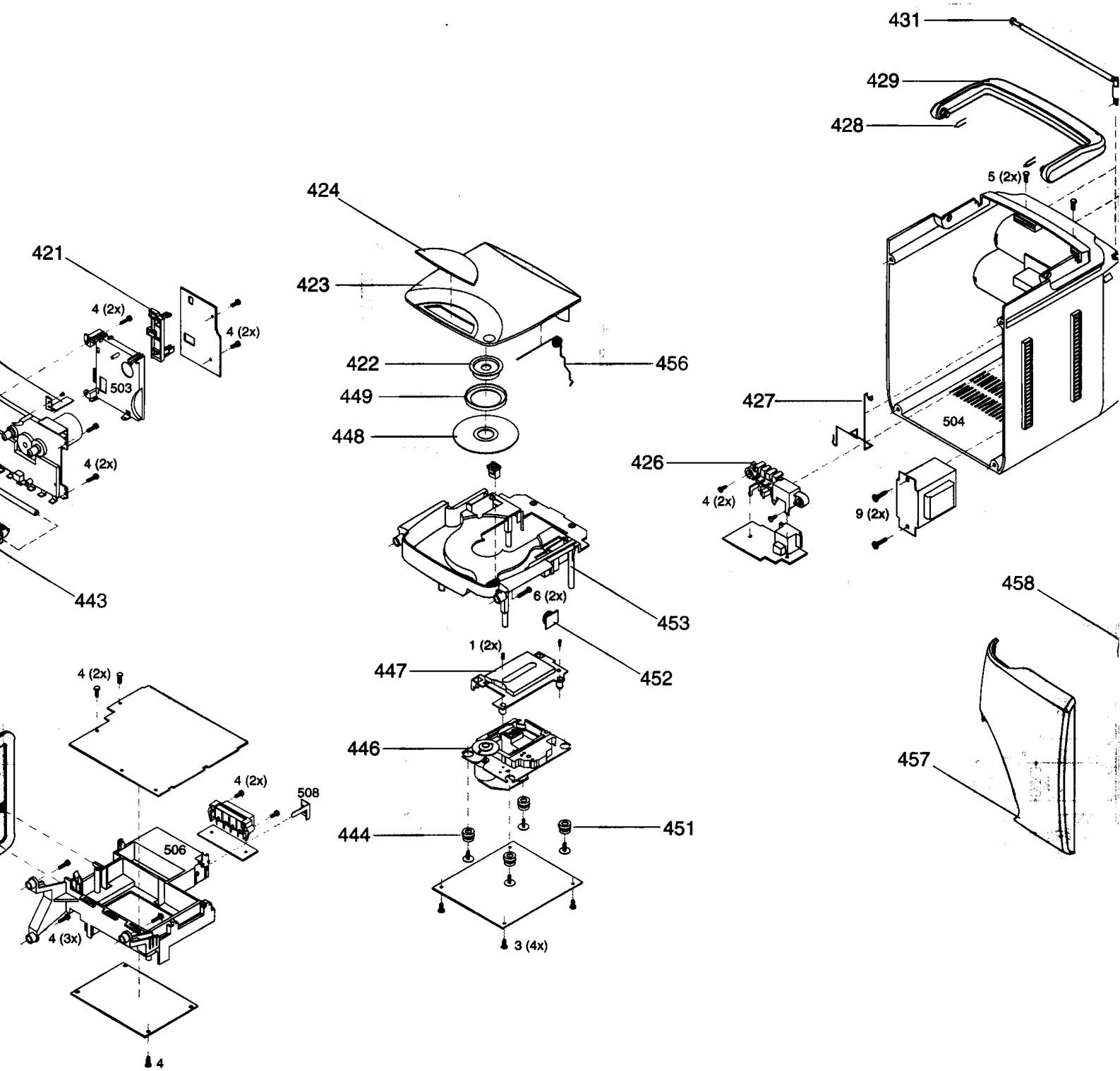
| ITEM NO. | TYPE | dipmate | connector |
|----------|------|---------|-----------|
| 71 | | ✓ | X |
| 72 | | ✓ | X |
| 1706 | | X | ✓ |
| 1708 | | X | ✓ |

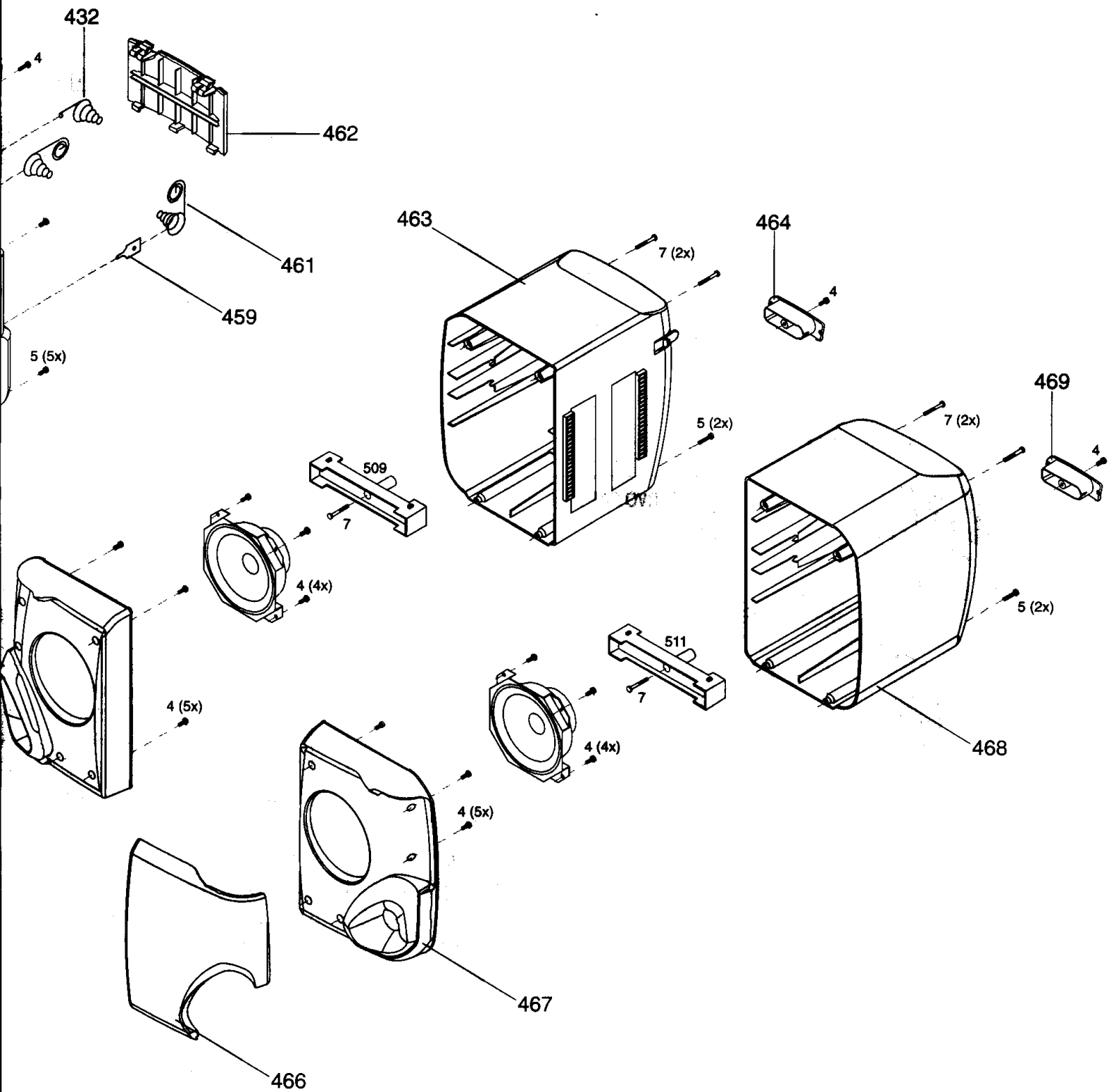
EXPLODED VIEW DIAGRAM - CABINET

SCREW LIST

1. M2 x 6
2. Torx 2 x 8
3. Torx 2 x 12
4. Torx 3 x 10
5. Torx 3 x 12
6. Torx 3 x 16
7. Torx 3 x 25
8. Plas P/W 2.6 x 10
9. Plas P/W 3 x 16







MECHANICAL PARTSLIST - CABINET

| | | | | | |
|-----|--------------|-------------------------------|-----|--------------|---|
| 401 | 314011759490 | Lens Cassette | 439 | 482246240683 | Rubber Foot |
| 402 | 314011432050 | Cover Cass (For AZ2425) | 441 | 482252910322 | Damper Assy |
| 402 | 314011432230 | Cover Cass (For AZ2420) | 442 | 314011432030 | Buttonset Tuning |
| 403 | 482244310215 | Door Cassette Bracket | 443 | 314011432070 | Keyset Cass |
| 404 | 314011431970 | Panel Digital (For AZ2425) | 444 | 482252910387 | Damper Rubber (40 DEG) |
| 404 | 314011432190 | Panel Analog (For AZ2420) | 446 | 482269110654 | CD Drive CD94V5T1 |
| 406 | 314011432040 | Lens Front (For AZ2425) | 447 | 482244201096 | Cover CD |
| 406 | 314011432220 | Lens Front (For AZ2420) | 448 | 482253560096 | Disc |
| 407 | 314011432000 | Cap Incr. Sound | 449 | 482253212241 | Ring (CD-Lid) |
| 408 | 482241011686 | Button Incr. Sound | 451 | 482252910386 | Damper Rubber (30 DEG) |
| 409 | 314011431990 | Button Mode | 452 | 482252910322 | Damper Assy |
| 411 | 314011431980 | Knob Power | 453 | 482241810334 | Tray CD |
| 413 | 482245904901 | Cabinet Front | 456 | 314011100600 | Spring CD |
| 414 | 482245413269 | Panel CD | 457 | 314011432110 | Speaker Frame Assy (L) |
| 416 | 314011431950 | Buttonset CD | 458 | 482245904902 | Cabinet Front Speaker (L) |
| 417 | 482225610434 | LCD Holder | 459 | 314011121320 | Contact Plate |
| 418 | 482269110633 | Tape Deck Mechanism | 461 | 482249211566 | Spring Compression |
| 419 | 482249211061 | Spring Recording | 462 | 482244310885 | Door Battery |
| 421 | 482240210126 | Lever Recording | 464 | 482240210925 | Cord Winder (L) |
| 422 | 482253212798 | Ring Pressure Assy | 466 | 314011432150 | Speaker Frame Assy (R) |
| 423 | 482244310884 | Door CD | 467 | 482245904903 | Cabinet Front Speaker (R) |
| 424 | 314011322280 | Inlay CD | 469 | 482240210926 | Cord Winder (R) |
| 426 | 482240410881 | Barcket Power | 501 | 482238020507 | Light Guide |
| 427 | 482249211565 | Spring Contact Aerial | | 482221910355 | Remote RC0786/01 (For AZ2425) |
| 428 | 482249211461 | Spring Handle | | 482232110249 | Main Cord (For -/00/01/11/11H/14/16) |
| 429 | 482249810691 | Handle | | 482232110886 | Main Cord (For -/05) |
| 431 | 482230314065 | Aerial Telescopic | | 482232110954 | Main Cord (For -/10) |
| 432 | 482249251961 | Spring Compression | | 482232111466 | Main Cord (For -/17) |
| 433 | 482249270231 | Spring Leaf | | 314011527470 | Instr Manual (For AZ2425/00/05) |
| 434 | 314011432020 | Buttonset Volume (For AZ2425) | | 314011527270 | Instr Manual (For AZ2420/00/05) |
| 434 | 314011432210 | Button Volume (For AZ2420) | | 314011527220 | Instr Manual (For AZ2425/01/10/11/11H/16) |
| 436 | 482238010232 | Light Giude DSC (For AZ2425) | | 314011527240 | Instr Manual (For AZ2425/14) |
| 437 | 314011432010 | Button DSC (For AZ2425) | | 314011527260 | Instr Manual (For AZ2425/17) |
| 437 | 482241011882 | Button DBB (For AZ2420) | | | |
| 438 | 482249242709 | Spring Cassette Door | | | |

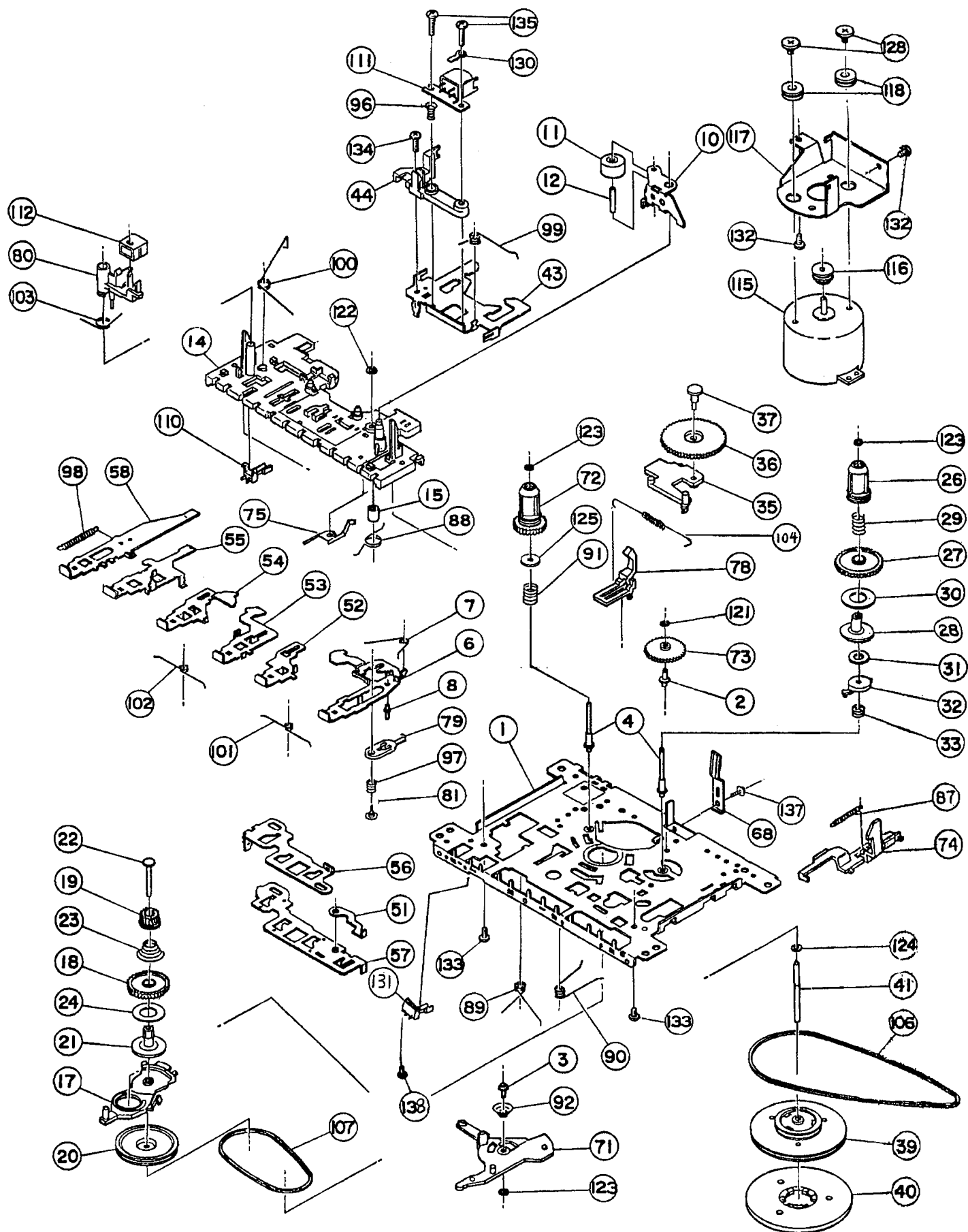
Note: Only these parts mentioned in the list are normal service parts.

MECHANICAL PARTSLIST - TAPE DECK

| | | | | | |
|-----|----------------|----------------------|-----|----------------|--------------|
| 10 | 4822 528 70849 | Pinch Roller Arm (B) | 111 | 4822 249 10397 | R/P Head |
| 11 | 4822 528 70695 | Pinch Roller Assy | 112 | 4822 249 40306 | E Head |
| 74 | 4822 403 30792 | Eject Hook (B) | 115 | 4822 361 21656 | Motor |
| 106 | 4822 358 31325 | Main Belt (B) | 116 | 4822 528 81497 | Motor Pulley |
| 107 | 4822 358 31124 | Sub Belt | 131 | 4822 276 13712 | Leaf Switch |
| 110 | 4822 278 90663 | Leaf Switch | | | |

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

EXPLODED VIEW DIAGRAM - TAPE DECK



ELECTRICAL PARTSLIST - FRONT BOARD

- CAPACITORS -

| | | |
|------|--------------|----------------------|
| 2400 | 482212612882 | 100nF +80-20% 50V |
| 2405 | 482212233519 | 470pF 10% 50V |
| 2406 | 482212233519 | 470pF 10% 50V |
| 2407 | 482212233519 | 470pF 10% 50V |
| 2408 | 482212612882 | 100nF +80-20% 50V |
| 2411 | 482212233519 | 470pF 10% 50V |
| 2412 | 482212440181 | 220uF 20% 10V |
| 2413 | 482212440769 | 4,7uF 20% 100V |
| 2414 | 482212611585 | 22nF +80-20% Y5V 25V |
| 2415 | 482212423432 | 100uF 20% 10V |
| 2416 | 482212440242 | 1uF 20% 63V |
| 2417 | 482212611585 | 22nF +80-20% Y5V 25V |
| 2418 | 482212611585 | 22nF +80-20% Y5V 25V |
| 2420 | 482212233519 | 470pF 10% 50V |
| 2421 | 482212233519 | 470pF 10% 50V |
| 2450 | 482212233519 | 470pF 10% 50V |
| 2451 | 482212233519 | 470pF 10% 50V |
| 2452 | 482212233519 | 470pF 10% 50V |
| 2453 | 482212233519 | 470pF 10% 50V |
| 2454 | 482212151387 | 10nF 20% 16V |
| 2455 | 482212233519 | 470pF 10% 50V |
| 2458 | 482212233197 | 1nF 10% 50V |
| 2580 | 482212612785 | 47nF Y5V 50V |
| 2581 | 482212612785 | 47nF Y5V 50V |

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3400 | 482211652256 | 2.2K 5% 0,5W |
| 3404 | 482211683872 | 220R 5% 0,5W |
| 3405 | 482205021002 | 1K 1% 0,6W |
| 3414 | 482211652257 | 22K 5% 0,5W |
| 3415 | 482211652257 | 22K 5% 0,5W |
| 3416 | 482211652257 | 22K 5% 0,5W |
| 3417 | 482211652257 | 22K 5% 0,5W |
| 3418 | 482211683864 | 10K 5% 0,5W |
| 3419 | 482211683864 | 10K 5% 0,5W |
| 3420 | 482205021002 | 1K 1% 0,6W |
| 3421 | 482205021002 | 1K 1% 0,6W |
| 3422 | 482205021002 | 1K 1% 0,6W |
| 3423 | 482205021002 | 1K 1% 0,6W |
| 3424 | 482211683864 | 10K 5% 0,5W |
| 3425 | 482211683864 | 10K 5% 0,5W |
| 3426 | 482211683864 | 10K 5% 0,5W |
| 3427 | 482211683864 | 10K 5% 0,5W |
| 3428 | 482211652283 | 4.7K 5% 0,5W |
| 3429 | 482211652283 | 4.7K 5% 0,5W |
| 3430 | 482211652283 | 4.7K 5% 0,5W |
| 3431 | 482211652283 | 4.7K 5% 0,5W |
| 3432 | 482211652283 | 4.7K 5% 0,5W |
| 3433 | 482211683872 | 220R 5% 0,5W |
| 3434 | 482205021002 | 1K 1% 0,6W |
| 3435 | 482205021002 | 1K 1% 0,6W |

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3436 | 482211683864 | 10K 5% 0,5W |
| 3437 | 482211652257 | 22K 5% 0,5W |
| 3438 | 482211652257 | 22K 5% 0,5W |
| 3439 | 482211652257 | 22K 5% 0,5W |
| 3440 | 482211652257 | 22K 5% 0,5W |
| 3441 | 482211652283 | 4.7K 5% 0,5W |
| 3442 | 482211652175 | 100R 5% 0,5W |
| 3443 | 482211652283 | 4.7K 5% 0,5W |
| 3444 | 482211652283 | 4.7K 5% 0,5W |
| 3445 | 482211652257 | 22K 5% 0,5W |
| 3446 | 482211652257 | 22K 5% 0,5W |
| 3449 | 482211652283 | 4.7K 5% 0,5W |
| 3450 | 482211652257 | 22K 5% 0,5W |
| 3451 | 482211683864 | 10K 5% 0,5W |
| 3452 | 482211683872 | 220R 5% 0,5W |
| 3453 | 482211652283 | 4.7K 5% 0,5W |
| 3456 | 482211652263 | 2.7K 5% 0,5W |
| 3457 | 482211652264 | 27K 5% 0,5W |
| 3458 | 482205021002 | 1K 1% 0,6W |
| 3459 | 482211683884 | 47K 5% 0,5W |
| 3460 | 482211652256 | 2.2K 5% 0,5W |
| 3462 | 482205021002 | 1K 1% 0,6W |
| 3463 | 482211683883 | 470R 5% 0,5W |
| 3464 | 482205021002 | 1K 1% 0,6W |
| 3465 | 482205021002 | 1K 1% 0,6W |
| 3466 | 482205021002 | 1K 1% 0,6W |
| 3467 | 482205021002 | 1K 1% 0,6W |
| 3468 | 482205021002 | 1K 1% 0,6W |
| 3469 | 482205021002 | 1K 1% 0,6W |
| 3470 | 482211652283 | 4.7K 5% 0,5W |
| 3471 | 482211652256 | 2.2K 5% 0,5W |
| 3472 | 482211652226 | 560R 5% 0,5W |
| 3473 | 482211652249 | 1.8K 5% 0,5W |
| 3474 | 482211652175 | 100R 5% 0,5W |
| 3475 | 482211652244 | 15K 5% 0,5W |
| 3476 | 482211652234 | 100K 5% 0,5W |
| 3477 | 482211683883 | 470R 5% 0,5W |
| 3478 | 482211652283 | 4.7K 5% 0,5W |
| 3479 | 482211683884 | 47K 5% 0,5W |
| 3480 | 482211683884 | 47K 5% 0,5W |
| 3483 | 482211652256 | 2.2K 5% 0,5W |
| 3484 | 482211652256 | 2.2K 5% 0,5W |
| 3485 | 482211652257 | 22K 5% 0,5W |
| 3486 | 482211683883 | 470R 5% 0,5W |
| 3487 | 482211683864 | 10K 5% 0,5W |
| 3488 | 482211683868 | 150R 5% 0,5W |
| 3489 | 482211683864 | 10K 5% 0,5W |
| 3490 | 482211683868 | 150R 5% 0,5W |
| 3491 | 482211683864 | 10K 5% 0,5W |
| 3492 | 482211683868 | 150R 5% 0,5W |

ELECTRICAL PARTSLIST - FRONT BOARD**- RESISTORS -**

| | | |
|------|--------------|--------------|
| 3493 | 482211683864 | 10K 5% 0,5W |
| 3494 | 482211652283 | 4.7K 5% 0,5W |
| 3495 | 482211683883 | 470R 5% 0,5W |
| 3497 | 482211683868 | 150R 5% 0,5W |
| 3498 | 482211683868 | 150R 5% 0,5W |
| 3499 | 482211652283 | 4.7K 5% 0,5W |

- COILS & FILTERS -

| | | |
|------|--------------|-------------------|
| 5401 | 482215752333 | Coil 100uH |
| 5402 | 482215711477 | Coil LAL02TB2R2J |
| 5403 | 482224273769 | Filter CST4,19MGW |

- DIODES -

| | | |
|------|--------------|---------------------|
| 7420 | 482213030621 | Diode 1N4148 |
| 7421 | 482213030621 | Diode 1N4148 |
| 7423 | 532213031504 | Diode BZX79-B3V3 |
| 7424 | 482213010418 | LED LTL16KGE |
| 7425 | 482213010418 | LED LTL16KGE |
| 7426 | 482213010418 | LED LTL16KGE |
| 7427 | 482213010418 | LED LTL16KGE |
| 7428 | 482213010418 | LED LTL16KGE |
| 7430 | 482213030621 | Diode 1N4148 |
| 7450 | 482213010165 | Rem Sensor GP1U28XP |
| 7460 | 482213010418 | LED LTL16KGE |
| 7461 | 482213010418 | LED LTL16KGE |
| 7462 | 482213010418 | LED LTL16KGE |
| 7463 | 482213010418 | LED LTL16KGE |
| 7481 | 482213034173 | Diode BZX79-B5V6 |

- IC & TRANSISTORS -

| | | |
|------|--------------|-----------------------|
| 7400 | 482220916661 | IC TMP87C20-AZ2402/00 |
| 7410 | 482213040959 | Trans BC547B |
| 7411 | 482213040959 | Trans BC547B |
| 7412 | 482213040959 | Trans BC547B |
| 7413 | 482213040959 | Trans BC547B |
| 7414 | 482213040959 | Trans BC547B |
| 7415 | 482213040959 | Trans BC547B |
| 7480 | 482220913156 | IC ST24C01M6 |

- MISCELLANEOUS -

| | | |
|------|--------------|-------------|
| 1450 | 482227613114 | Tact Switch |
| 1451 | 482227613114 | Tact Switch |
| 1452 | 482227613114 | Tact Switch |
| 1453 | 482227613114 | Tact Switch |
| 1454 | 482227613114 | Tact Switch |
| 1455 | 482227613114 | Tact Switch |
| 1456 | 482227613114 | Tact Switch |
| 1457 | 482227613114 | Tact Switch |
| 1458 | 482227613114 | Tact Switch |
| 1459 | 482227613114 | Tact Switch |

- MISCELLANEOUS -

| | | |
|------|--------------|------------------|
| 1460 | 482227613114 | Tact Switch |
| 1461 | 482227613114 | Tact Switch |
| 1462 | 482227613114 | Tact Switch |
| 1463 | 482227613114 | Tact Switch |
| 1464 | 482227613114 | Tact Switch |
| 1465 | 482227613114 | Tact Switch |
| 1466 | 482227613114 | Tact Switch |
| 1467 | 482227613114 | Tact Switch |
| 1480 | 482213500172 | LCD Display |
| 1496 | 482227612648 | Push Switch |
| 1514 | 482226511317 | Headphone Socket |
| 1515 | 482226731176 | Speaker Terminal |

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

ELECTRICAL PARTSLIST - ECO5 TUNER BOARD

- CAPACITORS -

| | | |
|------|--------------|--------------------------------|
| 2101 | 532212232531 | 100pF 5% NP0 50V |
| 2102 | 482212233177 | 10nF 20% X7R 50V |
| 2103 | 532212234123 | 1nF 10% X7R 50V |
| 2104 | 482212233195 | 100pF 10% 50V |
| 2106 | 482212550355 | Var. Cap. 4-20pF (For -/00/05) |
| 2106 | 482212560101 | Var. Cap. 3-11pF (For -/01/11) |
| 2106 | 482212550355 | Var. Cap. 4-20pF (For -/14) |
| 2106 | 482212560101 | Var. Cap. 3-11pF (For -/17) |
| 2107 | 482212151319 | 1uF 10% 63V |
| 2108 | 532212232531 | 100pF 5% NP0 50V |
| 2109 | 532212232448 | 10pF 5% NP0 63V |
| 2120 | 482212613691 | 27pF 1% NP0 63V (For -/00) |
| 2120 | 532212232658 | 22pF 5% 50V (For -/01/11) |
| 2120 | 482212613691 | 27pF 1% NP0 63V (For -/14) |
| 2120 | 532212232658 | 22pF 5% 50V (For -/17) |
| 2122 | 482212233891 | 3,3nF 10% X7R 63V |
| 2123 | 482212110766 | 390pF 1% 630V |
| 2125 | 482212151381 | 560pF 5% 400V |
| 2126 | 532212231863 | 330pF 5% NP0 63V |
| 2127 | 482212613473 | 220nF 80-20% 50V |
| 2128 | 482212441579 | 10uF 20% 50V |
| 2129 | 482212441584 | 100uF 20% 10V |
| 2130 | 482212611585 | 22nF +80-20% 25V |
| 2131 | 482212613482 | 470nF 80/20% 16V |
| 2132 | 482212613482 | 470nF 80/20% 16V |
| 2133 | 482212440242 | 1uF 20% 63V |
| 2134 | 532212232654 | 22nF 10% X7R 63V (For -/1) |
| 2134 | 482212613188 | 15nF 5% X7R 3V |
| 2135 | 482212440746 | 0,22uF 20% 63V |
| 2136 | 532212232654 | 22nF 10% X7R 63V (For -/1) |
| 2136 | 482212613188 | 15nF 5% X7R 3V |
| 2137 | 482212440746 | 0,22uF 20% 63V |
| 2138 | 482212441576 | 2,2uF 20% 50V |
| 2139 | 482212614236 | 15pF 5% 50V |
| 2141 | 482212610002 | 100nF 20% Y5V 25V |
| 2142 | 482212610002 | 100nF 20% Y5V 25V |
| 2143 | 482212613473 | 220nF 80-20% 50V |
| 2144 | 482212440242 | 1uF 20% 63V |
| 2145 | 482212233575 | 220pF 5% NP0 63V |
| 2146 | 482212233575 | 220pF 5% NP0 63V |
| 2147 | 482212233575 | 220pF 5% NP0 63V |
| 2148 | 482212611585 | 22nF +80-20% 25V |
| 2149 | 532212232654 | 22nF 10% X7R 63V |
| 2150 | 482212231947 | 100nF 20% Y5V 25V |
| 2152 | 532211680853 | 560pF 5% NP0 63V (For -/) |
| 2152 | 482212612105 | 33nF 5% X7R 50V |
| 2153 | 482212232139 | 12pF 2% NP0 63V (For -/14) |
| 2153 | 482212232504 | 15pF 2% NP0 50V |
| 2155 | 482212560101 | Var. Cap. 3-11pF |
| 2158 | 532212232448 | 10pF 5% NP0 63V |

- CAPACITORS -

| | | |
|------|--------------|-------------------|
| 2159 | 532212232659 | 33pF 5% 50V |
| 2160 | 532212232654 | 22nF 10% X7R 63V |
| 2161 | 482212610002 | 100nF 20% Y5V 25V |
| 2163 | 482212610002 | 100nF 20% Y5V 25V |
| 2164 | 482212613482 | 470nF 80/20% 16V |
| 2165 | 482212610002 | 100nF 20% Y5V 25V |
| 2166 | 532212234123 | 1nF 10% X7R 50V |
| 2167 | 482212232139 | 12pF 2% NP0 63V |
| 2168 | 482212613695 | 82pF 1% NP0 63V |

- RESISTORS -

| | | |
|------|--------------|----------------------------|
| 3101 | 482205120333 | 33K 5% 0,1W |
| 3102 | 482205120104 | 100K 5% 0,1W |
| 3103 | 482211710965 | 18K 1% 0,1W |
| 3104 | 482211711448 | 180R 1% 0,1W |
| 3105 | 482211683872 | 220R 5% 0,5W |
| 3108 | 482211711449 | 2.2K 1% 0,1W |
| 3109 | 482205120332 | 3.3K 5% 0,1W |
| 3110 | 482211652195 | 47R 5% 0,5W |
| 3123 | 482205120472 | 4.7K 5% 0,1W |
| 3125 | 482211710833 | 10K 1% 0,1W |
| 3128 | 482211711449 | 2.2K 1% 0,1W |
| 3132 | 482211652195 | 47R 5% 0,5W |
| 3134 | 482205120223 | 22K 5% 0,1W |
| 3137 | 482205120223 | 22K 5% 0,1W |
| 3141 | 482211711148 | 56K 1% 0,1W |
| 3142 | 482210011163 | 100K 30% LIN 0,1W |
| 3145 | 482211711449 | 2.2K 1% 0,1W |
| 3146 | 482205120229 | 22R 5% 0,1W |
| 3152 | 482211683883 | 470R 5% 0,5W |
| 3153 | 482205120471 | 470R 5% 0,1W |
| 3154 | 482211652206 | 120R 5% 0,5W |
| 3155 | 482205120229 | 22R 5% 0,1W |
| 3156 | 482205120104 | 100K 5% 0,1W |
| 3158 | 482211683883 | 470R 5% 0,5W |
| 3159 | 482211683883 | 470R 5% 0,5W |
| 3160 | 482211683883 | 470R 5% 0,5W |
| 3161 | 482211683883 | 470R 5% 0,5W |
| 3167 | 482205120121 | 120R 5% 0,1W |
| 3169 | 482205120154 | 150K 5% 0,1W |
| 3170 | 482211652234 | 100K 5% 0,5W |
| 3173 | 482211652219 | 330R 5% 0,5W |
| 3180 | 482205120223 | 22K 5% 0,1W |
| 3181 | 482205120182 | 1.8K 5% 0,1W |
| 4101 | 482205120008 | 0R Jumper |
| 4102 | 482205120008 | 0R Jumper (For -/01/11) |
| 4102 | 482205120008 | 0R Jumper (For -/17) |
| 4102 | 482205120334 | 330K 5% 0,1W (For -/00/05) |
| 4102 | 482205120334 | 330K 5% 0,1W (For -/14) |
| 4103 | 482205120008 | 0R Jumper |
| 4104 | 482205120008 | 0R Jumper |

ELECTRICAL PARTSLIST - ECO5 TUNER BOARD**- RESISTORS -**

| | | |
|------|--------------|-------------|
| 4105 | 482205120008 | 0R Jumper |
| 4106 | 482205120008 | 0R Jumper |
| 4108 | 482205120008 | 0R Jumper |
| 4111 | 482205120008 | 0R Jumper |
| 4120 | 482205120008 | 0R Jumper |
| 4150 | 482205110008 | 0R 5% 0,25W |
| 4151 | 482205120008 | 0R Jumper |
| 4152 | 482205110008 | 0R 5% 0,25W |
| 4153 | 482205110008 | 0R 5% 0,25W |
| 4154 | 482205110008 | 0R 5% 0,25W |
| 4155 | 482205110008 | 0R 5% 0,25W |
| 4156 | 482205120008 | 0R Jumper |
| 4157 | 482205110008 | 0R 5% 0,25W |
| 4158 | 482205110008 | 0R 5% 0,25W |
| 4159 | 482205110008 | 0R 5% 0,25W |
| 4163 | 482205120008 | 0R Jumper |

- COILS & FILTERS -

| | | |
|------|--------------|---------------------|
| 5102 | 482215771634 | MW Aerial |
| 5103 | 482215771635 | LW Aerial |
| 5109 | 482224270665 | Filter SFE10,7MS3-A |
| 5110 | 482224270665 | Filter SFE10,7MS3-A |
| 5111 | 482215860511 | AM-IFT |
| 5112 | 482215770302 | Coil F7MCS-12216N |
| 5114 | 482215770302 | Coil F7MCS-12216N |
| 5119 | 482215711443 | 2u4 10M7 |
| 5121 | 482224210261 | Crystal 75KHZ |
| 5122 | 482215760517 | Coil 110µH 8% |
| 5123 | 482215760517 | Coil 110µH 8% |
| 5130 | 482215630947 | RF Coil |
| 5131 | 482215630947 | RF Coil |

- DIODES -

| | | |
|------|--------------|-----------------|
| 6103 | 482213030621 | Diode 1N4148 |
| 6104 | 482213030621 | Diode 1N4148 |
| 6105 | 482213083075 | Diode HN1V02H-B |
| 6107 | 482213034488 | Diode BZX79-B11 |
| 6120 | 482213030621 | Diode 1N4148 |
| 6130 | 482213082833 | Diode 1SV228 |
| 6131 | 482213082833 | Diode 1SV228 |

- IC & TRANSISTORS -

| | | |
|------|--------------|----------------|
| 7101 | 482220990924 | IC TEA5757H/V1 |
| 7102 | 482213060093 | Trans 2SA838B |
| 7104 | 532213044779 | Trans BC338-40 |
| 7105 | 532213044779 | Trans BC338-40 |
| 7109 | 532213041983 | Trans BC858B |
| 7111 | 532213042136 | Trans BC848C |
| 7122 | 532213042136 | Trans BC848C |
| 7124 | 532213042136 | Trans BC848C |

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

ELECTRICAL PARTSLIST - CD97 MK2**- CAPACITORS -**

| | | |
|------|--------------|---------------------|
| 2801 | 482212151387 | 10nF 20% 16V |
| 2802 | 482212151387 | 10nF 20% 16V |
| 2804 | 482212612878 | 1,5nF 10% 16V |
| 2805 | 482212142408 | 220NF 5% 63V |
| 2806 | 482212614316 | 680pF 10% 50V Y5P |
| 2807 | 482212233191 | 22pF 5% 50V |
| 2808 | 482212481286 | 47uF 20% 16V |
| 2813 | 482212612339 | 2,2nF 10% Y5R |
| 2814 | 482212613677 | 39pF 5% 50V |
| 2815 | 482212151387 | 10nF 20% 16V |
| 2816 | 482212441407 | 0,47uF 20% 63V |
| 2817 | 482212142687 | 3,3nF 10% 63V |
| 2818 | 482212421913 | 1uF 20% 63V |
| 2819 | 532212142386 | 100nF 5% 63V |
| 2820 | 482212151399 | 47nF 10% 50V |
| 2821 | 482212440248 | 10uF 20% 63V |
| 2822 | 482212611585 | 22nF+80-20% Y5V 25V |
| 2823 | 482212440769 | 4,7uF 20% 100V |
| 2824 | 482212441407 | 0,47uF 20% 63V |
| 2825 | 482212210462 | 15pF 5% NPO |
| 2826 | 482212441407 | 0,47uF 20% 63V |
| 2827 | 482212481286 | 47uF 20% 16V |
| 2828 | 482212440248 | 10uF 20% 63V |
| 2829 | 482212142476 | 33nF 10% 50V |
| 2830 | 482212210319 | 82pF 5% 50V |
| 2831 | 482212170619 | 22nF 10% 50V |
| 2832 | 482212422652 | 2,2uF 20% 50V |
| 2833 | 482212440433 | 47uF 20% 25V |
| 2834 | 482212612882 | 100nF +80-20% 50V |
| 2835 | 482212151387 | 10nF 20% 16V |
| 2838 | 482212612785 | 47nF Y5V 50V |
| 2839 | 482212151387 | 10nF 20% 16V |
| 2840 | 482212481286 | 47uF 20% 16V |
| 2841 | 482212613677 | 39pF 5% 50V |
| 2842 | 482212481286 | 47uF 20% 16V |
| 2843 | 482212613098 | 5,6nF 20% 16V |
| 2844 | 482212210466 | 220pF 10% 50V |
| 2846 | 482212233519 | 470pF 10% 50V |
| 2848 | 482212233519 | 470pF 10% 50V |
| 2849 | 482212233195 | 100pF 10% 50V |
| 2851 | 482212233197 | 1nF 10% 50V |
| 2852 | 482212233197 | 1nF 10% 50V |
| 2853 | 482212151387 | 10nF 20% 16V |
| 2860 | 482212481286 | 47uF 20% 16V |
| 2861 | 482212151387 | 10nF 20% 16V |
| 2862 | 482212421913 | 1uF 20% 63V |
| 2863 | 482212421913 | 1uF 20% 63V |
| 2865 | 482212440433 | 47uF 20% 25V |
| 2866 | 482212233197 | 1nF 10% 50V |
| 2880 | 482212151387 | 10nF 20% 16V |

- CAPACITORS -

| | | |
|------|--------------|---------------|
| 2881 | 482212233195 | 100pF 10% 50V |
| 2882 | 482212233195 | 100pF 10% 50V |
| 2883 | 482212151387 | 10nF 20% 16V |
| 2886 | 482212412245 | 220uF 20% 10V |
| 2887 | 482212151387 | 10nF 20% 16V |
| 2888 | 482212151387 | 10nF 20% 16V |

- RESISTORS -

| | | |
|------|--------------|---------------|
| 3805 | 482211683868 | 150R 5% 0,5W |
| 3806 | 482211652249 | 1.8K 5% 0,5W |
| 3807 | 482205023303 | 33K 1% 0,6W |
| 3808 | 482211652263 | 2.7K 5% 0,5W |
| 3811 | 482211652219 | 330R 5% 0,5W |
| 3812 | 482211652219 | 330R 5% 0,5W |
| 3817 | 482211652234 | 100K 5% 0,5W |
| 3819 | 482211711825 | 1.5M 5% 0,5W |
| 3820 | 482211652252 | 180K 5% 0,5W |
| 3821 | 482211652243 | 1.5K 5% 0,5W |
| 3822 | 482211652264 | 27K 5% 0,5W |
| 3823 | 482211652234 | 100K 5% 0,5W |
| 3824 | 482211683868 | 150R 5% 0,5W |
| 3826 | 482211683961 | 6.8K 5% 0,5W |
| 3827 | 482211652269 | 3.3K 5% 0,5W |
| 3828 | 482211652251 | 18K 5% 0,5W |
| 3829 | 482211683884 | 47K 5% 0,5W |
| 3830 | 482211652244 | 15K 5% 0,5W |
| 3831 | 482211652251 | 18K 5% 0,5W |
| 3832 | 482211683881 | 390R 5% 0,5W |
| 3833 | 482211652264 | 27K 5% 0,5W |
| 3835 | 482211652184 | 18R 5% 0,5W |
| 3836 | 482205011002 | 1K 1% 0,4W |
| 3837 | 482211130893 | 4.7M 5% 0,2W |
| 3838 | 482211652234 | 100K 5% 0,5W |
| 3839 | 482211683866 | 1M 5% 0,5W |
| 3840 | 482205011002 | 1K 1% 0,4W |
| 3841 | 482211652298 | 680K 5% 0,5W |
| 3842 | 482211652297 | 68K 5% 0,5W |
| 3844 | 482211652291 | 56K 5% 0,5W |
| 3845 | 482211652283 | 4.7K 5% 0,5W |
| 3846 | 482205011002 | 1K 1% 0,4W |
| 3847 | 482211652239 | 120K 5% 0,5W |
| 3849 | 482205210478 | 4.7R 5% 0,33W |
| 3851 | 482205021003 | 10K 1% 0,6W |
| 3852 | 482211683883 | 470R 5% 0,5W |
| 3853 | 482211652244 | 15K 5% 0,5W |
| 3854 | 482211652243 | 1.5K 5% 0,5W |
| 3855 | 482211652264 | 27K 5% 0,5W |
| 3856 | 482211652303 | 8.2K 5% 0,5W |

ELECTRICAL PARTSLIST - CD97 MK2**- RESISTORS -**

| | | |
|------|--------------|---------------|
| 3857 | 482211652269 | 3.3K 5% 0,5W |
| 3858 | 482211680176 | 1R 5% 0,5W |
| 3859 | 482205021003 | 10K 1% 0,6W |
| 3860 | 482211652207 | 1.2K 5% 0,5W |
| 3863 | 482211652175 | 100R 5% 0,5W |
| 3864 | 482205021003 | 10K 1% 0,6W |
| 3870 | 482205210478 | 4.7R 5% 0,33W |
| 3871 | 482211683883 | 470R 5% 0,5W |
| 3872 | 482205011002 | 1K 1% 0,4W |
| 3873 | 482211652219 | 330R 5% 0,5W |
| 3875 | 482205011002 | 1K 1% 0,4W |
| 3876 | 482211652219 | 330R 5% 0,5W |
| 3877 | 482205011002 | 1K 1% 0,4W |
| 3878 | 482211652219 | 330R 5% 0,5W |
| 3879 | 482211652219 | 330R 5% 0,5W |
| 3881 | 482211652175 | 100R 5% 0,5W |
| 3882 | 482211652195 | 47R 5% 0,5W |
| 3883 | 482211683866 | 1M 5% 0,5W |
| 3884 | 482211683882 | 39K 5% 0,5W |
| 3886 | 482211683866 | 1M 5% 0,5W |
| 3888 | 482211652234 | 100K 5% 0,5W |
| 3889 | 482211652234 | 100K 5% 0,5W |
| 3891 | 482211683884 | 47K 5% 0,5W |
| 3892 | 482211683883 | 470R 5% 0,5W |
| 3893 | 482211683883 | 470R 5% 0,5W |
| 3894 | 482211683884 | 47K 5% 0,5W |

- COILS & FILTER -

| | | |
|------|--------------|------------------------|
| 5801 | 482215770826 | Coil 2,4uH |
| 5802 | 482215770826 | Coil 2,4uH |
| 5803 | 482224273557 | Filter CST8,46MTW-TF01 |
| 5804 | 482215770826 | Coil 2,4uH |
| 5805 | 482215770826 | Coil 2,4uH |
| 5806 | 482215770826 | Coil 2,4uH |
| 5807 | 482215770826 | Coil 2,4uH |
| 5808 | 482215771249 | Coil |

- DIODE -

| | | |
|------|--------------|------------|
| 6800 | 319801053380 | BZX79-B3V3 |
|------|--------------|------------|

- IC & TRANSISTORS -

| | | |
|------|--------------|-------------------|
| 7801 | 482220916076 | IC M65824FP/ES5.0 |
| 7802 | 482220932196 | IC TDA1311AT/N2 |
| 7803 | 482220990496 | IC M62475FP |
| 7804 | 933650090126 | Trans BC557C |
| 7805 | 482220932852 | IC TDA7073A/N2 |
| 7806 | 482220932852 | IC TDA7073A/N2 |
| 7807 | 482213044503 | Trans BC547C |

- MISCELLANEOUS -

| | | |
|------|--------------|--------------------------|
| 1002 | 482221412692 | Plop Killer Board Assy |
| 1006 | 482227711756 | CD Door Switch |
| 1802 | 482226510925 | Connector |
| 8000 | 482232012178 | Flexible Foil Connection |

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

ELECTRICAL PARTSLIST - RECORDER BOARD**- CAPACITORS -**

| | | |
|------|--------------|----------------------|
| 2700 | 482212421913 | 1uF 20% 63V |
| 2701 | 482212421913 | 1uF 20% 63V |
| 2703 | 482212481151 | 22uF 20% 50V |
| 2704 | 482212481151 | 22uF 20% 50V |
| 2706 | 482212440433 | 47uF 20% 25V |
| 2707 | 482212480144 | 220uF 20% 25V |
| 2708 | 482212441584 | 100uF 20% 10V |
| 2709 | 482212441584 | 100uF 20% 10V |
| 2710 | 482212481286 | 47uF 20% 16V |
| 2711 | 482212481151 | 22uF 20% 50V |
| 2712 | 482212612339 | 2,2nF 10% Y5R |
| 2713 | 532212232311 | 470pF 10% 100V |
| 2714 | 482212612339 | 2,2nF 10% Y5R |
| 2715 | 482212613174 | 33nF +80-20% 16V |
| 2716 | 482212611585 | 22nF +80-20% Y5V 25V |
| 2717 | 482212110686 | 4.7nF 10% 50V |
| 2718 | 482212210466 | 220pF 10% 50V |
| 2719 | 482212151305 | 15nF 10% 50V |
| 2720 | 532212232311 | 470pF 10% 100V |
| 2721 | 482212612339 | 2,2nF 10% Y5R |
| 2722 | 482212613174 | 33nF +80-20% 16V |
| 2723 | 482212611585 | 22nF +80-20% Y5V 25V |
| 2724 | 482212110686 | 4.7nF 10% 50V |
| 2725 | 482212210466 | 220pF 10% 50V |
| 2726 | 482212151305 | 15nF 10% 50V |
| 2727 | 482212612339 | 2,2nF 10% Y5R |
| 2728 | 482212611714 | 4,7nF 20% |
| 2729 | 482212611714 | 4,7nF 20% |
| 2730 | 482212614316 | 680pF 10% 50V Y5P |
| 2731 | 482212141857 | 10nF 5% 250V |
| 2732 | 482212611714 | 4,7nF 20% |
| 2733 | 482212170619 | 22nF 10% 50V |
| 2734 | 482212210466 | 220pF 10% 50V |
| 2736 | 482212614316 | 680pF 10% 50V Y5P |
| 2737 | 482212614316 | 680pF 10% 50V Y5P |
| 2738 | 482212233519 | 470pF 10% 50V |
| 2739 | 482212233519 | 470pF 10% 50V |
| 2799 | 482212480791 | 470uF 20% 16V |

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3700 | 482211683883 | 470R 5% 0,5W |
| 3701 | 482211683883 | 470R 5% 0,5W |
| 3702 | 482211652175 | 100R 5% 0,5W |
| 3703 | 482211652195 | 47R 5% 0,5W |
| 3704 | 482211683883 | 470R 5% 0,5W |
| 3705 | 482211683872 | 220R 5% 0,5W |
| 3706 | 482211652245 | 150K 5% 0,5W |
| 3707 | 482211652245 | 150K 5% 0,5W |
| 3708 | 482211683961 | 6.8K 5% 0,5W |
| 3709 | 482211683961 | 6.8K 5% 0,5W |

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3710 | 482205021003 | 10K 1% 0,6W |
| 3711 | 482211652207 | 1.2K 5% 0,5W |
| 3712 | 482211652303 | 8.2K 5% 0,5W |
| 3713 | 482211652195 | 47R 5% 0,5W |
| 3714 | 482211683883 | 470R 5% 0,5W |
| 3715 | 482211683872 | 220R 5% 0,5W |
| 3716 | 482211652245 | 150K 5% 0,5W |
| 3717 | 482211683961 | 6.8K 5% 0,5W |
| 3718 | 482211683961 | 6.8K 5% 0,5W |
| 3719 | 482205021003 | 10K 1% 0,6W |
| 3720 | 482211652303 | 8.2K 5% 0,5W |
| 3721 | 482211652207 | 1.2K 5% 0,5W |
| 3722 | 482211652257 | 22K 5% 0,5W |
| 3723 | 482211652257 | 22K 5% 0,5W |
| 3724 | 482205021003 | 10K 1% 0,6W |
| 3726 | 482205011002 | 1K 1% 0,4W |
| 3727 | 482205011002 | 1K 1% 0,4W |
| 3728 | 482205021003 | 10K 1% 0,6W |
| 3730 | 482211652186 | 22R 5% 0,5W |
| 3731 | 482211652304 | 82K 5% 0,5W |
| 3732 | 482211652176 | 10R 5% 0,5W |
| 3733 | 482211130893 | 4.7M 5% 0,2W |
| 3734 | 482205021003 | 10K 1% 0,6W |
| 3735 | 482205011002 | 1K 1% 0,4W |
| 3736 | 482211652234 | 100K 5% 0,5W |
| 3737 | 482205021003 | 10K 1% 0,6W |
| 3738 | 482211652234 | 100K 5% 0,5W |
| 3739 | 482205021003 | 10K 1% 0,6W |
| 3740 | 482211652234 | 100K 5% 0,5W |
| 3743 | 482211652269 | 3.3K 5% 0,5W |
| 3744 | 482211652269 | 3.3K 5% 0,5W |
| 3745 | 482205021003 | 10K 1% 0,6W |
| 3746 | 482205021003 | 10K 1% 0,6W |
| 3747 | 482211652191 | 33R 5% 0,5W |
| 3748 | 482211652283 | 4.7K 5% 0,5W |
| 3749 | 482211652283 | 4.7K 5% 0,5W |

- COIL -

| | | |
|------|--------------|------|
| 5701 | 482215710371 | Coil |
|------|--------------|------|

-DIODE -

| | | |
|------|--------------|--------------|
| 6704 | 482213030621 | Diode 1N4148 |
|------|--------------|--------------|

ELECTRICAL PARTSLIST - RECORDER BOARD

- IC & TRANSISTORS -

| | | |
|------|--------------|----------------|
| 7701 | 482213040959 | Trans BC547B |
| 7702 | 482213040981 | Trans BC337-25 |
| 7703 | 482213040981 | Trans BC337-25 |
| 7704 | 482213040981 | Trans BC337-25 |
| 7705 | 482220932918 | IC AN7318S |
| 7706 | 482213044503 | Trans BC547C |
| 7707 | 482213044503 | Trans BC547C |

- MISCELLANEOUS -

1707 482227711504 Push Switch

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

ELECTRICAL PARTSLIST - AUDIO BOARD

- CAPACITORS -

| | | |
|------|--------------|----------------|
| 2303 | 482212440746 | 0,22uF 20% 63V |
| 2304 | 482212440746 | 0,22uF 20% 63V |
| 2305 | 532212142386 | 100nF 5% 63V |
| 2306 | 482212233197 | 1nF 10% 50V |
| 2307 | 482212233197 | 1nF 10% 50V |
| 2308 | 482212233197 | 1nF 10% 50V |
| 2309 | 482212233197 | 1nF 10% 50V |
| 2310 | 482212411878 | 4700uF 20% 16V |
| 2311 | 482212440433 | 47uF 20% 25V |
| 2312 | 482212480195 | 470uF 20% 10V |
| 2314 | 482212480195 | 470uF 20% 10V |
| 2315 | 482212441584 | 100uF 20% 10V |
| 2316 | 482212441584 | 100uF 20% 10V |
| 2317 | 482212440746 | 0,22uF 20% 63V |
| 2318 | 482212233195 | 100pF 10% 50V |
| 2319 | 482212151387 | 10nF 20% 16V |
| 2320 | 482212151387 | 10nF 20% 16V |
| 2321 | 482212151387 | 10nF 20% 16V |
| 2322 | 482212481151 | 22uF 20% 50V |
| 2323 | 482212233197 | 1nF 10% 50V |
| 2324 | 482212233197 | 1nF 10% 50V |
| 2325 | 482212233197 | 1nF 10% 50V |
| 2326 | 482212481151 | 22uF 20% 50V |
| 2327 | 482212233197 | 1nF 10% 50V |
| 2328 | 482212481151 | 22uF 20% 50V |
| 2329 | 482212441584 | 100uF 20% 10V |
| 2510 | 482212422652 | 2,2uF 20% 50V |
| 2511 | 482212422652 | 2,2uF 20% 50V |
| 2512 | 482212151387 | 10nF 20% 16V |
| 2513 | 482212151387 | 10nF 20% 16V |
| 2514 | 482212611714 | 4,7nF 20% |
| 2515 | 482212611714 | 4,7nF 20% |
| 2516 | 482212612339 | 2,2nF 10% Y5R |
| 2517 | 482212612339 | 2,2nF 10% Y5R |
| 2518 | 482212210466 | 220pF 10% 50V |
| 2519 | 482212210466 | 220pF 10% 50V |
| 2520 | 482212233519 | 470pF 10% 50V |
| 2521 | 482212233519 | 470pF 10% 50V |
| 2522 | 482212441584 | 100uF 20% 10V |
| 2524 | 482212440769 | 4,7uF 20% 100V |
| 2525 | 482212440769 | 4,7uF 20% 100V |
| 2526 | 482212151379 | 82nF 5% 63V |
| 2527 | 482212151379 | 82nF 5% 63V |
| 2528 | 482212233848 | 47pF 5% SL 50V |
| 2529 | 482212233848 | 47pF 5% SL 50V |
| 2530 | 482212440433 | 47uF 20% 25V |
| 2531 | 482212441584 | 100uF 20% 10V |
| 2532 | 482212440433 | 47uF 20% 25V |
| 2533 | 482212440196 | 220uF 20% 16V |
| 2535 | 532212142498 | 680nF 5% 63V |

- CAPACITORS -

| | | |
|------|--------------|----------------|
| 2537 | 482212421913 | 1uF 20% 63V |
| 2538 | 482212421913 | 1uF 20% 63V |
| 2539 | 482212440196 | 220uF 20% 16V |
| 2540 | 482212422652 | 2,2uF 20% 50V |
| 2541 | 482212422652 | 2,2uF 20% 50V |
| 2542 | 482212440248 | 10uF 20% 63V |
| 2543 | 482212110686 | 4.7nF 10% 50V |
| 2544 | 482212110686 | 4.7nF 10% 50V |
| 2545 | 482212151305 | 15nF 10% 50V |
| 2546 | 482212151305 | 15nF 10% 50V |
| 2547 | 482212170619 | 22nF 10% 50V |
| 2548 | 482212170619 | 22nF 10% 50V |
| 2549 | 532212142386 | 100nF 5% 63V |
| 2550 | 532212142386 | 100nF 5% 63V |
| 2551 | 532212142386 | 100nF 5% 63V |
| 2552 | 532212142386 | 100nF 5% 63V |
| 2553 | 482212421913 | 1uF 20% 63V |
| 2554 | 482212421913 | 1uF 20% 63V |
| 2555 | 482212441407 | 0,47uF 20% 63V |
| 2556 | 482212441407 | 0,47uF 20% 63V |
| 2560 | 482212421913 | 1uF 20% 63V |
| 2561 | 482212421913 | 1uF 20% 63V |
| 2562 | 482212441584 | 100uF 20% 10V |
| 2563 | 482212441584 | 100uF 20% 10V |
| 2564 | 532212232052 | 680pF 10% 100V |
| 2565 | 532212232052 | 680pF 10% 100V |
| 2566 | 482212480144 | 220uF 20% 25V |
| 2567 | 482212440207 | 100uF 20% 25V |
| 2568 | 482212440433 | 47uF 20% 25V |
| 2569 | 482212440433 | 47uF 20% 25V |
| 2570 | 532212142661 | 330nF 5% 63V |
| 2571 | 532212142661 | 330nF 5% 63V |
| 2572 | 482212480195 | 470uF 20% 10V |
| 2573 | 482212480195 | 470uF 20% 10V |
| 2574 | 482212440433 | 47uF 20% 25V |

- RESISTORS -

| | | |
|------|--------------|---------------|
| 3208 | 482205210478 | 4.7R 5% 0,33W |
| 3209 | 532211653564 | 3.3R 5% 0.5W |
| 3210 | 482211683883 | 470R 5% 0,5W |
| 3211 | 482211683883 | 470R 5% 0,5W |
| 3212 | 482211683883 | 470R 5% 0,5W |
| 3213 | 482205210478 | 4.7R 5% 0,33W |
| 3214 | 532211653564 | 3.3R 5% 0.5W |
| 3215 | 482211652257 | 22K 5% 0,5W |
| 3216 | 482205011002 | 1K 1% 0,4W |
| 3217 | 482211683872 | 220R 5% 0,5W |

ELECTRICAL PARTSLIST - AUDIO BOARD

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3218 | 482211652257 | 22K 5% 0,5W |
| 3219 | 482211652283 | 4.7K 5% 0,5W |
| 3220 | 482211652256 | 2.2K 5% 0,5W |
| 3221 | 482211652283 | 4.7K 5% 0,5W |
| 3222 | 482211652256 | 2.2K 5% 0,5W |
| 3223 | 482211683868 | 150R 5% 0,5W |
| 3224 | 482211652256 | 2.2K 5% 0,5W |
| 3225 | 482211652234 | 100K 5% 0,5W |
| 3226 | 482211683866 | 1M 5% 0,5W |
| 3227 | 482211652285 | 470K 5% 0,5W |
| 3228 | 482211652283 | 4.7K 5% 0,5W |
| 3229 | 482205011002 | 1K 1% 0,4W |
| 3230 | 482211652257 | 22K 5% 0,5W |
| 3231 | 482205021003 | 10K 1% 0,6W |
| 3232 | 482211652256 | 2.2K 5% 0,5W |
| 3233 | 482205021003 | 10K 1% 0,6W |
| 3234 | 482205011002 | 1K 1% 0,4W |
| 3235 | 482205011002 | 1K 1% 0,4W |
| 3236 | 482211652283 | 4.7K 5% 0,5W |
| 3237 | 532211653564 | 3.3R 5% 0.5W |
| 3238 | 482205011002 | 1K 1% 0,4W |
| 3500 | 482205021003 | 10K 1% 0,6W |
| 3501 | 482205021003 | 10K 1% 0,6W |
| 3502 | 482211652269 | 3.3K 5% 0,5W |
| 3503 | 482211652269 | 3.3K 5% 0,5W |
| 3504 | 482205021003 | 10K 1% 0,6W |
| 3505 | 482205021003 | 10K 1% 0,6W |
| 3506 | 482211652289 | 5.6K 5% 0,5W |
| 3507 | 482211652289 | 5.6K 5% 0,5W |
| 3508 | 482211652256 | 2.2K 5% 0,5W |
| 3509 | 482211652256 | 2.2K 5% 0,5W |
| 3510 | 482211652256 | 2.2K 5% 0,5W |
| 3511 | 482211652256 | 2.2K 5% 0,5W |
| 3514 | 482205011002 | 1K 1% 0,4W |
| 3515 | 482205011002 | 1K 1% 0,4W |
| 3516 | 482211652283 | 4.7K 5% 0,5W |
| 3517 | 482211652283 | 4.7K 5% 0,5W |
| 3518 | 482205021003 | 10K 1% 0,6W |
| 3519 | 482205021003 | 10K 1% 0,6W |
| 3520 | 482205021003 | 10K 1% 0,6W |
| 3521 | 482205021003 | 10K 1% 0,6W |
| 3522 | 482211652269 | 3.3K 5% 0,5W |
| 3523 | 482211652269 | 3.3K 5% 0,5W |
| 3524 | 482205011002 | 1K 1% 0,4W |
| 3525 | 482211652283 | 4.7K 5% 0,5W |
| 3526 | 482211652283 | 4.7K 5% 0,5W |
| 3527 | 482211652191 | 33R 5% 0,5W |
| 3528 | 482211683883 | 470R 5% 0,5W |
| 3529 | 482211652175 | 100R 5% 0,5W |
| 3530 | 482211652175 | 100R 5% 0,5W |

- RESISTORS -

| | | |
|------|--------------|--------------|
| 3531 | 482211652283 | 4.7K 5% 0,5W |
| 3532 | 482211652283 | 4.7K 5% 0,5W |
| 3533 | 482211652283 | 4.7K 5% 0,5W |
| 3534 | 482211652256 | 2.2K 5% 0,5W |
| 3535 | 482211652257 | 22K 5% 0,5W |
| 3536 | 482211652257 | 22K 5% 0,5W |
| 3537 | 482211683866 | 1M 5% 0,5W |
| 3538 | 482211683866 | 1M 5% 0,5W |
| 3540 | 482211683878 | 270K 5% 0,5W |
| 3541 | 482211683878 | 270K 5% 0,5W |
| 3542 | 482211652234 | 100K 5% 0,5W |
| 3543 | 482211652234 | 100K 5% 0,5W |
| 3544 | 482211652234 | 100K 5% 0,5W |
| 3545 | 482211652234 | 100K 5% 0,5W |
| 3546 | 482211652304 | 82K 5% 0,5W |
| 3547 | 482211652304 | 82K 5% 0,5W |
| 3548 | 482211652234 | 100K 5% 0,5W |
| 3549 | 482211652234 | 100K 5% 0,5W |
| 3550 | 482211652245 | 150K 5% 0,5W |
| 3551 | 482211652245 | 150K 5% 0,5W |
| 3552 | 482205021003 | 10K 1% 0,6W |
| 3553 | 482205021003 | 10K 1% 0,6W |
| 3554 | 482211652234 | 100K 5% 0,5W |
| 3555 | 482211652234 | 100K 5% 0,5W |
| 3556 | 482211683884 | 47K 5% 0,5W |
| 3557 | 482211683884 | 47K 5% 0,5W |
| 3558 | 482211652291 | 56K 5% 0,5W |
| 3559 | 482211652291 | 56K 5% 0,5W |
| 3560 | 482205011002 | 1K 1% 0,4W |
| 3561 | 482205011002 | 1K 1% 0,4W |
| 3562 | 482211652234 | 100K 5% 0,5W |
| 3563 | 482211652234 | 100K 5% 0,5W |
| 3564 | 482211652249 | 1.8K 5% 0,5W |
| 3565 | 482211652249 | 1.8K 5% 0,5W |
| 3566 | 482211652256 | 2.2K 5% 0,5W |
| 3567 | 482211652256 | 2.2K 5% 0,5W |
| 3568 | 482211683881 | 390R 5% 0,5W |
| 3569 | 482211683881 | 390R 5% 0,5W |
| 3570 | 482205011002 | 1K 1% 0,4W |
| 3571 | 482205011002 | 1K 1% 0,4W |
| 3572 | 482211652283 | 4.7K 5% 0,5W |
| 3573 | 482211652283 | 4.7K 5% 0,5W |
| 3574 | 482211652176 | 10R 5% 0,5W |
| 3575 | 482211652272 | 330K 5% 0,5W |
| 3576 | 482211652245 | 150K 5% 0,5W |
| 3577 | 482211683883 | 470R 5% 0,5W |
| 3578 | 482211683883 | 470R 5% 0,5W |
| 3580 | 482211652263 | 2.7K 5% 0,5W |
| 3581 | 482211652263 | 2.7K 5% 0,5W |
| 3582 | 482211652289 | 5.6K 5% 0,5W |

ELECTRICAL PARTSLIST - AUDIO BOARD**- RESISTORS -**

| | | |
|------|--------------|--------------|
| 3583 | 482211652289 | 5.6K 5% 0,5W |
| 3584 | 482205011002 | 1K 1% 0,4W |
| 3585 | 482211652256 | 2.2K 5% 0,5W |
| 3588 | 482205011002 | 1K 1% 0,4W |
| 3589 | 482205011002 | 1K 1% 0,4W |

| | | |
|------|--------------|--------------|
| 3590 | 482211683883 | 470R 5% 0,5W |
| 3591 | 482211683883 | 470R 5% 0,5W |
| 3592 | 482211683872 | 220R 5% 0,5W |
| 3593 | 482211683872 | 220R 5% 0,5W |
| 3594 | 482205211109 | 10R 5% 0,5W |

| | | |
|------|--------------|--------------|
| 3595 | 482211652289 | 5.6K 5% 0,5W |
| 3596 | 482211652303 | 8.2K 5% 0,5W |

- COIL -

| | | |
|------|--------------|------------|
| 5310 | 482215711477 | Coil 2.2uH |
|------|--------------|------------|

- DIODES -

| | | |
|------|--------------|------------------|
| 6001 | 532213080686 | Diode 1N5392 |
| 6306 | 319801053380 | Diode BZX79-B3V3 |
| 6307 | 482213030621 | Diode 1N4148 |
| 6308 | 482213030621 | Diode 1N4148 |
| 6309 | 482213030621 | Diode 1N4148 |
| 6310 | 482213034488 | Diode BZX79-B11 |
| 6510 | 482213030621 | Diode 1N4148 |
| 6520 | 482213034174 | Diode BZX79-B4V7 |

- IC & TRANSISTORS -

| | | |
|------|--------------|----------------|
| 7210 | 482213044568 | Trans BC557B |
| 7211 | 482213041246 | Trans BC327-25 |
| 7212 | 482213040981 | Trans BC337-25 |
| 7214 | 482213040959 | Trans BC547B |
| 7215 | 482213040981 | Trans BC337-25 |

| | | |
|------|--------------|----------------|
| 7216 | 482213041246 | Trans BC327-25 |
| 7217 | 482213044568 | Trans BC557B |
| 7218 | 482213044568 | Trans BC557B |
| 7219 | 482213040959 | Trans BC547B |
| 7220 | 482213040959 | Trans BC547B |

| | | |
|------|--------------|----------------|
| 7221 | 482213040959 | Trans BC547B |
| 7222 | 482213040959 | Trans BC547B |
| 7223 | 482213040959 | Trans BC547B |
| 7224 | 482213040981 | Trans BC337-25 |
| 7512 | 482213040959 | Trans BC547B |

| | | |
|------|--------------|--------------|
| 7513 | 482213044568 | Trans BC557B |
| 7514 | 482213044568 | Trans BC557B |
| 7515 | 482213044568 | Trans BC557B |
| 7516 | 482213044568 | Trans BC557B |
| 7520 | 482220931544 | IC TA8227P |

- IC & TRANSISTORS -

| | | |
|------|--------------|--------------|
| 7521 | 532220911102 | IC HEF4052BT |
| 7522 | 482220963709 | IC LM324DTR |
| 7524 | 482220914831 | IC TDA7319 |
| 7525 | 482213040855 | Trans BC337 |
| 7526 | 482213040855 | Trans BC337 |

- MISCELLANEOUS -

| | | | |
|------|---|--------------|---|
| 1005 | △ | 482214610936 | Transformer 230V (For -/00/05/10/14) |
| 1005 | △ | 482214610937 | Transformer 120/230V (For -/01/11/11H/16) |
| 1005 | △ | 482214610938 | Transformer 120V UL (For -/17) |
| 1300 | | 482226520287 | AC Socket (Not for -/17) |

| | | | |
|------|---|--------------|---------------------------------------|
| 1300 | | 482226530986 | AC Socket (For -/17) |
| 1302 | △ | 482227210366 | Voltage Selector (For -/01/11/11H/16) |
| 1303 | △ | 482207032002 | Fuse 2A |
| 1530 | | 482227711755 | Slide Switch |
| 5001 | | 482224010099 | Loudspeaker 4 Ohm 4W |

| | | | |
|------|--|--------------|----------------------|
| 5002 | | 482224010099 | Loudspeaker 4 Ohm 4W |
|------|--|--------------|----------------------|

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