

# SERVICE MANUAL



**L 40**  
COMPACT  
DISC RECEIVER

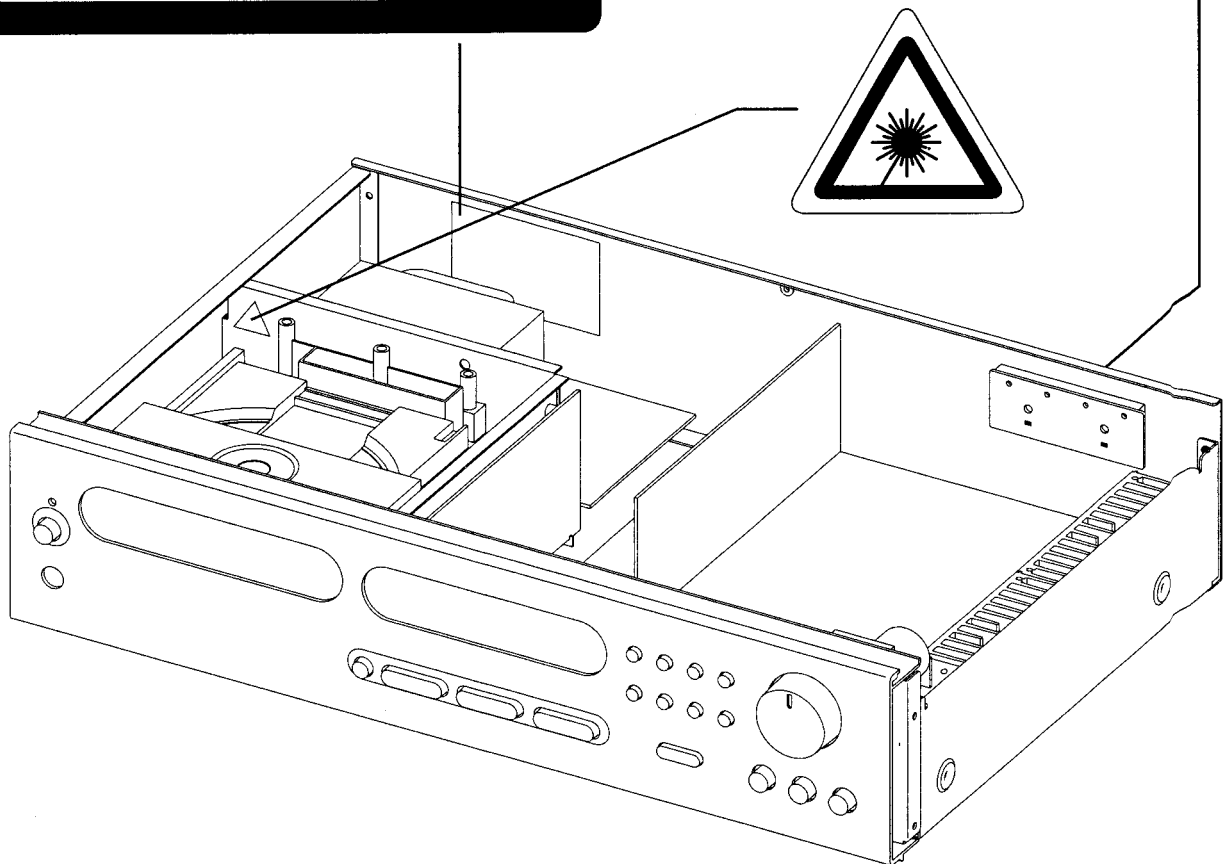
**L 40**  
COMPACT  
DISC RECEIVER

# SAFETY INFORMATION

## CAUTION

**CAUTION** - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.  
**ADVARSEL** - USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.  
**ADVARSEL** - USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.  
**VÅRING** - OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÅR ÖPPNAD OCH SPÄRRAR ÅR URKOPPLADE. STRÅLEN ÅR FARLIG.  
**VÅRO!** - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALLTINA NÄKTMÄTONTÄ LASERSÄTEILYLLE. ÄLÄ KAISO SÄTEESEEN.  
**VORSICHT!** - UNSICHTBARE LASERTRÄHLUNG TRITTT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT DEM STRAHL AUSSETZEN.

**CLASS 1  
LASER PRODUCT**



The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.  
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS :-  
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND  
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,  
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE  
OPERATION.

# SERVICE SAFETY PRECAUTIONS

## 1. Replacing the fuses

**CAUTION:** FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE REPLACE ONLY WITH SAME TYPE OF FUSE.

| Reference No | Part Number  | Description                       |
|--------------|--------------|-----------------------------------|
| M410-M412*AH | 5100-1020-1A | Fuse 1A 250V Time Lag (UL/CSA)    |
| M410-M412*C  | 5100-1020-1B | Fuse 1A 250V Time Lag (SEMKO/VDE) |
| M404-M405*AH | 5120-0037-0  | Fuse 3.15A 250V Time Lag (UL/CSA) |
| M404-M405*C  | 5120-0065-0  | Fuse 2A 250V Time Lag (SEMKO/VDE) |


NOTE :

- <\*AH > : USA, CANADIAN MODEL ONLY.
- <\*C > : EUROPEAN MODEL ONLY.

## 2. Safety check out

(Only U.S.A. model)

Before returning the product to the customer, make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit.

Parts marked with the symbol  are critical with regard to the risk of fire and electric shock. Replace only with parts recommended by the manufacturer.

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# SPECIFICATIONS

## PREAMPLIFIER AND POWER AMPLIFIER SECTIONS

|  |                 |                 |
|--|-----------------|-----------------|
| CONTINUOUS AVERAGE POWER OUTPUT INTO 8Ω<br>(Min. power per channel, 20Hz-20kHz, both channels driven,<br>with no more than rated distortion) |                 | 20 W (13 dBW)   |
| Rated distortion (THD 20Hz-20kHz)  |                 | 0.07%           |
| Clipping power (maximum continuous power per channel)  |                 | 25 W            |
| IHF dynamic headroom at 8 Ω  |                 | +3 dB           |
| IHF dynamic power  | 8Ω:             | 40 W (16 dBW)   |
| (maximum short term power per channel)   | 4 Ω:            | 60 W (17.8 dBW) |
|  | 2 Ω:            | 80 W (19 dBW)   |
| Slew rate  |                 | >20 V/usec      |
| Damping factor (ref. 8 ohms 50Hz)  |                 | >100            |
| THD + SMPTE + IHF I.M. (from 250mV to rated output)  |                 | <0.07%          |
| Input impedance  |                 | 80 kΩ + 220 pF  |
| Input sensitivity (for rated output into 8Ω)   |                 | 135 ±10 mV      |
| Signal/Noise ratio, A weighted   | ref. 1W         | 80 dB           |
| Frequency response (20Hz-20kHz)  | Tone defeat on  | 0± 0.5 dB       |
|  | Tone defeat off | 0± 0.8 dB       |
| Channel separation (2V in, 10W out, 1kHz)  |                 | 60 dB           |
| Headphone output in 0.05%, 600Ω load, AUX IN 500mV 1 kHz   |                 | 5 ± 1 V         |
| <b>Controls</b>  |                 |                 |
| Bass   | 100Hz           | ±7 dB at 100 Hz |
| Treble   | 10kHz           | ±6 dB at 10 kHz |

## FM TUNER SECTION

|  |        | <u>*C</u>  | <u>*AH</u> |
|--|--------|------------|------------|
| Input level is expressed as the reading in open-circuit<br>of 75-ohm source impedance signal generator |        |            |            |
| Usable Sensitivity ( 98 MHz)   |        | ≤ 18 dBμ   | ≤ 20 dBμ   |
| 50 dB Quieting   | Mono   | ≤ 20 dBμ   | ≤ 20 dBμ   |
|  | Stereo | ≤ 38 dBμ   | ≤ 38 dBμ   |
| 60 dB Quieting   | Mono   | ≤ 30 dBμ   | ≤ 28 dBμ   |
|  | Stereo | ≤ 48 dBμ   | ≤ 46 dBμ   |
| Signal / Noise Ratio   | Mono   | ≥ 65 dB    | ≥ 65 dB    |
| (60 dBμ, IHF wtd)  | Stereo | ≥ 60 dB    | ≥ 60 dB    |
| Frequency Response (30 Hz - 15 kHz, 60 dBμ)  |        | 0 ± 0.7 dB | 0 ± 0.7 dB |
| Channel Separation (60 dBμ)  | 30 Hz  | ≥ 30 dB    | ≥ 30 dB    |
|  | 1 kHz  | ≥ 32 dB    | ≥ 32 dB    |
|  | 10 kHz | ≥ 27 dB    | ≥ 28 dB    |
| Alternate Channel Selectivity<br>(40 dBμ, ± 400 kHz)   |        | ≥ 65 dB    | ≥ 60 dB    |
| Capture Ratio (40 dBμ)   |        | ≤ 7 dB     | ≤ 5 dB     |
| AM Suppression<br>(60 dBμ, 100% Mod.FM, 30% Mod AM)  |        | ≥ 51 dB    | ≥ 52 dB    |
| Image Rejection (119.4 MHz)  |        | ≥ 78 dB    | ≥ 74 dB    |
| I.F. Rejection (10.7 MHz)  |        | ≥ 82 dB    | ≥ 75 dB    |
| Pilot Suppression (60 dBμ)   |        | ≥ 60 dB    | ≥ 60 dB    |
| THD (60 dBμ, 100%Mod. for AH, 40% Mod. for C,1 kHz)  |        |            |            |
|  | Mono   | ≤ 0.6%     | ≤ 0.8%     |
|  | L - R  | ≤ 0.8%     | ≤ 0.8%     |
|  | L + R  | ≤ 0.8%     | ≤ 0.8%     |
| Auto-Search Sensitivity  |        | 16-30 dBμ  | 16-30 dBμ  |
| Center Tune Sensitivity  |        | 16-30 dBμ  | 16-30 dBμ  |
| Stereo Indicator Sensitivity   | On     | 18-26 dBμ  | 18-26 dBμ  |
|  | Off    | 17-25 dBμ  | 17-25 dBμ  |
| RDS decode Sensitivity   |        | 16-26 dBμ  | -          |

## **CD PLAYER SECTION**

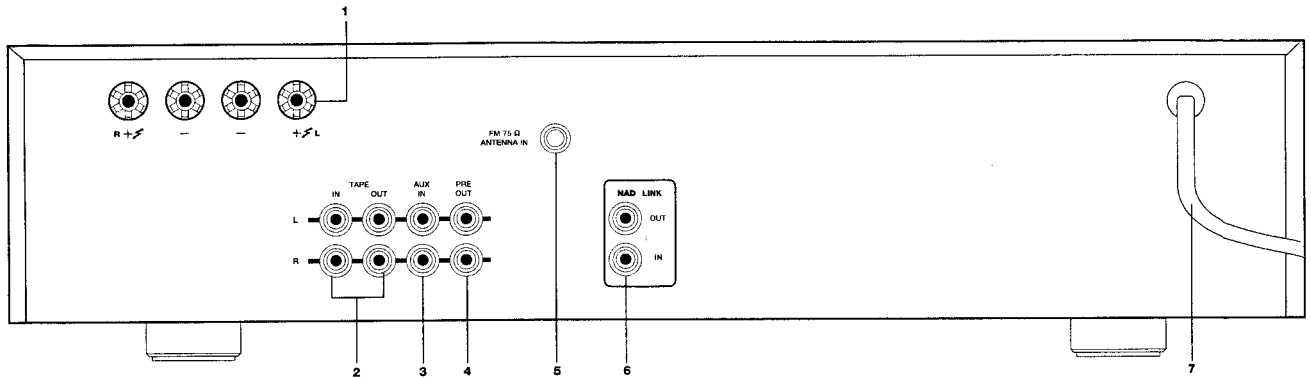
|   |   |
|---|---|
| Disc Capacity .....                     | One Disc, 120 or 80 mm                            |
| Decoding .....                          | Delta Sigma                                       |
| Digital Filter .....                    | 8 Times oversample                                |
| Analog Filter .....                     | 2 pole active                                     |
| Frequency Response .....                | +/- 0.5 dB, 5 Hz - 20 kHz                         |
| De-Emphasis Error .....                 | +/- 0.3 dB  |
| THD (at 0 dB, 1 kHz) .....              | 0.009%  |
| Intermodulation Distortion .....        | < -100 dB, 19 + 20 kHz                            |
| Dynamic Range .....                     | 96 dB   |
| Linearity .....                         | +/- 0.5 dB, 0 dB to -80 dB                        |
| Signal / Noise Ratio (A-Weighted) ..... | 96 dB, De-Emphasis on<br>96 dB, De-Emphasis off   |
| Channel Separation    1 kHz .....       | > 80 dB   |
| 10 kHz .....                            | > 72 dB   |
| Wow and Flutter .....                   | Unmeasurable (Quartz Crystal Accuracy)            |
| Digital Error Correction .....          | CIRC with double error correction<br>in C1 and C2 |

## **PHYSICAL SPECIFICATIONS**

|  |                    |
|--|--------------------|
| Dimensions<br>(Width x Height x Depth) | 435 x 95 x 285 mm  |
| Net weight                             | 6.4 kg (14.08 lbs) |
| Shipping weight                        | 8.0 kg (17.6 lbs)  |

# REAR PANEL / FRONT PANEL VIEW

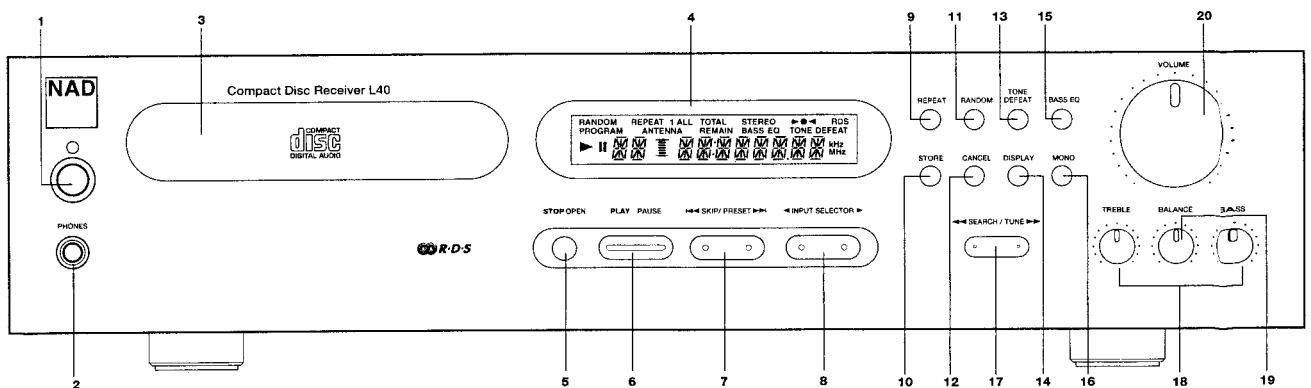
## REAR PANEL



1. SPEAKER TERMINALS
2. TAPE IN/OUT
3. AUX INPUT
4. PRE OUT

5. FM ANTENNA TERMINAL
6. NAD LINK IN/OUT
7. AC POWER CORD

## FRONT PANEL



1. POWER ON / OFF SWITCH
2. HEADPHONE
3. DISC DRAWER
4. LCD DISPLAY
5. STOP/OPEN
6. PLAY/PAUSE
7. SKIP/PRESET
8. INPUT SELECTOR
9. REPEAT
10. STORE

11. RANDOM
12. CANCEL
13. TONE DEFEAT
14. DISPLAY
15. BASS EQ
16. MONO
17. SEARCH/TUNE
18. TREBLE/BASS CONTROLS
19. BALANCE CONTROL
20. VOLUME CONTROL

## DISASSEMBLY INSTRUCTIONS

1. Remove machine screws M 4.0 x 6.0 (① to ④) from the side panels. Remove tapping screw 3.0 x 8.0 (⑤) from the back panel. Refer to **Figure No. 1**.

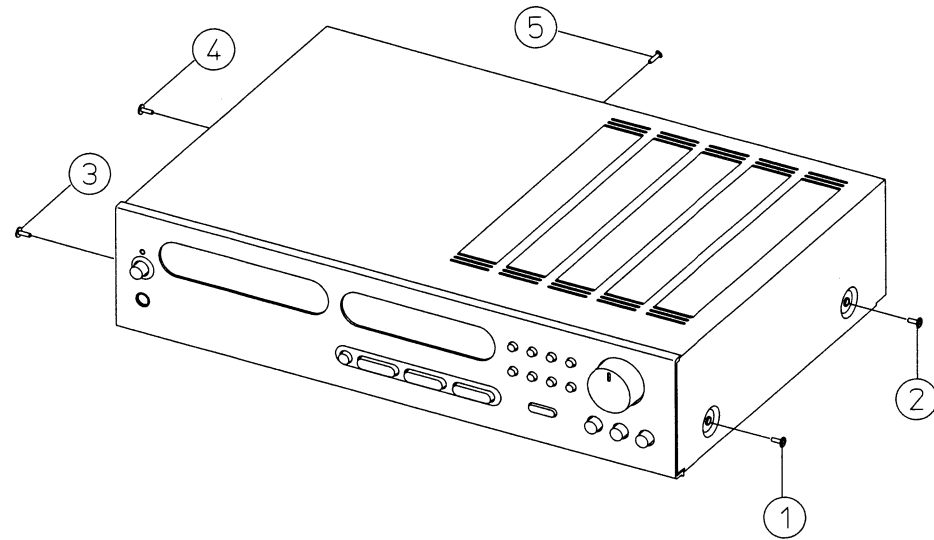


Figure No. 1.

2. Pull both sides of the TOP COVER slightly outwards (⑥) and tilt approx. 35° and then remove in the direction as indicated by the arrow (⑦). Refer to **Figure No. 2**.

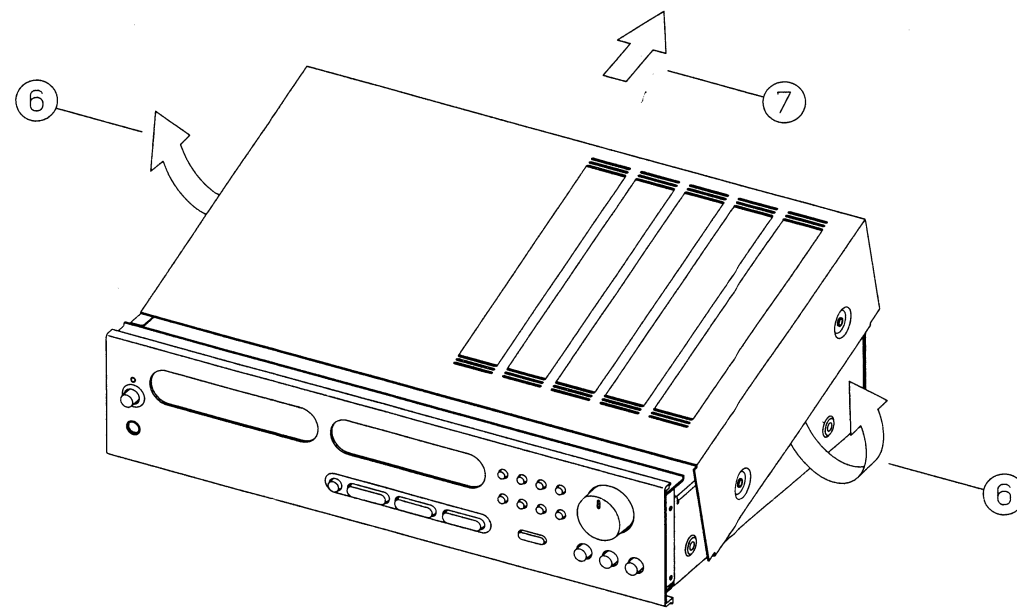
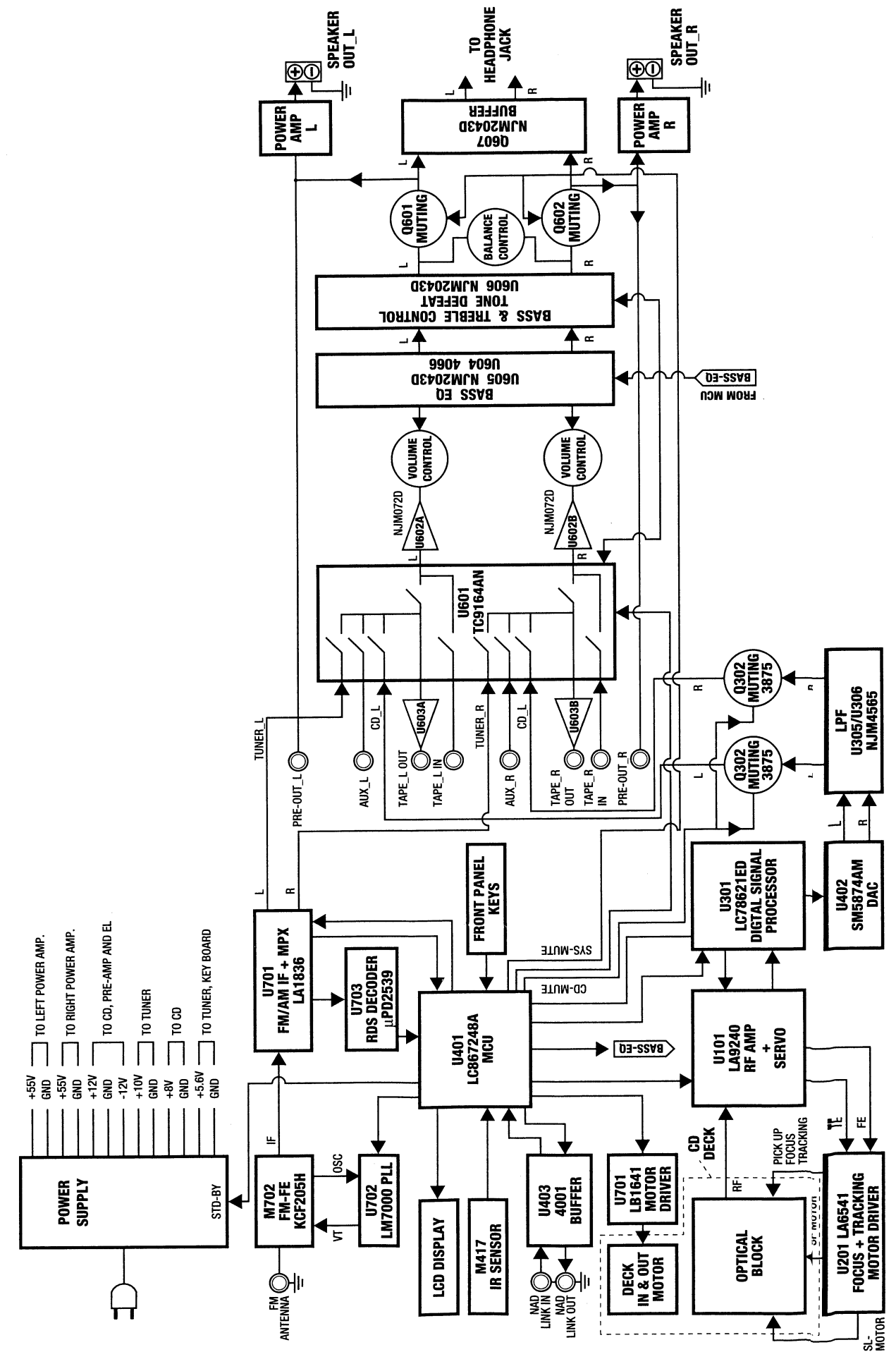
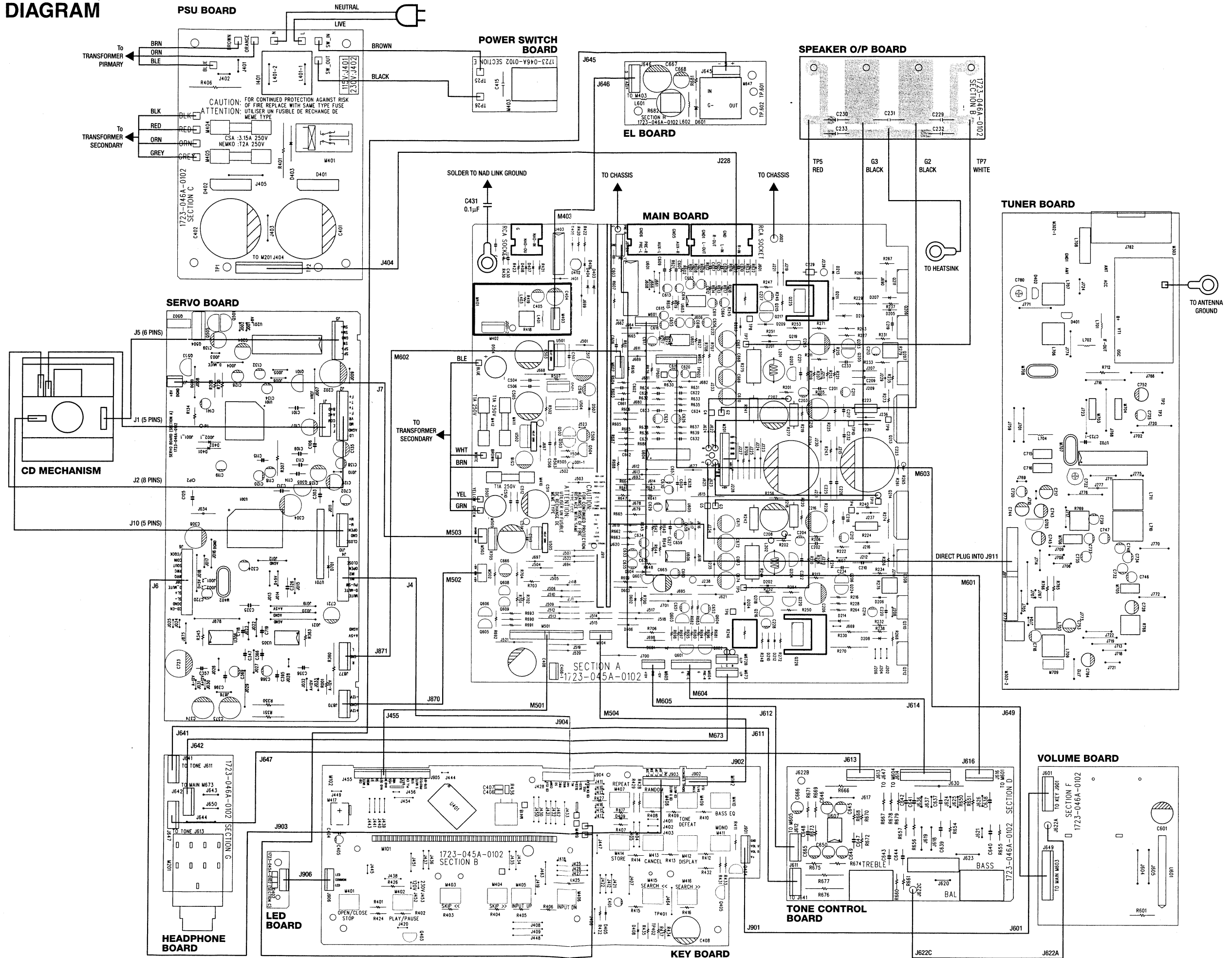


Figure No. 2.

## BLOCK DIAGRAM



# WIRING DIAGRAM









# ALIGNMENT PROCEDURES

## **FM SECTION**

AF MODULATION: 1 kHz, 40 kHz DEVIATION, MONO MODE  
STORE FREQUENCY: 98 MHz, 87.5 MHz, 108 MHz  
RF LEVEL: 75-ohm IMPEDANCE, OPEN CIRCUIT

## **OSCILLATION TUNING VOLTAGE**

Connect DVM between J701 & GND.  
Tune to 87.5 MHz.  
Adjust L06 (OSC Coil) to read  $1.5 \pm 0.5V$  on DVM.  
Tune to 108 MHz.  
Adjust L06 (OSC Coil) to read  $7.0 \pm 0.5V$  on DVM.

## **TUNER SENSITIVITY & SYNTHESIZER I.F. TRACKING**

Connect DVM across TP2 & TP3.  
Apply 98 MHz, 60 dB $\mu$  to antenna input.  
Tune to 98 MHz.  
Adjust L703 to read  $0 \pm 200$  mV  
Set RF level to 16 dB $\mu$ .  
Adjust C722 for minimum distortion.  
Set RF level to 36 dB $\mu$ .  
Adjust C722 to read  $0 \pm 100$  mV  
Set RF level to 15 dB $\mu$ .  
Check distortion to read <3%.  
Repeat until no further improvement.

## **STEREO SEPARATION PILOT SUPPRESSION**

FM Stereo: 98MHz, 40kHz devi., 60dB $\mu$ V, Pilot signal 19kHz, 7.5kHz devi.

Connect DVM across TP2 & TP3.  
Turn R768 fully clockwise.  
Turn off the modulating signal while leaving the pilot tone.  
Adjust L710 and L711 for minimum outputs on Left and Right channel respectively.  
Set modulated signal to Left only.  
Adjust C722 for minimum output at Right channel.  
Adjust L703 to read  $0 \pm 100$  mV.  
Repeat until no further improvement.  
Set modulated signal to Right only.  
Check for minimum output at Left channel. Readjust C722 and L703 if necessary.

## **SD LEVEL, SD BANDWIDTH & AUTO-SEARCH LEVEL**

Set stereo modulator to L = R mode.

Apply 98 MHz, 22 dB $\mu$  to antenna input.

Tune to 98MHz, Stereo Mode.

Adjust R768 until Center Tune Icon and Stereo Icon just lights.

Deviate RF frequency about 98MHz from -20kHz to +20kHz at a step of 1kHz.

Check SD only lights within the given frequency range.

Set input level to 28 dB $\mu$ .

Check if auto-search works and check tuning accuracy. Readjust R768 if necessary.

## **RDS SECTION**

RDS Generator - RDS Level : 5.6%, Output : 6.4Vp-p, Phase : 90 degree,  
Drop Off : 100%, Radio Text.

Signal Generator - 98MHz, 40kHz devi., 26dB $\mu$ .

## **RDS DECODER**

Check RDS icon lights and station name on the display.

Press display key once.

Check Radio Text scrolls across the display.

## **AMPLIFIER ADJUSTMENT**

### **Idle Current**

Remove solder link in between TP9 and TP10, or cut J236.

Connect DC millivoltmeter at TP9 and TP10 (i.e. across R239, 1-ohm resistor).

Adjust R279 for 25-35mV reading on voltmeter.

Remove solder link in between TP4 and TP11, or cut J237.

Connect DC millivoltmeter at TP4 and TP11 (i.e. across R240, 1-ohm resistor).

Adjust R276 for 25-35 mV reading on voltmeter.

Leave power on for at least 5 minutes, and check for idle current.

Replace solder link between TP9 and TP10 for left channel, and TP4 and TP11 for right channel,  
or reconnect J236 and J237.

# IMPORTANT NOTES

## INSTRUCTION FOR HANDLING OPTICAL SYSTEM BLOCK PICK-UP

Electrostatic breakdown of the laser diode in the optical system block may occur due to a potential difference caused by electrostatic charge accumulated on clothing, human body, etc. A ground must be provided as follows to prevent any electrostatic charge during unpacking or repair work.

### 1. Ground for Human Body

Be sure to wear a ground band (1M ohm) that is properly grounded to remove any static electricity that may be charged on the body.

### 2. Ground for Work Bench

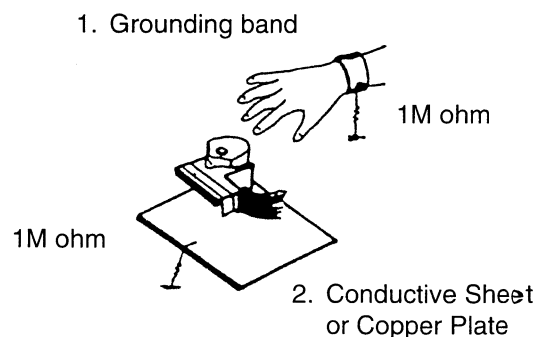
Be sure to place a conductive sheet (1M ohm) or copper plate with proper grounding on the work bench or other surface on which the pick-up is to be placed.

3. Because the static electricity charge on the clothing does not discharge through the body grounding band, do not let clothing to get in contact with the pick-up unit.

### INCORRECT



### CORRECT



**NOTE:** Laser diodes are so susceptible to damage from static electricity that even if a static discharge does not ruin the diode, it can shorten its life or cause it to work improperly.

## PRECAUTIONS FOR CHECKING BEAM EMISSION

The laser beam of this unit is focused on the reflecting surface of the objective lens in the optical system block. Therefore, keep your eyes at least 12 inches (30 cm) away from the objective lens when the laser diode is **ON**.

(Operation Check Method for Laser Diode and Focus Search Function.)

When the **POWER** switch is turned **ON** after the chucking plate is removed, observe the objective lens and confirm that the following operations are performed properly.

(The optical system block should be at the lead-in area position when it is checked at this time.)

(1) The laser should be at the innermost position after the chucking plate is removed.

(2) The diffused light of the laser beam can be seen when the **POWER** switch is turned **ON**.

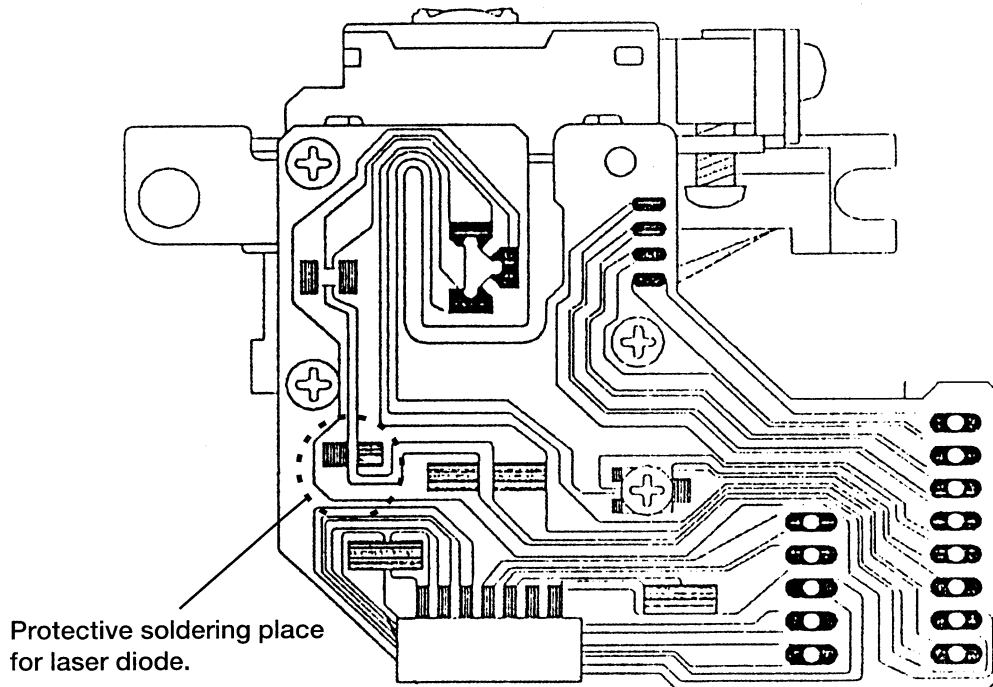
(3) Vertical (up and down) movement of the objective lens (2 or 3 times) will take place.

## PRECAUTIONS WHEN CHANGING LASER PICK-UP

When removing the pick-up assembly, short circuit the PCB tracks on the optical block as shown in the drawing in order to protect the pick-up before removal.

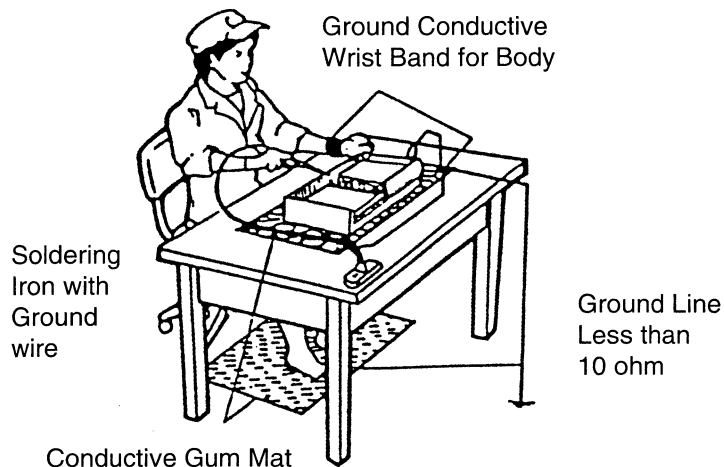
**NOTE:** Replacement pickup assemblies are supplied with the PCB pattern already protected.

DO NOT REMOVE THE SHORT CIRCUITS UNTIL YOU HAVE FINISHED FITTING THE PICK-UP.



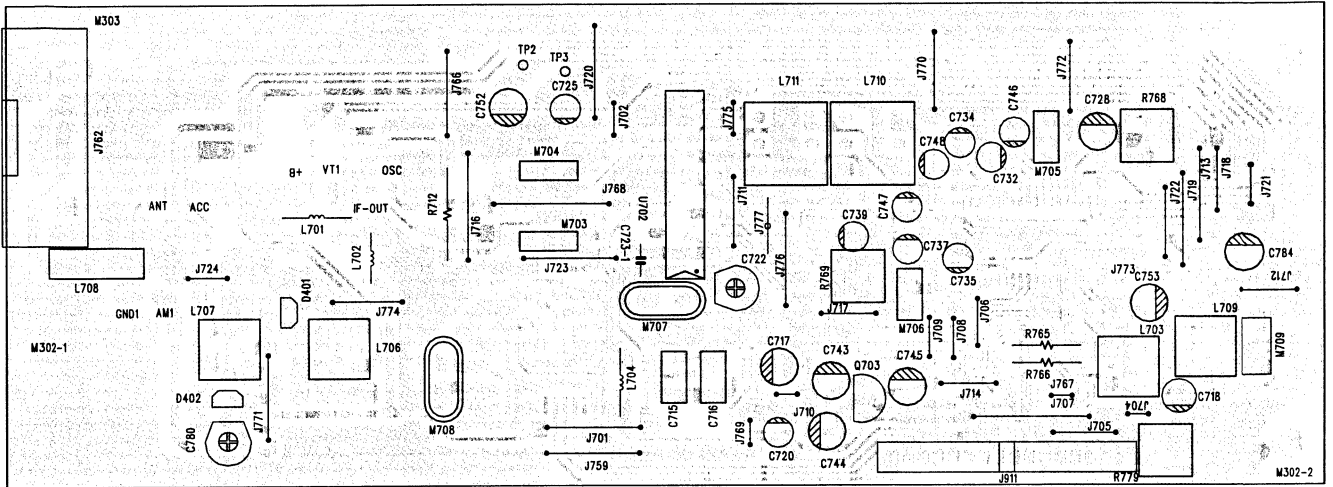
### Caution:

Laser diodes are extremely susceptible to damage from static electricity. Even if a static discharge does not ruin the diode, it can shorten its life or cause it to work improperly. When replacing the pick-up, use a conductive mat, a grounded soldering iron, and so on, to protect the laser diode from static damage.

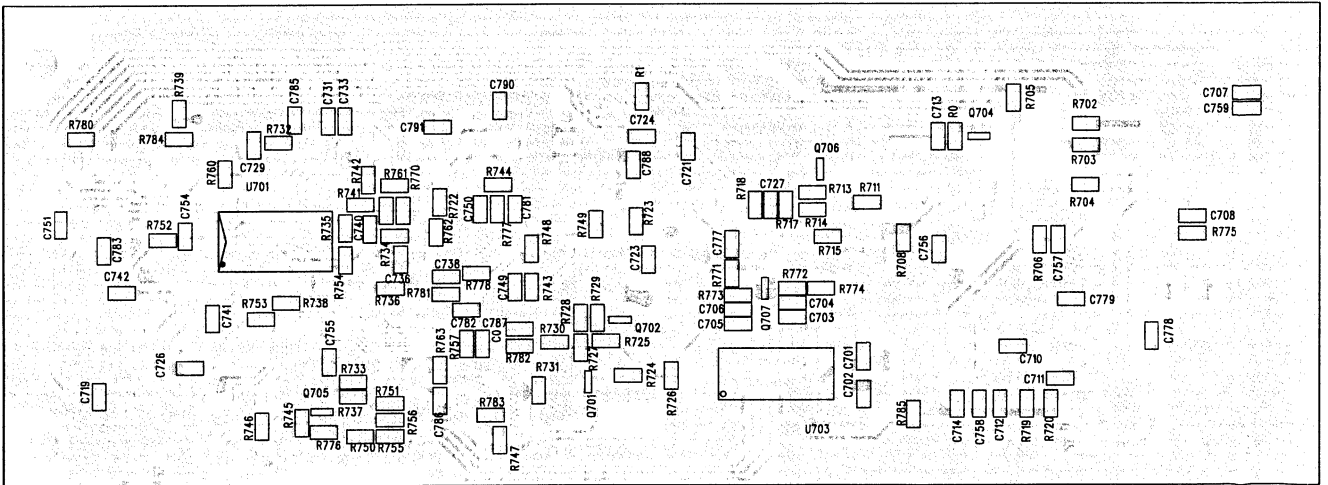


# PCB LAYOUT

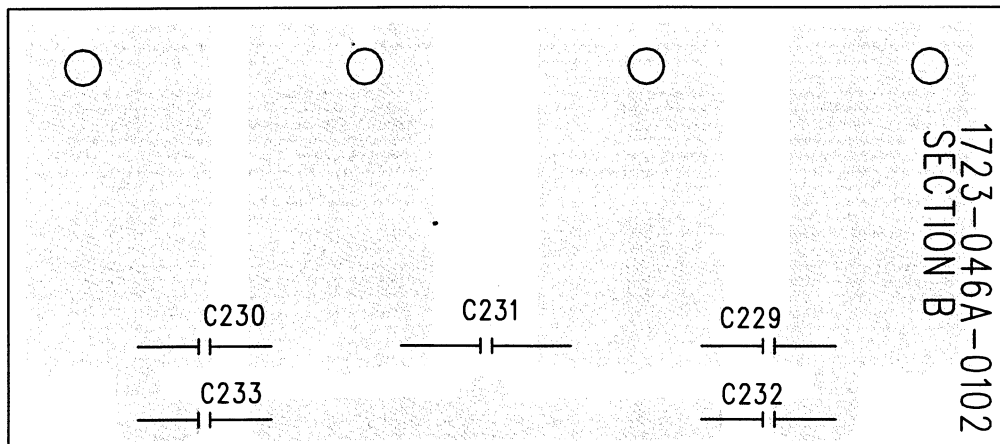
## TUNER BOARD - COMPONENT SIDE



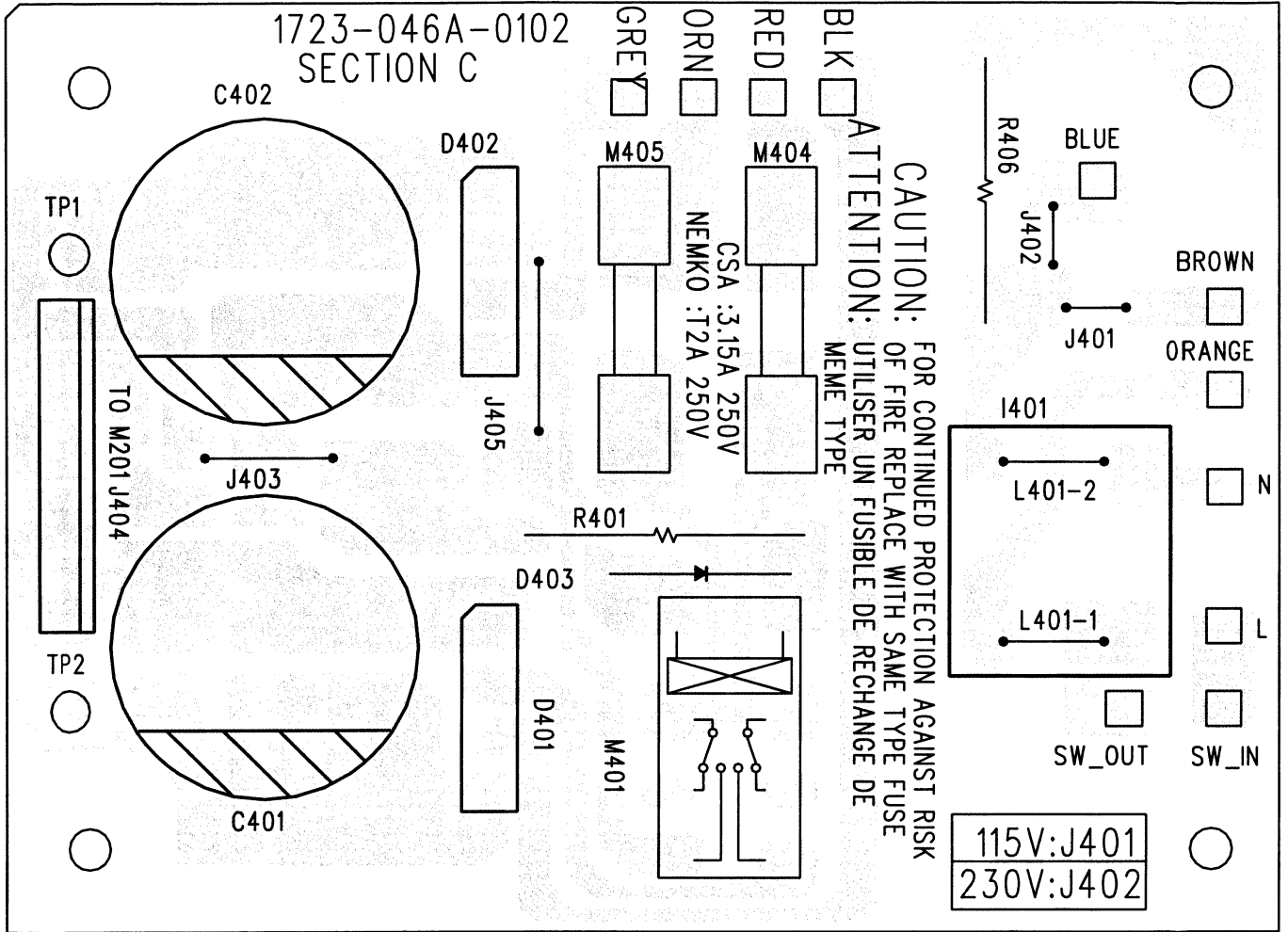
## TUNER BOARD - COPPER SIDE



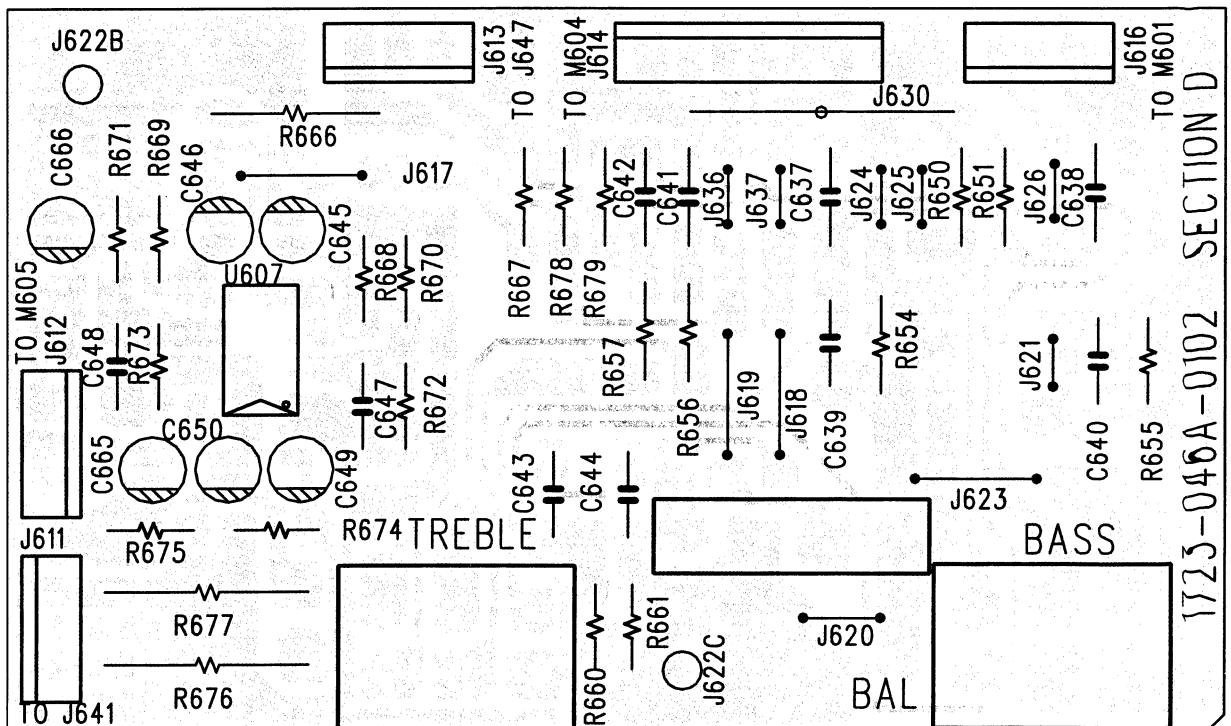
## SPEAKER TERMINAL BOARD



PSU BOARD



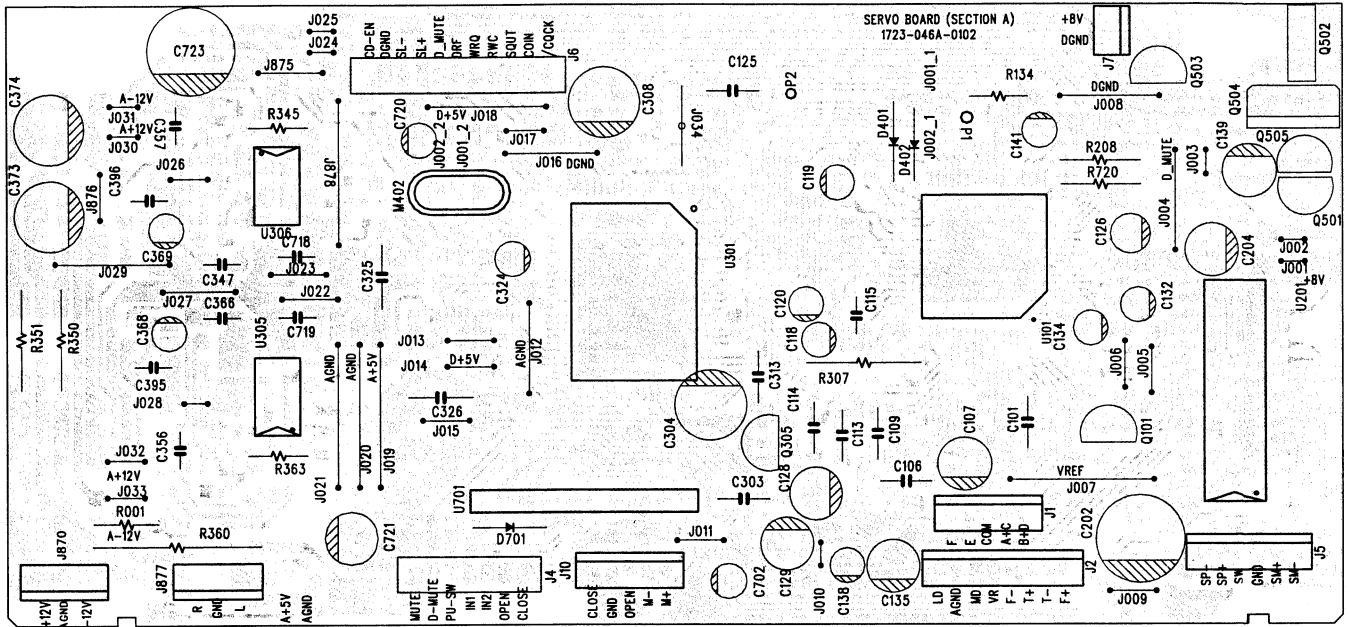
TONE CONTROL BOARD



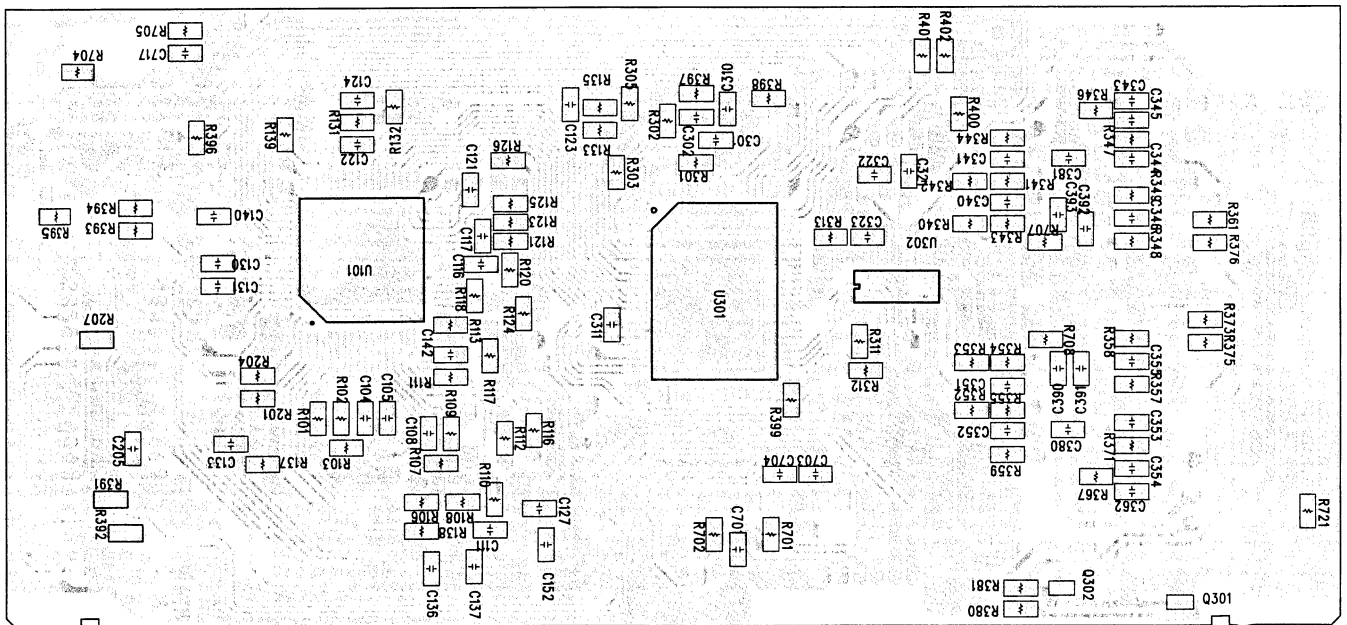




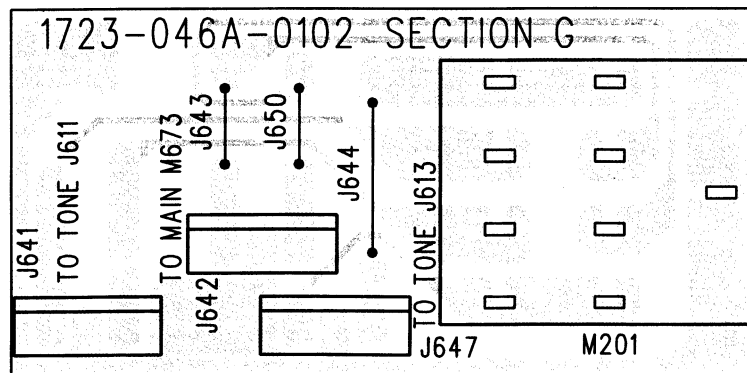
# SERVO BOARD - COMPONENT SIDE



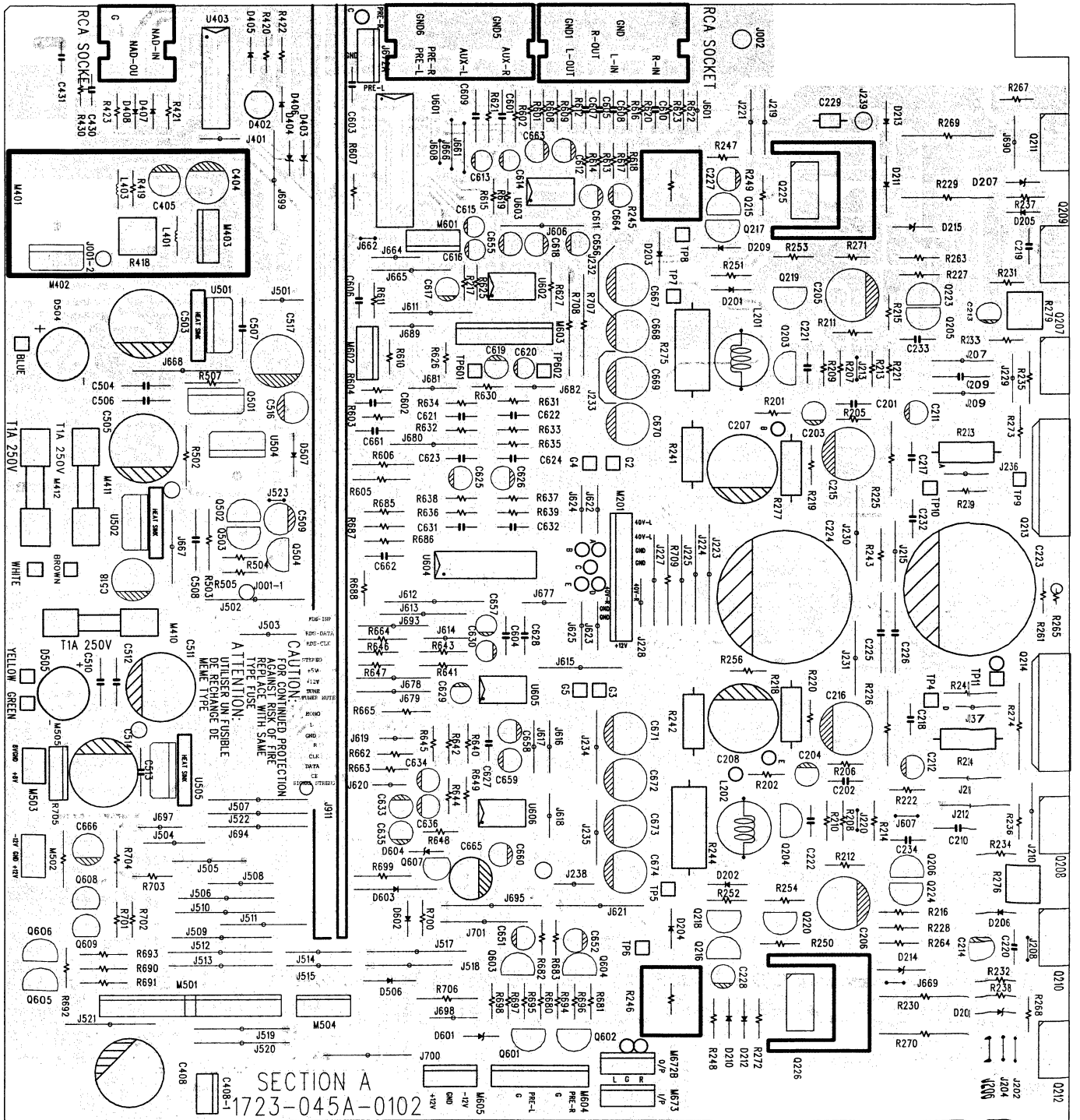
# SERVO BOARD - COPPER SIDE



# HEADPHONE BOARD

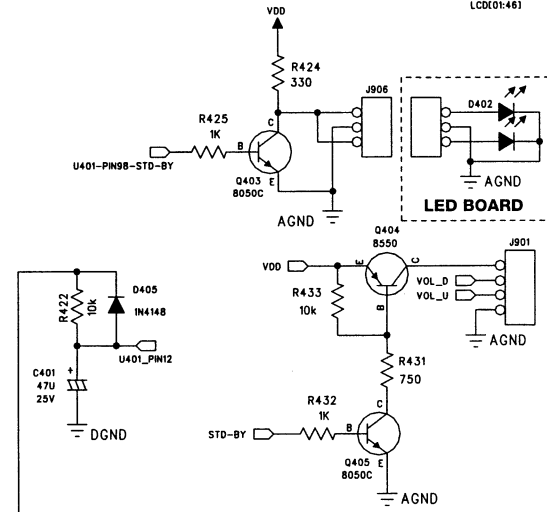
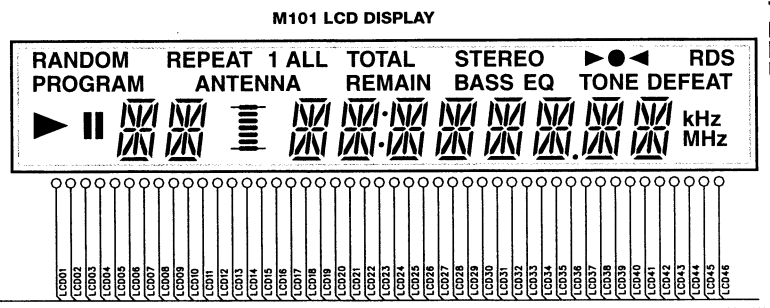
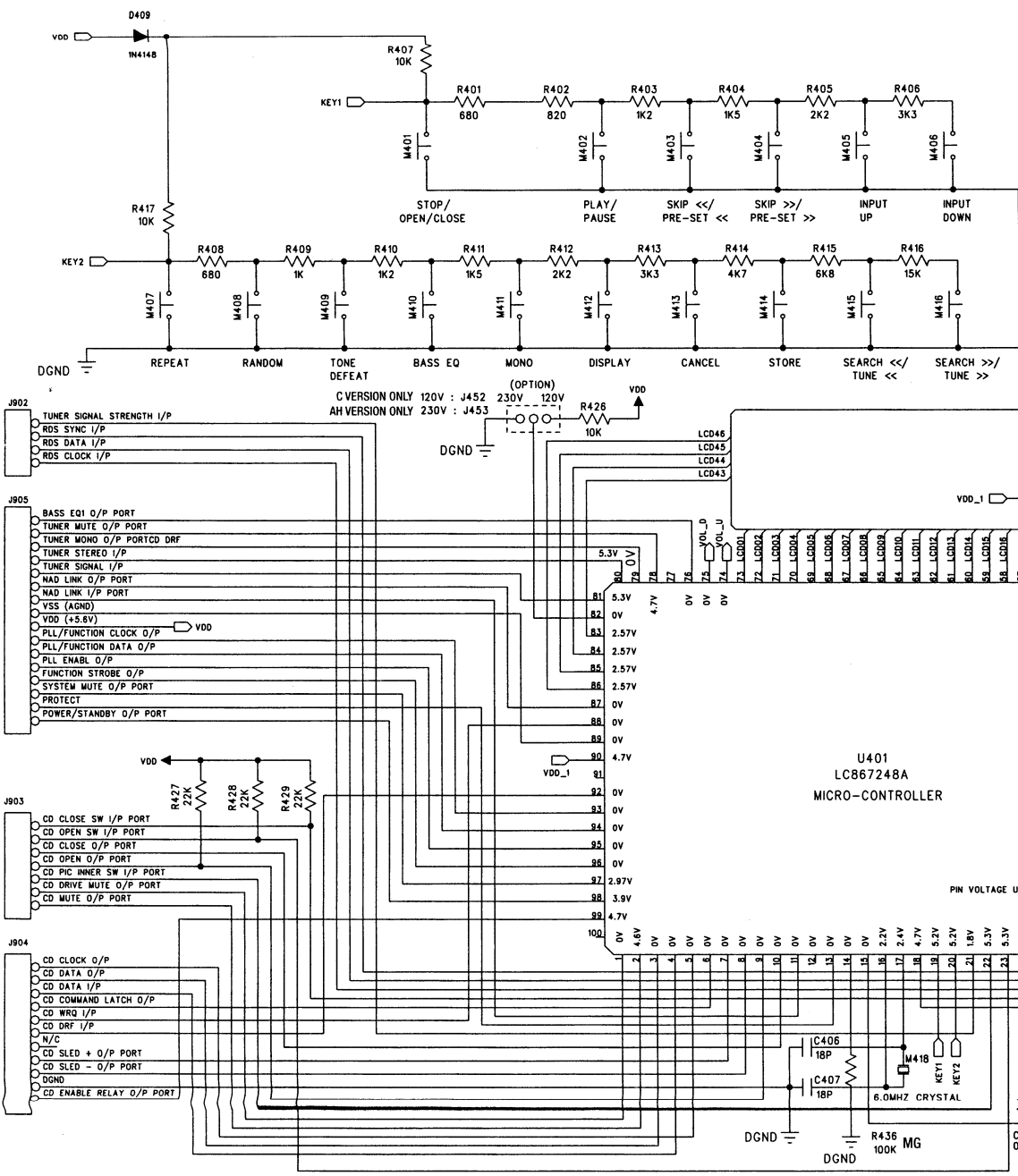


# MAIN BOARD



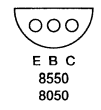
# SCHEMATIC DIAGRAM

## KEYBOARD / LED

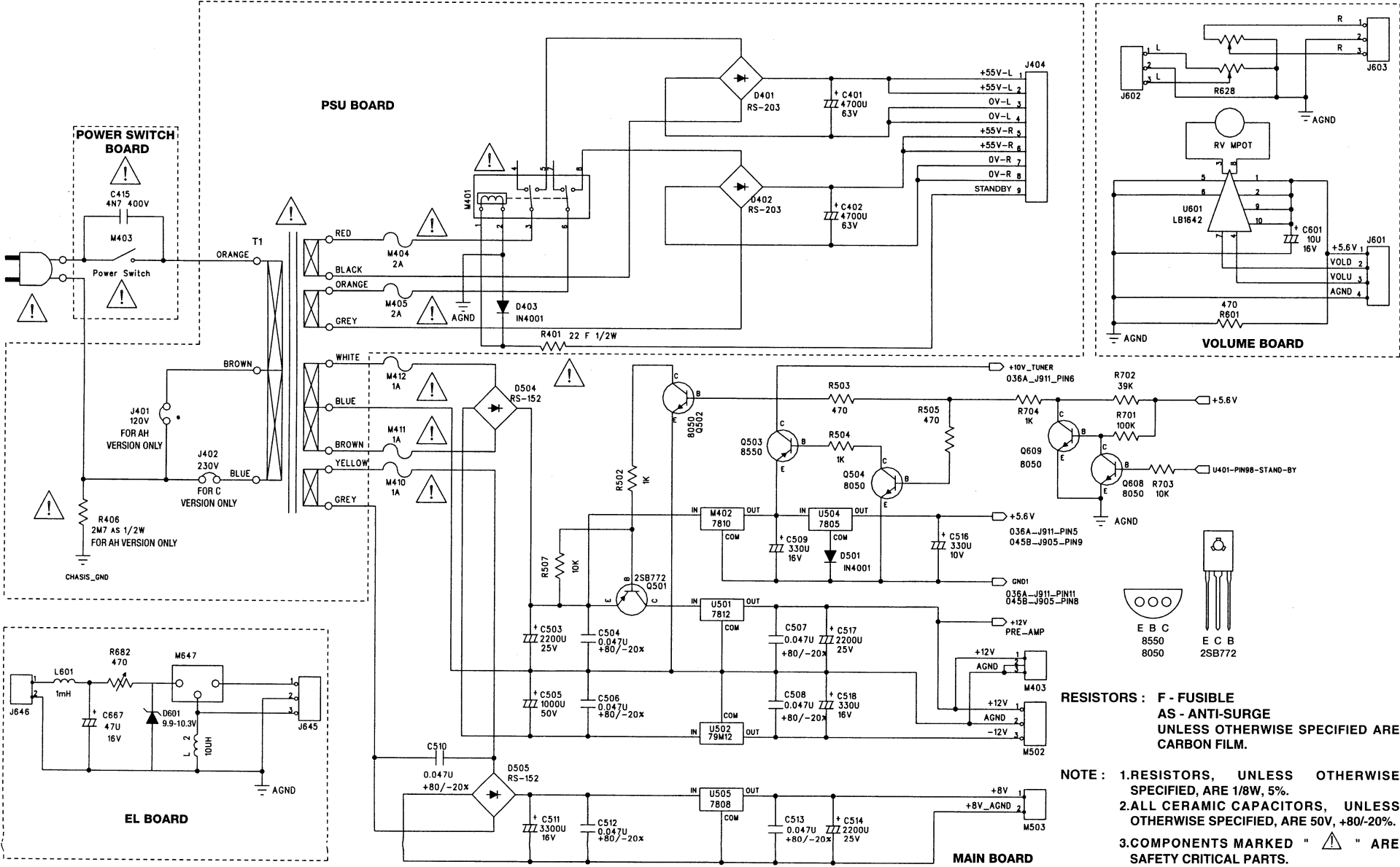


**RESISTORS :** MG-METAL GLAZE UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

**NOTE :** 1.RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
2.ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

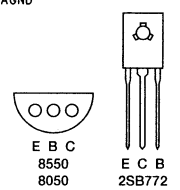


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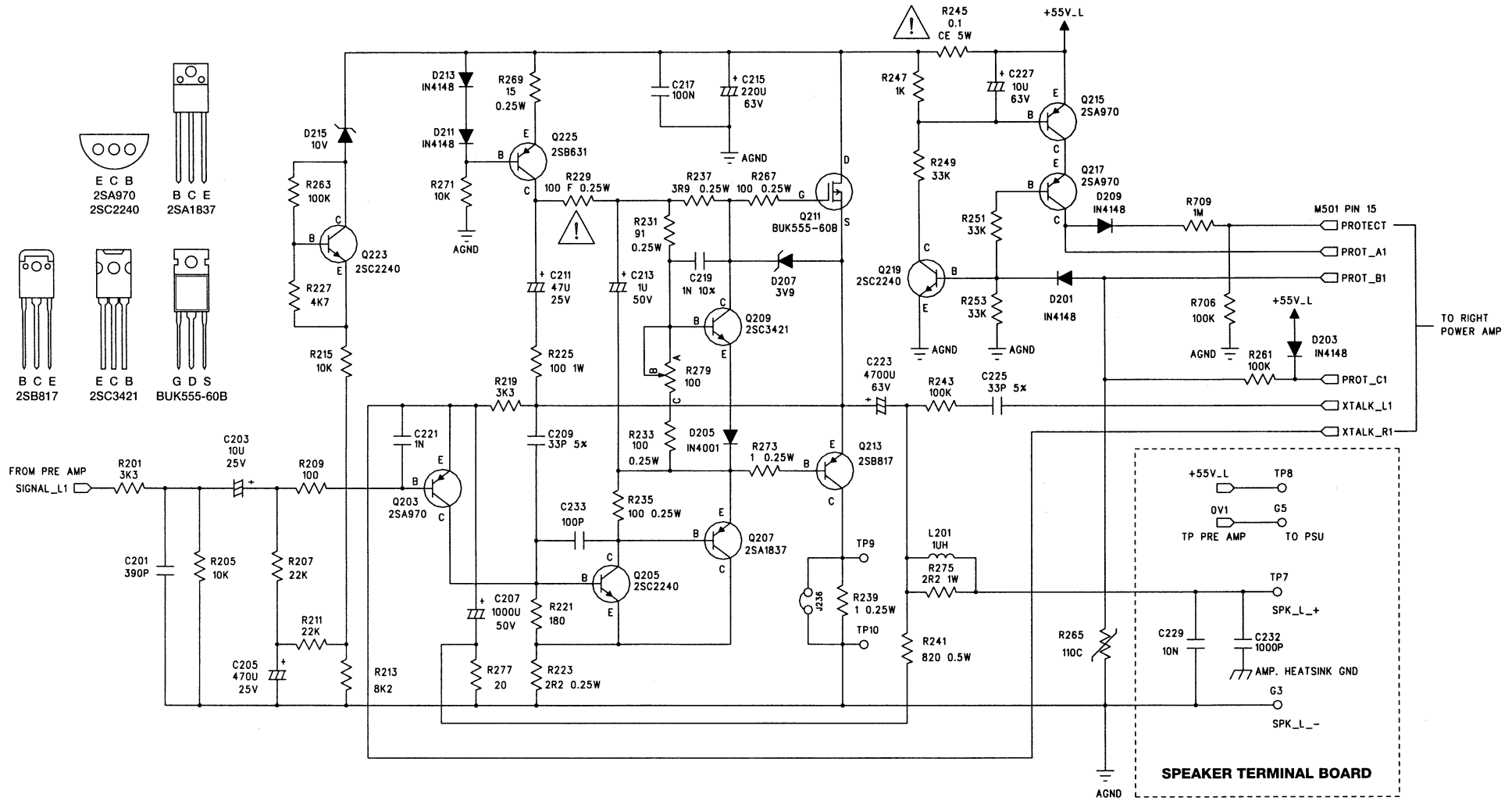


RESISTORS: F - FUSIBLE  
 AS - ANTI-SURGE  
 UNLESS OTHERWISE SPECIFIED ARE  
 CARBON FILM.

NOTE: 1.RESISTORS, UNLESS OTHERWISE  
 SPECIFIED, ARE 1/8W, 5%.  
 2.ALL CERAMIC CAPACITORS, UNLESS  
 OTHERWISE SPECIFIED, ARE 50V, +80/-20%.  
 3.COMPONENTS MARKED " ⚠ " ARE  
 SAFETY CRITICAL PARTS.



MAIN BOARD - POWER AMPLIFIER LEFT CHANNEL SECTION

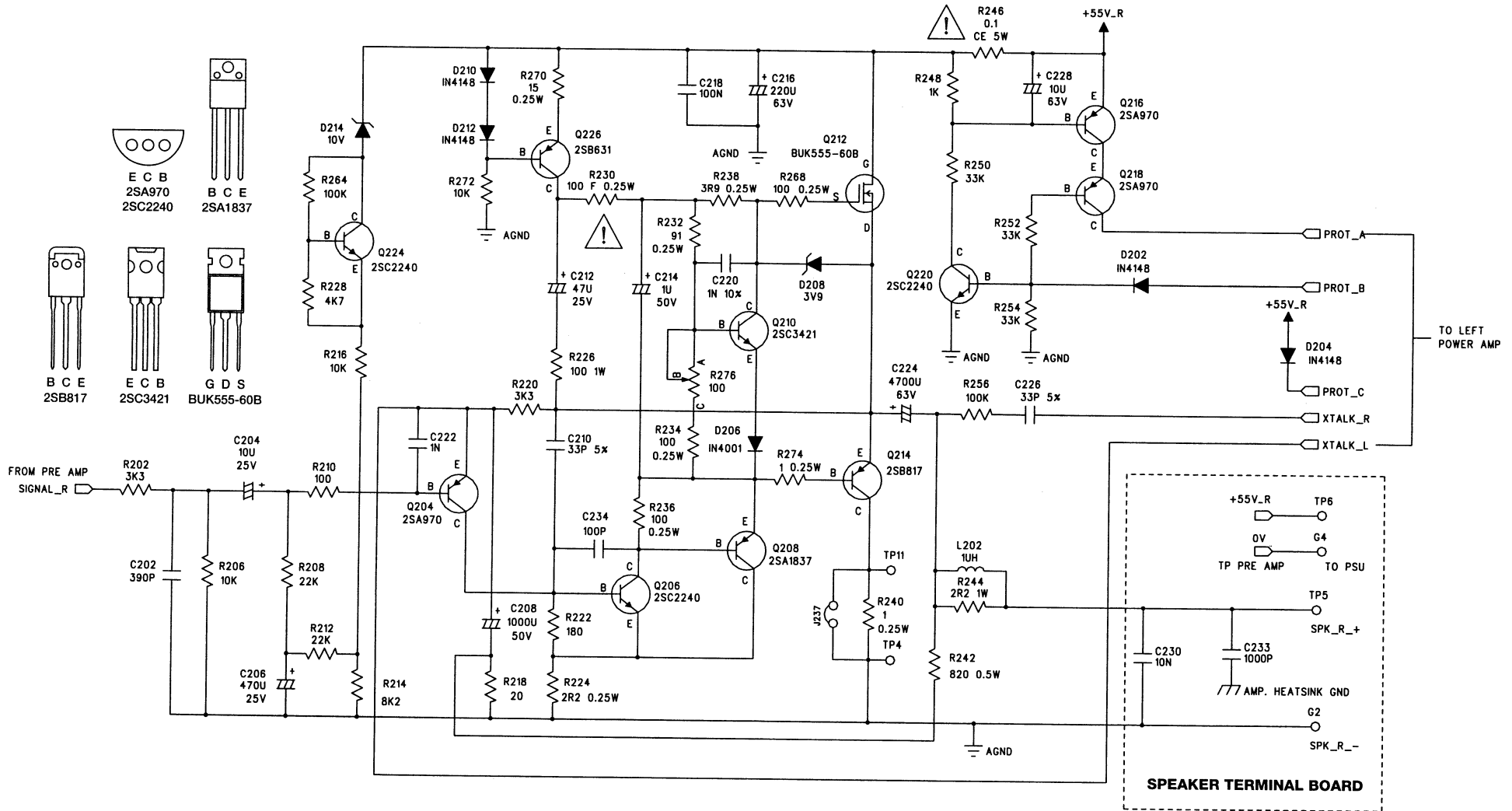


RESISTORS : CE - CERAMIC CASE  
UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

- NOTE : 1.RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
2.ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.  
3.COMPONENTS MARKED " " ARE SAFETY CRITICAL PARTS.

MAIN BOARD - POWER AMPLIFIER RIGHT CHANNEL SECTION

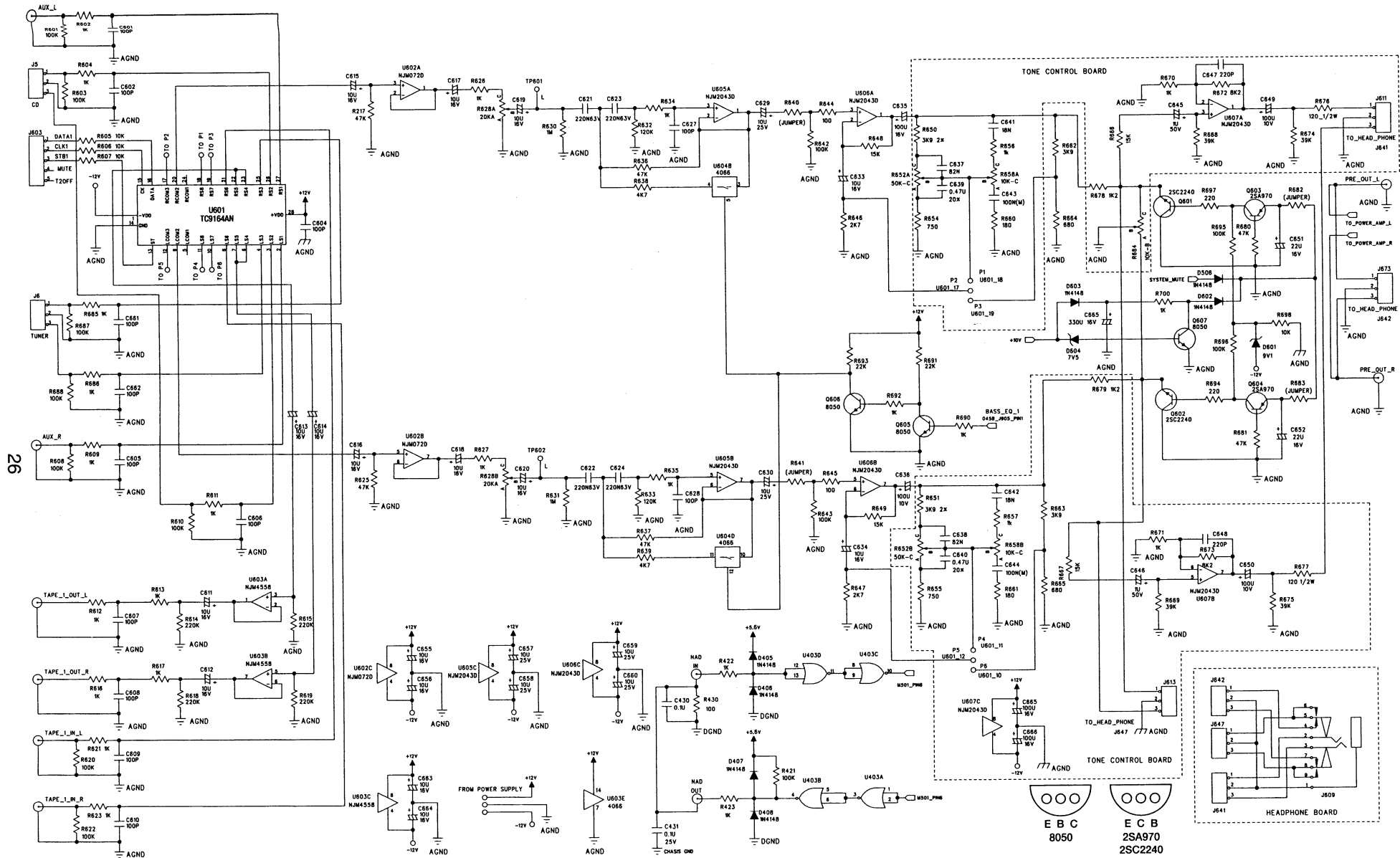
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RESISTORS : CE - CERAMIC CASE  
UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

NOTE : 1.RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
2.ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.  
3.COMPONENTS MARKED "  $\triangle$  " ARE SAFETY CRITICAL PARTS.

HEADPHONE / TONE CONTROL / MAIN



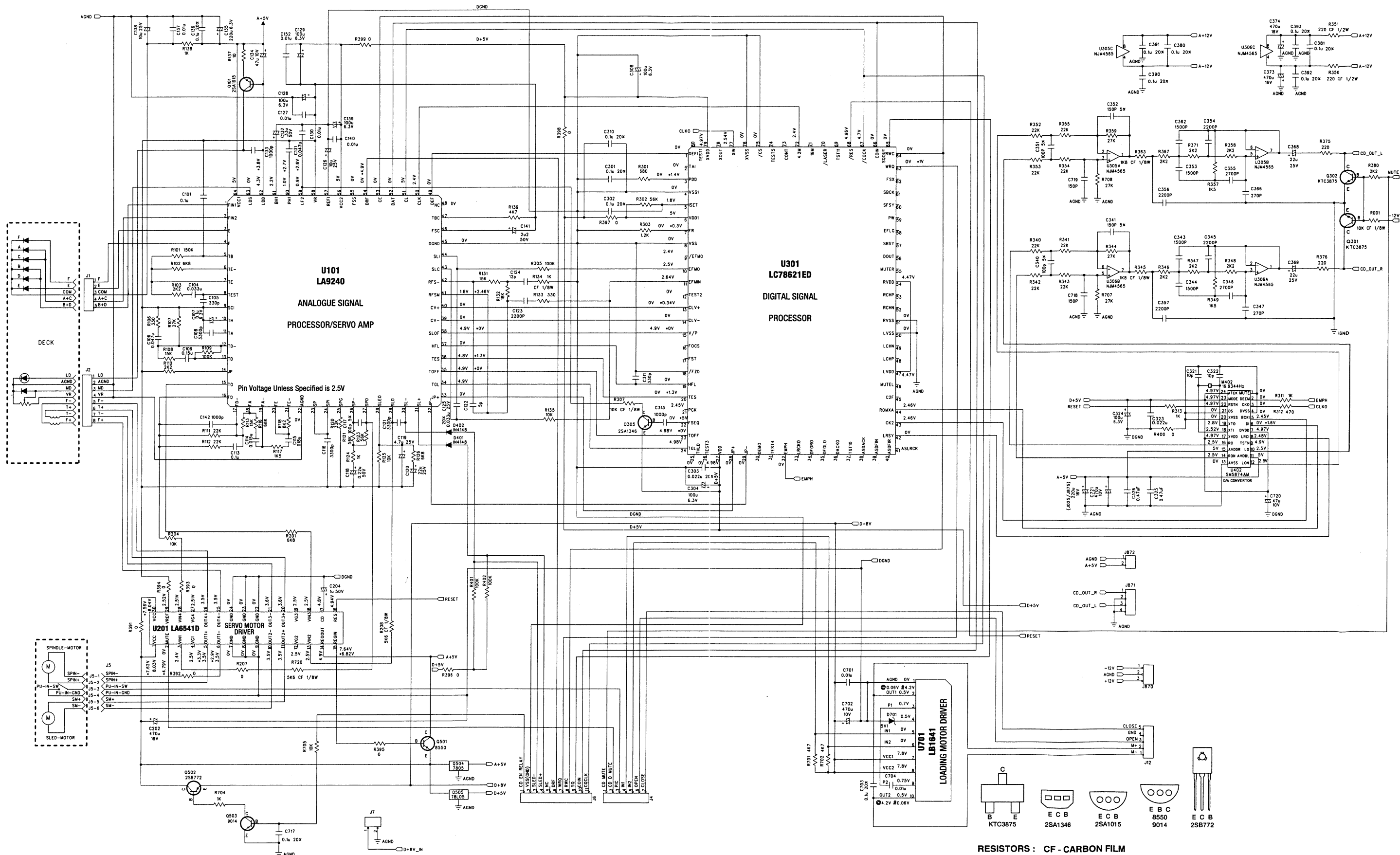
26

RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

NOTE : 1.RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
 2.ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.



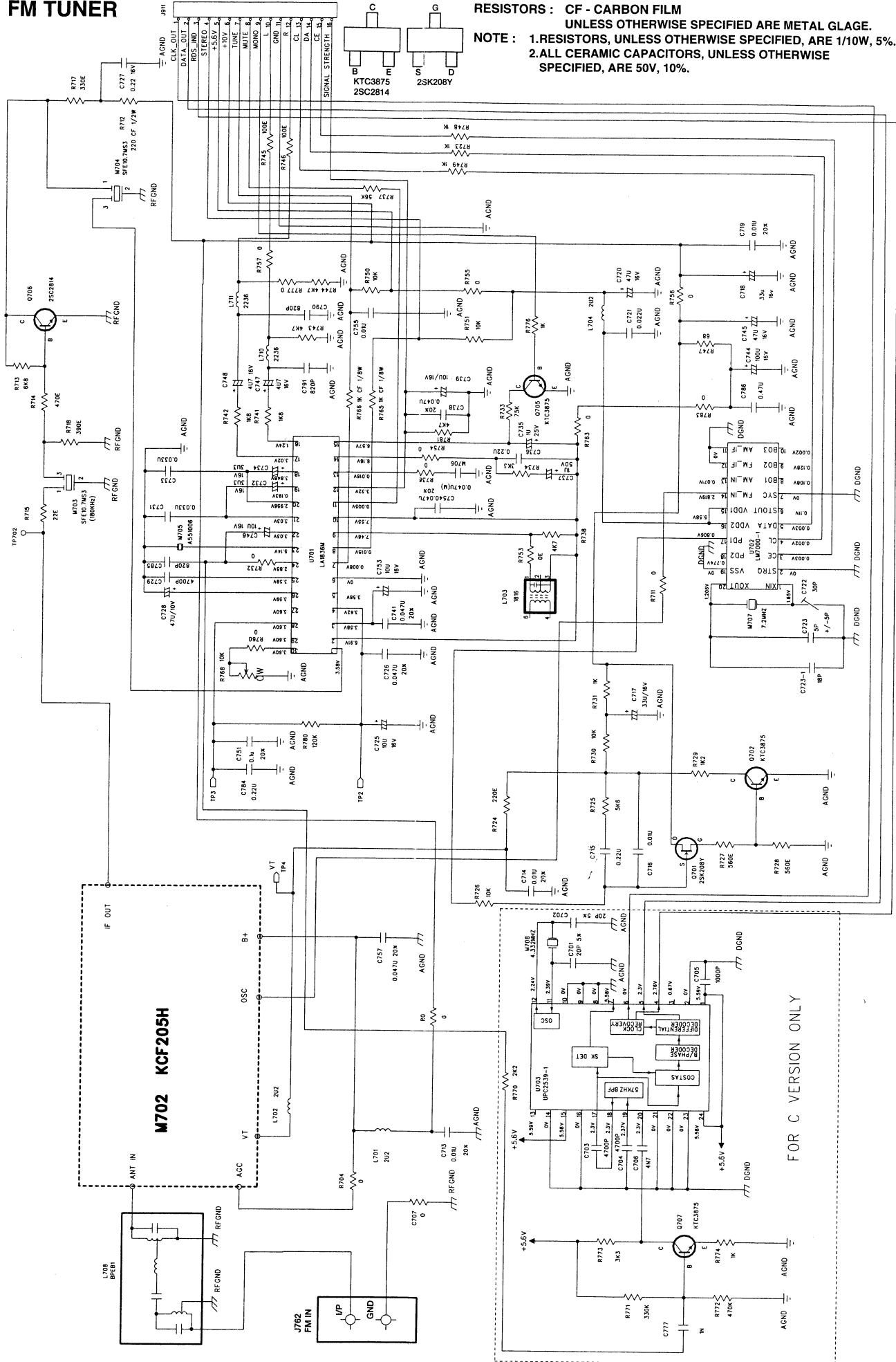
# CD SERVO



RESISTORS : CF - CARBON FILM  
UNLESS OTHERWISE SPECIFIED ARE METAL GLAZE.

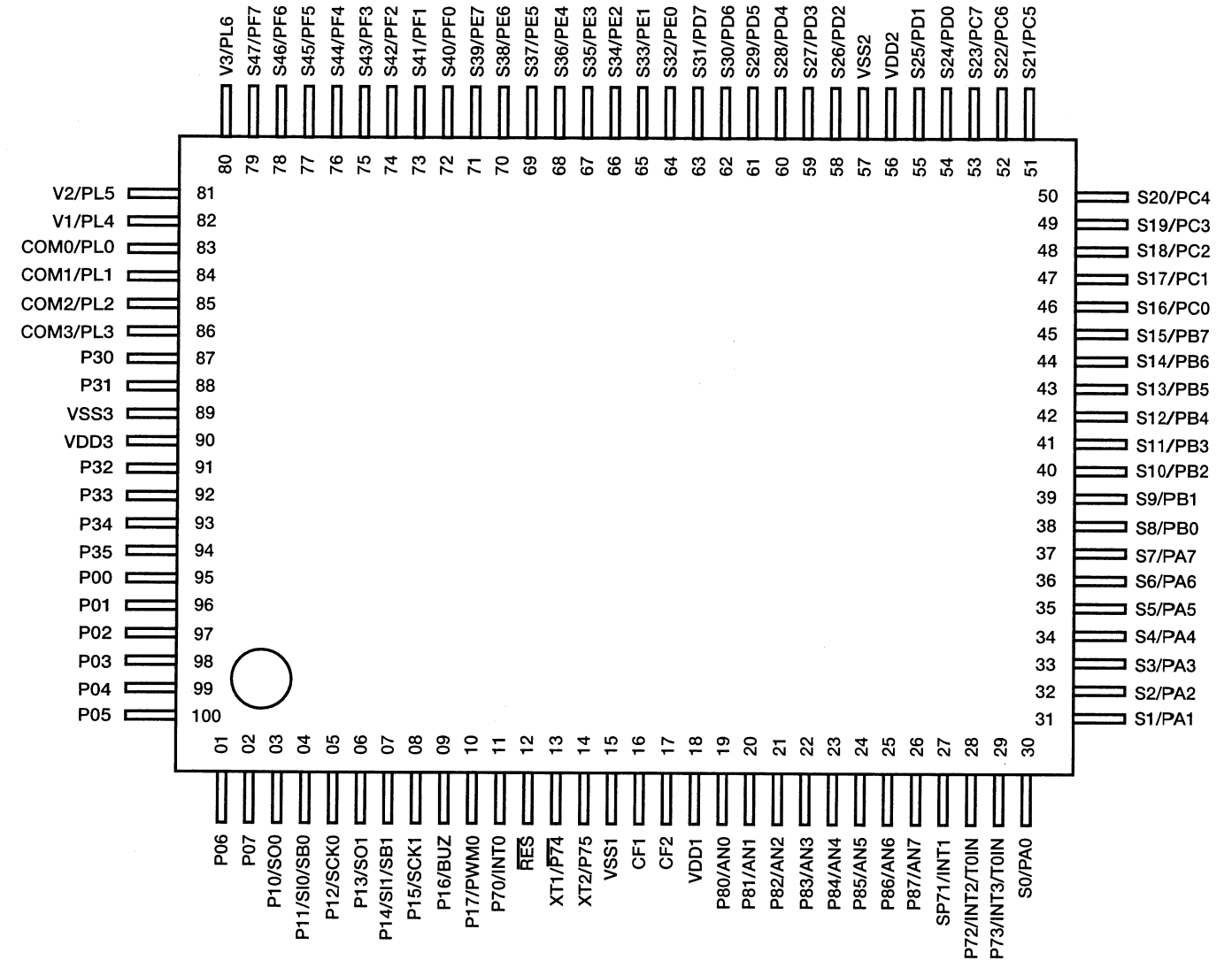
NOTE : 1.RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/10W, 5%.  
2.ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.  
3.VOLTAGE SPECIFIED ON THE IC'S PIN WHICH DO NOT HAS MARKING IS IN STP MODE,  
MARKED " \* " IS PLAY MODE, " # " IS TRAY OPEN MODE AND " @ " IS TRAY LOOSE MODE.

**FM TUNER**

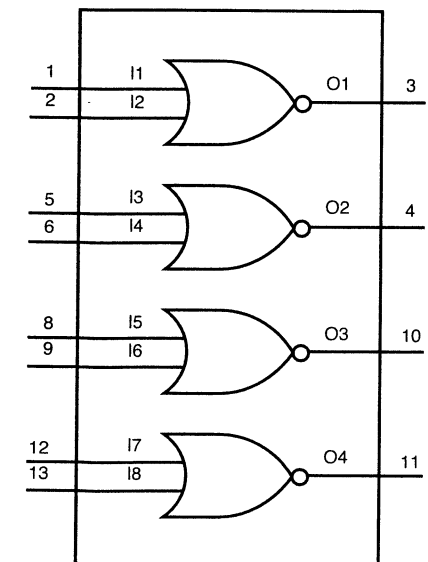


**IC BLOCK DIAGRAM**

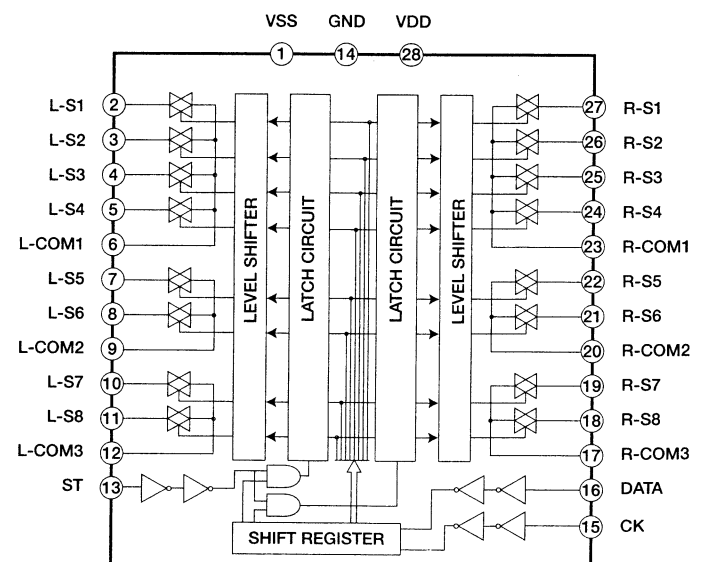
**KEYBOARD**  
**U401: LC867248A**



**MAIN BOARD**  
**U403: HCF4001BE**



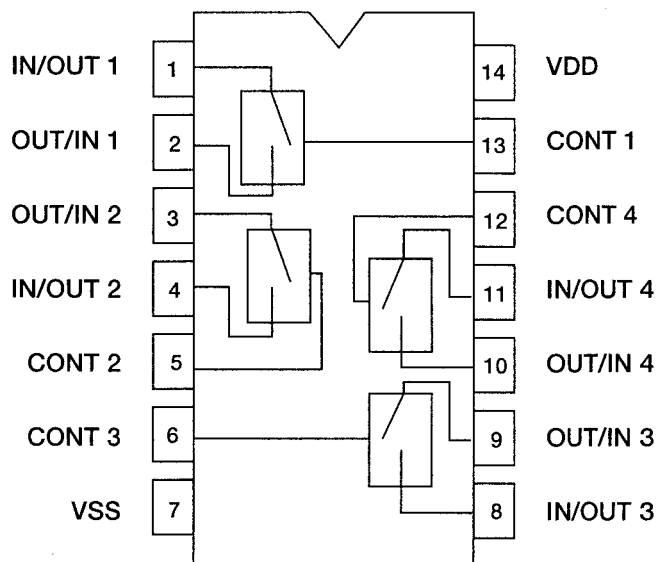
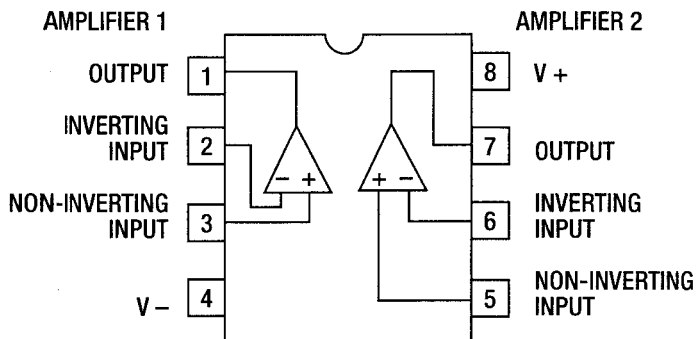
**U601: TC9164AN**



FOR C VERSION ONLY

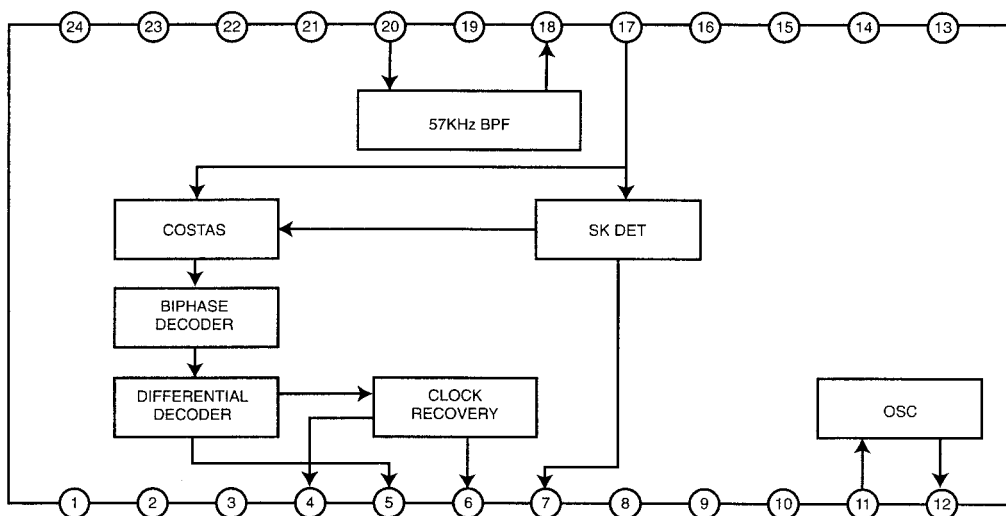
U602: NJM072D, U605-U606: NJM2043D,  
 U305-U306: NJM4565D (SERVO BOARD),  
 U607: NJM2043D (TONE CONTROL BOARD)

U604: TC4066B



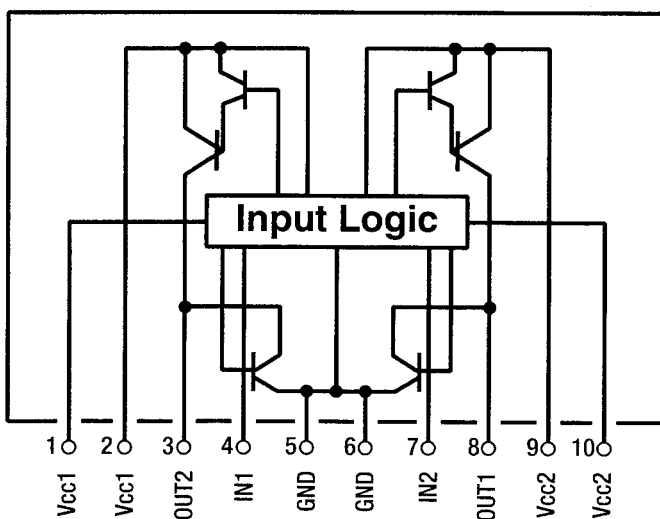
**FM TUNER BOARD**

U703:  $\mu$ PC2539

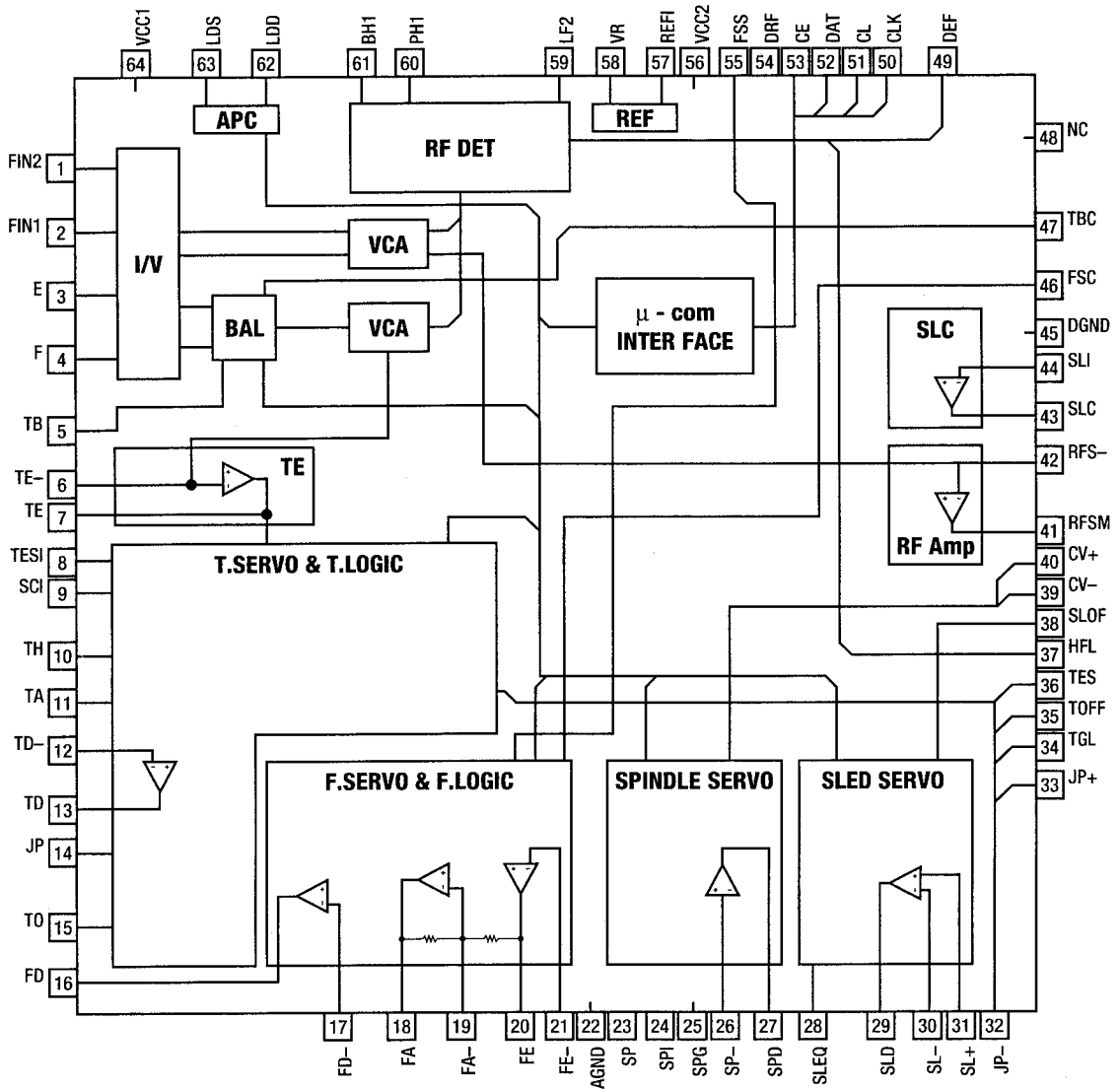


**VOLUME BOARD**

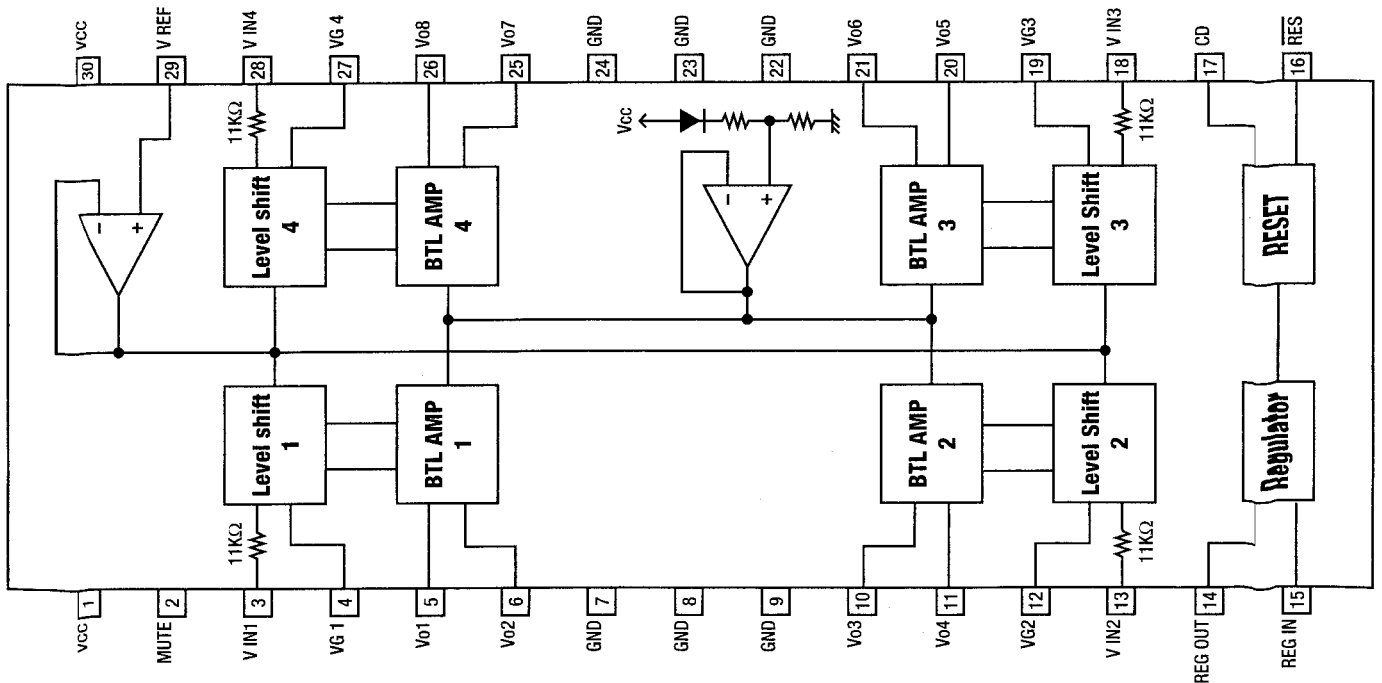
U601: LB1642



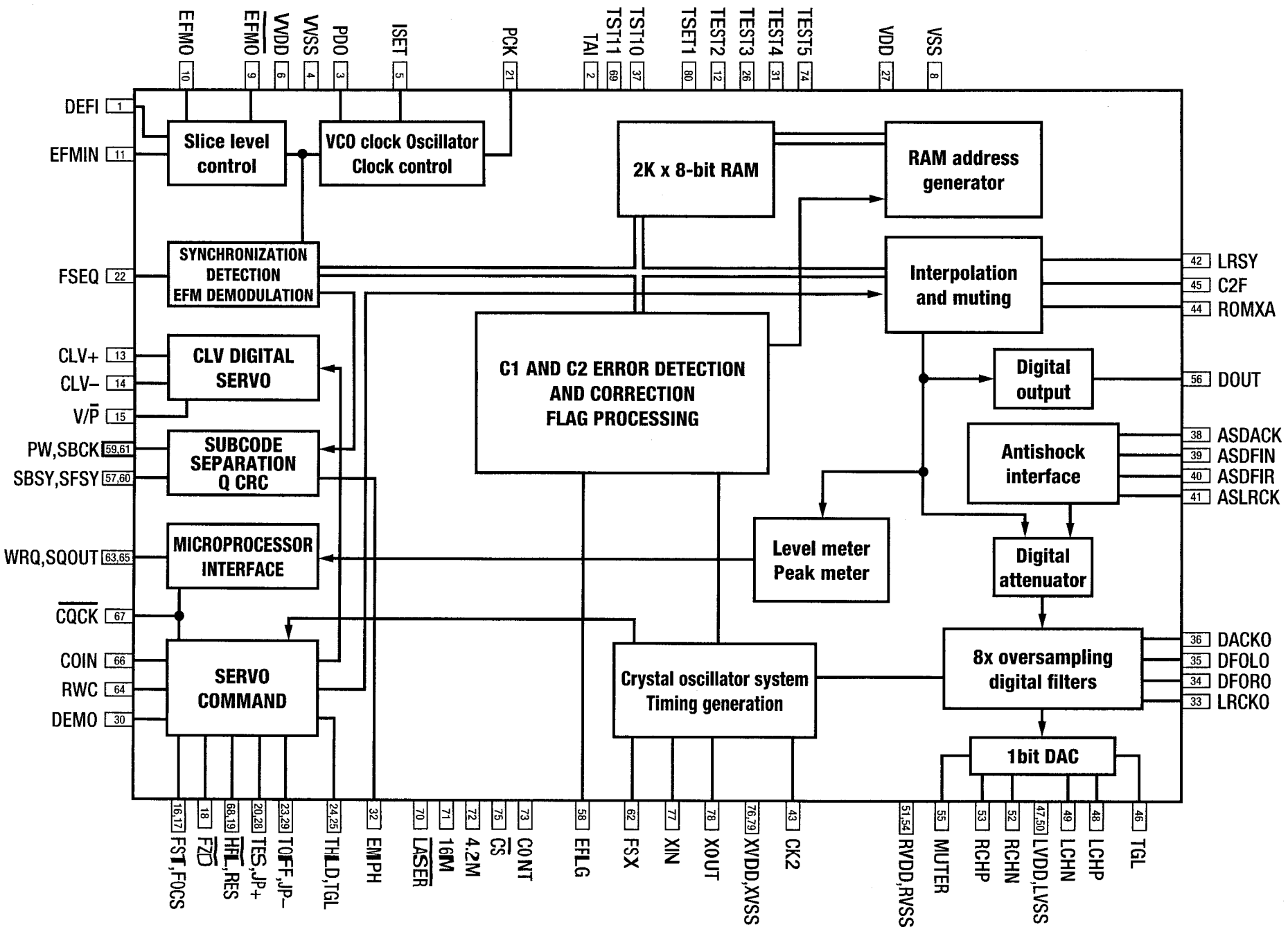
**SERVO BOARD**  
**U101: LA9240**



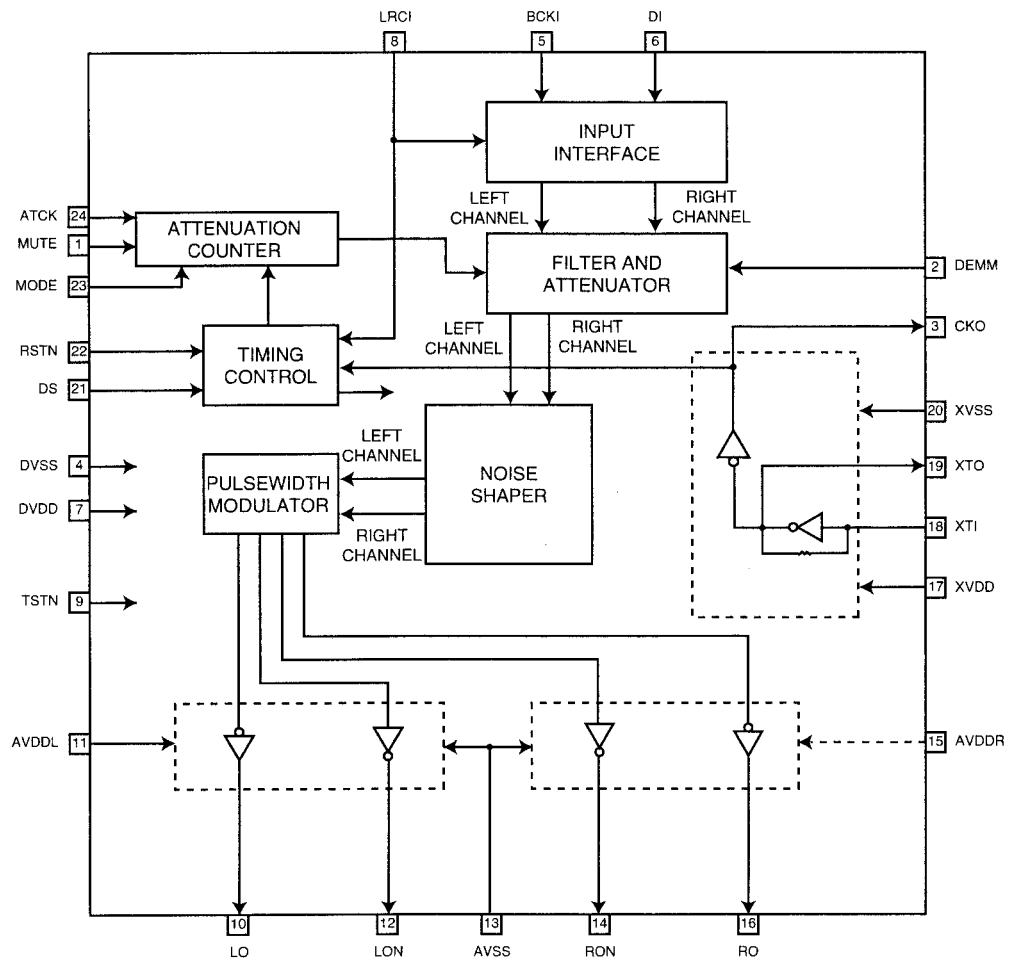
**U201: LA6541D**



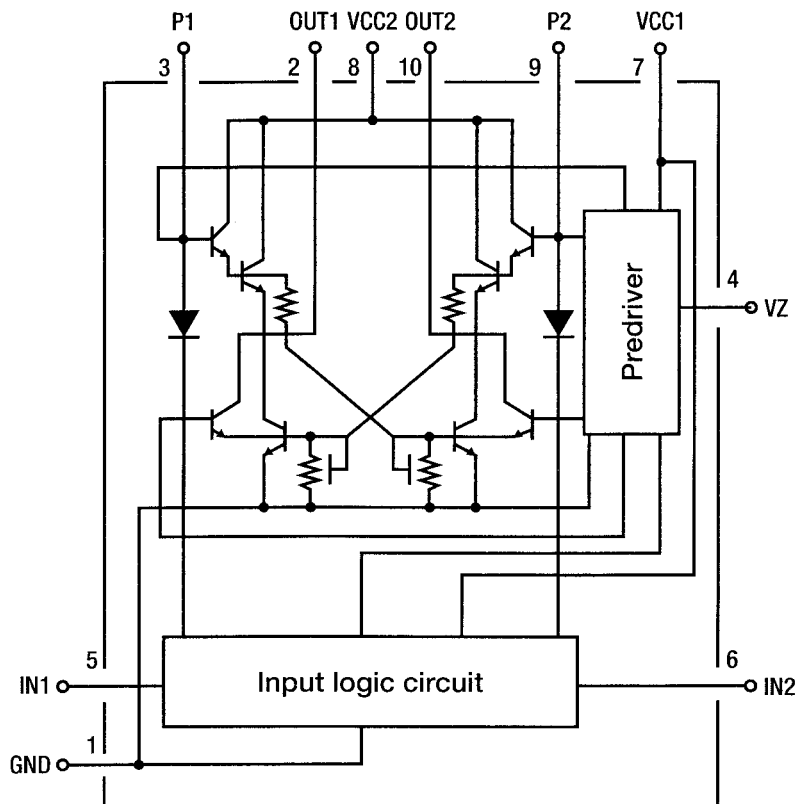
U301: LC78621E - Equivalent Circuit Block Diagram



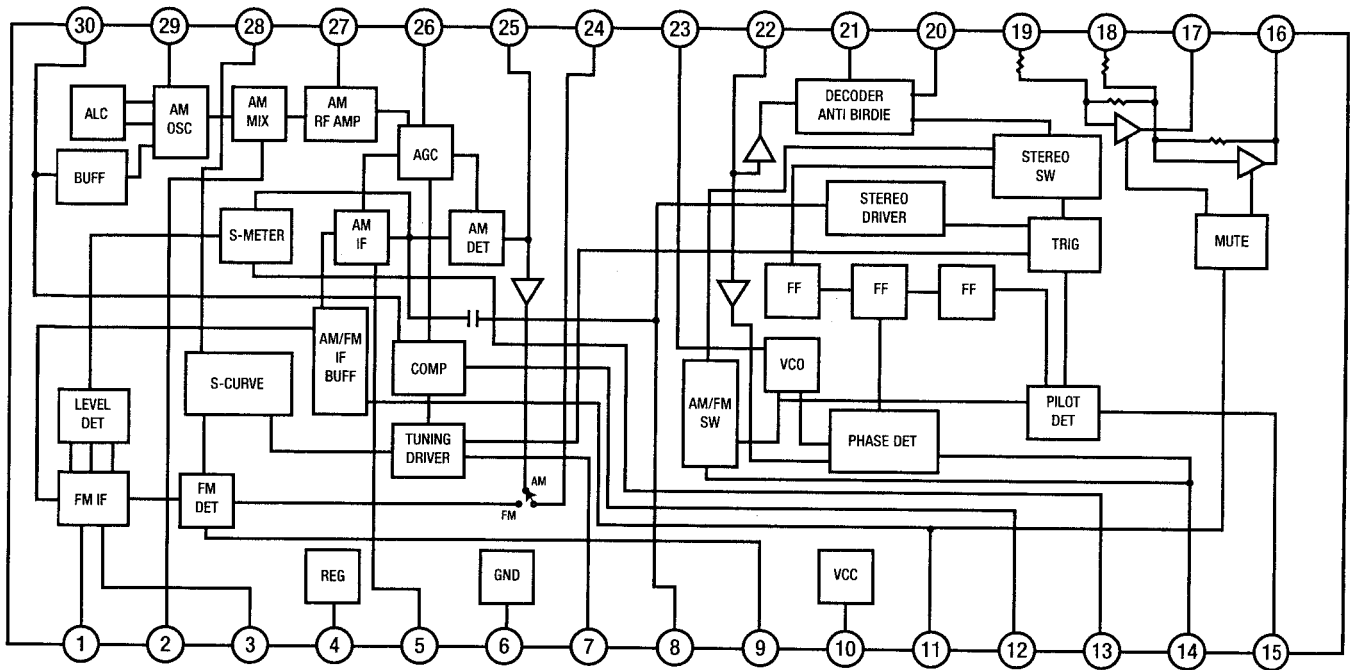
**U302: SM5874AM**



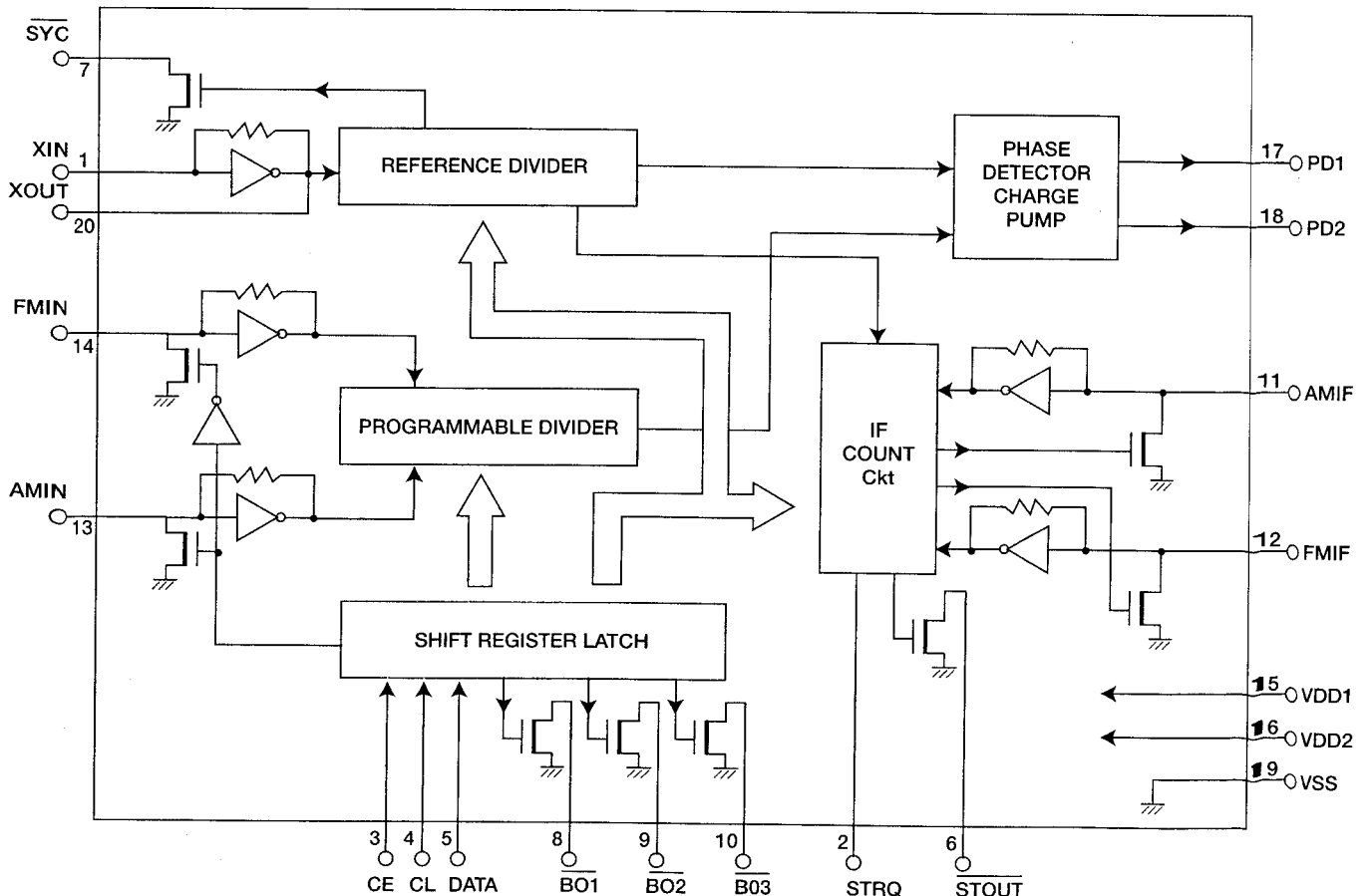
**U701: LB1641**



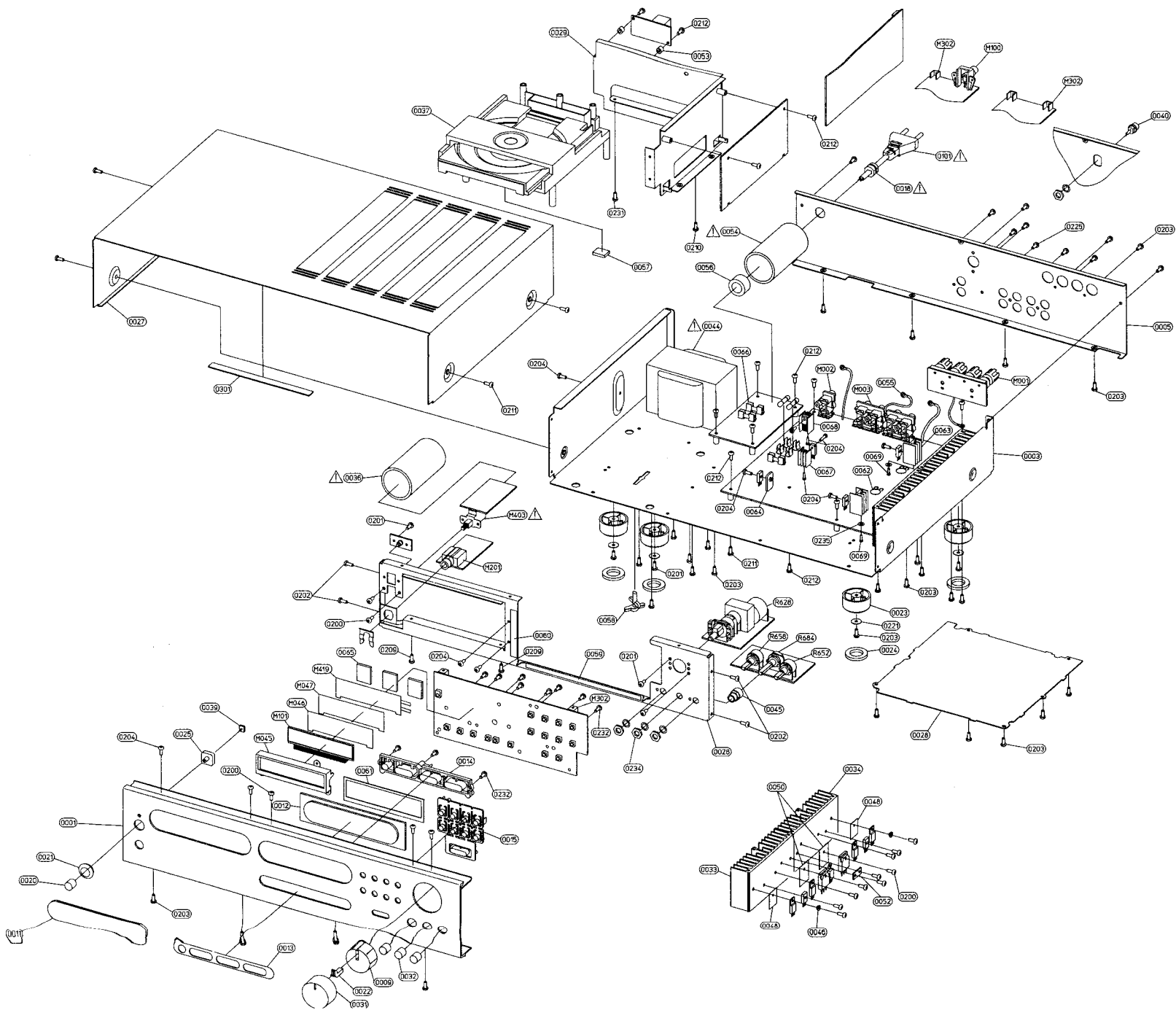
**FM TUNER BOARD**  
**U701: LA1836M**



**U702: LM7000**



# EXPLODED VIEW





# EXPLODED VIEW PARTS LIST

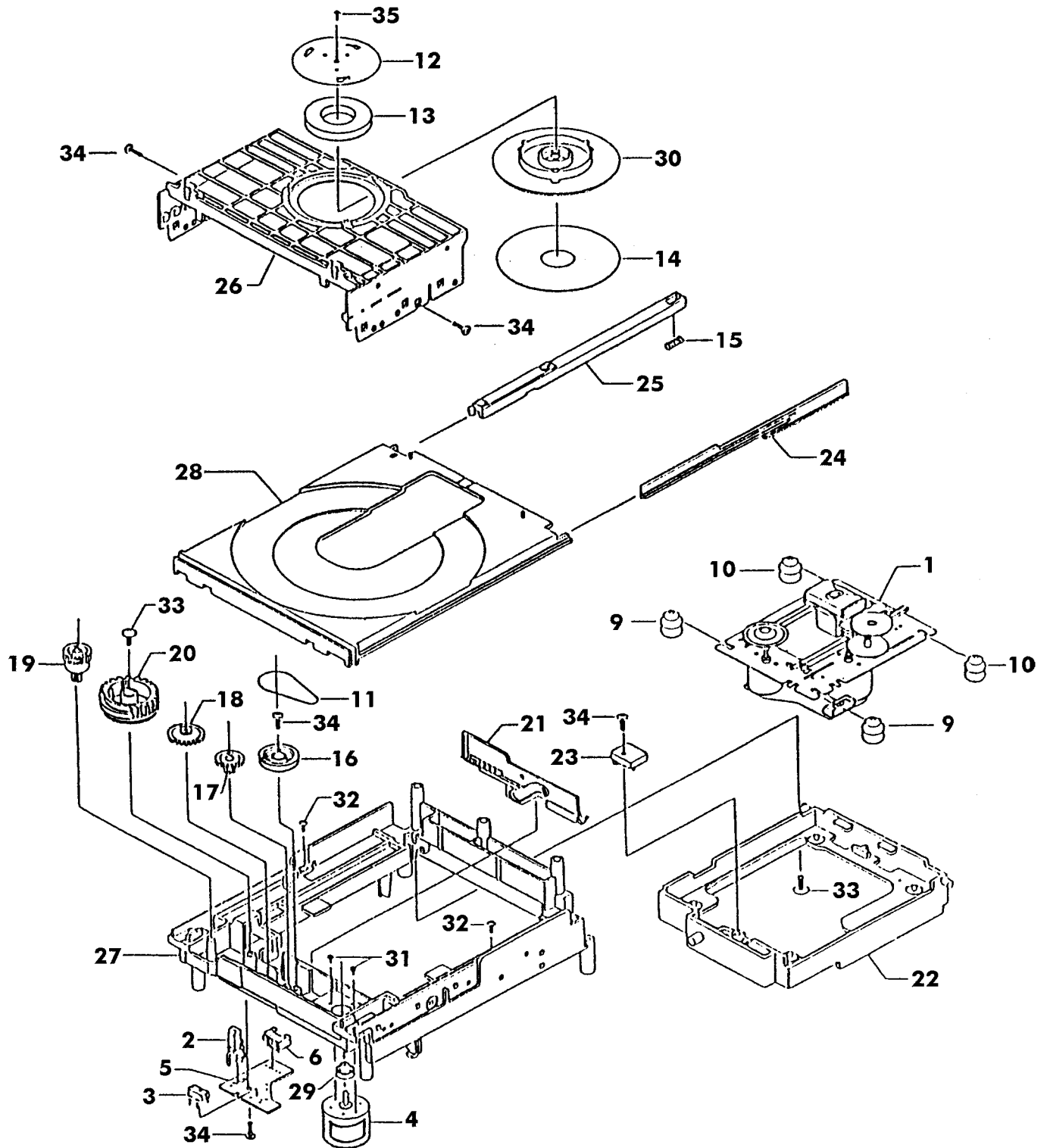
| <u>Item</u> | <u>Part No</u> | <u>Description</u>        | <u>Qty</u> |
|-------------|----------------|---------------------------|------------|
| 0001*AH     | 1402-6861-1    | FASCIA                    | 1          |
| 0001*C      | 1402-6862-1    | FASCIA                    | 1          |
| 0003        | 1402-3721-3    | BOTTOM CHASSIS            | 1          |
| 0005*AH     | 1402-3834-1    | REAR PANEL W/PAINT/SS     | 1          |
| 0005*C      | 1402-3835-2    | REAR PANEL                | 1          |
| 0009        | 2437-7601-0    | 35MM KNOB CORE            | 1          |
| 0011        | 1464-6011-1    | CD DOOR W/PAINT           | 1          |
| 0012        | 3715-5812-0    | LENS WINDOW W/SS          | 1          |
| 0013        | 4152-4371-1    | LINK BUTTON SURROUND      | 1          |
| 0014        | 2442-1401-1    | LINK BUTTON               | 1          |
| 0015        | 2442-1501-1    | BUTTON KIT                | 1          |
| 0018     △  | 4151-9461-0    | STRAIN RELIEF BUSHING     | 1          |
| 0020        | 2442-1000-0    | POWER BUTTON              | 1          |
| 0021        | 4152-4331-0    | POWER BUTTON BEZEL        | 1          |
| 0022        | 3715-5600-0    | VOLUME KNOB LENS          | 1          |
| 0023        | 4152-4631-0    | RUBBER FOOT 14MM HIGH     | 4          |
| 0024        | 4152-4641-0    | CUSHION FOOT              | 4          |
| 0025        | 4152-1701-0    | LED BEZEL                 | 1          |
| 0026        | 1402-7040-3    | SUB-FASCIA                | 1          |
| 0027        | 1402-3845-0    | TOP COVER                 | 1          |
| 0028        | 1402-7060-1    | BOTTOM COVER              | 1          |
| 0029        | 1402-7050-3    | CD BOARD BRACKET          | 1          |
| 0031        | 1402-3465-0    | VOLUME KNOB               | 1          |
| 0032        | 4152-4621-0    | BASS/TREBLE/BALANCE KNOBS | 3          |
| 0033        | 5400-1291-1    | FRONT HEAT SINK           | 1          |
| 0034        | 5400-1301-1    | REAR HEAT SINK            | 1          |
| 0036     △  | 1660-0640-0    | SHRINKABLE TUBE ID=30MM   | 1          |
| 0037        | 4111-0901-1    | CD DECK                   | 1          |
| 0039        | 3714-5706-0    | LED LENS                  | 1          |
| 0040*AH     | 2113-1172-0    | F ANTENNA CONNECTOR       | 1          |
| 0044     △  | 1806-2203-0    | X'FORMER 120/230V         | 1          |
| 0045        | 4132-8031-0    | VR BUSHING                | 1          |
| 0046        | 4151-9931-0    | INSULATION BUSHING        | 2          |
| 0048        | 3100-3551-0    | SI INSULATOR 12X18        | 2          |
| 0050        | 3100-3211-0    | SILICON SHEET 26X20MM     | 2          |
| 0052        | 4132-5357-0    | RESISTOR FLAT BRACKET     | 1          |
| 0053        | 4152-3586-0    | NYLON SPACER I.D. 3.2X5MM | 2          |
| 0054     △  | 1660-0610-0    | SHRINKABLE TUBE ID=25.4MM | 1          |
| 0055        | 4131-7701-0    | ANTENNA WASHER            | 1          |
| 0056        | 1808-0130-0    | FERRITE CORE D19XT10      | 1          |
| 0057        | 4152-0241-0    | PAD CORK 15X12X3MM        | 1          |
| 0058        | 1465-120B-1    | TRANSIT LOCK              | 1          |
| 0059        | 3100-5091-0    | PC SHEET 162X11X0.25MM    | 1          |
| 0060        | 3100-5101-0    | PC SHEET 50X7X0.25MM      | 1          |
| 0061        | 4152-5521-1    | LCD GASKET                | 1          |
| 0062        | 4132-3981-0    | TRANSISTOR CLAMP SPRING   | 2          |
| 0063        | 5400-0851-0    | HEATSINK 15MM-HIGH HOLE   | 2          |

| <u>Item</u>         | <u>Part No</u> | <u>Description</u>                | <u>Qty</u> |
|---------------------|----------------|-----------------------------------|------------|
| 0064                | 5400-1051-0    | HEATSINK PLATE 28X12X2T           | 1          |
| 0065                | 4152-4841-1    | BLACK CUSHION                     | 3          |
| 0066                | 4131-9131-0    | FUSE HOLDER 6.5MM PITCH RECT      | 10         |
| 0067                | 5400-9130-0    | HEAT SINK                         | 1          |
| 0068                | 5400-0831-0    | HEATSINK 20MM-HIGH HOLE           | 1          |
| 0069                | 2954-2608-0000 | SCREW BT 2.6X8                    | 2          |
| 0101*AH $\triangle$ | 7009-3100-1    | AC CORD 18AWGX2 SPT-2 UL/CSA      | 1          |
| 0101*C $\triangle$  | 7009-3110-0    | AC CORD SEMKO                     | 1          |
| 0200                | 2904-3008-0000 | MACHINE SCREW 3X8MM (YEL.ZN)      | 13         |
| 0201                | 2954-3006-3000 | TAPPING 3X6MM B-TITE (BLK.ZN)     | 4          |
| 0202                | 2951-3008-3000 | MACHINE SCREW 3X8 B-TITE (BLK.ZN) | 4          |
| 0203                | 2954-3008-3000 | TAPPING 3X8MM B-TITE (BLK.ZN)     | 35         |
| 0204                | 2954-3008-0000 | TAPPING 3X8MM B-TITE (YEL.ZN)     | 14         |
| 0209                | 2954-3010-3000 | TAPPING 3X10MM B-TITE (BLK.ZN)    | 2          |
| 0210                | 2954-3510-3000 | TAPPING 3.5X10MM B-TITE (BLK.ZN)  | 1          |
| 0211                | 2900-4006-3010 | M4X0.5PX6MM W/FLAT WASHER         | 8          |
| 0212                | 2904-3006-0000 | MACHINE SCREW M3X6MM (YEL.ZN)     | 12         |
| 0221                | 2842-3367-0    | METAL WASHER ID=3.3 OD=6.7        | 4          |
| 0225                | 2904-3008-3000 | MACHINE SCREW M3X8 (BLK.ZN)       | 2          |
| 0231                | 2954-4010-3000 | TAPPING 4X10MM B-TITE (BLK.ZN)    | 1          |
| 0232                | 2954-2606-3000 | TAPPING 2.6X6MM B-TITE (BLK.ZN)   | 14         |
| 0234                | 2832-9751-0    | NUT 9X0.75X2X11                   | 1          |
| 0235                | 2601-2608-0601 | FIBRE WASHER M2.6 0.8T OD=6       | 2          |
| 0301                | 4151-9411-0    | CUSHION 130X10X1MM                | 1          |
| M001*AH             | 2103-6004-0    | SPK TERM W/O PLUG                 | 1          |
| M001*C              | 2103-6604-0    | SPK TERM W PLUG                   | 1          |
| M002                | 2113-1196-0    | 2P RCA JACK YELLOW NI-HSP-242V    | 1          |
| M003                | 2113-0104-1    | 4P RCA JACK R/W NI HSP-244V-01    | 2          |
| M045                | 4132-7151-1    | LCD/EL HOLDER                     | 1          |
| M046                | 3716-0702-0    | POLYESTER SHEET LEE FILTER        | 1          |
| M047                | 3716-0705-0    | CLEAR PC SHEET W/SS               | 1          |
| M100*C              | 2113-1191-0    | DIN ANTENNA CONNECTOR             | 1          |
| M101                | 2460-1330-0    | LCD DISPLAY                       | 1          |
| M201                | 2113-1011-0    | PHONE JACK 6312-03-070 W/CLIP     | 1          |
| M302*AH             | 4132-6221-0    | GROUNDING BRACKET                 | 5          |
| M302*C              | 4132-6221-0    | GROUNDING BRACKET                 | 4          |
| M403 $\triangle$    | 5200-3431-0    | POWER SWITCH W/M3 THREAD          | 1          |
| M419                | 2450-0976-0    | EL LIGHT                          | 1          |
| R628                | 4750-3860-0    | VR-VOL MOTOR POT 50KX2            | 1          |
| R652                | 4750-3676-0    | VR-BASS 2X50KC W/WASHER & NUT     | 1          |
| R658                | 4750-3646-0    | VR-TRE 2X10KC W/WASHER & NUT      | 1          |
| R684                | 4750-4820-0    | VR-BALANCE 10KW W/WASHER & NUT    | 1          |

- NOTE :** - The components identified by  $\triangle$  mark are critical for risk of fire and electrical shock. Replace only with part number specified.
- <\*AH > : USA, Canadian model only.
- <\*C > : European model only.

# MECHANISM EXPLODED VIEW

CD93F8



## EXPLODED VIEW PARTS LIST OF MECHANISM CD93F8

| <u>Item</u> | <u>Part No</u> | <u>Description</u>          | <u>Qty</u> |
|-------------|----------------|-----------------------------|------------|
| 1           | 4102-5002-0    | CD94V5 MECHANISM            | 1          |
| 2           | 4102-5003-0    | SWITCH LEAF                 | 1          |
| 3           | 4102-5004-0    | SWITCH PUSH 2-1             | 1          |
| 4           | 4102-5005-0    | LOADING MOTOR               | 1          |
| 5           | 4102-5006-0    | CON/SW PCB                  | 1          |
| 6           | 4102-5007-0    | CON JST 5P RT               | 1          |
| 9           | 4102-5008-0    | Hardness 60° CUSHION RUBBER | 2          |
| 10          | 4102-5009-0    | Hardness 50° CUSHION RUBBER | 2          |
| 11          | 4102-5010-0    | BELT SQUARE                 | 1          |
| 12          | 4102-5011-0    | PLATE MAGNET                | 1          |
| 13          | 4102-5012-0    | MAGNET DISK                 | 1          |
| 14          | 4102-5013-0    | SHEET                       | 1          |
| 15          | 4102-5014-0    | SPRING RAIL                 | 1          |
| 16          | 4102-5015-0    | PULLEY GEAR                 | 1          |
| 17          | 4102-5016-0    | GEAR IDLER A                | 1          |
| 18          | 4102-5017-0    | GEAR IDLER B                | 1          |
| 19          | 4102-5018-0    | GEAR TRAY                   | 1          |
| 20          | 4102-5019-0    | GEAR MEDIATION              | 1          |
| 21          | 4102-5020-0    | SLIDER                      | 1          |
| 22          | 4102-5021-0    | CDM MOUNTING BASE           | 1          |
| 23          | 4102-5022-0    | FIXITY                      | 1          |
| 24          | 4102-5023-0    | RAIL RIGHT                  | 1          |
| 25          | 4102-5024-0    | RAIL LEFT                   | 1          |
| 26          | 4102-5025-0    | SUPPORT MAGNET              | 1          |
| 27          | 4102-5026-0    | BASE FRAME                  | 1          |
| 28          | 4102-5027-0    | CD TRAY                     | 1          |
| 29          | 4102-5028-0    | PULLEY MOTOR                | 1          |
| 30          | 4102-5029-0    | HOLDER MAGNET               | 1          |
| 31          | 4102-5030-0    | SCREW PAN+SW 1.7x3.5        | 2          |
| 32          | 4102-5031-0    | SCREW S-TPG PAN+FLG 2x6     | 2          |
| 33          | 4102-5032-0    | SCREW S-TPG BRZ+FLG 3x8     | 2          |
| 34          | 4102-5033-0    | SCREW S-TPG BIN 2.6x7.8     | 5          |
| 35          | 4102-5034-0    | SCREW SPECIAL 1.7x4.0       | 1          |

# ELECTRICAL PARTS LIST

| <u>Reference No.</u>   | <u>Part No.</u>                  | <u>Description</u>                                     |
|--|----------------------------------|--|
| <b><u>HEADPHONE BOARD</u></b><br><b>PC BOARD</b>                     | PCB-N0810C-HEAD                  | HEADPHONE ASSEMBLY                                     |
| <b><u>LED BOARD</u></b><br><b>PC BOARD</b>                           | PCB-N0810C-LED                   | LED ASSEMBLY   |
| <b>LED</b><br>D402   | 3700-3513-Y                      | LED AMBER (L-424YDT)                                   |
| <b><u>EL BOARD</u></b><br><b>PC BOARD</b>                            | PCB-N0810C-EL                    | EL ASSEMBLY  |
| <b><u>CAPACITOR</u></b><br>C667                                      | 157D-476M-5-IU                   | CE 16V 47 $\mu$ F 20%                                  |
| <b><u>COILS</u></b><br>L601<br>L602                                  | 1801-102K-M<br>1801-100K-M       | COIL 1mH 10%<br>COIL 10 $\mu$ H 10%                    |
| <b><u>INVERTER</u></b><br>M647                                       | 1806-2217-0                      | INVERTER 5VDC TO 70-110VAC                             |
| <b><u>VARIABLE RESISTOR</u></b><br>R682                              | 4756-4716-3-03                   | SVR 470E H3 MAT EVN-D8A A03                            |
| <b><u>DIODE</u></b><br>D601  | 4837-8A30-2                      | ZENER DIODE 1/2W 9.9-10.3V                             |
| <b><u>SPEAKER TERMINAL BOARD</u></b><br><b>PC BOARD</b><br>*AH<br>*C | PCB-N0810C-SPK<br>PCB-N0811C-SPK | SPEAKER TERMINAL ASSEMBLY<br>SPEAKER TERMINAL ASSEMBLY |
| <b><u>POWER SWITCH BOARD</u></b><br><b>PC BOARD</b>                  | PCB-N0810C-SW                    | POWER SWITCH ASSEMBLY                                  |
| <b><u>CAPACITOR</u></b><br>C415 $\triangle$                          | 8910-0049-0                      | CAP400V 4700P DE7150F472MVA1KC                         |
| <b><u>VOLUME BOARD</u></b><br><b>PC BOARD</b>                        | PCB-N0810C-VOL                   | VOLUME ASSEMBLY  |
| <b><u>CAPACITOR</u></b><br>C601                                      | 157D-106M-5-II                   | CE 16V 10 $\mu$ F 20%                                  |

| <u>Ref. No.</u>                                       | <u>Part No.</u>                                 | <u>Description</u>   |
|---|---|--|
| <b>RESISTOR</b><br>R628                               | 4750-4476-0                                     | MOTORIZED POT 2X20KA   |
| <b>IC</b><br>U601                                     | 3130-3410-0                                     | IC LB1642 MOTOR DRIVER   |
| <b>PSU BOARD</b><br><b>PC BOARD</b><br>*AH<br>*C      | PCB-N0810C-PSU<br>PCB-N0811C-PSU                | PSU ASSEMBLY<br>PSU ASSEMBLY   |
| <b>CAPACITORS</b><br>C401-C402                        | 8910-0057-0                                     | CE 63V 4700µF 20%  |
| <b>DIODES</b><br>D401-D402<br>D403                    | 4840-1120-0<br>4804-0010-2                      | BRIDGE DIODE RS203L<br>DIODE 1N4001 AT   |
| <b>FUSES</b><br>M404-M405*AH △<br><br>M404-M405*C △   | 5120-0037-0<br><br>5120-0065-0                  | FUSE 250V 3.15A TIME LAG<br>UL/CSA 5X20MM<br><br>FUSE 250V 2A TIME LAG<br>SEMKO/VDE 5X20MM |
| <b>JUMPER</b><br>J401*AH<br>J402*C                    | 635N-0001-0<br>635N-0001-0                      | WJ #23 D=0.6MM<br>WJ #23 D=0.6MM   |
| <b>RELAY</b><br>M401 △                                | 4500-0200-0                                     | RELAY 2P2T MIB-12H   |
| <b>RESISTORS</b><br>R401 △<br>R406*AH △               | 4715-220J-2-F<br>4717-275J-2-S                  | RFU 1/4W 22 OHM 1/4W 5%<br>RAS 1/2W 2.7M OHM 1/2W 5% UL                                    |
| <b>KEYBOARD BOARD</b><br><b>PC BOARD</b><br>*AH<br>*C | PCB-N0810C-KEY<br>PCB-N0811C-KEY                | KEYBOARD ASSEMBLY<br>KEYBOARD ASSEMBLY   |
| <b>CAPACITORS</b><br>C401<br>C405<br>C408             | 157E-476M-5-IQ<br>157D-227M-5-KW<br>4060-0550-0 | CE 25V 47µF 20%<br>CE 16V 220µF 20%<br>SUPERCAP 0.47F FYDOH474Z                            |
| <b>DIODES</b><br>D405,D408-D409                       | 4804-1480-C                                     | DIODE 1N4148 ATS   |
| <b>JUMPER</b><br>J452*AH<br>J453*C                    | 635N-0001-0<br>635N-0001-0                      | WJ #23 D=0.6MM<br>WJ #23 D=0.6MM   |
| <b>LCD DISPLAY</b><br>M101                            | 2460-1330-0                                     | LCD DISPLAY  |

| <b>Reference No.</b>  | <b>Part No.</b>   | <b>Description</b>  |
|---|---|---|
| <b>SWITCHES</b><br>M401-M416  | 5200-3011-0-01  | TACT SWITCH 4P  |
| <b>IR SENSOR</b><br>M417  | 4816-043T-3   | IR SENSOR MODULE  |
| <b>CRYSTAL</b><br>M418  | 2300-1770-0   | CRYSTAL 6.0MHZ +-20PPM  |
| <b>EL LIGHT</b><br>M419   | 2450-0976-0   | EL LIGHT  |
| <b>TRANSISTORS</b><br>Q403,Q405<br>Q404   | 4858-050I-5<br>4858-550I-5  | TR LM8050I HFE 100-250<br>TR LM8550I HFE 100-250  |
| <b>IC</b><br>U401   | 3130-7640-0   | IC LC867248A MICROCONTROLLER  |
| <b><u>TONE CONTROL BOARD</u></b><br><b>PC BOARD</b>   | PCB-N0810C-TONE   | TONE CONTROL ASSEMBLY   |
| <b>CAPACITORS</b><br>C637-C638<br>C641-C642<br>C643-C644<br>C645-C646<br>C649-C650<br>C665-C666                           | 153F-823J-5-SY<br>153F-183J-5-KP<br>153F-104J-5-SY<br>157F-105M-5-IU<br>157C-107M-5-IU<br>157D-107M-5-IU  | CM 50V 0.082 $\mu$ F 5%<br>CM 50V 0.018 $\mu$ F 5%<br>CM 50V 0.1 $\mu$ F 5%<br>CE 50V 1 $\mu$ F 20%<br>CE 10V 100 $\mu$ F 20%<br>CE 16V 100 $\mu$ F 20%   |
| <b>RESISTORS</b><br>R652<br>R658<br>R684  | 4750-3676-0<br>4750-3646-0<br>4750-4820-0   | VR BASS 2X50K<br>VR TREBLE 2X10K<br>VR BALANCE 10KW   |
| <b>IC</b><br>U607   | 3130-3680-0   | IC NJM2043D DUAL OP AMP   |
| <b><u>CD SERVO BOARD</u></b><br><b>PC BOARD</b>   | PCB-N0810C-SERV   | CD SERVO ASSEMBLY   |
| <b>CAPACITORS</b><br>C101<br>C106<br>C107<br>C109<br>C113<br>C114<br>C115<br>C118<br>C119<br>C120<br>C122<br>C124<br>C126 | 153F-104J-5-PT<br>153F-473K-5-NO<br>157F-104M-5-IU<br>153F-154K-5-KM<br>153F-104J-5-PT<br>153F-153K-5-KP<br>153F-183J-5-KP<br>157F-224M-5-IU<br>157E-475M-5-GM<br>157E-226K-5-IU<br>15CH-050C-J-BDL<br>15CG-120J-J-BD<br>157E-106M-5-IU | CM 50V 0.1 $\mu$ F 5%<br>CM 50V 0.047 $\mu$ F 10%<br>CE 50V 0.1 $\mu$ F 20%<br>CM 50V 0.15 $\mu$ F 10%<br>CM 50V 0.1 $\mu$ F 5%<br>CM 50V 0.015 $\mu$ F 10%<br>CM 50V 0.018 $\mu$ F 5%<br>CE 50V 0.22 $\mu$ F 20%<br>CE 25V 4.7 $\mu$ F 20%<br>CE 25V 22 $\mu$ F 10%<br>CC 50V 5pF +/-0.25pF NPO<br>CC 50V 12pF 5% NPO<br>CE 25V 10 $\mu$ F 20% |

| <b>Reference No.</b>  | <b>Part No.</b> | <b>Description</b>                       |
|-----------------------|-----------------|--|
| C128-C129             | 157B-107M-5-KM  | CE 6.3V 100µF 20%                        |
| C132                  | 157F-334K-5-luF | CE 50V 0.33µF 10%                        |
| C134                  | 157C-476M-5-IU  | CE 10V 47µF 20%                          |
| C135                  | 157B-227M-5-KW  | CE 6.3V 220µF 20%                        |
| C138                  | 157D-106M-5-GM  | CE 16V 10µF 20%                          |
| C139                  | 157B-107M-5-KM  | CE 6.3V 100µF 20%                        |
| C141                  | 157F-225M-5-GM  | CE 50V 2.2µF 20%                         |
| C202                  | 157C-477M-5-OW  | CE 10V 470µF 20%                         |
| C204                  | 157F-105M-5-GM  | CE 50V 1µF 20%                           |
| C304,C308             | 157B-107M-5-KM  | CE 6.3V 100µF 20%                        |
| C321                  | 15CG-100J-J-BD  | CC 50V 10pF 5% NPO                       |
| C324                  | 157B-107M-5-KM  | CE 6.3V 100µF 20%                        |
| C325-C326             | 153I-474K-5-RPM | CM 63V 0.47µF 10%                        |
| C368-C369             | 157E-226K-5-IU  | CE 25V 22µF 10%                          |
| C373-C374             | 157D-477M-5-OVK | CE 16V 470µF 20%                         |
| C702                  | 157C-477M-5-OU  | CE 10V 470µF 20%                         |
| C720                  | 157C-476M-5-II  | CE 10V 47µF 20%                          |
| C721                  | 157C-477M-5-OW  | CE 10V 470µF 20%                         |
| J025/J875             | 157D-227M-5-KW  | CE 16V 220µF 20%                         |
| <b>DIODES</b>         |                 |  |
| D401-D402             | 4804-1480-C     | DIODE 1N4148 ATS                         |
| D701                  | 4837-5V11-2     | DZ 5.1V 1/2W AT                          |
| <b>CRYSTAL</b>        |                 |  |
| M402                  | 2300-0110-0     | CRYSTAL 16.9344 MHZ                      |
| <b>TRANSISTORS</b>    |                 |  |
| Q101                  | 4851-015Y-5     | TR 2SA1015-Y HFE 120-240                 |
| Q301-Q302             | 4853-875Y-3     | TR KTC3875Y                              |
| Q305                  | 485A-1346-5     | TR 2SA1346 HFE 50-100                    |
| Q501                  | 4858-550I-5     | TR LM8550I HFE 100-250                   |
| Q502                  | 485B-772P-5     | TR 2SB772P PNP POWER TR                  |
| Q503                  | 4859-014C-5     | TR 9014C HFE 200-600                     |
| <b>ICs</b>            |                 |  |
| Q504                  | 3130-2020-2     | IC 7805 5V REGULATOR                     |
| Q505                  | 3130-0640-0     | IC NJM78L05A 5V REGULATOR                |
| U101                  | 3130-6710-0     | IC LA9240 ASP FOR CD QIP64E              |
| U201                  | 3130-6720-0     | IC LA6541D 4-CHANNEL BTL DRIVER<br>DIP30 |
| U301                  | 3130-6700-0     | IC LC78621ED DSP FOR CD QIP80E           |
| U302                  | 3130-4390-0     | IC SM5874AM-ET D/A CONVERTER             |
| U305-U306             | 3130-5830-0     | IC NJM4565D OP AMP                       |
| U701                  | 3130-6560-0     | IC LB1641 MOTOR DRIVER                   |
| <b>FM TUNER BOARD</b> |                 |  |
| <b>PC BOARD</b>       |                 |  |
| *AH                   | PCB-N0810C-TUN  | FM TUNER ASSEMBLY                        |
| *C                    | PCB-N0811C-TUN  | FM TUNER ASSEMBLY                        |
| <b>CAPACITORS</b>     |                 |  |
| C701*C-C702*C         | 150F-200J-J-BD  | CC 50V 20pF 5%                           |
| C703*C-C704*C,C706 *C | 150F-472K-J-BD  | CC 50V 4700pF 10%                        |
| C705*C                | 150F-102K-J-BD  | CC 50V 1000pF 10%                        |
| C715                  | 153F-224J-5-MIB | CM 50V 0.22µF 5%                         |
| C716                  | 153F-103J-5-IM  | CM 50V 0.01µF 5%                         |



| <b>Reference No.</b>             | <b>Part No.</b> | <b>Description</b>         |
|----------------------------------|-----------------|----------------------------|
| C717-C718                        | 157D-336M-5-IU  | CE 16V 33μF 20%            |
| C720                             | 157D-476M-5-IMK | CE 16V 47μF 20%            |
| C722                             | 1551-0210-0     | TRIMCAP 5.2-30P TZ03R300FR |
| C723-1                           | 15UJ-180J-5-GG  | CC 50V 18pF 5% NPO         |
| C725                             | 157D-106M-5-GM  | CE 16V 10μF 20%            |
| C728                             | 157D-476M-5-IMK | CE 16V 47μF 20%            |
| C732,C734                        | 157D-335M-5-II  | CE 16V 3.3μF 20%           |
| C735                             | 157E-105M-5-IU  | CE 25V 1μF 20%             |
| C737                             | 157F-105M-5-GM  | CE 50V 1μF 20%             |
| C739                             | 157D-106M-5-GM  | CE 16V 10μF 20%            |
| C744                             | 157D-107M-5-IU  | CE 16V 100μF 20%           |
| C745                             | 157D-476M-5-IMK | CE 16V 47μF 20%            |
| C746                             | 157D-106M-5-GM  | CE 16V 10μF 20%            |
| C747-C748                        | 157D-475M-5-EI  | CE 16V 4.7μF 20%           |
| C753                             | 157D-106M-5-GM  | CE 16V 10μF 20%            |
| C777*C                           | 150F-102K-J-BD  | CC 50V 1000pF 10%          |
| C784                             | 153F-224J-5-MIB | CM 50V 0.22μF 5%           |
| <b>COILS</b>                     |                 |                            |
| L701-L702,L704                   | 1801-2R2M-M     | COIL 2.2μH 20%             |
| L703                             | 5600-1816-T     | TUNER IFT 10.7MHZ          |
| L708                             | 2701-0609-4     | BAND PASS FILTER 64-108MHZ |
| L710-L711                        | 5600-2236-S     | 19KHZ FILTER COIL          |
| <b>TUNER MODULE</b>              |                 |                            |
| M702                             | 1300-0636-0     | FM F/E TUNER KEC KCF205H   |
| <b>RESONATORS &amp; CRYSTALS</b> |                 |                            |
| M703-M704                        | 2701-0116-1     | CF 10.7+-30 SFE10.7MS3-A   |
| M705                             | 2703-0040-0     | CR 456F15                  |
| M706                             | 153F-473K-5-NO  | CM 50V 0.047μF 10%         |
| M707                             | 2300-0440-0     | CRYSTAL 7.2MHZ 20PPM       |
| M708*C                           | 2300-1220-0     | CRYSTAL 4.332MHZ           |
| <b>TRANSISTORS</b>               |                 |                            |
| Q701                             | 490K-208Y-3     | FET 2SK208(Y) IDS 1.2-3.0  |
| Q702,Q705,Q707*C                 | 4853-875Y-3     | TR KTC3875Y                |
| Q706                             | 4852-814F-3     | TR 2SC2814 HFE 60-180      |
| <b>RESISTORS</b>                 |                 |                            |
| R768                             | 4756-1036-3-03  | SVR 10K H3 6.7X6.3         |
| R770*C                           | 4720-102J-J     | RMG 1K OHM 1/10W 5%        |
| R771*C                           | 4720-334J-J     | RMG 330K OHM 1/10W 5%      |
| R772*C                           | 4720-474J-J     | RMG 470K OHM 1/10W 5%      |
| R773*C                           | 4720-332J-J     | RMG 3.3K OHM 1/10W 5%      |
| R774*C                           | 4720-102J-J     | RMG 1K OHM 1/10W 5%        |
| <b>ICS</b>                       |                 |                            |
| U701                             | 3130-6420-0     | IC LA1836M FM/AM IF+MPX    |
| U702                             | 3130-3430-0     | IC LM7000 DTS              |
| U703*C                           | 3130-5570-0     | IC UPC2539 RDS DEMODULATOR |
| <b>MAIN BOARD</b>                |                 |                            |
| <b>PC BOARD</b>                  |                 |                            |
| *AH                              | PCB-N0810C-MAIN | MAIN BOARD ASSEMBLY        |
| *C                               | PCB-N0811C-MAIN | MAIN BOARD ASSEMBLY        |

| <u>Reference No.</u>     | <u>Part No.</u> | <u>Description</u>                        |
|--------------------------|-----------------|---|
| <b>CAPACITORS</b>        |                 |   |
| C203-C204                | 157E-106M-5-IU  | CE 25V 10 $\mu$ F 20%                     |
| C205-C206                | 157E-447Z-5-S5  | CE 25V 470 $\mu$ F +80/-20%               |
| C207-C208                | 157F-108M-5-W9  | CE 50V 1000 $\mu$ F 20%                   |
| C211-C212                | 157E-476M-5-IU  | CE 25V 47 $\mu$ F 20%                     |
| C213-C214                | 157F-105M-5-IU  | CE 50V 1 $\mu$ F 20%                      |
| C215-C216                | 157I-227M-5-S9  | CE 63V 220 $\mu$ F 20%                    |
| C217-C218                | 153I-104J-9-NL  | CM 63V 0.1 $\mu$ F 5%                     |
| C221-C222                | 153I-102J-9-NL  | CM 63V 0.001 $\mu$ F 5%                   |
| C223-C224                | 8910-0057-0     | CE 63V 4700 $\mu$ F 20%                   |
| C227-C228                | 157I-106M-5-IU  | CE 63V 10 $\mu$ F 20%                     |
| C503                     | 157E-228M-5-X9  | CE 25V 2200 $\mu$ F 20%                   |
| C505                     | 157F-108M-5-W9  | CE 50V 1000 $\mu$ F 20%                   |
| C509                     | 157D-337M-5-OVK | CE 16V 330 $\mu$ F 20%                    |
| C511                     | 157D-338M-5-W@  | CE 16V 3300 $\mu$ F 20%                   |
| C514                     | 157E-228M-5-X9  | CE 25V 2200 $\mu$ F 20%                   |
| C516                     | 157C-337M-5-OW  | CE 10V 330 $\mu$ F 20%                    |
| C517                     | 157E-228M-5-X9  | CE 25V 2200 $\mu$ F 20%                   |
| C518                     | 157D-337M-5-OVK | CE 16V 330 $\mu$ F 20%                    |
| C611-C620                | 157D-106M-5-IU  | CE 16V 10 $\mu$ F 20%                     |
| C621-C624                | 153I-224J-9-NL  | CM 63V 0.22 $\mu$ F 5%                    |
| C629-C630                | 157E-106M-5-IU  | CE 25V 10 $\mu$ F 20%                     |
| C633-C634                | 157D-106M-5-IU  | CE 16V 10 $\mu$ F 20%                     |
| C635-C636                | 157D-107M-5-IU  | CE 16V 100 $\mu$ F 20%                    |
| C651-C652                | 157E-226M-5-IU  | CE 25V 22 $\mu$ F 10%                     |
| C655-C656,C663-C664      | 157D-106M-5-IU  | CE 16V 10 $\mu$ F 20%                     |
| C657-C660                | 157E-106M-5-IU  | CE 25V 10 $\mu$ F 20%                     |
| C665                     | 157D-337M-5-OVK | CE 16V 330 $\mu$ F 20%                    |
| <b>DIODES</b>            |                 |   |
| D201-D204,D209-D213      | 4804-1480-C     | DIODE 1N4148 ATS                          |
| D205-D206                | 4804-0010-2     | DIODE 1N4001 AT                           |
| D207-D208                | 4837-3B20-2     | DZ 1/2W 3.8-4.0V AT                       |
| D214-D215                | 4837-8A30-2     | DZ 1/2W 9.9-10.3V AT                      |
| D405-D408,D506           | 4804-1480-C     | DIODE 1N4148 ATS                          |
| D504-D505                | 4840-0490-0     | BRIDGE RECTIFIER RB152 100V 1.5A          |
| D601                     | 4837-7C20-2     | DZ 1/2W 9.1-9.5V AT                       |
| D602-D603                | 4804-1480-C     | DIODE 1N4148 ATS                          |
| D604                     | 4837-7V51-2     | DZ 1/2W 7.5V ROHM AT                      |
| U504                     | 4804-0010-2     | DIODE 1N4001 AT                           |
| <b>FUSES</b>             |                 |   |
| M410*AH-M412*AH $\Delta$ | 5100-1020-1A    | FUSE 125V 1A TIME LAG UL/CSA<br>5X20MM    |
| M410*C-M412*C $\Delta$   | 5100-1020-1B    | FUSE 125V 1A TIME LAG SEMKO/VDE<br>5X20MM |
| <b>COILS</b>             |                 |   |
| L201-L202                | 1804-0540-0     | SPRING COIL 1mH                           |
| <b>TRANSISTORS</b>       |                 |   |
| Q203-Q204                | 4860-0650-5     | TR 2SA970GR                               |
| Q205-Q206                | 4852-40GR-5     | TR 2SC2240GR                              |
| Q207-Q208                | 4860-1050-5     | TR 2SA1837 HFE 100-320                    |
| Q209-Q210                | 4860-1220-5     | TR 2SC3421                                |
| Q211-Q212                | 4860-1420-5     | MOS FET BUK555-60B                        |
| Q213-Q214                | 4860-1460-5     | TR 2SB817 (E) HFE 100-200                 |
| Q215-Q218                | 4860-0650-5     | TR 2SA970GR                               |

| Reference No.         | Part No.       | Description                   |
|-----------------------|----------------|-------------------------------|
| Q219-Q220,Q223-Q224   | 4852-40GR-5    | TR 2SC2240GR                  |
| Q225-Q226             | 4860-0870-5    | TR 2SB631K (E,F)              |
| Q501                  | 485B-772P-5    | TR 2SB772P PNP POWER TR       |
| Q502,Q504             | 4858-050I-5    | TR LM8050I HFE 100-250        |
| Q503                  | 4858-550I-5    | TR LM8550I HFE 100-250        |
| Q601-Q602             | 4852-40GR-5    | TR 2SC2240GR                  |
| Q603-Q604             | 4860-0650-5    | TR 2SA970GR                   |
| Q605-Q606             | 4858-050D-5    | TR 8050D                      |
| Q607-Q609             | 4858-050I-5    | TR LM8050I HFE 100-250        |
| <b>RESISTORS</b>      |                |                               |
| R229-R230 $\triangle$ | 4715-101J-2-F  | RFU 100 OHM 1/4W 5%           |
| R245-R246 $\triangle$ | 474B-0R1J-5    | RCE 0.1 OHM 5W 5%             |
| R265                  | 8910-0031-0    | T.S-110 PTH9M04BC471TS2F      |
| R276,R279             | 4756-1016-3-06 | SVR H6 100 OHM RH0615C        |
| R640-R641             | 635N-0001-0    | WJ #23 D=0.6MM                |
| <b>ICS</b>            |                |                               |
| M402                  | 3130-7650-0    | IC 7810 10V REGULATOR         |
| U403                  | 3130-0980-0    | IC HCF 4001BE                 |
| U501                  | 3130-2520-2    | IC 7812H 12V REGULATOR        |
| U502                  | 3130-3800-0    | IC UPC79M12HF -12V REGULATOR  |
| U504                  | 3130-2020-3    | IC 7805 5V REGULATOR          |
| U505                  | 3130-2790-1    | IC 78M08 8V REGULATOR         |
| U601                  | 3130-3730-1    | IC TC9164AN HV ANALOG SW      |
| U602                  | 3130-3560-0    | IC NJM072 OP AMP              |
| U603                  | 3130-0890-0    | IC NJM4558D DUAL OP AMP       |
| U604                  | 3130-5220-0    | IC 4066 QUAD BILATERAL SWITCH |
| U605-U606             | 3130-3680-0    | IC NJM2043D DUAL OP AMP       |

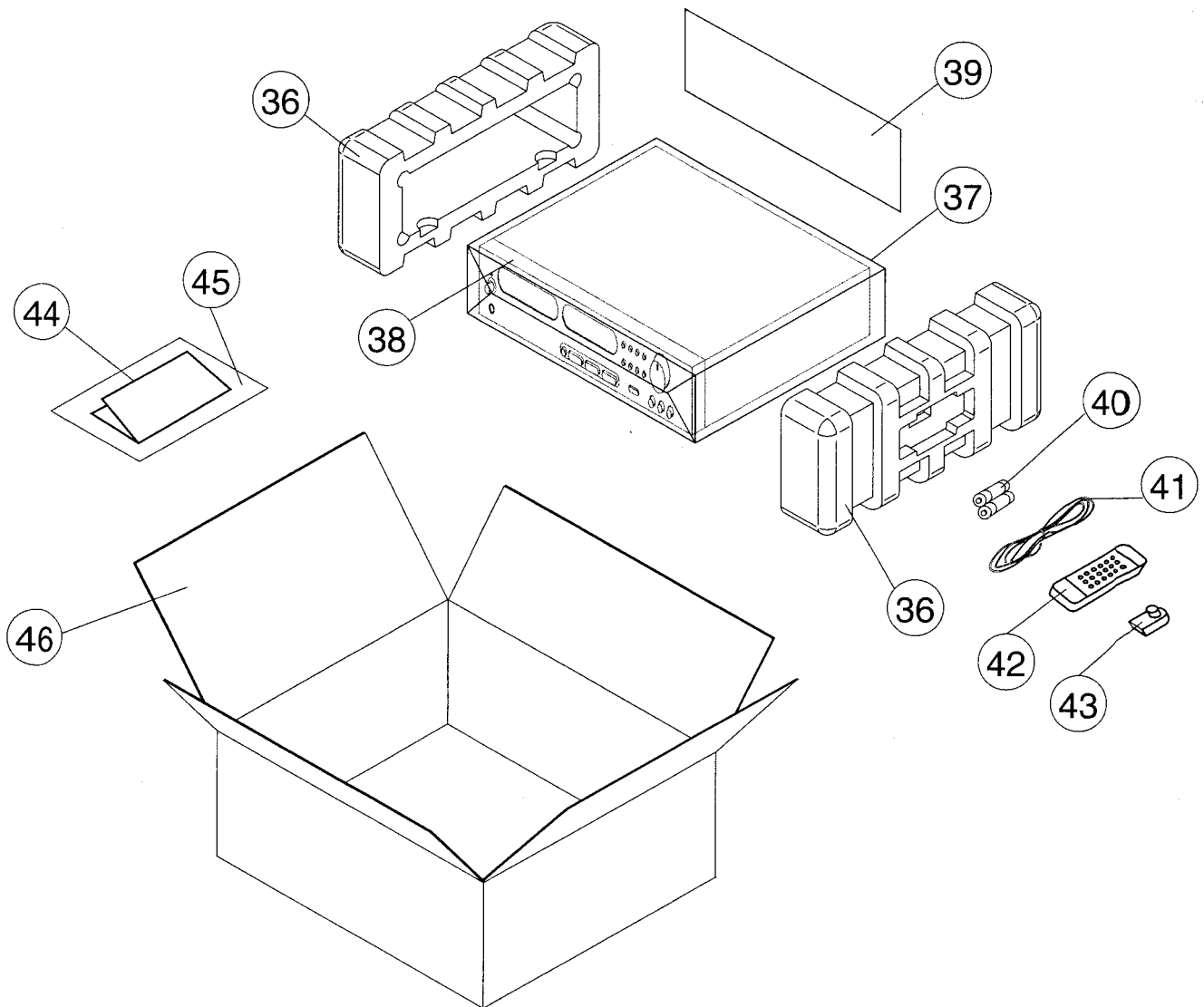
- NOTE:** – The components identified by  $\triangle$  mark are critical for risk of fire and electrical shock. Replace only with part number specified.
- <\*AH> : USA, Canadian model only.
  - <\*C> : European model only.
  - Capacitors : CM-Mylar, CE-Electrolytic, CC-Ceramic.
  - Resistors : RFU-Fusible, RAS-Anti-Surge, RCE-Ceramic Case.

## REVISION HISTORY

| Location                   | Old Part    | New Part         | Serial No.         |
|----------------------------|-------------|------------------|--------------------|
| 1. Keyboard R436           | Axial Lead  | SMD              | After G87L4000959  |
| 2. Keyboard R437           | /           | RCF 100K 5% 1/8W | After G87L4000959  |
| 3. Keybaord C408           | 0.1F        | 0.47F            | After G8XL4003600* |
| 4. FM Tuner Board R781     | 6.8K        | 4.7K             | After G87L4000959  |
| 5. Main Board R430         | Metal Glaze | Carbon Film      | After G87L4000959  |
| 6. Main Board C430         | SMD         | Conventional     | After G87L4000959  |
| 7. EL Board D601           | /           | 1/2W 9.9-10.3V   | After G87L4000959  |
| 8. Speaker Board C232,C233 | 0.1uF       | 1000pF           | After G87L4000959  |
| 9. LED Board D402          | Dual Colour | Amber Colour     | After G8XL4004495* |

**Remark :** “\*” indicates target start serial number.

# PACKING DIAGRAM



| ITEM | PART NO.        | DESCRIPTION            | Q'TY |
|------|-----------------|------------------------|------|
| 36   | 1490-1843-1     | POLYFOAM ENDCAP        | 2    |
| 37   | 1497-1332-1     | UNIT POLYBAG           | 1    |
| 38   | 1497-1442-1     | FASCIA COVER           | 1    |
| 39   | 1497-1320-0     | ACCESSORIES POLYBAG    | 1    |
| 40   | 4060-0530-0     | BATTERIES              | 2    |
| 41   | 2107-0661-1     | 300 OHM T ANTENNA      | 1    |
| 42   | 8900-1610-0     | REMOTE CONTROL HANDSET | 1    |
| 43   | 2103-6101-0 *AH | RF CONNECTOR PLUG      | 1    |
| 43   | 2103-6101-1 *C  | RF CONNECTOR PLUG      | 1    |
| 44   | 4301-3857-0     | INSTRUCTION MANUAL     | 1    |
| 45   | 1497-1062-0     | MANUAL POLYBAG         | 1    |
| 46   | 1477-3101-0     | CARTON BOX             | 1    |

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