



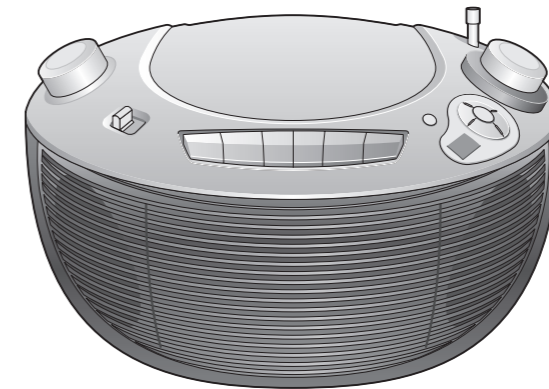
SERVICE MANUAL

MODEL : LPC-M155X , LPC12W

PORTABLE CD CASSETTE RECORDER SERVICE MANUAL

CAUTION

BEFORE SERVICING THE UNIT, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.



MODEL : LPC-M155X , LPC12W



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SECTION 1. GENERAL

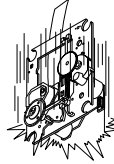
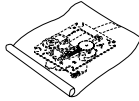
□ SERVICING PRECAUTIONS

NOTES REGARDING HANDLING OF THE PICK-UP

1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

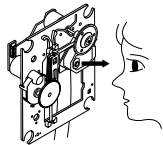
Storage in conductive bag



Drop impact

2. Repair notes

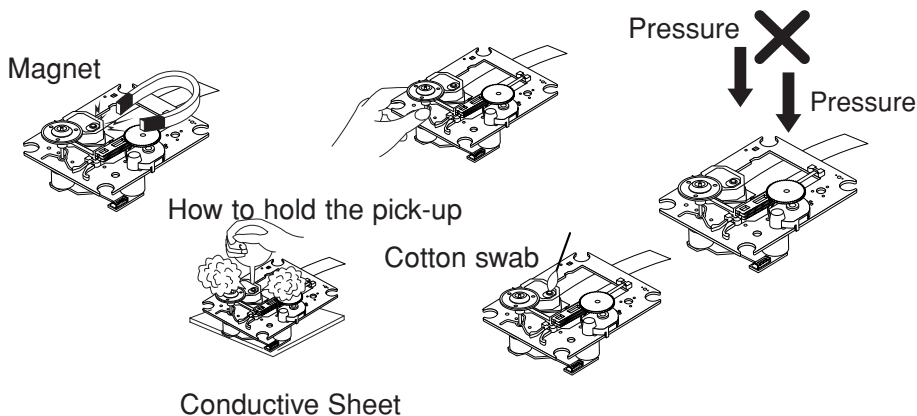
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes!
Absolutely never permit laser beams to enter the eyes!
Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



6) Never attempt to disassemble the pick-up.

Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

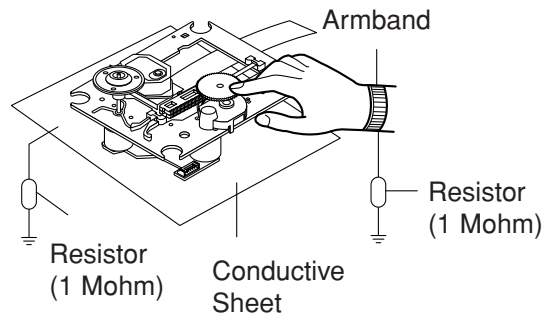
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature or humidity is high, where strong magnetism is present, or where there is excessive dust.

2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.
When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1M Ω)
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity charges in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



ESD PRECAUTIONS

Electrostatically Sensitive Devices (ESD)



Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.

8. Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

CAUTION. GRAPHIC SYMBOLS

	THE LIGHTNING FLASH WITH APROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

□ SPECIFICATIONS

General

Power supply	Refer to the back panel of the unit.
Power consumption	Refer to the back panel of the unit.
Net Weight	2.3 kg
External dimensions (W x H x D)	330 x 166 x 148 mm
Output Power (T.H.D 10%)	1 W X 2
Speakers	8 Ω X 2
Battery Operation	DC 9V, six "C"(R14) batteries (not supplied)

Tuner

FM

Tuning Range	65 - 108 MHz, 87.5 - 108.0 MHz
Intermediate Frequency	10.7 MHz

Antenna Telescopic antenna

AM

Tuning Range	522 - 1620 kHz or 520 - 1720 kHz
Intermediate Frequency	455 kHz
Antenna	Ferrite bar antenna

CD

Frequency response	100 - 18000 Hz
Signal-to-noise ratio	55 dB
T.H.D	0.5 %

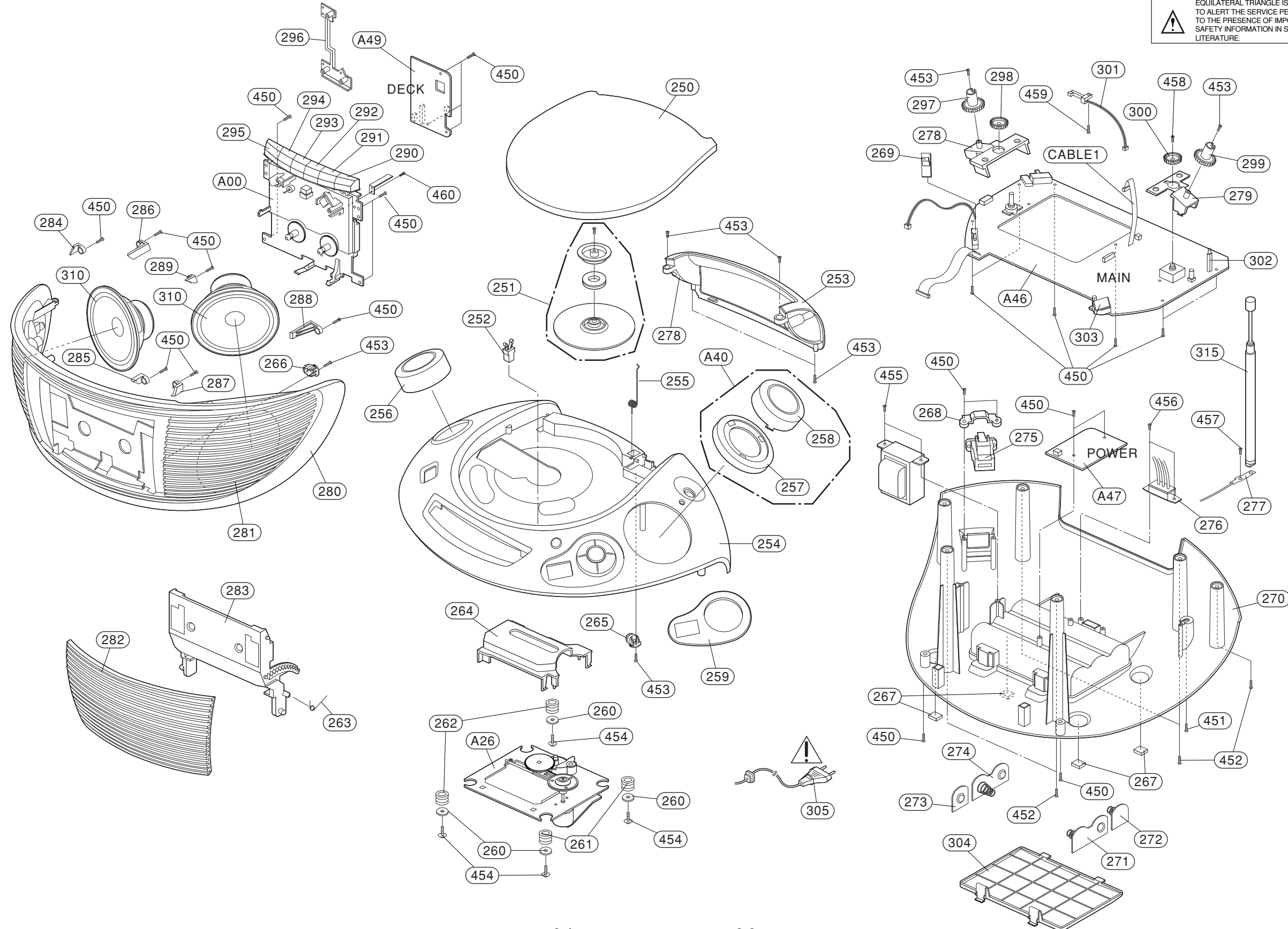
Cassette tape player

Recording System	4 Tracks 2 channel stereo
Frequency Response	125 - 8000 Hz
Signal to Noise Ratio	40 dB

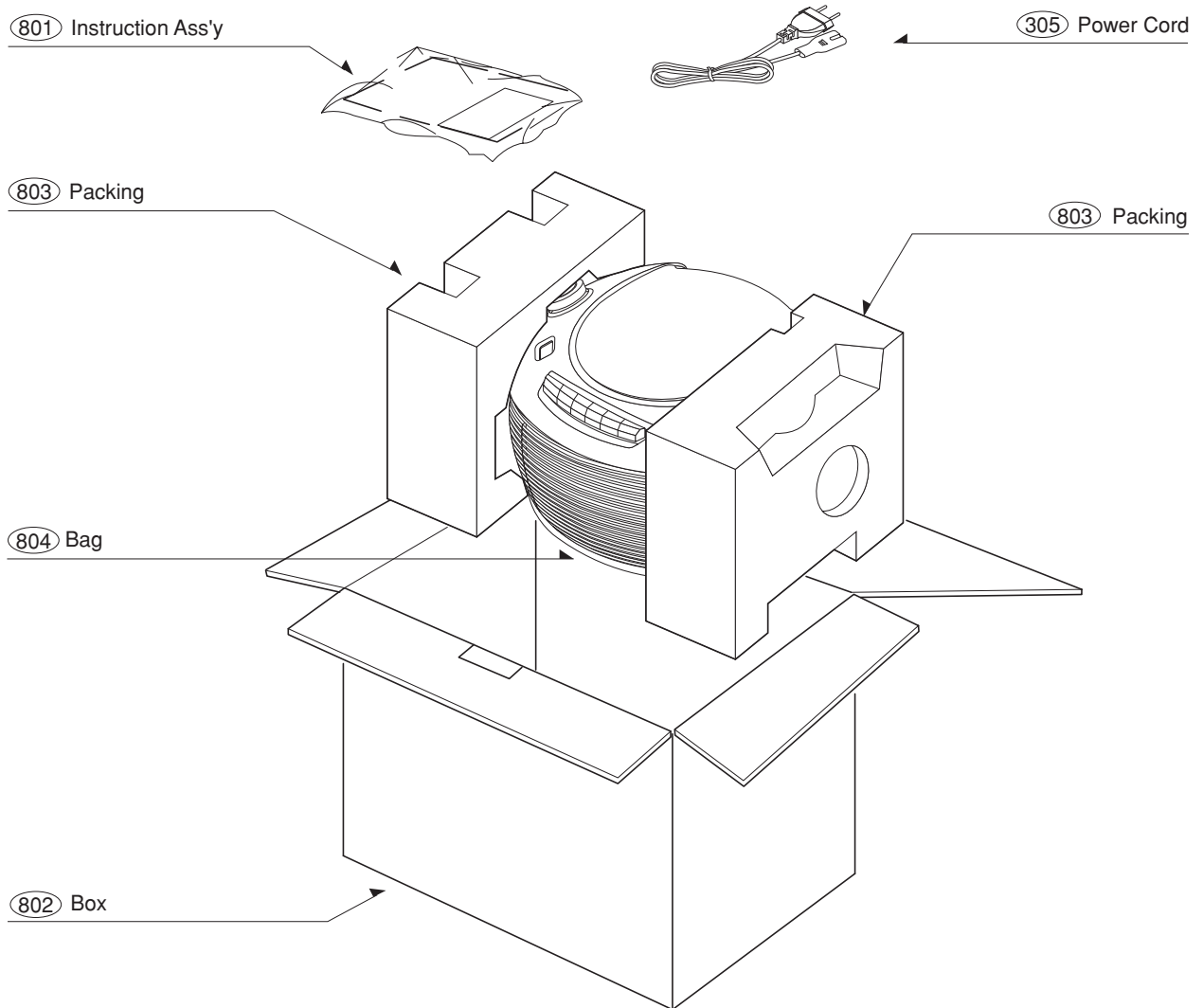
SECTION 2. EXPLODED VIEWS

• CABINET AND MAIN FRAME SECTION

NOTES) THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.



• PACKING ACCESSORY SECTION



MEMO

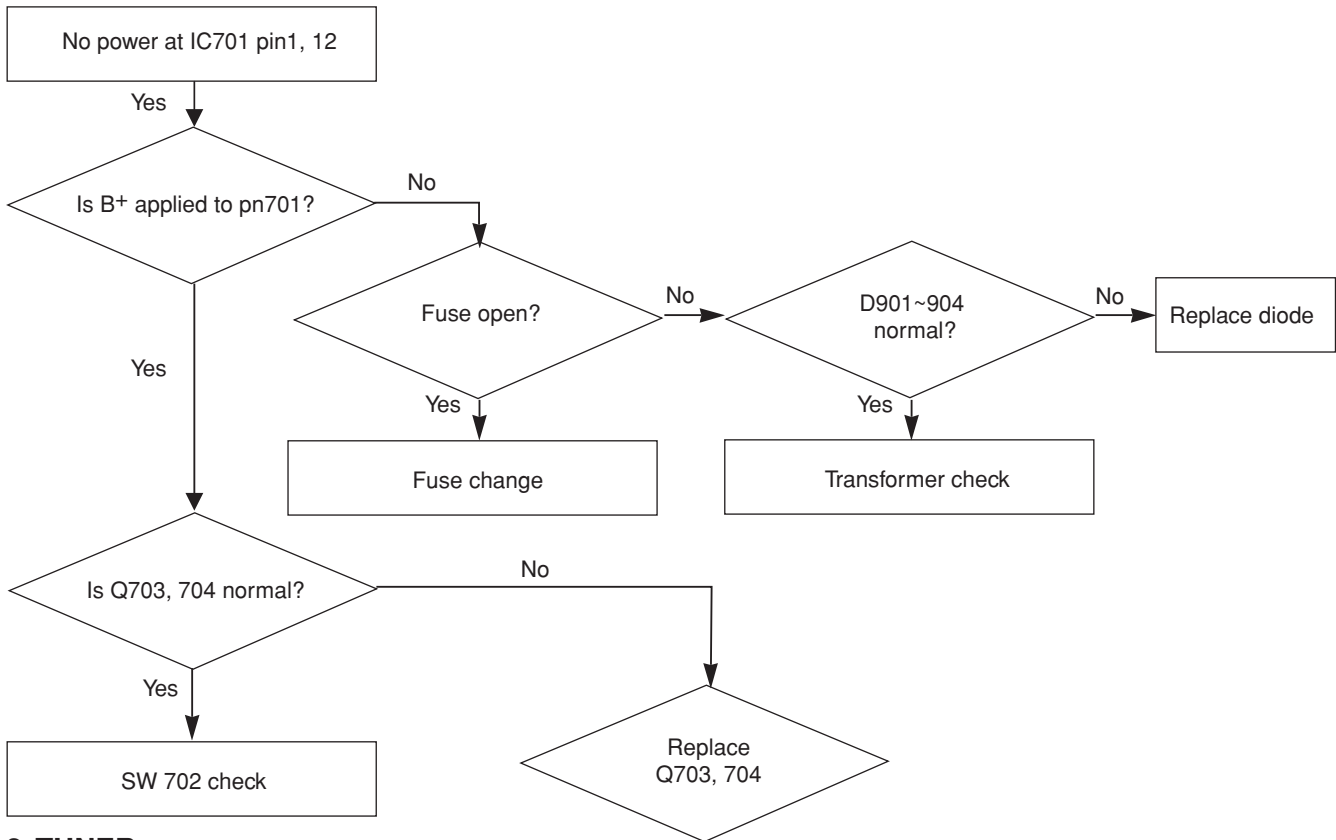
A series of horizontal dotted lines for writing a memo.

SECTION 3. ELECTRICAL SECTION

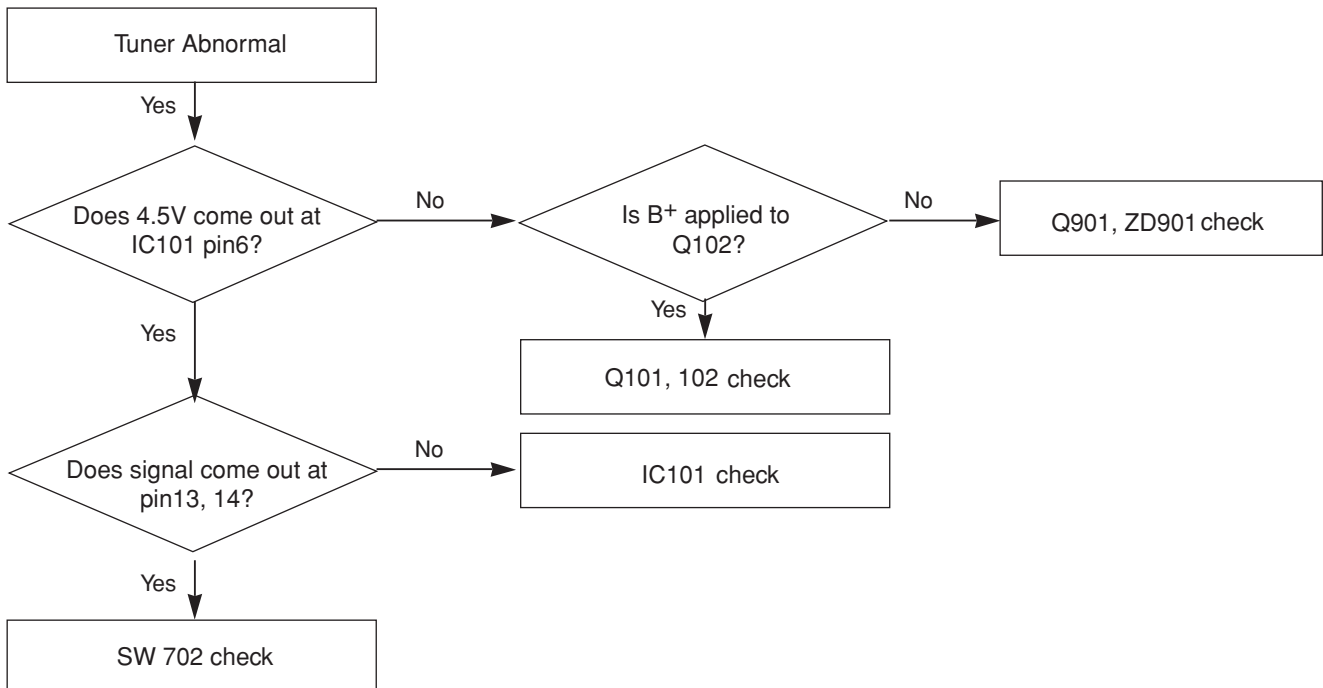
□ TROUBLESHOOTING GUIDE

• MAIN PART

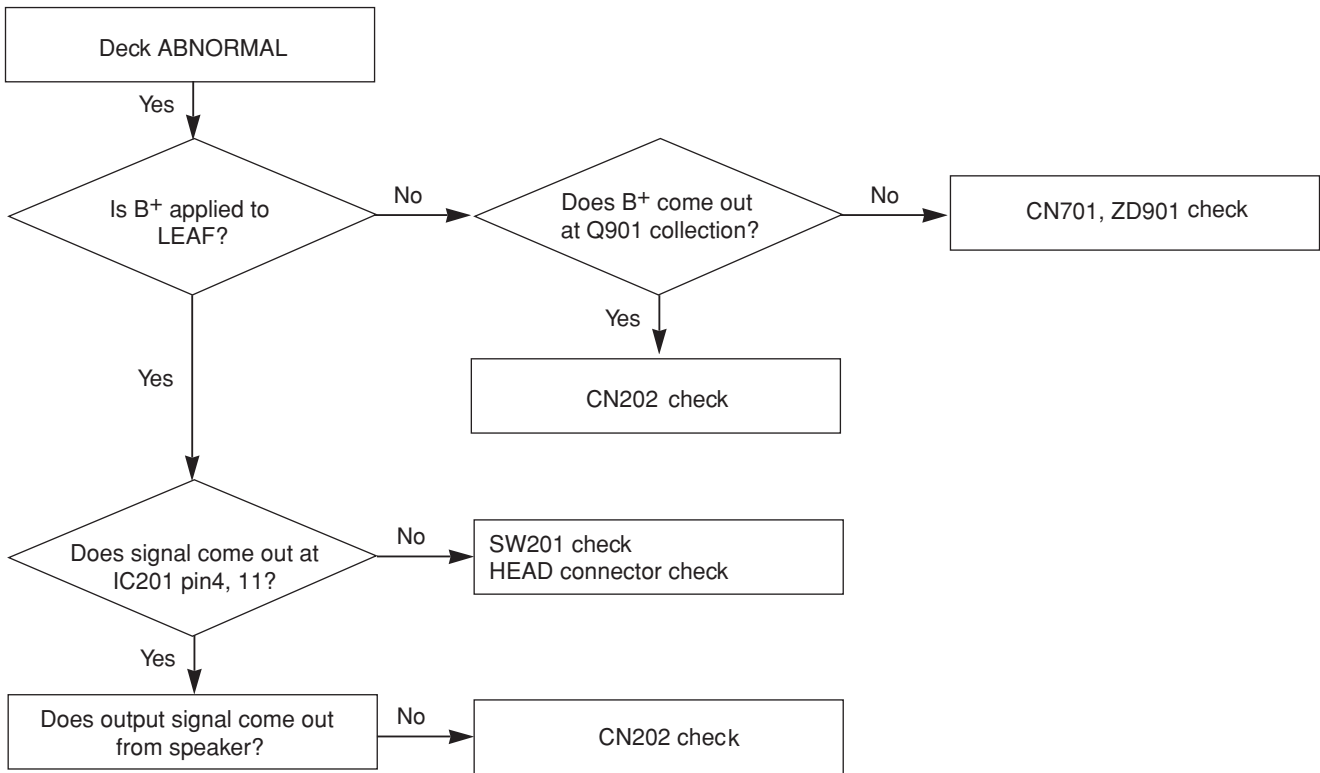
1. AUDIO OUT



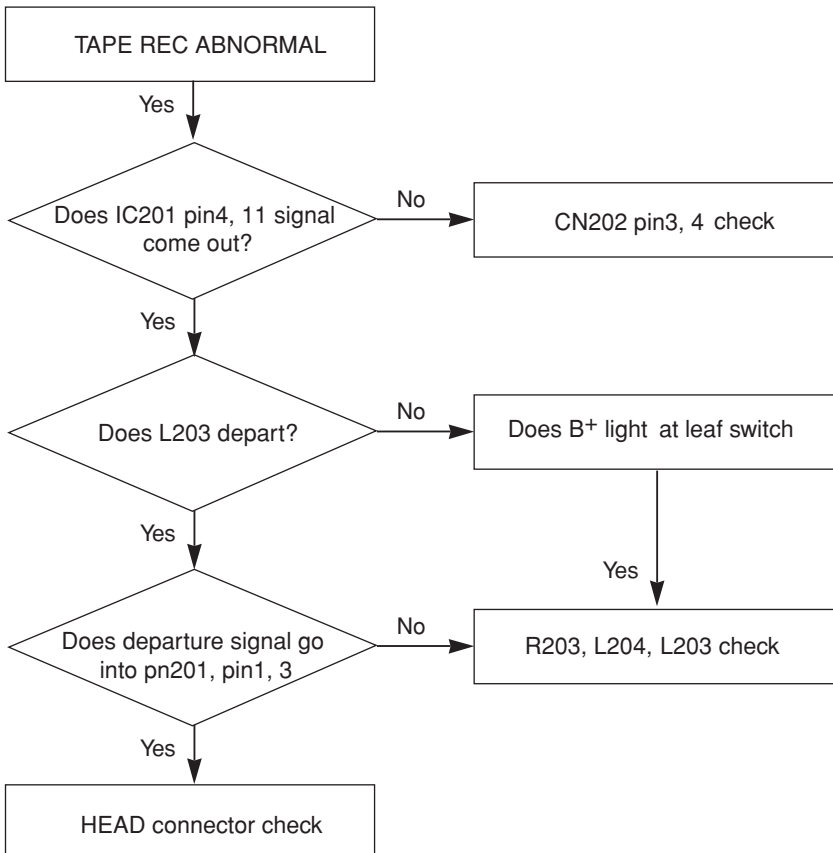
2. TUNER



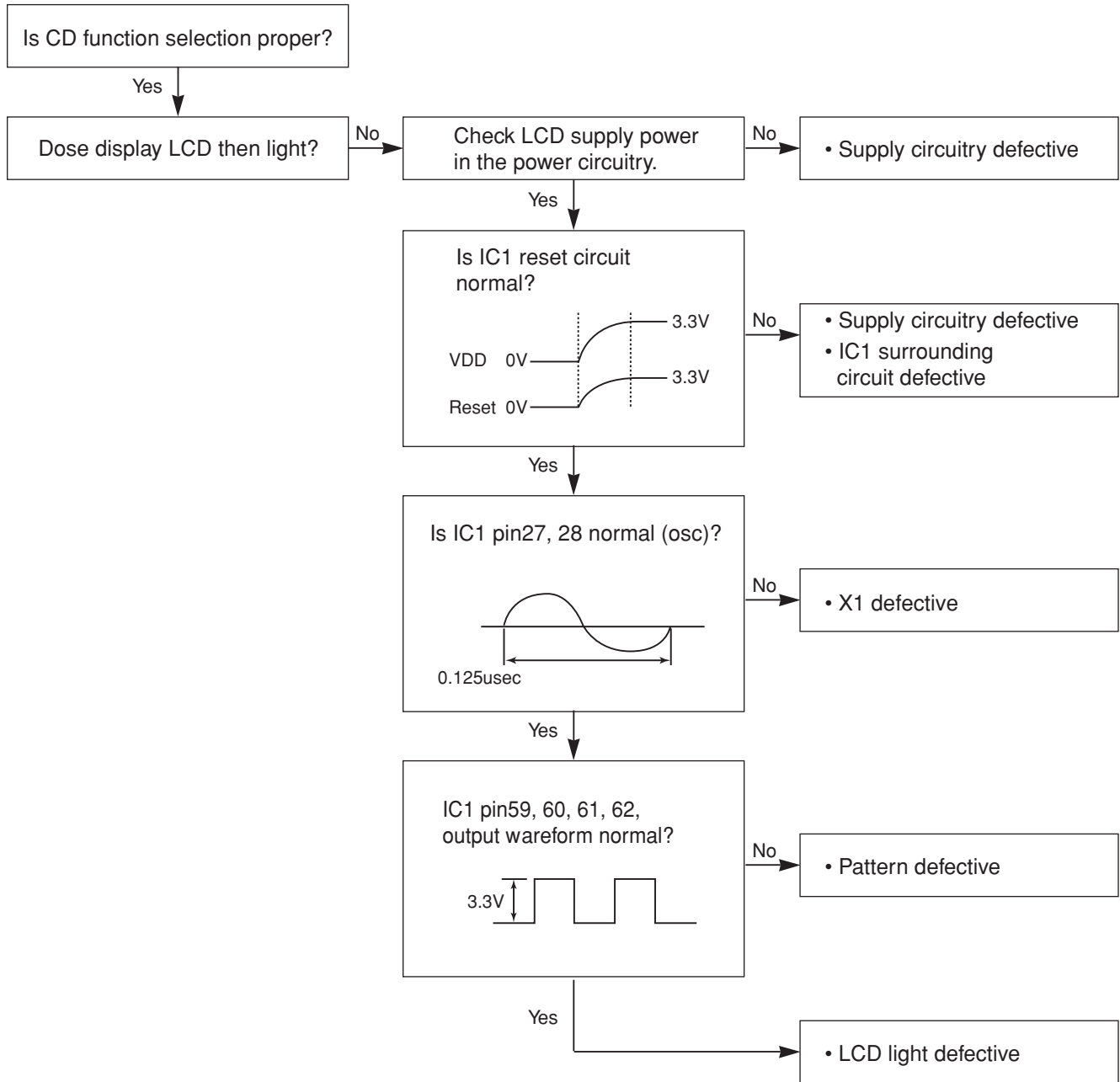
3. CASSETTE DECK



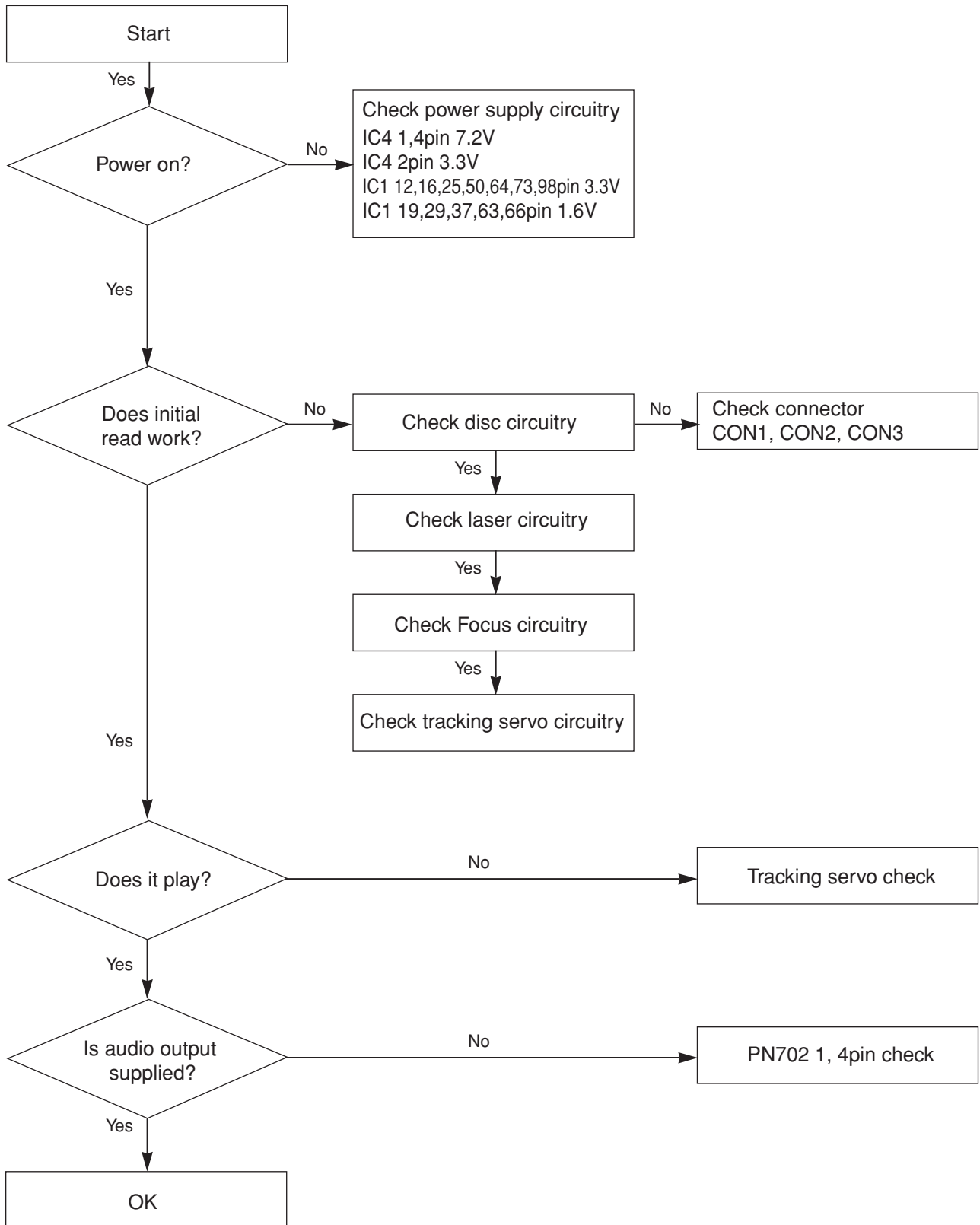
4. Tape recode



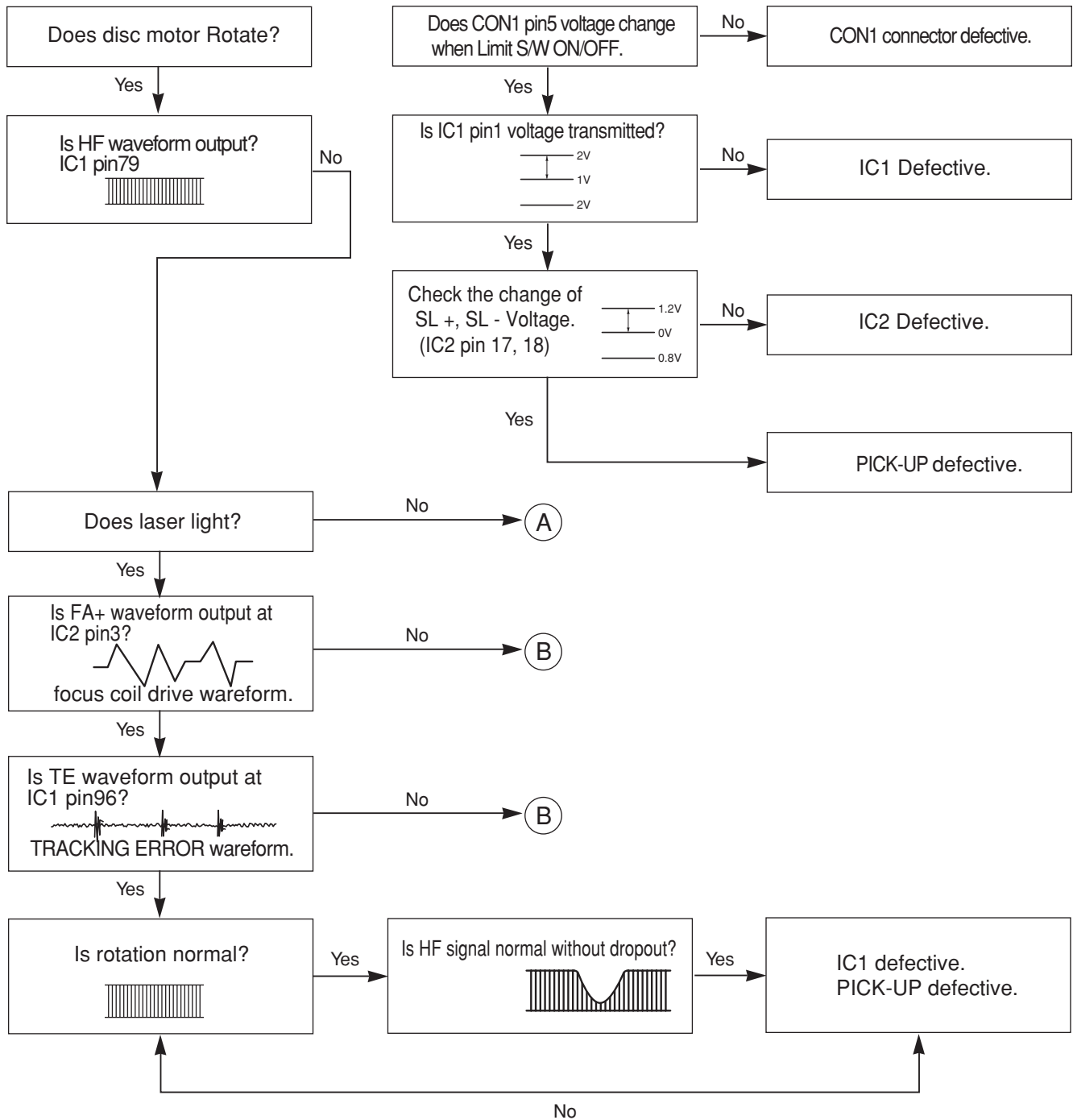
• LCD CIRCUIT



• CD PART

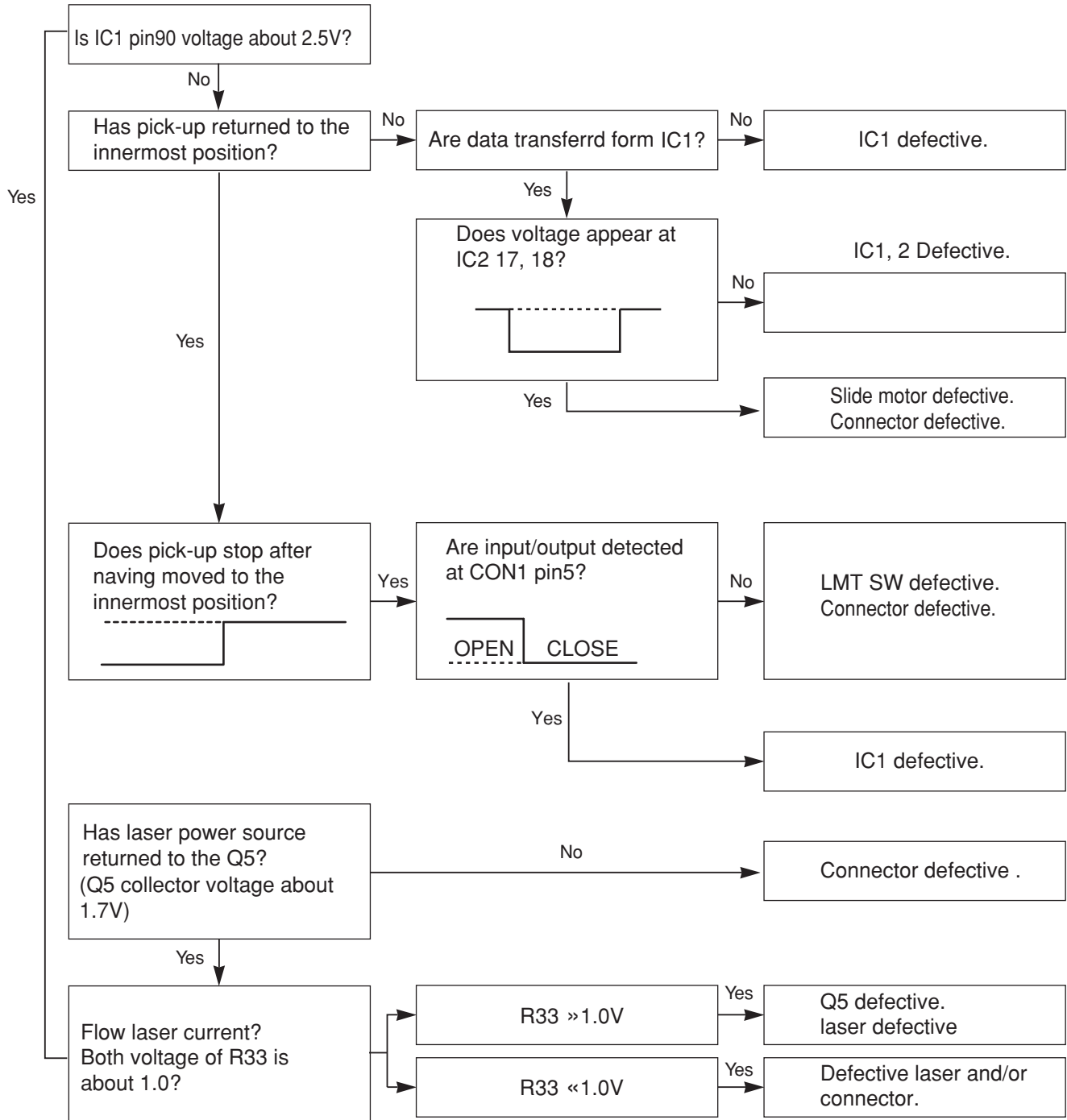


IF INITIAL READING IS NOT CARRIED OUT (WITH DISC)

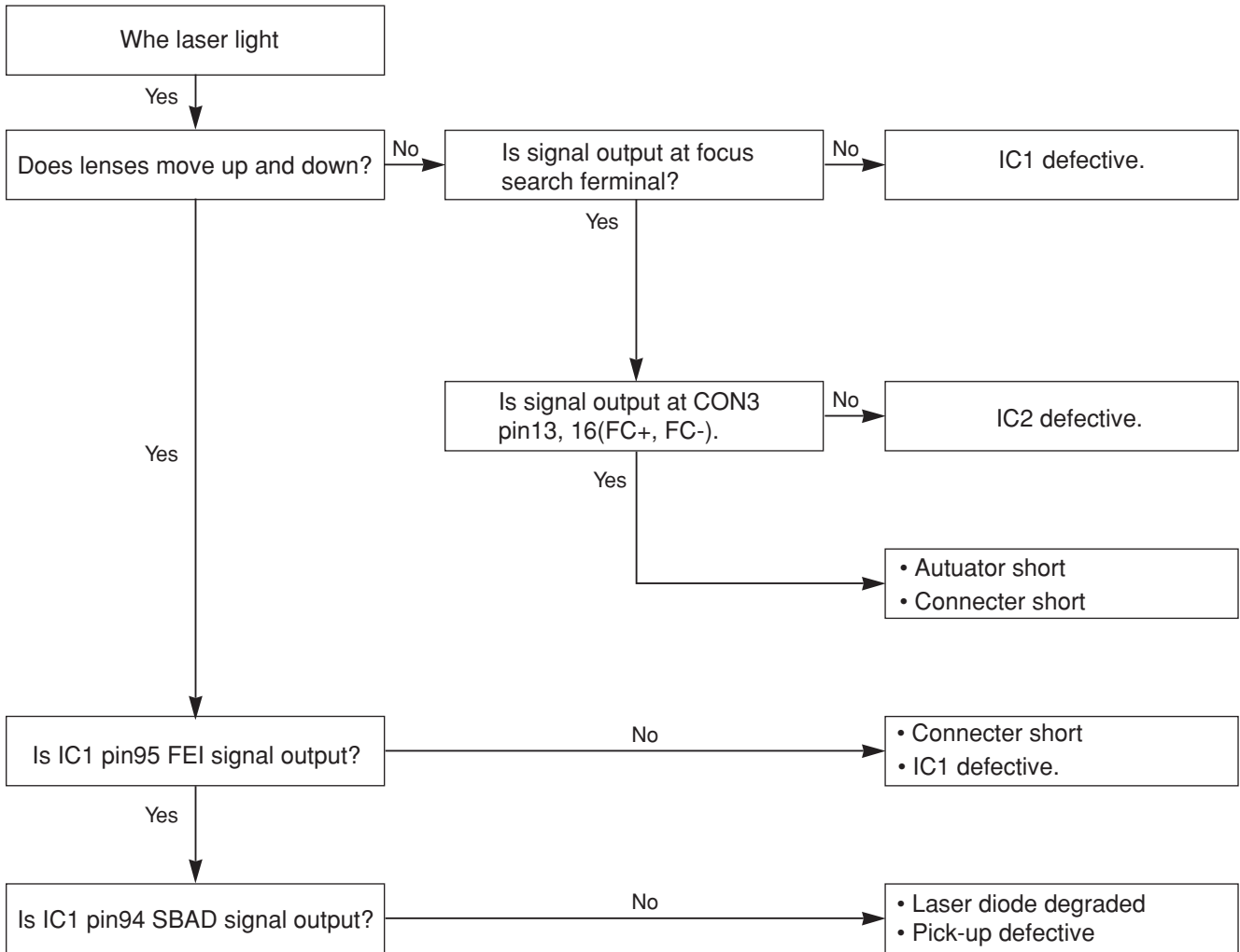


Ⓐ

When laser does not light



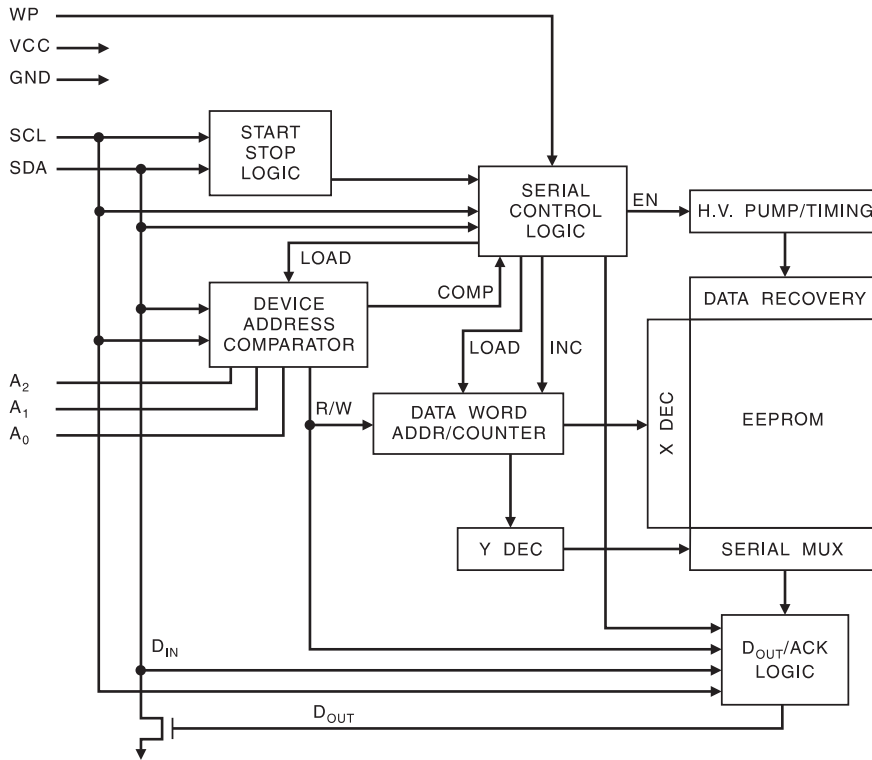
(B)



INTERNAL BLOCK DIAGRAM OF ICs

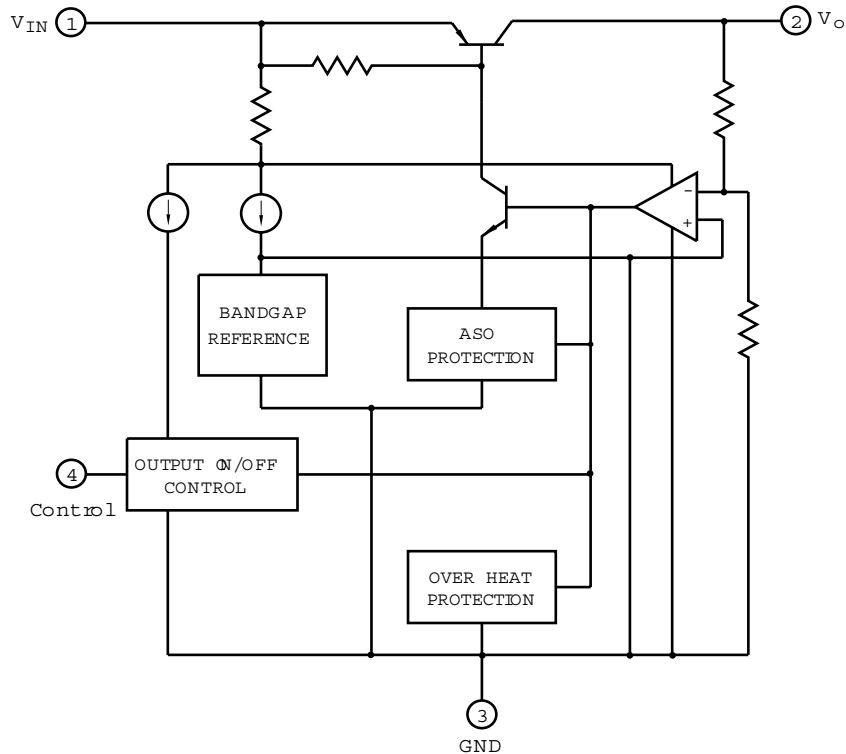
AT24C32

BLOCK DIAGRAM

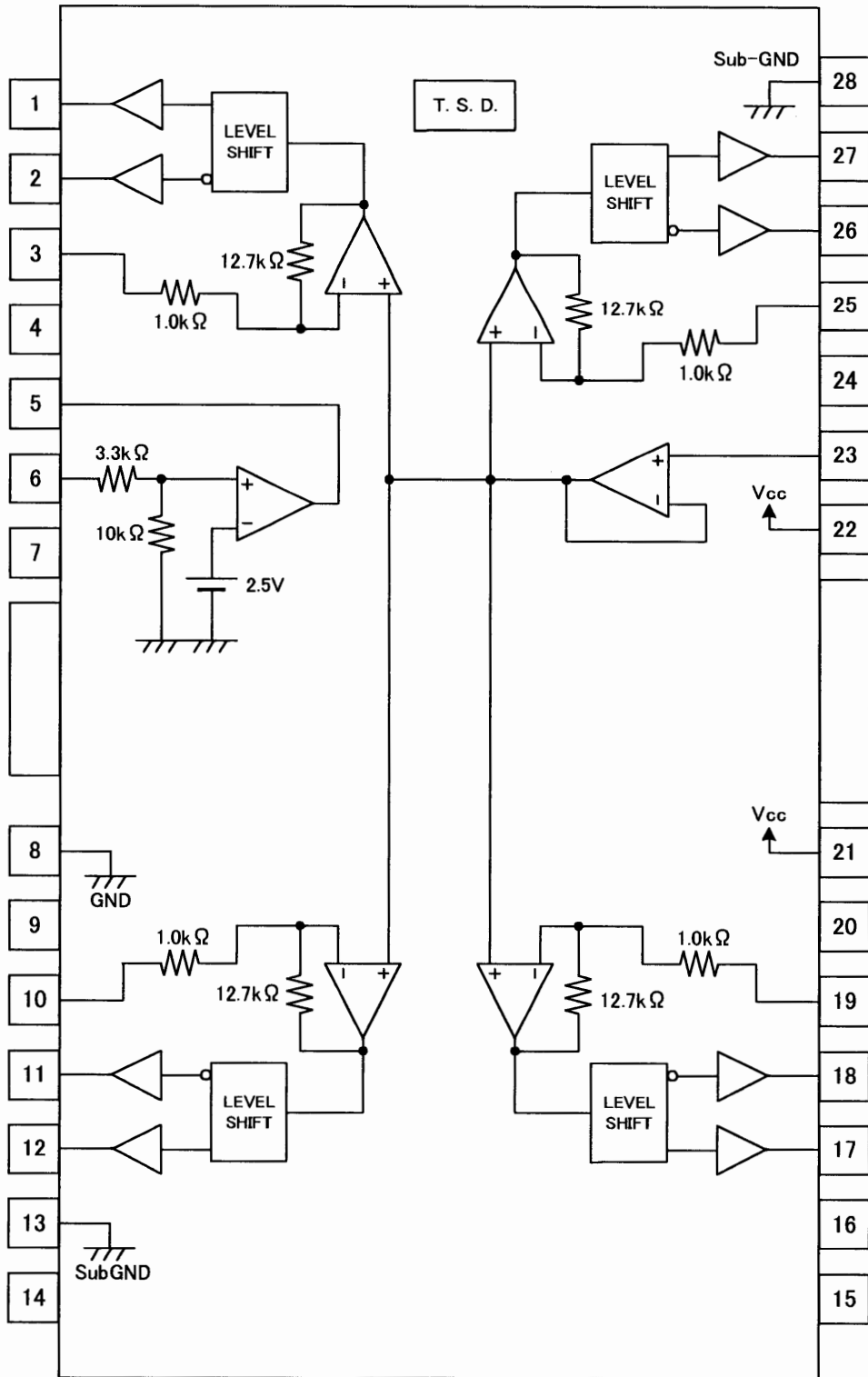


KIA278R33P1

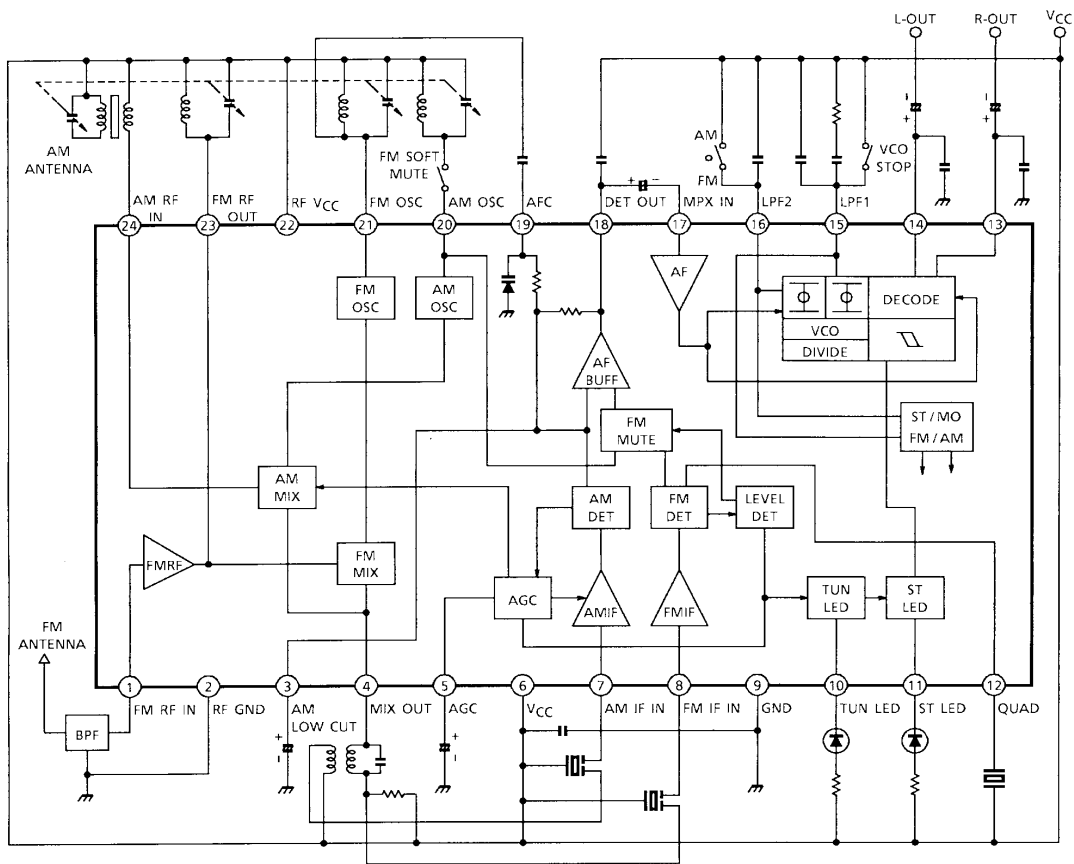
BLOCK DIAGRAM



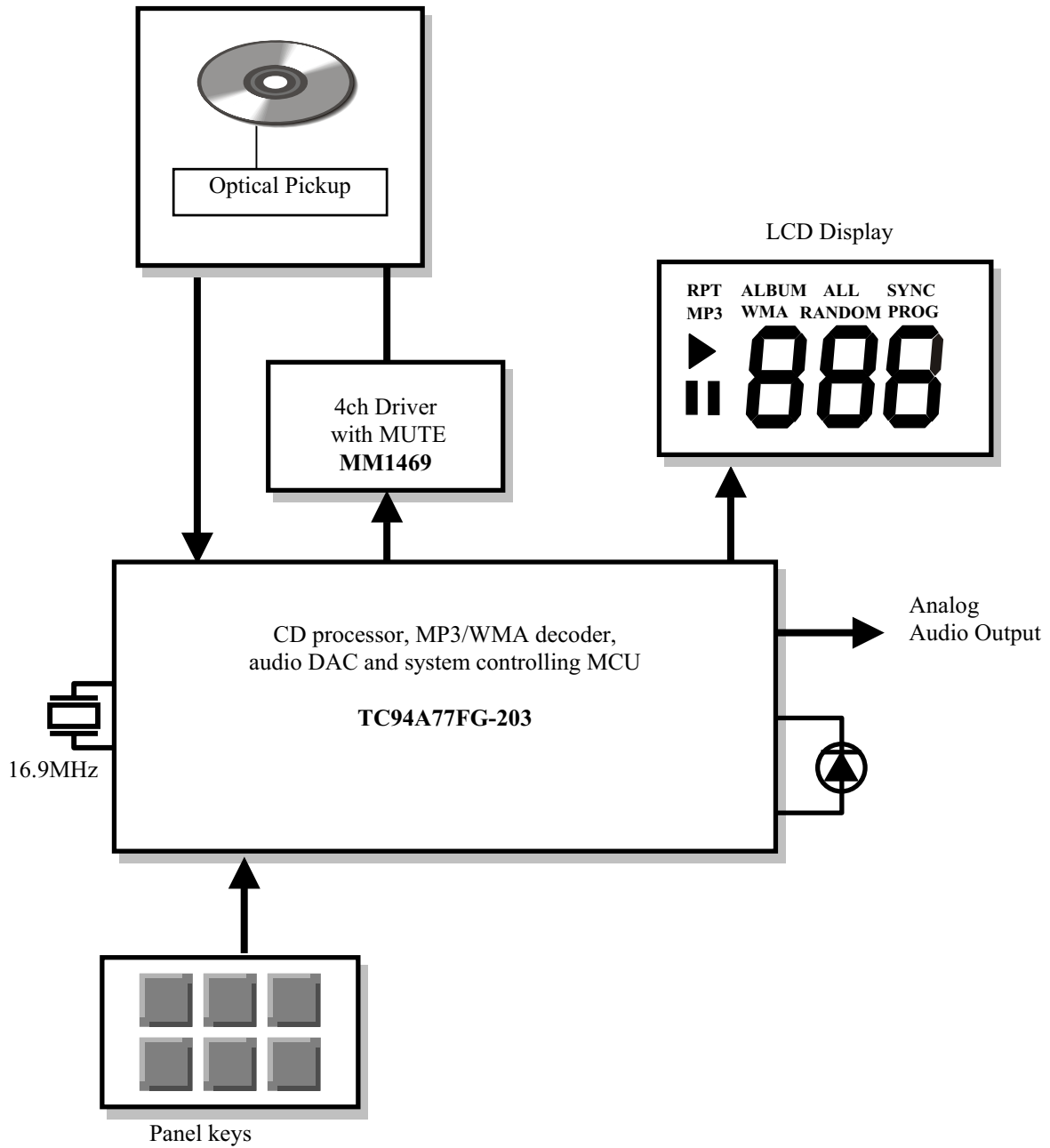
■ MM1669AH
 • BLOCK DIAGRAM



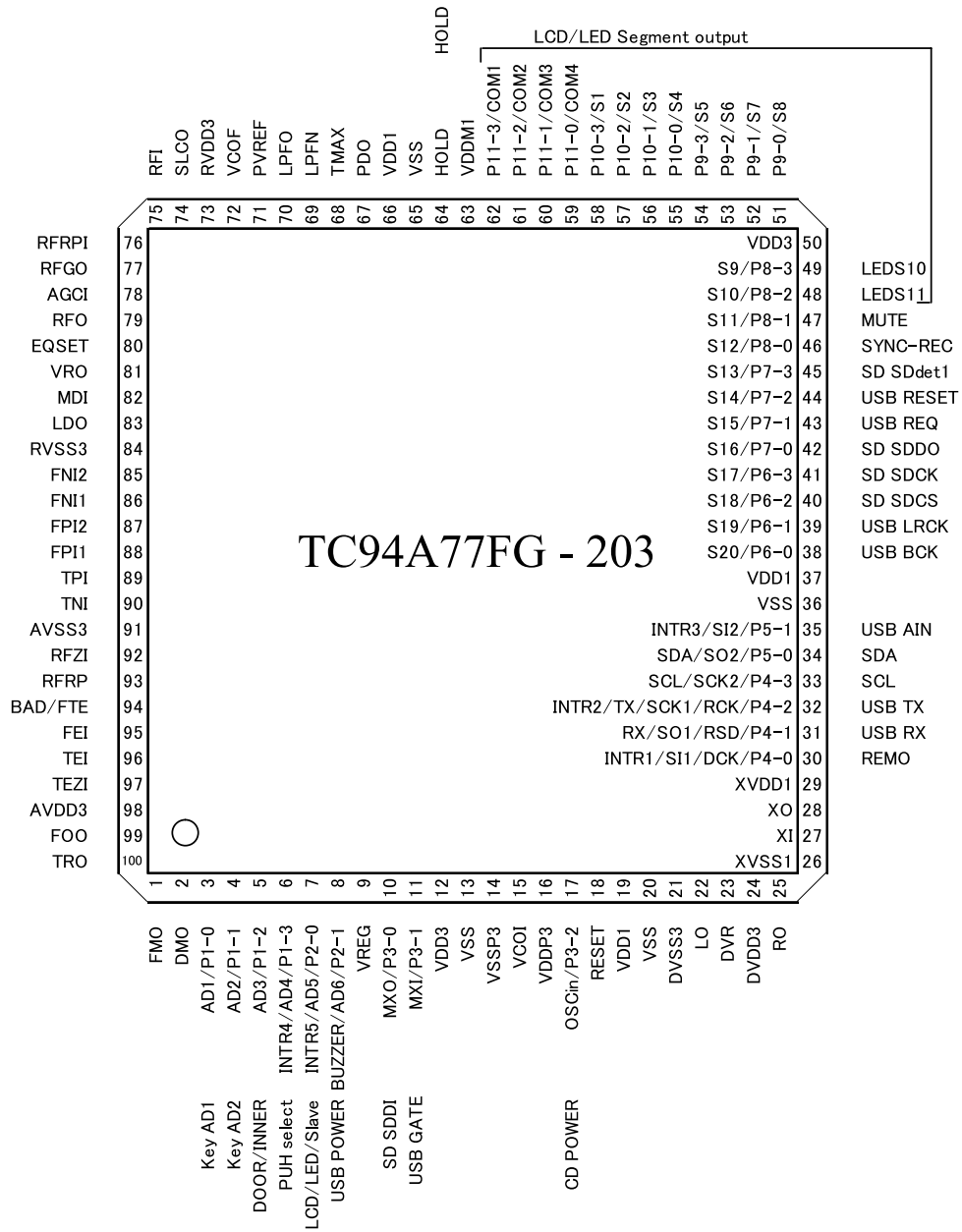
■ TA2111
 • BLOCK DIAGRAM



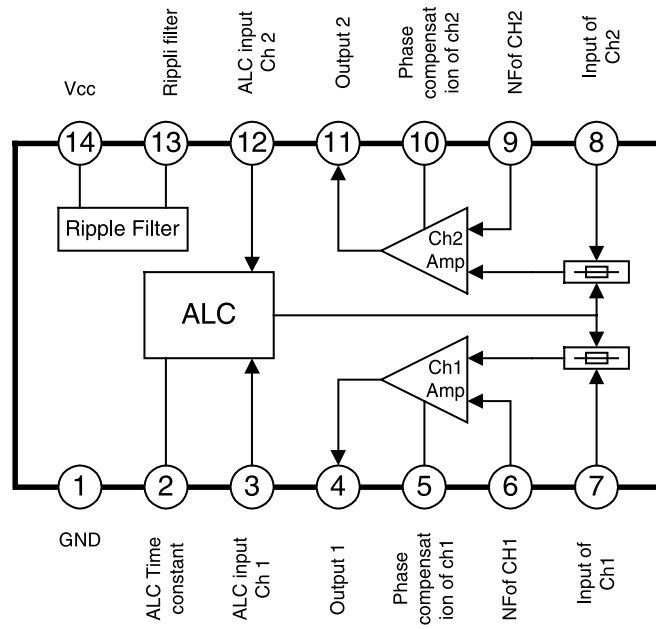
■ TC94A77FG
 • SYSTEM BLOCK DIAGRAM



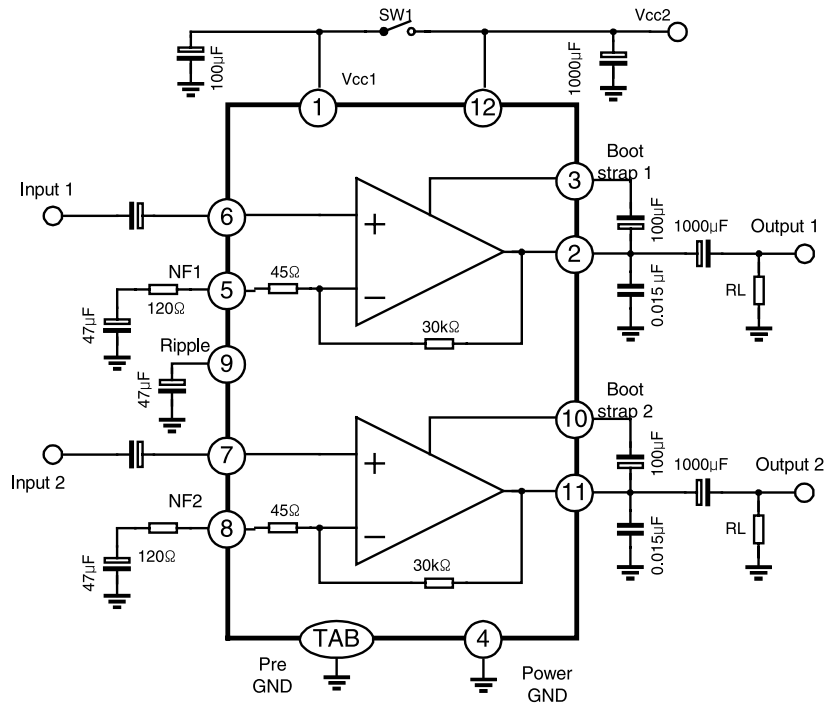
• PIN ASSIGNMENT



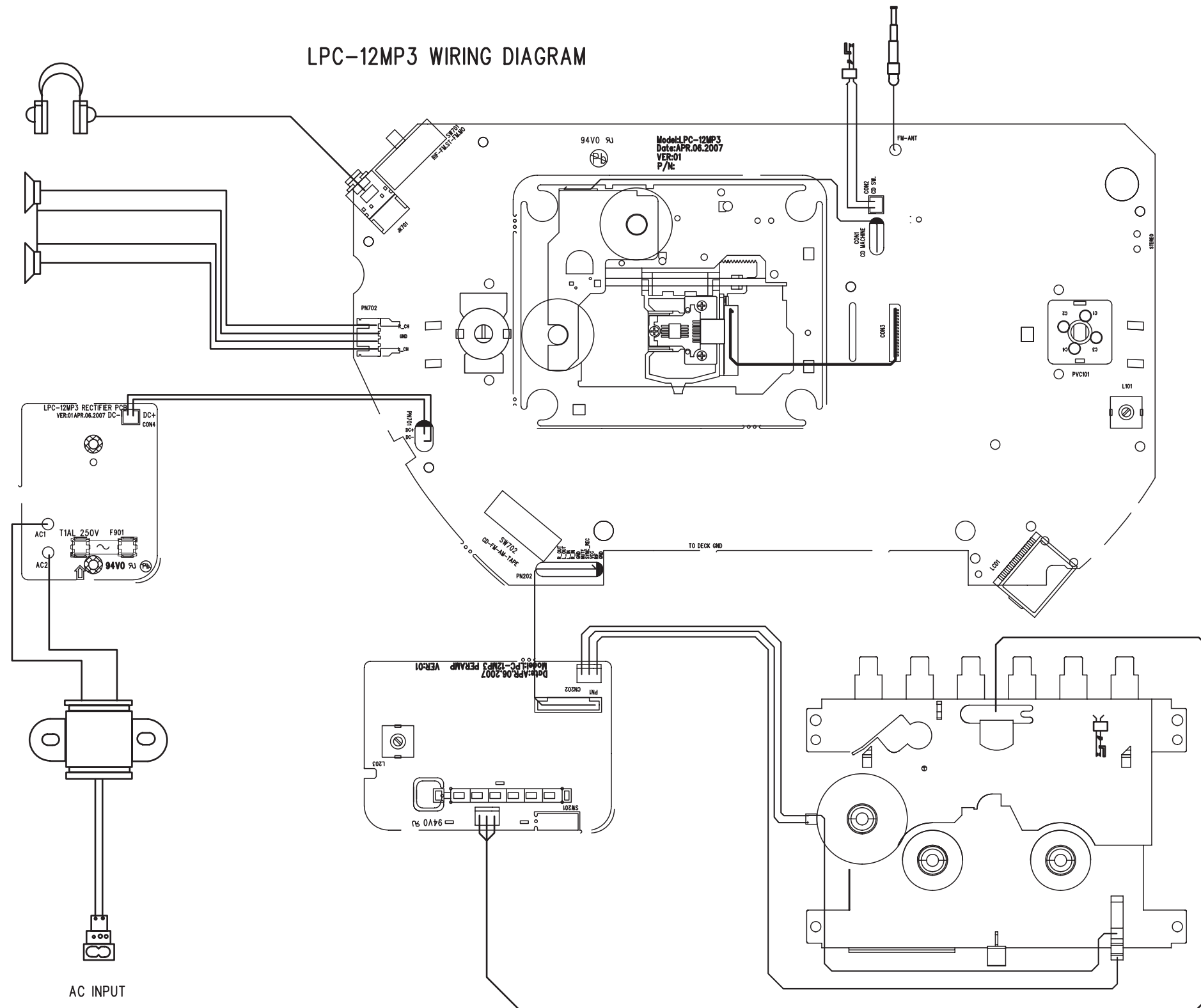
■ UTC7312
 • BLOCK DIAGRAM



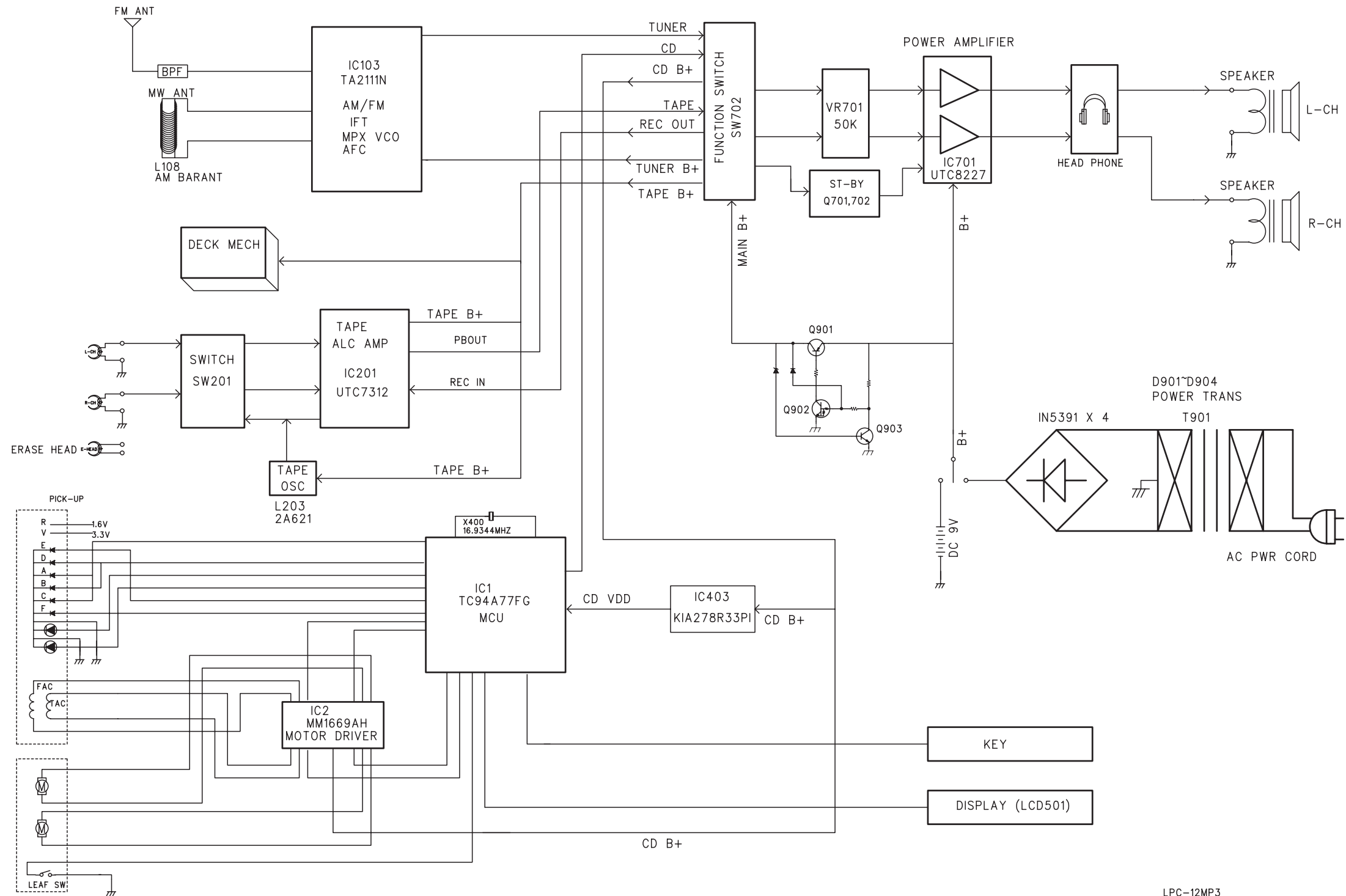
■ UTC8227
 • TEST CIRCUIT



WIRING DIAGRAM



□ BLOCK DIAGRAM



LPC-12MP3
2007.03.07

PRINTED CIRCUIT DIAGRAM

MAIN P.C BOARD DIAGRAM

