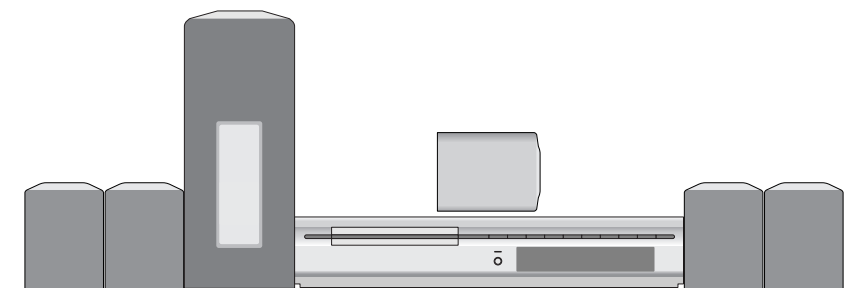




SERVICE MANUAL MODEL: LH-T6347 (LH-T6347X LHS-T6347T, LHS-T6347W)



# DVD/CD RECEIVER SERVICE MANUAL



MODEL: LH-T6347  
LH-T6347X  
LHS-T6347T, LHS-T6347W

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# SECTION 1. GENERAL

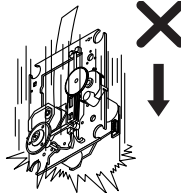
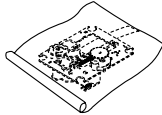
## □ SERVICING PRECAUTIONS

### 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.

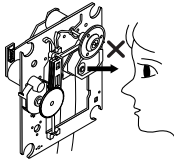
Storage in conductive bag



Drop impact

#### 2. Repair notes

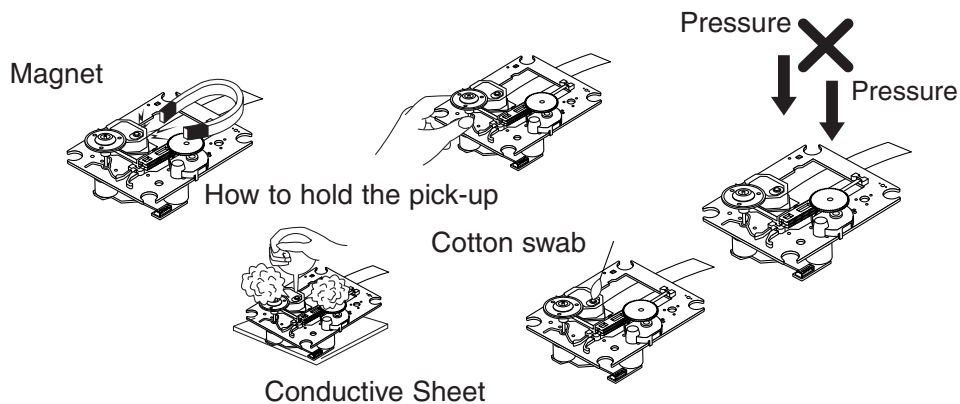
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational 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.

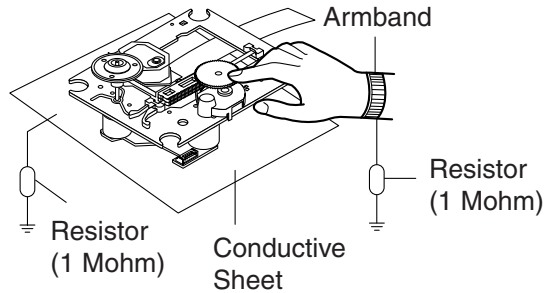
# NOTES REGARDING COMPACT DISC PLAYER REPAIRS

## 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  $\Omega$ )
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes 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 main label  |   |  |
|                        | Power consumption  | Refer to main label  |   |  |
|                        | Mass   | 3.8kg  |   |  |
|                        | External dimensions (W x H x D)  | 360 x 75 x 314 mm  |   |  |
|                        | Operating conditions   | Temperature: 5°C to 35°C, Operation status: Horizontal   |   |  |
|                        | Operating humidity   | 5% to 85%  |   |  |
| [CD/DVD]               | Laser  | Semiconductor laser, wavelength 650 nm   |   |  |
|                        | Signal system  | PAL 625/50, NTSC 525/60  |   |  |
|                        | Frequency response (audio)   | 200 Hz to 18 kHz   |   |  |
|                        | Signal-to-noise ratio (audio)  | More than 70 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)  |   |  |
|                        | Dynamic range (audio)  | More than 70 dB  |   |  |
|                        | Harmonic distortion (audio)  | 1.0 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)   |   |  |
| [Video]                | Video output   | 1.0 V (p-p), 75Ω , negative sync., RCA jack  |   |  |
|                        | S-video output   | (Y) 1.0 V (p-p), 75Ω , negative sync., Mini DIN 4-pin x 1<br>(C) 0.3 V (p-p), 75Ω  |   |  |
| [Tuner]                | [FM]   | Tuning Range   | 87.5 - 108.0 MHz or 65.0 - 74.0 MHz, 87.5 - 108.0 MHz |  |
|                        |  | Intermediate Frequency   | 10.7 MHz  |  |
|                        |  | Signal-to Noise Ratio  | 55 dB (Mono)  |  |
|                        | [AM<br>[MW]]   | Frequency Response   | 180-10,000 Hz   |  |
|                        |  | Tuning Range   | 522~1,611kHz, 530~1,610kHz                            |  |
|                        |  | Intermediate Frequency   | 450 kHz   |  |
| [Amplifier]            | Stereo mode  | 25W + 25W (6Ω at 1 kHz, THD 10 %)  |   |  |
|                        | Surround mode<br>(* Depending on the sound mode settings and the source, there may be no sound output.)  | Front: 25W + 25W (THD 10 %)<br>Centre*: 25W<br>Surround*: 25W + 25W (6Ω at 1 kHz, THD 10 %)<br>Subwoofer*: 60W (8Ω at 70 Hz, THD 10 %) |   |  |
|                        | Outputs  | S-VIDEO<br>MONITOR   |   |  |
| [Speakers]             |  | Satellite Speaker  | Passive Subwoofer                                     |  |
|                        | Type   | 1Way 1Speaker  | 1Way 1Speaker   |  |
|                        | Impedance  | 6Ω   | 8Ω  |  |
|                        | Frequency Response   | 130-20,000 Hz  | 50 -1,500 Hz  |  |
|                        | Sound Pressure Level   | 83 dB/W (1m)   | 82 dB/W (1m)  |  |
|                        | Rated Input Power  | 25 W   | 60 W  |  |
|                        | Max. Input Power   | 50 W   | 120 W   |  |
|                        | Net Dimensions (W x H x D)   | 88 x 100 x 95 mm   | 160 x 350 x 325 mm                                    |  |
| Net Weight             | 0.54 kg  | 4.12 kg  |   |  |
| [Supplied Accessories] | <ul style="list-style-type: none"> <li>• Speakers .....6</li> <li>• AM loop antenna .....1</li> <li>• Remote control .....1</li> <li>• Speaker cables .....5</li> <li>• FM antenna .....2</li> <li>• Batteries (AAA) .....1</li> </ul> |  |   |  |

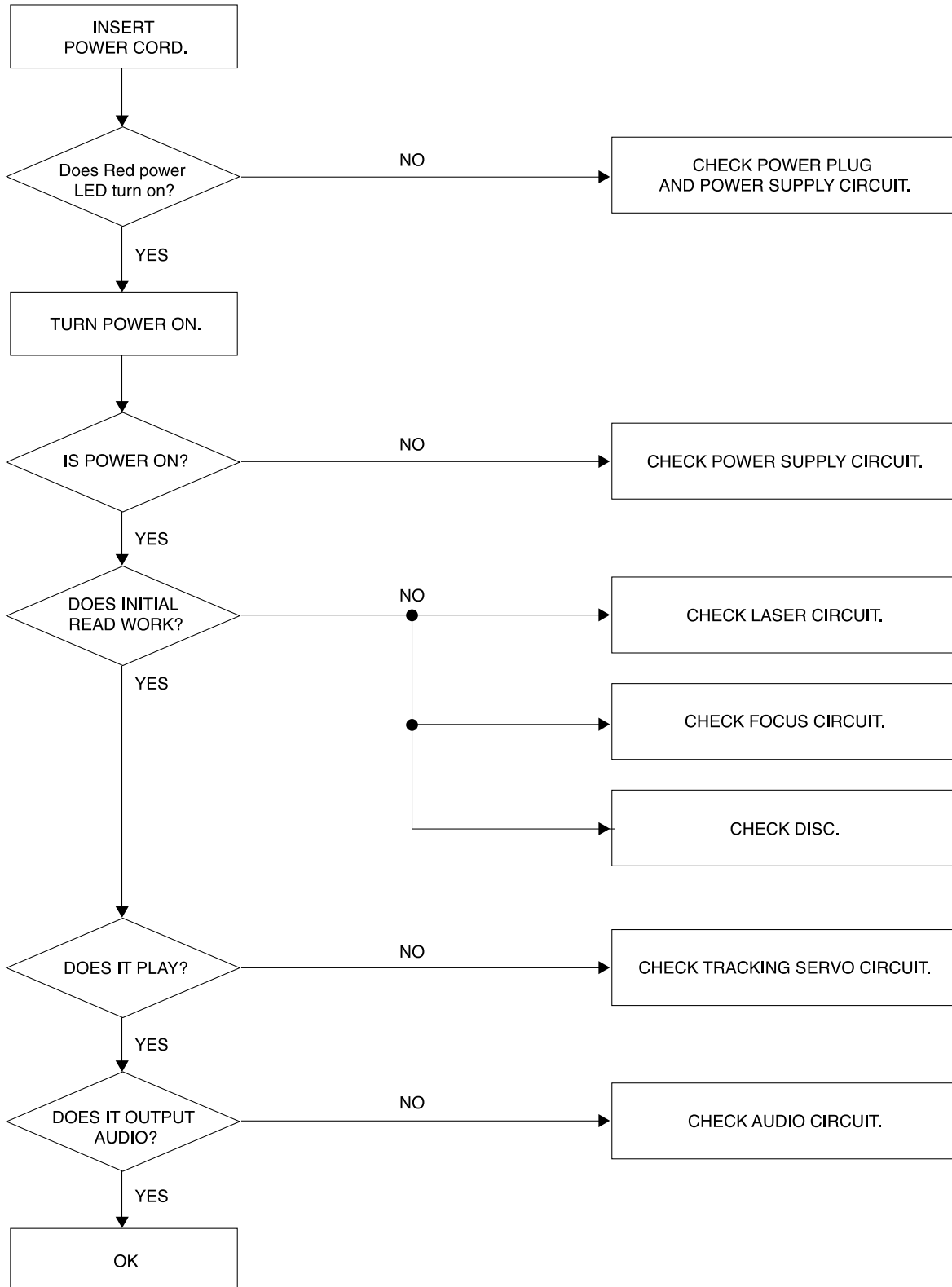
Designs and specifications are subject to change without notice.



# SECTION 2. AUDIO PART

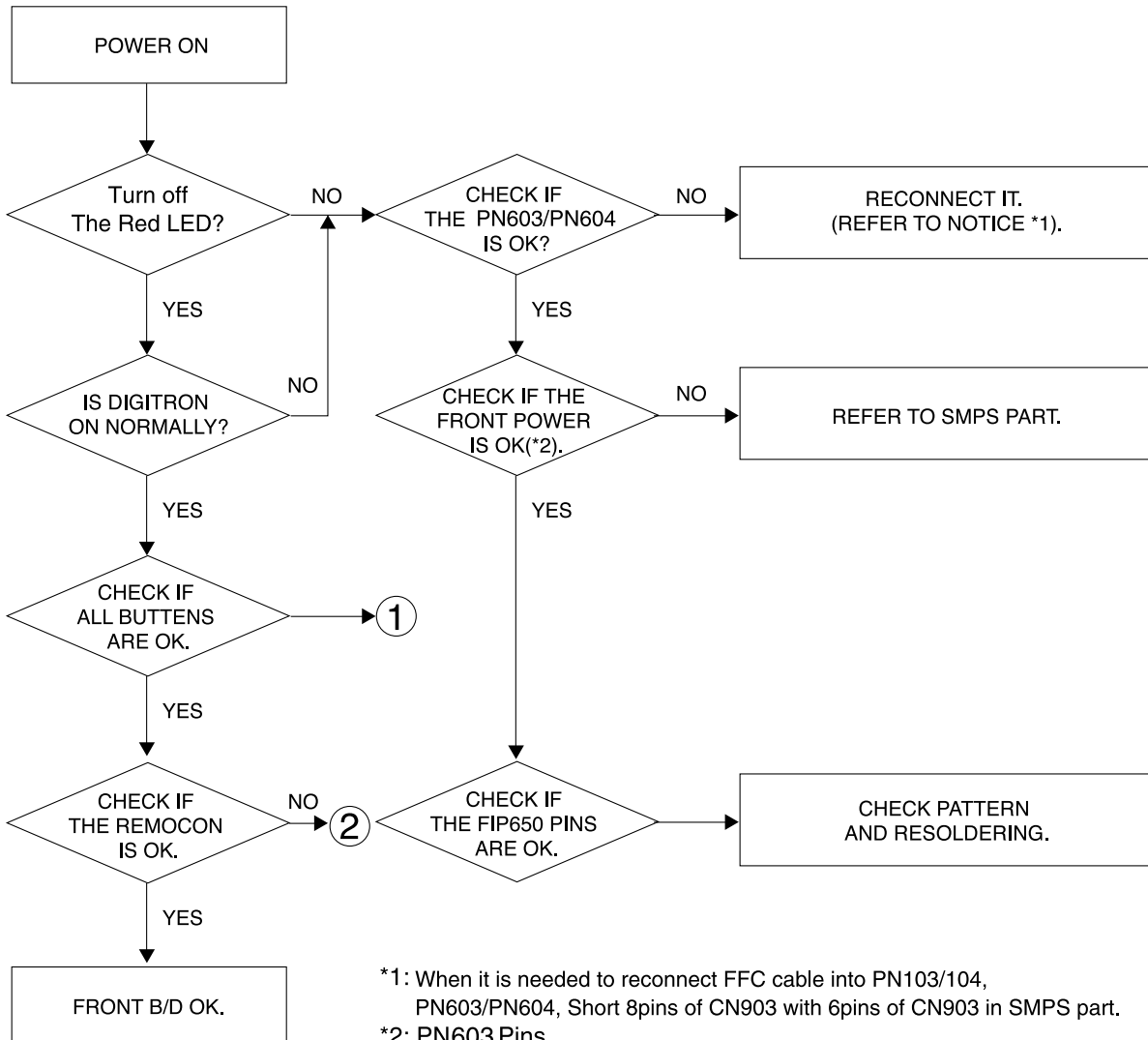
## □ AUDIO TROUBLESHOOTING GUIDE

### 1. POWER SUPPLY CIRCUIT





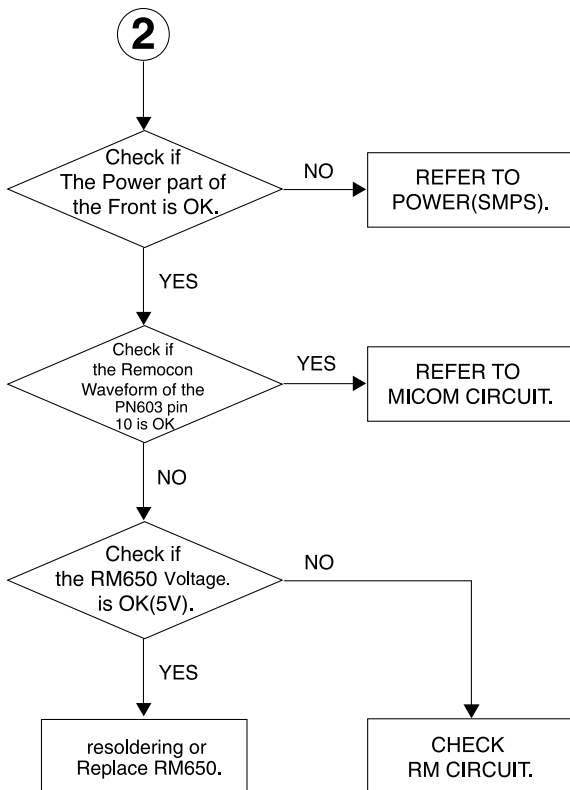
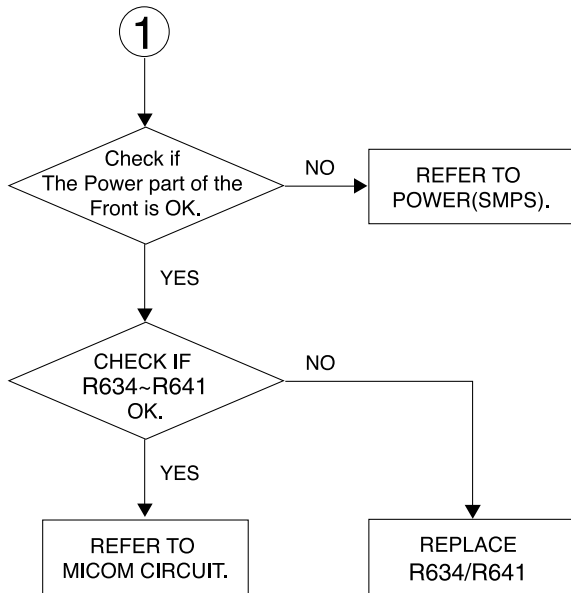
## 2. FRONT CIRCUIT (1/2)



\*1: When it is needed to reconnect FFC cable into PN103/104,  
PN603/PN604, Short 8pins of CN903 with 6pins of CN903 in SMPS part.

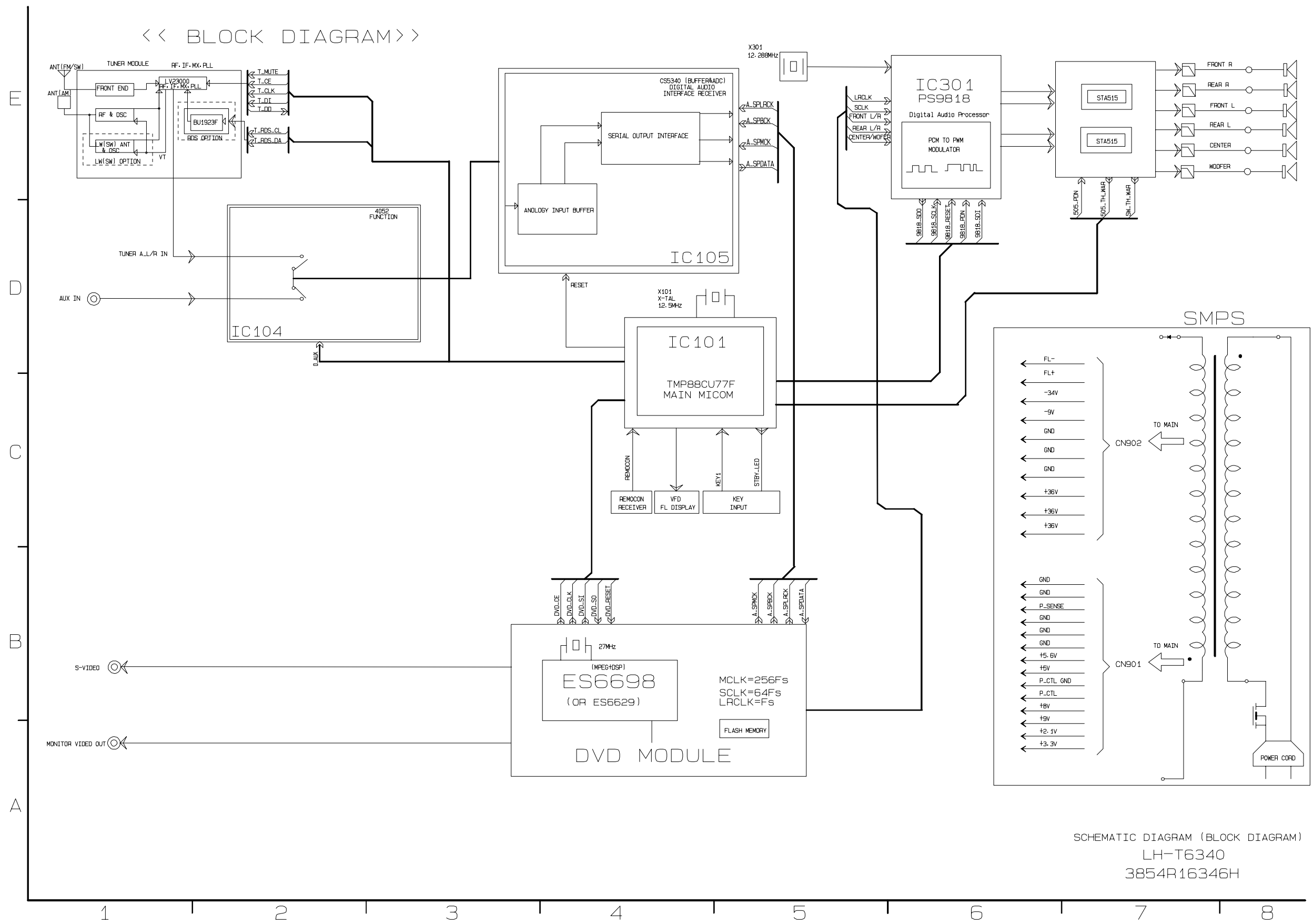
\*2: PN603 Pins.  
 PIN1 : -32.4  
 PIN2 : -27.5  
 PIN3 : -23.7  
 PIN4 : -23.7  
 PIN11 : -5.0

### 3. FRONT CIRCUIT (2/2)



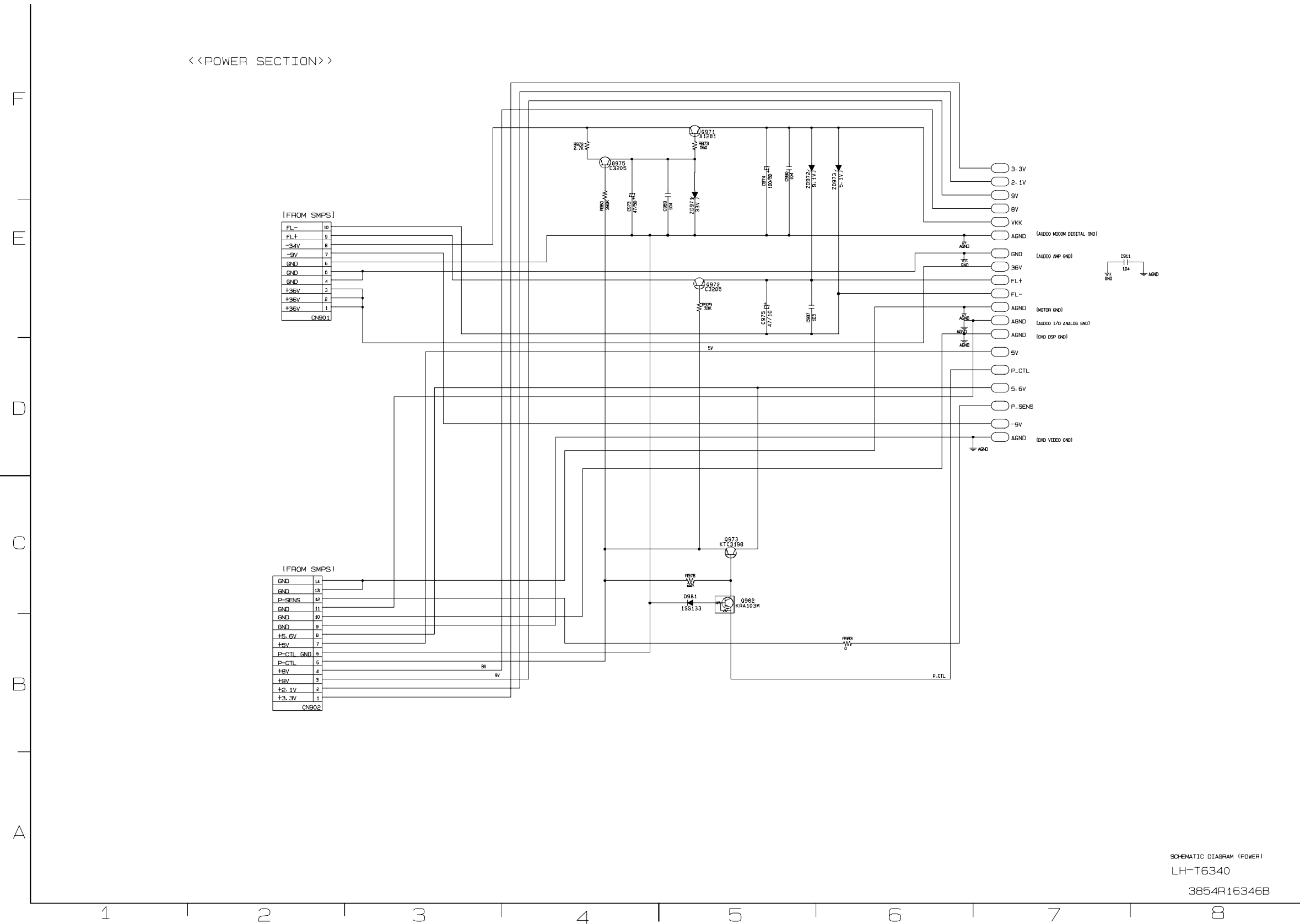
# MEMO

# □ BLOCK DIAGRAM

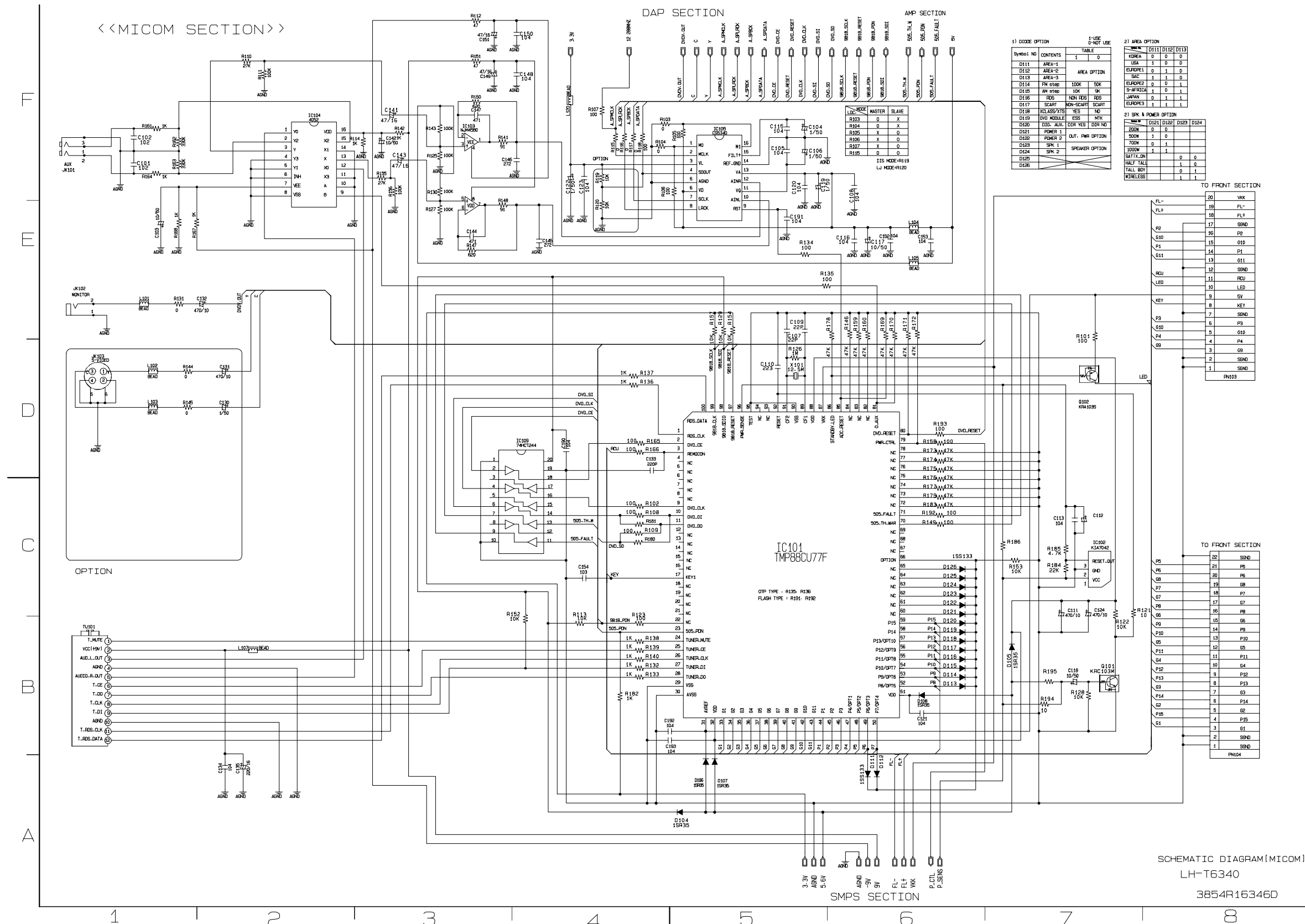


# SCHEMATIC DIAGRAMS

## POWER SCHEMATIC DIAGRAM



# MICOM SCHEMATIC DIAGRAM



1) DIOCE OPTION

| Symbol NO | CONTENTS   | TABLE     | 1-USE      | 0-NOT USE |
|-----------|------------|-----------|------------|-----------|
| D111      | AREA-1     | 1         | 0          |           |
| D112      | AREA-2     | 1         | 0          |           |
| D113      | AREA-3     | 1         | 0          |           |
| D114      | FM stnd    | 100K      | 50K        |           |
| D115      | AM stnd    | 100K      | 50K        |           |
| D116      | RES        | NON-RES   | RES        |           |
| D117      | SCART      | NON-SCART | SCART      |           |
| D118      | XCCLASS    | YES       | NO         |           |
| D119      | DVD MODULE | ESS       | MTX        |           |
| D120      | DISK ADJ.  | DIR YES   | DIR NO     |           |
| D121      | POWER 1    |           |            |           |
| D122      | POWER 2    | OUT.      | PWR OPTION |           |
| D123      | SPK 1      |           |            |           |
| D124      | SPK 2      |           |            |           |
| D125      |            |           |            |           |
| D126      |            |           |            |           |

2) AREA OPTION

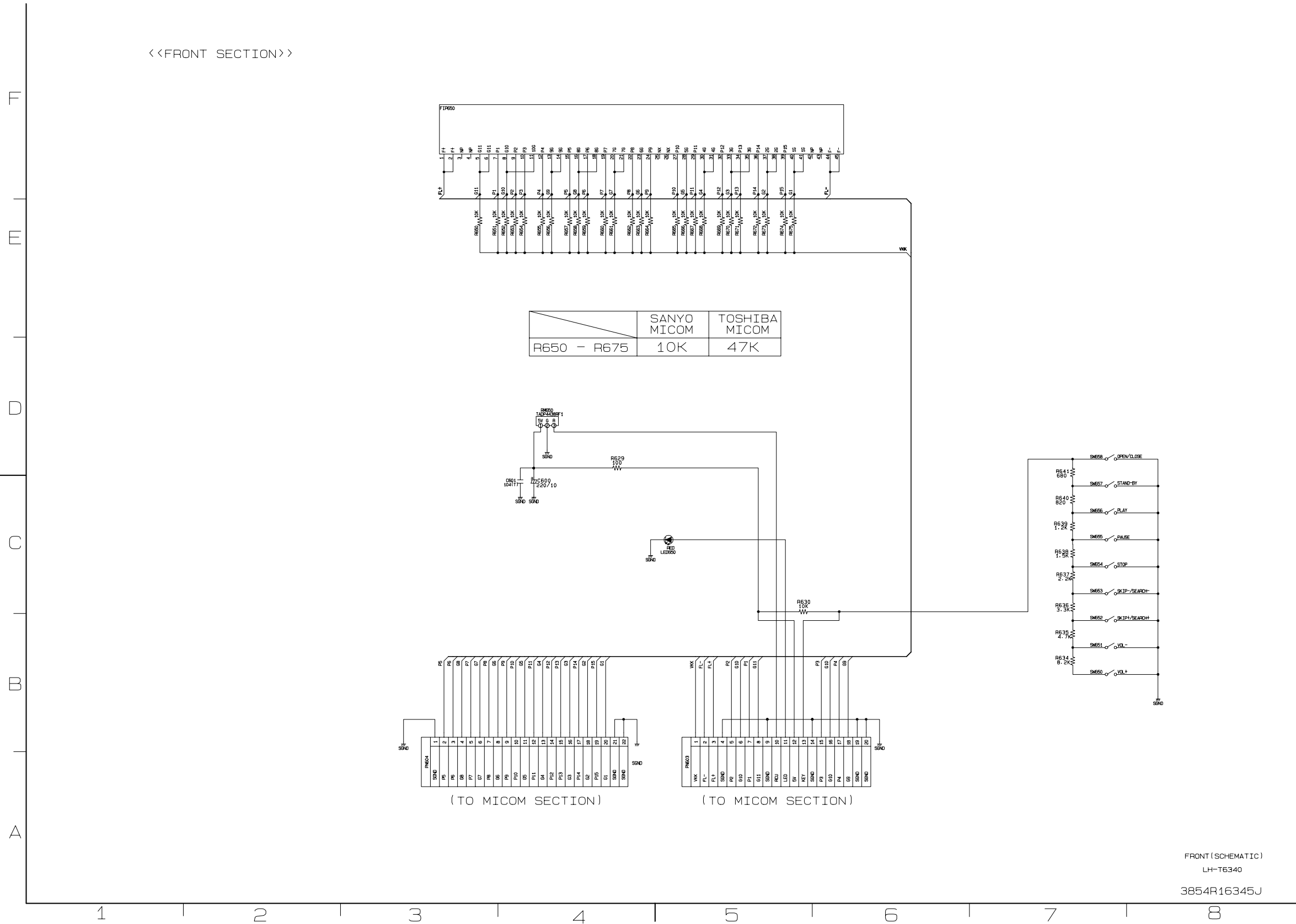
| Symbol NO | D111 | D112 | D113 | D114 | D115 | D116 | D117 | D118 | D119 | D120 | D121 | D122 | D123 | D124 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| KOREA     | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |
| USA       | 1    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |
| EUROPE1   | 0    | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |
| SAC       | 1    | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |
| EUROPE2   | 0    | 0    | 1    |      |      |      |      |      |      |      |      |      |      |      |
| AFRICA    | 1    | 0    | 1    |      |      |      |      |      |      |      |      |      |      |      |
| JAPAN     | 0    | 1    | 1    |      |      |      |      |      |      |      |      |      |      |      |
| EUROPE3   | 1    | 1    | 1    |      |      |      |      |      |      |      |      |      |      |      |

2) SPK & POWER OPTION

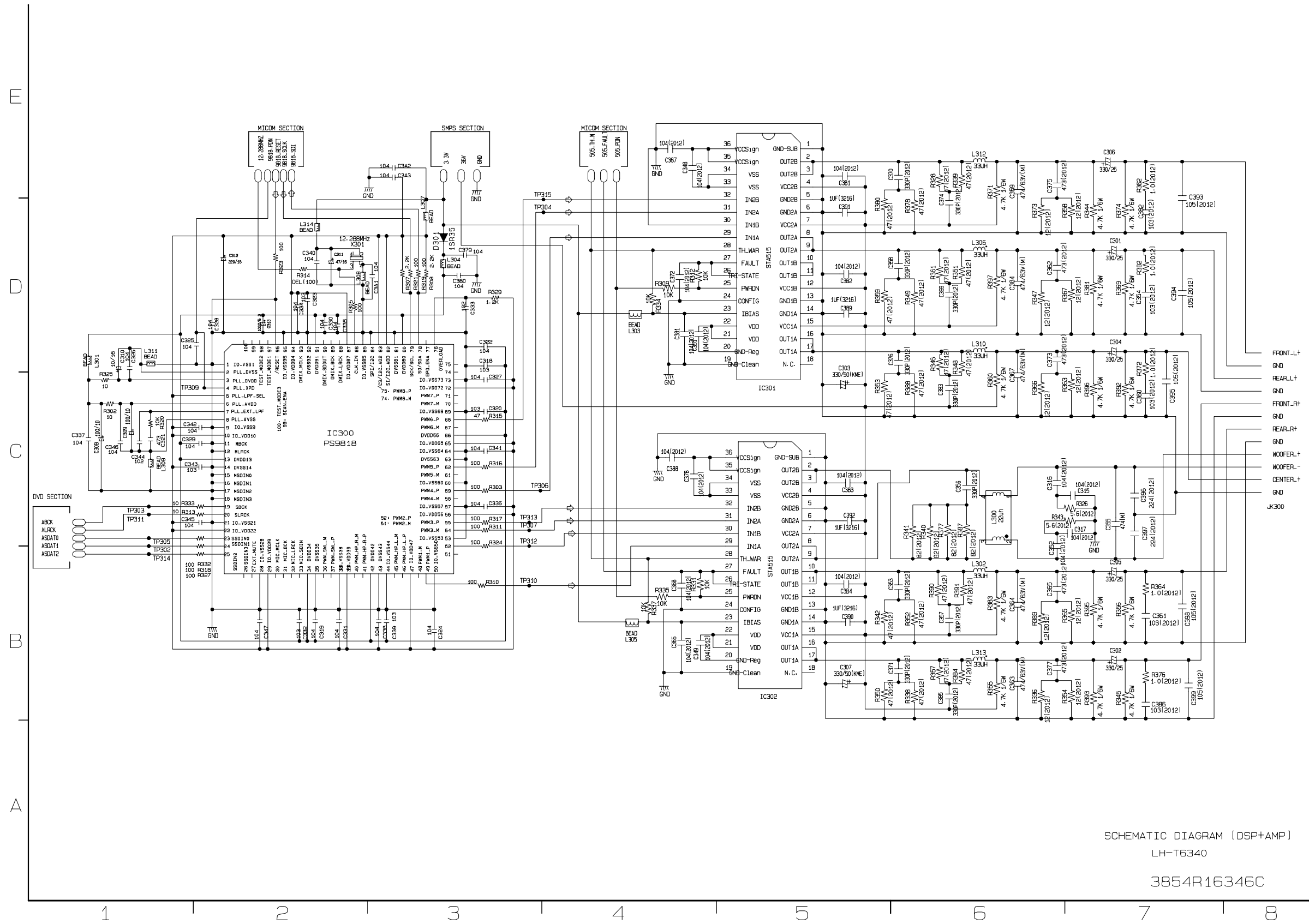
| Symbol NO | D121 | D122 | D123 | D124 |
|-----------|------|------|------|------|
| 300M      | 0    | 0    |      |      |
| 500M      | 1    | 0    |      |      |
| 700M      | 0    | 1    |      |      |
| 800M      | 0    | 0    |      |      |
| BATT.ON   |      |      | 0    | 0    |
| HALF TALL |      |      | 1    | 0    |
| TALL BOT  |      |      | 0    | 1    |
| WIRELESS  |      |      | 1    | 1    |

SCHEMATIC DIAGRAM(MICOM)  
LH-T6340  
3854R16346D

• FRONT SCHEMATIC DIAGRAM



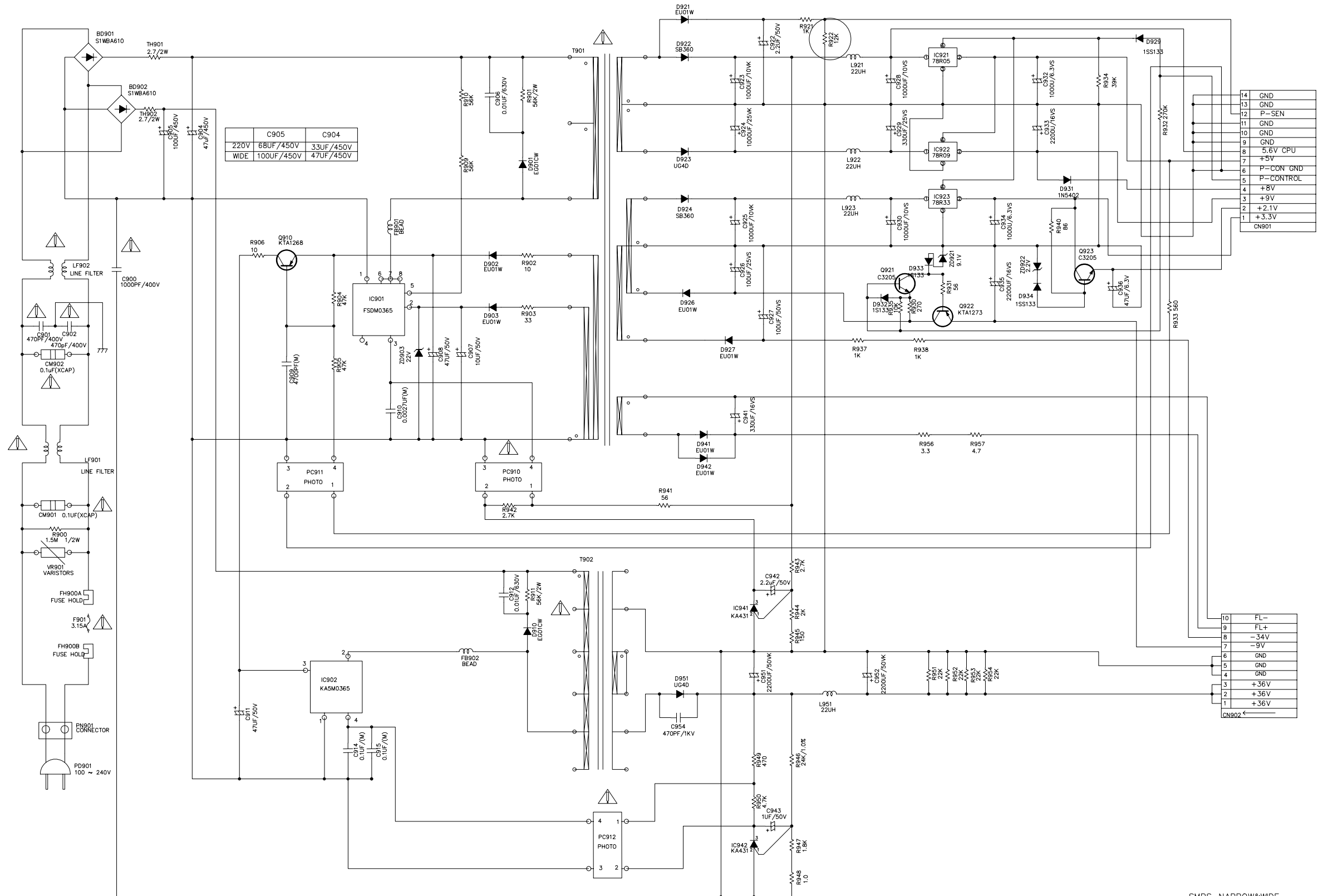
# • DSP&AMP SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM [DSP+AMP]  
LH-T6340  
3854R16346C



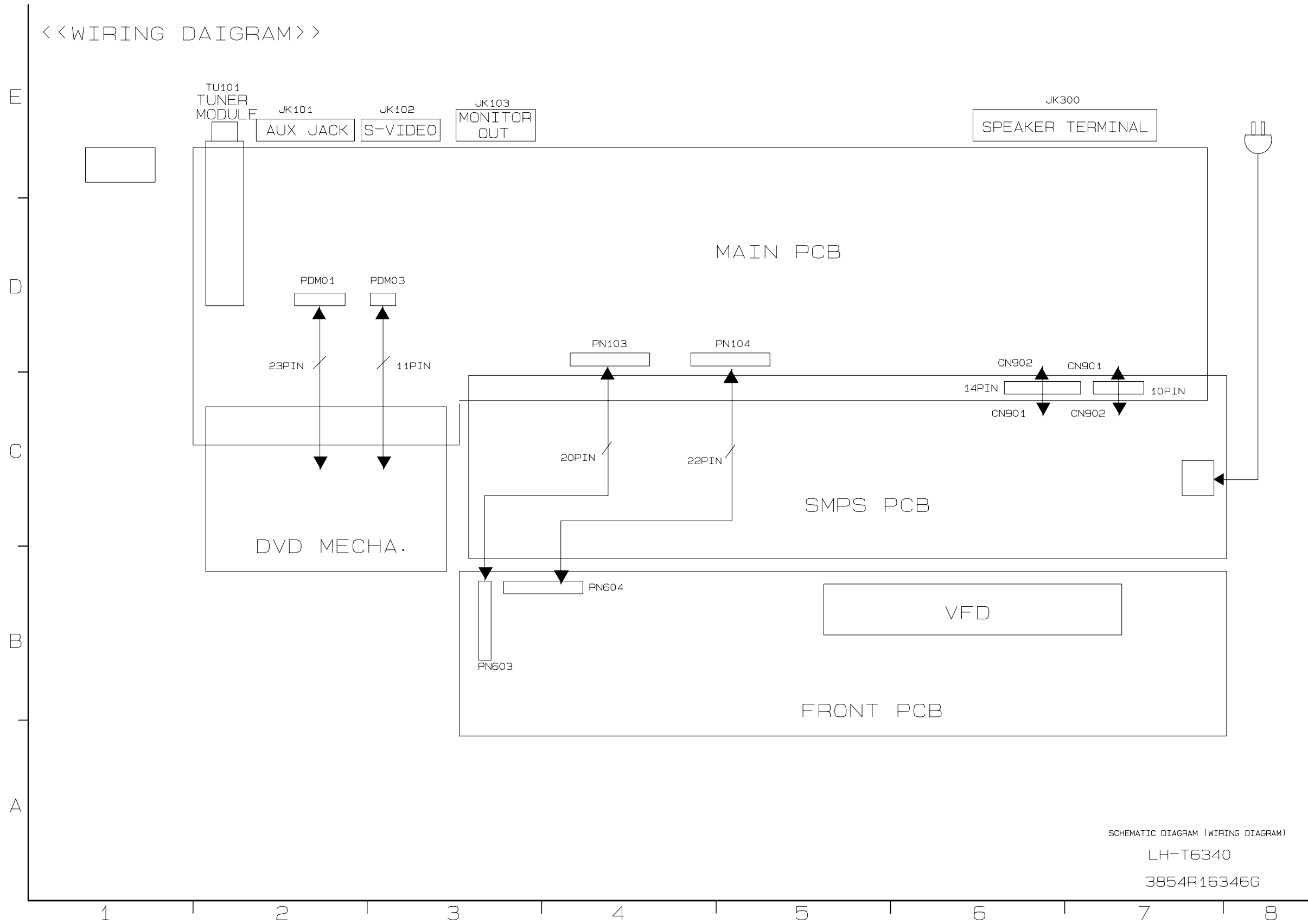
# • SMPS-NARROW&WIDE SCHEMATIC DIAGRAM



|    |           |
|----|-----------|
| 14 | GND       |
| 13 | GND       |
| 12 | P-SEN     |
| 11 | GND       |
| 10 | GND       |
| 9  | GND       |
| 8  | +5.6V CPU |
| 7  | +5V       |
| 6  | P-CON GND |
| 5  | P-CONTROL |
| 4  | +8V       |
| 3  | +9V       |
| 2  | +2.1V     |
| 1  | +3.3V     |
|    | CN901     |

|    |       |
|----|-------|
| 10 | FL-   |
| 9  | FL+   |
| 8  | -34V  |
| 7  | -9V   |
| 6  | GND   |
| 5  | GND   |
| 4  | GND   |
| 3  | +36V  |
| 2  | +36V  |
| 1  | +36V  |
|    | CN902 |

# WIRING DIAGRAM



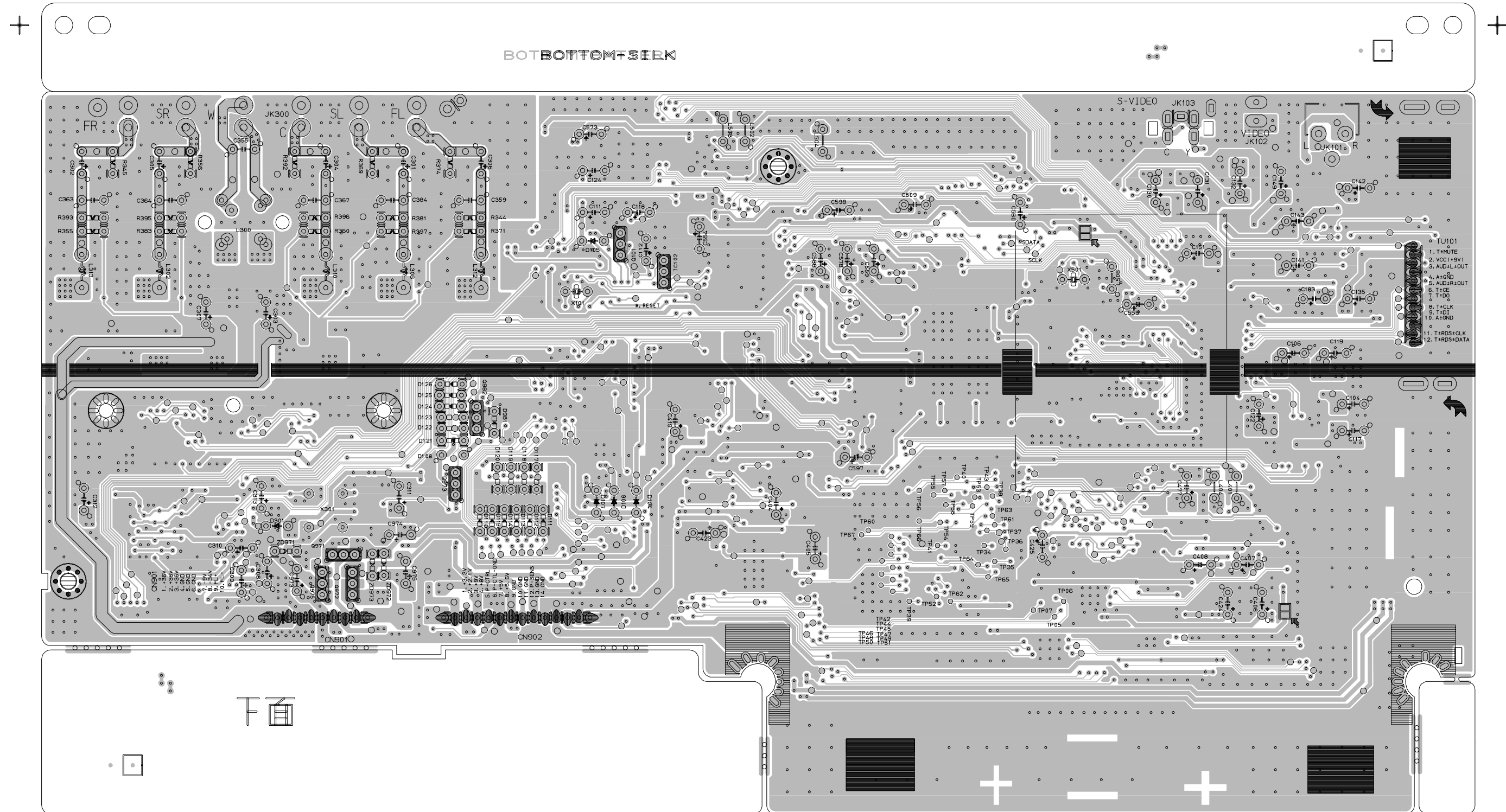
SCHEMATIC DIAGRAM (WIRING DIAGRAM)

LH-T6340

3854R16346G

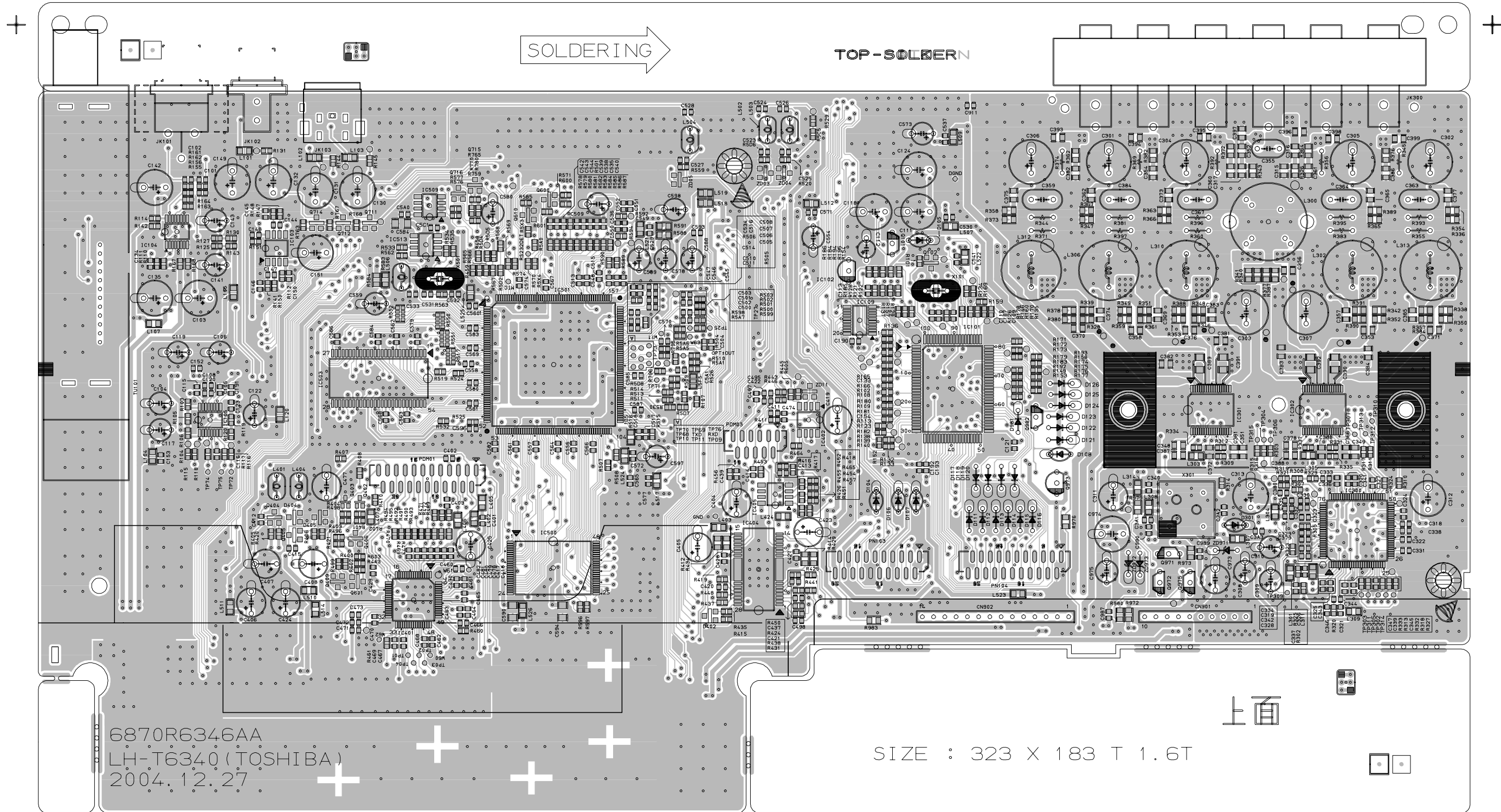
# PRINTED CIRCUIT BOARD DIAGRAMS

## MAIN/DVD P.C. BOARD DIAGRAM (BOTTOM)

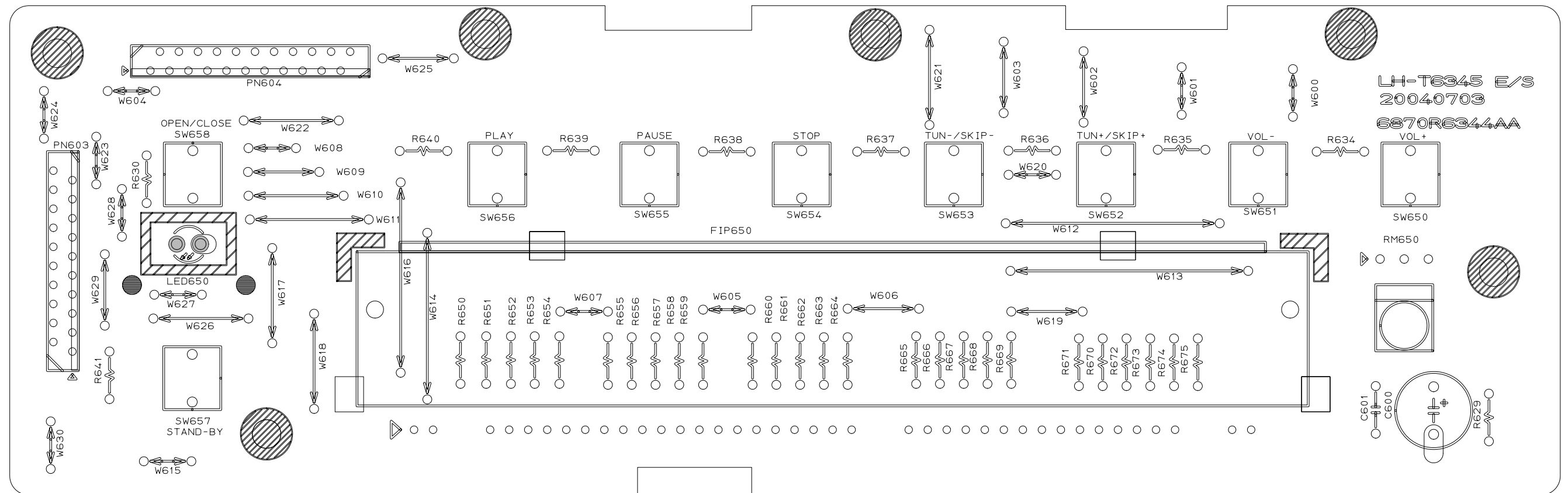




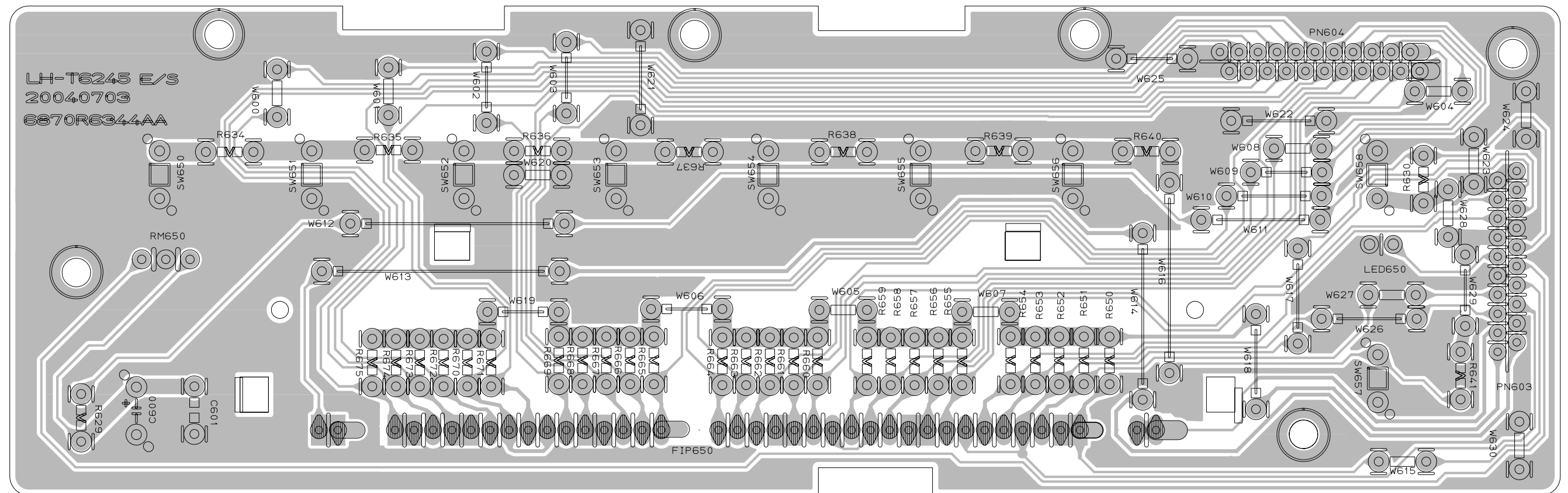
• MAIN/DVD P.C. BOARD DIAGRAM (TOP)



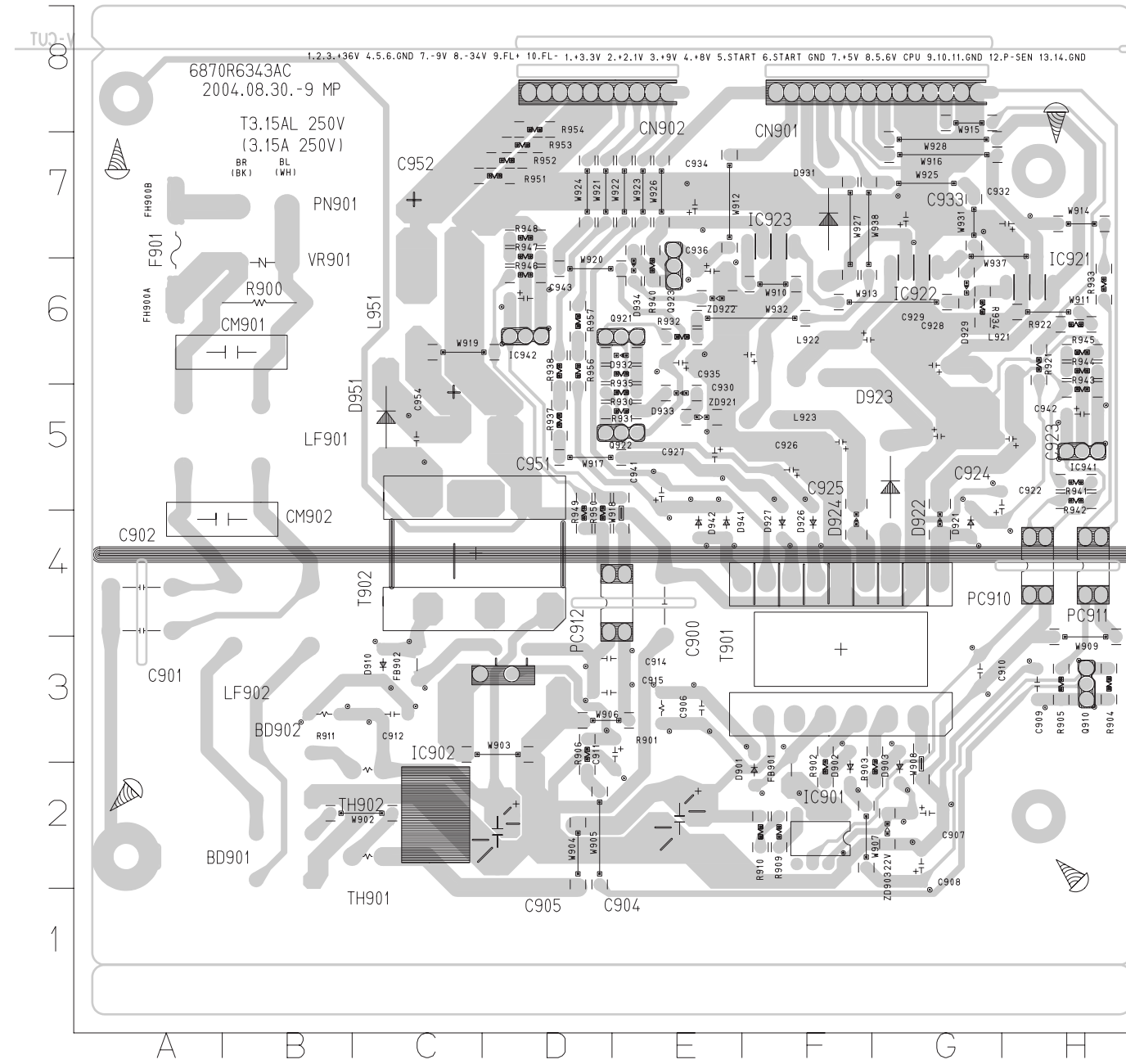
• FRONT P.C. BOARD (TOP)



• FRONT P.C. BOARD (BOTTOM)



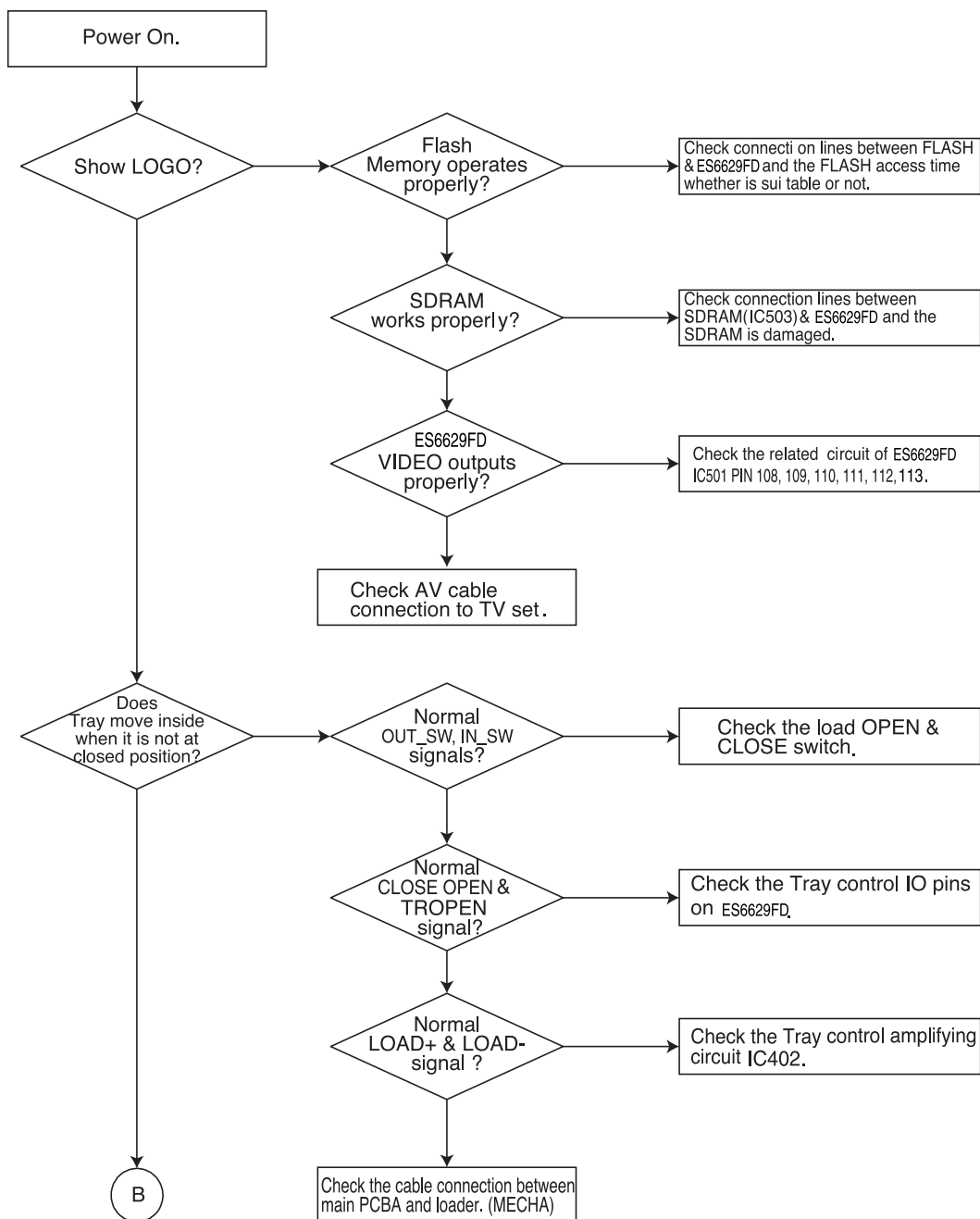
• SMPS P.C. BOARD



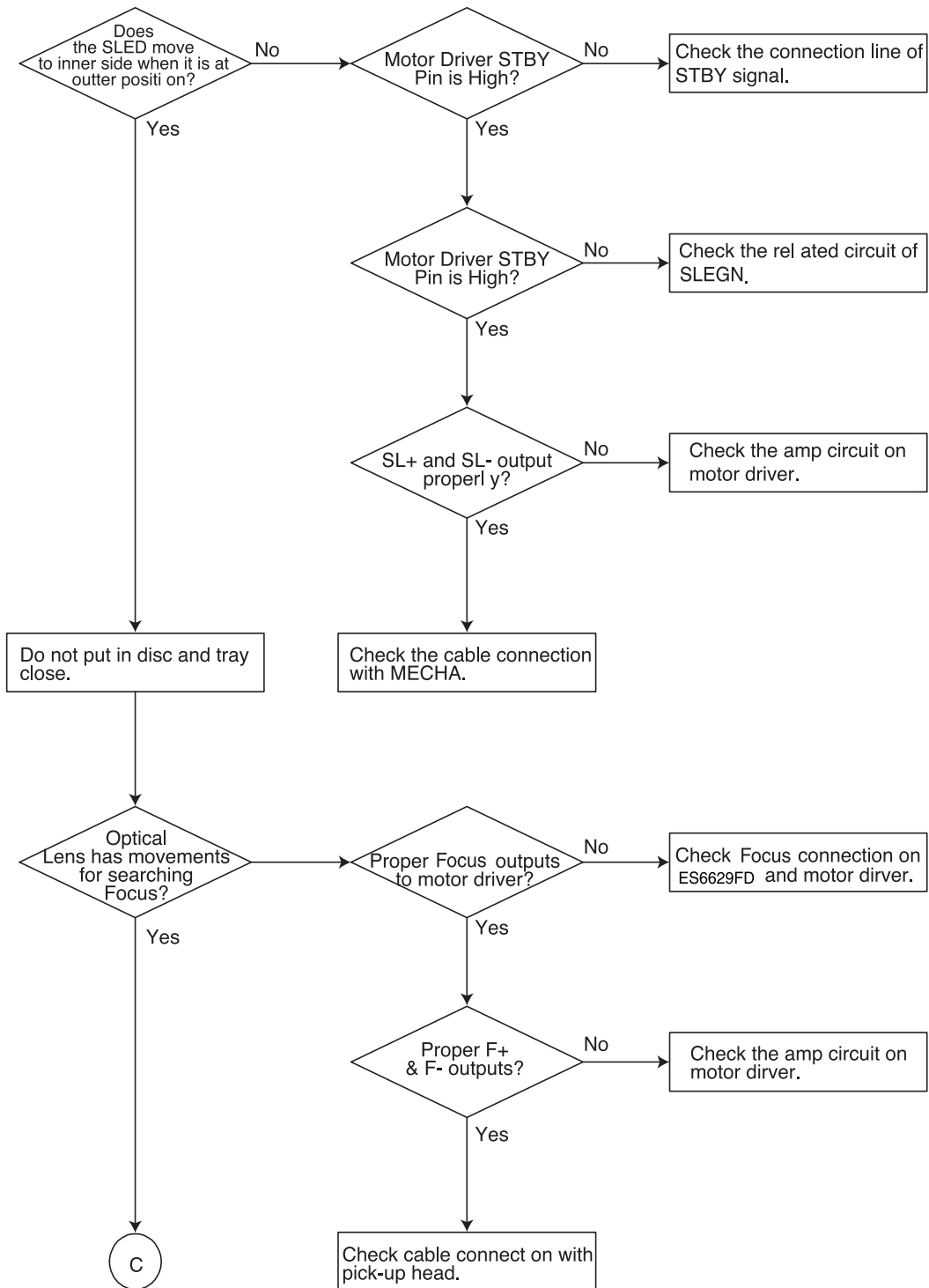
# SECTION 3. DVD PART

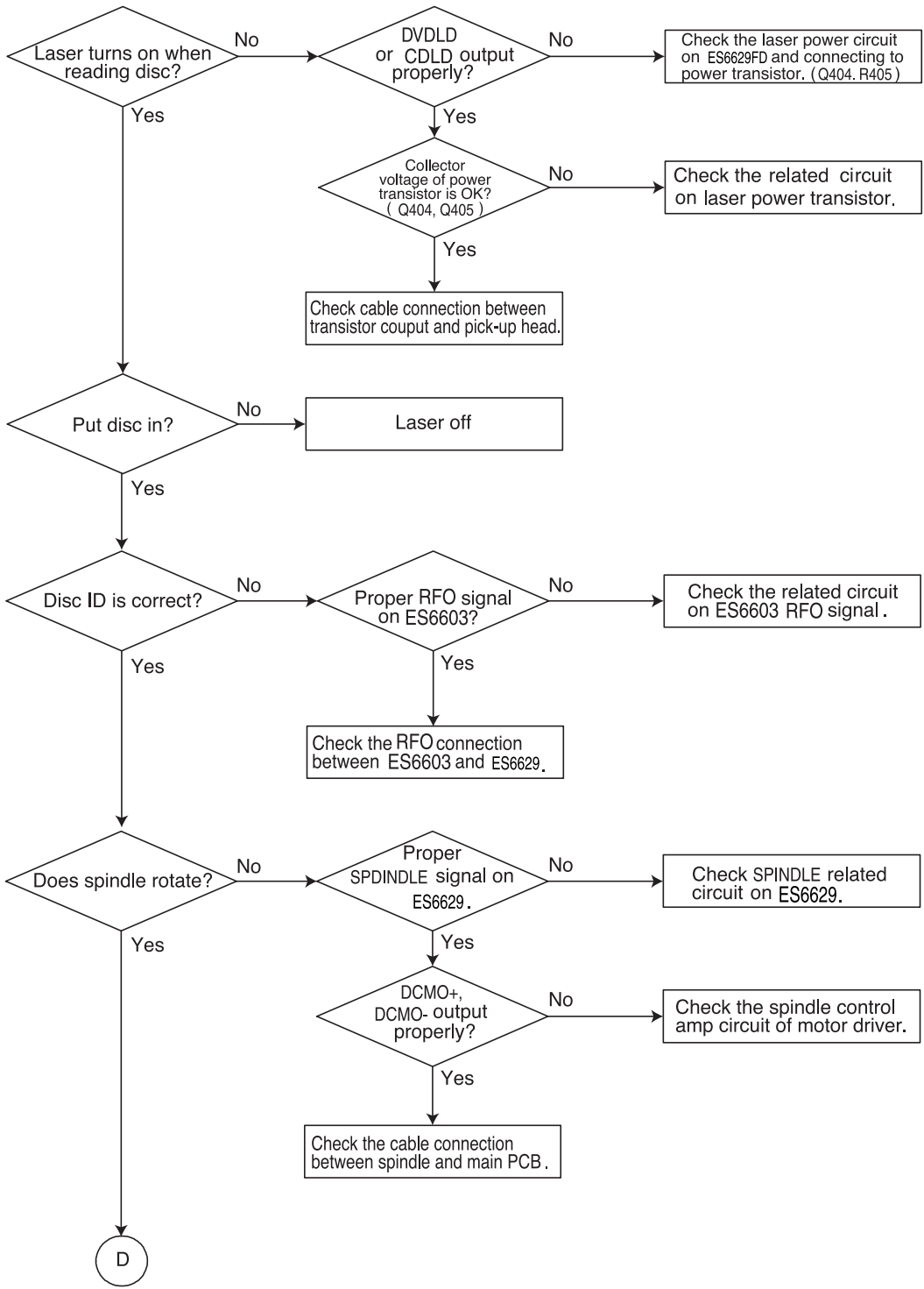
## TROUBLESHOOTING GUIDE

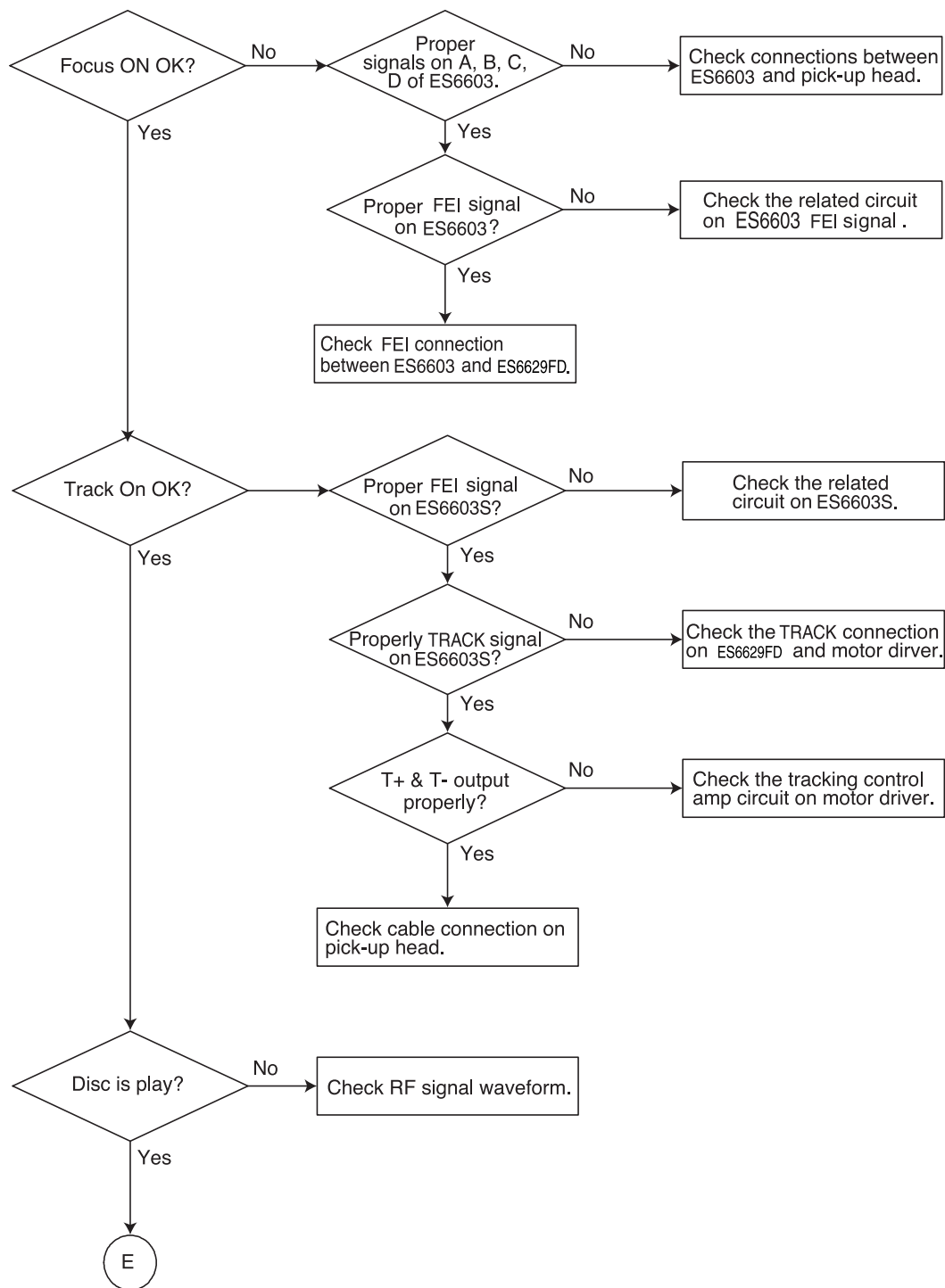
### 1. Test & debug flow

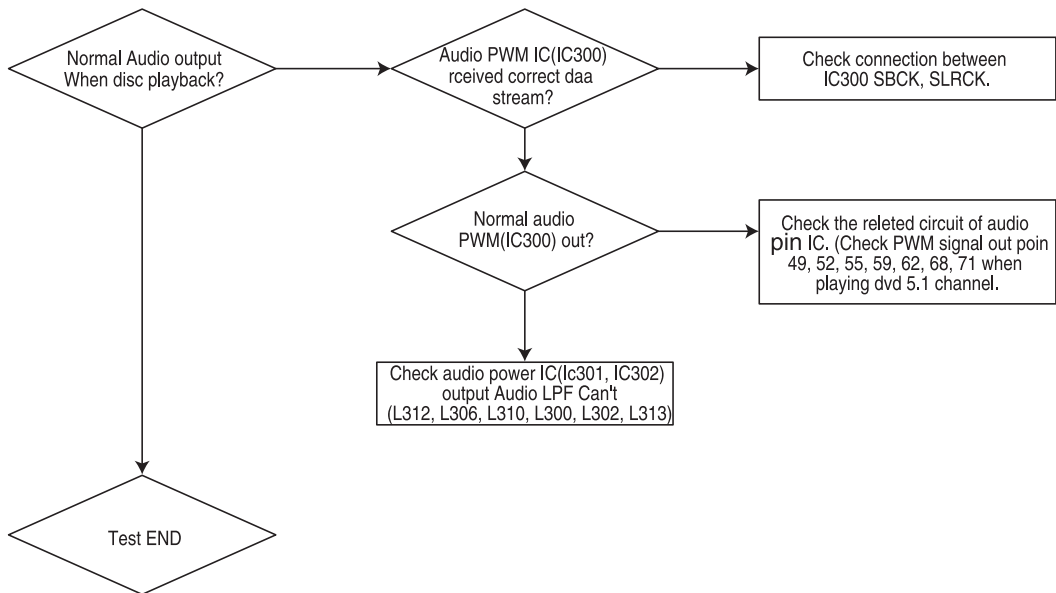








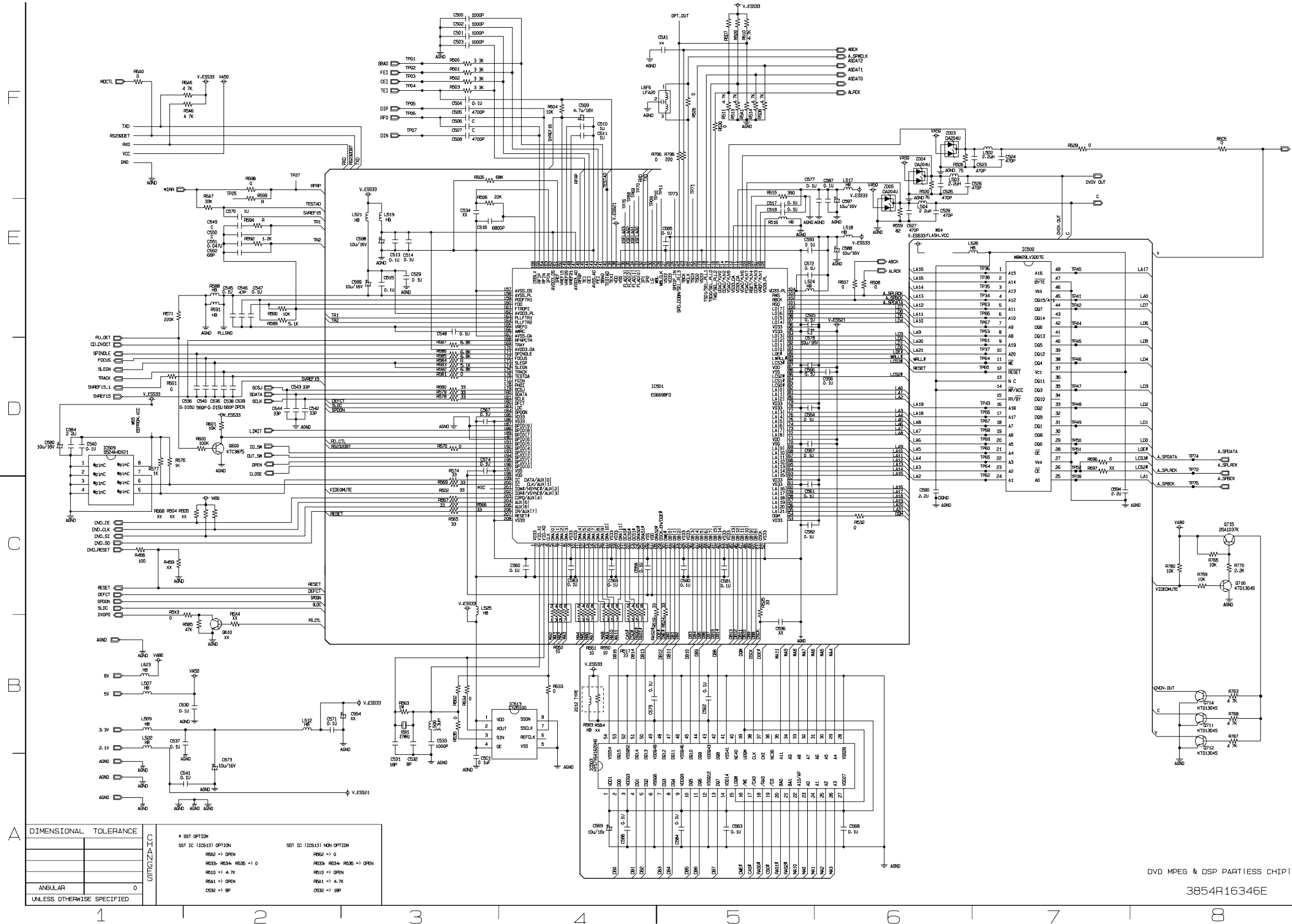






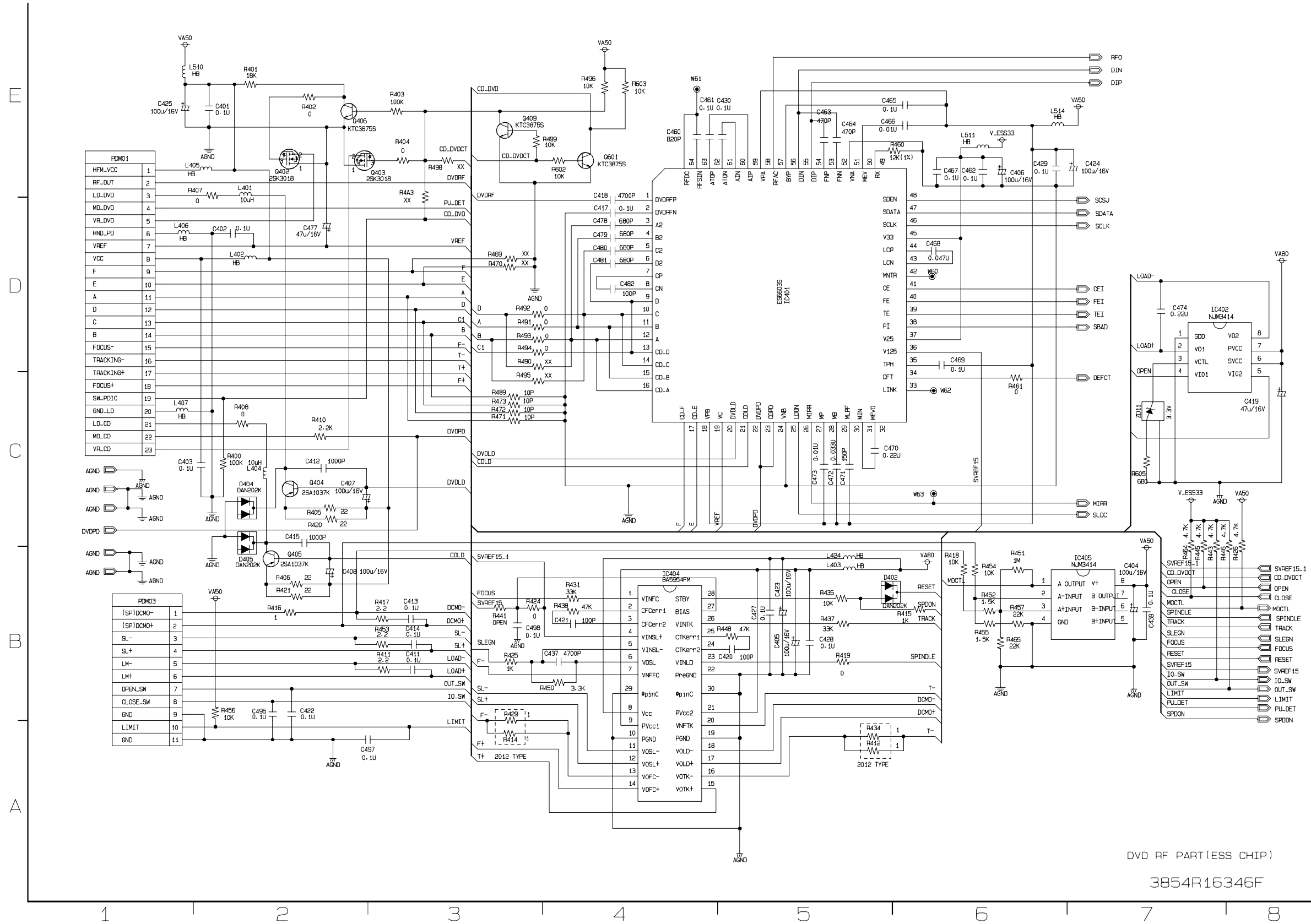
# DVD SCHEMATIC DIAGRAMS

## DVD MPEG & DSP SCHEMATIC DIAGRAM



DVD MPEG & DSP PART(ESS CHIP)  
3854R16346E

# DVD RF SERVO SCHEMATIC DIAGRAM

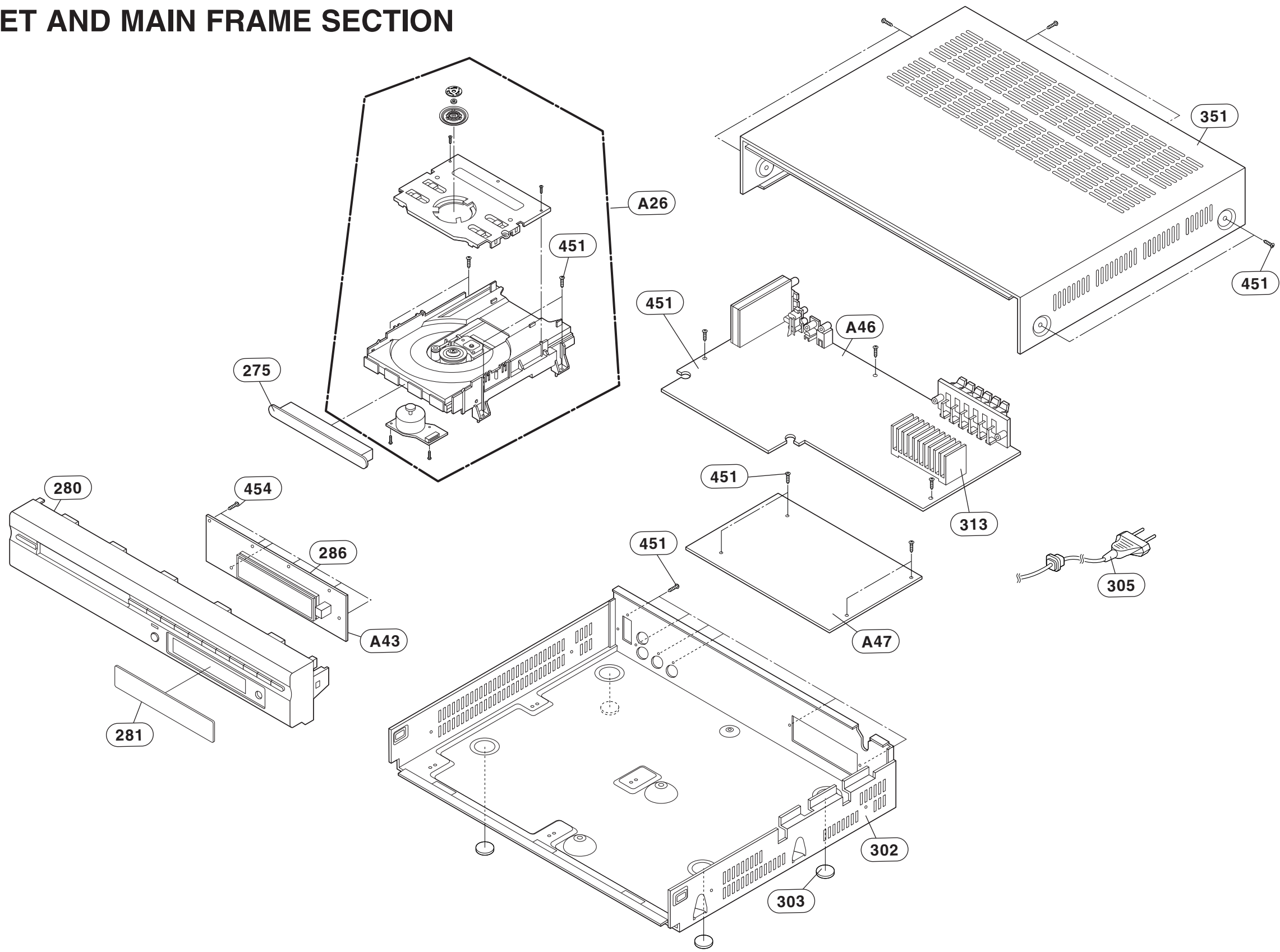


DVD RF PART (ESS CHIP)

3854R16346F

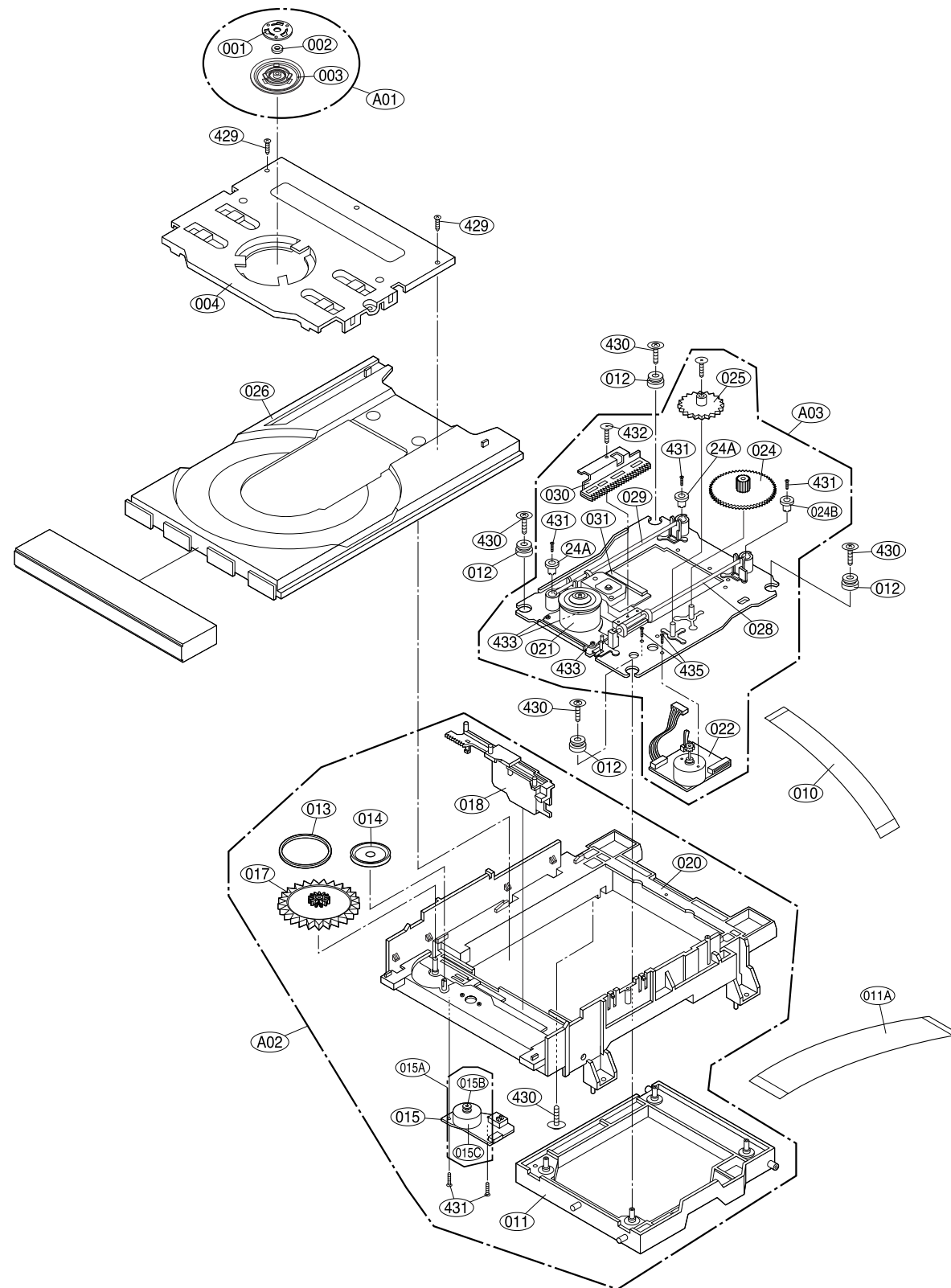
# SECTION 4. EXPLODED VIEWS

## □ CABINET AND MAIN FRAME SECTION





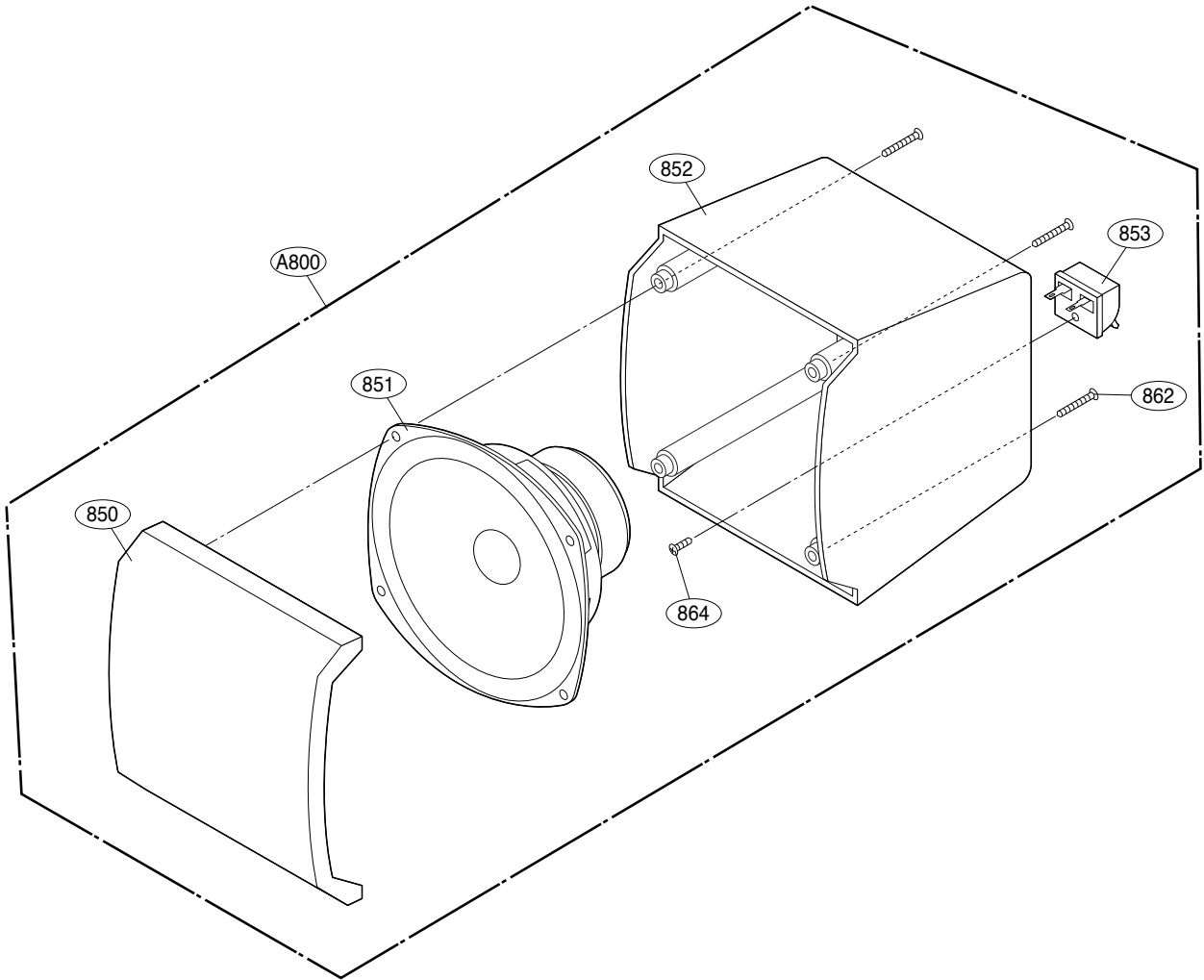
• DECK MECHANISM EXPLODED VIEW



| LOCA. NO. | PART NO.    | DESCRIPTION            | SPECIFICATION                  |
|-----------|-------------|------------------------|--------------------------------|
| A26       | 6721RJ0856E | DECK ASSEMBLY,AUDIO    | DECK/MECHA DP-7T(HZ)-ESS -(M:M |
| A01       | 4861R-0016D | CLAMP ASSEMBLY         | DECK/MECHA DISC DP-7C(7A) -HZ  |
| A02       | 3041R-M040A | BASE ASSEMBLY          | MAIN DP-7T-HZ                  |
| A03       | 3041R-M061D | BASE ASSEMBLY          | SLED DP-7A-HZ ESS (M: MITSUMI  |
| 001       | 3300R-0547A | PLATE                  | CLAMP                          |
| 002       | 5016H-1016B | MAGNET                 | CLAMP(LDM-R608,10*5,1*1.5T)    |
| 003       | 4860R-0021A | CLAMP                  | UPPER DP7                      |
| 004       | 4930R-0402A | HOLDER                 | CLAMP DP-7A                    |
| 010       | 6850R-GK22Z | CABLE,FLAT             | P=1.0 FFC UL2896(0.05X0.65) 11 |
| 011       | 3210R-M002A | FRAME                  | UP/DOWN MOLD DP7C              |
| 011A      | 6850R-JW16B | CABLE,FLAT             | P=1.0 FFC UL2896(0.035X0.7) 23 |
| 012       | 5040R-0075D | RUBBER                 | DAMPER DP7 (YAMAUCHI 30)       |
| 013       | 4400R-0006B | BELT                   | DECK/MECHA DP2-5, DP7C,DP7A OT |
| 014       | 4470R-0055A | GEAR                   | PULLEY                         |
| 015       | 6871RJ4415A | PWB(PCB) ASSEMBLY,JACK | PWB(PCB) TOTAL LOADING-HZ      |
| 015A      | 4681R-1023G | MOTOR ASSEMBLY         | DECK/MECHA LOADING-HZ          |
| 015B      | 4560R-0008A | PULLEY                 | MOTOR                          |
| 015C      | 4680R-E010A | MOTOR(MECH)            | FEEDING BCZ3B51 SANKYO FOR DP7 |
| 017       | 4470R-0056A | GEAR                   | LOADING                        |
| 018       | 4974R-0023A | GUIDE                  | UP/DOWN                        |
| 020       | 3040R-D005A | BASE                   | MAIN DP-7T MOLD (SLIM)         |
| 021       | 4680R-C011A | MOTOR(MECH)            | SPINDLE JCL9B68 SANKYO FOR COM |
| 022       | 4681R-0034D | MOTOR ASSEMBLY         | DECK/MECHA FEEDING DP-7C(7A) - |
| 024       | 4470R-0131A | GEAR                   | PINION DP7C                    |
| 024A      | 5006R-0044A | CAP                    | SKEW-T DP7C                    |
| 024B      | 5006R-0043A | CAP                    | SKEW DP7C                      |
| 025       | 4470R-0130A | GEAR                   | MIDDLE DP7C                    |
| 026       | 3390R-0026A | TRAY                   | DVD DP-7T MOLD DISC            |
| 028       | 4370R-0082B | SHAFT                  | DECK/MECHA PU R DP-7C OTHER    |
| 029       | 4370R-0082A | SHAFT                  | PU DP-7C                       |
| 030       | 4471R-0013D | GEAR ASSEMBLY          | DECK/MECHA RACK DP-7C(7A) -HZ  |
| 031       | 6716DPH005B | PICK UP,DVD            | PVR-502W R52 0219 MITSUMI PLAY |
| 429       | 1SZZR-0012A | SCREW,DRAWING          | B-TITE                         |
| 430       | 1SZZH-1003A | SCREW,DRAWING          | + D2.0 6MM SWRCH16A/NIY 4.5MM  |
| 431       | 1SZZH-1007B | SCREW,DRAWING          | + D2.0 6MM SWRCH16A/ZNBK 4MM 1 |
| 432       | 1SZZR-0023B | SCREW,DRAWING          | + 1 D1.7 L6.0 SWRCH16A/FZY RAC |
| 433       | 1SZZR-0050A | SCREW,DRAWING          | + 1 D2.0 L4.5 SWRCH16A/ZNY S-T |
| 435       | 1SZZR-0011A | SCREW,DRAWING          | MACHINE                        |

# SECTION 5. SPEAKER SECTION

□ MODEL : LHS-T6347T



□ MODEL : LHS-T6347W

