

Service  
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# Service Manual



## TABLE OF CONTENTS

	Page
Technical Specifications .....	1-2
Safety Instruction, Warnings and Notes .....	1-3
Mechanical and Dismantling Instruction .....	2
Region Code, Software version and upgrades .....	3
Trouble Shooting Chart .....	4
Block diagram and Wiring diagram .....	5
Electrical Schematics and Layouts:	
Loader Module ( <i>For information only</i> ) .....	6
Front Board .....	7
Karaoke Amplifier & Echo Boards .....	8
Power Board .....	9
Mechanical Exploded view & parts list .....	10
Revision List .....	11



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3139 785 30471

Version 1.1



# PHILIPS

# Technical Specifications

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## Playback system

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DVD Video  
 Video CD & SVCD  
 CD (CD-R and CD-RW)  
 MP3 CD  
 DVD+RW / DVD+R (finished)

## TV standard (PAL/50Hz) (NTSC/60Hz)

---

Number of lines	625	525
Playback	Multi standard	(PAL/NTSC)

## Video performance

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Video output	1Vpp into 75ohm
S-video output	Y: 1Vpp into 75ohm C: 0.3Vpp into 75ohm
Component video output	Y: 1Vpp into 75ohm Pb/Cb Pr/Cr: 0.7Vpp into 75ohm

## Audio format

---

Digital	MPEJ	Compressed Digital
	Dolby Digital	16, 20, 24bits
	PCM	fs, 44.1, 48, 96kHz

Analogue Stereo Sound

Dolby surround-compatible downmix from Dolby Digital multi-channel sound on 2speakers.

## Audio performance

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DA converter	24bits
DVD	fs 96kHz 4Hz---44kHz
DVD/SVCD	fs 48kHz 4Hz---22kHz
SVCD/VCD/CD	fs 44.1kHz 4Hz---20kHz
Signal-Noise (1kHz)	>90dB
Dynamic Range (1kHz)	>80dB
Cross talk (1kHz)	>80dB
Distortion and Noise (1kHz)	>80dB
MPEG MP3	MPEG Audio L3

## Connections

---

Y output	Cinch (green)
Pb/Cb output	Cinch (blue)
Pr/Cr output	Cinch (red)
S-video output	Mini DIN, 4pins
Video output	Cinch yellow
Audio L+R output	Cinch (white/red)
Digital output	1 coaxial
	IEC958 for CDDA/LPCM
	IEC1937 for MPEG1/2,

## Cabinet

---

Dimensions (w X h X d)	228 X 56 X 296mm
Weight	Approximately 2.32

\*Typical playing time for movie with 2 spoken languages and 3 subtitle languages.

Specifications subjects to change without prior notice.

# Safety instructions, Warnings, Notes

## Safety instructions

---

### 1. General safety

Safety regulations require that during a repair:

- . Connect the unit to the mains via an isolation transformer.
- . Replace safety components indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

- . Route the wires/cables correctly, and fix them with the mounted cable clamps.
- . Check the insulation of the mains lead for external damage.
- . Check the electrical DC resistance between the mains plug and the secondary side:
  - 1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
  - 2) Set the mains switch the "on" position (keep the mains cord unplug).
  - 3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
  - 4) Repair or correct unit when the resistance measurement is less than 1MΩ.
  - 5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
  - 6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

### 2. Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type	: Semiconductor laser GaAlAs
Wavelength	: 650nm (DVD)
	: 780nm (VCD/CD)
Output power	: 20mW (DVD+RW writing)
	: 0.8mW (DVD reading)
	: 0.3 mW (VCD/CD reading)

Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

## Warnings

---

### 1. General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

- 1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
- 2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply (pos. 1005), including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is "off!"). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A "lighting stroke" and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is "on".

### 2. Laser

. The use of optical instruments with this product, will increase eye hazard.

. Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.

. Repair handling should take place as much as possible with a disc loaded inside the player.

. Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.
--

Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

# Mechanical and Dismantling Instructions

## Dismantling Instruction

In this paragraph some tips are given to dismantle the DVD590M player. For item number, refer to the exploded view.

**Step1:** Remove 4 screws at the Rear Cover. (Figure 1)

**Step2:** Push the Top Cover toward the Rear. (Figure 2)

**Step3:** Remove 5 screws at the Inner Metal Plate and then open it. (Figure 3)



Figure 1

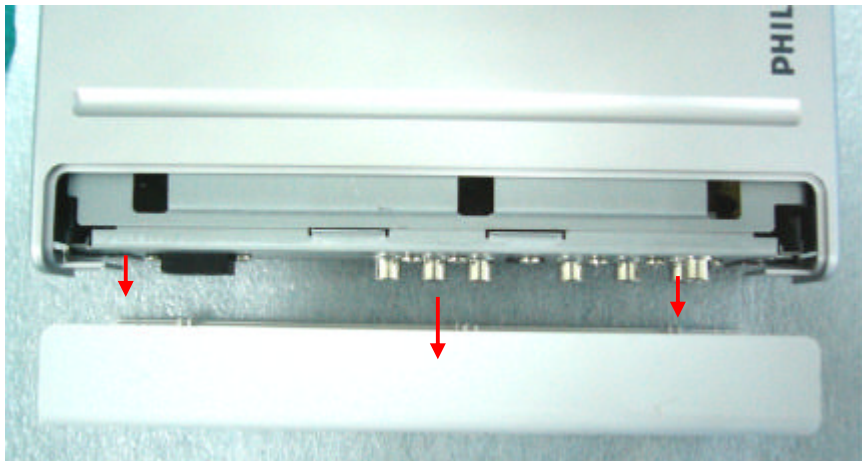


Figure 2

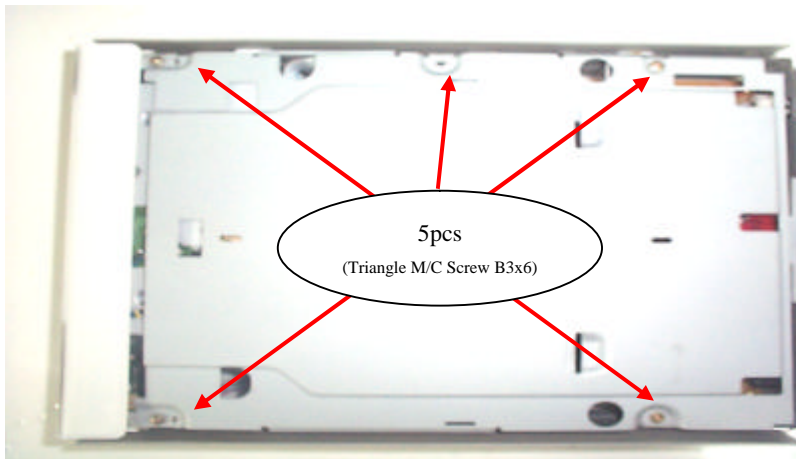


Figure 3

## Mechanical and Dismantling Instructions

**Step4:** Remove the metal plate, the Loader and other modules will be visible. (Figure 4)

**Step5:** Use a small flat tip screw driver to release the snaps on the Front Panel and gently pull the Panel out from the set. (Figure 5)

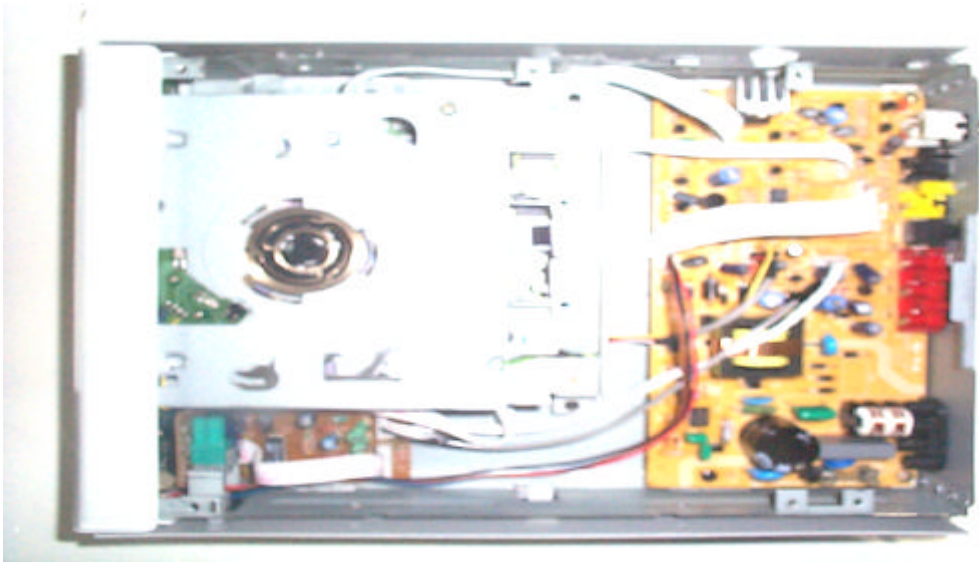


Figure 4

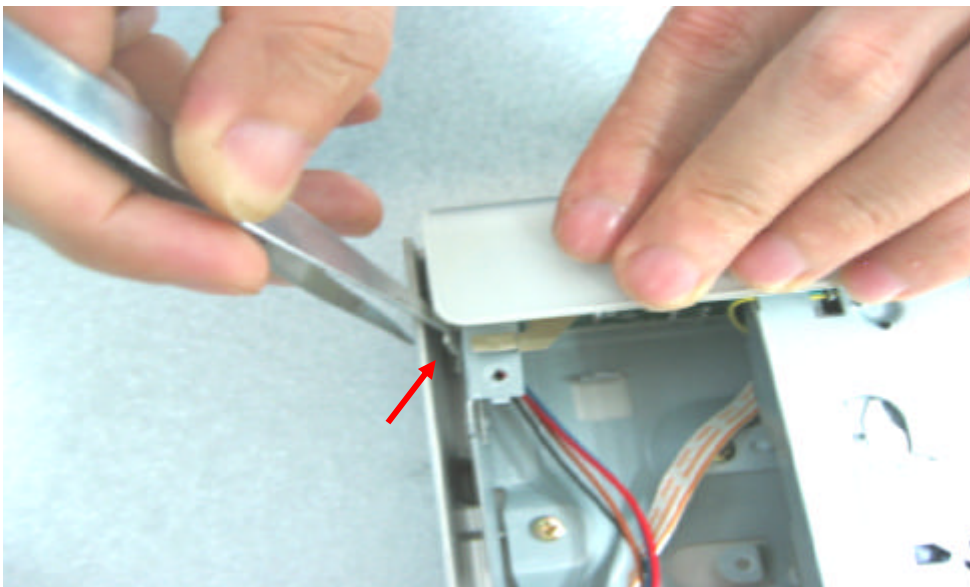


Figure 5

**Step6:** Remove 4 screws that added ellipses at both sides of the Loader and disconnect 4 wire connections as the arrowhead aim. (Figure 6)

**Step7:** Remove the power board. First remove the 5 screws that added ellipses (Figure 7), secondly remove the 8 screws inside the big ellipse, (Figure 8)

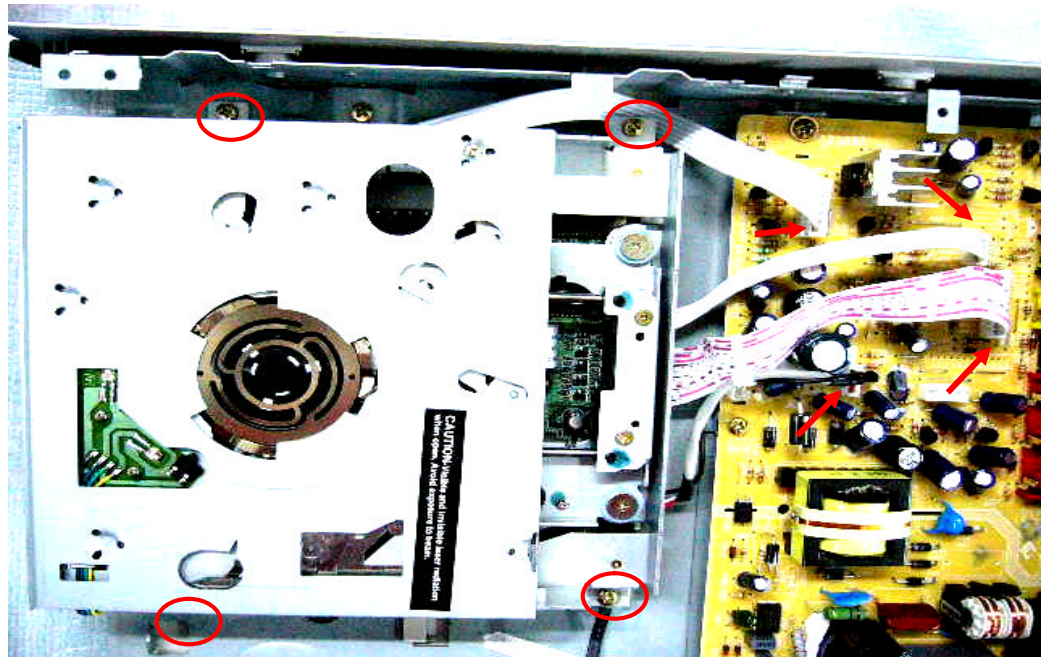


Figure 6



Figure 7

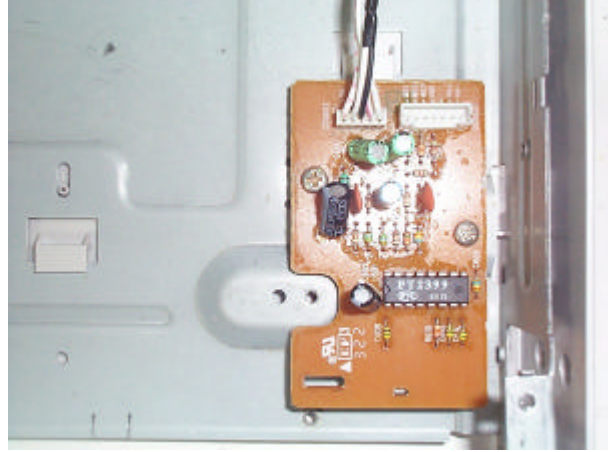


Figure 8

. Karaoke Amplifier Board & Echo Board

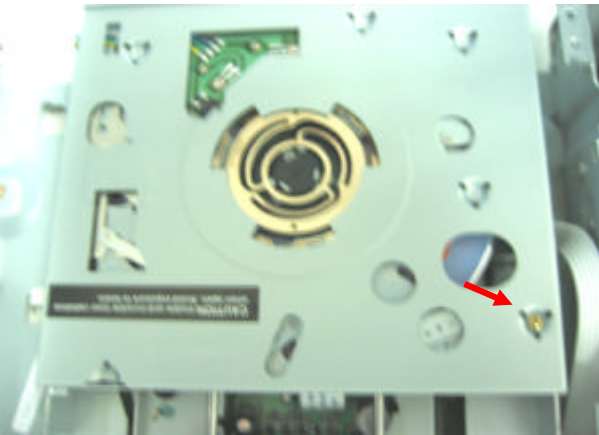


Karaoke Amplifier Board

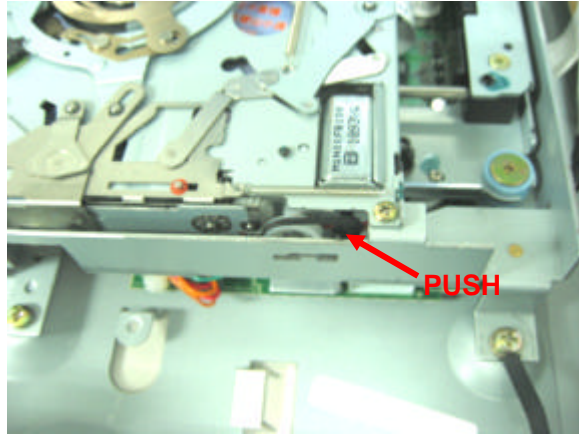


Karaoke ECHO Board

. How to remove the disc that is jammed in the loader?



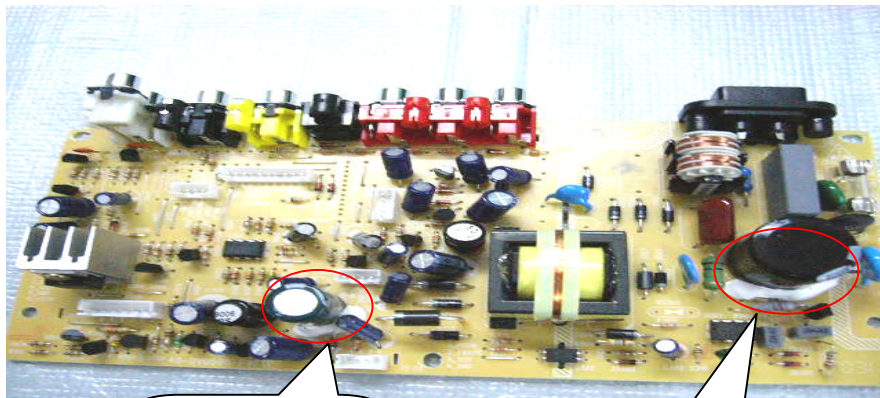
Firstly, remove the screw on the Loader cover.



Secondly, remove the Loader cover and push the Strap forward until the Disk come out.



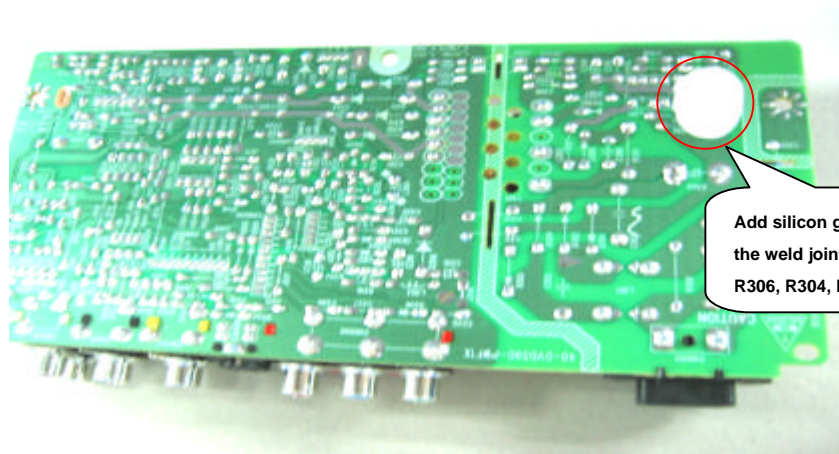
**. ATTENTION OF REPAIRING**



Add silicon glue (C326)

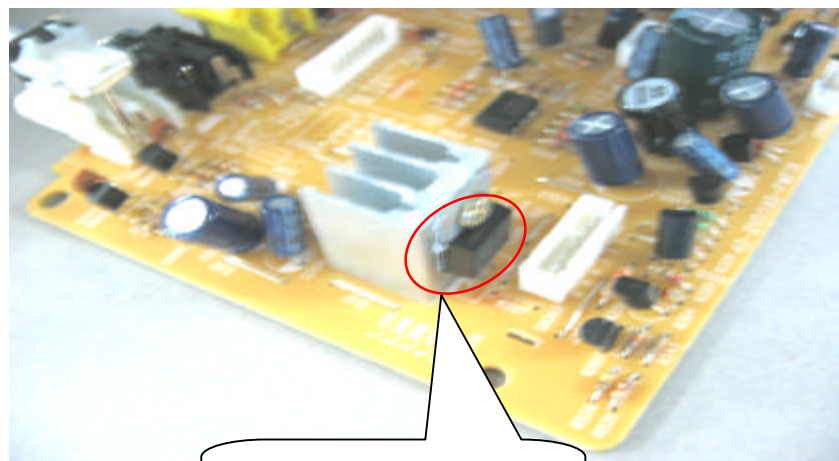
Add silicon glue (C305)

Add silicon glue around the two capacitors



Add silicon glue cover the weld joints of Q301, R306, R304, R305, R302.

Add silicon glue on the PCB Pads



Add the conductive silicon glue between the IC and the heat sink

## REGION CODE CHANGE & SOFTWARE UPGRADE

### Upgrade Software

#### A. Prepare Upgrade disc

1. Start the CD Burning software and create a new CD project (data Disc) with the following settings:
  - Volume Label: ALICDROM
  - File System: ISO9660
  - Format: Mode1: CDROM
  - Record Mode: Single Session (Track-at-once), Finalized CD
2. Unzip the zip archive file and place the 2 folders (1 folder with 2 files & 1 folder with 1 dummy file) into the root directory of the new CD project.
3. Burn the data onto a blank CDR

#### B. Procedure for Software upgrade

1. Power up the set and insert Upgrade CDROM.
2. The set starts reading disc & response with the following display TV screen:
 

```
FIRMWARE UPGRADING
PLEASE WAIT A MOMENT
.....
```
3. After about 1 minute the TV screen will display:
 

```
UPGRADE SUCCESS
PLEASE TURN OFF
```
4. The Upgrade CDROM will eject when the upgrade is completed, removed the Upgrade CDROM.

Caution: The set must not be power off during upgrading, in that case the decoder board will be damaged.

#### Reading out the software version to confirm upgrading

1. Power up the set and press <Eject> button.
2. Press <Disc Menu> <1> <9> on the remote control.
3. The software version and other informations are display on the TV screen as follows:
 

```
ALI SYSTEM SETUP
DATE:          yyyyymmdd (= Version of application
                software)
MPEG F/W:      xx.xx.x.x (software version of MPEG)
MPEG H/W:      xx-xx-xxx
SERVO F/W:     xxxxx (software version of Servo)
SERVO H/W:     xxxxx.xx
VENDER:        PHILIPS
VENDER VER:    590AP
DISK TYPE:     NTSC
DISABLE VCD    OFF
REGION CODE    3
PARENTAL CC   8
PARENTAL PW    0000
```

### Changing the Region Code

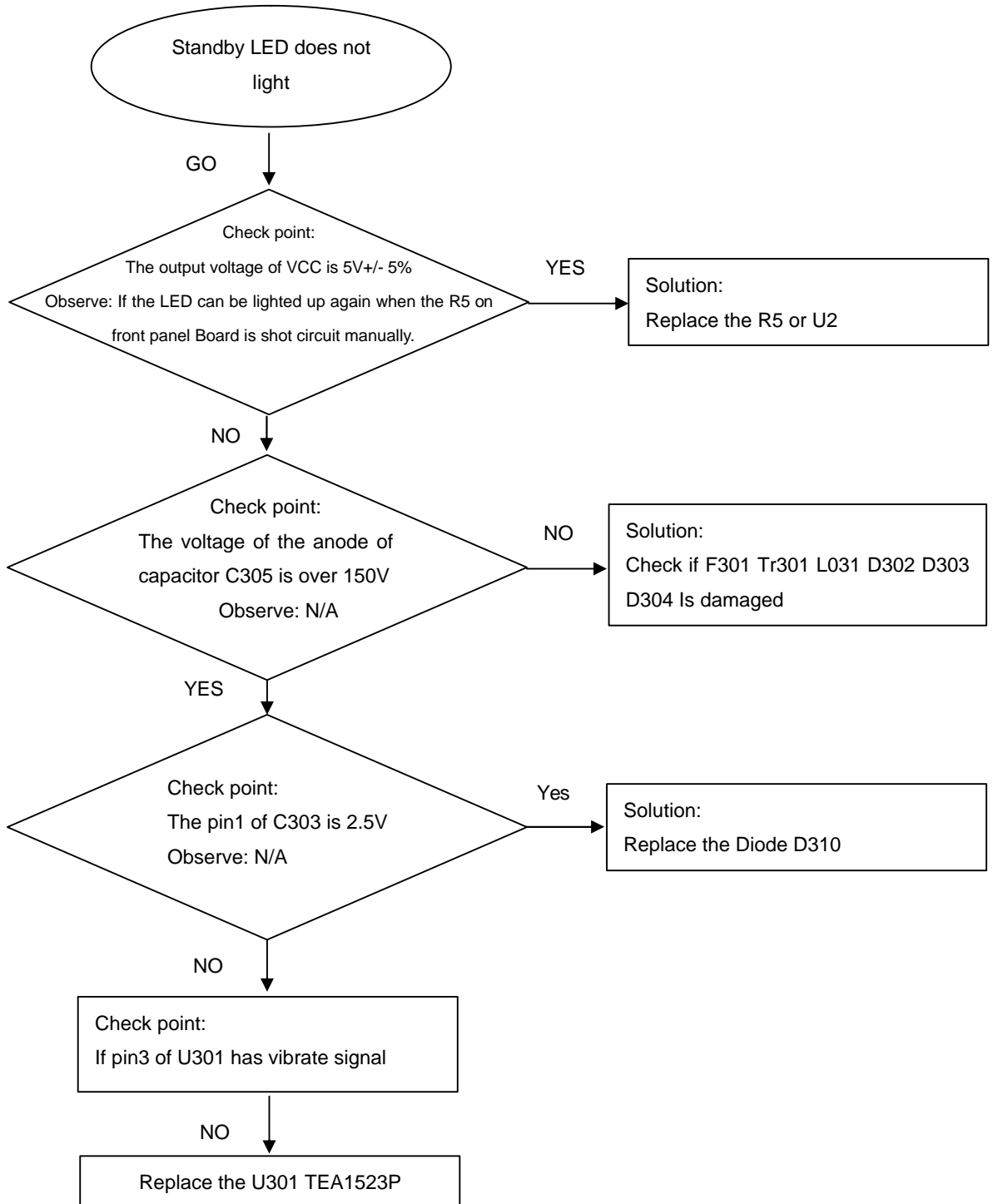
1. Power up the set and press <Eject> button.
2. Press <Disc Menu> <1> <9> on the remote control.
3. The software version and other informations are display on the TV screen as follows:
 

```
ALI SYSTEM SETUP
DATE:          yyyyymmdd (= Version of application
                software)
MPEG F/W:      xx.xx.x.x (software version of MPEG)
MPEG H/W:      xx-xx-xxx
SERVO F/W:     xxxxx (software version of Servo)
SERVO H/W:     xxxxx.xx
VENDER:        PHILIPS
VENDER VER:    590AP
DISK TYPE:     NTSC
DISABLE VCD    OFF
REGION CODE    3
PARENTAL CC   8
PARENTAL PW    0000
```
4. Highlight the Region code bar with the <Up> or <Down> cursor buttons and press <OK> button on the remote control
5. Key in the new <numeric> button as per below:
  - 1 = USA
  - 2 = Europe
  - 3 = AP
  - 4 = LATAM
  - 5 = India / Russia
  - 6 = China
6. Confirm entry by pressing <OK> button on the remote control.
7. Press the <Eject> button on the remote control to save & exit.

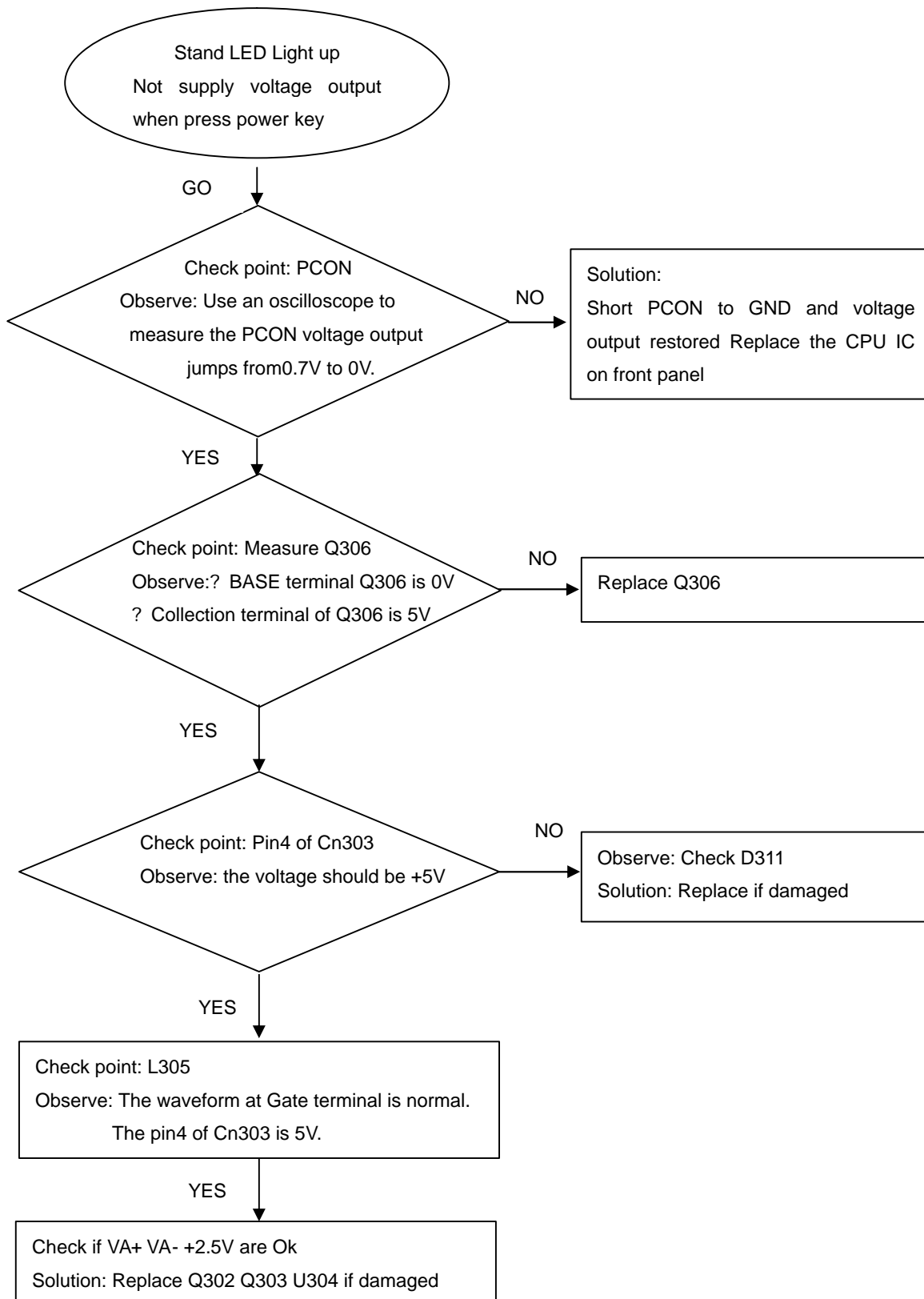
Note: Repeat steps 1 - 3 to check that new region code when necessary.

# TROUBLE SHOOTING CHART

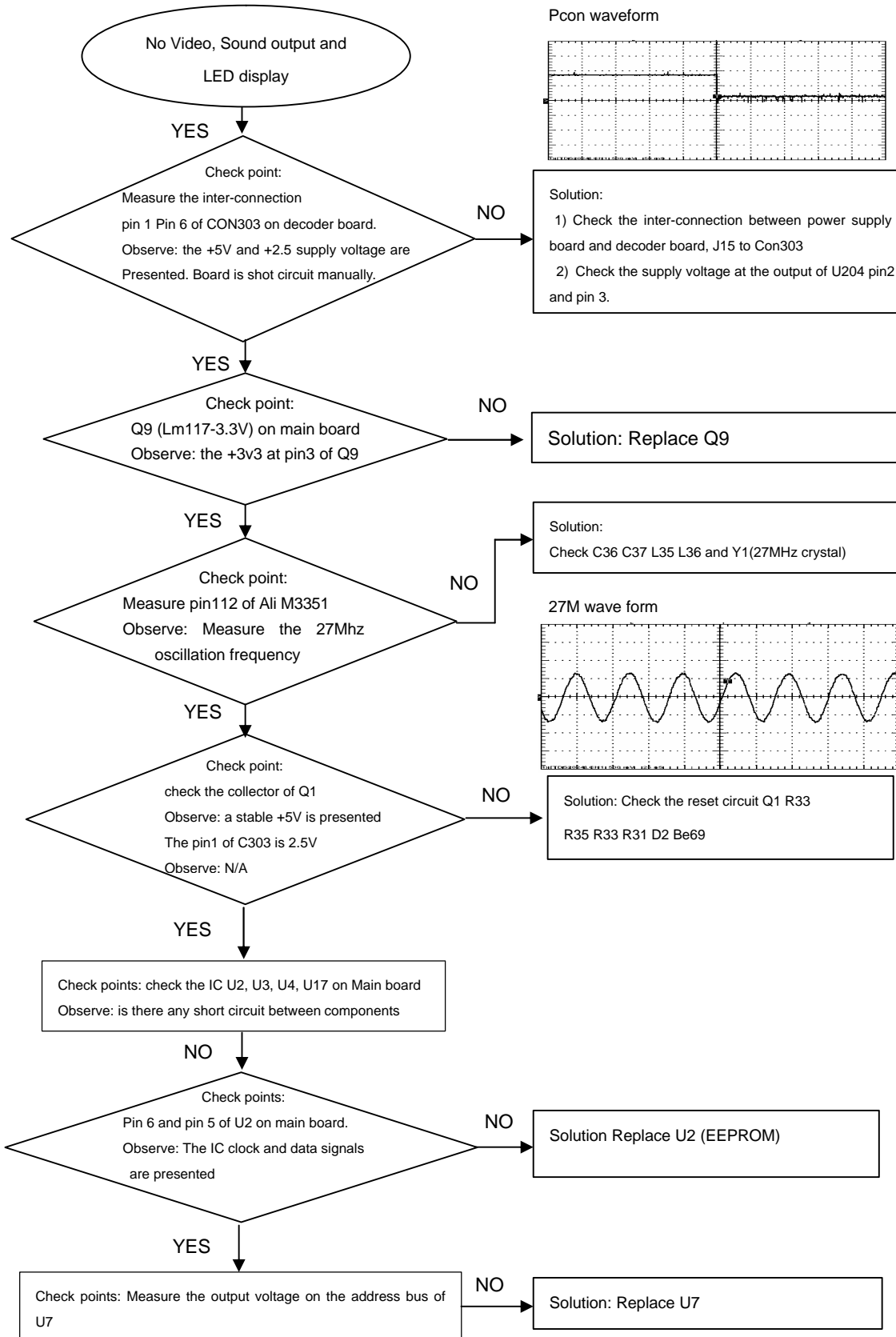
NO Picture



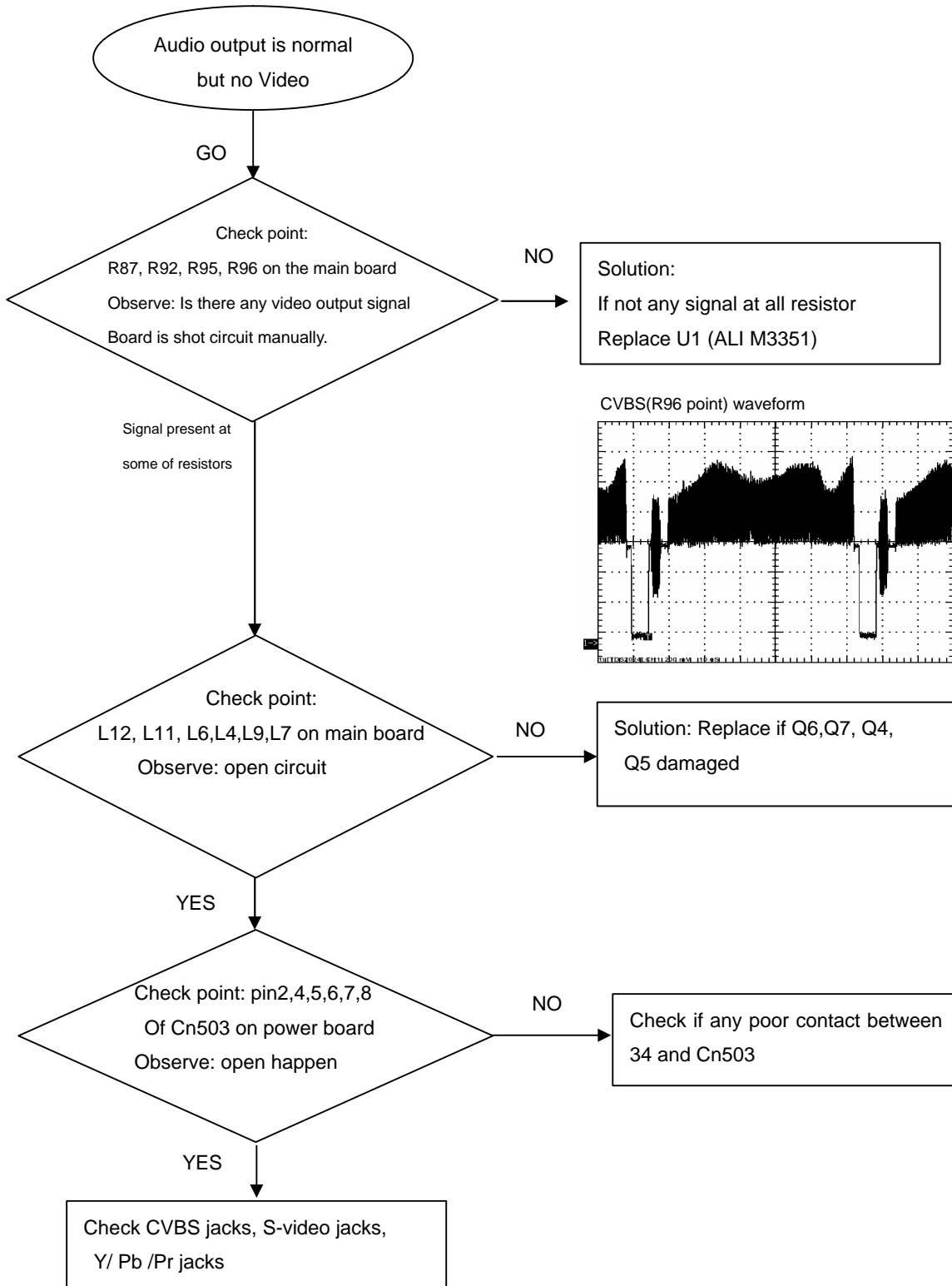
## No supply at power on



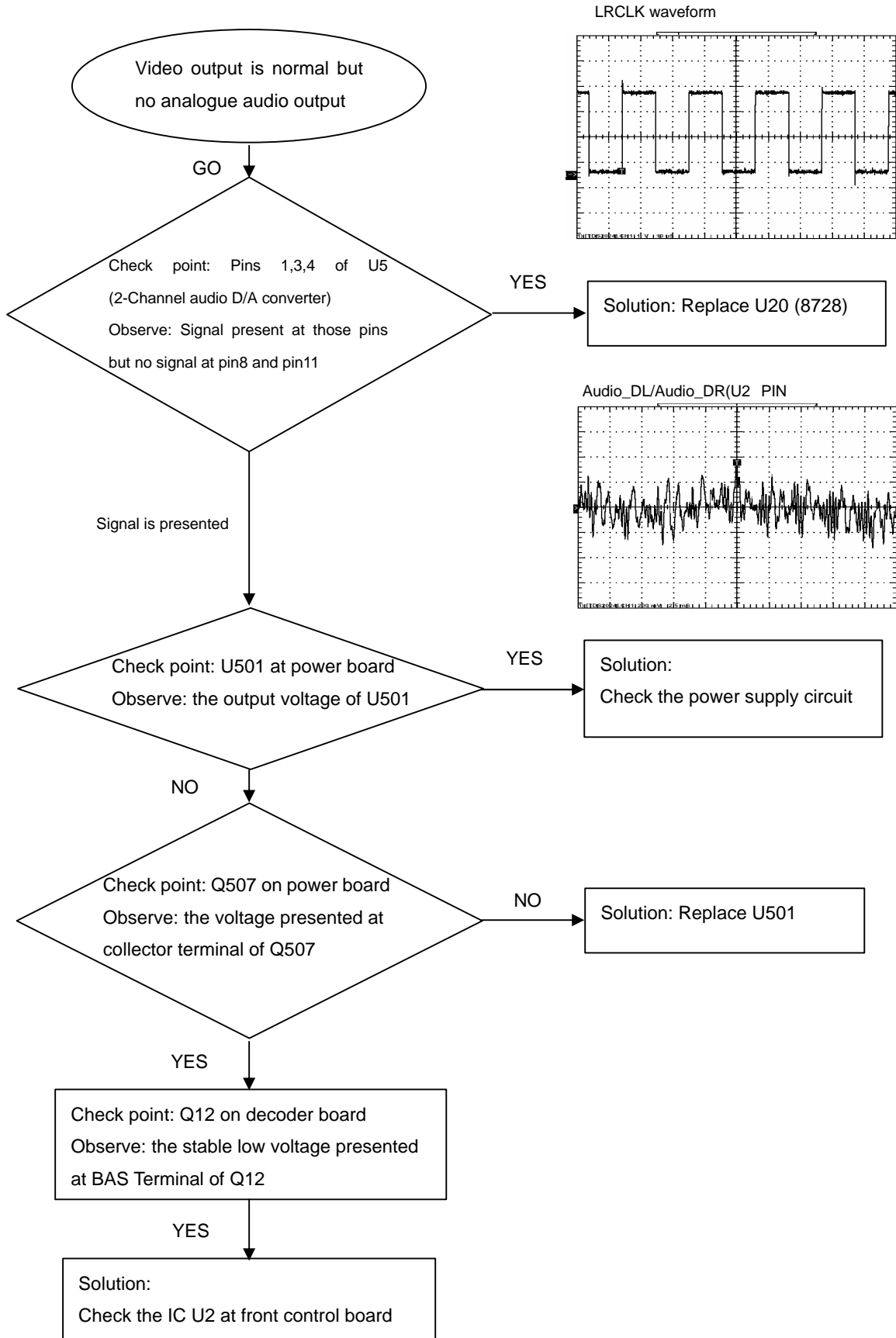
**No video and sound**

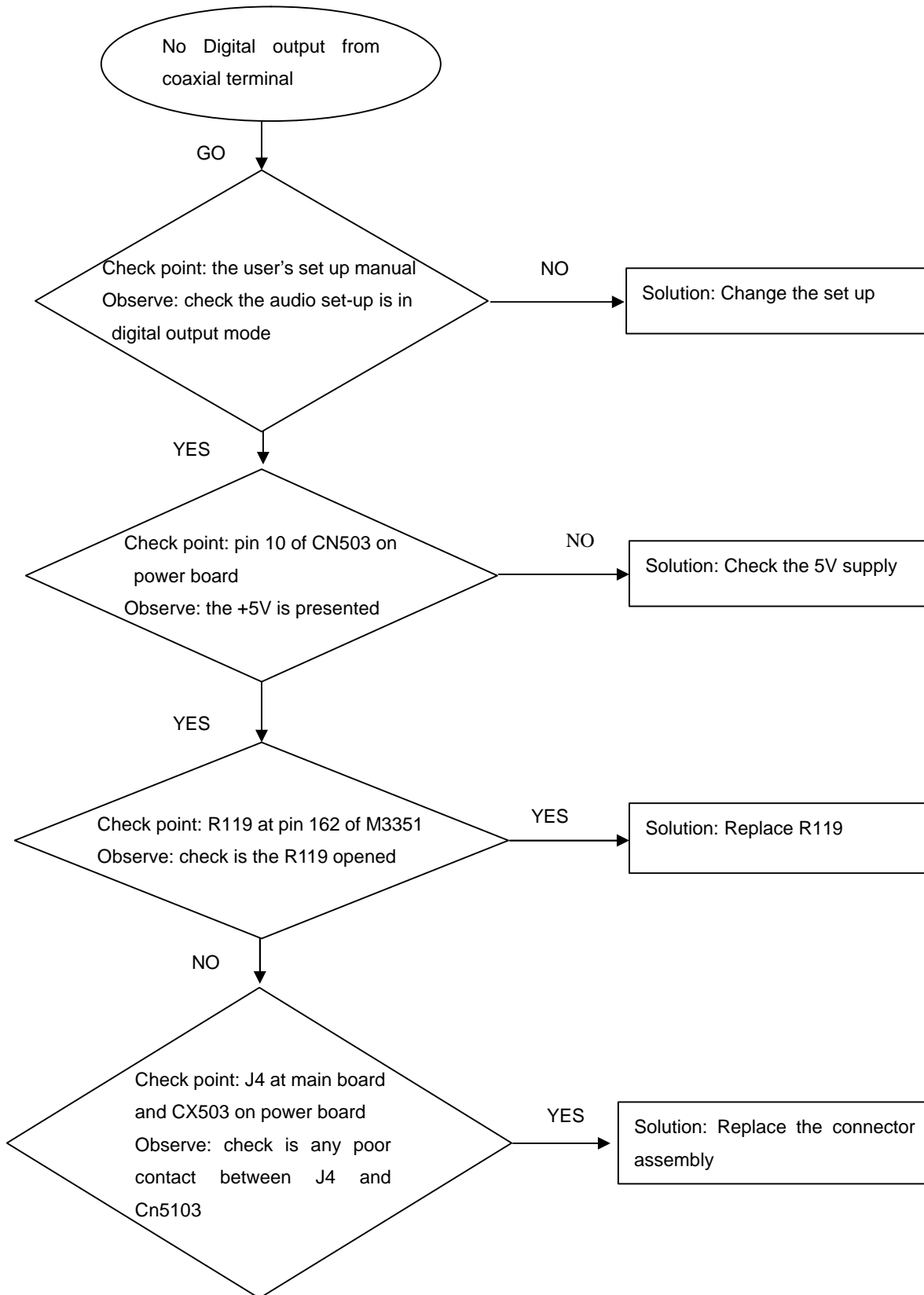


No Video

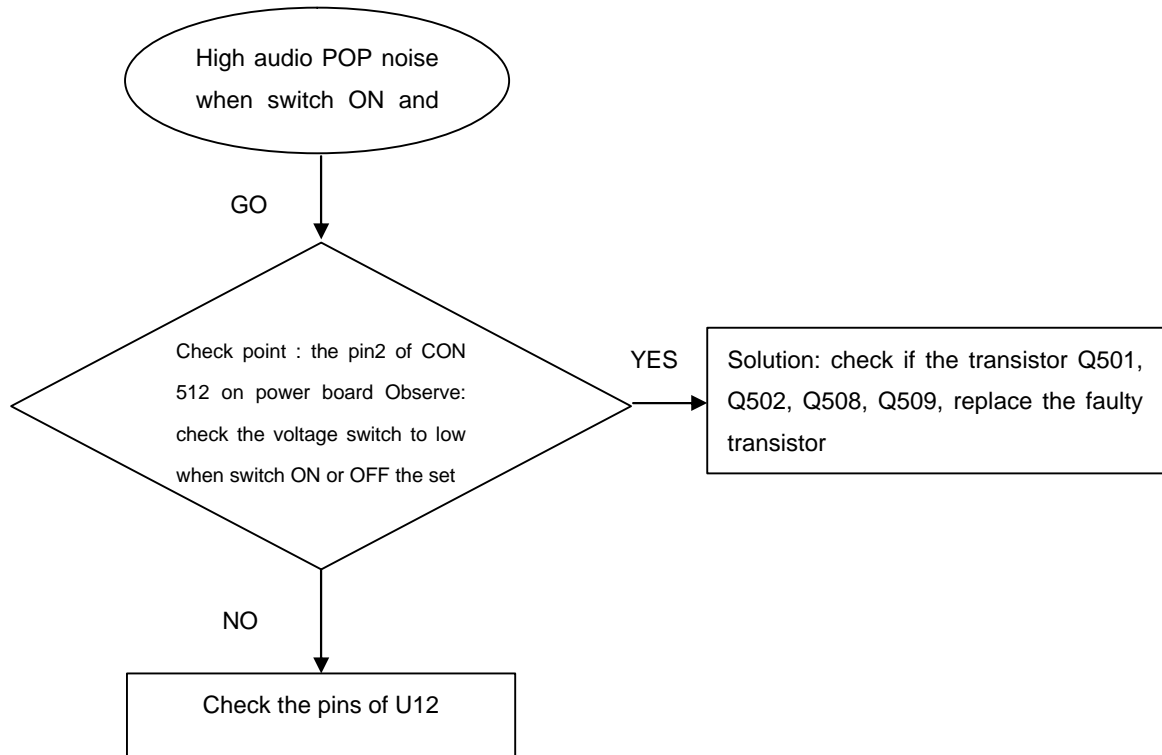


**No Analog Audio Output on Cinch**

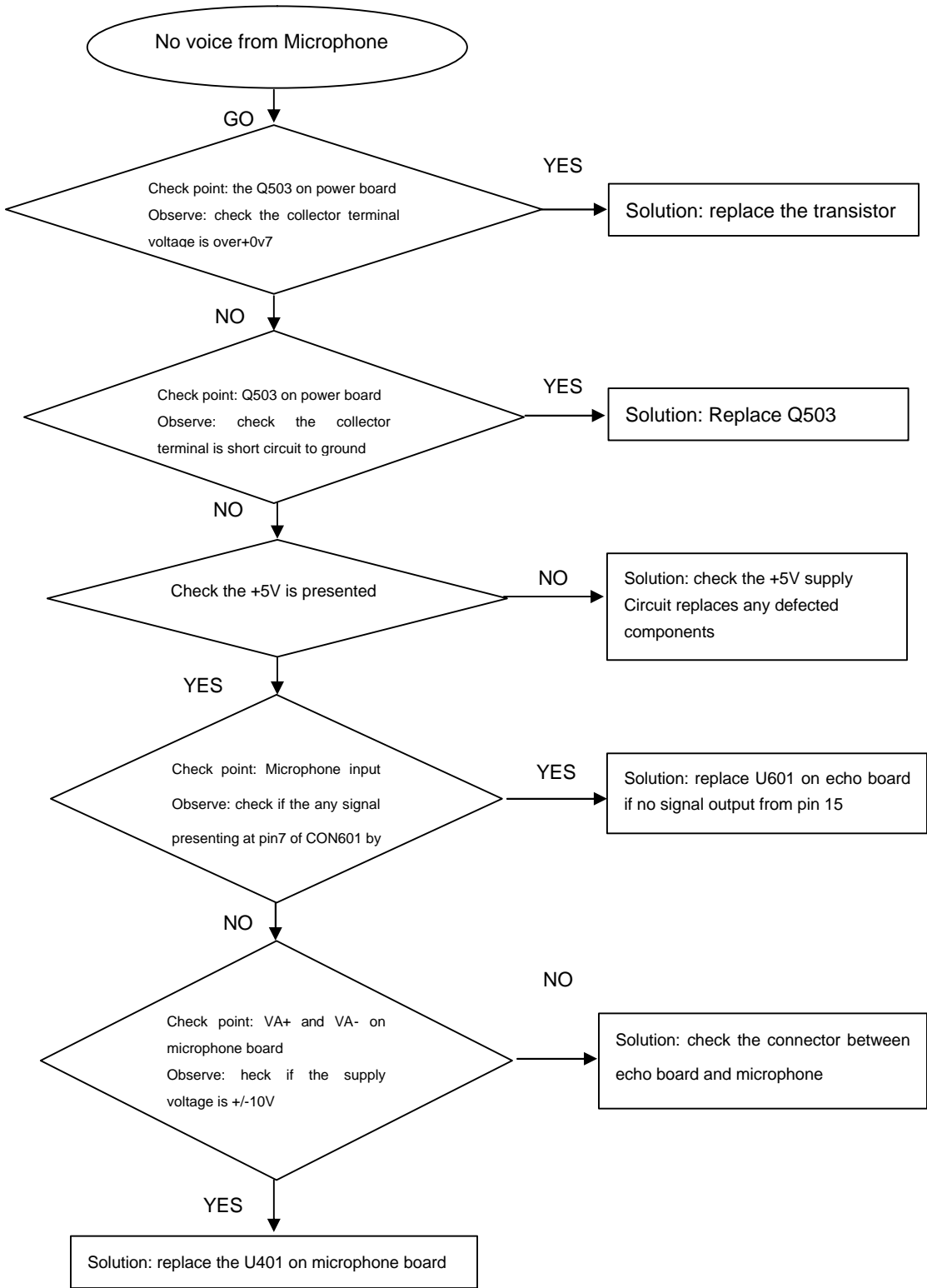


**No Digital Out on Coaxial**

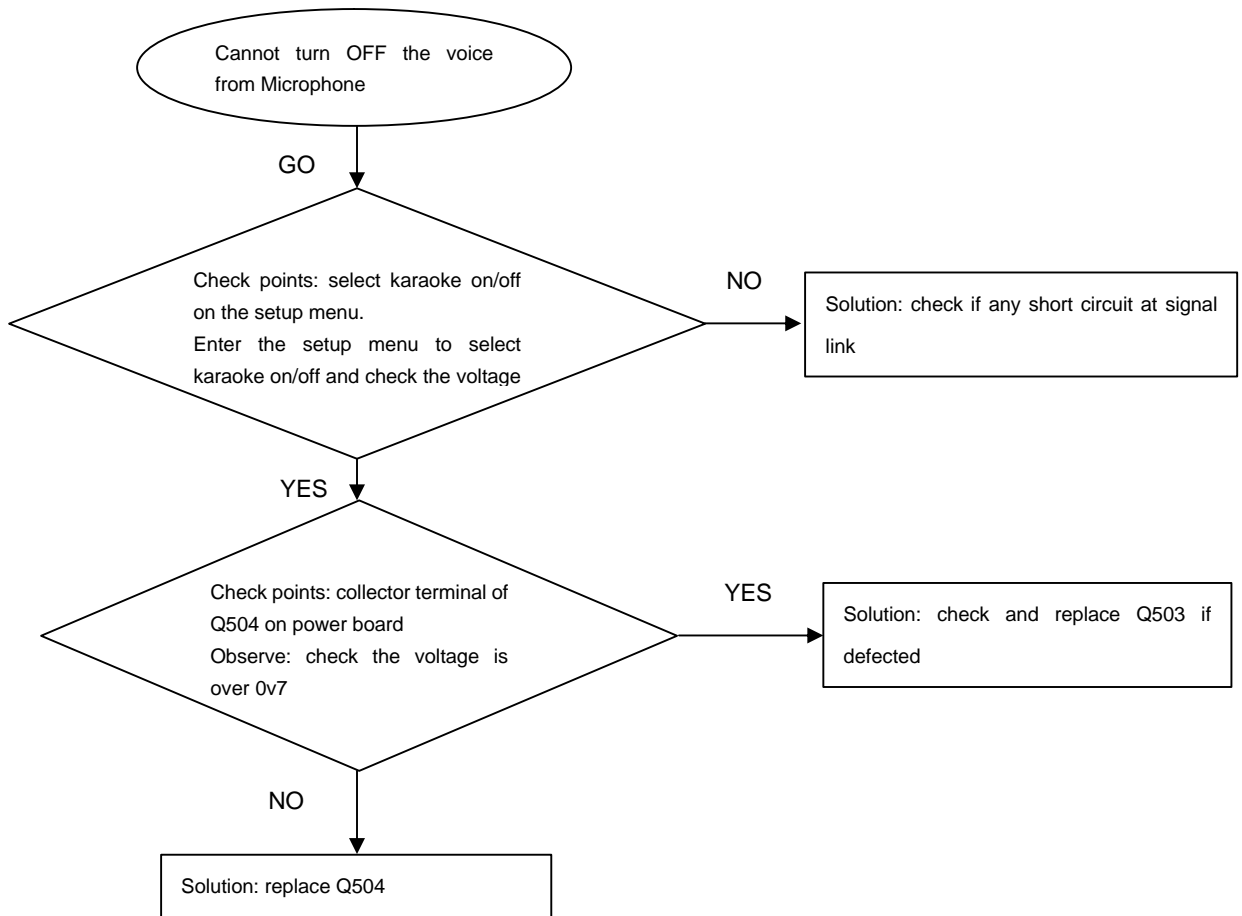


**POP sound**

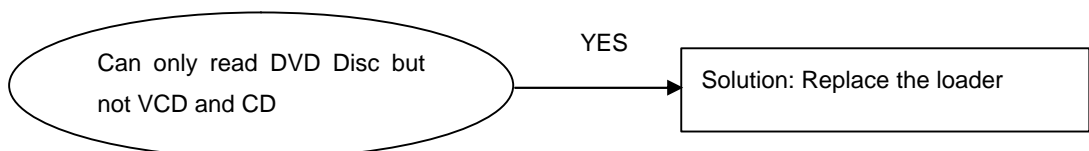
**Microphone not working**

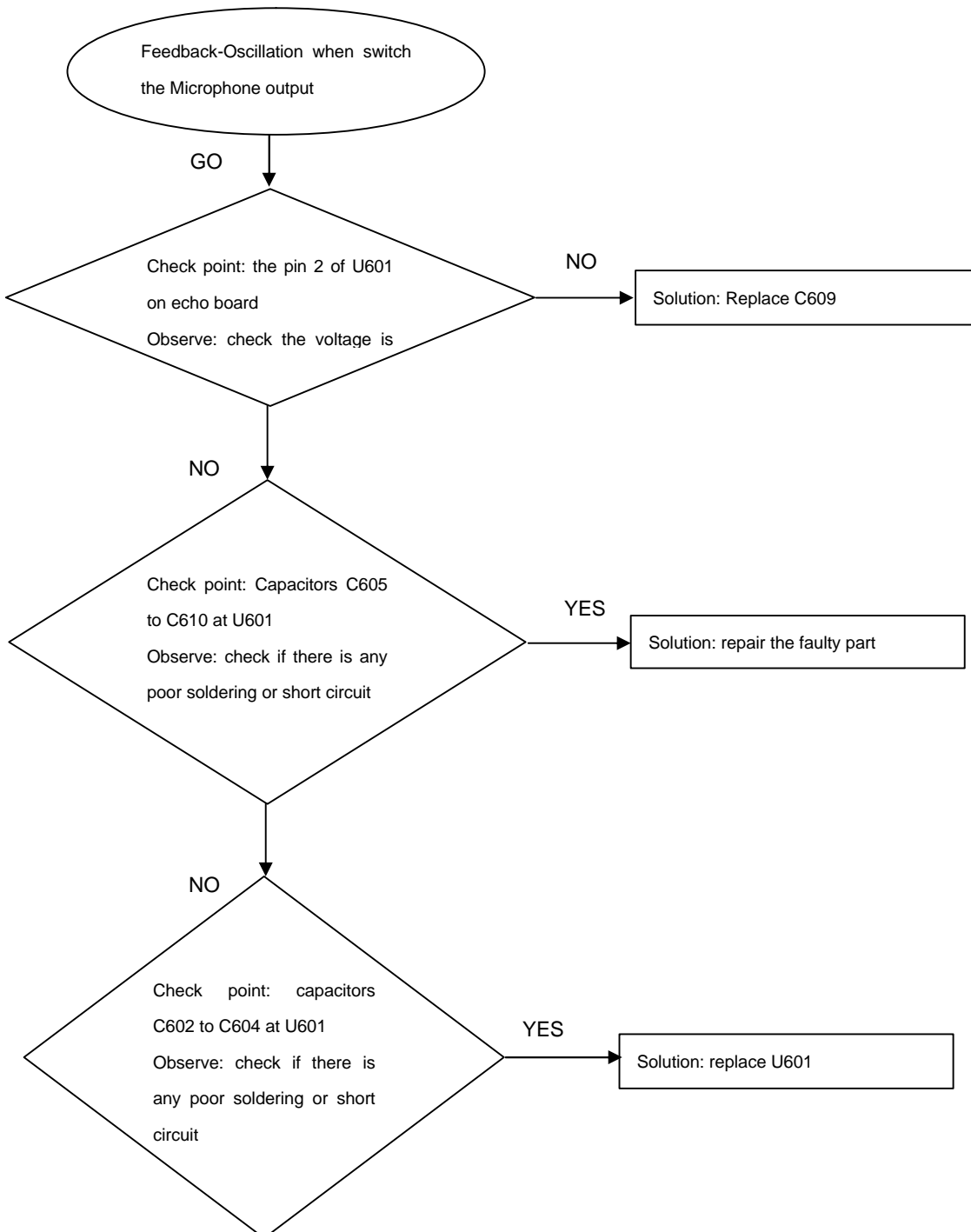


**Microphone can not SW off**

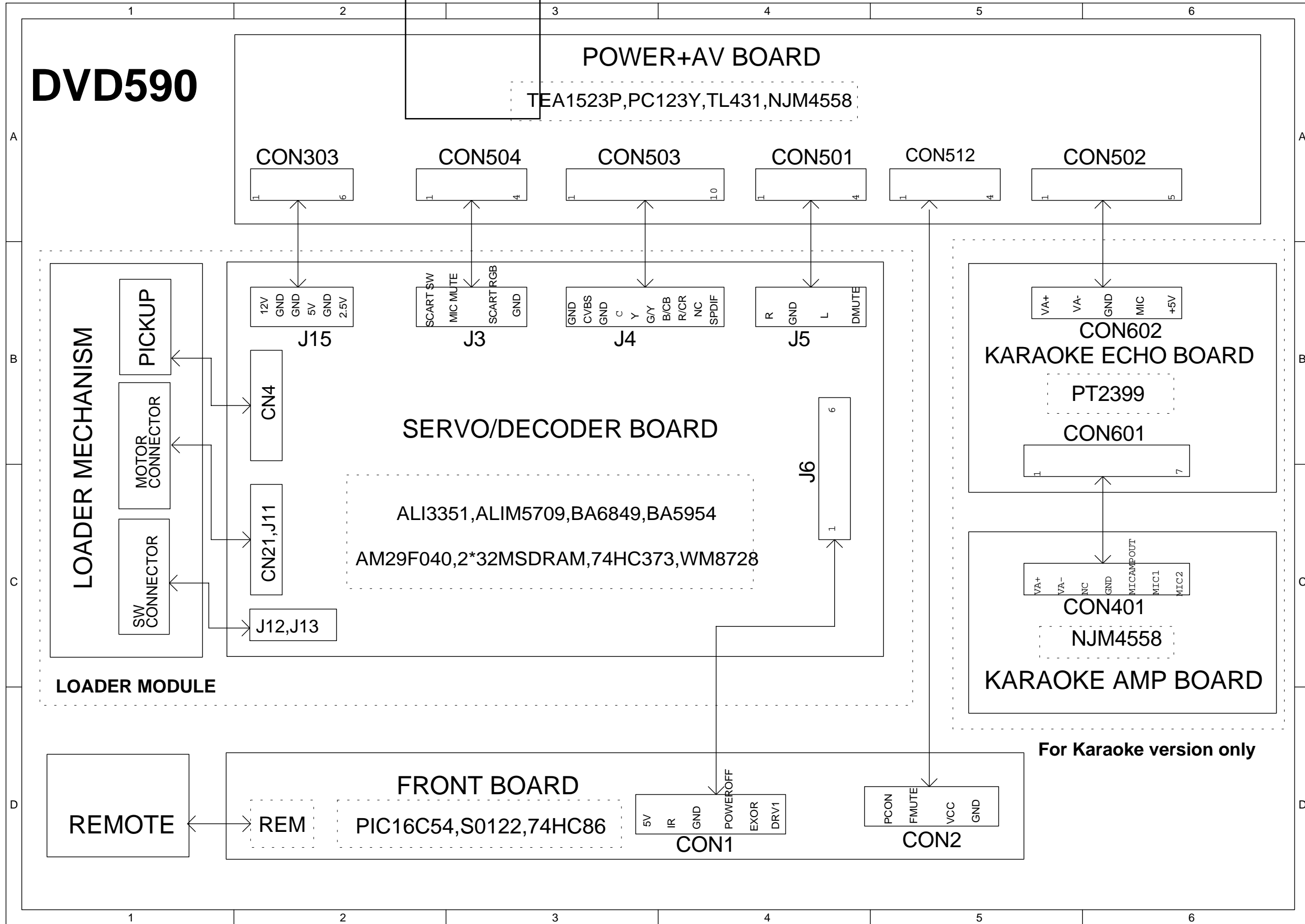


**Can only read DVD disc**



**Oscillation from Microphone**

# Block and Wiring Diagram



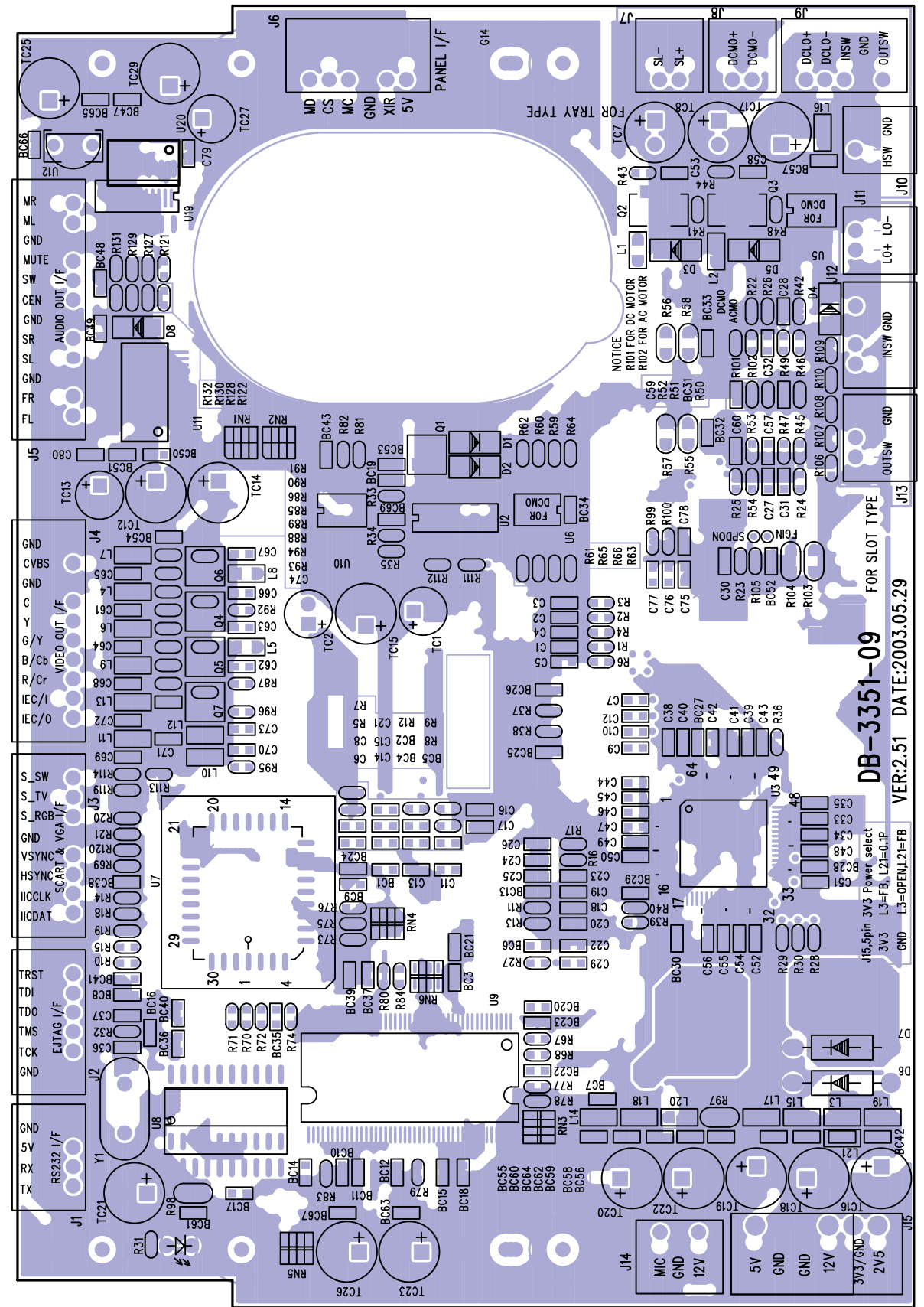
# LOADER MODULE

(For information only)

It is not recommended for component repair on this module but to replace the entire assembly when it becomes defective.

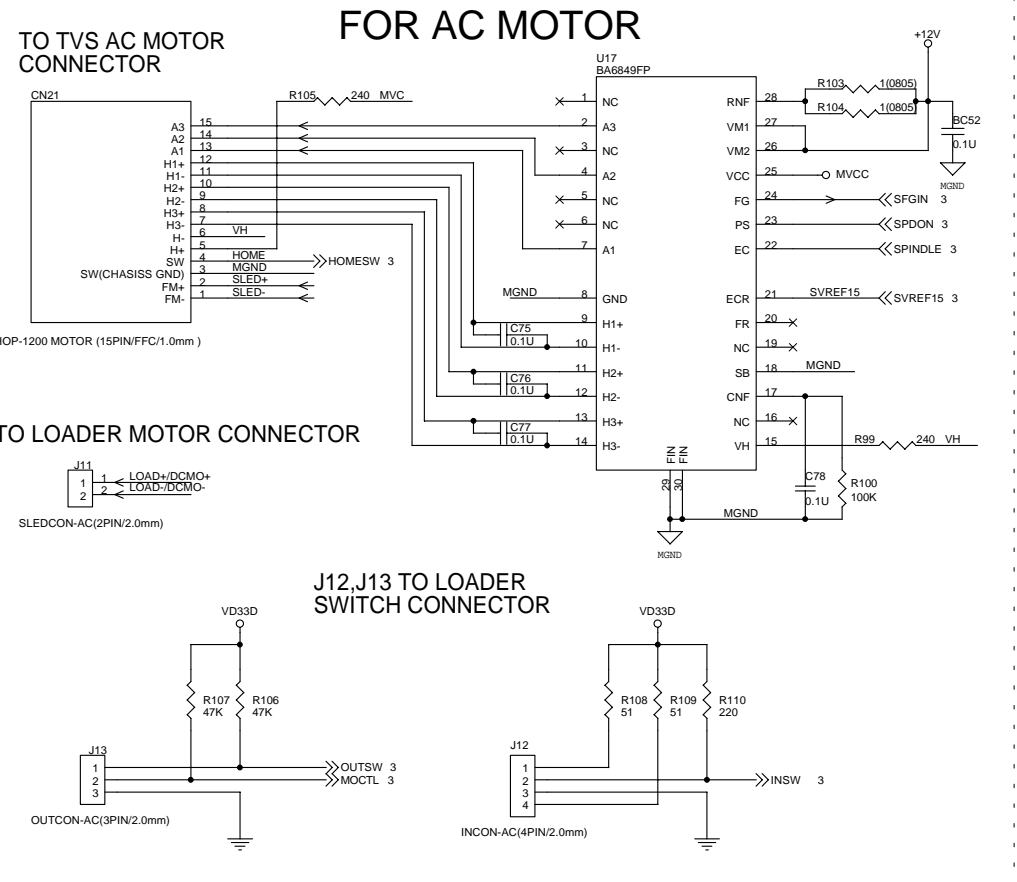
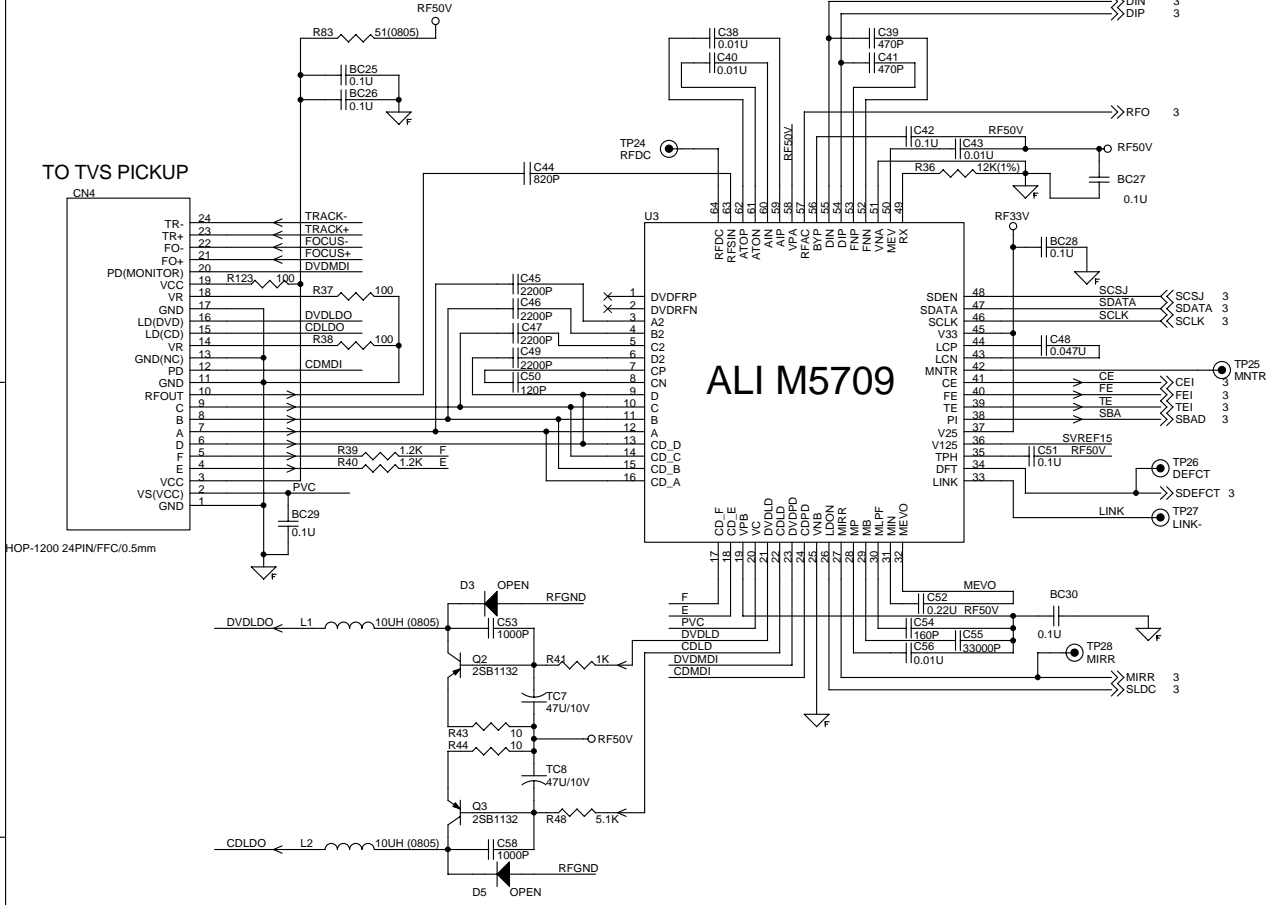
The complete Loader Module is available under service part code: 9965 000 22493

(For information only)

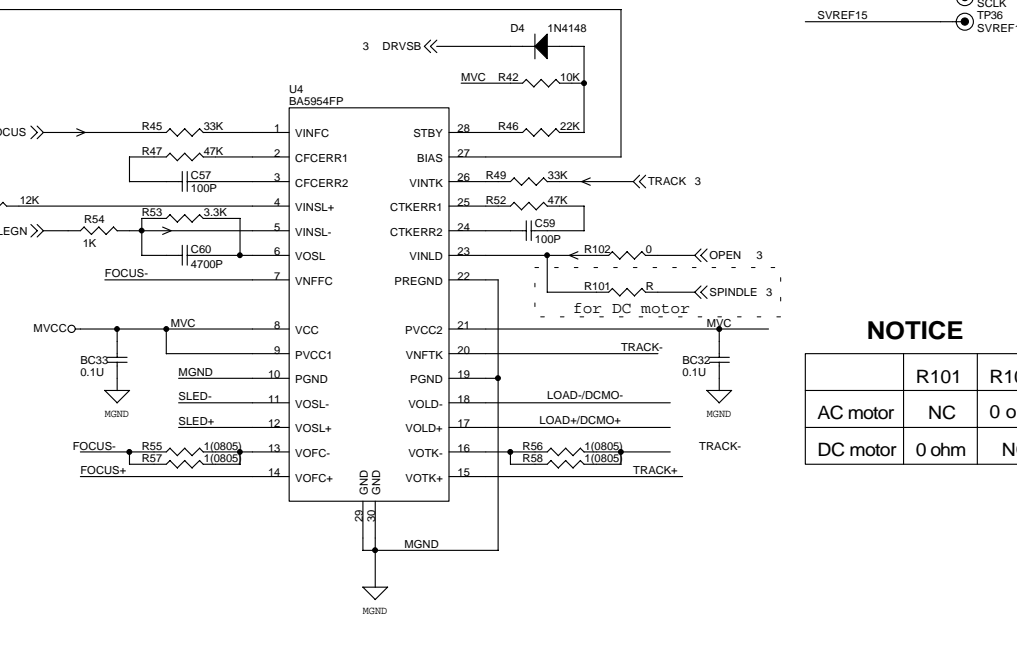
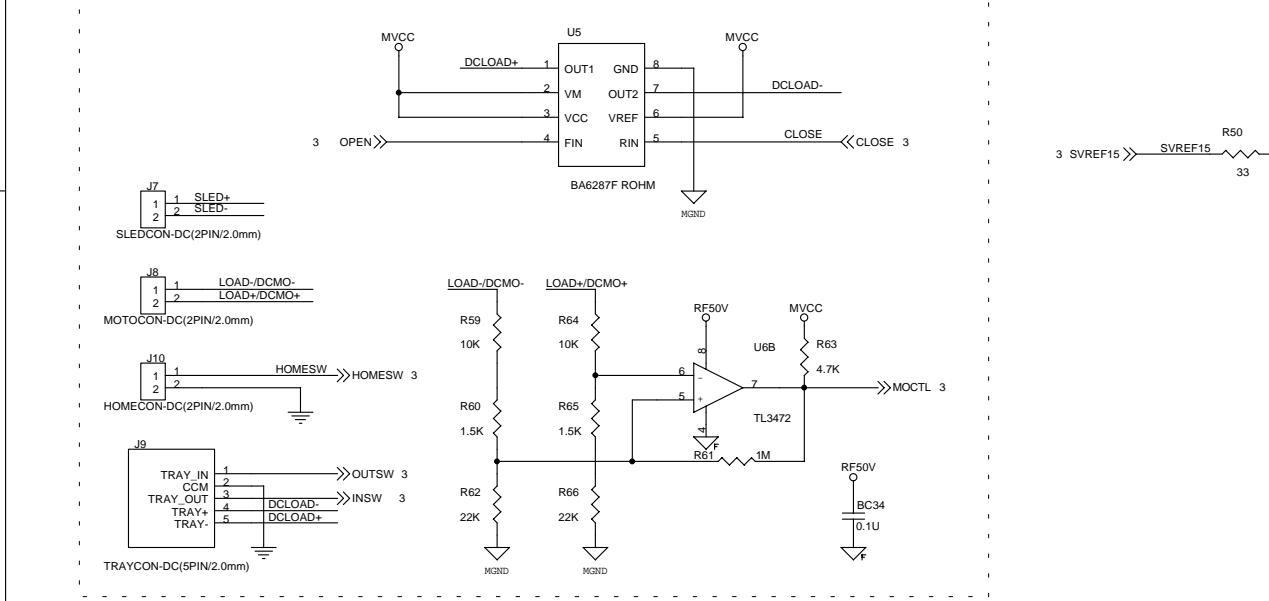


(For information only)

# SERVO ALI M5709



## FOR DC MOTOR (OPEN)



- TE TP29
- FE TP30
- CE TP31
- SBA TP32
- SDATA TP33
- SCSJ TP34
- SCLK TP35
- SVREF15 TP36

### NOTICE

	R101	R102
AC motor	NC	0 ohm
DC motor	0 ohm	NC

(For information only)

# DECODER ALI3351

- XFLAG0 TP1
- XFLAG1 TP2
- XFLAG2 TP3
- XFLAG3 TP4
- RFO TP5
- TESTAD TP6
- DA TP7
- RFRP TP8
- DIP TP9
- DIN TP10
- TRACK TP11
- FOCUS TP12
- SLEGN TP13
- SLEGN TP14
- SPINDLE TP15
- MIRR TP16
- TEI TP17
- CEI TP18
- SPDON TP19
- SFGIN TP20
- CPURST TP21
- SVREF21 TP22
- SVREF21 TP23

MIRRA RFRP

SVREF15

MIRRA OPEN

SVREF15

IN SW

HOME SW

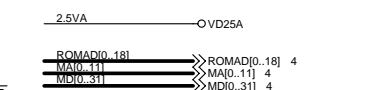
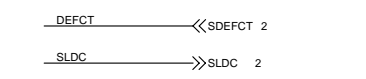
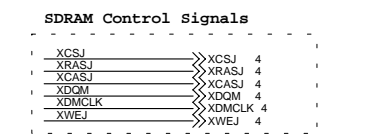
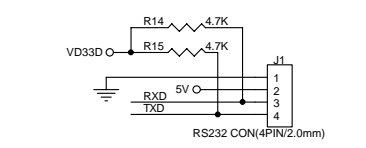
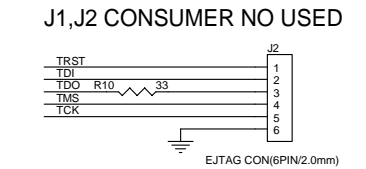
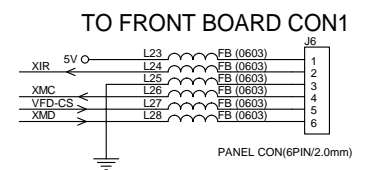
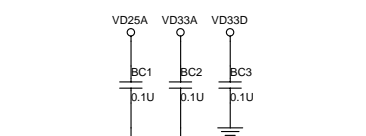
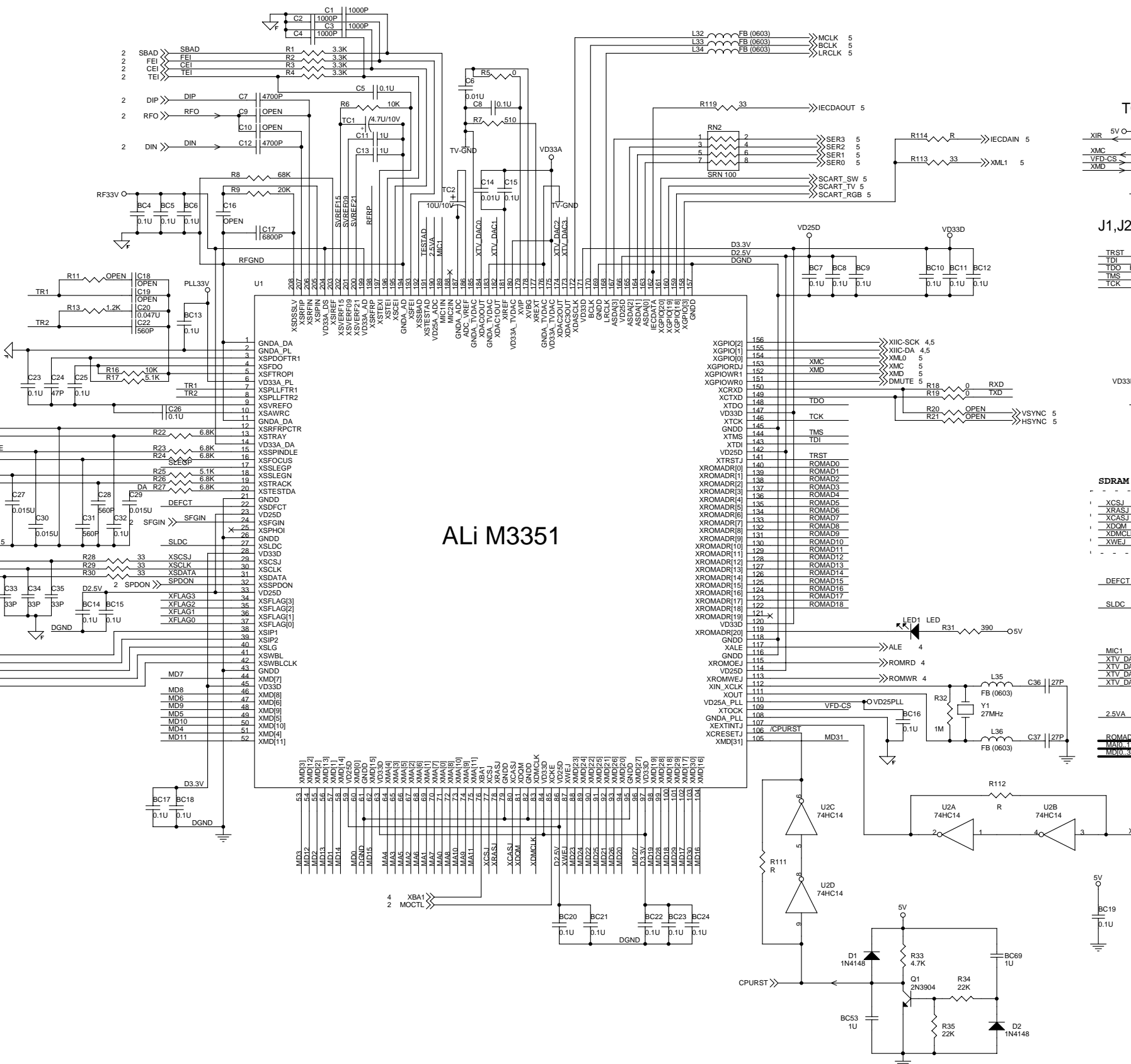
CLOSE

OUT SW

DRV SW

XBA1

MOCTL

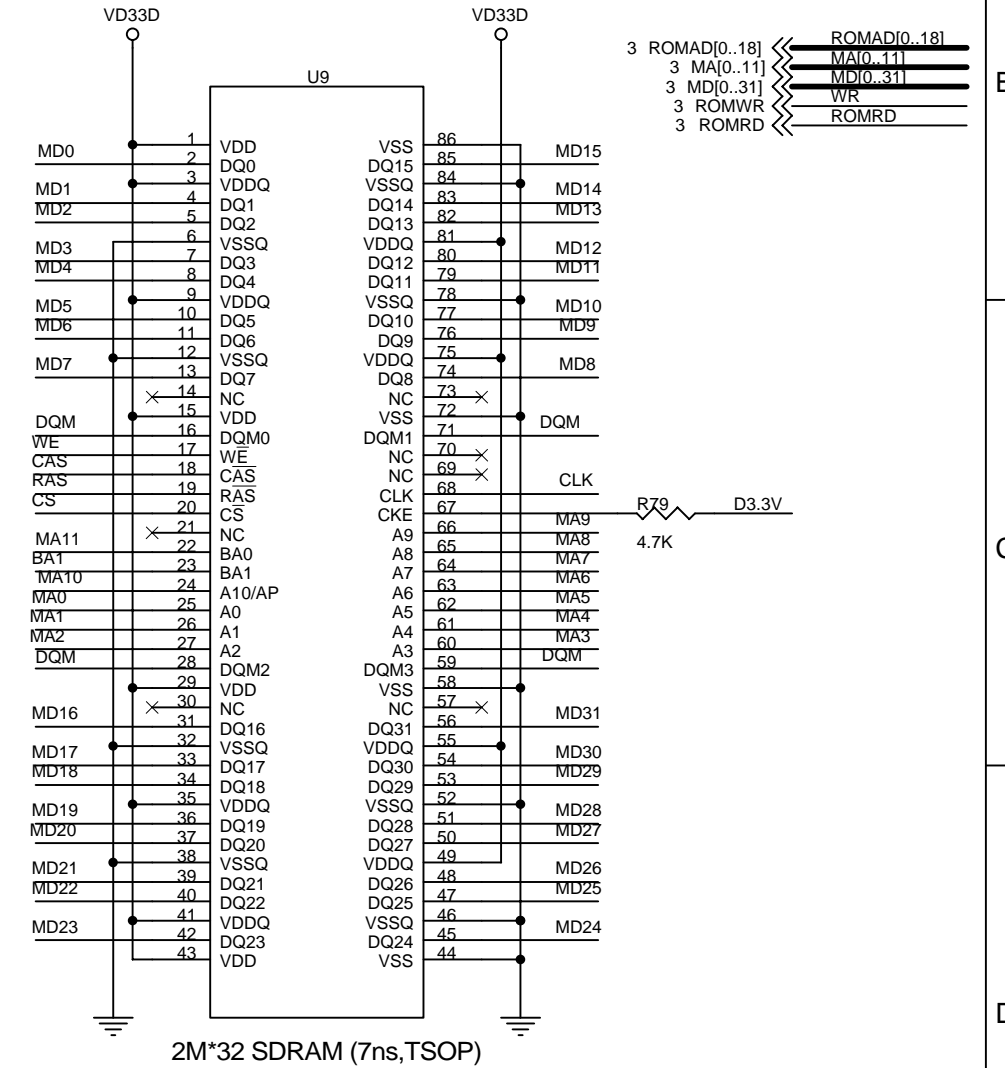
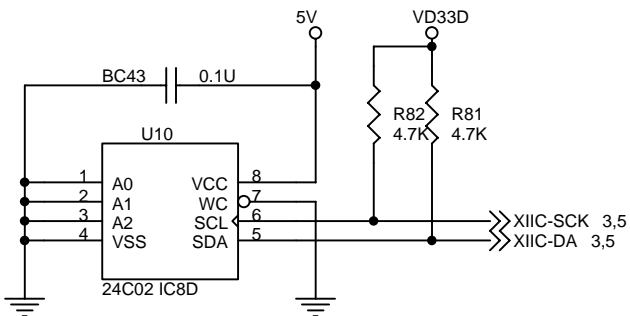
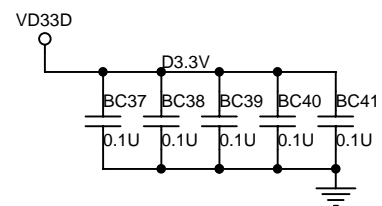
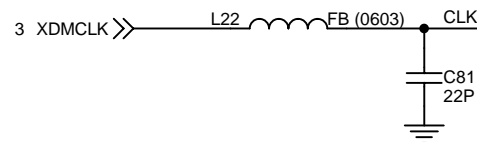
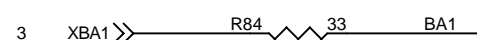
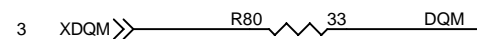
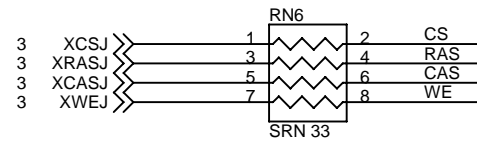
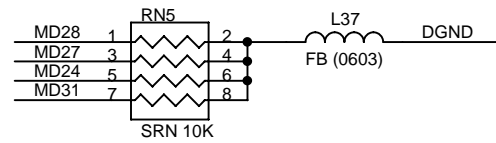
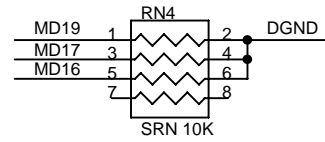
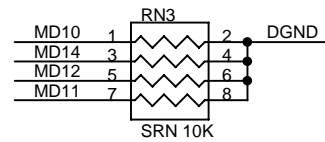
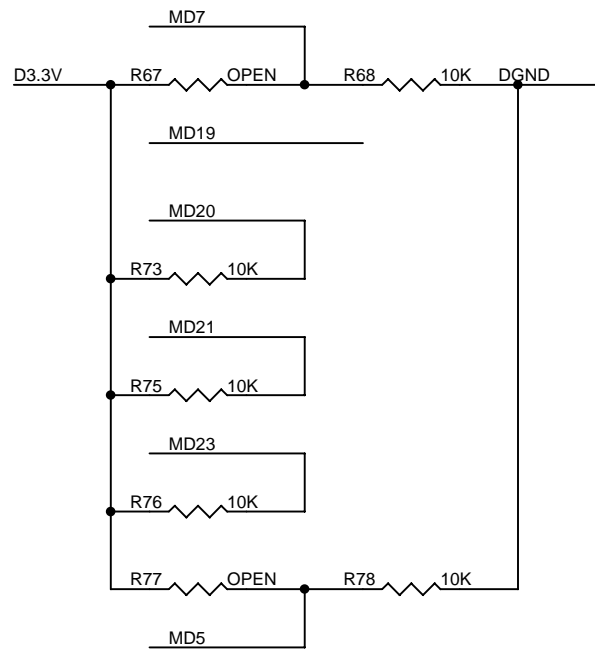
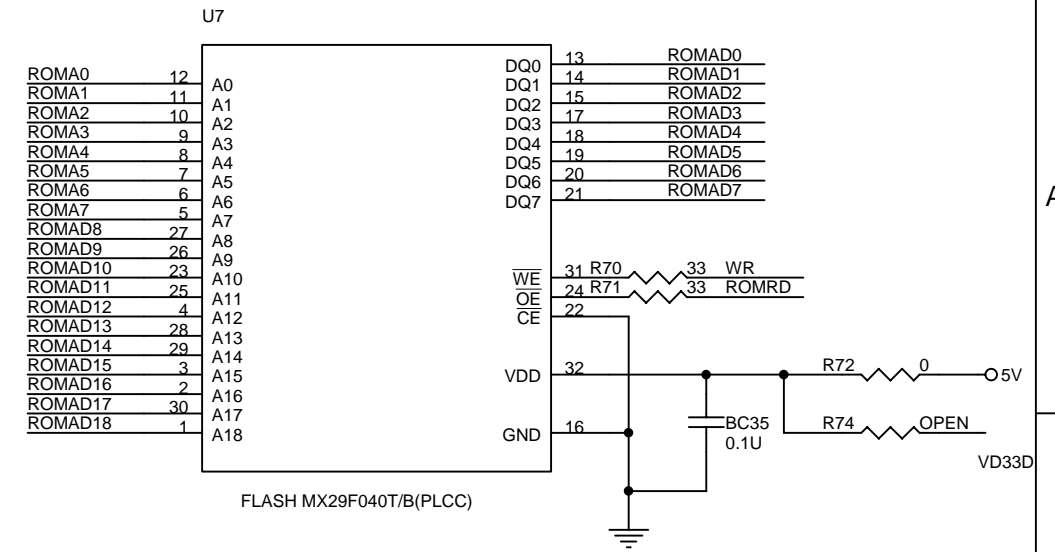
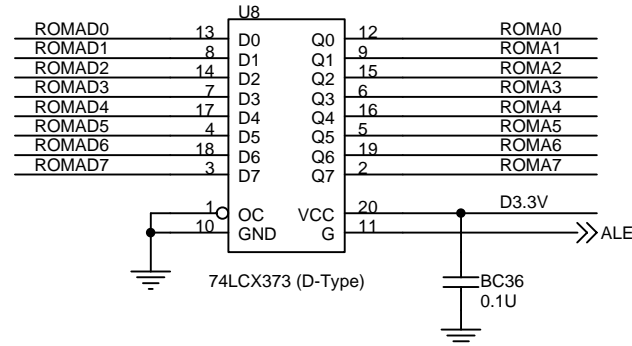




(For information only)

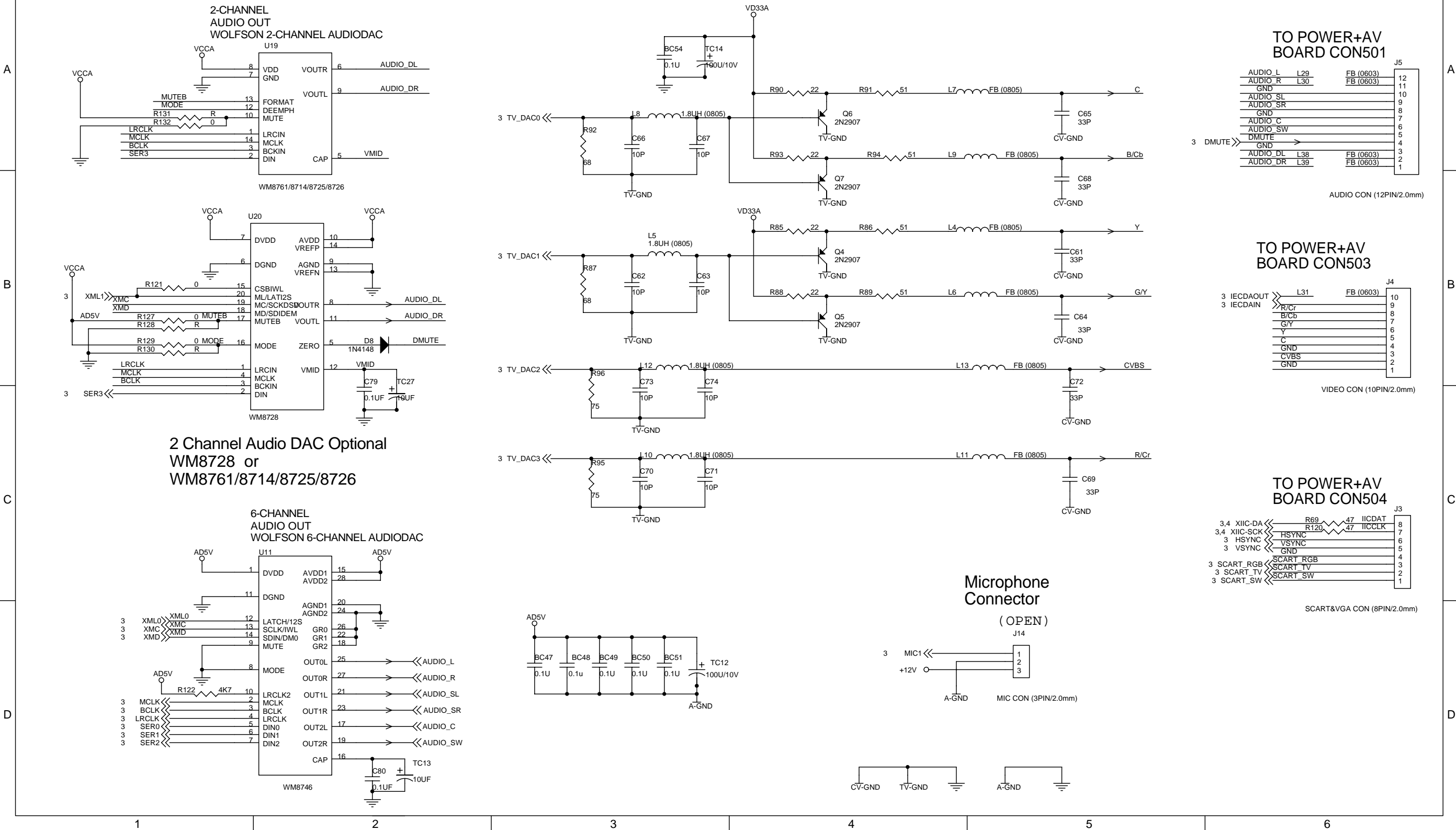
# DECODER FLASH,SDRAM

- 1. MD[7]: PLL94EN (Switch 81Mhz to 94Mhz)
  - 0: Keep 81Mhz ( Default )
  - 1: Switch 81Mhz to 94Mhz
- 2. MD[5]:VGA Enable
  - 0: VGA disable, XCTXD/XCRXD as normal.
  - 1: VGA enable, HSYNC, VSYNC replace XCTXD/XCRXD.

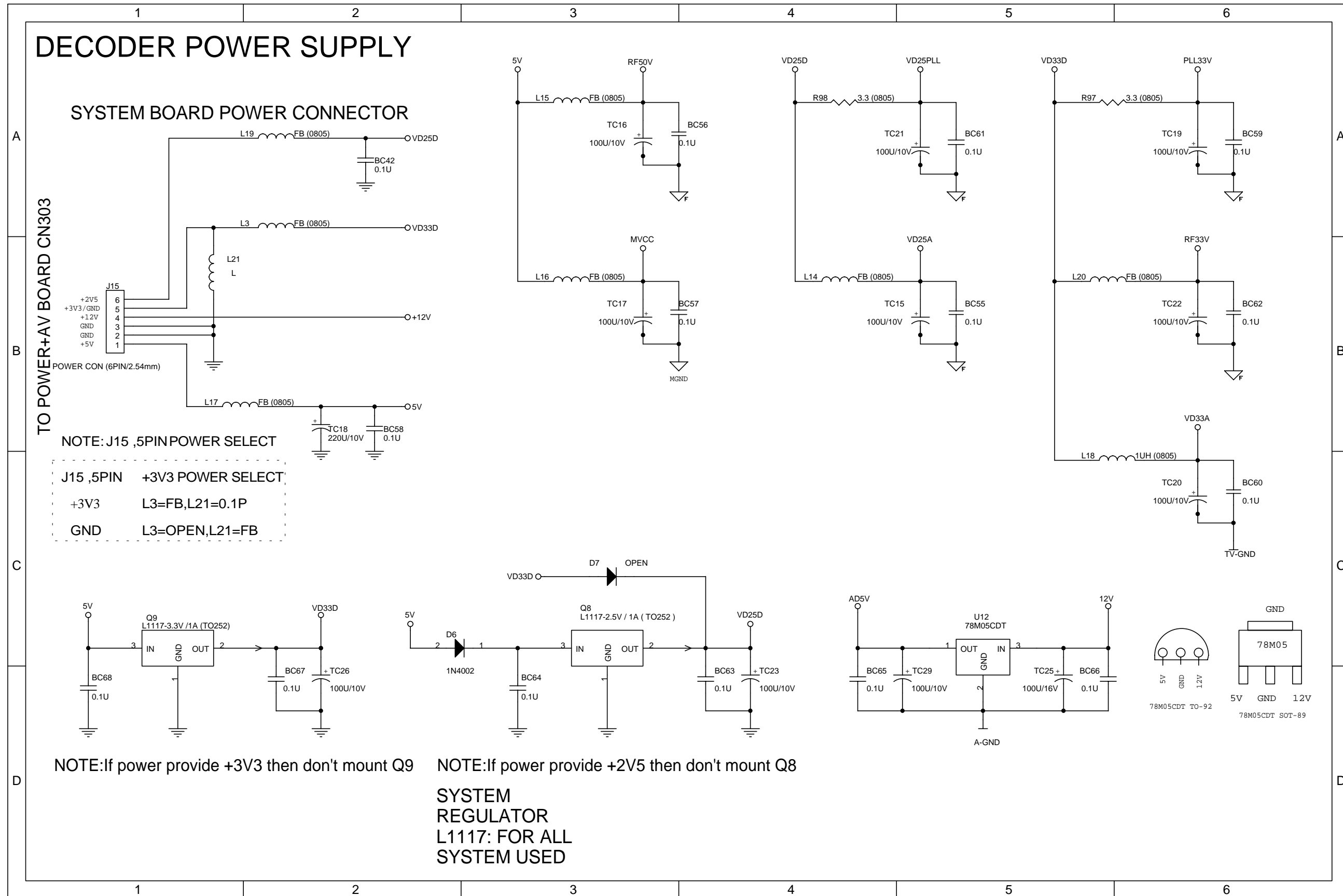


(For information only)

# DECODER AUDIO DAC VIDEO CHANNEL



(For information only)



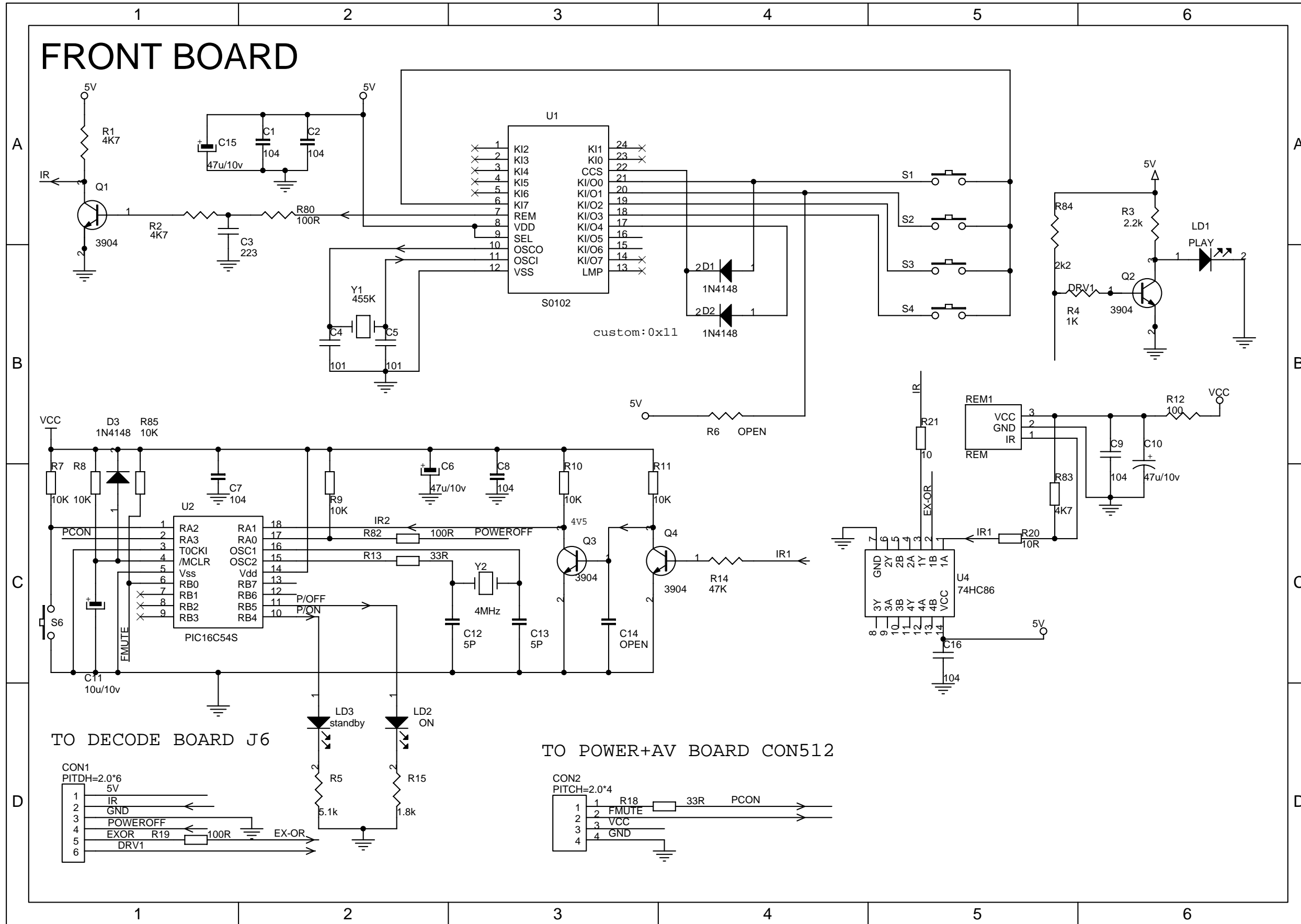
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# FRONT BOARD

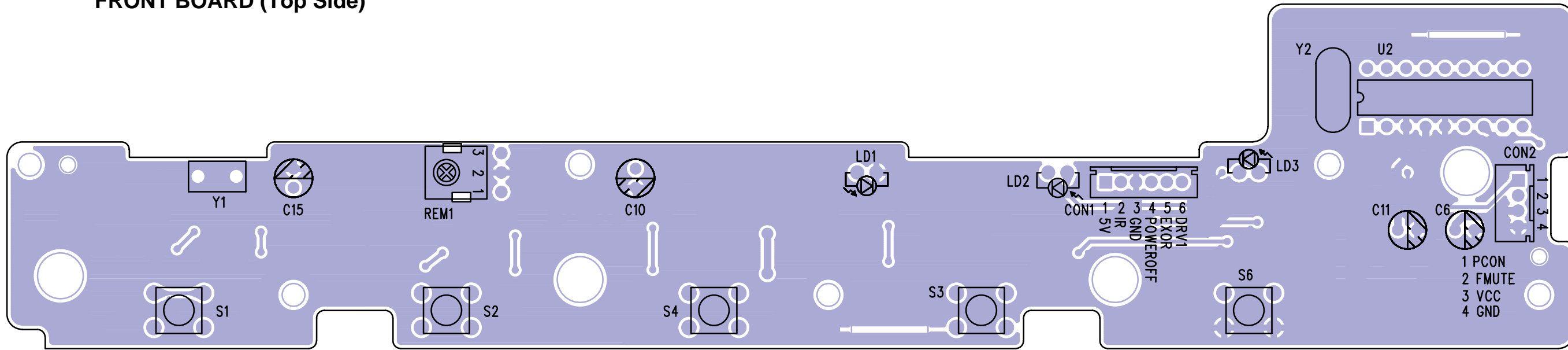
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## TABLE OF CONTENTS

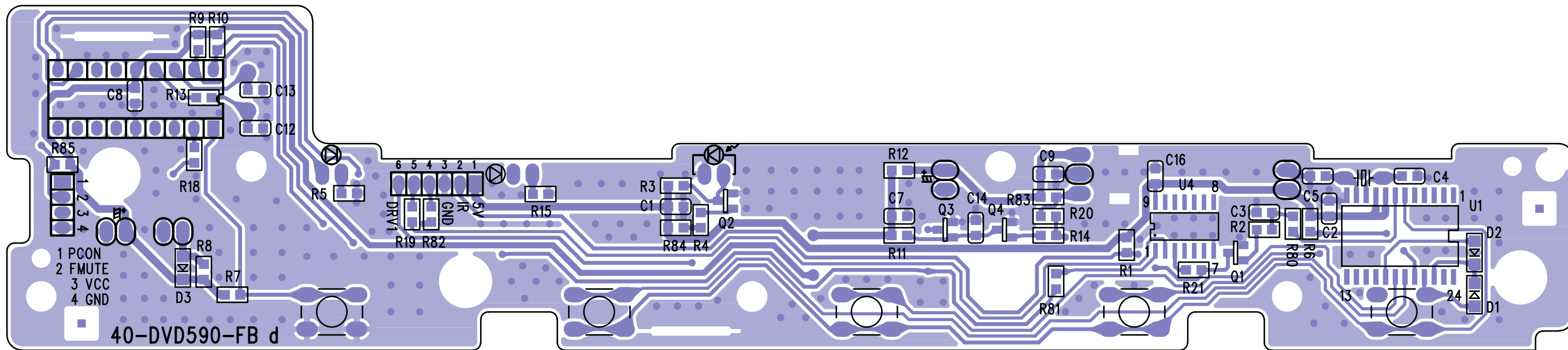
. Front Board-Circuit Diagram.....	7-2
. Front Board-Component & Chip Layout.....	7-3
. Electrical Parts List.....	7-4



### FRONT BOARD (Top Side)



### FRONT BOARD (Bottom Side)



**ELECTRICAL PARTS LIST - FRONT BOARD**

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**MISCELLANEOUS**

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REM1	9965 000 20398	RECEIVER MODULE AT138BV3T-10
S1	9965 000 14031	TACT SWTICH TSAB-1
S2	9965 000 14031	TACT SWTICH TSAB-1
S3	9965 000 14031	TACT SWTICH TSAB-1
S4	9965 000 14031	TACT SWTICH TSAB-1
S6	9965 000 14031	TACT SWTICH TSAB-1
Y1	9965 000 22468	CERAMIC RESONATOR 455KHZ
Y2	9965 000 14019	CRYSTAL 4MHZ

**CAPACITORS**

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C6	9965 000 22464	ELCAP 47UF 16V 20% SMALL
C10	9965 000 22464	ELCAP 47UF 16V 20% SMALL
C11	9965 000 14026	CAP. ELEC 10UF 16V 20%SMALL
C15	9965 000 22464	ELCAP 47UF 16V 20% SMALL

**DIODES**

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D1	4822 130 81637	PMLL4148L
D2	4822 130 81637	PMLL4148L
D3	4822 130 81637	PMLL4148L
LD1	9965 000 22465	LED BT-402YOEN-30-605B
LD2	9965 000 22465	LED BT-402YOEN-30-605B
LD3	9965 000 20399	LED RED HFR103 (3MM)

**TRANSISTORS**

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Q1	9965 000 20152	MMBT3904LT1 SMD SOT23
Q2	9965 000 20152	MMBT3904LT1 SMD SOT23
Q3	9965 000 20152	MMBT3904LT1 SMD SOT23
Q4	9965 000 20152	MMBT3904LT1 SMD SOT23

**INTEGRATED CIRCUITS**

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U1	9965 000 22466	IC S0102
U2	9965 000 14022	PIC16C54-SW FOR ALL 580M-MARKED!
U4	9965 000 22467	IC 74HC86D

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

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# KARAOKE AMPLIFIER & ECHO BOARD

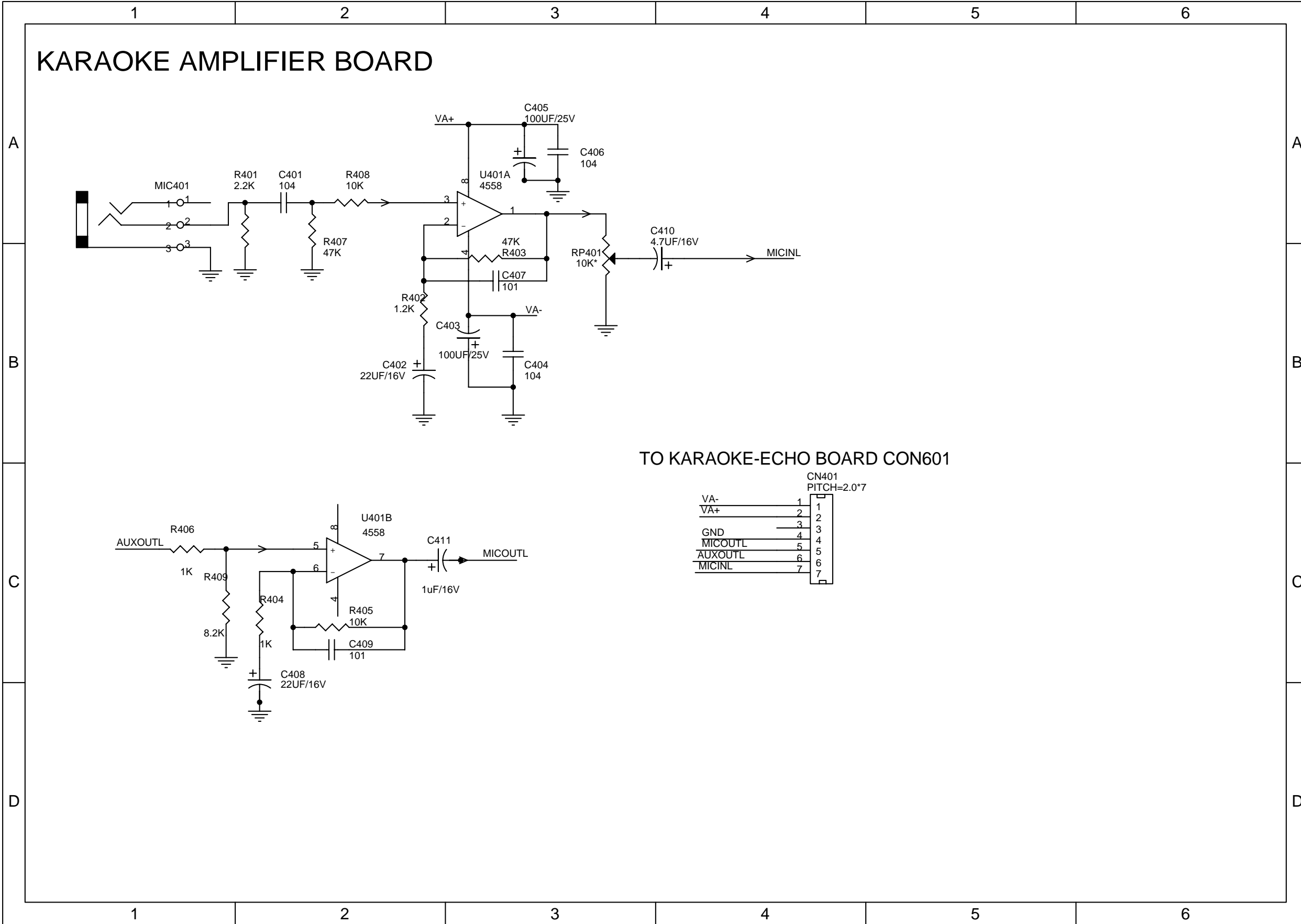
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## TABLE OF CONTENTS

. Karaoke Board-Circuit Diagram.....	8-2
. ECHO Board-Circuit Diagram.....	8-3
. Karaoke Amplifier & ECHO Board-Component & Chip Layout.....	8-4
. Electrical Parts List.....	8-5



# KARAOKE AMPLIFIER BOARD

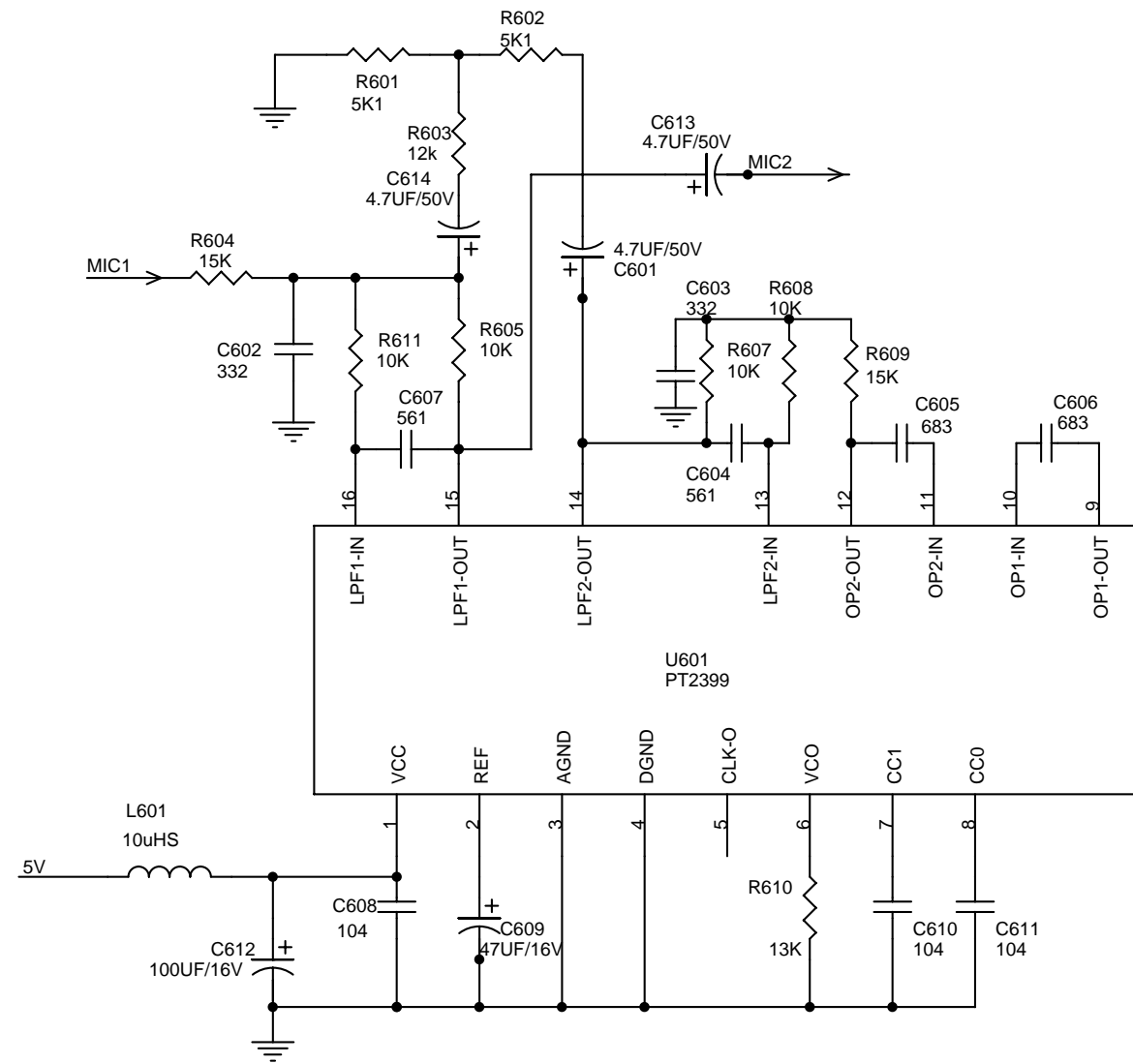


- C401 A2
- C402 B3
- C404 B3
- C405 A3
- C406 A3
- C407 B3
- C408 D2
- C409 C2
- C410 A3
- C411 C2
- CN401 C4
- MIC401 A1
- R401 A2
- R402 B3
- R403 B3
- R404 C2
- R405 C2
- R406 C2
- R407 A2
- R408 A2
- R409 C2
- RP401 B3
- U401B C2
- U401A A3

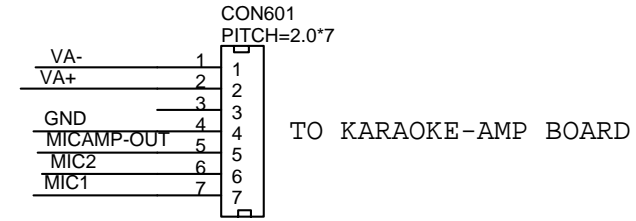
TO KARAOKE-ECHO BOARD CON601

CN401 PITCH=2.0*7	
VA-	1
VA+	2
GND	3
MICOUTL	4
AUXOUTL	5
MICINL	6
	7

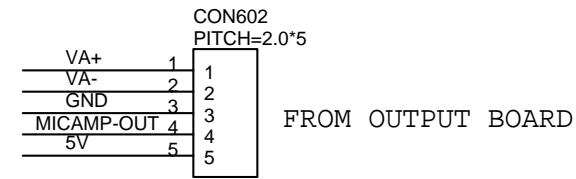
# KARAOKE ECHO BOARD



TO KARAOKE-AMP BOARD CON401

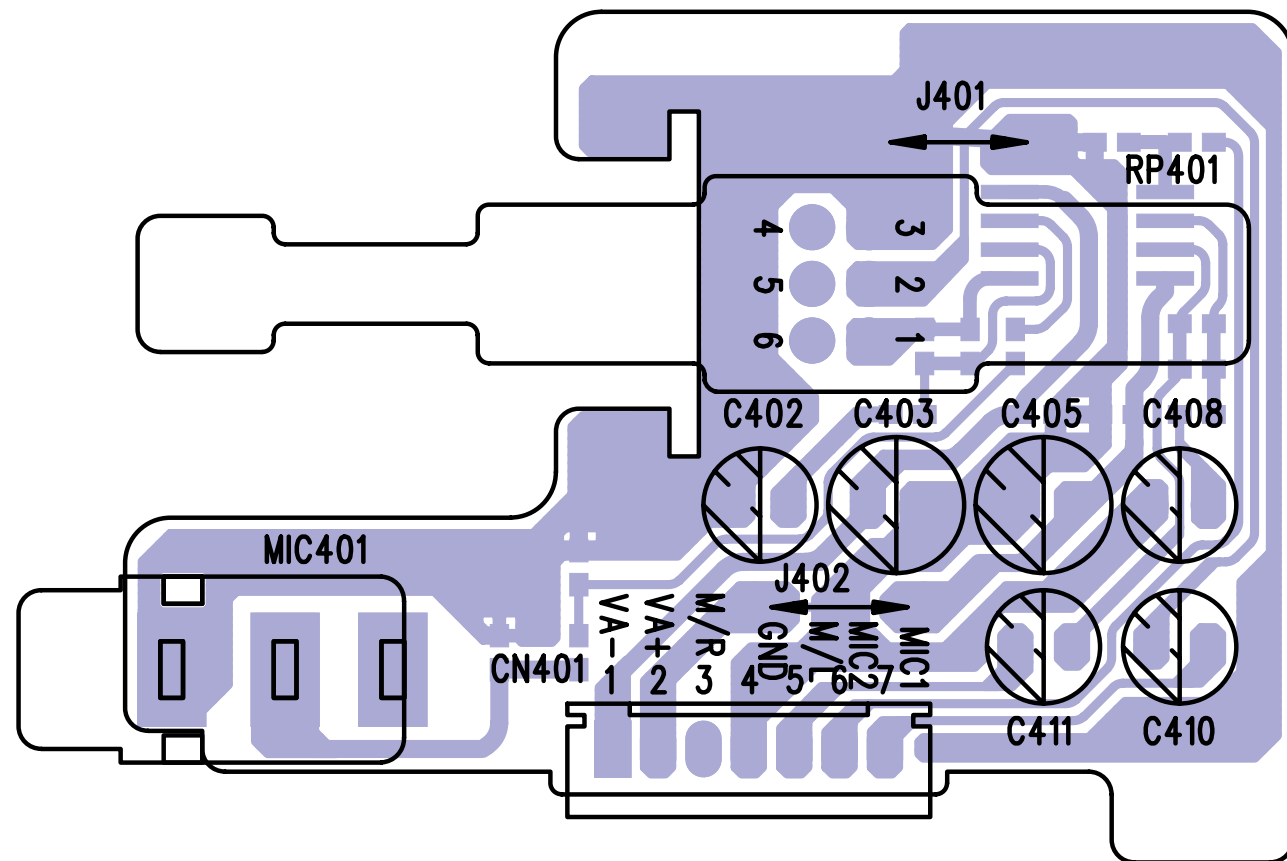


TO POWER+AV BOARD CON502

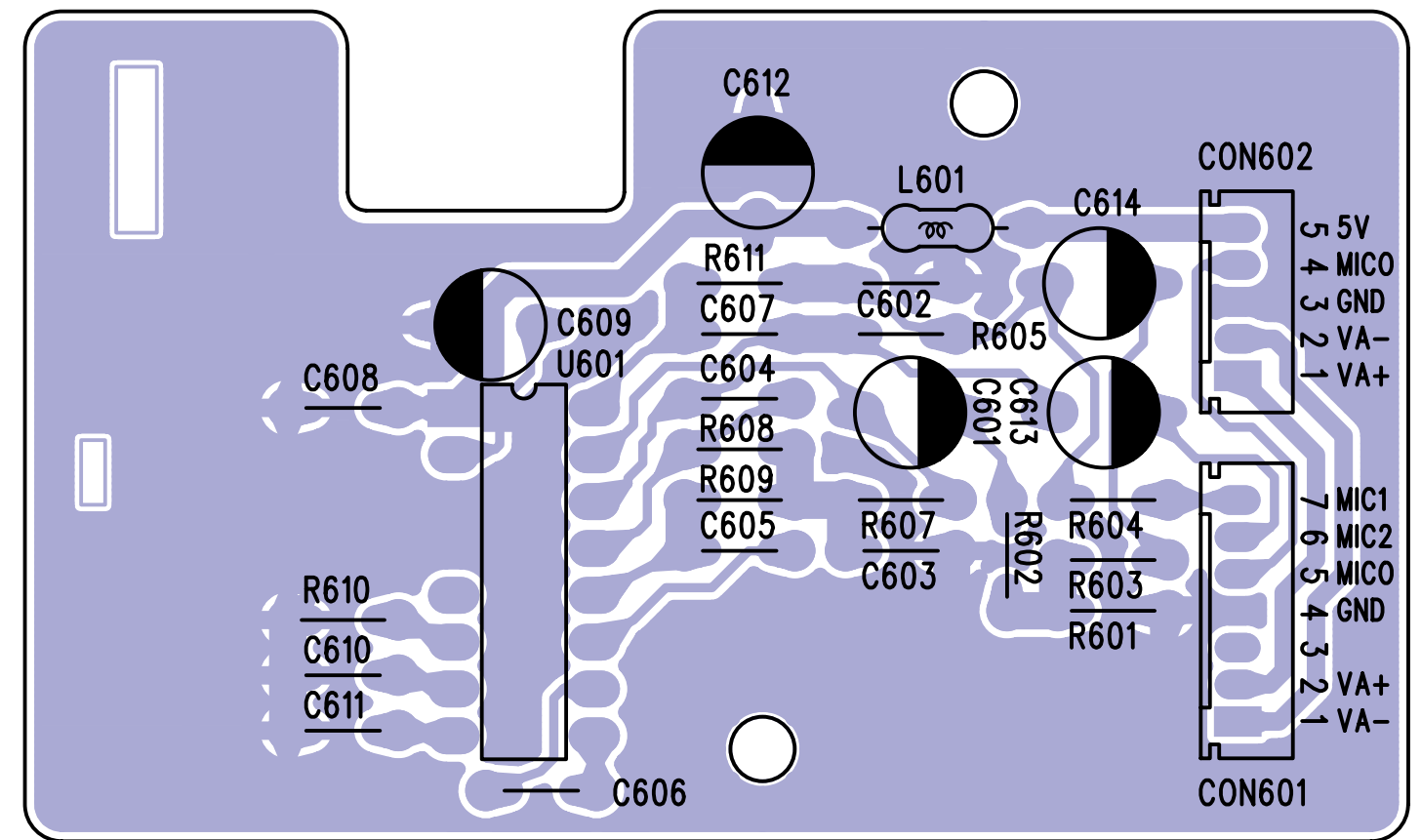


- C601 A3
- C602 B2
- C603 B3
- c604 A1
- C605 B3
- C606 B4
- C607 B2
- C608 C2
- C609 C2
- C610 C3
- C611 C4
- C612 C2
- C613 A3
- C614 A2
- CON601 A5
- CON602 B5
- L601 C1
- R10 C3
- R601 A2
- R602 A2
- R603 A2
- R604 A1
- R605 B2
- R607 B3
- R608 B3
- R609 B3
- R611 B2
- U601 B3

KARAOKE AMPLIFIER BOARD



KARAOKE ECHO BOARD



**ELECTRICAL PARTS LIST - KARAOKE AMPLIFIER AND ECHO BOARDS**

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**MISCELLANEOUS**

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MIC401	9965 000 14041	EARPHONE SOCKET CK3-3.5-3WK-E
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**CAPACITORS**

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C403	4822 124 40207	100UF20% 25V
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C405	4822 124 40207	100UF20% 25V
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**RESISTORS**

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RP401	9965 000 14035	POTM ROT. WH09GTX-1C-B10K-F25
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**COILS & FILTERS**

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L601	9965 000 14082	COIL CHOKE 10UH 10%
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**INTEGRATED CIRCUITS**

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U401	9965 000 14591	IC RC4558DR
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U601	4822 209 17186	PT2399
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Note: Only the parts mentioned in this list are normal service spare parts.

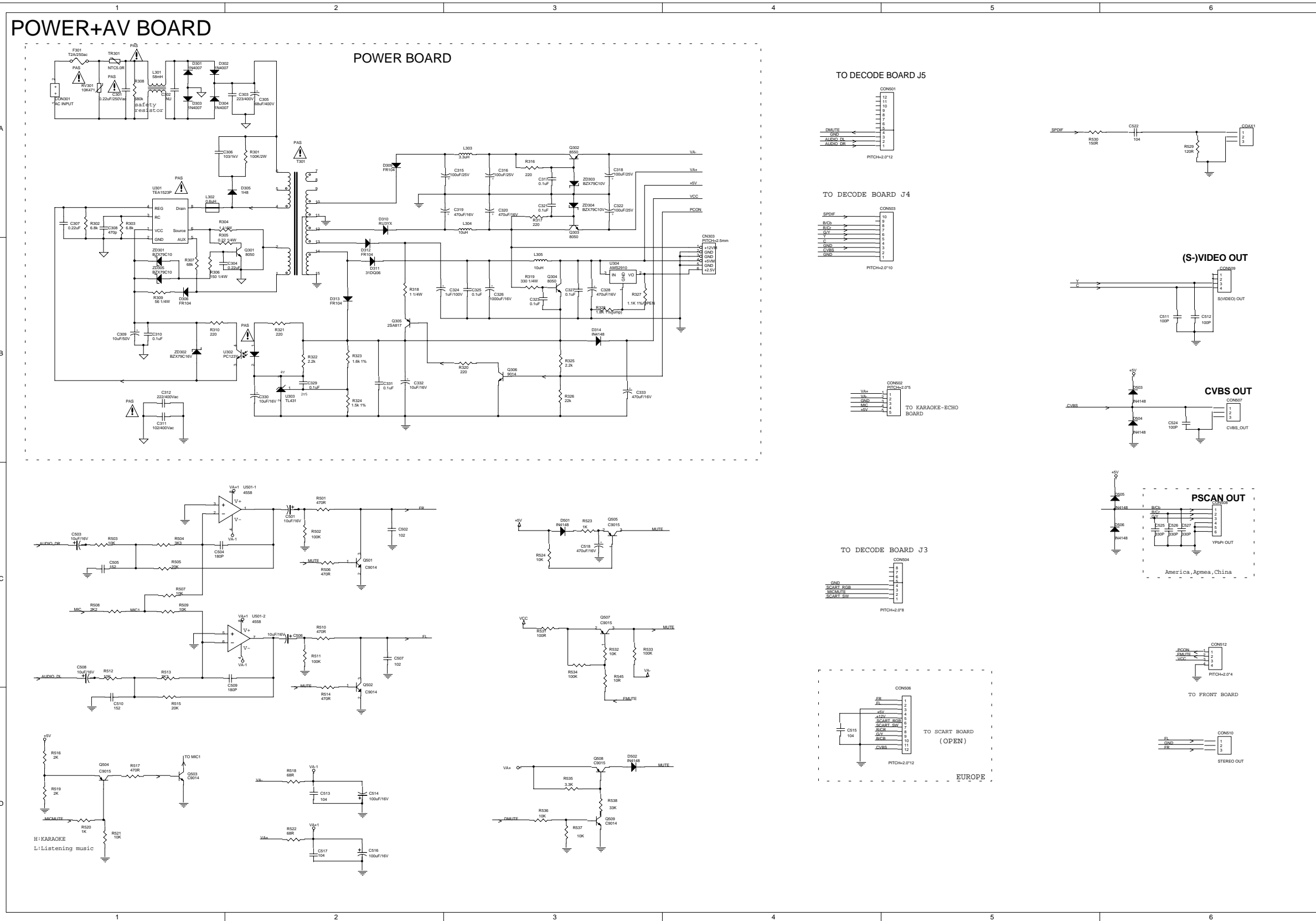
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# POWER + AV BOARD

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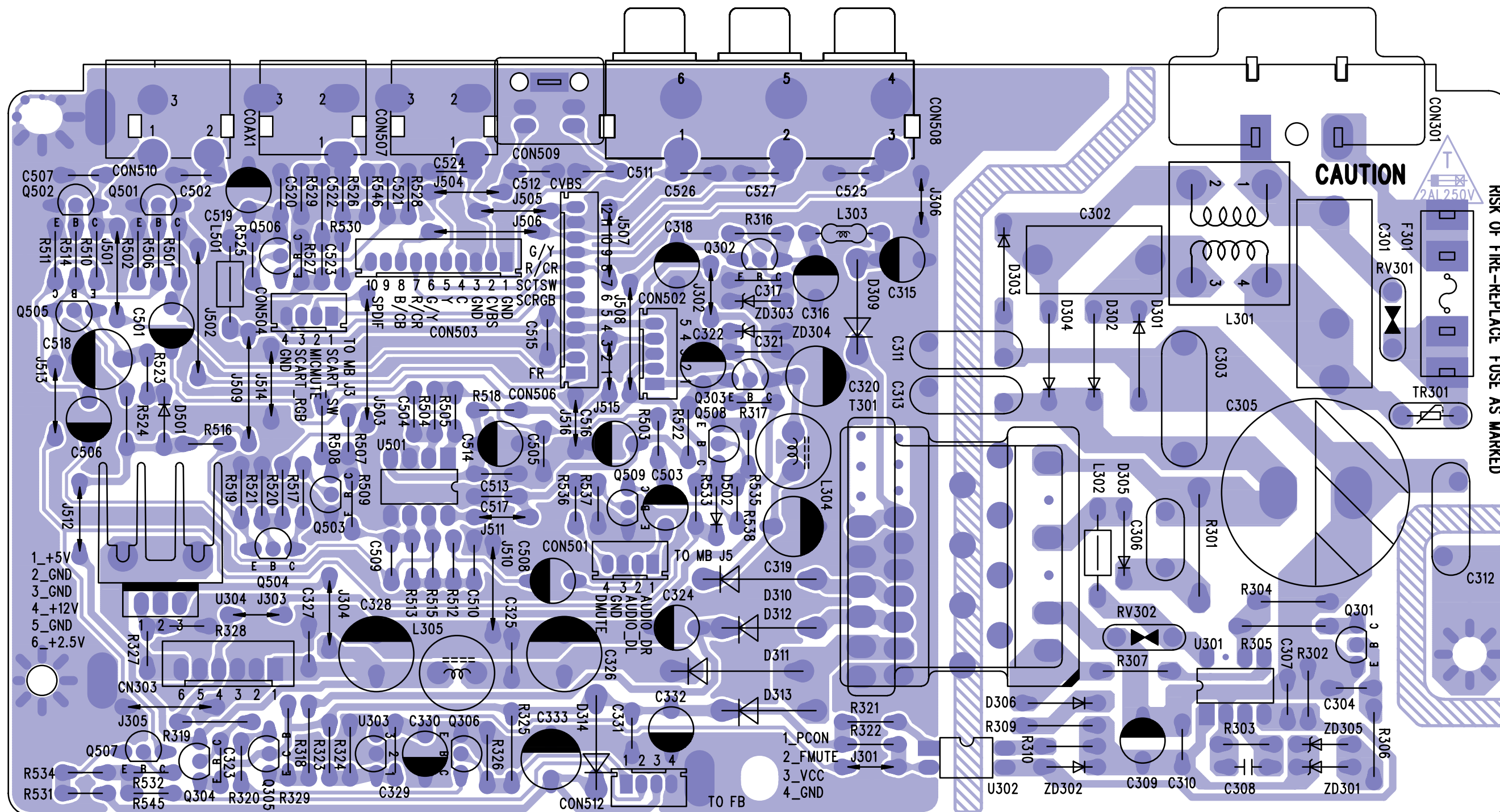
## TABLE OF CONTENTS

. Power + AV Board-Circuit Diagram.....	9-2
. Power + AV Board-Component Layout.....	9-3
. Electrical Parts List.....	9-4



- C301 A1
- C302 A1
- C303 A2
- C304 B2
- C305 A2
- C306 A2
- C307 A1
- C308 A1
- C309 B1
- C310 B1
- C311 B1
- C312 B1
- C315 A3
- C316 A3
- C317 A3
- C318 A3
- C319 A3
- C321 A3
- C322 A3
- C323 B3
- C324 B3
- C325 B3
- C326 B3
- C327 B3
- C328 B3
- C329 B2
- C330 B2
- C331 B2
- C332 B2
- C333 B3
- C501 C2
- C502 C2
- C503 C1
- C504 C1
- C505 C1
- C506 C2
- C507 C2
- C508 C1
- C509 C2
- C510 D1
- C511 B6
- C512 B6
- C513 D2
- C514 D2
- C516 D2
- C517 D2
- C518 C3
- C522 A6
- C524 B6
- C525 C6
- C526 C6
- C527 C6
- CN303 B4
- COAX1 A6
- CON301 A1
- CON501 A5
- CON502 B5
- CON503 A5
- CON504 C5
- CON506 D5
- CON507 C6
- CON508 C6
- CON509 B6
- CON510 D6
- CON512 C6
- D301 A1
- D302 A1
- D303 A1
- D304 A1
- D305 A2
- D306 B1
- D309 A2
- D310 A2
- D311 B2
- D312 B2
- D313 B2
- D314 B3
- D501 C3
- D502 D3
- D503 B6
- D504 B6
- D505 C6
- D506 C6
- F301 A1
- L301 A1
- L302 A1
- L303 A3
- L305 B3
- Q301 B2
- Q302 A3
- Q303 A3
- Q304 B3
- Q305 A2
- Q306 B2
- Q306 B3
- Q501 C2
- Q502 C2
- Q503 D1
- Q504 D1
- Q505 C3
- Q507 C3
- Q508 D3
- Q509 D3
- R301 A2
- R302 A1
- R303 A1
- R304 A1
- R305 A1
- R306 B1
- R307 B1
- R308 A1
- R309 B1
- R310 B1
- R316 A3
- R317 A3
- R318 B2
- R319 B3
- R320 B3
- R321 B2
- R322 B2
- R323 B2
- R324 B2
- R325 B3
- R326 B3
- R327 B3
- R328 B3
- R501 C1
- R502 C1
- R503 C1
- R504 C1
- R505 C1
- R506 C2
- R508 C1
- R509 C1
- R510 C2
- R511 C2
- R512 C1
- R513 C1
- R515 D1
- R516 D1
- R517 D1
- R518 D2
- R519 D1
- R520 D1
- R521 D1
- R522 D2
- R523 C3
- R524 C3
- R529 A6
- R530 A5
- R531 C3
- R532 C3
- R533 C3
- R534 C3
- R535 D3
- R536 D3
- R537 D3
- R538 D3
- R545 C3
- RV301 A1
- T301 A2
- TR301 A1
- U301 A1
- U303 B2
- U304 B3
- U304 B3
- U304 B3
- U501-1 C2
- U501-2 C2
- ZD301 B1
- ZD302 B1
- ZD303 A3
- ZD304 A3
- ZD305 B1

### POWER +AV BOARD



**ELECTRICAL PARTS LIST - POWER + AV BOARD****MISCELLANEOUS**

COAX1	9965 000 22507	RCA JACK AV8.4-108WT-3 BLK
CON301	9965 000 22512	△ MAINS SOCKET SC-13-12
CON507	9965 000 22514	RCA JACK AV8.4-108WT-2 YEL
CON508	9965 000 13971	RCA SOCKET 3P AV-3.2-3W-H
CON509	9965 000 13973	S-TERMINAL SOCKET
CON510	9965 000 20408	RCA SOCKET L/R RCA-213D4-020
F301	9965 000 20422	△ FUSE 2.0AT 250VAC
T301	9965 000 22516	△ MAINS TRANSFO. SRW28EC-X16H117
TR301	9965 000 20430	NTC DTC5D2-11

**CAPACITORS**

C301	9965 000 15790	△ CAP. M.PP 0.22UF 250VAC 20%
C303	9965 000 15699	△ CAP. PP 0.022 UF 400V 5%
C304	9965 000 15113	CAP. M.P.E. 0.22 UF 50V 5%
C305	9965 000 22513	△ CAP.ELEC 400V 68UF 20%
C306	9965 000 20418	△ CAP. CER 10 NF 1KVDC 20%
C307	9965 000 15113	CAP. M.P.E. 0.22 UF 50V 5%
C308	9965 000 20419	CAP. P.E. 470 PF 63V 5%
C311	9965 000 17574	△ CAP. CER 1000PF 400VAC 20%
C312	9965 000 15160	△
C319	9965 000 14599	CAP. ELEC 470 UF 16V 20%
C320	9965 000 14599	CAP. ELEC 470 UF 16V 20%
C324	9965 000 22508	ELCAP 1UF 100V 20%
C326	9965 000 22509	ELCAP 2200UF 16V 20%
C328	9965 000 14599	CAP. ELEC 470 UF 16V 20%
C333	9965 000 14599	CAP. ELEC 470 UF 16V 20%
C518	9965 000 14599	CAP. ELEC 470 UF 16V 20%

**RESISTORS**

R301	4822 053 11104	△ 100K 5% 2W
R305	9965 000 22515	RES.C.C. 1/2W 0.22 OHM 5%
RV301	9965 000 20428	VARIATOR RESISTANCE FNR-10K471

**COILS & FILTERS**

L301	9965 000 20423	LINE FILTER 2*38MH
L302	9965 000 13966	FERR. BEAD LB3.5X6
L303	9965 000 20424	COIL CHOKE 3.3 UH 10%
L304	9965 000 20425	COIL CHOKE SG9006 10UH 20%
L305	9965 000 20425	COIL CHOKE SG9006 10UH 20%

**DIODES**

D301	4822 130 30799	1N4007G
D302	4822 130 30799	1N4007G
D303	4822 130 30799	1N4007G
D304	4822 130 30799	1N4007G
D305	9965 000 20421	DIODE 1H8
D306	3141 018 51230	DIO REC FR104
D309	3141 018 51230	DIO REC FR104
D310	4822 130 82936	RU3YX
D311	9965 000 14601	DIODE 31DQ06
D312	3141 018 51230	DIO REC FR104
D313	3141 018 51230	DIO REC FR104

D314	4822 130 30621	1N4148
D501	4822 130 30621	1N4148
D502	4822 130 30621	1N4148
ZD301	4822 130 30862	BZX79-B9V1
ZD302	4822 130 31024	BZX79-B18
ZD303	4822 130 61219	BZX79-B10
ZD304	4822 130 61219	BZX79-B10
ZD305	4822 130 30862	BZX79-B9V1

**TRANSISTORS**

Q301	4822 130 62718	JE8050C
Q302	9965 000 14603	TRANSISTOR KTC8550C
Q303	4822 130 62718	JE8050C
Q304	4822 130 62718	JE8050C
Q305	9965 000 20427	TRANSISTOR 2SA817AY
Q306	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q501	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q502	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q503	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q504	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q505	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q507	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q508	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q509	9965 000 14581	TRANSISTOR 3DG9014-C NPN

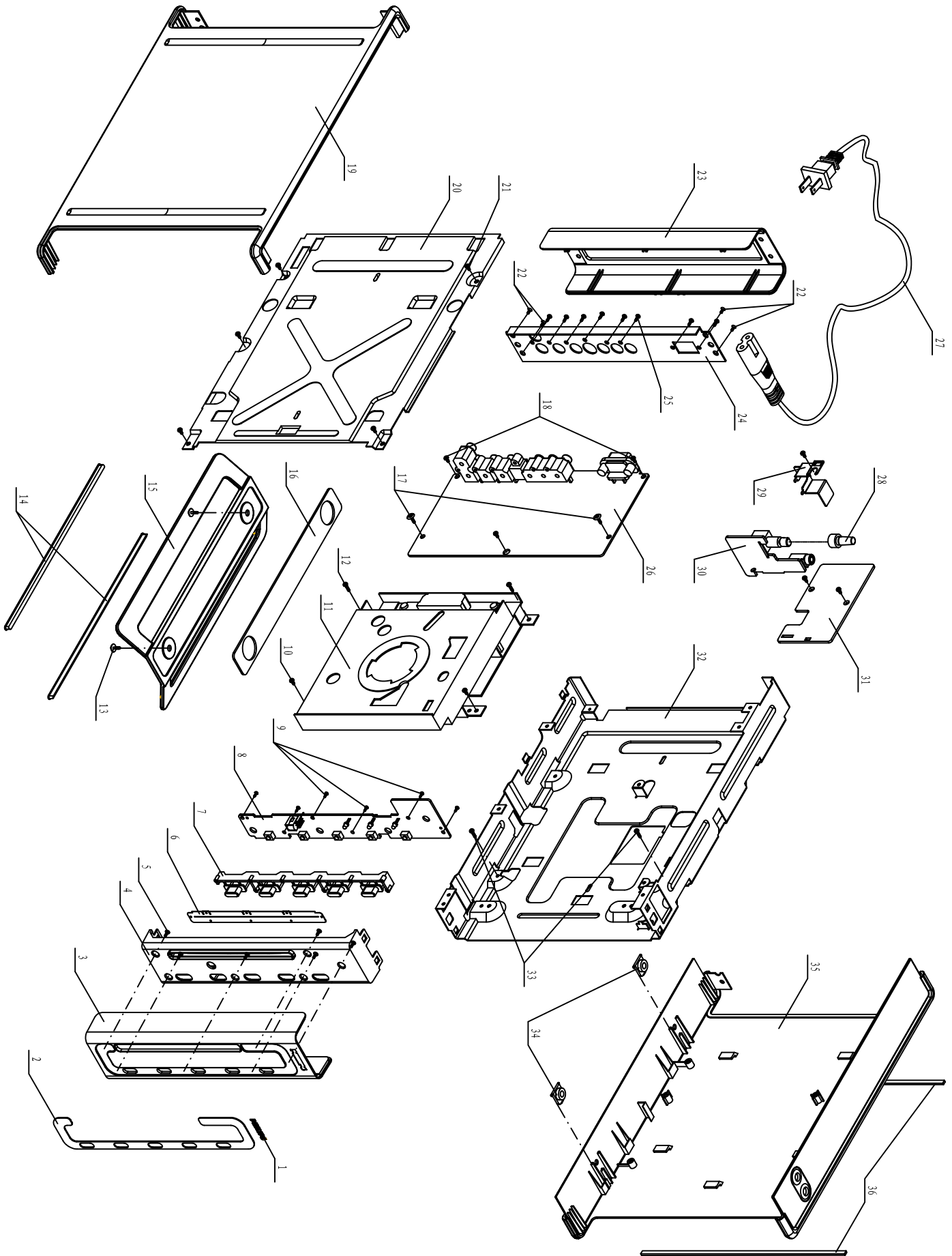
**INTEGRATED CIRCUITS**

U301	9352 639 17112	IC TEA1523P/N1 (PHSE) L
U302	9965 000 20431	PHOTOCOUPLER PC123Y92
U303	4822 209 81397	TL431CLPST
U304	9965 000 22517	IC AZ1117T-2.5 TO-220
U501	4822 209 83631	NJM4558DD

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



# MAIN ENCASING EXPLODED VIEW



**MECHANICAL & ACCESSORIES PART LIST****SCREW LIST**

1	9965 000 22496	PHILIPS LOGO	5	D2.5 x 8
2	9965 000 22485	FRONT LABEL	9	D2.6 x 8
3	9965 000 22481	OUTSIDE FRONT CABINET	10	M3 x 6
4	9965 000 22482	INNER FRONT CABINET	12	D3 x 8
6	9965 000 13942	DISK BRUSH	13	refer to parts list
7	9965 000 22483	FRONT KEY BUTTONS	17	D3 x 8
11	9965 000 22493	DVD LOADER MODULE DVD590M	18	M3 x 6
13	9965 000 22494	WASHER HEAD M4 X 14 FOR STAND	21	M3 x 6
14	9965 000 22490	RUBBER PAD 1	22	M3 x 7
15	9965 000 22484	BASE	25	D3 x 8
16	9965 000 22491	RUBBER PAD 2	33	D3 x 8
19	9965 000 22486	TOP COVER(PALSTIC)		
23	9965 000 22488	BACK PLATE		
27	9965 000 13933	△ POWER CORD 1880 20MM		
28	9965 000 13941	MIC KNOB		
34	9965 000 22489	BRACKET		
35	9965 000 22487	LOWER COVER		
36	9965 000 22492	RUBBER PAD 3		
A_CBL	9965 000 22497	AUDIO CABLE 1,5M WHITE/RED		
IFU	9965 000 22498	OPERATION MANUAL(IFU)		
RC	9965 000 21425	REMOTE CONTROLLER		
V_CBL	9965 000 22495	VIDEO CABLE 1,5M YEL		

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

**REVISION LIST**

**Version 1.0**

- \* Initial release

**Version 1.1**

- \* Page 4-3 & 4-4 Correction of Trouble shooting Chart