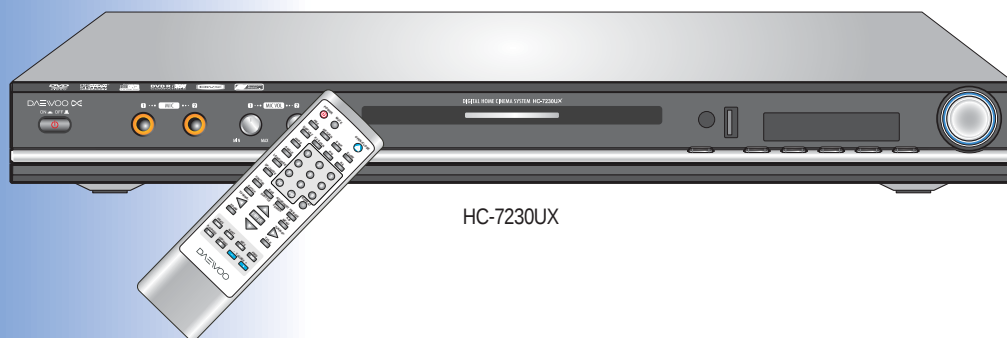


SN: 9CD8305700

Service Manual

Digital Home Cinema System

Model : HC-7230UX Series



HC-7230UX

DIGITAL HOME CINEMA SYSTEM

Model : HC-7230UX Series

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Safety Precautions

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

	CAUTION RISK OF ELECTRIC SHOCKS DO NOT OPEN	
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		
	THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.	
	THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.	

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

LASER SAFETY

THIS UNIT EMPLOYS A LASER. ONLY QUALIFIED SERVICE PERSONNEL SHOULD REMOVE THE COVER OR ATTEMPT TO SERVICE THIS DEVICE DUE TO POSSIBLE EYE INJURY.

CAUTION : USE OF ANY CONTROLS, ADJUSTMENTS, OR PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION : TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION : POUR EVITER LES CHOCs ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

Important Safety Instructions

- All the safety and operating instructions should be read before the appliance is operated.
 - The safety and operating instructions should be retained for future reference.
 - All warnings on the appliance and in the operating instructions should be adhered to.
 - All operating and use instructions should be followed.
1. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink,

laundry tub, in a wet basement, or near a swimming pool, and the like.

PORTABLE CART

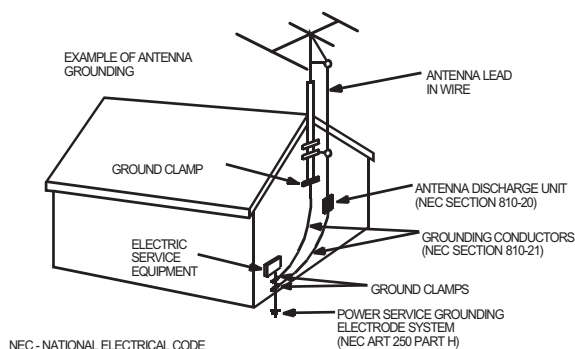


Figure 2

2. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
3. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
4. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
5. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
6. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
7. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
8. Grounding or Polarization - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
9. Power - Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
10. Protective Attachment Plug - If the appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
11. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
12. Power Lines - An outdoor antenna should be located away from power lines.

Safety Precautions

13. Outdoor Antenna Grounding - If an outside antenna is connected to the receiver be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes and requirements for the grounding electrode. See Figure 1.



14. Non-use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

15. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

16. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

- a) The power-supply cord or the plug has been damaged; or
- b) Objects have fallen, or liquid has been spilled into the appliance; or
- c) The appliance has been exposed to rain; or
- d) The appliance does not appear to operate normally or exhibits a marked change in performance; or
- e) The appliance has been dropped, or the enclosure damaged.

17. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Specifications

2

2

General specifications

Power supply Operating Voltage	~ 100 V - 240 V, 50/60Hz (Free Voltage)	Model	Power output at 10%THD(RMS)	
			Front / Center / Rear	Woofer
Power consumption	Operating 60 Watt	HC-7230UX	30 W, 8 ohm	50 W, 6 ohm
Dimensions (W x D x H) / Weight	430 x 316 x 52 mm / 3.24 kg			

Front Amp. Section

Front Amp.	Power Output at 10% THD(RMS)	At 1 KHz, 8 ohms	30 W
	THD(Total Harmonic Distortion)	At 1 KHz, 1 W	0.5 %
	Frequency Response(Analogue)	1 W	100 Hz ~ 20 KHz
	S/N Ratio, IHF-A Weighted	CD PLAY	>55 dB
	Subwoofer Turnover Frequency		120 Hz
	Channel Separation	1 KHz	50 dB
Center Amp.	Power Output at 10% THD(RMS)	At 1 KHz, 8 ohms	30 W
	THD(Total Harmonic Distortion)	At 1 KHz, 1 W	0.5 %
	S/N Ratio, IHF-A Filter	Rated Output	>55 dB
	Frequency Response	1 W	135 Hz ~ 18 KHz
Rear Amp.	Power Output at 10% THD(RMS)	At 1 KHz, 8 ohms	30 W
	THD(Total Harmonic Distortion)	At 1 KHz, 1 W	0.5 %
	S/N Ratio, DOLBY	Rated Output	>55 dB
	Frequency Response	1 W	135 Hz ~ 18 KHz
Woofer	Power Output at 10% THD(RMS)	At 100 Hz, 6 ohms	50 W
	Frequency Response	1 W	20 Hz ~ 150 Hz
	S/N Ratio, IHF-A Weighted		>50 dB

Video Section

Output Level/Impedance	Composite 75 ohm	1.0Vp-p/75 ohm	0.5 dB
	S-Video(Y/C) 75 ohm(DVD only)	1Vp-p/ 0.286Vp-p	0.5 dB
	Component Out(Y/ Cb/ Cr) :Option	1Vp-p/0.7Vp-p/0.7Vp-p	0.5 dB
Frequency Response	Ref 500KHz		5Hz~5.7MHz
Crosstalk	@1MHz	45dB	40dB
S/N Ratio	DVD	60dB	

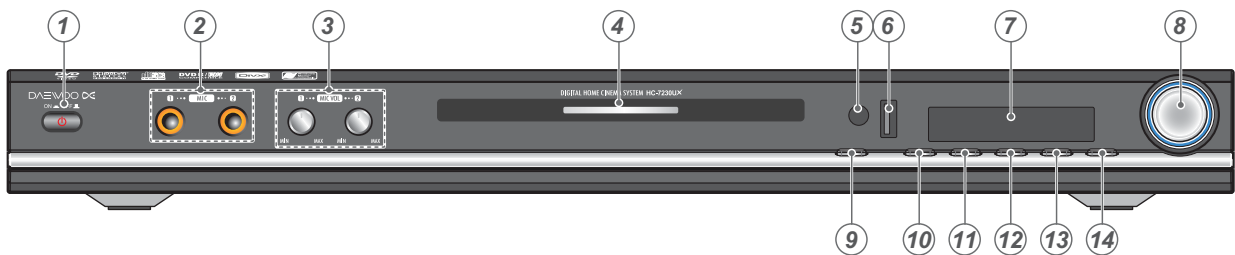
FM Tuner Section (option) (FM ANT Impedance : 75 ohms)

Tuning Range	USA Version	87.5~108.0MHz
	Australia / Europe Version	87.5~108.0MHz
Scanning Frequency Interval	USA Version	100KHz
	Australia / Europe Version	50KHz
Usable Sensitivity, 75 ohms	S/N=30dB, USA Version	2uV(17.2dBf)
	S/N=26dB, Australia / Europe Version	3uV(20.8dBf)
S/N Ratio @1mV IHF-A FILTER	Mono USA Version	55dB
	Mono Australia / Europe Version	55dB
	Stereo USA Version	50dB
	Stereo Australia / Europe Version	50dB

Location of Users Controls

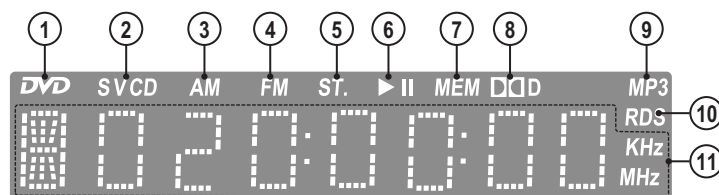
• Front Panel

HC-7230UX



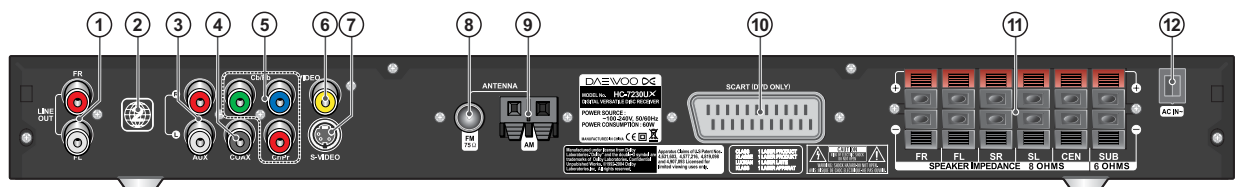
- | | |
|----------------------------------|-----------------------------|
| 1. POWER ON/OFF push button | 8. MASTER VOLUME Control |
| 2. MIC 1 / MIC 2 jacks | 9. OPEN/CLOSE (▲) button |
| 3. MIC 1 / MIC 2 VOLUME Controls | 10. FUNCTION button |
| 4. DISC Tray | 11. PLAY/PAUSE (▶) button |
| 5. Remote Control Sensor | 12. STOP (■)/BAND button |
| 6. USB Port | 13. PREV (◀◀) button |
| 7. Display | 14. NEXT (▶▶) button |

• Display



- | | |
|------------------------------|--|
| 1. DVD indicator | 7. MEMORY indicator |
| 2. CD/VCD/S VCD indicator | 8. DOLBY DIGITAL indicator |
| 3. AM(MW) indicator (option) | 9. MP3 indicator |
| 4. FM indicator (option) | 10. RDS indicator (option) |
| 5. STEREO indicator | 11. Multi-Function Information Displaying Area |
| 6. PLAY/PAUSE indicator | |

• Rear Panel

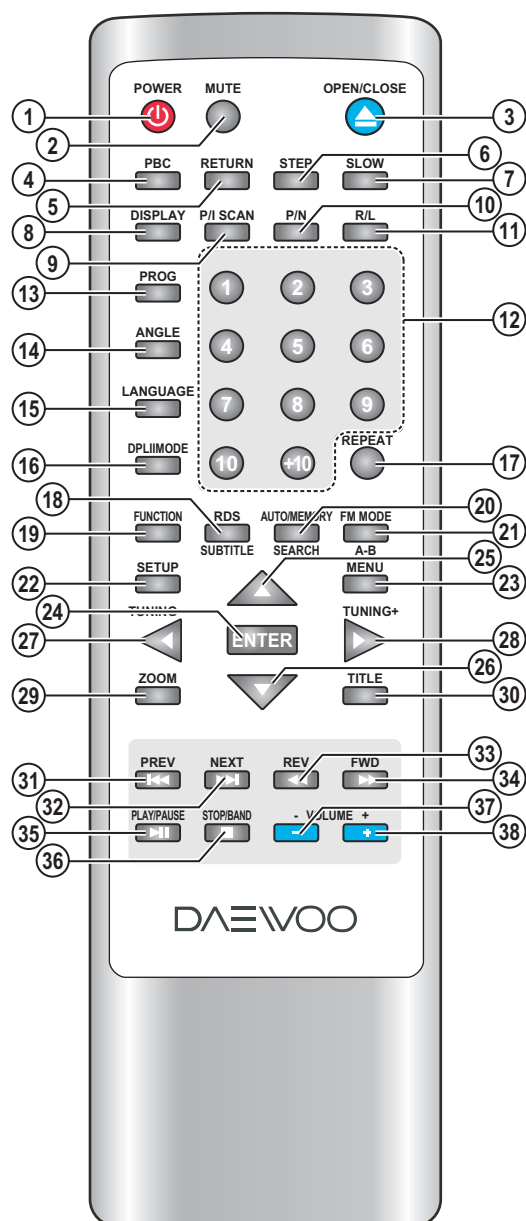


- | | |
|--|---------------------------------------|
| 1. *LINE OUTPUT Jacks | 7. S VIDEO OUT jack |
| 2. Region Code | 8. FM ANTENNA connector (option) |
| 3. AUX INPUT jacks | 9. AM(MW) ANTENNA connectors (option) |
| 4. COAXIAL OUTPUT Jack | 10. *SCART jack (option) |
| 5. COMPONENT VIDEO OUTPUT (Y, Cb/Pb,Cr/Pr) jacks | 11. SPEAKER connectors |
| 6. VIDEO OUT jack | 12. Power cord |

* Choose stereo in DOWNMIX in speaker setup when using LINE OUTPUT or SCART Jack (option)

Location of Users Controls

• Remote Controller

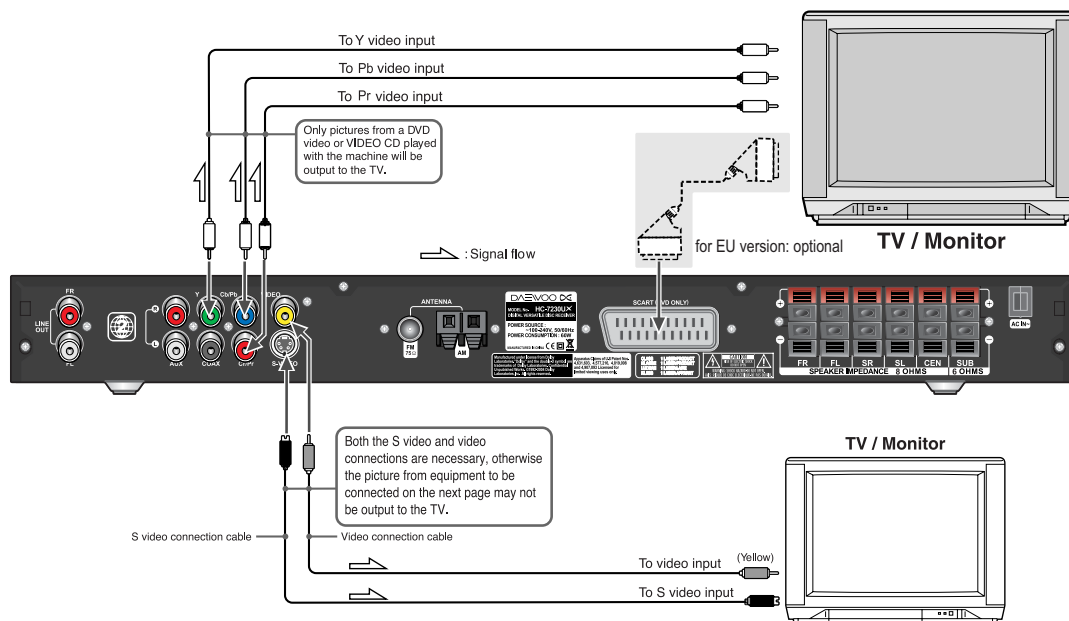


1. POWER ON/STANDBY button
2. MUTE button
3. OPEN/CLOSE button
4. PBC button
5. RETURN button
6. STEP button
7. SLOW button
8. DISPLAY button
9. PROGRESSIVE/INTERLACE Scan button
10. TV SYSTEM(PAL/NTSC: DVD only) button
11. R/L button
12. Number(1~10, 10+) buttons
13. PROGRAM button
14. ANGLE button
15. LANGUAGE button
16. DOLBY PRO LOGIC II MODE button
17. REPEAT button
18. RDS/SUBTITLE button
19. FUNCTION button
20. AUTO MEMORY/SEARCH button
21. FM MODE/A-B REPEAT button
22. SETUP button
23. MENU button
24. Enter button
25. Direction(▲) button
26. Direction(▼) button
27. Direction(◀)/TUNING - button
28. Direction(▶)/TUNING + button
29. ZOOM button
30. TITLE button
31. SKIP PREV (◀◀) button
32. SKIP NEXT (▶▶) button
33. FAST REVERSE (◀◀) button
34. FAST FORWARD (▶▶) button
35. PLAY/PAUSE (▶||) button
36. STOP (■)/BAND button
37. VOLUME - buttons
38. VOLUME + buttons

Connecting to Equipment

• Connecting to TV

- 21-Pin SCART Cable(not included) to 21-pin SCART input terminal on TV
- SCART Specification : Composite and Component Video output(DVD, Video)Audio L/R Output(DVD only)



- If the TV or monitor is equipped with an S video input, make the S video connection in addition to the normal video connection. The S video connection will provide higher quality picture playback.

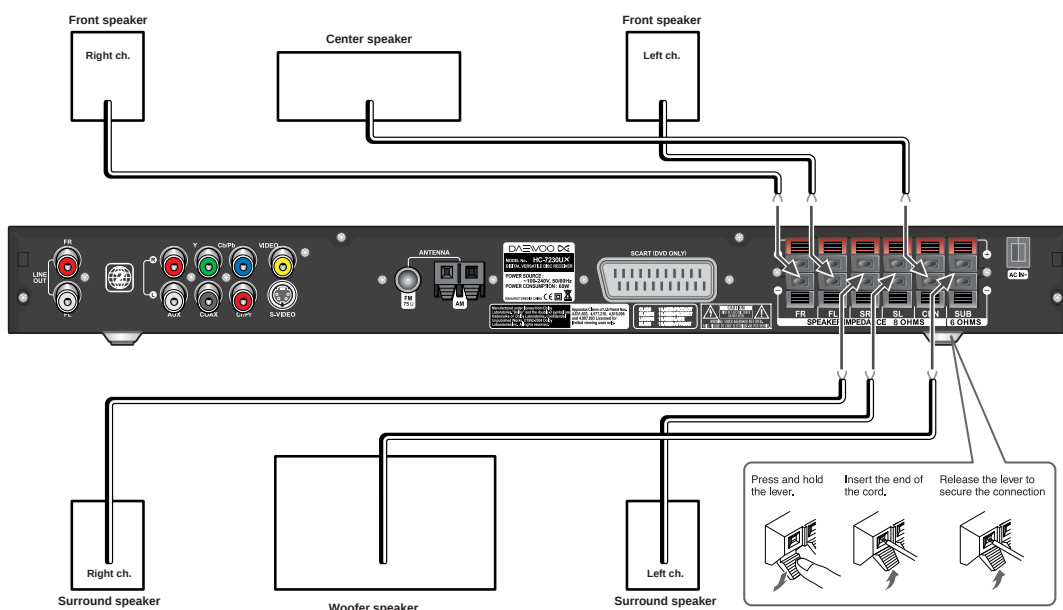
• Connecting speakers

- ◆ **Before connecting**
- This machine is designed to reproduce optimum sound quality when speakers with the specified impedance below are connected. Please check the following information and choose speakers with appropriate impedance for the connections.

Front speakers / Center speaker / Surround Speakers : 6 ohms min. per speaker

Woofer speaker : 4 ohms min.

- To prevent damage to circuits, never short-circuit the positive (+) and negative (-) speaker wires.
- Do not connect the speaker cable to the L and R connectors at the same time and do not connect more than one speaker to the same speaker connectors.



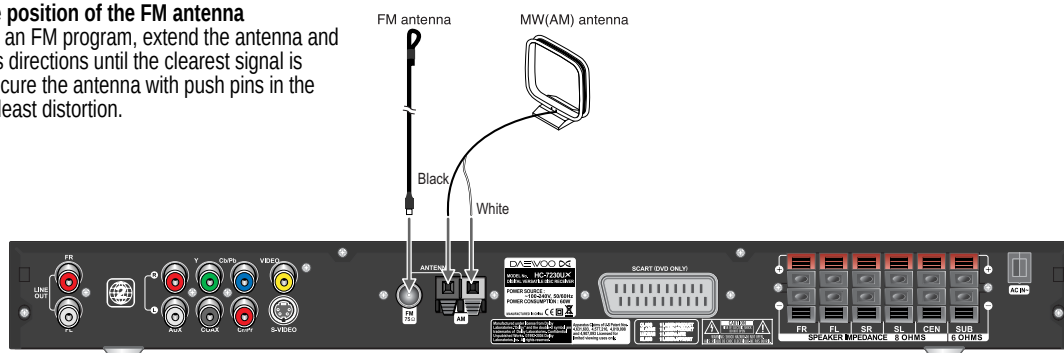
- To prevent damage to circuits, never short-circuit the positive (+) and negative (-) speaker wires.
- Do not connect the speaker cable to the L and R connectors at the same time and do not connect more than one speaker to the same speaker connectors.

Connecting to Equipment

• Connecting the supplied FM/MW(AM) antennas (option)

◆ Adjusting the position of the FM antenna

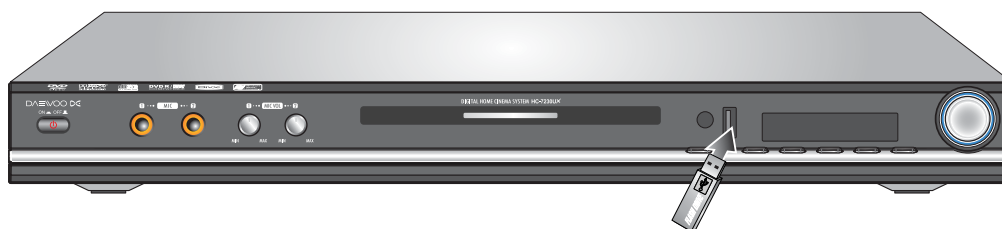
While listening to an FM program, extend the antenna and move it in various directions until the clearest signal is received, then secure the antenna with push pins in the position with the least distortion.



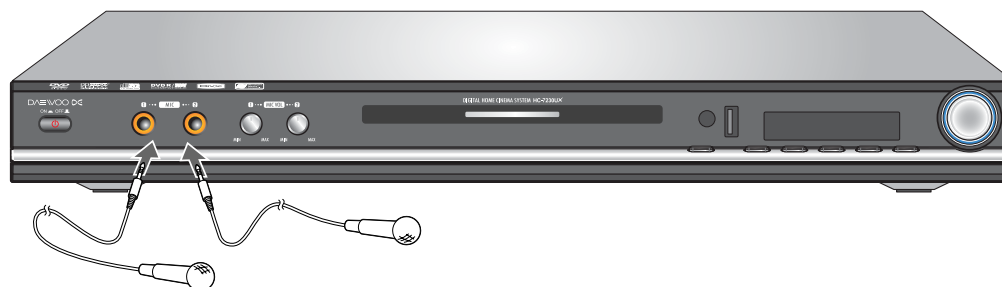
• Connecting the USB device of Fresh memory type (option)

◆ Before connecting

- Refer also to the instruction manual of each USB Device to be connected.
- Before using the USB devices, make sure there is no disc on the machine.
- USB function works only under the condition that the display shows "NO DISC" at DVD function mode.
- Connect the plugs securely.



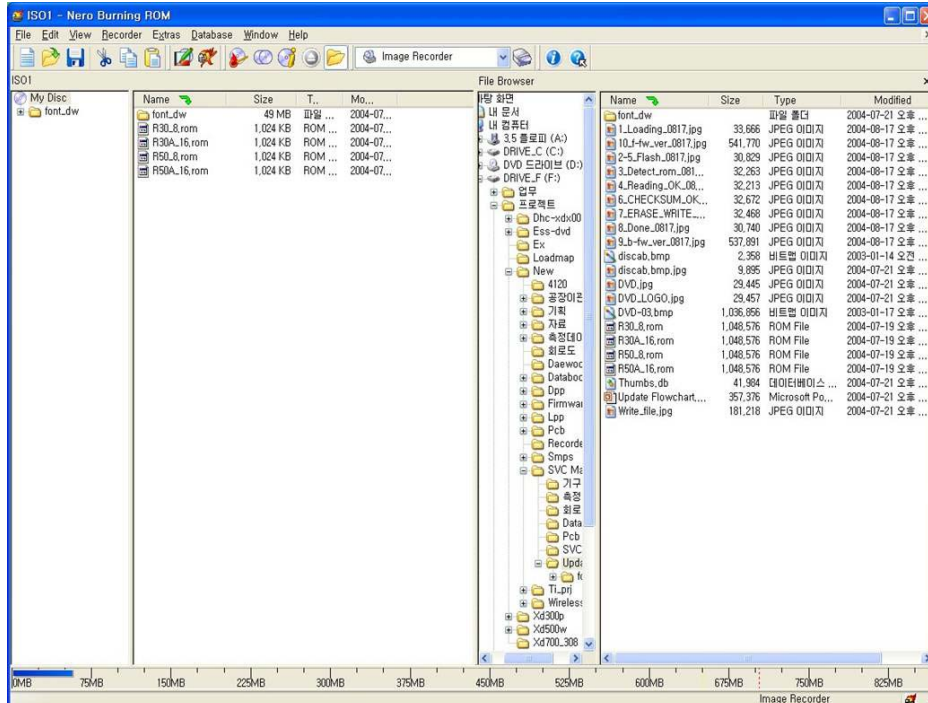
• Connecting the Microphone for KARAOKE



Firmware Upgrade

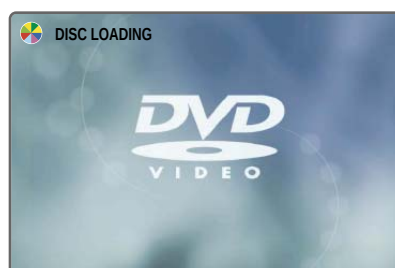
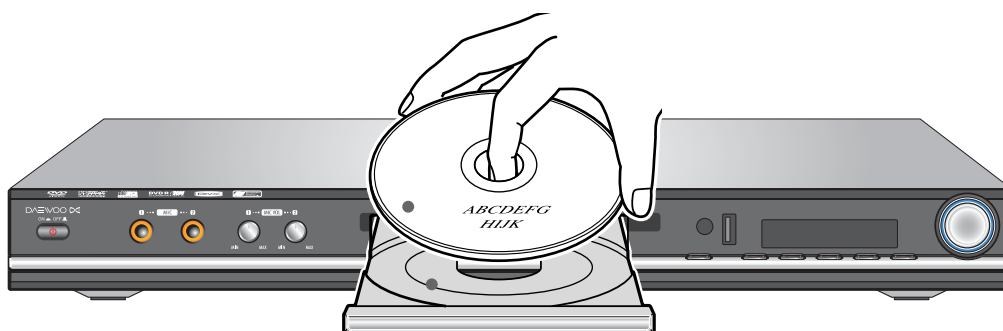
• Preparing the Firmware Upgrade

1. Write a disc to Update file by PC Writing Program.
2. A size of dummy folder is more than 10M bite. (ex : font_dw, attached picture)
3. Put Firmware file (DVDROM.BIN) in a disc.



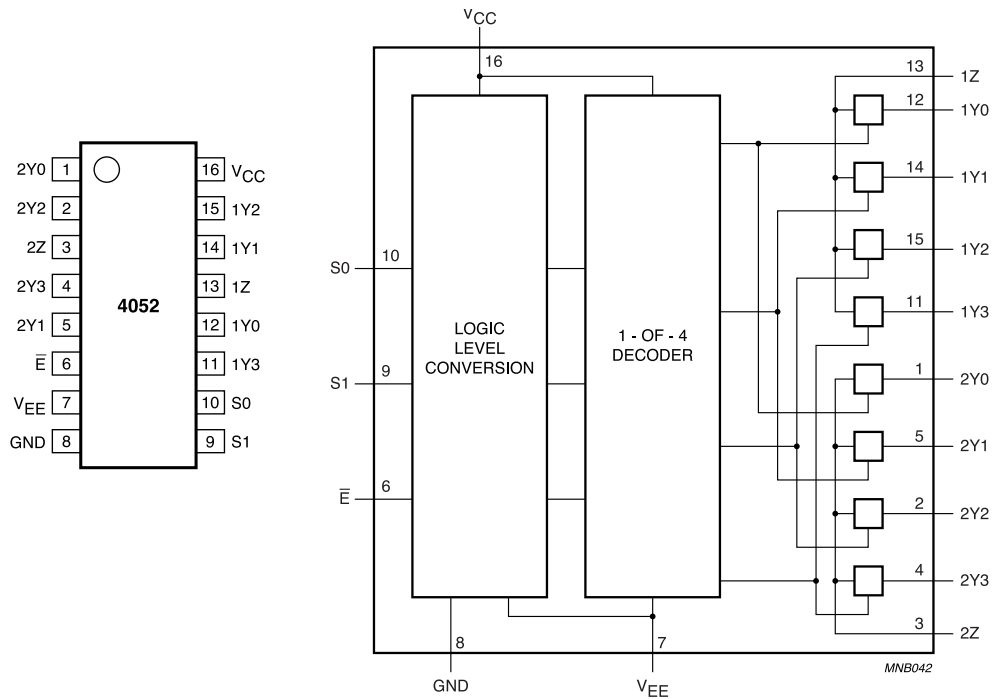
• Activating the Firmware Upgrade

1. Open the Door of DVD Receiver.
2. Insert the Update Disc into the Disc Tray.
3. Close the Door, then DVD Receiver reads the disc, and Update the Firmware itself.

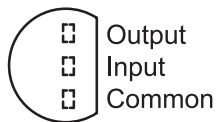


Internal Block Diagram of ICs

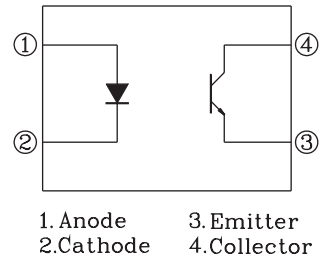
- **74HC4052**



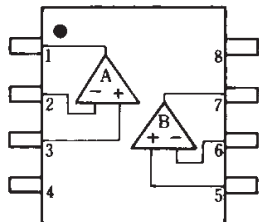
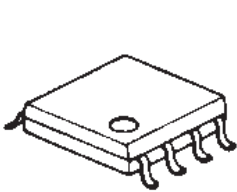
- **74L24**



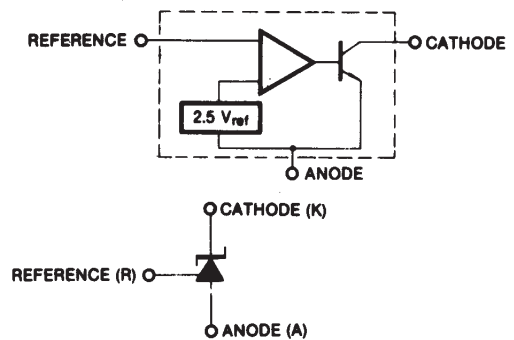
- **EL817**



- **NJM4558M**

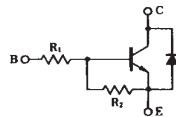
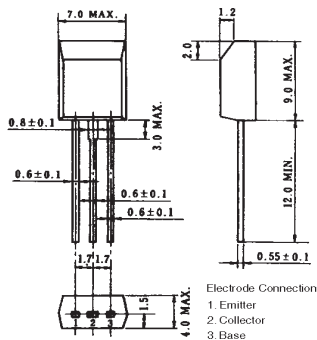


- **TL431**

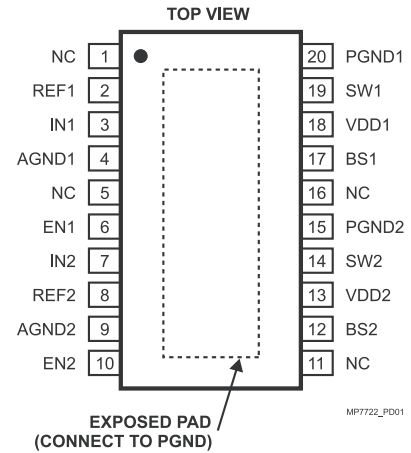


Internal Block Diagram of ICs

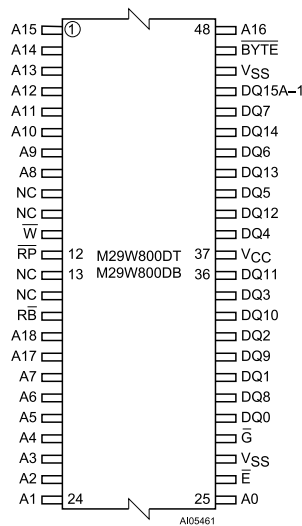
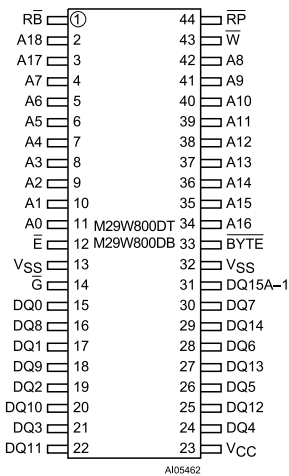
• CE2826



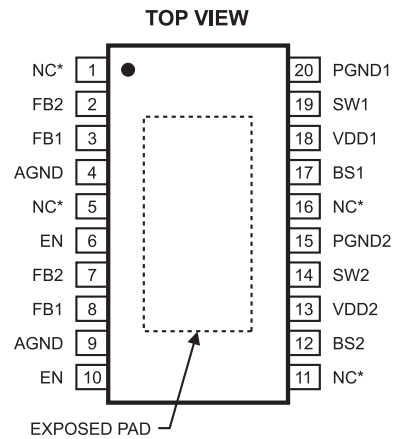
• MP7722



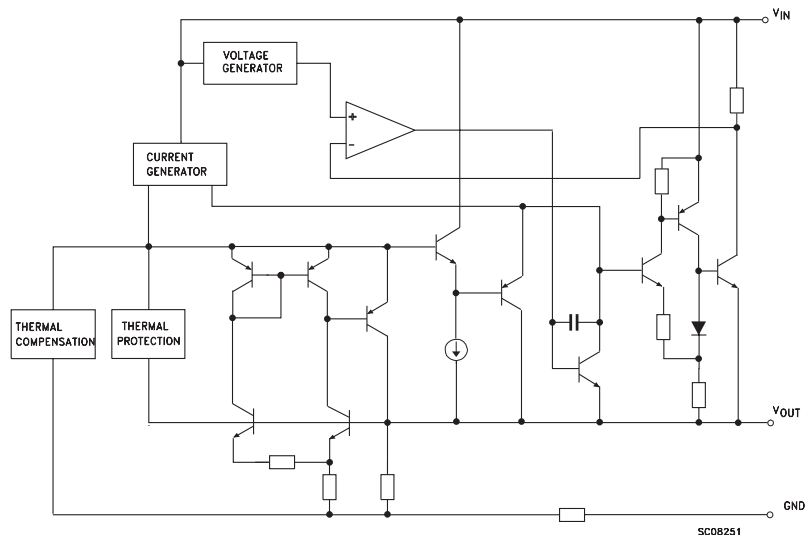
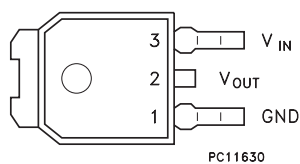
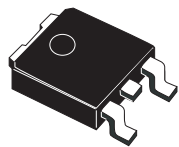
• M29W800DB



• MP7782

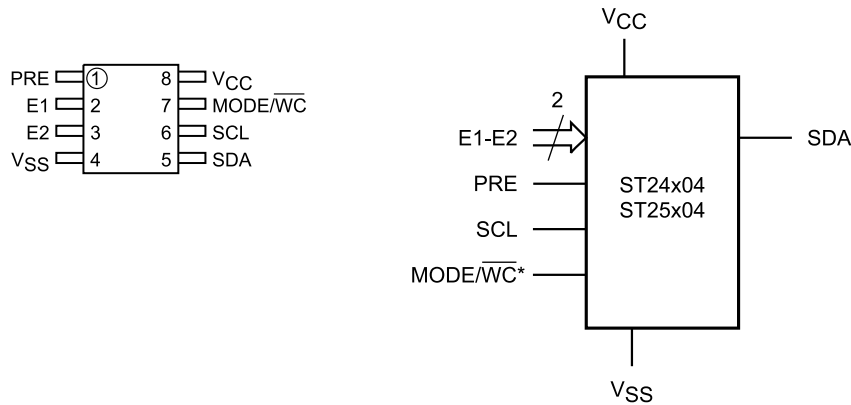


• LD1117ADT-R

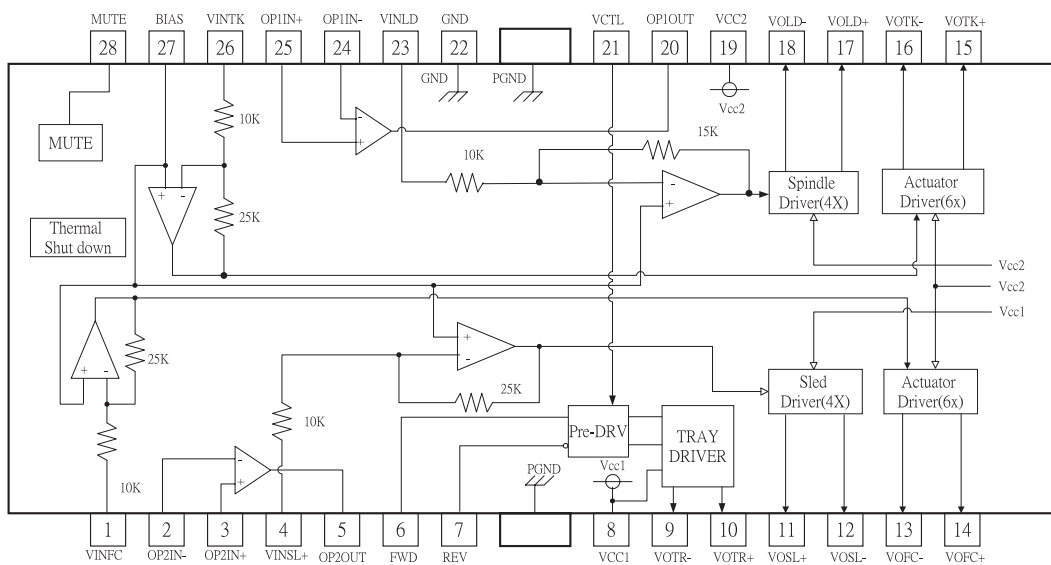


Internal Block Diagram of ICs

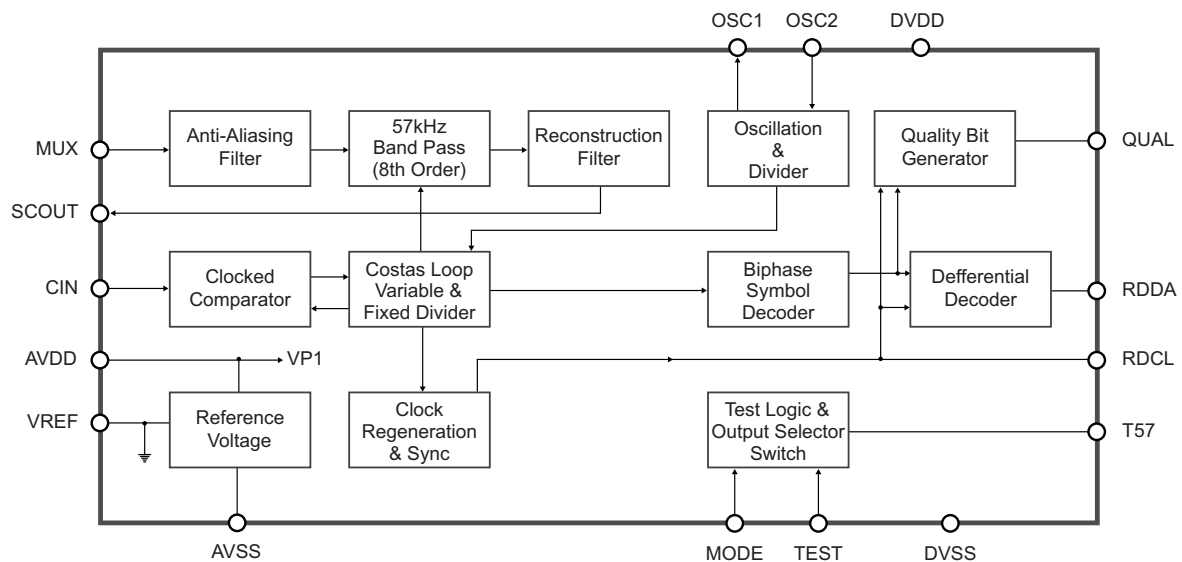
• 24C04



• AM5888S

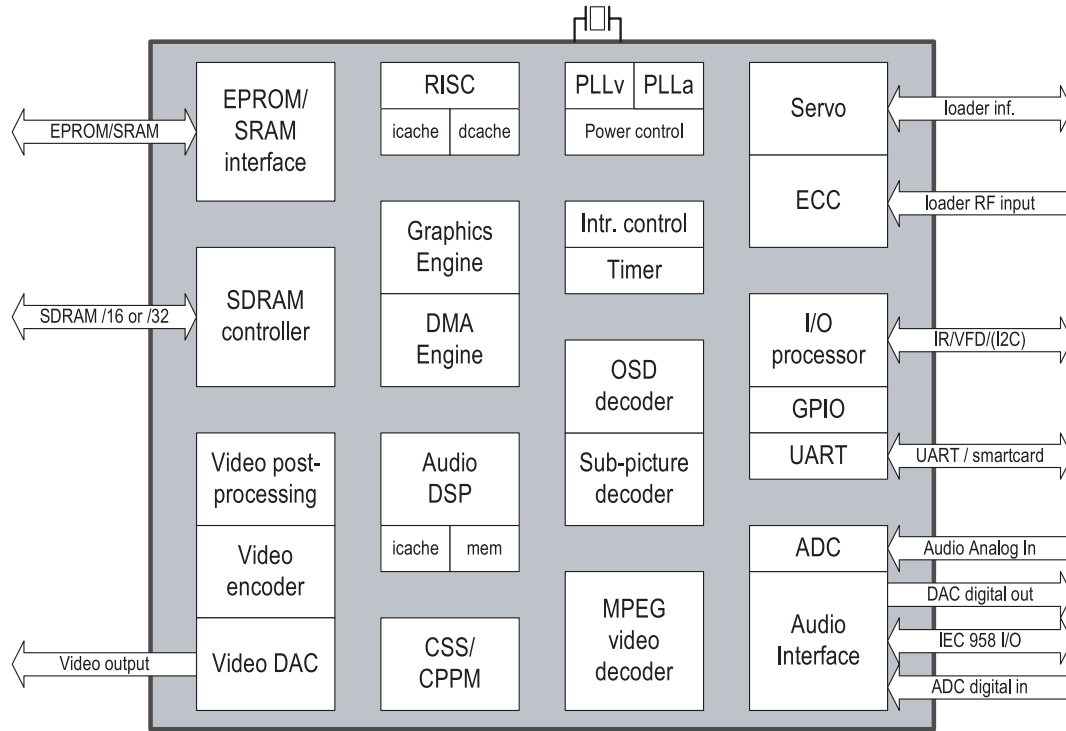


• PT2579 (RDS option)

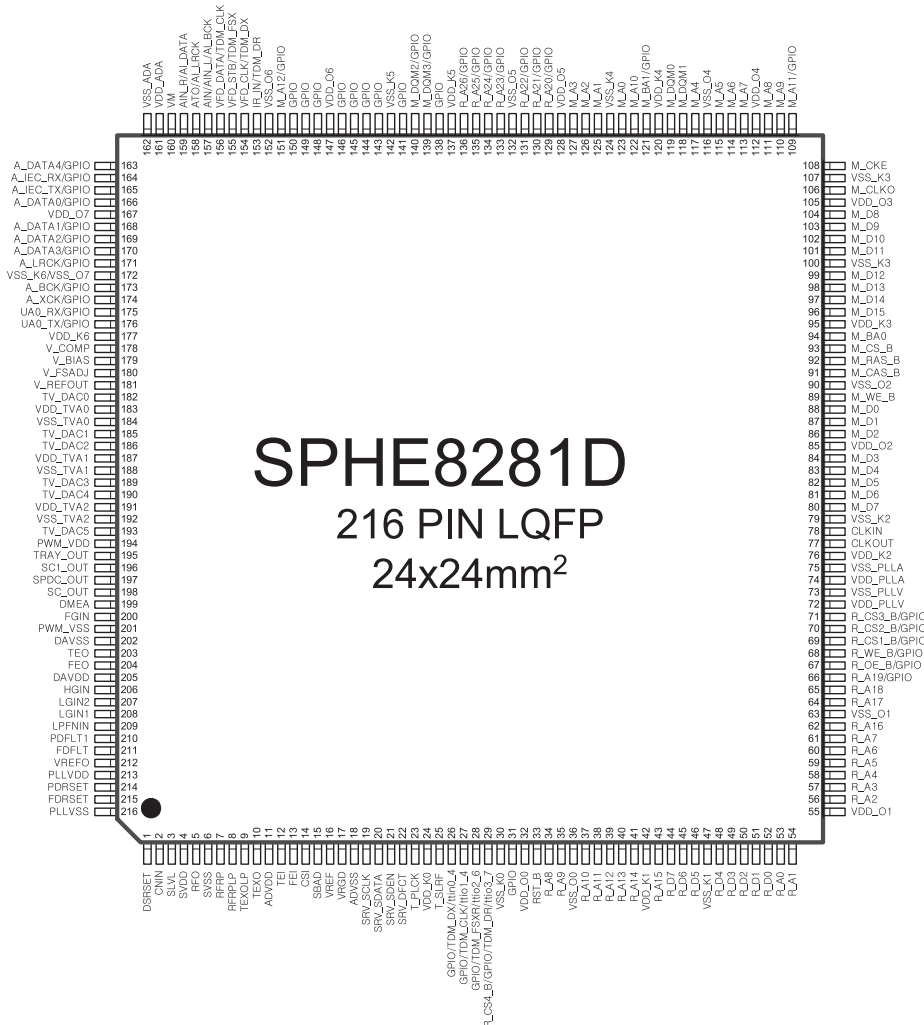


Internal Block Diagram of ICs

• SPHE8281DE (with DOLBY PROLOGIC II)

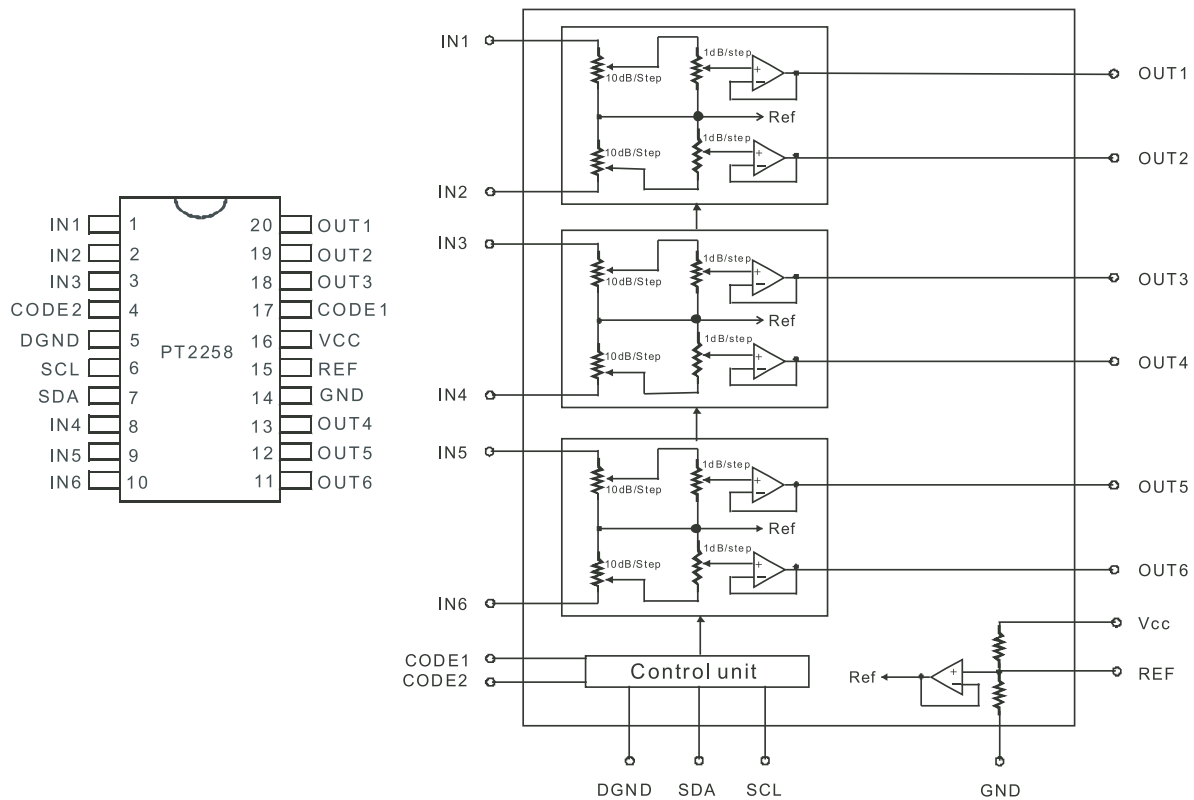


SPHE8281D
216 PIN LQFP
24x24mm²

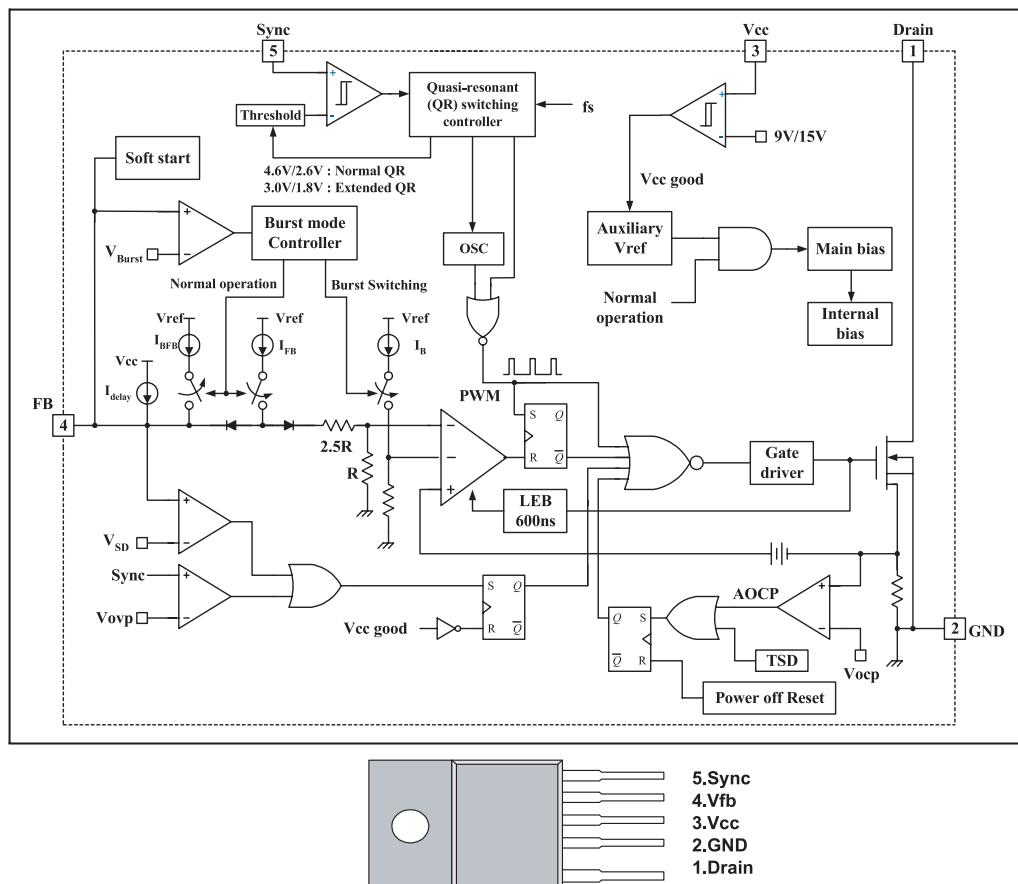


Internal Block Diagram of ICs

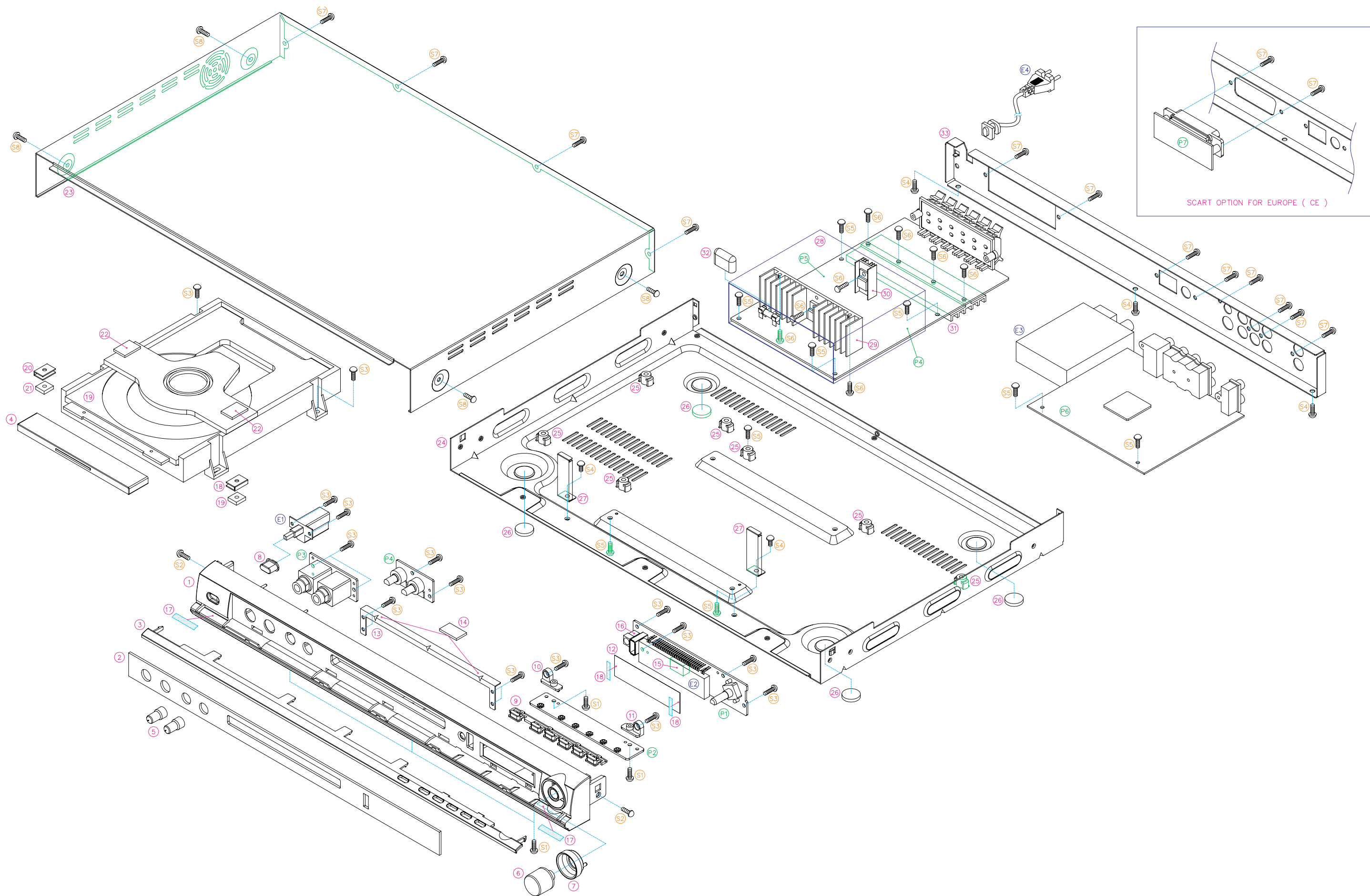
• PT2258



• FSCQ0765RT



Exploded View and Mechanical Parts List

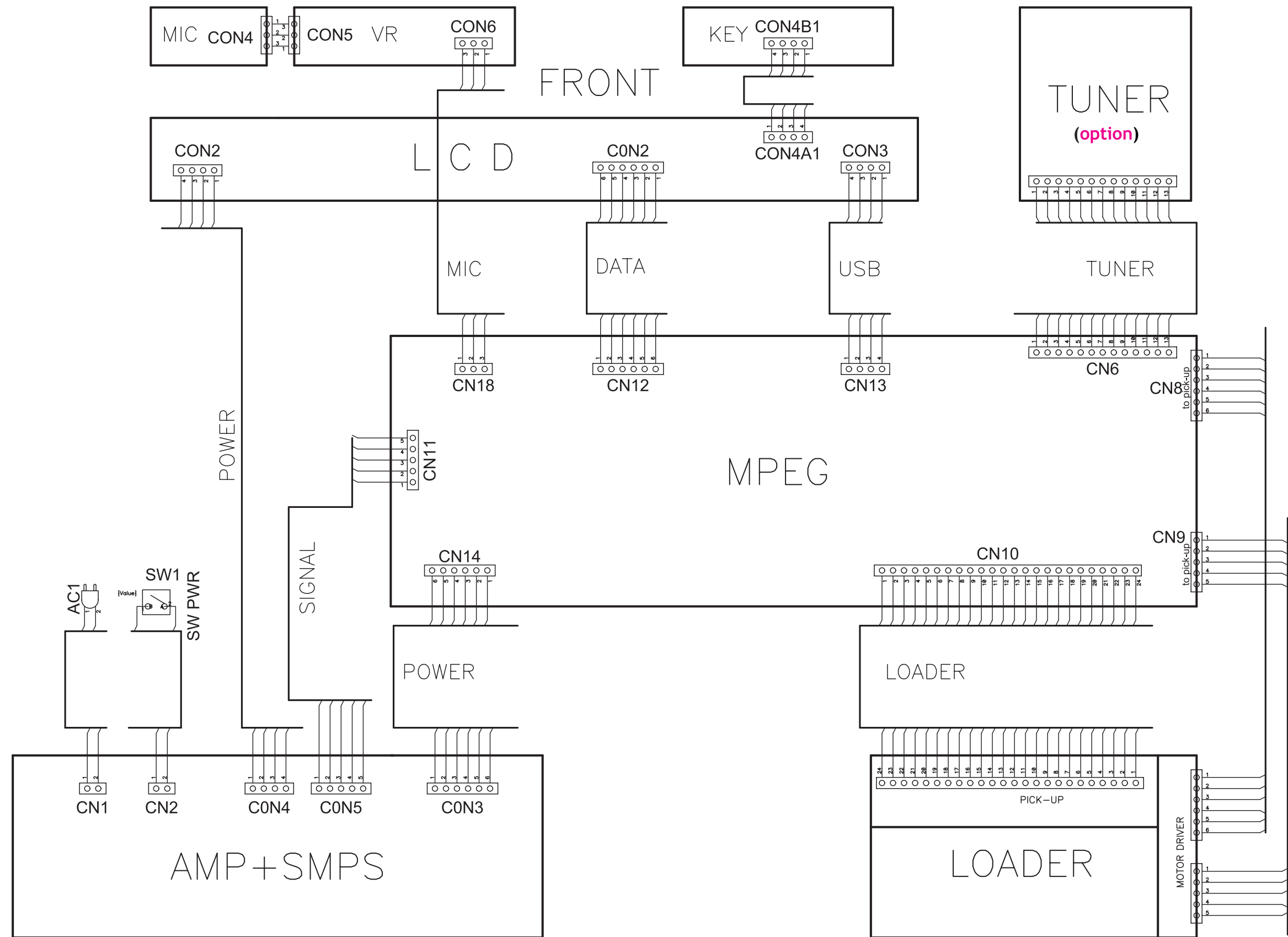


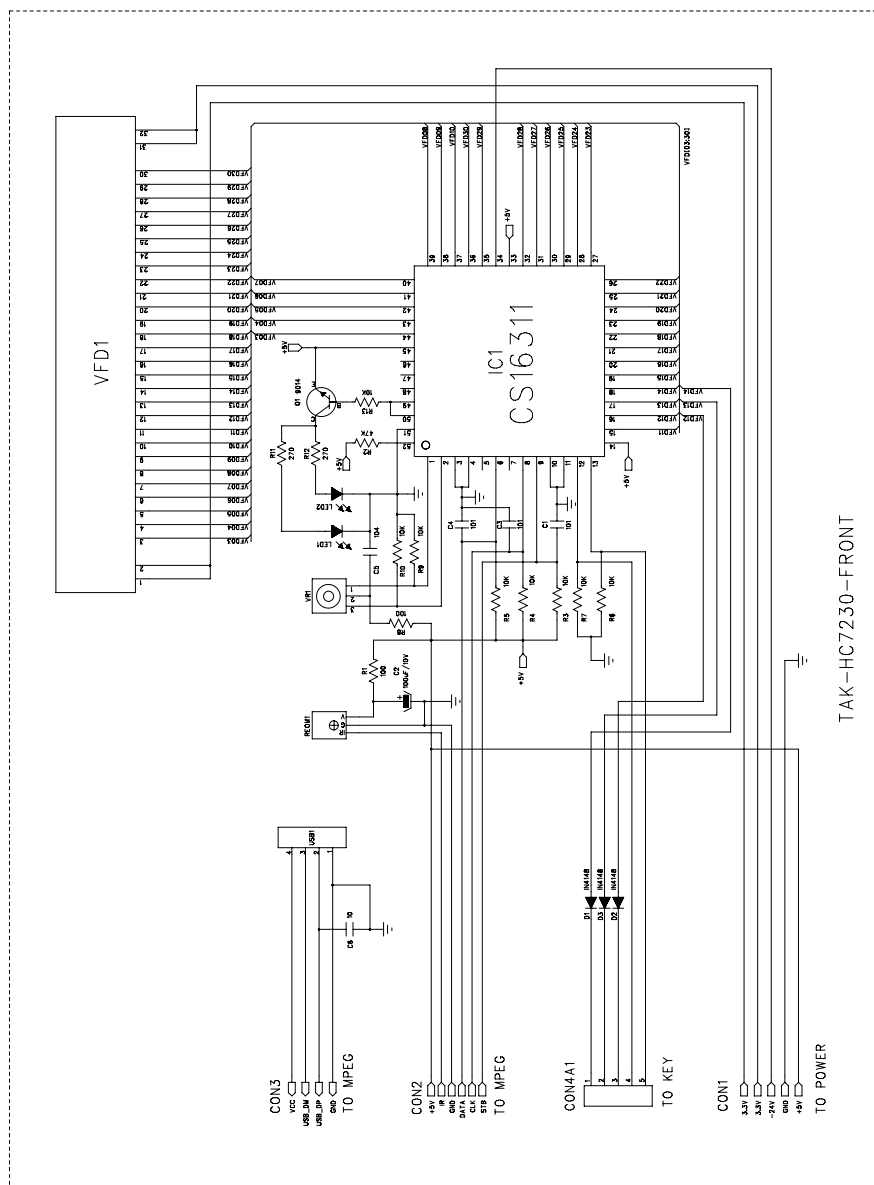
Exploded View and Mechanical Parts List

NO	PARTS NAME	CODE NO.	DESCRIPTIONS	Q'TY	REMARKS
1	PANEL FRONT	9CD0318600	HIPS, SPRAY, SILK	1	
2	WINDOW FRONT	9CD1626300	ACRYL T2.0, SILK	1	
3	DECO FRONT	9CD1013900	HIPS, SPRAY, SILK	1	
4	DOOR DVD	9CD1818100	HIPS, SPRAY, STAMPING	1	
5	KNOB MIC	9CD1364900	ABS, CR COATING	2	
6	KNOB VOLUME	9CD1364800	ABS, CR COATING	1	
7	DECO VOLUME	9CD1014100	ACRYL, CLEAR MILKY	1	
8	KNOB POWER	9CD1364600	HIPS, SPRAY, SILK	1	
9	KNOB PRESET	9CD1364700	ABS, CR COATING	1	
10	BRKT PCB L	9CD24205L0	HIPS	1	
11	BRKT PCB R	9CD24205R0	HIPS	1	
12	FILTER VFD	9CD4701200	PC SHEET T0.3~0.5	1	VIOLET
13	BRACKET COVER TOP	9CD2418600	SECC T0.7	1	
14	CUSHION BRKT TOP	9CD4211300	EVA 15 X 10 X 2	2	
15	Double Side Adhesive Sponge	9CD42101B0	EVA 15 X 10 X 6	1	
16	Double Side Adhesive Sponge	9CD42101A0	EVA 8 X 8 X 7	1	
17	Double Side Adhesive Tape	—	22 X 5	2	
18	Double Side Adhesive Tape	—	17 X 3	2	
19	LOADER DVD AS	9CD6015300		1	
20	BRACKET LOADER	9CD2421000	SECC T0.7	2	
21	CUSHION LOADER	9CD4211400	Urethane Rubber 10X10X2.5	2	
22	CUSHION LOADER TOP	9CD4211200	EVA 15 X 10 X 3	2	
23	COVER TOP	9CD0423200	SECC T0.8	1	
24	CHASSIS BOTTOM	9CD0614900	SECC T0.8	1	
25	SUPPORT PCB 08	9CD2419008	HIPS H=8.0	7	
26	CUSHION FOOT	9CD42102B0	Urethane Rubber Ø15 X 5	4	
27	BRACKET BOTTOM	9CD2421100	SECC T0.6	2	
28	SHIELD PCB	9CD3304300	PC T0.5	1	
29	HEAT SINK P (Power)	9CD4413700	AL-EXT	1	

NO	PARTS NAME	CODE NO.	DESCRIPTIONS	Q'TY	REMARKS
30	HEAT SINK D (Diode)	9CD4413800	AL-EXT	1	
31	HEAT SINK A (Amplifier)	9CD4414600	AL-EXT	1	
32	RUBBER SILICON	9CD4209200	20 X 25 X 0.3T	1	
33	COVER BACK	9CD0422700	SECC T0.5	1	
S1	SCREW TAPTITE	7173300611	TT2 BIN 3 X 6 MFZN	5	
S2	SCREW TAPTITE	7271300613	TT3 FAN 3 X 6 MFCR	2	
S3	SCREW TAPTITE	7173300811	TT2 BIN 3 X 8 MFZN	16	
S4	SCREW TAPTITE	7173300411	TT2 BIN 3 X 4 MFZN	3	
S5	SCREW TAPTITE	7173301411	TT2 BIN 3 X 14 MFZN	9	
S6	SCREW TAPTITE	7173301011	TT2 BIN 3 X 10 MFZN	8	
S7	SCREW TAPTITE	7173301012	TT2 BIN 3 X 10 BK	12	W/O SCART
				14	With SCART
S8	SCREW TAPTITE	7172300612	TT2 TRUSS 3 X 6 MFZN BK	4	
P1	PCB VFD			1	
P2	PCB FUNCTION			1	
P3	PCB MIC JACK			1	
P4	PCB MIC VOL			1	
P5	PCB MAIN			1	
P6	PCB MPEG			1	
P7	PCB SCART		OPTION FOR EUROPE	1	
E1	SW POWER	5S40102382	SW-5-M20	1	
E2	VFD	DSC3118-20	SC-3118-2(20)	1	
E3	TUNER MODULE	9737653601		1	EUROPE
		9737653701			AMERICA
E4	AC CORD	9736914400	VDE CP2	1	
	***	***	***	*	***

Wiring Diagram





REMARK: POWER TEST COMPANY REQUEST MODIFY OF CIRCLE 01.28

ADD TC10--470U/16V

ACGND

YC2 102/250V

YC1 102/250V

TC1 150U/400V

HD1 KBL406

SL-6060

TI18-10-10-01

C1 0.22

F1 3.15A/250V

CON1

CON2

CON3

CON4

TC10 470U/16V

TC9 100U/50V

TC8 470U/16V

TC7 1000U/16V

TC6 3300U/35V

TC5 3300U/35V

TC4 22U/16V

TC3 10U/16V

TC2 33U/25V

TC1 150U/400V

YC1 102/250V

YC2 102/250V

YC3 332/250V

YC4 222/250V

YC5 47U/25V

YC6 47U/25V

YC7 1000U/16V

YC8 470U/16V

YC9 100U/50V

YC10 470U/16V

YC11 100U/50V

YC12 470U/16V

YC13 100U/50V

YC14 470U/16V

YC15 100U/50V

YC16 470U/16V

YC17 100U/50V

YC18 470U/16V

YC19 100U/50V

YC20 470U/16V

YC21 100U/50V

YC22 470U/16V

YC23 100U/50V

YC24 470U/16V

YC25 100U/50V

YC26 470U/16V

YC27 100U/50V

YC28 470U/16V

YC29 100U/50V

YC30 470U/16V

YC31 100U/50V

YC32 470U/16V

YC33 100U/50V

YC34 470U/16V

YC35 100U/50V

YC36 470U/16V

YC37 100U/50V

YC38 470U/16V

YC39 100U/50V

YC40 470U/16V

YC41 100U/50V

YC42 470U/16V

YC43 100U/50V

YC44 470U/16V

YC45 100U/50V

YC46 470U/16V

YC47 100U/50V

YC48 470U/16V

YC49 100U/50V

YC50 470U/16V

YC51 100U/50V

YC52 470U/16V

YC53 100U/50V

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YC55 100U/50V

YC56 470U/16V

YC57 100U/50V

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YC82 470U/16V

YC83 100U/50V

YC84 470U/16V

YC85 100U/50V

YC86 470U/16V

YC87 100U/50V

YC88 470U/16V

YC89 100U/50V

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YC103 100U/50V

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YC105 100U/50V

YC106 470U/16V

YC107 100U/50V

YC108 470U/16V

YC109 100U/50V

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YC146 470U/16V

YC147 100U/50V

YC148 470U/16V

YC149 100U/50V

YC150 470U/16V

YC151 100U/50V

YC152 470U/16V

YC153 100U/50V

YC154 470U/16V

YC155 100U/50V

YC156 470U/16V

YC157 100U/50V

YC158 470U/16V

YC159 100U/50V

YC160 470U/16V

YC161 100U/50V

YC162 470U/16V

YC163 100U/50V

YC164 470U/16V

YC165 100U/50V

YC166 470U/16V

YC167 100U/50V

YC168 470U/16V

YC169 100U/50V

YC170 470U/16V

YC171 100U/50V

YC172 470U/16V

YC173 100U/50V

YC174 470U/16V

YC175 100U/50V

YC176 470U/16V

YC177 100U/50V

YC178 470U/16V

YC179 100U/50V

YC180 470U/16V

YC181 100U/50V

YC182 470U/16V

YC183 100U/50V

YC184 470U/16V

YC185 100U/50V

YC186 470U/16V

YC187 100U/50V

YC188 470U/16V

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YC190 470U/16V

YC191 100U/50V

YC192 470U/16V

YC193 100U/50V

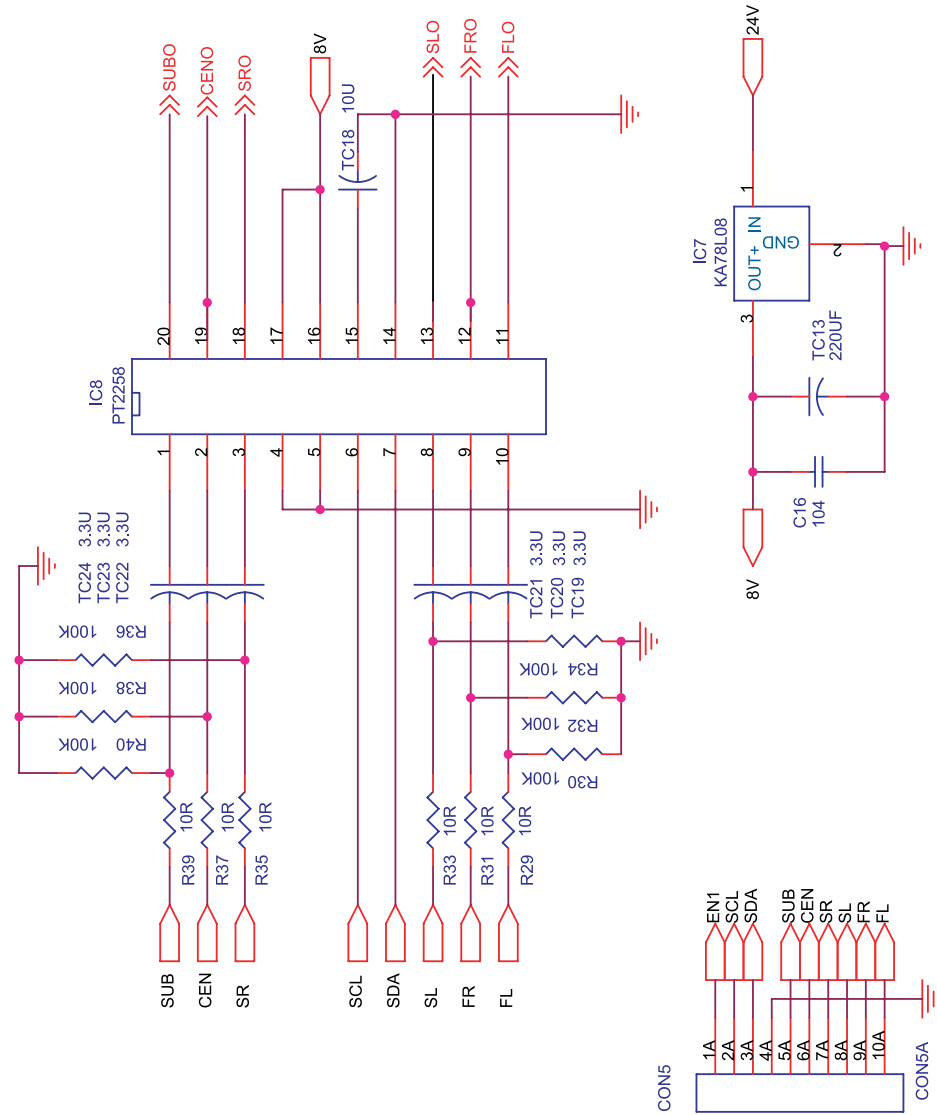
YC194 470U/16V

YC195 100U/50V

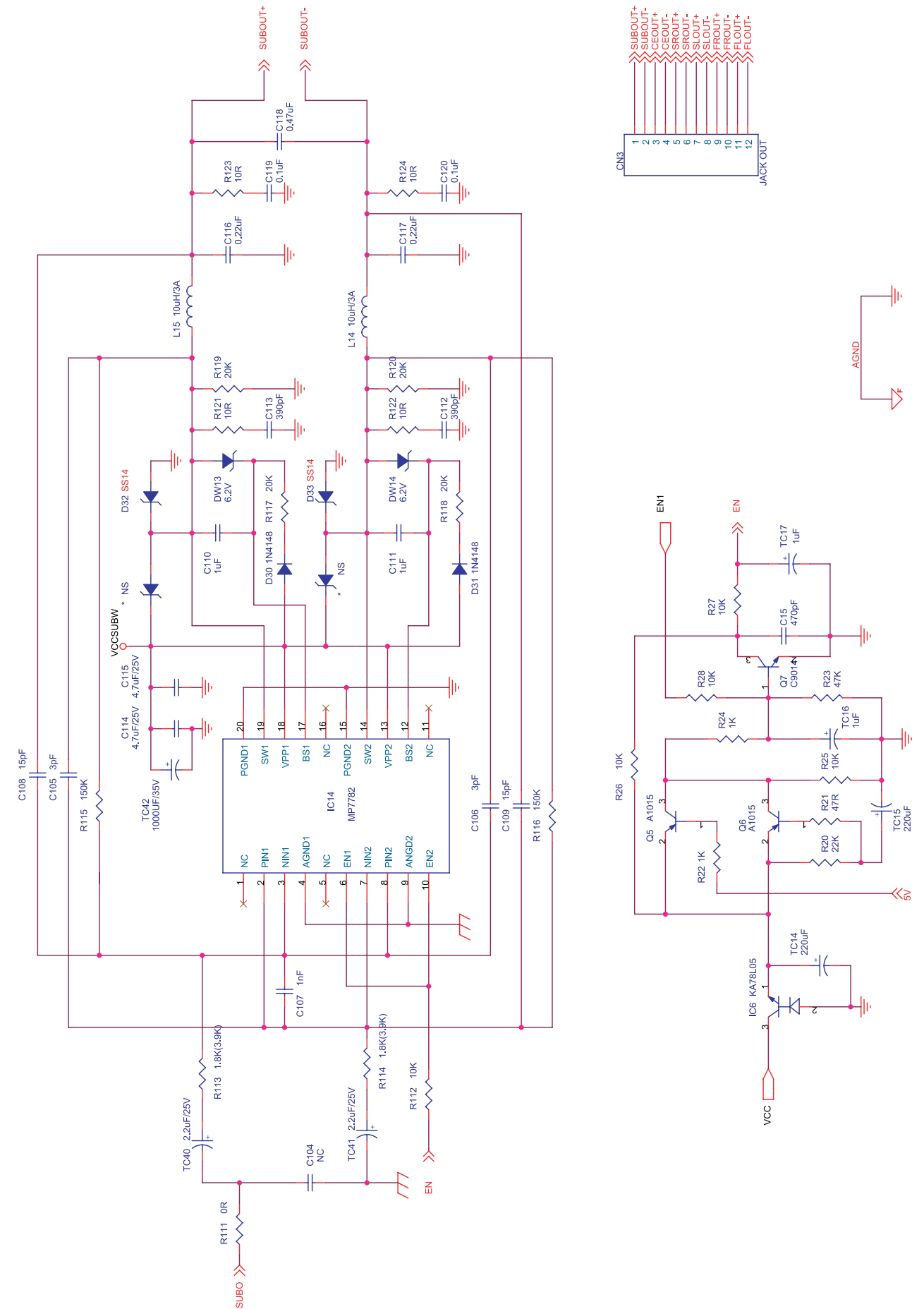
YC196 470U/16V

YC197

- **POWER + AMP Section 2 : VR**

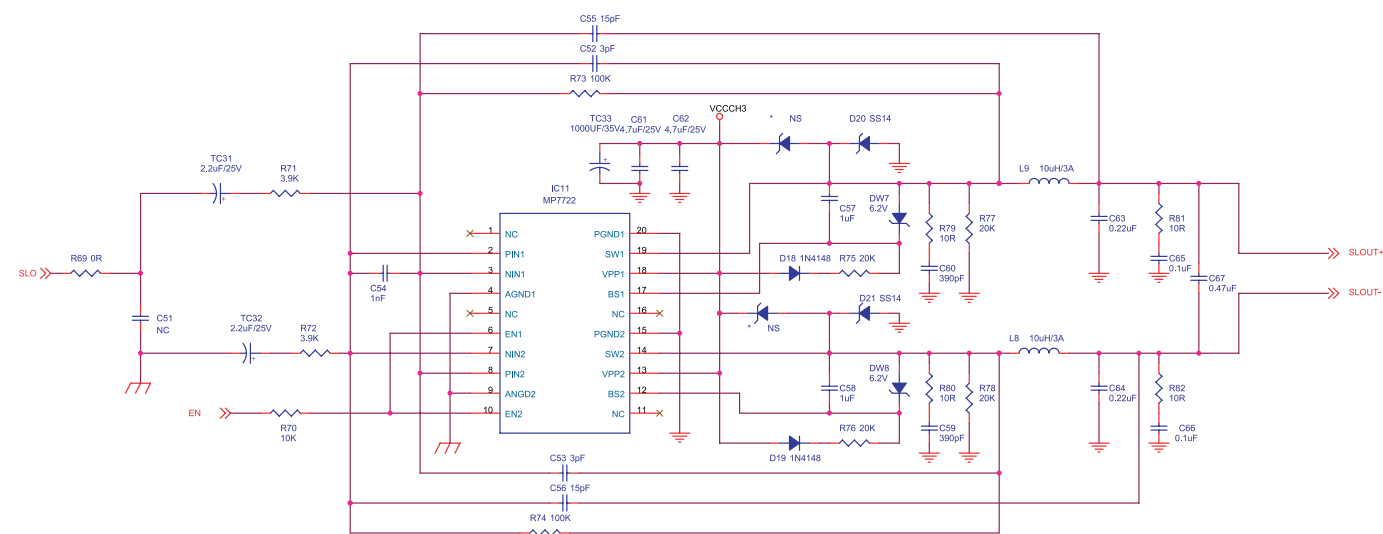
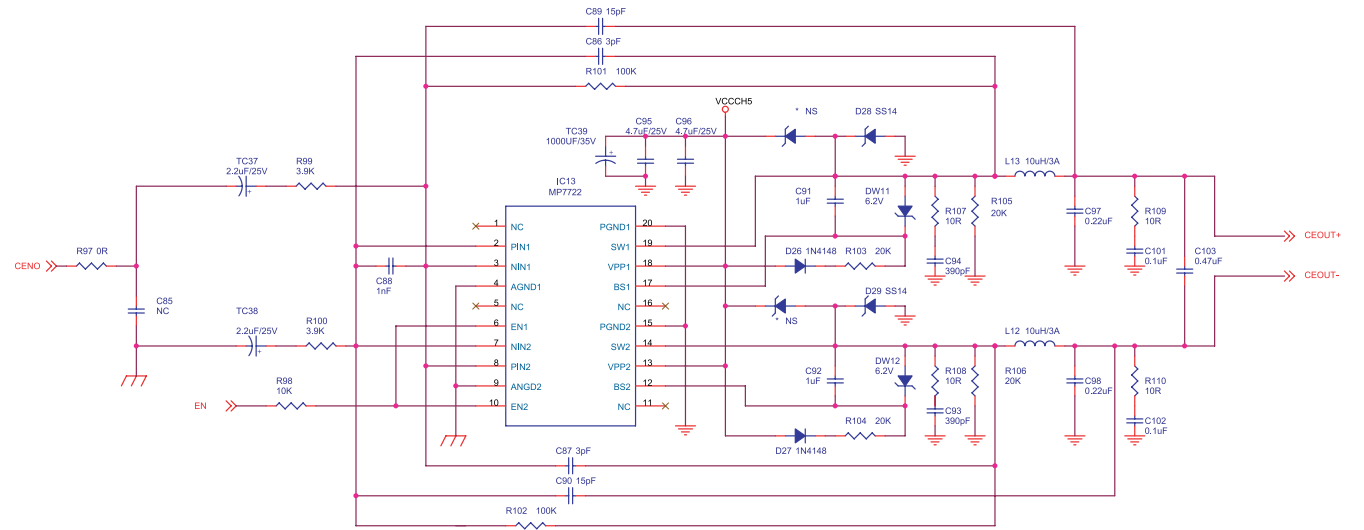
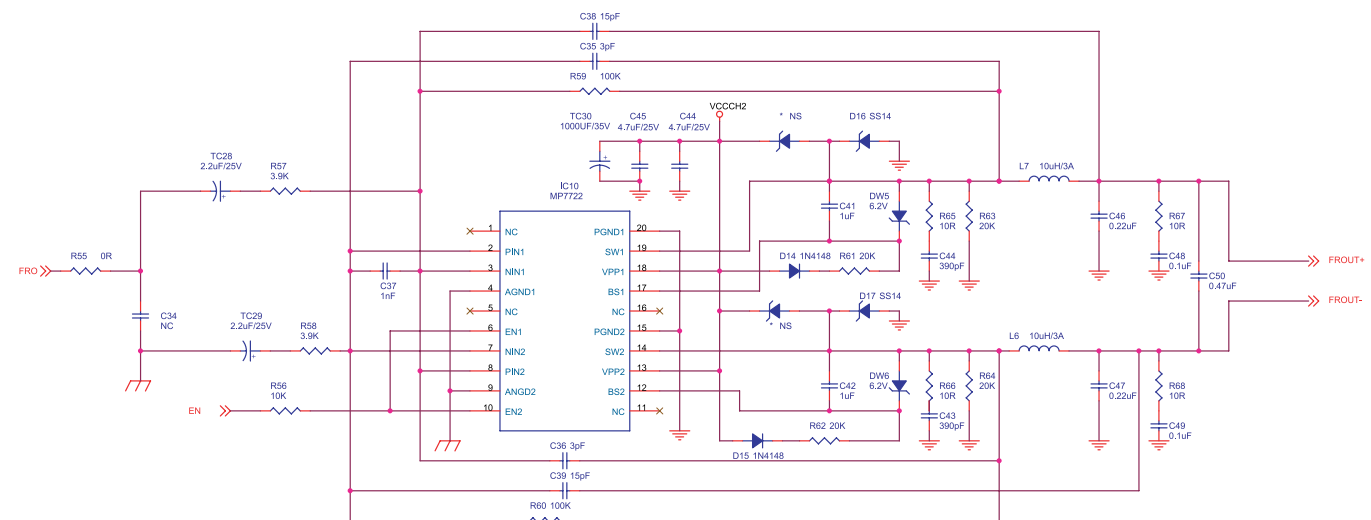
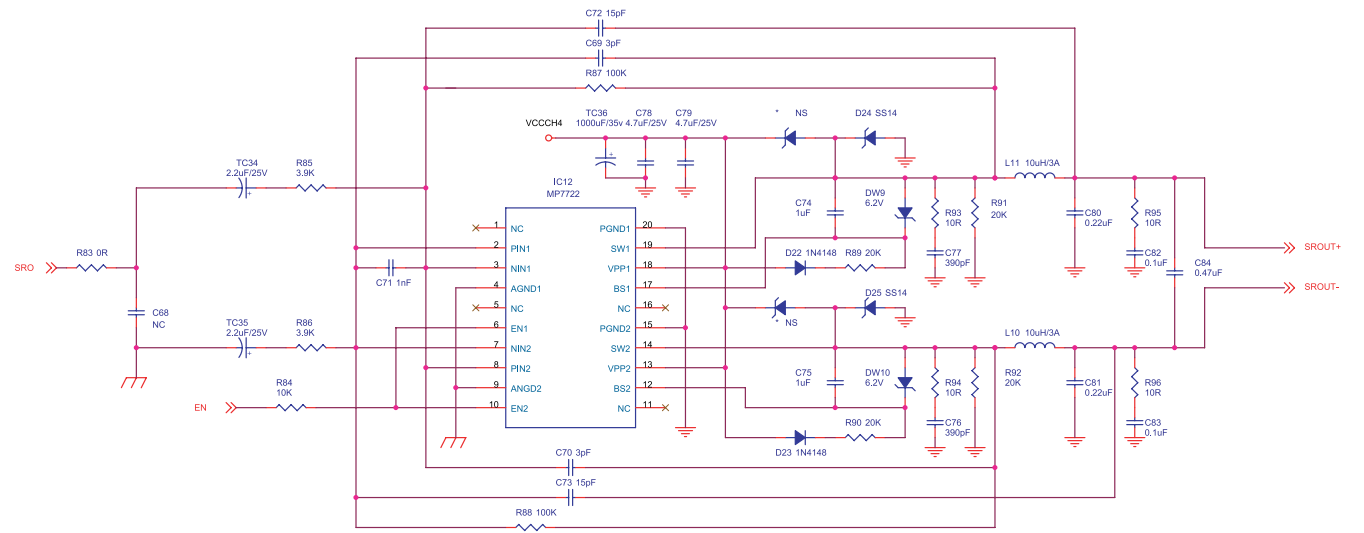
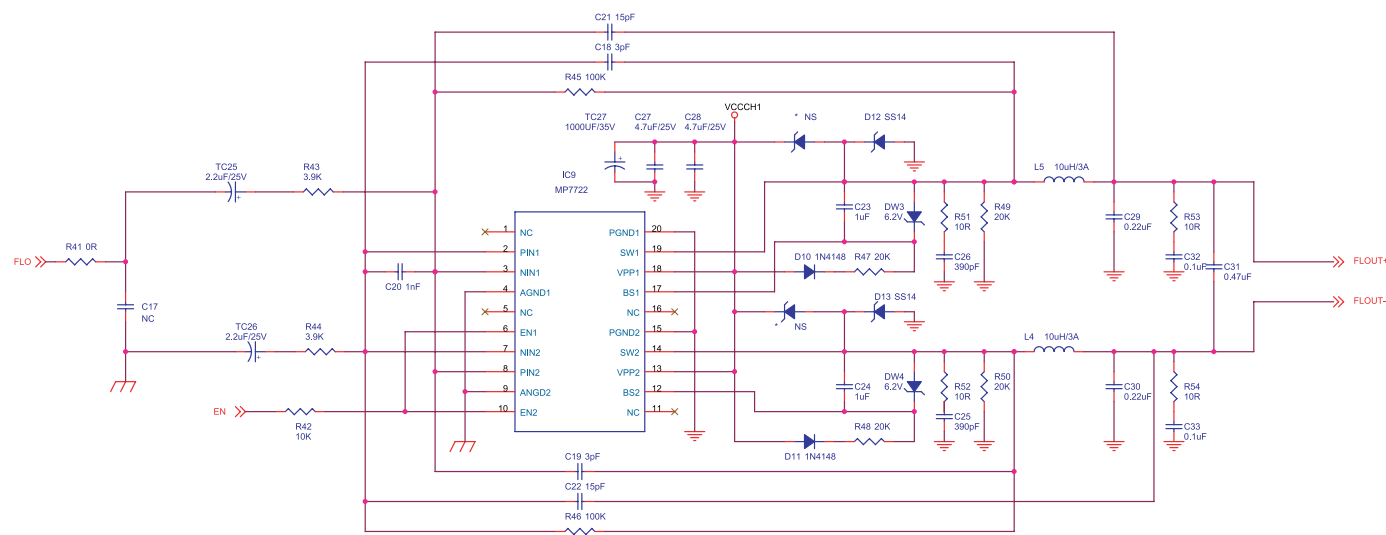


● POWER + AMP Section 3 : MP 7782



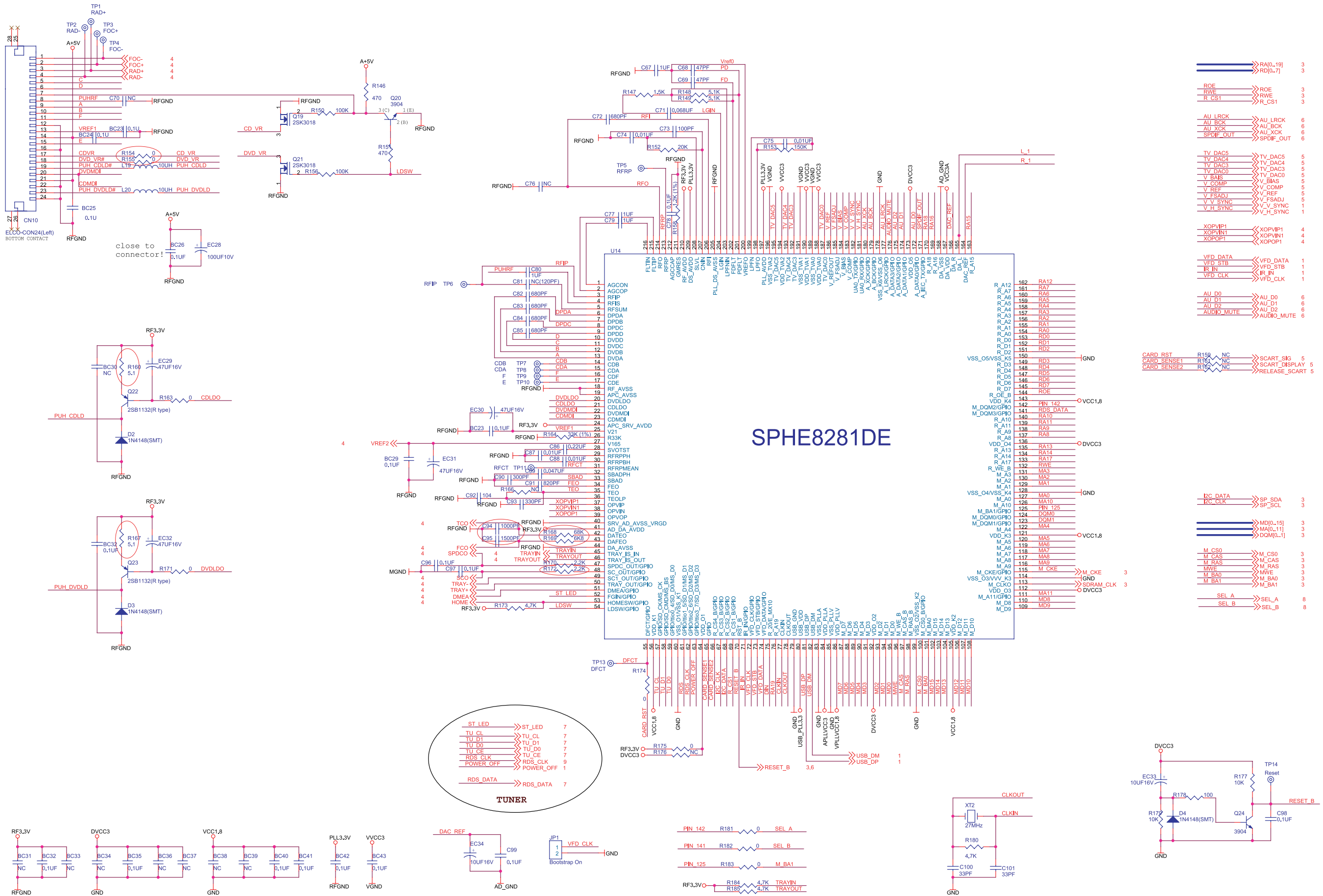
Schematic Diagram

● POWER + AMP Section 4 : MP 7722

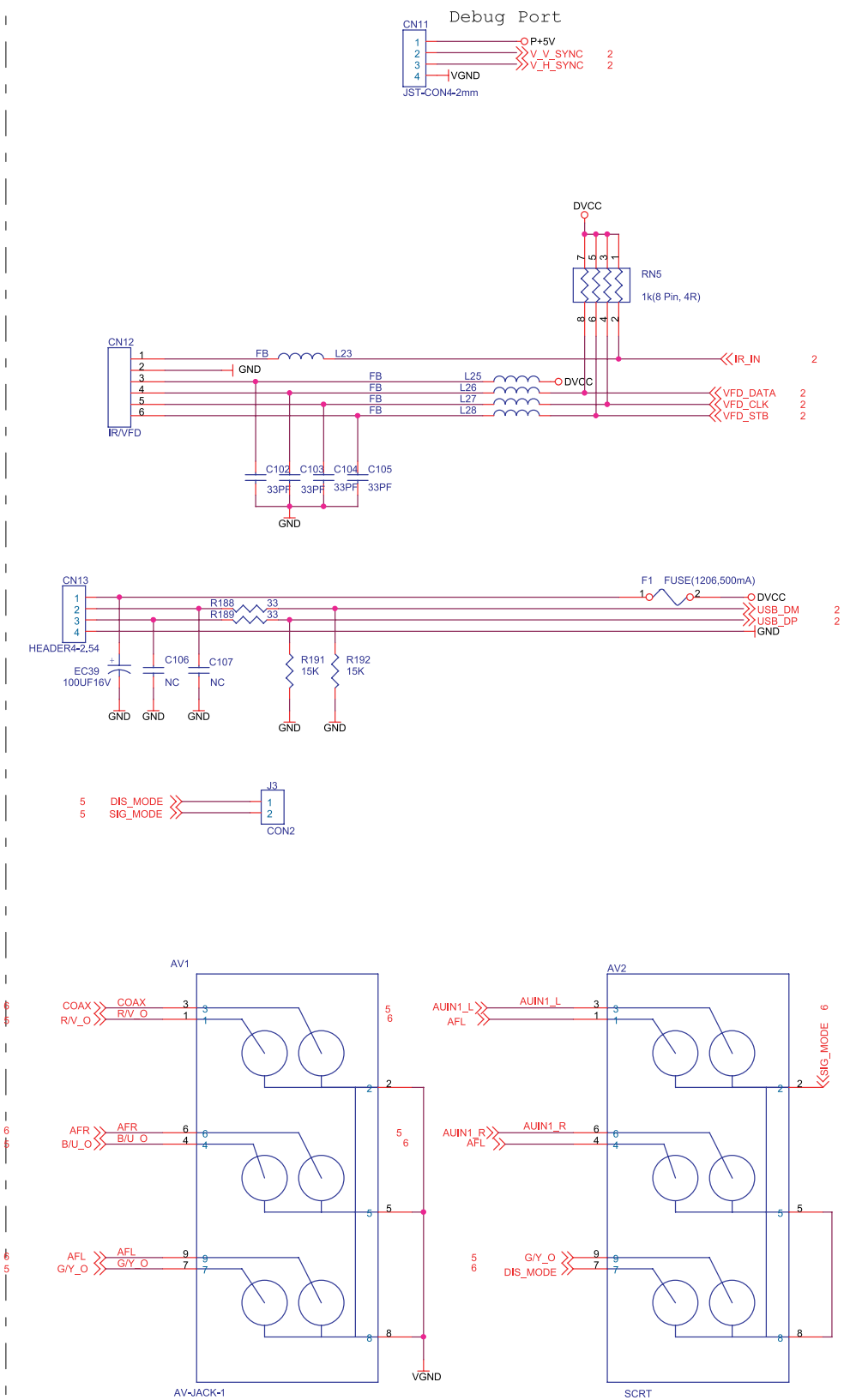


Schematic Diagram

● MPEG Section 1 : MPEG Processor

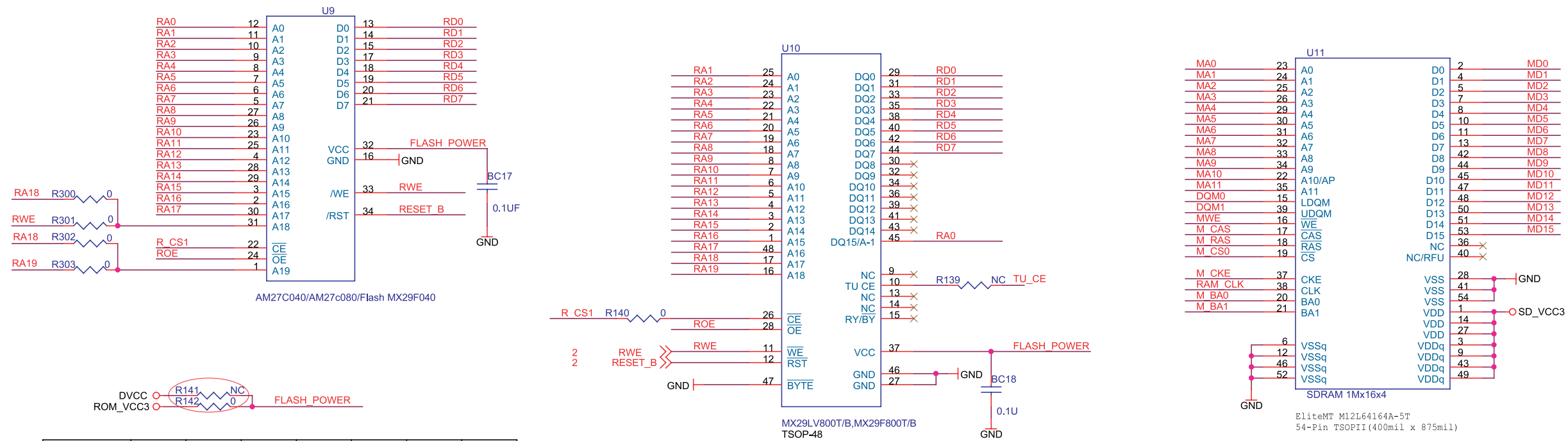


- MPEG Section 2 : Power



Schematic Diagram

● MPEG Section 3 : ROM/FLASH/Memory

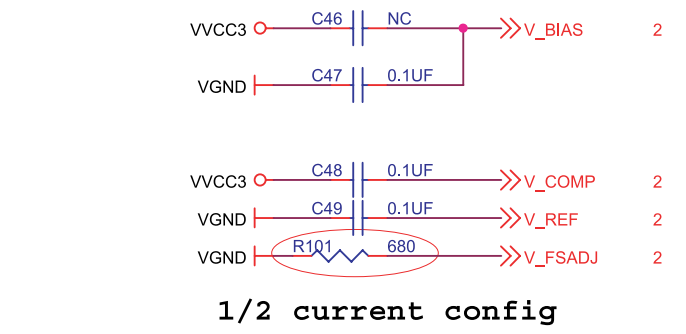
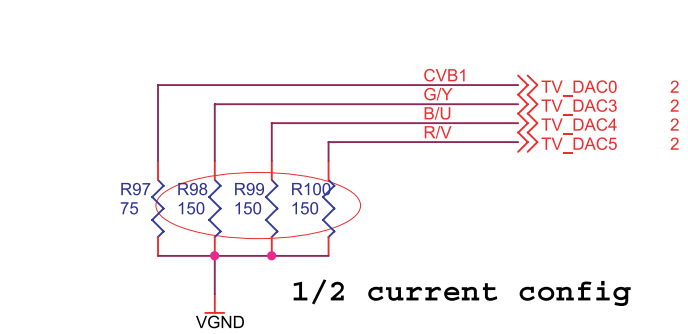


- **MPEG Section 4 : Motor Driver**

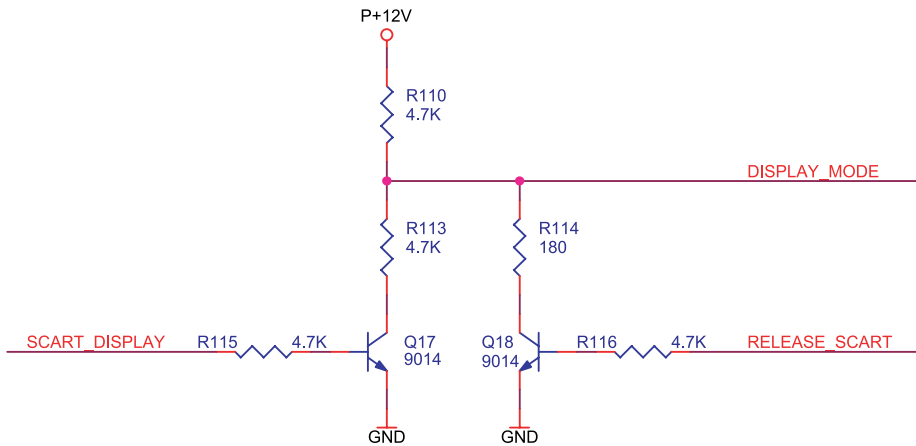
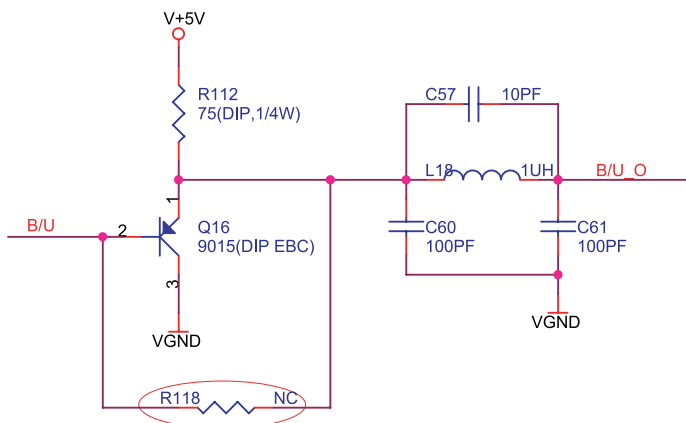
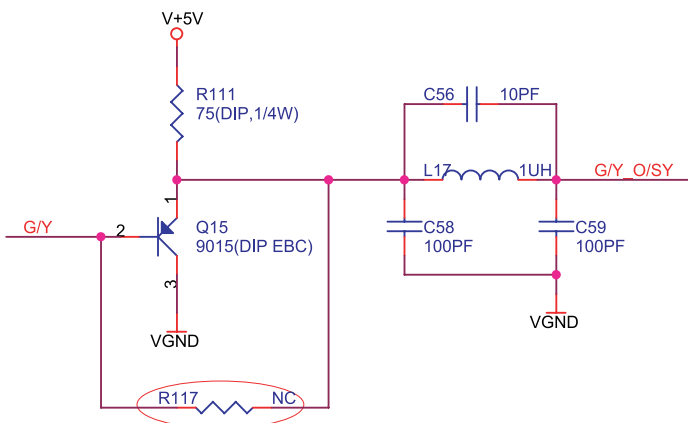
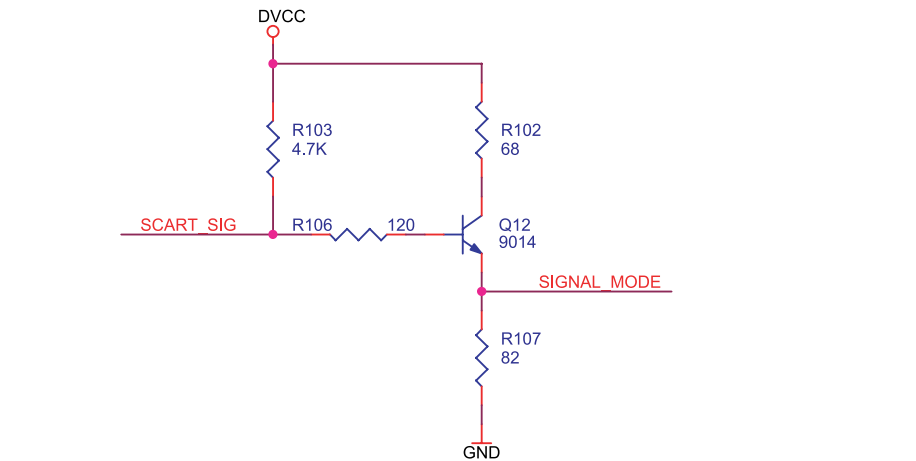
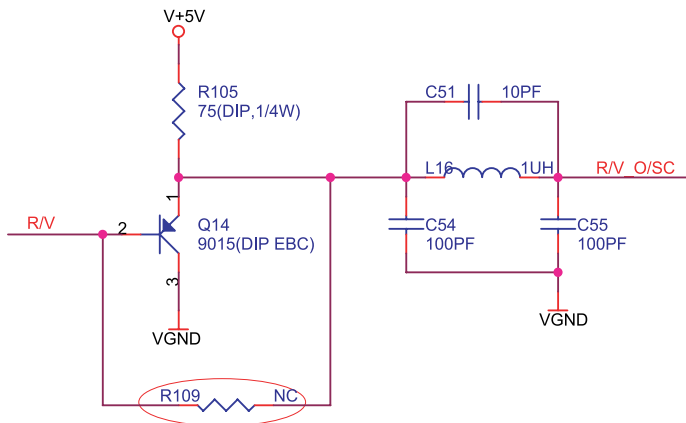
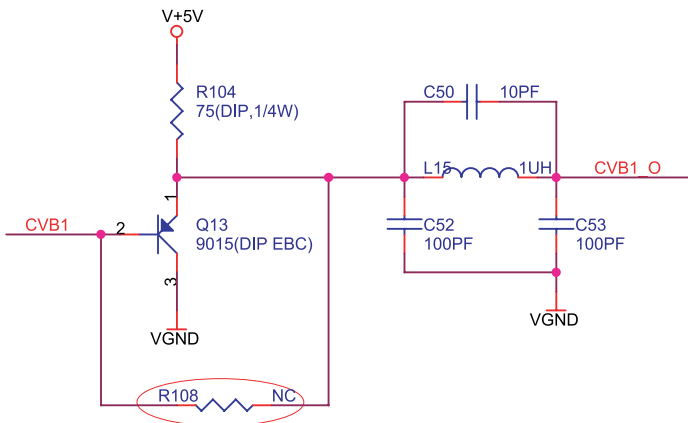


Schematic Diagram

• MPEG Section 5 : Video Buffer



TV0	TV3	TV4	TV5
CVB	Y	Cb	Cr
CVB	Y (S-Video)	CVB	C (S-Video)
CVB	G	B	R



VIDEO DAC	R118	R169	R245	R246	R247	R16	R17	R24
Full Current	390	0	0	0	0	75	75	75
Half Current	680	NC	NC	NC	NC	150	150	150

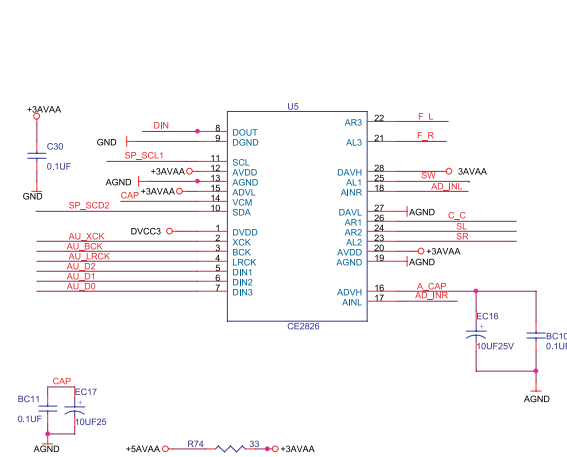
RELEASE_SCART	DISPLAY_MODE
0	Not RELEASE
1	RELEASE

SCART_SIG	SIGNAL_MODE
0	0V (CVBS)
1	3V (RGB)

SCART_DISPLAY	DISPLAY_MODE
1	12V (9.5V--12V 4:3)
0	6V (5V--8V 16:9)

Schematic Diagram

- **MPEG Section 6 : Audio Filter**



CEI2826
Format

DIF1	DIF0	AUDIO INTERFACE
0	0	IJ 24 bits
0	1	I2S
1	0	RJ 16bits
1	1	RJ 24 bits

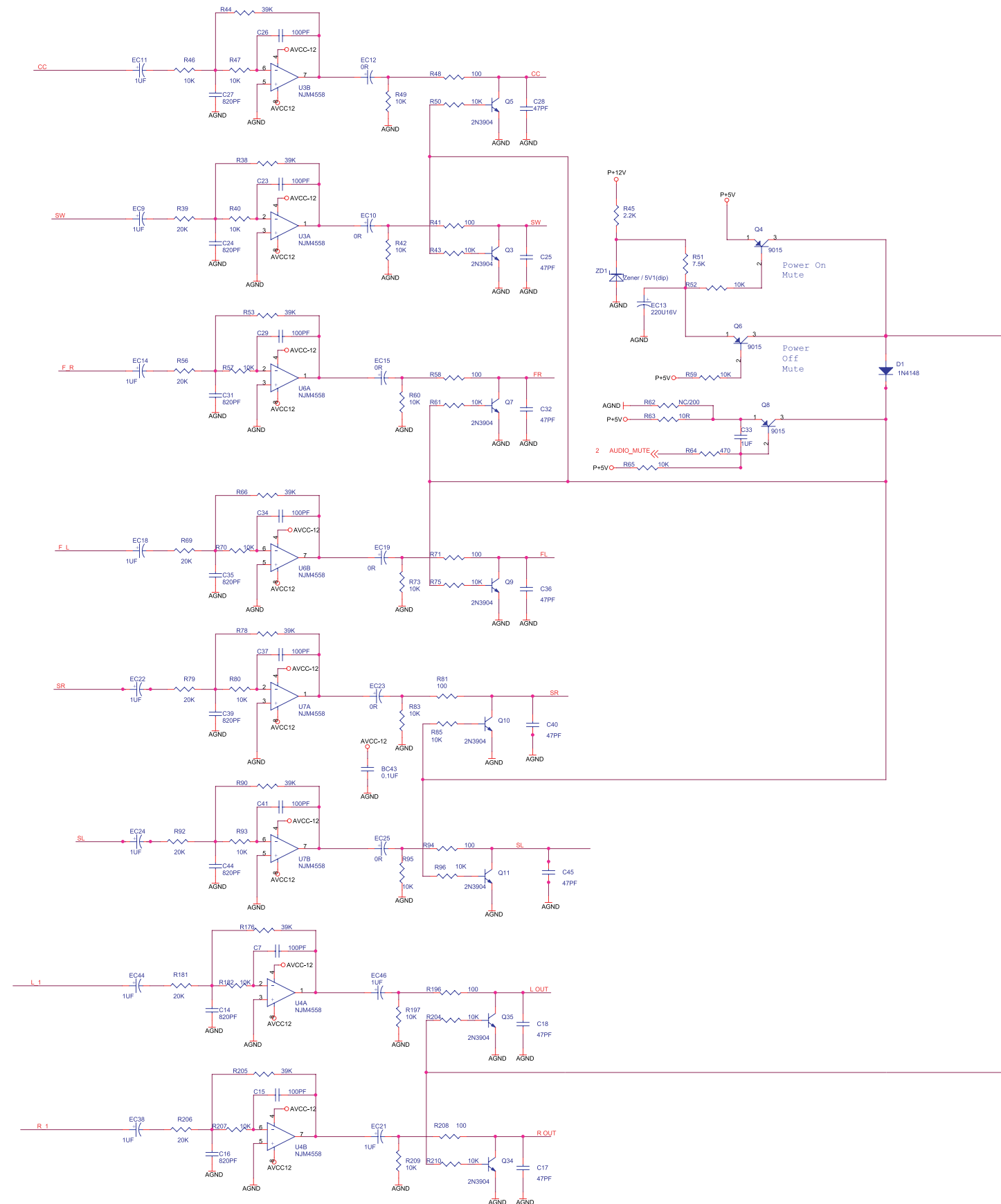
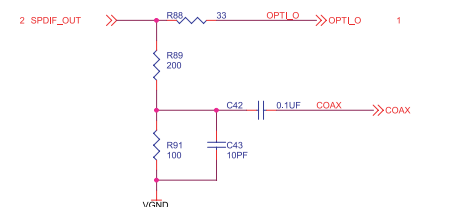
ASW	ASW	1
NC	AC_C	1
AFR	AFR	1
AFL	AFL	1

AU_D0	→	AU_D0	2
AU_D1	→	AU_D1	2
AU_D2	→	AU_D2	2
AU_LRCK	→	AU_LRCK	2
AU_BCK	→	AU_BCK	2
AU_XCK	→	AU_XCK	2

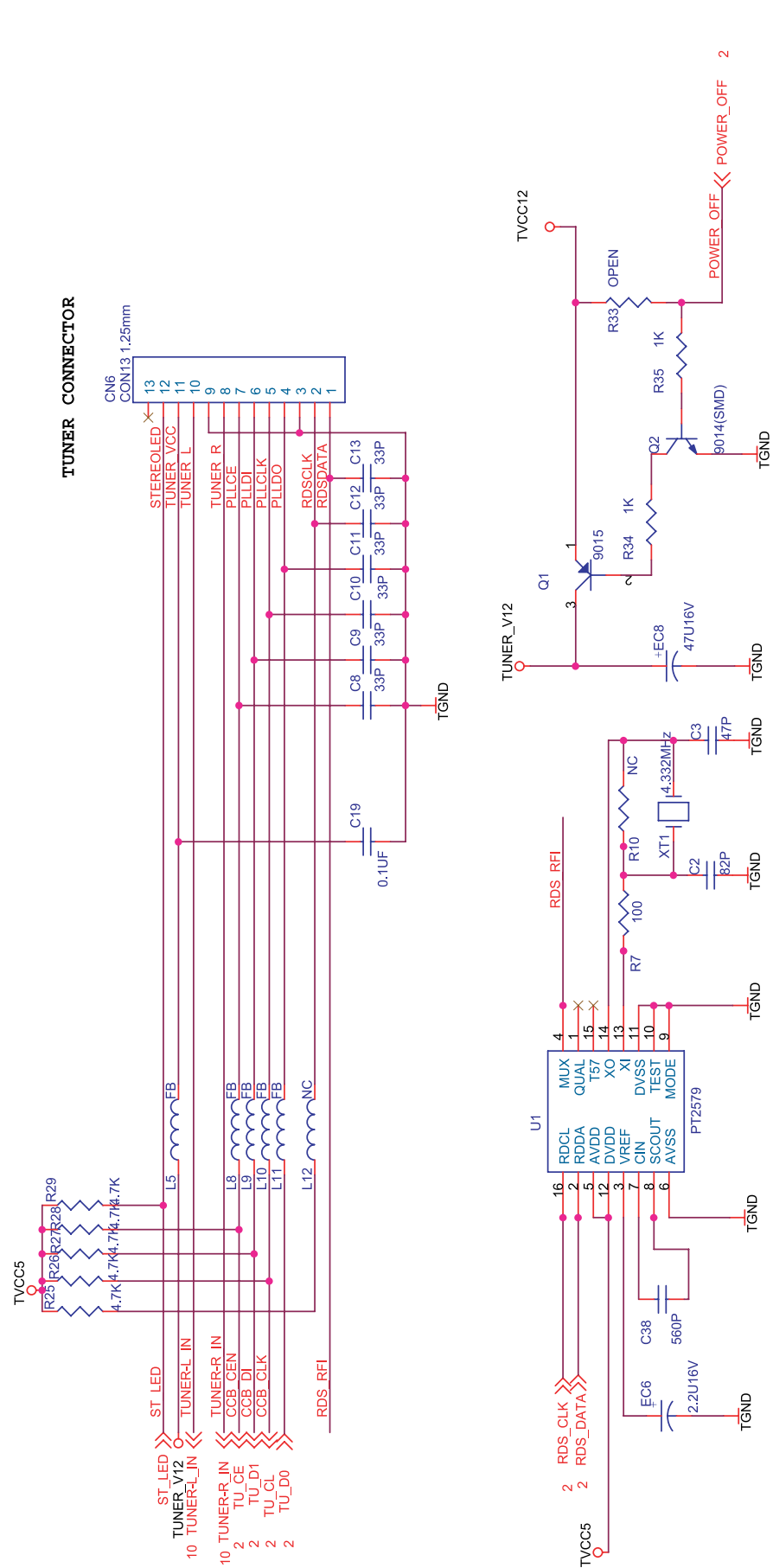
$$\begin{array}{ccc} \text{DA}_L & \gg & \text{DA}_L \\ \text{DA}_R & & \text{DA}_R \end{array} \quad \begin{array}{c} 2 \\ 2 \end{array}$$

$\frac{SP_SCL}{2} \gg SP_SCL$ 3

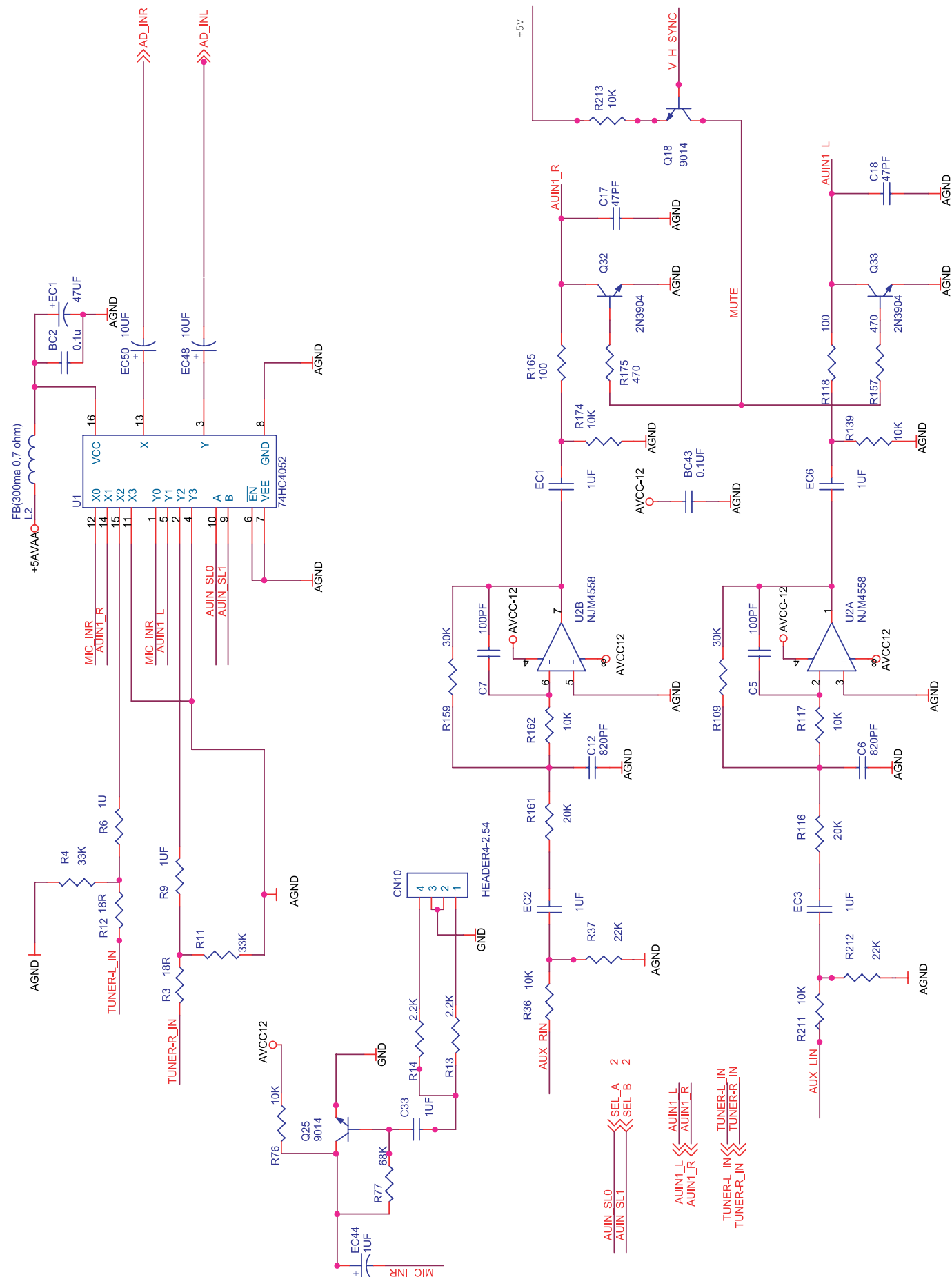
<u>AD_INL</u>	>>	AD_INL	6
AD_INR	>>	AD_INR	6



- MPEG Section 7 : Tuner (option)

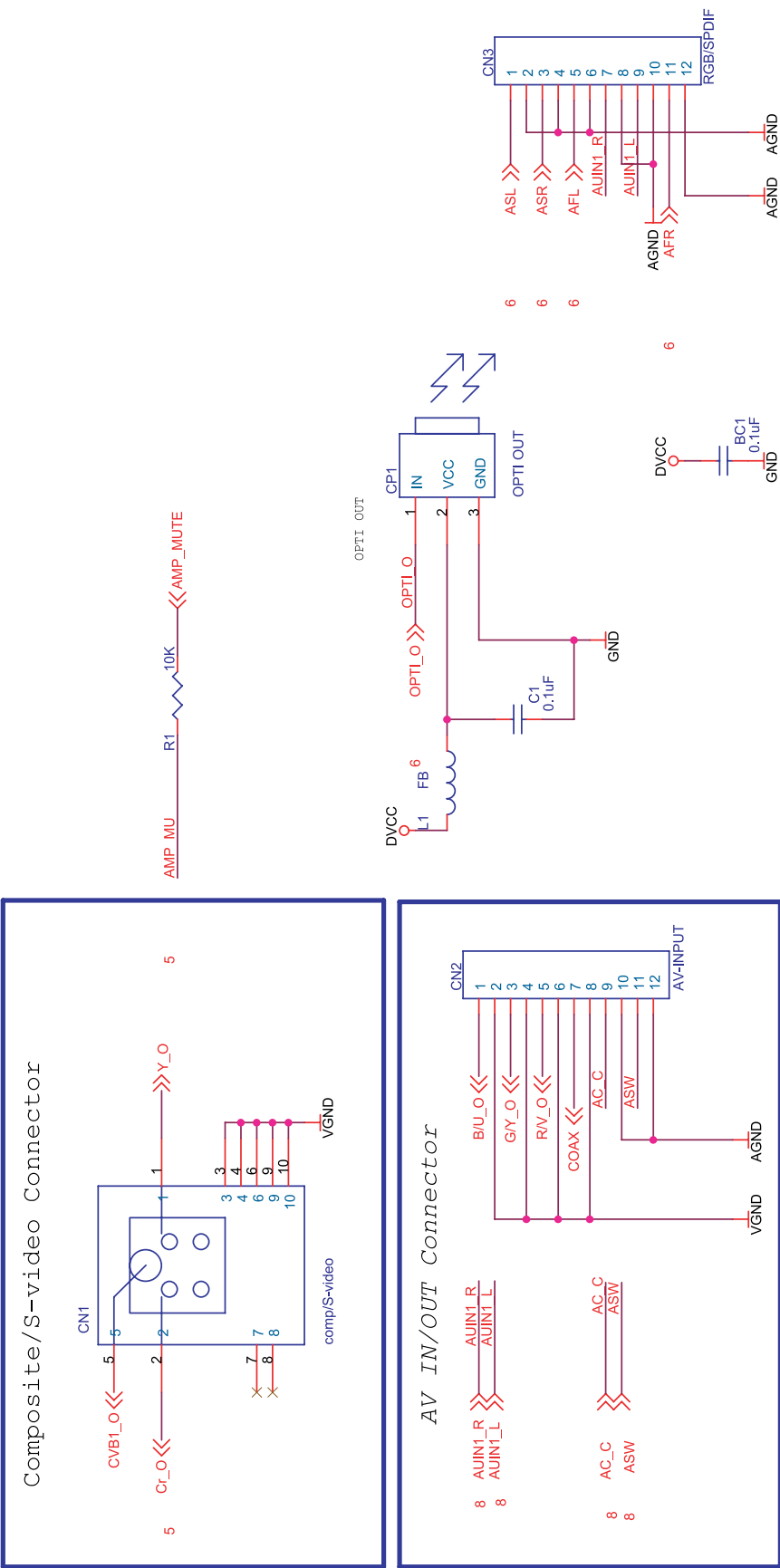


- **MPEG Section 8 - AV Switch**

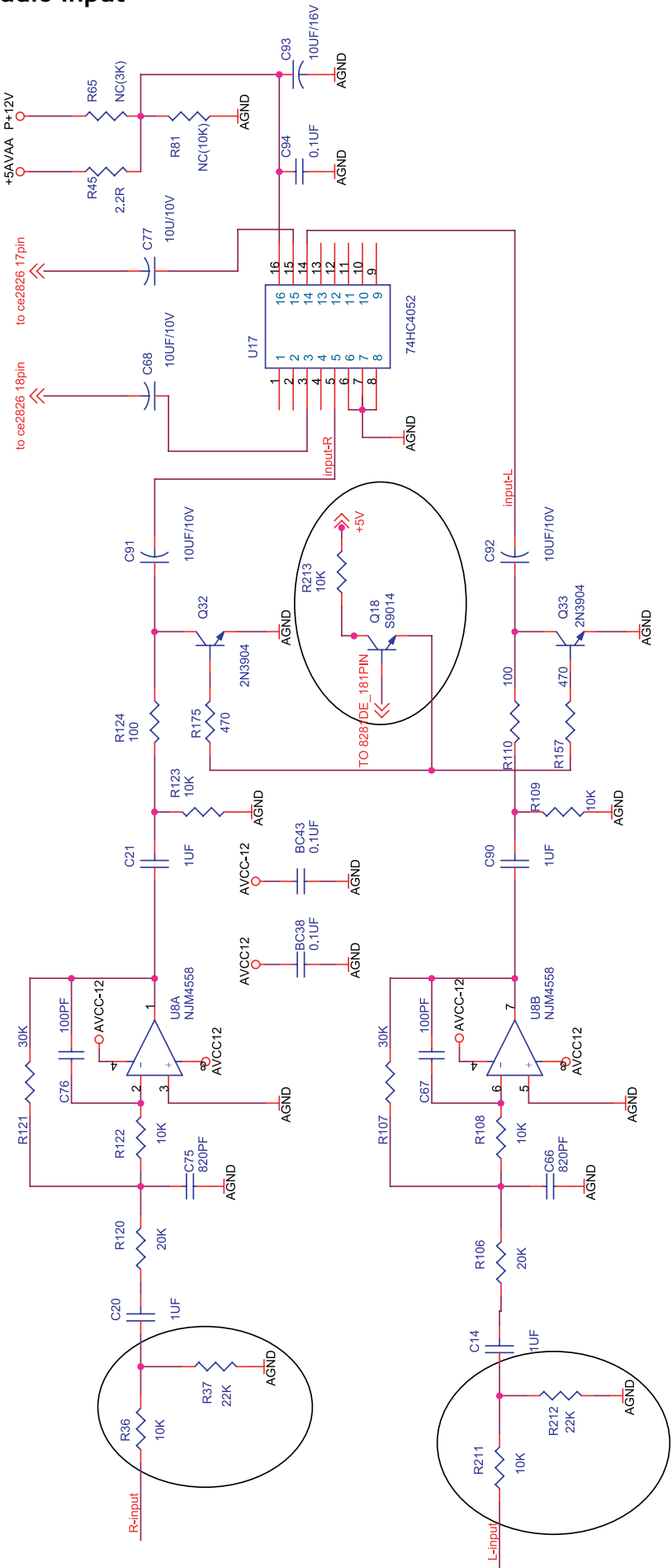


Schematic Diagram

• MPEG Section 9 : External ADC



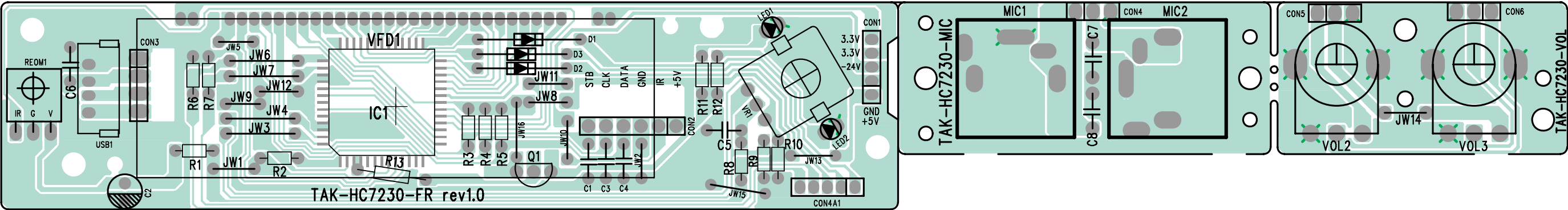
• MPEG Section 10 : Audio Input



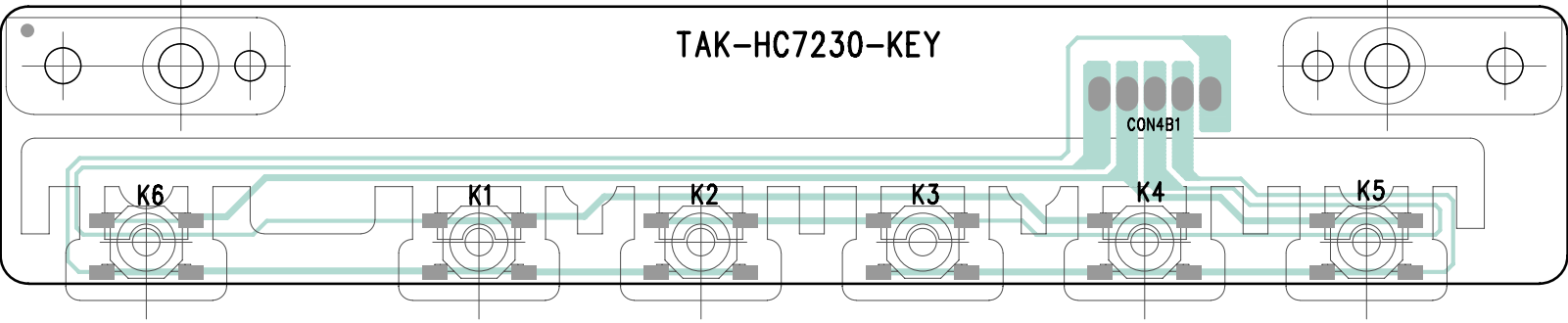
P.C.B Pattern Layout

● FRONT

<Top View>

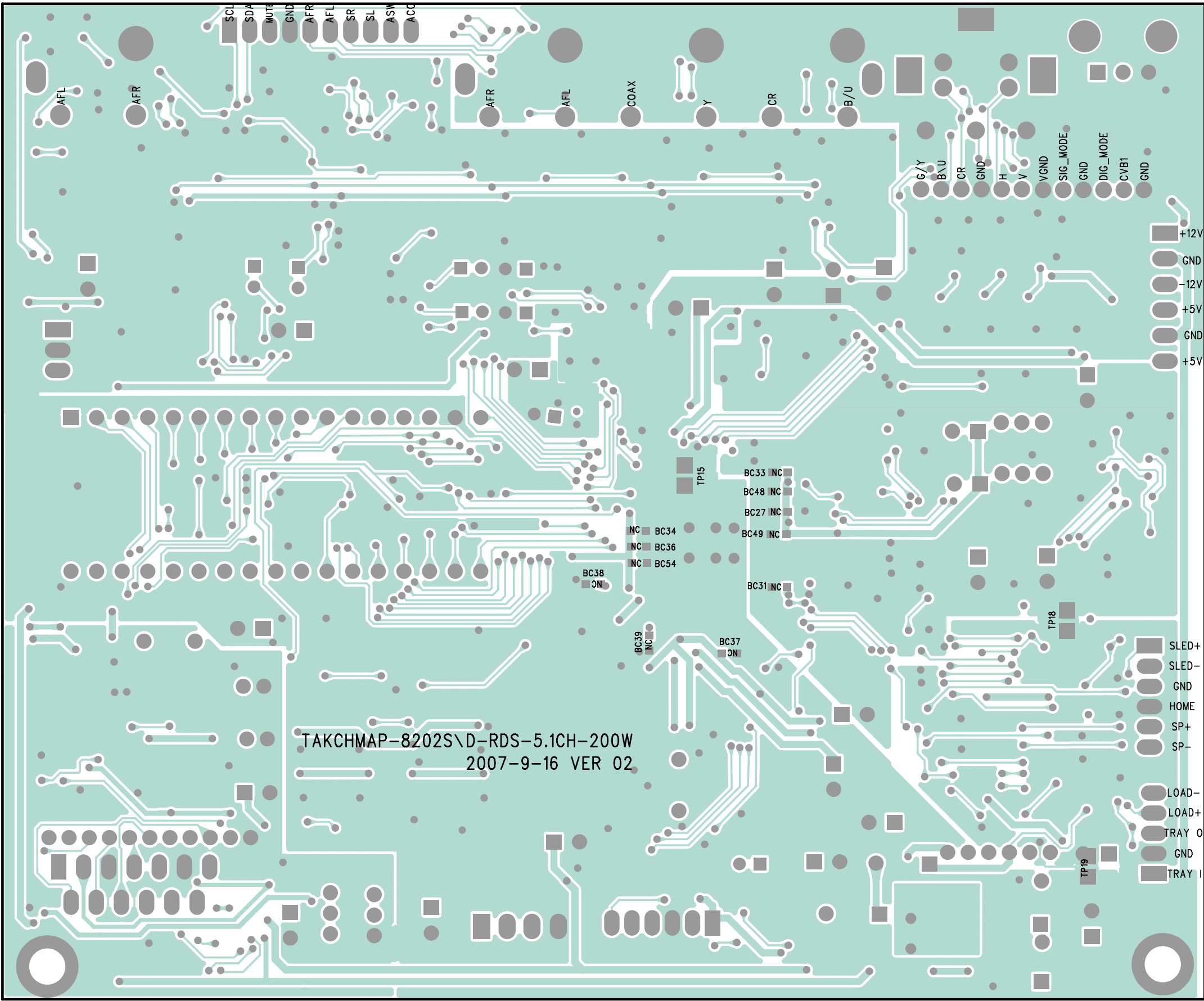


<Top View>



• MPEG

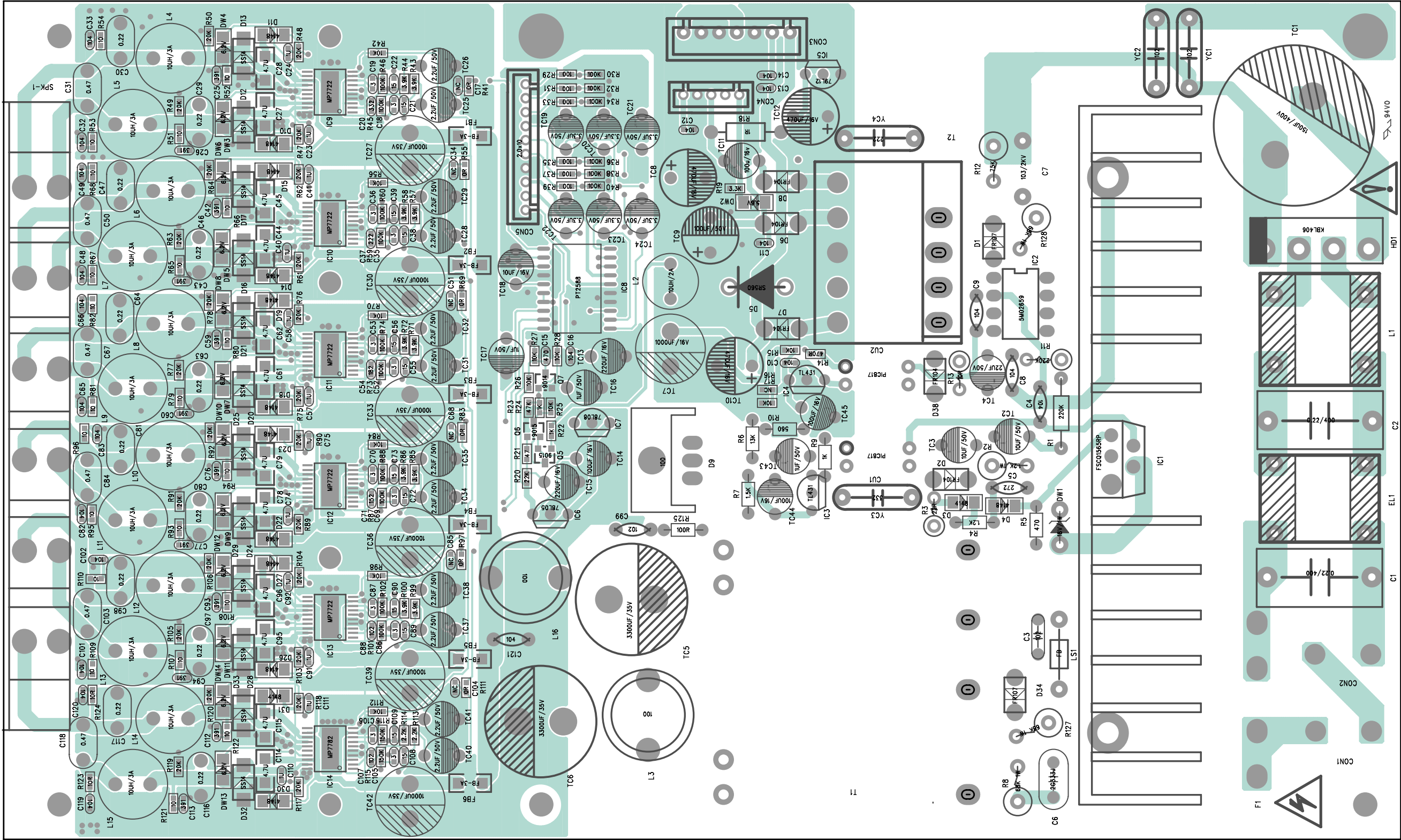
<Bottom View>



P.C.B Pattern Layout

● POWER + AMP

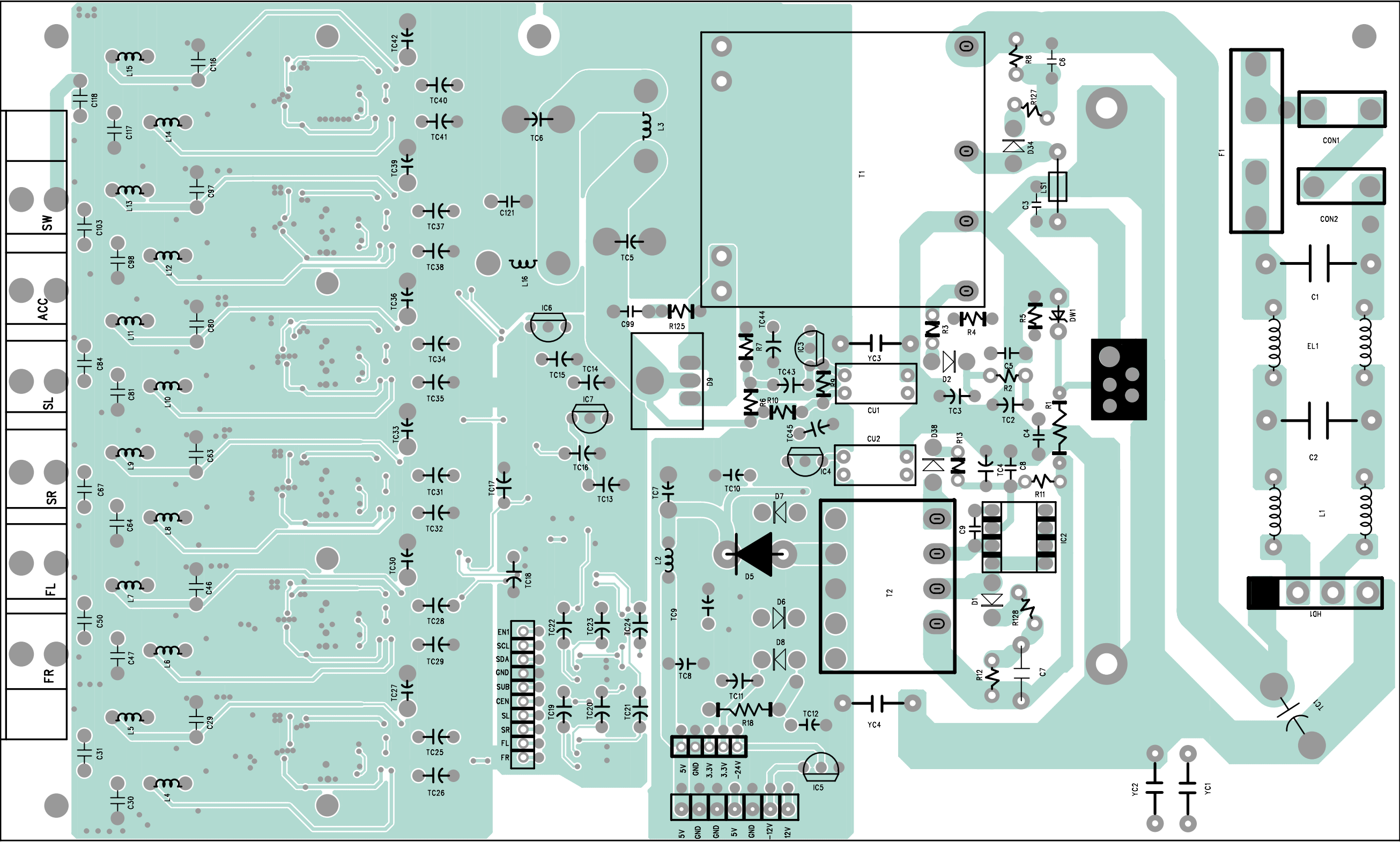
<TopBottom View>



P.C.B Pattern Layout

● POWER + AMP

<Bottom View>



Appendix - Electrical part list

PCB MPEG ASSY [9CDC090200] : HC-7230

Loc.	Part Code	Part Name	Description	Remark
B501	TAKCHMAP-8202S\ID	PCB MPEG	119X98.5X1.2T	
AV1	9736328500	JACK COMPONENT	RCA-303AE-21(RGB 3P,Shield plate)	
CN1	9736330300	JACK S-video	RCA-S-02	
CN10	9CD6273500	CONN WAFER	52559-2492	
CN10	9728833500	CONN FFC	24P 250MM	
CN11	2001-WS-10	WAFER	10P 2.0MM	
CN11	9728844600	CONN AS	10P 260MM(两头插座2.0)	
CN12	2001-WS-06	WAFER	6P 2.0MM (Horizontal)	
CN13	2503-WS-04	WAFER	4P 2.5MM (Horizontal)	
CN14	2503-WS-06	WAFER	6P 2.5MM	
CN14	9728833600	CONN AS	6P+7P #22 220MM	
CN18	2001-WS-03	WAFER	3P 2.0MM	
CN6	9CD6264500	WAFER	52045-1345	
CN6	9728828400	CONN AS	FFC 13P P=1.25X280MM R	
CN8	2001-WS-06	WAFER	6P 2.0MM	
CN8	9728833800	CONN AS	6P #2468 210MM	
CN9	2001-WS-05	WAFER	5P 2.0MM	
CN9	9728833900	CONN AS	5P #2468 250MM	
CN2	2001-WS-12	WAFER	12P 2.0MM	
CN17	9736331800	JACK LINE	JACK LINE	
D1, D2, D3, D4	EDD414800200	DIODE	DIODE, RLS4148	
D9, D11	DIN4004—	DIODE	IN4004	
L1, L5, L21, L22, L23, L24, L25 L26, L27, L28, L29, L30, L31, L32 L33, L34, L37, L38, L39, L40, L41	5LX600K841	CHIP BEAD	FB 60 OHM 100MHZ 2012	
L10	9CDC8603800	GBG160808U600B	GBG160808U600B	
L15, L16, L17, L18	HLC109J03A	CHIP COIL	CM1201209U1R0KT	
L19, L20	HLC100J03A	CHIP COIL	CM1201209X100KT	
L2, L8, L9, L11	9CDC8603800	FB	GBG160808U600B	
F1	5LX600K841	CHIP BEAD	FB 60 OHM 100MHZ 2012	
FB1	5LX600K841	CHIP BEAD	FB 60 OHM 100MHZ 1608	
Q2	TZS9014Y—	TR	S9014	
Q22, Q23, Q26, Q27	TZS8550Y—	TR	S8550	
Q1	TZS9015Y—	TR	S9015	
Q12, Q17, Q18, Q25	T2S9014Y—	TR CHIP	2S9014Y	
Q19, Q21	T2SK3018—	TR CHIP	2SK3018 SOT-23	
Q3, Q5, Q7, Q9, Q10, Q11, Q20 Q24, Q32, Q33, Q34, Q35	T2SK3904—	TR CHIP	3904 SOT-23	
Q4, Q6, Q8, Q13, Q14, Q15, Q16	T2S9015Y—	TR CHIP	2S9015Y	
RN5	HRTT8102J-	R ARRAY CHIP	1/10 1KX4 OHM J 1608	
U1	1PT2579-	IC	PT2579-SN	
U2, U3, U4, U6, U7	1NJM4558M-	IC	NJM4558M	
U5	1CE2826—	IC	CE2826 SSOP-28	
U8	1AM5888—	IC	AM5888	
U10	1EN29LV800	IC	EN29LV800 FLASH(8M)	
U11	1K4S641632K	IC	K4S641632K	
U13	1M24C04MN-	IC EEPROM	M24C04MN SOP	
U14	1SPHE8281DE	IC MPEG	SPHE8281DE	
U17	174HC4052-	IC	74HC4052	
XT2	5XJ27M000E	X-TAL	27MHZ HC-49/US (RADIAL/SMD)	
Y1	5XA4R332M-	X-TAL	4.332M	
ZD1	DZTZ5R1B—	DIODE ZENER	MTZ-5.1B 52MM TAPPING	
10	9CD6015300	TRAY LOADER	213Q Lase-SAMSUNG DL6 FS	

Appendix - Electrical part list

PCB FRONT ASSY [9CDC0989700] : HC-7230

Loc.	Part Code	Part Name	Description	Remark
B701	9CD6509400	PCB FRONT	225X30XT1.6	
CN1	9728844700	CONN AS	4P 530MM(一头插座2.0MM)	
CN2	9728844800	CONN AS	6P 270MM(一头插座2.0MM)	
CN3	9728844900	CONN AS	4P 270MM(一头插座2.5MM)	
CN4	9728845000	CONN AS	3P 150MM(两头插座2.0MM)	
CN5	9728845100	CONN AS	3P 150MM(两头插座2.0MM)	
CN6	9728845200	CONN AS	3P 560MM(两头插座2.0MM)	
D1, D2, D3	DZN4148—	DIODE	IN4148 AUTO 52MM	
JW1, JW2, JW5, JW8, JW9	W581GY5095	WIRE JUMPER	AWG22 1/0.65 SN 5 AUTO	
JW3, JW4, JW6, JW7	W581GY1005	WIRE JUMPER	AWG22 1/0.65 SN 10 AUTO	
JW10, JW11, JW12, JW14, JW13 JW15, JW16	W581GY5095	WIRE JUMPER	AWG22 1/0.65 SN 5 AUTO	
	W581GY7595	WIRE JUMPER	AWG22 1/0.65 SN 7.5AUTO	
Q1	TZS9014Y—	TR	S9014	
IC1	1CS16311-	IC	CS16311EN	
K1, K2, K3, K4, K5, K6	5S51616C—	SW TACT	KQG906	
LED1, LED2	D3B4VC—	LED	BLUE	
VFD1	DSC3118-20	VFD	SC-3118-2(20)	
VR1	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
USB1	9736329300	JACK USB	USAF-046N-WP-01	
VOL2, VOL3	FV1103731B	VR	F-09KV B10K L20FC*7(H6.5)(K) VERTI	
MIC1, MIC2	9736329900	JACK HEADPHONE	CK-6.35-14	

Appendix - Electrical part list

PCB MAIN ASSY [9CDC090100] : HC-7230

Loc.	Part Code	Part Name	Description	Remark
B801	TAK-MP7208 VER1	PCB SMPS	200X121X1.6T	
C1, C2	CL1BB3224K	C CERA(X-CAP)	400V 0.22UF(X-CAP) 436D	
CON1, CON2	9728808200	CONN WAFER	VH-3A (W/O CENTER,WHITE)	
CON3	2503-WS-07	WAFER	7P 2.5MM	
CON4	2001-WS-05	WAFER	5P 2.0MM	
CON5	2001-WS-10	WAFER	10P 2.0MM	
CU1, CU2	1 EL817B—	IC	EL 817B	
D1, D34	DIN4007—	DIODE	IN4007	
D12, D13, D16, D17, D20, D21 D24, D25, D28, D29, D32, D33	DDSS140000	DIODE	DSS14	
D2, D6, D7, D8, D38	DIN4004—	DIODE	IN4004	
D3, D4, D10, D11, D14, D15 D18, D19, D22, D23, D26, D27 D30, D31	EDD4148—	DIODE	DIODE, RLS4148	
D5	DSR360—	DIODE	SR360 DO-204AL	
D9	MUR2020CR-	DIODE(Phase Silicon Rectifier)	MUR2020CR	
DW1	DZTZ18B1W-	DIODE ZENER	18V IW	
DW2	DZTZ5R6B—	DIODE ZENER	MTZ-5.6B 52MM TAPPING	
DW3, DW4, DW5, DW6, DW7 DW8, DW9, DW10, DW11, DW12 DW13, DW14	DZTZ6R2B—	DIODE ZENER	MTZ-6.2B 52MM TAPPING	
EL1	5TPC28036TS	EMI Filter	C280-36TS*2	
F1	9734600800	HOLDER FUSE CLIP	PI5.2-REEL	
F1	5FSGB31522L	FUSE GLASS TUBE	VDE TL 3.15A 250V MF51	
FB1, FB2, FB3, FB4, FB5, FB6	5LK600K887	FB	FB	
HD1	1KBL406G—	DIODE(Bridge Rectifier)	KBL406G	
IC1	1FSCQ1565R	IC	FSCQ1565RP	
IC14	1MP7782DF	IC	MP7782DF	
IC2	1SM02659R-	IC	5M02659R	
IC3, IC4	1TL431A—	IC	TL431A	
IC5	1TA79L12—	IC	79L12 TO-92	
IC6	1TA78L05—	IC	78L05 TO-92	
IC7	1TA78L08—	IC	78L08 TO-92	
IC8	1PT2588—	IC	PT2588	
IC9, IC10, IC11, IC12, IC13	1MP7722DF	IC	MP7722DF	
L1	5PUU105860	Inductance Filter	UU10.5-860	
L2	5LC100K D5X8	COIL	10UH 2A LPF(SPK)	
L3, L5, L6, L7, L8, L9, L10, L11 L12, L13, L14, L15	5LF110K886	COIL	10UH 3.5A LPF(SPK)	
L4, L16	5LF111K888	COIL	100UH	
LS1	5LX100J001	COIL BEAD	3.6PI X 6MM 100 OHM,100MHz	
Q5, Q6	TZS9015Y—	TR	S9015	
Q7	TZS9014Y—	TR	S9014	
SPK-1	9736331900	JACK SPK	WP-1201	
T1	5TP8035998	Transformer (HF)	DAT-3541A2	
T2	5TP8025999	Transformer (HF)	Tk-2570	
TU001	9737651201-1	TUNER MODULE	KST-MV014MA1-B0	
YC1, YC2	CH1BFE102M	C CERA AC	400V 1000PF M SD AC250V	
YC3	CH1BFE332M	C CERA AC	400V 3300PF M SD AC250V	
YC4	CH1BFE222M	C CERA AC	400V 2200PF M SD AC250V	
10	9CD4413800	(Diode) HEAT SINK D	AL (L15XW10XH30MM)	
20	9CD4413700	(POWER) HEAT SINK P	AL (L100XW18XH30	
30	9CD4414600	(Amplifier)HEAT SINK A	AL (I120XW40XH8)	
40	new part code???	SCREW TAPPTITE	BM3*7	
50	9CD3304300	PVC Slipcover (T=0.5MM)	PVC Slipcover (T=0.5MM)	
60	new part code???	SCREW TAPPTITE	BM3*8	

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