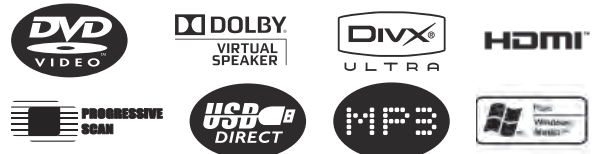


Service
Service
Service



Service Manual



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TECHNICAL SPECIFICATION

Amplifier

Rated Output Power	2X10W + 40W RMS
Frequency Response	40 - 20000 Hz, -3dB
Signal to Noise Ratio	>67dB
Aux Input	0.5V RMS 20k ohm

Disc

Laser Type	Semiconductor
Disc Diameter	12cm/8cm
Video Decoding	MPEG-1 / MPEG-2 / DivX
Video DAC	12Bits
Signal System	PAL / NTSC
Video Format	4:3 / 16:9
Video S/N	>48dB
Audio DAC	24Bits / 96kHz
Total Harmonic Distortion	<1%
Frequency Response	40Hz - 20kHz (44.1kHz) 40Hz - 22kHz (48kHz) 40Hz - 24kHz (96kHz)
S/N Ratio	>67dBA

Tuner (FM)

Tuning Range	87.5 - 108MHz
Tuning grid	50KHZ
Sensitivity	- Mono, 26dB S/N Ratio <22 dBf - Stereo, 46dB S/N Ratio <43 dBf
Search Selectivity	>28dBf
Total Harmonic Distortion	<2%
Signal to Noise Ratio	>55dB

Speakers

Speaker Impedance	8ohm
Speaker Driver	3" Full range +5.25"subwoofer
Sensitivity	>82dB/m/W

General information

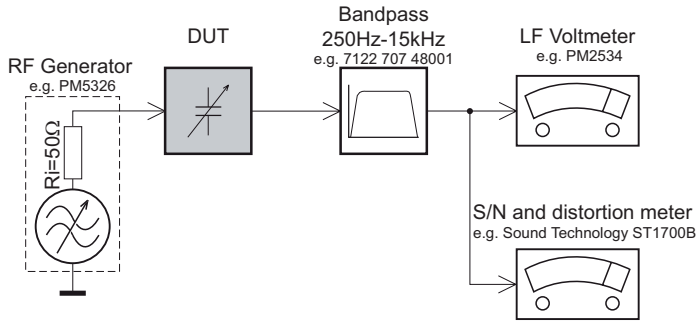
AC power	100 - 240V, ~50/60 Hz
Operation Power Consumption	Main unit: 22W; Subwoofer: 45W
Standby Power Consumption	<4W
Composite Video Output	1.0Vp-p, 75ohm
Headphone Output	2X15mW 32ohm
USB Direct	Version 2.0
Dimensions	- Main Unit 525 x 90 x 200 mm - Active Subwoofer Box 600 x 400 x 308 mm
Weight	- With Packing 8.8 kg - Main Unit 2.62 kg - Active Subwoofer Box 3.03 kg

VERSION VARIATION

Type /Versions: Service policy	MCD263									
	/05	/12		/55	/78	/61			/93	/98
Board in used:										
DISPLAY BOARD				C&M	C&M					C&M
MAIN BOARD				C&M	C&M					C&M
SW BOARD				C	C					C
KEY BOARD				C	C					C
USB BOARD				C	C					C
Type /Versions: Feature difference	MCD263									
Features	/05	/12		/55	/78	/61			/93	/98
RDS										
VOLTAGE SELECTOR										
ECO STANDBY - DARK										
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used										

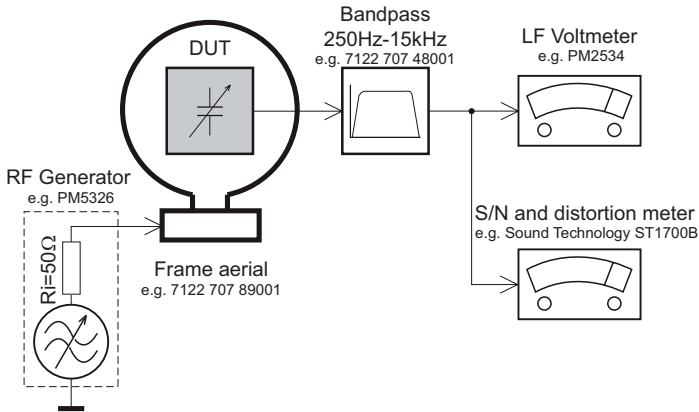
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

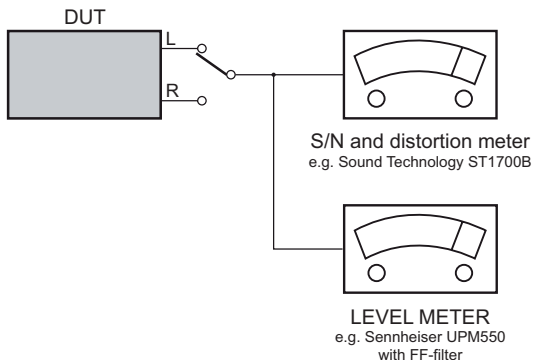
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

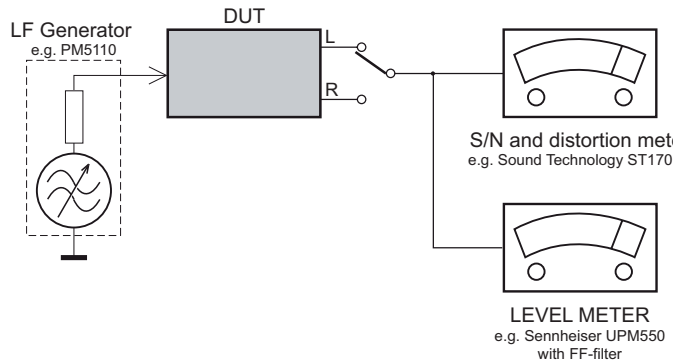
CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)



Recorder

Use Universal Test Cassette Cr02 SBC419 4822 397 30069 or Universal Test Cassette Fe SBC420 4822 397 30071



SERVICE AIDS

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets
 - * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

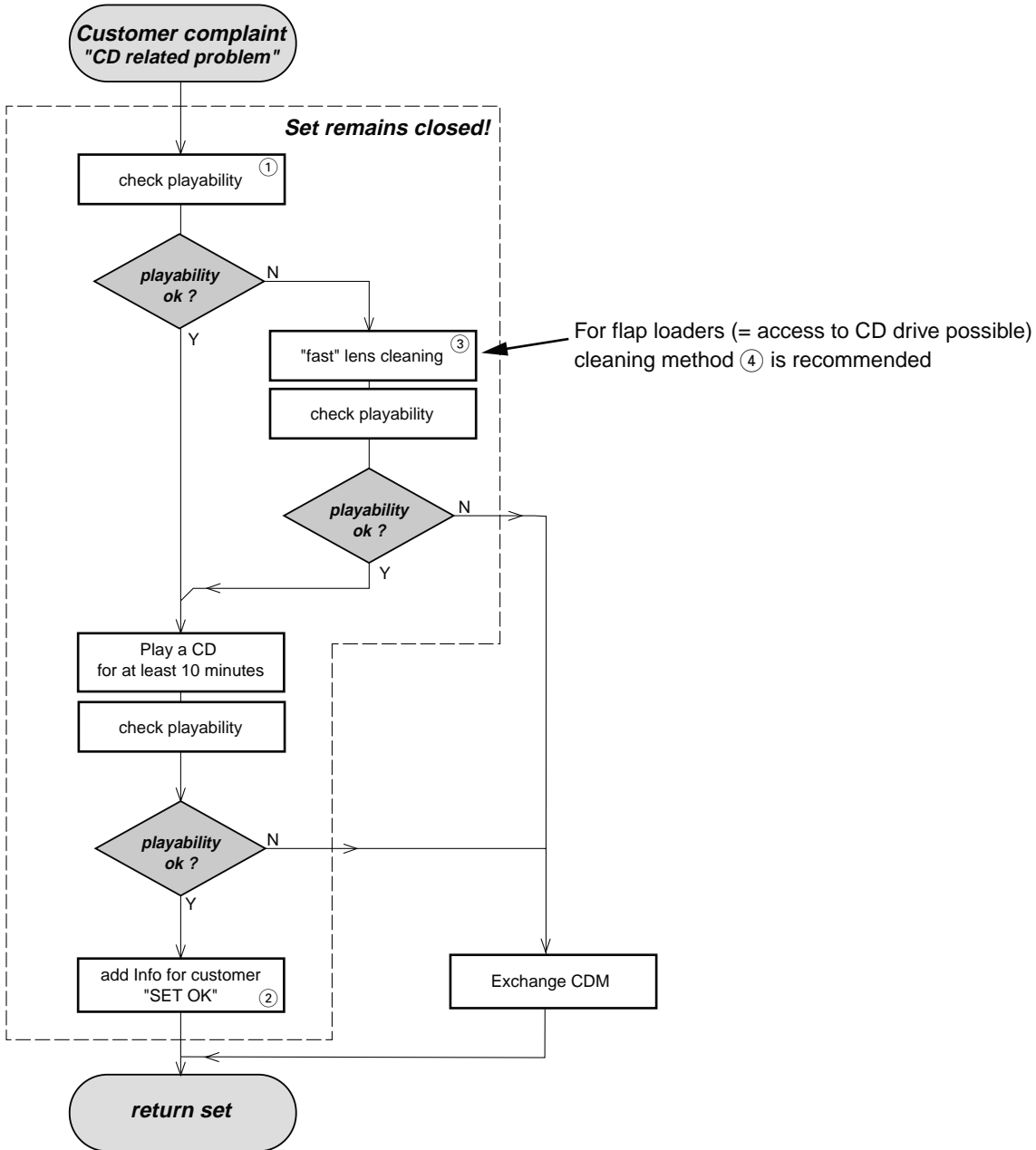
For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

INSTRUCTIONS ON CD PLAYABILITY



① - ④ For description - see following pages

INSTRUCTIONS ON CD PLAYABILITY

①

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥ 10 seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

②

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.

The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.

The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

④

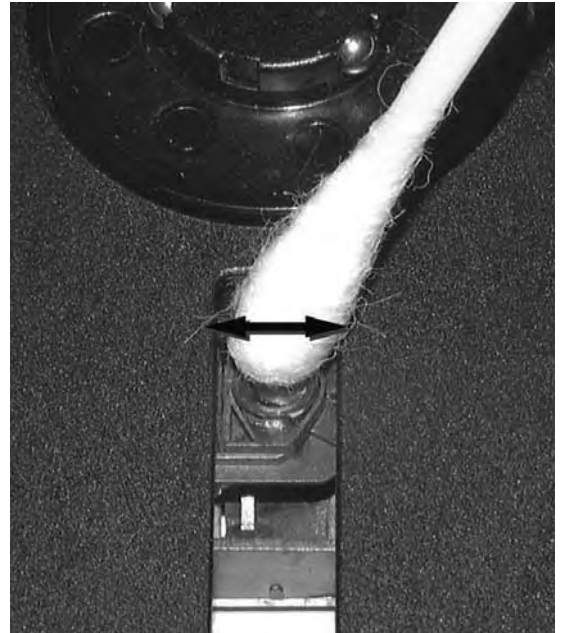
LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

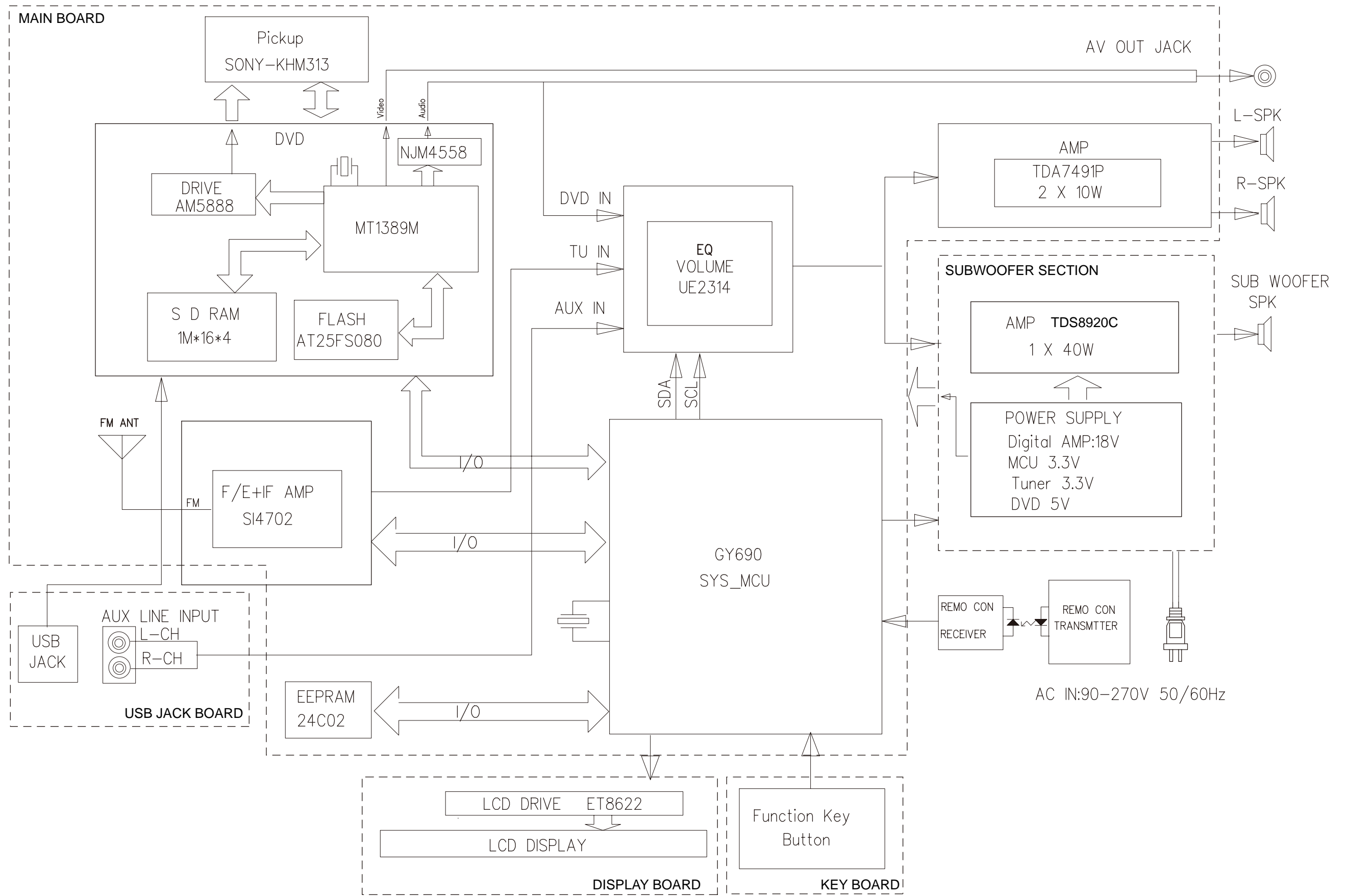
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent"

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

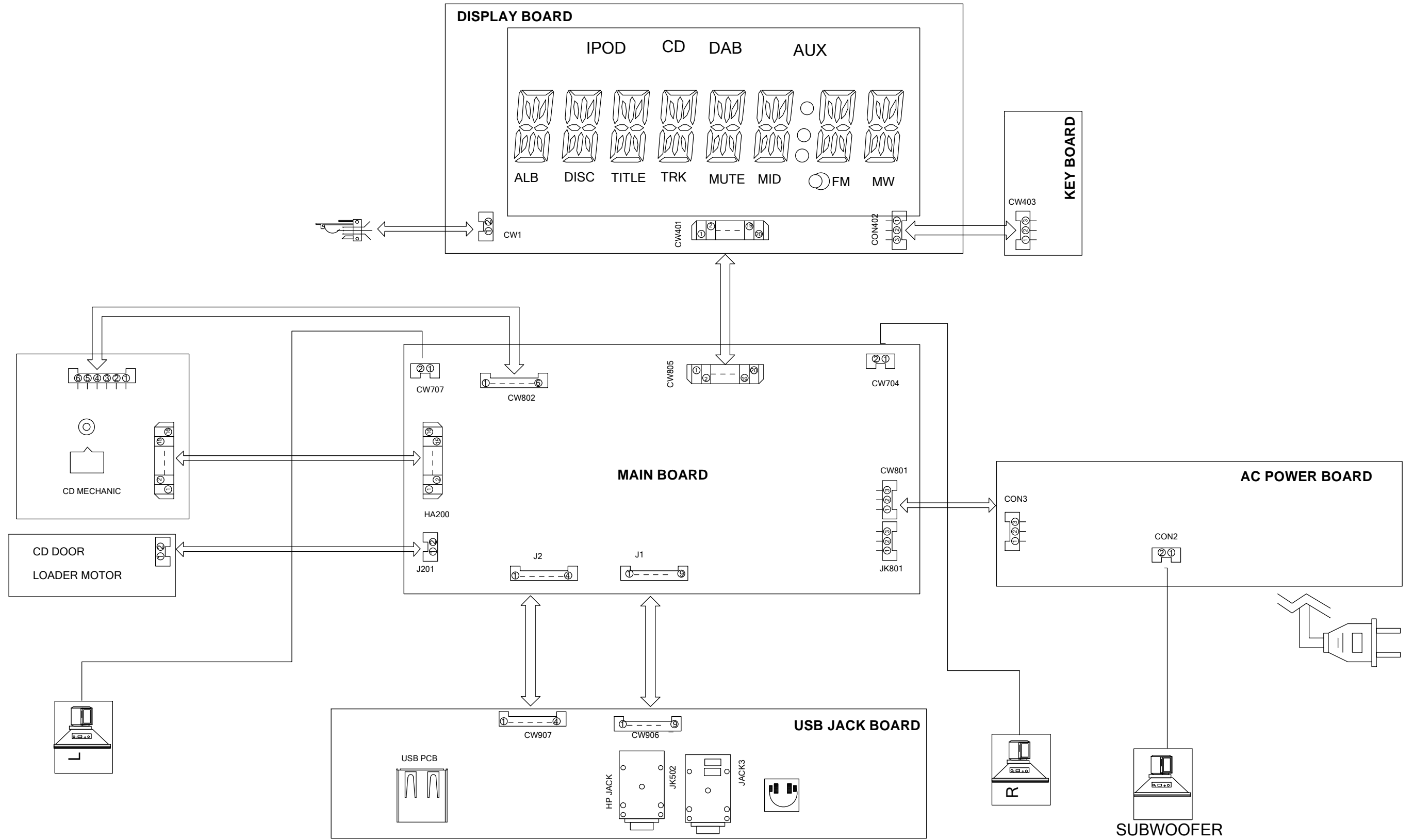
The direction of cleaning must be in the way as indicated in the picture below.



BLOCK DIAGRAM

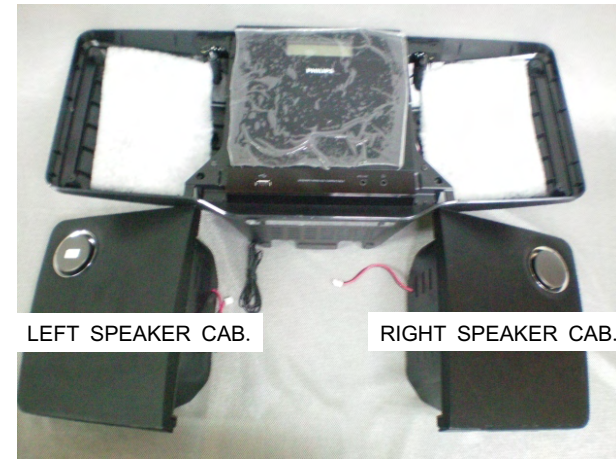
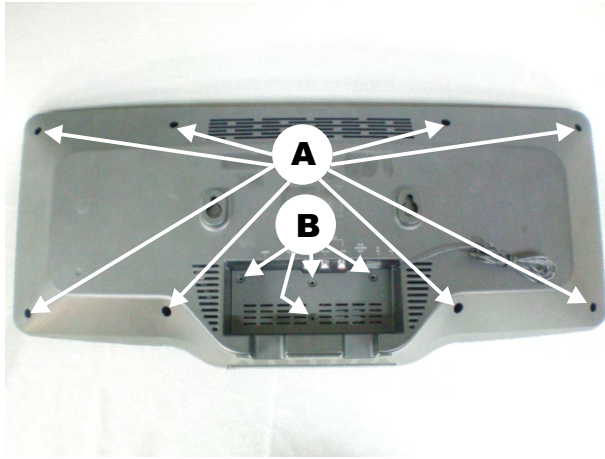


WIRING DIAGRAM

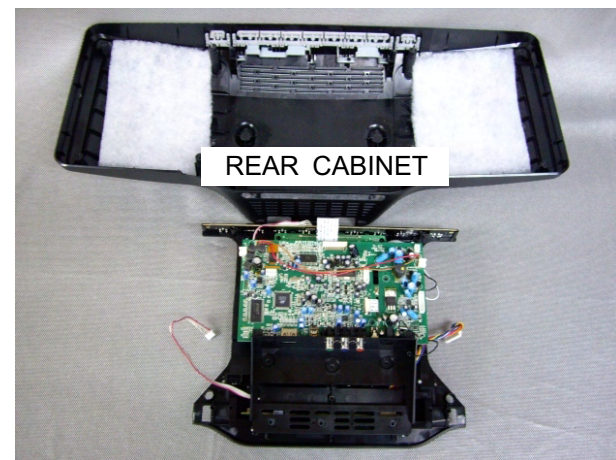
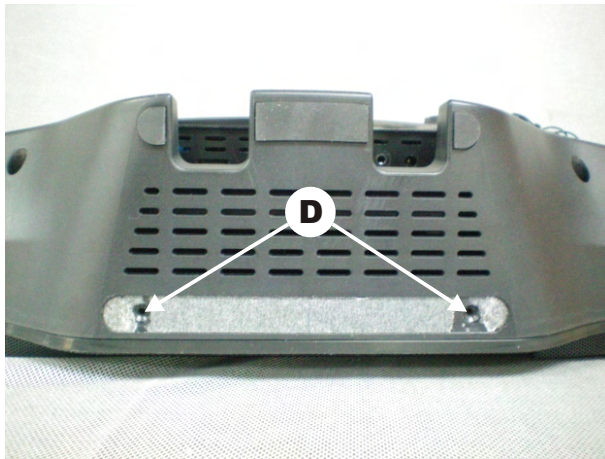


DISASSEMBLY DIAGRAM**Dismantling of the Rear Cabinet**

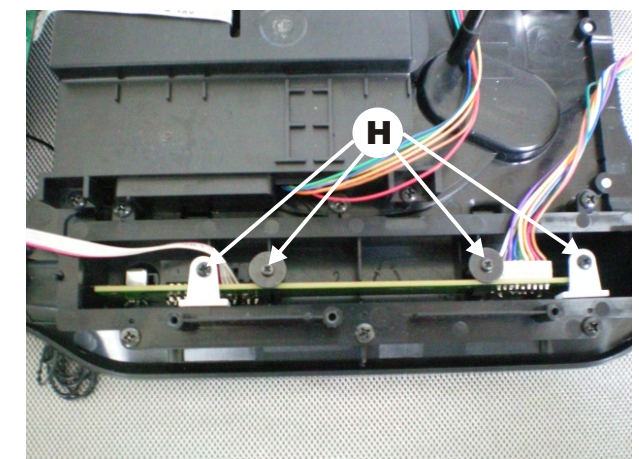
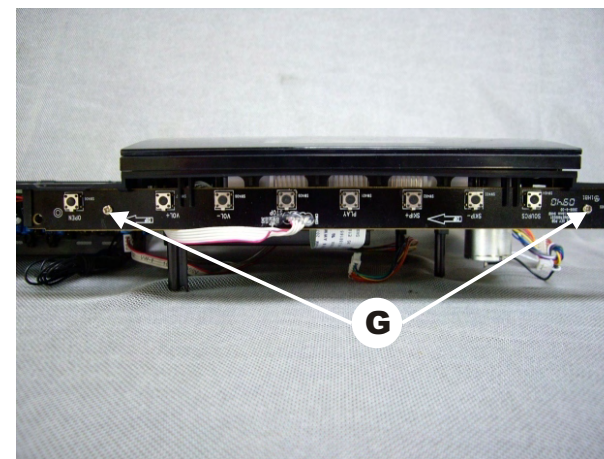
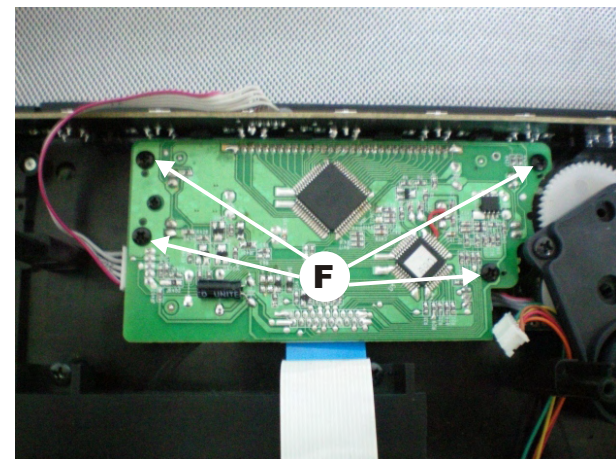
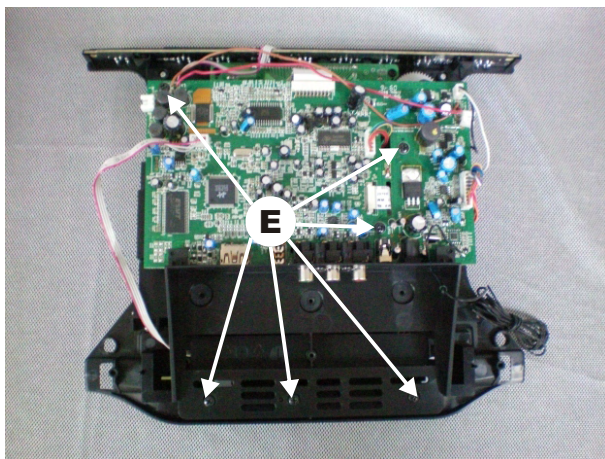
- 1) Remove 8 screws A as indicated to loosen the speaker cabinet.
- 2) Remove 4 screws B and 4 screws C as indicated.
- 3) Remove a rubber foot at bottom of the unit as indicated.



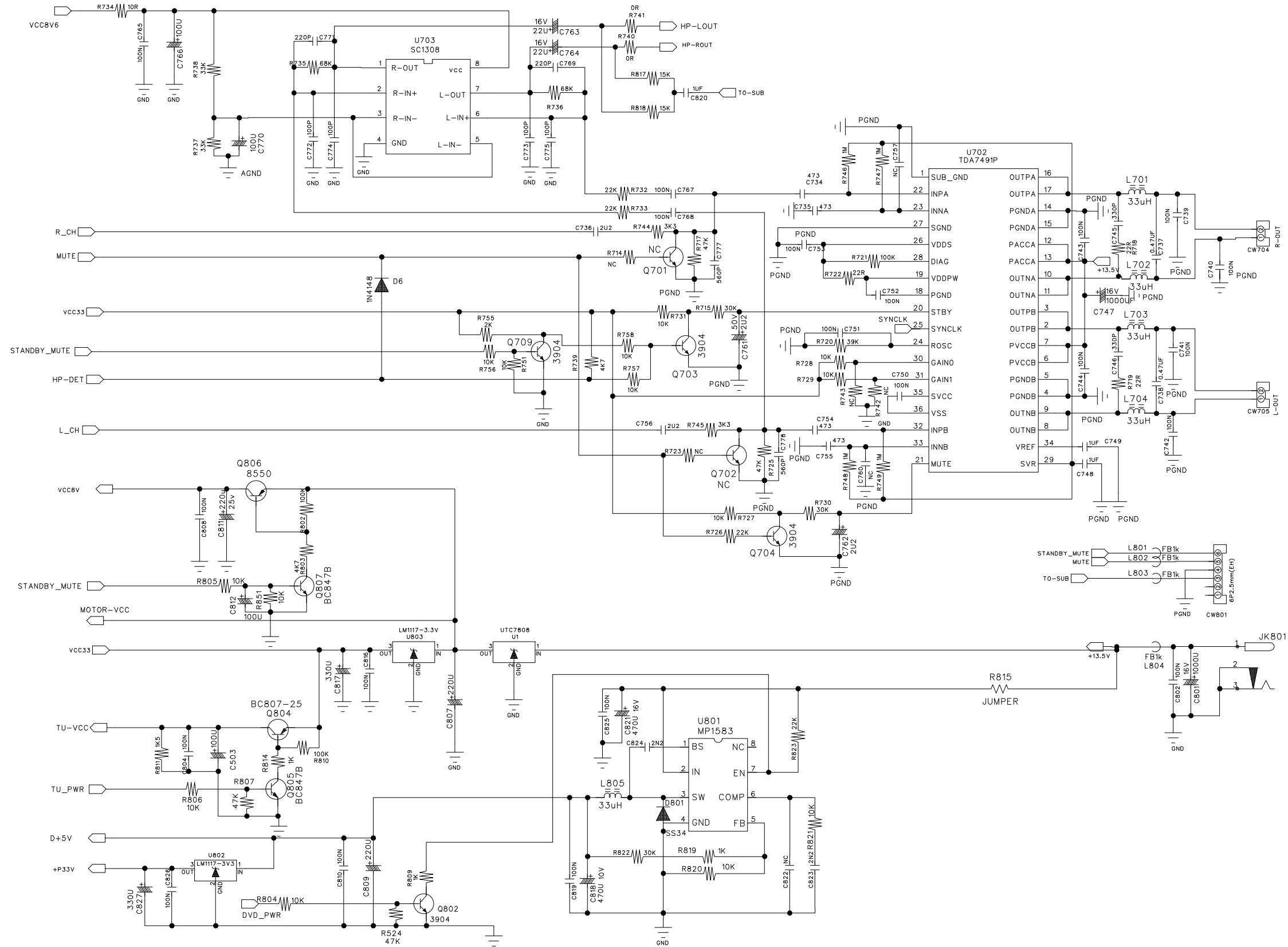
- 4) Remove 2 screws D as indicated to loosen the Rear Cabinet.

**Dismantling of the PCB Board**

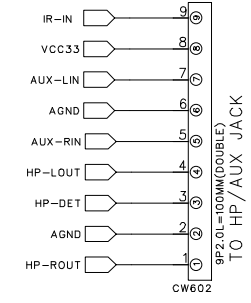
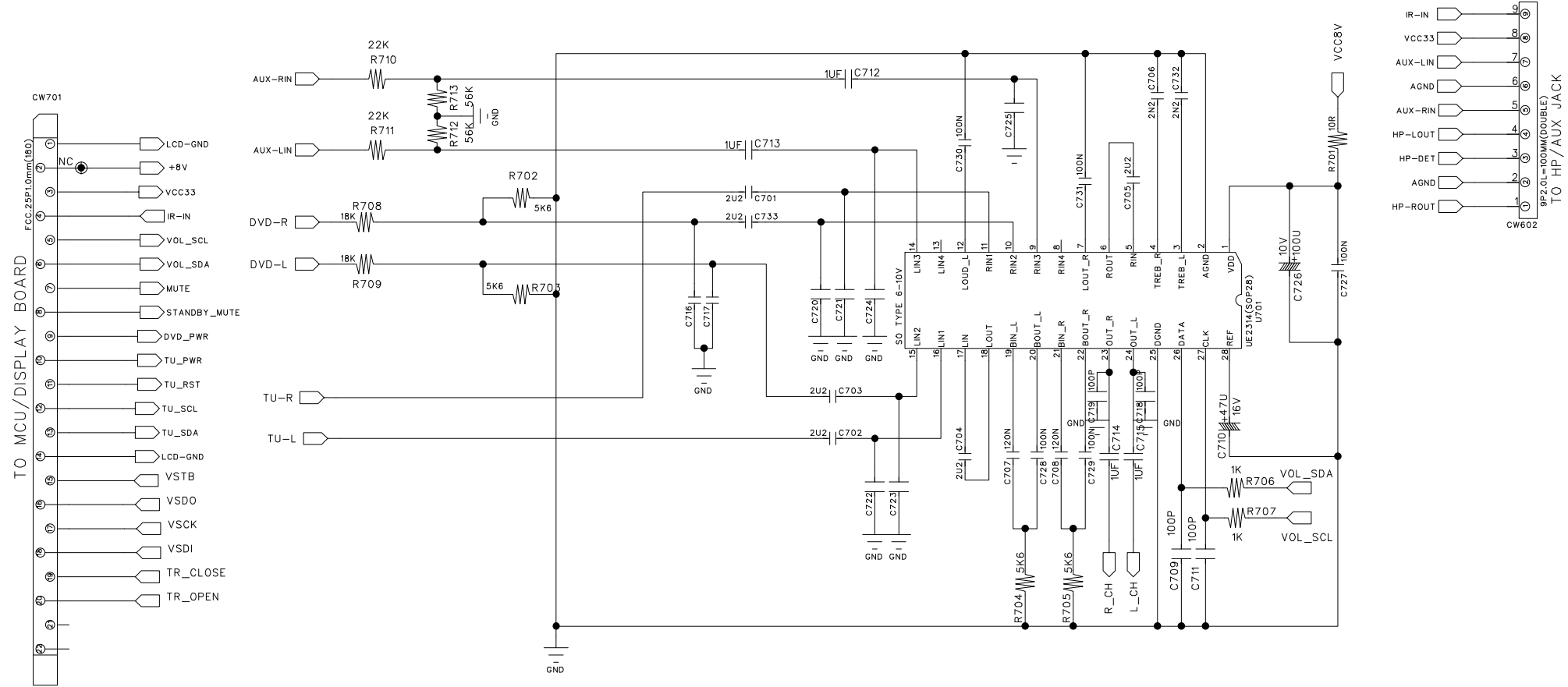
- 1) Remove 6 screws E as indicated to loosen the Main Board.
- 2) Remove 4 screws F as indicated to loosen the Display Board.
- 3) Remove 2 screws G as indicated to loosen the Key Board.
- 4) Remove 4 screws H as indicated to loosen the USB jack Board.



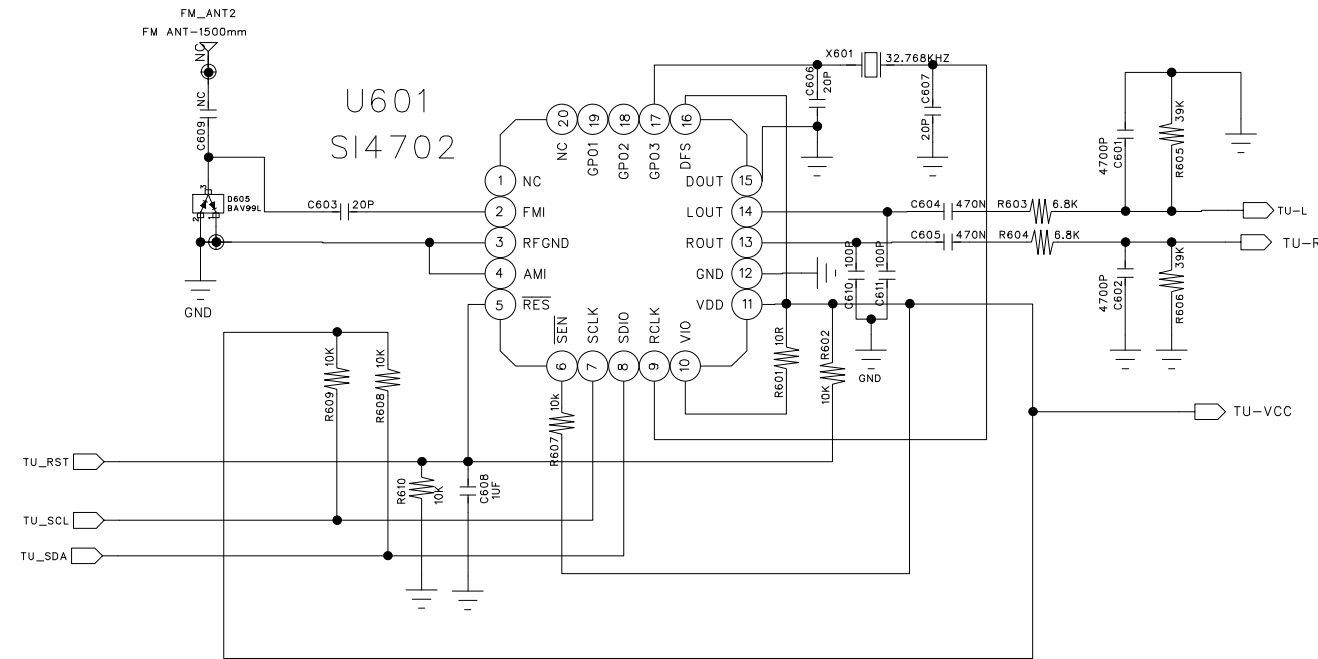
CIRCUIT DIAGRAM-MAIN BOARD POWER/AMP SECTION



CIRCUIT DIAGRAM-MAIN BOARD
EQ/TUNER SECTION



TUNER PART

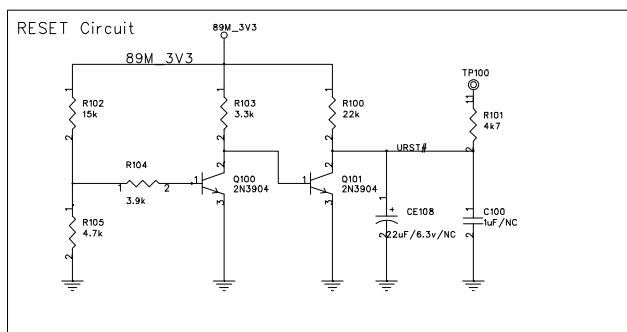
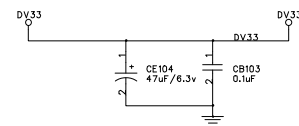
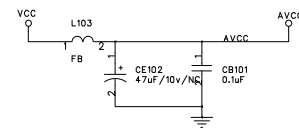
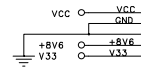


**CIRCUIT DIAGRAM-MAIN BOARD
DVD SECTION**

COMMON1389M_HD65_AT5669_V1.0

MT1389M (LQFP128) DVD Board w/ Sanyo HD6x Series PUHs

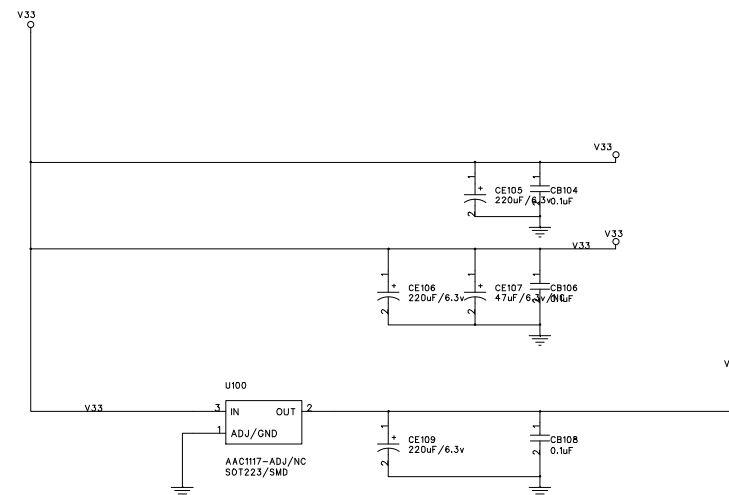
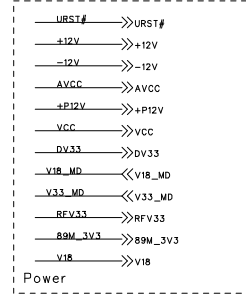
- 1 INDEX & POWER / RESET
- 2 MT1389M LQFP128
- 3 SDRAM & FLASH & MOTOR
- 4 AUDIO & VIDIO & USB I/F



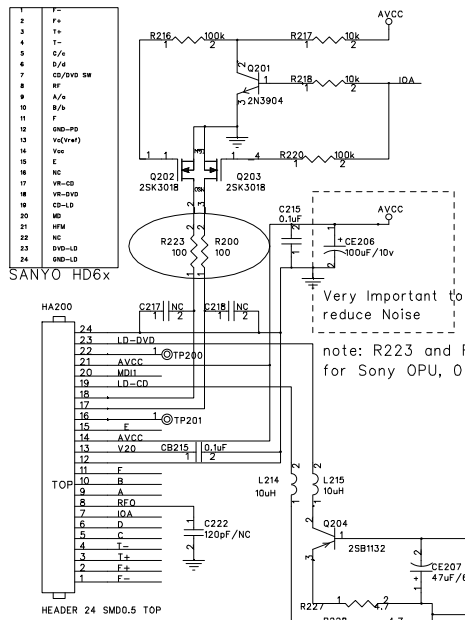
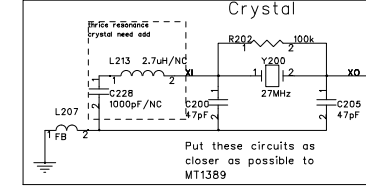
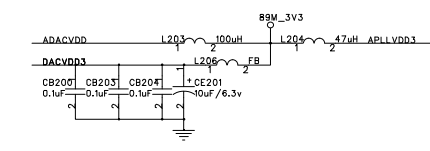
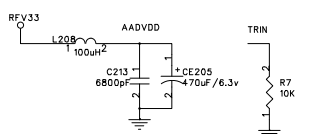
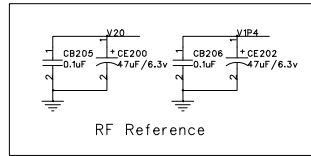
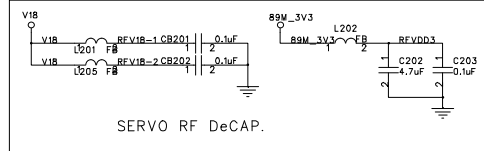
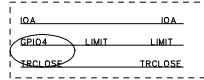
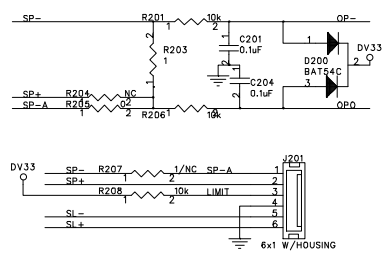
MT1389M 128 PIN GPIO LIST

NAME	PIN	FEATURES
TRAY_OPEN	14	STBY
TRAY_CLOSE	15	TROPEN IOA
FG / GPIO2	18	TRIN
UP1_6	28	VSCK HDMI_SCL
UP1_7	29	VSDA HDMI_SDA
GPIO3	34	CEC
GPIO4	35	LIMIT TROUT
GPIO5	7	TRCLOSE
GPIO6	31	Gxyz_SW TxD
GPIO7	39	SD_CLK MS_CLK
GPIO8	38	SD_CMD MS_BS
GPIO9	37	SD_DATA MS_DATA
GPIO10	81	HPLG
GPIO11	30	SCART1 HSYNC# RxD
GPIO12	80	ASPDIF
GPIO13	36	VSTB
GPIO14	96	A_MUTE
GPIO19	103	SCART2 VSYNC#
GPIO20	104	AVCM
GPIO21	105	AKIN1
ARF	109	AUDIO_ARF Gxyz_LOAD
ARS	110	AUDIO_ARS Gxyz_CLK
ALS	114	AUDIO_ALS Gxyz_DATA1
ALF	115	AUDIO_ALF Gxyz_DATA2

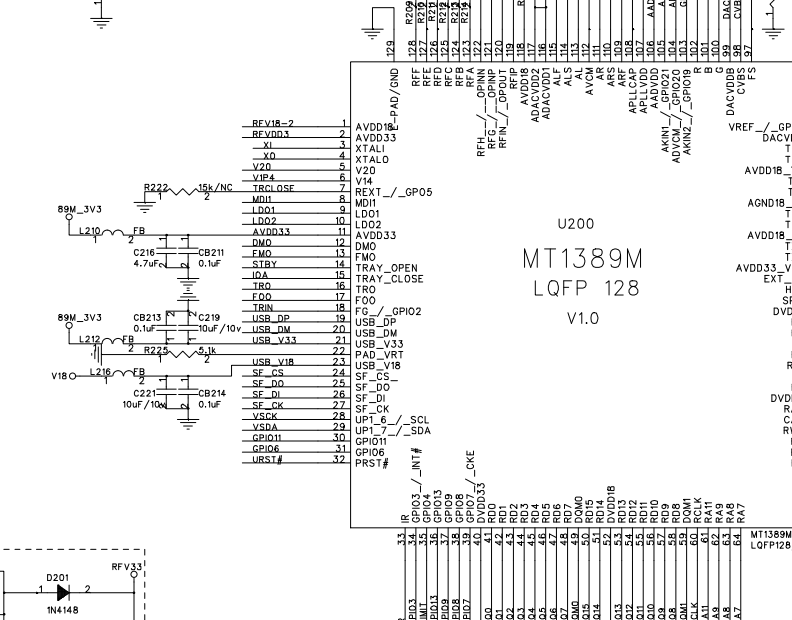
OFF-PAGE CONNECTION



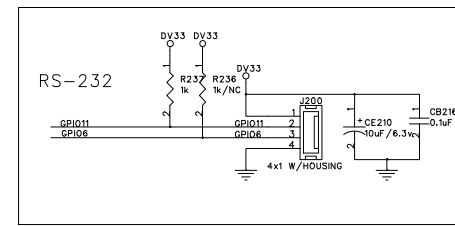
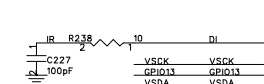
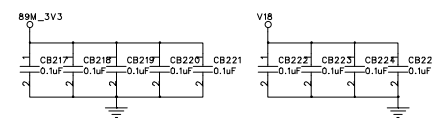
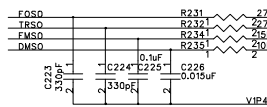
CIRCUIT DIAGRAM-MAIN BOARD DVD SECTION



note: R223 and R200 are 100 ohm for Sanyo OPU, 0 ohm for Sanyo OPU.



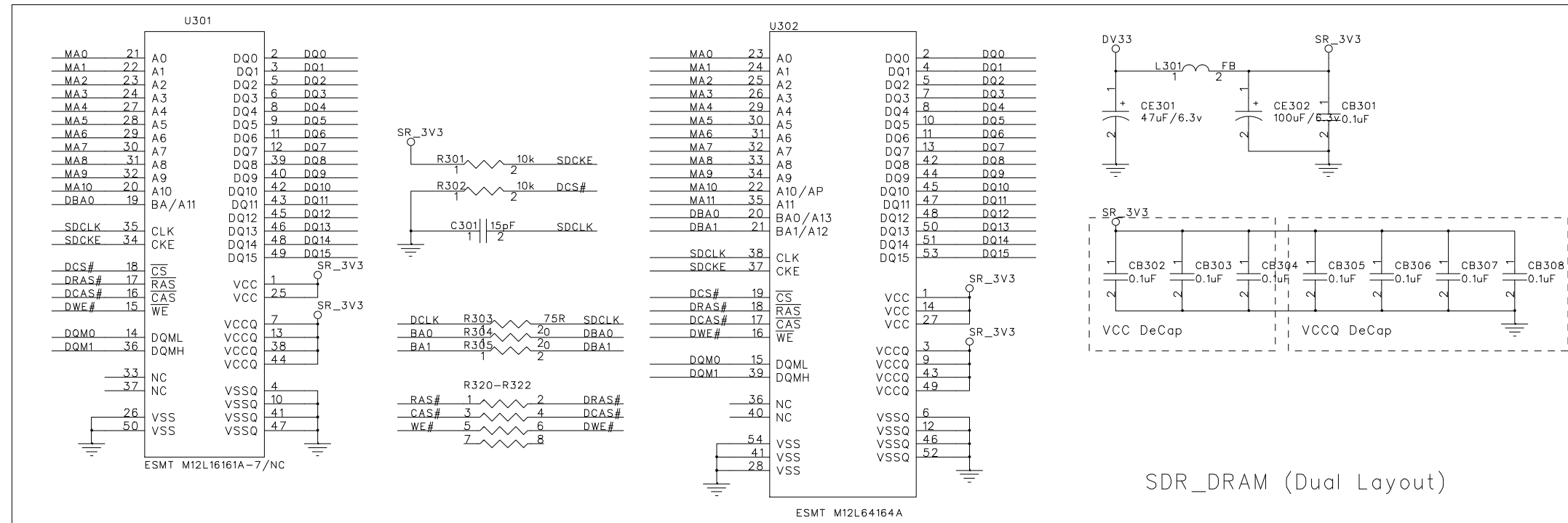
IR / VFD



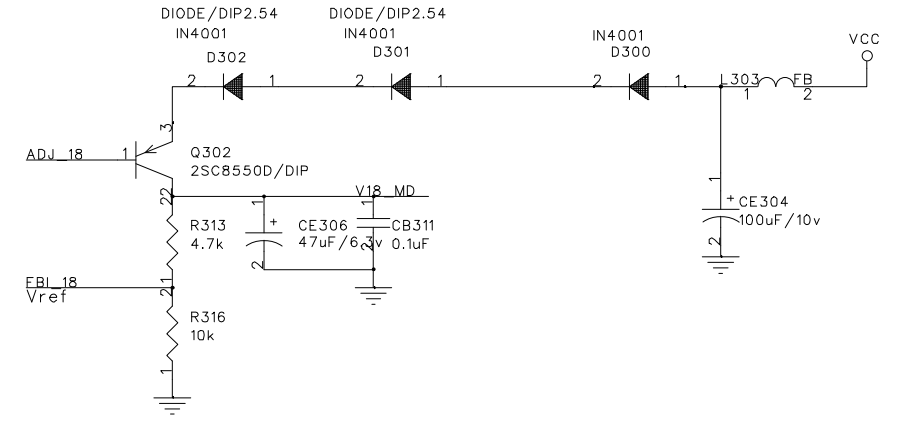
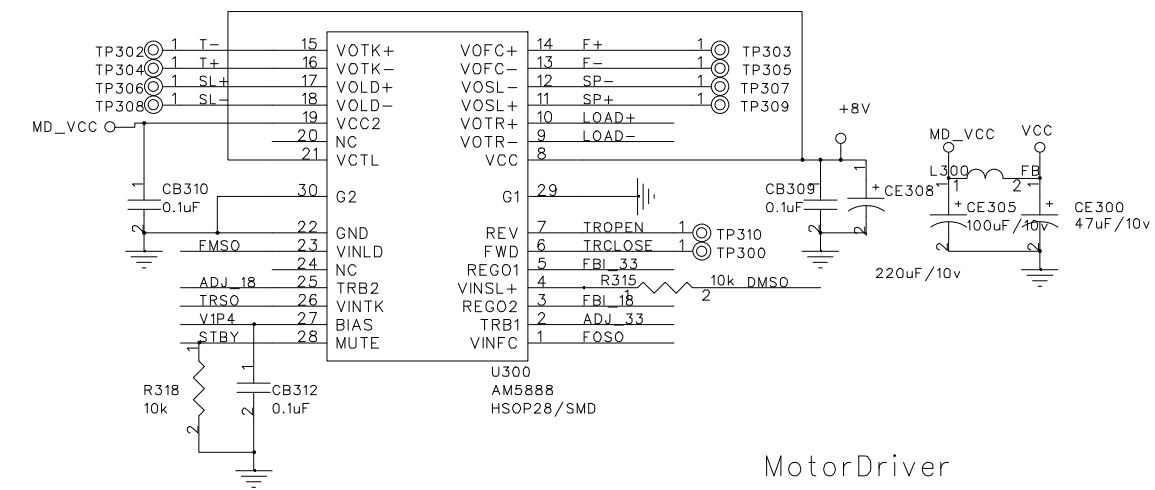
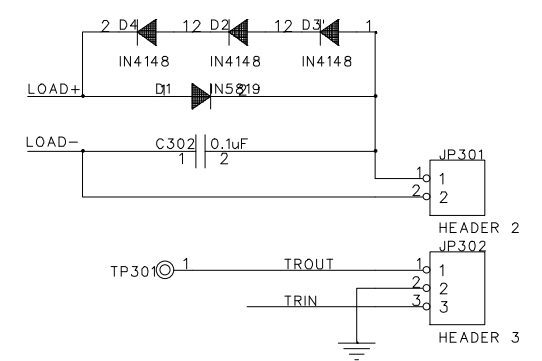
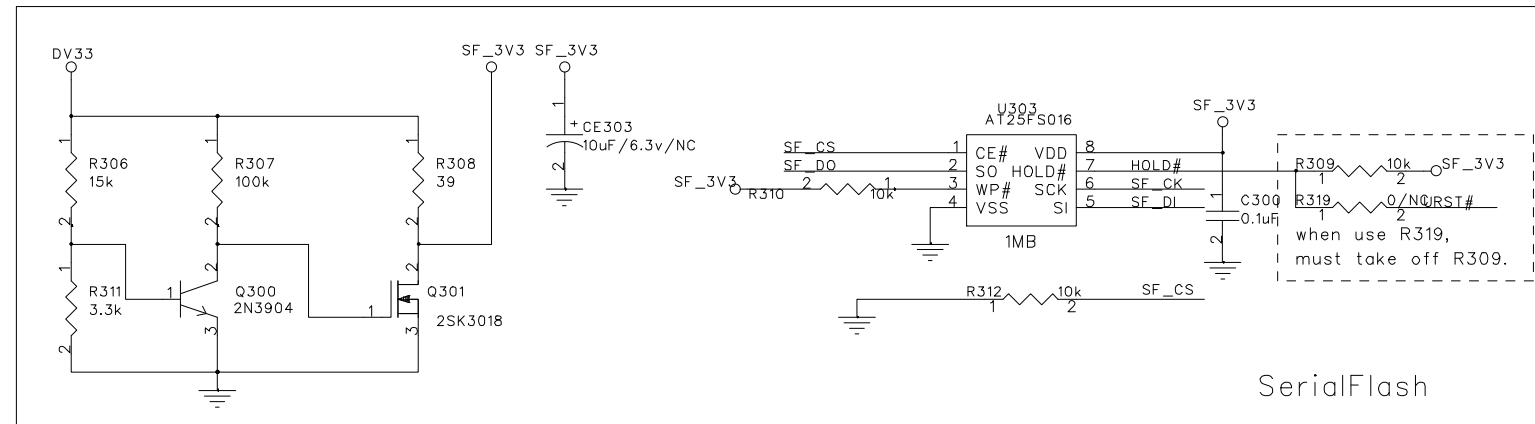
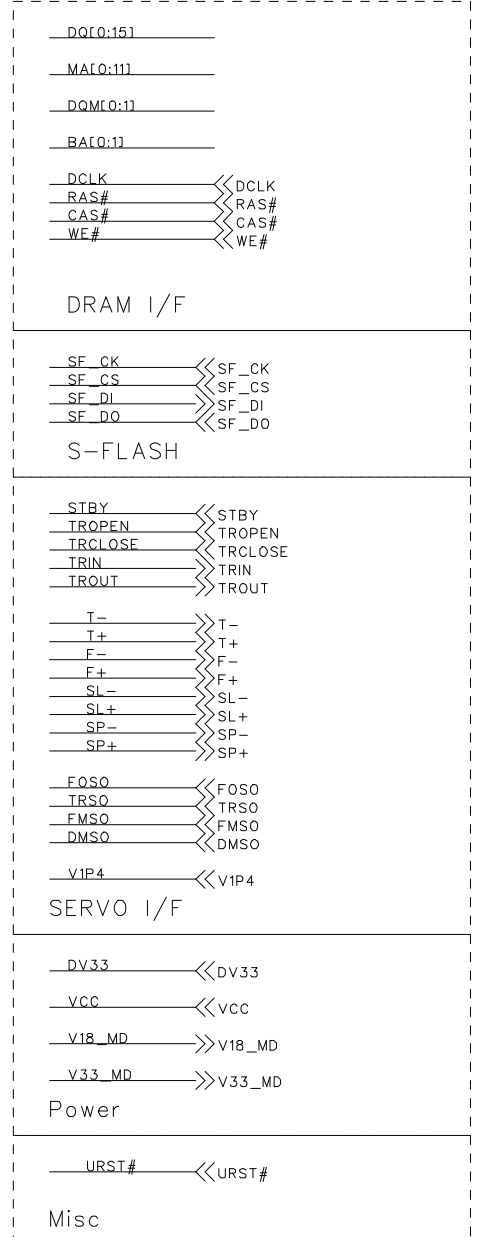
OFF-PAGE CONNECTION

- DOIO151
- MAIO111
- DMIO111
- BAIO111
- DCLK
- RAS#
- CAS#
- WE#
- DRAM I/F
- SF_CK
- SF_CS
- SF_DI
- SF_DO
- S-FLASH
- UPL1_6(7)
- IIC I/F
- GPIO1_7(9)
- MCR I/F
- CVBS_OUT
- V_R
- V_B
- V_G
- GPIO11
- GPIO19
- GPIO19
- VIDEO I/F
- AR
- AL
- ARS
- ALS
- ARF
- ALF
- ASPDF
- AKIN1
- GPIO6
- GPIO4
- AUDIO I/F
- USB_DM
- USB_DP
- USB_DP
- STBY
- IDA
- TRCLOSE
- TRM
- LIMIT
- T+
- T-
- F+
- F-
- SL+
- SL-
- SP+
- SP-
- FMSO
- TRSO
- FMSO
- DMSO
- SERVO I/F
- TXC+
- TXC-
- TX0+
- TX0-
- TX1+
- TX1-
- TX2+
- TX2-
- HPLG
- UPL1_6(7)
- GPIO3
- GPIO13
- GPIO13
- TMSD I/F
- URST#
- VCC
- AVCC
- DV33
- 89M_3V3
- V18
- RFV33
- Power

CIRCUIT DIAGRAM-MAIN BOARD DVD SECTION



OFF-PAGE CONNECTION

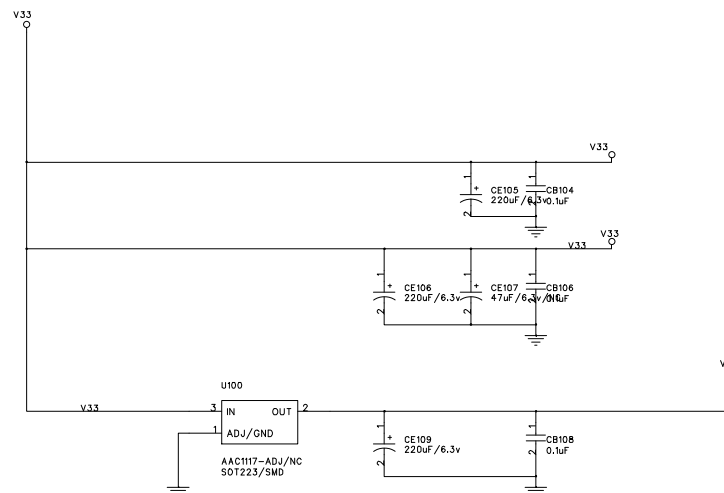
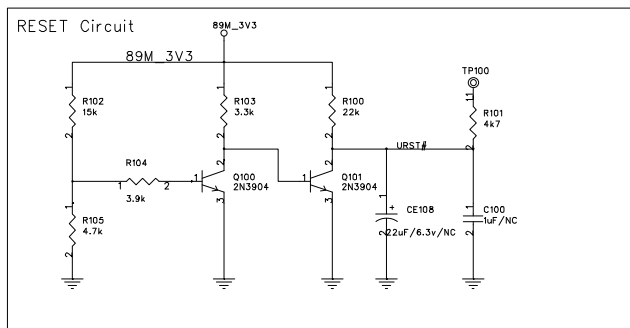
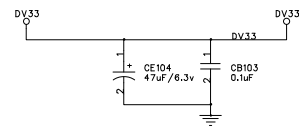
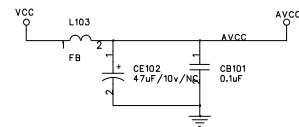
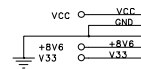


CIRCUIT DIAGRAM-MAIN BOARD DVD SECTION

COMMON1389M_HD65_AT5669_V1.0

MT1389M (LQFP128) DVD Board w/ Sanyo HD6x Series PUHs

- 1 INDEX & POWER / RESET
- 2 MT1389M LQFP128
- 3 SDRAM & FLASH & MOTOR
- 4 AUDIO & VIDIO & USB I/F

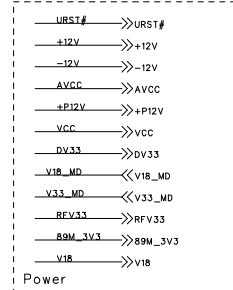


Rev	History	P#	Date
V1	Original release		2007.11.20

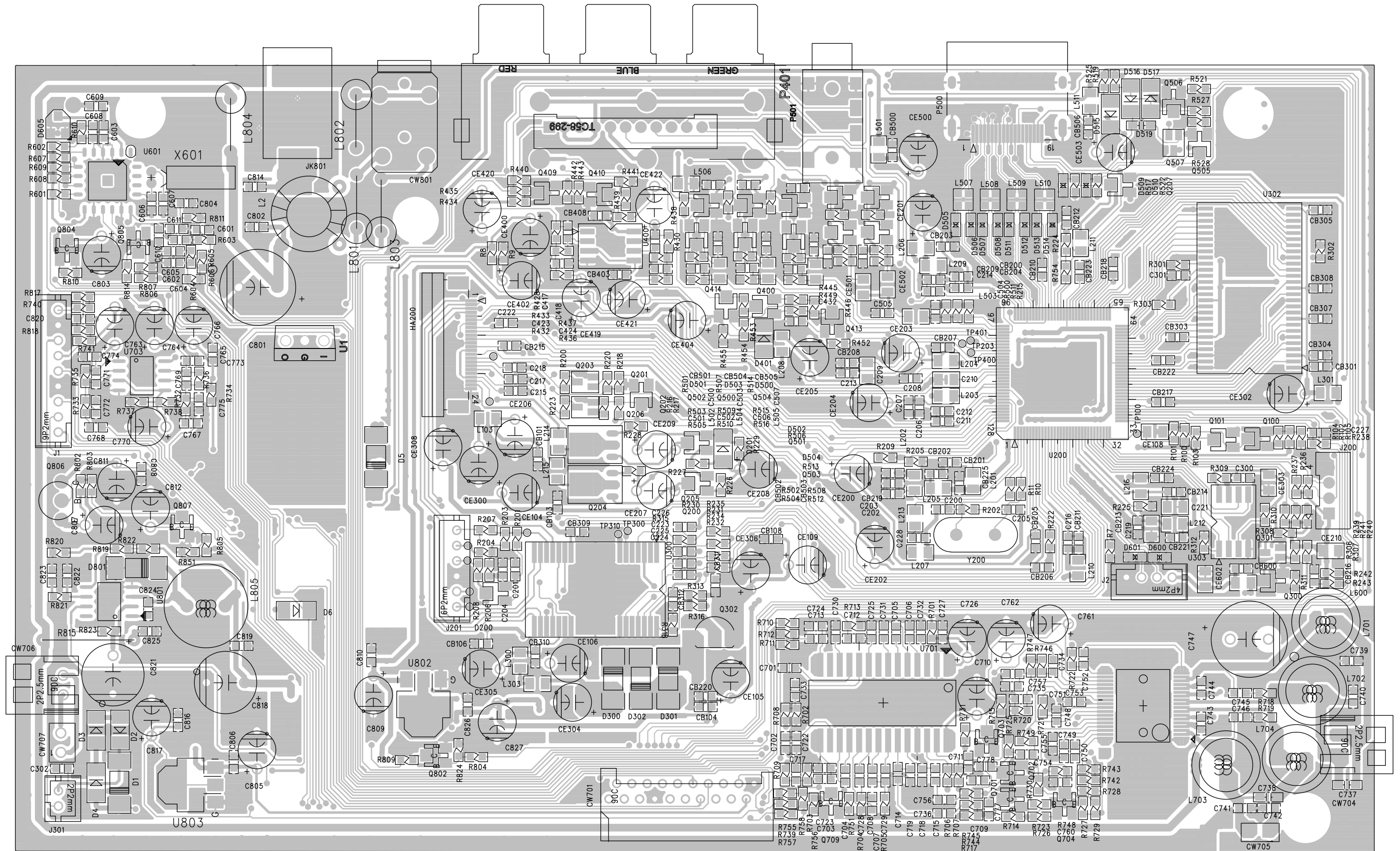
MT1389M 128 PIN GPIO LIST

NAME	PIN	FEATURES
TRAY_OPEN	14	STBY
TRAY_CLOSE	15	TROPEN IOA
FG / GPIO2	18	TRIN
UP1_6	28	VSCK HDMI_SCL
UP1_7	29	VSDA HDMI_SDA
GPIO3	34	CEC
GPIO4	35	LIMIT TROUT
GPIO5	7	TRCLOSE
GPIO6	31	Gxyz_SW TxD
GPIO7	39	SD_CLK MS_CLK
GPIO8	38	SD_CMD MS_BS
GPIO9	37	SD_DATA MS_DATA
GPIO10	81	HPLG
GPIO11	30	SCART1 HSYNC# RxD
GPIO12	80	ASPDIF
GPIO13	36	VSTB
GPIO14	96	A_MUTE
GPIO19	103	SCART2 VSYNC#
GPIO20	104	AVCM
GPIO21	105	AKIN1
ARF	109	AUDIO_ARF Gxyz_LOAD
ARS	110	AUDIO_ARS Gxyz_CLK
ALS	114	AUDIO_ALS Gxyz_DATA1
ALF	115	AUDIO_ALF Gxyz_DATA2

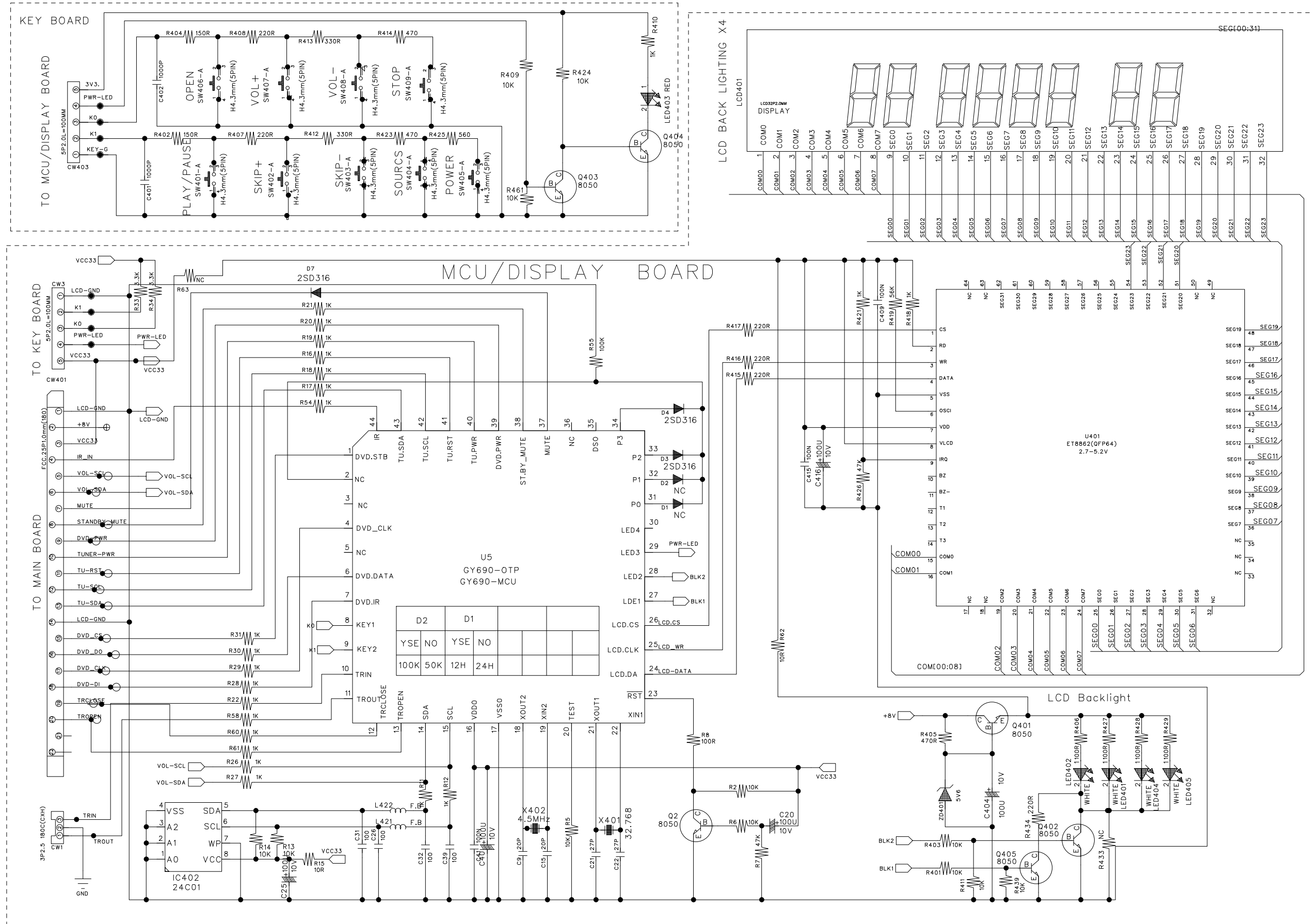
OFF-PAGE CONNECTION



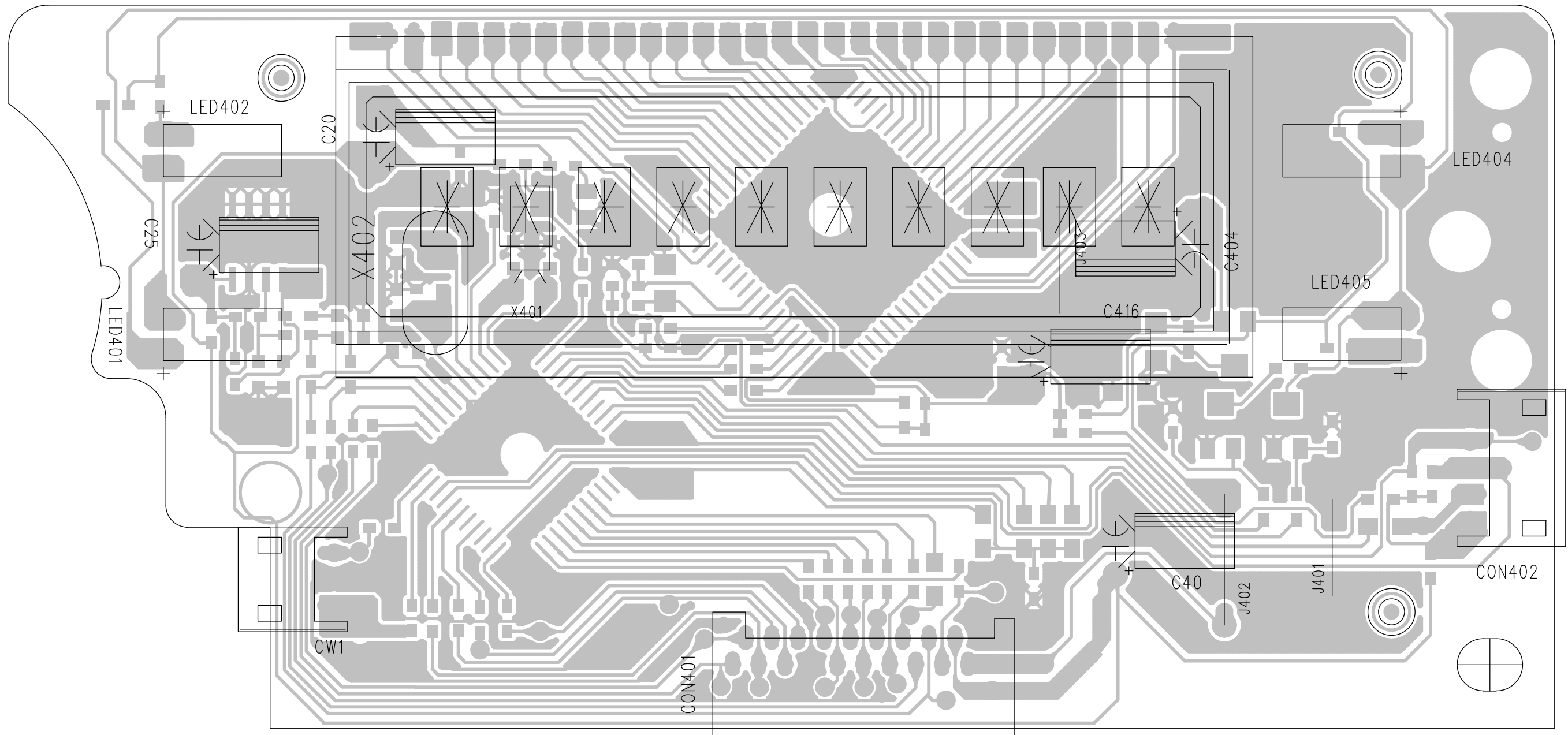
LAYOUT DIAGRAM-MAIN BOARD



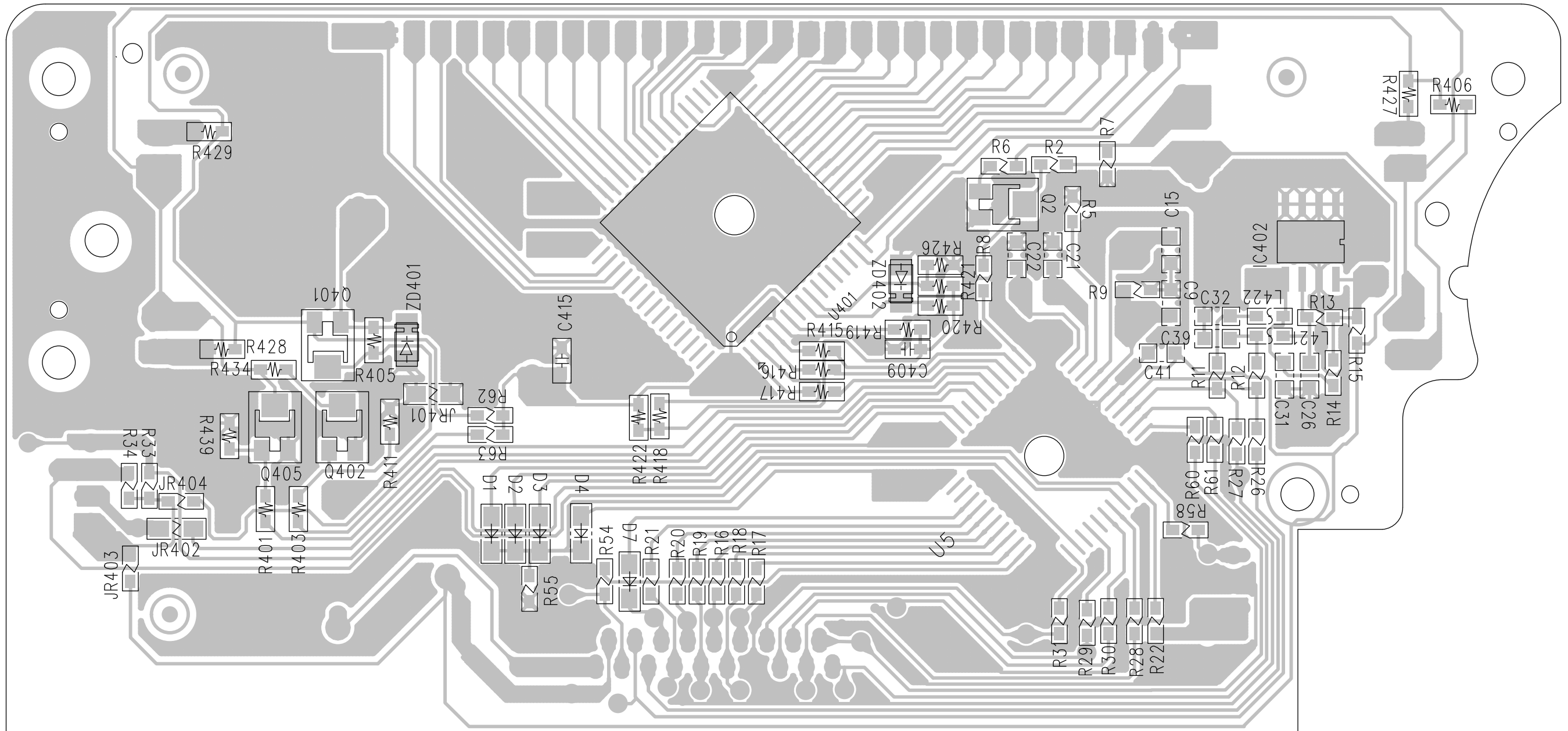
CIRCUIT DIAGRAM-DISPLAY/MCU/KEY BOARD



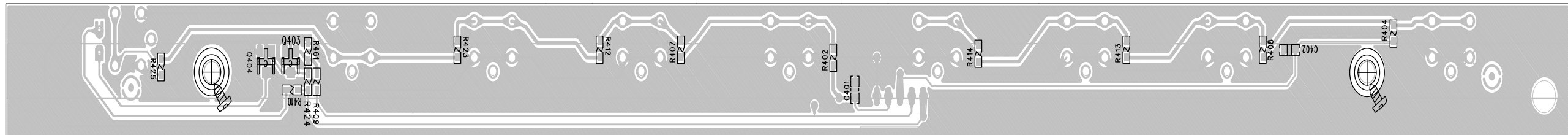
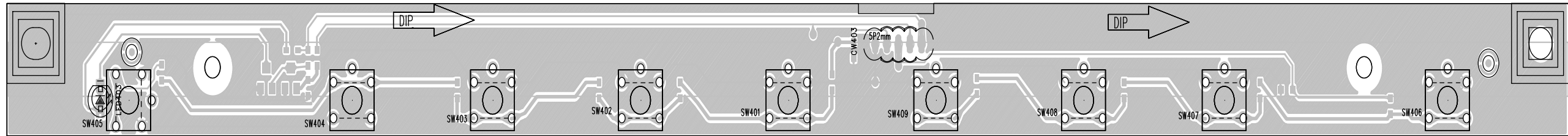
LAYOUT DIAGRAM-DISPLAY/MCU BOARD
TOP SIDE



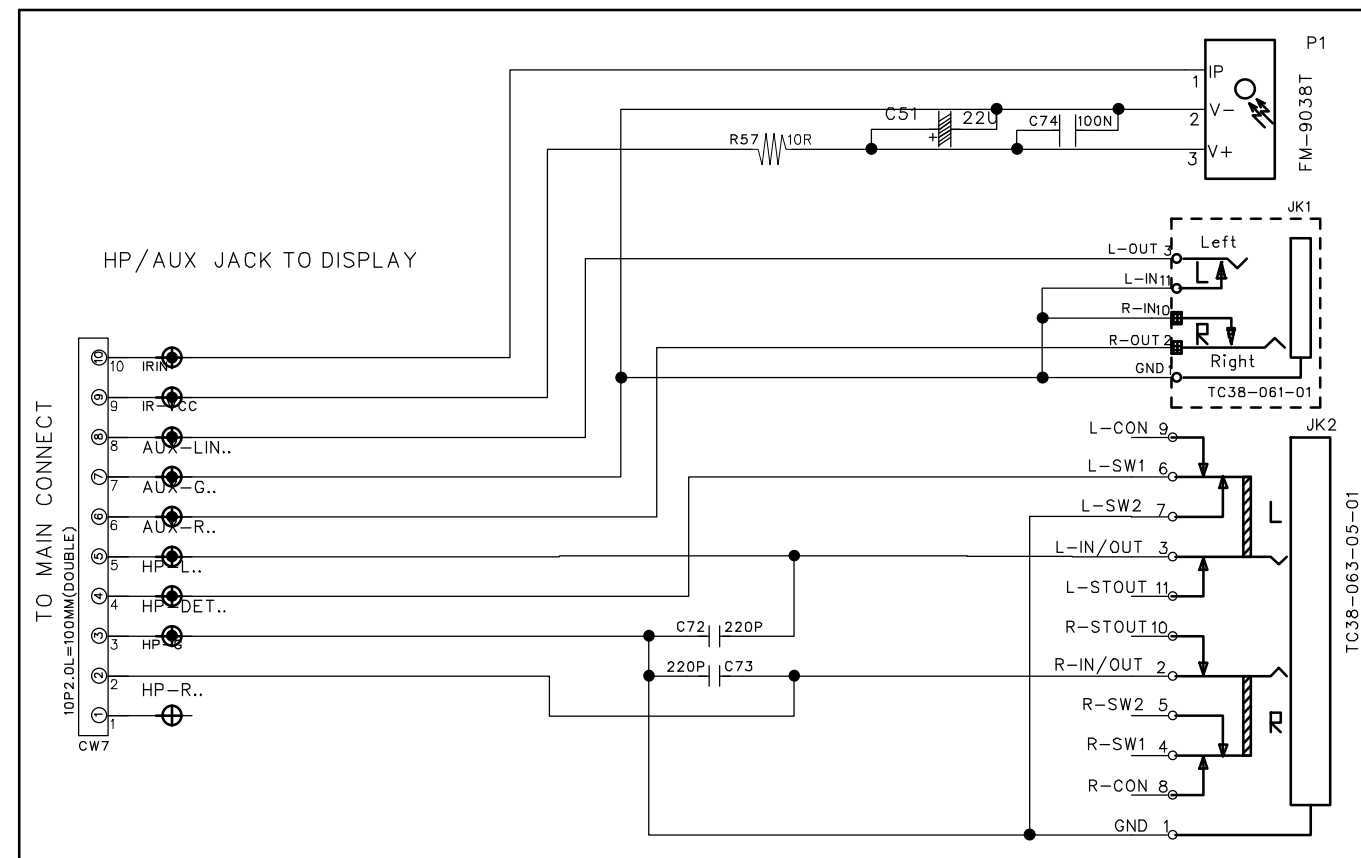
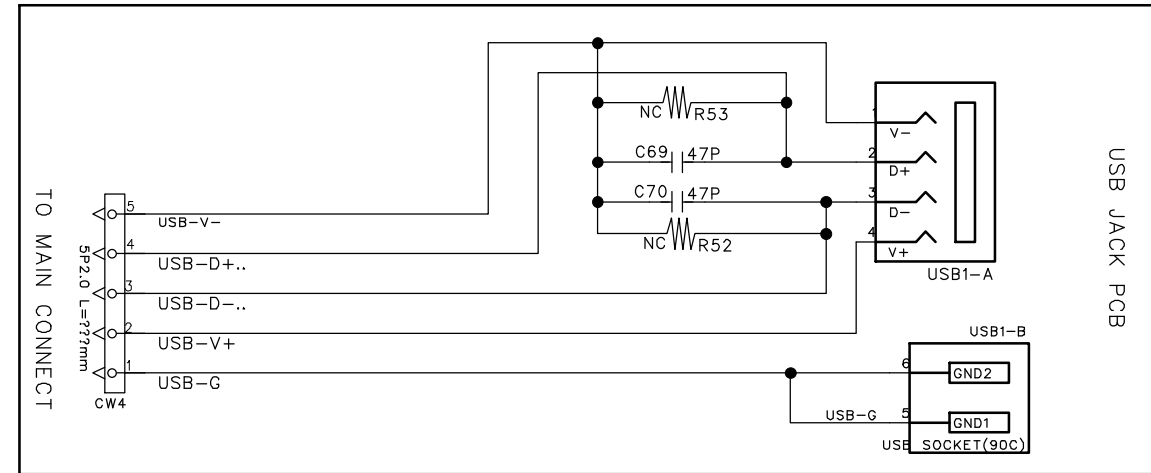
LAYOUT DIAGRAM-DISPLAY/MCU BOARD
BOTTOM SIDE



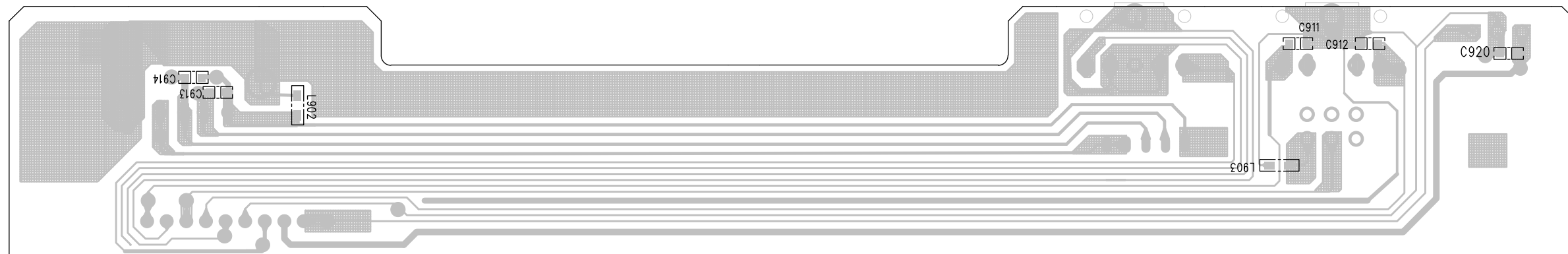
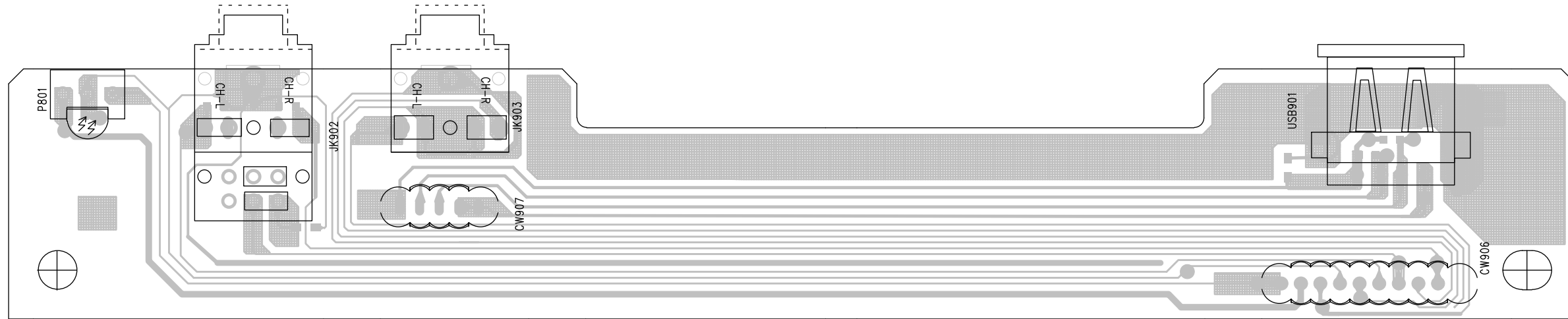
LAYOUT DIAGRAM-KEY BOARD



CIRCUIT DIAGRAM-USB/HP JACK BOARD



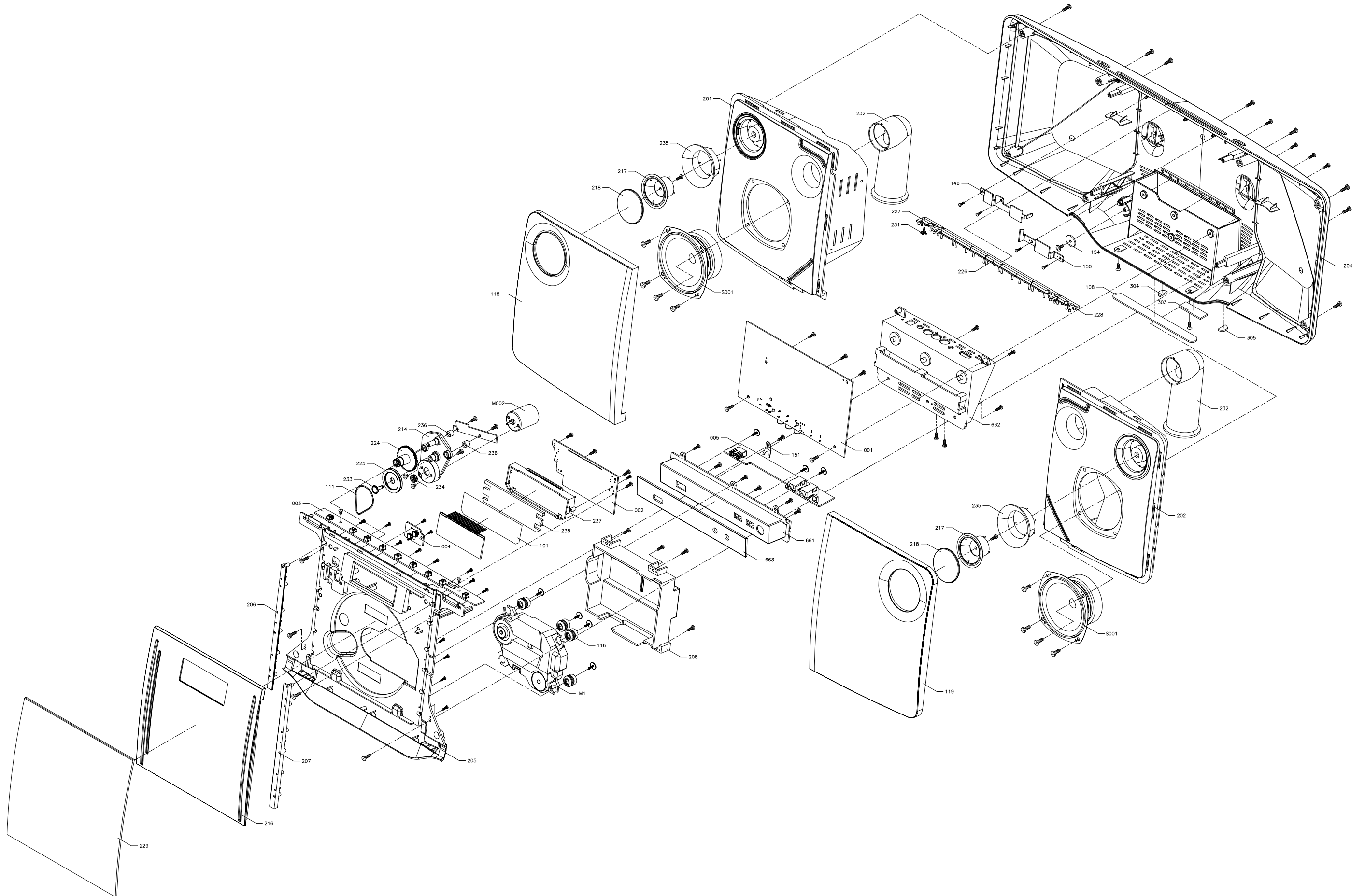
LAYOUT DIAGRAM-USB/HP JACK BOARD



SET EXPLODED VIEW

9-1

9-1



REVISION LIST

Version 1.0 (3141 785 34870)

* Initial Release

Version 1.1 (3141 785 34871)

* Add /55