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# DLP PROJECTOR

# SERVICE MANUAL

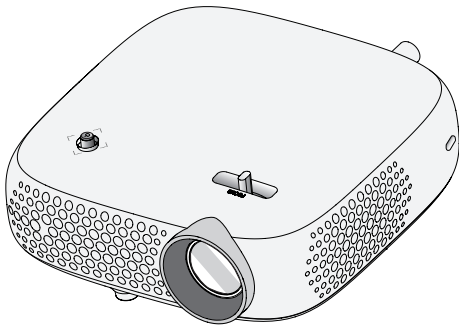
**CHASSIS : FM51A**

**MODEL : PW800/800G**

**PW800-NA/EU/MA/CB/PW800G-GL**

## CAUTION

BEFORE SERVICING THE CHASSIS,  
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



P/NO : MFL68702301 (1502-REV01)

Printed in Korea

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# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\triangle$  in the Schematic Diagram and Exploded View.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this PROJECTOR receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1 W), keep the resistor 10 mm away from PCB.

Keep wires away from high voltage or high temperature parts.

### Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

### Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1 M $\Omega$  and 5.2 M $\Omega$ .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

### Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

### Do not use a line Isolation Transformer during this check.

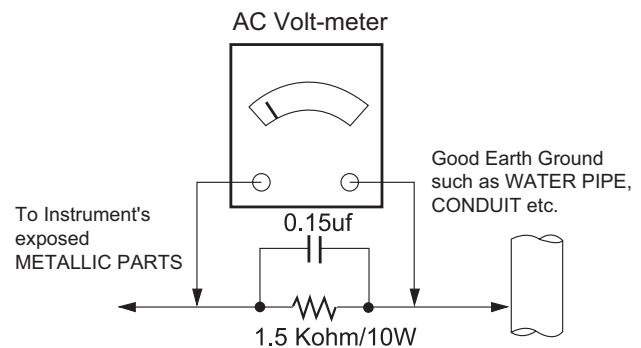
Connect 1.5 K / 10 watt resistor in parallel with a 0.15 uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5 mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

### Leakage Current Hot Check circuit



When 25A is impressed between Earth and 2nd Ground for 1 second, Resistance must be less than 0.1

\*Base on Adjustment standard

# SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

## 1. Application range

This spec sheet is applied all of the DLP Projector with FM51A chassis.

## 2. Requirement for Test

Each part is tested as below without special appointment.

(1) Temperature: 25 °C ± 5 °C, CST: 40 °C ± 2 °C

(2) Relative Humidity: 65 % ± 10 %

(3) Power Voltage

: Standard input voltage (AC 100-240 V~, 50/60 Hz)

\* Standard Voltage of each products is marked by models.

(4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.

(5) The receiver must be operated for about 5 minutes prior to the adjustment.

## 3. Test method

(1) Performance: LGE PROJECTOR test method followed

(2) Demanded other specification

Safety : KCC, IEC, CE specification (EN55022 Class B), CCC.

EMC : KCC, IEC, CE specification (EN60950-1), CCC.

## 4. Model General Specification

No	Item	Specification			Remark
		Min	Max	Unit	
1	Video input applicable system	1) NTSC M 2) PAL-B,D,G,H,I 3) PAL M 4) PAL N 5) PAL 60 6) SECAM			3.579545 / 60 Hz 4.433618 / 50 Hz 3.575611 / 60 Hz 3.582056 / 50 Hz 4.433618 / 60Hz
2	Power	Adapter - DC 19 V @ 3.42A (65W)			
3	Input Voltage	AC 100 ~ 240(± 10 %)V, 50/ 60Hz			
4	Market	North America			PW800-NA
		Global			PW800G-GL
		Europe			PW800-EU
		Middle Asia			PW800-MA
		Columbia			PW800-CB
5	Picture size	WXGA (1280 x 800)			
6	Aspect ratio	16:10			Panel Resolution
7	Operating Temperature	0	40	deg	
8	Operating Humidity		80	%	
9	Storage Temperature	-20	60	deg	
10	Storage Humidity		85	%	

# ADJUSTMENT INSTRUCTION

## 1. Application Object

This instruction is for the application to the DLP Projector (Chassis: FM51A).

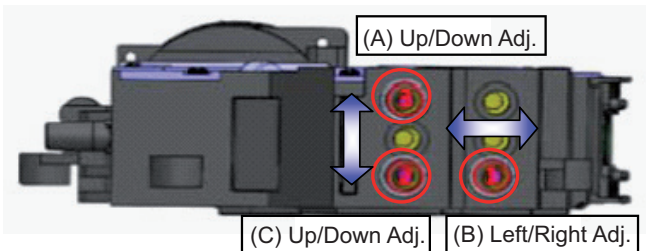
## 2. Notes

- (1) The power source insulation of this DLP Projector is not charging type and you may not use the transformer for insulation. It is advised to use an insulation transform between the power supply cable and power input of the set to protect the test equipment.
- (2) The adjustment must be performed under the correct sequence. But, it can be changed within the error boundary of performance, considering the mass productivity.
- (3) The adjustment must be performed in the circumstance of  $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$  of temperature and  $65\% \pm 10\%$  of relative humidity.
- (4) For the adjustment, the receptor's input voltage shall be maintained at 220 V, 60 Hz.
- (5) The set must be on for 5 minutes prior to any adjustment. After receiving possible 100 % White Pattern, it is ready for adjustment. If it is inevitable, it can be regardless of the signal.

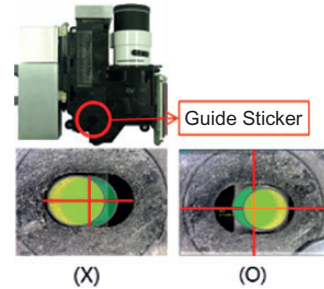
## 3. Composition of Adjustment Mode

- (1) Adjustment mode can be entered by pressing ADJ key of the adjustment remote controller, and may exit by pressing EXIT key after the adjustment.
- (2) Preparation for adjustment.
  - 1) Connect power to the Set, and make it Power On state.
  - 2) Heat Run for at least 5 min. before the adjustment.
- (3) Adjustment specification
  - 1) Composition of adjustment mode
    - A. Turn on the power of the set with Power on key.
    - B. When the set is turned on, press the Power only key to enter the power-only mode.
    - C. Select Default mode for input source.
    - D. Adjustment mode can be entered by pressing ADJ key of the adjustment remote controller, and may exit by pressing EXIT key after the adjustment.
    - E. Preparation for adjustment.
    - F. Connect power to the Set, and make it Power On state.
    - G. Heat Run for at least 3 min. before the adjustment.

## 4. Folding Mirror Adjustment



(Fig. 4-1) Full Black Lighting System Adjustment



(Fig. 4-2) Position of the lighting mirror guide

- (1) When the lighting system should be readjusted.
  - 1) Check the position of the guide in the back of the engine and move the guide boss to the appropriate position. (Fig. 4-2, yellow zone)
    - As shown in (Fig. 4-1), turn the three adjustment screws clockwise to tighten them, so they are secure.
    - As shown in (Fig. 4-1), turn the three adjustment screws counterclockwise three times to loosen them. Unscrew them in the order of (a), (b), and (c).
  - 2) Make sure the optical engine is mounted correctly in accordance with the reference position of the jig.
- (2) When the lighting system does not need to be readjusted.
  - 1) If the position of the guide is appropriate as shown in (Fig. 4-2), make sure the optical engine is mounted correctly in accordance with the reference position of the jig.

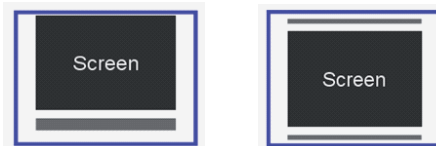
## 4.1. Lighting System Adjustment Procedure

- (1) After adjusting the screen size, using 40 inches as a reference size, project a full white screen and then adjust the focus.
- (2) Turn the three adjustment screws, illustrated in (Fig. 4-1-1), clockwise (tightening) until they are fastened securely.
- (3) Rotate the three screws twice each in a counterclockwise (loosening) direction in order from A to C.



(Fig. 4-1-1) Full White Lighting System Adjustment

- (4) Fine-tune screw B (within 0.5 turns) to adjust the left/right margins.
- (5) Adjust the up/down margins by fine-tuning the A and C screws in order (within 0.5 turns).

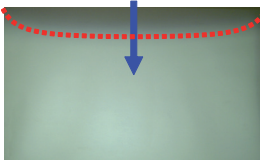
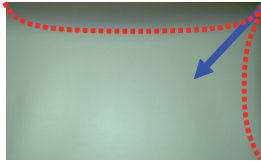
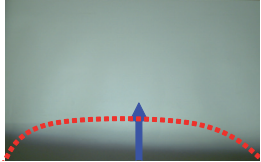
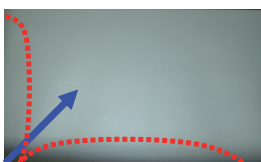
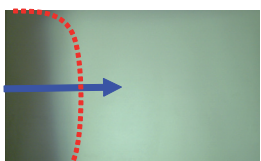
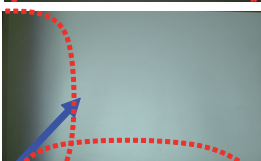
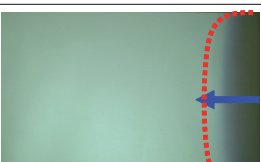

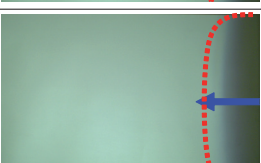
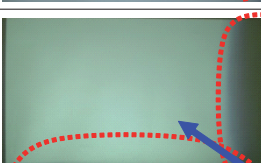
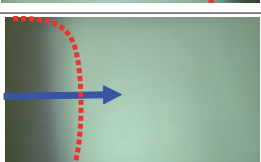
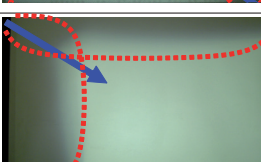


(Fig. 4-1-2)

- (6) Project a full black screen and look for any red bars (light leakage).
- (7) When you see vertical red bars (light leakage) with the naked eye, turn the three screws from A to C, in order, within 0.5 turns clockwise (tightening) until you no longer see any red bars and then adjust the margins. (Red Bar Spec: Red Bars / Center Brightness Ratio: Adjust to below 50%.)

## 4.2. Illuminator Phenomenon Adjustment

Illuminator goes down direction  Illuminator goes down area 

Adjustment Part	Screw Rotation	Screen Status		Adjustment Description
		Initial Status	After Adjustment	
Up/Down Adjustment Screw A	Clockwise (Tightening direction)			As the light at the top first fades away, the light on the right side also starts to slowly fade.
	Counterclockwise (Loosening direction)			As the light at the bottom first fades away, the light on the left side also starts to slowly fade.
Left/Right Adjustment Screw B	Clockwise (Tightening direction)			The light at the top first fades away, and then the light on the left side also starts to slowly fade.
	Counterclockwise (Loosening direction)			The light at the bottom first fades away, and then the light on the right side also starts to slowly fade.
Left/Right Adjustment Screw C	Clockwise (Tightening direction)			The light on the right side first fades away, and then the light at the top also starts to slowly fade.
	Counterclockwise (Loosening direction)			The light on the left side first fades away, and then the light on the bottom side also starts to slowly fade.

## 4.3. Final Lighting System Adjustment

Repeat the steps outlined in 4.1, 4.2, twice and make sure that the light has been adjusted in the directions where the screws have been fastened completely using a driver. Find the best location for light and make sure there are no areas with faded light that can be seen with the naked eye.

Also, check for foreign objects, the focus line width (measuring items: see the figures below), and the focus stopper position, and then fix the lighting adjustment lens.

#### 4.4. Lighting System Margin Inspection Method and Spec.

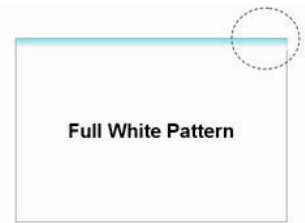
- Apply for the sample that the decision for good/fail is difficult during visual inspection of lighting margin.

- (1) Prepare CL-200 with measurement surface of width 20mm, length 5mm as in (Fig. 4-4-1)



(Fig. 4-4-1) CL-200 for lighting margin inspection (right side)

- (2) Bring up Full White pattern and check whether Light Cyan shows.



(Fig. 4-4-2) CL-200 for lighting margin inspection (right side)

- (3) Measure the brightness at the boundary of the screen.  
(Refer to Fig. 4-4-3)



(Fig. 4-4-3) Measure brightness of screen boundary

- (4) Measure brightness at 10mm in the inner direction from screen boundary. (Refer to Fig. 4-4-4)



(Fig. 4-4-4) Measure brightness at 10mm inside the screen

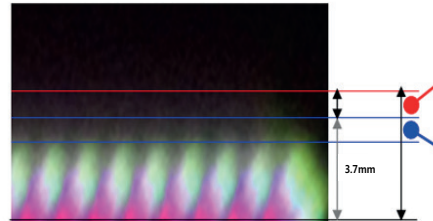
- (5) Lighting Margin Spec shall be smaller than 105% of (4) brightness/(3)brightness.

#### 4.5. Focus test method and subject

- Test pattern : White Cross-Hatch Pattern
- Tools : Focus width measurement ruler

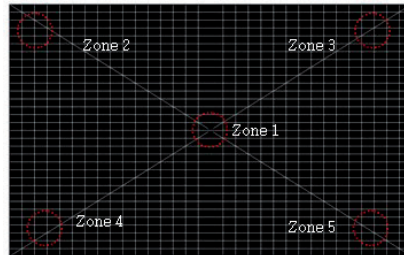
##### 4.5.1. Focus adjustment method

- (1) Set the projection distance of Engine as 1293 mm (40 Inch screen).
- (2) Pop up the Resolution Pattern among the Test Patterns of Set, and fix the Focus on the part where the White Cross-Hatch Pattern is classified on each part of screen.
- (3) Pop up the White Cross-Hatch Pattern and measure the width of each Point.
- (4) Focus judging standard : Center 3.2 mm, 3.7 mm or less (Measure line width excluding light Flare : Refer to Fig. 4-5-1-1)



Red Line ( light Flare), Blue Line (Thick Flare)

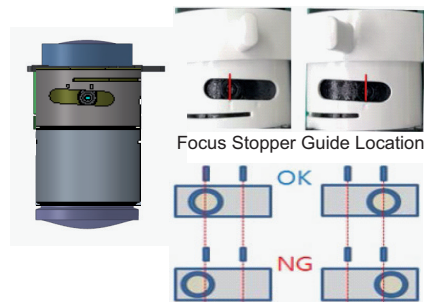
(Fig. 4-5-1-1) Standard for deciding line width



(Fig. 4-5-1-2) Resolution Pattern

##### 4.5.2. Focus Stopper Location Verification

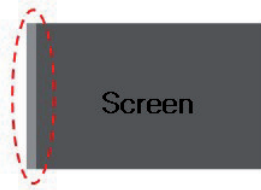
- (1) Test pattern : White cross-hatch
- (2) Visually verify focus after locating a white board 803 mm from the projection lens so that screen is set to 25 inches.
- (3) Inspect the location of the stopper after locating a white board 1293 mm from the projection lens so that screen is set to 40 inches
- (4) Evaluation criteria for stopper location  
Non-defective : Bushing shall be located within Guide.(Fig. 4-5-2-1)



(Fig. 4-5-2-1) Bushing verification location

### 4.5.3. Verification of DMD light source

- (1) Finish after verifying if the light source in the right side of DMD screen in Gray Pattern – Full Gray 10 Pattern inside DMD Check Pattern can be seen with naked eyes. (Refer to Fig. 4-5-3-1)
- (DMD Light Source Spec: It is not seen with naked eyes in Full Gray 10 Pattern.)



(Fig. 4-5-3-1) Verification of DMD light source

## 5. Caution for DMD (Digital Micro-mirror Device)

### 5.1. Caution for DMD ESD

- (1) Connector the grounding to prevent a damage of ESD (Electrostatic Discharge) when handing the DMD.
- (2) Wear a wrist strap to connect the ESD grounding in flesh necessarily.
- (3) Connect the ESD ground to workstation and an electric conductor.
- (4) Save the DMD after getting rid of a static electricity. Keep it at an exclusive case when moving it When grounding, open the case.
- (5) Put on gloves for preventing static electricity.
- (6) All work is done at static free location. Attach the tape or remove a dust on the DMD front or DMD back pin

### 5.2. Caution for DMD Clean

- (1) Follow the procedure and caution to prevent the screen from being scratched.
- (2) When DMD glass stains with dust, polish the front and back DMD glass with soft cloth. Then, do it again after rotating 180 degree the DMD. If necessary, keep under observation.
- (3) Don't clean the DMD with the high pressure. The static electricity and pressure will damage the DMD.

\* Attachment )TI Reference :  
DMD Handling Specification, DMD Cleaning

## 6. Country, Wi-Fi Country Adjustment

### 6.1. Country Group, Country Adjustment

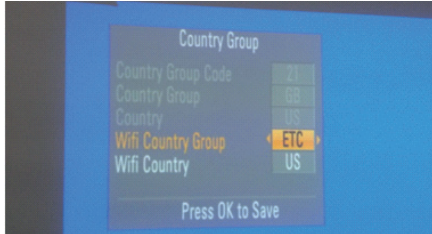
- (1) Enter to the adjustment mode by selecting "IN-START".
- (2) Press the right arrow key in "Adjust check" to locate a cursor on "Country Group Code".
- (3) In case of PW800-NA, change "Country Group Code" to "02" and press the down arrow key once to change "Country" and then press OK.  
In case of PW800G-GL, change "Country Group Code" to "21" and press the down arrow key once to change "Country" and then press OK.  
In case of PW800-EU, change "Country Group Code" to "4" and press the down arrow key once to change "Country" and then press OK.  
In case of PW800-MA, change "Country Group Code" to AJ - "19", JA - "20" and press the down arrow key once to change "Country" and then press OK.  
In case of PW800-CB, change "Country Group Code" to "10" and press the down arrow key once to change "Country" and then press OK.
- (4) Press Exit to complete the adjustment.

Model	Suffix	Country Code	Country Group	Country
PW800-NA	AUS	02	US	-
	ACC		CC	-
	AWM		WM	-
PW800G-GL	AEU AEK	21	EU	-
	AKR		KR	-
	AUS ACC AWM		US	-
	ACN		CN	-
	Other		GB	-
	PW800-EU		AEU AEK ARU APD	04
PW800-MA	ATI AAU	19	AJ	-
	AFB AMF AMA AMR	20	JA	
PW800-CB	AWC	10	TW	CO



## 6.2. Wi-fi Country Group, Country Adjustment

- (1) Press "ADJ" on the remote control to enter adjustment mode.
- (2) 11. Press the right arrow key to select an option in Country Group.
- (3) Set Wifi Country Group and Wifi Country by using the arrow keys according to the Wifi country index for each suffix.
- (4) Press OK to finish the adjustment.

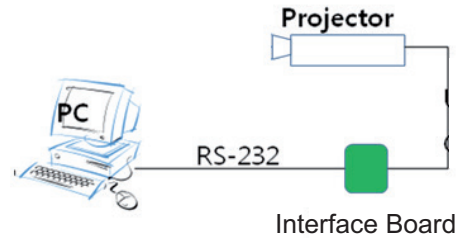


## 7. WIDI HDCP2.0 Download

### 7.1. Used Device

- HOST PC 1EA
- Interface board 1EA, RS-232 cable 1EA

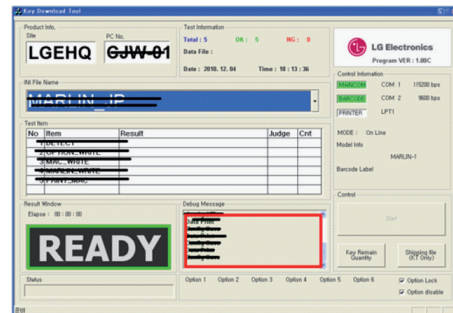
### 7.2. Composition of the equipment



(Fig. 7-2-1) Device Setting Diagram

### 7.3. Download method

- (1) Connect the main board and the interface board as in the (Fig. 7-3-1).
- (2) As in the (Fig. 7-3-1), click the red square area of the HDCP2 key download program window in the PC of the (Fig. 7-3-1). Pressing the "Enter" key on the keyboard will start downloading.



(Fig. 7-3-1) Download Program Window

<Wifi Country Index>

Suffix	Wifi Country Group	Country
AEU, AEK	EU	DE
APD, AFB, AMF, AMA (OMANA, KUWAIT), AGE, AFK		
AFP	AJ	MA
X		PK
AMB (Egypt)		EG
AFL, ACN		QA
AMI AMA (Dubai, Bahrain) ATV		SA
ATI		ID
ARU AMB (Lebanon, Syria, Jordan) ATR ATS AAU ATC ATJ ATM		MY
AMH	ETC	MM
AKR		KR
AWM, AWZ, AZD, AWP AWV, AWC, APH, AWF AWH		BR
ATT		TW
AUS, ACC, AUT, AVL		US
X		JP

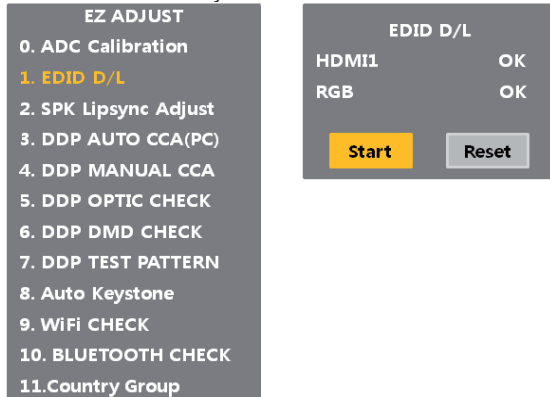
## 8. EDID Data Download

### 8.1. Used Device

: Adjustment remote control

### 8.2. Adjustment Method

- (1) Enter to adjustment mode with selecting "ADJ" on remote control.
- (2) Enter to "1. EDID D/L" with pressing right direction key to get in EDID Download adjustment menu (Fig. 8-2-1)
- (3) Select "START".
- (4) When adjustment is completed, check RGB "OK(PCM)" HDMI1 "OK(PCM)". (Fig. 8-2-2)  
When it fails, Reset and check by trying the (3) process again.
- (5) To exit, press "ADJ" or "EXIT" of the adjustment remote controller again to exit.
- (6) To verify the adjustment result, enter PCM EDID D/L or IN-START and verify.

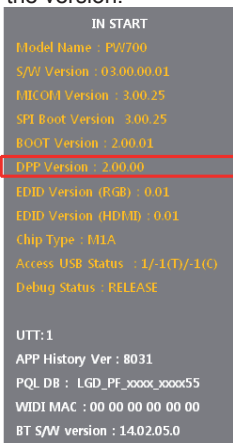


(Fig.8-2-1) Adjustment Menu when ADJ is selected (Left)

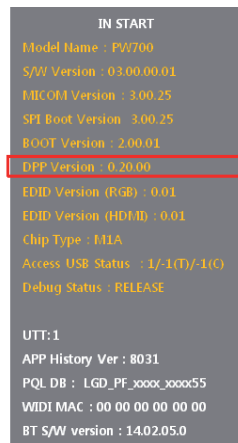
(Fig.8-2-2) Selection Category on ADJ Adjustment Menu (Right)

## 9. Verify DPP Version

- (1) Used Device: Adjustment remote control 1EA
- (2) DPP Version Verification Method
  - Run IN-START and check the DPP version in the sixth item on the left of the screen (Fig. 9-1).
  - If the version information is displayed wrong, as shown in (Fig. 9-2), exit and re-enter the IN-START menu to check the version.



(Fig. 9-1)



(Fig. 9-2)

## <Adjustment for Assembly Line>

## 10. Total Assembly Adjustment

### 10.1. Enter Power Only mode

- (1) After assembling the SET, DC on the SET at the start of post process. (use keypad or remote controller)
- (2) Press 'P-ONLY' key of the adjustment remote controller to enter 'Power Only' mode. (Full White screen is displayed)
- (3) To enter the next adjustment, enter 'EXIT' of the remote controller to exit Full white screen, and proceed to the adjustment.

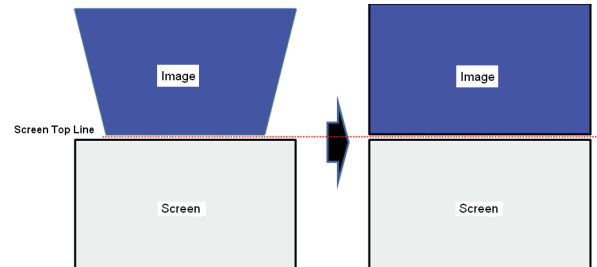
## 11. Compensate Auto Keystone

### 11.1. Used Device

- Adjustment remote controller
- Projector remote controller

### 11.2. Adjustment Preparations and Device Configuration

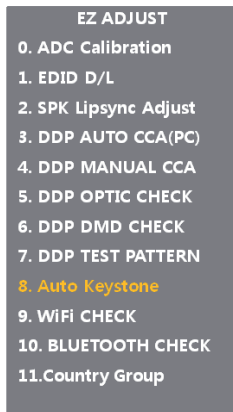
- (1) Adjustment Preparations
  - 1) Input source: Default (no need to specify an input source)
  - 2) The set must be adjusted on a plate, glass or table with a flatness degree between more than -1 and less than +1.
  - 3) Incline upward the set to project an image over the top line of the screen. After the keystone changes, adjust the image to the adjusting position. (Fig. 11-2-1)



(Fig. 11-2-1) Preparations before Auto Keystone Compensation

### (2) Adjustment Method

- 1) Make sure the set is placed on an adjusting position.
- 2) Check the keystone value using the projector remote control.
  - A. Enter the Menu button.-> Move through the options.-> Check the Keystone value.
- 3) Enter the menu to compensate the keystone using the adjustment remote controller.
  - A. ADJ -> 8. Auto Keystone ADJ -> Enter the right arrow key



(Fig. 11-2-2) Auto Keystone Menu

- 4) Compensate keystone distortion by pressing the left/right arrow keys according to the keystone value you have checked in 2).
- If the value you have checked in 2) is positive (+), press the left arrow key.
  - If it is negative (-), press the right arrow key as many times as the value. (ex. If the value was -3, then press the right arrow key 3 times to make it +3.)
- \* It is O.K, if the keystone value is -2 or higher and +2 or lower. (Menu ->Option->Keystone)



(Fig. 11-2-3) Example Before Auto Keystone Compensation



(Fig. 11-2-4) Example Before Auto Keystone Compensation

## 12. Country Group, ADC, EDID, HDCP2, WiDi Mac Verification

### 12.1. Used Device

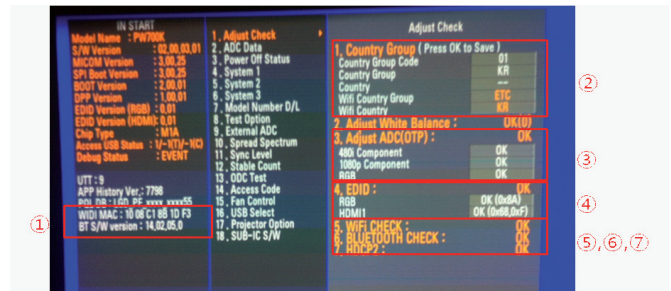
- Adjustment Remote Controller
- Access Point 1 EA(Turn on the Access Point around the set.)
- Bluetooth audio device JIG specified by the Production Engineering Research Center (Turn on the JIG around the set)

### 12.2. Check Method

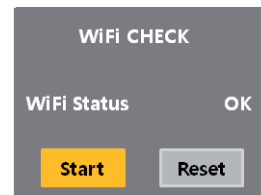
- : Press IN-START on the adjustment remote control (enter "0413" for the password).
- (1) Check WIDI MAC at the bottom left of the IN-START screen. (If it shows "00", it means NG.)
  - (2) Check the settings for each suffix from 1. Country Group.
  - (3) Check if ADC Comp 480i, ADC Comp 1080p, and ADC RGB show an "OK" status in 3. Adjust ADC.
  - (4) In 4. EDID, check if RGB and HDMI1 show an "OK" status. (Fig. 12-2-1)
  - (5) 5. Wi-Fi CHECK shows an "OK" status.
    - Automatically search for nearby access points and determine if they are showing "OK" or "NG".
    - Shows an "OK" status only when the AP device is installed.
  - (6) HDCP2 shows an "OK" status.
  - (7) To exit the IN-START screen, press IN-START again or press EXIT on the adjustment remote control.

\* How to check again when the Wi-Fi Check shows an "NG" status (manually)

- (1) Check if the AP (access point) device is normal.
- (2) Select ADJ on the adjustment remote control and select 9. Wi-Fi Check.
- (3) Select Start to begin searching. (Fig. 12-2-2)
- (4) To exit the screen, press ADJ or EXIT on the adjustment remote control.



(Fig. 12-2-1) Adjustment Menu when IN-START is selected



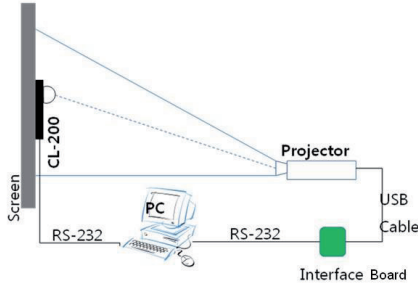
(Fig. 12-2-2) Adjustment Menu when WiFi Check is selected

# 13. White Balance (CCA) Adjustment.

## 13.1. Used Device

- (1) Photometer (Model Name: CL-200) 1EA --> Measure color coordinate at the center of the projection screen
- (2) Adjustment remote controller 1EA
- (3) Interface board - 1EA, RS-232C Cable - 1EA
- (4) CL200A UART Cable (T - A11), USB Cable - 1EA

## 13.2. Composition of the equipment

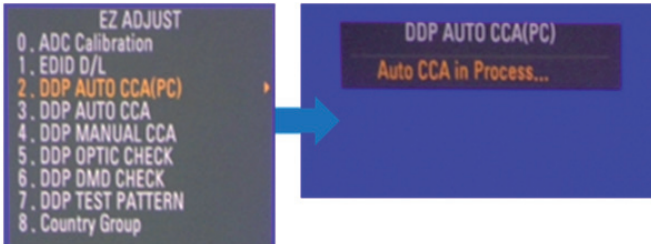


(Fig. 13-2-1) Device Setting Diagram

## 13.3. Adjustment Method

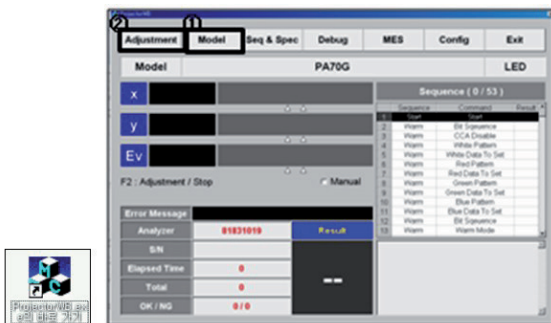
\* Heat Run for at least 5 min. before the adjustment.

- (1) After connecting as in the Device Composition Diagram, select "ADJ" of the adjustment remote controller to enter the adjustment mode.
- (2) Select 2.DDP AUTO CCA(PC) and enter the right direction key (▶) of the adjustment remote controller to enter. Then, it becomes the screen state as in the right side of Figure 2, and it means that the SET is ready for CCA adjustment.



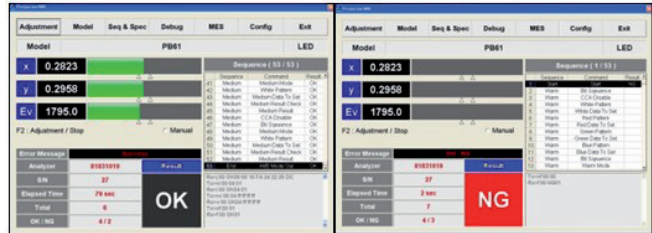
(Fig. 13-3-1) Selection Category on ADJ Menu

- (3) When 'ProjectorWB.exe' as the following icon is run in CCA adjustment PC screen, window as in (Fig. 13-3-2) is displayed.
- (4) Click 'Model' to select 'PW800' model, and click 'Adjustment', then the adjustment starts.



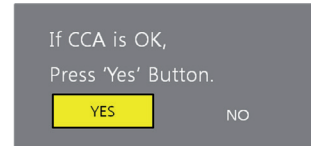
(Fig. 13-3-2)

- (5) If adjustment is properly completed, 'OK' as in the bottom left figure is displayed. If it is 'NG' as in the bottom left figure, check again whether device composition is properly done as in (Fig. 13-3-3), and click 2) 'Adjustment' again to try re-adjustment.



(Fig. 13-3-3)

- (6) Press the "Back" or "Exit" key when the compensation is completed. Then a window will be displayed to verify it is completed normally as shown in (Fig. 13-3-4). If the CCA result is OK, select YES on the screen as shown in (Fig. 13-3-4); if NG, select NO.



(Fig. 13-3-4)

- (7) You can check whether the result of CCA adjustment is OK or NG by selecting "IN-START" > 1. Adjust Check > 2. Adjust White Balance. If you selected Yes on the screen as shown in (Fig. 13-3-4), OK is displayed; if you selected NO then NG is displayed. (Fig. 13-3-5)



(Fig.13-3-5)

Color Temp	Color Coordinate	Min	Typ	Max
Medium	X	0.268	0.283	0.298
	Y	0.282	0.297	0.312
Warm	X	0.298	0.313	0.328
	Y	0.311	0.326	0.341
Cool	X	0.261	0.276	0.291
	Y	0.268	0.283	0.298

## 14. Brightness Inspection

- Measure the subjects below and it should satisfy the spec of product specification.

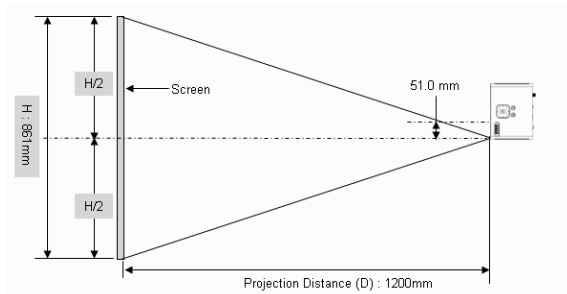
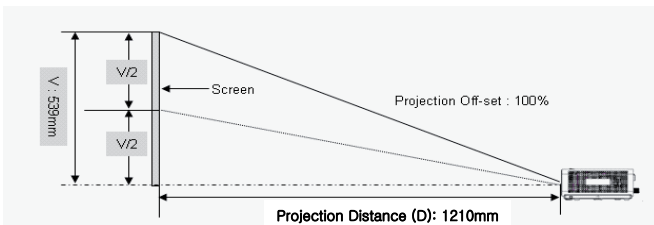
- (1) Brightness(ANSI-Lumen)
- (2) White color coordinate
- (3) Color Uniformity
- (4) Brightness Uniformity

### 14.1. Preparation for Adjustment and Device Composition

#### 14.1.1. Adjustment Preparation

- (1) Input source: Default (No need to designate Source)
- (2) The order of operating the adjustment remote controller buttons
  - IN-STAR -> 4. DDP OPTIC CHECK -> Select Full White.

#### 14.1.2. Brightness Measurement Screen Setting

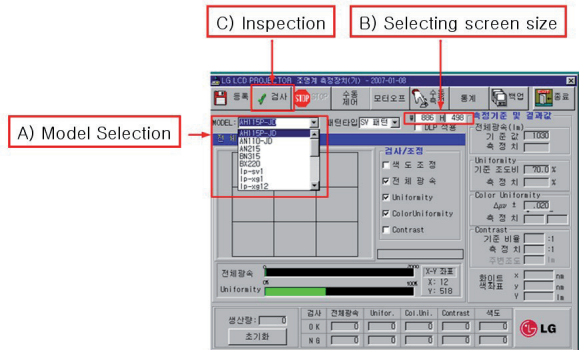


(Fig. 14-1-2-1)

Brightness Measurement Screen Setting Composition

### 14.1.3. Projector Brightness Measurement JIG Software Organization

- (1) Model Selection : PW800
- (2) Selecting screen size : W: 861, H: 539

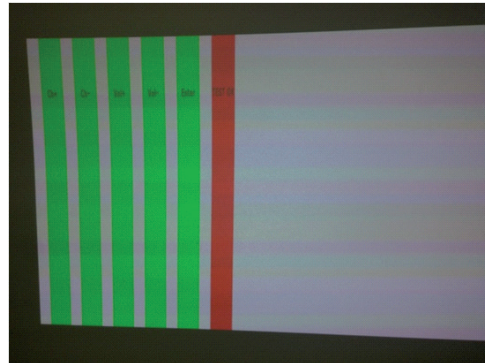


(Fig. 14-1-3-1)

- 1) Press the direction key of the adjustment remote controller to change the screen of the projector to White Pattern.
  - After 2~3 seconds, White Color Coordinate Data is transmitted from CL200.
  - In the result display window in the right center of the screen, color coordinate and brightness value are recorded.
- 2) Press 'Finish' button of the screen.
- (3) White brightness inspection: brightness is Min Spec 320 ANSI lm or more.

## 15. Joystick Test

- Go to the Power only mode using the remote control that adjusts. Press Up, Down, Left, Right, and the ENTER key on the joystick to confirm "TEST OK" and that the joystick works.



## 16. Final Inspection

- Carry out according to the contents of the final inspection in the Working Guide.

- (1) Check the Keystone value using the projector remote control.
  - 1) The set must be inspected on a plate, glass or table with a flatness degree between more than-1 and less than +1.
  - 2) Incline upward the set to project an image over the top line of the screen. After the keystone changes, adjust the image to the inspecting position.
  - 3) Enter the Menu button.-> Move through the options.-> Check the Keystone value.
  - 4) It is O.K, if the keystone value is -2 or higher and +2 or lower.

[Reference]

### 1. EDID Data

#### (1) RGB : BLOCK 0

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	13	37	01	01	01	01
10	01	19	01	03	08	80	50	78	0A	31	14	AB	51	4D	A3	24
20	05	48	4C	A1	08	00	31	40	45	40	61	7C	71	40	81	80
30	90	40	B3	00	81	00	9E	20	00	90	51	20	1F	30	48	80
40	36	00	00	20	53	00	00	1E	66	21	50	B0	51	00	1B	30
50	40	70	36	00	00	20	53	00	00	1E	00	00	00	FD	00	3A
60	7A	1E	69	10	00	0A	20	20	20	20	20	20	00	00	00	FC
70	00	4C	47	20	50	52	4F	4A	45	43	54	4F	52	0A	00	DB

#### (2) HDMI : Country Group: GB/ - BLOCK 0

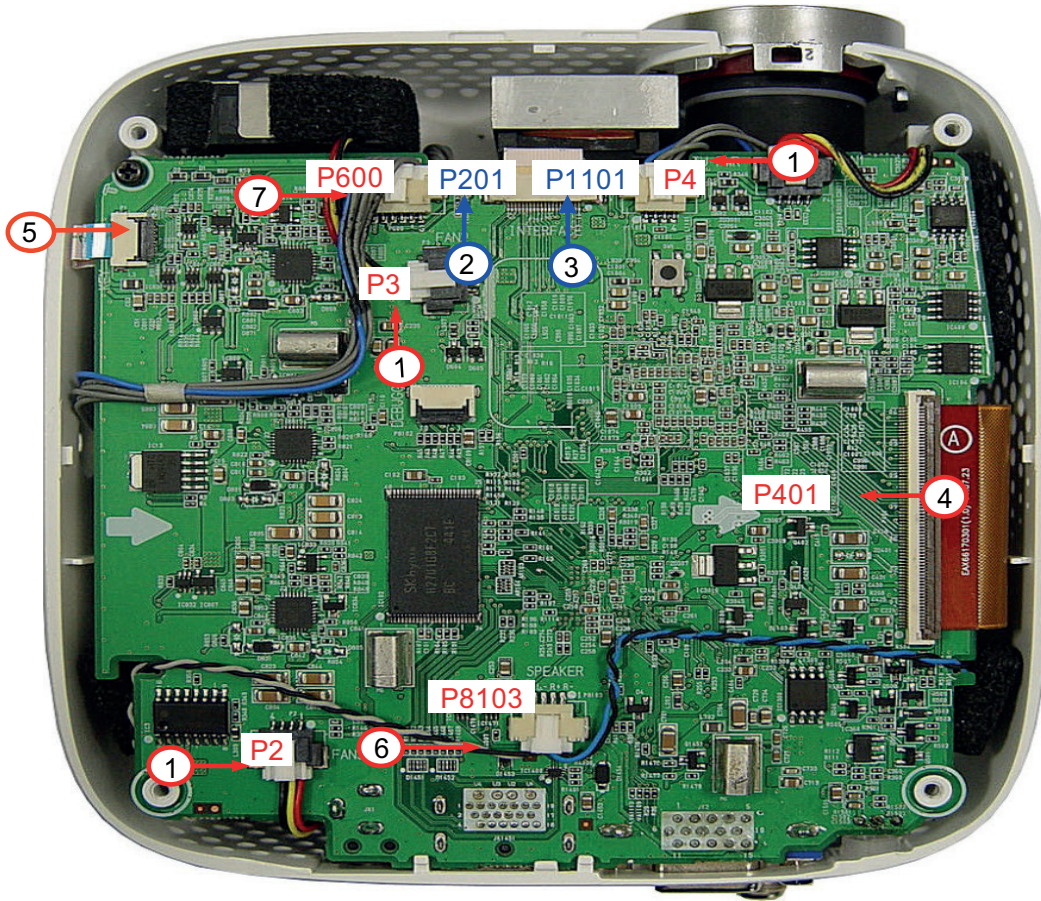
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	14	37	01	01	01	01
10	01	19	01	03	80	80	50	78	0A	31	14	AB	51	4D	A3	24
20	05	48	4C	A1	08	00	31	40	45	40	61	7C	71	40	81	80
30	90	40	B3	00	81	00	9E	20	00	90	51	20	1F	30	48	80
40	36	00	00	20	53	00	00	1E	66	21	50	B0	51	00	1B	30
50	40	70	36	00	00	20	53	00	00	1E	00	00	00	FD	00	3A
60	7A	1E	69	10	00	0A	20	20	20	20	20	20	00	00	00	FC
70	00	4C	47	20	50	52	4F	4A	45	43	54	4F	52	0A	01	61



#### - BLOCK 1

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	02	03	21	F1	4D	02	03	84	05	10	20	22	11	12	13	14
10	1F	01	26	15	07	50	09	57	07	67	03	0C	00	10	00	B8
20	2D	01	1D	00	72	51	D0	1E	20	6E	28	55	00	00	20	53
30	00	00	1E	F3	39	80	18	71	38	2D	40	58	2C	45	00	00
40	20	53	00	00	1E	8C	0A	D0	90	20	40	31	20	0C	40	55
50	00	00	20	53	00	00	18	01	1D	00	BC	52	D0	1E	20	B8
60	28	55	40	00	20	53	00	00	1E	01	1D	80	D0	72	1C	16
70	20	10	2C	25	80	00	20	53	00	00	9E	00	00	00	00	18

# TROUBLE SHOOTING GUIDE

## 1. A connection defect of a connector

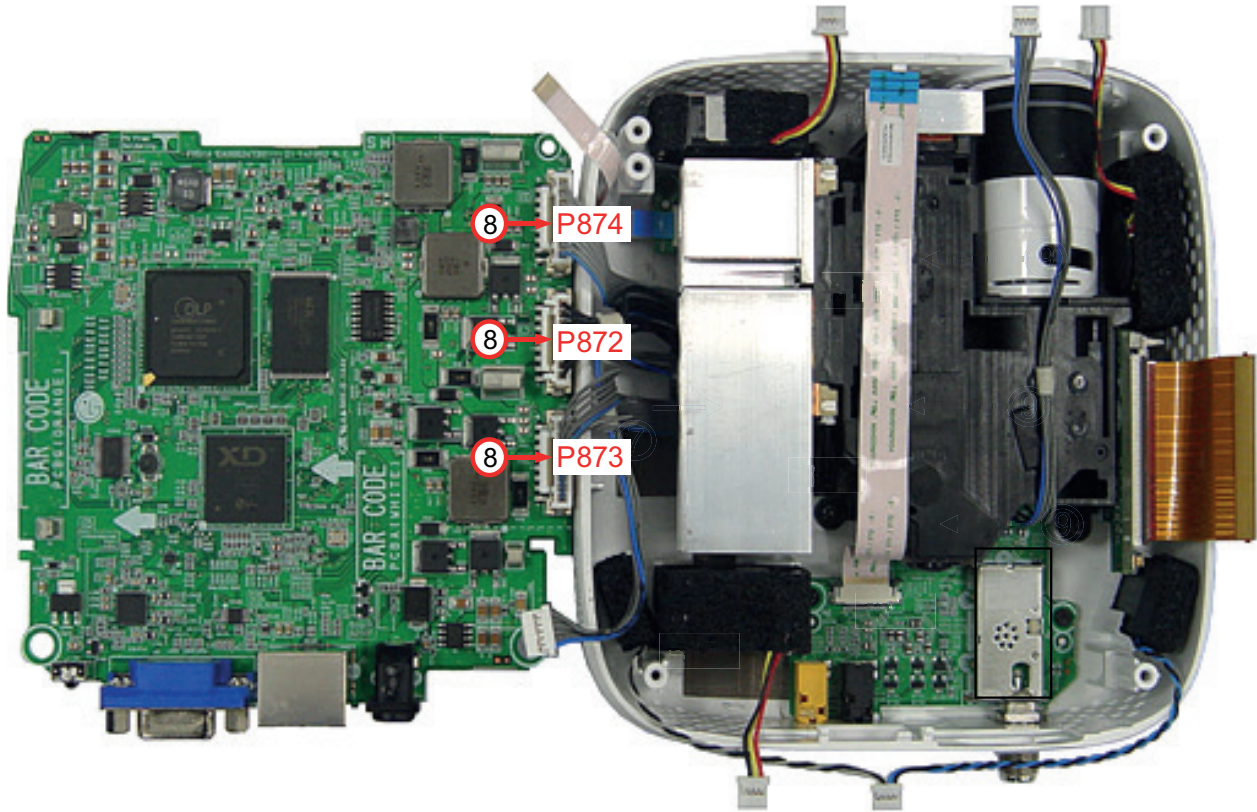




- MAIN board assembly point 
- TUNER board assembly point 

No.	Circuit Number	Pin count	Connections	Symptoms of a bad connection
1	P2, P3, P4	4	FAN	Stop fan operating, conversion to Stand-by a little after when power is on
			FAN	When fan was inserted conversely, conversion to stand-by during operating the set.
2	P201	20	Tuner board	Image distorted
3	P1101	4	Tuner board	No power
4	P401	70	DMD board	No image (LED is turned on) or vertical/horizontal bars appear
5	P1	10	Keypad Board	Key does not operate
6	P8103	4	Speaker	Speaker does not print out.
7	P600	6	WIFI Module	Smart Share is not functional.

# TROUBLE SHOOTING GUIDE

## 1. A connection defect of a connector

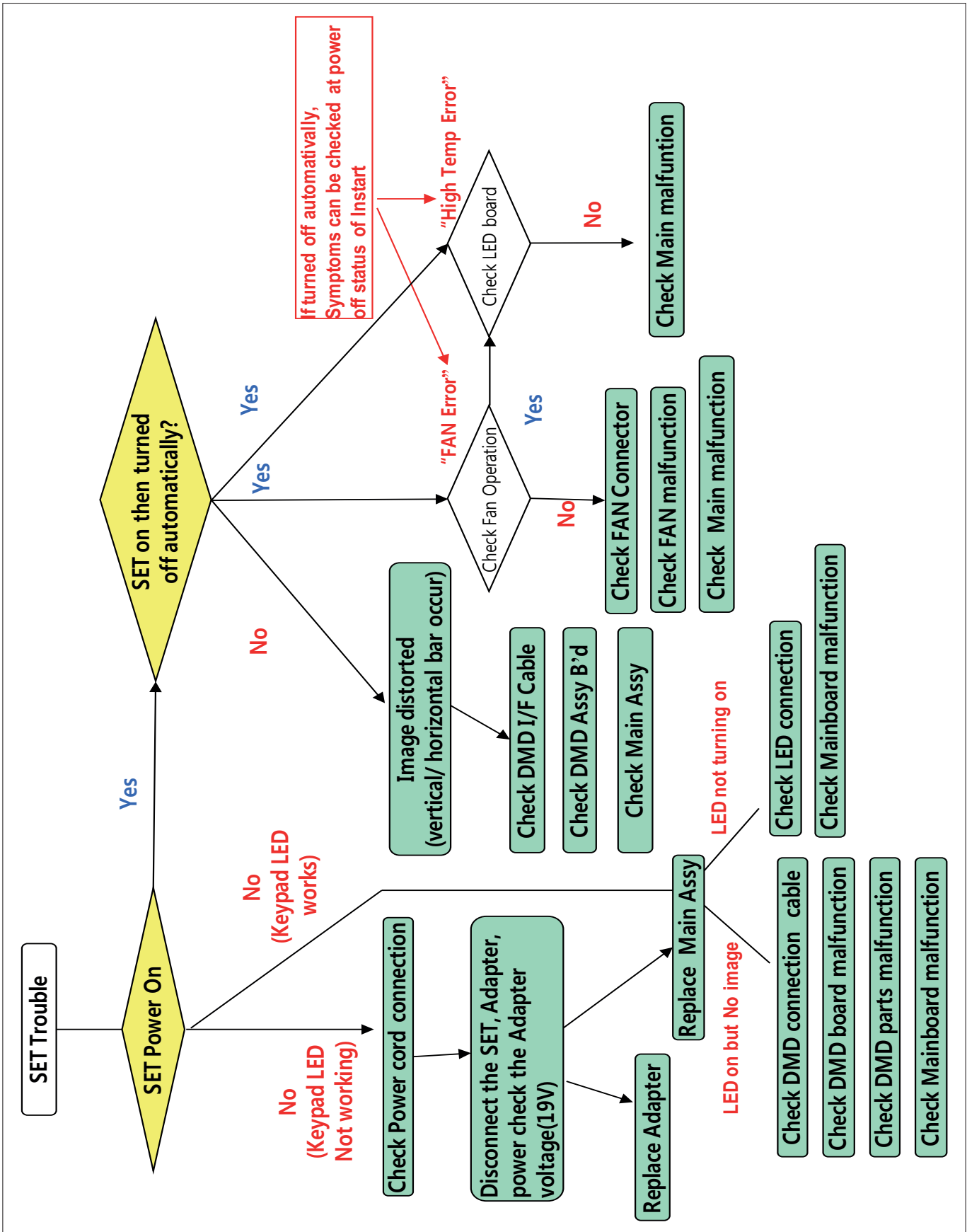


- MAIN board assembly point 
- TUNER board assembly point 

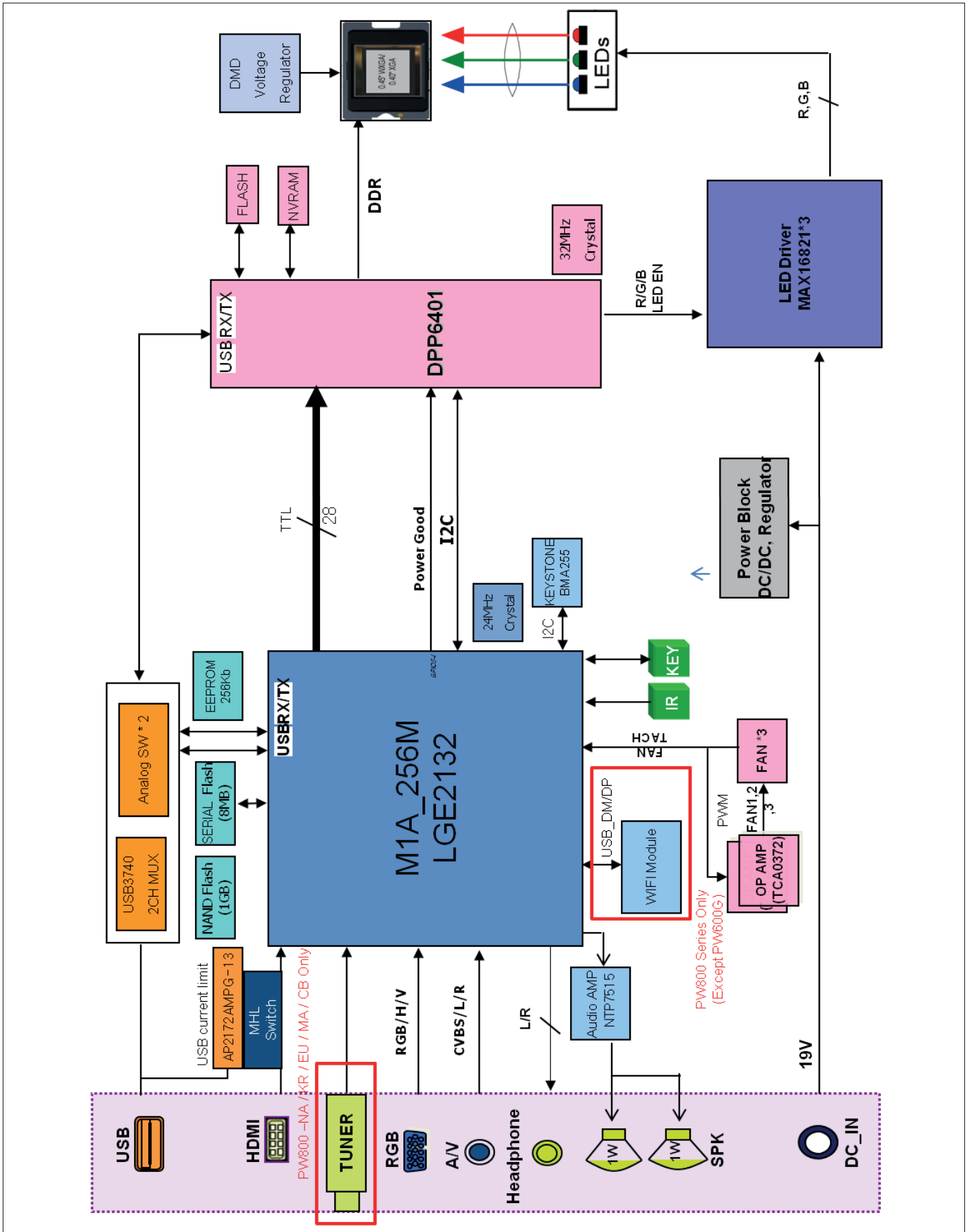
No.	Circuit Number	Pin count	Connections	Symptoms of a bad connection
8	P874, P873, P872	12	Engine	No image



# TROUBLE SHOOTING GUIDE



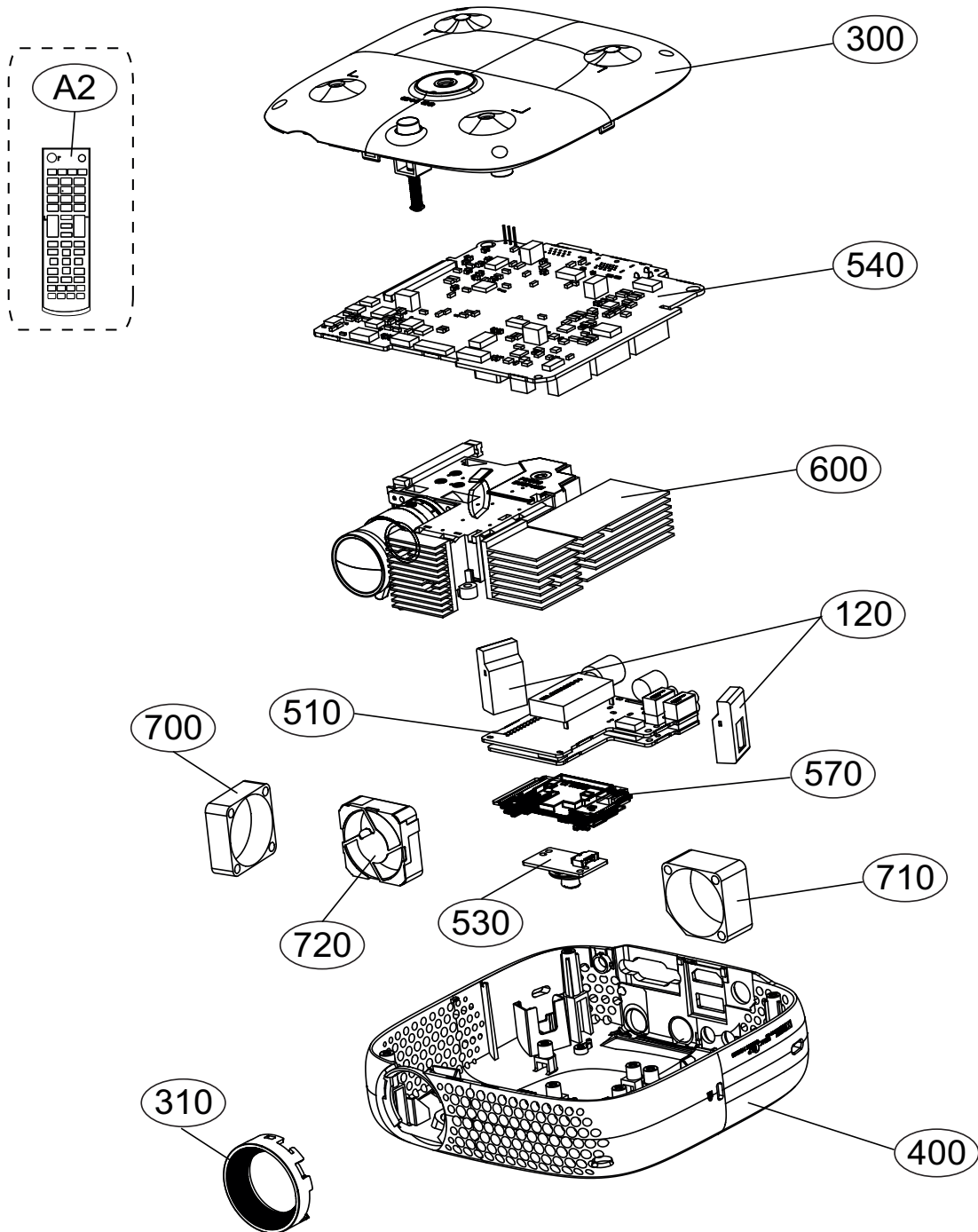
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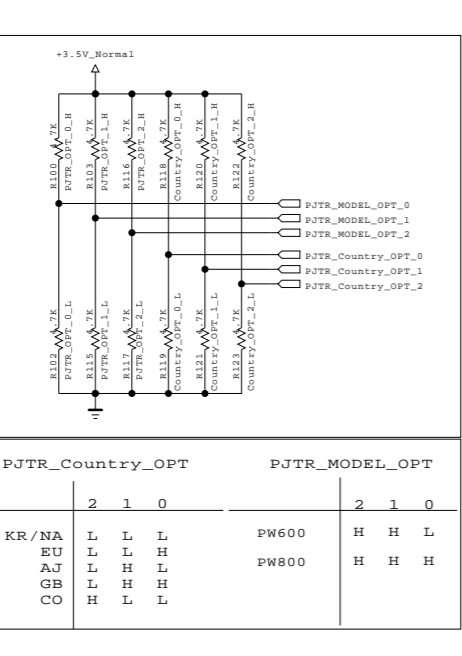
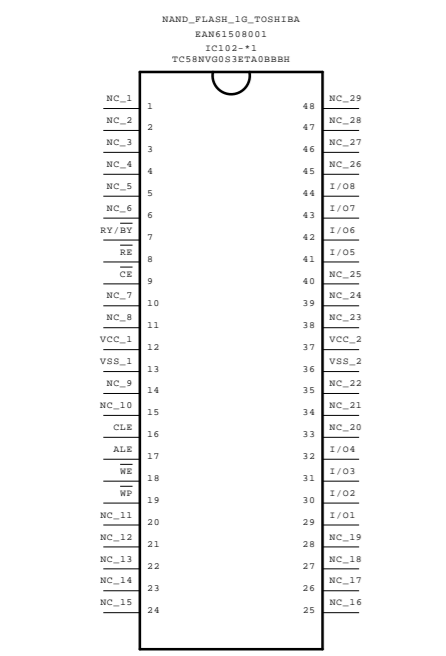
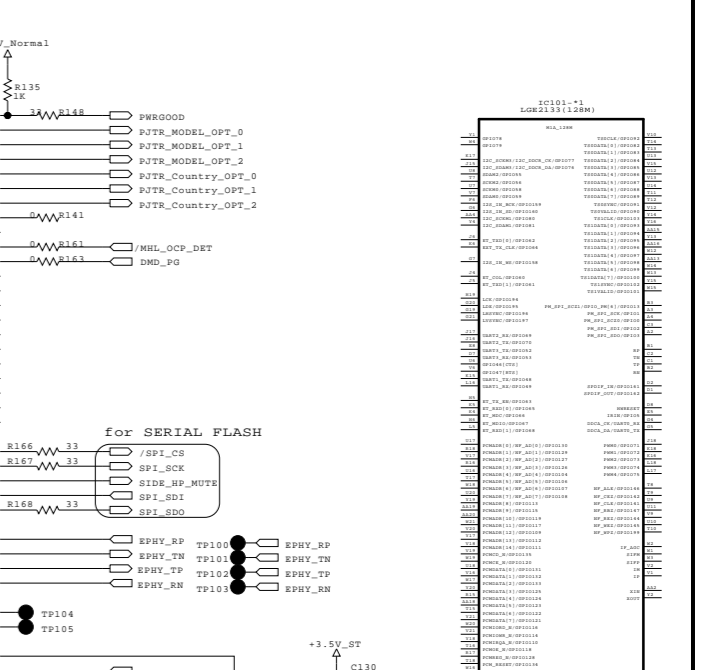
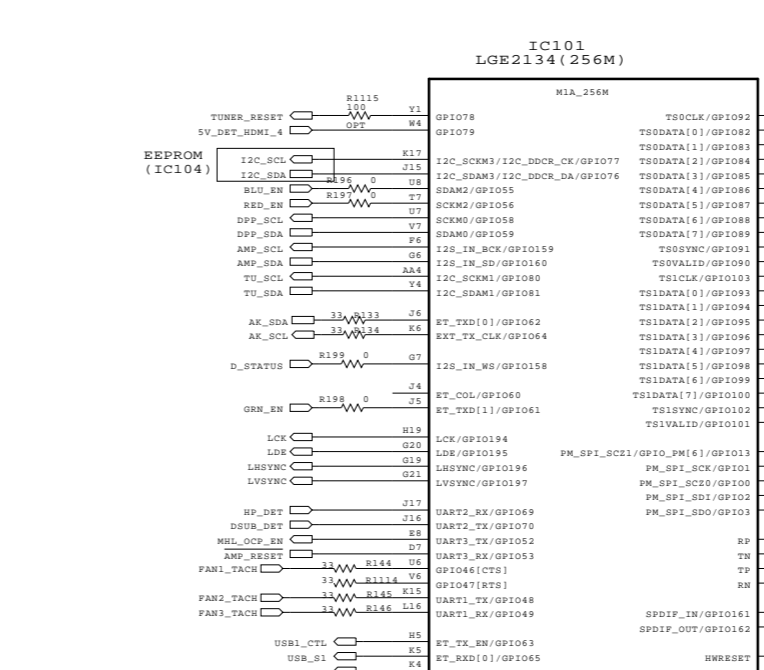
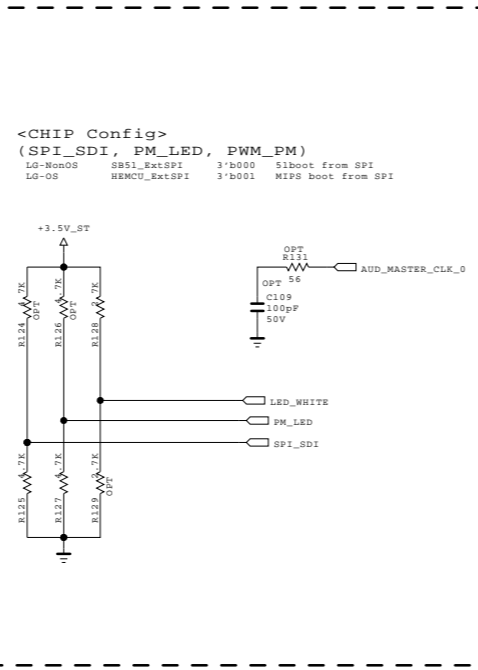
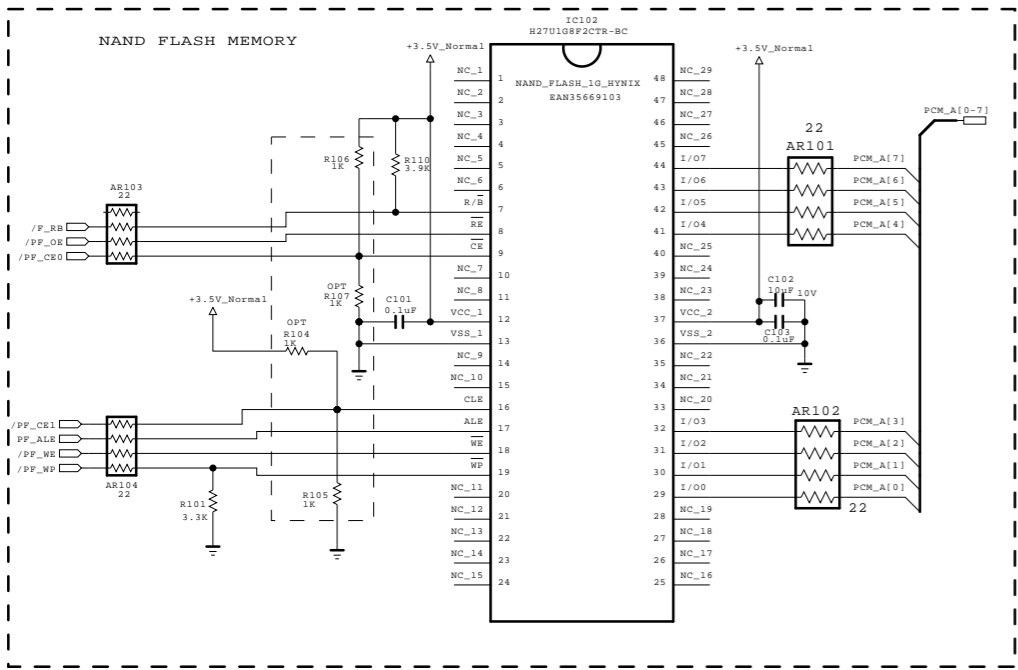


# EXPLODED VIEW

## IMPORTANT SAFETY NOTICE

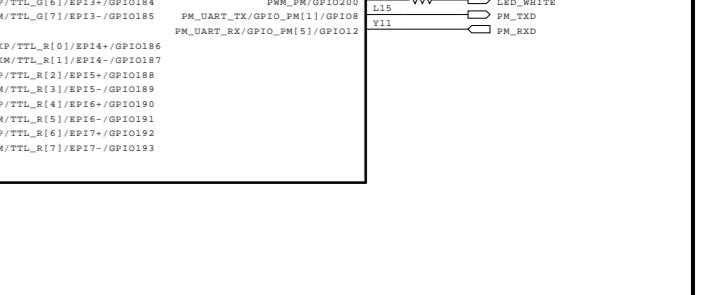
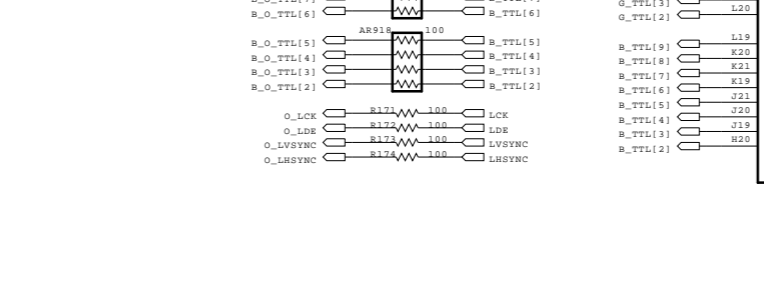
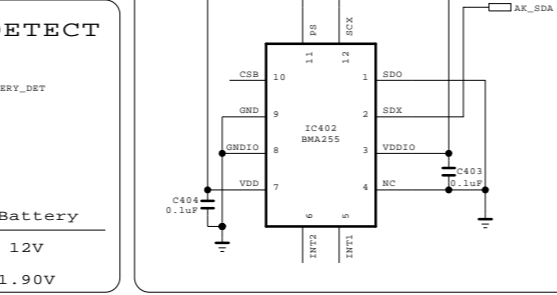
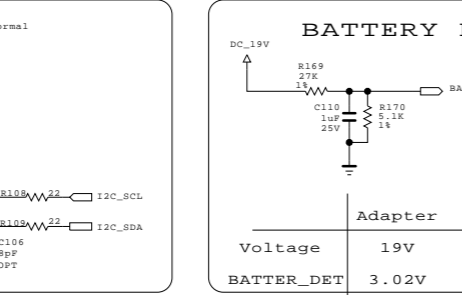
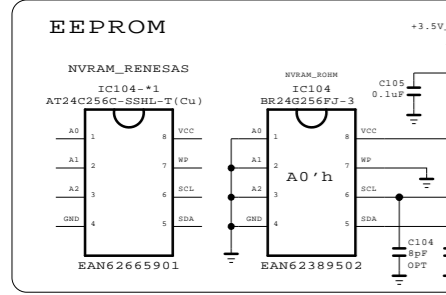
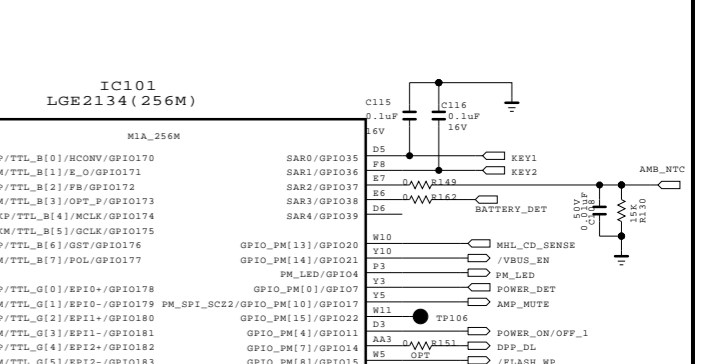
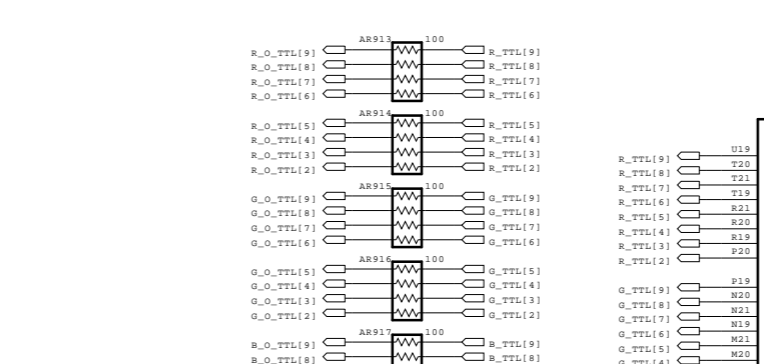
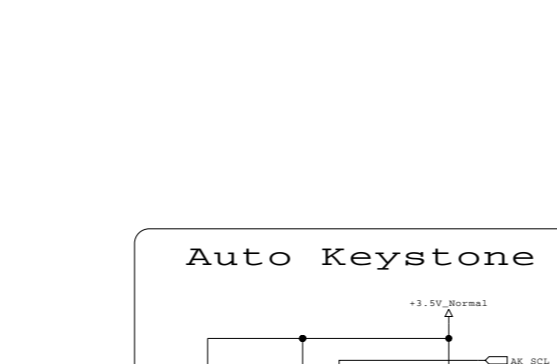
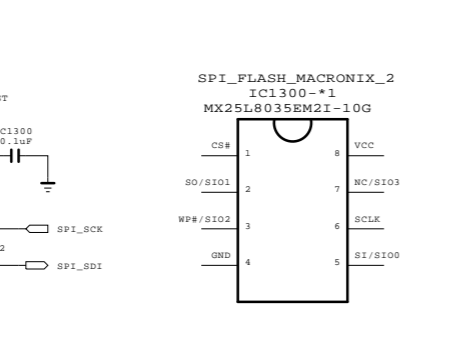
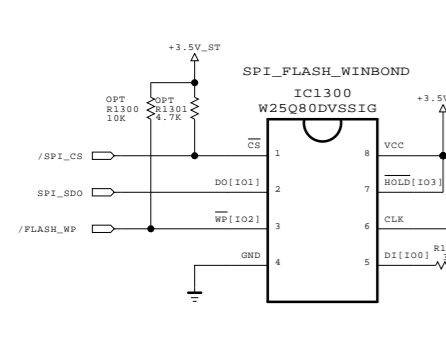
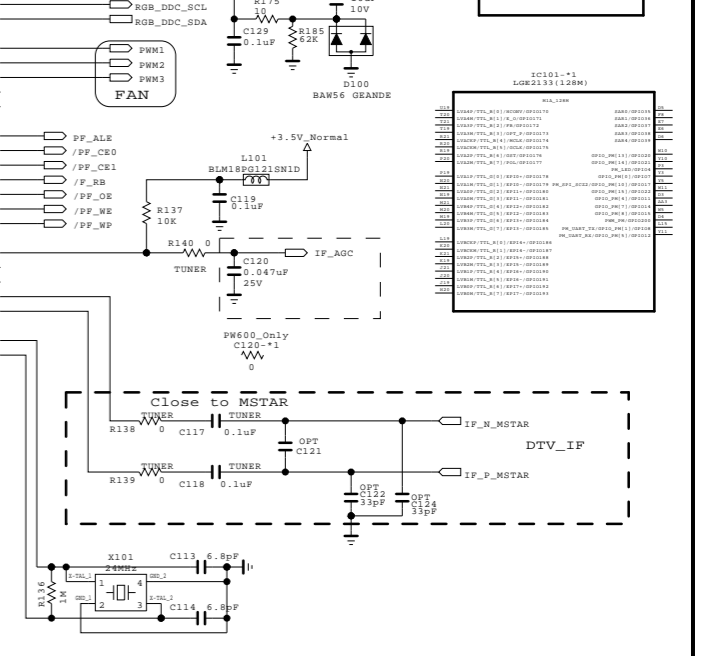
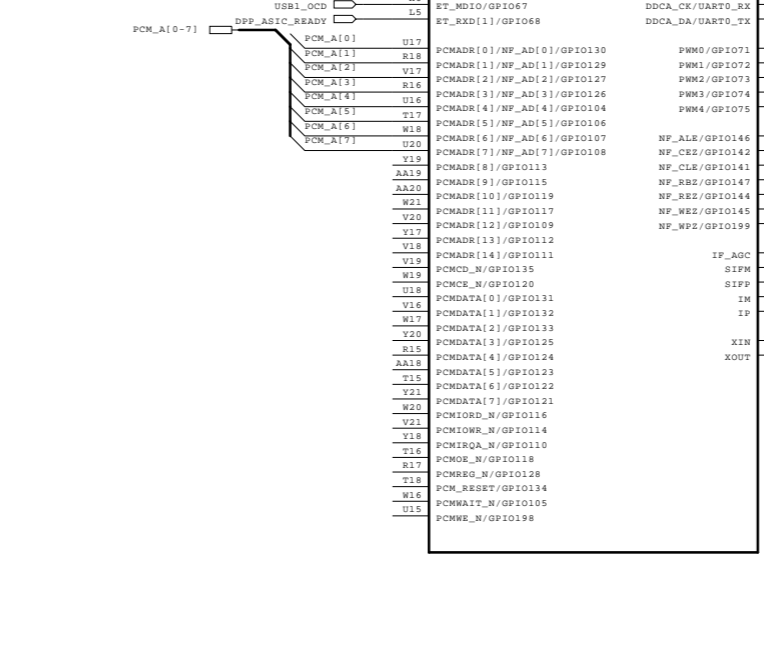
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\triangle$  in the Schematic Diagram and EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.





### MEMORY

	Ref No.	1ST	2ND
EEPROM	IC104	ROHM EAN62389502	RENESAS EAN62389501
SPI	IC1300	WINBOND EAN55718403	MXIC EAN63127201
NAND	IC102	HYNIX EAN35669103	TOSHIBA EAN61508001

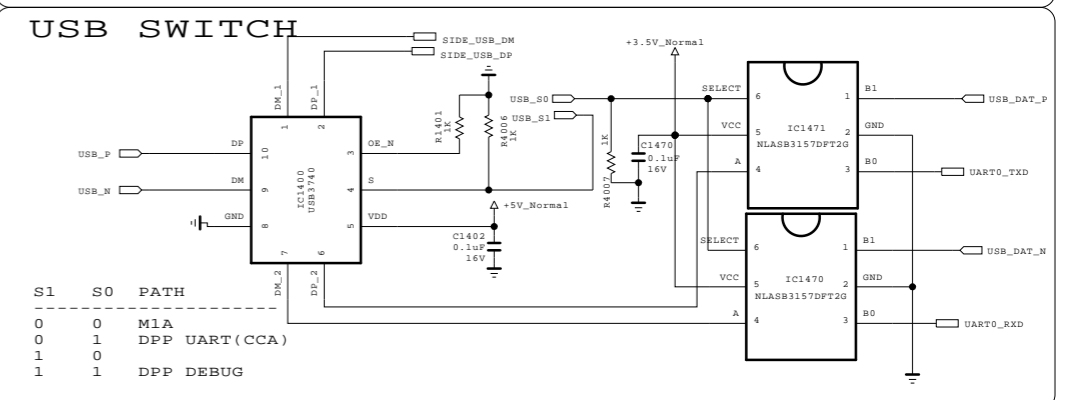
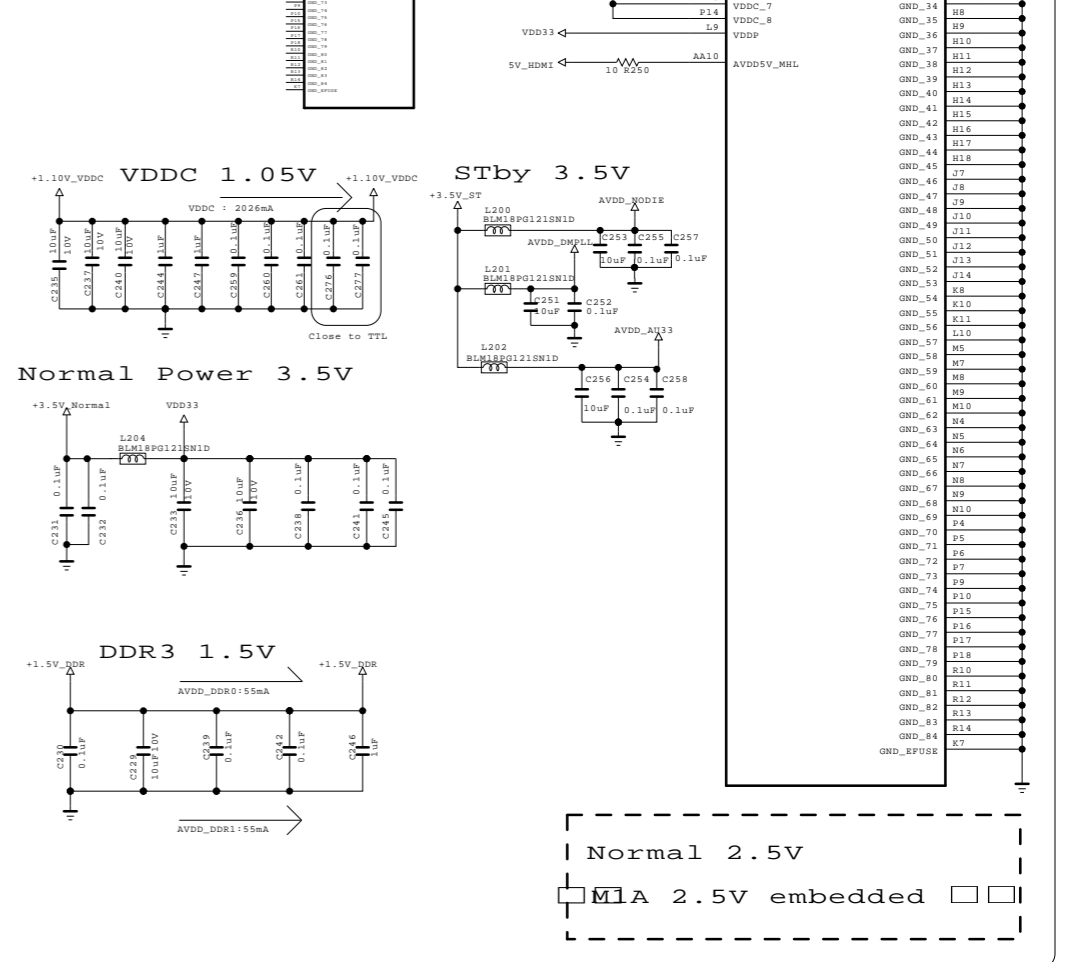
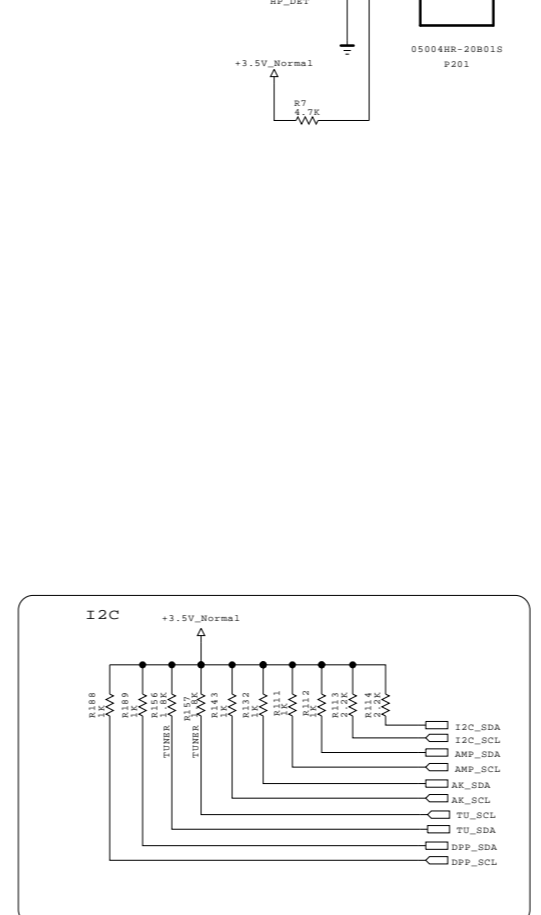
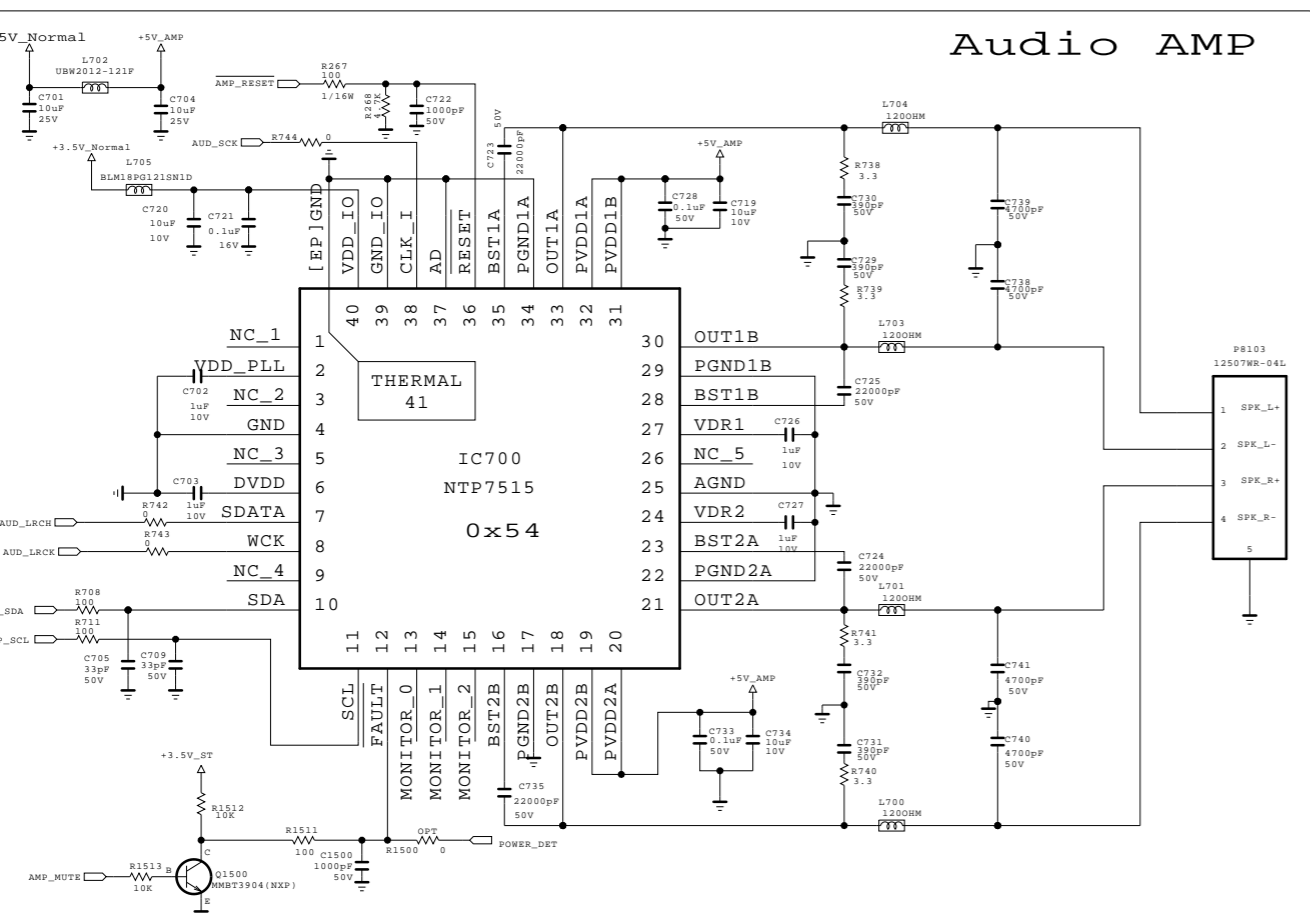
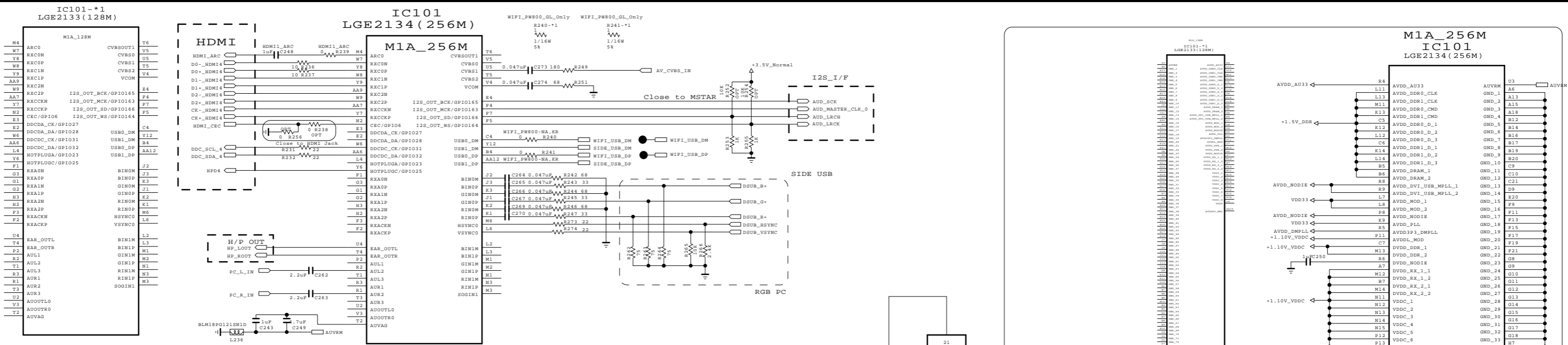


THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

**SECRET**  
LGElectronics



MODEL	DATE
BLOCK	SHEET

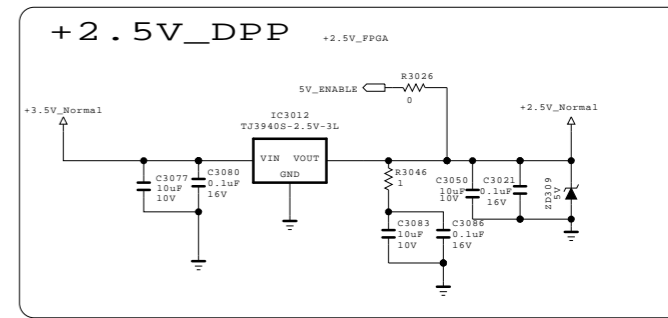
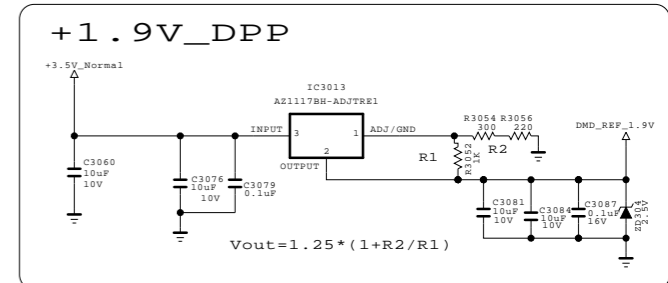
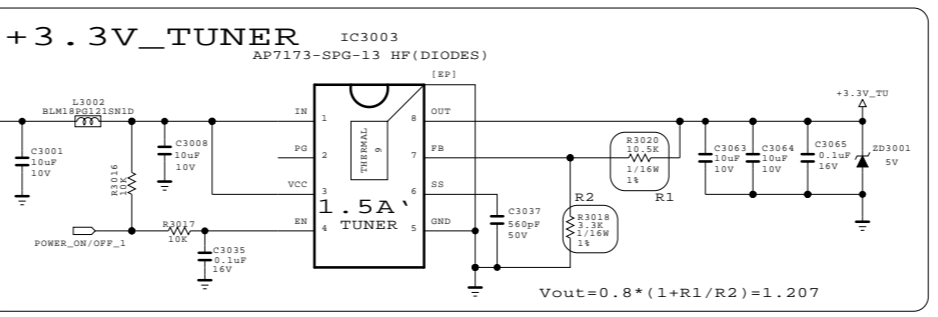
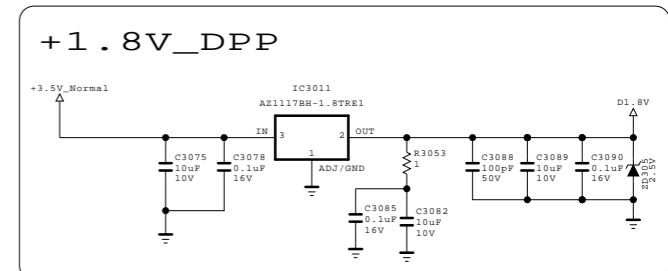
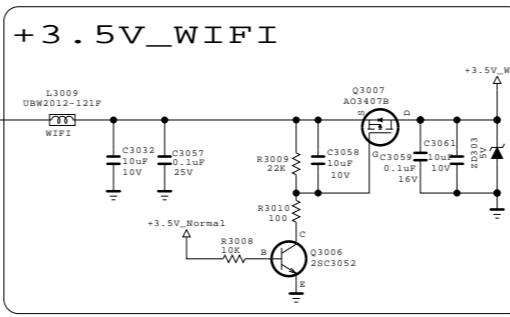
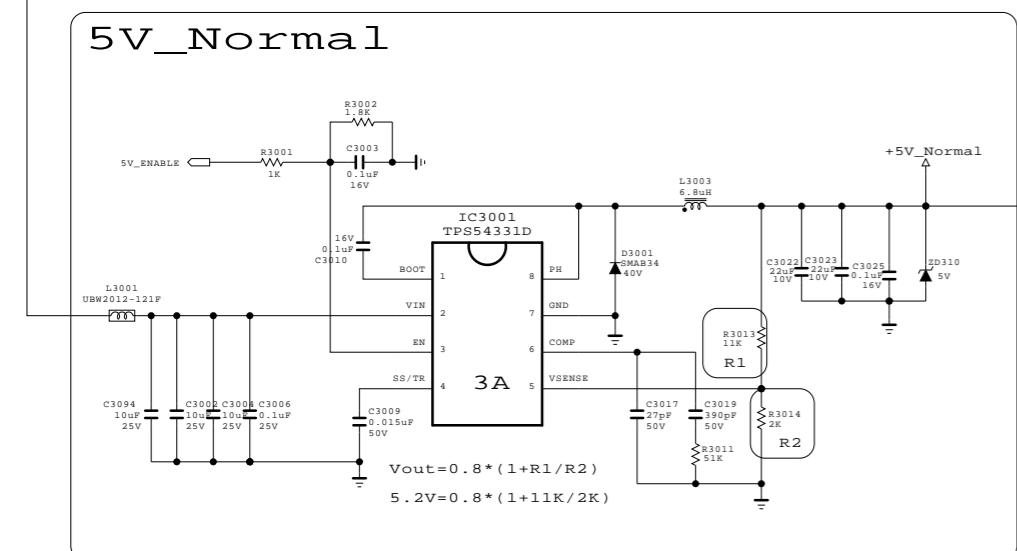
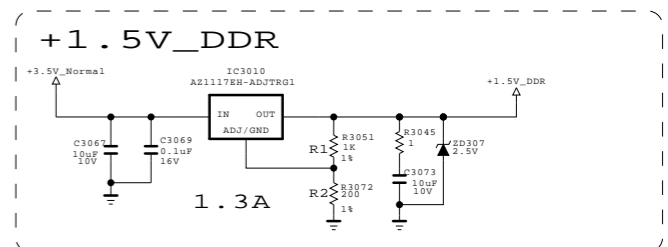
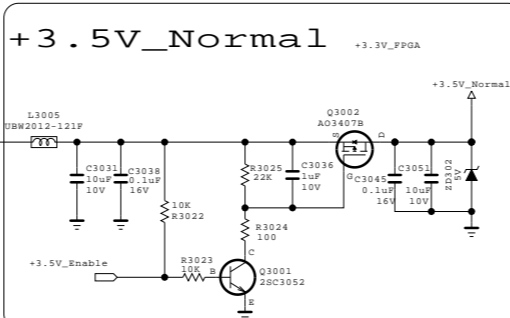
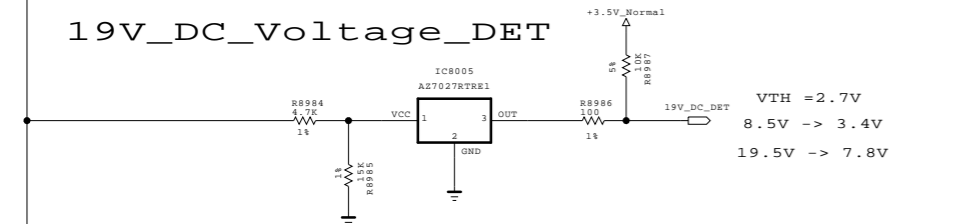
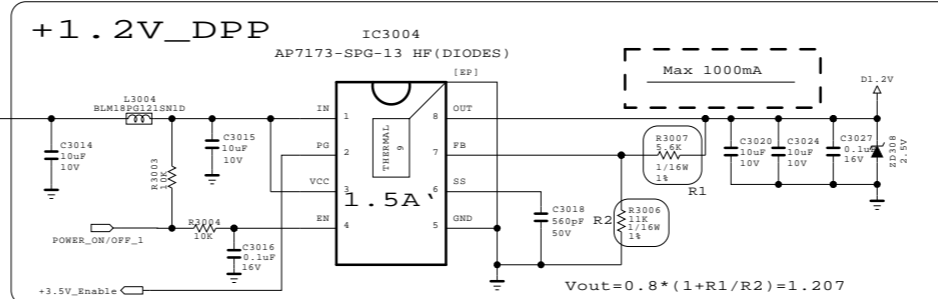
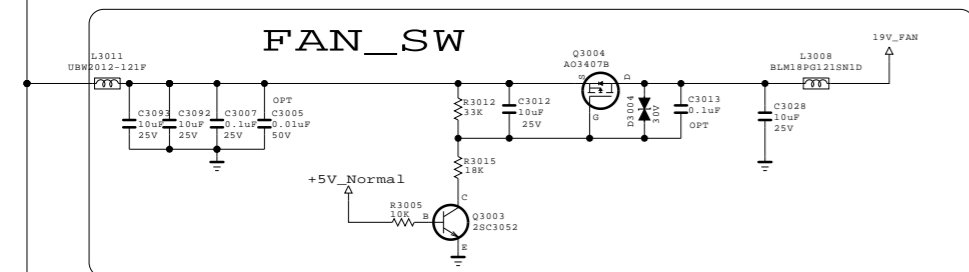
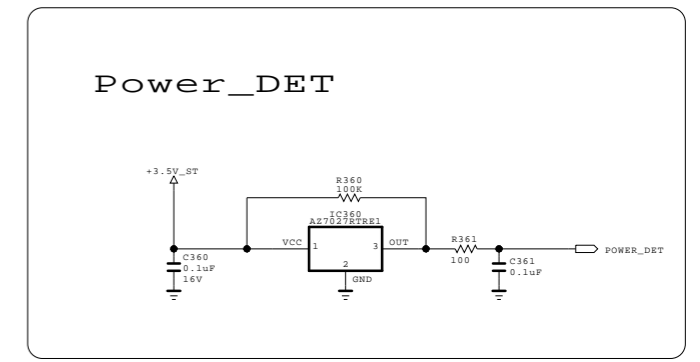
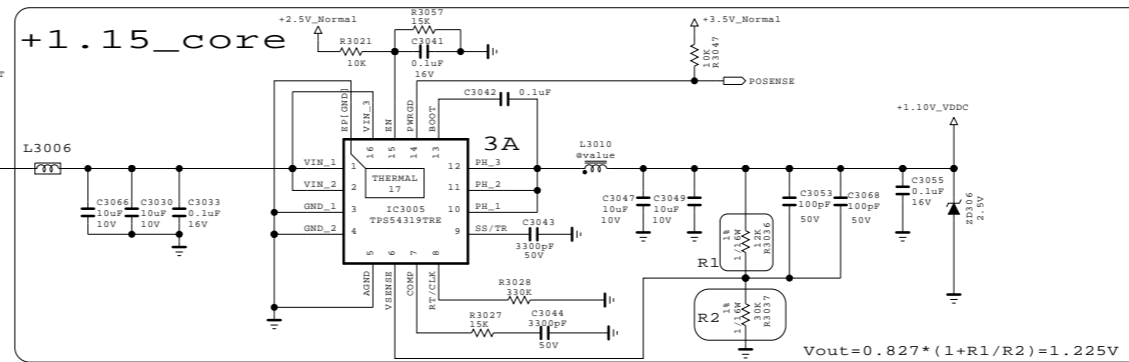
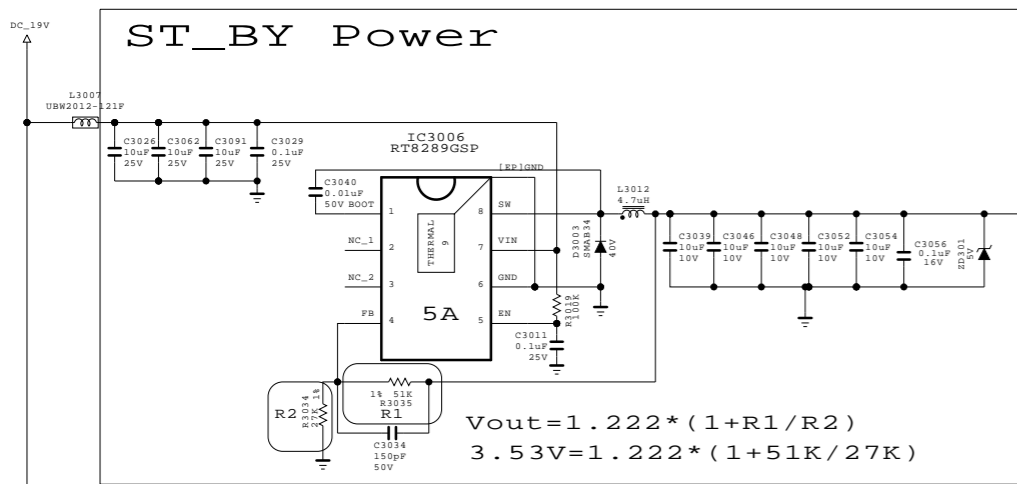


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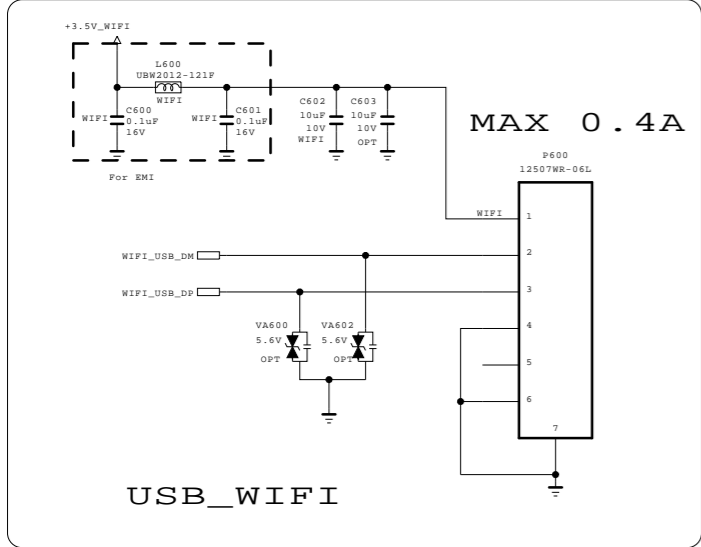
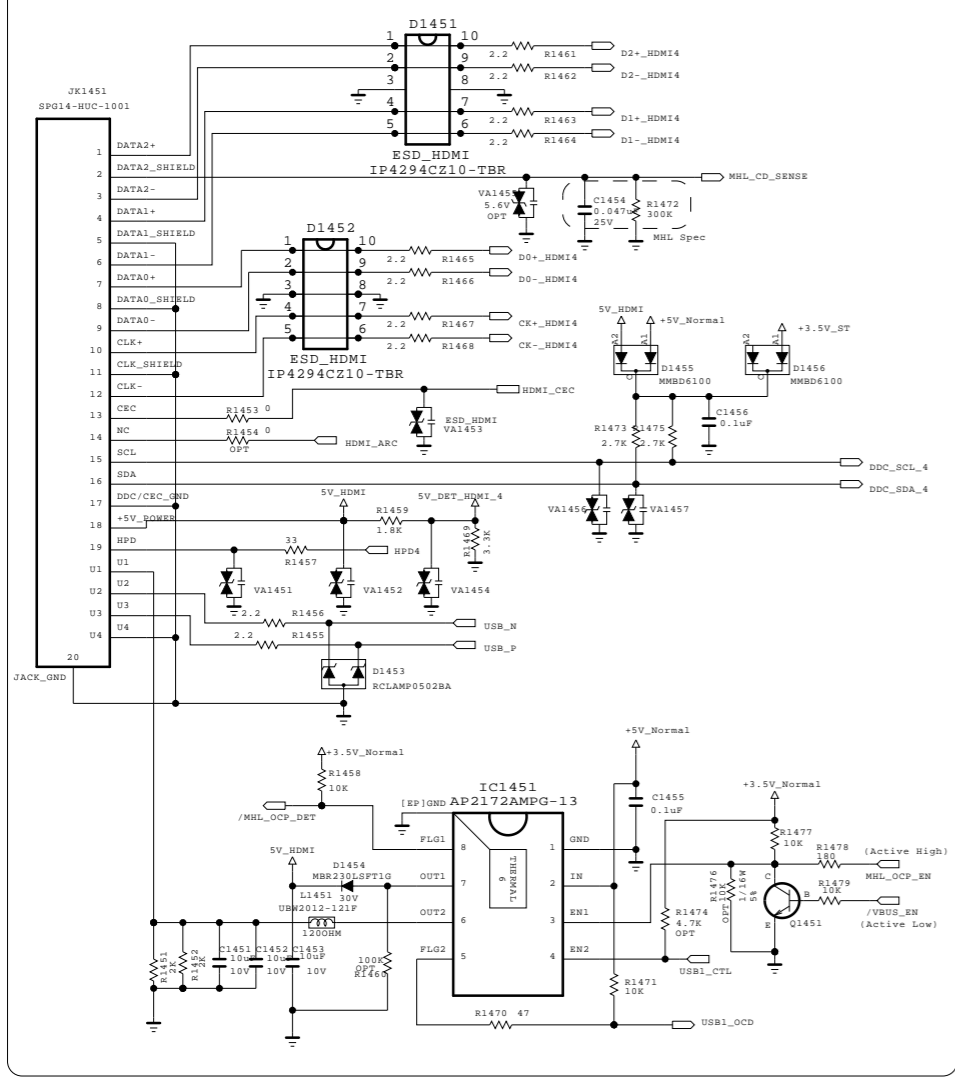
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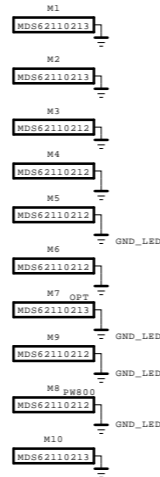
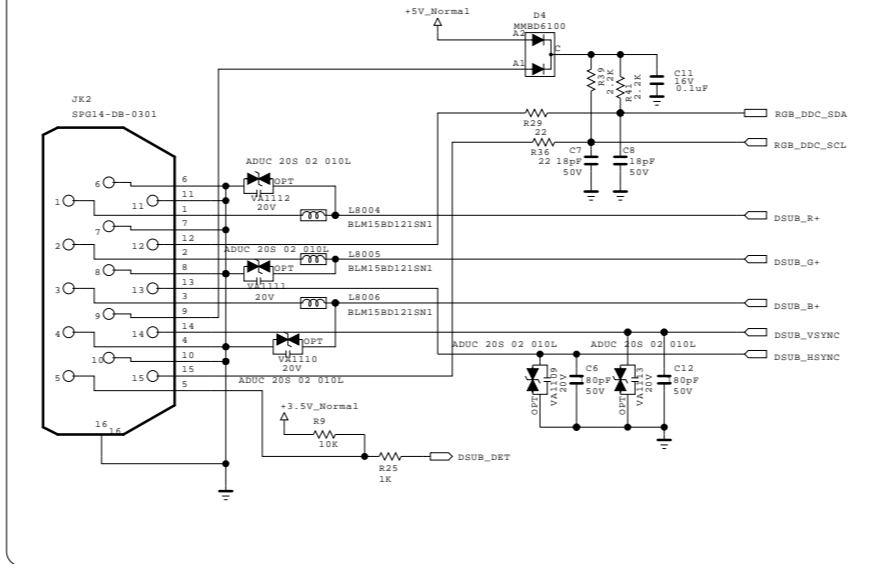
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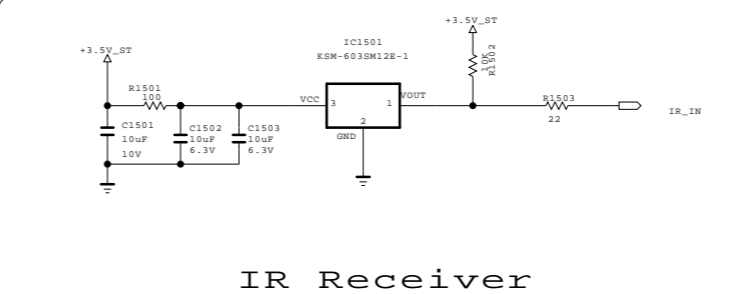
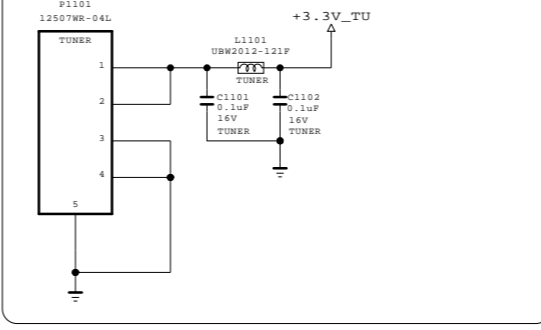
# HDMI & MHL



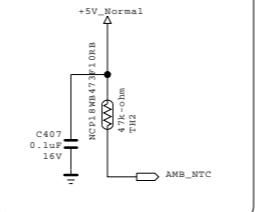
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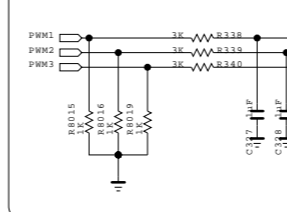
## <TUNER POWER>



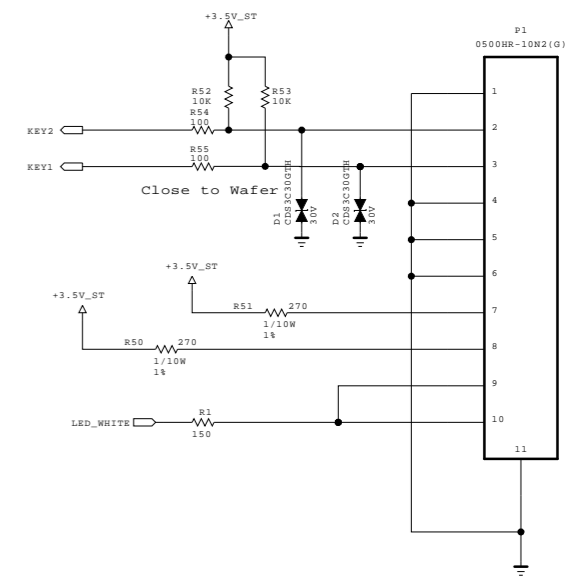
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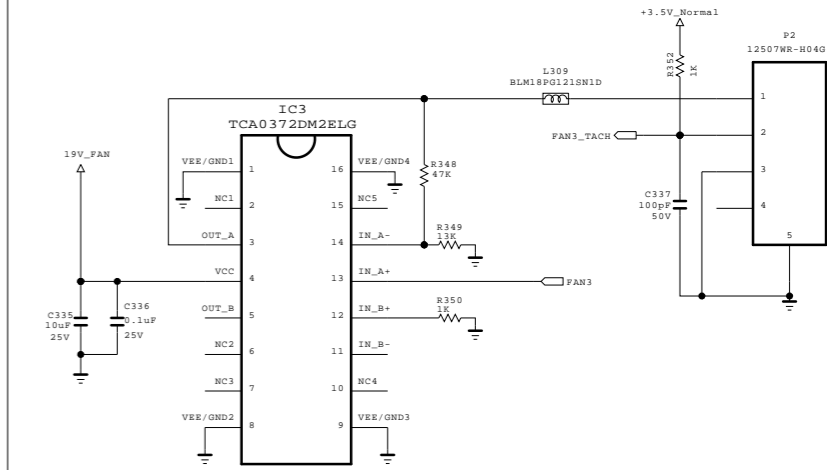
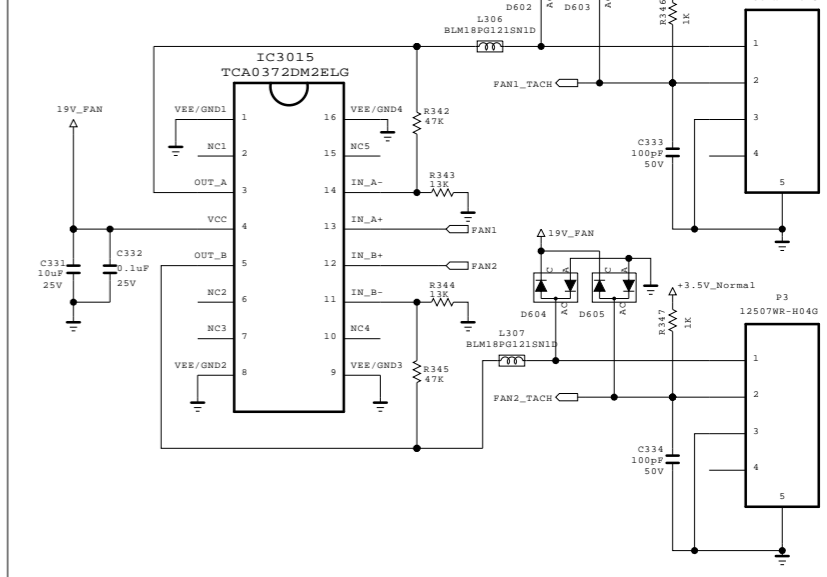
## Close to MSTAR



# IR/LED and Control



# FAN Voltage



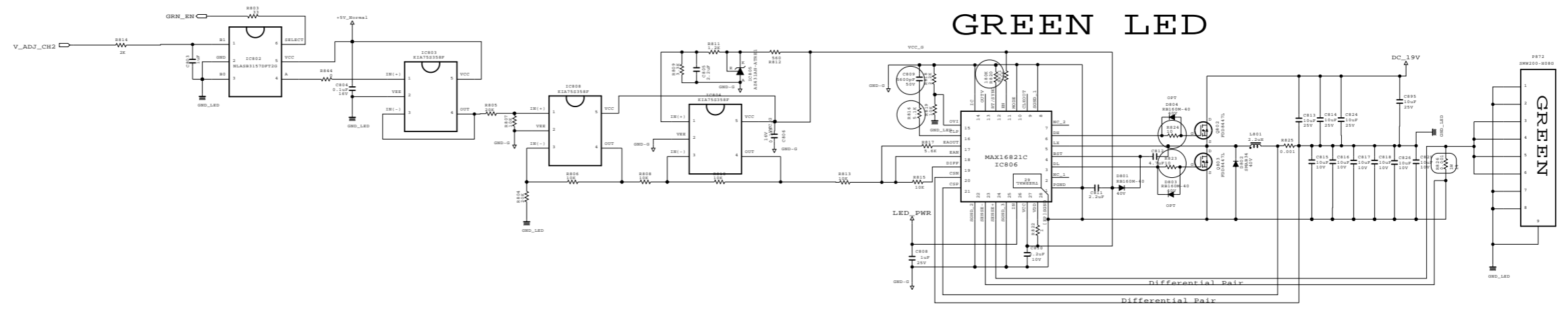
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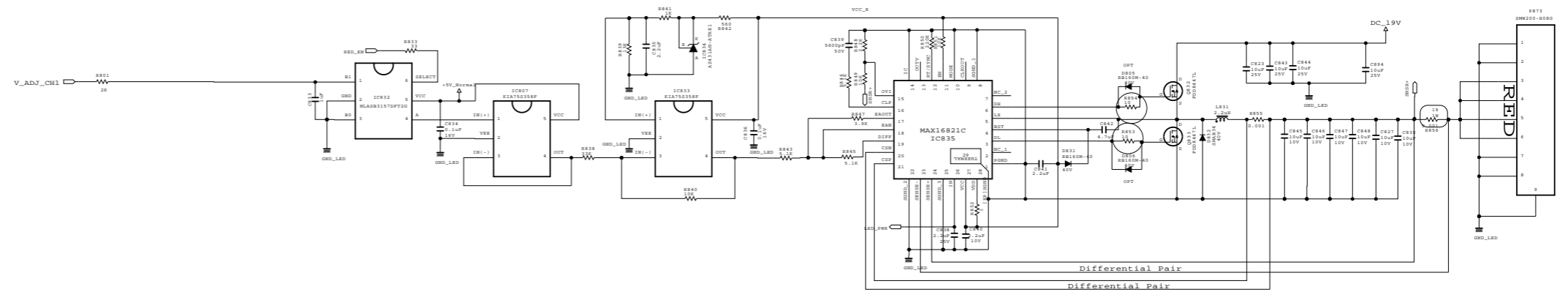


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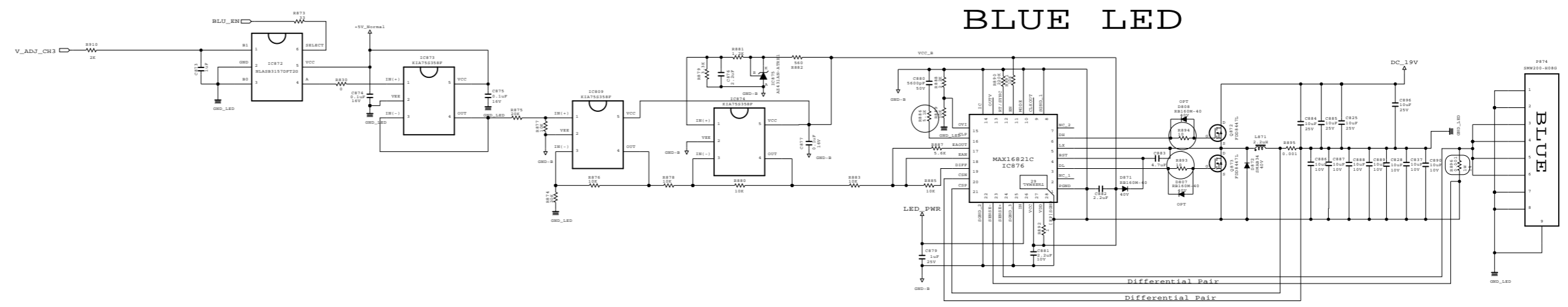




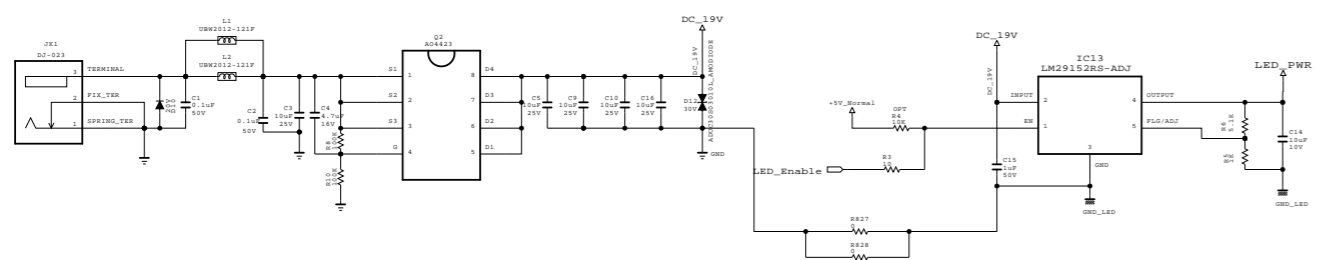
### GREEN LED



### RED LED



### BLUE LED



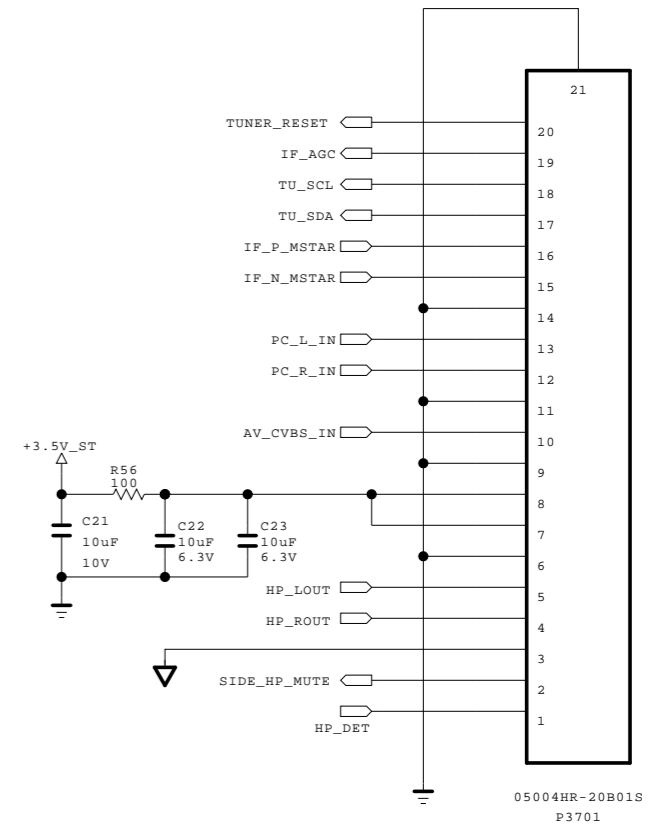
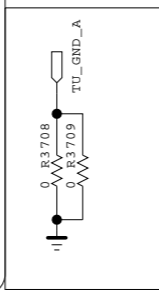
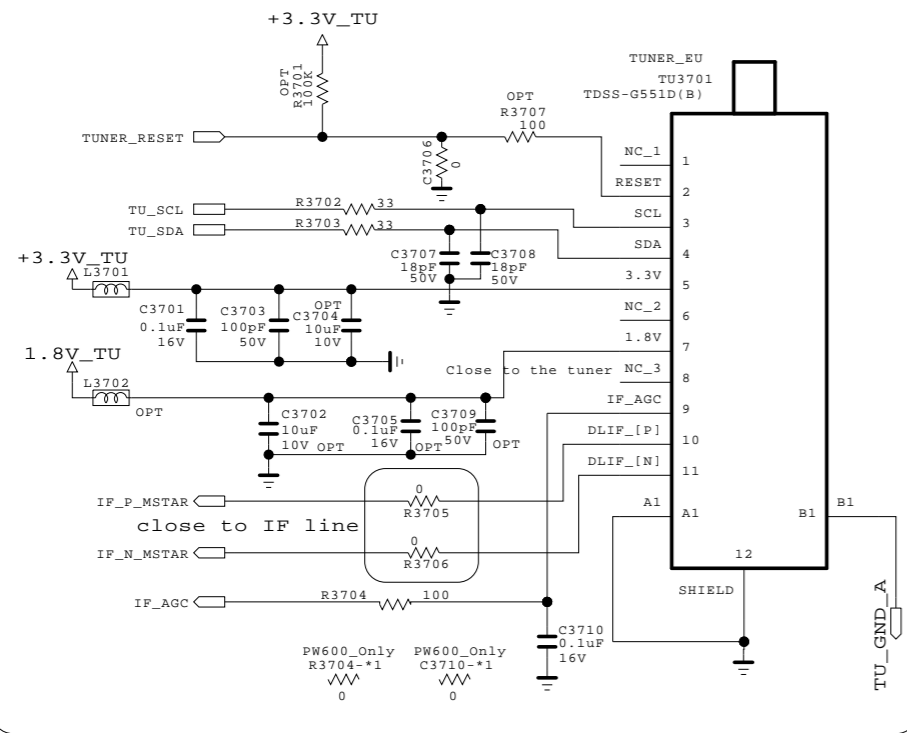
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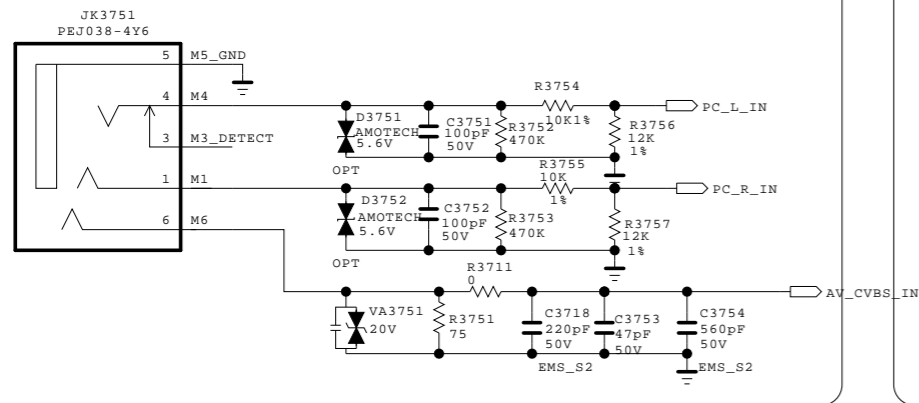


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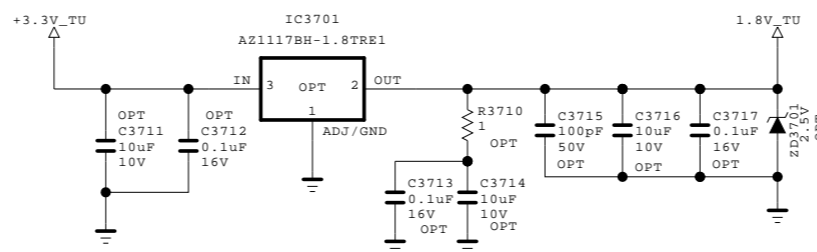
# TUNER\_KR



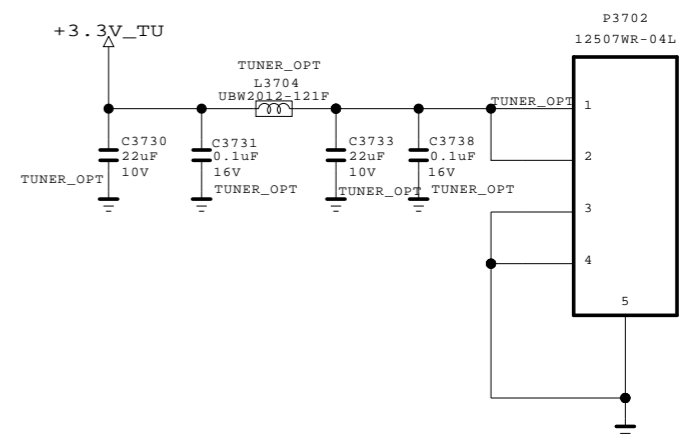
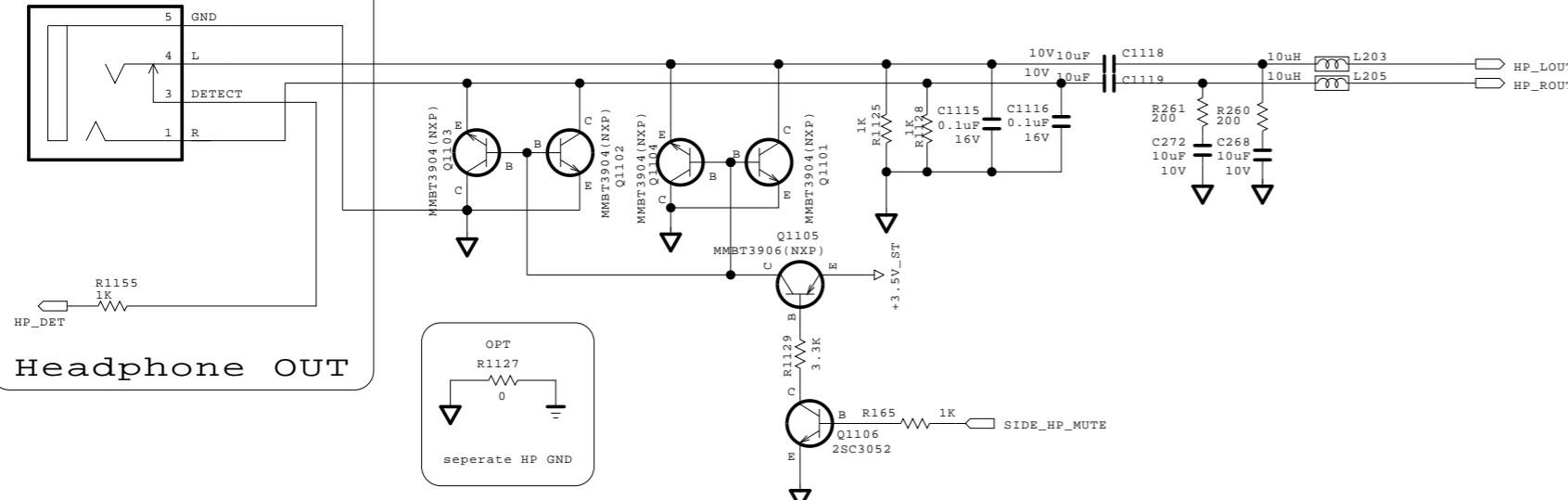
# AV IN



# +1.8V\_TU



# Headphone OUT

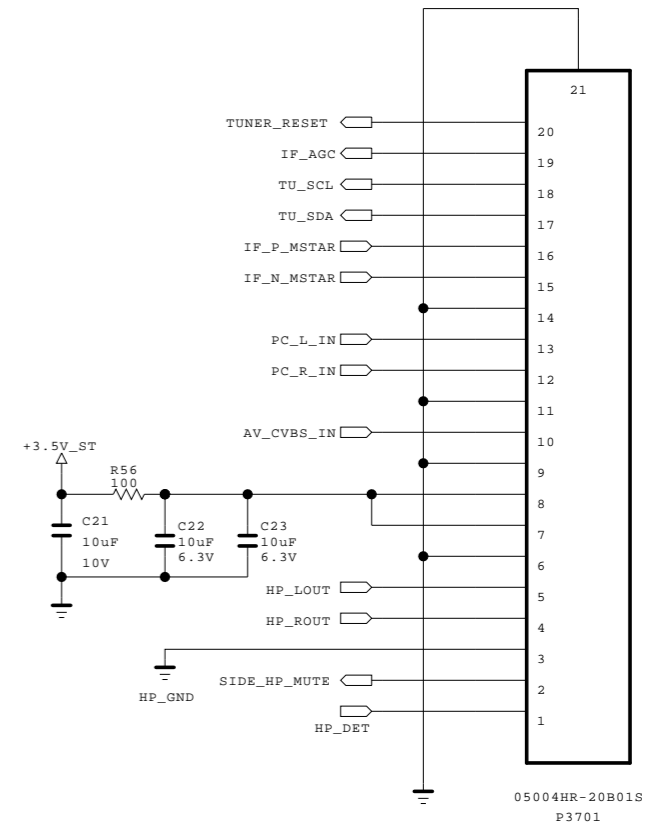
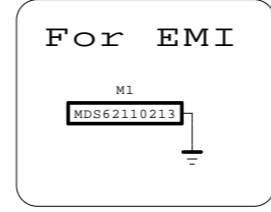
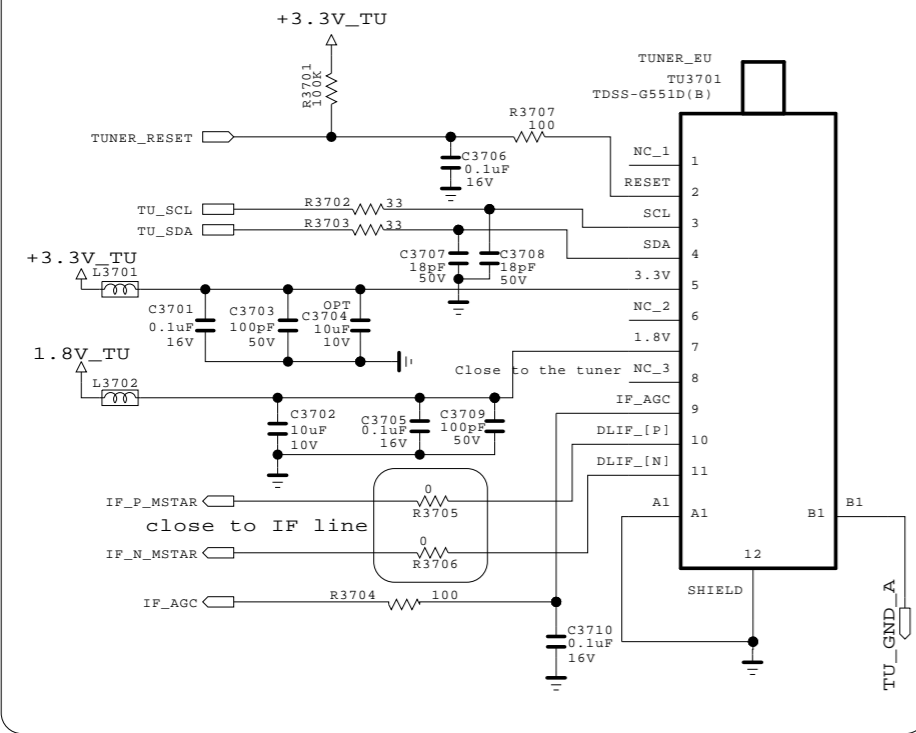


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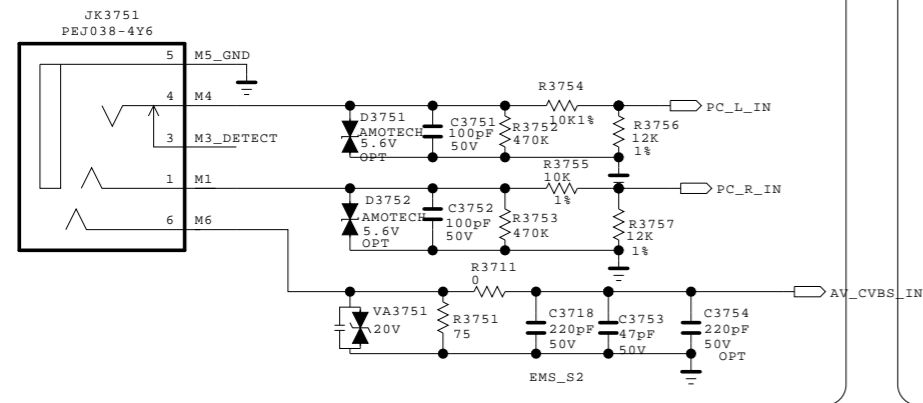
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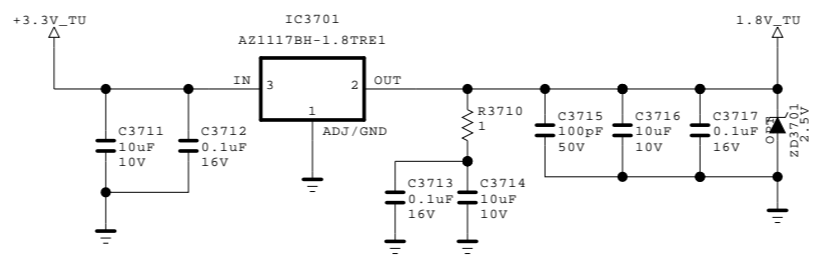
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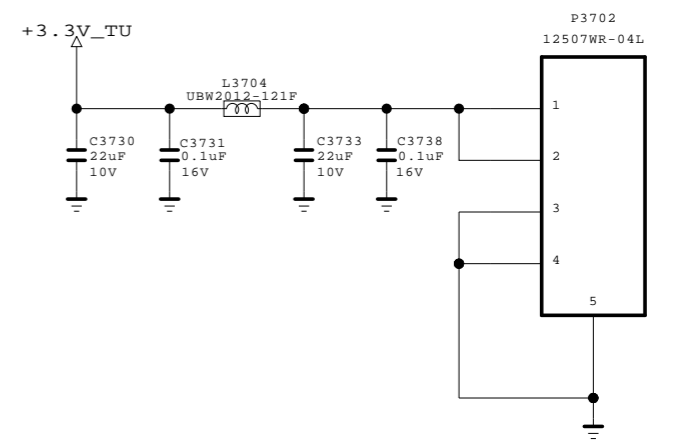
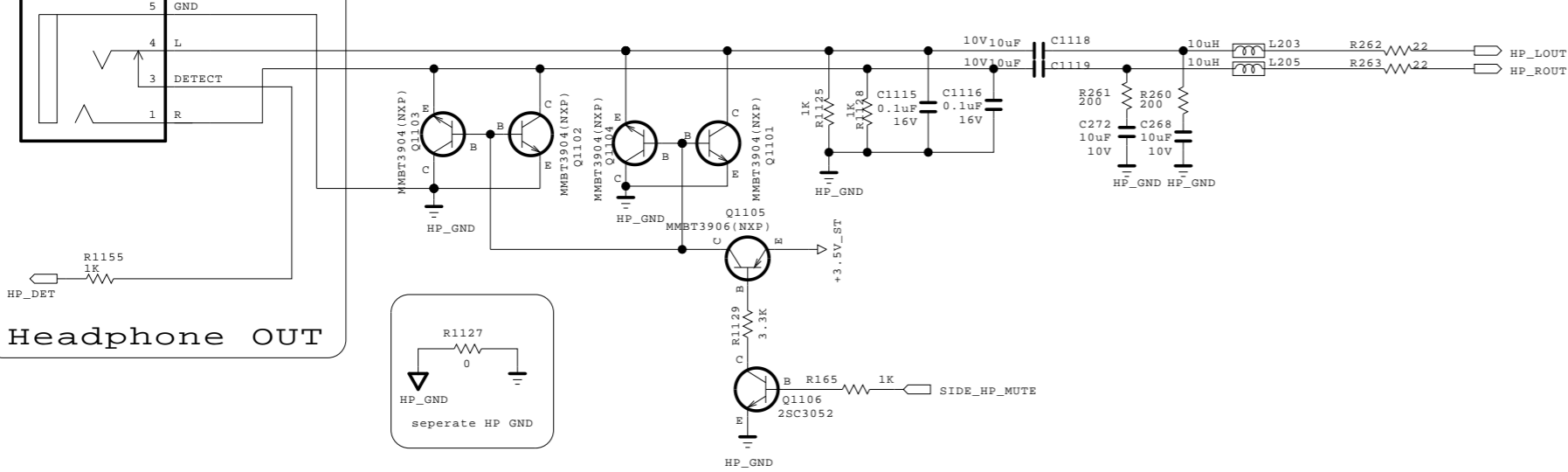
# AV IN



# +1.8V\_TU



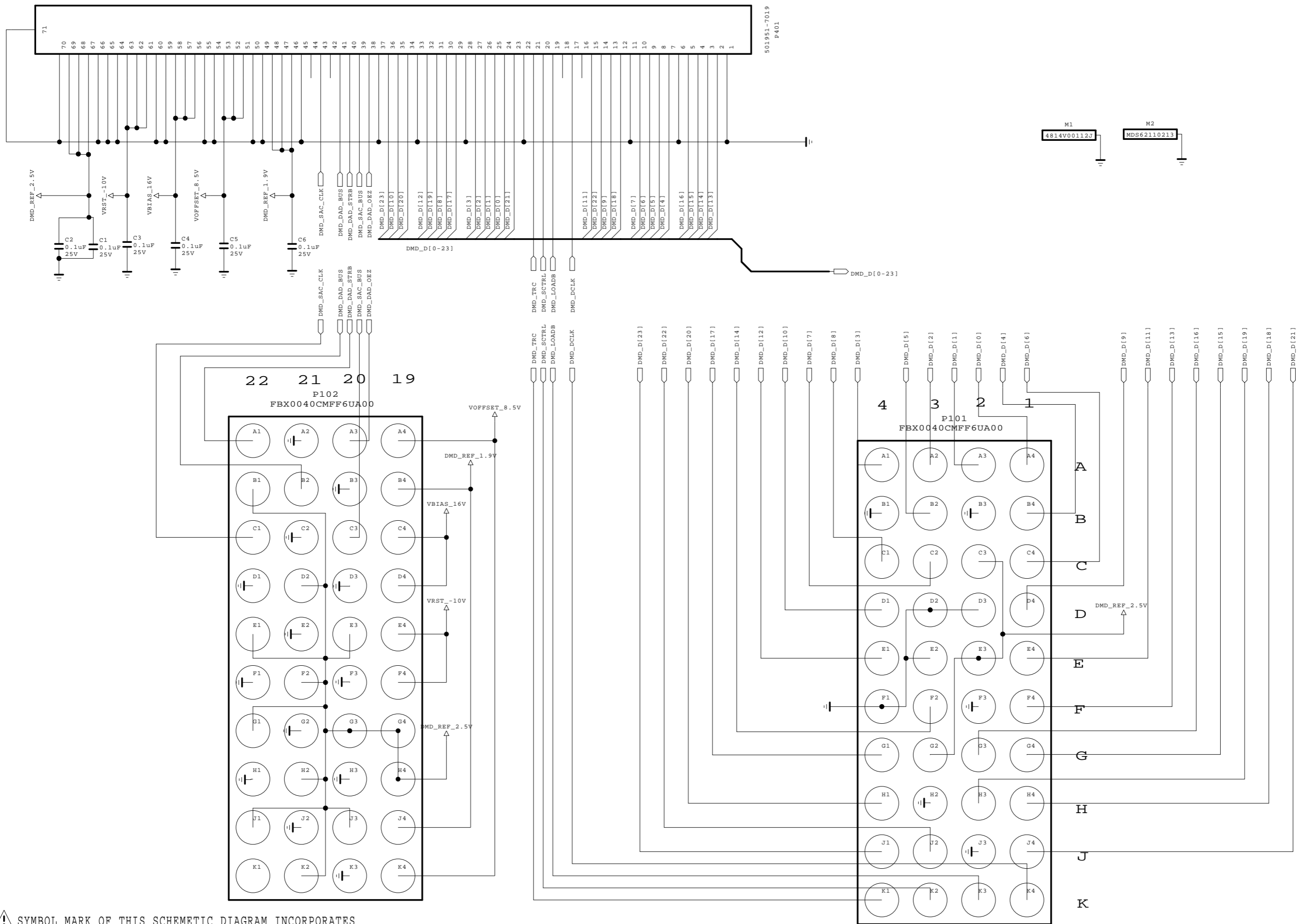
# Headphone OUT



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