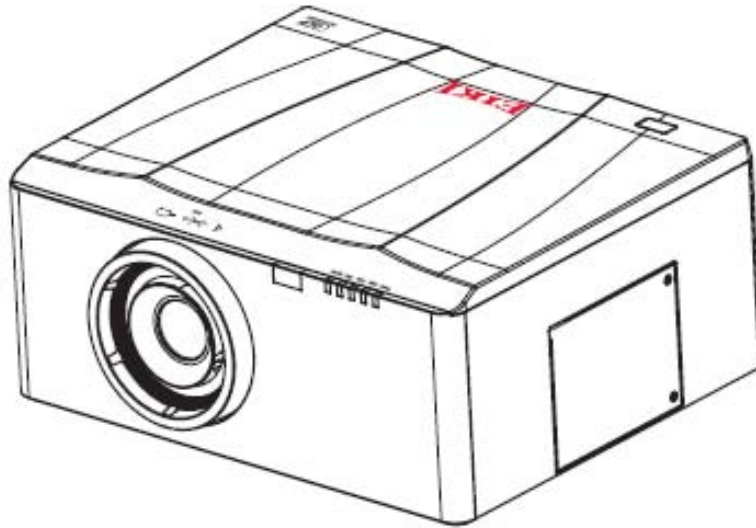


SERVICE MANUAL



EK-610U/EK-611W/EK-612X (without lens)

Date	Revise Version	Description
2016.8.10	V1.0	Initial Issue

Preface

This manual is applied to EK-610U/EK-611W/EK-612X projection system.

The manual gives you a brief description of basic technical information to help in service and maintain the product. Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them. This manual is for technicians and people who have an electronic background. Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

Notice: The information found in this manual is subject to change without prior notice.

Any subsequent changes made to the data herein will be incorporated in future edition.

EK-610U/EK-611W/EK-612X Service Manual

Copyright August 2016

All Rights Reserved

Manual Version Rev1.0

Table of Content

Chapter 1 Introduction

Highlight	1-1
Compatible Mode	1-2

Chapter 2 Disassembly Process

Equipment Needed & Product Overview	2-1
Disassemble projector Lens	2-2
Disassemble Lamp Module	2-3
Disassemble Top Cover	2-4
Disassemble Rear Cover Module	2-5
Disassemble Main Board Module	2-6
Disassemble Blower Module	2-10
Disassemble System Fan Module	2-11
Disassemble M/B and Front Shielding	2-12
Disassemble Front Cover Module	2-13
Disassemble Right Cover Module	2-14
Disassemble Engine Module	2-16
Disassemble Lamp Driver Module	2-18
Disassemble LVPS Module	2-19
Disassemble FAN Module	2-19
Disassemble Left Cover Module	2-20
Disassemble Bottom Cover Module	2-21
Repair Action	2-22

Chapter 3 Troubleshooting

LED Lighting Message	3-1
Main Procedure	3-2
No Power Troubleshooting	3-3
Power Troubleshooting	3-4
Image Performance Troubleshooting	3-5
Remote Control Troubleshooting	3-7
Network Troubleshooting	3-8

Chapter 4 Test & Inspection

Test Equipment Needed	4-1
Service Mode and Factory Mode	4-1
Factory Reset	4-3
Calibration	4-4
Adjustment	4-9
Check points for exterior and print pattern	4-11

Chapter 5 Firmware Upgrade

Section 1: DDP/Scalar/LAN FW upgrade	5-1
Section 2: PIC FW upgrade	5-7

Appendix

Exploded Image	I
----------------	---

Introduction

1-1 Highlight

No	Item	Description		
		EK-610U	EK-611W	EK-612X
1	Dimensions (W x H x D)	452.8 x 389.9 x 206.5 mm (without lens and elevators)		
2	Weight (kg)	13.9kg Net Weight (w/o lens) 14.3kg Gross Weight (with A02 lens) 17.3kg Weight with package (w/o lens)		
3	Power Supply	580W (110V) AC 100 - 240 V (50Hz / 60Hz) Stand-by Mode: <0.5W		
4	Keystone Correction	Horizontal: +/- 20 degrees Vertical: +/- 20 degrees		
5	Brightness	Normal: 6500 lm Eco: 5200 lm	Normal: 6500 lm Eco: 5200 lm	Normal: 7000 lm Eco: 5700 lm
6	Throw Ratio AH-A22010 (A15) AH-A22020 (A01) AH-A22030 (A02) AH-A21010 (A03) AH-A23010 (A13)	0.75 - 0.95 0.95 - 1.22 1.22 - 1.53 1.52 - 2.92 2.90 - 5.50	0.79 - 1.00 1.00 - 1.28 1.28 - 1.61 1.60 - 3.07 3.04 - 5.78	0.78 - 0.99 0.99 - 1.26 1.26 - 1.58 1.58 - 3.00 3.00 - 5.70
7	Uniformity	90% (JBMA)		
8	Lamp	1500 hours (Normal:465W) 2000 hours (Eco:360W)		
9	I/O Terminal	1 x HDMI 1 x DVI-D 1 x VGA 1 x Composite 1 x Component 1 x HDBaseT		
10	Control Terminal	1 x D-sub 9pin (RS-232C) 1 x USB type A 1 x Mini USB 1 x RJ45 1 x Remote In		
11	DMD Chip	0.67" WUXGA, Type A, DC3	0.65" WXGA, Type A, DC3	0.7" XGA, Type A, DC3
12	Native Resolution	1920 x 1200	1280 x 800	1024X768
13	Video Compativity	NTSC (3.58/4.43 MHz) PAL (B/D/G/H/I/M/N, 4.43 MHz) SDTV (480i/p, 576i/p) HDTV (720p 50/60Hz, 1080i/p 50/60Hz, 1080p 24/25/30/50/60 Hz) SECAM (SECAM B/D/G/K/K1/L, 4.25/4.4 MHz)		
14	Color Wheel	Color Segments: 6 (RGBCYW) CW Speed: 3X, 10800RPM (180Hz)		
15	Operating Temperature	0~2500 ft: 5~40 2500~5000 ft: 5~35 5000~10000 ft: 5~30		

1-2 Compatible Mode

• Computer Compatibility for PC

Signal	Resolution	Frequency H. [KHz]	RefreshRate [Hz]	Video	Digital	Analog	Remark
NTSC	-	15.734	60	O	-	-	
PAL/SECAM	-	15.625	50	O	-	-	
	640 x 350	31.5	70.1		O	O	70Hz
	640 x 400	37.9	85.1		O	O	85Hz
	720 x 400	31.5	70		O	O	
	720 x 400	37.9	85		O	O	
	720 x 576		50		O	O	
VGA	640 x 480	31.5	60		O	O	
VGA	640 x 480		67		O	O	
VGA	640 x 480	37.9	72.8		O	O	72Hz
VGA	640 x 480	37.5	75		O	O	
VGA	640 x 480	43.3	85		O	O	
SVGA	800 x 600	35.2	56.3		O	O	56Hz
SVGA	800 x 600	37.9	60.3		O	O	60Hz
SVGA	800 x 600	46.9	75		O	O	
SVGA	800 x 600	48.1	72.2		O	O	72Hz
SVGA	800 x 600	53.7	85.1		O	O	85Hz
	832 x 624		75		O	O	
XGA	1024 x 768	48.4	60		O	O	
XGA	1024 x 768	56.5	70.1		O	O	70Hz
XGA	1024 x 768	60	75		O	O	
XGA	1024 x 768	68.7	85		O	O	
	1152 x 864		75		O	O	
HD720	1280 x 720		50		O	O	
HD720	1280 x 720		60		O	O	
WXGA	1280 x 768	47.4	60		O	O	
WXGA	1280 x 768		75		O	O	
WXGA	1280 x 768		85		O	O	
WXGA-800	1280 x 800		60		O	O	
SXGA	1280 x 1024	64	60		O	O	
SXGA	1280 x 1024	80	75		O	O	
SXGA	1280 x 1024	91.1	85		O	O	
SXGA+	1400 x 1050		60		O	-	
UXGA	1600 x 1200	75	60		O	O	
HD1080	1920 x 1080		24		O	O	
HD1080	1920 x 1080		50		O	O	

Signal	Resolution	Frequency H. [KHz]	RefreshRate [Hz]	Video	Digital	Analog	Remark
HD1080	1920 x 1080		60		O	O	
WUXGA	1920 x 1200		60		O	O	Only support [RB] timing
HDTV	1920 x 1080	33.8	30	O	-	-	
	1920 x 1080	28.1	25	O	-	-	
	1920 x 1080i		50	-	O	O	
	1920 x 1080i		60	-	O	O	
	1920 x 1080p		24	-	O	O	
	1920 x 1080p		25	-	O	O	
	1920 x 1080p		30	-	O	O	
	1920 x 1080p		50	-	O	O	
	1920 x 1080p		60	-	O	O	
	1280 x 720	45	60	O	-	-	
	1280 x 720p		50	-	O	O	
	1280 x 720p		60	-	O	O	
SDTV	720 x 576	31.3	50	O	-	-	
	720 x 576i		50	-	O	O	
	720 x 576p		50	-	O	O	
	720 x 480	31.5	60	O	-	-	
	720 x 480i		60	-	O	O	
	720 x 480p		60	-	O	O	

Signal	Resolution	Frequency H. [KHz]	RefreshRate [Hz]	Video	Digital	Analog	Remark
SDTV	720 x576	31.3	50	O	-	-	
	720 x576i		50	-	O	O	
	720 x576p		50	-	O	O	
	720 x480	31.5	60	O	-	-	
	720 x480i		60	-	O	O	
	720 x480p		60	-	O	O	
1024x768	70	O	O	O	O	-	O

• **Computer Compatibility for MAC**

Resolution		Mac book compatibility		Mac book Pro (Intel) compatibility		Power Mac G5 compatibility		Power Mac G4 compatibility	
		Digital	Analog	Digital	Analog	Digital	Analog	Digital	Analog
800x600	60	O	O	O	O	-	-	O	-
800x600	72	O	O	O	O	-	O	O	O
800x600	75	O	O	O	O	-	O	O	O
800x600	85	O	O	-	O	-	O	O	O
1024x768	60	O	O	O	O	-	O	O	O
1024x768	70	O	O	O	O	-	O	O	O
1024x768	75	O	O	O	O	-	O	O	O
1024x768	85	O	O	O	O	-	O	O	O
1280x720	60	O	O	O	O	-	O	O	O
1280x768	60	O	O	O	O	-	-	-	O
1280x768	75	-	O	-	O	-	O	O	O
1280x768	85	-	O	-	O	-	-	-	O
1280x800	60	-	O	-	O	-	O	O	O
1280x1024	60	O	-	-	O	-	O	O	O
1280x1024	75	O	-	-	O	-	O	O	-
1920x1080	60	O	-	-	O	-	O	O	O
1920x1200(*1)	60	O	-	-	O	-	O	O	O

Note :1.EK-612X resolution XGA, EK-611W resolution WXGA, EK-610U resolution

WUXGA.

2.“O ” expressed support this type of signal and “-” expressed that does not support this type of signal.

3. If the Computer Compatibility supportive signal is different from User’s Manual, please refer to User’s Manual.

Disassembly Process

2-1 Equipment Needed & Product Overview

1. Screw Bit (+) :105
2. Screw Bit (+) :107
3. Screw Bit (-) :107
4. Hex Sleeves 5 mm
5. Tweezers
6. Knife
7. Projector

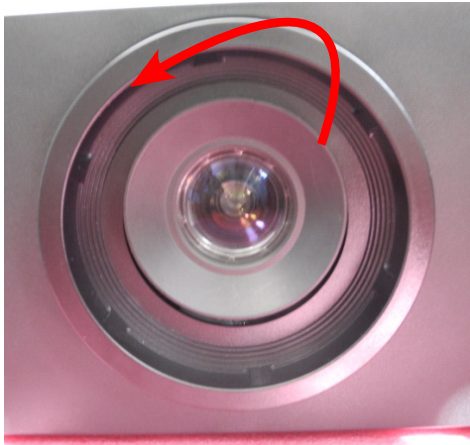
*** Before you start:**

- This process is protective level II. Operators should wear electrostatic chains.
- When disassemble Engine module , please notice that it require specific environmental conditions (clean room).



2-2 Disassemble Projector Lens

1. Rotate the lens ring cover (as red arrow), pull out the lens cover.



Lens ring cover

2. Pull out the lens shift lock (as red circle) and hold projector lens, rotate it carefully (as red arrow), then remove it out carefully.

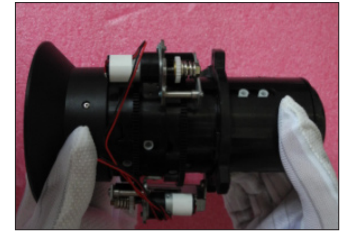


Projector lens

Note: - Please hold lens module in the right way.
- Be careful not to dirty the glass of the lens module.
- Be careful not to touch the motor of the lens module



Wrong



Right

2-3 Disassemble Lamp Module

1. Unscrew 2 screws (as red circle) on the Lamp cover.



2. Unscrew 3 screws (as yellow circle) and take out the lamp.



Lamp Module

2-4 Disassemble Top Cover

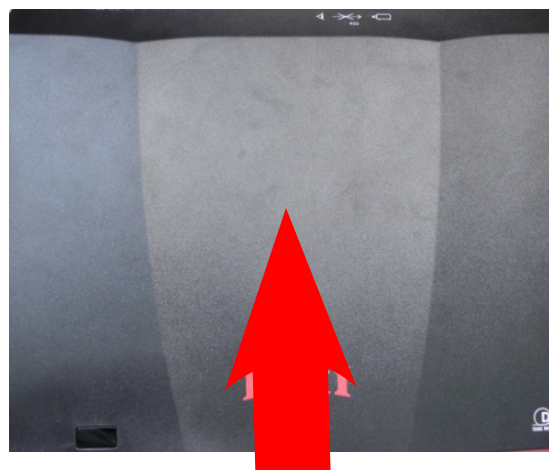
1. Unscrew 1 screw (as red circle).



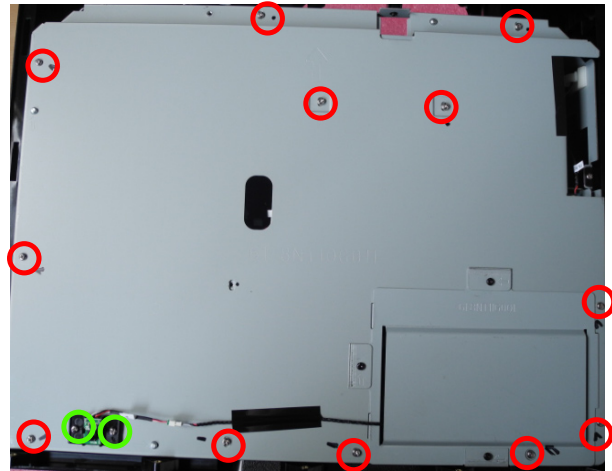
2. Unscrew 5 screws (as red circle) on the top cover.



3. Push the top cover out (as red arrow).



4. Unscrew 2 screws (as green circle) to disassemble IR board and unplug 1 connector, then unscrew 12 screws to disassemble top shielding.



IR board

2-5 Disassemble Rear Cover Module

1. Unscrew 8 screws (as red circle) and 7 hex screws (as yellow circle) to disassemble rear cover module.



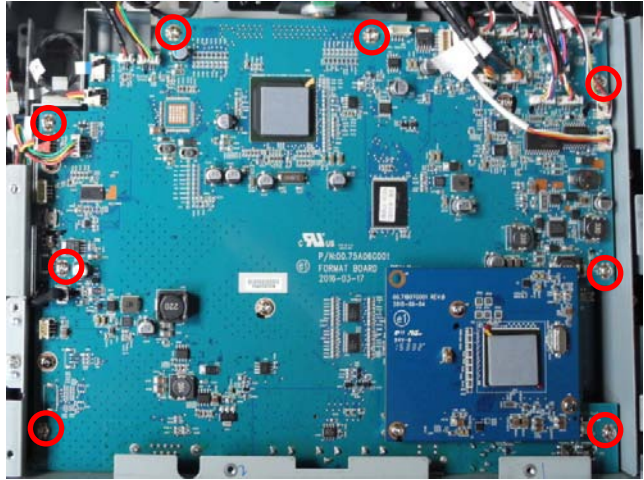
2. Remove the rear cover module.



Rear Cover

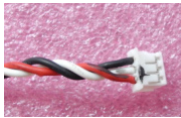


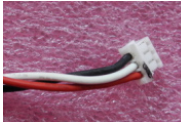
2-6 Disassemble Main Board Module






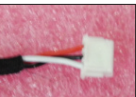


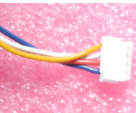
1. Unscrew 8 screws(as red circle) and unplug all connectors to disassemble the main board module.










Note:

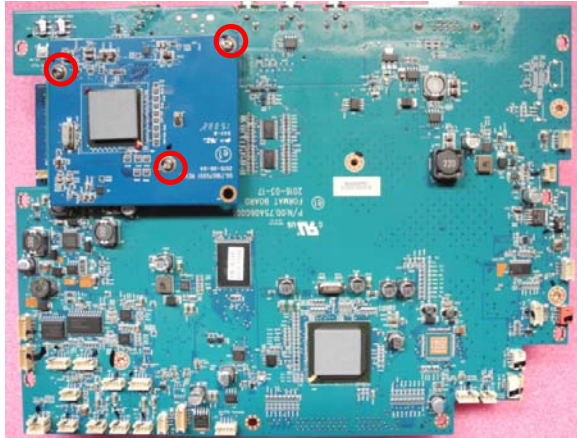
J* please refer to the printed words on the board.

Item	Male Connector on Connector Board	The key feature	Figure
J57	SYSTEM FAN	Composed of Red/White/Black Wire, White Connector (3 pin)	
J27	TOP BLOWER	Composed of Red/White/Black Wire, White Connector (3 pin)	
J26	TC BLOWER	Composed of Red/White/Black Wire, White Connector (3 pin)	
J28	BOTTOM BLOWER	Composed of Red/White/Black Wire, White Connector (3 pin)	

Item	Male Connector on Connector Board	The key feature	Figure
J17	LAMP DRIVER	Composed of White/Yellow/Red/Black /Brown Wire, White Connector (5 pin)	
J37	DA MOTOR	Composed of Green/Yellow/Black/ Orange Wire, White Connector (4 pin)	
J38	DA SENSOR	Composed of Black/Yellow/Red Wire, White Connector (3 pin)	
J54	C/W SENSOR	Composed of Black/Yellow/Red Wire, White Connector (3 pin)	
J55	C/W Motor	FPC	
J59	IR-F	Composed of Red/Black/White Wire, White Connector and Black wire tube (3 pin)	
J33	ZOOM/FOCUS	Composed of Red/Black/Yellow/ White Wire, White Connector (4 pin)	
J34	SHUTTER SENSOR	Composed of Red/Black Wire, White Connector(2 pin)	
J35	SHUTTER MOTOR	Composed of Blue/Red/White/ Yellow Wire, White Connector (4 pin)	

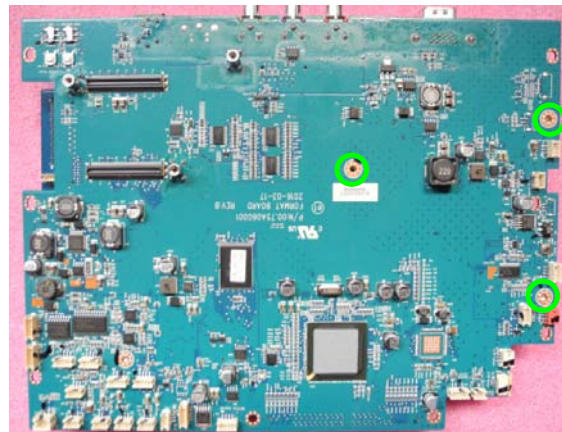
Item	Male Connector on Connector Board	The key feature	Figure
J29	MOTOR-H	Composed of Yellow/Black/Brown/ Orange Wire, White Connector and Black wire tube (4 pin)	
J30	SENSOR-H	Composed of Red/Black/Yellow/ White Wire, White Connector and White wire tube (4 pin)	
J31	MOTOR-V	Composed of Yellow/Black/Brown/ Orange Wire, White Connector and Blue wire tube (4 pin)	
J32	SENSOR-V	Composed of Red/Black/Yellow/ White Wire, White Connector and Red wire tube (4 pin)	
J24	DMD FAN	Composed of Red/Yellow/Black Wire, White Connector and Black wire tube (3 pin)	
J48	THERMAL SENSOR	Composed of Red/Black/White/Blue Wire, White Connector and Black wire tube (4 pin)	
J43	FILTER SENSOR	Composed of Red/Black Wire, White Connector(2 pin)	

2. Unscrew 3 screws (as red circle) to disassemble PW610 board.



PW610 Board

3. Unscrew 3 screws (as green circle) to separate Formatter Board and Scaler Board.



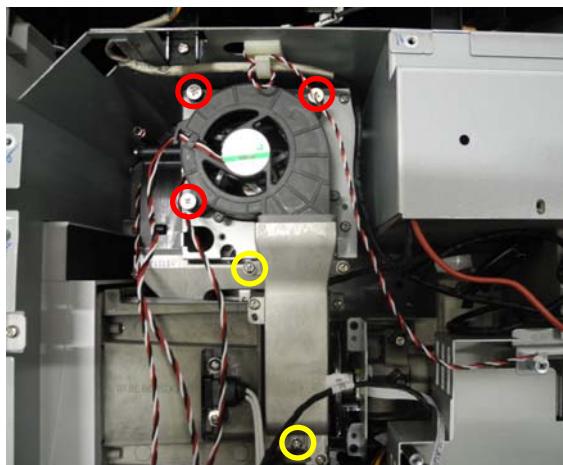
Foratter Board



Scaler Board

2-7 Disassemble Blower Module

1. Unscrew 3 screws (as red circle) to disassemble top blower.
2. Unscrew 2 screws (as yellow circle) to disassemble top blower duct.

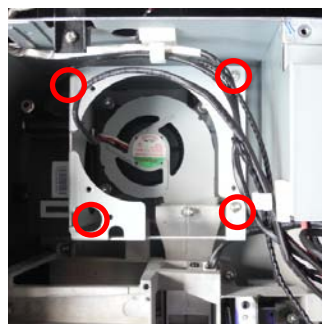


TOP BLOWER



BLOWER DUCT

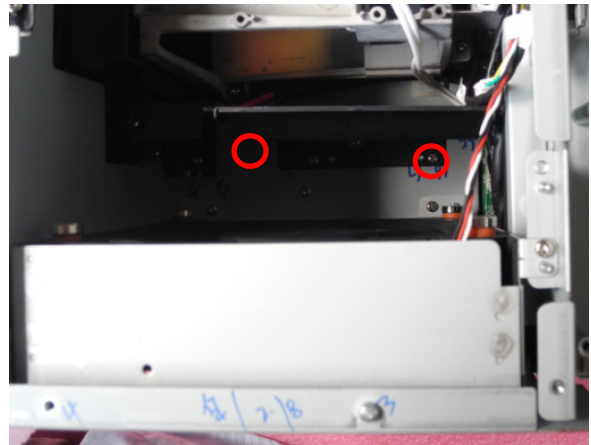
3. Unscrew 4 screws as red circle.
4. Unscrew 3 screws (as green circle) to disassemble TC blower.



TC BLOWER

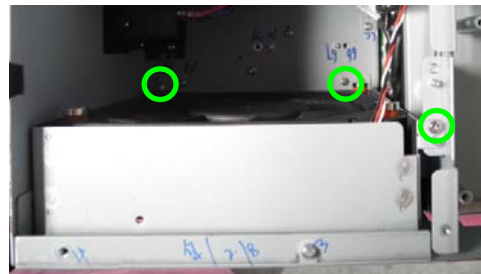
2-8 Disassemble System Fan Module

1. Unscrew 2 screws (as red circle) to disassemble outlet vent.



OUTLET VENT

2. Unscrew 3 screws as green circle.



3. Unscrew 4 screws (as red circle) to disassemble the system fan.



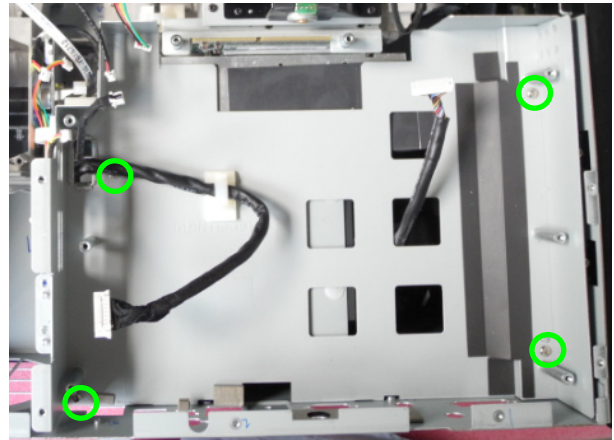
FAN BARCKET



SYSTEM FAN

2-9 Disassemble M/B and Front Shielding

1. Unscrew 4 screws (as green circle) to disassemble main board shielding.



M/B SHIELDING

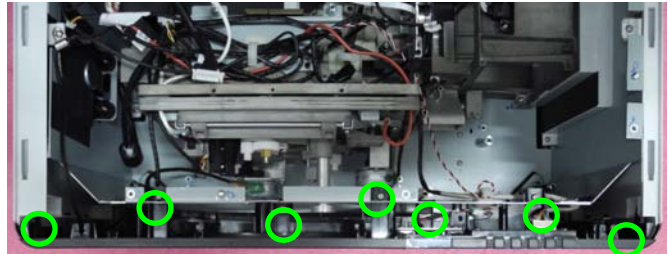
2. Unscrew 2 screws (as red circle) to disassemble front shielding.



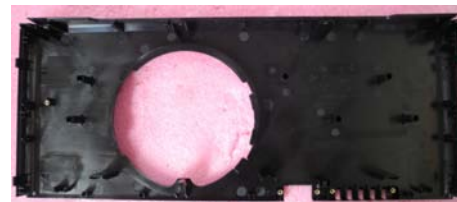
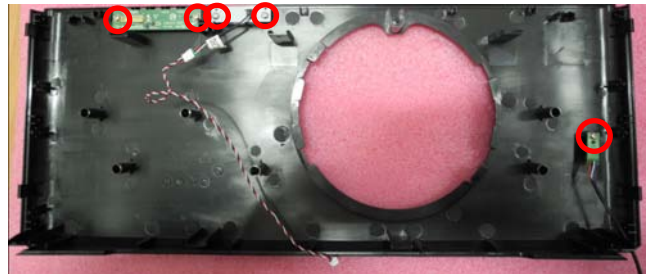
FRONT SHIELDING

2-10 Disassemble Front Cover Module

1. Unscrew 7 screws (as green circle) to disassemble front cover module.



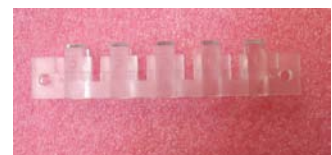
2. Unscrew 5 screws (as red circle) to disassemble front cover, LED board, LED cover, thermal sensor BD and IR Sensor BD.



FRONT COVER



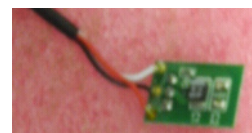
LED BOARD



LED COVER



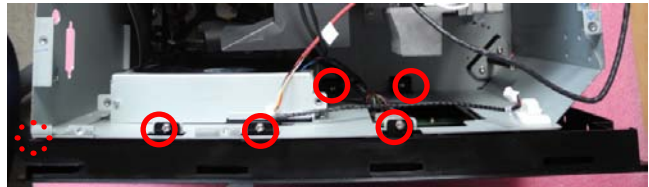
THERMAL SENSOR BD



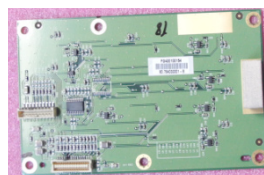
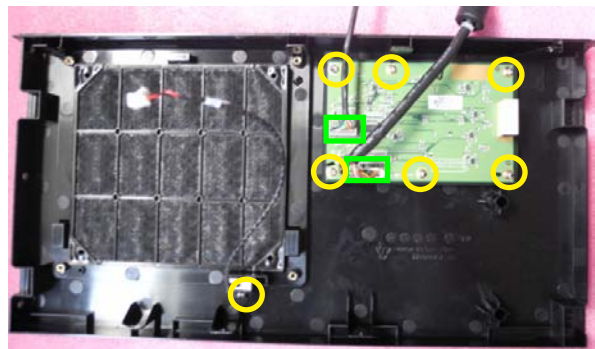
IR SENSOR BD

2-11 Disassemble Right Cover Module

1. Unscrew 6 screws (as red circle) and unplug two connectors (as red square) to disassemble the right cover module.



2. Unscrew 7 screws (as red yellow) to disassemble keypad keypad rubber, keypad board and interrupt switch.



KEYPAD BOARD

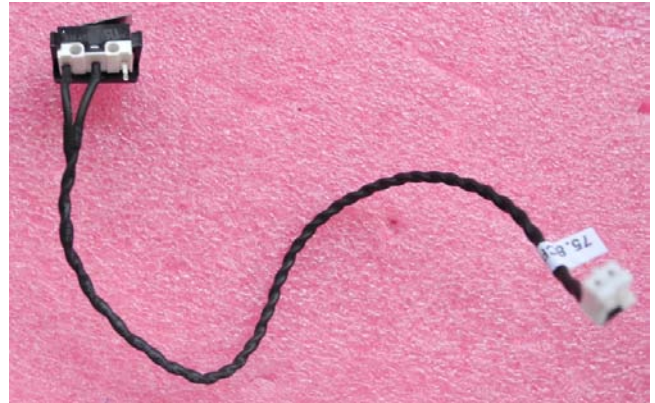


KEYPAD RUBBER

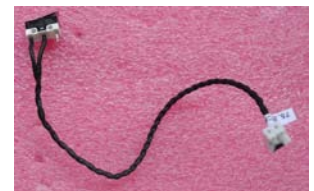


INTERRUPT SWITCH

3. Separate INTERRUPT SWITCH and SWITCH HOLDER.

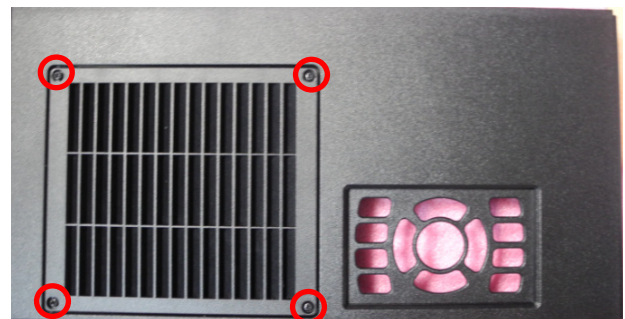


SWITCH HOLDER



INTERRUPT SWITCH

4. Unscrew 4 screws (as red circle) to disassemble right cover ,then seperate filter cover and filter.



RIGHT COVER



FILTER



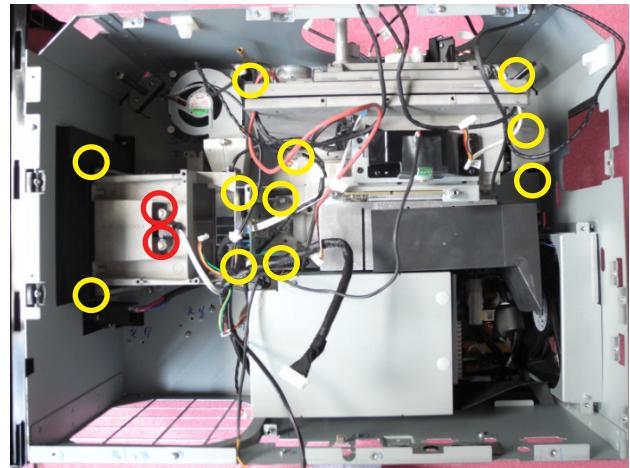
FILTER COVER

2-12 Disassemble Engine Module

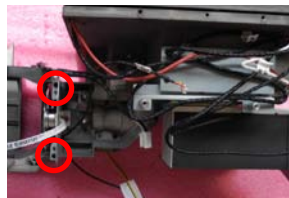
Caution:

- Disassemble Engine module require specific environmental conditions (clean roowm).

1. Unscrew 2 screws (as red circle) to remove lamp connector and 11screws (as yellow circle) to disassemble engine module.



2. Unscrew 2 screws (as red circle) to disassemble the cw module.

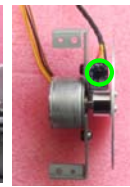
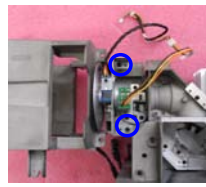


3. Unscrew 1 screw to disassemble the photo sensor board.



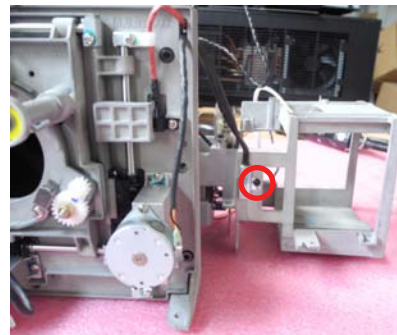
CW MODULE P/S BD

4. Unscrew 2 screws (as blue circle) to disassemble DA module and unscrew 1 screw (as green circle) to remove DA sensor board.



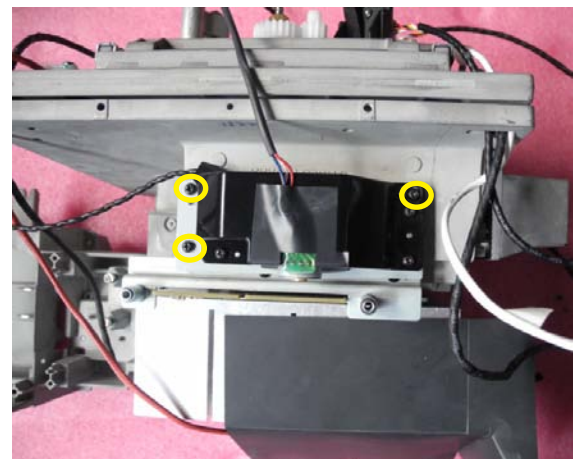
DA SENSOR BOARD and
DA MODULE

5. Unscrew 1 screw (as red circle) to remove thermal switch.



THERMAL SWITCH

6. Unscrew 3 screws (as yellow circle) to separate shutter module and engine module.

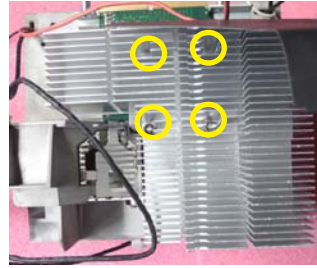


SHUTTER MODULE

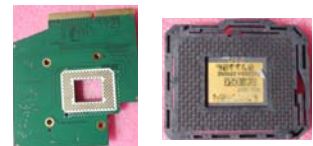
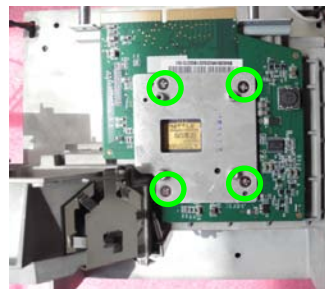


ENGINE MODULE

7. Unscrew 4 screws(as yellow circle) to disassemble the DMD heatsink.



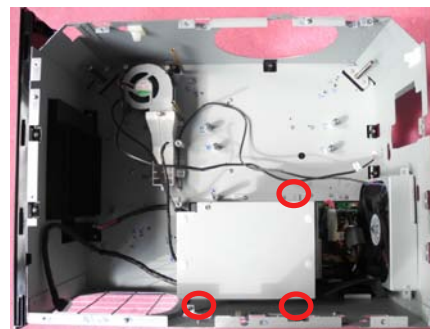
8. Unscrew 4 screws (as green circle) to disassemble the DMD board and DMD chip.



DMD BOARD & DMD

2-13 Disassemble Lamp Driver Module

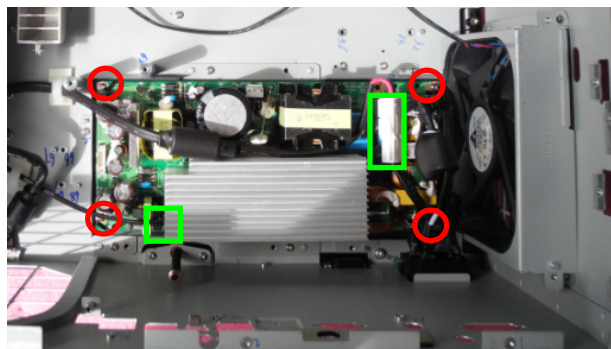
1. Unscrew 3 screws (as red circle) to disassemble lamp driver module.
2. Unplug connectors (as red square), then separate lamp driver from lamp driver shielding.



LAMP DRIVER

2-14 Disassemble LVPS Module

1. Unscrew 4 screws (as red circle) and unplug connectors (as green square) to disassemble the LVPS module.



LVPS Module

2-15 Disassemble FAN Module

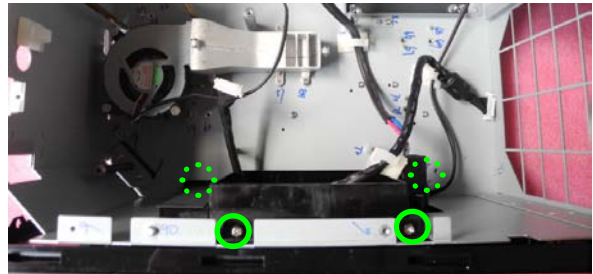
1. Unscrew 4 screws (as red circle) to disassemble the fan module.
2. Separate DMD fan and DMD fan rubber.



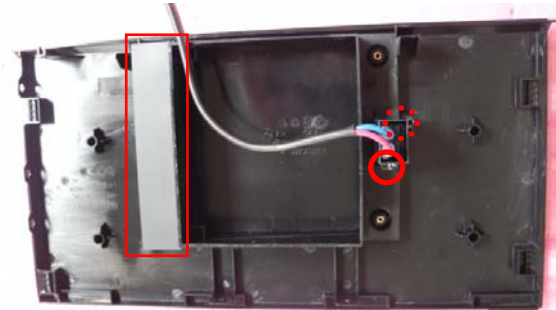
DMD FAN

2-16 Disassemble Left Cover Module

1. Unscrew 4 screws (as green circle) to disassemble the left cover module.



2. Unscrew 2 screws (as red circle) and tear off Mylar(as red square) to disassemble the left cover module.



3. Separate left cover and lamp cover.



INTERLOCK SWITCH



LEFT COVER MODULE



LAMP COVER

2-17 Disassemble Bottom Cover Module

1. Unscrew 7 screws (as yellow circle) to disassemble bootome blower,blower duct and AC inlet .



BOOTOM BLOWER



AC INLET

2. Unscrew 18 screws (as red circle) to disassemble Bottom Cover module.



BOTTOM COVER MODULE

2-18 Repair Action

Repair action	Change parts				Software
	Main Board	Engine Module	DA	Fan	Firmware
Firmware Update	V				V
OSD Reset	V				V
DA calibration			V		V
Lens calibration	V	V			V
Fan calibration	V			V	
G Sensor calibration	V				
Focus Adjustment		V			

Note: Main Board contains formatter board, scaler board, PW610 board.

Troubleshooting

3-1 LED Lighting Message

• Power LED

LED STATUS			PROJECTOR STATE
RED	PURPLE	BLUE	
Steady Light	Off	Off	Standby state (LAN connection is inactive).
Flashing (0.5 sec on/0.5 sec off)	Off	Off	Standby state (LAN connection is active).
Off	Off	Steady Light	Power is on and lamp is lighting.
Off	Flashing (0.5 sec on/0.5 sec off)	Off	Cooling for an abnormal shutdown.

Note:
During firmware upgrade, the Power LED lights purple, and Lamp LED, Temp LED, and Filter LED light red.

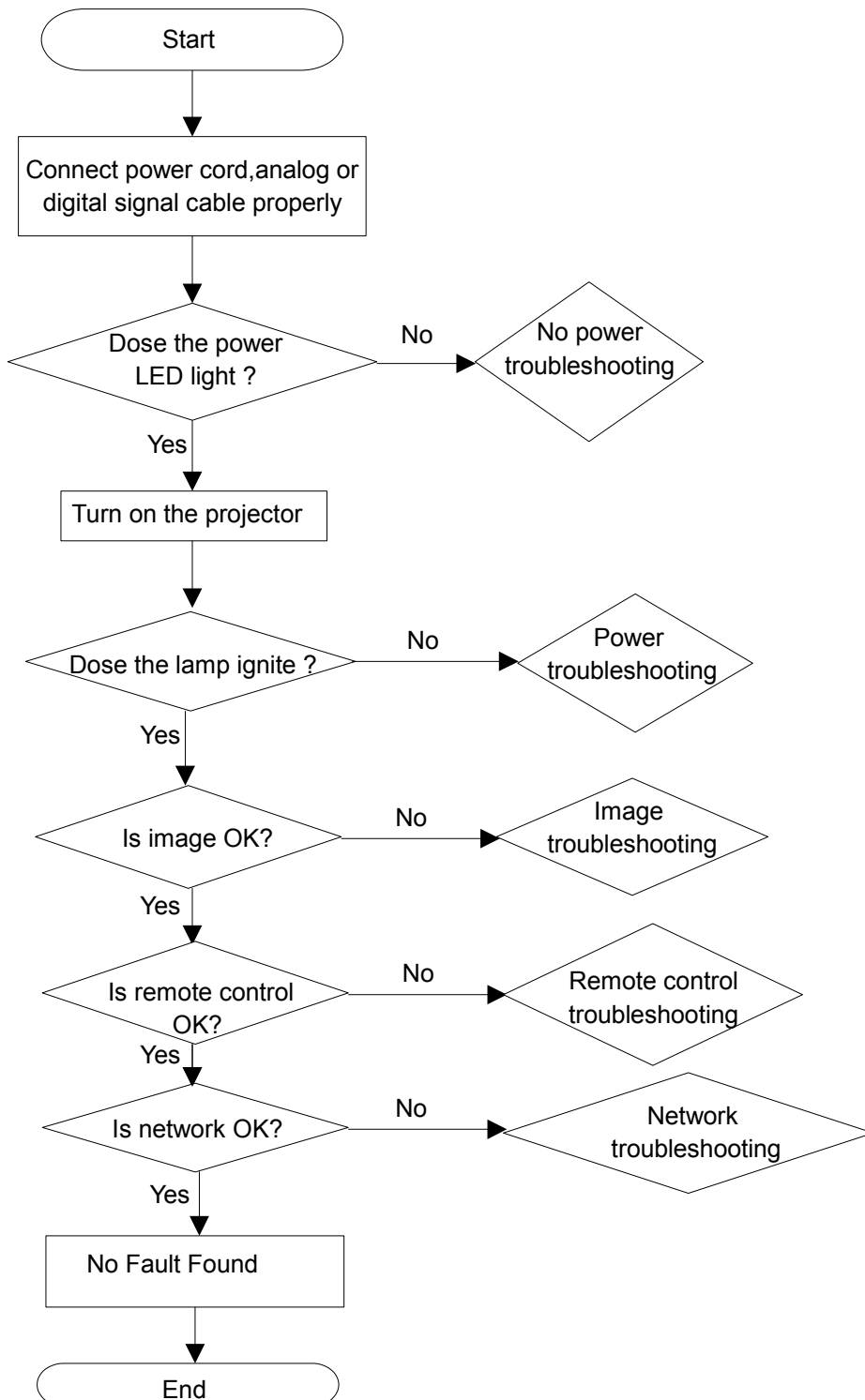
• Lamp LED

LED STATUS	PROJECTOR STATE
RED	
Steady Light	Lamp has failed and is in error state.
Flashing (3 sec on/1 sec off)	Lamp driver has failed and lamp is in error state.
Flashing (1 sec on/1 sec off)	Color wheel has failed.

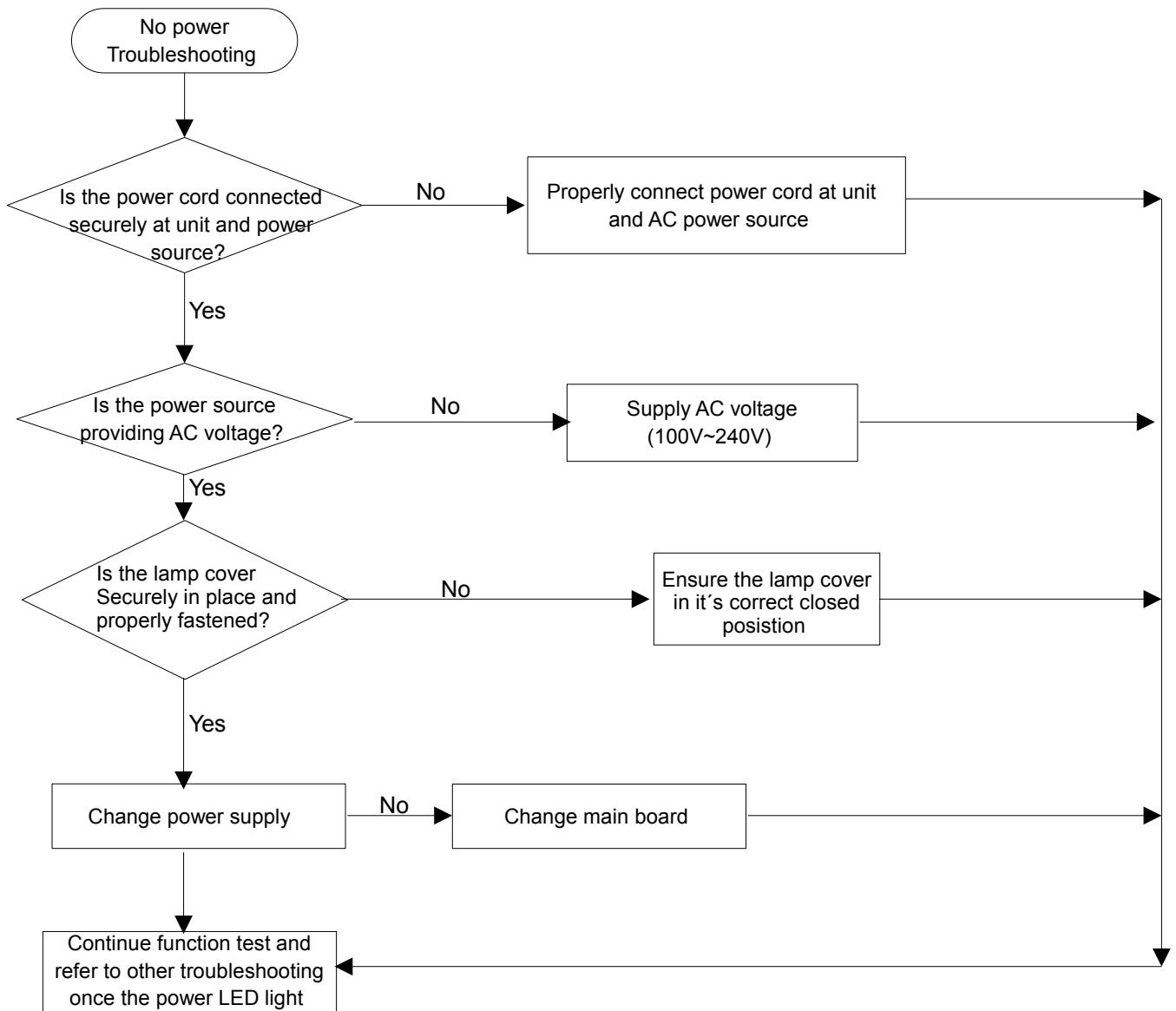
• Temp LED/Filter LED

LED STATUS		PROJECTOR STATE
TEMP (RED)	FILTER (RED)	
Steady Light	Off	Over temperature. The projector will shut down.
Flashing (0.5 sec on/0.5 sec off)	Off	Fan has failed and is in error state.
Flashing (3 sec on/1 sec off)	Flashing (1 sec on/1 sec off)	Filter has overheated and is in error state.
Off	Steady Light	Filter switch has failed and is in error state.

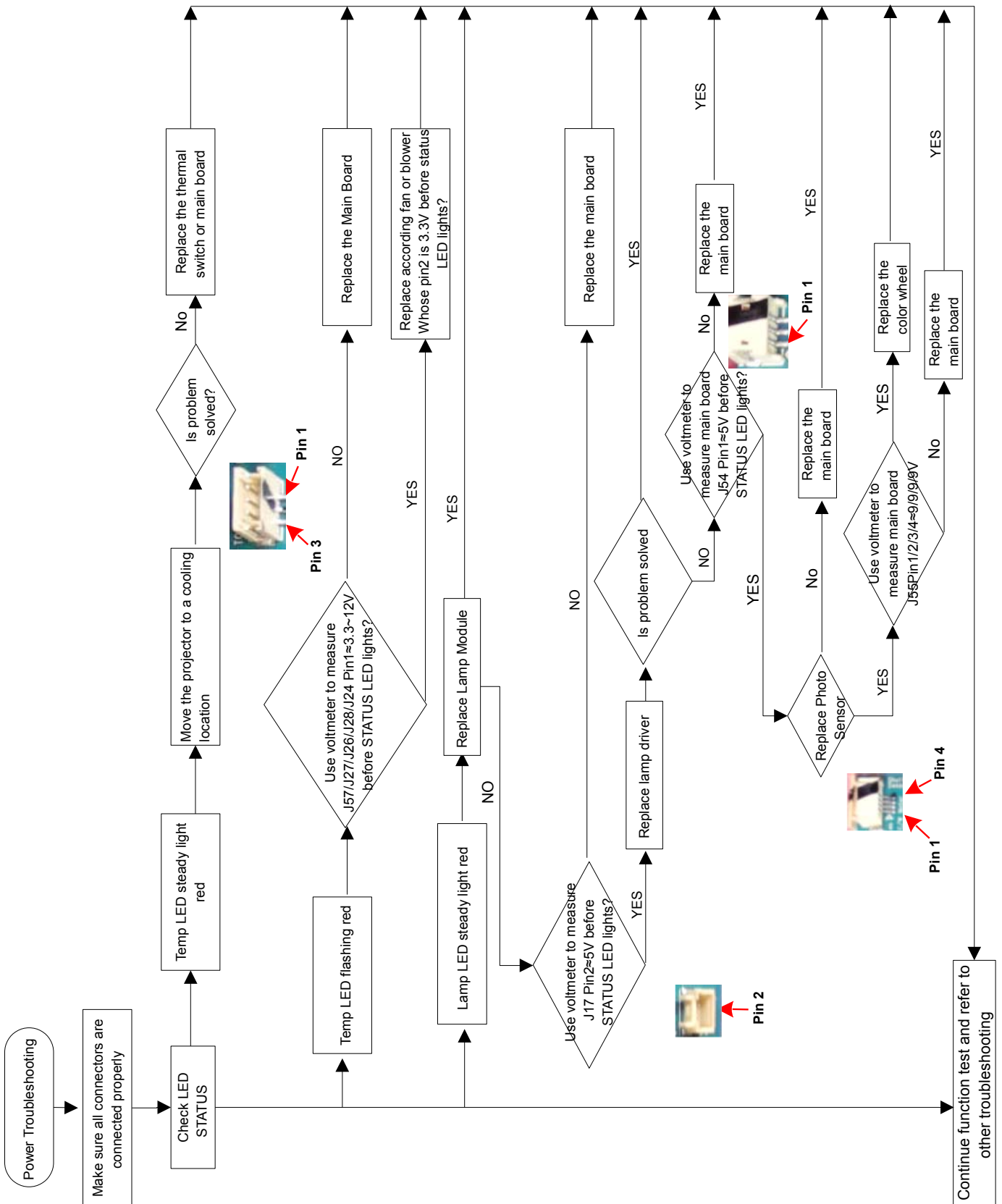
3-2 Main Procedure



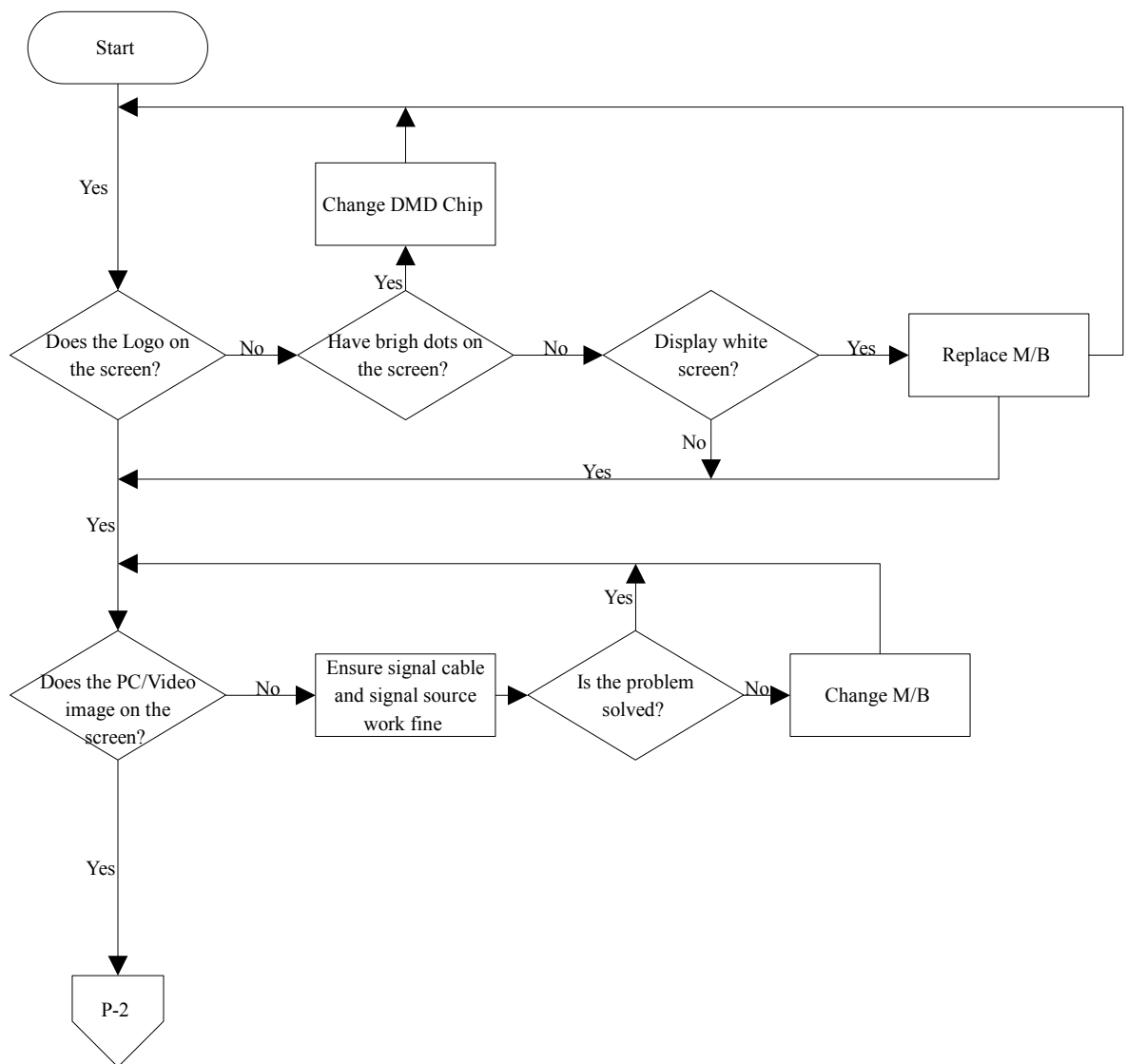
3-3 No Power Troubleshooting



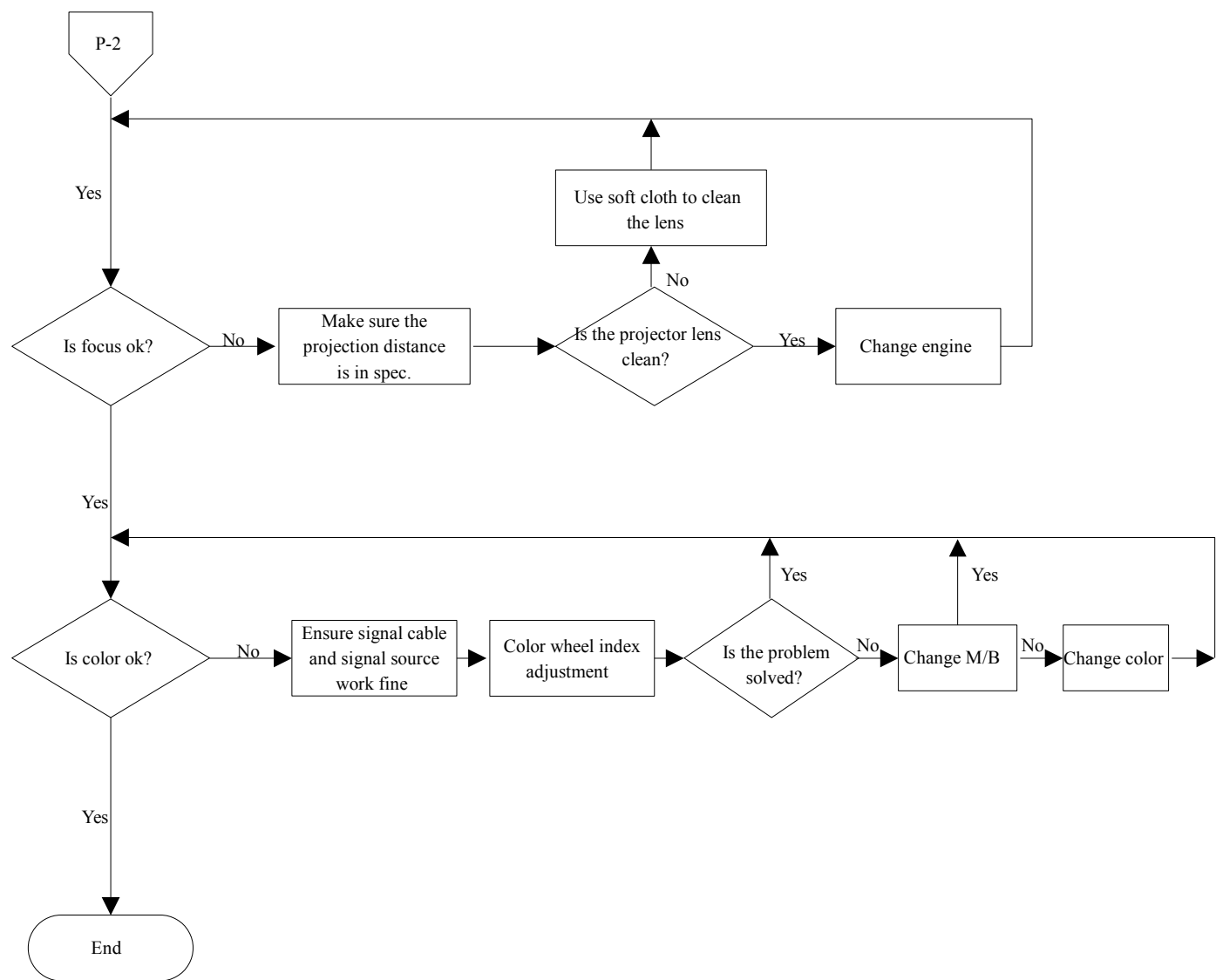
3-4 Power Troubleshooting



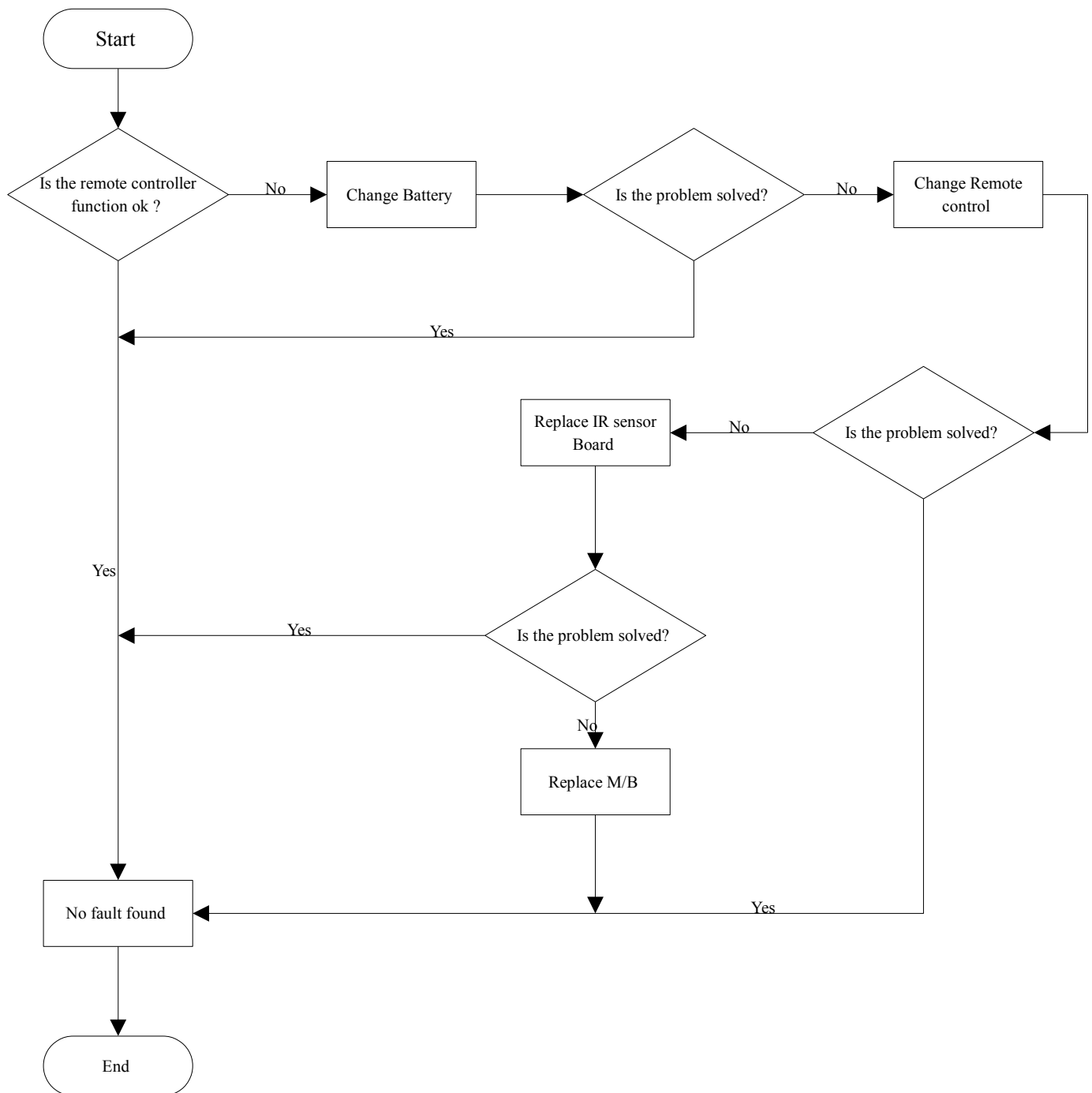
3-5 Image Performance Troubleshooting (1/2)



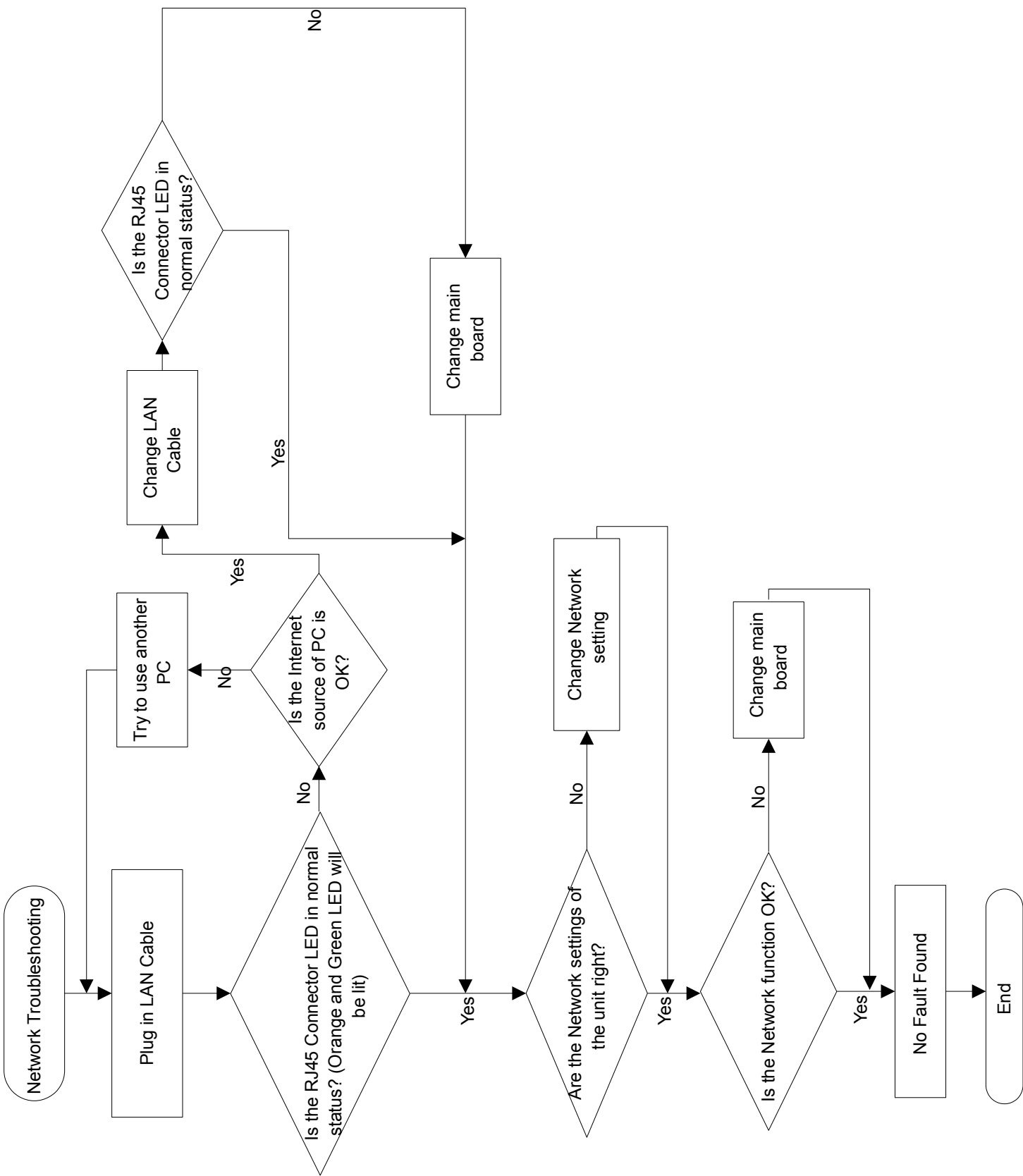
3-5 Image Performance Troubleshooting (2/2)



3-6 Remote Control Troubleshooting



3-7 Network Troubleshooting



Test&Inspection

4-1 Test Equipment Needed

- PC with HDTV resolution
- DVD player with Multi-system, equipped “Component”, “S-Video”, “Composite” and “HDMI”.
- HDTV Source (480P, 720P, 1080P)
- CL-200
- Quantum Data 802B or CHROMA 2327 (Color Video Signal & Pattern Generator)

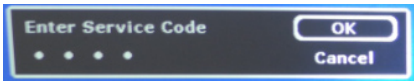
4-2 Service Mode and Factory Mode

1. Service Mode

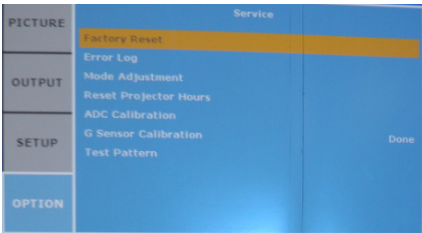
- Turn on the projector
- Press “Menu” button on Remote Controller or Keypad,
choose “OPTION”
- Choose “SERVICE”

PICTURE	OPTION	
OUTPUT	Auto Source	On
	High Altitude	Off
	Test Pattern	Off
	Background Color	Logo
SETUP	Hot-Key Settings	Blank Screen
	Power Settings	
	Light Source Settings	
	Information	
OPTION	Factory Reset	
	Service	

- Enter the code “1,5,9,0” by remote controller or Press the button “LEFT +DOWN+RIGHT+UP” by keypad to access service mode.

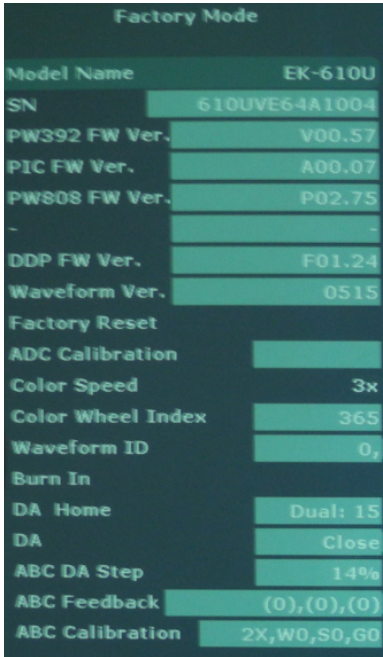


- Enter “OK” to get into service mode.



2. Factory Mode

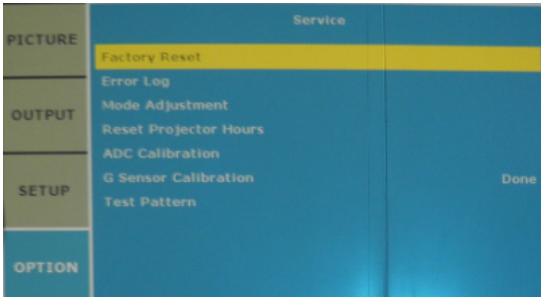
- Turn on the projector
- Press “Exit->Right->Right->Right” buttons sequentially on remote control or keypad to get into factory mode.



4-3 Factory Reset

After final QC step, we have to erase all saved change again and restore the OSD default setting.
The following actions will allow you to erase all end-users' settings and restore the default setting:

- Please press "Menu" button.
- Get into service mode (refer to 4-2)
- To execute "Factory Reset" function.



4-4 Calibration

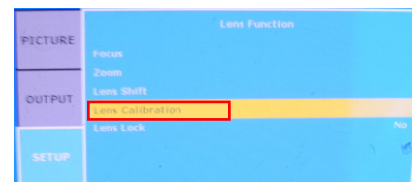
1. Lens Calibration

Note: Always perform a Lens Calibration after repairing the projector or replacing the light engine.

Inspection Item - Check if the Lens Shift Module is moving smoothly.

Criteria - If the Lens Shift Module is not moving smoothly or sound noising, please replace the light engine module.

Procedure - Place the projector on a clean horizontal surface.
- On the Remote, press Menu > Lens Function.
- Select Lens Calibration.
- Press Enter.

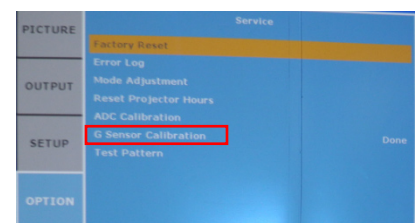


2. G Sensor Calibration

Note: Always perform a G Sensor Calibration after repairing the projector or replacing the main board.

Procedure - Place the projector on a clean horizontal surface.

- Get into service mode select "G sensor calibration".
- Press "Enter" to execute G sensor calibration.



3. ADC calibration

Note: After replacing main board, please execute ADC calibration.

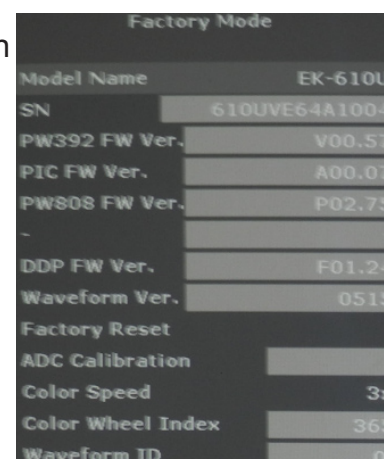
(1) PC Calibration (For BNC port)

- Procedure
- Test equipment: QD802BT.
 - Test signal: 1920x1200@60Hz
 - Test pattern: SMPTE Bar
 - Input the signal from BNC port.
 - Get into factory mode.
 - Select "ADC Calibration".
 - Press "Auto" key to execute the Video calibration

- Criteria
- If there is noise on the screen, the product is considered as failure product.
 - The screen appears normal, it shouldn't appear any abnormal condition, such as lines and so on.



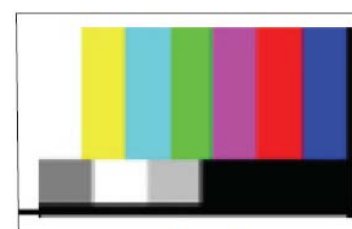
Grays 16



(2) Video Calibration (For VGA port)

- Procedure
- Test equipment: video generator.
 - Test signal: 1920x1200@60Hz
 - Test pattern: SMPTE BAR.
 - Input the signal from BNC port.
 - Get into factory mode.
 - Select "ADC Calibration".
 - Press "Auto" key to execute the video calibration.

- Criteria
- There should not have any lack of SMPTE BAR. Color levels should be sufficient and normal.
 - There is not any abnormal lines on the image.



SMPTE BAR

(3) PC Calibration (For VGA port)

Procedure	<ul style="list-style-type: none">- Test equipment: video generator.- Test signal:1920x1200@60Hz- Test pattern: Grays 16.- Input the signal from VGA port.- Get into factory mode.- Select “ADC Calibration”.- Press “Auto” key to execute the PC calibration.
Criteria	<ul style="list-style-type: none">- If there is noise on the screen, the product is considered as failure product.-The screen appears normal, it shouldn't appear any abnormal condition, such as lines and so on.

4. Fan Calibration

Note: Always perform an F-type Fan Calibration after replacing an F-type fan

- | | |
|-----------|---|
| Criteria | - If the Fan calibration failure please change the corresponding fan. |
| Procedure | <ul style="list-style-type: none">- Plug in power cord and AC on.- Hold "Left" button then press "Power" button.- Release "Left" button when the lamp lights- After several minutes, the projector will auto- power on |

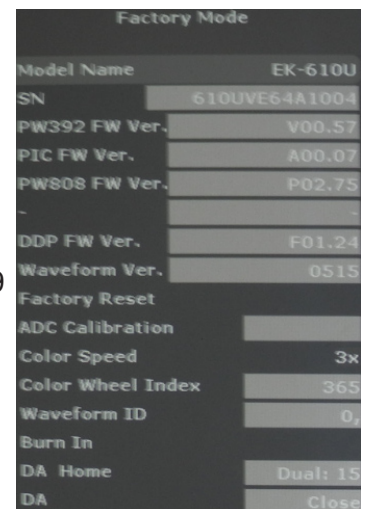


Note: If the Fan RPM is 9999, please do calibration again.

5. DA Calibration

Note: Always perform a DA Calibration after replacing the DA module or the Main board

- | | |
|-----------------|---|
| Inspection Item | - Check if the brightness of the screen is variations when execute the DA calibration |
| Criteria | - If the DA Module is not operating properly, change the DA module. |
| Procedure | <ul style="list-style-type: none">- Place the projector on a clean horizontal surface.- Enter Factory Mode- Set DA to Open.- Select DA Home > Dual: 16.- Press right and left key following 16 > 17 > 18 > 19 (Right) > 18 > 17 > 16 (Left) to check whether DA is operating correctly.- Set DA Home position to position of maximum brightness. Default value is Dual: 16. |



Note: If the brightness value is very far from 16, it may indicate that DA is not operating smoothly and needs to be replaced.

- Select DA.
- Press Select, following Open > Close > Open to check whether DA is operating correctly.

4-5 Adjustment

1. Focus Adjustment

Note: This step must be done only when the optical engine module is changed.

Inspection item - Check the focus under the pattern of full screen by the distance of 2.5m.

Criteria - Unbalance $\leq 30\text{cm}$

Procedure - If the unbalance is over 50cm, pls do the focus adjustment as below procedure.

1) Back focus ensure

- Change to "Full Screen" pattern, adjust the lens room widest, adjust the focus fuzzy, then measure the minimum imaging distance, confirm whether the distance value in the lens specifications of $\pm 3\text{cm}$.

- If not, adjust the three setscrew to the specification.

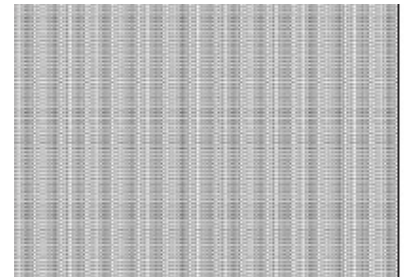
- If yes, go to next step to do bore sight adjustment.

2) Bore sight adjustment.

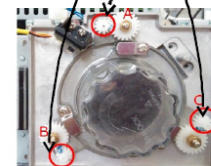
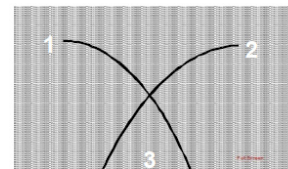
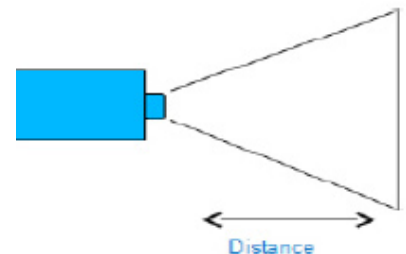
- Use focus button to adjust focus to make position 3 in focus.

- Once position 3 is in focus, check position 1
If position 1 is not in focus, use focus up or down key to adjust focus till it is in focus.

- If pressing focus up key can focus position 1,



Full screen



adjust setscrew C clockwise. If pressing down key can focus position 1, adjust set screw C counterclockwise.

- Refocus position 3 and see if position 1 is also in focus. If not, repeat step 1 to 3.
- Adjust position 2 is the same method as position 1.
- Repeat step till positions 1, 2 and 3 are in focus at the same time.

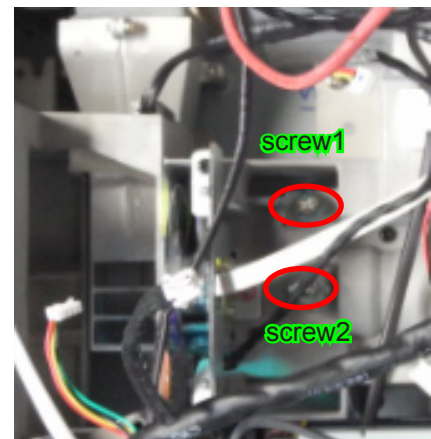
2. ROD Adjustment

- Environment Adjustment

- The distance between the engine and the screen is 2.00 M.
- This process should be done in the dark environment (under 2 Lux).

- Procedure Adjustment

- Change the screen to "white screen."
- Adjust the rod by using the screws on the engine module to re-adjust the image. ("screw 1" should be adjusted first, and then "screw 2". Adjust until the yellowish or bluish parts disappear.)



4-6 Check points for exterior and print pattern

Check item	Check point
Text & Pattern	Missing letters & pattern or blurry prints are unacceptable.
Exterior	Dirt, scrape, water ripples and uneven color are unacceptable.
Focus and Zoom	Focus and Zoom function is well.
Logo	Missing logo, missing prints and blurry prints are unacceptable
Screw	All screws should be fixed and in right type.
Pedestal	Well-functioned
Lamp Cover	It should be locked in the correct place.
Plastic Parts	All plastic parts can not be broken and damaged.
Safety or warning label	All safety and warning labels should be visible, including all contents.
Connector	All interface connectors should be complete and workable.

Firmware Upgrade

Section 1 : DDP/Scalar/LAN FW upgrade

5-1-1 Equipment Needed

Software :

- EIKI B25H plus DLP Upgrade Firmware Wizard .zip

Hardware :

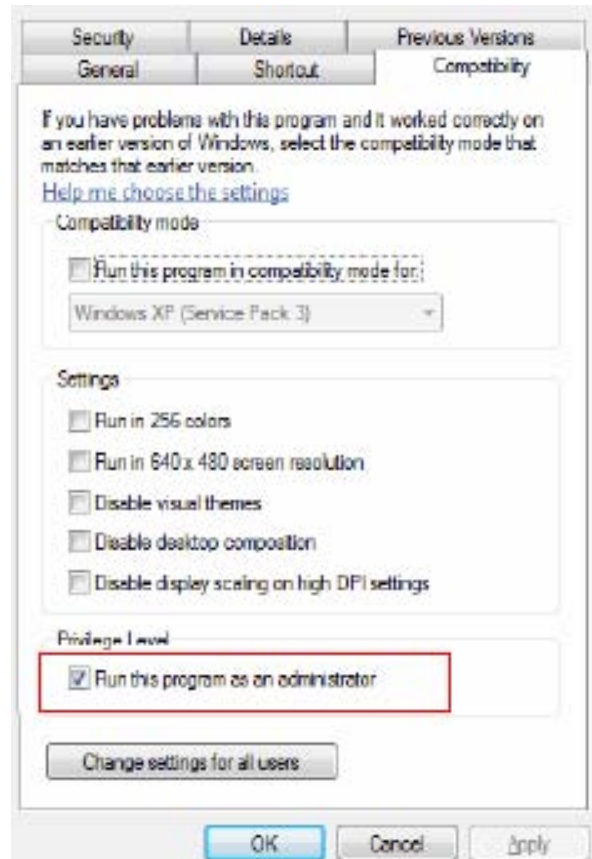
- Projector
- Power Cord
- RJ45 cable(CAT-5e)
- PC or Laptop with Windows XP/7



5-1-2 Firmware Upgrade Procedure

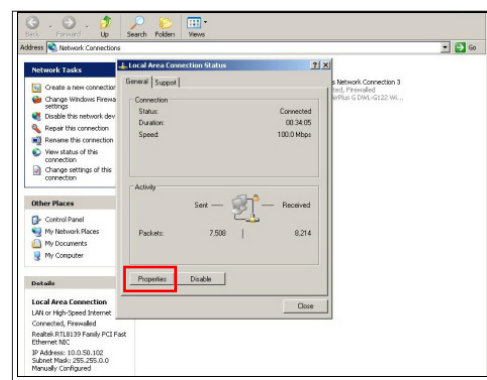
1.Windows Setting

- Close Windows firewall.
- Set HDD sleep timer larger than two hours.
- Run as administrator in case of Windows 7 system.

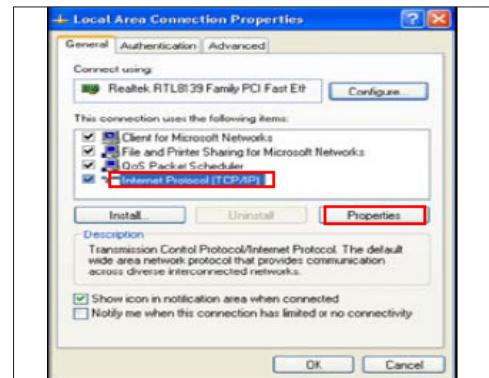


2.Network Setting

- Double click the "Local area connection", choose "Properties".

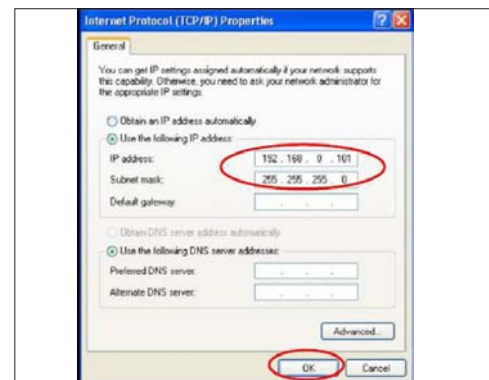


- Select "Internet protocol (TCP/IP)", then click "Properties".



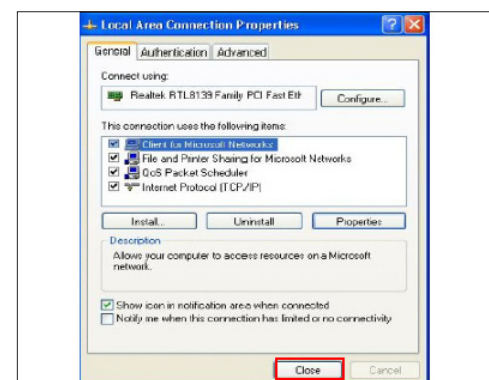
- Modify the IP address to 192.168.0.101, and modify Subnet mask to 255.255.255.0.

Note: The HOST ID (192.168.0.XXX) of PC IP address must be different from the projector IP address written down.

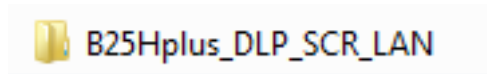


- Click "OK".

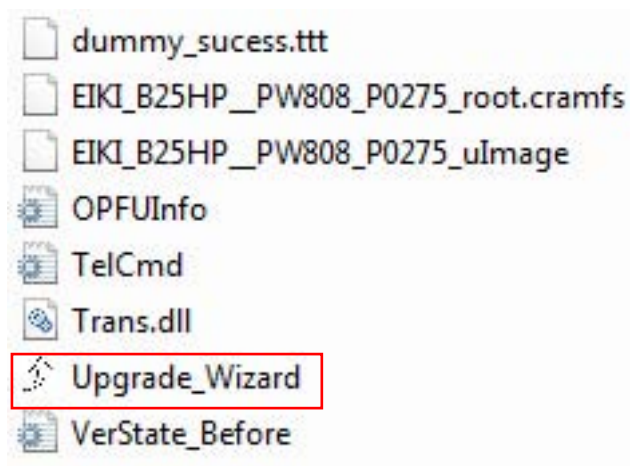
- Click "Close" to quit the setting screen.



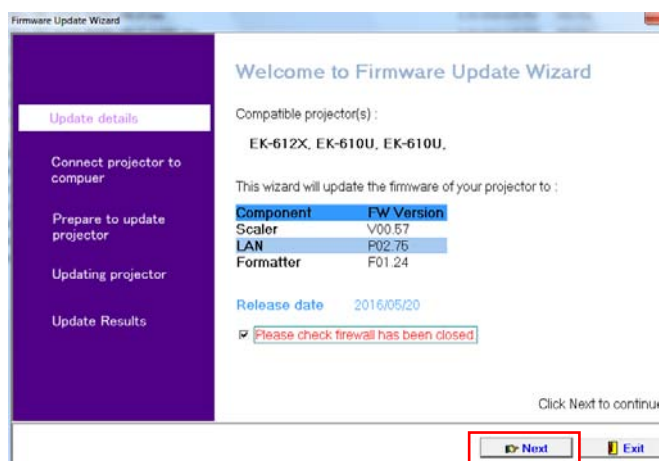
3. Download the latest firmware program file from the website, Unzip the file to the desktop and open the folder created.



4. Execute the Upgrade_Wizard.exe.

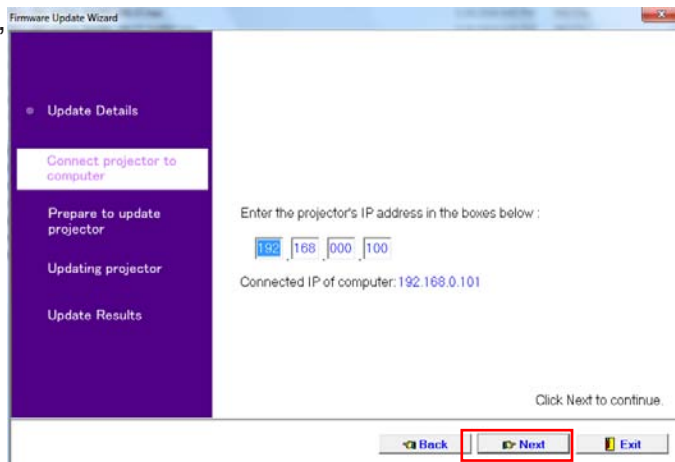


5. Select "please check firewall has been cloesd".
- Click "next".



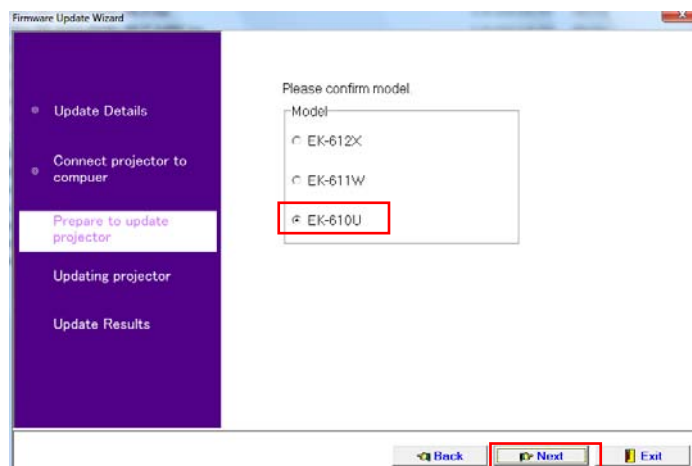
6. Connect projector to computer by RJ-45,
turn on projector.

- Click "next".

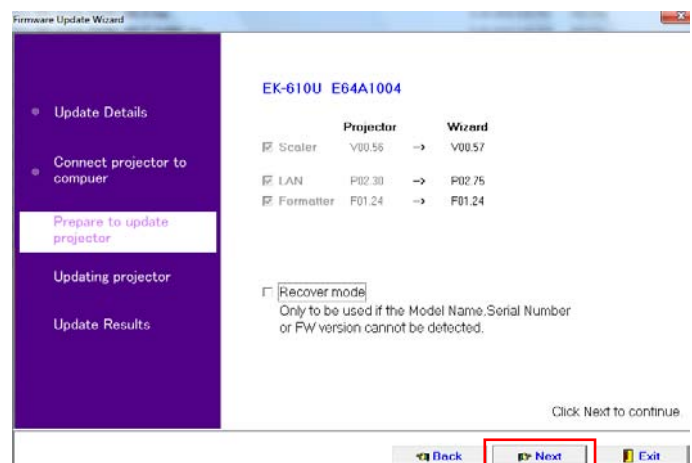


7. Prepare to update projector.

- Click "next".



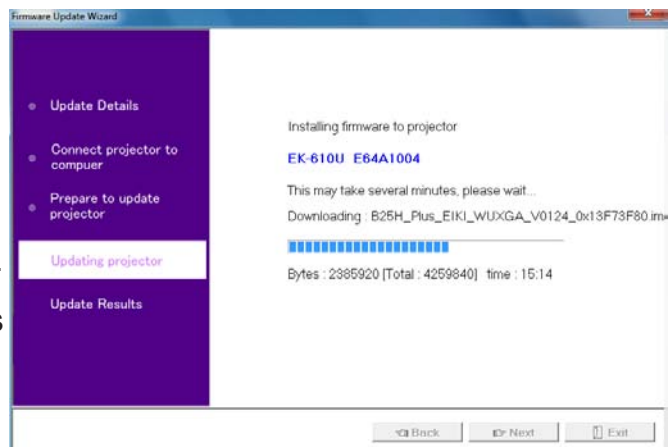
- Click "next".



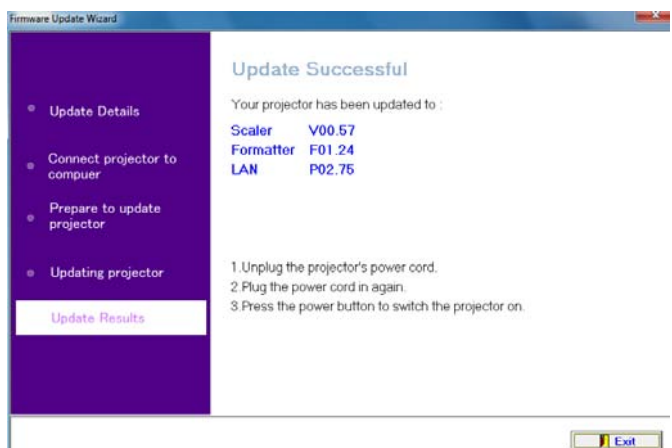
8. Update projector.

During the update:

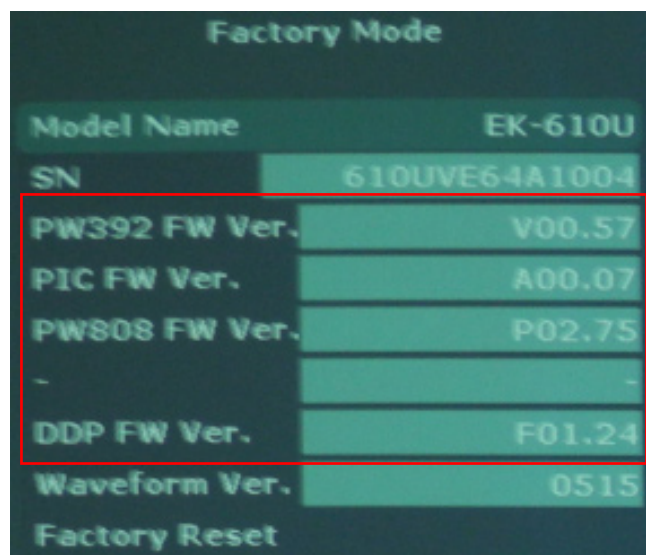
- Do not start or exit any programs on the computer.
- Do not turn off the projector or computer.
- Do not connect or disconnect any cables or power cords.
- It takes about 1 hour.



9. At last "Update successful" shows on the screen.



10. Re-plug the cord then turn on the projector get into factory mode to check the FW Version.



Section 2 : PIC FW upgrade

5-2-1 Equipment Needed

Software :

- EIKI B25H plus PIC Upgrade Firmware Wizard .zip

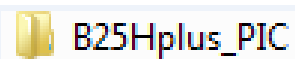
Hardware :

- Projector
- Power Cord
- RJ45 cable(CAT-5e)
- PC or Laptop with Windows XP/7

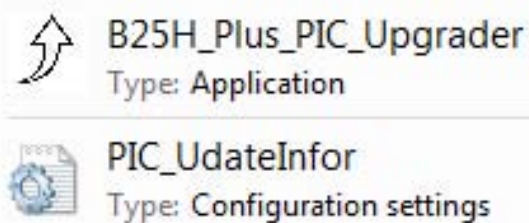


1. Network Setting refer to 5-1-2

2. Download the latest firmware program file from the website, Unzip the file to the desktop and open the folder created.

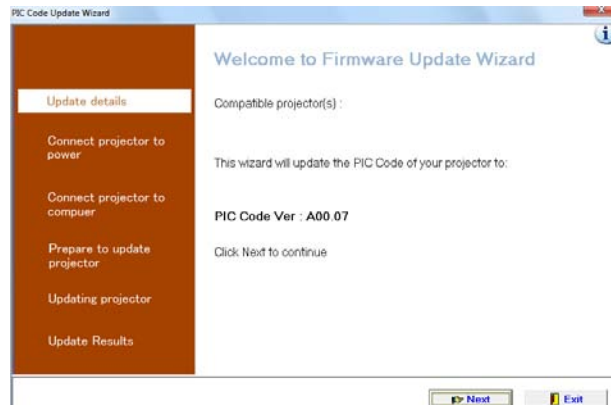


3. Execute the Upgrade_Wizard.exe.



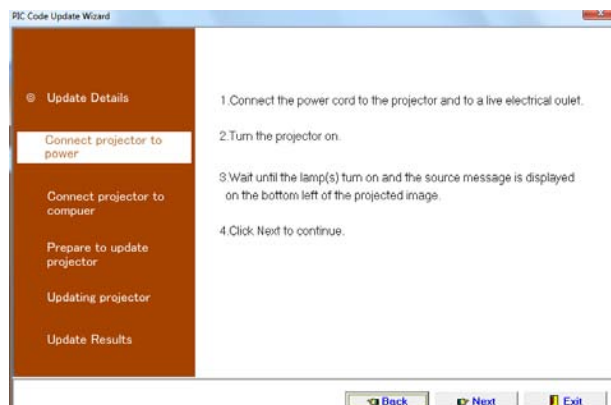
4. Update details

- Click "next".



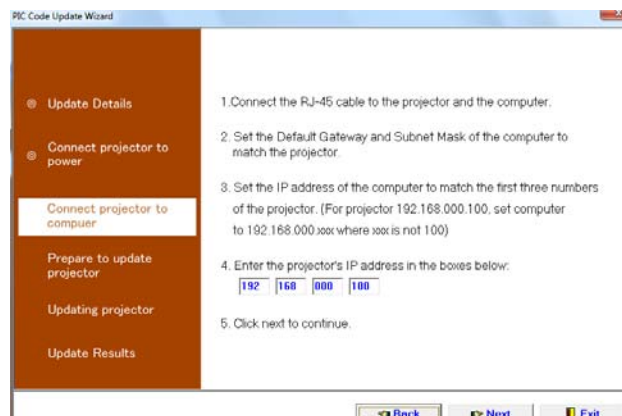
5. Connect projector to power.

- turn on the projector.
- wait until the lamp turn on normal.
- Click "next".



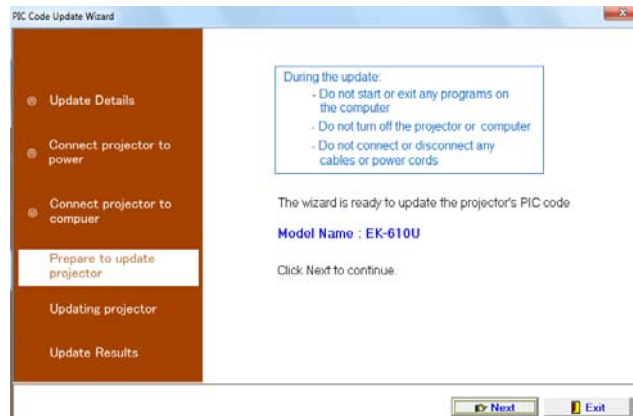
6. Connect projector to computer by RJ-45.

- Click "next".



7. Prepare to update projector.

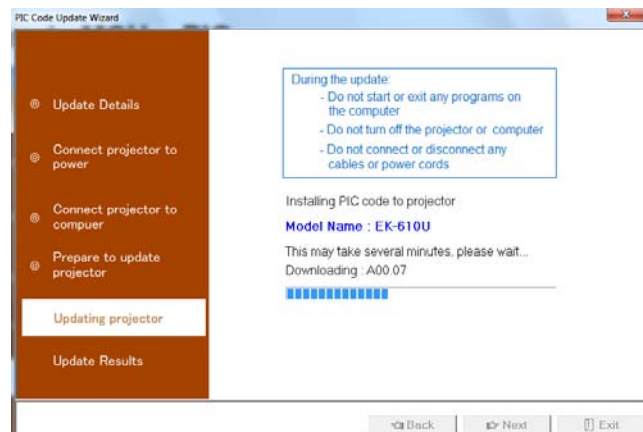
-Click "next".



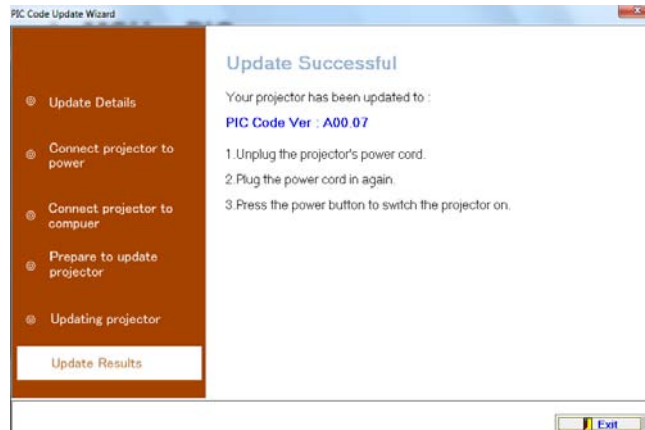
8. Updating projector.

During the update:

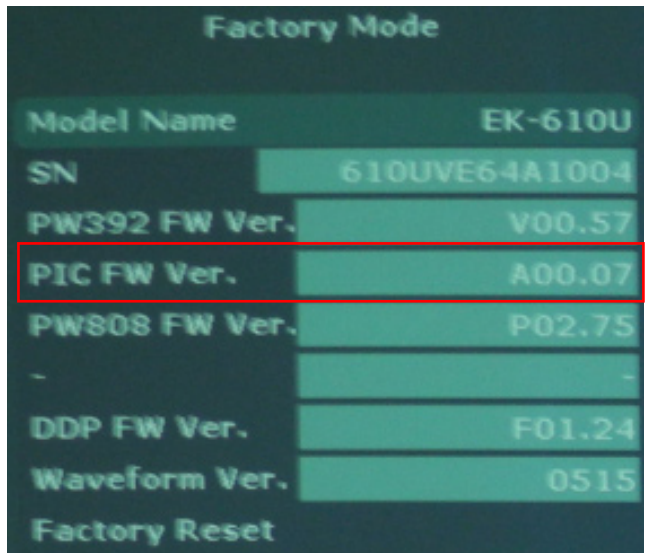
- Do not start or exit any programs on the computer.
- Do not turn off the projector or computer.
- Do not connect or disconnect any cables or power cords.



9. At last "Update Successful" shows on the screen.



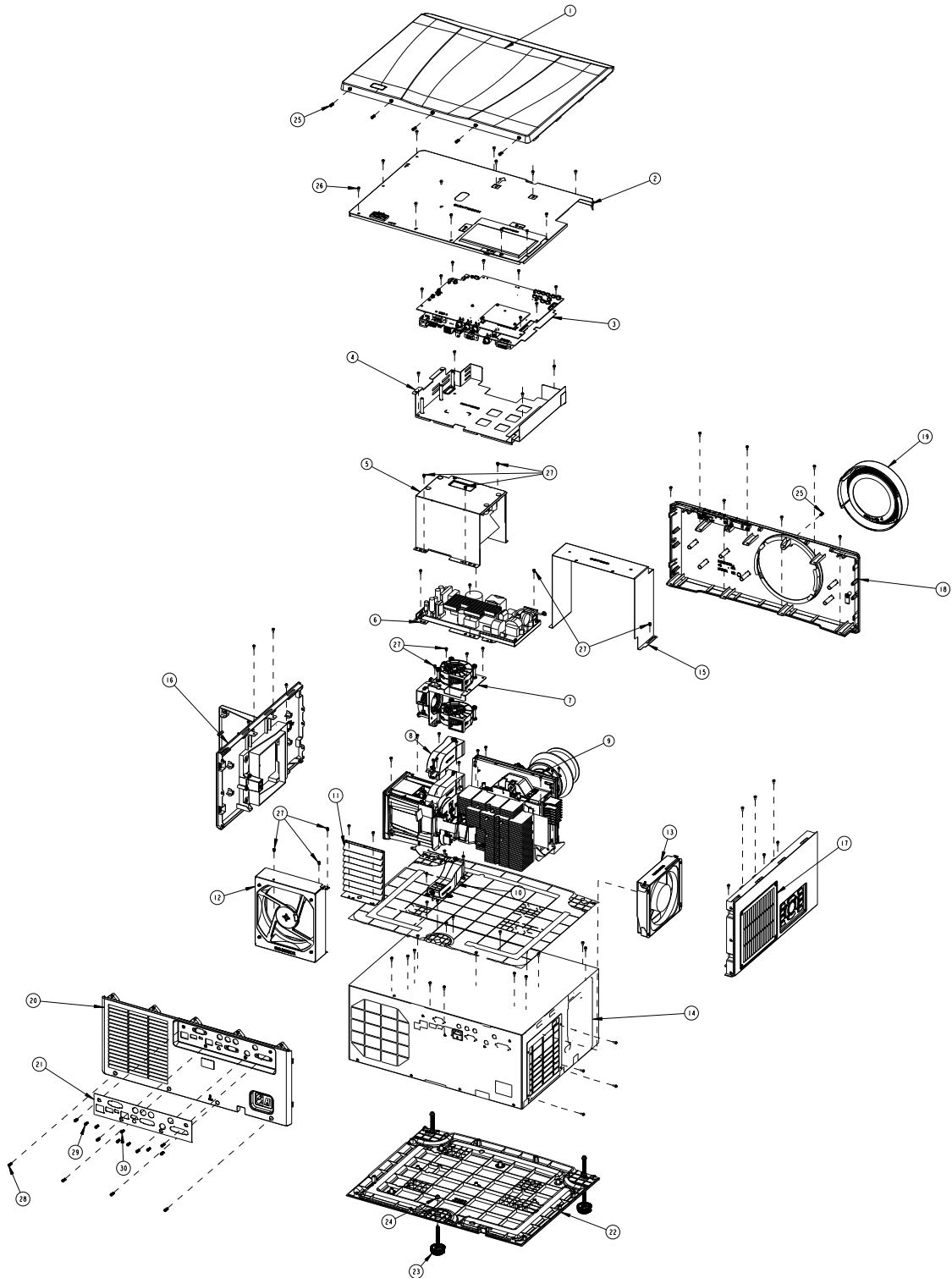
10. Re-plug power cord ,power on projector and get into factory mode to check FW.



Appendix (Exploded Image)

Note: This chapter is only designed to show the exploded image of the projector. For updated part numbers, please refer to RSPL report. Here we take EK-610U for example.

D.C.



Item	P/N	Description	Parts Supply
1	70.75A15GR01	ASSY TOP COVER MODULE FOR 75A (SERVICE)	V
2	70.77806G001	ASSY TOP SHIELDING MODULE ASSY B25H	
3	80.75A06G001	PCBA FORMATTER BD FOR B25H PLUS EK610U WUXGA PROJECTOR	V
4	70.75A01G001	ASSY MAIN BD MODULE	
5	70.77818GR01	ASSY LAMP DRIVER MODULE FOR 778 (SERVICE)	V
6	75.8VKP1G001	POWER SUPPLY, AD-683W, INLET, 232*100, DL, 5V/1.5A	V
7	70.72P07GR01	ASSY BLOWER MODULE FOR 72P (SERVICE)	V
8	70.8VK10G001	BLOWER DUCT TOP MODULE PGXG-61B	
9	70.75A16GR01	ASSY ENGINE MODULE FOR 75A (SERVICE)	V
10	70.8VK04G001	BLOWER DUCT BTM MODULE PGXG-61B	
11	61.8NT20G001	LAMP LIGHT CUT	
12	49.8LB05G001	SUNON 140X38 AXIAL FAN, RoHs 2.0 COMPATIBLE, COPPER SHAFT SLEEVE	V
13	49.8NZ01G011	DELTA AXIAL FAN 120X120X25 mm, WIRE 460 mm, R TYPE BLACK HOR SHRUNK TUBE_ROHS2.0	V

Item	P/N	Description	Parts Supply
14	61.8NT09G021	SHIELDING BASE SECC 1.0T B25H+	
15	61.8NT15G001	FRONT SHIELDING DHD550	
16	51.8SG02G001	LEFT COVER B25	V
17	51.75A02G001	COVER RIGHT BLACK EIKI B25H+	V
18	70.8ZB16GR01	ASSY FRONT COVER MODULE 8ZB(SERVICE)	V
19	51.8SG06G001	LENS RING B25	V
20	70.75A14GR01	ASSY REAR COVER MODULE FOR 75A (SERVICE)	V
21	35.75A01G001	LABEL IO EIKI B25H+	
22	70.72P09GR01	ASSY BOTTOM COVER MODULE FOR 72P (SERVICE)	V
23	75.8LB09G002	BUY ASSY REAR ADJUST FOOT 50mm EX855	V
24	86.03123G035	HEX CAP HEAD NUT M3*0.5P L3.5	
25	61.00018G003	LOCK SCREW PAN MECH M3*8.5-3.5 BLACK(1018+HEAT TREATMENT)	