Merak-PJ1

Machine Codes: Y067

Field Service Manual

November, 2014

Important Safety Notices

Safety Instructions

Safety Precautions

⚠WARNING

- The chassis of this projector is isolated (COLD) from AC line by using the converter transformer. Primary side of the converter and lamp power supply unit circuit is connected to the AC line and it is hot, which hot circuit is identified with the line () in the schematic diagram. For continued product safety and protection of personnel injury, servicing should be made with qualified personnel.
- The following precautions must be observed.
    1. An isolation transformer should be connected in the power line between the projector and the AC line before any service is performed on the projector.
    2. Comply with all caution and safety-related notes provided on the cabinet back, cabinet bottom, inside the cabinet or on the chassis.
    3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, etc.

       DO NOT OPERATE THIS PROJECTOR WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PROPERLY SECURED.
    4. Before replacing the cabinet cover, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.
- Before returning any projector to the customer, the service personnel must be sure it is completely safe to operate without danger of electric shock.

Product Safety Notice

Product safety should be considered when a component replacement is made in any area of the projector. Components indicated by mark⚠! in the parts list and the schematic diagram designate components in which safety can be of special significance. It is, therefore, particularly recommended that the replacement of there parts must be made by exactly the same parts.

Service Personnel Warning

Eye damage may result from directly viewing the light produced by the Lamp used in this equipment. Always turn off Lamp before opening cover. The Ultraviolet radiation eye protection required during this servicing.

Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages (15kV - 25kV) at its starts.

Since the lamp is very high temperature during units operation replacement of the lamp should be done at least 45 minutes after the power has been turned off, to allow the lamp cool-off.

TABLE OF CONTENTS

4. Firmware Update

1. Product Information

Specification

List of General Specifications

Item	Specification
Consumption Power	Normal mode: 350W ±10% @ 110Vac (Bright mode @ full power) ECO mode: 290W ±10% @ 110Vac (Video mode @ eco power) Standby < 0.5 W
Weight	8 kg
Dimensions (WxHxD)	357 (W) x 135(H) x 367 (D) mm (excluding foot) 357 (W) x 231(H) x 367 (D) mm (including reflection mirror)
Environmental Considerations	Operational Temperatures : 41° to 95°F (5° to 35°C), 20% to 80% humidity (non-condensing) Storage Temperatures : -4° to 140°F (-20° to 60°C), 20% to 80% humidity (non-condensing)
Projection System	Single DLP® 0.55″chip
Resolution	1024 × 768 pixels (XGA)
Lens	F#2.6, f=5.27 mm
Lamp	High-pressure mercury lamp (280W)
Lamp Life	3000 hours typical (Full Mode) / 4000 hours typical (ECO Mode)
Projection screen size	60 - 90 inch
Projection distance	522 mm - 802 mm (±10 mm)
Speaker	10W (Mono)
Connection terminal	

Item	Specification
Computer In terminal x 2	Mini D sub 15 pin RGB / Y/PB/PR (dual use)
Monitor Out terminal	Mini D sub 15 pin
HDMI terminal	HDMI
S-Video	Mini Dim Connector
Video terminal	RCA Pin Jack
PC Control terminal	D sub 9 pin Female (RS-232C compliant)
Audio in RCA × 2	RCA jack (L/R) for S-video and Video
Audio In terminal × 2	3.5 mm diameter mini-jack for Computer In
Audio Out terminal	3.5mm diameter mini-jack
Mic Input	3.5mm diameter mini jack
Mini USB	
RJ45	RJ45 for LAN control

Compatibility Modes

VGA Analog

(1) PC Signal				
Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]	Pixel CLK[MHz]
VGA	640x480	60	31.5	25.2
	640x480	67	35.0	26.8
	640x480	72	37.9	31.5
	640x480	75	37.5	31.5
	640x480	85	43.3	36.0
	640x480	120	61.9	52.2
IBM	720x400	70	31.5	28.3

SVGA	800x600	56	35.1	36.0
	800x600	60	37.9	40.0
	800x600	72	48.1	50.0
	800x600	75	46.9	49.5
	800x600	85	53.7	56.3
	800x600	120	77.4	83.0
Apple, Mac II	832x624	75	49.1	57.3
XGA	1024x768	60	48.4	65.0
	1024x768	70	56.5	75.0
	1024x768	75	60.0	78.8
	1024x768	85	68.7	94.5
	1024x768	120	99.0	137.8
Apple,Mac II	1152x870	75	68.7	100.0
SXGA	1280x1024	60	64.0	108.0
	1280x1024	72	77.0	133.0
	1280x1024	75	80.0	135.0
Quad VGA	1280x960	60	60.0	101.3
	1280x960	75	75.2	130.0
SXGA+	1400x1050	60	65.3	121.8
UXGA	1600x1200	60	75.0	161.0
	1024x768	70	56.5	75.0
	1024x768	75	60.0	78.8
	1024x768	85	68.7	94.5
	1024x768	120	99.0	137.8
Apple,Mac II	1152x870	75	68.7	100.0

SXGA	1280x1024	60	64.0	108.0
	1280x1024	72	77.0	133.0
	1280x1024	75	80.0	135.0
Quad VGA	1280x960	60	60.0	101.3
	1280x960	75	75.2	130.0
SXGA+	1400x1050	60	65.3	121.8
UXGA	1600x1200	60	75.0	161.0
(2) Extended Wide timing				
WXGA	1280x720	60	44.8	74.2
	1280x800	60	49.6	83.5
	1366x768	60	47.7	84.8
	1440x900	60	59.9	106.5
WSXGA+	1680x1050	60	65.3	146.3
(3) Component Signal				
480i	720x480(1440x480)	59.94(29.97)	15.7	13.5
576i	720x576(1440x576)	50(25)	15.6	13.5
480p	720x480	59.94	31.5	27.0
576p	720x576	50	31.3	27.0
720p	1280x720	60	45.0	74.3
720p	1280x720	50	37.5	74.3
1080i	1920x1080	60(30)	33.8	74.3
1080i	1920x1080	50(25)	28.1	74.3
1080p	1920x1080	23.98/24	27.0	74.25
1080p	1920x1080	60	67.5	148.5
1080p	1920x1080	50	56.3	148.5

HDMI Digital

(1) PC Signal				
Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]	Pixel CLK[MHz]
VGA	640x480	60	31.5	25.2
	640x480	67	35.0	26.8
	640x480	72	37.9	31.5
	640x480	75	37.5	31.5
	640x480	85	43.3	36.0
	640x480	120	61.9	52.2
IBM	720x400	70	31.5	28.3
SVGA	800x600	56	35.1	36.0
	800x600	60	37.9	40.0
	800x600	72	48.1	50.0
	800x600	75	46.9	49.5
	800x600	85	53.7	56.3
	800x600	120	77.4	83.0
Apple, Mac II	832x624	75	49.1	57.3
XGA	1024x768	60	48.4	65.0
	1024x768	72	56.5	75.0
	1024x768	75	60.0	78.8
	1024x768	85	68.7	100.0
	1024x768	120	99.0	137.8
Apple, Mac II	1152x870	75	68.7	100.0
SXGA	1280x1024	60	64.0	108.0
	1280x1024	72	77.0	133.0
	1280x1024	75	80.0	135.0

QuadVGA	1280x960	60	60.0	101.3
	1280x960	75	75.2	130.0
SXGA+	1400x1050	60	65.3	121.8
UXGA	1600x1200	60	75.0	161.0
(2) Extended Wide timing				
WXGA	1280x720	60	44.8	74.2
	1280x800	60	49.6	83.5
	1366x768	60	47.7	84.8
	1440x900	60	59.9	106.5
WSXGA+	1680x1050	60	65.3	146.3
(3) HDMI - Video Signal				
640x480p	640x480	59.94/60	31.5	25.2
480i	720x480(1440x480)	59.94(29.97)	15.7	13.5
576i	720x576(1440x576)	50(25)	15.6	13.5
480p	720x480	59.94	31.5	27.0
576p	720x576	50	31.3	27.0
720p	1280x720	60	45.0	74.3
720p	1280x720	50	37.5	74.3
1080i	1920x1080	60(30)	33.8	74.3
1080i	1920x1080	50(25)	28.1	74.3
1080p	1920x1080	23.98/24	27.0	74.3
1080p	1920x1080	60	67.5	148.5
1080p	1920x1080	50	56.3	148.5
(4) HDMI 1.4a mandatory 3D timing- Video Signal				

Frame Packing	720p	50	31.5	
	720p	59.94/60	15.7	
	1080p	23.98/24	15.6	
Side-by-Side	1080i	50	31.5	
	1080i	59.94/60	31.3	
Top-and-Bottom	720p	50	45.0	
	720p	59.94/60	37.5	
	1080p	23.98/24	33.8	

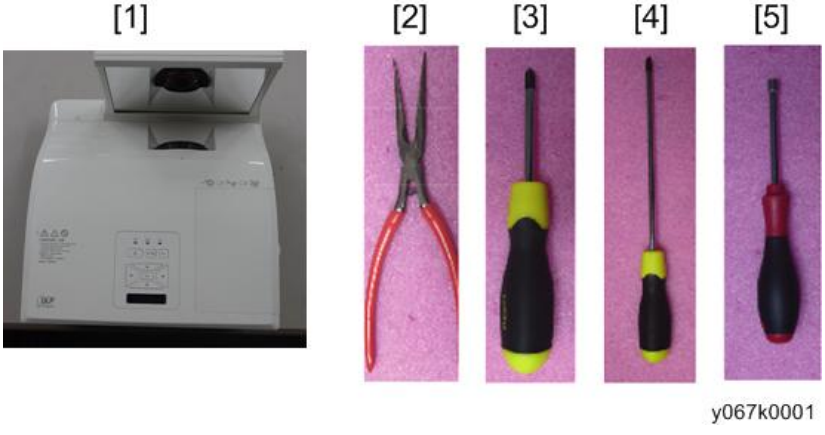
Note

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

2. Replacement and Adjustment

Equipment Needed & Product Overview

1. Projector
2. Long Nose Nipper
3. Screw Bit (+) :105
4. Screw Bit (+) :107
5. Hex Sleeves 5 mm



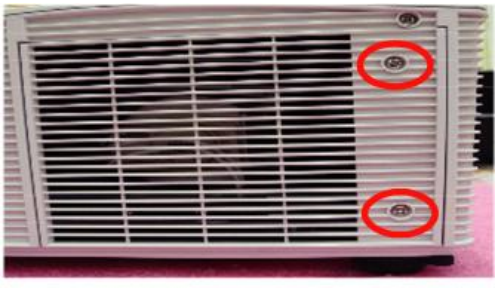
* Before you start: This process is protective level II. Operators should wear electrostatic chains.

Please place the protective cover or protective plastic on the lens and mirror for prevent scratched.

Disassembly & Assembly Process

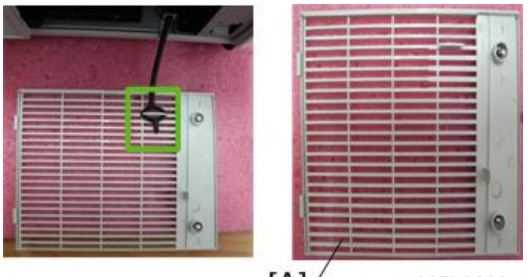
Disassemble Lamp Module and Mesh Inlet

1. Loosen 2 screws (as red circles) on the Lamp Cover.



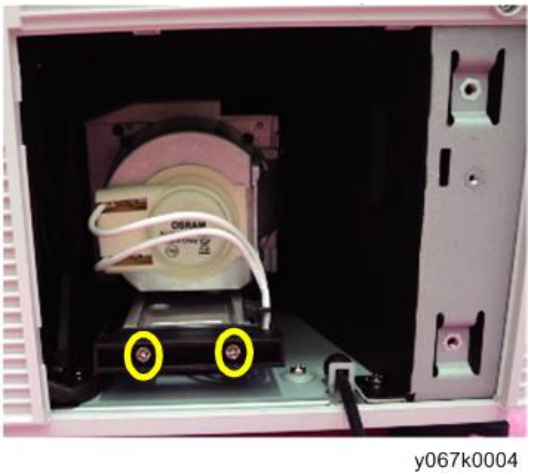
y067k0002

2. Separate the Lamp cover [A] and Lamp cover strap (as green square).



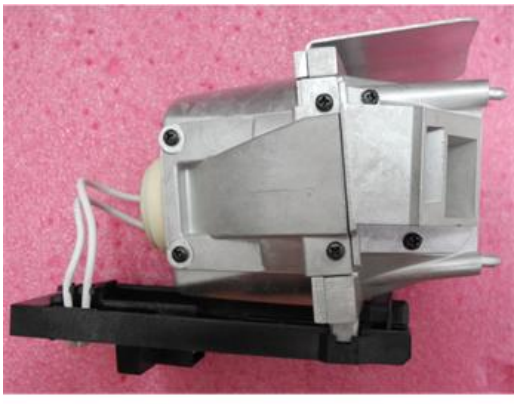
y067k0003

3. Loosen 2 screws (as yellow circles) on the Lamp Module.



y067k0004

4. Take off the Lamp Module.



y067k0005

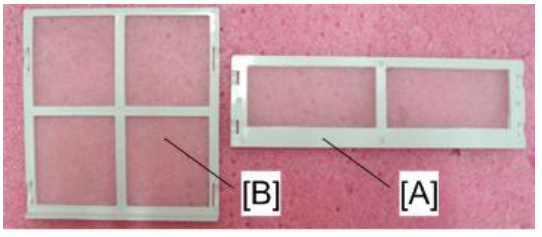
5. Pull down the tenons (as red square) to disassemble the side mesh inlet.

y067k0006

6. Pull down the tenons (as green square) to disassemble the back mesh inlet.

y067k0007

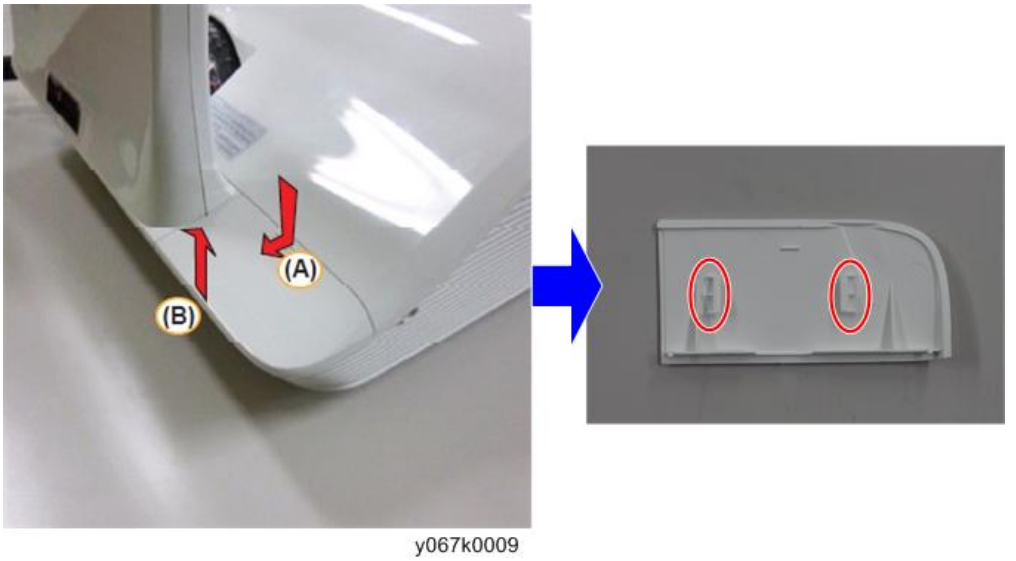
7. Disassemble the side mesh inlet [A] and the back mesh inlet [B].



y067k0008

Disassemble Top Cover Module

1. Push (A) part and pull the (B) part of the corner cover at the same time to remove it.

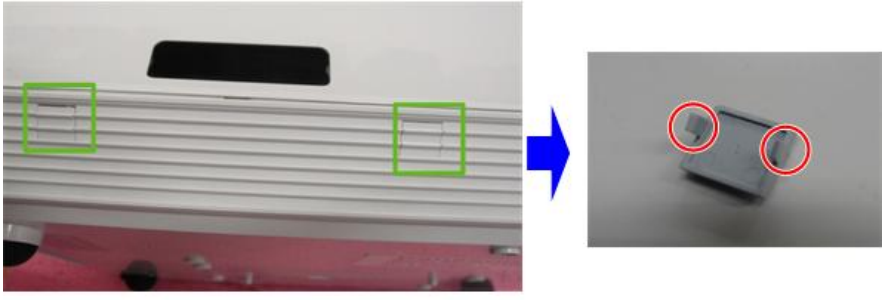


y067k0009

2. Unscrew 2 screws (as red circles).

y067k0010

3. **Disassemble the Bottom Cap (as green squares).**

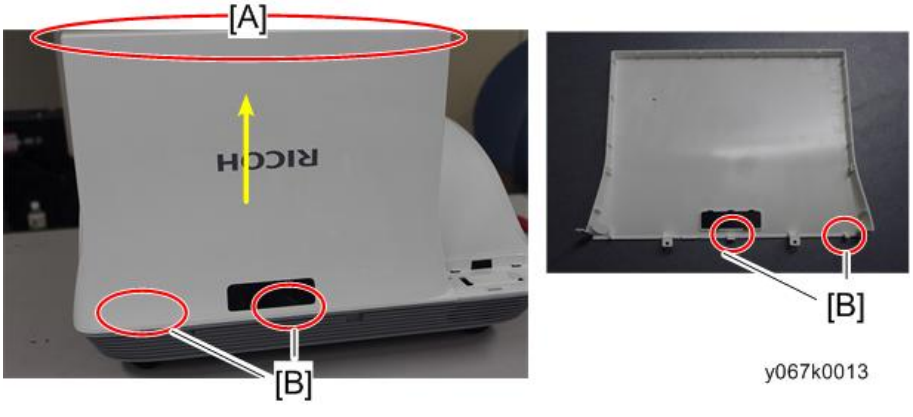


y067k0011

4. **Unscrew 2 screws (as blue circles).**

y067k0012

5. **Detach the top [A] of the front mirror cover.**
6. **Push the two positions [B] where the two hooks are inside cover, and then pull the front mirror cover upward.**

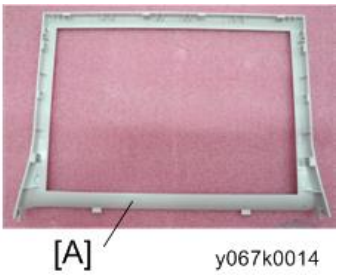


y067k0013

Note

- When disassemble the front mirror cover, please notice the hooks [B] (as red circles), as they are easily broken.

7. **Remove the rear mirror cover [A].**



y067k0014

8. **Unscrew 2 screws (as green circles).**

y067k0015

9. **Disassemble the wireless top cover.**

y067k0016

10. **Unscrew 2 screws (as yellow circles) to disassemble LAN Board [A].**

11. Unscrew 2 screws (as red circles).

y067k0017

12. Unscrew 3 screws (as green circles).

y067k0018

13. Unscrew 3 screws (as blue circles).

y067k0019

14. Unscrew 2 screws (as yellow circles).

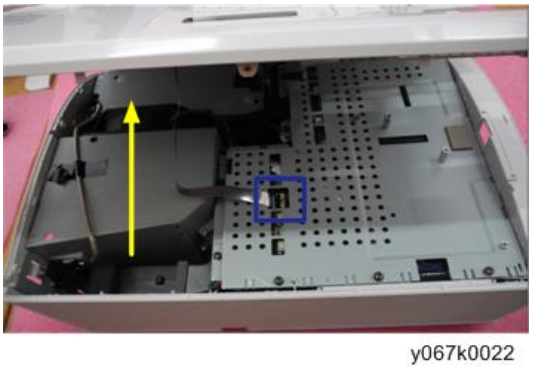
y067k0020

15. Unscrew 2 screws (as red circles).

y067k0021

16. Pull upward the Top Cover Module.

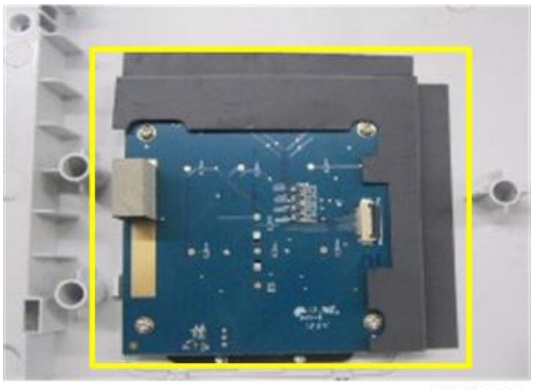
- Unplug 1 connector (as blue square) to remove the Top Cover Module.



y067k0022

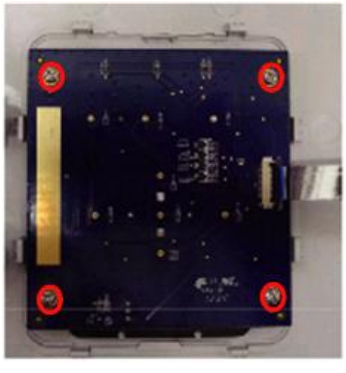
Disassemble Keypad Board

1. Tear off the black mylar and Sponge (as yellow square).



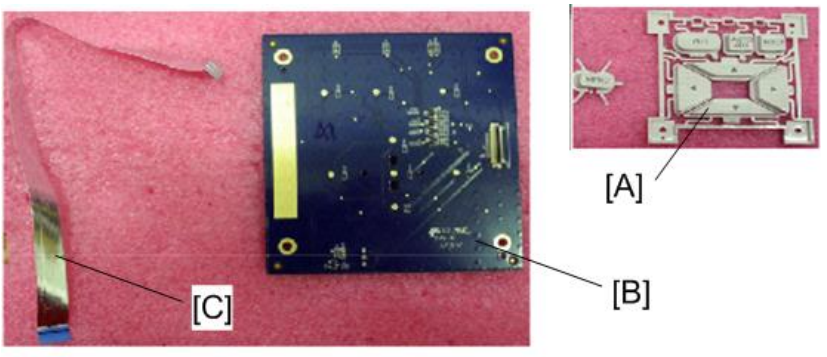
y067k0023

2. Unscrew 4 screws (as red circles) to disassemble keypad board.



y067k0024

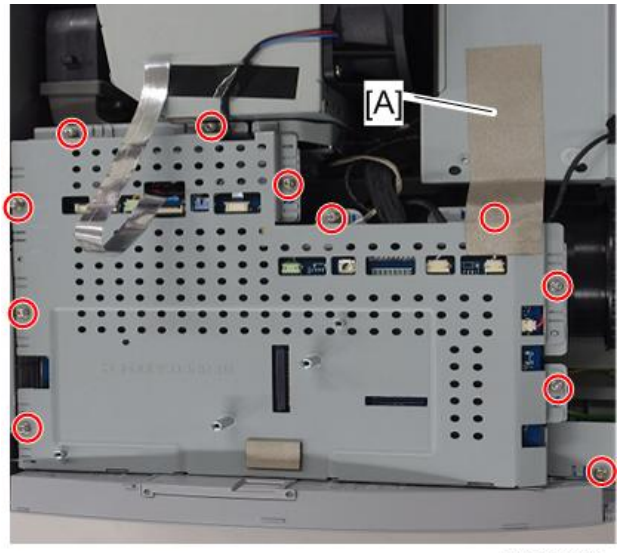
3. **Separate the Keypad Button [A] and Keypad Board [B] and FPC cable [C].**



Disassemble Main Board

1. **Remove the tape [A].**
    - Keep this tape. This tape is necessary when reassembling the main board shielding.

2. Unscrew 11 screws (as red circles) to disassemble the main board shielding.



y067k0026

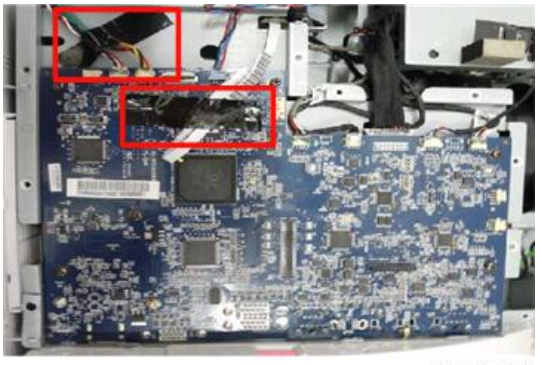
3. Unscrew 6 screws (as green circles).

y067k0027

4. Unscrew 8 hex screws (as blue circles) and 4 screws (as yellow circles).

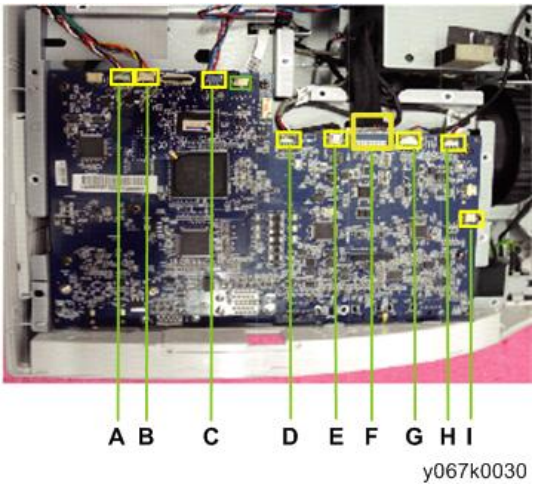
y067k0028

5. **Tear off the tape (as red squares).**



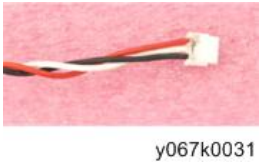
y067k0029

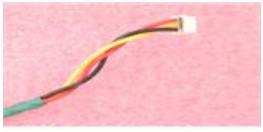
6. **Unplug 9 connectors (as yellow squares).**
7. **Unplug 1 connector (as green square) of Color Wheel.**



y067k0030

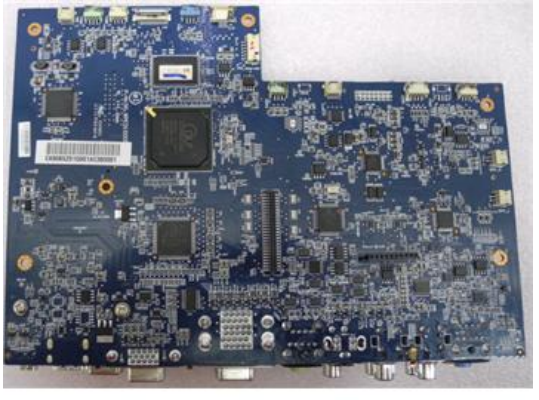
- Please refer to the table as below for details of each connector:

Item	Male Connector on Main Board	The key feature	Figure
A	Blower FAN	Compose of Red/White/Black Wire (3 pin)	 y067k0031

Item	Male Connector on Main Board	The key feature	Figure
B	DMD FAN	Compose of Red/Yellow/Black Wire (3 pin)	 y067k0032
C	SYS FAN	Compose of Red/Blue/Black Wire (3 pin)	 y067k0033
D	Photo Sensor	Compose of Red/Black/White Wire (3 pin)	 y067k0034
E	Lamp Driver	Black wire tube (5 pin)	 y067k0035
F	LVPS to Main Board cable	Black wire tube (16 pin)	 y067k0036
G	Thermal sensor	Compose of Red/Black/White/ Blue (4pin)	 y067k0037
H	Front IR	Compose of Red/Black/White Wire (3 pin)	 y067k0038

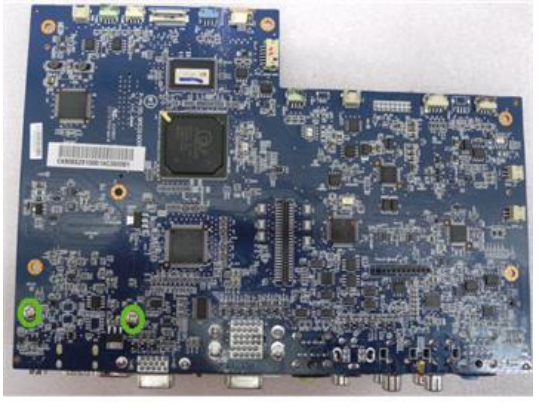
Item	Male Connector on Main Board	The key feature	Figure
1	Speaker	Compose of Black/Red wire and Black wire tube (2 pin)	 y067k0039

8. Disassemble MB Module.



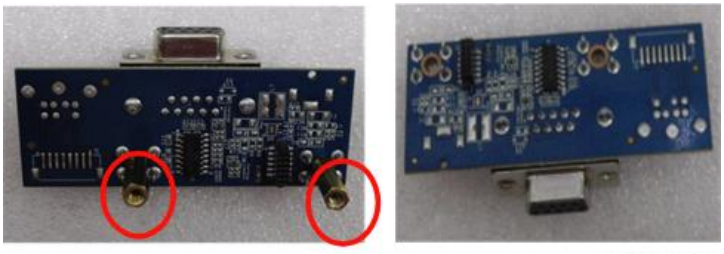
y067k0040

9. Unscrew 2 screws to disassemble daughter board (as green circles)



y067k0041

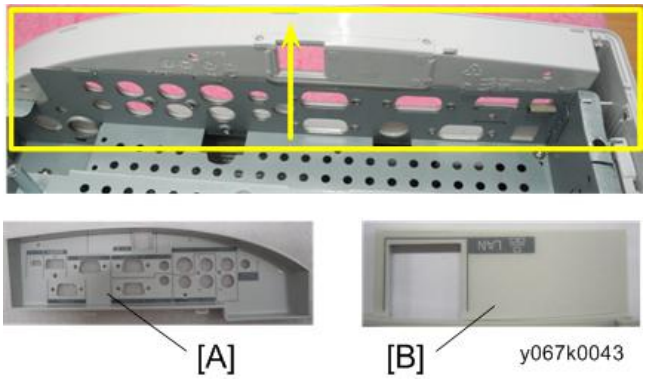
10. **Unscrew 2 screws (as red circles).**



y067k0042

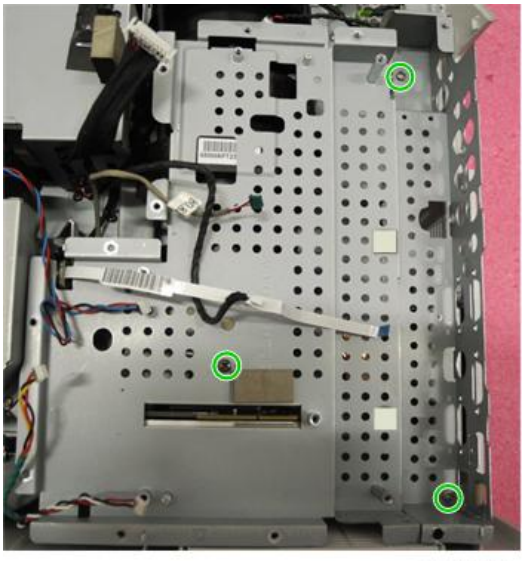
Disassemble Shielding and IO Cover Module

1. **Plug the IO cover Module [A] from Bottom cover.**
    - Separate the wireless cover [B] from the IO cover.



y067k0043

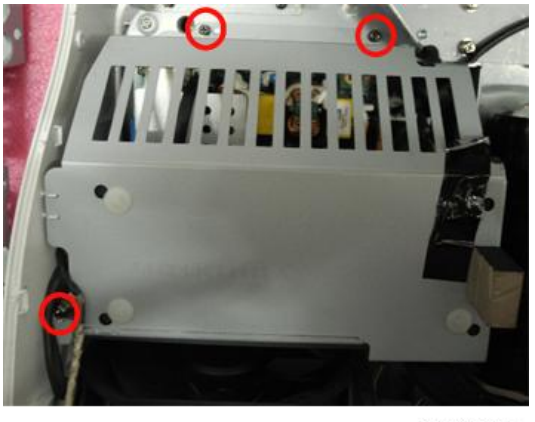
2. **Unscrew 3 screws (as green circles) to disassemble the Shielding.**



y067k0044

Disassemble Lamp Driver Module and LVPS

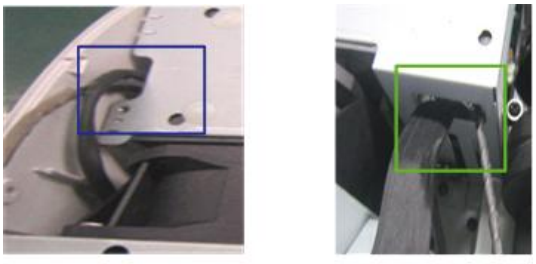
1. **Unscrew 4 screws (as red circles) to disassemble the Lamp Driver Module.**



y067k0045

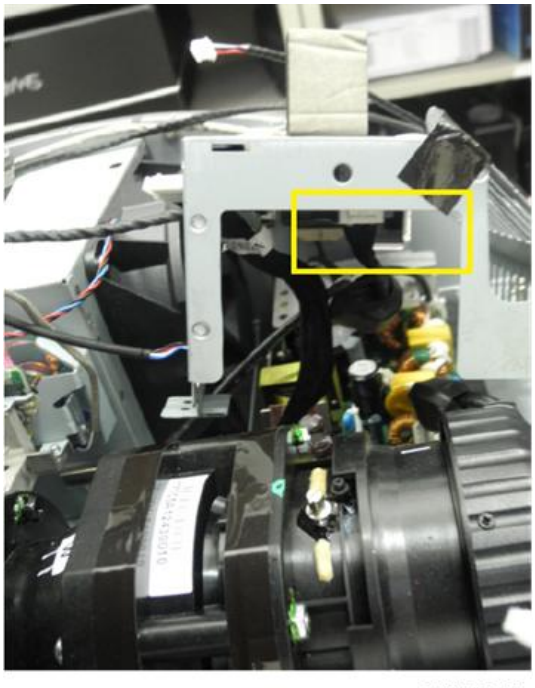
Note

- When assemble, please arrange the Interlock switch and lamp cable to the notch (as blue square).
- When assemble, please arrange the 16Pin cable and 5Pin cable to the Shielding notch(as green square)



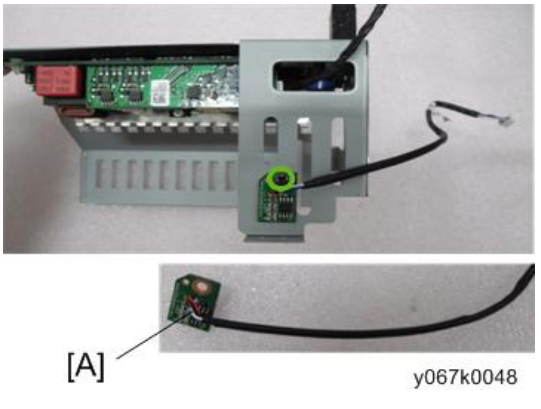
y067k0046

2. Unplug the connector to disassemble the lamp driver (as yellow square).



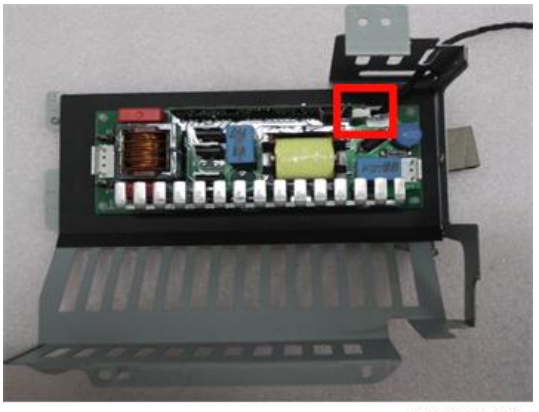
y067k0047

3. Unscrew 1 screw (as green circle) to disassemble the thermal sensor board [A].



y067k0048

4. **Unplug 1 connector (as red square).**

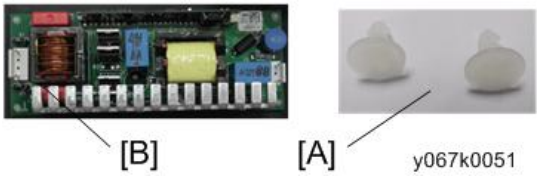


y067k0050

5. **Cut the spacers [A] off (as blue squares) to remove the LAMP DRIVER board [B].**

Note

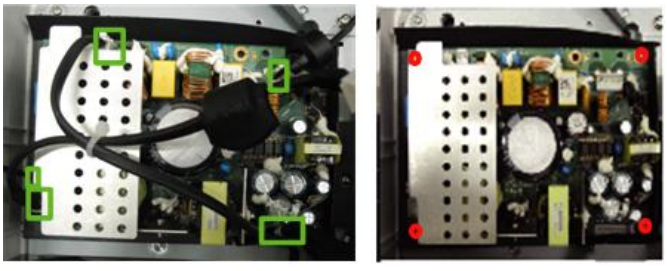
- After fixing the LAMP DRIVER board, fix it by new spacers as shown in the picture.



y067k0051

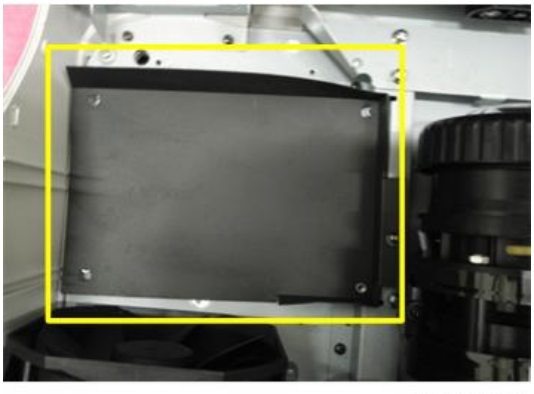
6. **Unplug 5 connectors (as green squares).**

7. Unscrew 4 screws (as red circles) to disassemble LVPS.



y067k0052

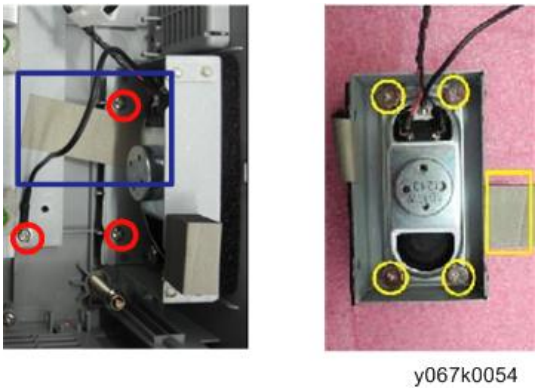
8. Take off Mylar (as yellow square).



y067k0053

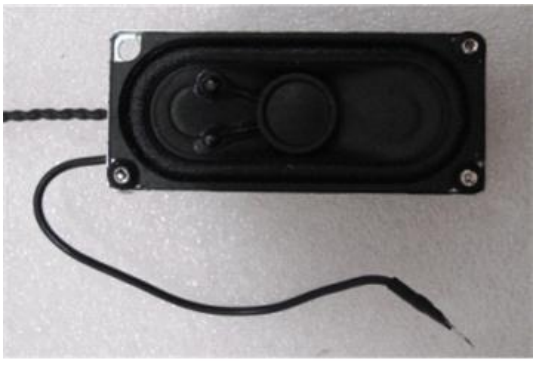
Disassemble Speaker and AC Inlet Bracket

1. Tear off the EMI TAPE (as blue square) and unscrew 3 screws (as red circles) to remove the right speaker module.
2. Unscrew 4 screws (as yellow circles) and remove the Sponge (as yellow square).



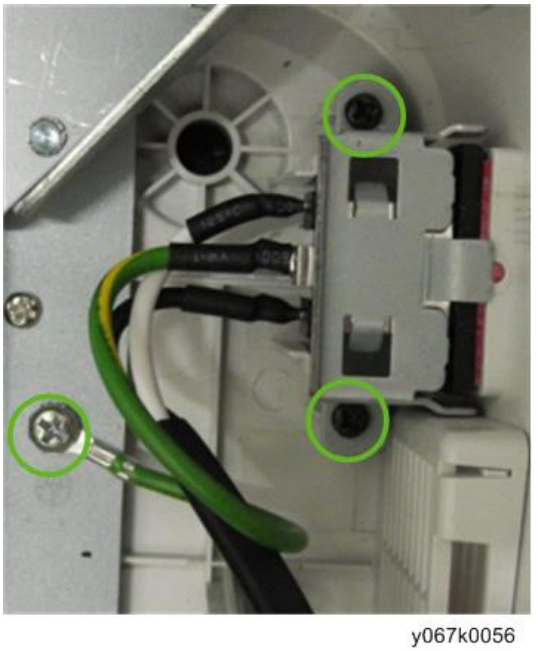
y067k0054

3. **Disassemble Speaker.**



y067k0055

4. **Unscrew 3 screws (as green circles) to disassemble AC Inlet Bracket.**



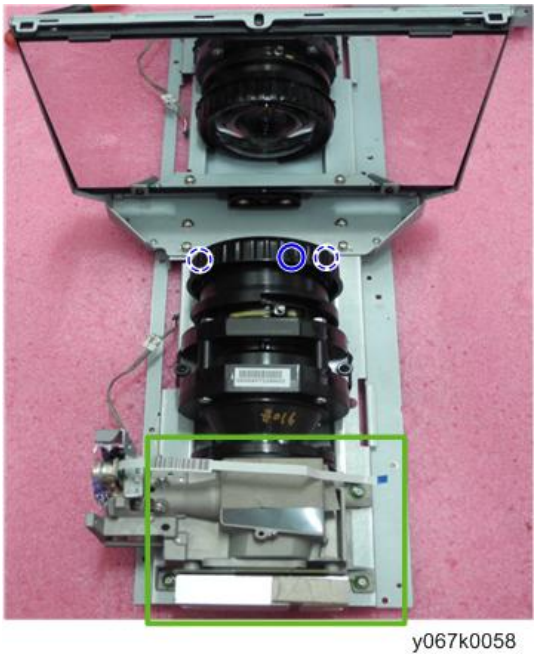
y067k0056

Disassemble ENGINE Module

1. **Unscrew 6 screws (as red circles) and remove the Engine Module.**

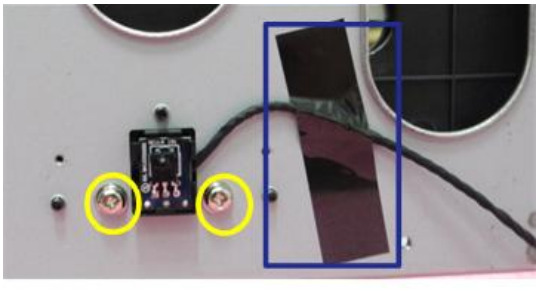
y067k0057

2. **Tear off the EMI tape and EMI gasket (as green square).**
    - Unscrew 3 screws (as blue circles) to disassemble the focus ring from the engine module.



y067k0058

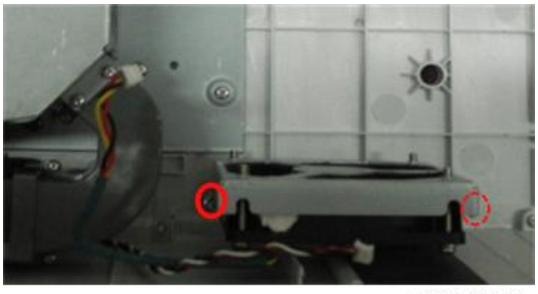
3. Tear off the tape (as blue square) and unscrew two screws (as yellow circles) to disassemble front IR sensor board [A].



y067k0059

Disassemble DMD FAN and SYS FAN and Blower FAN

1. Unscrew 2 screws (as red circles) and remove the DMD FAN Module.

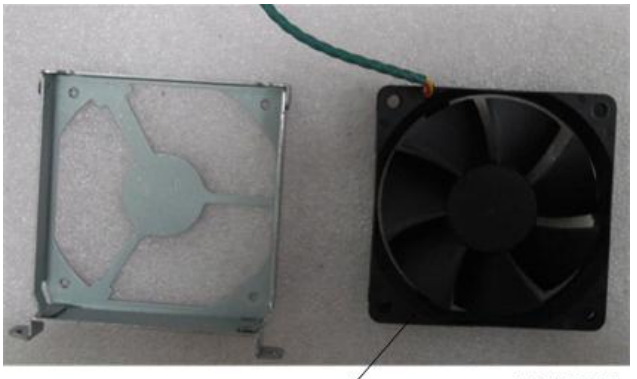


y067k0060

2. Unscrew 4 screws (as green circles).

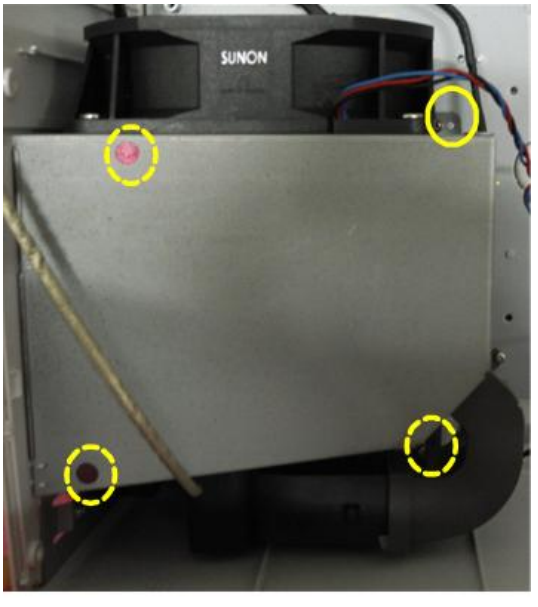
y067k0061

3. **Separate the Bracket and FAN.**



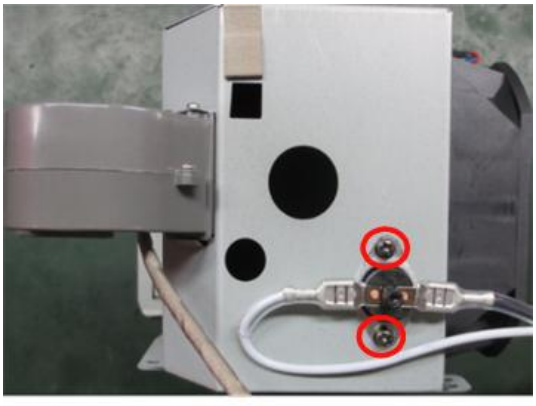
y067k0062

4. **Unscrew 4 screws (as yellow circles) to disassemble SYS FAN.**



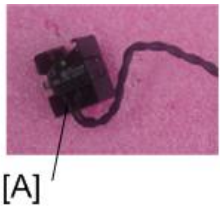
y067k0063

5. Unscrew 2 screws (as red circles) to disassemble the thermostat controller.



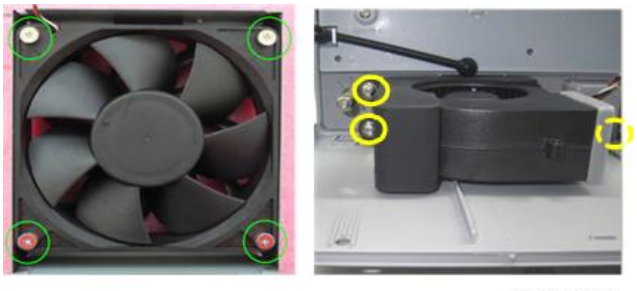
y067k0064

6. Unscrew 1 screw (as red circle) to disassemble the Interlock switch [A].



y067k0065

7. Unscrew 4 screws (as green circles) to disassemble the SYS FAN.
8. Unscrew 3 screws (as yellow circles) to disassemble the Blower FAN.



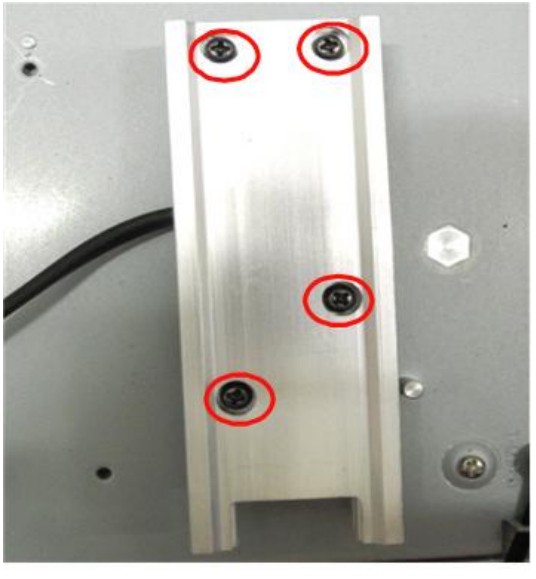
y067k0066

9. Separate the Blower and Blower Rubber.

y067k0067

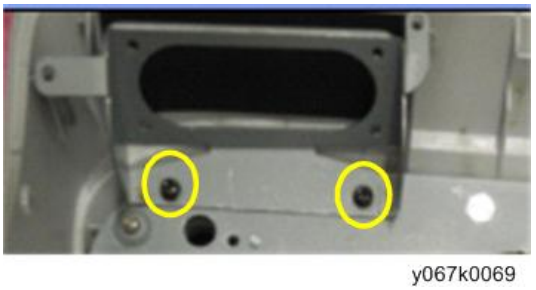
Disassemble Bottom Module

1. Unscrew 4 screws (as red circles) to remove the Lamp holder rail.



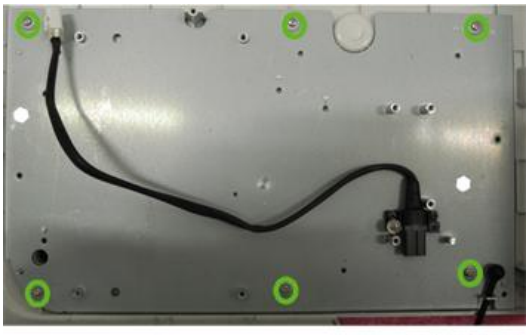
y067k0068

2. Unscrew 2 screws (as yellow circles) and remove the Speaker Shielding.



y067k0069

3. Unscrew 6 screws (as green circles) and remove the Bottom Shielding.

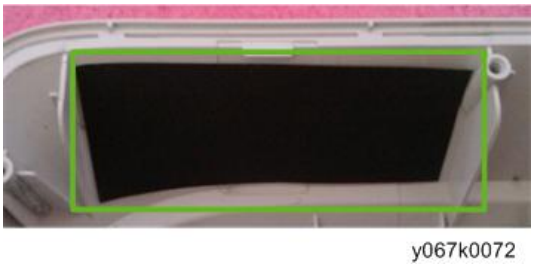


y067k0070

4. Unscrew 4 screws (as blue circles) to disassemble the side mesh frame and back mesh frame.

y067k0071

5. Tear off the Speaker Mylar (as green square).



y067k0072

6. **Pull out the Security Bar (as blue square).**

y067k0073

Repair Action

Update	Change Parts					
	Main Board	Firmware	Lamp Module	Engine Module	Lamp Driver	Fan
Version Update	V(*1)					
ADC Calibration	V(*1)	V(*1)				
Reset lamp hour			V			
Factory reset	V					
Waveform Download					V	
Fan Calibration	V	V				V

- After changing parts, please execute the related items as table show above.

(*1) This action is not always required. Perform it only if the situation demands it.

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:

1. **Please enter OSD menu.**
2. **Choose "Options" and then execute "Reset" function.**

ADC Calibration

Note

- After replacing main board or upgrading firmware, the ADC calibration should be done.

Procedure - Test equipment: video generator

1. **Test signal:**
   1024 x 768@60Hz

y067k0096

2. **Test Pattern: (240/255)white/(15/255)Black**

Note

- Calibration pattern should be in full screen mode.
- Please get into service mode, and choose “ADC Calibration”.

Inspection item

- Check if there are lines or noise on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

Criteria

- If there is noise on the screen, the product is considered as failure product.
- The screen appears normal. It should not appear any abnormal condition, such as lines and so on.
- Check if the projection is same as monitor displayed.

Waveform download

After replacing Lamp driver, the “waveform download” is needed as below.

1. **Hold on “Power” and “Menu” button and plug in the power cord, the “STANDBY” LED will flash in red.**
2. **Release the “Power” and “Menu” button in 2s.**
3. **The “STANDBY” LED flash red and green alternately.**
4. **Press “POWER” button. The “STANDBY” LED will light in green for about 5s and then turns red.**

5. **The waveform download is complete.**

Note

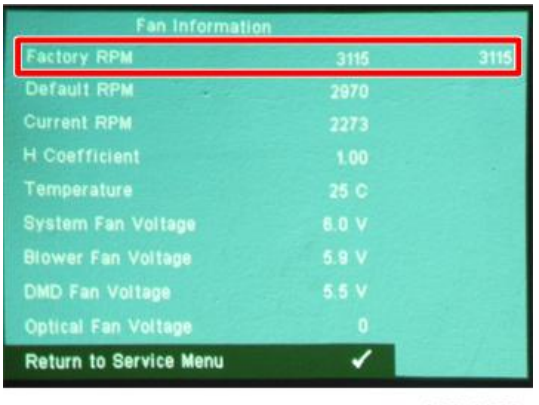
- Check whether execute auto Waveform download, if not, repeat the step again.

Fan Calibration

After upgrade firmware and replacing main board, fan (as the picture shown below), please follow steps as below:

y067k0074

1. **Hold on "Menu" button and plug in the power cord.**
2. **The "STANDBY" LED will flash green about 2s, then release the "Menu" button.**
3. **The projector will power on automatically.**
4. **Enter the Service Mode by pressing the buttons sequentially as follows: POWER > LEFT > RIGHT > MENU, then select "Factory Fan RPM" and press "MENU" button to enter the Fan information.**



y067k0075

5. **Check that the value of "Factory Fan RPM" is in the range specified as below; 2623 ± 525**

3. Troubleshooting

LED Lighting Message

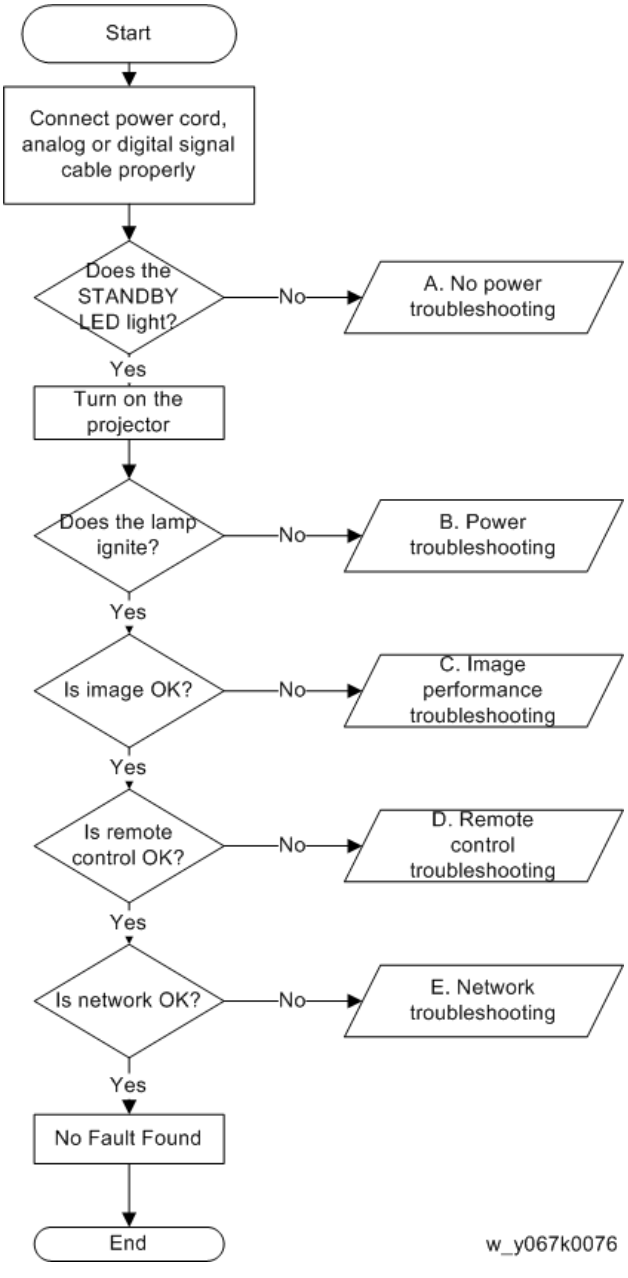
Message	LAMP (Red)	TEMP (Red)	STANDBY LED	
			(Red)	(Green)
Power Plug	Flash ON to OFF 100ms	Flash ON to OFF 100ms	Flash ON to OFF 100ms	○
Standby	○	○	☼	○
Power button ON	○	○	○	☼
Cooling state	○	○	0.5 second(ON) 0.5 second(OFF) flashing	○
Power button OFF:Cooling completed;Standby Mode	○	○	☼	○
Firmware Download	☼	☼	☼	☼
Thermal Switch error(Lamp OverTemperature),OSD shows “Projector Overheated”	○	☼	○	☼
Thermal sensor error(System Over Temperature),OSD shows “Projector Overheated”	○	☼	○	☼
Fan lock error OSD shows red “Fan Fail,Will automatically turn off soon”	○	0.5 second(ON) 0.5 second(OFF) flashing	○	☼
Lamp error(Lamp,ballast)	☼	○	○	☼

Color Wheel fail Photo sensor fail	0.5 second(OFF) flashing	○	○	☼
Over Temp	○	☼	☼	○

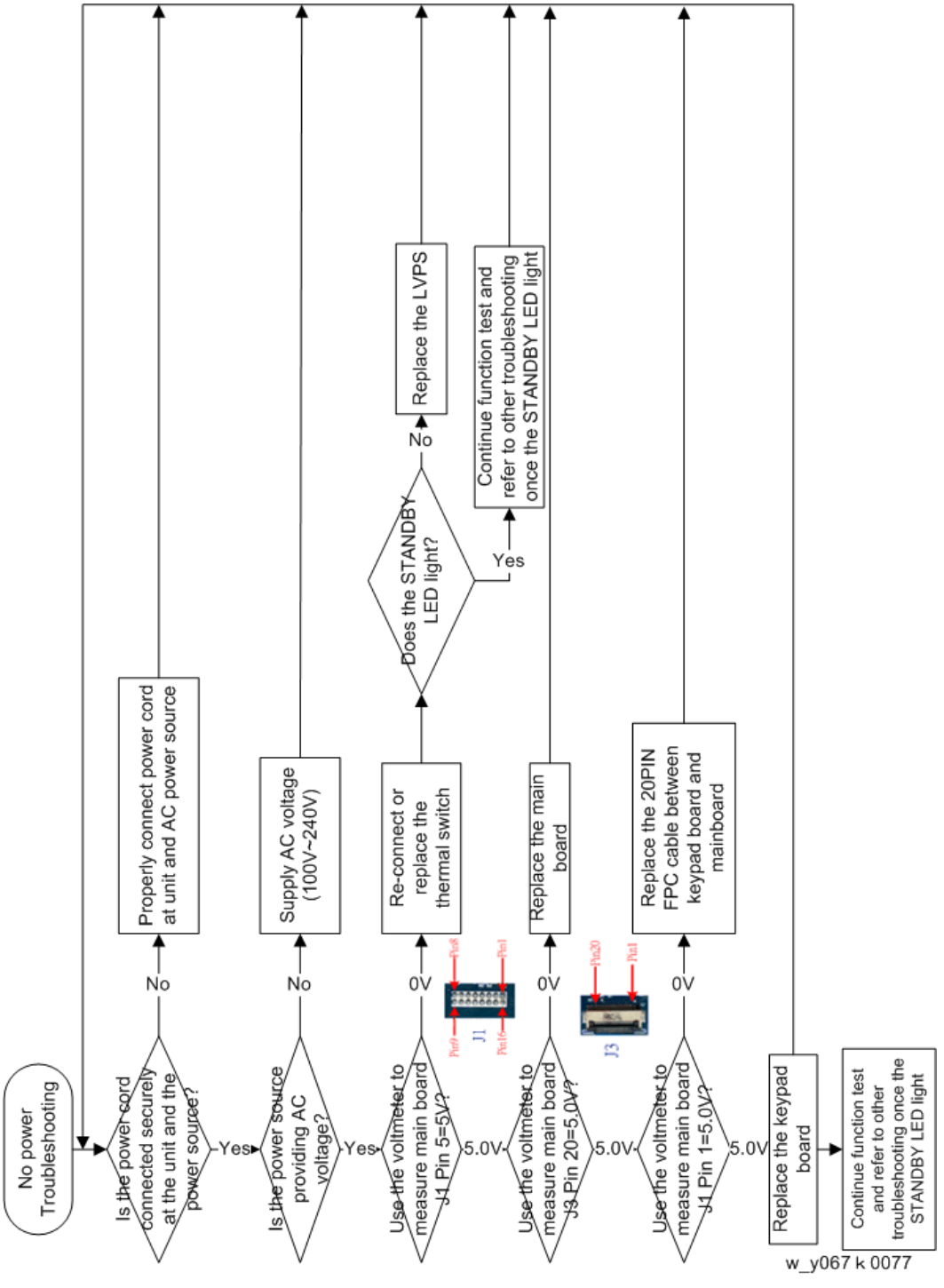
☼: Steady light/ ○: No light

Troubleshooting Guide

Main Procedure



NO Power Troubleshooting



Power Troubleshooting

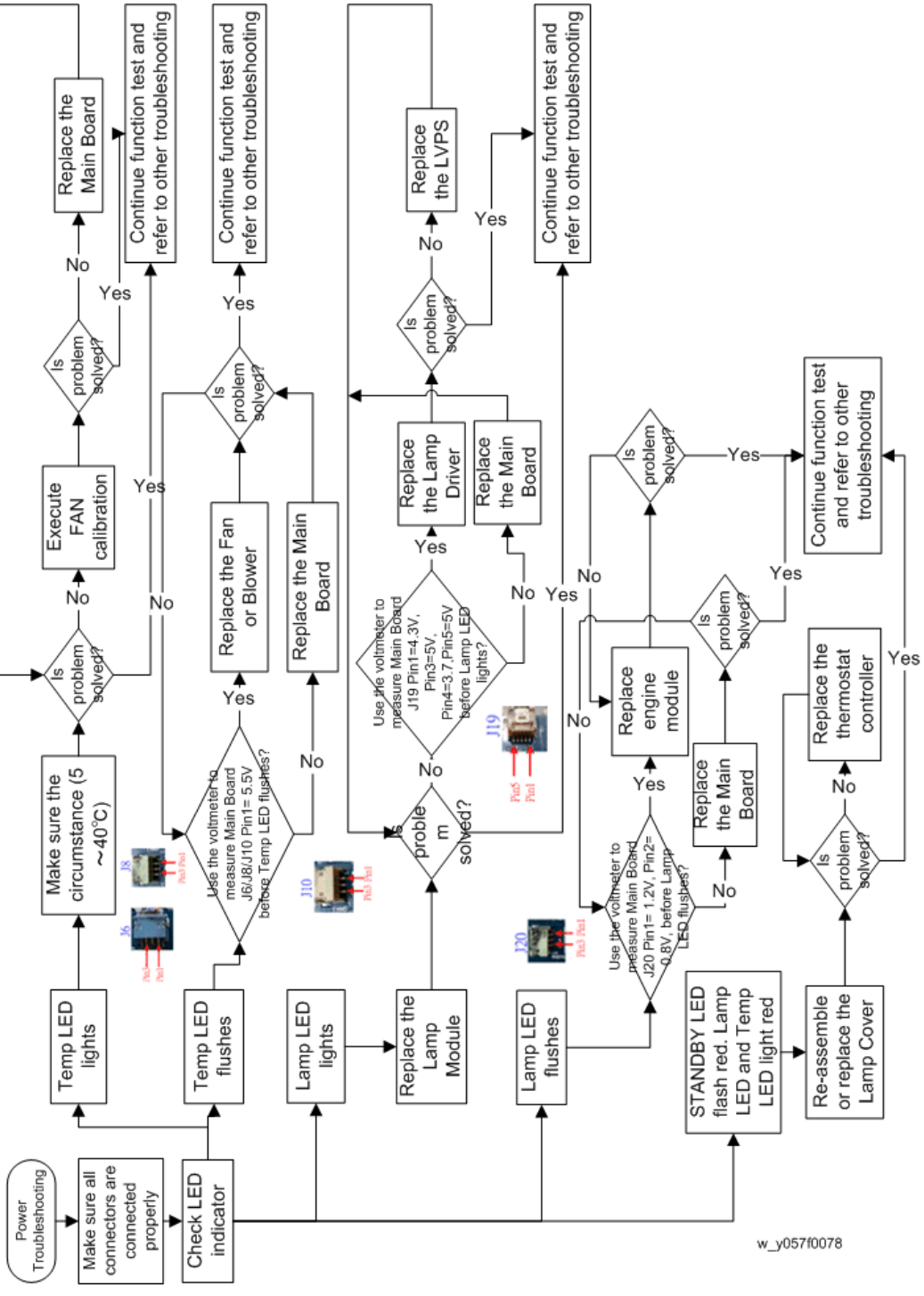


Image Troubleshooting 1

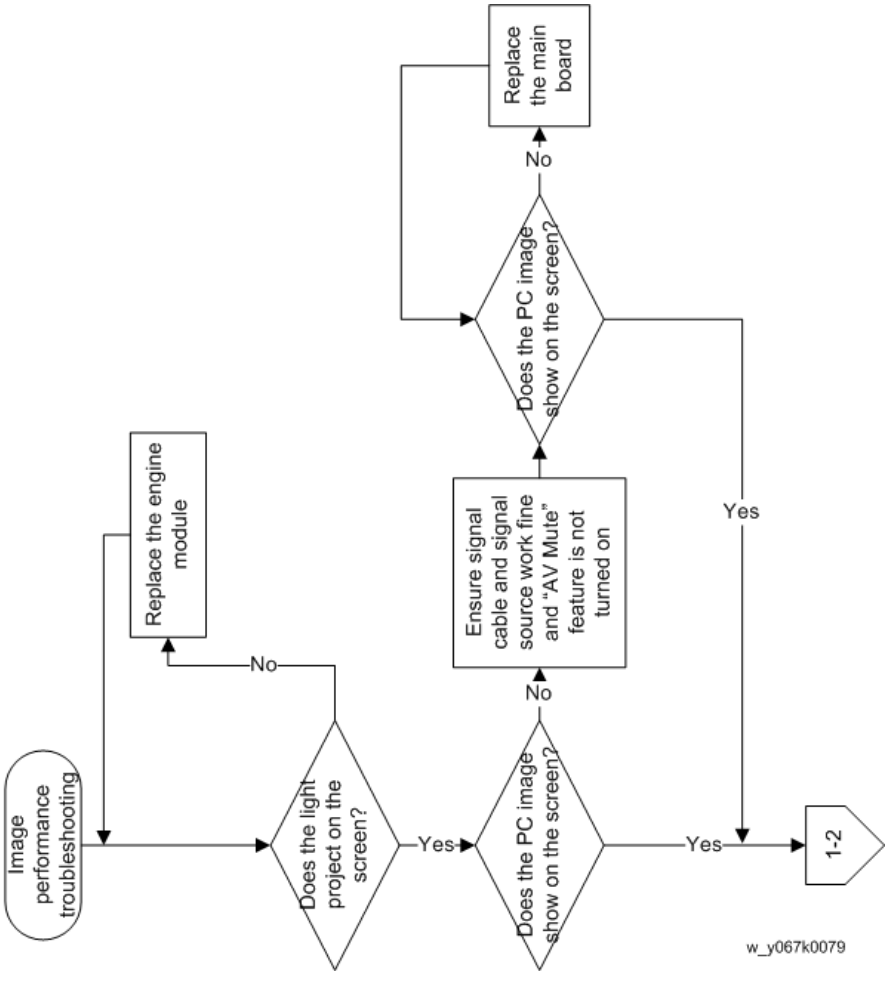


Image Troubleshooting 2

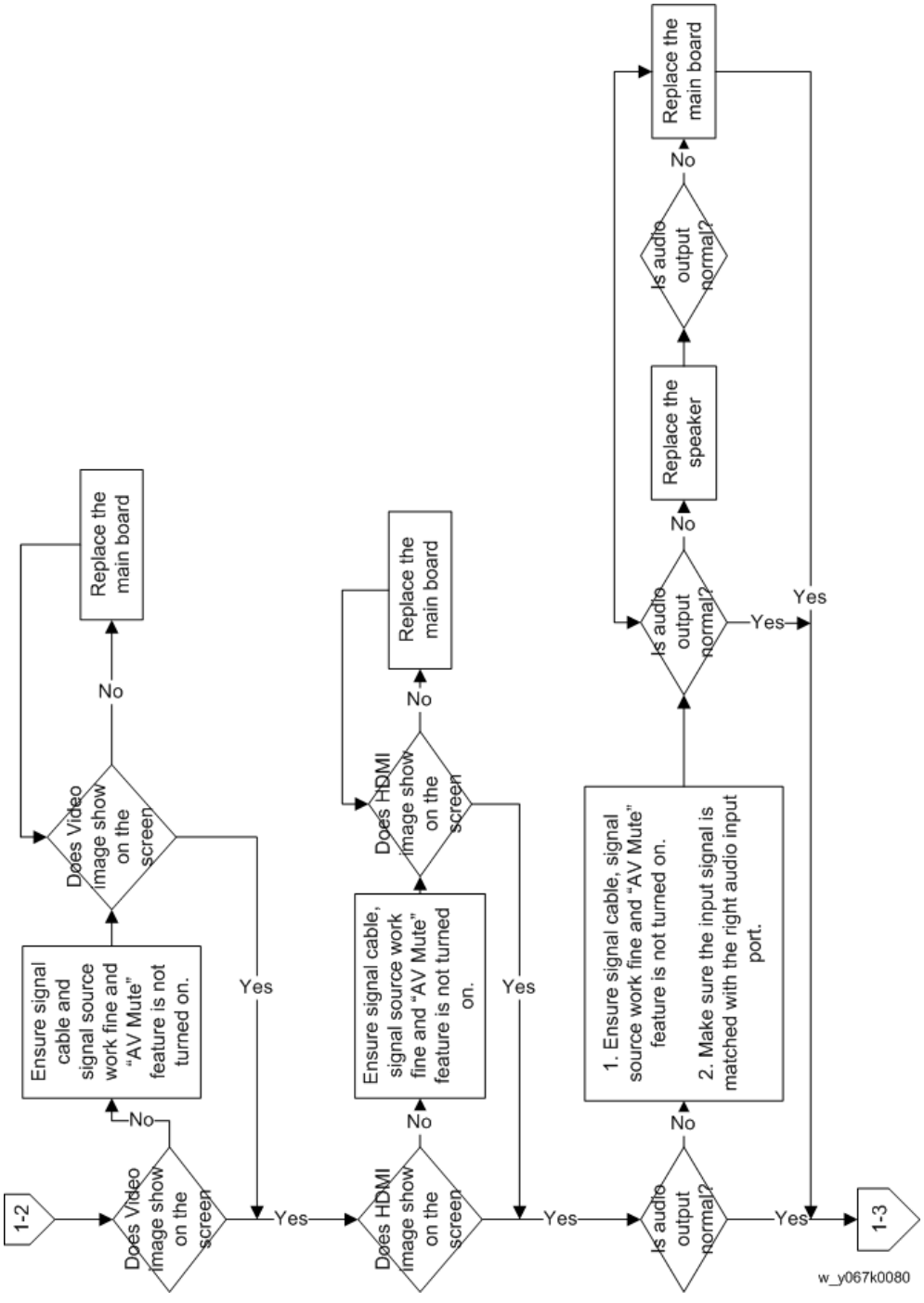


Image Troubleshooting 3

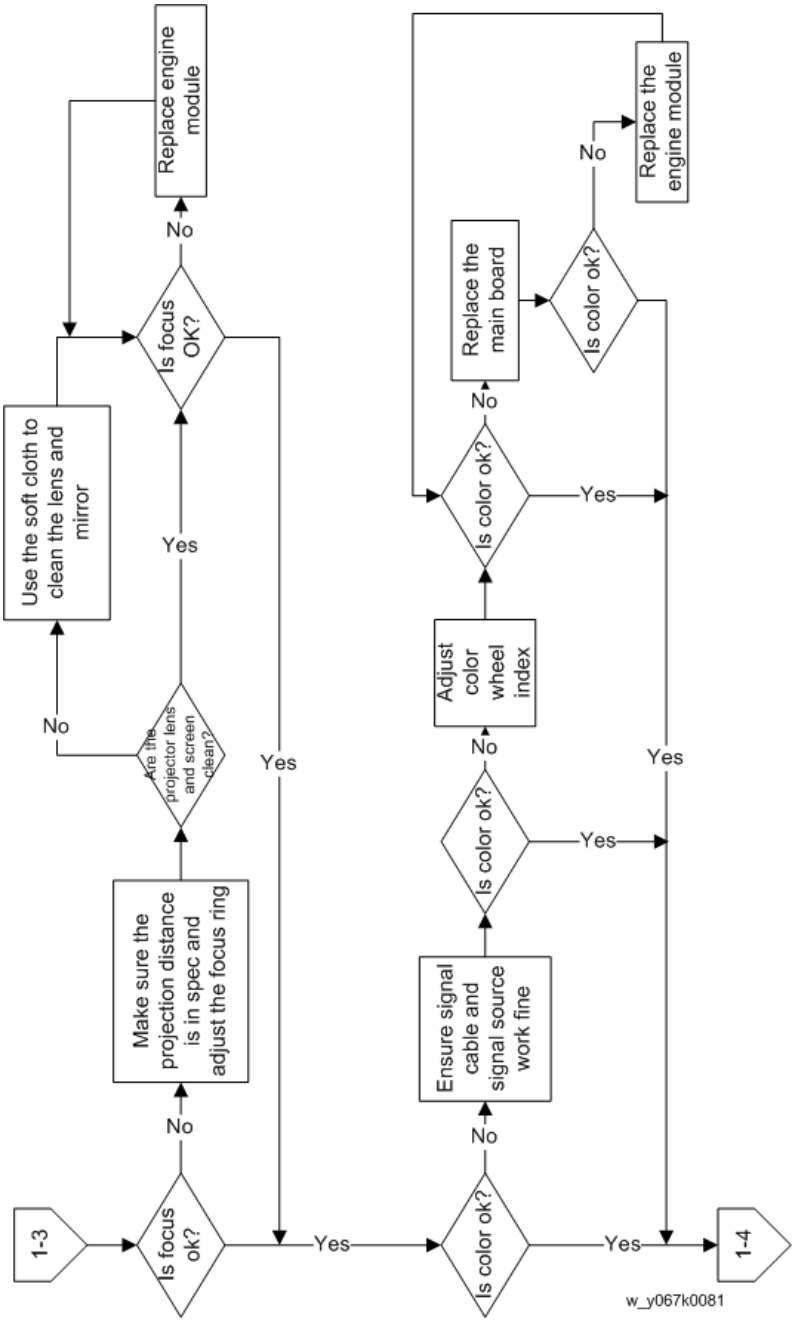
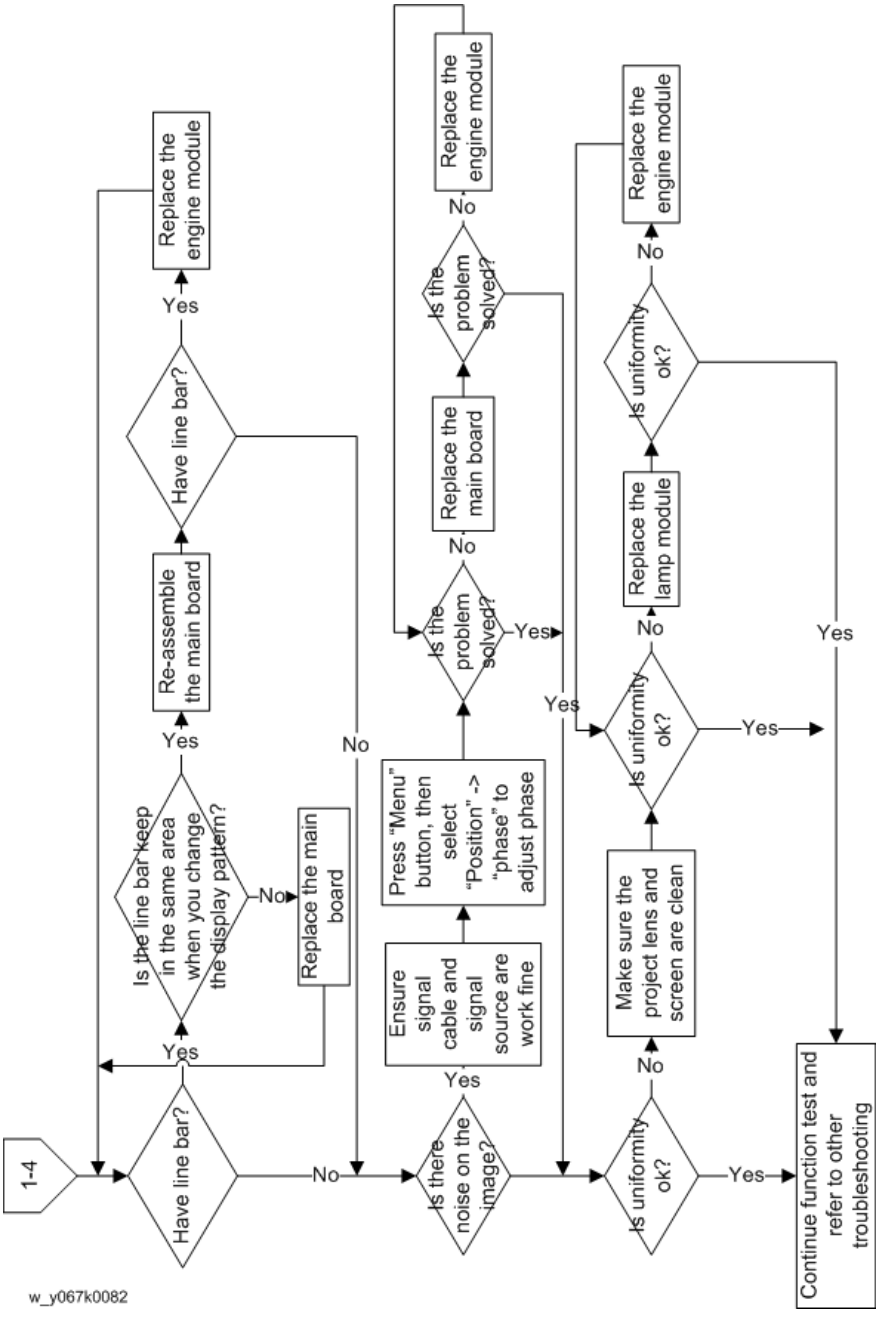
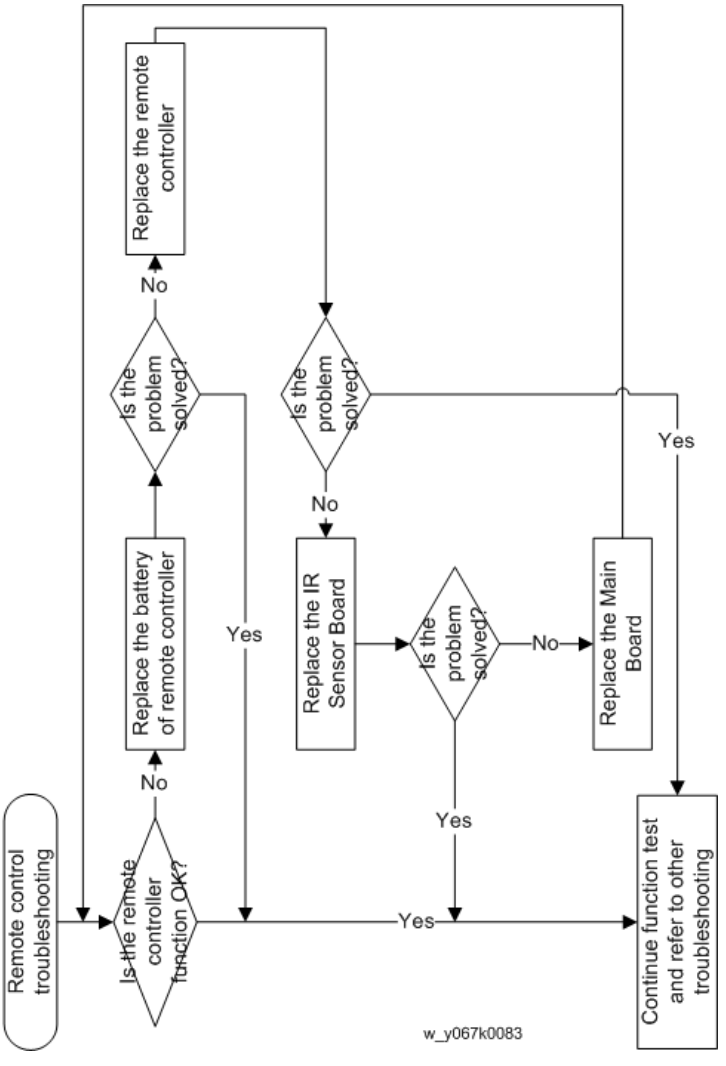


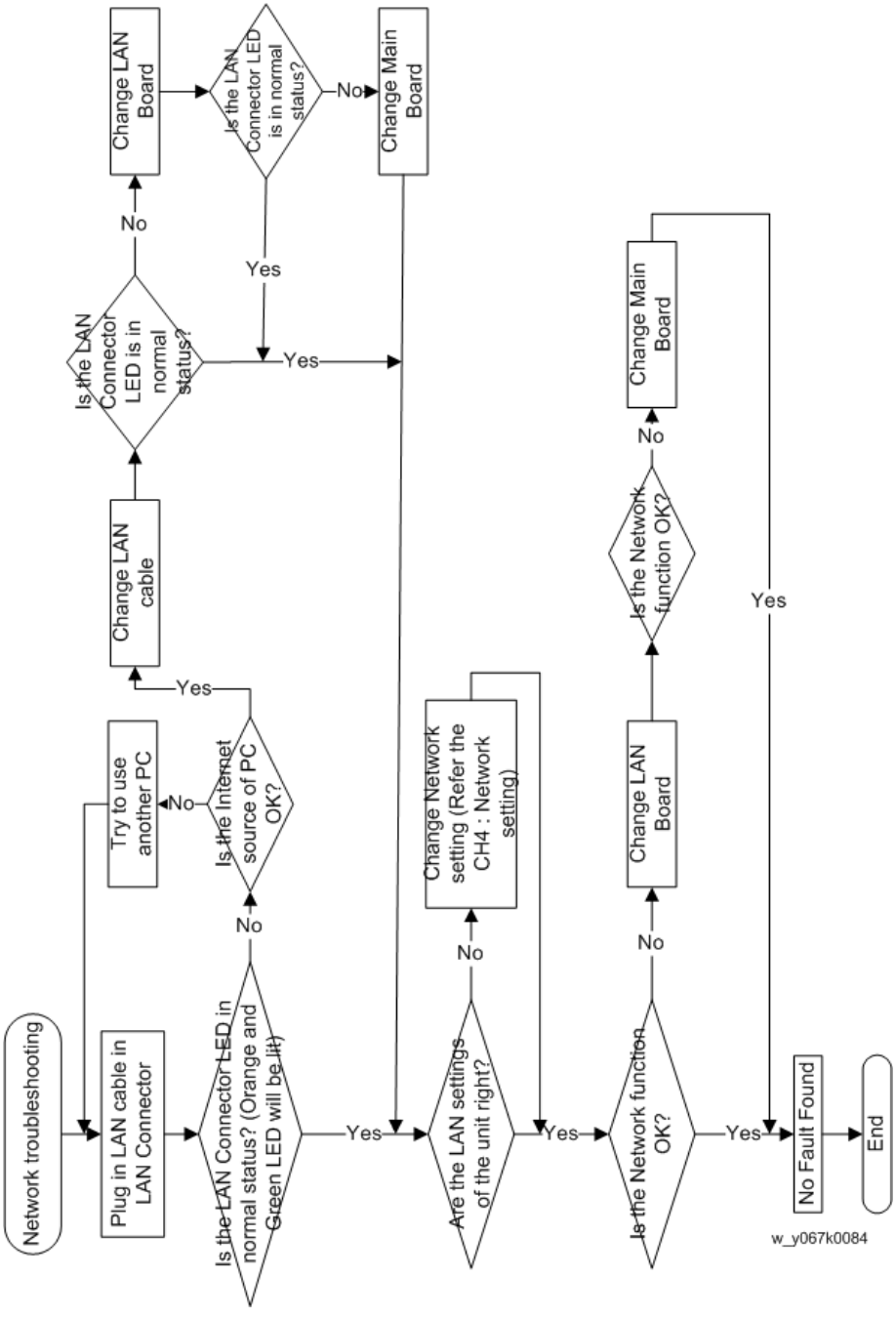
Image Troubleshooting 4



Remote Control Troubleshooting



Network Troubleshooting

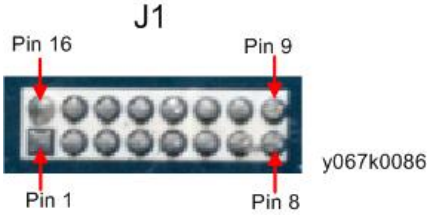


Pin Assignment

Note

- The Pin Voltage is only for your reference, as some of PIN needed to measure of current or sync pulse to determine.

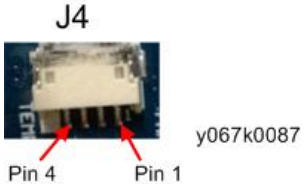
J1: 16Pin POWER From LVPS



PIN	Description	Voltage (V)
1	PFC ON	Signal
2	GND	0
3	GND	0
4	GND	0
5	5V	5V+/- 5%
6	12V	12V +/- 5%
7	12V	12V +/- 5%
8	12V	12V +/- 5%
9	12V	12V +/- 5%
10	12V	12 V +/- 5%
11	12V	12V +/- 5%
12	GND	0
13	GND	0
14	GND	0

PIN	Description	Voltage (V)
15	GND	0
16	GND	0

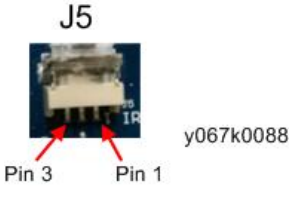
J4: Thermal Sensor



y067k0087

PIN	Description	Voltage (V)
1	TS_BD_VCC	3.3V +/- 5%
2	TS_BD_GND	0
3	TS_BD_SDA	Signal Low=0V, High=3.3V
4	TS_BD_SCL	Signal Low=0V, High=3.3V

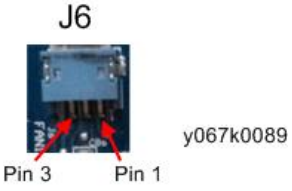
J5: Front IR



y067k0088

PIN	Description	Voltage (V)
1	IR_F_VCC	5V +/- 5%
2	GND	0
3	IR_F	Signal Low=0V, High=5V

J6: System Fan

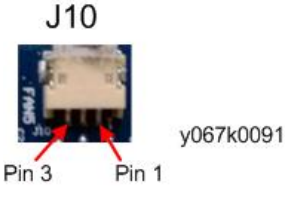


PIN	Description	Voltage (V)
1	FAN_P1	Fan Voltage (4V~12V)
2	FAN_P2	Signal Low=0V, High=3.3V
3	GND	0

J8: Blower Fan

PIN	Description	Voltage (V)
1	FAN3_P1	Fan Voltage (4V~12V)
2	FAN3_P2	Signal Low=0V, High=3.3V
3	GND	0

J10: DMD Fan



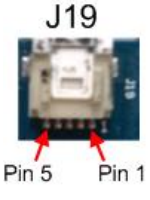
PIN	Description	Voltage (V)
1	FAN5_P1	Fan Voltage (4V~12V)
2	FAN5_P2	Signal Low=0V, High=3.3V
3	GND	0

J18: CW to MB

y067k0092

PIN	Description	Voltage (V)
1	CWCTR1	Signal Low=0V, High=3.3V
2	CWY C1	Signal Low=0V, High=3.3V
3	CWY B1	Signal Low=0V, High=3.3V
4	CWY A1	Signal Low=0V, High=3.3V

J19: Lamp Driver



y067k0093

PIN	Description	Voltage (V)
1	LAMPLIT_IN	Signal Low=0V, High=5V
2	GND	0
3	P5V	5V +/- 5%
4	LAMPEN_OUT	Signal Low=0V, High=5V

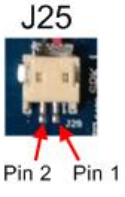
PIN	Description	Voltage (V)
5	LAMP_TXD31	Signal Low=0V, High=5V

J20: Photo Sensor

y067k0094

PIN	Description	Voltage (V)
1	PHOTO 1	5V +/- 5%
2	PHOTO 2	Signal Low=0V, High=5V
3	GND	0

J29: Speaker



y067k0095

PIN	Description	Voltage (V)
1	SP_L+	Signal (Range0V to 11V)
2	SP_L-	Signal (Range0V to 11V)

Service Menu Explanation

Get into Service Mode

Press Power > Left > Right > Menu buttons sequentially on remote controller or on the top panel to get into service mode.

Item	Description	Explanation	For Service
1	MCU A03	Shows the present MCU FW version.	V
2	PJ-U3000	Indicate the model name.	V
3	< Aug 15 2014-11:19>	Date and time of build code	
4	Lamp Hour-Full	Shows working hours of the projector in full mode.	V
5	Lamp Hour-ECO	Shows working hours of the projector in eco mode.	V
6	Operating Hour	Shows operating hours of the projector.	V
7	Lamp On/Off Counter	Shows the times of lamp on or lamp off.	
8	Lamp Voltage/ Max	Shows Lamp current voltage and the max voltage.	
9	UART Response	Counts the lamp driver failure times.	
10	Over Temp	Counts the over temperature times.	V
11	Fan Lock	Counts the fan lock times.	V
12	AC Fail	Counts the abnormal shutdown times.	V
13	Lamp Fail	Counts the lamp ignite fail times.	V
14	CW Fail	Counts the color wheel times.	V
15	Spoke Test	To select some test pattern for simple test.	V
16	Burn in Test	Choose this option and press enter key getting into Burn in Test menu.	V

Item	Description	Explanation	For Service
17	Color Wheel Index	Choose “CW index” to adjust color wheel index.	V
18	ADC Calibration	To adjust the white and black signal level.	V
19	SNID Read	This is an inactive item for this model.	
20	Thermal Detect	Enables or disables thermal detect function.	
21	Waveform ID	Shows the waveform’s ID.	
22	Debug Message	On or off debug message.	
23	Direct Power On	Select “on”, the unit will power on automatically when it turns off abnormally. Select “off”, the function will be disabled.	
24	Factory Fan RPM	Shows the FAN rotate value.	V
25	Factory Reset	Resets the projector’s value.	V
26	Internal Bus Log	Records the I2C bus error status.	
27	Exit	Leaves Service Menu.	V

4. Firmware Update

SYS Firmware Upgrade Procedure

Equipment Needed

Software: (DDP 442X-USB)

- DDP 442X Firmware Downloader.exe
- Firmware (*.img)
- NET Framework 4.0

Hardware:

- Projector
- Power Cord
- Mini USB Cable (USB Cable mini USB to USB (A))
- PC or Laptop

SYS Firmware Upgrade Procedure

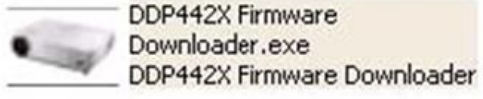
1. **Set-up:**
    - Hold on “MENU” button and plug in the power cord.
    - About 4 second, the STANDBY LED will light orange, the Lamp LED and Temp LED will light red, get into FW Download mode.
    - Release the “MENU” button.
    - Connect projector with Mini USB cable to PC.

y067k0098

Note

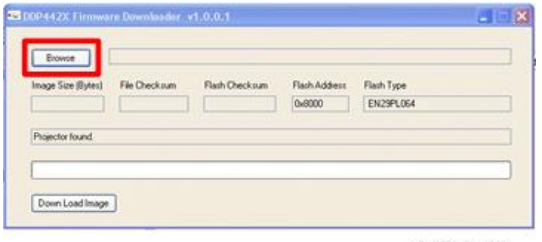
- The system fan and the lamp will not operate.

2. **Execute the "DDP442X Firmware Downloader.exe" file.**



y067k0099

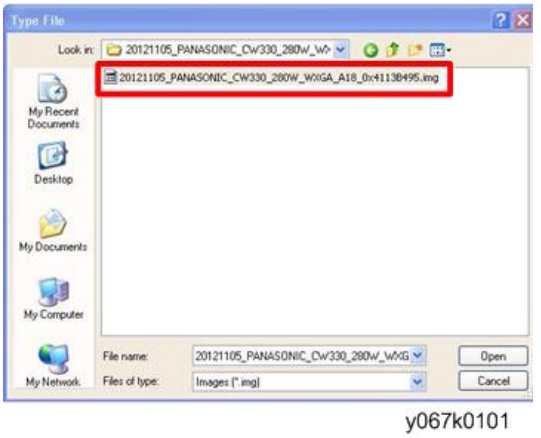
3. **Show up "Projector found" and Click "Browse".**



y067k0100

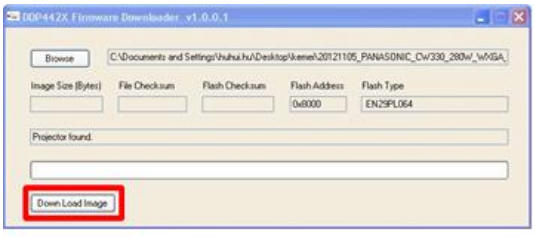
4. **Choose "*.img" file.**

- Click "Open".



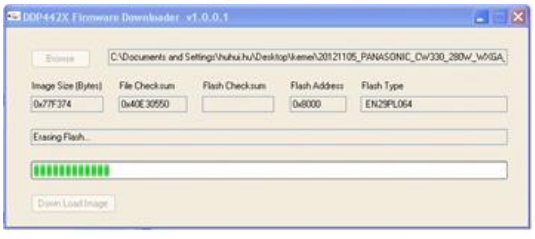
y067k0101

5. **If the firmware is ready, click "Down Load Image" to execute the firmware upgrade.**



y067k0102

6. **Proceeding Picture.**

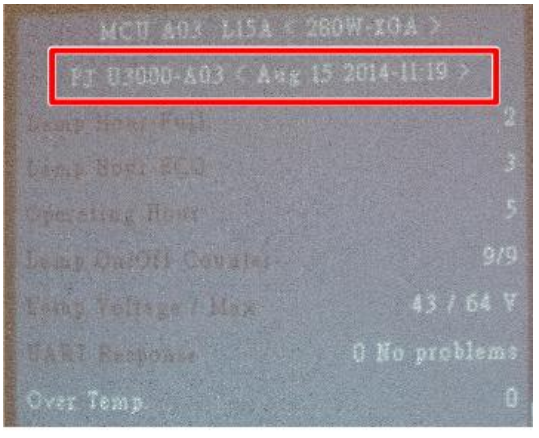


y067k0103

7. **It takes about several minutes, the firmware upgrade process is finished, "Download completed" will appear on the screen.**
   - Click "OK"
   - Unplug Mini USB cable and power cord.

y067k0104

8. **Check SYS firmware version.**
   - Re-plug in power cord, then restart the unit and get into the Service mode to check the SYS firmware version.
     (To get into service mode, please press "Power", "Left", "Right" and "Menu" buttons sequentially on remote controller.)


MCU A03 L15A < 280W-ZOA >
FI 03000-A03 < Aug 15 2014-11:19 >
2
3
5
9/9
43 / 64 V
0 No problems
Over Temp
0

y067k0105