

# Service manual

PJ2000/PJ2000i UST DLP  
PJ3000/PJ3000i UST-W DLP



## Preface

This manual is applied to PJ2000(i) UST DLP PJ3000(i) UST-W DLP projection system. The manual gives you 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.*

## Comparison List

	PJ2000	PJ2000i	PJ3000	PJ3000i
IO Cover	70.8ZM13GR01		70.8ZN20GR01	
LAMP DRIVER	75.8ML02G011		75.8SZ01G001	
ENGINE MODULE	75.8PE05G001		75.8PE06G002	
LVPS	75.8PEP1G001		75.8PEP2G001	
IR Camera	NA	SP.8ZM03G001	NA	SP.8ZM03G001
Laser Curtain	NA	SP.8ZM02G001	NA	SP.8ZM02G001

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Exploded Image I

**Appendix B**

Serial Number System Definition I

PCBA Code Definition II

# 1. Introduction

## Compatible Modes

### VGA Analog

#### (1) PC Signal

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
VGA	640x480	60	31.50
	640x480	67	35.0
	640x480	72	37.90
	640x480	75	37.5
	640x480	85	43.3
	640x480	120	61.9
IBM	720x400	70	31.5
SVGA	800 x 600	56	35.10
	800 x 600	60	37.90
	800 x 600	72	48.10
	800 x 600	75	46.90
	800 x 600	85	53.70
	800 x 600	120	77.4
Apple, Mac II	832 x 624	75	49.1
XGA	1024 x 768	60	48.40
	1024 x 768	70	56.50
	1024 x 768	75	60.00
	1024 x 768	85	68.70
	1024 x 768	120	99

## Chapter 1: Introduction

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
Apple, Mac II	1152 x 864	75	68.7
SXGA	1280 x 1024	60	64
	1280 x 1024	72	77
	1280 x 1024	75	80
Quad VGA	1280x960	60	60
	1280x960	75	75
SXGA+	1400 x 1050	60	65.3
UXGA	1600 x 1200	60	75.00

### (2) Extended Wide Timing

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
WXGA	1280x720	60	44.8
	1280x800	60	49.6
	1366x768	60	47.7
	1440x900	60	59.9
WSXGA+	1680x1050	60	65.3

### (3) Component Signal

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
480i	720x480(1440x480)	59.94(29.97)	15.7
576i	720x576(1440x576)	50(25)	15.6
480p	720x480	59.94	31.5
576p	720x576	50	31.3
720p	1280x720	60	45.0
720p	1280x720	50	37.5
1080i	1920x1080	60(30)	33.8
1080i	1920x1080	50(25)	28.1
1080p	1920x1080	23.98/24	27.0
1080p	1920x1080	60	67.5
1080p	1920x1080	50	56.3

## HDMI Digital

### (1) PC Signal

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
VGA	640x480	60	31.50
	640x480	67	35.0
	640x480	72	37.90
	640x480	75	37.5
	640x480	85	43.3
	640x480	120	61.9
IBM	720x400	70	31.5
SVGA	800 x 600	56	35.10
	800 x 600	60	37.90
	800 x 600	72	48.10
	800 x 600	75	46.90
	800 x 600	85	53.70
	800 x 600	120	77.4
Apple, Mac II	832 x 624	75	49.1
XGA	1024 x 768	60	48.40
	1024 x 768	70	56.50
	1024 x 768	75	60.00
	1024 x 768	85	68.70
	1024 x 768	120	99
Apple, Mac II	1152 x 864	75	68.7
SXGA	1280 x 1024	60	64
	1280 x 1024	72	77
	1280 x 1024	75	80
Quad VGA	1280x960	60	60
	1280x960	75	75
SXGA+	1400 x 1050	60	65.3
UXGA	1600 x 1200	60	75.00

## Chapter 1: Introduction

### (2) Extended Wide Timing

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
WXGA	1280x720	60	44.8
	1280x800	60	49.6
	1366x768	60	47.7
	1440x900	60	59.9
WSXGA+	1680x1050	60	65.3

### (3) HDMI-Video Signal

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
640x480p	640x480	59.94/60	31.5
480i	720x480(1440x480)	59.94(29.97)	15.7
576i	720x576(1440x576)	50(25)	15.6
480p	720x480	59.94	31.5
576p	720x576	50	31.3
720p	1280x720	60	45.0
720p	1280x720	50	37.5
1080i	1920x1080	60(30)	33.8
1080i	1920x1080	50(25)	28.1
1080p	1920x1080	23.98/24	27.0
1080p	1920x1080	60	67.5
1080p	1920x1080	50	56.3

*Note: If the compatibility supportive signal is different from user's manual, please refer to user's manual.*

## 2. Disassembly Process

### 2-1 Equipment Needed & Product Overview

1. Projector
2. Hex Sleeves 7mm
3. Long Nose Nipper
4. Screw Bit (+): 105
5. Screw Bit (+): 107
6. Screw Bit (-): 107
7. Hex Sleeves 5 mm
8. + NO.0 Screwdriver

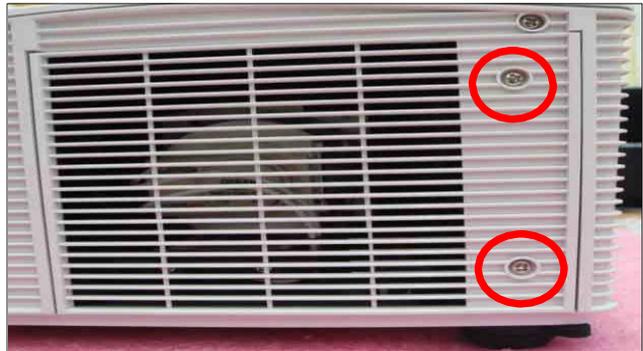
*\* Before you start: This process is protective level II. Operators should wear electrostatic chains. Please place the protective cover or protective plastic on the lens and mirror for prevent scratched.*



## Chapter 2: Disassembly Process

### 2-2 Disassemble Lamp Module and Mesh Inlet

1. Loosen 2 screws (as red circle) on the lamp cover.



2. Separate the lamp cover and lamp cover strap (as green square).



Lamp Cover

3. Loosen 2 screws (as yellow circle) on the lamp module.



4. Take off the lamp module.



Lamp Module

Chapter 2: Disassembly Process

5. Remove the two mesh inlets.



Back Mesh

Side Mesh Inlet

**2-3 Disassemble IR Camera  
(for PJ2000i/PJ3000i)**

1. Push down the latch (as yellow arrow) and pull out the IR camera module (as green arrow).



IR Camera

Chapter 2: Disassembly Process

**2-4 Disassemble Top Cover Module**

1. Unscrew 2 screws (as red circles).



2. Disassemble the Bottom Cap (as green square).



3. Unscrew 2 screws (as yellow circle).



4. Remove the front mirror cover module.



Front Mirror Cover Module

## Chapter 2: Disassembly Process

5. Remove the rear mirror cover.



Rear Mirror Cover

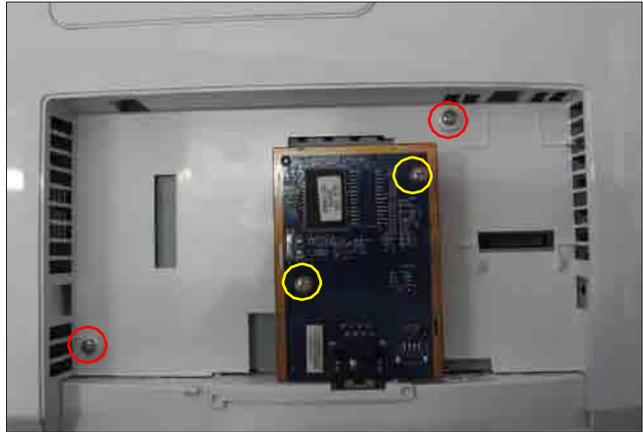
6. Unscrew 2 screws (as green circle) to remove wireless top cover.



Wireless Top Cover

## Chapter 2: Disassembly Process

7. Unscrew 2 screws (as yellow circles) to disassemble LAN board.



8. Unscrew 2 screws (as red circles).



LAN Board

9. Unscrew 2 screws (as red circle).



## Chapter 2: Disassembly Process

10. Unscrew 3 screws (as blue circle).



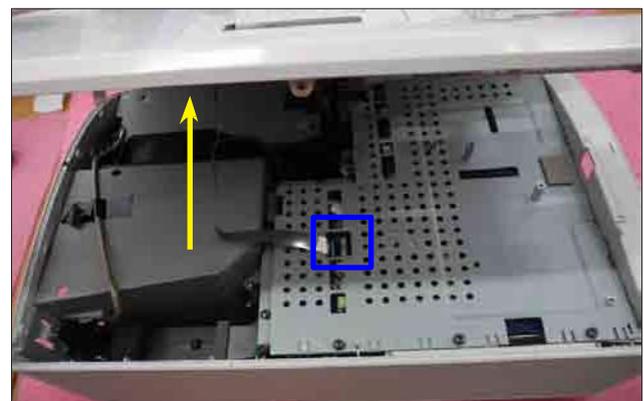
11. Unscrew 3 screws (as yellow circle).



12. Unscrew 2 screws (as red circle).



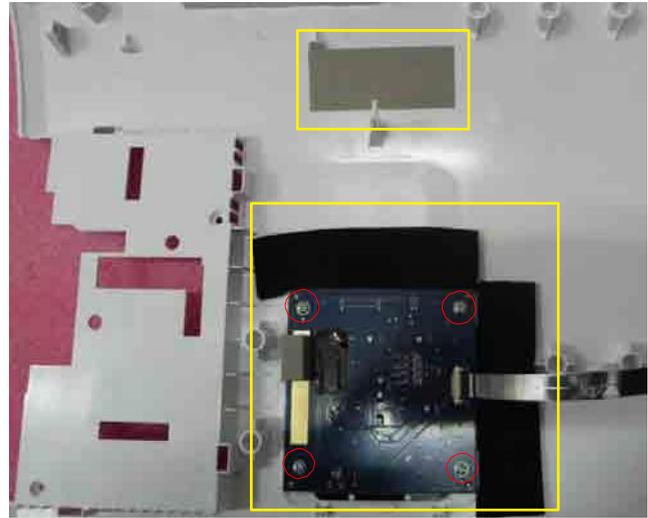
13. Pull upward the top cover module. (as yellow arrow)



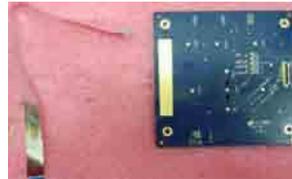
14. Unplug 1 connector (as blue square), then remove the top cover module.

## Chapter 2: Disassembly Process

15. Tear off the keypad molar and sponge (as yellow square).



16. Unscrew 4 screws (as red circle) and separate the keypad board and FPC cable.

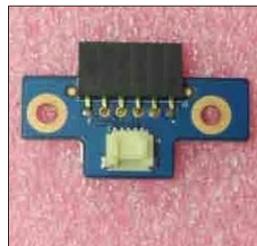


FFC Cable Keypad Board



Keypad Button

17. Unscrew 2 screws (as green circles) and unplug 1 connector (as red square) to disassemble the IR camera transform board.(For PJ2000i/PJ3000i)



IR Camera Transform Board

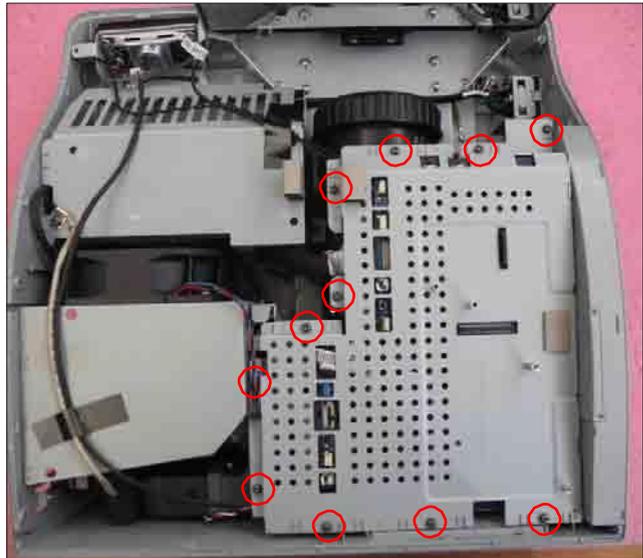


Top Cover

## Chapter 2: Disassembly Process

### 2-4 Disassemble Main Board

1. Unscrew 11 screws (as red circle) to disassemble the main board shielding.



2. Unscrew 6 screws (as green circle) .

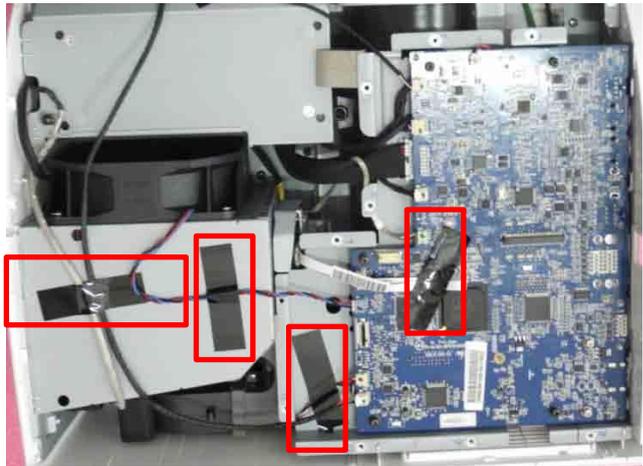


3. Unscrew 8 hex screws (as blue circle) and 4 screws (as yellow circle).

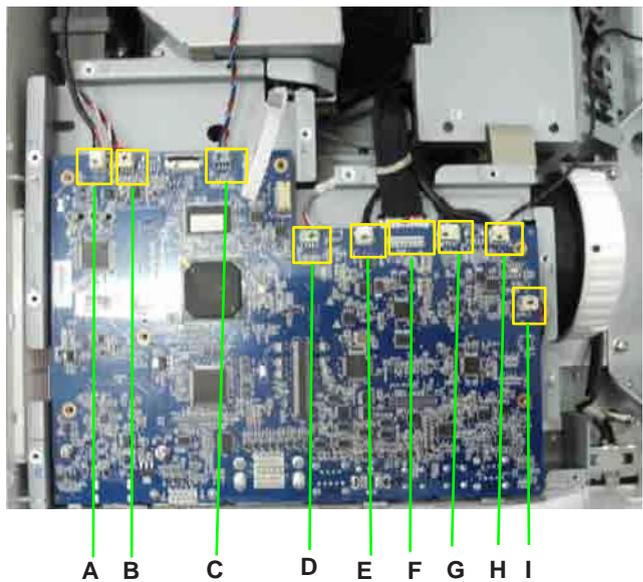


## Chapter 2: Disassembly Process

4. Tear off the tape (as red square).



5. Unplug 9 connectors (as yellow square).



Chapter 2: Disassembly Process

Item	Male Connector on Main Board	The key feature	Figure
A	IR CAMERA TRANSFORM BOARD (For PJ2000i/PJ3000i)	Compose of Red/White/Green/Brown/Blackwire, White connector and Black wire tube (5pin)	
B	FAN3	Compose of Red/White/Black wire, White connector(3 pin)	
C	FAN1	Compose of Red/Blue/Black wire, White connector(3 pin)	
D	PHOTO SENSOR	Compose of Red/White/Black-wire, Green connector and Gray wire tube (3 pin)	
E	LAMP DRIVER	Black wire tube (5 pin)	
F	LVPS TO M/B	Black wire tube (16 pin)	
G	THERMAL SENSOR	Compose of Red/White/Black/Blue wire, White connector and Black wire tube (4 pin)	
H	IR	Compose of Red/White/Black-wire, White connector and Black wire tube (3 pin)	
I	SPEAKER	Compose of Red/Black wire(2 pin)	

## Chapter 2: Disassembly Process

6. Remove the main board module.



Main Board

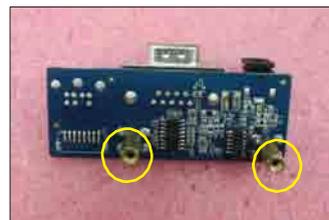


Daughter Board

7. Unscrew 2 screws (as green circle) to disassemble daughter board.



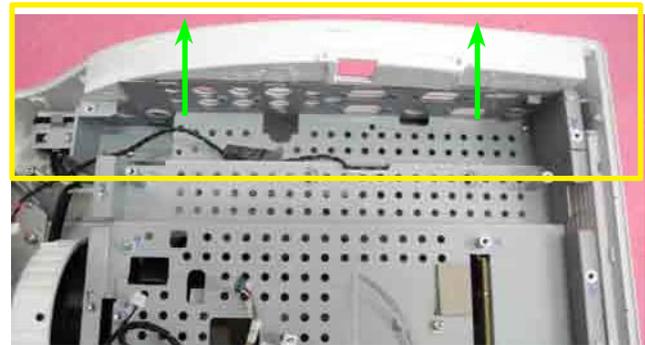
8. Unscrew 2 screw hex (as yellow circle).



Chapter 2: Disassembly Process

## 2-5 Disassemble IO Cover Module and Bottom Shielding

1. Remove the IO cover module (as green arrow).



2. Separate the IO cover module.

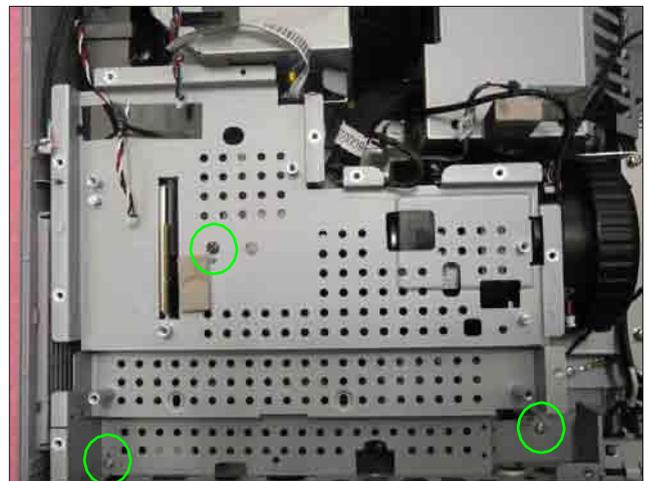


IO Cover Module



Wireless Cap

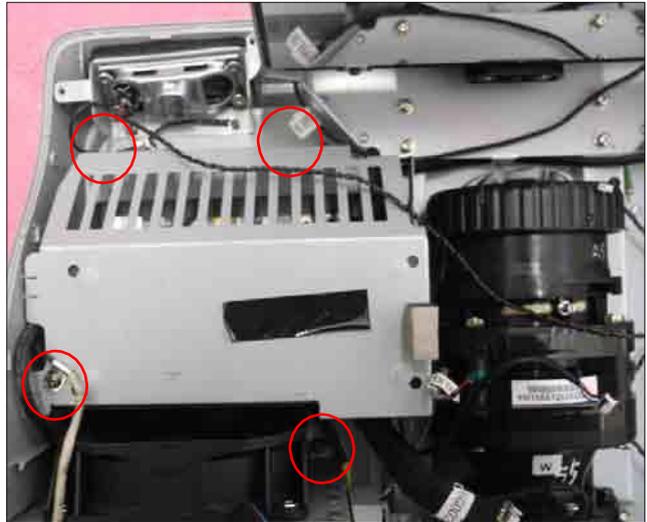
3. Unscrew 3 screws (as green circle) to disassemble the bottom shielding.



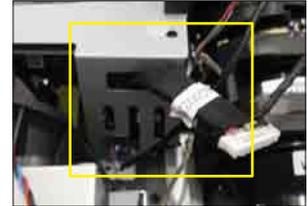
## Chapter 2: Disassembly Process

### 2-6 Disassemble Lamp Driver Module and LVPS Module

1. Unscrew 4 screws (as red circle) to disassemble the lamp driver module.



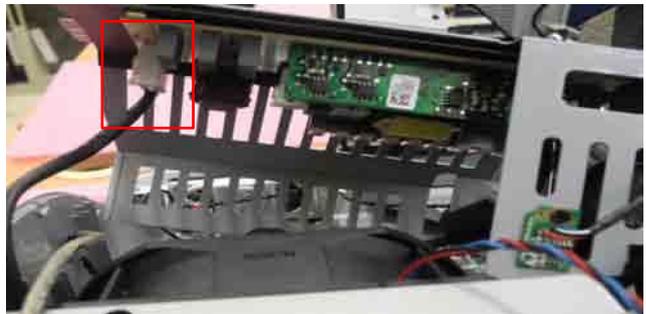
*Note: 1. The Interlock switch and IR camera transform cable should be from the notch (as blue square).*



2. The 16 pin cable and 5 pin cable should be from the notch (as yellow square).

## Chapter 2: Disassembly Process

2. Unplug 2 connectors (as red square) to disassemble the lamp driver module.

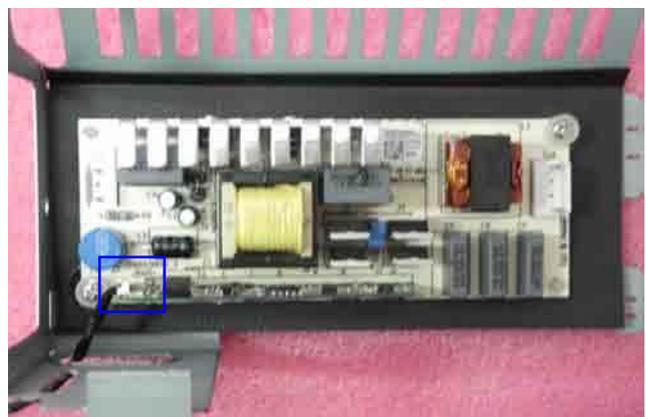


3. Unscrew 1 screw (as green circle) to disassemble the thermal sensor board.



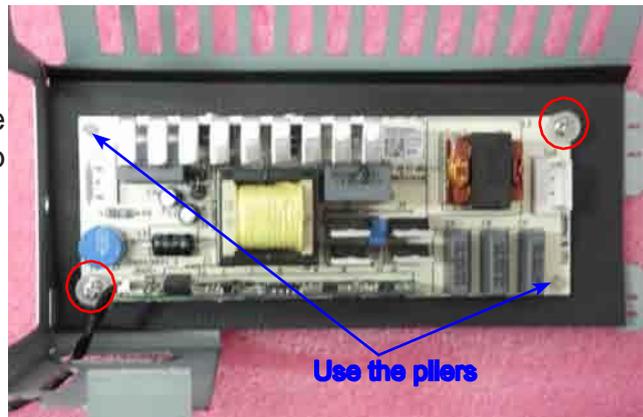
Thermal Sensor Board

4. Unplug 1 connector (as blue square).



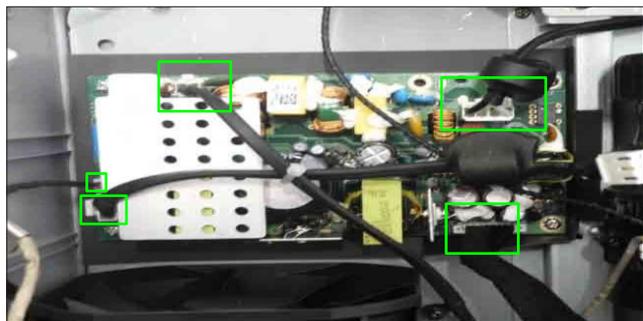
## Chapter 2: Disassembly Process

5. Unscrew 2 screws (as red circle) and use the pliers to separate lamp driver and lamp driver shielding.



Lamp driver

6. Unplug 5 connectors (as green square).



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



8. Take off molar (as yellow square).



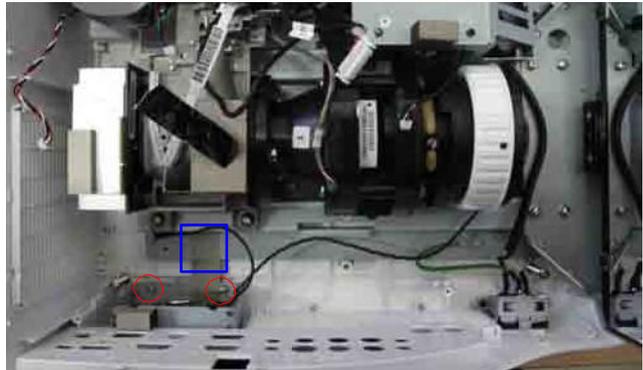
LVPS



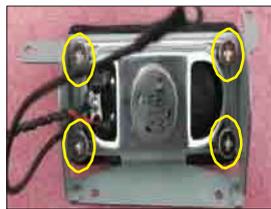
Chapter 2: Disassembly Process

## 2-7 Disassemble Speaker and AC Inlet Module

1. Tear off the molar (as blue square) and unscrew 2 screws (as red circle) to disassemble the speaker module.

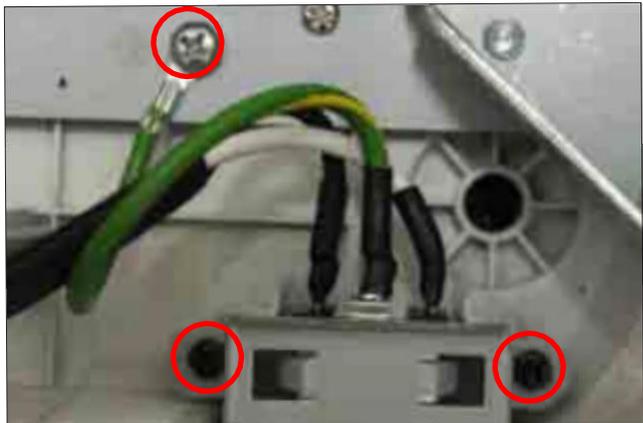


2. Unscrew 4 screws (as yellow circle) to remove the speaker.

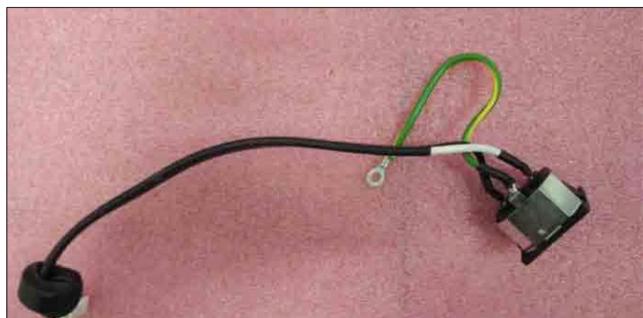


speaker

3. Unscrew 3 screws (as red circle) to disassemble AC inlet bracket.



4. Remove AC Inlet module.

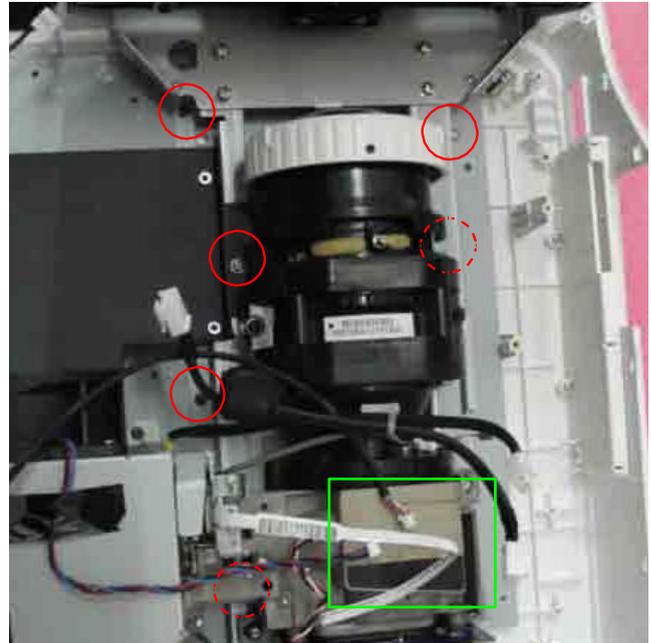


AC Inlet

## Chapter 2: Disassembly Process

### 2-8 Disassemble Engine Module

1. Unscrew 6 screws (as red circle) and remove the Engine Module.
  
2. Tear off the EMI tape and EMI gasket (as green square) .



3. Tear off the tape (as blue square) and unhook the hooks on the IR sensor holder and remove the front IR sensor board.

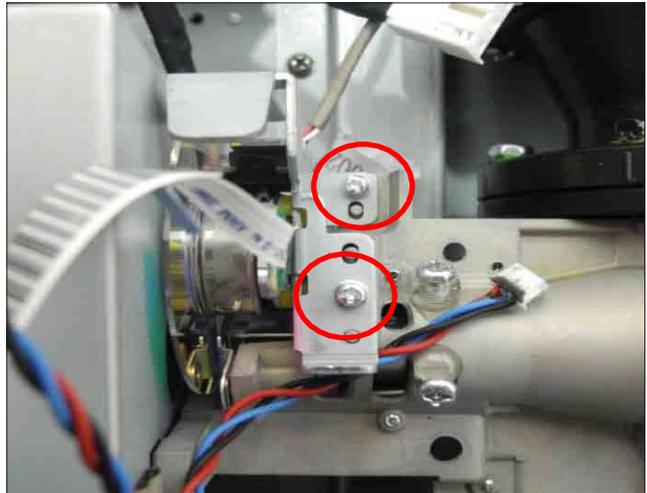


IR Sensor

Chapter 2: Disassembly Process

## 2-9 Disassemble Color Wheel Module

1. Unscrew 2 screws (as red circle) to remove color wheel module.



2. Unscrew 1 screw (as blue circle) to separate color wheel module and photo sensor board.



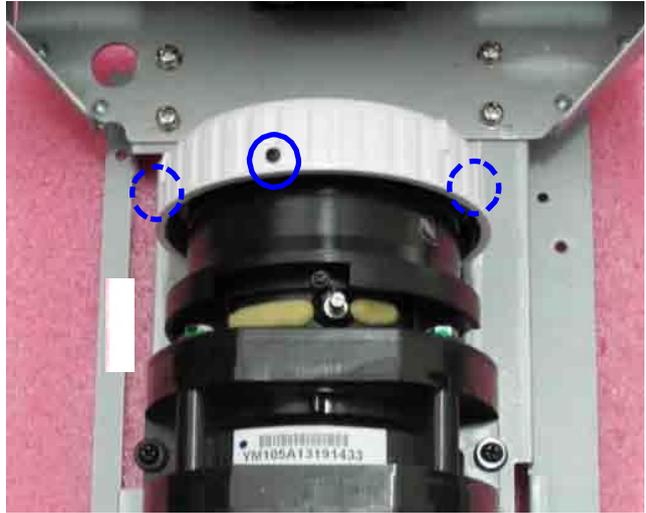
color wheel module



photo sensor board.

## Chapter 2: Disassembly Process

- Unscrew 3 screws (as blue circle) to disassemble focus ring.



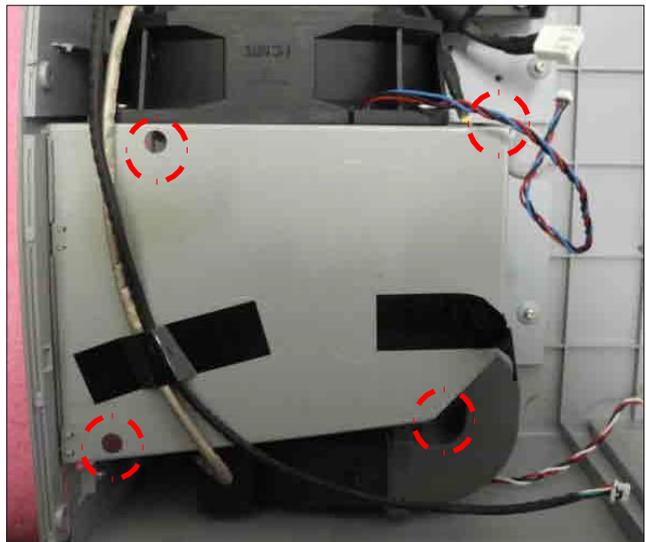
The engine module disassembly process is completed.



focus ring

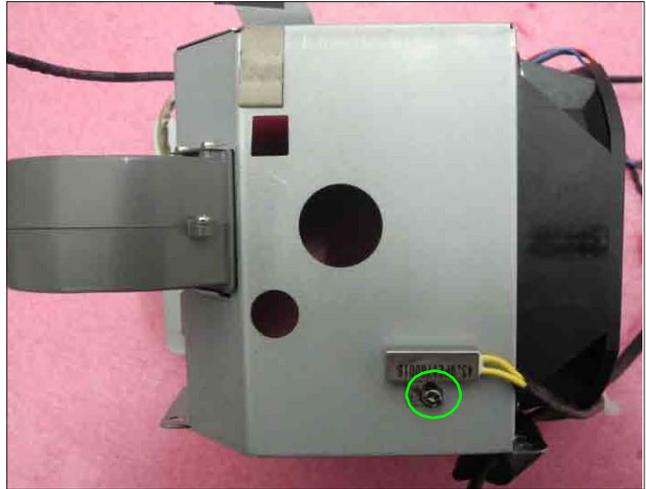
### **2-10 Disassemble System FAN and Blower**

- Unscrew 4 screws (as red circle) to disassemble system fan module.



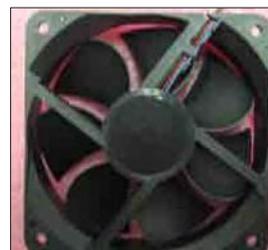
## Chapter 2: Disassembly Process

2. Unscrew 1 screw (as green circle) to disassemble the thermal switch.



Thermal Switch

3. Unscrew 4 screws to disassemble system fan.



system fan

## Chapter 2: Disassembly Process

4. Unscrew 1 screw (as red circle) to disassemble the interlock switch .



Interlock switch

5. Unscrew 3 screws (as yellow circle) to disassemble the Blower.



6. Separate the Blower and Blower Rubber.



blower rubber

blower

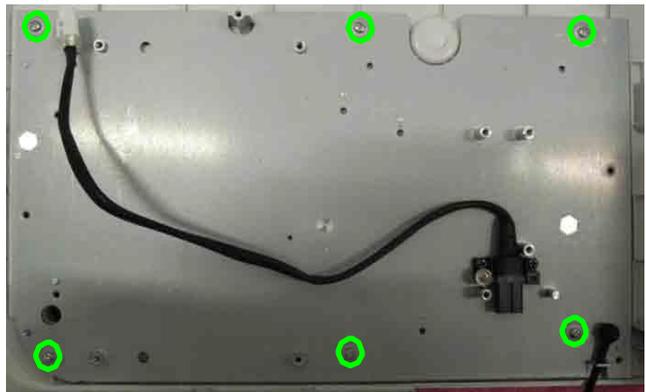
Chapter 2: Disassembly Process

**2-11 Disassemble Bottom Cover Module**

1. Unscrew 4 screws (as red square) and remove the lamp holder rail.

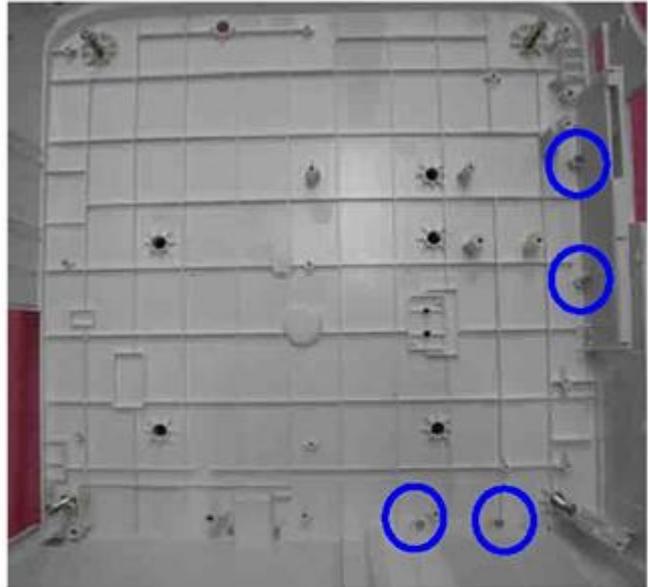


2. Unscrew 6 screws (as green circle) and remove the bottom shielding.



## Chapter 2: Disassembly Process

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



bottom cover



Chapter 2: Disassembly Process

## 2-12 Repair Action

Repair action	Change parts							Software	Description page
	Main Board	Lamp Module	IR Camera	Laser Curtain	Lamp Driver	Fan	Color Wheel	Firmware	
Firmware Update	v							v	Chapter 5
Color Wheel Index	v						v		Chapter 4-4-1.7
OSD Reset	v	v						v	Chapter 4-7.2
ADC Calibration	v							v	Chapter 4-3.1
Factory Fan RPM	v					v		v	Chapter 4-3.3
Waveform Download					v				Chapter 4-3.2
RJ45 Port Test	v							v	Chapter 4-4-9
Re-write Lamp Usage Hour	v								Chapter 4-8
IR Camera test	v		v	v				v	Chapter 4-5

Chapter 3: Troubleshooting

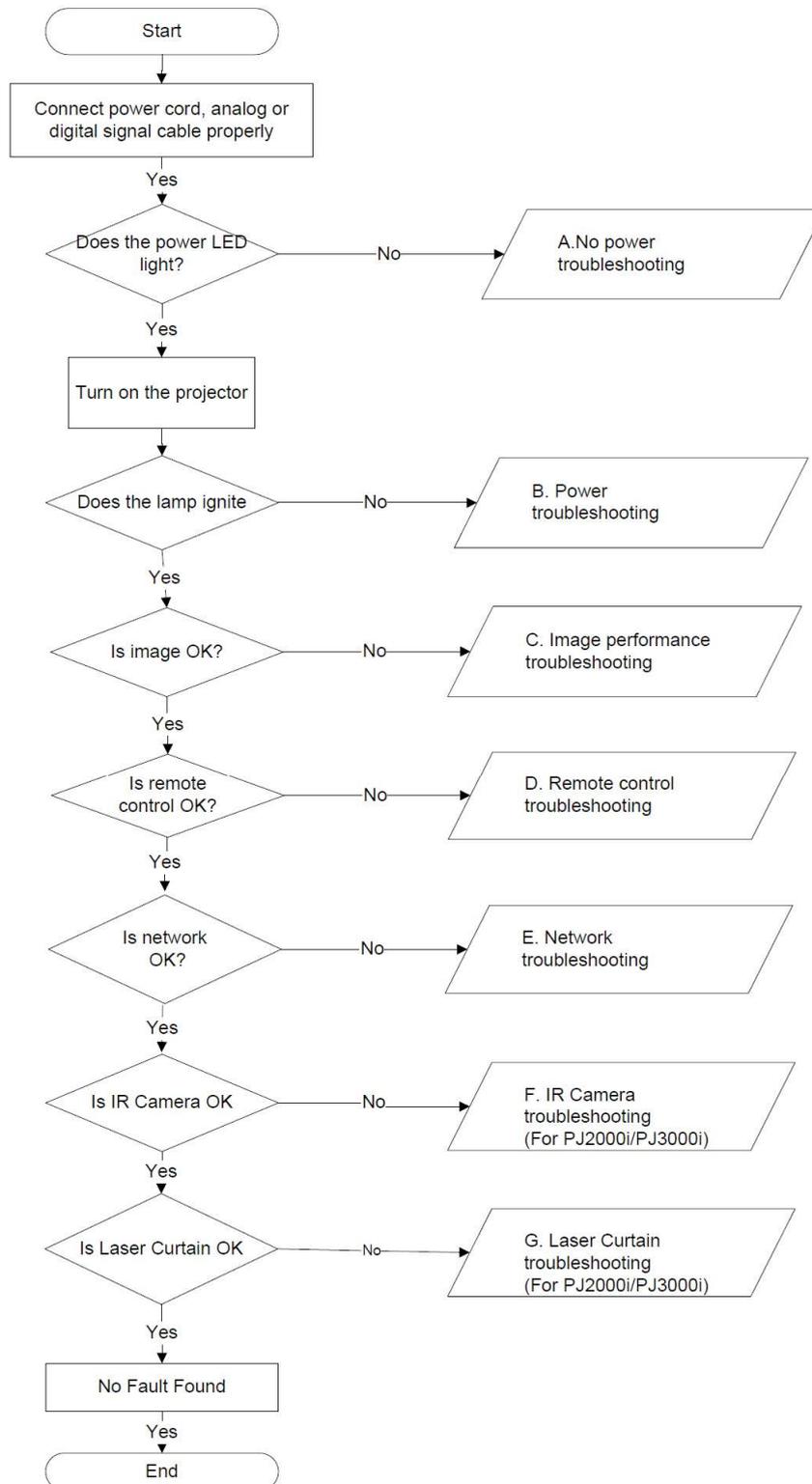
# 3. Troubleshooting

## 3-1 LED Lighting Message

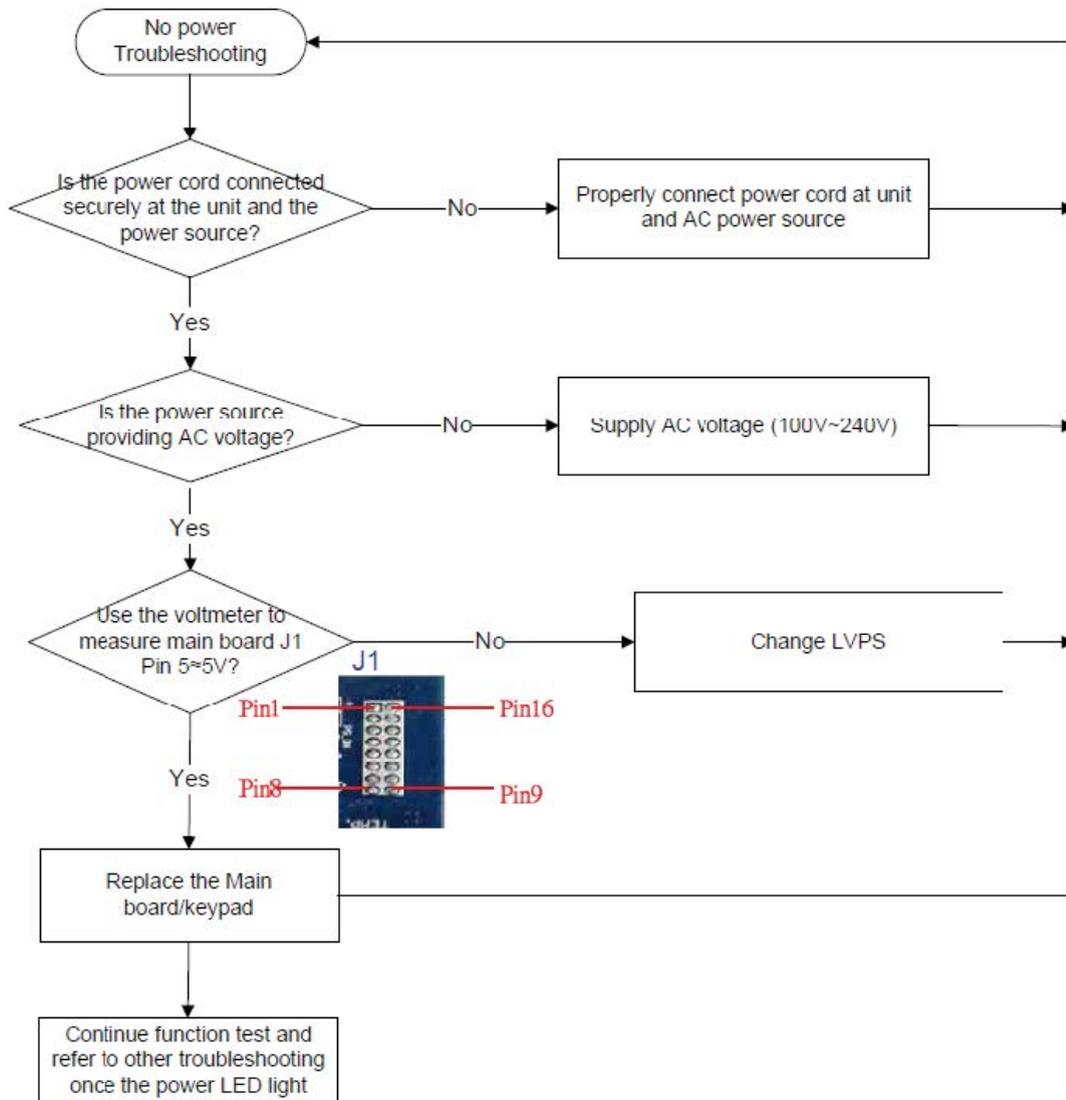
Message	LAMP(Red)	TEMP(Red)	Power LED	
			(Red)	(Blue)
Power Plug	Flash ON to OFF 100ms	Flash ON to OFF 100ms	Flash ON to OFF 100ms	
Standby				
Power button ON				
Cooling state			0.5 second(ON) 0.5 second(OFF) flashing	
Power button OFF: Cooling completed; Standby Mode				
Firmware Download				
Thermal sensor error, OSD showing as below: 1. Make sure air in and outlets are not blocker. 2. Make sure the environment temperature is under 40 degree C.				
Fan lock error, OSD showing as below: The projector will switch off automatically.		0.5 second H(On) 0.5 second L(Off) flashing		
Lamp error(Lamp, Lamp driver, Color wheel)				

 Steady light       No light

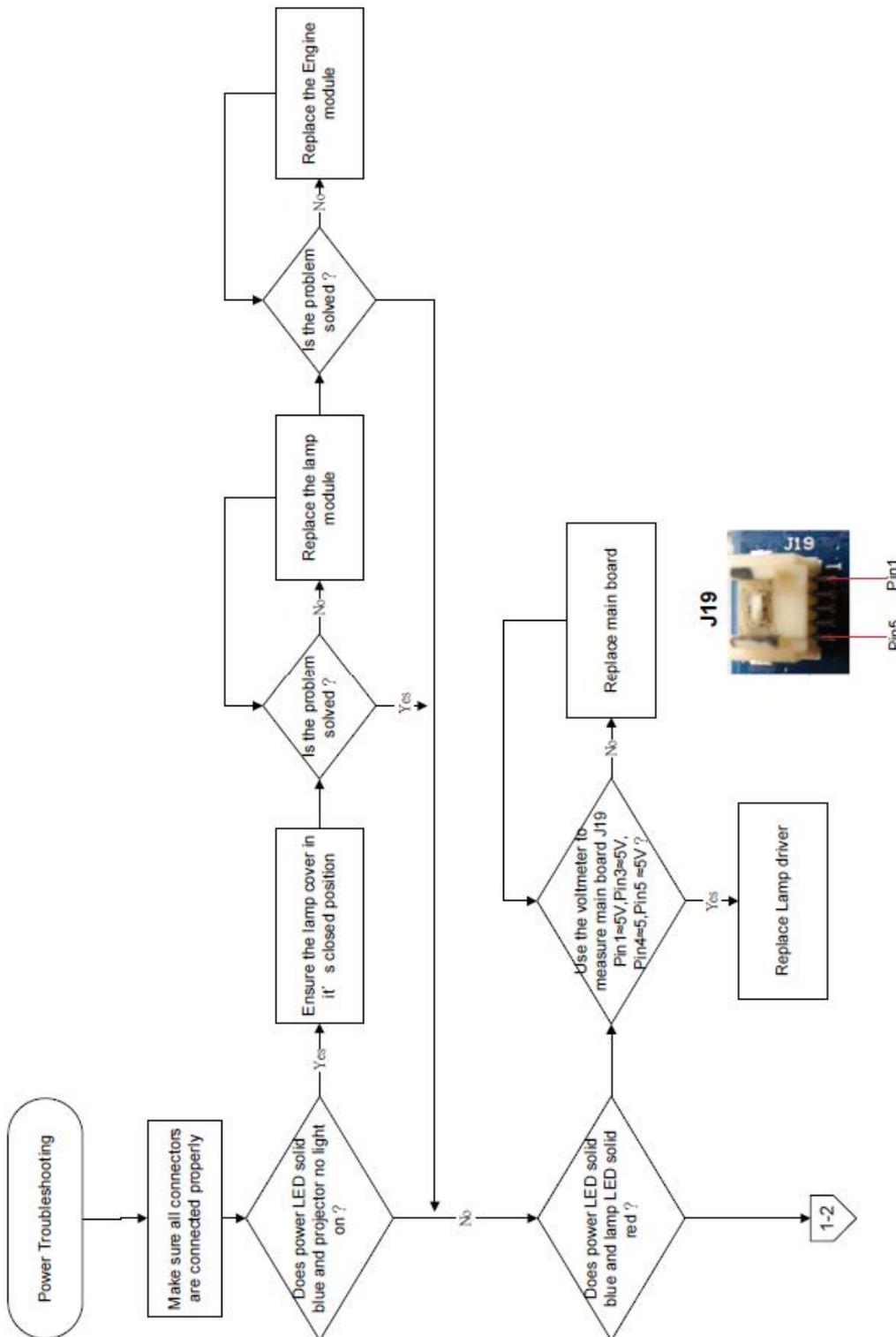
## 3-2 Main Procedure



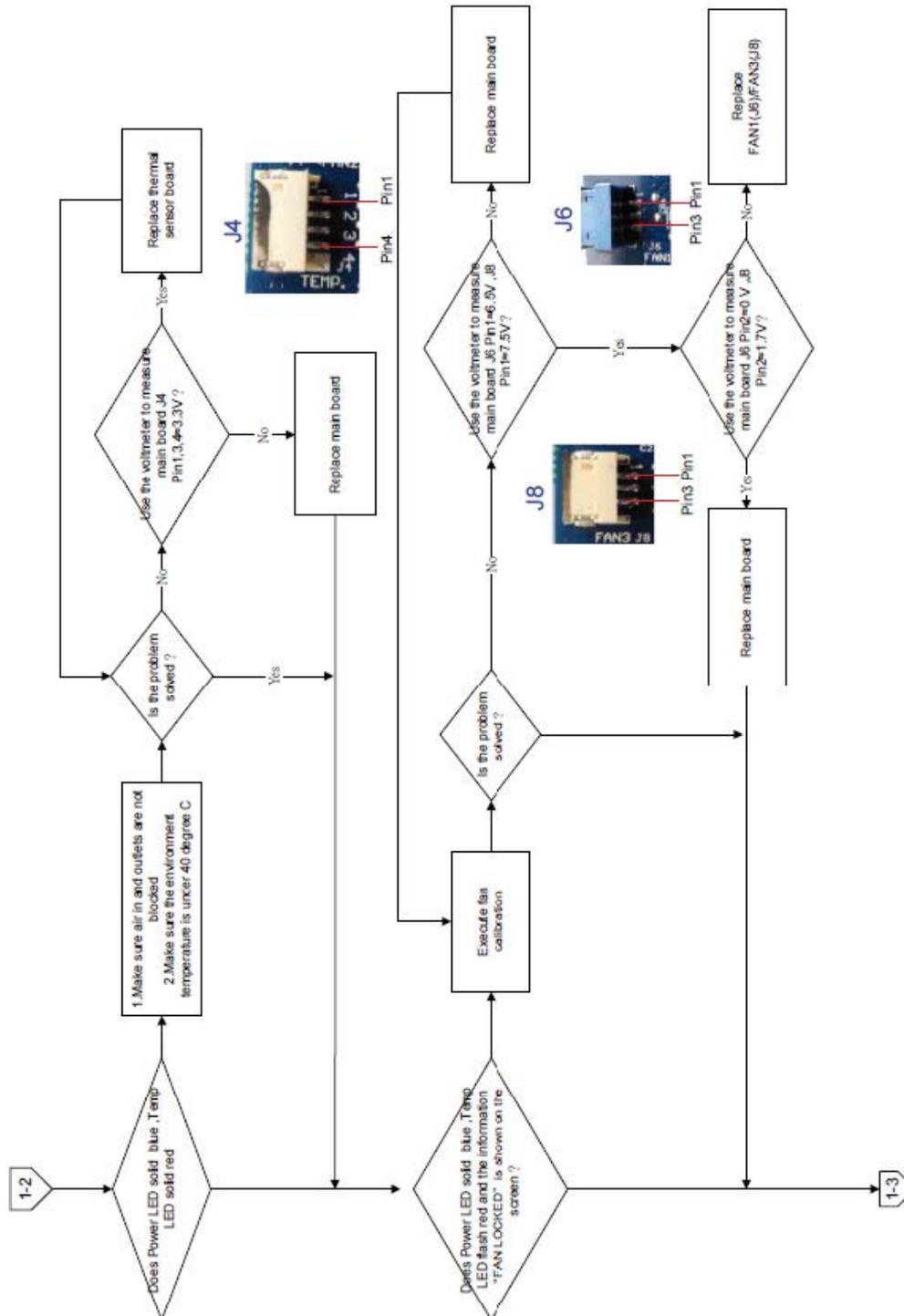
### 3-3 NO Power troubleshooting



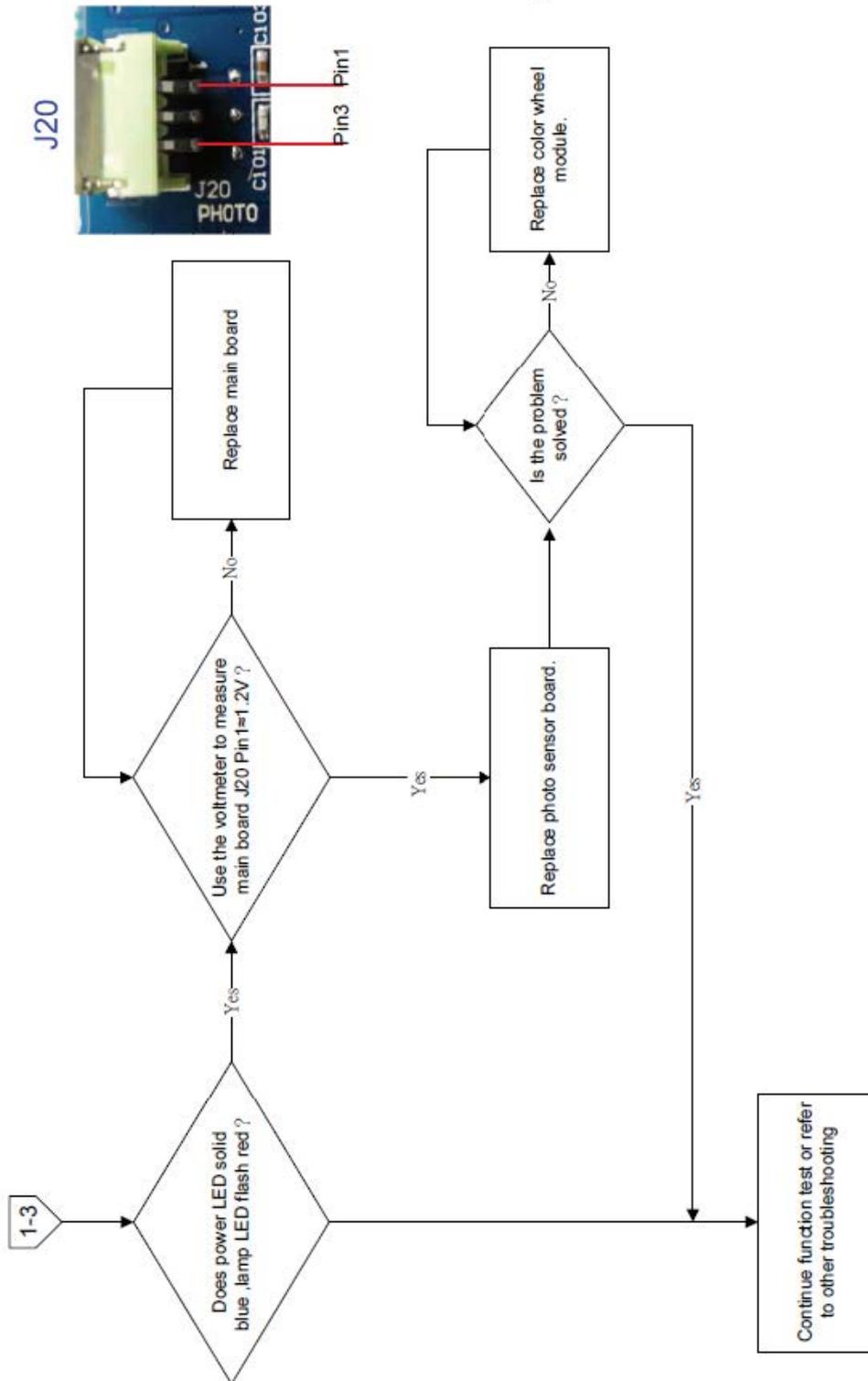
## 3-4 Power troubleshooting



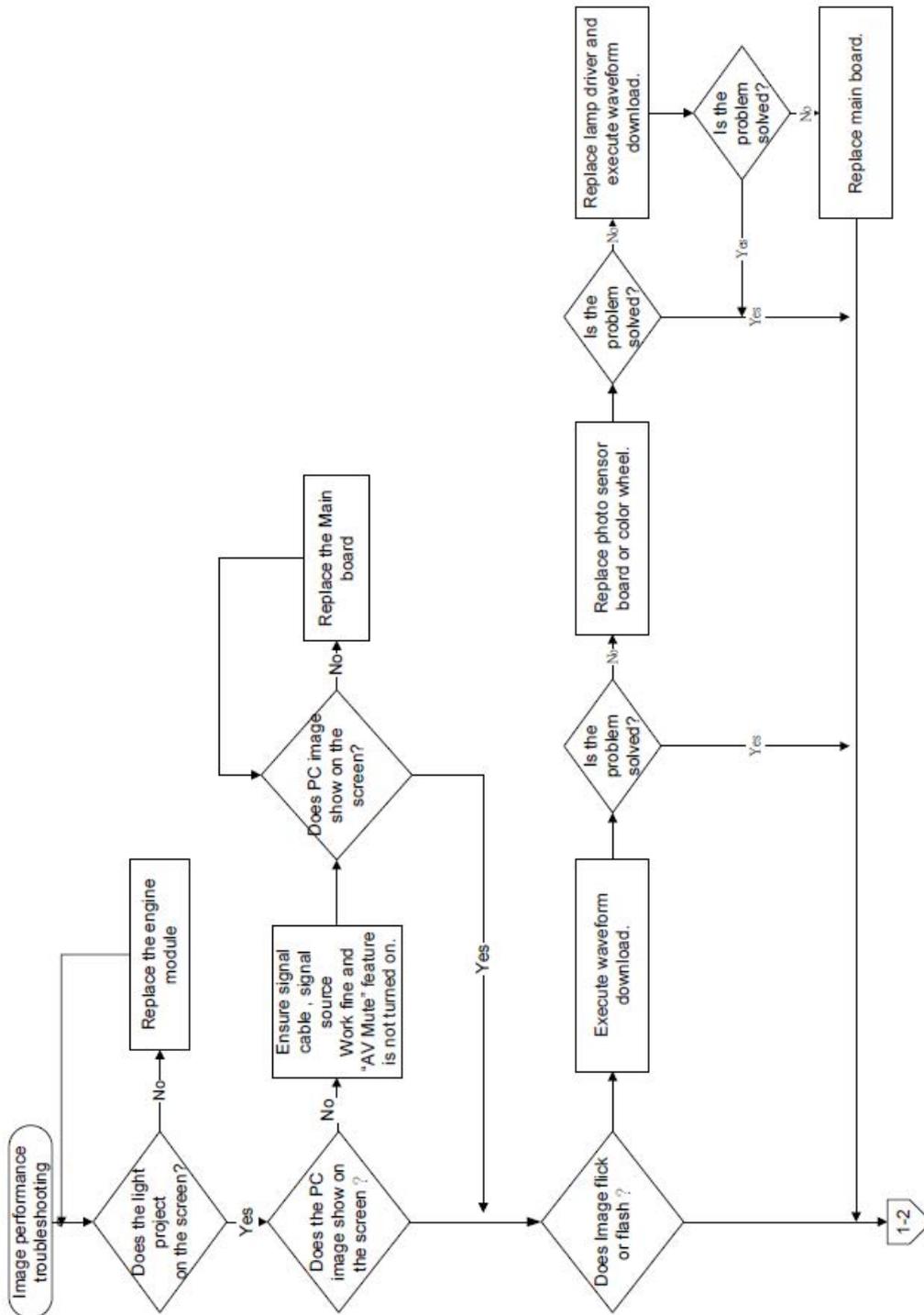
### 3-4 Power



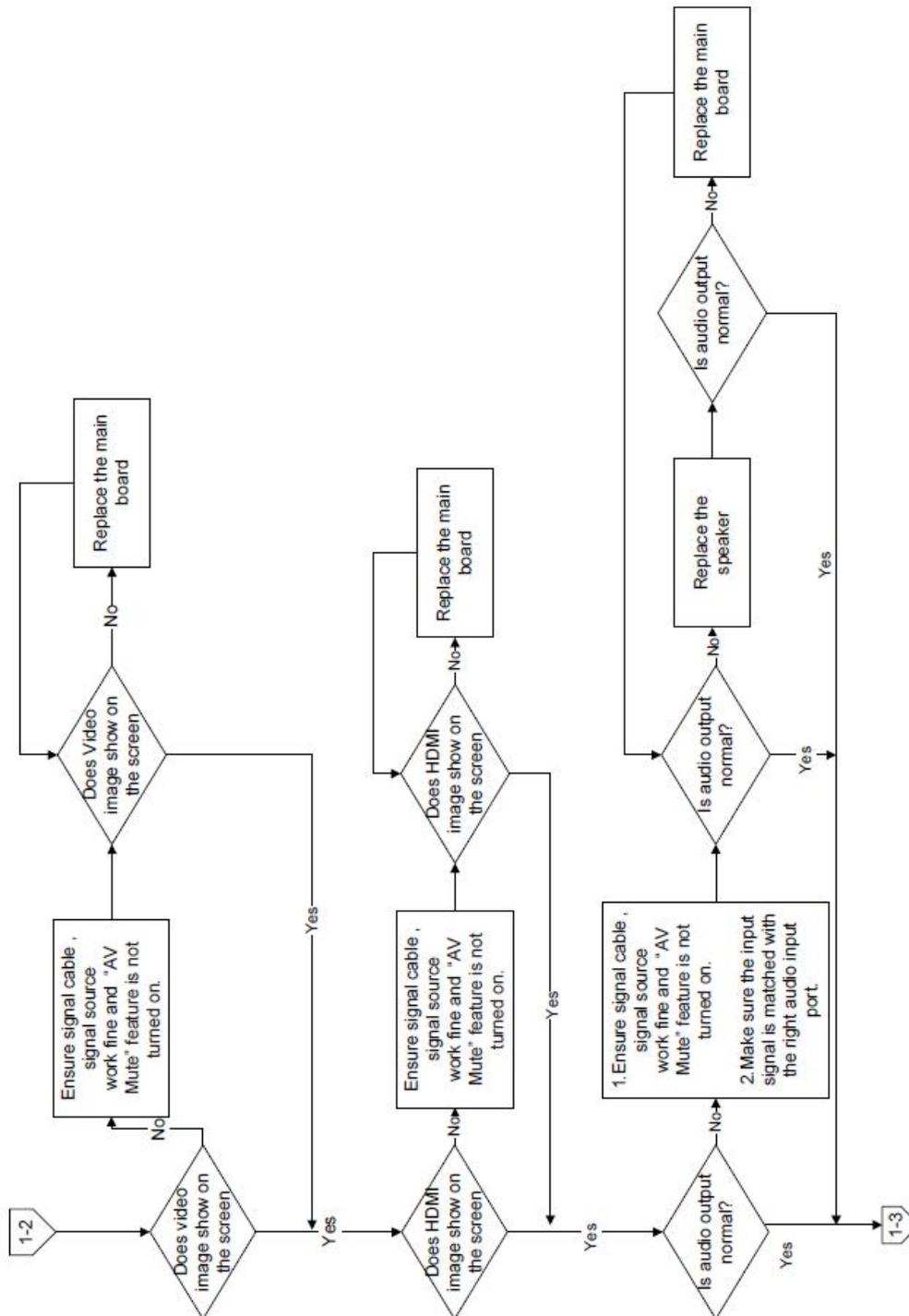
### 3-4 Power troubleshooting



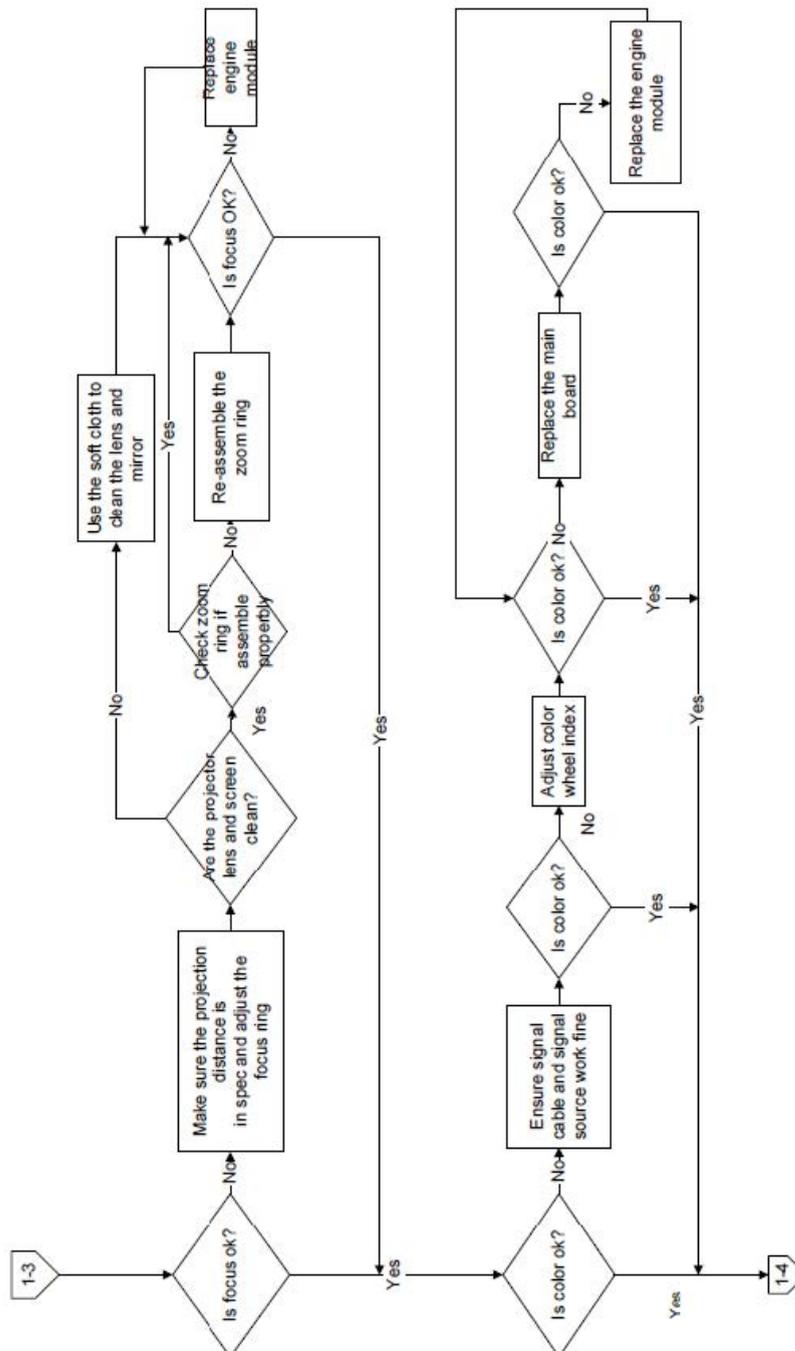
### 3-5 Image troubleshooting



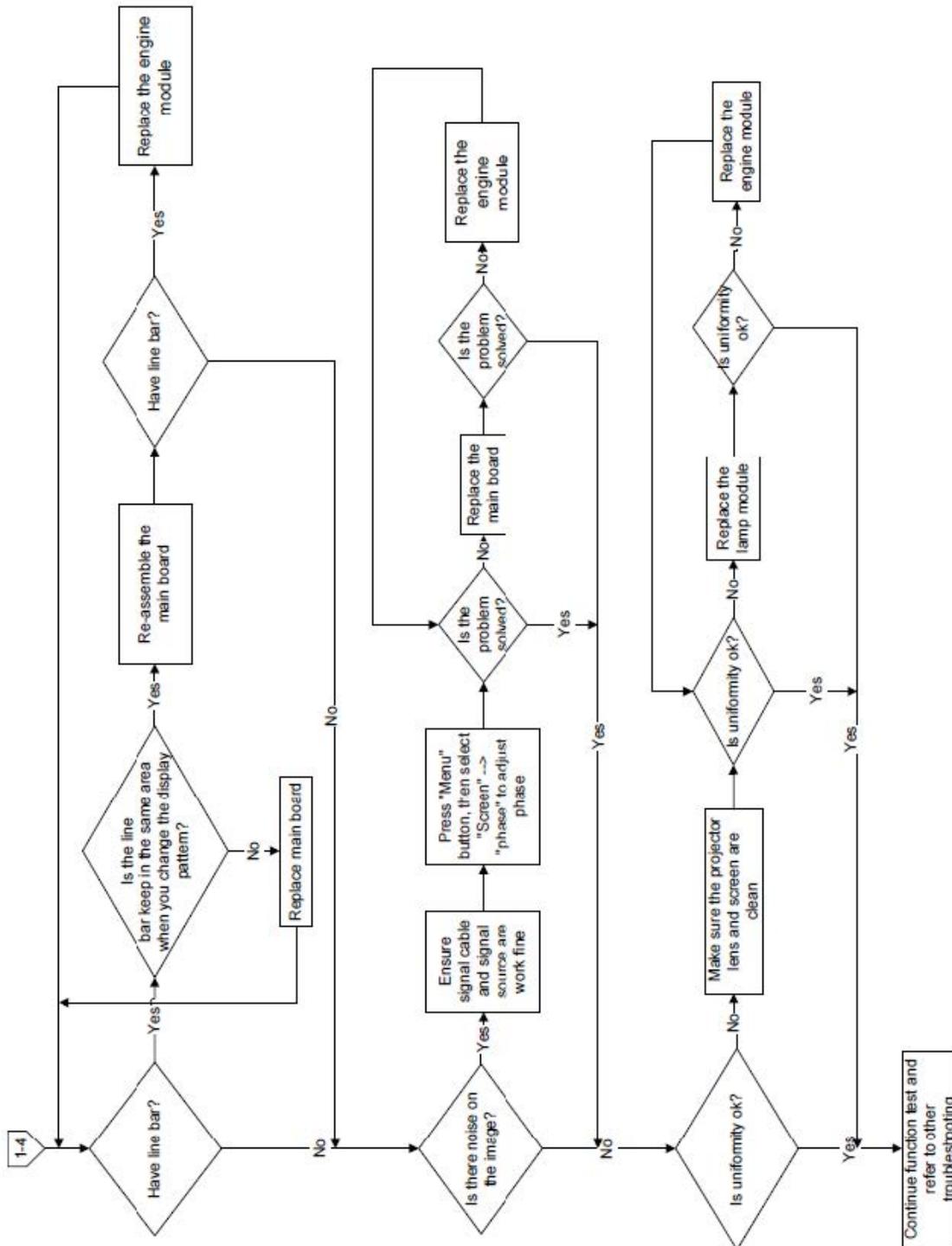
## 3-5 Image troubleshooting



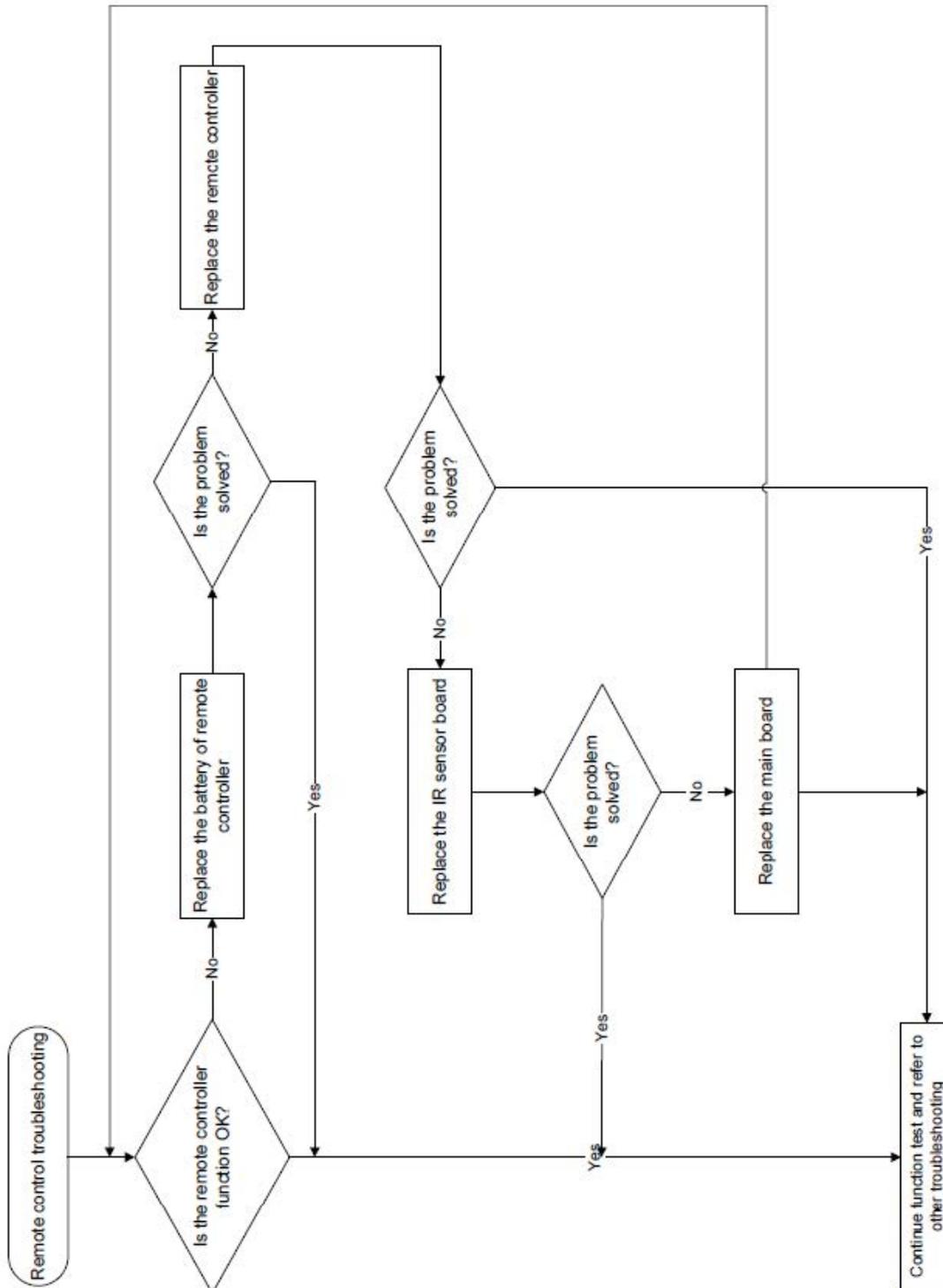
## 3-5 Image troubleshooting



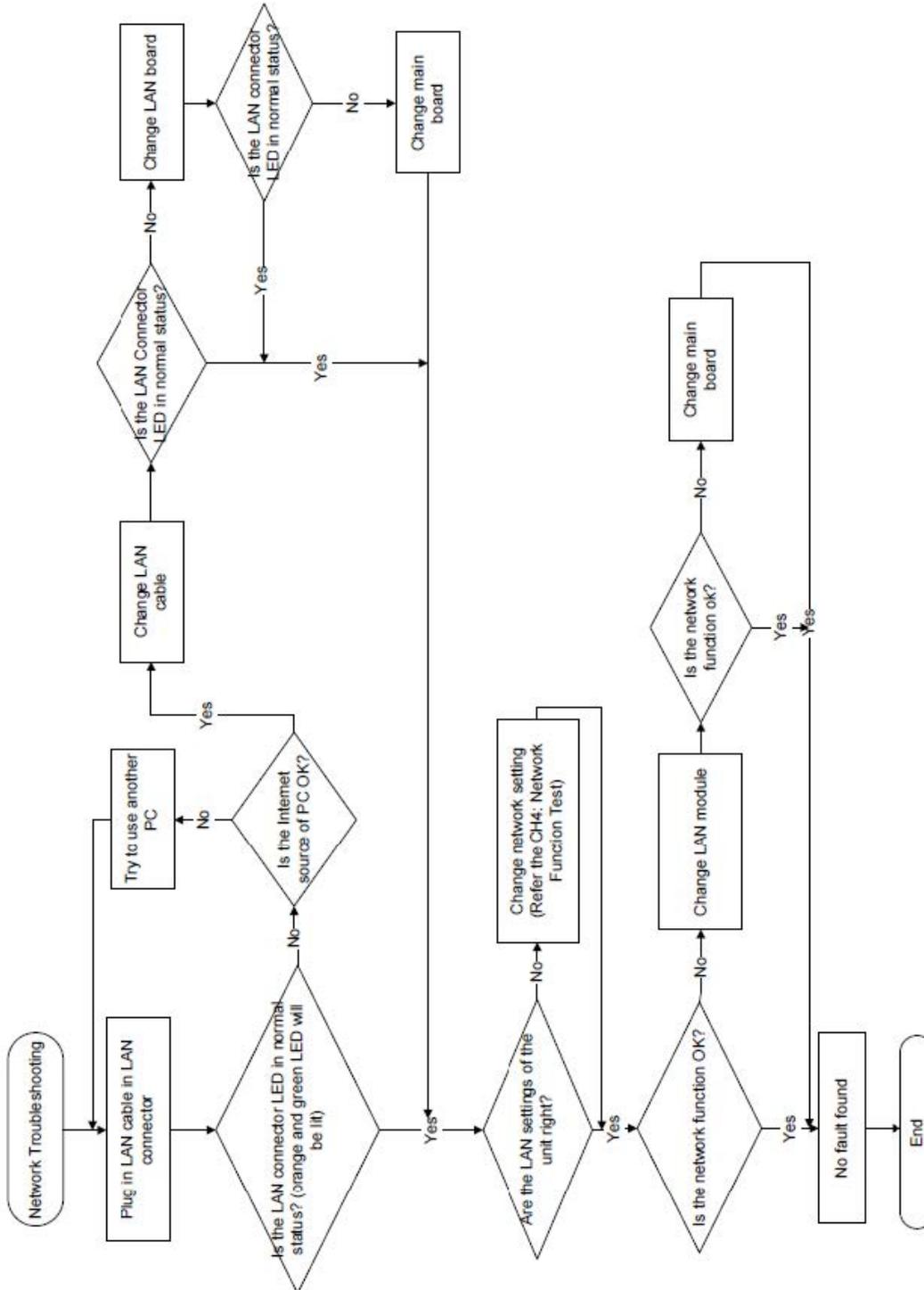
### 3-5 Image troubleshooting



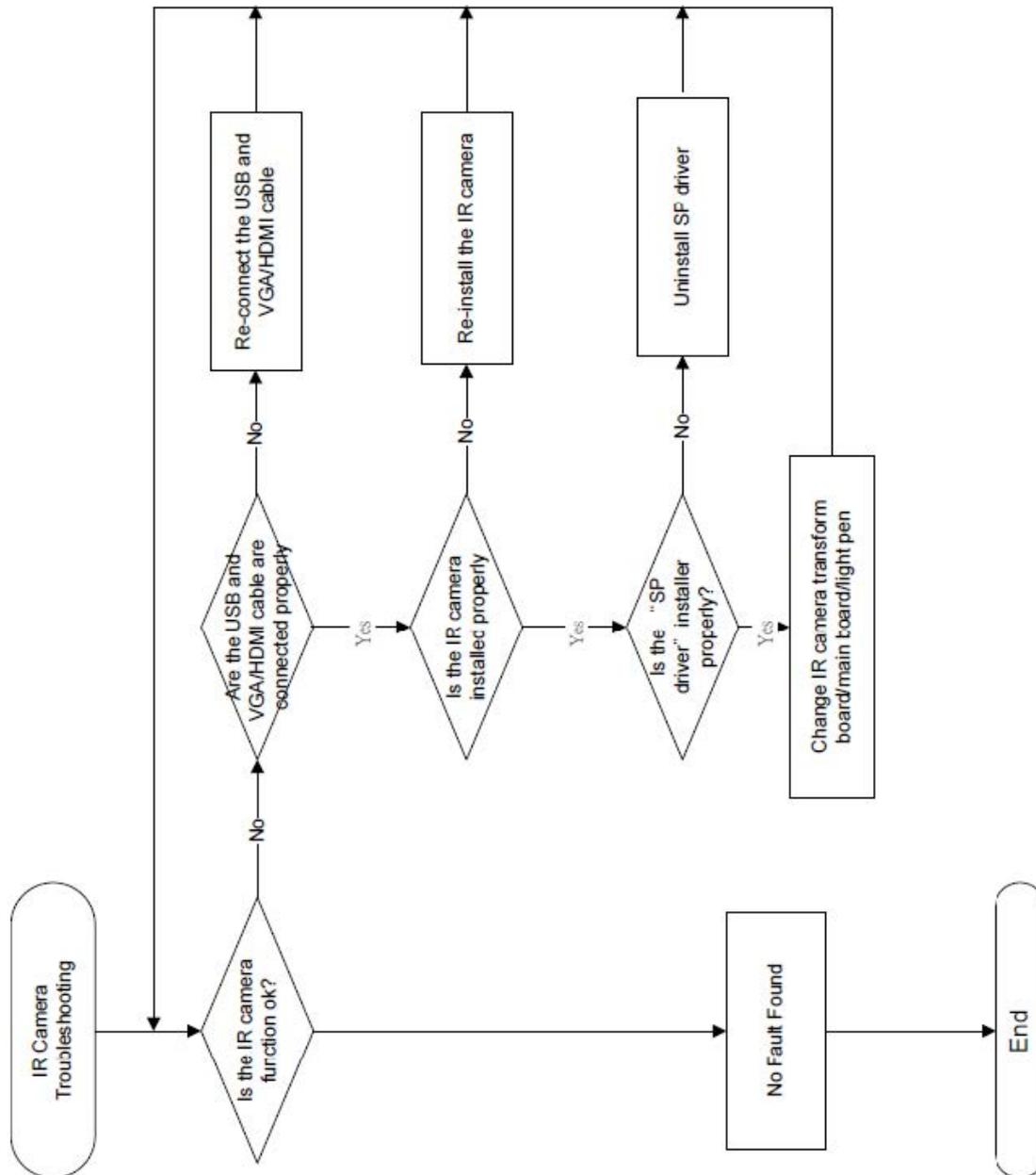
### 3-6 Remote control troubleshooting



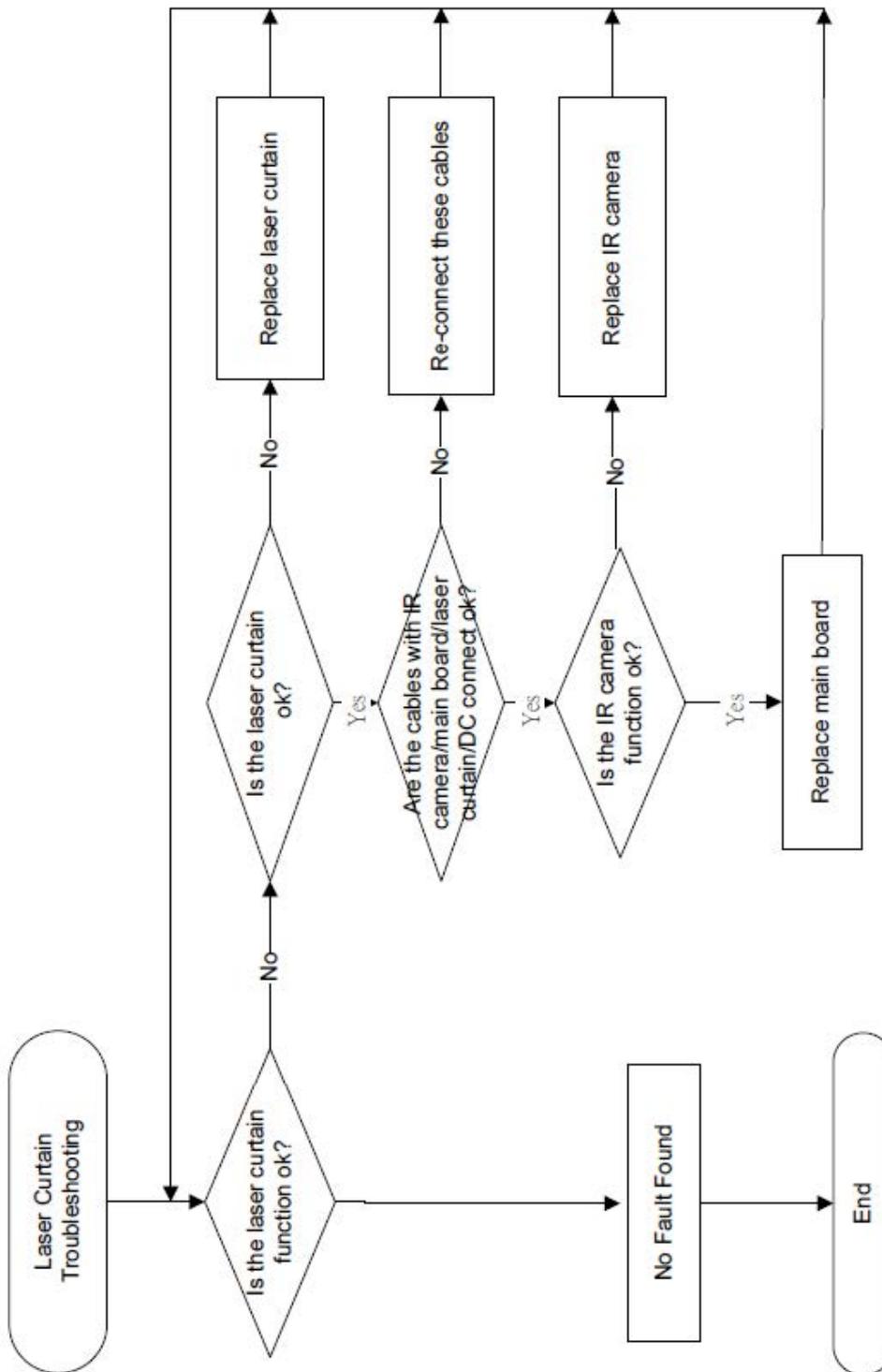
### 3-7 Network troubleshooting



### 3-8 IR Camera troubleshooting



### 3-9 Laser Curtain troubleshooting



## 4. Test & Inspection

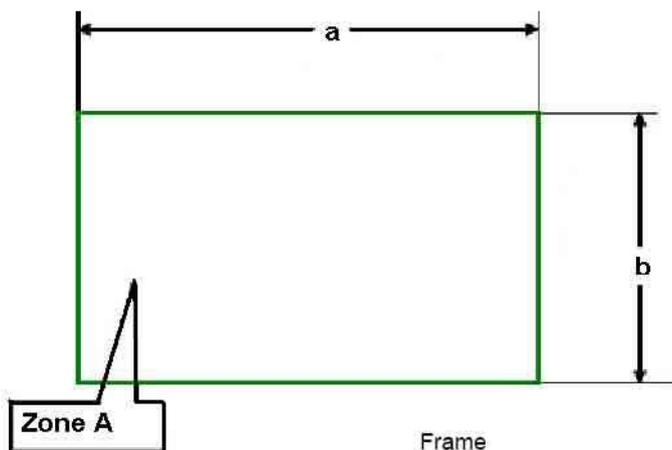
### 4-1 Test Equipment Needed

- PC support HDTV resolution & Independent graphic card
- Blue-ray DVD player support "S-Video", "3D source files", "HDMI" and "Video"
- Minolta CL-200
- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)

### 4-2 Test Condition

- Circumstance brightness: Dark room less than 5.0 lux.
- Screen size: 77 inches diagonal for PJ2000/PJ2000i  
87.2 inches diagonal for PJ3000/PJ3000i

#### Zone Definition

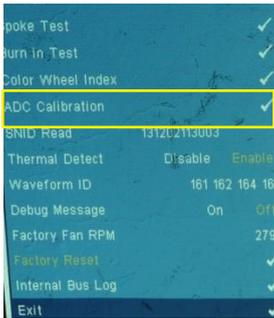


< Figure: Zone A(as green line) Definition >

## 4-3 Calibration

### 1. ADC Calibration

*Note: After replacing main board or upgrading firmware, the ADC calibration should be done.*

- |                 |   |  |
|-----------------|---|--|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator</li> <li>(1) Test signal: 1024 x 768@60Hz(for PJ2000/PJ2000i)<br/>1280 x 800@60Hz(for PJ3000/PJ3000i)</li> <li>(2) Test Pattern: White/Black</li> <li>- Note</li> <li>(1) Calibration pattern should be in full screen mode.</li> <li>(2) Please “power -&gt; left-&gt; right-&gt;menu “to get into service mode, and choose “ADC Calibration”.</li> </ul> |  <p>White/Black</p> |
| Inspection item | <ul style="list-style-type: none"> <li>- Check if there is lines or noise on the screen.</li> <li>- Horizontal and vertical position of the video should be adjustable to the screen frame.</li> </ul>  |                    |
| Criteria        | <ul style="list-style-type: none"> <li>- If there is noise on the screen, the product is considered as failure product.</li> <li>- The screen appears normal, it shouldn't appear any abnormal condition, such as lines and so on.</li> <li>- Check if the projection is same as monitor displayed.</li> </ul>  |  |

### 2. Waveform download

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

1. Hold on “Power” and “Menu“ button and plug in the power cord.
2. The “Power LED” will flash red about 2s, then release the “Power” and “Menu“ button.
3. Press “Power” button when the “Power LED” flash red and blue alternately.
4. The “Power LED” will light blue about 5s, then it will light red (Note: If the power LED solid blue or the lamp LED light, please repeat the step1-3 ).
- 5.The waveform download is finished.
6. Pull out the power cord.





## 4-4 I/O Port Test

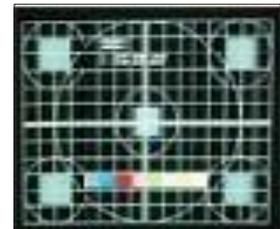
### 4-4-1 VGA Port Test

*Note: If you don't have the professional equipment such as Quantum Data 802B or Chroma 2327, please use the PC that support HDTV resolution & Independent graphic card to output the corresponding PC pattern. You can download the "test pattern by PC" from website as right picture. PJ2000/PJ2000i the native resolution of test signal is 1024x768 @60HZ. PJ3000/PJ3000i the native resolution of test signal is 1280x800 @60HZ. We take PJ3000/PJ3000i for example here.*



#### 1. Frequency and tracking boundary

- |                 |   |
|-----------------|---|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator.</li> <li>- Test signal: analog 1280 x 800@60Hz</li> <li>- Test Pattern: General-1</li> <li>- Check and see if the image sharpness is well performed.</li> <li>- If not, re-adjust by the following steps:             <ol style="list-style-type: none"> <li>(1) Select "Frequency" function to adjust the total pixel number of pixel clock in one line period.</li> <li>(2) Select "Tracking" functions and use right or left arrow key to adjust the value to minimize video flicker.</li> </ol> </li> <li>- Adjust Resync or Frequency/Tracking/H. Position/V. Position to the inner screen.</li> </ul> |
| Inspection item | <ul style="list-style-type: none"> <li>- Eliminate visual wavy noise by Resync, Frequency or Tracking selection.</li> <li>- Check if there is noise on the screen.</li> <li>- Horizontal and vertical position of the video should be adjustable to the screen frame.</li> </ul>  |
| Criteria        | <ul style="list-style-type: none"> <li>- If there is noise on the screen, the product is considered as failure product.</li> <li>- If there is noise on the screen, use auto or manual "frequency" function or "tracking" function to adjust the screen.</li> <li>- The PC mode functionally sure be workable include support format with frequency and auto detected functional will be workable.</li> </ul>   |



General-1



Master

## Chapter 4: Test & Inspection

### 2. Bright Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: gray 10
Inspected item	- Bright pixel check.
Criteria	- Please refer to Pixel specification table.



*Gray 10*

### 3. Dark Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: full white
Inspection item	- Dead pixels check. - White pattern (IRE=100)
Criteria	- Please refer to Pixel specification table.



*Full White*

### 4. Bright Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: gray 10
Inspection item	- Bright blemish check.
Criteria	- Please refer to Pixel specification table.



*Gray 10*

### 5. Dark Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: blue 60
Inspection item	- Dark blemish check
Criteria	- Please refer to Pixel specification table.



*Blue 60*

## Pixel specification

### For PJ2000/PJ2000i

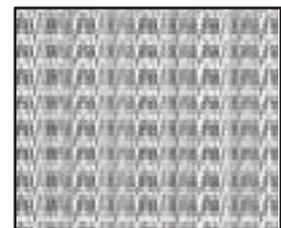
Order	Symptom	Pattern	Criteria
1	Bright pixel ( dots)	Gray 10	A=0
2	Dark pixel(dots)	White	A ≤ 4
3	Bright blemish	Gray 10	A≤4 (diameter≤3/2 inch)
4	Dark blemish	Blue 60	A≤2 (diameter≤3/2 inch)
5	Bright dot on frame	Gray 10	≤ 1
6	Unstable pixel	Any pattern	A=0
7	Adjacent dark pixel	Any pattern	A=0

### For PJ3000/PJ3000i

Order	Symptom	Pattern	Criteria
1	Bright pixel ( dots)	Gray 10	A=0
2	Dark pixel(dots)	White	A ≤ 6
3	Bright blemish	Gray 10	A≤4 (diameter≤3/2 inch)
4	Dark blemish	Blue 60	A≤2 (diameter≤3/2 inch)
5	Bright dot on frame	Gray 10	≤ 1
6	Unstable pixel	Any pattern	A=0
7	Adjacent dark pixel	Any pattern	A=0

## 6. Focus Test

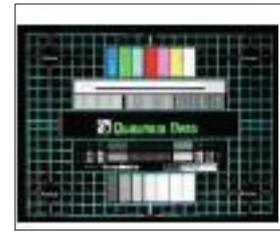
- Procedure
- Test equipment: video generator.
  - Test signal: analog 1280 x 800@60Hz
  - Test Pattern: full screen
- Inspection item
- Focus check
- Criteria
- Check the focus, look at the entire screen, focus shall be clear, crisp, and sharp over the entire surface of the display pattern. (Blur word on one of the



Full screen

## Chapter 4: Test & Inspection

corner after adjustment is acceptable. However, the word should at least be recognizable.)



Master

### 7. Color Performance

*Note: After replacing main board, optical engine or upgrading firmware, the color wheel index adjustment should be done.*

- |                 |  |
|-----------------|--|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator.</li> <li>- Test signal: 1280 x 800@60Hz, 1080i</li> <li>- Test Pattern: Master, 64 gray RGBW<br/>Please “power -&gt;left -&gt;right -&gt;menu” to get into service mode, then choose “Color Wheel Index”</li> </ul>  |
| Inspection item | <ul style="list-style-type: none"> <li>- Check if each color level is well-functioned.</li> <li>- Color saturation</li> </ul>  |
| Criteria        | <ul style="list-style-type: none"> <li>- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.</li> <li>- Color appears normal.</li> <li>- It is unacceptable to have few lines flashing.</li> <li>- RGBW should all appear normal on the screen and sort from R-G-B-W.</li> <li>- Color levels should be sufficient and normal.<br/>(The unidentified color levels on both left and right sides should not over 4 color levels.)</li> <li>- Gray level should not have abnormal color or heavy lines.</li> <li>- If color appears abnormal, please get into service mode to do color wheel index adjustment.</li> </ul> |



64 gray RGBW



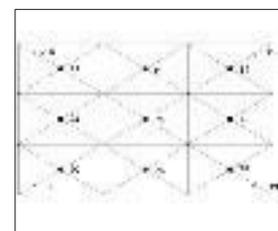
## Chapter 4: Test & Inspection

### 8. Optical Performance

Inspection Condition
<ul style="list-style-type: none"> <li>- Environment luminance: 5 Lux</li> <li>- Product must be warmed up for 5 minutes</li> <li>- Distances from the screen: 300mm ~ 350mm</li> <li>- Screen Size: 77 inches diagonal (for PJ2000/PJ2000i) 87.2 inches diagonal (for PJ3000/PJ3000i)</li> </ul>

#### 1). Test equipment

- Procedure
- Please get into OSD menu, select “Lamp Mode” under “Settings”, then select “Standard” .
  - Test equipment: video generator.
  - Test signal: analog 1024 x 768 @60Hz (For PJ2000/PJ2000i)  
analog 1280 x 800 @60Hz (For PJ3000/PJ3000i)



Full white pattern

#### 2). Brightness

- Procedure
- Full white pattern
  - Use CL200 to measure brightness values of P1~P9.
  - Follow the brightness formula to calculate brightness values.

##### ☀ Brightness Formula

Avg. (P1~P9) \* 1.84m<sup>2</sup> (For PJ2000/PJ2000i)

Avg. (P1~P9) \* 2.2m<sup>2</sup> (For PJ3000/PJ3000i)

- Criteria
- 1144 ANSI lumen (For PJ2000/PJ2000i)
  - 1300 ANSI lumen (For PJ3000/PJ3000i)

## Chapter 4: Test & Inspection

### 3). Full On/Full Off Contrast

- Procedure
- Full white pattern & Full black pattern
  - Use CL100 to measure brightness values of full white pattern P5 & full black pattern B5 ( see image: full white)
  - Follow Contrast formula to calculate contrast values.



Full black pattern

☀ Contrast Formula

P5/B5

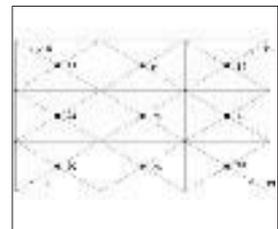
Note: P5 = Lux of center in full white pattern

B5 = Lux of center in full black pattern

- Criteria
- 1600:1

### 4). Uniformity

- Procedure
- Full white pattern
  - Use CL200 to measure brightness values of P1~P9 (see image: full white).
  - Follow the Uniformity formula to calculate average values.



Full white pattern

☀ Uniformity Formula

$$\text{JBMA Uniformity} = \frac{\text{Avg. (P1, P3, P7, P9)}}{\text{P5}} * 100\%$$

- Criteria
- 65%

## Chapter 4: Test & Inspection

### 4-4-2 Audio Test

- |                     |  |
|---------------------|--|
| Procedure           | - Test equipment: DVD Player<br>- Test signal: CVBS  |
| Inspection item     | - Audio performance test   |
| Inspection Distance | - 300mm ~350mm   |
| Criteria            | - Check the sound from speaker<br>- Plug Audio cable into Audio in port, check whether "Volume" is normal.<br>- Adjust the volume to "0→ 32" by using the remote controller.<br>- Check the sound from speaker.<br>- Check whether the "mute" is normal. |



*Motion video*

### 4-4-3 S-Video Port Test

- |                     |  |
|---------------------|--|
| Procedure           | - Test equipment: DVD player<br>- Test signal: S-Video   |
| Inspection item     | - Video performance test   |
| Inspection Distance | - 300mm ~350mm   |
| Criteria            | - Check any abnormal color, line distortion or any noise on the screen.<br>- Check the sound from speaker. |

### 4-4-4 Component Port Test

- |                     |   |
|---------------------|---|
| Procedure           | - Test equipment: DVD Player<br>- Test signal: Ycbcr/YPbPr              |
| Inspection item     | - HDTV performance test   |
| Inspection Distance | - 300mm ~350mm  |
| Criteria            | - Check any abnormal color, line distortion or any noise on the screen. |

## Chapter 4: Test & Inspection

### **4-4-5 HDMI Port Test**

- Procedure - Test equipment: DVD Player with HDMI output.  
- Test signal: 720p, 1080p, 1080i
- Inspection item - HDMI performance test.
- Inspection Distance - 300mm ~350mm
- Criteria - Ensure the image is well performed and the color can not discolor.  
- Check whether “mute” is normal.

### **4-4-6 3D Test**

- Procedure - Test equipment: Blue-Ray DVD player & 3D format CD&3D goggles  
- Test signal: 1080i@60HZ
- Inspection item - 3D test
- Inspection Distance - 3~5 M
- Criteria - The image should not appear noise, flicker, shadow, shocking, abnormal color.

### **4-4-7 Video Port Test**

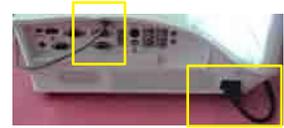
- Procedure - Test equipment: DVD Player - Test signal: video
- Inspection item - Video performance test
- Inspection Distance - 300mm ~350mm
- Criteria - Check any abnormal color, line distortion or any noise on the screen.  
- Check the sound from speaker.

## Chapter 4: Test & Inspection

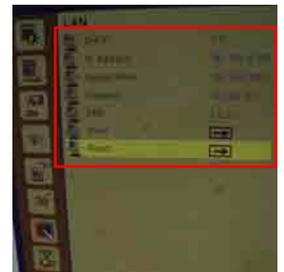
### 4-4-8 RJ45 Port Test

#### 1. Read Projector IP

1. Plug in power cord to the projector and plug in LAN cable to the PC.



2. Remove the light mark to "DHCP" to select "Off",
  - The IP address will be shown on screen.
  - Write down the IP address:  
192.168.0.100.

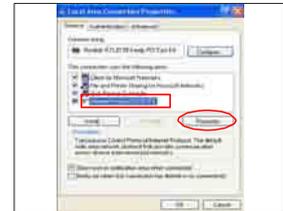


#### 2. Network Setting

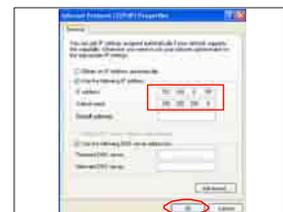
- (1) Double click the "Local area connection", choose "Properties".

## Chapter 4: Test & Inspection

(2) Select “Internet protocol (TCP/IP)”



(3)- Modify the IP address to 192.168.0.101,  
and modify Subnet mask to 255.255.255.0  
- Click “OK”



(4) Click “OK”.



## Chapter 4: Test & Inspection

(5) Click "Close" to quit the setting screen.



### 3. Read Projector Information

- (1) Connect the PC and the Projector with LAN Cable.
- (2) Click "Internet Explorer".
- (3) Write the IP address: <http://192.168.0.100>
- (4) Please check whether web management and model name are right.



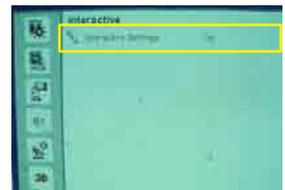
## Chapter 4: Test & Inspection

### 4-5 IR Camera Test (For PJ2000i/PJ3000i)

**Note:** IR camera test need the special pen(wavelength 850nm)

#### 1. Projector Setting

1. Power on projector.
2. Connect the PC and Projector by mini USB Cable.
3. Connect the PC and Projector by VGA Cable.
4. Press "Menu" to enter OSD menu, select "Interative" is "on"
5. Set the PC resolution: 1280 x 800@60Hz
6. Screen size: 77.4 inches diagonal.(For PJ2000i)  
87.2 inches diagonal.(For PJ3000i)



#### 2. Setup TouchDriver Procedure.

1. Double click "My computer", and then double click "TouchDriver"

*Note: If the PC can't show the "TouchDriver", please restart the unit and PC.*



2. Double click "TouchDriver.exe"

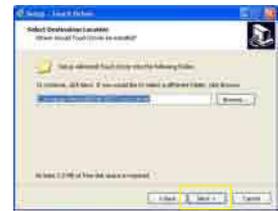


3. Click "Next"



## Chapter 4: Test & Inspection

4. Click “Next”.

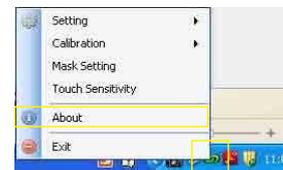


5. Click “Finish”.



### 3. IR Camera Calibration.

1. Right click the green icon at the tool bar and select “About” to check the version (Version 1.2.2.4), then click “OK”.



2. - Right click the green icon and select “Mask Setting”, the unit will auto mask setting.

*Note: 1. Please turn off lights or reduce stray light on screen*

*2. Do not walk in front of or shake lens during Mask setting*

*3. Please adjust focus to sharpen the image*



## Chapter 4: Test & Inspection

- If auto mask setting is failed, “Auto mask setting failed” message will appear, after the message appears twice, you will be prompted to perform Mask Setting manually



- Drag the 4 points, in the order of P1 to P4. The green frame should lie slightly outside the projected image area and there should not be any reflected light spot within this frame. Once you have completed this task, click “Exit”.

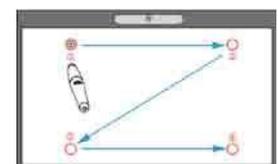


3. Right click the green icon and select “Calibration”, select “Auto” mode to execute the calibration procedure.

*Note: If the “auto Calibration still failed” message appears on screen, please change to manual calibration mode.*

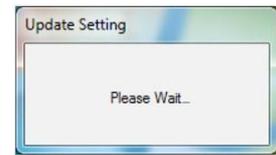


4. Please touch the target marks on the screen. (If you would like exit calibration process, please use the “Esc” key) After the 4th point of calibration is finished, please wait for 2 seconds while calibration data is saved.



## Chapter 4: Test & Inspection

5. The system saves calibration data after the four calibration points are touched.



6. Installation setup is completed and touch is ready for use.

### 4. Setup LightPenIII Tool Procedure.

1. Unzip the "Light pen tool" Folder

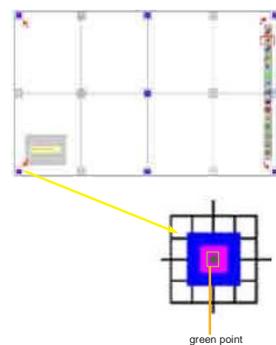


2. Open the "Light pen tool" Folder, then double click "LightPenIII Tool\_NO ID for Win8.exe"



3. - Use the light pen to click the 7 green points (as red arrow).

- Click the point should be no more than the blue area.



## Chapter 4: Test & Inspection

### 4-6 Run In Test

- Temperature: 15°C~35°C
- Circumstance brightness: Normal environment
- Screen size: No concern
- Display mode: ECO mode

After repairing each unit, a Run-in test is necessary (refer to the below table).

Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shutdown	6 hours

- Get into Burn-In Mode

\* Cycle setting is based on the defect symptoms. ie: If it is NFF, the run-in time is 4 hours.

You have to set the lamp on for 60 min. and lamp off for 10 min for 4 cycles.

Press power > left >right > menu buttons sequentially on remote controller or keypad to get into service mode	
Choose Burn-In Test > enter	
Lamp On	Press right key to adjust the time (60)
Lamp Off	Press right key to adjust the time (10)
Set burn in cycle	Press right key to adjust the cycle
After setting up the time, choose "Get into Burn-In Mode" and press enter	

## 4-7 Test Inspection Procedure

### 1. Check Points

Check item	Check point
Firmware version	All firmware version must be the latest version
TB implementation	Related TB must be implement
Cosmetic	Cosmetic cannot be broken
Logo	Missing logo, missing prints and blurry prints are unacceptable
Lamp cover	It should be locked in the correct place.
Zoom in/out	The function should work smoothly
Keypad	All keypad buttons must operate smoothly

### 2. OSD 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:

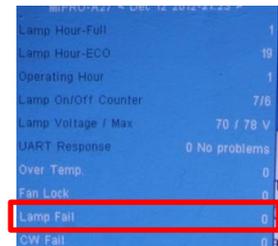
- (1) Please enter OSD menu.
- (2) Choose "Setting" and then execute "Reset" function

## Chapter 4: Test & Inspection

### 4-8 Re-write Lamp Usage Hour

#### 1. Get into Service Menu

- Press "Power->Left->Right->Menu" on the remote control or the keypad to get into the service mode.



Lamp Hour-Full	1
Lamp Hour-ECO	19
Operating Hour	1
Lamp On/Off Counter	7/8
Lamp Voltage / Max	70 / 78 V
UART Response	0 No problems
Over Temp.	0
Fan Lock	0
Lamp Fail	0
CW Fail	0

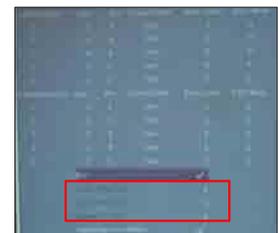
#### 2. Select "Lamp Fail"

#### 3. Re-write Lamp Hour-Full

- Select "Lamp Hour-Full" , then use "left" and "right" key to re-write "Lamp Hour-Full".

#### 4. Re-write Lamp Hour-ECO

- Select "Lamp Hour-ECO" , then use "left" and "right" key to re-write "Lamp Hour-ECO".



#### 5. Re-write Operating Hour

- Select "Operating Hour" , then use "left" and "right" key to re-write "Operating Hour".

#### 6. Exit Service Menu

- Use "Up" or "Down" key to select "Exit", press "Enter" to exit the service mode.

*Note: Left key = decrease Lamp/Projection hour*

*Right key = increase Lamp/Projection hour*

# 5. Firmware Upgrade

## Section 1: System Firmware Upgrade

### 5-1-1 Equipment Needed

#### Software: (DDP 442X-USB)

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

#### Hardware:

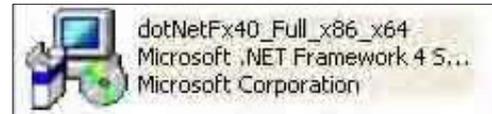
- Projector
- Power Cord
- Mini USB Cable: 42.00284G001 (USB Cable mini USB to USB (A))
- PC or Laptop



## Chapter 5: Firmware Upgrade

### 5-1-2 NET Framework 4.0 Setup Procedure

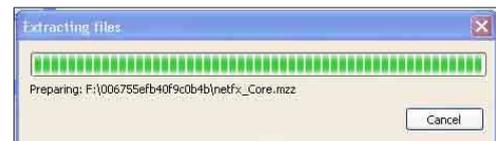
1. Choose "dotNetFX40\_Full\_X86\_X64  
Microsoft .NET Framework 4.5...  
"Corporation" Program.



2. Click "Run".



3. Preparing



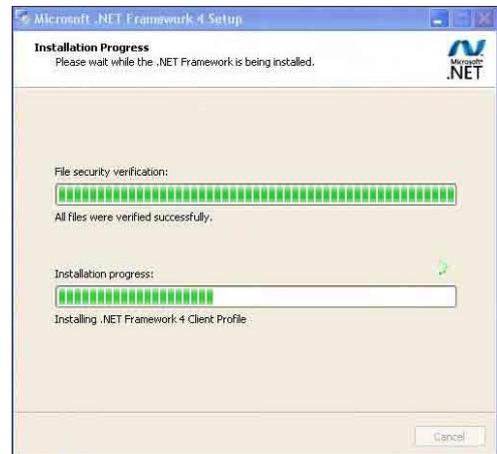
4. Read "License terms".

- Choose "I have read and accept the license terms".
- Click "Install".



## Chapter 5: Firmware Upgrade

5. Installing



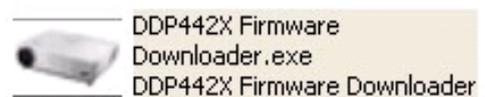
6. Click "Finish".



## Chapter 5: Firmware Upgrade

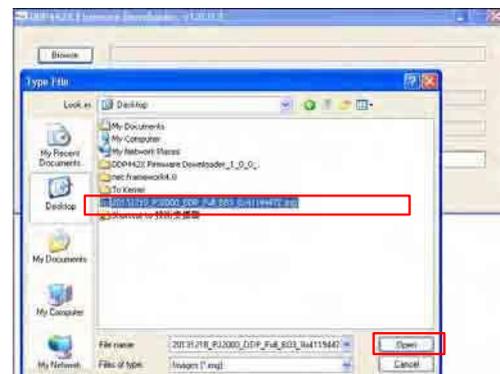
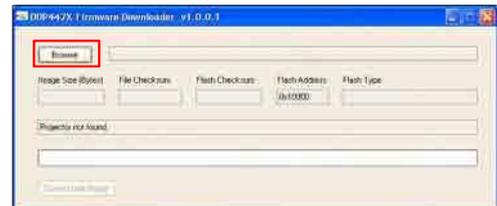
### 5-1-3 Firmware Upgrade Procedure

1. Download the firmware from website, unzip the firmware file, then unzip the "DDP442X Firmware Downloader\_1\_0\_0\_1.zip" file.



2. Execute "DDP442X Firmware Downloader.exe"

3. Click "Browse" to choose the firmware and then click "Open".



4. Connect projector and computer by USB cable (USB A to mini USB B).

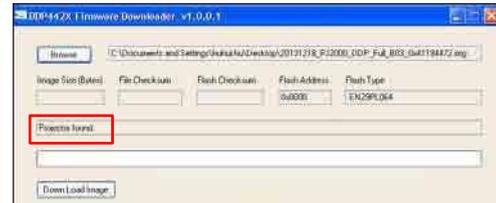


5. Get into firmware download mode.
  - Hold on "MENU" button and plug in the power cord.
  - Release the "MENU" button until all LEDs solid on.

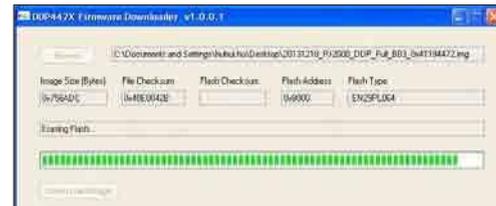


## Chapter 5: Firmware Upgrade

6. The "Projector found" will appear, then click "Down Load Image".

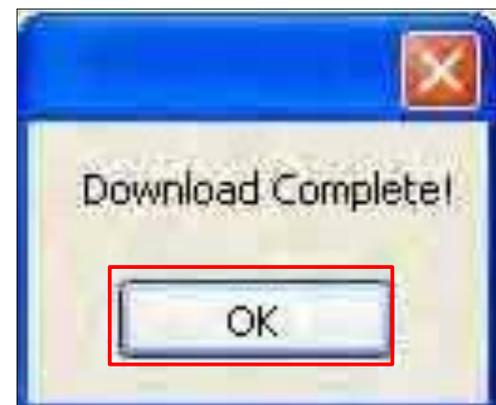


7. The firmware will be upgraded automatically.



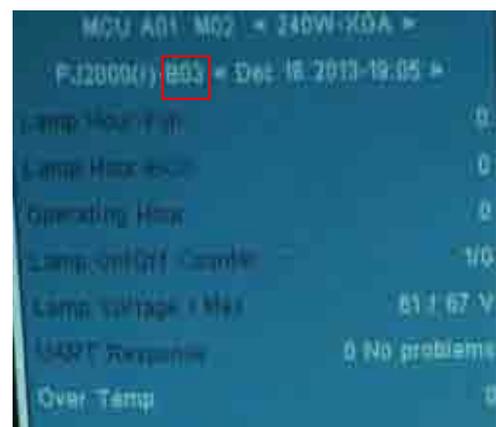
8. Finish.

"Download Complete" will appear, click "OK".



9. Check the system firmware version.

- Unplug the power cord and USB cable, then re-plug the power cord to power on the projector.
- Press "power->left->right->menu" sequentially to get into service mode to check firmware version.



## Chapter 5: Firmware Upgrade

### Section 2: MCU Firmware Upgrade Procedure

#### 5-2-1 Equipment Needed

**Software:**

- Firmware update tool: RS232\_0753
- xxx\_xxx\_xxx.hex

**Hardware:**

- Projector
- Power Cord
- RS232 Cable : 42.86603G001 (RS-232 9 Pin Cable (pin to pin, F-F))
- PC or Laptop



## 5-2-2 MCU Firmware Upgrade Procedure

### 1. Set up

- Connect projector with RS232 cable to PC.
- Hold on "MENU" button and plug in the power cord.
- Release the "MENU" button until all LEDs solid on.



- ### 2. Download the firmware file and firmware upgrade tool "RS232\_0753" from website, then unzip the firmware file and firmware upgrade tool.



- ### 3. Click the file to install the firmware upgrade tool.

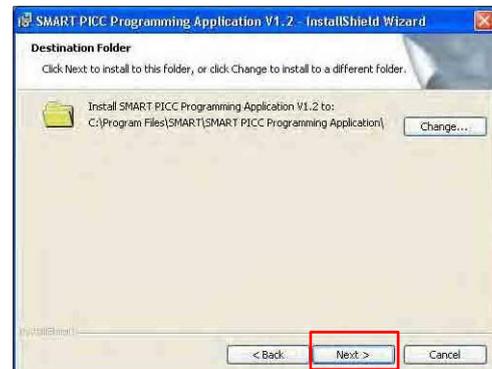
## Chapter 5: Firmware Upgrade



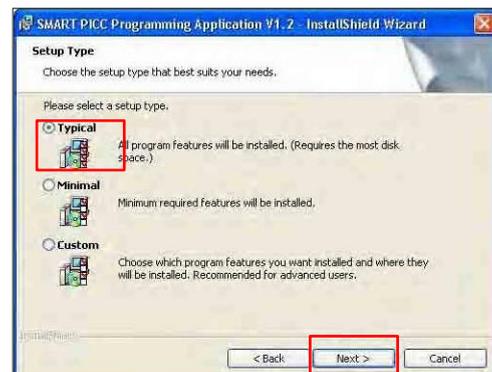
4. Click "Next"



5. Click "Next".

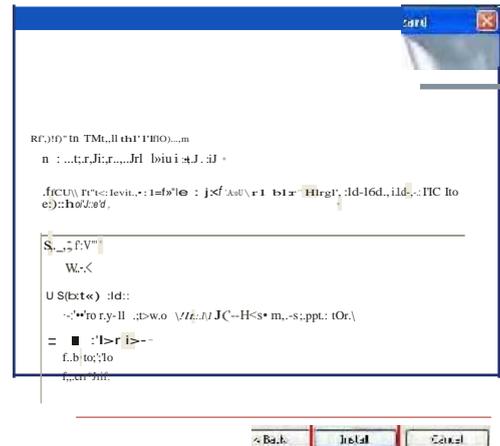


6. Select "Typical" and click "Next"

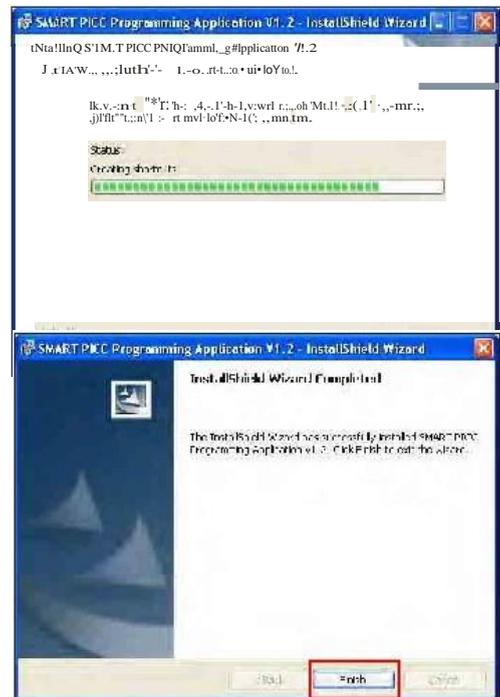


## Chapter 5: Firmware Upgrade

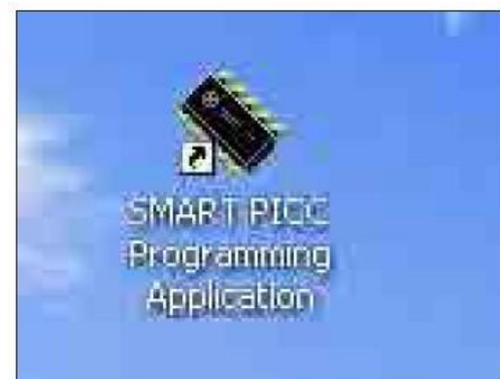
7. Click "Install".



8. Click "Finish".



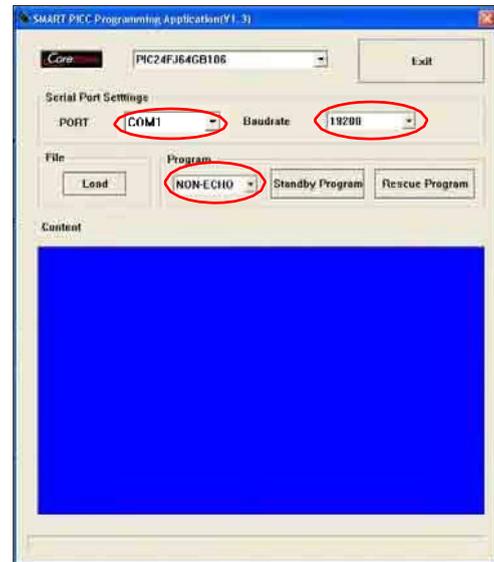
9. Execute the program.



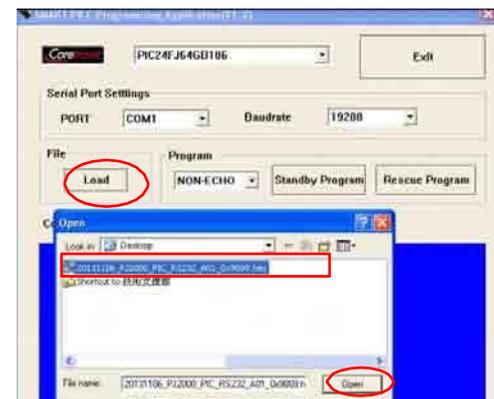
## Chapter 5: Firmware Upgrade

### 10. Program settings

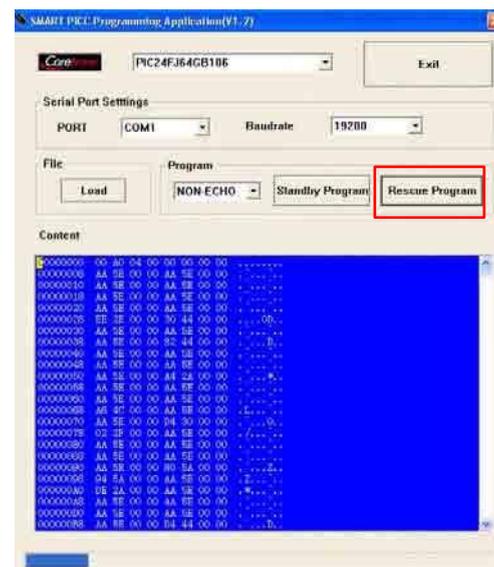
- Make sure the settings are as below:
  - 1) PORT: Check the COM port is “COM 1”  
(Select the COM port which you are using).
  - 2) Baud rate: Please set to 19200
  - 3) Program: Please set to “NON-ECHO”.



11. Click the “Load” button to choose the firmware file.

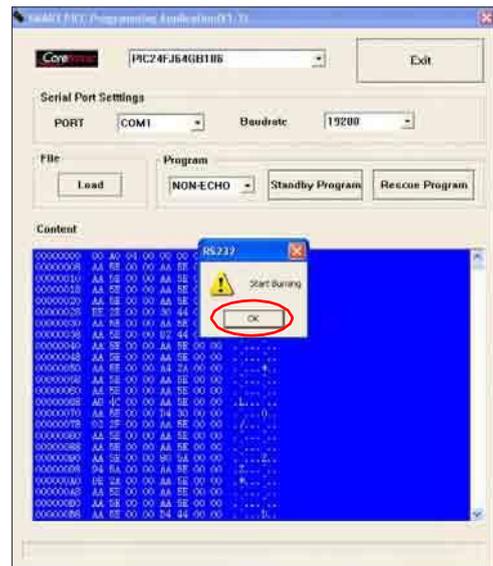


12. Click the “Rescue Program” button.

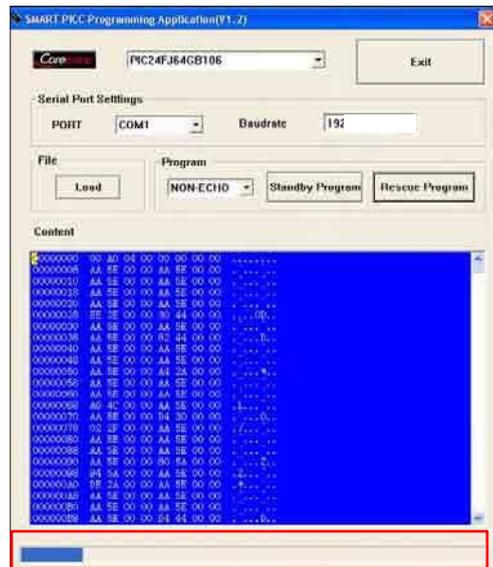


## Chapter 5: Firmware Upgrade

13. Click the “OK” to start firmware upgrading.

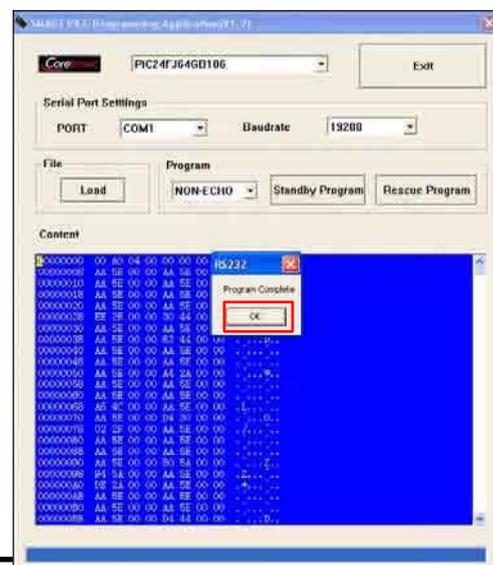


14. The firmware will be upgraded automatically.



15. Finish.

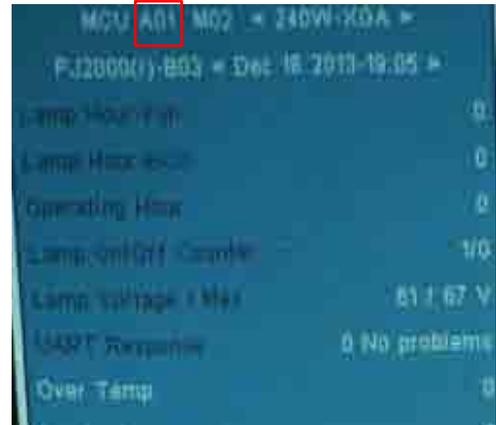
- Click "OK".



## Chapter 5: Firmware Upgrade

16. Check the MCU firmware version.

- Unplug the power cord and USB cable, then re-plug the power cord to power on the projector .
- Press "power->left->right->menu" sequentially to get into service mode to check firmware version.



## Section 3: Network Firmware Upgrade Procedure

### 5-3-1 Equipment Needed

**Software:**

- xxx\_xxx\_xxx.bin (\*.bin)

**Hardware:**

- Projector
- Power Cord
- LAN Cable
- PC or Laptop



## Chapter 5: Firmware Upgrade

### 5-3-2 PC Hardware Link

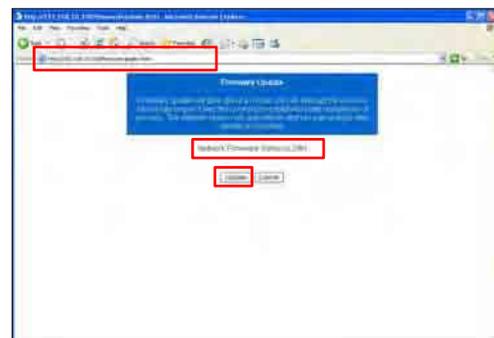
1. Execute Network Settings, please refer to 4-7 details of Chapter 4.
2. Enter into OSD menu, then select "Setting"-->LAN/Wireless (Standby), choose "Off" to "On", then turn off the projector.



3. Double click "Internet Explorer".

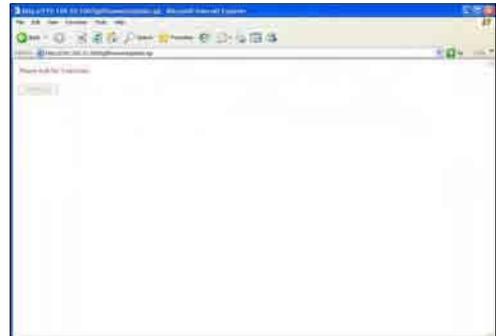


4. - Visit "<http://192.168.10.100/firmwareUpdate.htm>" to get into web to upgrade network firmware.  
- Click "Update"

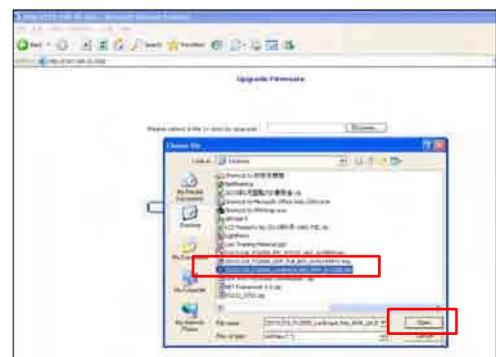


## Chapter 5: Firmware Upgrade

5. Please wait for 3 seconds.



- 6. - Click “Browse” button to select the Network FW file (\*.bin) which you saved.
- Click “Open”.

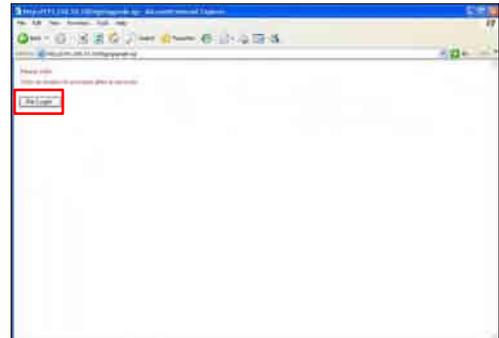


7. Click the “Update” button.

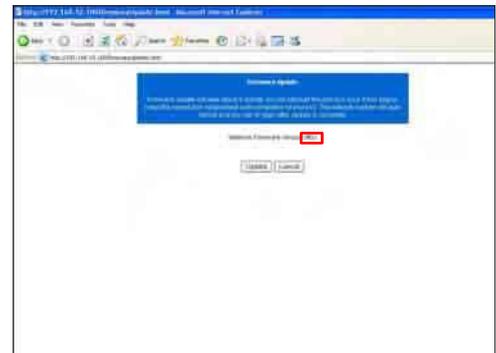


## Chapter 5: Firmware Upgrade

8. Click the “Re login” button.



9. Network firmware upgrade procedure complete.  
Visit “<http://192.168.10.100/firmwareUpdate.htm>”  
to check the version.



# 6. EDID Upgrade

## 6-1 EDID Introduction

Extended Display Identification Data is a VESA standard data format that contains basic information about a display device and its capabilities, including vendor information, maximum image size, color characteristics, factory pre-set timings, frequency range limits, and character strings for the monitor name and serial number.

The information is stored in the display and is used to communicate with the system through a Display Data Channel (DDC), which sits between the display device and the PC graphics adapter. The system uses this information for configuration purposes, so the monitor and system can work together.

*Note: - If a display device has digital input ports, like DVI or HDMI, but without EDID in its Main Board, the display device will show no image while the input source is digital signal.*

## Chapter 6: EDID Upgrade

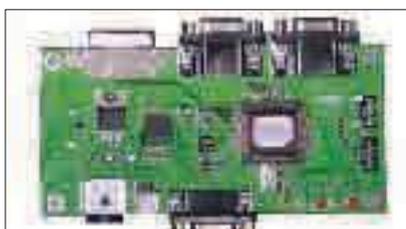
### 6-2 Equipment Needed

#### Software

- EDID Program (EDID 1.09 )
- EDID File (\*.ini )

#### Hardware

- Projector
- Power Cord for Projector (42.53506G002)
- VGA Cable (42.87305G102)
- HDMI to DVI cable (42.00256G001)
- DVI Cable (42.83N06G001)
- Generic Fixture (80.00001G001) for EDID Key-in
- RS-232 9 Pin Cable (pin to pin, F-M) (42.83C07G001)
- Power Adapter (47.57803G001)
- Monitor
- PC



### 6-3 Setup Procedure (VGA& HDMI)

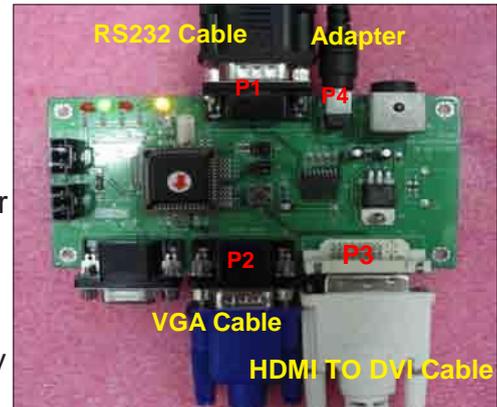
1. Connect all ports

(1) Connect P1 of fixture to COM Port of PC/Laptop by RS232 Cable.

(2) Connect P2 of fixture to VGA1 IN Port of projector by VGA Cable.

(3) Connect P3 of fixture to HDMI Port of projector by DVI to HDMI Cable.

(4) Plug Power Adapter to P4 of fixture.



### 6-4 EDID Key-In Procedure (VGA &HDMI)

1. Execute EDID Program

- Double click "EDID" to execute EDID program.

## Chapter 6: EDID Upgrade

### 2. Process

(1) Select the COM Port which you are using.

(2) Click "Model".

(3) Select the EDID file (\*.ini).

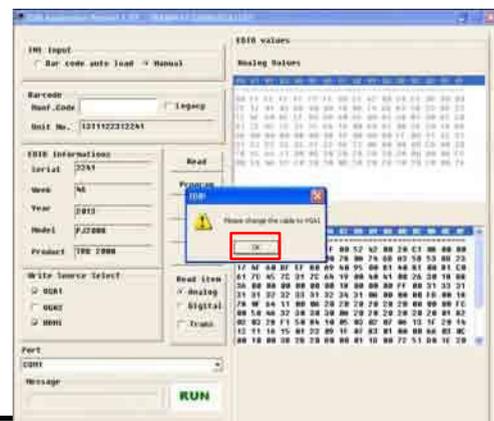
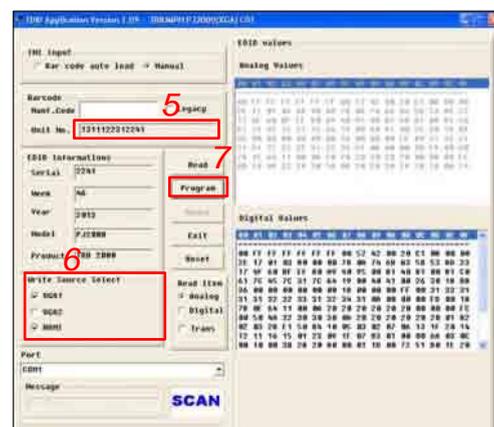
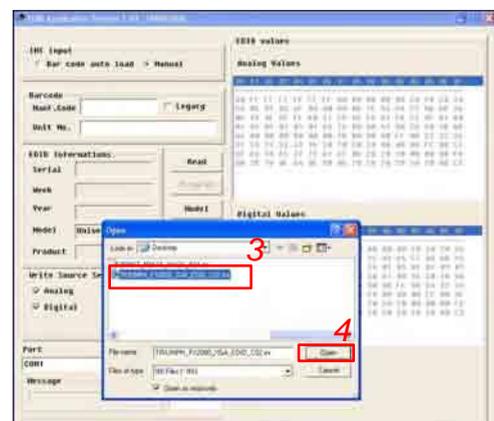
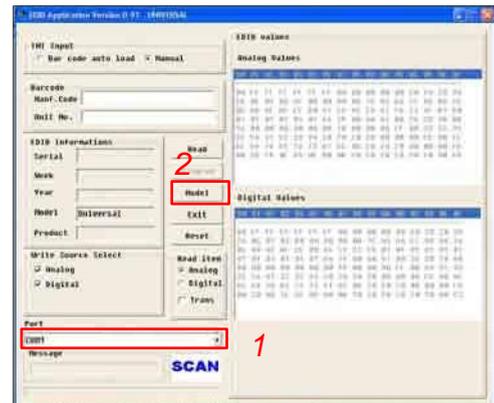
(4) Click "Open".

(5) Key in the Serial Number into the Barcode blank space.

(6) In "Write Source Select" item, select "VGA1" and "HDMI".

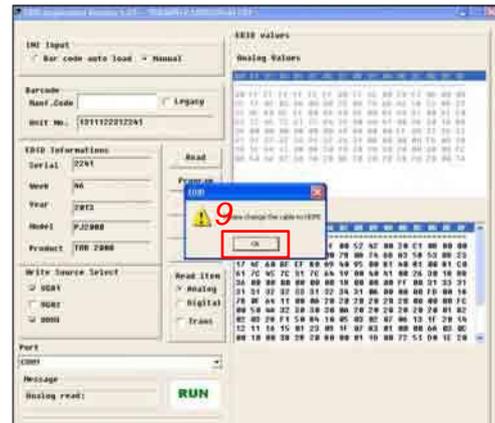
(7) Click "Program".

(8) When the message "Please change the cable to VGA1" appears on the screen, click "OK".

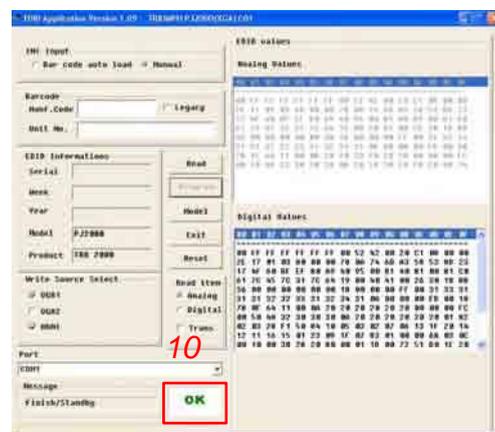


## Chapter 6: EDID Upgrade

(9) When the message "Please change the cable to HDMI" appears on the screen, click "OK".

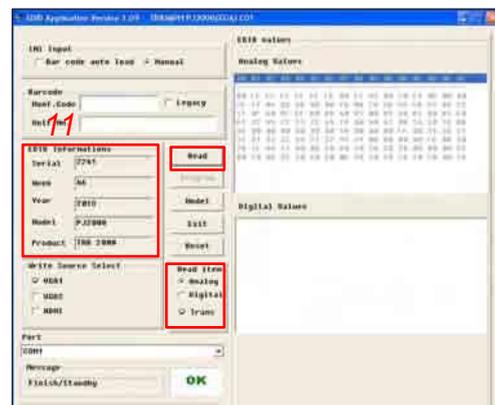


(10) When the EDID program is completed, a "OK" message will appear on the screen.



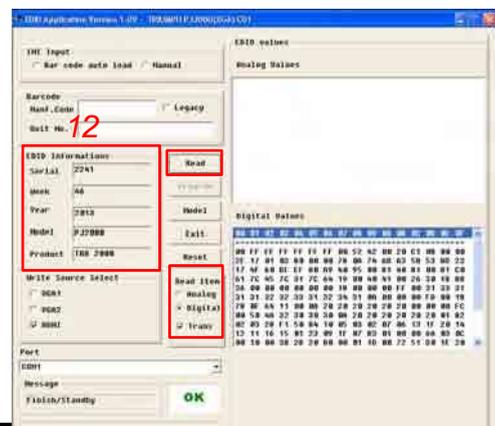
(11) Read EDID "Analog" information.

- In "Read item", select "Analog" and "Trans", then click the "Read".
- EDID "Analog" information will show the result.



(12) Read EDID "Digital" information

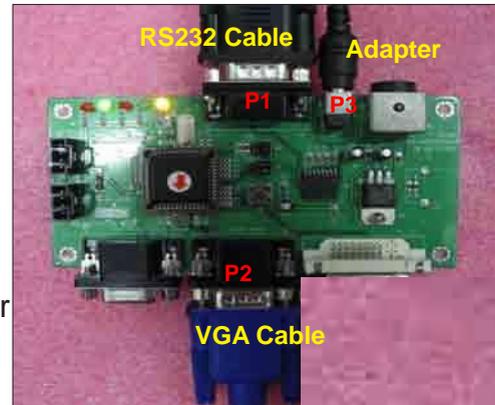
- In "Read item", select "Digital" and "Trans", then click the "Read".
- EDID "Digital" information will show the result.



## Chapter 6: EDID Upgrade

### 6-5 Setup Procedure (VGA2)

1. Connect all ports
  - (1) Connect P1 of fixture to COM Port of PC/Laptop by RS232 Cable.
  - (2) Connect P2 of fixture to VGA2 IN Port of projector by VGA Cable.
  - (3) Plug Power Adapter to P3 of fixture.

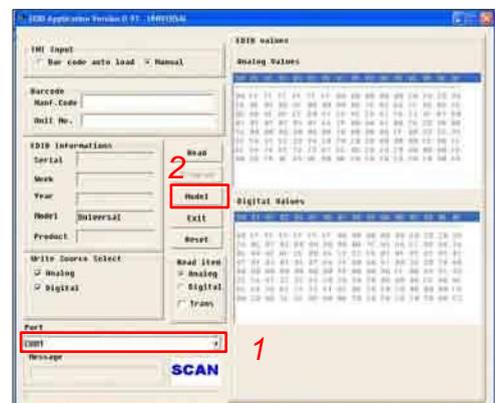


### 6-6 EDID Key-In Procedure (VGA2)

1. Execute EDID Program
  - Double click "EDID" to execute EDID program.

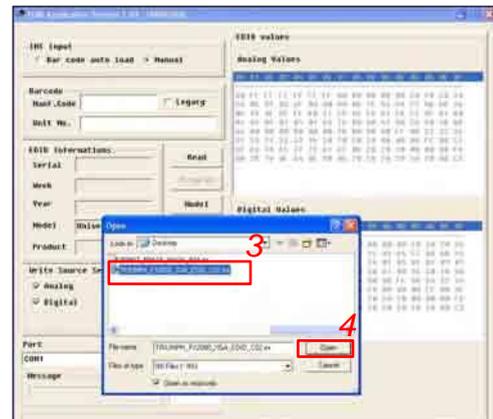


2. Process
  - (1) Select the COM Port which you are using.
  - (2) Click "Model".

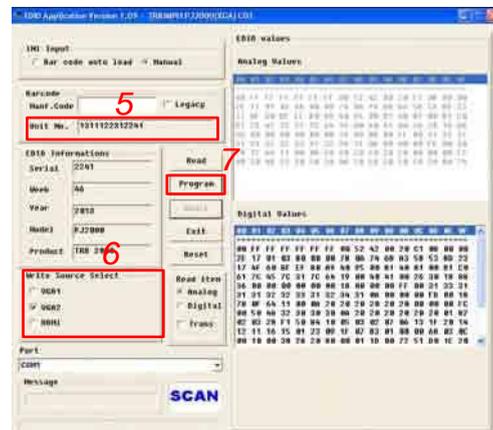


## Chapter 6: EDID Upgrade

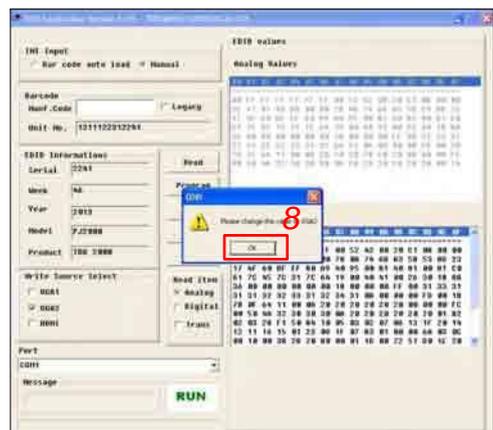
- (3) Select the EDID file (\*.ini).
- (4) Click "Open".



- (5) Key in the Serial Number into the Barcode blank space.
- (6) In "Write Source Select" item, select "VGA2".
- (7) Click "Program".

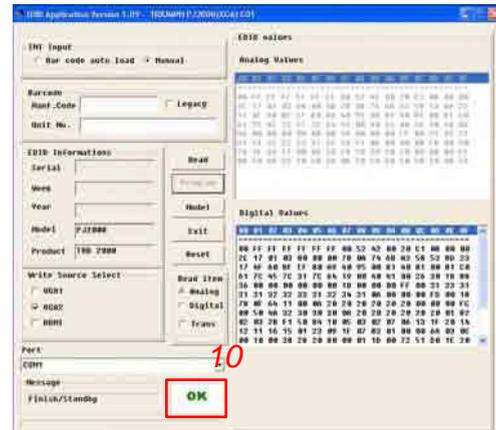


- (8) When the message "Please change the cable to VGA2" appears on the screen, click "OK".

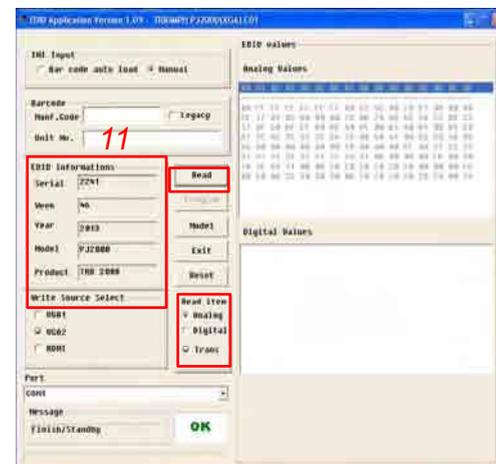


## Chapter 6: EDID Upgrade

- (9) When the EDID program is completed, a "OK" message will appear on the screen.



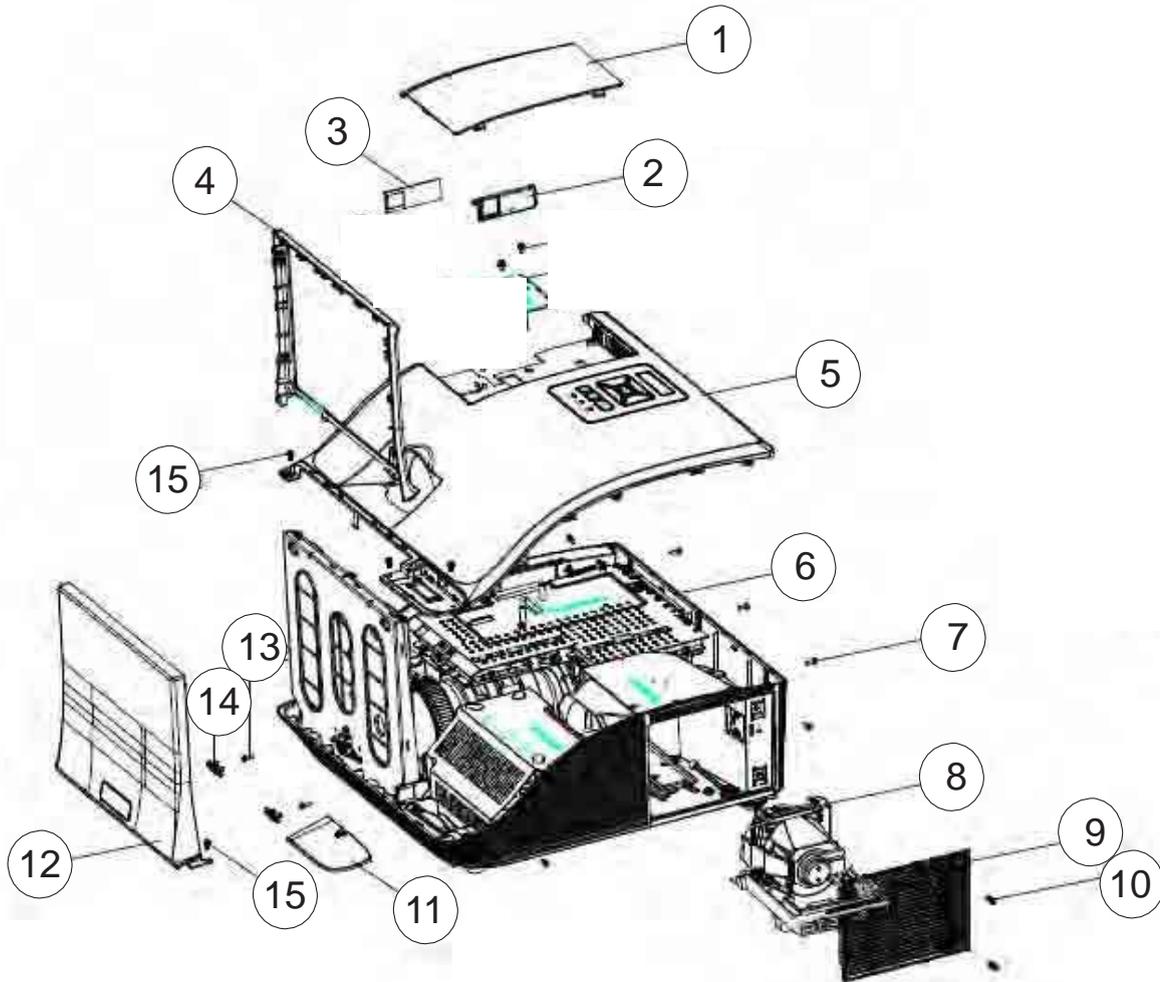
- (10) Read EDID "Analog" information.
- In "Read item", select "Analog" and "Trans", then click the "Read".
  - EDID "Analog" information will show the result.



Appendix A (Exploded Image)

# Appendix A (Exploded Image)

D.C.



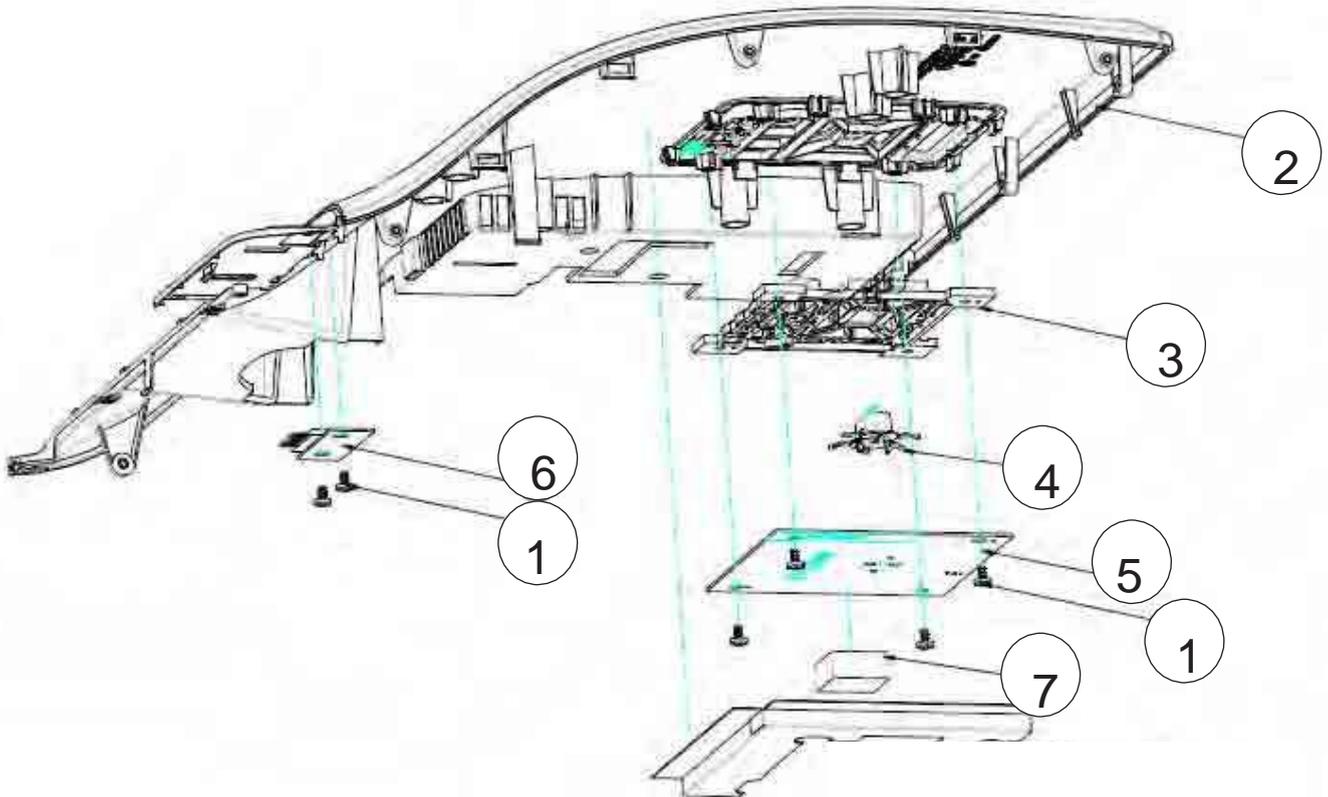
Appendix A (Exploded Image)

**D.C.**

Item	Description	Parts Supply
1	COVER TOP WIRELESS MN3600 G3.5	V
2	CAP WIRELESS IO BLANK MN3600 G3.5	
3	WIRELESS LABEL BLANK PC-835 G3.5	
4	COVER MIRROR REAR MN3600 WHITE G3.5	V
5	COVER COSMETIC MODULE G3.5	V
6	ASSY I/O COVER MODULE 8PE (SERVICE)	V
7	SCREW PAN MECH M3*6 NYLOK, GREEN	
8	LAMP MODULE FOR PROJECTOR MIPRO	V
9	COVER LAMP MN3600 G3.5	V
10	LOCK SCREW PAN MECH M3*8.5-3.5 Ni	
11	CORNER COVER MN3600 G3.5	
12	COVER MIRROR FRONT MODULE WHITE G3.5	V
13	SCREW PAN MECH W/SF M3*6 BLACK	
14	BOTTOM CAP MN3600 G3.5	
15	SCREW PAN TAP M3*6 Ni	

Appendix A (Exploded Image)

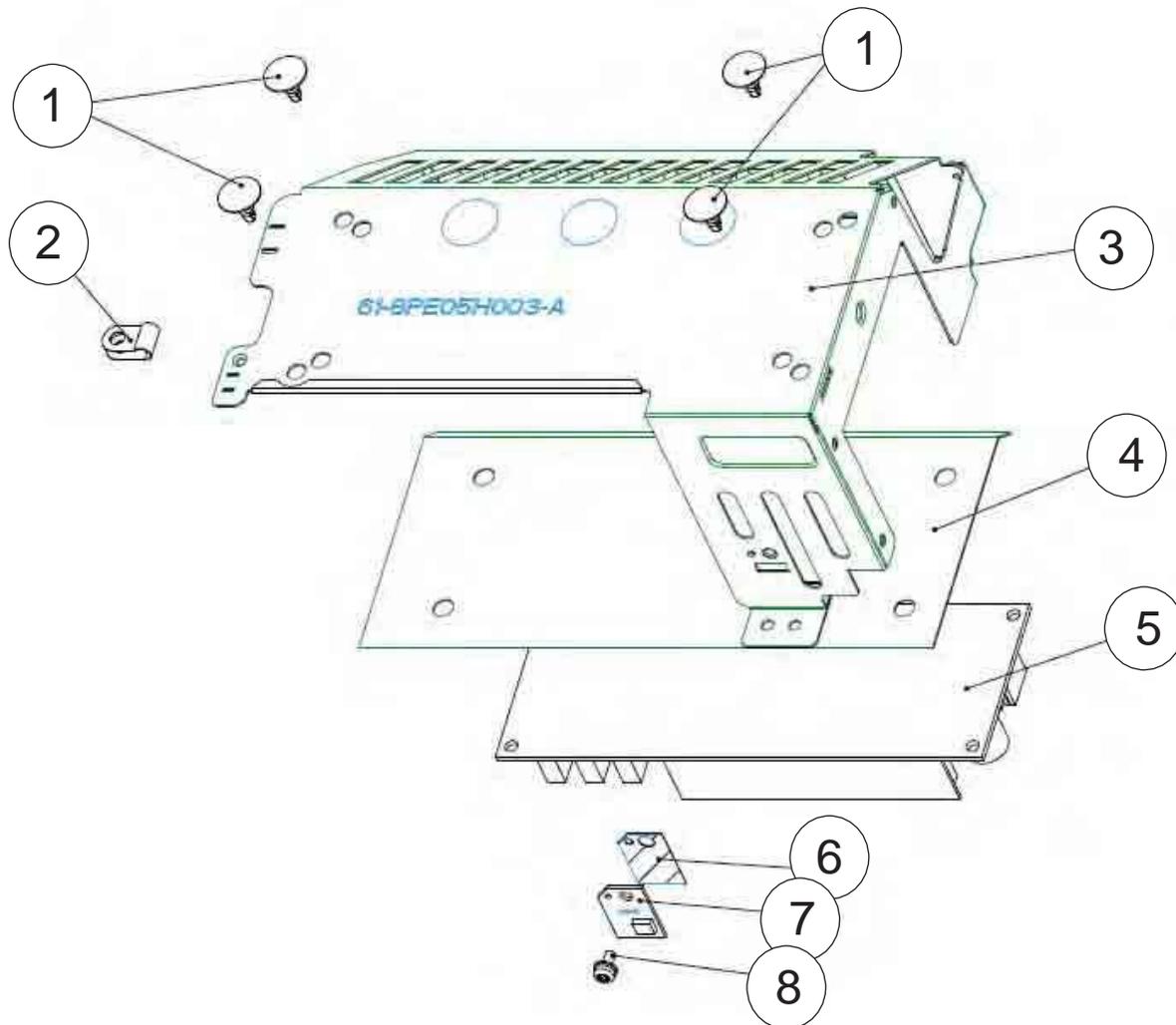
ASSY TOP COVER MODULE



Item	Description	Parts Supply
1	SCREW PAN TAP M3*6 Ni	
2	COVER COSMETIC MODULE G3.5	V
3	KEYPAD MN3600 G3.5	
4	KEYPAD MENU MN3600 G3.5	
5	PCBA KEYPAD BOARD 8PE FR4 FOR G035 PROJECTOR	V
6	PCBA IR CAMERA TRANSFORM BOARD 8PE FR4 FOR G035 PROJECTOR	
7	GASKET FOR MAIN BOARD EMI	

Appendix A (Exploded Image)

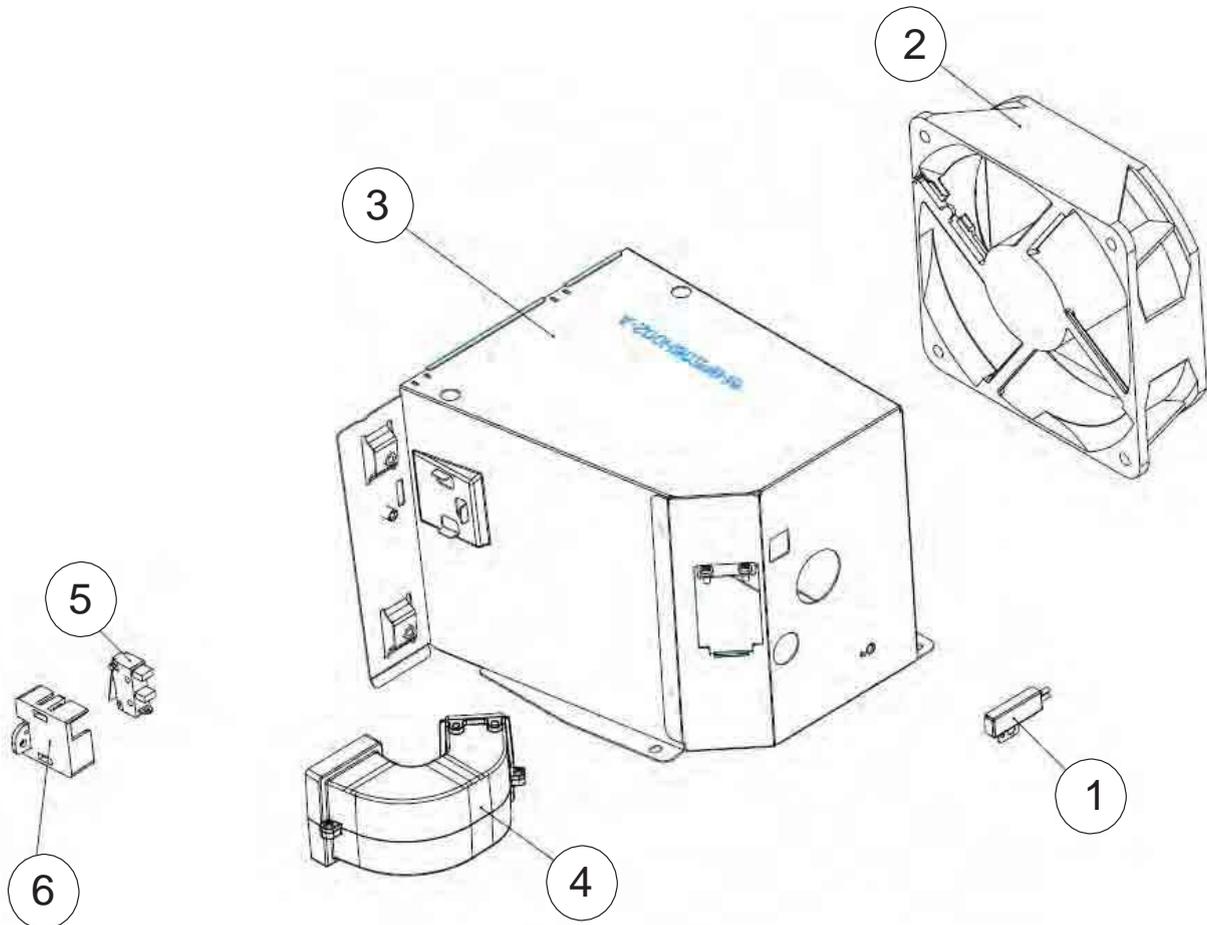
**ASSY LAMP DRIVER MODULE**



Item	Description	Parts Supply
1	SPACER FOR LAMP DRIVER 240W G3.5	
2	GROUNDING CABLE CLAMP FN-008 "PINGOOD"	
3	BRACKET LAMP DRIVER MIPRO	
4	LAMP DRIVER MYLAR FORMEX GK-17 0.43t G3.5	
5	ASSY OSRAM LAMPDRIVER PT VIP O3 MID 240W-UNIPRO AS WITH DYNAMIC ECO	V
6	THERMAL SENSOR MYLAR G3.5	
7	PCBA THERMAL SENSOR BD FOR PROJECTOR G035	V
8	SCREW PAN MECH W/SF M3*6 BLACK	

Appendix A (Exploded Image)

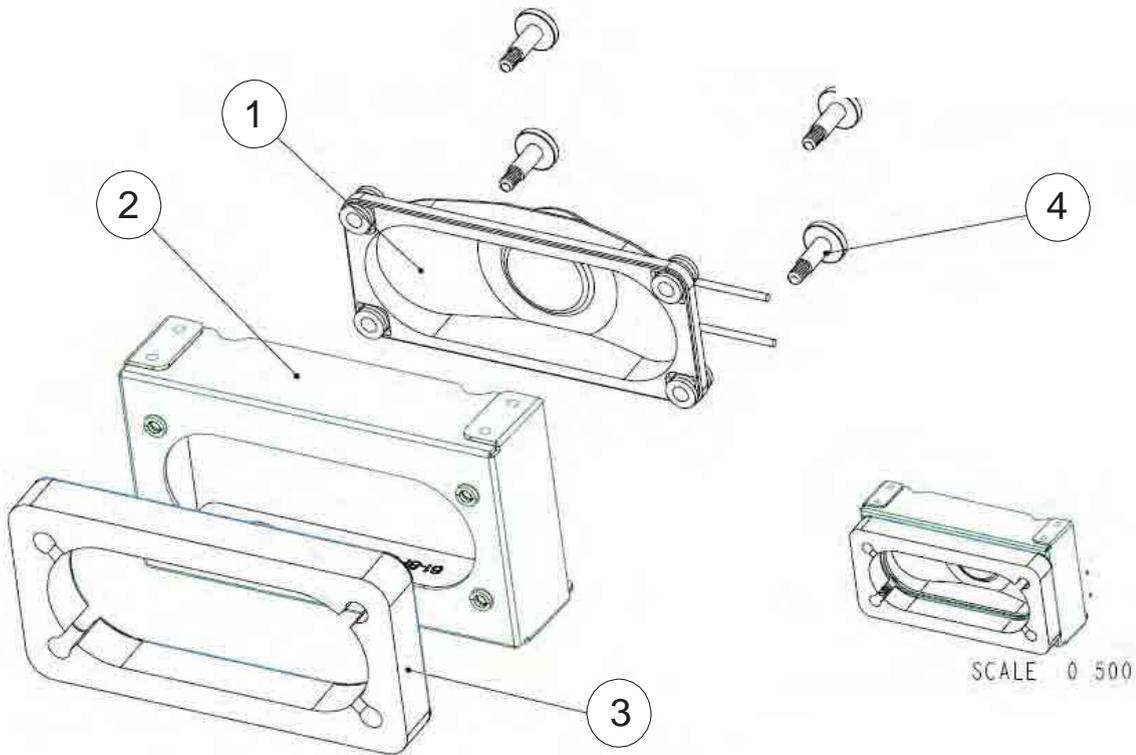
**ASSY SYS FAN MODULE**



Item	Description	Parts Supply
1	THERMAL SWITCH WITH BRACKET (KLIXON YS11) G035	V
2	SUNON 105mm*32mm / AXIAL FAN / RoHS2.0	V
3	FAN SYSTEM BRACKET MIPRO	
4	BLOWER DUCT ASS'Y G3.5	
5	BUY ASSY INTERLOCK SWITCH 2P #26 320mm G3.5	V
6	LIMIT SWITCH HOLDER PC MN3600H BLACK TDP-SP1	

Appendix A (Exploded Image)

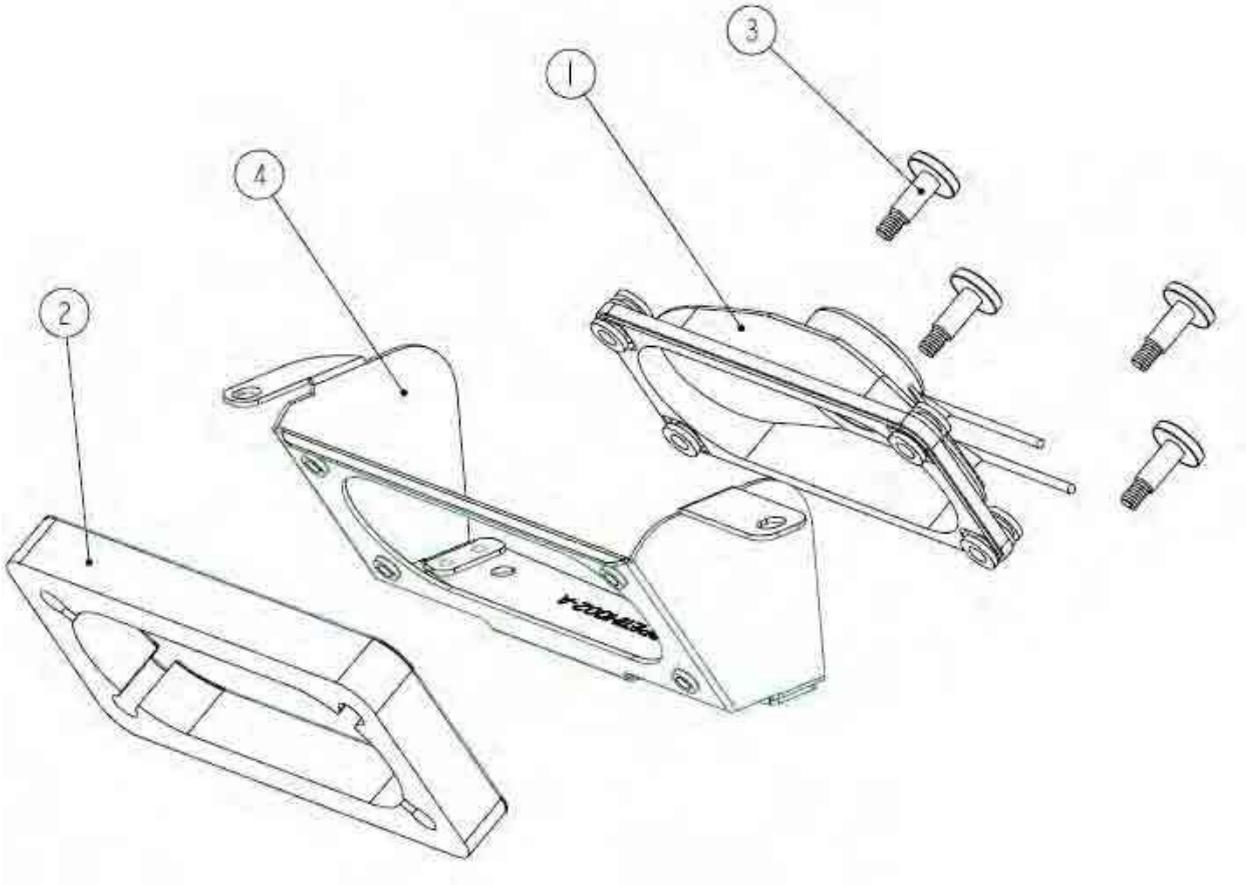
**ASSY LEFT SPEAKER MODULE**



Item	Description	Parts Supply
1	SPEAKER 10W 6-OHM 280mm G3.5	V
2	SPEAKER BRKT LEFT SECC 0.8t G3.5	
3	PORON SPEAKER G3.5	
4	SCREW PAN MECH W/SF M3*8 NI GREEN	

Appendix A (Exploded Image)

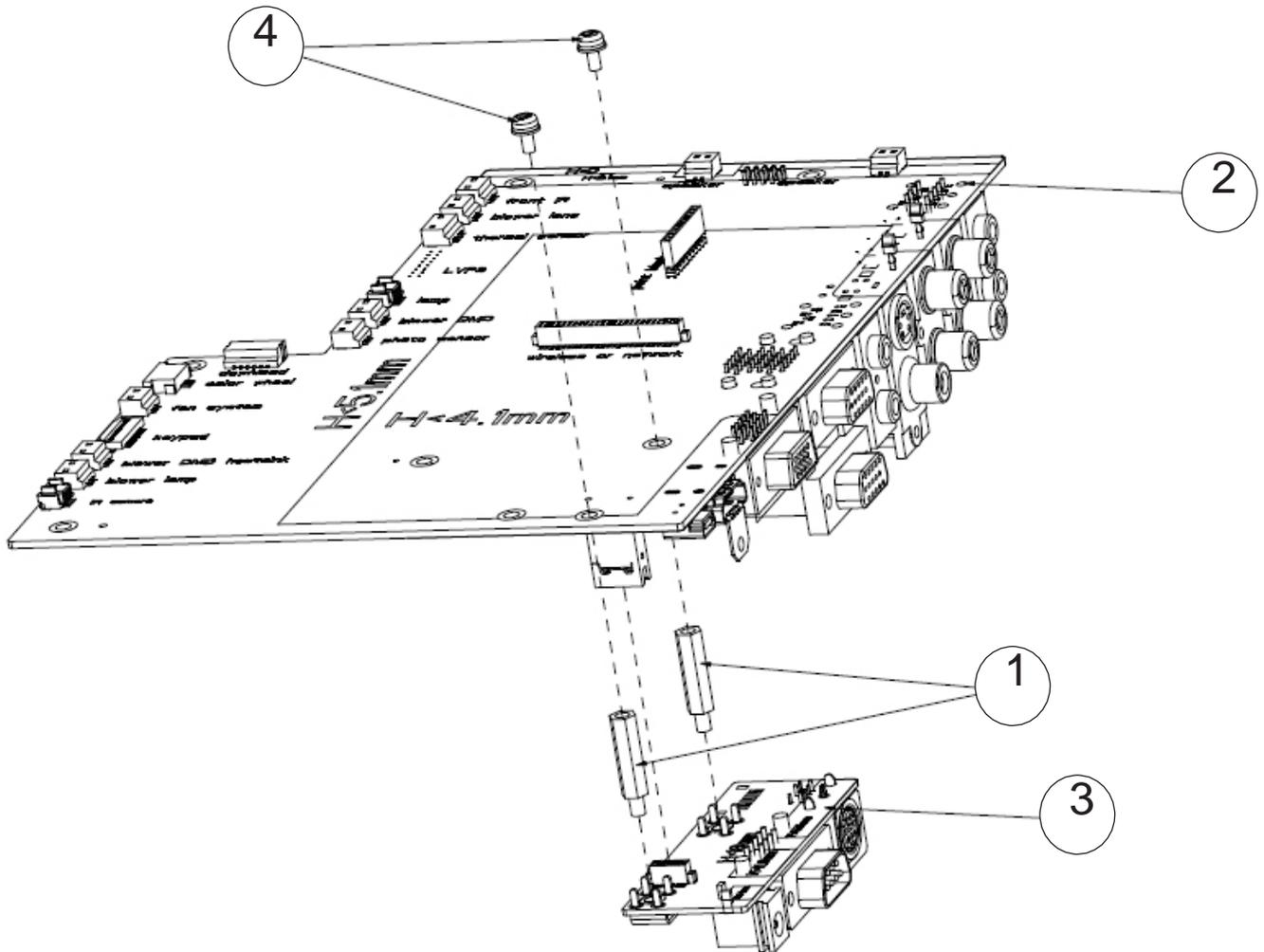
**ASSY FRONT SPEAKER MODULE**



Item	Description	Parts Supply
1	SPEAKER 10W 6-OHM 280mm G3.5	V
2	PORON SPEAKER G3.5	
3	SCREW PAN MECH W/SF M3*8 NI GREEN	
4	SPEAKER BRKT FRONT MIPRO	

Appendix A (Exploded Image)

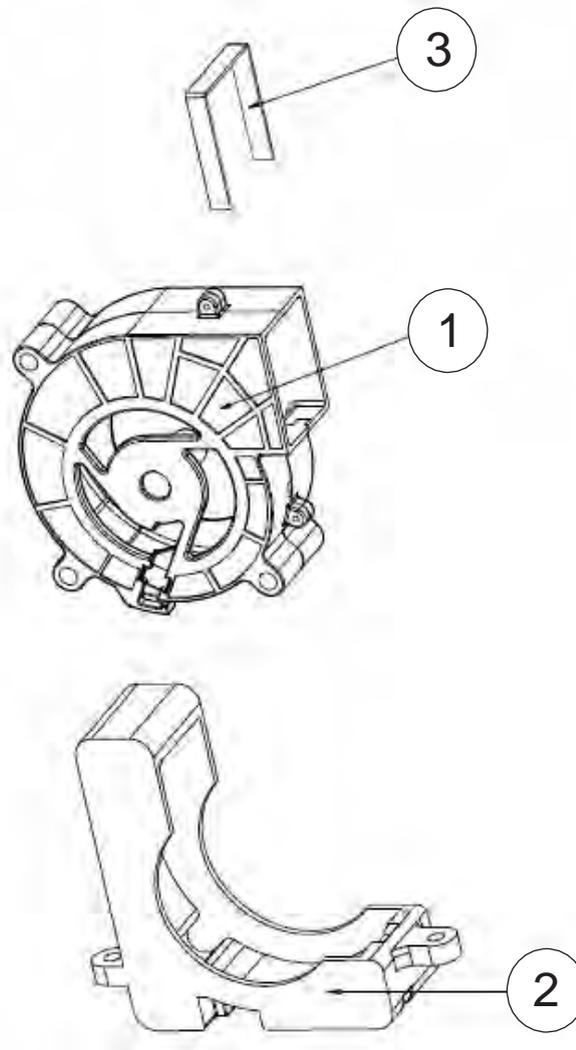
**ASSY MAIN BOARD MODULE**



Item	Description	Parts Supply
1	HEXAGON COPPER STICK M3 L18 SCREW L4.5 EzPro 735	
2	PCBA MAIN BD FOR MIPRO PROJECTOR	√
3	PCBA DAUGHTER BD FOR G035 PROJECTOR	√
4	SCREW PAN MECH W/SF M3*6 Ni GREEN	

Appendix A (Exploded Image)

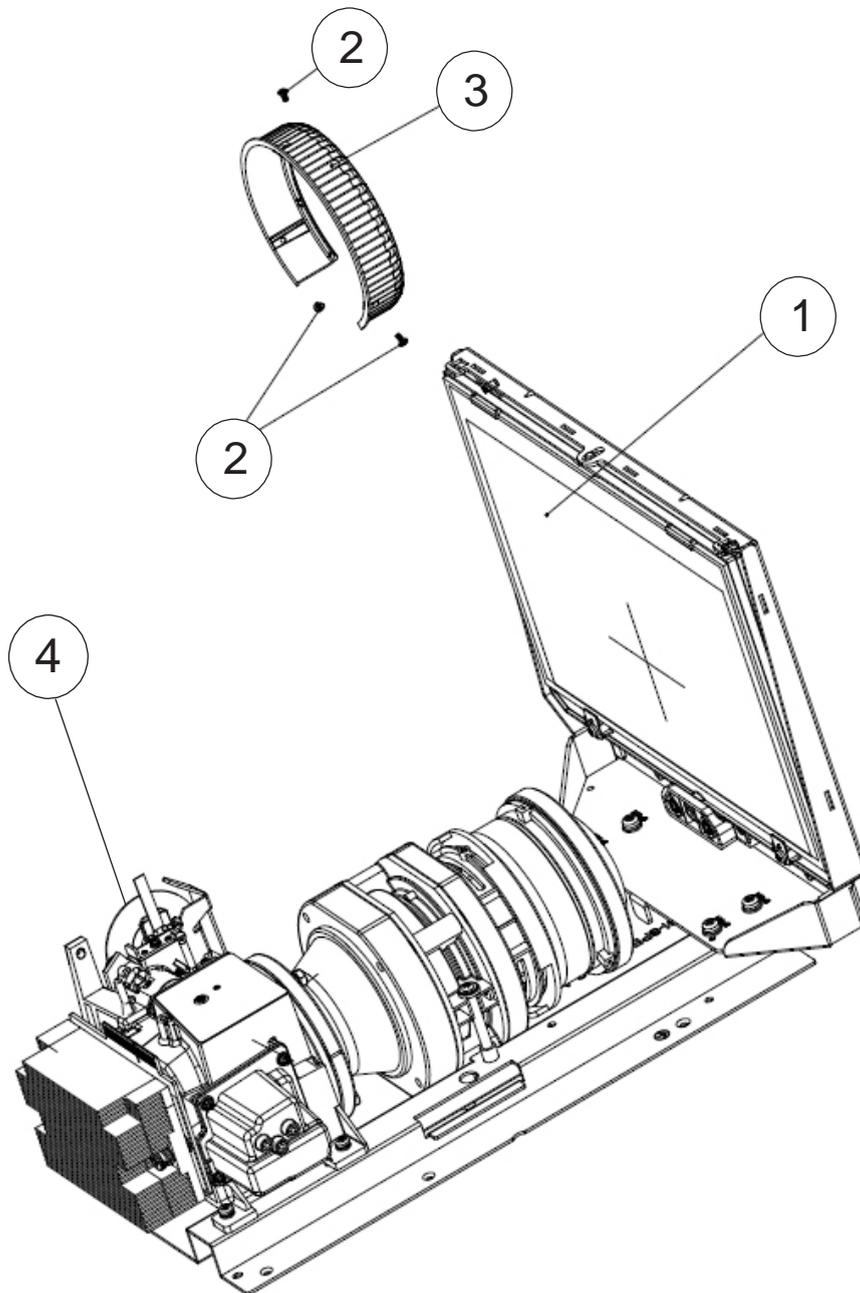
## ASSY LAMP BLOWER MODULE



Item	Description	Parts Supply
1	SUNON 70mm*25mm /LAMP BLOWER/ RoHS2.0/WIRE LENGTH 230mm	
2	7025 BLOWER RUBBER HD33	V
3	7025 BLOWER DUCT AIR TIGHT HD33	

Appendix A (Exploded Image)

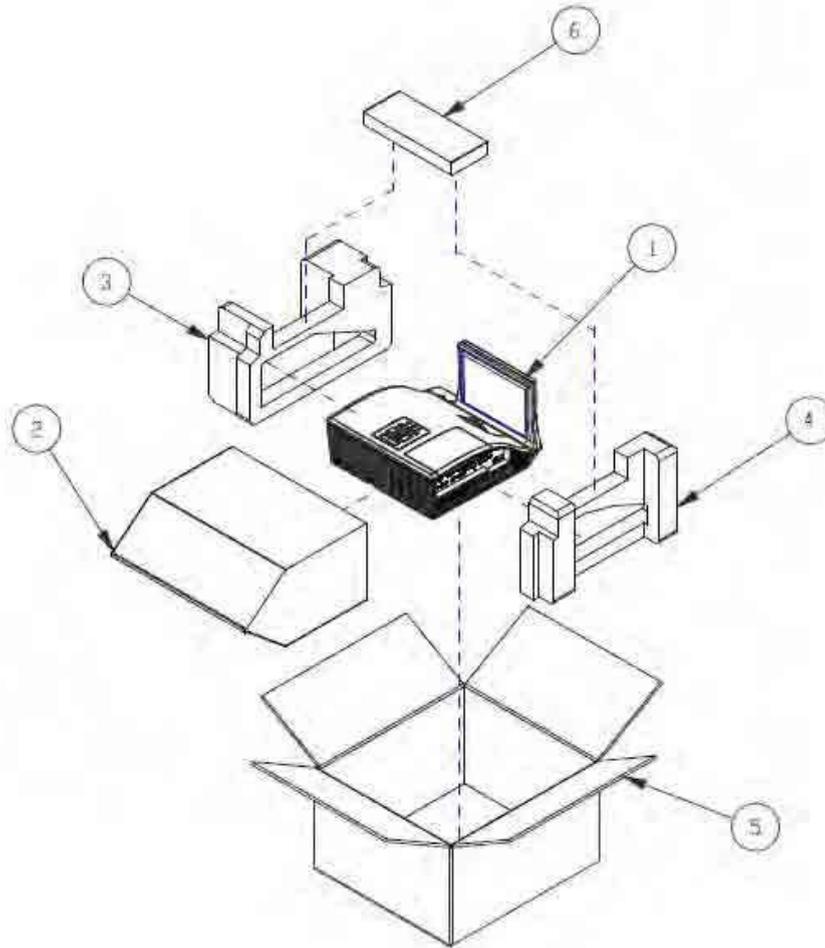
**ASSY ENGINE MODULE**



Item	Description	Parts Supply
1	ASSY ENGINE MODULE FOR 8SP 75.8PE03G001(SERVICE)	√
2	SCREW FLAT HEAD TAP M2*4MM SWRCH18A H BLACK	
3	FOCUS RING MIPRO	
4	ASSY COLOR WHEEL MODULE FOR 8SP(SERVICE)	√

Appendix A (Exploded Image)

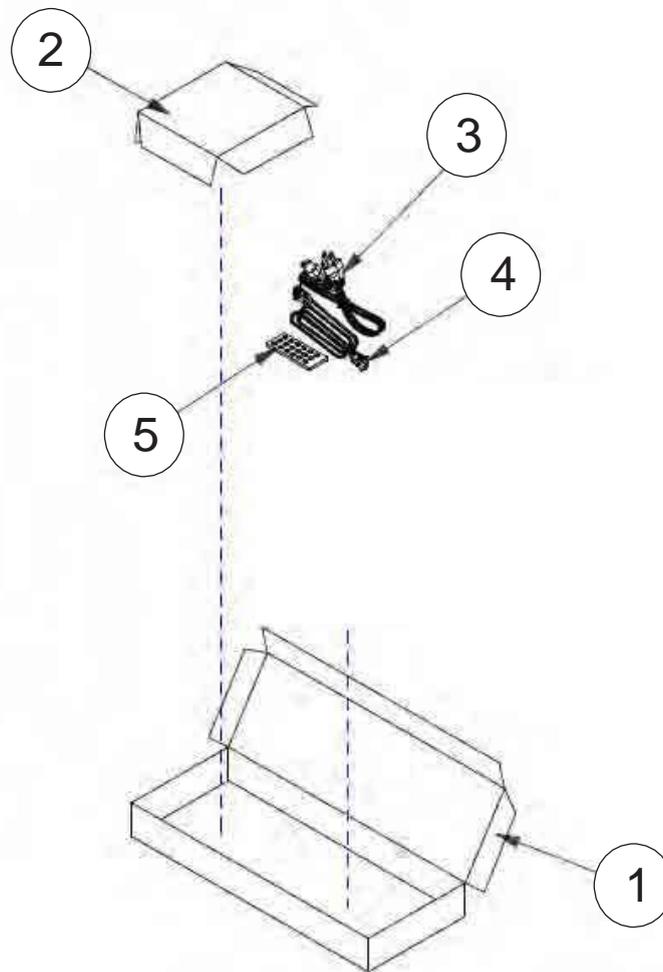
DP.



Item	Description	Parts Supply
1	D.C. G3.5	
2	EPE BAG S500WI	
3	EPE CUSHION LEFT G3.5	
4	EPE CUSHION RIGHT G3.5	
5	CARTON BOX G3.5	V
6	A.K. G3.5	

Appendix A (Exploded Image)

**AK.**



Item	Description	Parts Supply
1	AK BOX MIPRO	
2	AK PARTITION PAPER W/O IR CAMERA MIPRO	
3	CABLE POWER CORD 1.8M SP30+IS14 US	√
4	CABLE VGA 15P 1.8M BLK EP739	√
5	INFRARED REMOTE CONTROLLER FOR MIPRO	√

# Appendix B

## I. Serial Number System Definition

Serial Number Format for Projector

**13    11    30    110    0001**

①        ②        ③        ④        ⑤

① :        13 = manufacture year

② :        11 = manufacture month

③ :        30 =manufacture day

④ :        110 = product code

⑤ :        0001 = Serial Code

EX: 1311301100001

This label "1311301100001" represents the serial number for PJ2000.

It is produced at CPC on 11/30 of 2013. Its serial code is 0001.

Appendix B

## II. PCBA Code Definition

PCBA Code for Projector

A   B   XXXXXXXXXXXX   C   XXX   EEEE

①

②

③

④

⑤

⑥

①

:

ID

②

:

Vendor Code

③

:

P/N

④

:

Revision

⑤

:

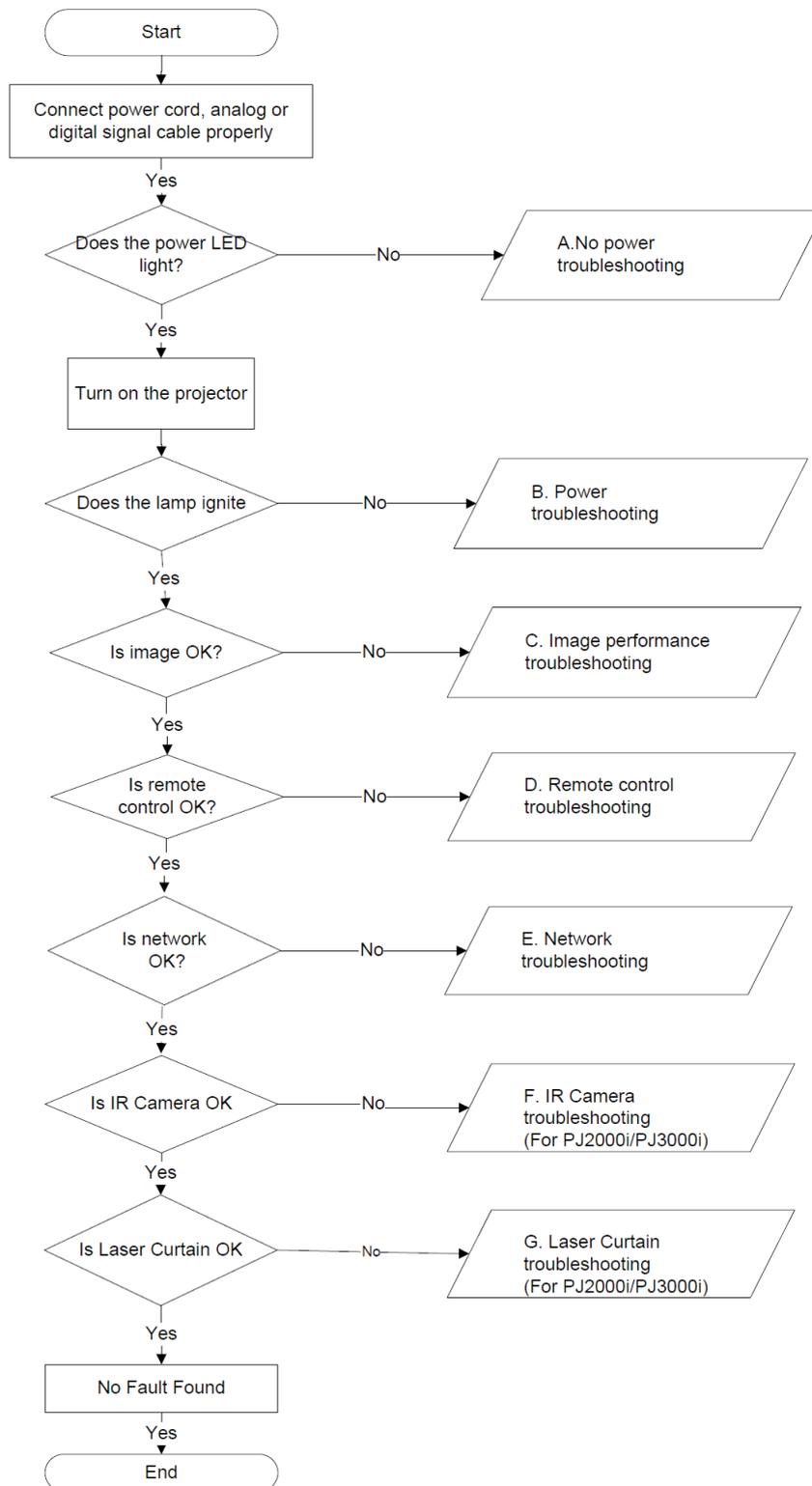
Date Code

⑥

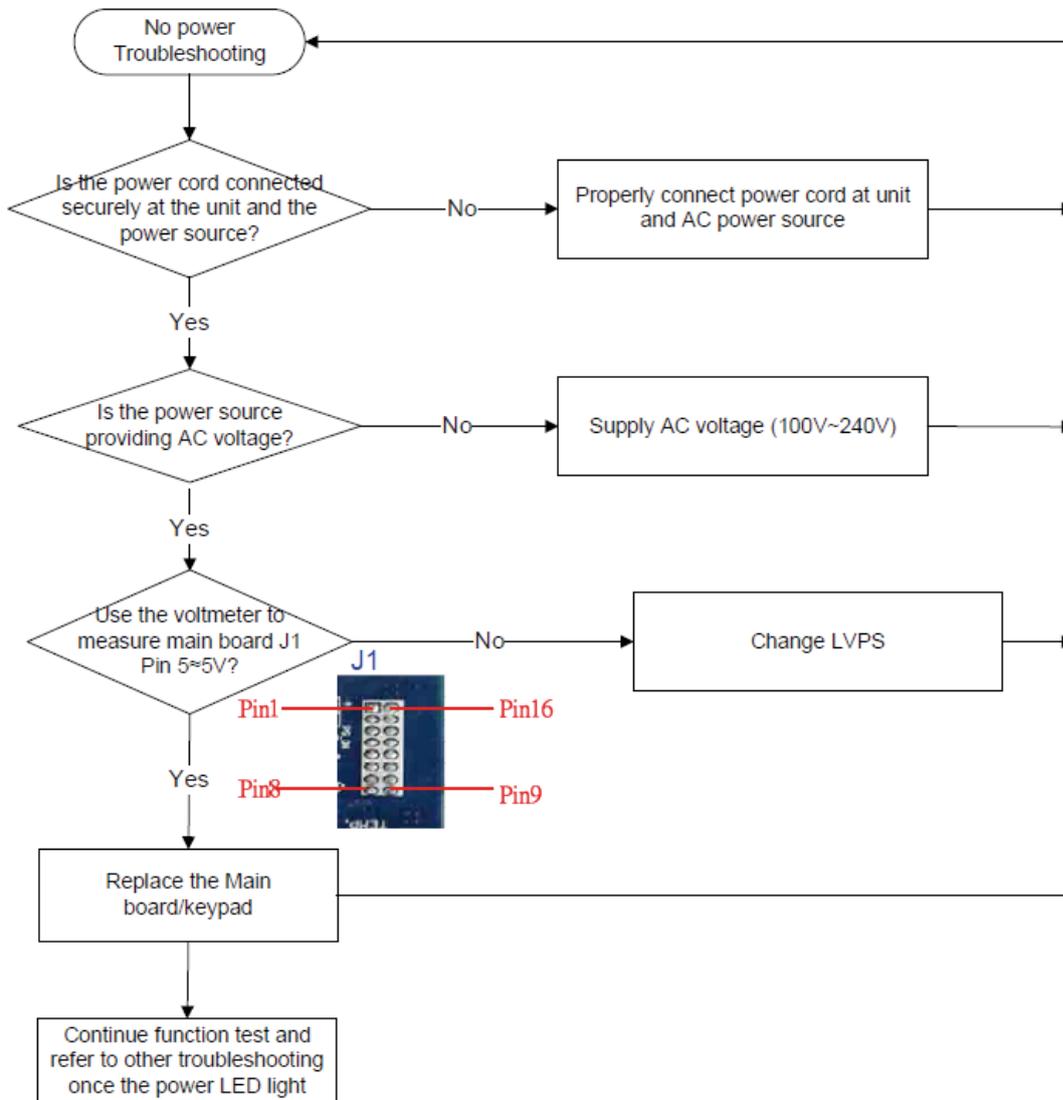
:

S/N

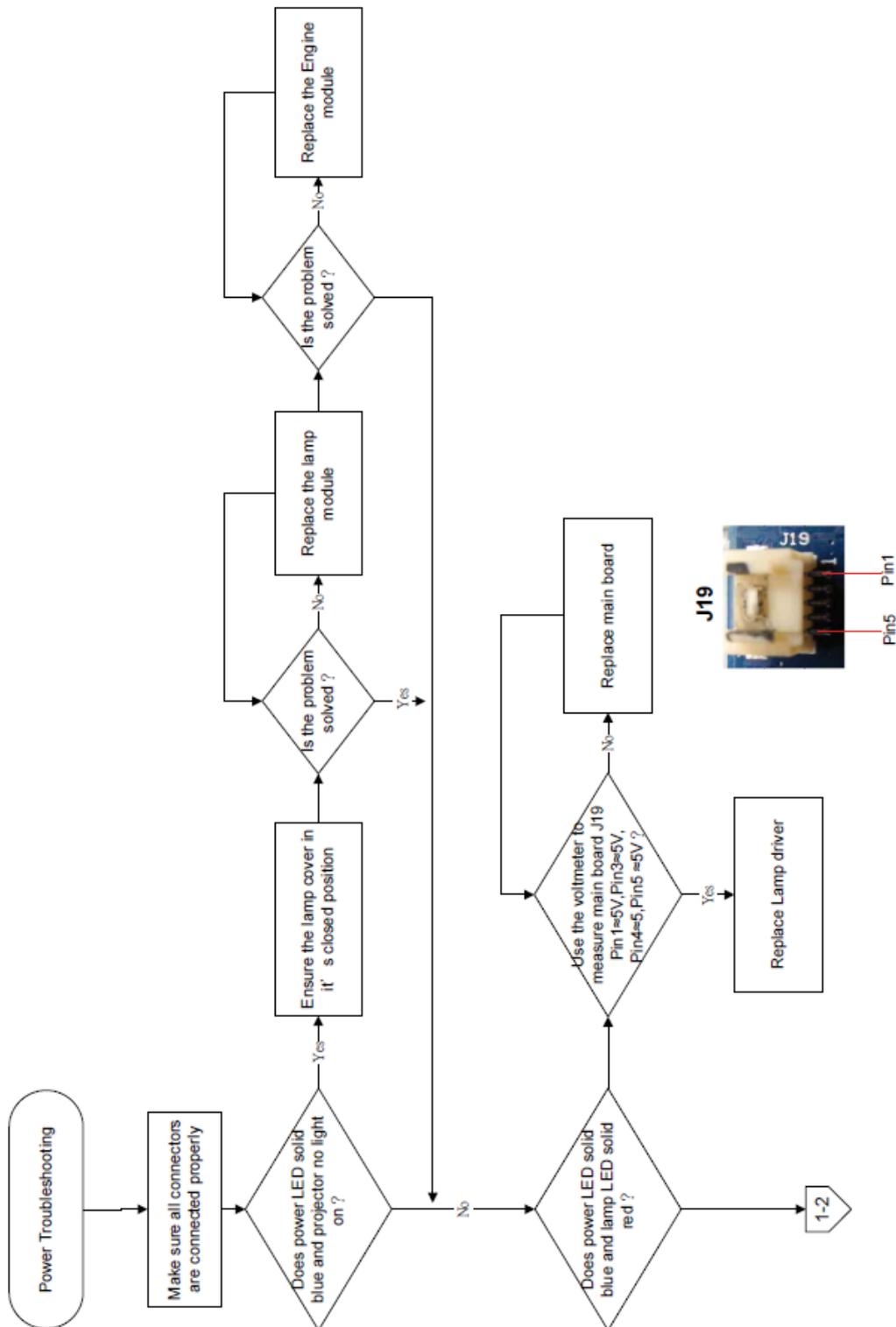
## 3-2 Main Procedure



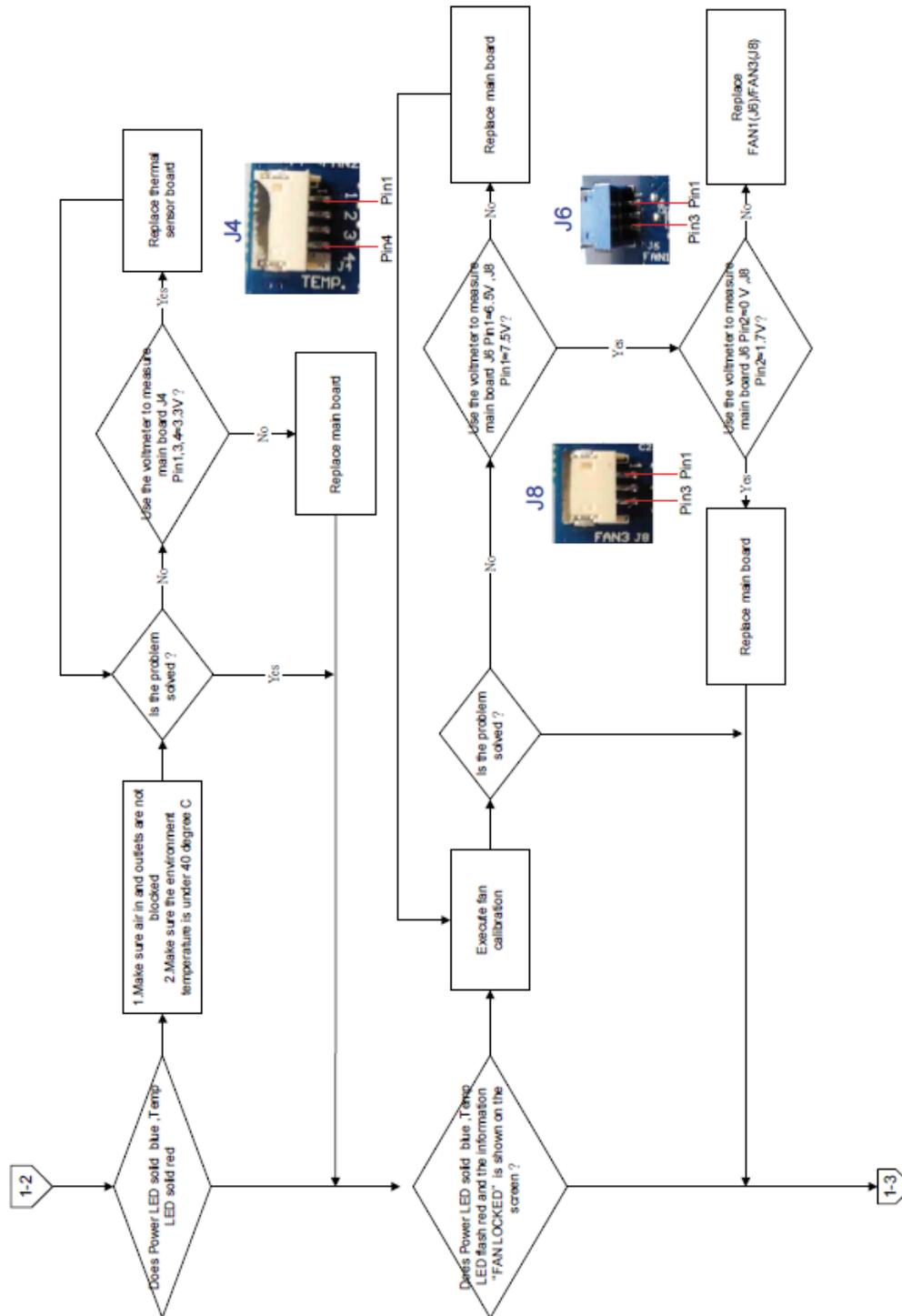
### 3-3 NO Power troubleshooting



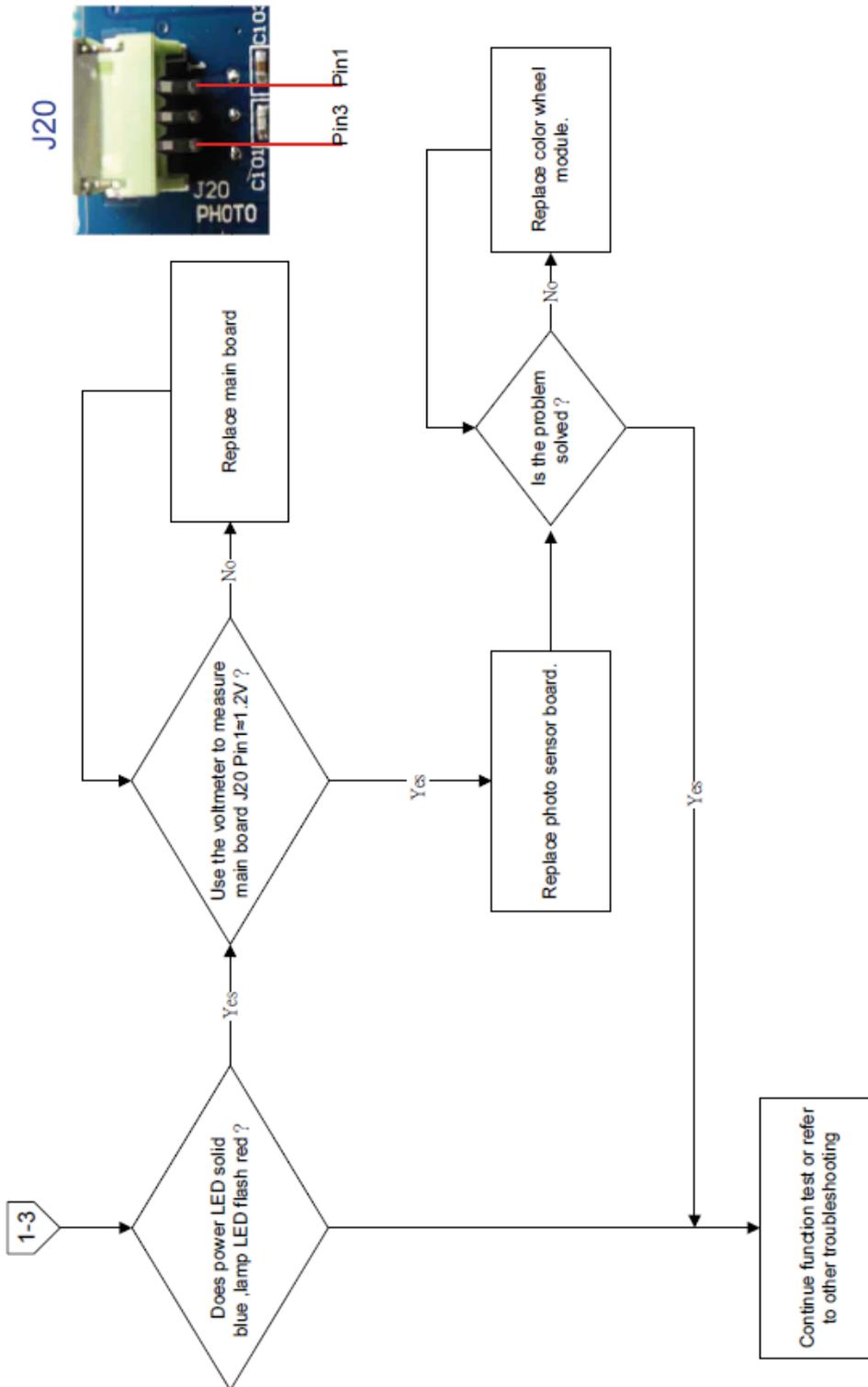
### 3-4 Power troubleshooting



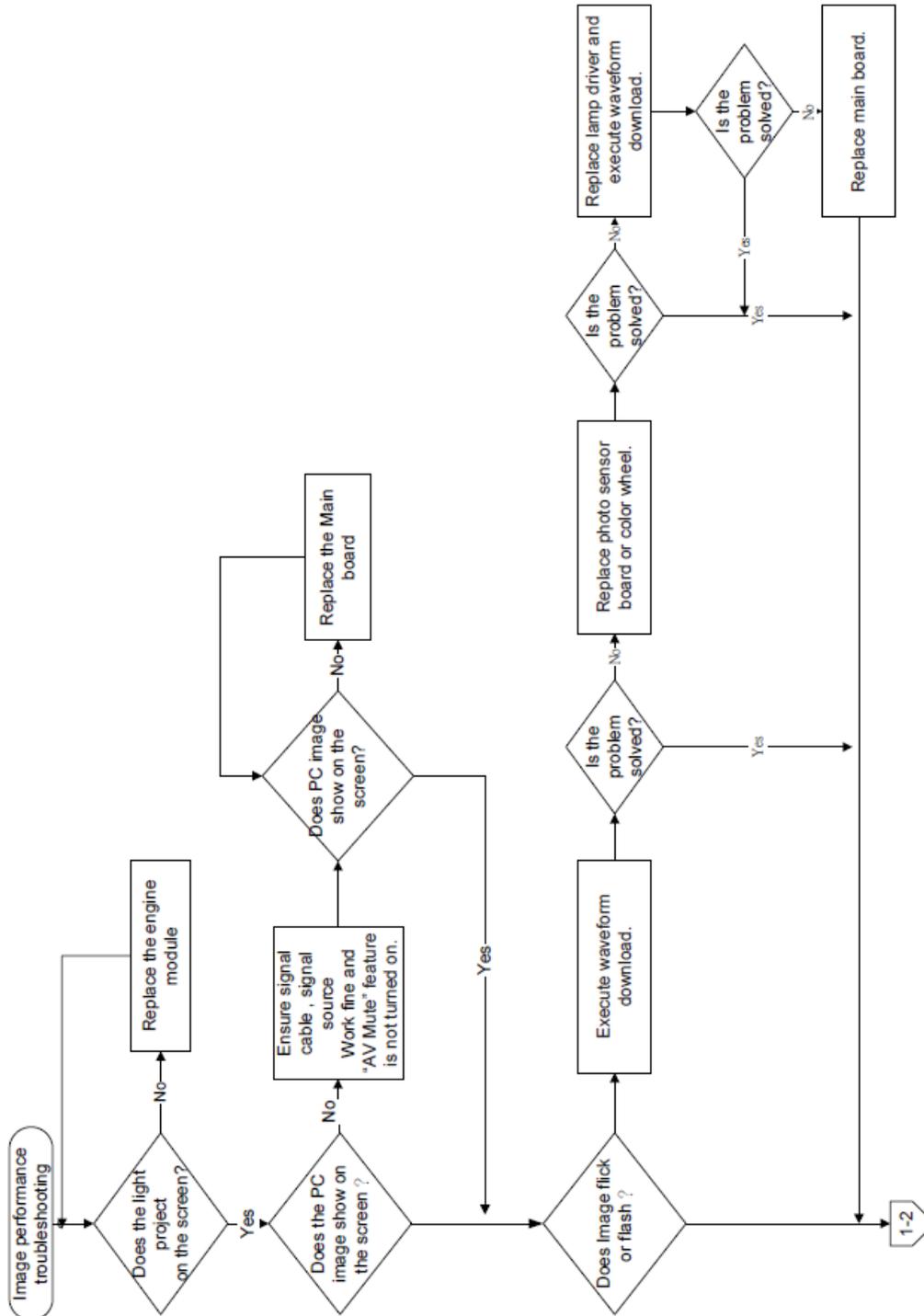
### 3-4 Power troubleshooting



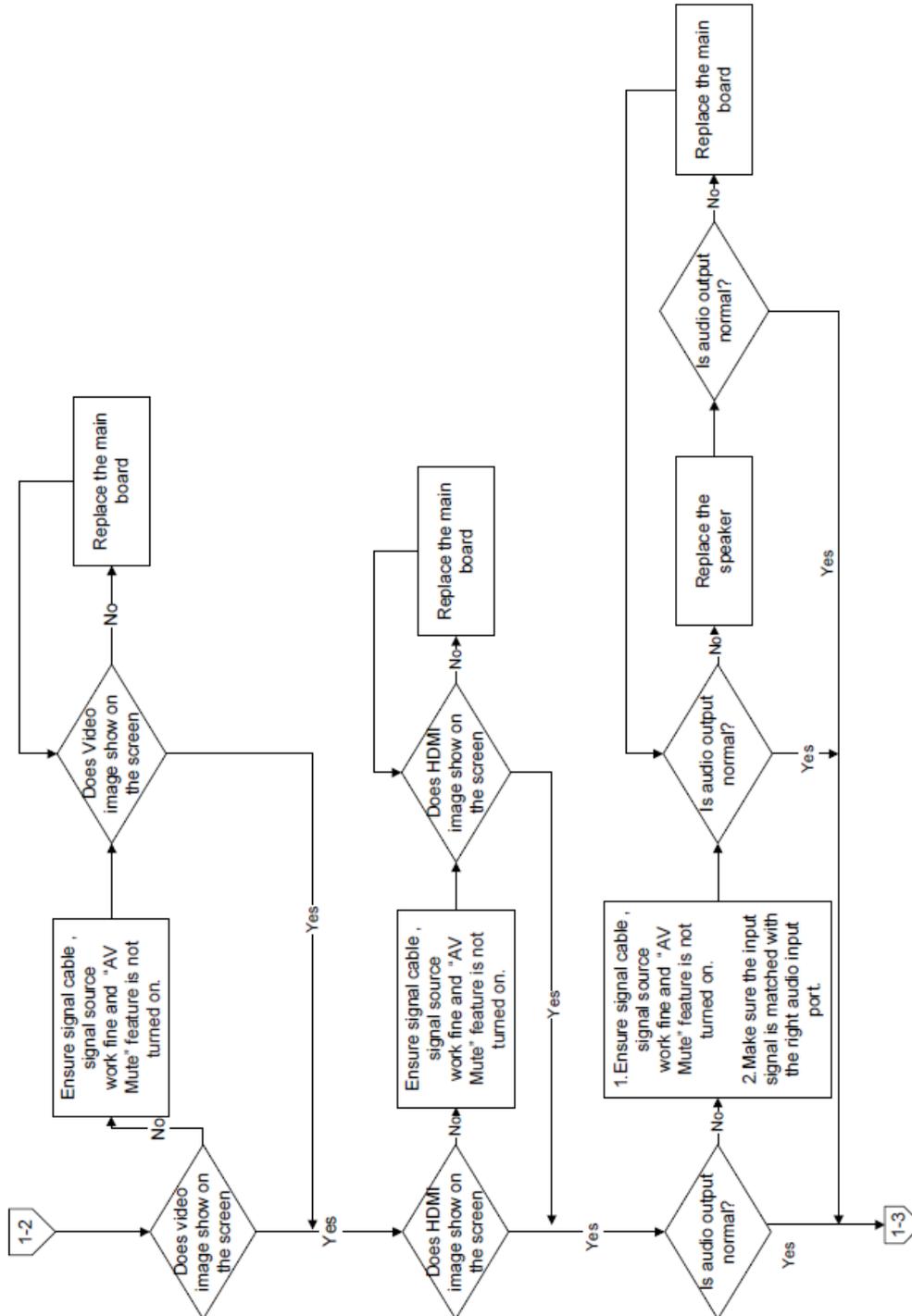
### 3-4 Power troubleshooting



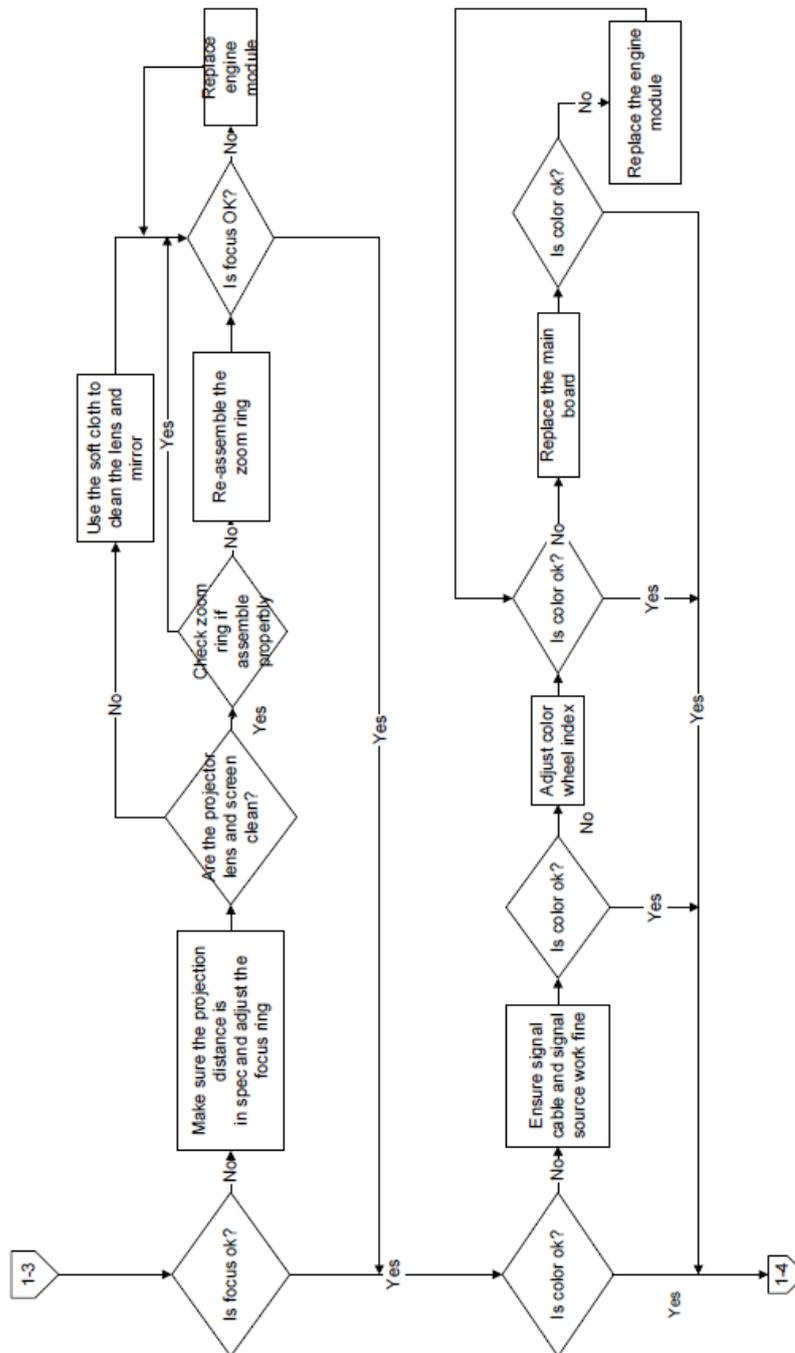
### 3-5 Image troubleshooting



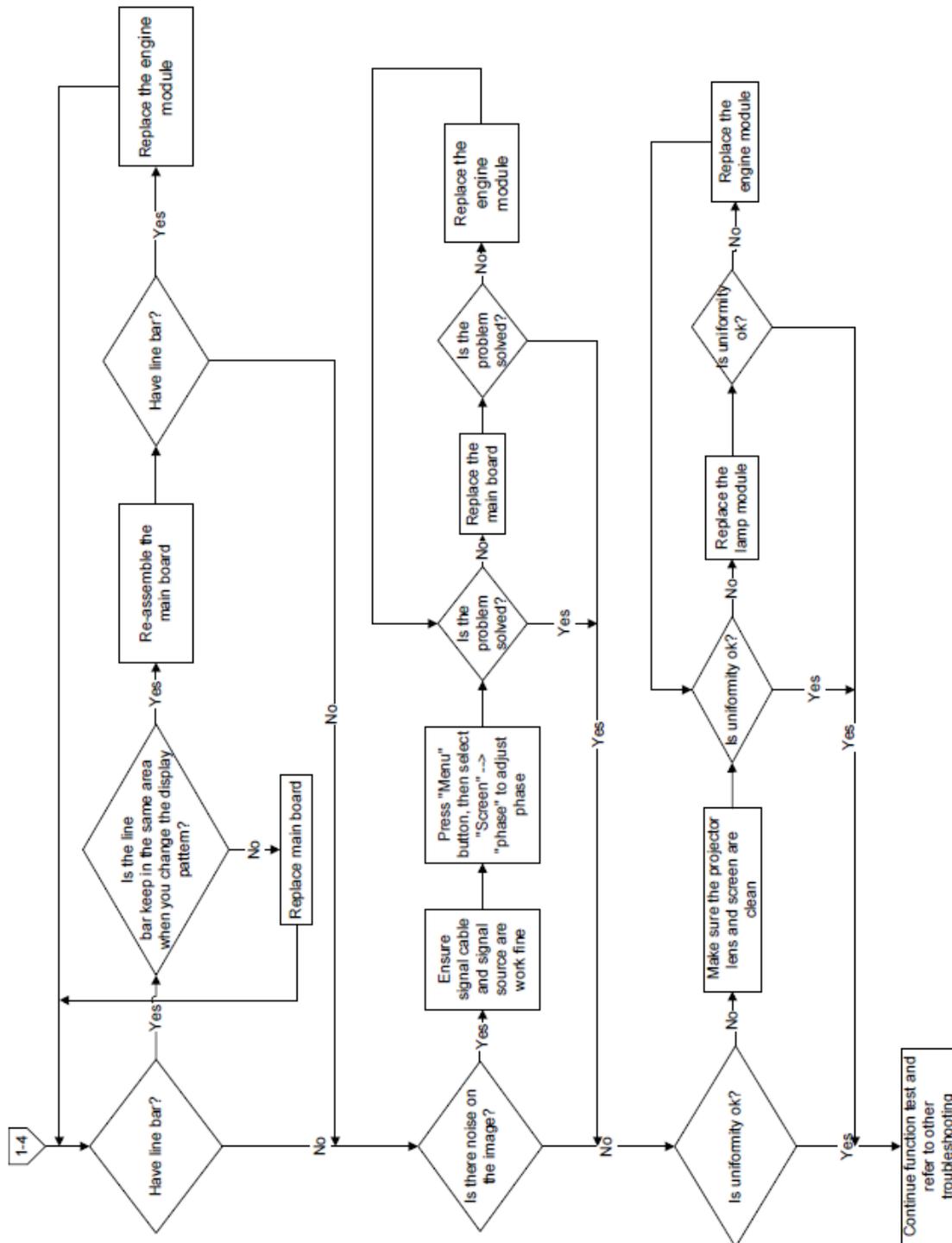
### 3-5 Image troubleshooting



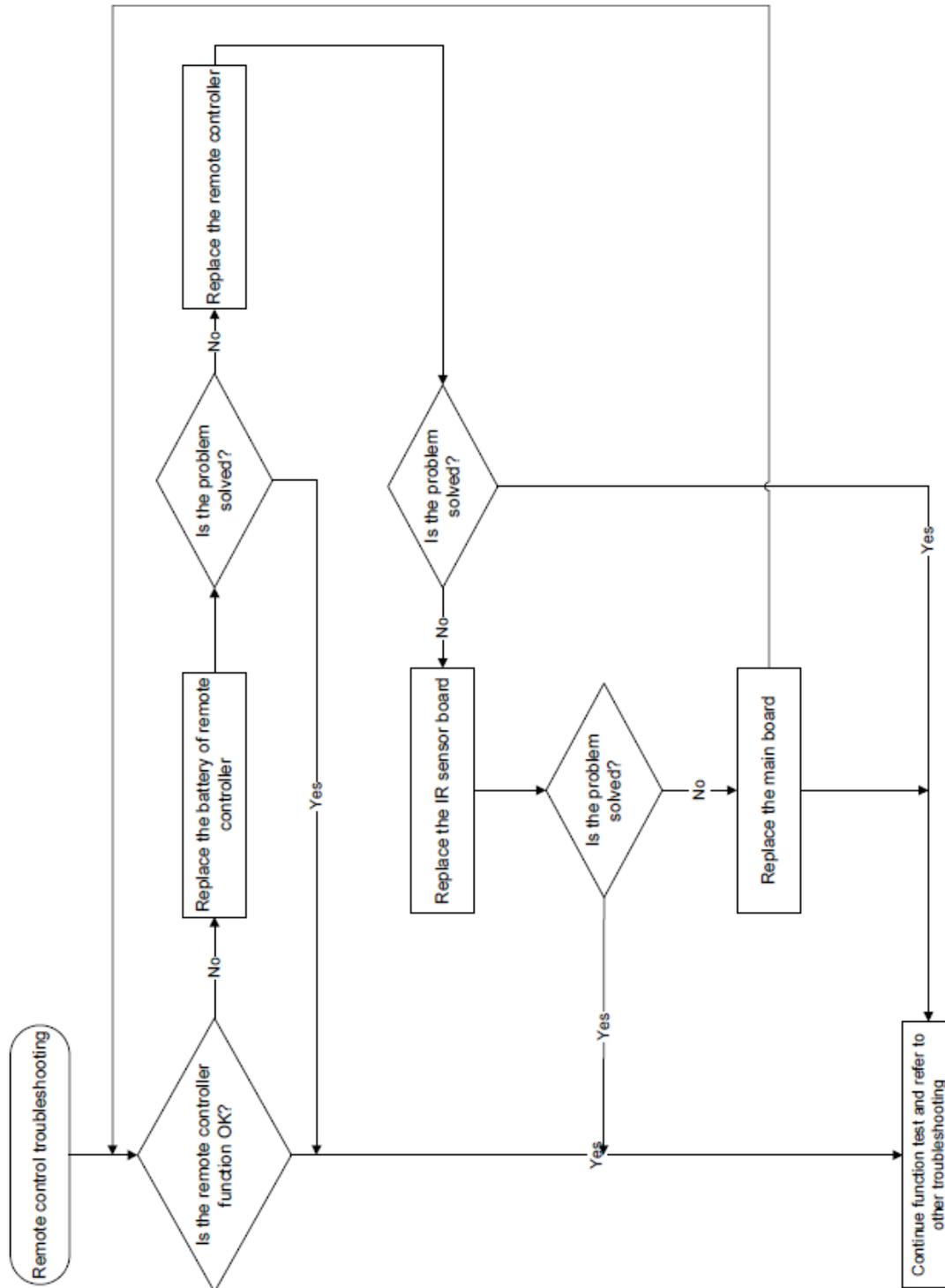
### 3-5 Image troubleshooting



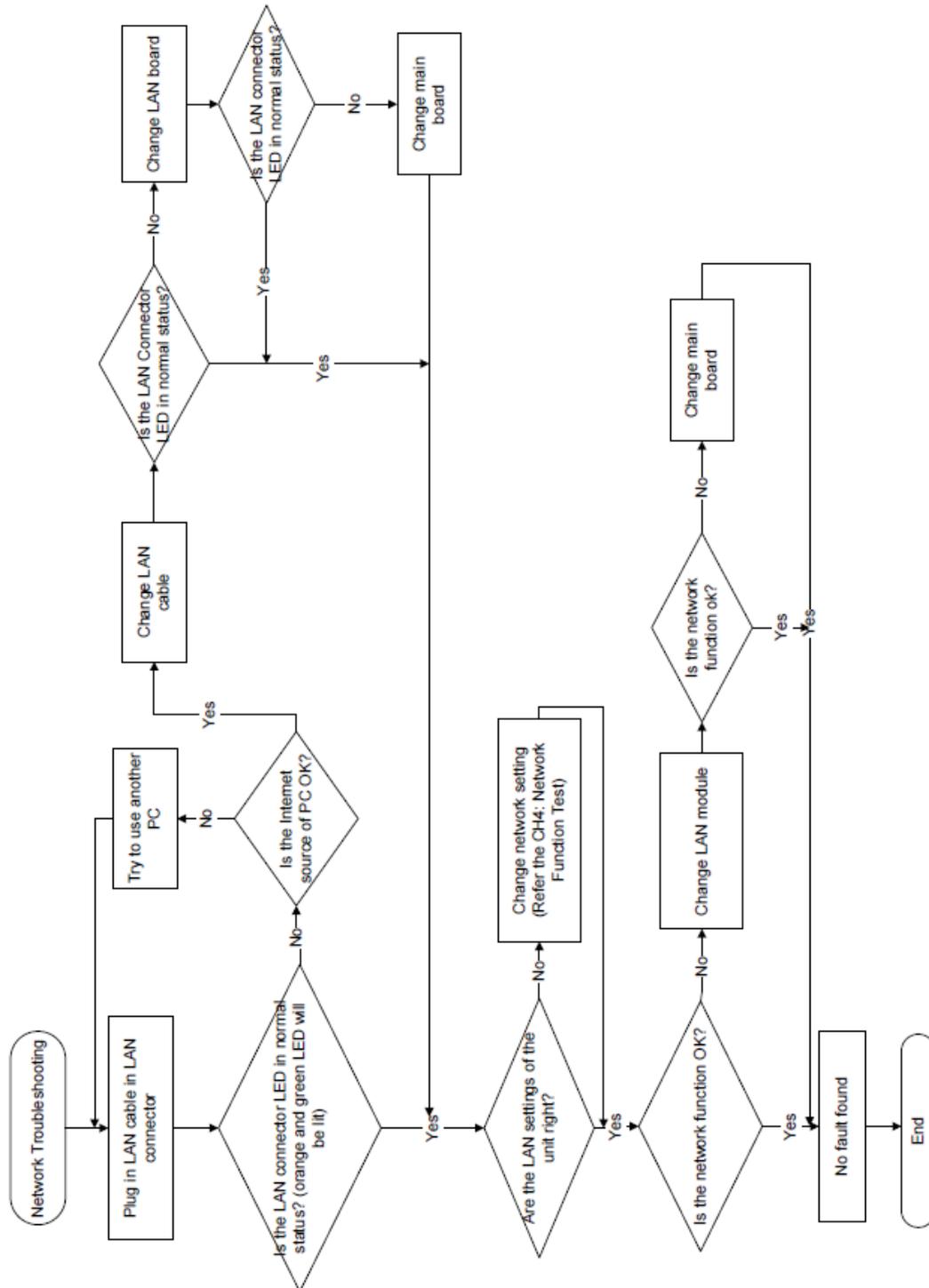
### 3-5 Image troubleshooting



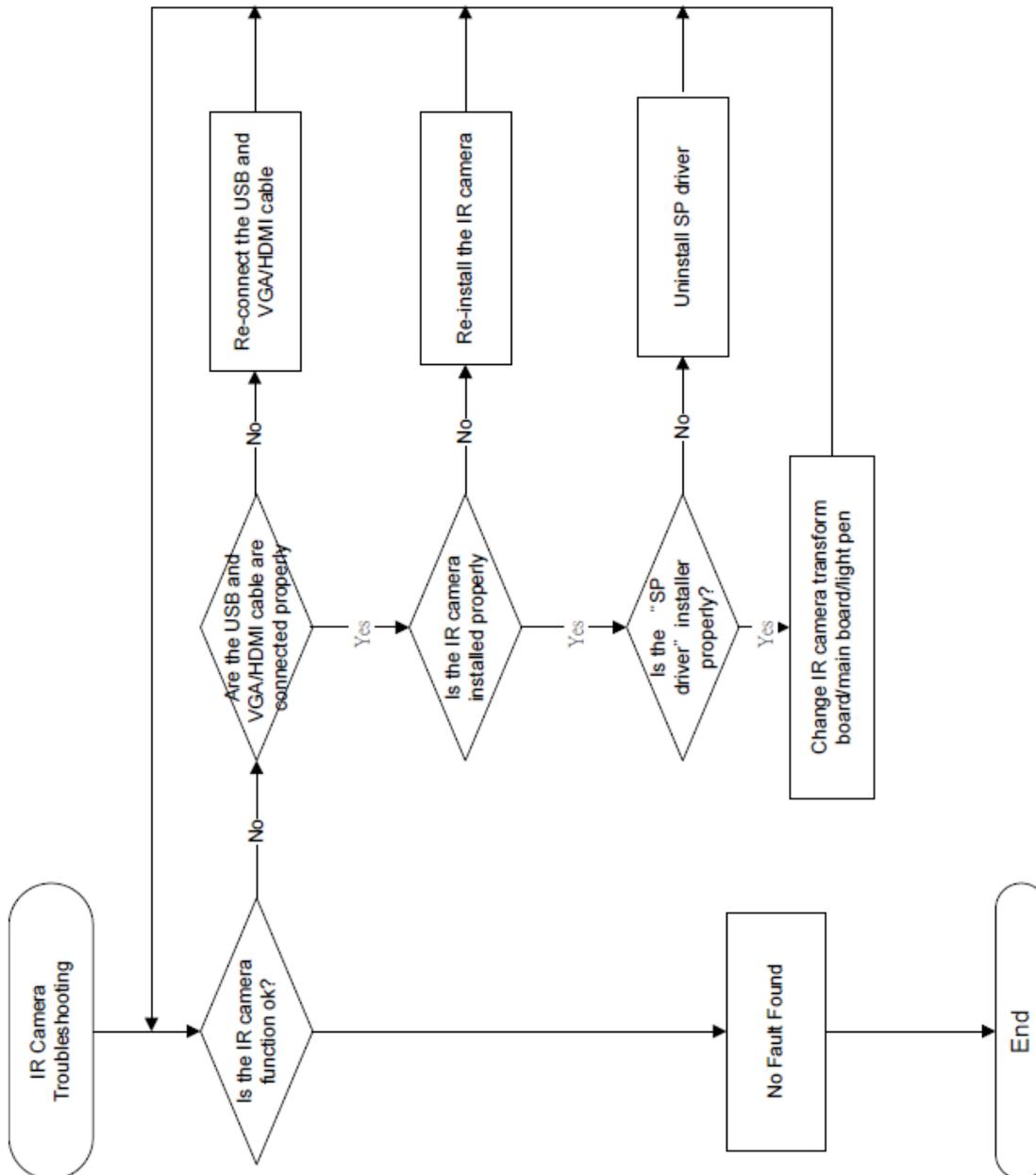
### 3-6 Remote control troubleshooting



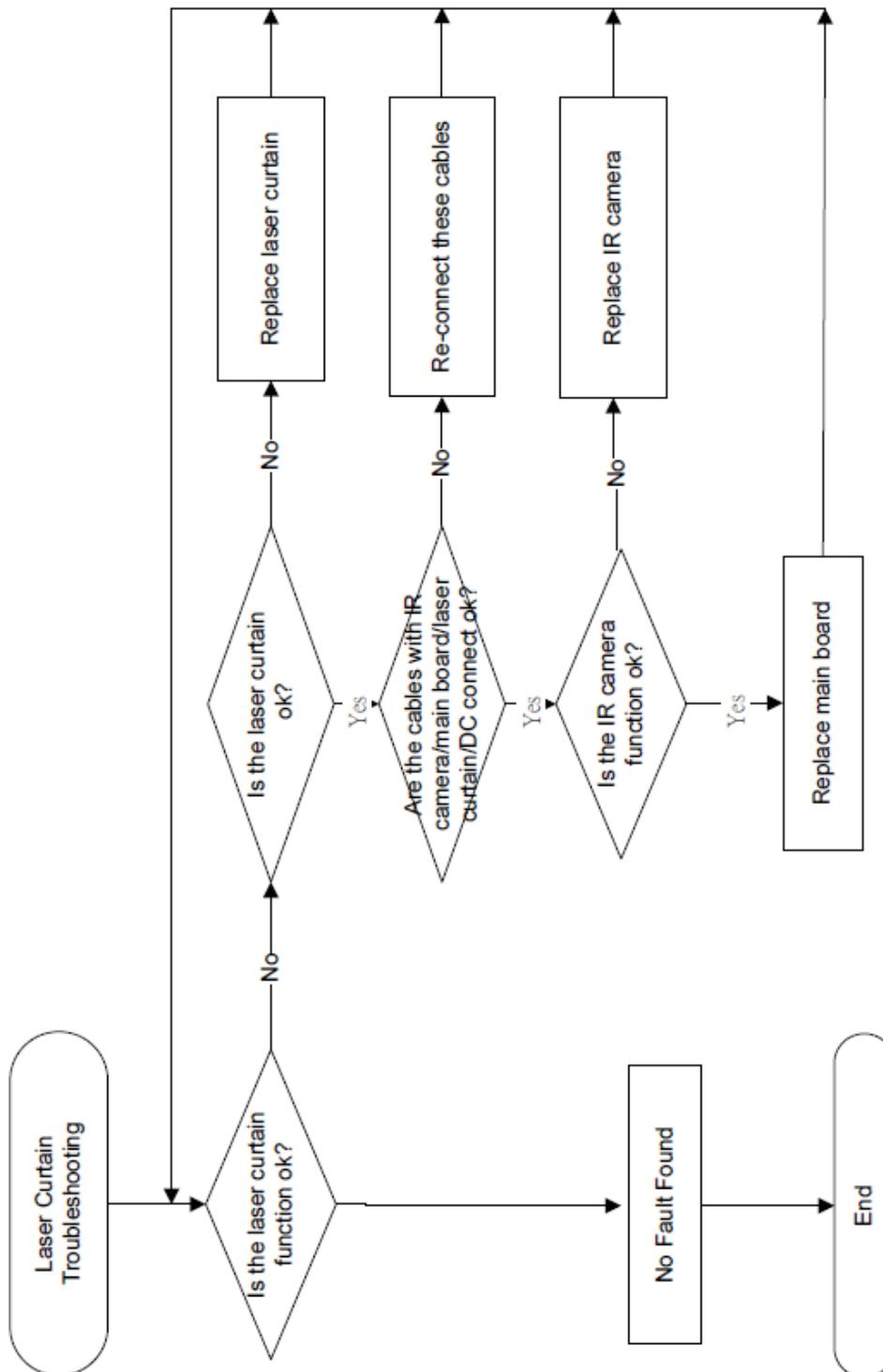
### 3-7 Network troubleshooting



### 3-8 IR Camera troubleshooting



### 3-9 Laser Curtain troubleshooting



## 4. Test & Inspection

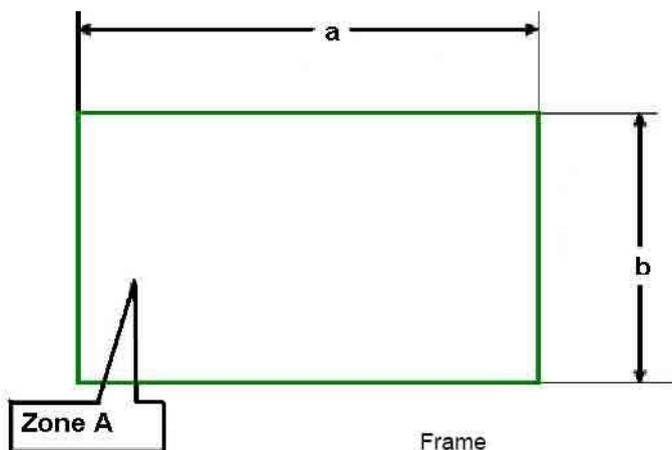
### 4-1 Test Equipment Needed

- PC support HDTV resolution & Independent graphic card
- Blue-ray DVD player support "S-Video", "3D source files", "HDMI" and "Video"
- Minolta CL-200
- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)

### 4-2 Test Condition

- Circumstance brightness: Dark room less than 5.0 lux.
- Screen size: 77 inches diagonal for PJ2000/PJ2000i  
87.2 inches diagonal for PJ3000/PJ3000i

#### Zone Definition

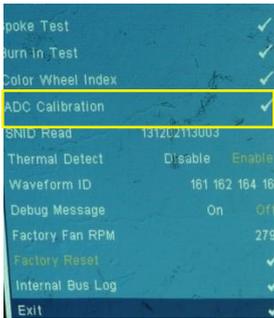


< Figure: Zone A(as green line) Definition >

## 4-3 Calibration

### 1. ADC Calibration

*Note: After replacing main board or upgrading firmware, the ADC calibration should be done.*

- |                 |   |  |
|-----------------|---|--|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator</li> <li>(1) Test signal: 1024 x 768@60Hz(for PJ2000/PJ2000i)<br/>1280 x 800@60Hz(for PJ3000/PJ3000i)</li> <li>(2) Test Pattern: White/Black</li> <li>- Note</li> <li>(1) Calibration pattern should be in full screen mode.</li> <li>(2) Please “power -&gt; left-&gt; right-&gt;menu “to get into service mode, and choose “ADC Calibration”.</li> </ul> | <br>White/Black |
| Inspection item | <ul style="list-style-type: none"> <li>- Check if there is lines or noise on the screen.</li> <li>- Horizontal and vertical position of the video should be adjustable to the screen frame.</li> </ul>  |                |
| Criteria        | <ul style="list-style-type: none"> <li>- If there is noise on the screen, the product is considered as failure product.</li> <li>- The screen appears normal, it shouldn't appear any abnormal condition, such as lines and so on.</li> <li>- Check if the projection is same as monitor displayed.</li> </ul>  |  |

### 2. Waveform download

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

1. Hold on “Power” and “Menu“ button and plug in the power cord.
2. The “Power LED” will flash red about 2s, then release the “Power” and “Menu“ button.
3. Press “Power” button when the “Power LED” flash red and blue alternately.
4. The “Power LED” will light blue about 5s, then it will light red (Note: If the power LED solid blue or the lamp LED light, please repeat the step1-3 ).
- 5.The waveform download is finished.
6. Pull out the power cord.





## 4-4 I/O Port Test

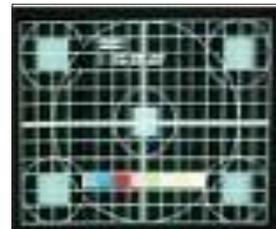
### 4-4-1 VGA Port Test

*Note: If you don't have the professional equipment such as Quantum Data 802B or Chroma 2327, please use the PC that support HDTV resolution & Independent graphic card to output the corresponding PC pattern. You can download the "test pattern by PC" from website as right picture. PJ2000/PJ2000i the native resolution of test signal is 1024x768 @60HZ. PJ3000/PJ3000i the native resolution of test signal is 1280x800 @60HZ. We take PJ3000/PJ3000i for example here.*



#### 1. Frequency and tracking boundary

- |                 |   |
|-----------------|---|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator.</li> <li>- Test signal: analog 1280 x 800@60Hz</li> <li>- Test Pattern: General-1</li> <li>- Check and see if the image sharpness is well performed.</li> <li>- If not, re-adjust by the following steps:             <ol style="list-style-type: none"> <li>(1) Select "Frequency" function to adjust the total pixel number of pixel clock in one line period.</li> <li>(2) Select "Tracking" functions and use right or left arrow key to adjust the value to minimize video flicker.</li> </ol> </li> <li>- Adjust Resync or Frequency/Tracking/H. Position/V. Position to the inner screen.</li> </ul> |
| Inspection item | <ul style="list-style-type: none"> <li>- Eliminate visual wavy noise by Resync, Frequency or Tracking selection.</li> <li>- Check if there is noise on the screen.</li> <li>- Horizontal and vertical position of the video should be adjustable to the screen frame.</li> </ul>  |
| Criteria        | <ul style="list-style-type: none"> <li>- If there is noise on the screen, the product is considered as failure product.</li> <li>- If there is noise on the screen, use auto or manual "frequency" function or "tracking" function to adjust the screen.</li> <li>- The PC mode functionally sure be workable include support format with frequency and auto detected functional will be workable.</li> </ul>   |



General-1

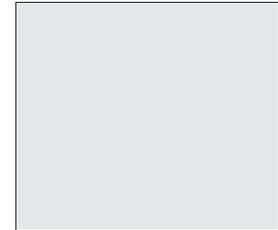


Master

## Chapter 4: Test & Inspection

### 2. Bright Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: gray 10
Inspected item	- Bright pixel check.
Criteria	- Please refer to Pixel specification table.



*Gray 10*

### 3. Dark Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: full white
Inspection item	- Dead pixels check. - White pattern (IRE=100)
Criteria	- Please refer to Pixel specification table.



*Full White*

### 4. Bright Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: gray 10
Inspection item	- Bright blemish check.
Criteria	- Please refer to Pixel specification table.



*Gray 10*

### 5. Dark Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1280 x 800@60Hz - Test Pattern: blue 60
Inspection item	- Dark blemish check
Criteria	- Please refer to Pixel specification table.



*Blue 60*

## Pixel specification

### For PJ2000/PJ2000i

Order	Symptom	Pattern	Criteria
1	Bright pixel ( dots)	Gray 10	A=0
2	Dark pixel(dots)	White	A ≤ 4
3	Bright blemish	Gray 10	A≤4 (diameter≤3/2 inch)
4	Dark blemish	Blue 60	A≤2 (diameter≤3/2 inch)
5	Bright dot on frame	Gray 10	≤ 1
6	Unstable pixel	Any pattern	A=0
7	Adjacent dark pixel	Any pattern	A=0

### For PJ3000/PJ3000i

Order	Symptom	Pattern	Criteria
1	Bright pixel ( dots)	Gray 10	A=0
2	Dark pixel(dots)	White	A ≤ 6
3	Bright blemish	Gray 10	A≤4 (diameter≤3/2 inch)
4	Dark blemish	Blue 60	A≤2 (diameter≤3/2 inch)
5	Bright dot on frame	Gray 10	≤ 1
6	Unstable pixel	Any pattern	A=0
7	Adjacent dark pixel	Any pattern	A=0

## 6. Focus Test

### Procedure

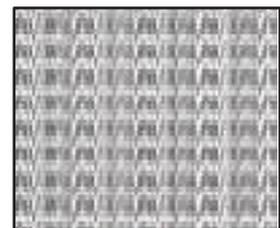
- Test equipment: video generator.
- Test signal: analog 1280 x 800@60Hz
- Test Pattern: full screen

### Inspection item

- Focus check

### Criteria

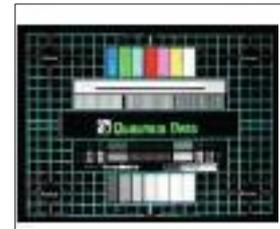
- Check the focus, look at the entire screen, focus shall be clear, crisp, and sharp over the entire surface of the display pattern. (Blur word on one of the



Full screen

## Chapter 4: Test & Inspection

corner after adjustment is acceptable. However, the word should at least be recognizable.)



Master

### 7. Color Performance

*Note: After replacing main board, optical engine or upgrading firmware, the color wheel index adjustment should be done.*

- |                 |  |
|-----------------|--|
| Procedure       | <ul style="list-style-type: none"> <li>- Test equipment: video generator.</li> <li>- Test signal: 1280 x 800@60Hz, 1080i</li> <li>- Test Pattern: Master, 64 gray RGBW<br/>Please “power -&gt;left -&gt;right -&gt;menu” to get into service mode, then choose “Color Wheel Index”</li> </ul>  |
| Inspection item | <ul style="list-style-type: none"> <li>- Check if each color level is well-functioned.</li> <li>- Color saturation</li> </ul>  |
| Criteria        | <ul style="list-style-type: none"> <li>- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.</li> <li>- Color appears normal.</li> <li>- It is unacceptable to have few lines flashing.</li> <li>- RGBW should all appear normal on the screen and sort from R-G-B-W.</li> <li>- Color levels should be sufficient and normal.<br/>(The unidentified color levels on both left and right sides should not over 4 color levels.)</li> <li>- Gray level should not have abnormal color or heavy lines.</li> <li>- If color appears abnormal, please get into service mode to do color wheel index adjustment.</li> </ul> |



64 gray RGBW



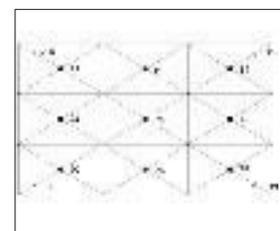
## Chapter 4: Test & Inspection

### 8. Optical Performance

Inspection Condition
<ul style="list-style-type: none"> <li>- Environment luminance: 5 Lux</li> <li>- Product must be warmed up for 5 minutes</li> <li>- Distances from the screen: 300mm ~ 350mm</li> <li>- Screen Size: 77 inches diagonal (for PJ2000/PJ2000i) 87.2 inches diagonal (for PJ3000/PJ3000i)</li> </ul>

#### 1). Test equipment

- Procedure
- Please get into OSD menu, select “Lamp Mode” under “Settings”, then select “Standard” .
  - Test equipment: video generator.
  - Test signal: analog 1024 x 768 @60Hz (For PJ2000/PJ2000i)  
analog 1280 x 800 @60Hz (For PJ3000/PJ3000i)



Full white pattern

#### 2). Brightness

- Procedure
- Full white pattern
  - Use CL200 to measure brightness values of P1~P9.
  - Follow the brightness formula to calculate brightness values.

##### ☀ Brightness Formula

$$\text{Avg. (P1~P9)} * 1.84\text{m}^2 \text{ (For PJ2000/PJ2000i)}$$

$$\text{Avg. (P1~P9)} * 2.2\text{m}^2 \text{ (For PJ3000/PJ3000i)}$$

- Criteria
- 1144 ANSI lumen (For PJ2000/PJ2000i)
  - 1300 ANSI lumen (For PJ3000/PJ3000i)

## Chapter 4: Test & Inspection

### 3). Full On/Full Off Contrast

- Procedure
- Full white pattern & Full black pattern
  - Use CL100 to measure brightness values of full white pattern P5 & full black pattern B5 ( see image: full white)
  - Follow Contrast formula to calculate contrast values.



Full black pattern

☀ Contrast Formula

P5/B5

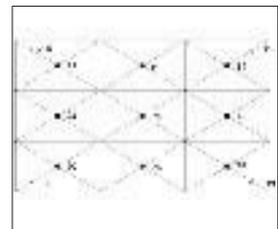
Note: P5 = Lux of center in full white pattern

B5 = Lux of center in full black pattern

- Criteria
- 1600:1

### 4). Uniformity

- Procedure
- Full white pattern
  - Use CL200 to measure brightness values of P1~P9 (see image: full white).
  - Follow the Uniformity formula to calculate average values.



Full white pattern

☀ Uniformity Formula

JBMA Uniformity = Avg. (P1, P3, P7, P9) /  
P5 \*100%

- Criteria
- 65%

## Chapter 4: Test & Inspection

### 4-4-2 Audio Test

- |                     |  |
|---------------------|--|
| Procedure           | - Test equipment: DVD Player<br>- Test signal: CVBS  |
| Inspection item     | - Audio performance test   |
| Inspection Distance | - 300mm ~350mm   |
| Criteria            | - Check the sound from speaker<br>- Plug Audio cable into Audio in port, check whether "Volume" is normal.<br>- Adjust the volume to "0→ 32" by using the remote controller.<br>- Check the sound from speaker.<br>- Check whether the "mute" is normal. |



*Motion video*

### 4-4-3 S-Video Port Test

- |                     |  |
|---------------------|--|
| Procedure           | - Test equipment: DVD player<br>- Test signal: S-Video   |
| Inspection item     | - Video performance test   |
| Inspection Distance | - 300mm ~350mm   |
| Criteria            | - Check any abnormal color, line distortion or any noise on the screen.<br>- Check the sound from speaker. |

### 4-4-4 Component Port Test

- |                     |   |
|---------------------|---|
| Procedure           | - Test equipment: DVD Player<br>- Test signal: Ycbcr/YPbPr              |
| Inspection item     | - HDTV performance test   |
| Inspection Distance | - 300mm ~350mm  |
| Criteria            | - Check any abnormal color, line distortion or any noise on the screen. |

## Chapter 4: Test & Inspection

### **4-4-5 HDMI Port Test**

- Procedure - Test equipment: DVD Player with HDMI output.  
 - Test signal: 720p, 1080p, 1080i
- Inspection item - HDMI performance test.
- Inspection Distance - 300mm ~350mm
- Criteria - Ensure the image is well performed and the color can not discolor.  
 - Check whether “mute” is normal.

### **4-4-6 3D Test**

- Procedure - Test equipment: Blue-Ray DVD player & 3D format CD&3D goggles  
 - Test signal: 1080i@60HZ
- Inspection item - 3D test
- Inspection Distance - 3~5 M
- Criteria - The image should not appear noise, flicker, shadow, shocking, abnormal color.

### **4-4-7 Video Port Test**

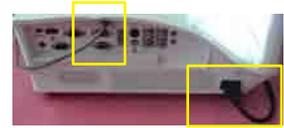
- Procedure - Test equipment: DVD Player - Test signal: video
- Inspection item - Video performance test
- Inspection Distance - 300mm ~350mm
- Criteria - Check any abnormal color, line distortion or any noise on the screen.  
 - Check the sound from speaker.

## Chapter 4: Test & Inspection

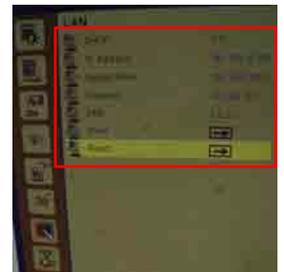
### 4-4-8 RJ45 Port Test

#### 1. Read Projector IP

1. Plug in power cord to the projector and plug in LAN cable to the PC.



2. Remove the light mark to "DHCP" to select "Off",
  - The IP address will be shown on screen.
  - Write down the IP address:  
192.168.0.100.

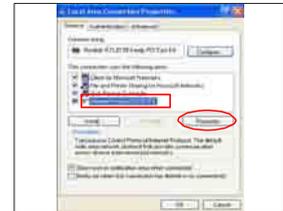


#### 2. Network Setting

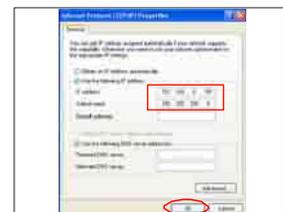
- (1) Double click the "Local area connection", choose "Properties".

## Chapter 4: Test & Inspection

(2) Select “Internet protocol (TCP/IP)”



(3)- Modify the IP address to 192.168.0.101,  
and modify Subnet mask to 255.255.255.0  
- Click “OK”

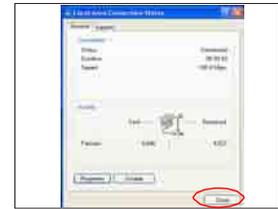


(4) Click “OK”.



## Chapter 4: Test & Inspection

(5) Click "Close" to quit the setting screen.



### 3. Read Projector Information

- (1) Connect the PC and the Projector with LAN Cable.
- (2) Click "Internet Explorer".
- (3) Write the IP address: <http://192.168.0.100>
- (4) Please check whether web management and model name are right.



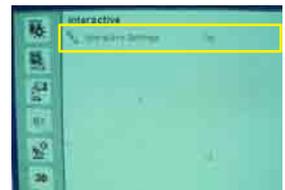
## Chapter 4: Test & Inspection

### 4-5 IR Camera Test (For PJ2000i/PJ3000i)

**Note:** IR camera test need the special pen(wavelength 850nm)

#### 1. Projector Setting

1. Power on projector.
2. Connect the PC and Projector by mini USB Cable.
3. Connect the PC and Projector by VGA Cable.
4. Press “Menu“ to enter OSD menu, select “Interative” is ”on”
5. Set the PC resolution: 1280 x 800@60Hz
6. Screen size: 77.4 inches diagonal.(For PJ2000i)  
87.2 inches diagonal.(For PJ3000i)



#### 2. Setup TouchDriver Procedure.

1. Double click “My computer”, and then double click “TouchDriver”

*Note: If the PC can't show the “TouchDriver”, please restart the unit and PC.*



2. Double click “TouchDriver.exe”

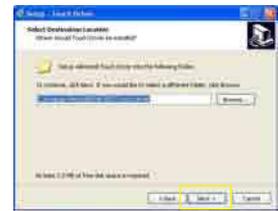


3. Click “Next”



## Chapter 4: Test & Inspection

4. Click “Next”.

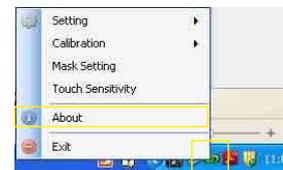


5. Click “Finish”.



### 3. IR Camera Calibration.

1. Right click the green icon at the tool bar and select “About” to check the version (Version 1.2.2.4), then click “OK”.

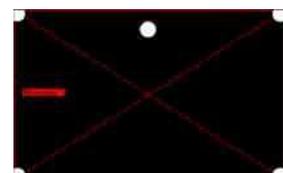


2. - Right click the green icon and select “Mask Setting”, the unit will auto mask setting.

*Note: 1. Please turn off lights or reduce stray light on screen*

*2. Do not walk in front of or shake lens during Mask setting*

*3. Please adjust focus to sharpen the image*



## Chapter 4: Test & Inspection

- If auto mask setting is failed, “Auto mask setting failed” message will appear, after the message appears twice, you will be prompted to perform Mask Setting manually



- Drag the 4 points, in the order of P1 to P4. The green frame should lie slightly outside the projected image area and there should not be any reflected light spot within this frame. Once you have completed this task, click “Exit”.

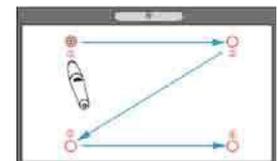


3. Right click the green icon and select “Calibration”, select “Auto” mode to execute the calibration procedure.

*Note: If the “auto Calibration still failed” message appears on screen, please change to manual calibration mode.*

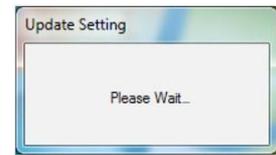


4. Please touch the target marks on the screen. (If you would like exit calibration process, please use the “Esc” key) After the 4th point of calibration is finished, please wait for 2 seconds while calibration data is saved.



## Chapter 4: Test & Inspection

5. The system saves calibration data after the four calibration points are touched.



6. Installation setup is completed and touch is ready for use.

### 4. Setup LightPenIII Tool Procedure.

1. Unzip the “Light pen tool” Folder

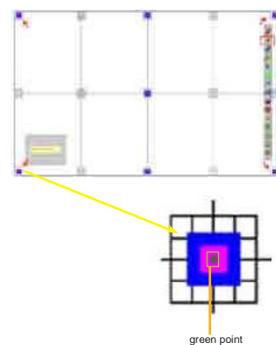


2. Open the “Light pen tool” Folder, then double click “LightPenIII Tool\_NO ID for Win8.exe”



3. - Use the light pen to click the 7 green points (as red arrow).

- Click the point should be no more than the blue area.



## Chapter 4: Test & Inspection

### 4-6 Run In Test

- Temperature: 15°C~35°C
- Circumstance brightness: Normal environment
- Screen size: No concern
- Display mode: ECO mode

After repairing each unit, a Run-in test is necessary (refer to the below table).

Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shutdown	6 hours

- Get into Burn-In Mode

\* Cycle setting is based on the defect symptoms. ie: If it is NFF, the run-in time is 4 hours.

You have to set the lamp on for 60 min. and lamp off for 10 min for 4 cycles.

Press power > left >right > menu buttons sequentially on remote controller or keypad to get into service mode	
Choose Burn-In Test > enter	
Lamp On	Press right key to adjust the time (60)
Lamp Off	Press right key to adjust the time (10)
Set burn in cycle	Press right key to adjust the cycle
After setting up the time, choose "Get into Burn-In Mode" and press enter	

## 4-7 Test Inspection Procedure

### 1. Check Points

Check item	Check point
Firmware version	All firmware version must be the latest version
TB implementation	Related TB must be implement
Cosmetic	Cosmetic cannot be broken
Logo	Missing logo, missing prints and blurry prints are unacceptable
Lamp cover	It should be locked in the correct place.
Zoom in/out	The function should work smoothly
Keypad	All keypad buttons must operate smoothly

### 2. OSD 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:

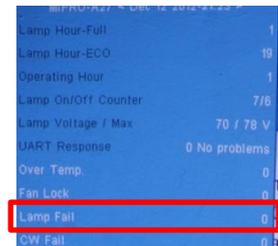
- (1) Please enter OSD menu.
- (2) Choose "Setting" and then execute "Reset" function

## Chapter 4: Test & Inspection

### 4-8 Re-write Lamp Usage Hour

#### 1. Get into Service Menu

- Press "Power->Left->Right->Menu" on the remote control or the keypad to get into the service mode.



Lamp Hour-Full	1
Lamp Hour-ECO	19
Operating Hour	1
Lamp On/Off Counter	7/6
Lamp Voltage / Max	70 / 78 V
UART Response	0 No problems
Over Temp.	0
Fan Lock	0
Lamp Fail	0
CW Fail	0

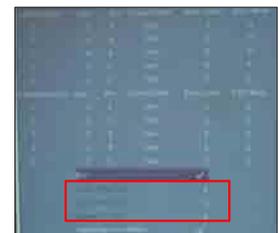
#### 2. Select "Lamp Fail"

#### 3. Re-write Lamp Hour-Full

- Select "Lamp Hour-Full" , then use "left" and "right" key to re-write "Lamp Hour-Full".

#### 4. Re-write Lamp Hour-ECO

- Select "Lamp Hour-ECO" , then use "left" and "right" key to re-write "Lamp Hour-ECO".



#### 5. Re-write Operating Hour

- Select "Operating Hour" , then use "left" and "right" key to re-write "Operating Hour".

#### 6. Exit Service Menu

- Use "Up" or "Down" key to select "Exit", press "Enter" to exit the service mode.

*Note: Left key = decrease Lamp/Projection hour*

*Right key = increase Lamp/Projection hour*

# 5. Firmware Upgrade

## Section 1: System Firmware Upgrade

### 5-1-1 Equipment Needed

#### Software: (DDP 442X-USB)

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

#### Hardware:

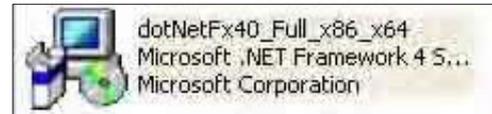
- Projector
- Power Cord
- Mini USB Cable: 42.00284G001 (USB Cable mini USB to USB (A))
- PC or Laptop



## Chapter 5: Firmware Upgrade

### 5-1-2 NET Framework 4.0 Setup Procedure

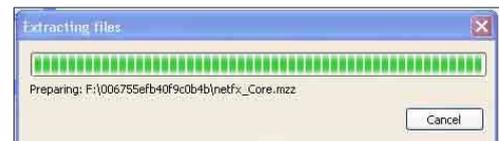
1. Choose "dotNetFX40\_Full\_X86\_X64  
Microsoft .NET Framework 4.0 Microsoft  
"Corporation" Program.



2. Click "Run".



3. Preparing



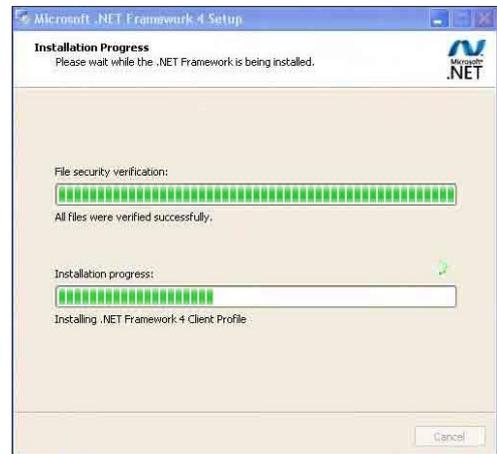
4. Read "License terms".

- Choose "I have read and accept the license terms".
- Click "Install".



## Chapter 5: Firmware Upgrade

5. Installing



6. Click "Finish".



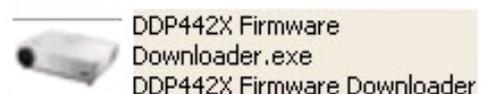
## Chapter 5: Firmware Upgrade

### 5-1-3 Firmware Upgrade Procedure

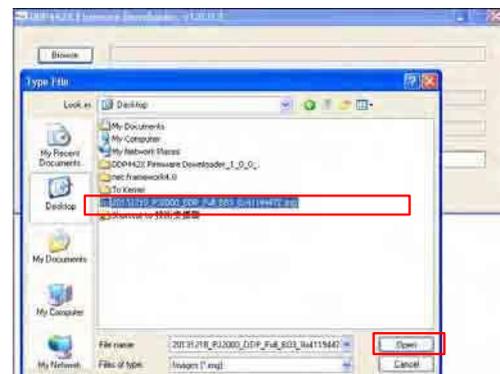
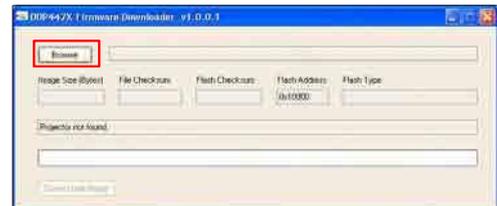
1. Download the firmware from website, unzip the firmware file, then unzip the "DDP442X Firmware Downloader\_1\_0\_0\_1.zip" file.



2. Execute "DDP442X Firmware Downloader.exe"



3. Click "Browse" to choose the firmware and then click "Open".



4. Connect projector and computer by USB cable (USB A to mini USB B).



5. Get into firmware download mode.
  - Hold on "MENU" button and plug in the power cord.
  - Release the "MENU" button until all LEDs solid on.



## Chapter 5: Firmware Upgrade

6. The "Projector found" will appear, then click "Down Load Image".

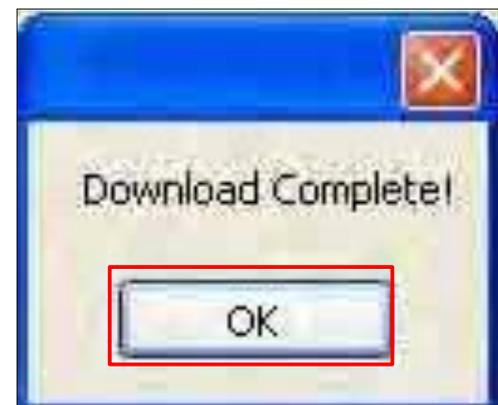


7. The firmware will be upgraded automatically.



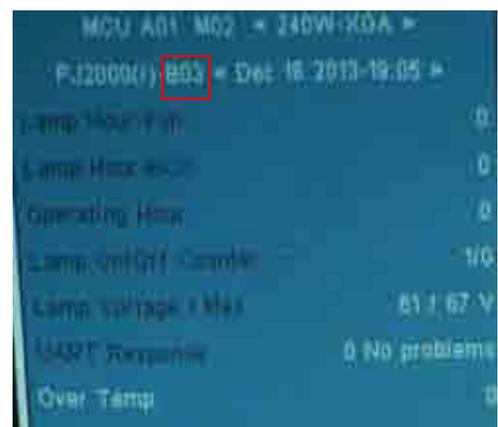
8. Finish.

"Download Complete" will appear, click "OK".



9. Check the system firmware version.

- Unplug the power cord and USB cable, then re-plug the power cord to power on the projector.
- Press "power->left->right->menu" sequentially to get into service mode to check firmware version.



## Chapter 5: Firmware Upgrade

### Section 2: MCU Firmware Upgrade Procedure

#### 5-2-1 Equipment Needed

**Software:**

- Firmware update tool: RS232\_0753
- xxx\_xxx\_xxx.hex

**Hardware:**

- Projector
- Power Cord
- RS232 Cable : 42.86603G001 (RS-232 9 Pin Cable (pin to pin, F-F))
- PC or Laptop



## 5-2-2 MCU Firmware Upgrade Procedure

### 1. Set up

- Connect projector with RS232 cable to PC.
- Hold on "MENU" button and plug in the power cord.
- Release the "MENU" button until all LEDs solid on.



- ### 2. Download the firmware file and firmware upgrade tool "RS232\_0753" from website, then unzip the firmware file and firmware upgrade tool.



- ### 3. Click the file to install the firmware upgrade tool.

## Chapter 5: Firmware Upgrade



4. Click "Next"



5. Click "Next".

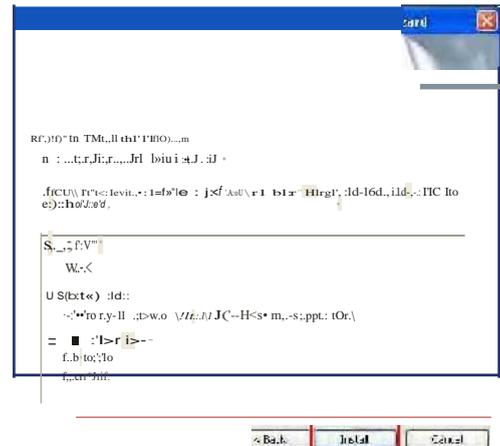


6. Select "Typical" and click "Next"

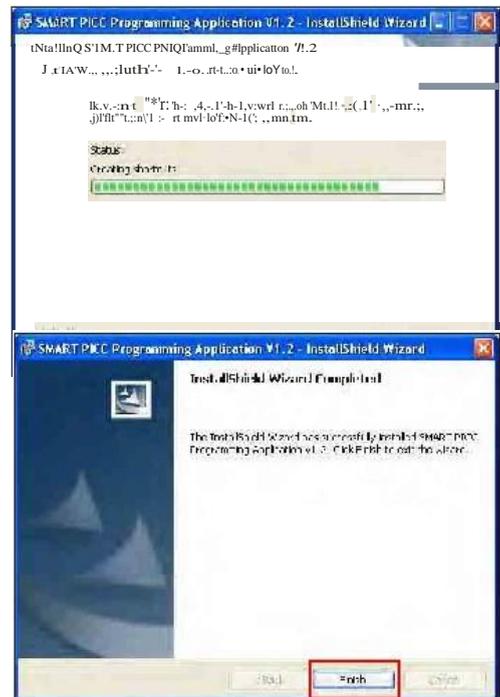


## Chapter 5: Firmware Upgrade

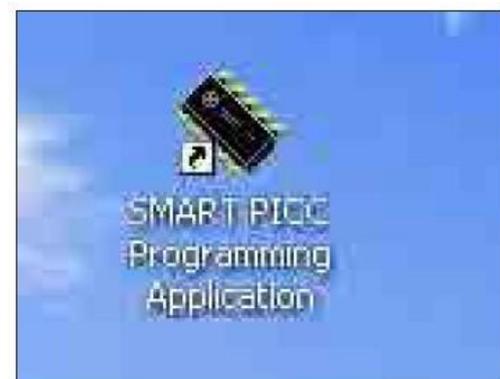
7. Click "Install".



8. Click "Finish".



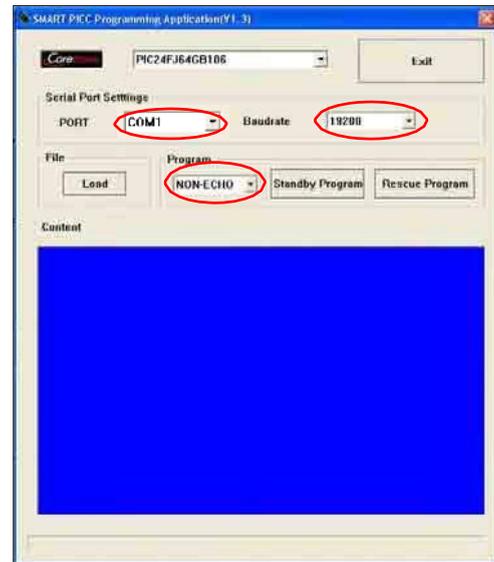
9. Execute the program.



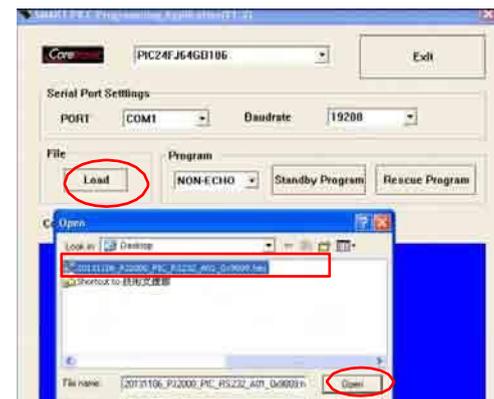
## Chapter 5: Firmware Upgrade

### 10. Program settings

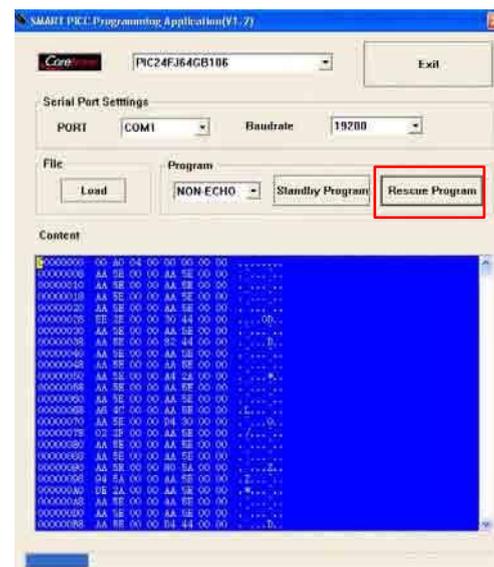
- Make sure the settings are as below:
  - 1) PORT: Check the COM port is “COM 1”  
(Select the COM port which you are using).
  - 2) Baud rate: Please set to 19200
  - 3) Program: Please set to “NON-ECHO”.



11. Click the “Load” button to choose the firmware file.

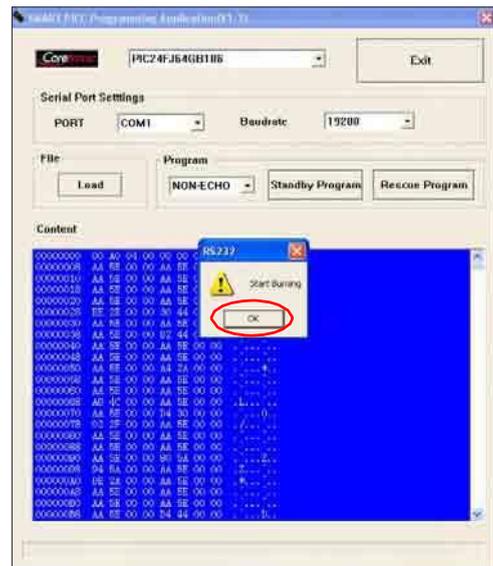


12. Click the “Rescue Program” button.

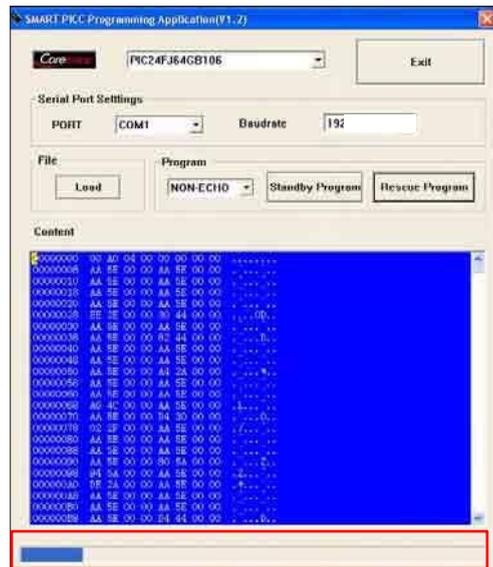


## Chapter 5: Firmware Upgrade

13. Click the “OK” to start firmware upgrading.

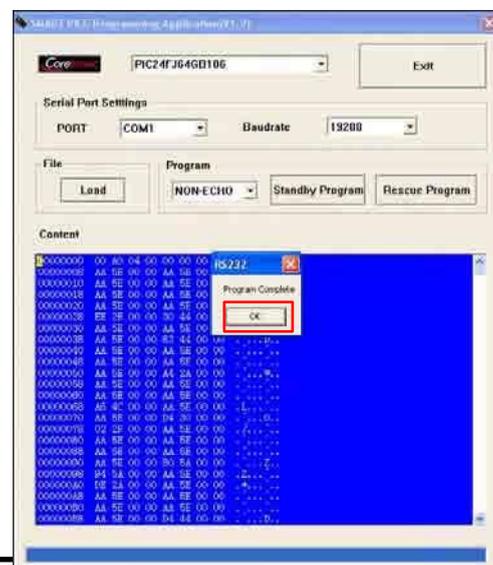


14. The firmware will be upgraded automatically.



15. Finish.

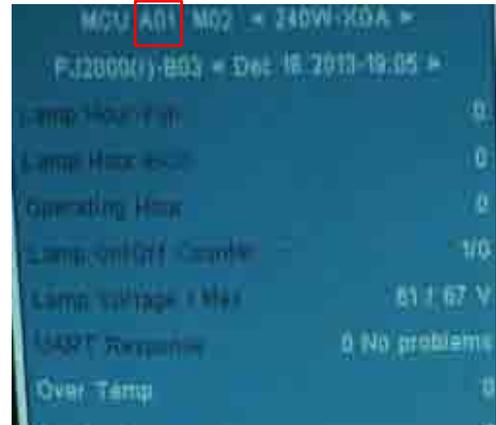
- Click "OK".



## Chapter 5: Firmware Upgrade

16. Check the MCU firmware version.

- Unplug the power cord and USB cable, then re-plug the power cord to power on the projector .
- Press "power->left->right->menu" sequentially to get into service mode to check firmware version.



## Section 3: Network Firmware Upgrade Procedure

### 5-3-1 Equipment Needed

**Software:**

- xxx\_xxx\_xxx.bin (\*.bin)

**Hardware:**

- Projector
- Power Cord
- LAN Cable
- PC or Laptop



## Chapter 5: Firmware Upgrade

### 5-3-2 PC Hardware Link

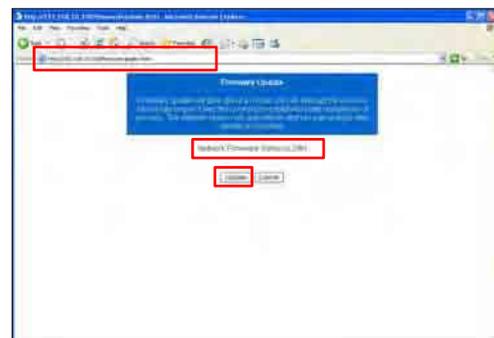
1. Execute Network Settings, please refer to 4-7 details of Chapter 4.
2. Enter into OSD menu, then select "Setting"-->LAN/Wireless (Standby), choose "Off" to "On", then turn off the projector.



3. Double click "Internet Explorer".

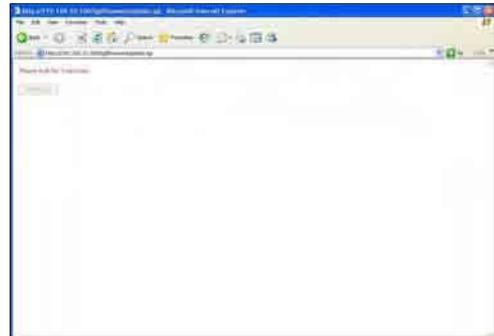


4. - Visit "<http://192.168.10.100/firmwareUpdate.htm>" to get into web to upgrade network firmware.  
- Click "Update"

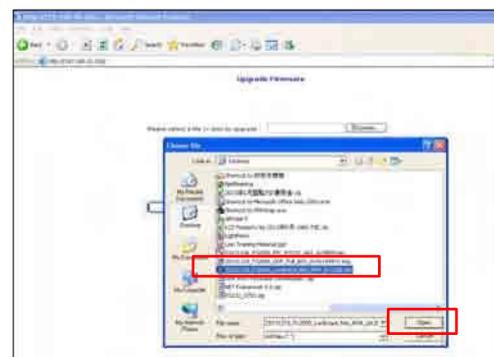


## Chapter 5: Firmware Upgrade

5. Please wait for 3 seconds.



- 6. - Click “Browse” button to select the Network FW file (\*.bin) which you saved.
- Click “Open”.

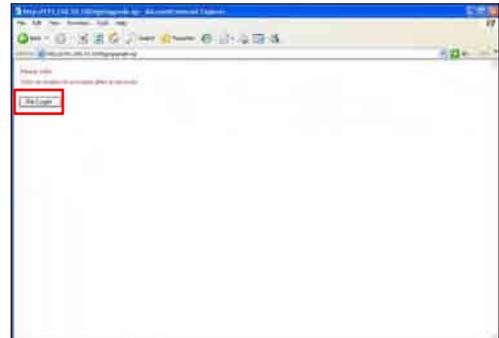


7. Click the “Update” button.

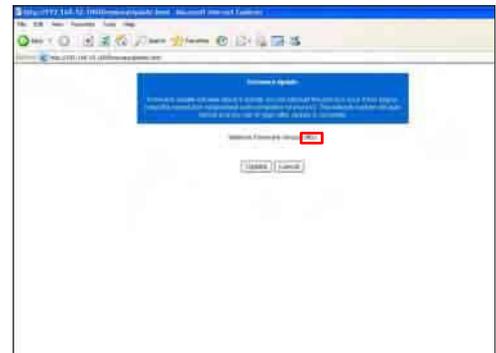


## Chapter 5: Firmware Upgrade

8. Click the “Re login” button.



9. Network firmware upgrade procedure complete.  
Visit “<http://192.168.10.100/firmwareUpdate.htm>”  
to check the version.



## 6. EDID Upgrade

### 6-1 EDID Introduction

Extended Display Identification Data is a VESA standard data format that contains basic information about a display device and its capabilities, including vendor information, maximum image size, color characteristics, factory pre-set timings, frequency range limits, and character strings for the monitor name and serial number.

The information is stored in the display and is used to communicate with the system through a Display Data Channel (DDC), which sits between the display device and the PC graphics adapter. The system uses this information for configuration purposes, so the monitor and system can work together.

*Note: - If a display device has digital input ports, like DVI or HDMI, but without EDID in its Main Board, the display device will show no image while the input source is digital signal.*

## Chapter 6: EDID Upgrade

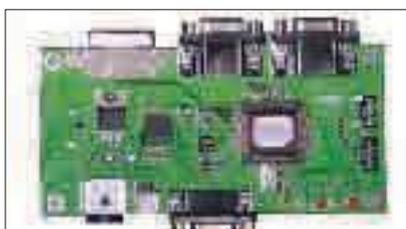
### 6-2 Equipment Needed

#### Software

- EDID Program (EDID 1.09 )
- EDID File (\*.ini )

#### Hardware

- Projector
- Power Cord for Projector (42.53506G002)
- VGA Cable (42.87305G102)
- HDMI to DVI cable (42.00256G001)
- DVI Cable (42.83N06G001)
- Generic Fixture (80.00001G001) for EDID Key-in
- RS-232 9 Pin Cable (pin to pin, F-M) (42.83C07G001)
- Power Adapter (47.57803G001)
- Monitor
- PC



### 6-3 Setup Procedure (VGA& HDMI)

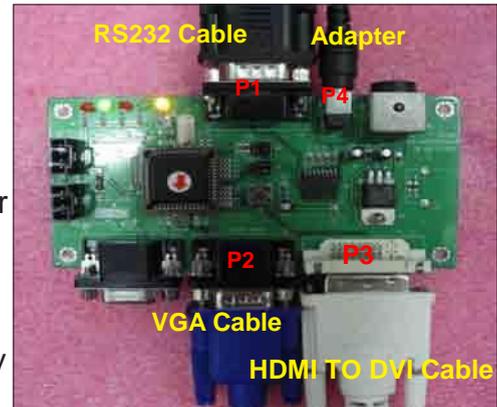
1. Connect all ports

(1) Connect P1 of fixture to COM Port of PC/Laptop by RS232 Cable.

(2) Connect P2 of fixture to VGA1 IN Port of projector by VGA Cable.

(3) Connect P3 of fixture to HDMI Port of projector by DVI to HDMI Cable.

(4) Plug Power Adapter to P4 of fixture.



### 6-4 EDID Key-In Procedure (VGA &HDMI)

1. Execute EDID Program

- Double click "EDID" to execute EDID program.

## Chapter 6: EDID Upgrade

### 2. Process

(1) Select the COM Port which you are using.

(2) Click "Model".

(3) Select the EDID file (\*.ini).

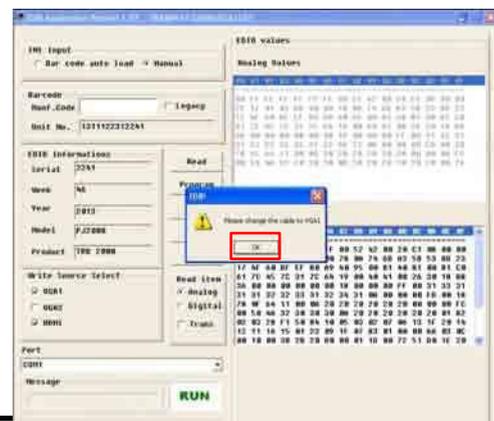
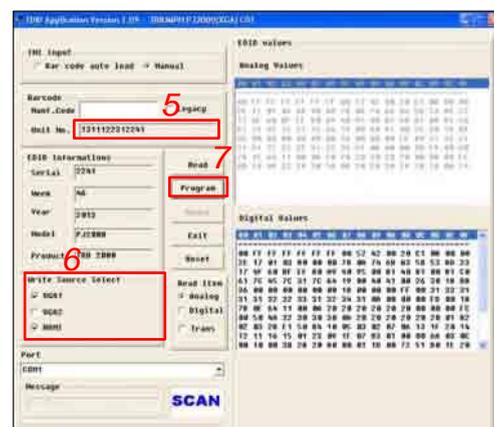
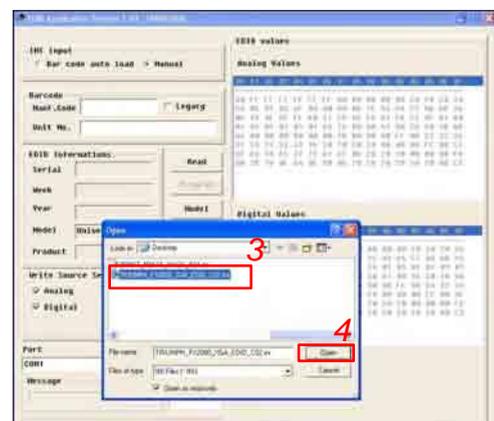
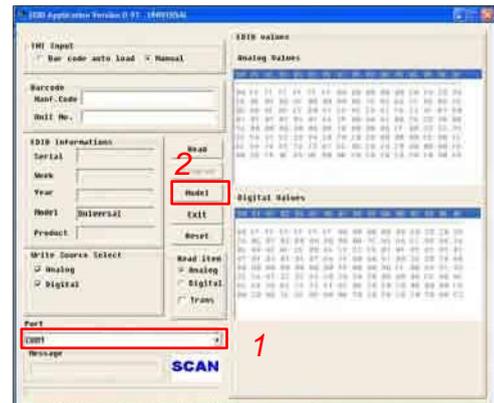
(4) Click "Open".

(5) Key in the Serial Number into the Barcode blank space.

(6) In "Write Source Select" item, select "VGA1" and "HDMI".

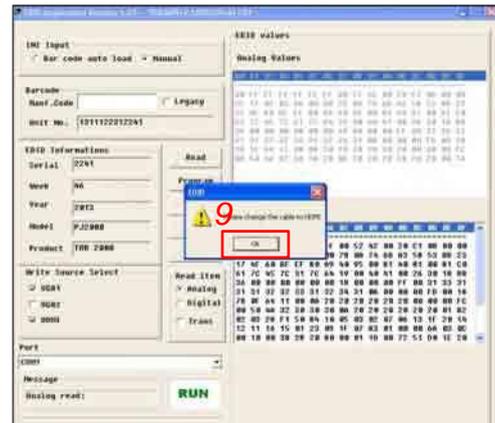
(7) Click "Program".

(8) When the message "Please change the cable to VGA1" appears on the screen, click "OK".

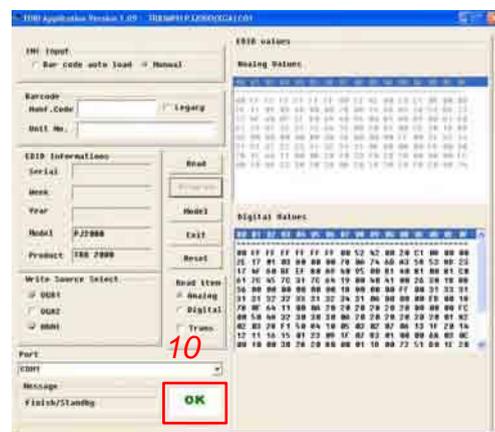


## Chapter 6: EDID Upgrade

(9) When the message "Please change the cable to HDMI" appears on the screen, click "OK".

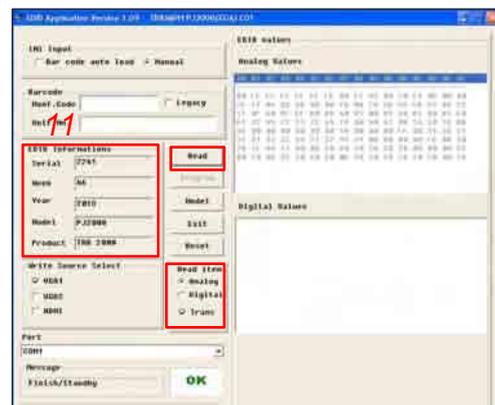


(10) When the EDID program is completed, a "OK" message will appear on the screen.



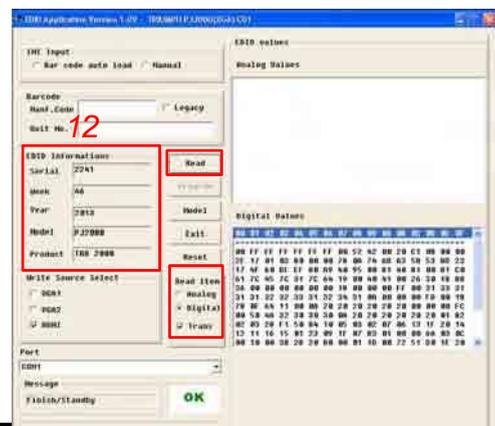
(11) Read EDID "Analog" information.

- In "Read item", select "Analog" and "Trans", then click the "Read".
- EDID "Analog" information will show the result.



(12) Read EDID "Digital" information

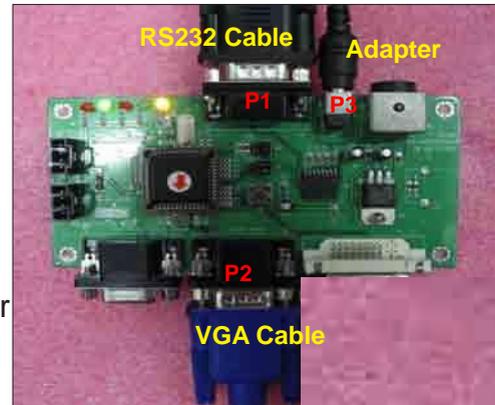
- In "Read item", select "Digital" and "Trans", then click the "Read".
- EDID "Digital" information will show the result.



## Chapter 6: EDID Upgrade

### 6-5 Setup Procedure (VGA2)

1. Connect all ports
  - (1) Connect P1 of fixture to COM Port of PC/Laptop by RS232 Cable.
  - (2) Connect P2 of fixture to VGA2 IN Port of projector by VGA Cable.
  - (3) Plug Power Adapter to P3 of fixture.

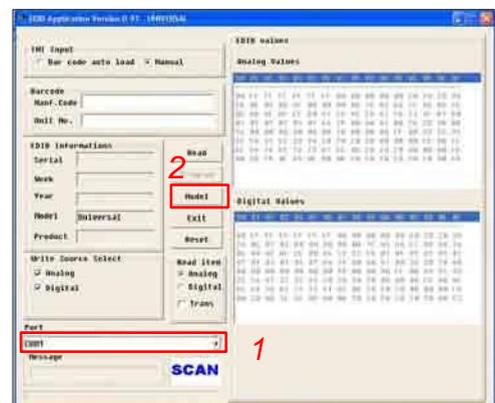


### 6-6 EDID Key-In Procedure (VGA2)

1. Execute EDID Program
  - Double click "EDID" to execute EDID program.

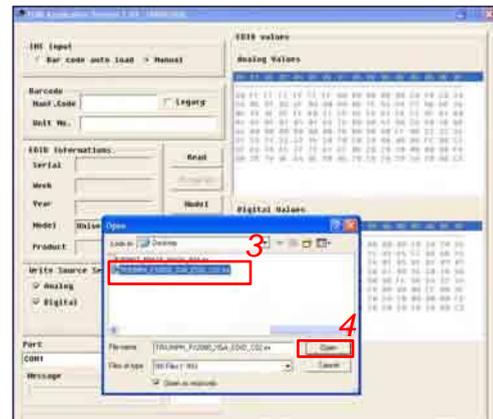


2. Process
  - (1) Select the COM Port which you are using.
  - (2) Click "Model".

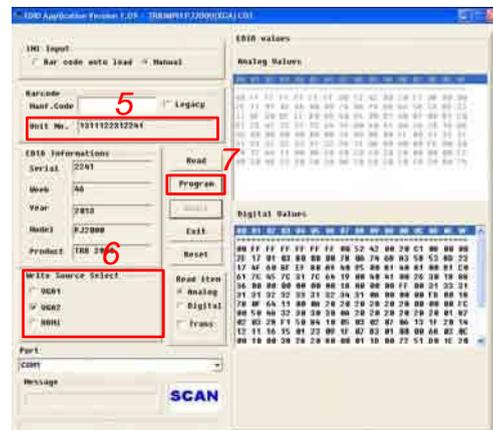


## Chapter 6: EDID Upgrade

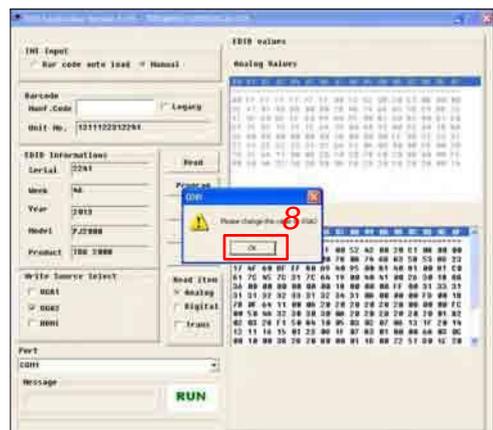
- (3) Select the EDID file (\*.ini).
- (4) Click "Open".



- (5) Key in the Serial Number into the Barcode blank space.
- (6) In "Write Source Select" item, select "VGA2".
- (7) Click "Program".

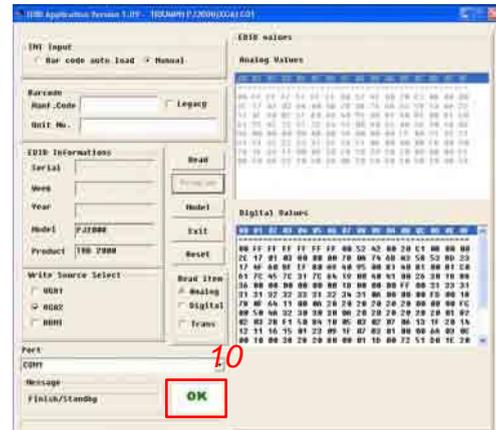


- (8) When the message "Please change the cable to VGA2" appears on the screen, click "OK".

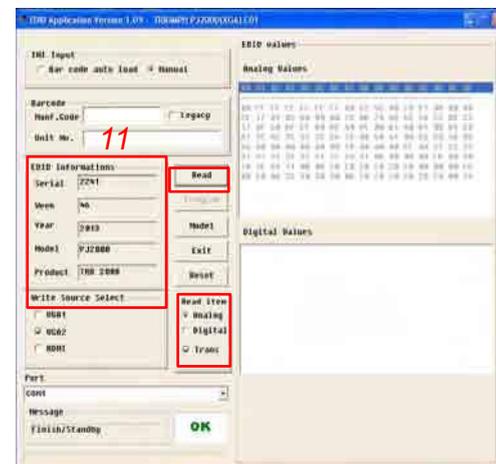


## Chapter 6: EDID Upgrade

- (9) When the EDID program is completed, a "OK" message will appear on the screen.



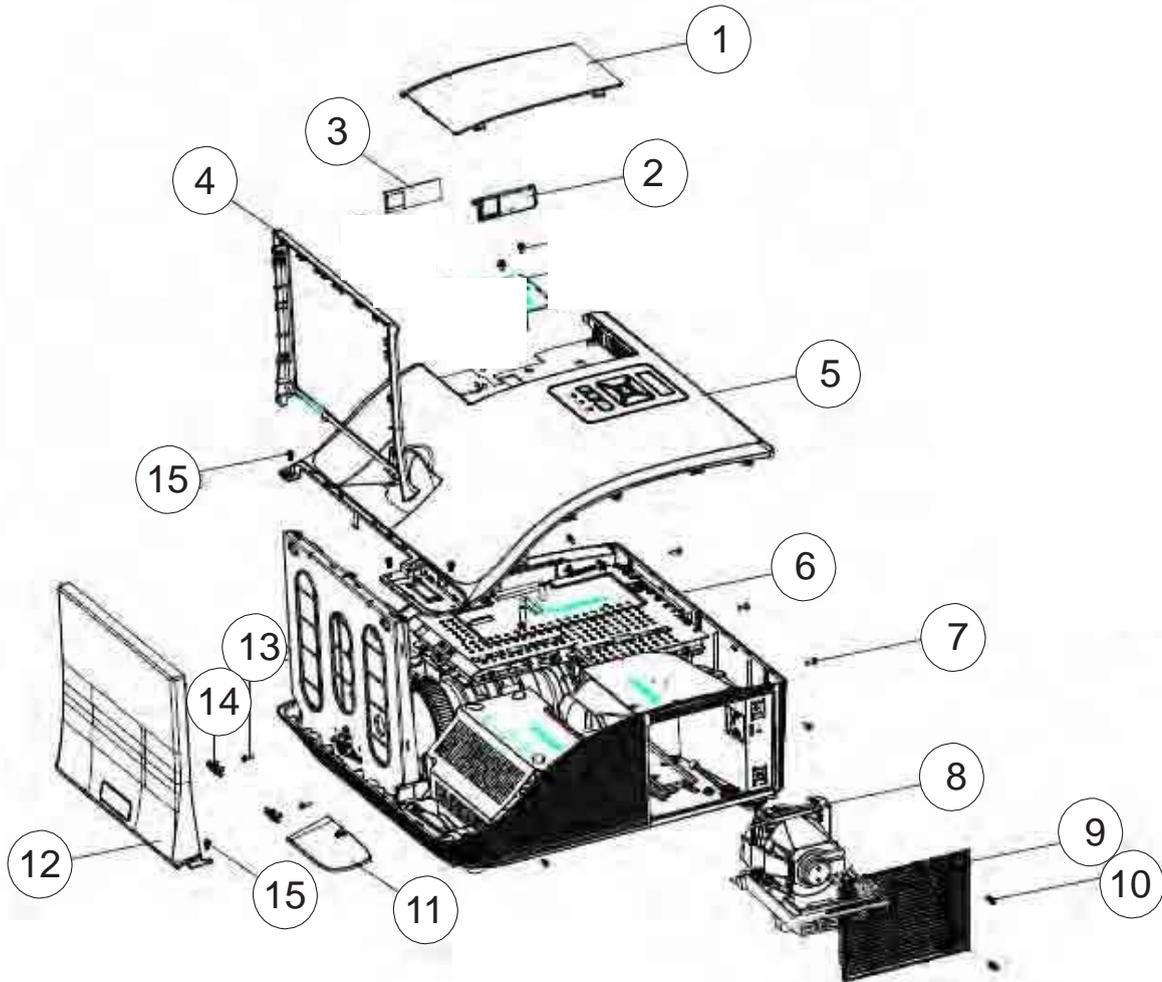
- (10) Read EDID "Analog" information.
- In "Read item", select "Analog" and "Trans", then click the "Read".
  - EDID "Analog" information will show the result.



Appendix A (Exploded Image)

# Appendix A (Exploded Image)

D.C.



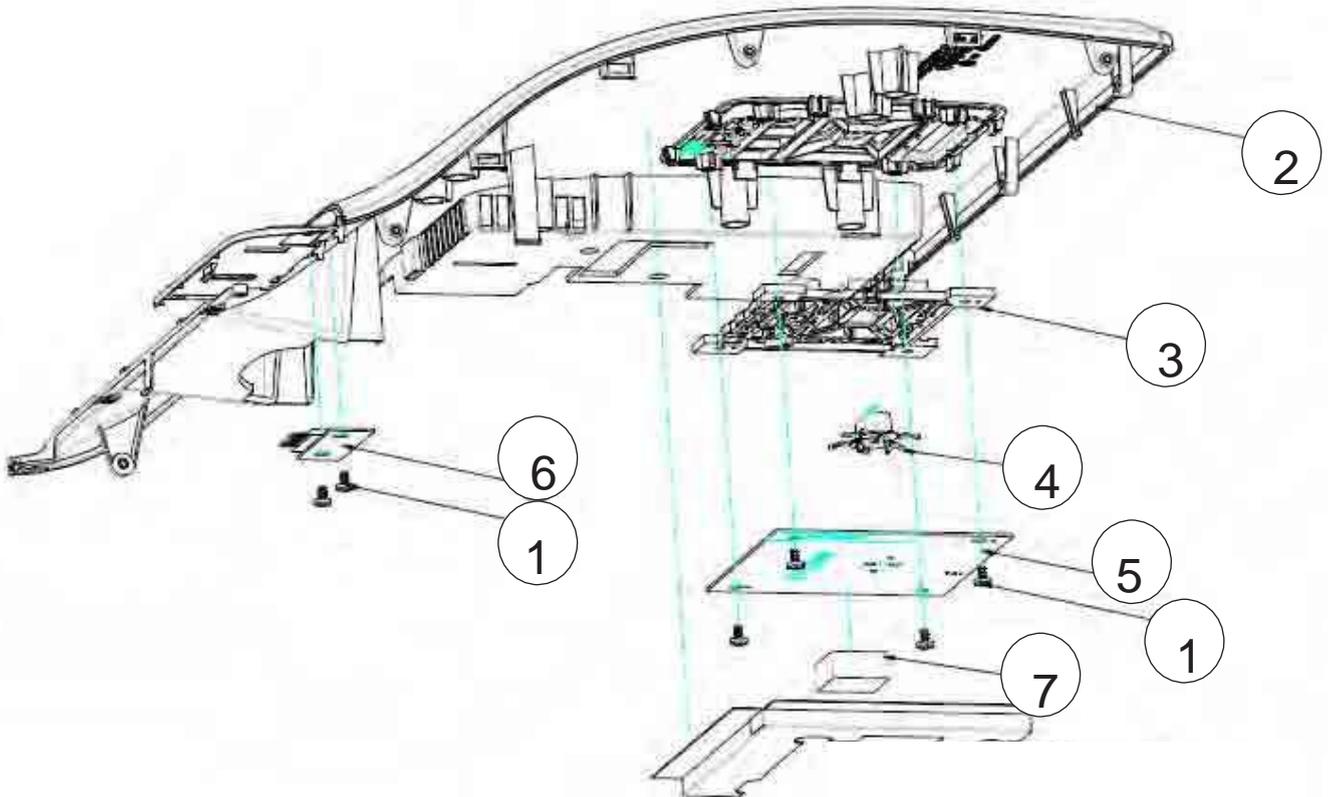
Appendix A (Exploded Image)

**D.C.**

Item	Description	Parts Supply
1	COVER TOP WIRELESS MN3600 G3.5	V
2	CAP WIRELESS IO BLANK MN3600 G3.5	
3	WIRELESS LABEL BLANK PC-835 G3.5	
4	COVER MIRROR REAR MN3600 WHITE G3.5	V
5	COVER COSMETIC MODULE G3.5	V
6	ASSY I/O COVER MODULE 8PE (SERVICE)	V
7	SCREW PAN MECH M3*6 NYLOK, GREEN	
8	LAMP MODULE FOR PROJECTOR MIPRO	V
9	COVER LAMP MN3600 G3.5	V
10	LOCK SCREW PAN MECH M3*8.5-3.5 Ni	
11	CORNER COVER MN3600 G3.5	
12	COVER MIRROR FRONT MODULE WHITE G3.5	V
13	SCREW PAN MECH W/SF M3*6 BLACK	
14	BOTTOM CAP MN3600 G3.5	
15	SCREW PAN TAP M3*6 Ni	

Appendix A (Exploded Image)

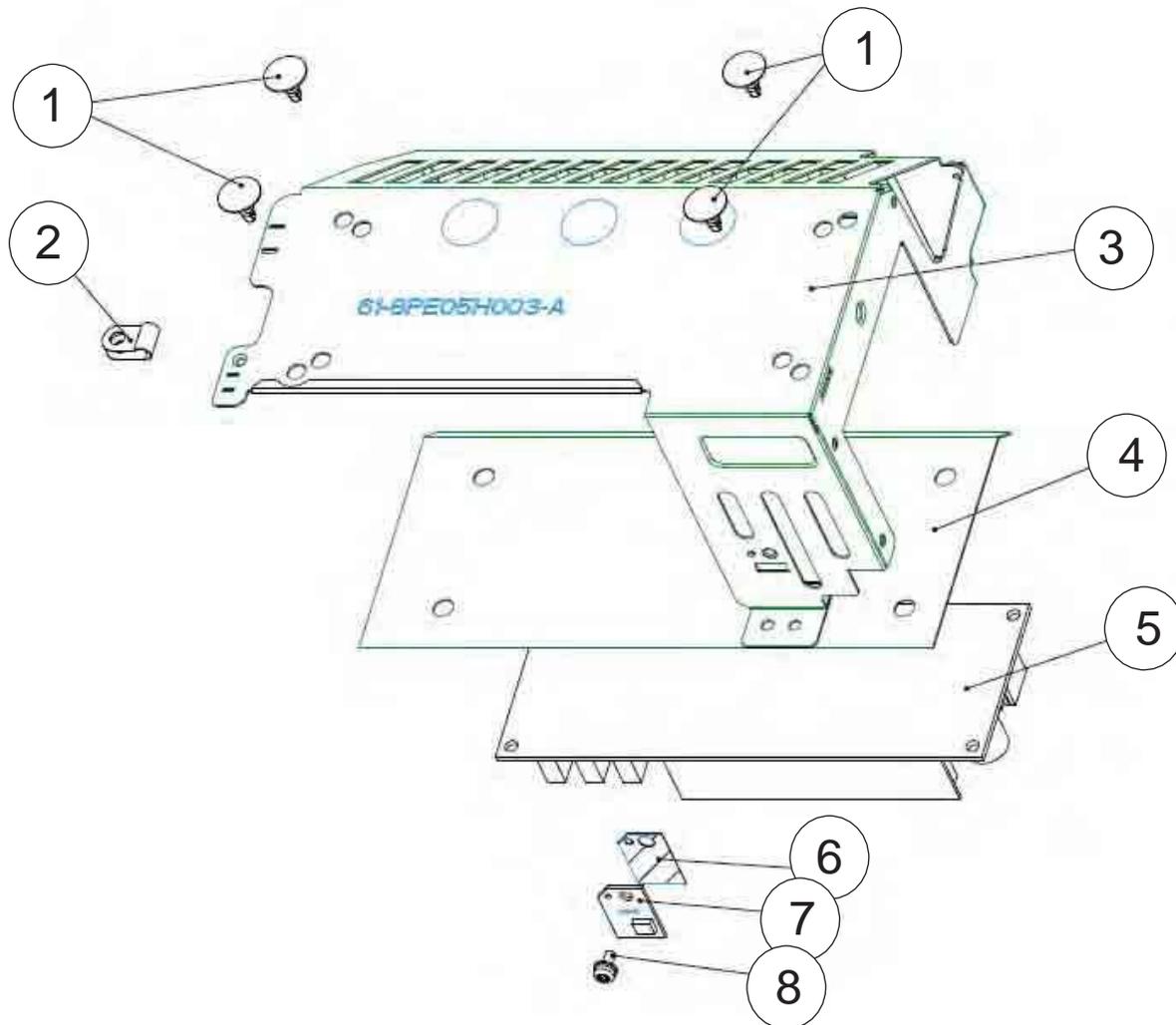
ASSY TOP COVER MODULE



Item	Description	Parts Supply
1	SCREW PAN TAP M3*6 Ni	
2	COVER COSMETIC MODULE G3.5	V
3	KEYPAD MN3600 G3.5	
4	KEYPAD MENU MN3600 G3.5	
5	PCBA KEYPAD BOARD 8PE FR4 FOR G035 PROJECTOR	V
6	PCBA IR CAMERA TRANSFORM BOARD 8PE FR4 FOR G035 PROJECTOR	
7	GASKET FOR MAIN BOARD EMI	

Appendix A (Exploded Image)

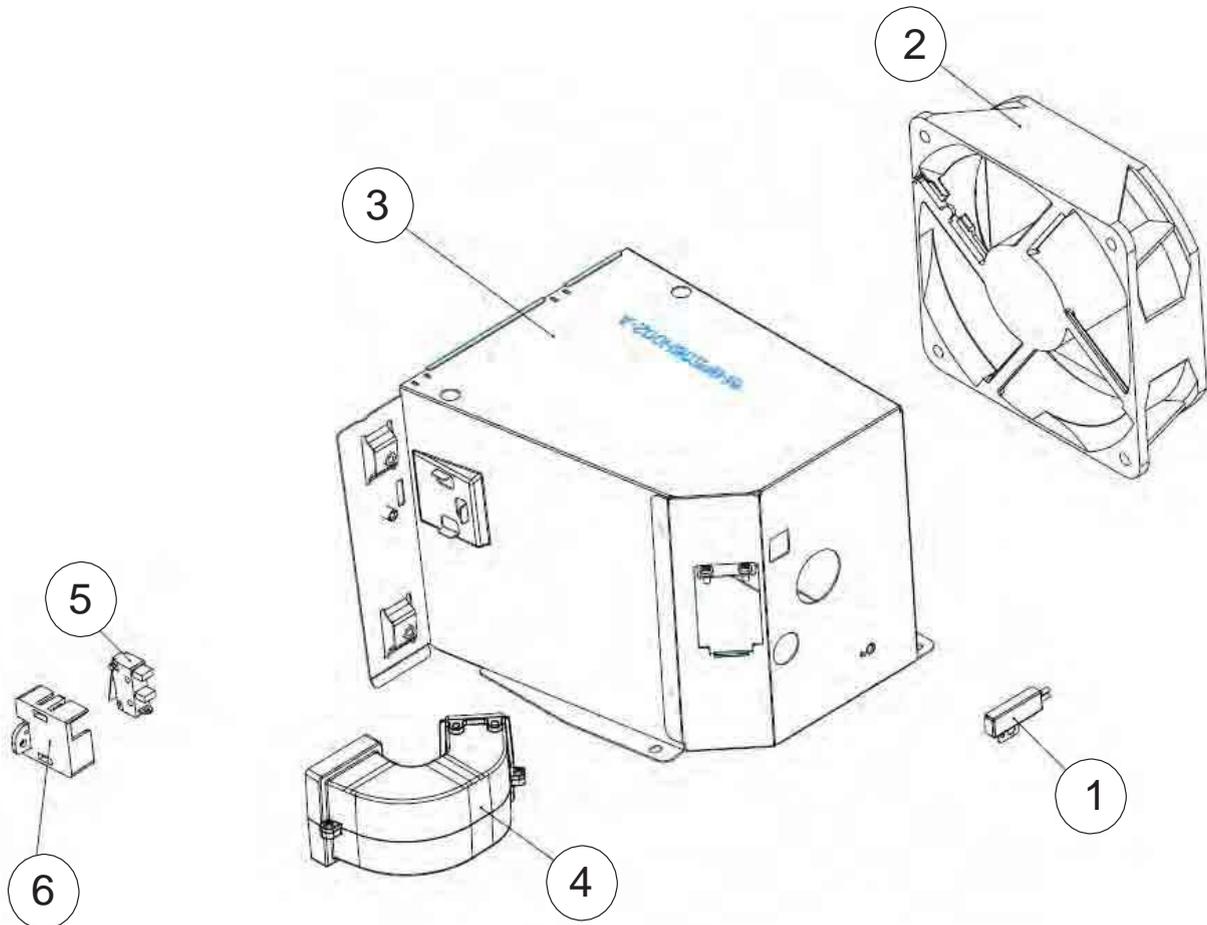
**ASSY LAMP DRIVER MODULE**



Item	Description	Parts Supply
1	SPACER FOR LAMP DRIVER 240W G3.5	
2	GROUNDING CABLE CLAMP FN-008 "PINGOOD"	
3	BRACKET LAMP DRIVER MIPRO	
4	LAMP DRIVER MYLAR FORMEX GK-17 0.43t G3.5	
5	ASSY OSRAM LAMPDRIVER PT VIP O3 MID 240W-UNIPRO AS WITH DYNAMIC ECO	V
6	THERMAL SENSOR MYLAR G3.5	
7	PCBA THERMAL SENSOR BD FOR PROJECTOR G035	V
8	SCREW PAN MECH W/SF M3*6 BLACK	

Appendix A (Exploded Image)

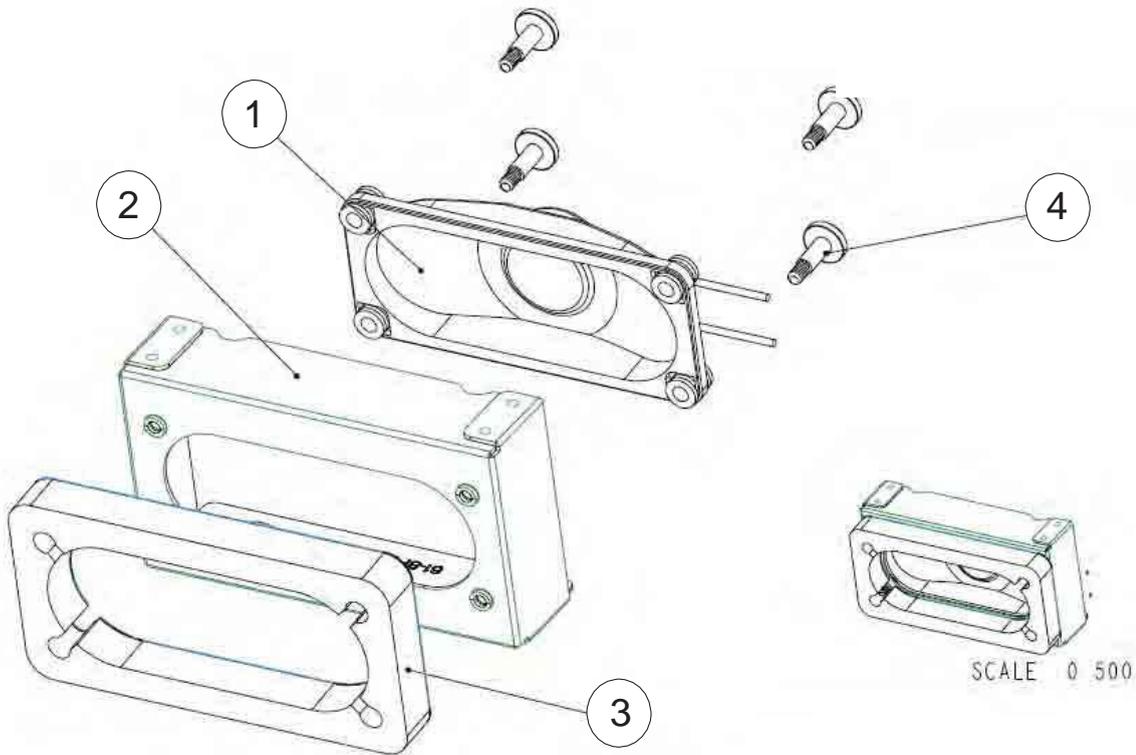
**ASSY SYS FAN MODULE**



Item	Description	Parts Supply
1	THERMAL SWITCH WITH BRACKET (KLIXON YS11) G035	V
2	SUNON 105mm*32mm / AXIAL FAN / RoHS2.0	V
3	FAN SYSTEM BRACKET MIPRO	
4	BLOWER DUCT ASS'Y G3.5	
5	BUY ASSY INTERLOCK SWITCH 2P #26 320mm G3.5	V
6	LIMIT SWITCH HOLDER PC MN3600H BLACK TDP-SP1	

Appendix A (Exploded Image)

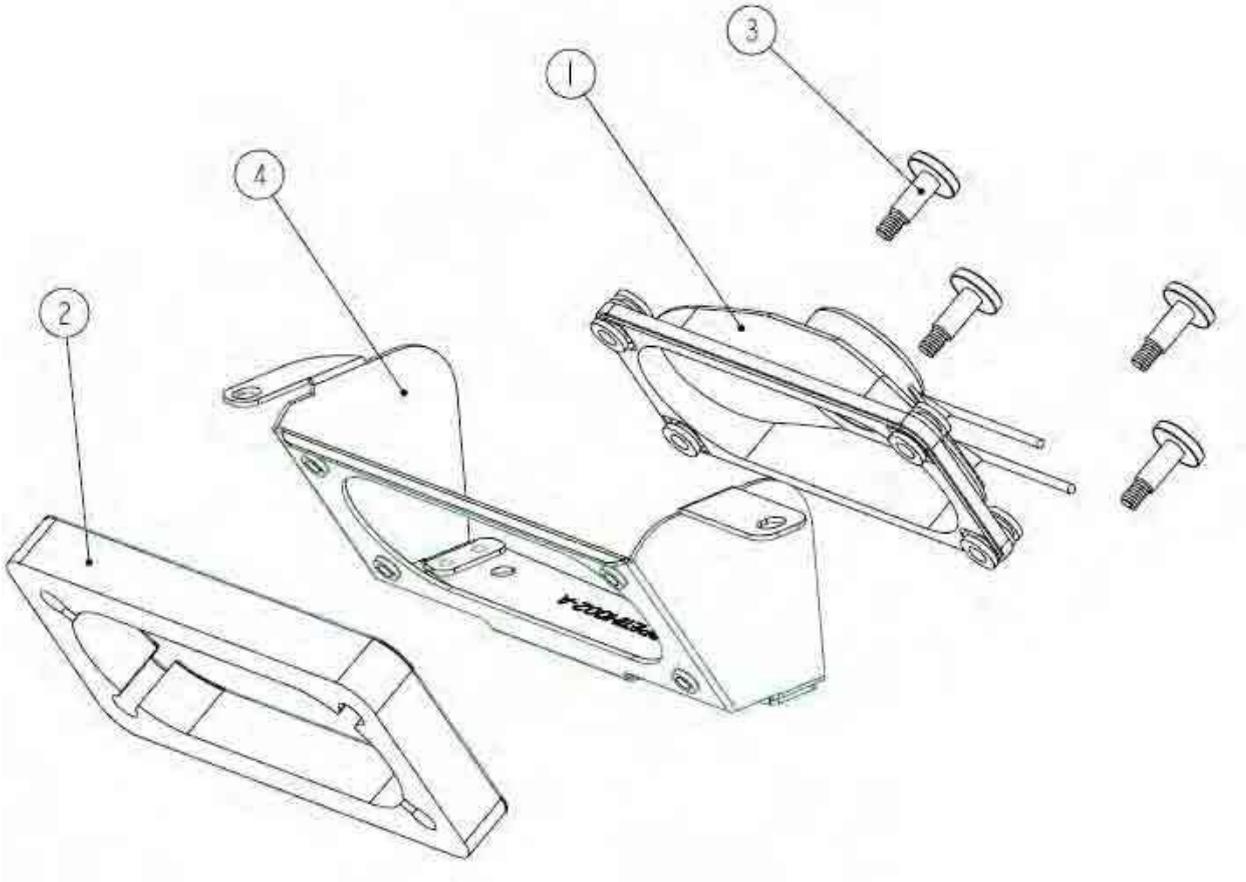
**ASSY LEFT SPEAKER MODULE**



Item	Description	Parts Supply
1	SPEAKER 10W 6-OHM 280mm G3.5	V
2	SPEAKER BRKT LEFT SECC 0.8t G3.5	
3	PORON SPEAKER G3.5	
4	SCREW PAN MECH W/SF M3*8 NI GREEN	

Appendix A (Exploded Image)

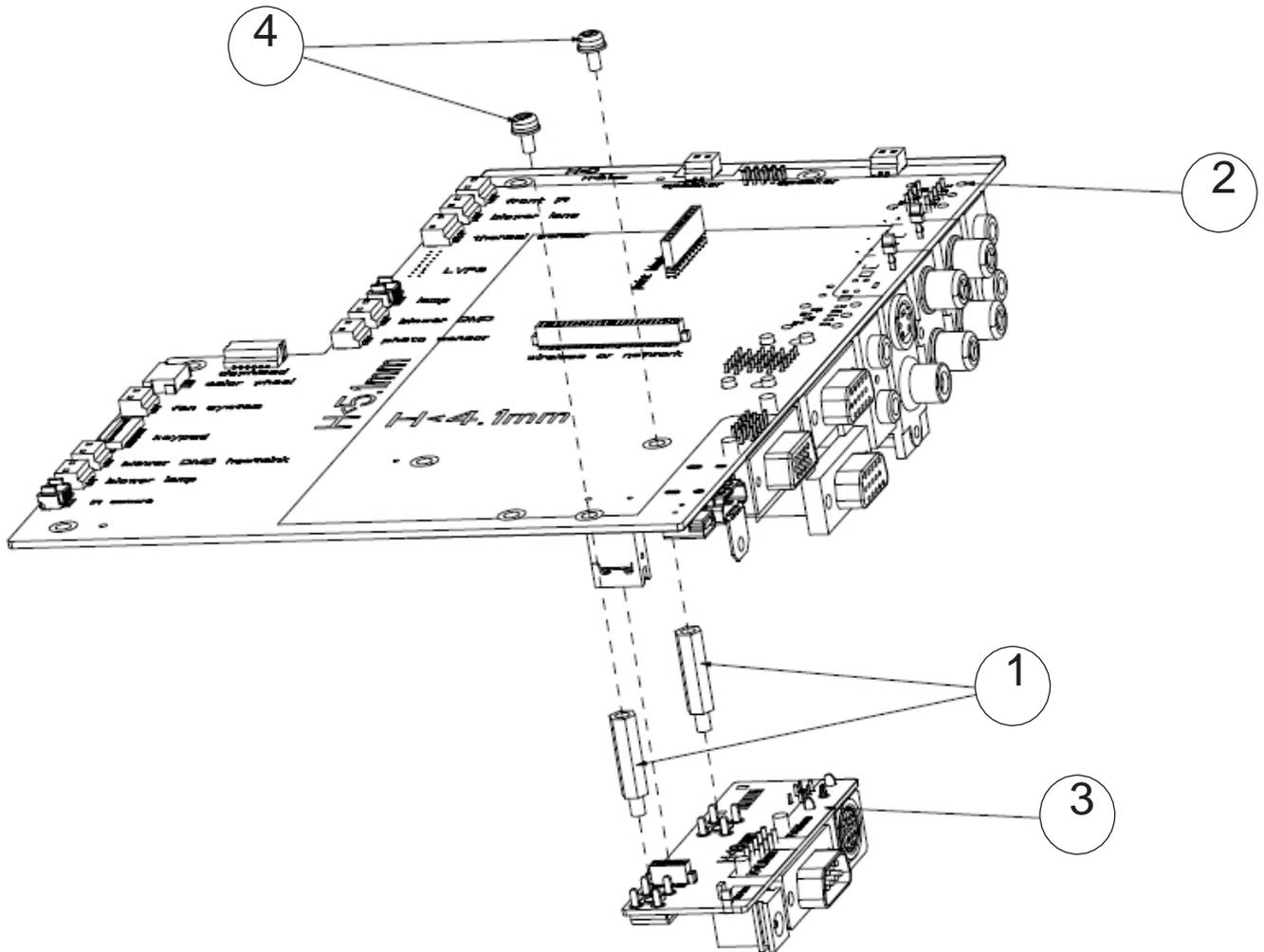
**ASSY FRONT SPEAKER MODULE**



Item	Description	Parts Supply
1	SPEAKER 10W 6-OHM 280mm G3.5	V
2	PORON SPEAKER G3.5	
3	SCREW PAN MECH W/SF M3*8 NI GREEN	
4	SPEAKER BRKT FRONT MIPRO	

Appendix A (Exploded Image)

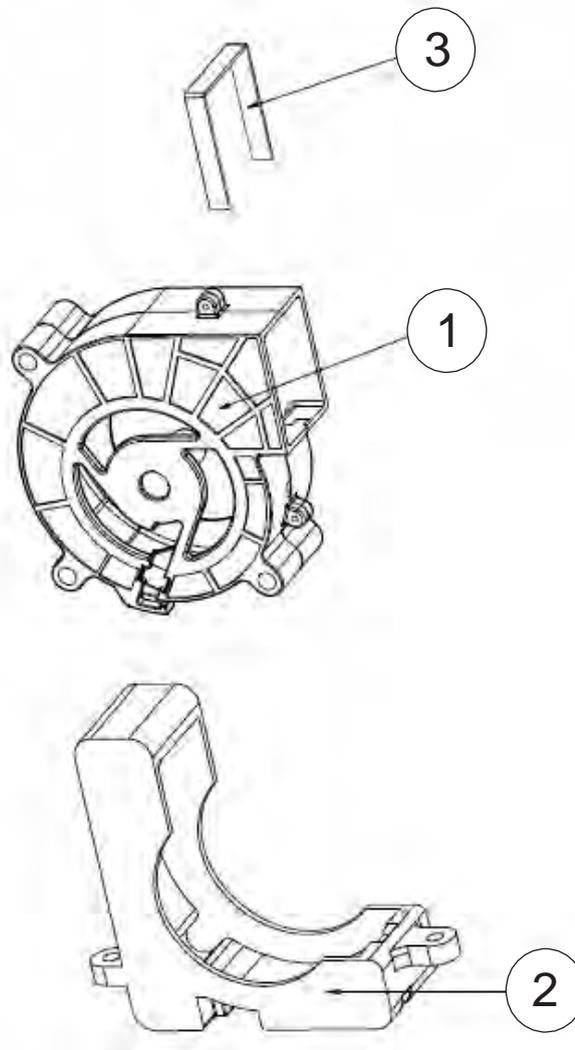
**ASSY MAIN BOARD MODULE**



Item	Description	Parts Supply
1	HEXAGON COPPER STICK M3 L18 SCREW L4.5 EzPro 735	
2	PCBA MAIN BD FOR MIPRO PROJECTOR	√
3	PCBA DAUGHTER BD FOR G035 PROJECTOR	√
4	SCREW PAN MECH W/SF M3*6 Ni GREEN	

Appendix A (Exploded Image)

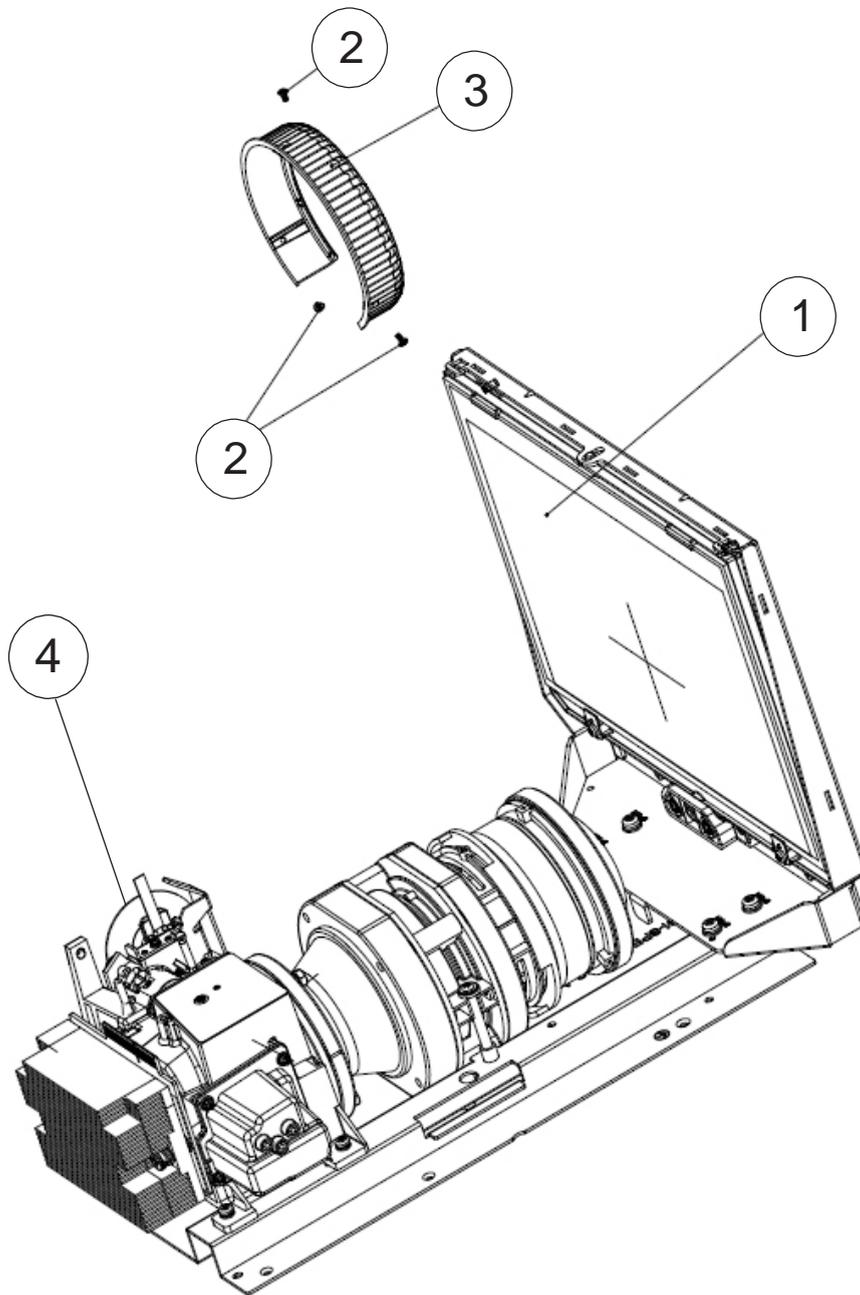
**ASSY LAMP BLOWER MODULE**



Item	Description	Parts Supply
1	SUNON 70mm*25mm /LAMP BLOWER/ RoHS2.0/WIRE LENGTH 230mm	
2	7025 BLOWER RUBBER HD33	V
3	7025 BLOWER DUCT AIR TIGHT HD33	

Appendix A (Exploded Image)

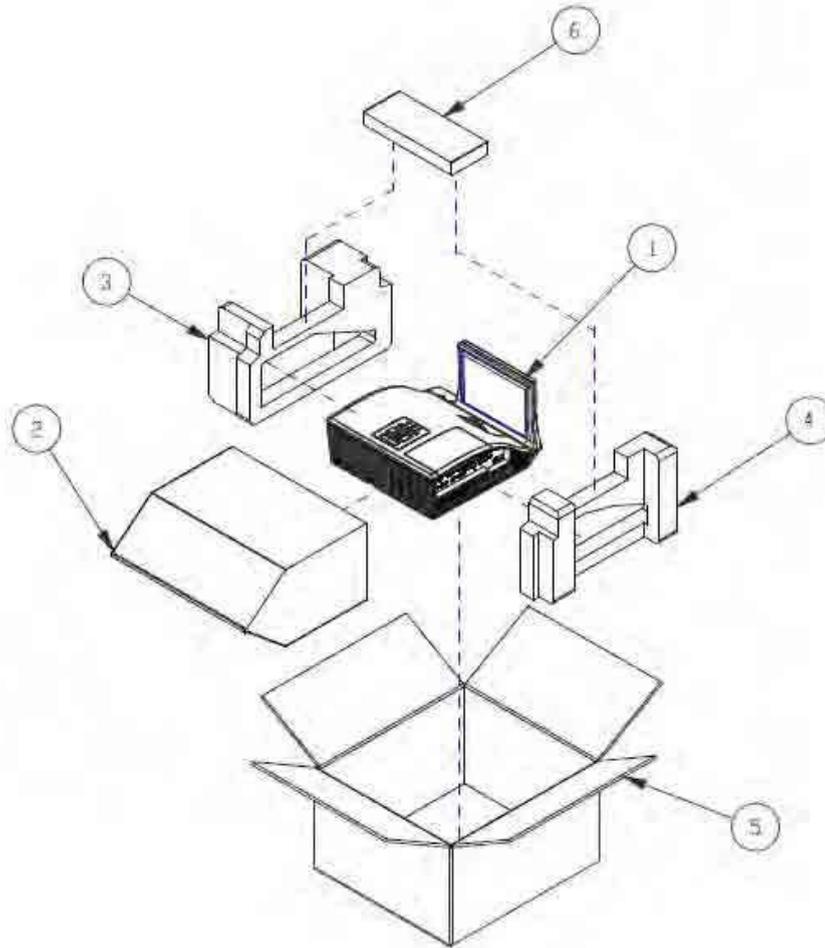
**ASSY ENGINE MODULE**



Item	Description	Parts Supply
1	ASSY ENGINE MODULE FOR 8SP 75.8PE03G001(SERVICE)	√
2	SCREW FLAT HEAD TAP M2*4MM SWRCH18A H BLACK	
3	FOCUS RING MIPRO	
4	ASSY COLOR WHEEL MODULE FOR 8SP(SERVICE)	√

Appendix A (Exploded Image)

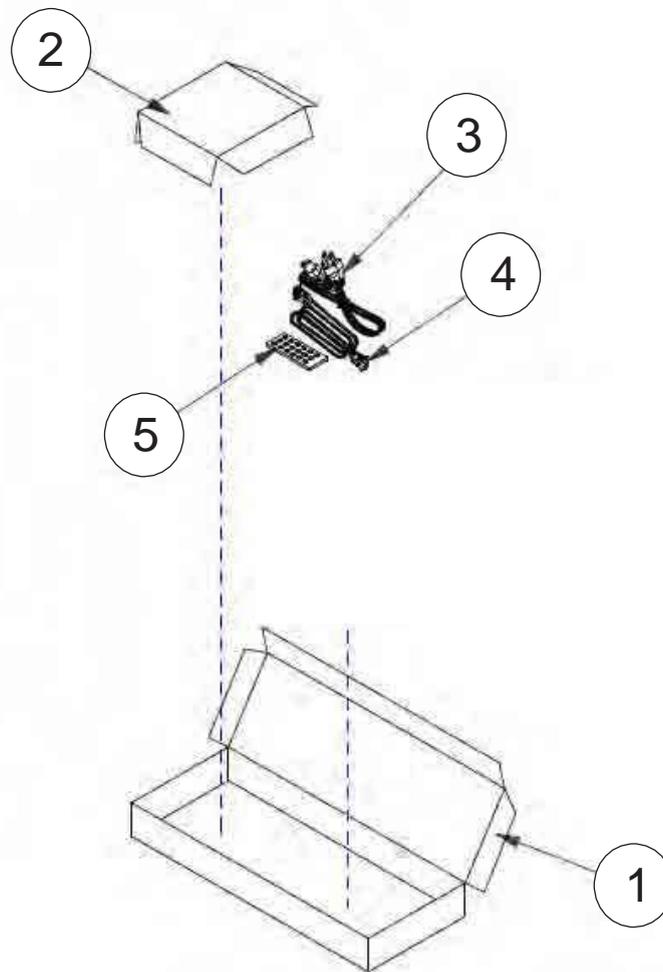
DP.



Item	Description	Parts Supply
1	D.C. G3.5	
2	EPE BAG S500WI	
3	EPE CUSHION LEFT G3.5	
4	EPE CUSHION RIGHT G3.5	
5	CARTON BOX G3.5	V
6	A.K. G3.5	

Appendix A (Exploded Image)

**AK.**



Item	Description	Parts Supply
1	AK BOX MIPRO	
2	AK PARTITION PAPER W/O IR CAMERA MIPRO	
3	CABLE POWER CORD 1.8M SP30+IS14 US	√
4	CABLE VGA 15P 1.8M BLK EP739	√
5	INFRARED REMOTE CONTROLLER FOR MIPRO	√

# Appendix B

## I. Serial Number System Definition

Serial Number Format for Projector

13    11    30    110    0001

①        ②        ③        ④        ⑤

① :        13 = manufacture year

② :        11 = manufacture month

③ :        30 =manufacture day

④ :        110 = product code

⑤ :        0001 = Serial Code

EX: 1311301100001

This label "1311301100001" represents the serial number for PJ2000.

It is produced at CPC on 11/30 of 2013. Its serial code is 0001.

Appendix B

## II. PCBA Code Definition

PCBA Code for Projector

A   B   XXXXXXXXXXXX   C   XXX   EEEE

①

②

③

④

⑤

⑥

①

:

ID

②

:

Vendor Code

③

:

P/N

④

:

Revision

⑤

:

Date Code

⑥

:

S/N