Service manual

PJ1000 ST DLP

Preface

This manual is applied to PJ1000 projection system. The manual gives you a brief description of basic technical information to help in service and maintain the product. Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background. Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

Notice: The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in future edition.

Table of Content

1. Introduction

1-1 Highlight

No	Item	Description
1	Dimensions (WxDxH)	• 288x219x77mm (WxDxH) (w/o feet) • 288x219x87mm (WxDxH) (w/ feet)
2	Power Supply	• Universal AC 100 – 240 V ,50-60 Hz
3	Power Consumption	• Bright (Normal): TYP 295W MAX 325W @ 110VAC • ECO:TYP 245W MAX 270W @ 110VAC
4	Native resolution	• Native Resolution: 1024x768(XGA)
5	Projection lens	• YM23LL
6	Throw Ratio	• 0.626 (D/W) @ 77
7	Brightness	• Typical: 2400 lumens • Minimum: 2040 lumens
8	Color Wheel	• 6 segments (R81Y41G84C31W52B71)
9	DMD chip	• TI DMD 0.55” XGA 2xLVDS S450
10	System controller	• TI DDP2431
11	Lamp Type	• 240 Watt OSRAM E20.8 Lamp
12	Lamp Life	• Bright Mode (Normal Mode) 3500 Hours Standard @ 240W, 50% Survival Rate • STD Mode (ECO Mode) 5000 Hours Typical @ 190W, 50% Survival Rate
13	Video Compatibility	• NTSC: M/J ,3.58MHz, 4.43 MHz • PAL: B, D, G, H, I, M, N, 4.43MHz • SECAM: B, D, G, K, K1, L, 4.25/4.4 MHz • HDTV: 720p(50/60Hz), 1080i/P(50/60Hz),1080P(24/50/60Hz) • SDTV:480i/p, 576i/p
14	Altitude&Temperature	• Non-operation: Sea Level to 40,000 feet Operating: Sea Level to 10,000 feet (@23°C); manual switch to high altitude mode @5000 feet & above • Operating: 0 to 10,000 feet (5 to 40ºC) Operating Testing:5°C~40°C @ 0~2,500 feet 5°C~35°C @ 2,500~5,000 feet 5°C~30°C @ 5,000~10,000 feet
15	Input signal spec	• VGA-in x2 • Composite Video x1 • HDMI v1.3 • S-Video (Mini DIN) x 1 • Audio input (Mini Jack) x 1 • RS232 control (9 pin) • USB type B(remote mouse simulation) • RJ45

1-2 Compatible Mode

PC Signal

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
VGA	640x350	70	31.50
VGA	640x350	85	37.90
VGA	720x350	70	31.50
VGA	640x400	70	31.50
VGA	640x400	85	37.90
VGA	720x400	70	31.50
VGA	720x400	85	37.90
	720x576	50	-
	720x576	60	-
VGA	640x480	60	31.50
VGA	640x480	67	-
VGA	640x480	72	37.90
VGA	640x480	75	37.50
VGA	640x480	85	43.30
SVGA	800x600	56	35.20
SVGA	800x600	60	37.90
SVGA	800x600	75	46.90
SVGA	800x600	72	48.10
SVGA	800x600	80	-
SVGA	800x600	85	53.70
	832x624	72	-
	832x624	75	-
XGA	1024x576	50	-
XGA	1024x576	60	-
XGA	1024x768	60	48.40
XGA	1024x768	70	56.50
XGA	1024x768	72	57.70
XGA	1024x768	75	60
XGA	1024x768	85	68.70
	1152x864	60	-
	1152x864	70	-
	1152x864	75	-
	1152x864	85	-
	1152x870	75	-

Mode	Resolution	V-Sync[Hz]	H-Sync(KHz)
HD720	1280x720	50	-
HD720	1280x720	60	
HD720	1280x720	75	
HD720	1280x720	85	
WXGA	1280x768	60	47.40
WXGA	1280x768	70	-
WXGA	1280x768	75	-
WXGA	1280x768	85	-
WXGA-800	1280x800	60	-
SXGA	1280x1024	60	64.00
SXGA	1280x1024	75	80.00
SXGA	1280x1024	85	91.10
SXGA+	1400x1050	60	-
UXGA	1600x1200	60	75.00
HDTV	1920x1080	30	33.80
HDTV	1920x1080	25	28.10
HDTV	1920x1080i	50/60	-
HDTV	1920x1080p	24/25/30/50/60	-
HDTV	1280x720	60	45.00
HDTV	1280x720p	50/60	-
SDTV	720x576	50	31.30
SDTV	720x576i	50	-
SDTV	720x576p	50	-
SDTV	720x480	60	31.50
SDTV	720x480i	60	-
SDTV	720x480p	60	-
MAC LC 13”	640x480	34.98	66.66
MAC II 13”	640x480	35.00	66.68
MAC 16”	832x624	49.73	74.55
MAC 19”	1024x768	60.24	75
MAC	1152x870	68.68	75.06
MAC G4	640x480	31.35	60
i MAC DV	1024x768	60	75
i MAC DV	1152x870	68.49	75

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

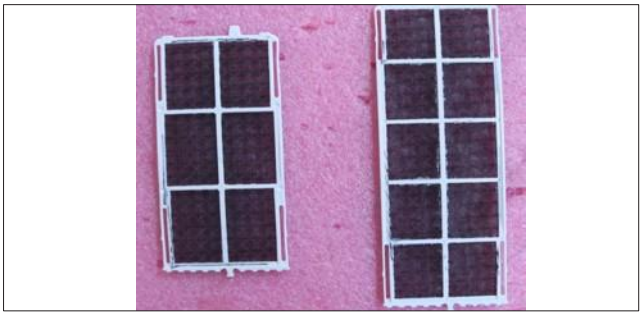
** Before you start: This process is protective level II. Operators should wear electrostatic chains.*

2-2 Disassemble Filter and Focus Ring

1. Pull down the tendon (as red square) to disassemble the left filter.

2. Pull down the tendon (as yellow square) to disassemble the right filter.

3. Disassemble the left filter and the right filter.

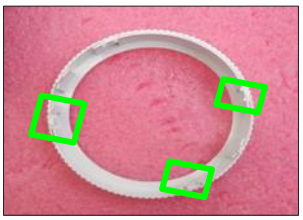


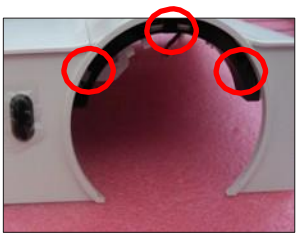
left filter **right filter**

4. Please rotate the focus ring outward so as to take out the focus ring easily.

5. Pull out the focus ring.

Note: - When you assemble the focus ring, ensure the card slot (as green square) placed in the right area properly (as red circle), and the focus ring can be well adjusted.



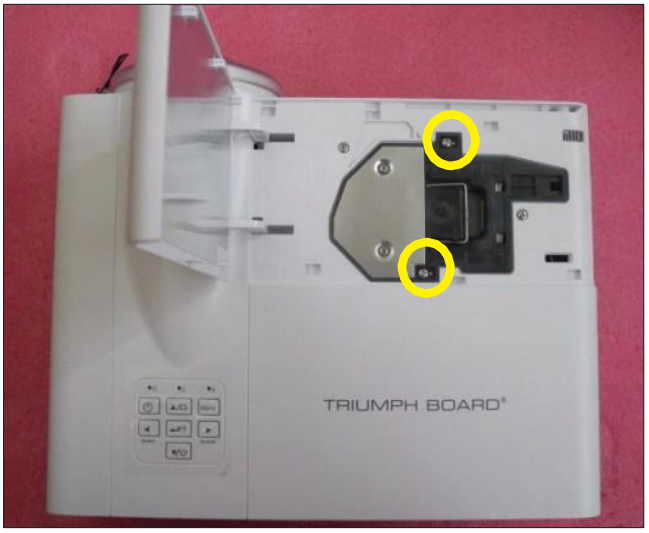


Focus Ring

2-3 Disassemble Lamp Module

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

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



3. Take off the lamp module.

lamp module

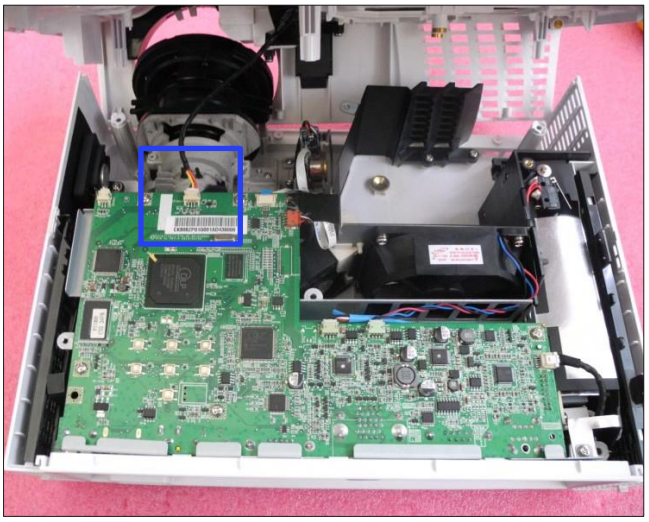
2-4 Disassemble Top Cover Module

1. Unscrew 2 screws (as red circle) from the top cover.

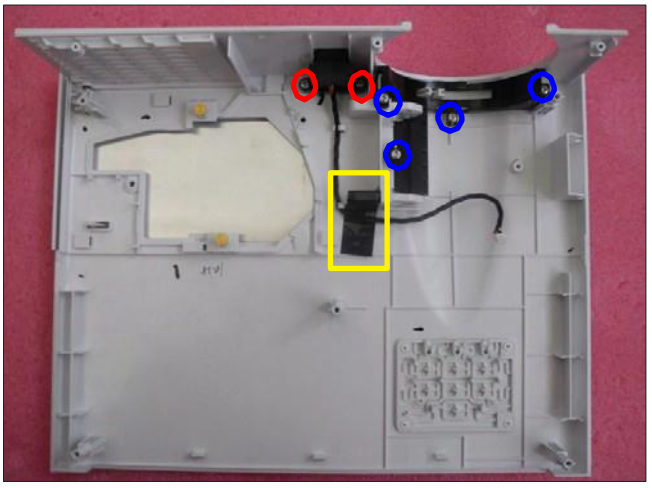
2. Unscrew 8 screws (as green circle) from the bottom cover.

3. Press two sides of the projector as the blue arrows point.

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



5. Disassemble the top cover module.



2-5 Disassemble Lamp Cover

1. Unscrew 2 screws (as red circle) and tear off the tape (as yellow square) to disassemble the IR sensor module.

2. Unscrew 4 screws (as blue circle) to disassemble the zoom ring.

Zoom Ring

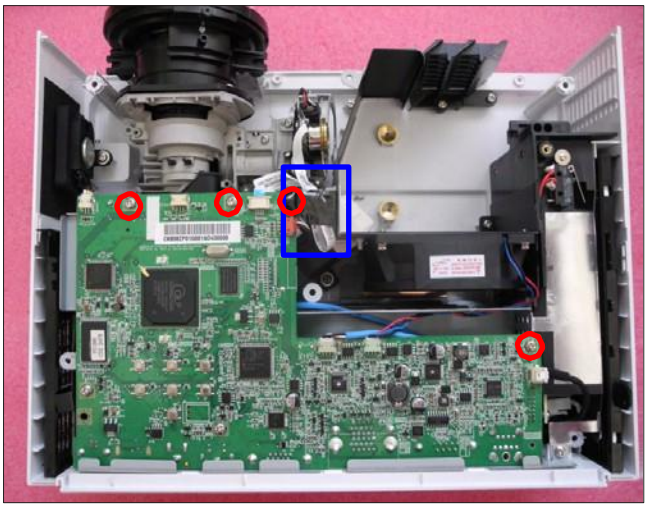
IR Sensor Module

3. Then remove the lamp cover from the top cover.

Lamp Cover

2-6 Disassemble Main Board Module and Shielding

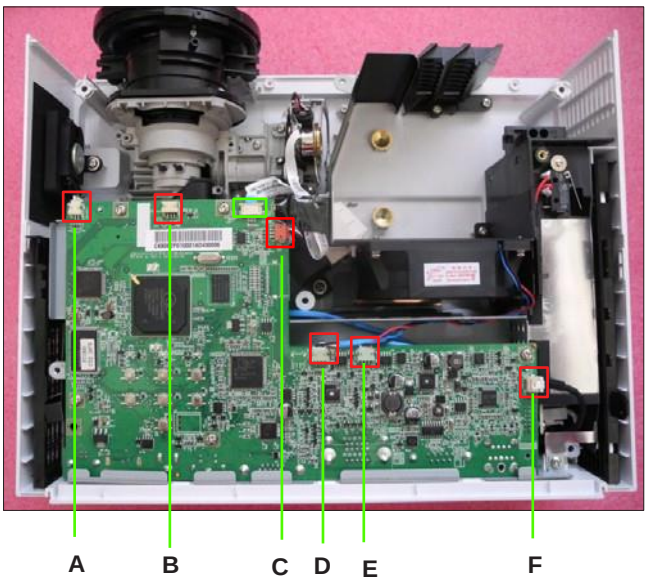
1. Tear off the tape (as blue square) and unscrew 4 screws (as red circle).



2. Unscrew 8 hex screws (as green circle) and 1 screw (as yellow circle).

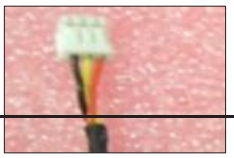
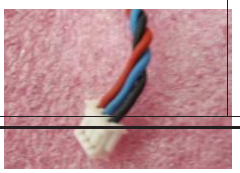
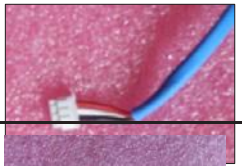
3. Unplug 6 connectors (as red square).

4. Unplug 1 connector (as green square) of color wheel.

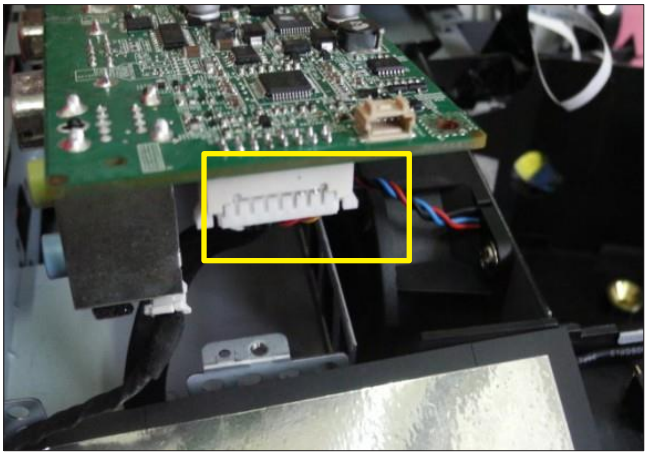


Note: - Make sure cables plug into the correct ports when assembling the unit.

Please refer to the below table details of each connector on main board.

Item	Male Connector on Main Board	The key feature	Figure
A	Speaker	Compose of Yellow/ White Wire and Black tube(2 pin)	
B	Front IR	Compose of Black/ Yellow/Pink Wire and Black tube(3 pin)	
C	Photo Sensor BD	Compose of Black/ White/Red Wire, Red Connector and Black tube(3 pin)	
D	Fan	Compose of Black/ White/Red Wire, White Connector (3 pin)	
E	Blower	Compose of Black/ Blue/Pink Wire, White Connector (3 pin)	
F	Lamp driver	Black wire tube (5 pin)	

5.Unplug 1 connector (as yellow square).



6. Disassemble main board module.

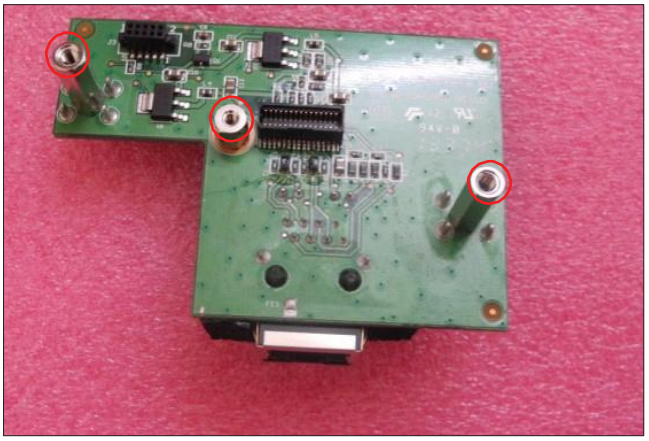
7. Unscrew 2 screws (as green circle).

8. Unscrew 1 screw (as blue circle) to separate LAN board and daughter board.

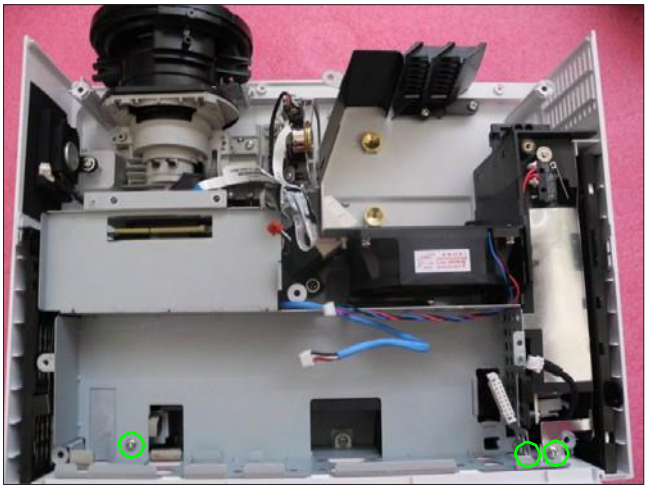
Daughter Board

LAN Board

9. Unscrew 3 hex screws (as red circle) to disassemble the LAN board.

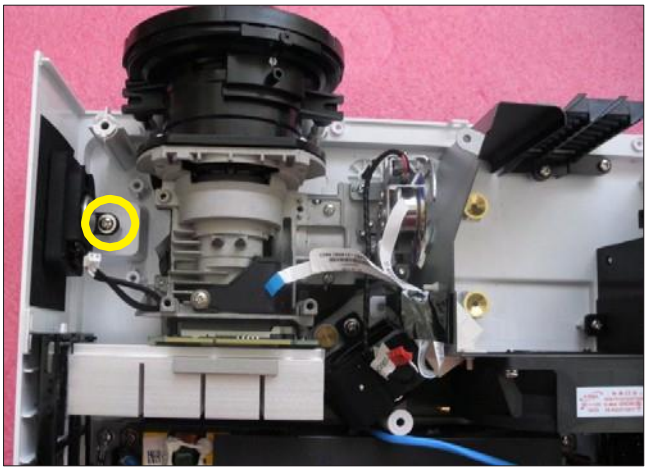


10. Unscrew 3 screws (as green circle) to disassemble the shielding.



2-7 Disassemble Speaker Module and Filter Holder

1. Unscrew 1 screw (as yellow circle) to disassemble the speaker module.

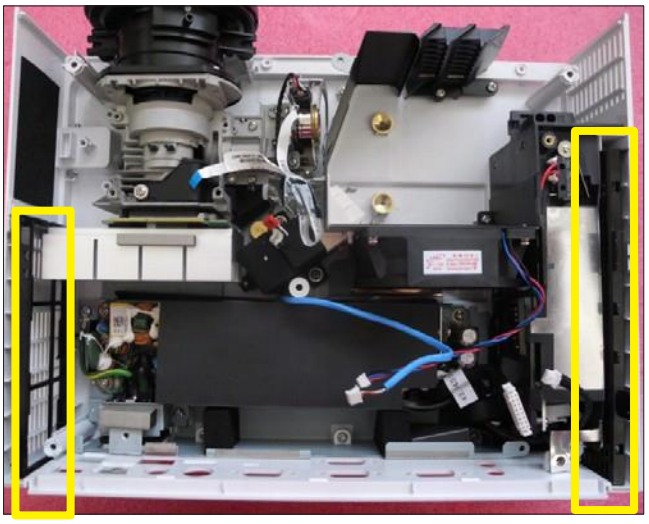


2. Separate the speaker and rubber.

Rubber

Speaker

3. Separate the filter holder (as yellow square).

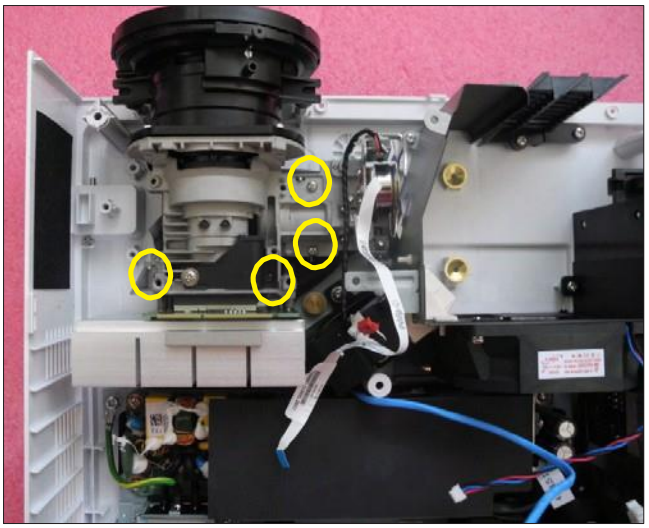


Left Filter Hold

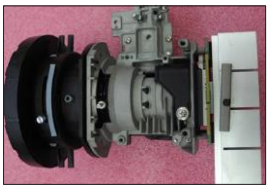
Right Filter Hold

2-8 Disassemble Engine Module

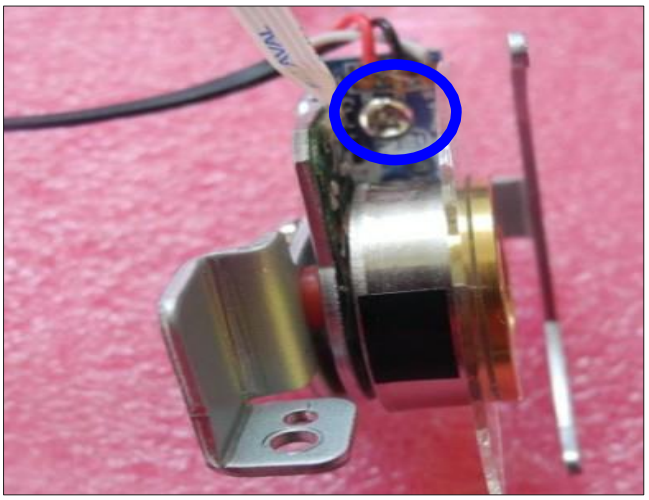
1. Unscrew 4 screws (as yellow circle) to disassemble the engine module.



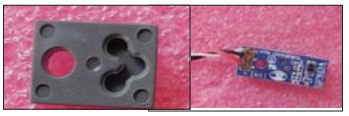
2. Unscrew 2 screws (as red circle) to disassemble the color wheel module.



3. Unscrew 1 screw (as blue circle) to disassemble the photo sensor board.



4. Separate the photo sensor board and spacer.

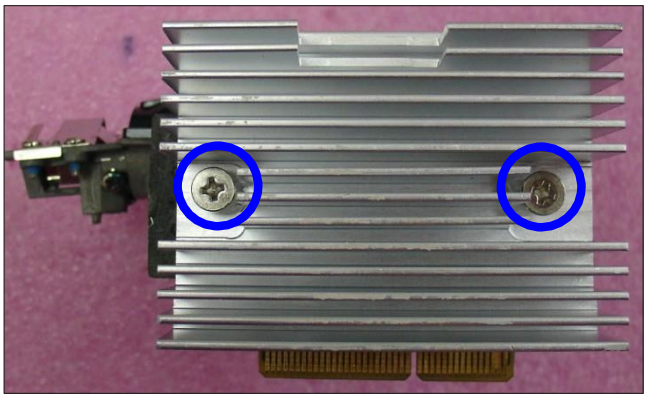


Spacer

Photo sensor BD

C/W Module

5. Unscrew 2 screws (as blue circle).

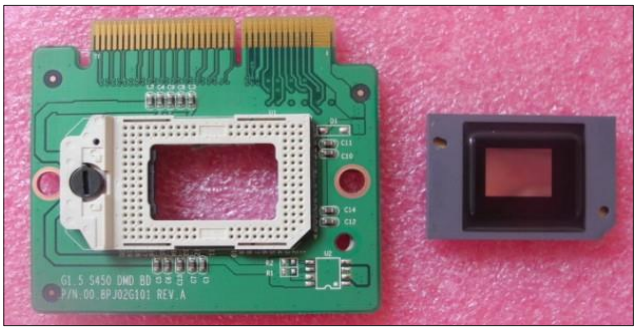


6. Disassemble the heat sink and DMD module, and then tear off 2 DMD molars (as green square).

7. Rotate the screw (as yellow circle) 180° counterclockwise to disassemble the DMD board and DMD chip.

Note: - Avoid touching the DMD Chip when you disassemble it.

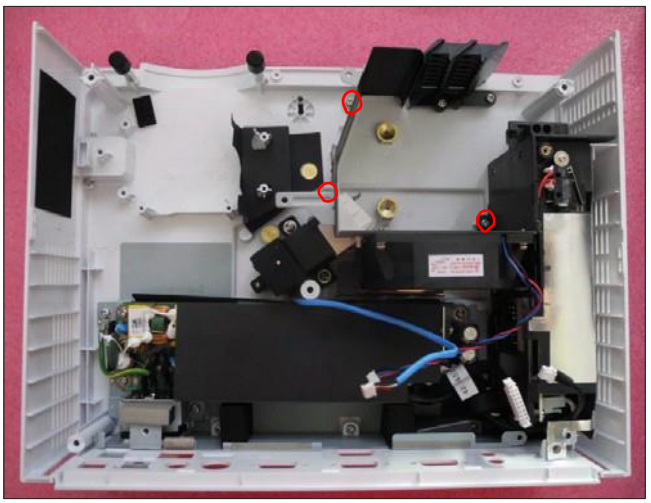
- Pay attention to the fixed position when assembling the DMD chip.



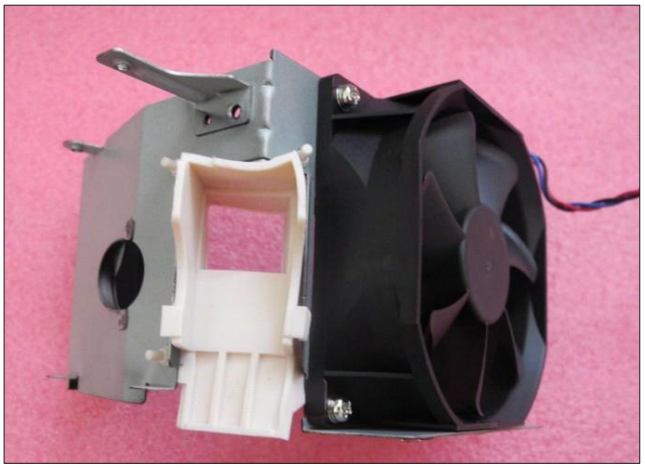
DMD Board DMD Chip

2-9 Disassemble System Fan Module

1. Unscrew 3 screws (as red circle) to disassemble system fan module.



2. Separate the rubber from the system fan module



Rubber

System Fan Module

3. Unscrew 4 screws (as green circle) to separate system fan and fan shielding.

System Fan

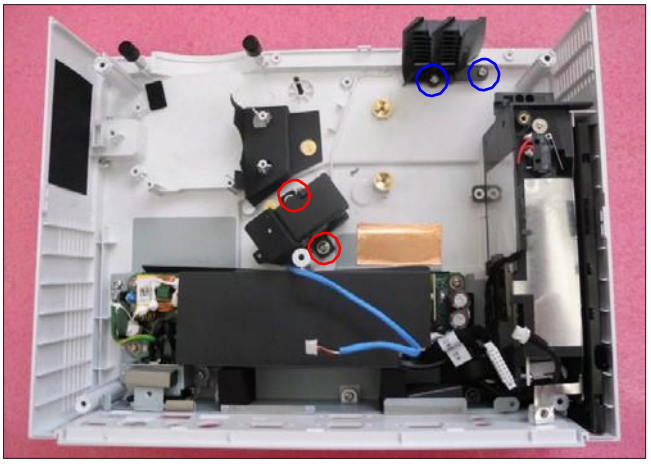
Note: Take the fan module as the right gesture.

The right gesture

The wrong gesture

2-10 Disassemble Blower Module and Thermal Vent

1. Unscrew 2 screws (as blue circle) to disassemble the thermal vent.



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

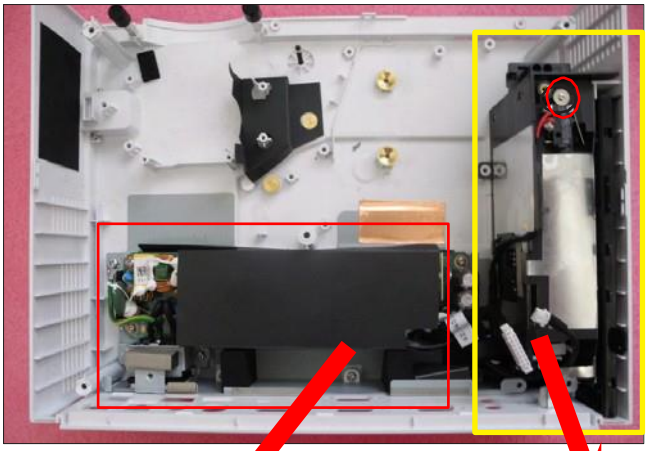
Thermal Vent

Blower

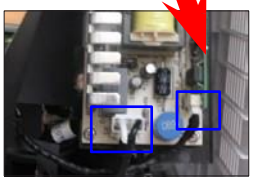
3. Separate the blower and blower rubber.

2-11 Disassemble Lamp Driver Module and Interrupter Switch

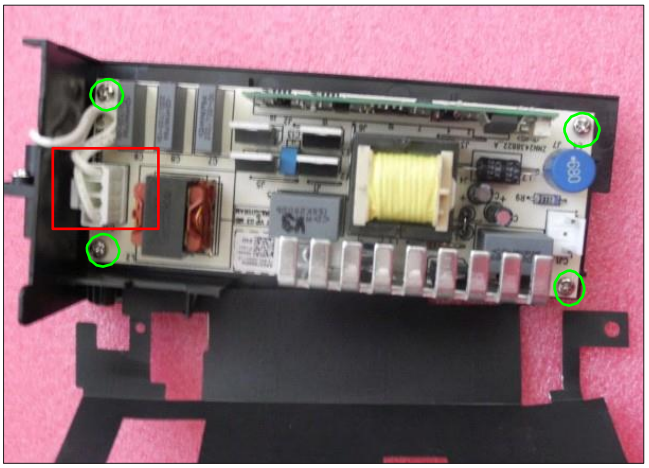
1. Unscrew 1 screw (as red circle) and unplug 1 connector (as red square) to disassemble the interrupter switch.



2. Unplug 2 connectors (as blue square), then disassemble the lamp driver module (as yellow square).

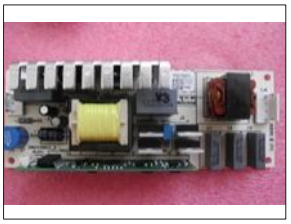


3. Unplug 1 connector (as red square).



4. Unscrew 4 screws (as green circle) to disassemble the lamp driver.

5. Separate lamp driver and lamp driver holder, and unscrew 1 screw (as blue circle) to disassemble the lamp driver cable.



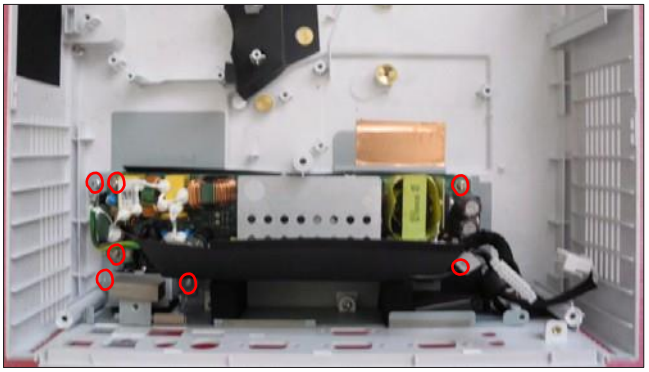
Lamp Driver

Lamp Driver Holder

Lamp Driver Cable

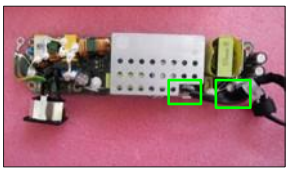
2-12 Disassemble LVPS Module

1. Unscrew 7 screws (as red circle) to disassemble the LVPS Module.



2. Unplug 2 connectors (as green square).

3. Remove the Cable, LVPS and the AC inlet bracket from LVPS Module.



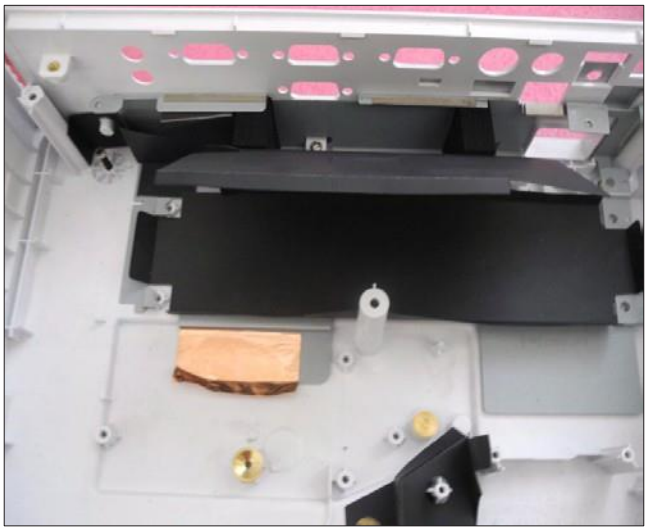
Bracket

LVPS

Cable

2-13 Disassemble Bottom Shielding and IO Cover

1. Take off the bottom shielding and molar

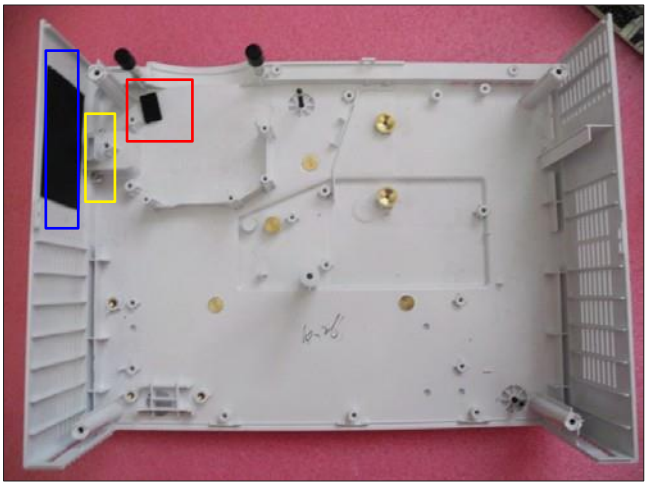


Bottom shileding

2. Unscrew 3 screws (as red circle) to disassemble the IO cover.

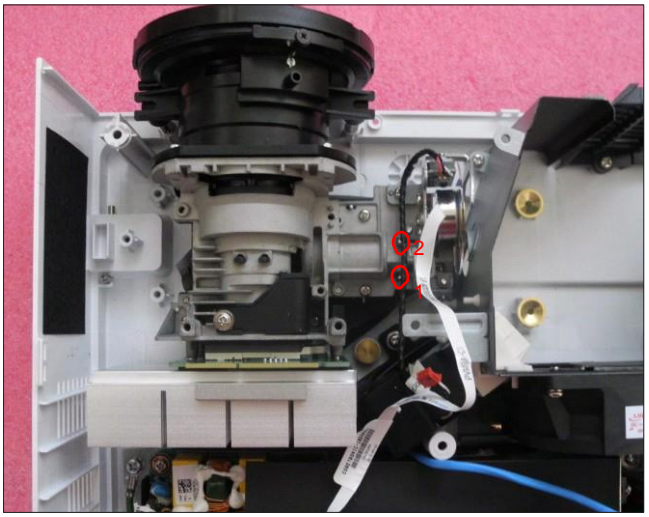
3. Separate bottom cover module and IO cover.

4. Tear off molars (as blue square) and sponge (as red square).



5. Pull out the security bar (as yellow square).

2-14 Rod Adjustment



1. Environment Adjustment

   - The size of the screen is 51.5".

   - This process should be done at a dark environment (under 2 Lux).

2. Procedure Adjustment

   - Change the screen to "white screen".

   - Adjust the screws by using the rod on the Engine Module to readjust the image.

     ("Screw 1" should be adjusted first, and then "screw 2". Adjust until the yellowish or bluish parts disappeared.)

3. Abnormal image inspection

   - It should not have any abnormal color at the rim of the image by estimating through the eyes.

Note: - To avoid over adjusting the rod.

2-15 Repair Action

Repair action	Change parts						Software		Description page
	Main Board	Lamp Module	Engine Module	Lamp Driver	Color Wheel	Blower	Firmware	EDID	
Firmware Update	v						v	v	Chapter 5
Color Wheel index					v				Chapter 4-4-1.8
OSD Reset	v	v							Chapter 4-6.2
Re-write Lamp Hours Usage	v								Chapter 4-7
S-Video and Audio Port Test	v								Chapter 4-4-2
Auto Waveform and Factory Calibration	v			v		v	v		Chapter 4-3
Optical Performance Measure			v						Chapter 4-4-1.9

Note: - After changing parts, check the information according to above table.

3. Troubleshooting

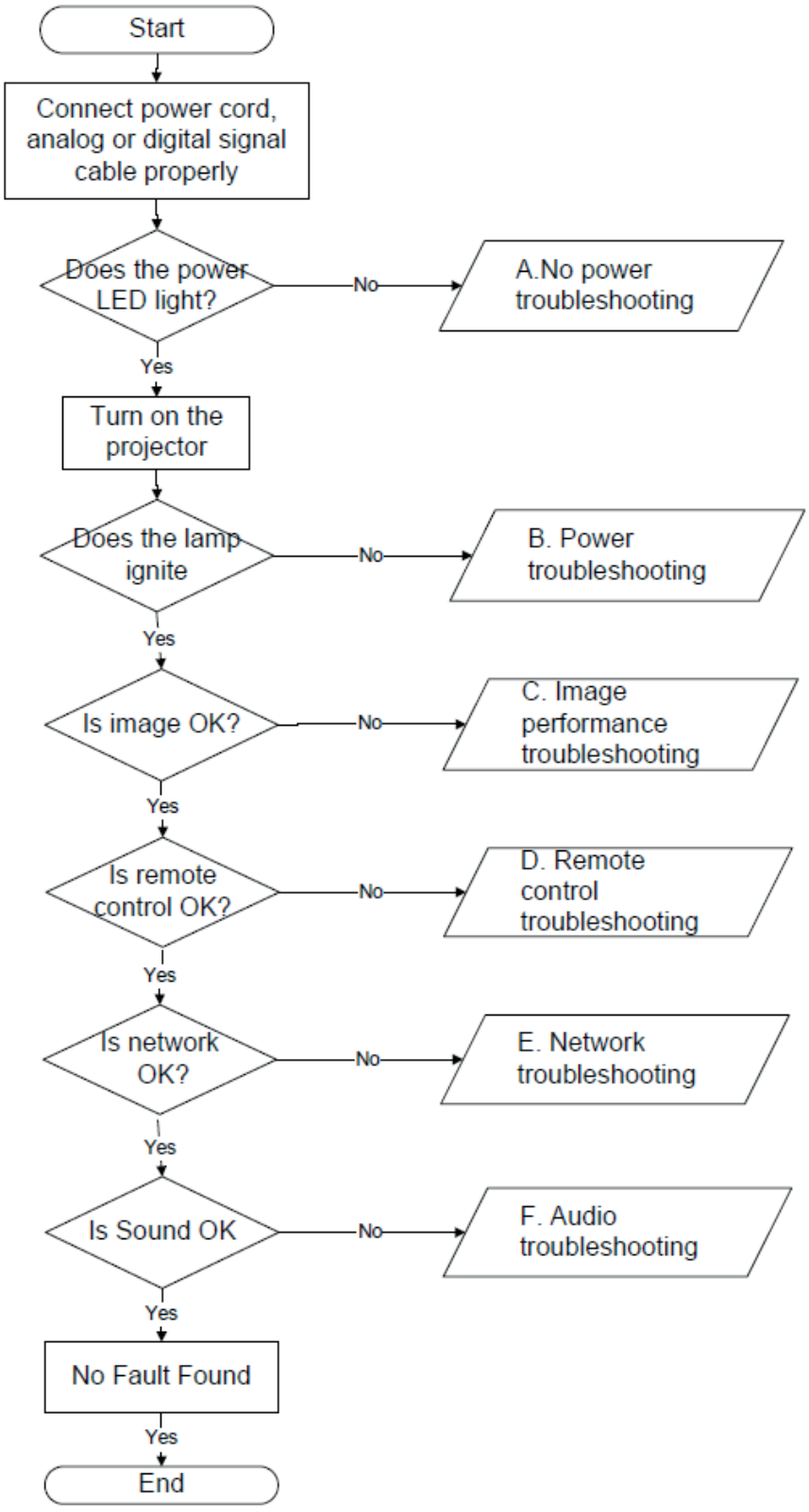
3-1 LED Lighting Message for Projector

Message	POWER/STANDBY LED	LED	
	(Green/Amber)	TEMP (Red)	LAMP (Red)
Standby State (Input power code)	Amber	○	○
Power on(Warming)	Flashing Green	○	○
Lamp lighting	Green	○	○
Quick Resume(100 secs)	Flashing Green	○	○
Power off (Cooling)	Flashing Green	○	○
Error (Over Temp.)	Flashing Amber	☼	○
Error (Fan fail)	Flashing Amber	Flashing	○
Error (Lamp fail)	Flashing Amber	○	☼

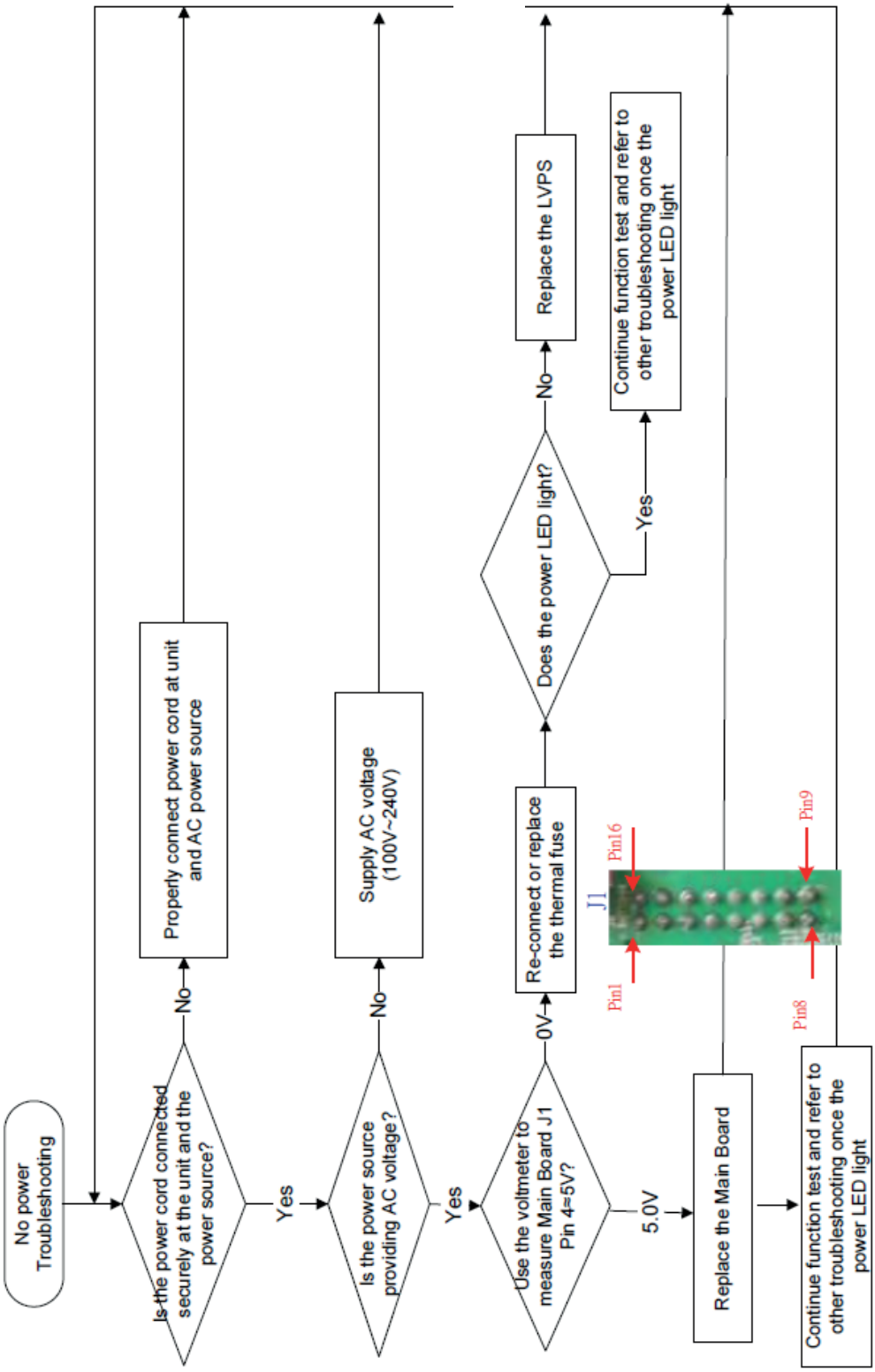
Steady light ○ *No light* ☼

POWER/STANDBY LED be ON when OSD appears, be OFF when OSD disappears

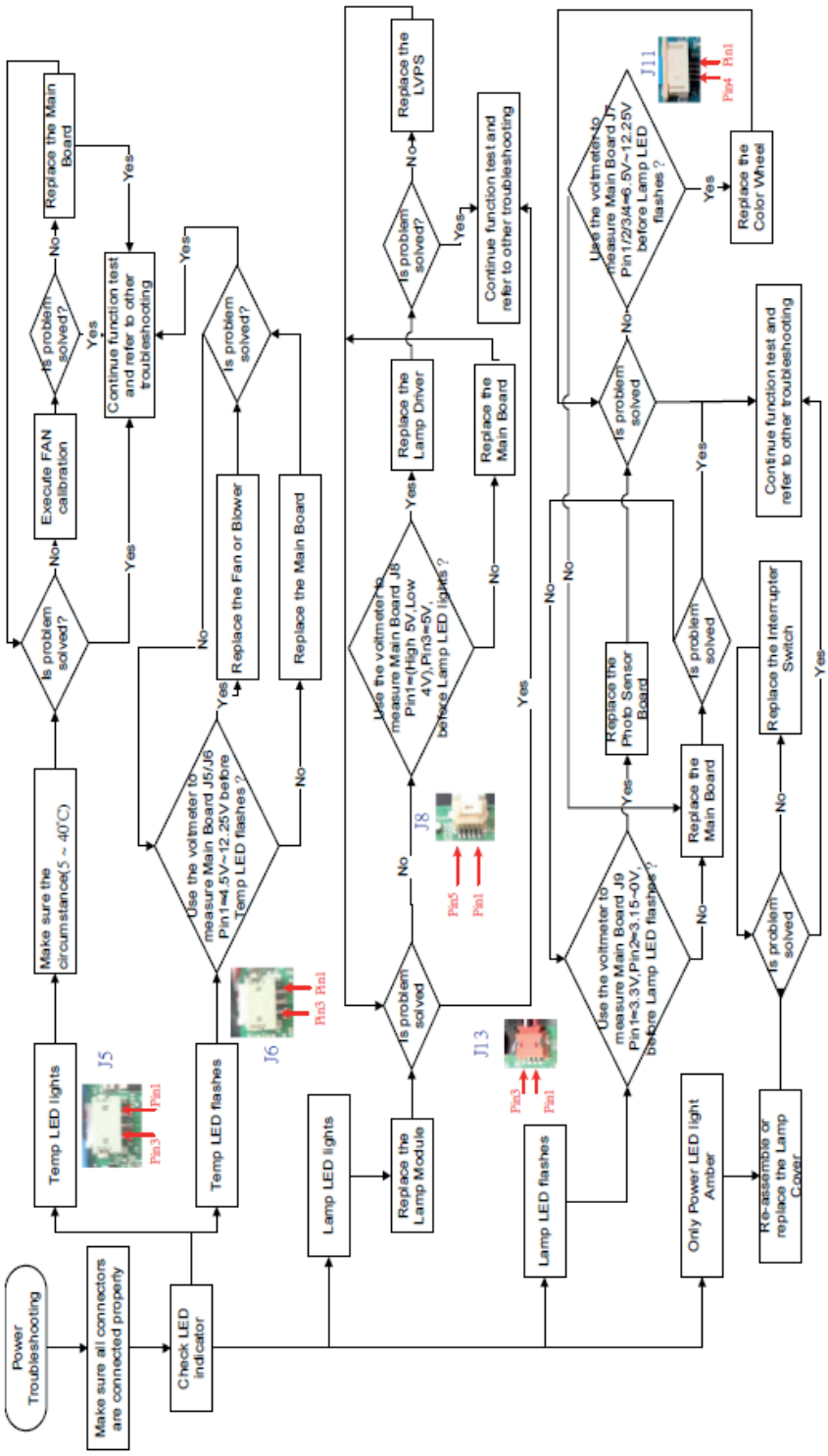
3-2 Main Procedure



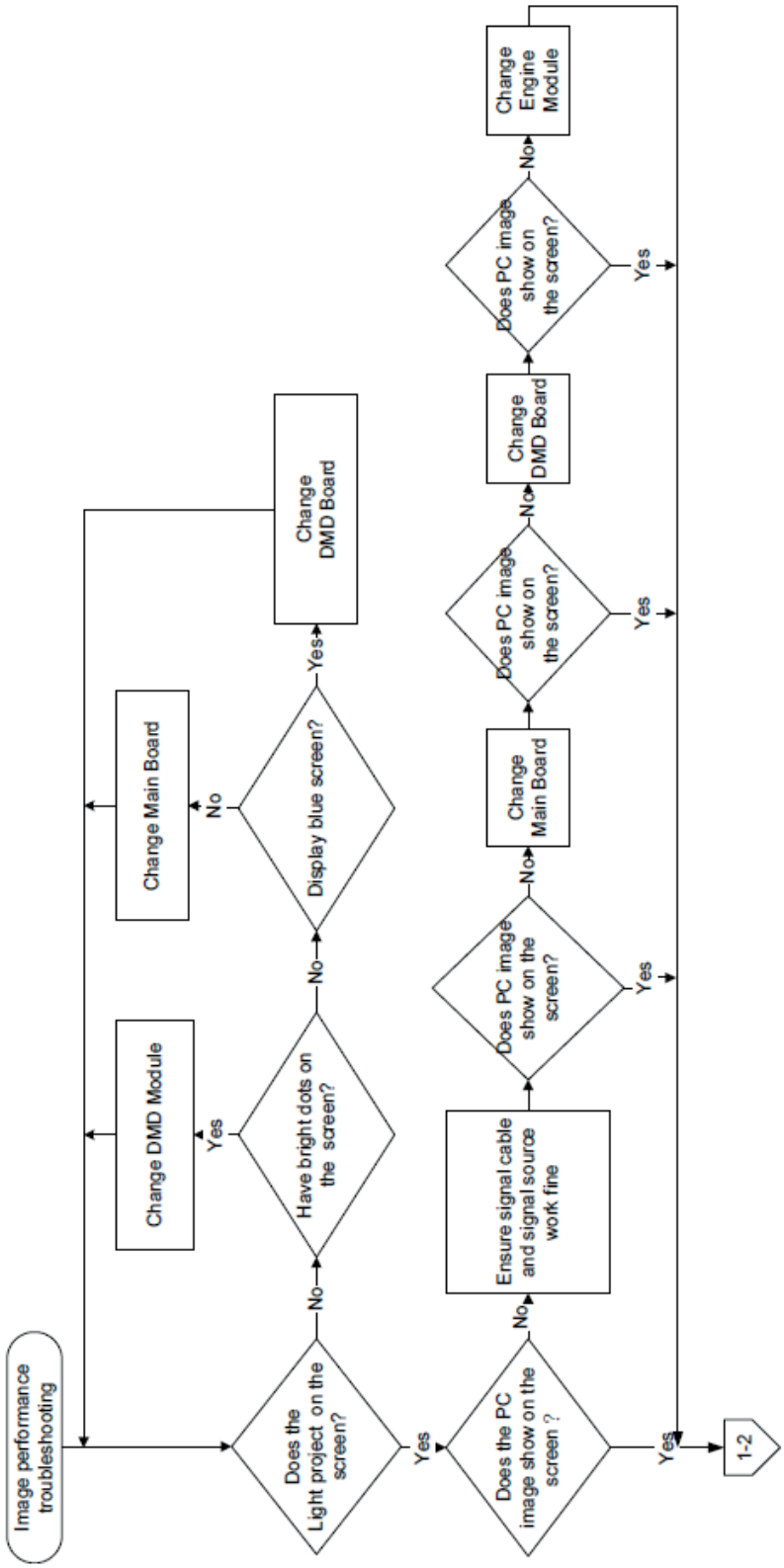
3-3 NO Power troubleshooting



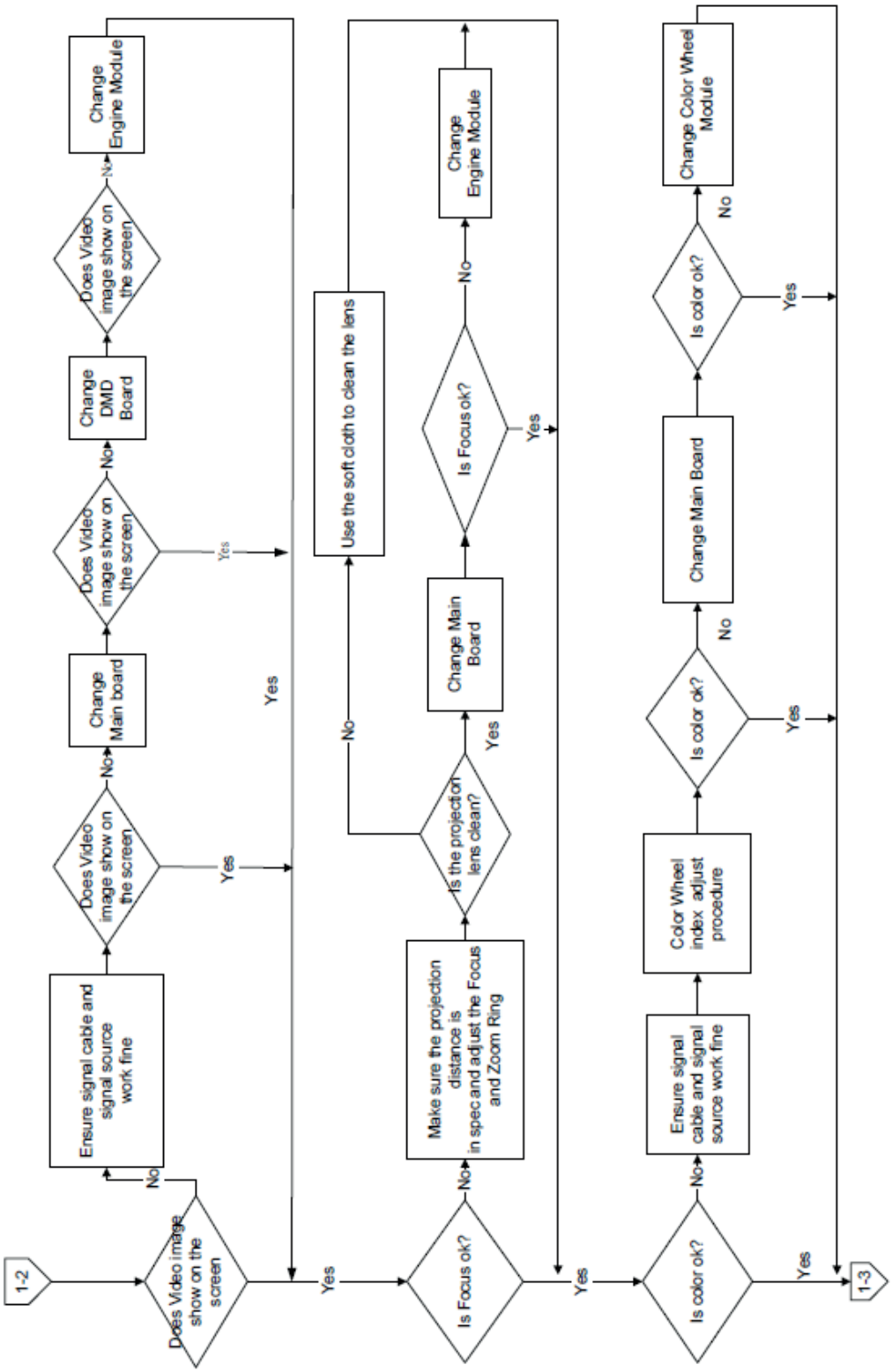
3-4 Power troubleshooting



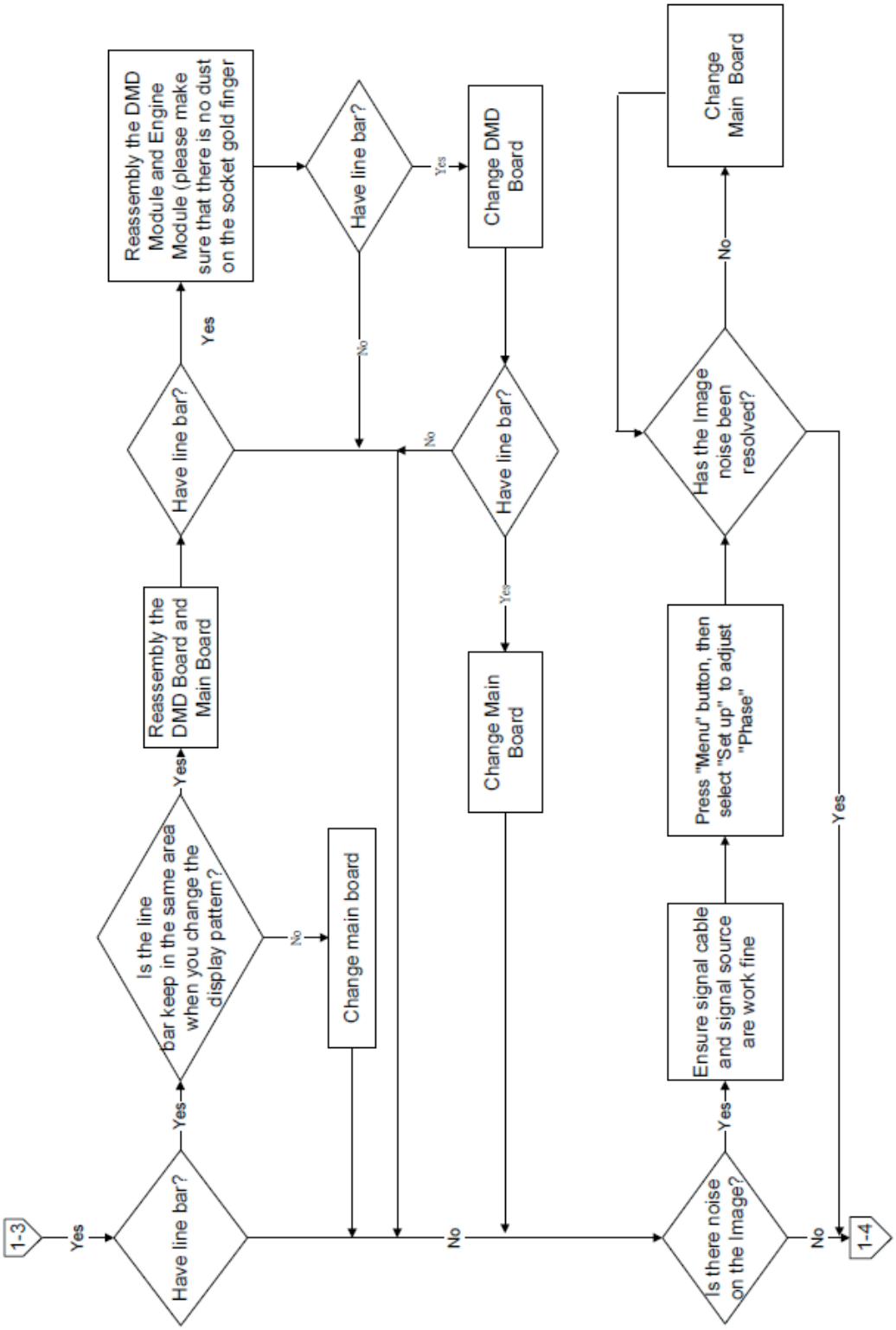
3-5-1 Image troubleshooting



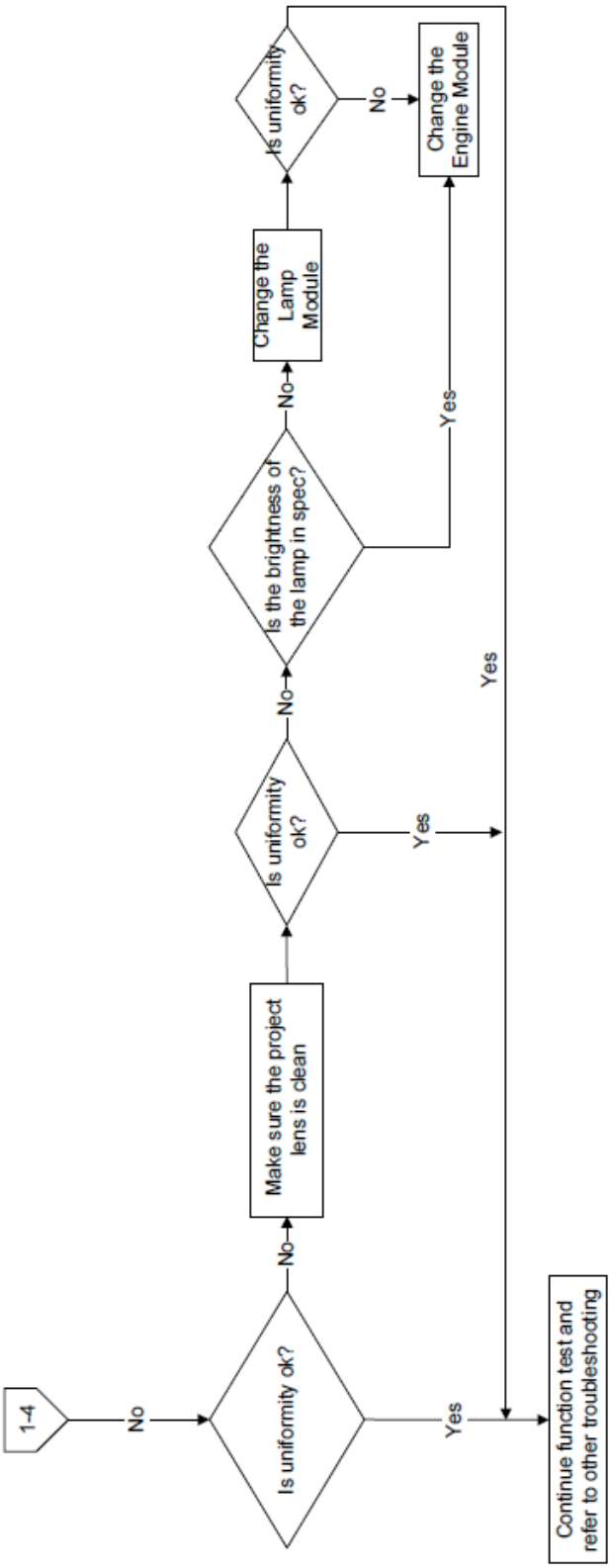
3-5-2 Image troubleshooting



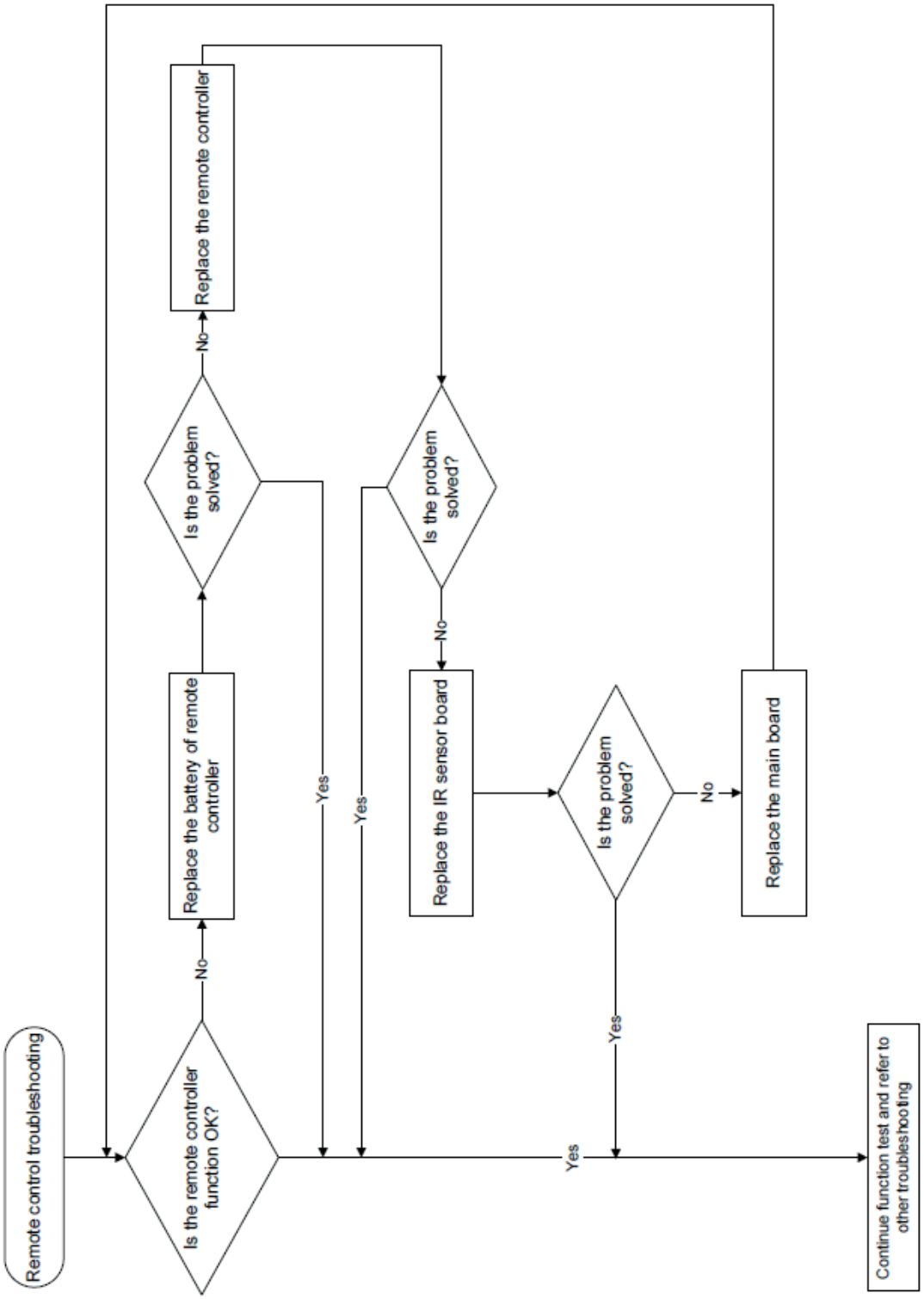
3-5-3 Image troubleshooting



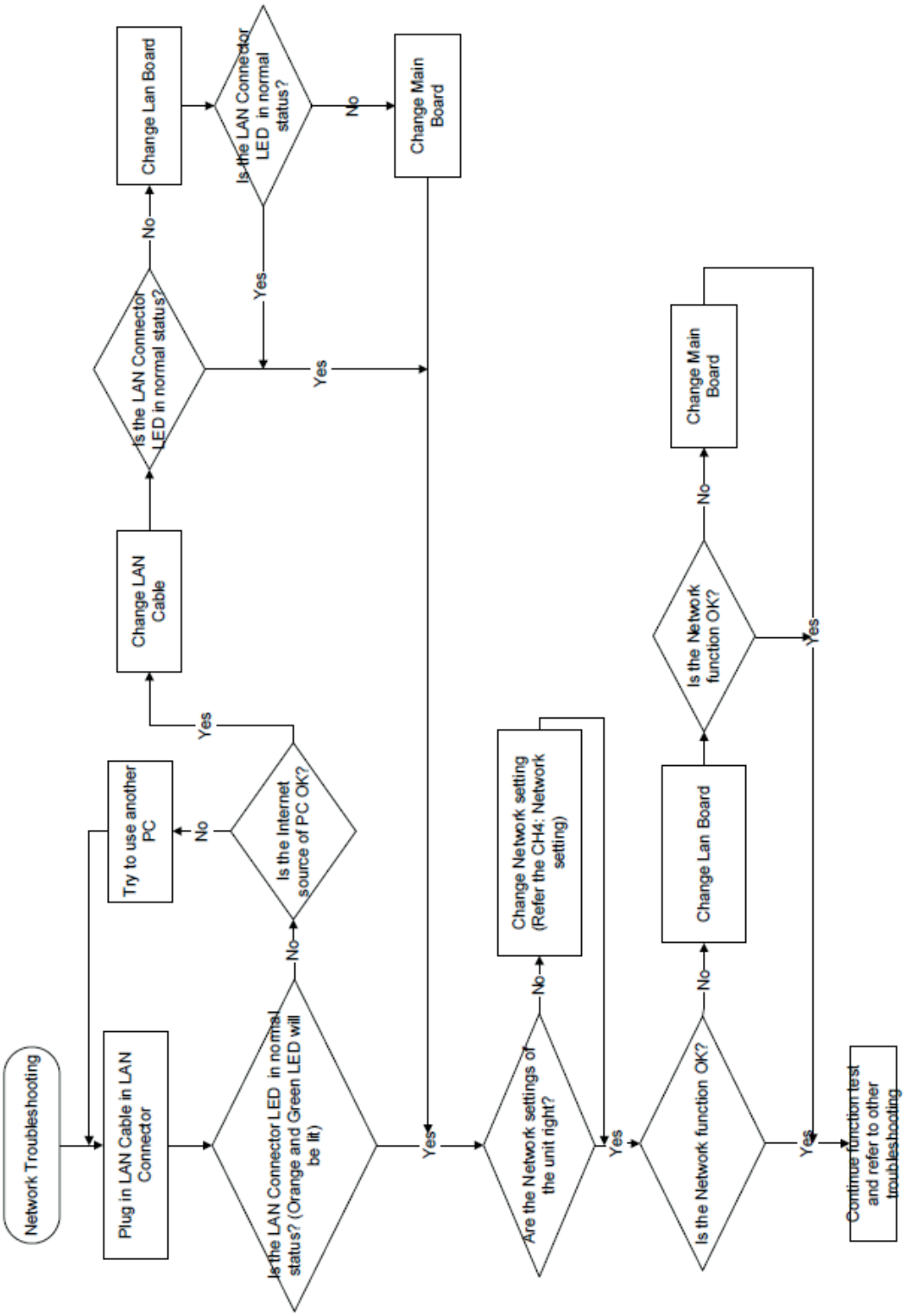
3-5-4 Image troubleshooting



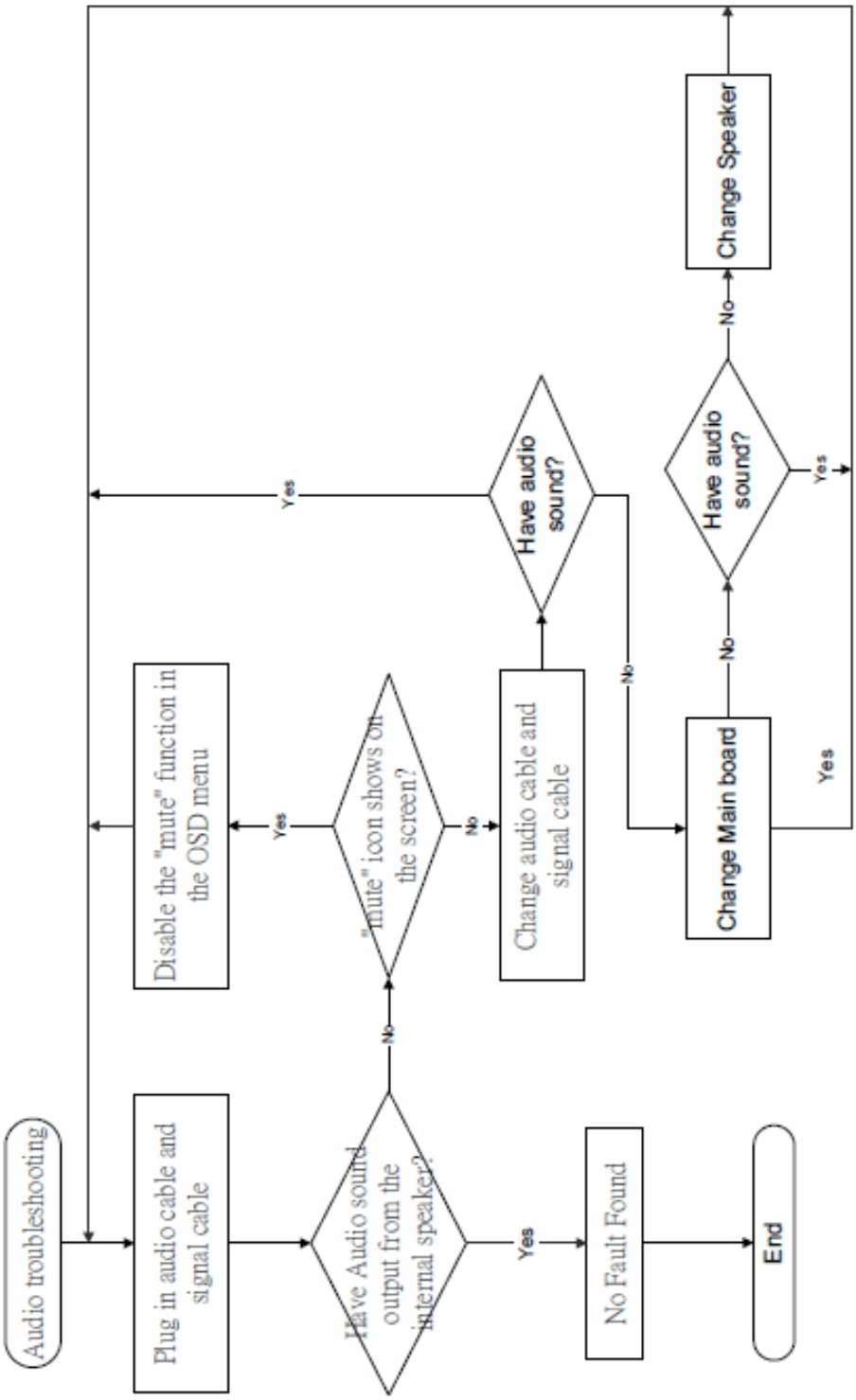
3-6 Remote control troubleshooting



3-7 Network troubleshooting



3-8 Audio troubleshooting



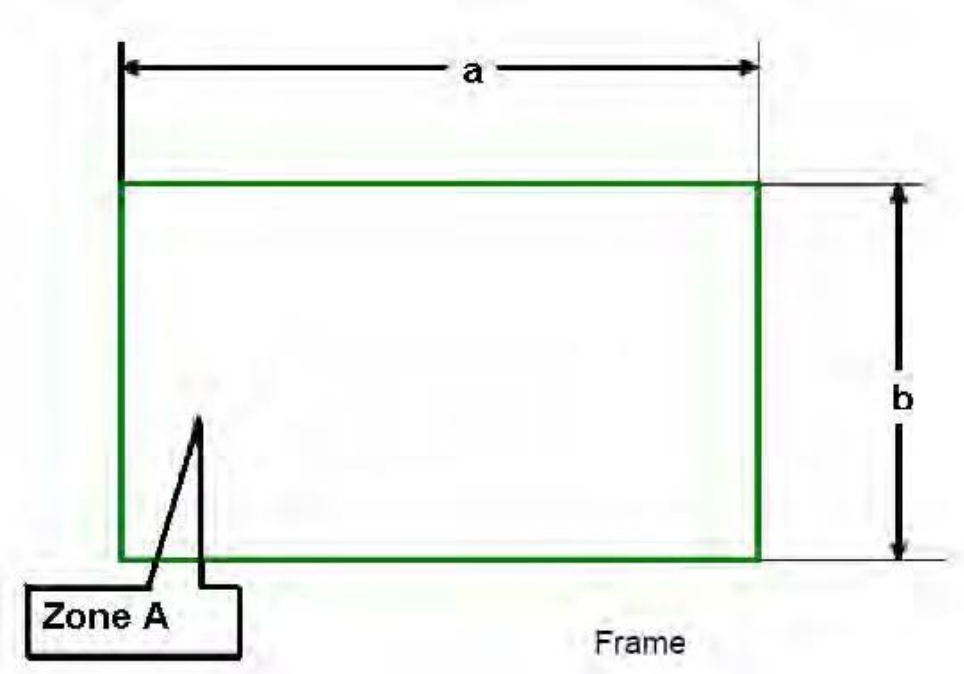
4-1 Test Equipment Needed

- 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 2 lux.
- Product must be warmed up for 3 minutes.
- Screen size: 51.5 inches diagonal.

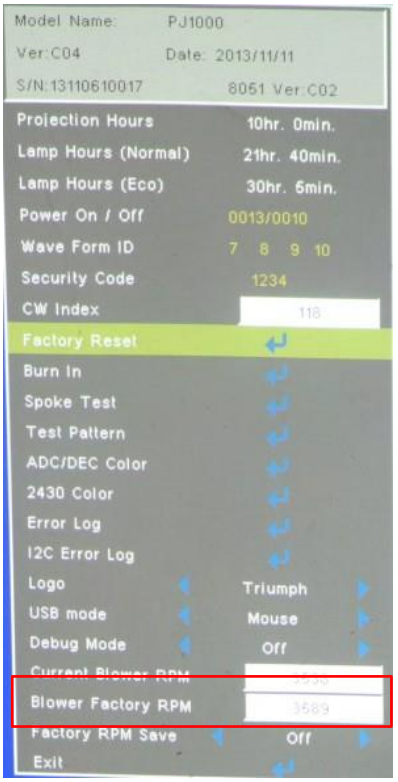
Zone Definition



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

4-3 Auto Waveform and Fan Calibration

After replacing main board, blower, lamp driver or upgrading the firmware, please follow steps as below:



1. Plug in the power cord, then hold on “Menu” and “Up” button, and press “power” button, then the “Temp LED” and “Lamp LED” will light red, release the “Menu” and “Up” button, waveform download is finished.
2. Wait a moment; please get into service mode to check the “Blower Factory RPM” (as right picture shown).

Note: - Make sure the “Blower Factory RPM“ is 2900-3900.
-If the “Blower Factory RPM“ does not meet above range, please replace the blower.

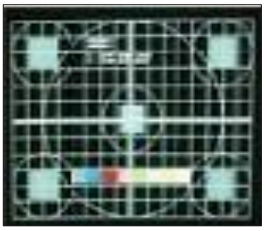
4-4 I/O Port Test

4-4-1 VGA Port Test

Note: 1.If you don't have the professional equipment such as Quantum Data 802B or CHROMA2327, 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.

1. Frequency and tracking boundary

Procedure
- Test equipment: video generator.
- Test signal: analog 1024 x 768@60Hz
- Test Pattern: general-1 or master
- Check and see if the image sharpness is well performed.
- If not, re-adjust by the following steps:
  (1) Select "Frequency" function to adjust the image appears to flicker vertically.
  (2) Select "Phase" function and use right or left arrow key to image appears to be unstable or flickers.
- Adjust Resync or Frequency/Phase/H. Position/V. Position to the inner screen.



General-1

Inspection item
- Eliminate visual wavy noise by Resync, Frequency or Tracking selection.
- Check if there is noise on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

Master

Criteria
- If there is noise on the screen, the product is considered as failure product.
- If there is noise on the screen, use auto or manual "frequency" function or "tracking" function to adjust the screen.
- The PC mode functionally sure be workable include support format with frequency and auto detected functional will be workable.

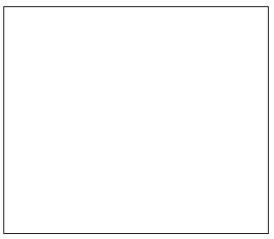
2. Bright Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@60Hz - Test Pattern: gray 10
Inspection item	- Bright pixel check.
Criteria	- Please refer to Pixel specification table

Gray 10

3. Dark Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@60Hz - Test Pattern: full white
Inspection item	- Dead pixels check.
Criteria	- Please refer to Pixel specification table



Full white

4. Bright Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@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 1024 x 768@60Hz - Test Pattern: blue 60
Inspection item	- Dark blemish check
Criteria	- Please refer to Pixel specification table

Blue 60

Pixel specification

PJ1000

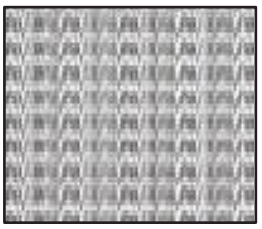
Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10 pattern	A=0
2	Dark pixel(dots)	White pattern	A≤4
3	Unstable pixel (dots)	Any pattern	A=0
4	Adjacent pixel (dots)	Any pattern	A=0
5	Bright blemish (Dirty)	Gray 10 pattern	A≤4 (diameter<3/2 inch)
6	Dark Blemish(Dirty)	Blue 60 pattern	A≤4 (diameter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

6. Focus Test

Procedure - Test equipment: video generator.
- Test signal: analog 1024 x 768@60Hz
- Test Pattern: full screen

Inspection item - Focus check

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



Full screen

7. Unbalance Test

Procedure - Test equipment: video generator.
- Test Pattern: full screen
- Screen size: 51.1 inches diagonal

Criteria - Test signal: analog 1024x768@60Hz
- unbalance <16.6cm@51.1' (A, H, E)
<24.5cm@ 51.1' (F, B, G, D, I, C)

Picture 1

Note:- The position of (A-H) refer to picture 1.

- If focus could not clarify, you can use the unbalance test that you put a white paper far away screen front or behind until the focus is best ,then measure the distance from paper and screen within the specification

8. Color Performance

Procedure
- Test equipment: video generator.
- Test signal: 1024 x 768@60Hz, 1080i
- Test Pattern: 64 gray RGBW

Please get into service mode.
Use 720p & 1080p signal, pattern to do color performance. Color cannot discolor to purple and blue.

64 gray RGBW

Inspection item
- Check if each color level is well-functioned.
- Color saturation

Criteria
- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.
- Color appears normal.
- It is unacceptable to have few lines flashing.
- RGBW should all appear normal on the screen and sort from R-G-B-W.
- Color levels should be sufficient and normal. (The unidentified color levels on both left and right sides should not over 4 color levels.)
- Gray level should not have abnormal color or heavy lines.
- If color appears abnormal, please get into service mode to do color wheel index adjustment.

9. Optical Performance

Inspection Condition
- Environment luminance: 2 Lux
- Product must be warmed up for 5 minutes
- Screen Size: 51.1inches diagonal

a. Measure setting

Procedure
- Press “Power→Left→Left→Menu”.
- Select “Spoke”.

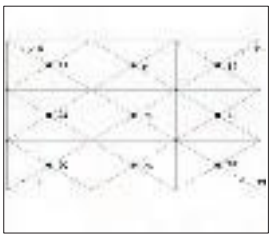
b. Brightness

Procedure
- Full white pattern
- Use CL100 to measure brightness values of P1~P9.
- Follow the brightness formula to calculate brightness values.

☼ Brightness Formula

Avg. (P1~P9)*0.81m^2

Criteria
- 1180 ANSI lumen



Full white pattern

c. 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.

☼ Contrast Formula

Full black pattern

P5/B5

Note: P5 = Lux of center in full white pattern

B5 = Lux of center in full black pattern

Criteria • normal mode is 2000:1

d. Uniformity

Procedure - Full white pattern

- Use CL100 to measure brightness values of P1~P9 (see image: full white).
- Follow the Uniformity formula to calculate average values.

☼ Uniformity Formula

Uniformity (MAX)%= MAX (1,...,13) /AVERAGE (1,...,9) x 100% -1

Uniformity (MIN)%= MIN (1,...,13) /AVERAGE (1,...,9) x 100% -1

Criteria • 30% ~ 40%(MAX)
-30% ~ -40%(MIN)

4-4-2 S-Video and Audio Port Test

Motion video

Procedure - Test equipment: DVD Player

- Test signal: NTSC

Inspection item - Audio performance test

Inspection Distance - 0.56M~0.66M

Criteria - Check the sound from speaker

- Plug Audio cable into Audio in port and S-Video cable into S-Video port, check whether “Volume” is normal.
- Adjust the volume to “0→ 9” by using the remote controller.
- Check the sound from speaker.
- Check whether the “mute” is normal.

4-4-3 Video Port Test

Procedure	- Test equipment: DVD player
	- Test signal: Video
Inspection item	- Video performance test
Inspection Distance	- 0.56M~0.66M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.
	- Check the sound from speaker.

4-4-4 HDMI Port Test

Procedure	- Test equipment: DVD Player with HDMI output.
	- Test signal: 720p, 1080p, 1080i
Inspection item	- HDMI performance test.
Inspection Distance	- 0.56M~0.66M.
Criteria	- Ensure the image is well performed and the color cannot discolor.
	- Check whether "mute" is normal.

4-4-5 HDTV Test

Procedure	- Test equipment: DVD player
	- Test signal: 1080i30/ 1080P50 /720P60
Inspection item	- HDTV performance test
Inspection Distance	- 0.56M~0.66M.
Criteria	- Check any abnormal color, line distortion or any noise on the screen.

4-4-6 Component Port Test

Procedure	- Test equipment: DVD player
	- Test signal: 576i
Inspection item	- HDTV performance test
Inspection Distance	- 0.56M~0.66M
Criteria	- Check any abnormal color, line distortion or any noise on the screen

4-4-7 3D Test

Procedure	- Test equipment: 1.DVD Player & HQFS format CD Or 2.PC with 3D Graphic card
Inspection item	- 3D test
Inspection Distance	- < 6M
Criteria	- The image should not appear noise, flicker, shadow, shocking, abnormal color.

4-4-8 RJ45 Port Test

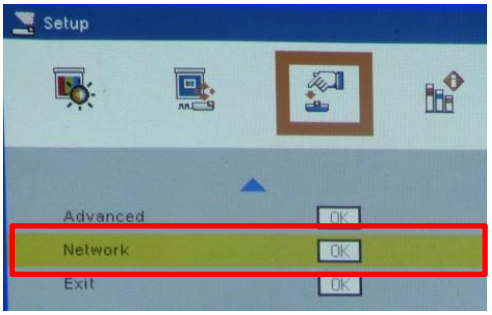
1. Read Projector IP

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

2. - Turn on the projector, then press "Menu" button to get into OSD menu.

   - Use “right” button to select “Setup”.

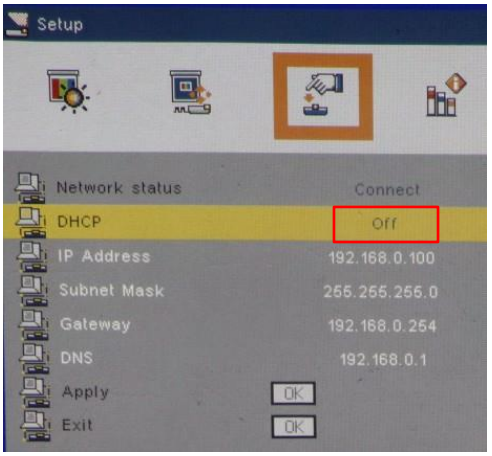
   - Select "Network", press "Enter" button.



3. - Remove the light mark to "DHCP" to select "Off",

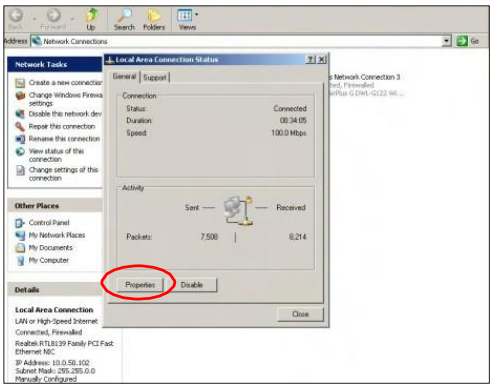
   - The IP address will be shown on screen.

   - Write down the IP address: 192.168.0.100.

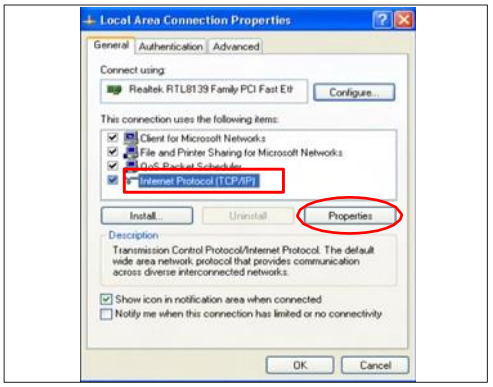


2. Network Setting

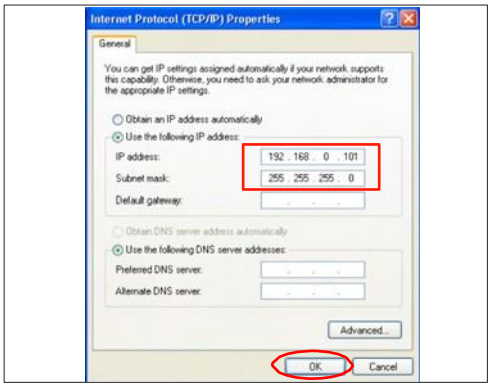
(1) Double click the “Local area connection”, choose “Properties”.



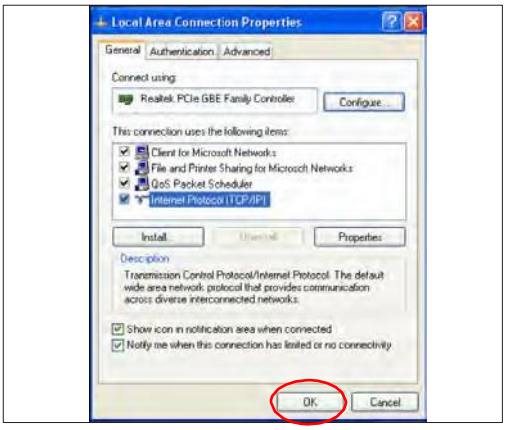
(2) Select “Internet protocol (TCP/IP)”



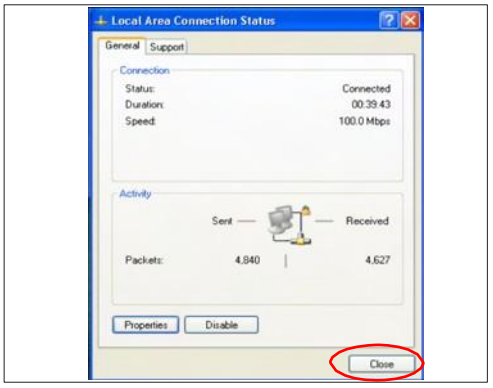
(3)- Modify the IP address to 192.168.0.101,
and modify Subnet mask to 255.255.255.0
- Click “OK”



(4) Click “OK”.



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



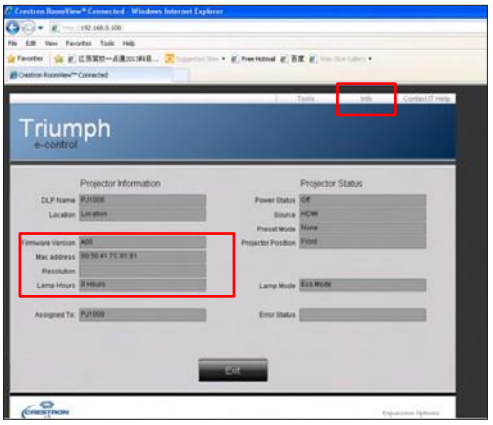
3. Read Projector Information

(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) Select “Info”, then the information will be shown on the web.



4-5 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 50 min and lamp off for 10 min for 4 cycles.*

Press power > Left > Left >Menu buttons sequentially on remote controller to get into service mode	
Choose Burn-In Test > enter	
Lamp On	Press right key to adjust the time (50)
Lamp Off	Press right key to adjust the time (10)
Set burn in cycle	Press right key to adjust the cycles(4)
After setting up the time, choose “Get into Burn-In Mode” and press enter	

4-6 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 can not 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 settings. The following actions will allow you to erase all end-users' settings and restore the default settings:

(1) Please enter OSD menu.

(2) Choose "Option" and then execute "Reset" function.

4-7 Re-write Lamp Hours Usage

1. Get into service mode

   - Press (power→left→left→Menu) to get into service mode.

2. Re-write Projection Hours

   - Select Projection Hours and use “left” or “right” buttons to re-write the lamp hours.

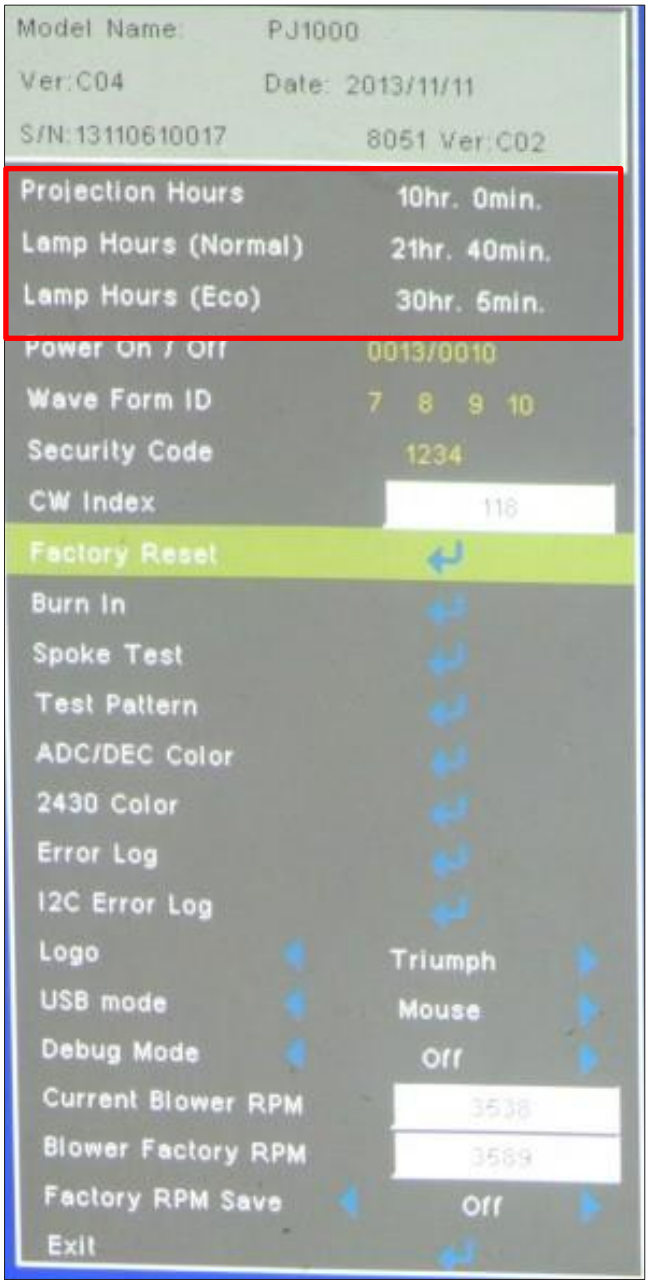
3. Re-write Lamp Hours (Normal)

   -Select Lamp Hours (Normal) and use “left” or “right” buttons to re-write the lamp hours (Normal).

4. Re-write Lamp Hours (Eco)

   -Select Lamp Hours (Eco) and use “left” or “right” buttons to re-write the lamp hours (Eco).

5. Choose “Exit”, press “Enter” to exit



Note: left key = decrease lamp hour

right key =increase lamp hour

5. Firmware Upgrade

Section 1: System Firmware Upgrade

5-1-1 Equipment Needed

Software:

- DLP Composer Lite 11.2
- Firmware (*.img)
- 11.2FlashDeviceParameters

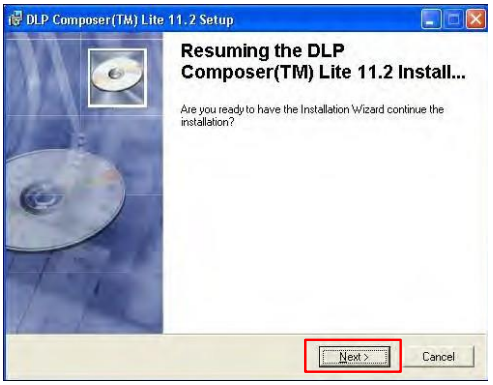
Hardware:

- Projector
- Power cord: (42.50115G001)
- Cable USB-A to USB-B (42.87304G001)
- PC or Laptop

5-1-2 DLP Composer Lite Setup Procedure

1. Choose "DLP Composer Lite V11.2 Setup" Program.

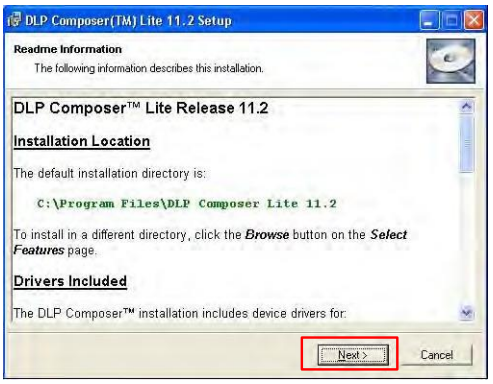
2. Click "Next".



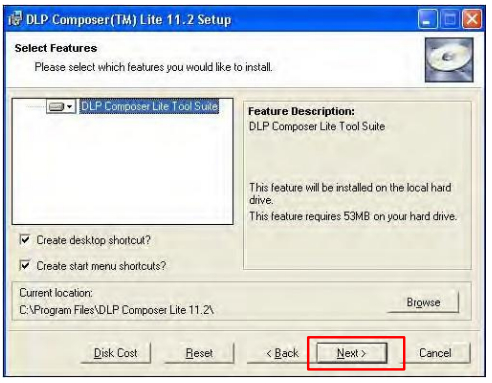
3. Read "License Agreement".

   - Choose "I accept and agree to be bound by all the terms and conditions of this License Agreement".
   - Click "Next".

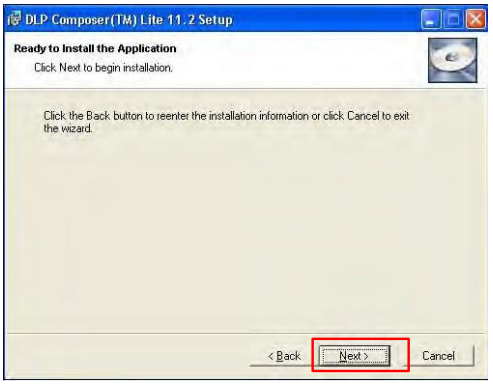
4. Click "Next".



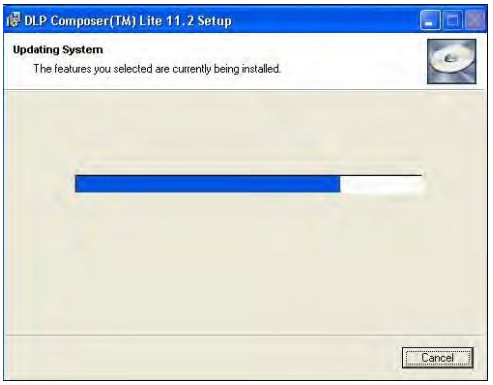
5. Click "Next".



6. Click "Next".



7. The program is executing "installing" status.



8. Click "Finish".

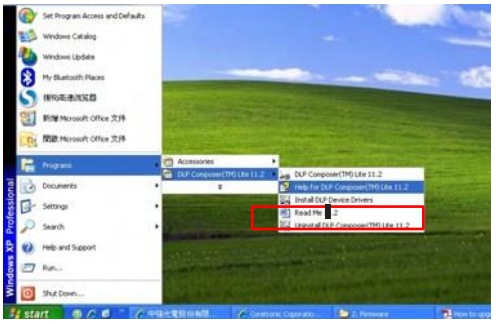
5-1-3 Get into Firmware Download Mode

1. Set-up

- Hold on "power" button and plug in the power cord.
- Until the three LED light on then loosen "power" button.
- Connect the projector with PC by USB cable.

5-1-4 USB Driver Upgrade Procedure

1. Execute “Install DLP Device Drivers” in start menu.



2. Select “Jungo WinDriver (WinXP), then click “Install”.

Note: If OS is Windows XP, select “Jungo WinDriver (WinXP)”; If OS is Windows7, select Jungo WinDriver” Win 7)

3. Click “Next”.

4. Click “Finish".

5-1-5 Firmware Upgrade Procedure

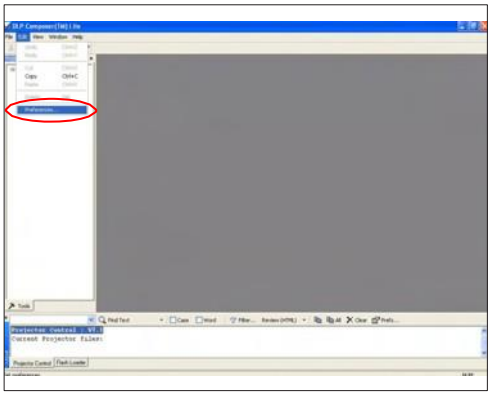
1. Execute the "DLP Composer™ Lite 11.2" file.

2. Setting "11.2FlashDeviceParameters".

   - Select the file "11.2FlashDeviceParameters".

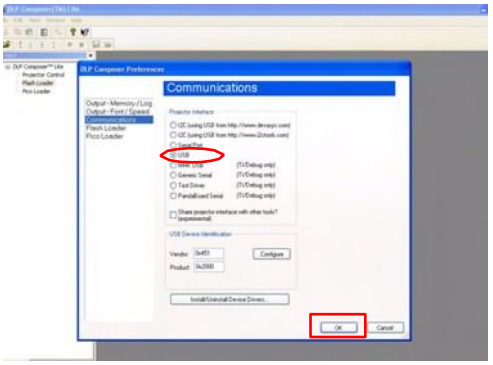
   - Put "FlashDeviceParameters" file into the folder where you setup "DLP Composer Lite 11.2".

3. Click "Edit" and "Preferences".



4. Click "Communications".

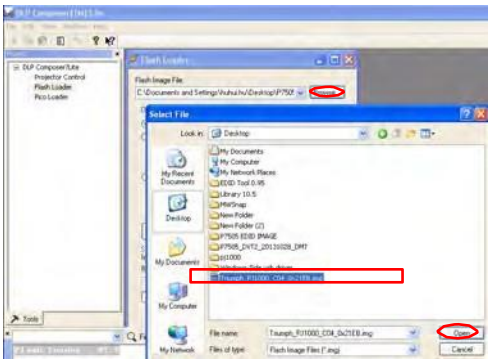
   - Select “USB”, and then click “OK".



5. Choose "Flash Loader".

   - Click "Browse" to search the firmware file (*.img).

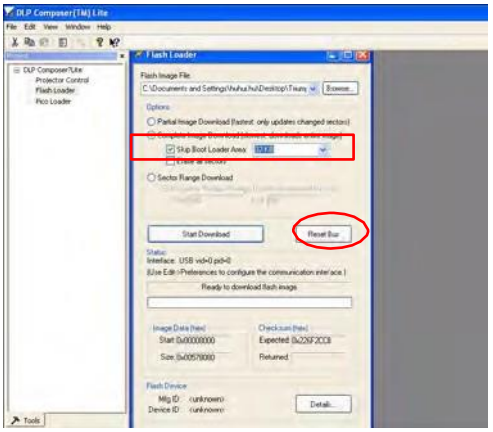
   - Click "Open".



6. Select the item skip Boot Loader Area

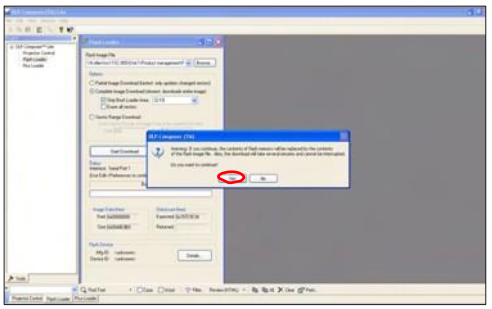
   - Select “32KB”.

   - Click "Reset Bus" to erase the flash memory.

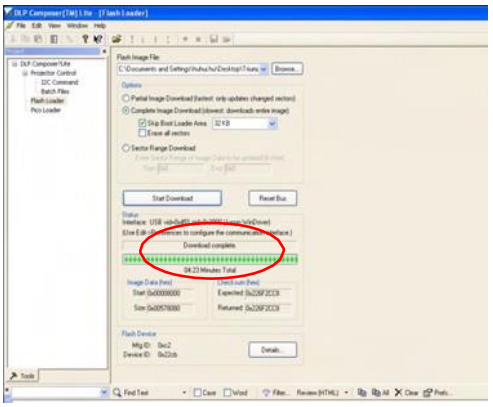


7. If the FW is ready, click "Start Download" to execute the firmware upgrade.

   - Click “Yes” to erase the flash memory.



8. When firmware upgrade process is finished, “Download Complete” will appear.



9. Check system firmware version.

- Re-plug in power cord and power on the projector. Get into the service mode (Power--Left--Left--Menu) to check the system firmware version.

Section 2: 8051 Firmware Upgrade Procedure

5-2-1 Equipment Needed

Software:

- TB ICP Programmer, v6.00.zip
- USB-to-Serial COM port Driver (PL2303_Prolific_DriverInstaller_v1417.exe)
- Program file (*.hex)

Hardware:

- Projector
- Power Cord (42.50115G001)
- ICP FIXTURE (SP.8JC08G001)
- PC or Laptop



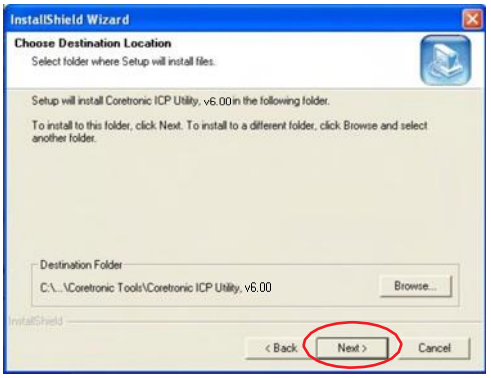

5-2-2 Setup Procedure

Install ICP Utility

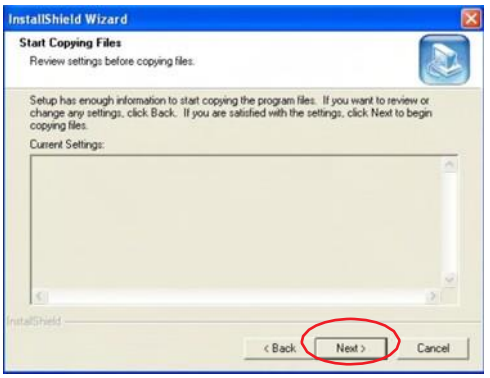
1. Double click "Setup, ICP Utility, v6.00.exe".

2. Click "Next".

3. Click "Next".



4. Click "Next".

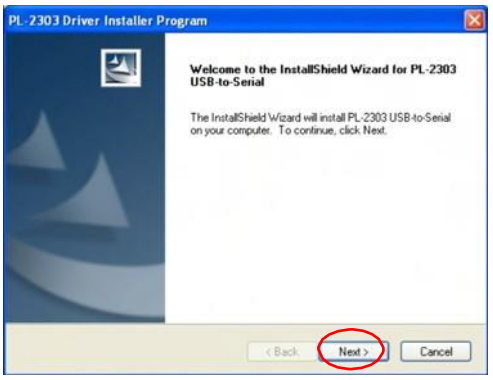


5. Click "Finish" to end ICP Utility installed.

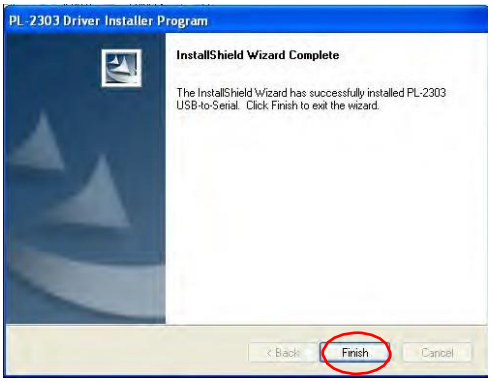
Install PL2303_Prolific_Driver

6. Double Click "PL2303_Prolific_DriverInstaller_v1417.exe"

7. Click "Next".

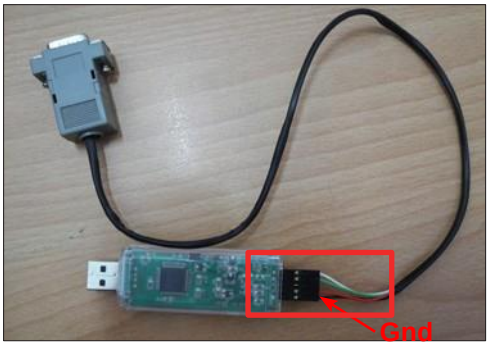


8. Click "Finish" to end PL2303_Prolific_Driver installed.

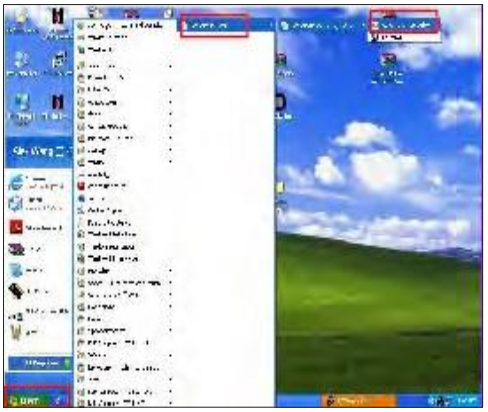


5-2-3 Upgrade Procedure

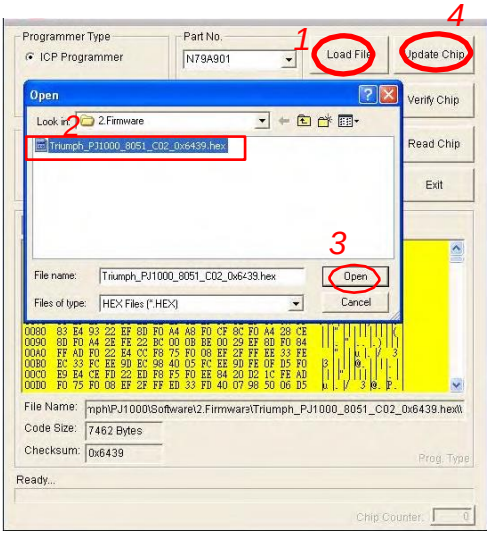
1. Connect the PC and projector (VGA-2 in) by ICP FIXTURE and plug in the power cord.



Note: please properly plug into the fixture board by 4pin cable (as the square shown).



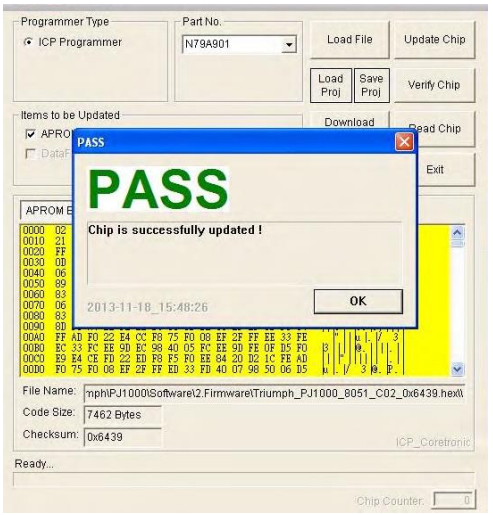
2. Select "Start" -->"TB Tools" -->"TB ICP Utility V6.00" to run "ICP Utility.exe".



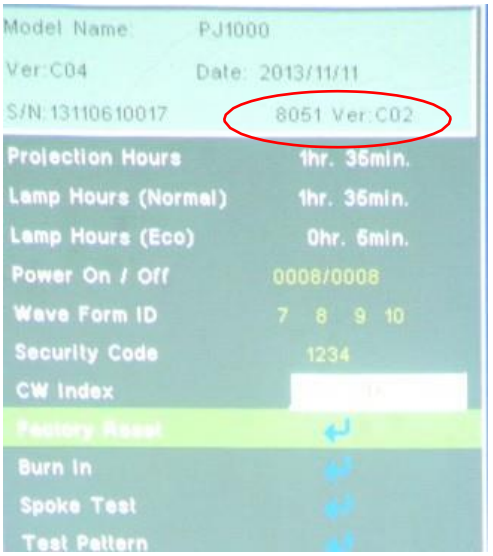
3. Click "Load File" to open the “hex” file which you will upgrade 8051 firmware file, then click " Update Chip" to upgrade the 8051 firmware.

4. Finish

- When 8051 FW upgrade process is finished, "PASS" will be shown.



5. Re-plug in power cord and power on the projector. Get into the service mode to check the 8051 firmware version.



Section 3: Network Firmware Upgrade Procedure

5-3-1 Equipment Needed

Software:

- xxx_Network firmware_xxx.bin (*.bin)

Hardware:

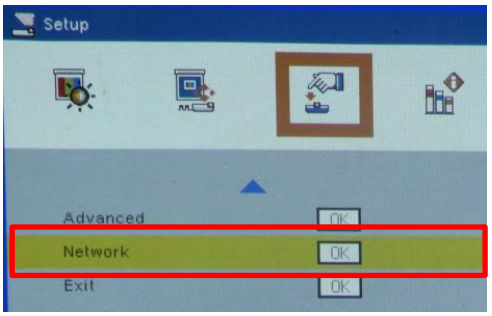
- Projector
- Power Cord: 42.50115G001
- LAN Cable
- PC

Note1: Upgrade Network firmware please use the IE version of 7.0 or above.

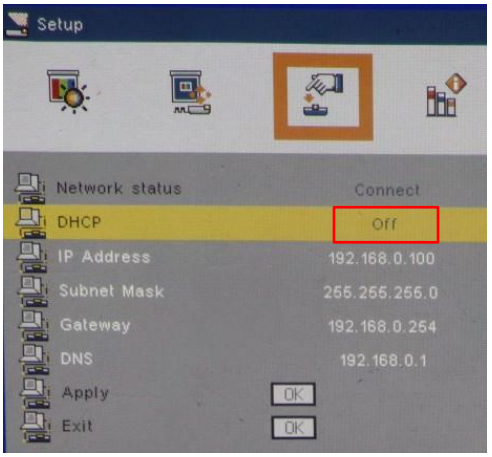
5-3-2 Write Down Projector IP

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

2. - Turn on the projector, then press "Menu" button to get into OSD menu.
   - Use “right” button to select “Setup”.
   - Select "Network", press "Enter" button.

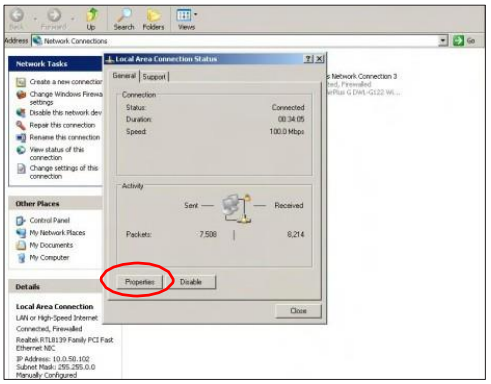


3. - Remove the light mark to "DHCP" to select "Off",
   - The IP address will be shown on screen.
   - Write down the IP address: 192.168.0.100.

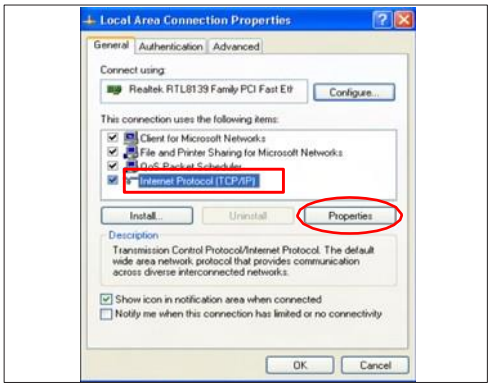


5-3-3 Network Setting

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

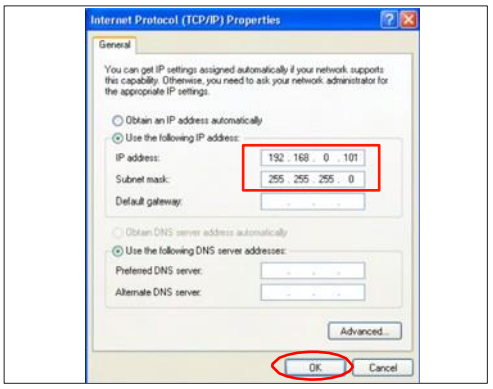


2. Select "Internet protocol (TCP/IP)", then click "Properties".



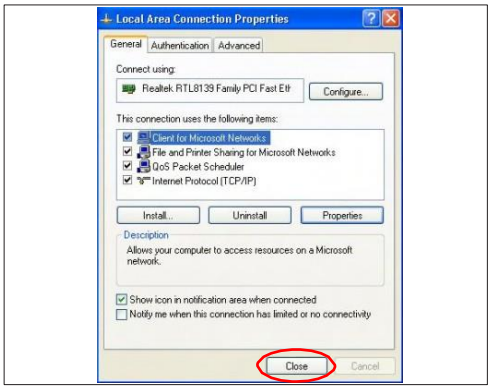
3. Modify the IP address to 192.168.0.101, and modify Subnet mask to 255.255.255.0.

Note: - The HOST ID (192.168.0.XXX) of PC IP address must be different from the projector IP address written down in step 4 of 5-3-2.



4. Click "OK".

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



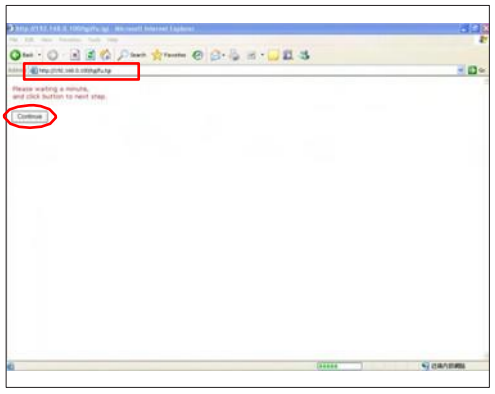
5-3-4 Upgrade Procedure

1. - Execute "Internet Explorer".

2. - Visit "http:// 192.168.0.100/tgi/fu.tgi" to get into Firmware Update screen.

Note: - The format of address is "IP address/tgi/ fu.tgi".

- Click "Continue".

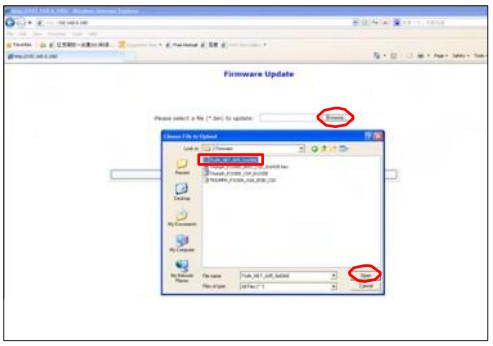


3. - "Firmware Update" image will appear on the screen.

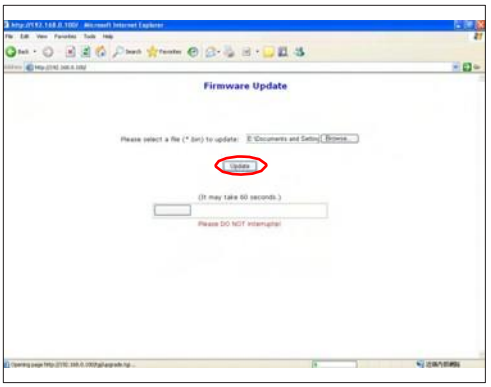
- Click "Browse" button to select the Network firmware file (*.bin) which you saved.

- Click "Open".

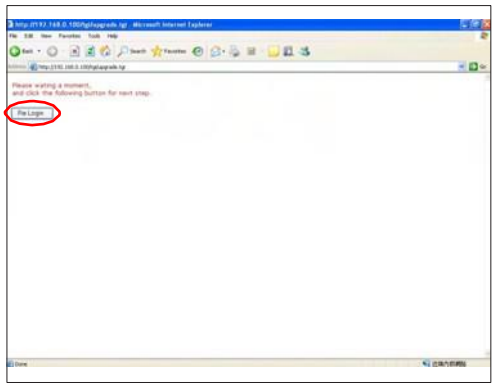
- Click "Update" to start updating.



4. Firmware Upgrade procedure.

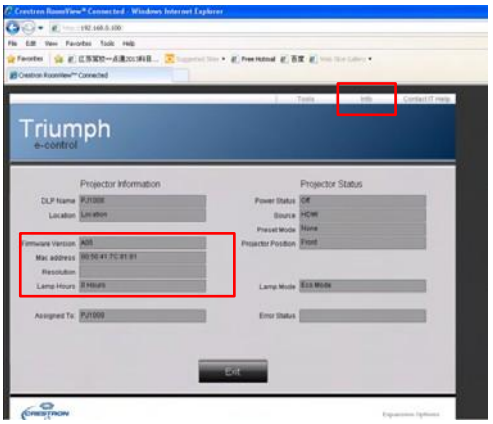


5. Click "Re Login".



6. Firmware upgrade procedure completes.

- Select "Info"
- The projector Network Firmware version will appear.



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 sites 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.

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 (VGA1 & HDMI)

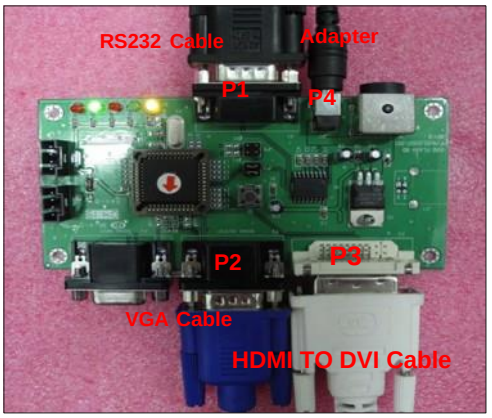
1. Connect all ports

(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 (VGA1 &HDMI)

1. Execute EDID Program

- Double click "EDID" to execute EDID program.

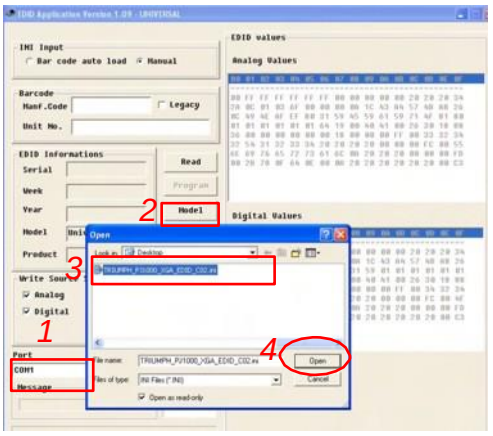
2. Process

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

(2) Click "Model".

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

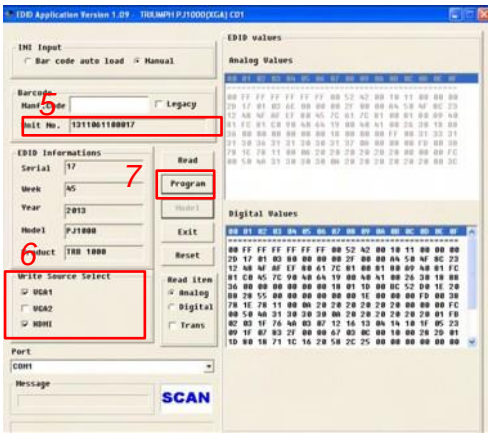
(4) Click "Open".



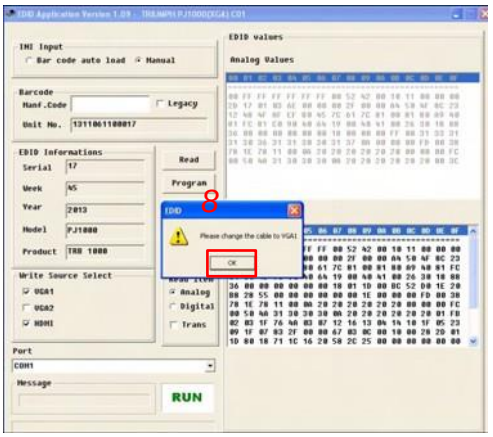
(5) Key in the Serial Number into the Barcode blank space.

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

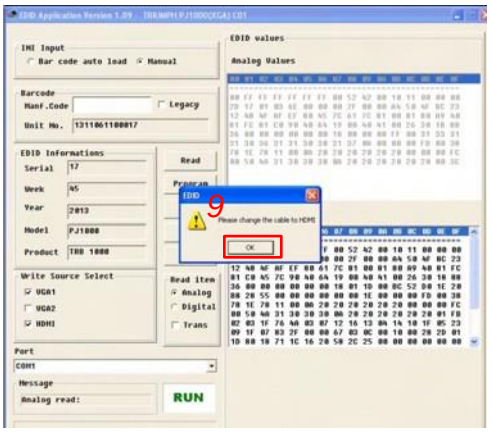
(7) Click "Program".



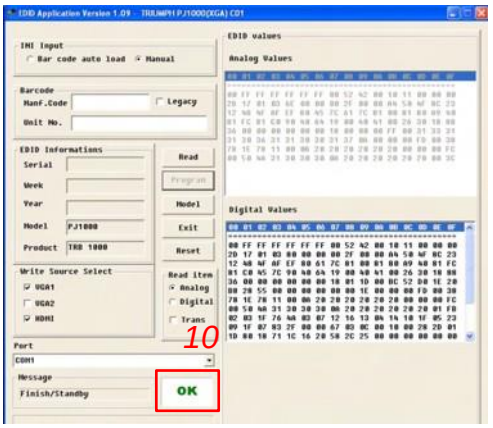
(8) When the message "Please change the cable to VGA1" appears on the screen, click "OK".



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



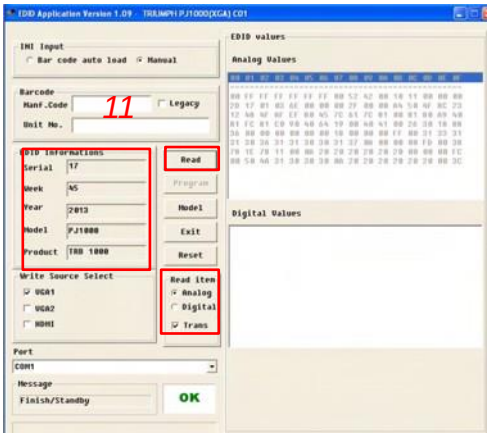
(10) When the EDID program is completed, a "OK" message will appear on the screen.



(11) Read EDID "Analog" information.

- In "Read item", select "Analog" and "Trans", then click the "Read".

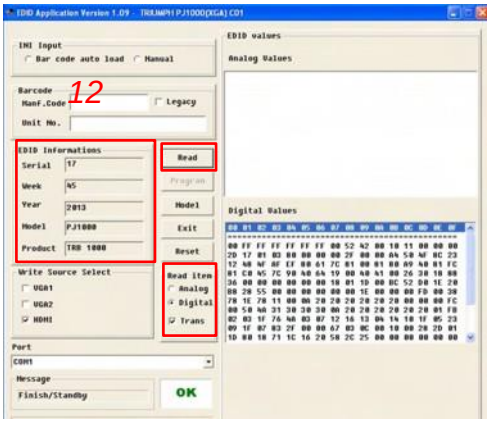
- EDID "Analog" information will show the result.



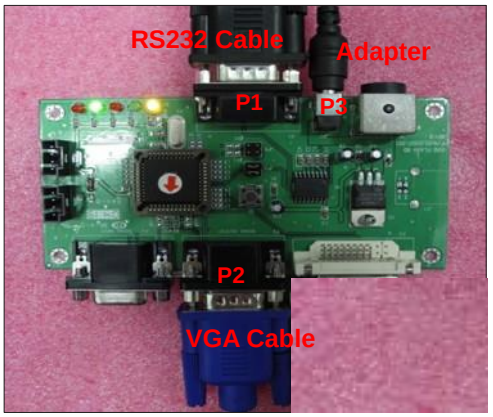
(12) Read EDID "Digital" information

- In "Read item", select "Digital" and "Trans", then click the "Read".

- EDID "Digital" information will show the result.



6-5 Setup Procedure (VGA2)



1. Connect all ports

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

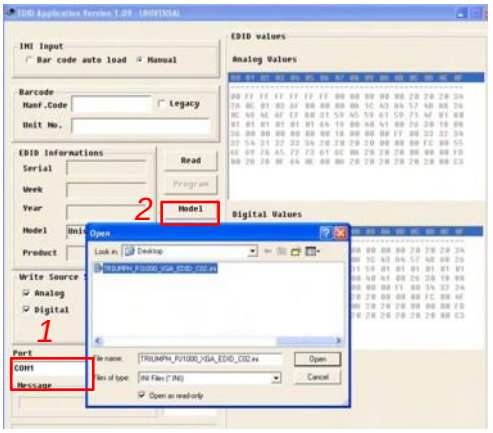
   (2) Connect P2 of fixture to VGA2-in Port of projector by VGA Cable.

   (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.



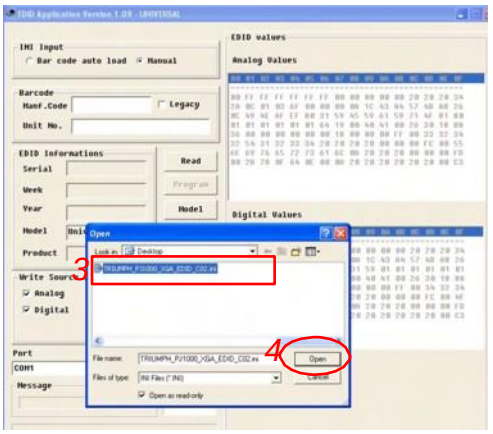
2. Process

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

   (2) Click "Model".

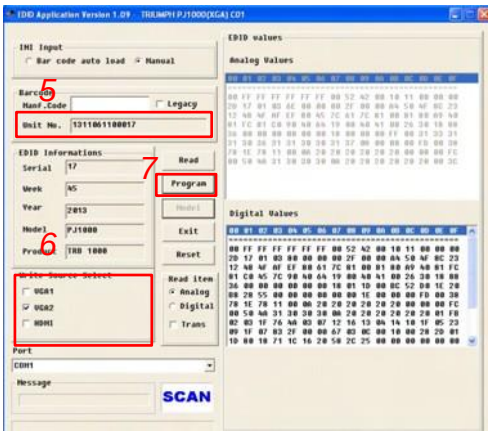
(3) Select the EDID file (*.ini).

(4) Click "Open".



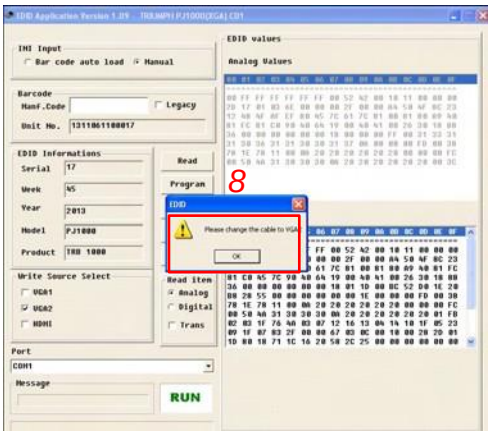
(5) Key in the Serial Number into the Barcode blank space.

(6) In "Write Source Select" item, select "VGA2".

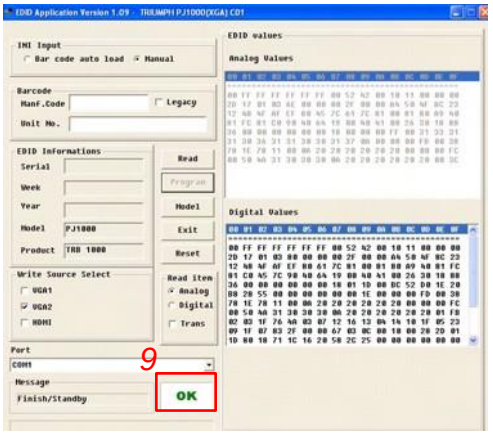


(7) Click "Program".

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



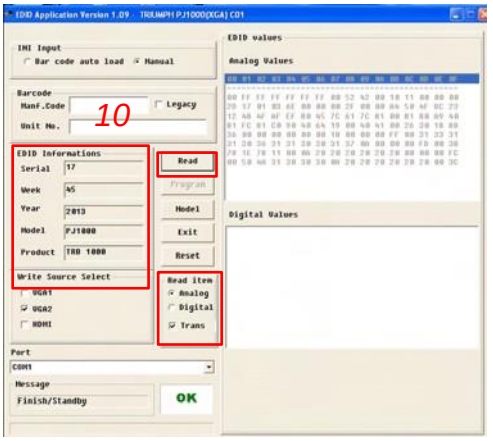
(9) When the EDID program is completed, a "OK" message will appear on the screen.



(10) Read EDID "Analog" information.

- In "Read item", select "Analog" and "Trans", then click the "Read".

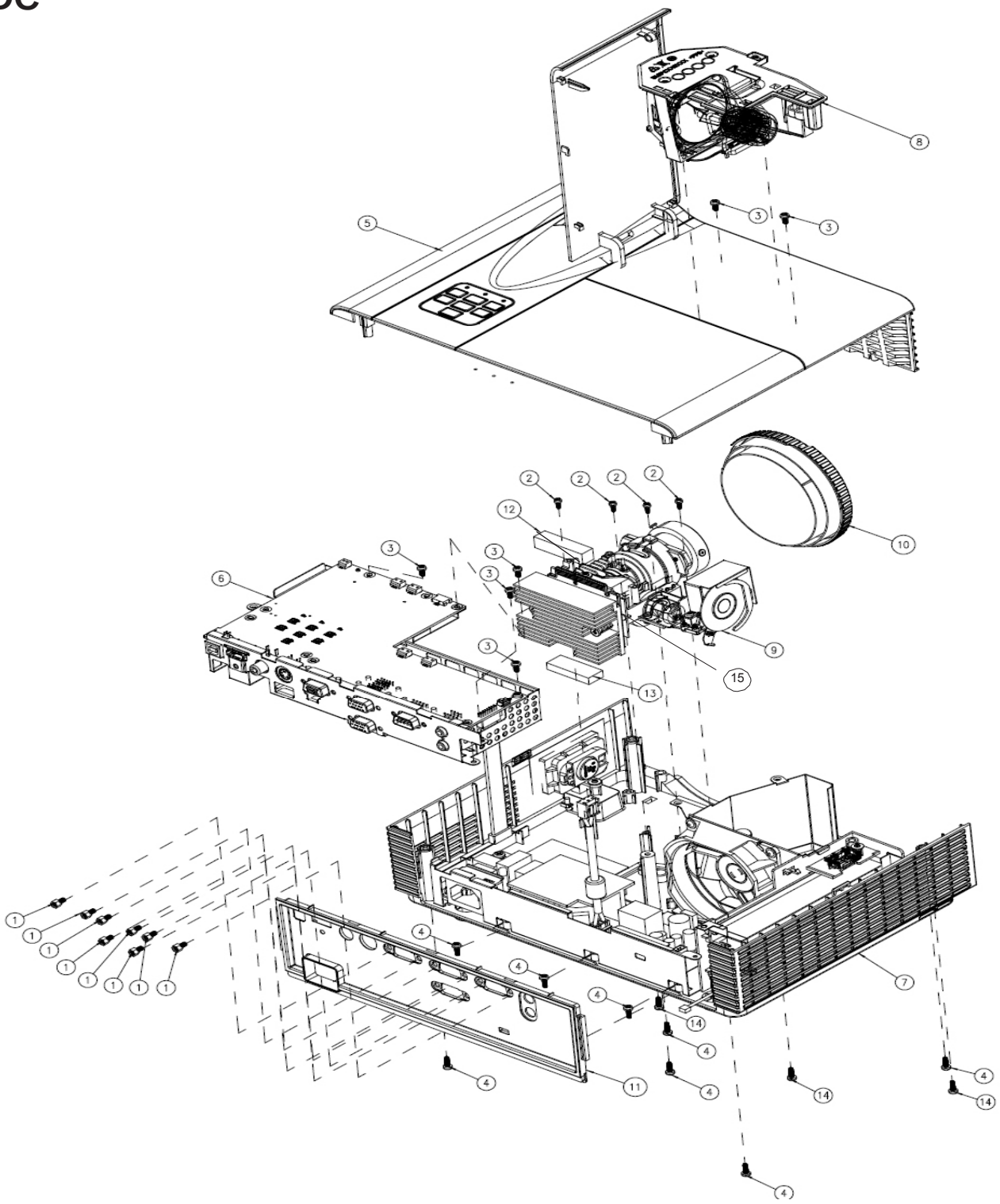
- EDID "Analog" information will show the result.



Appendix A (Exploded Image)

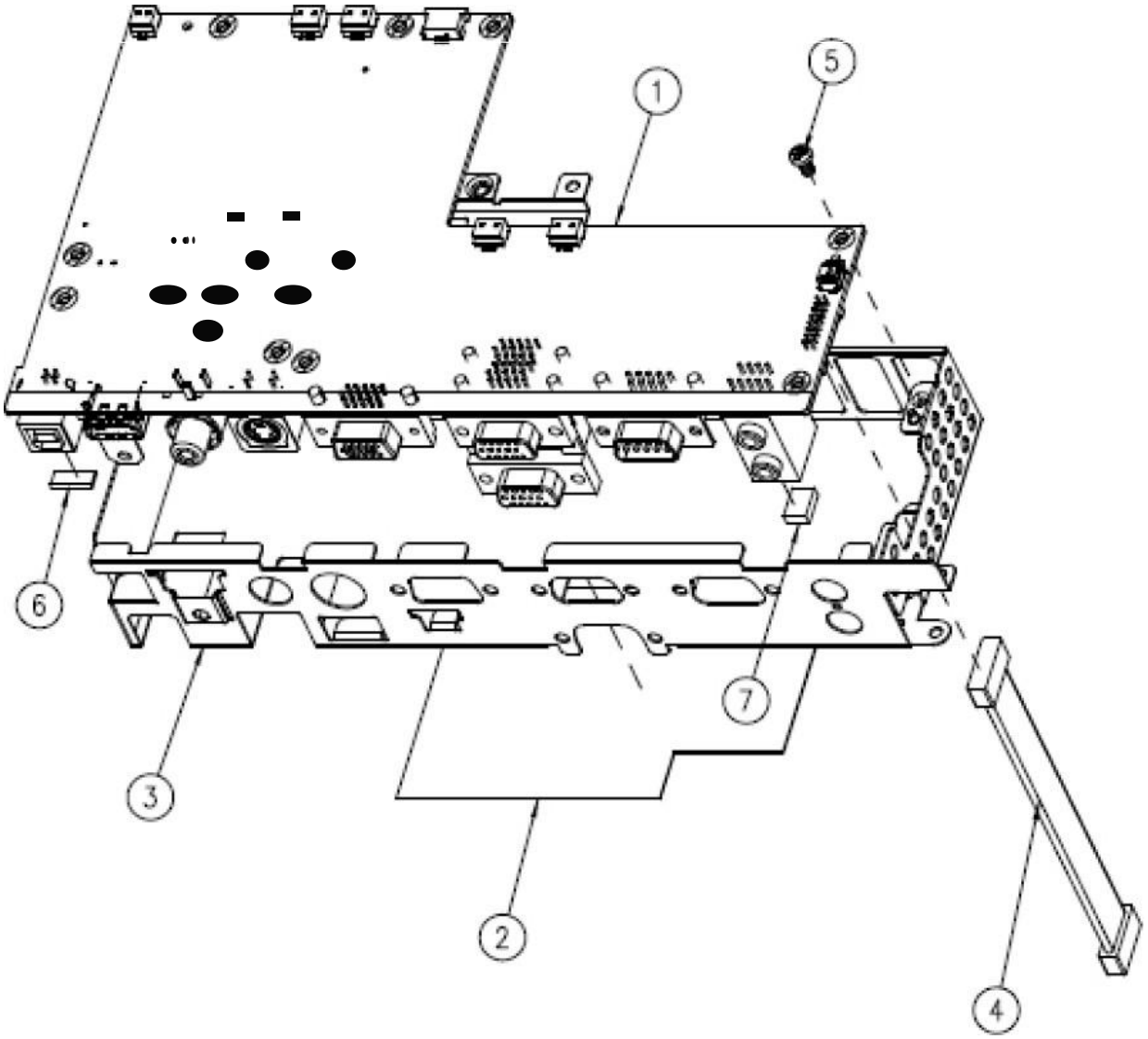
Note: This chapter is only designed to show the exploded image of the projector. For updated part numbers, please refer to RSPL report.

DC



Item	Description	Parts Supply
1	SCREW HEX I/O	
2	SCREW PAN HEAD TAP	
3	SCREW PAN TAP	
4	SCREW PAN TAP	
5	ASSEMBLY TOP COVER MODULE	
6	ASSEMBLY M/B MODULE	
7	PRE-ASSEMBLY BOTTOM MODULE	
8	S.P. LAMP MODULE FOR PROJECTOR	V
9	ASSEMBLY OPTICAL ENGINE MODULE	
10	ASSEMBLY IO COVER MODULE FOR	V
11	FRONT COVER RING	
12	ASSEMBLY OPTICAL ENGINE MODULE FOR 8RC(SERVICE)	V
13	EMI GASKET CONDUCTIVE SPONGE 1	
14	SCREW PAN TAP	
15	2xLVDS SERIES DMD	V

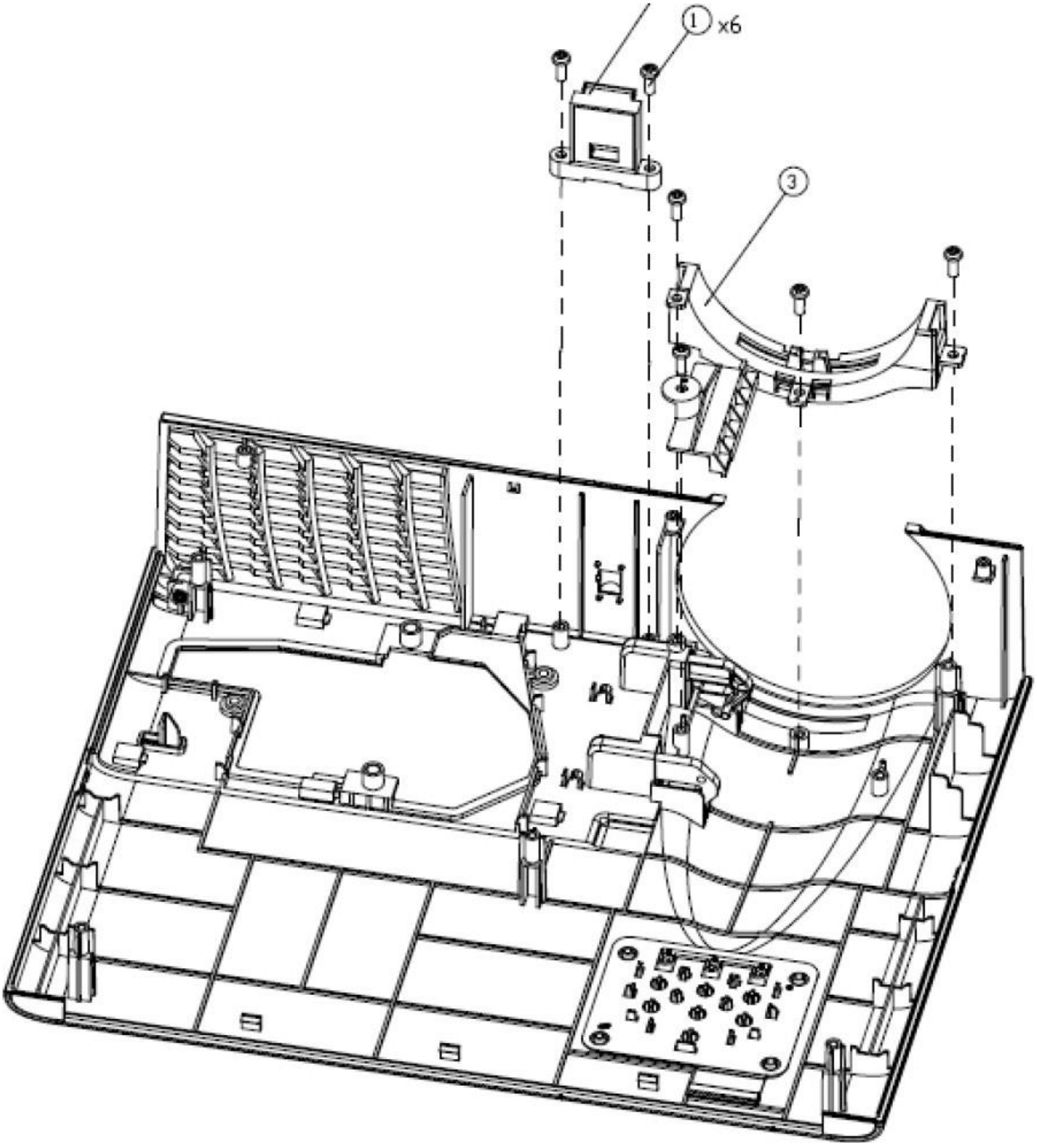
Assembly Main Board

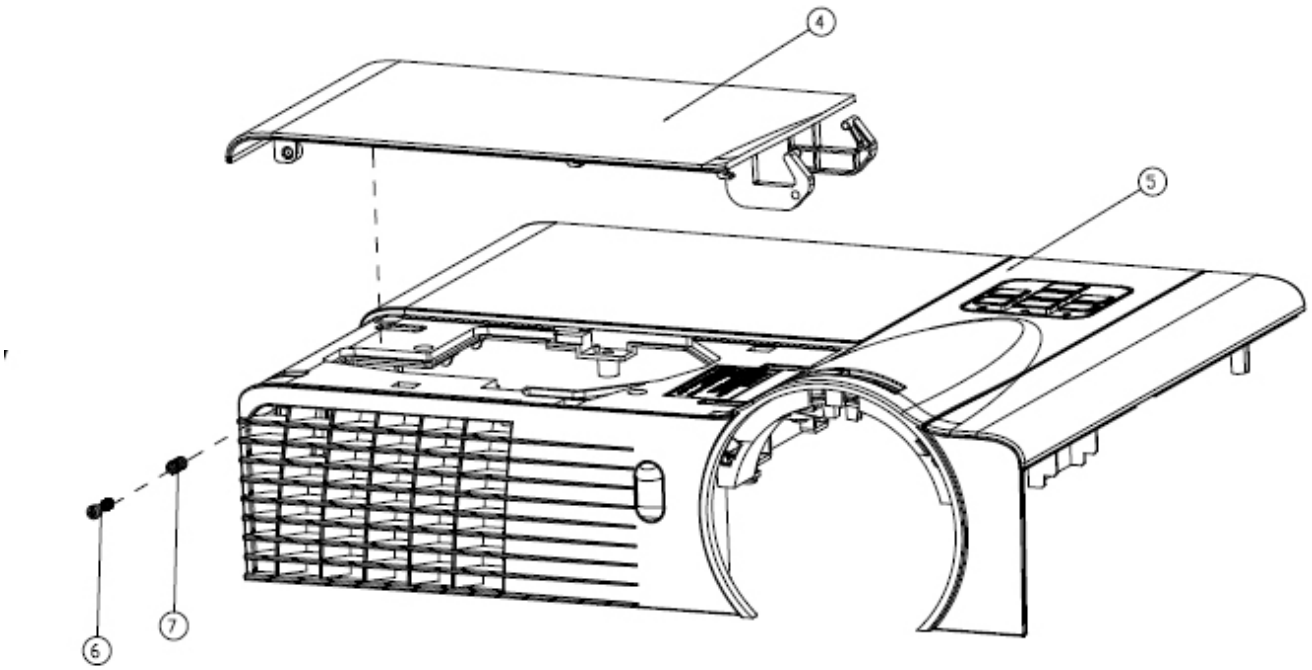


Item	Description	Parts Supply
1	PCBA MAIN BOARD FOR PROJECTOR	V
2	ENGINE UP MYLAR	
3	M/B BOTTOM SHIELDING	
4	W.A. 16P 90mm LVPS TO MAIN BD UL1007 P1266	
5	SCREW PAN MECH M3*6 NI	
6	EMI TAPE W5*H1.0*L11mm PD	
7	EMI GASKET W5*H2.5*L20	
8	PCBA RJ45 LAN DAUGHTER BD	V
9	PCBA LAN MODULE FOR	V

Assembly Top Cover Module

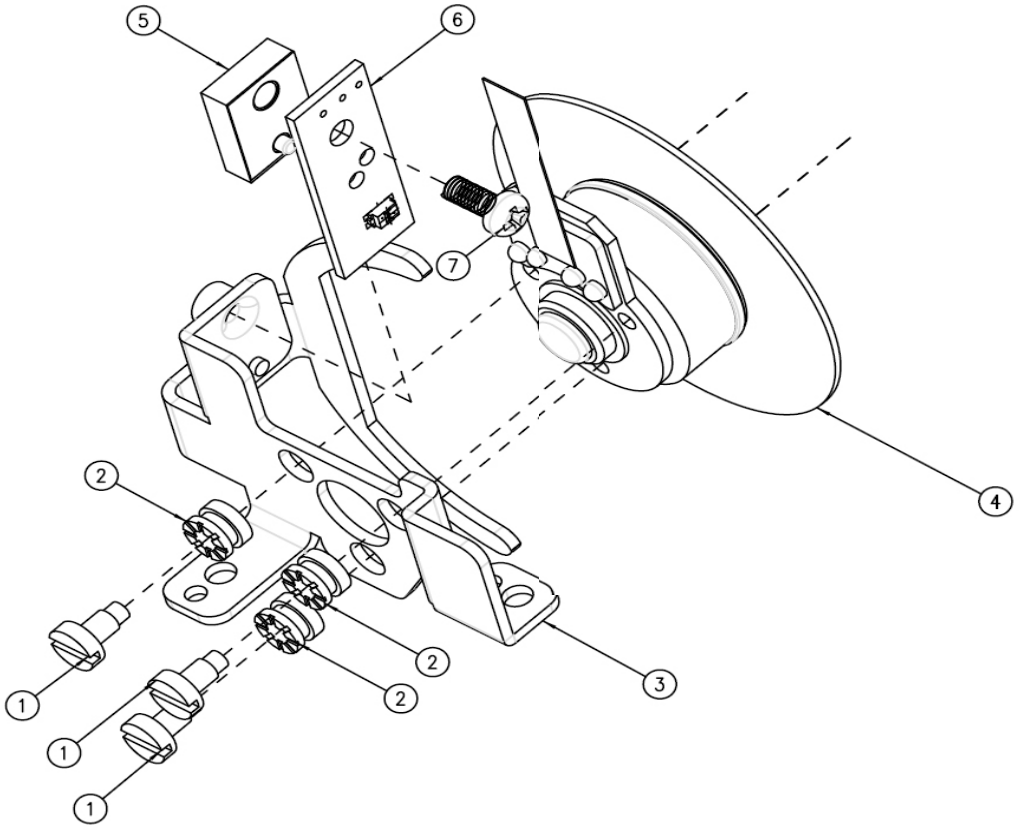
2





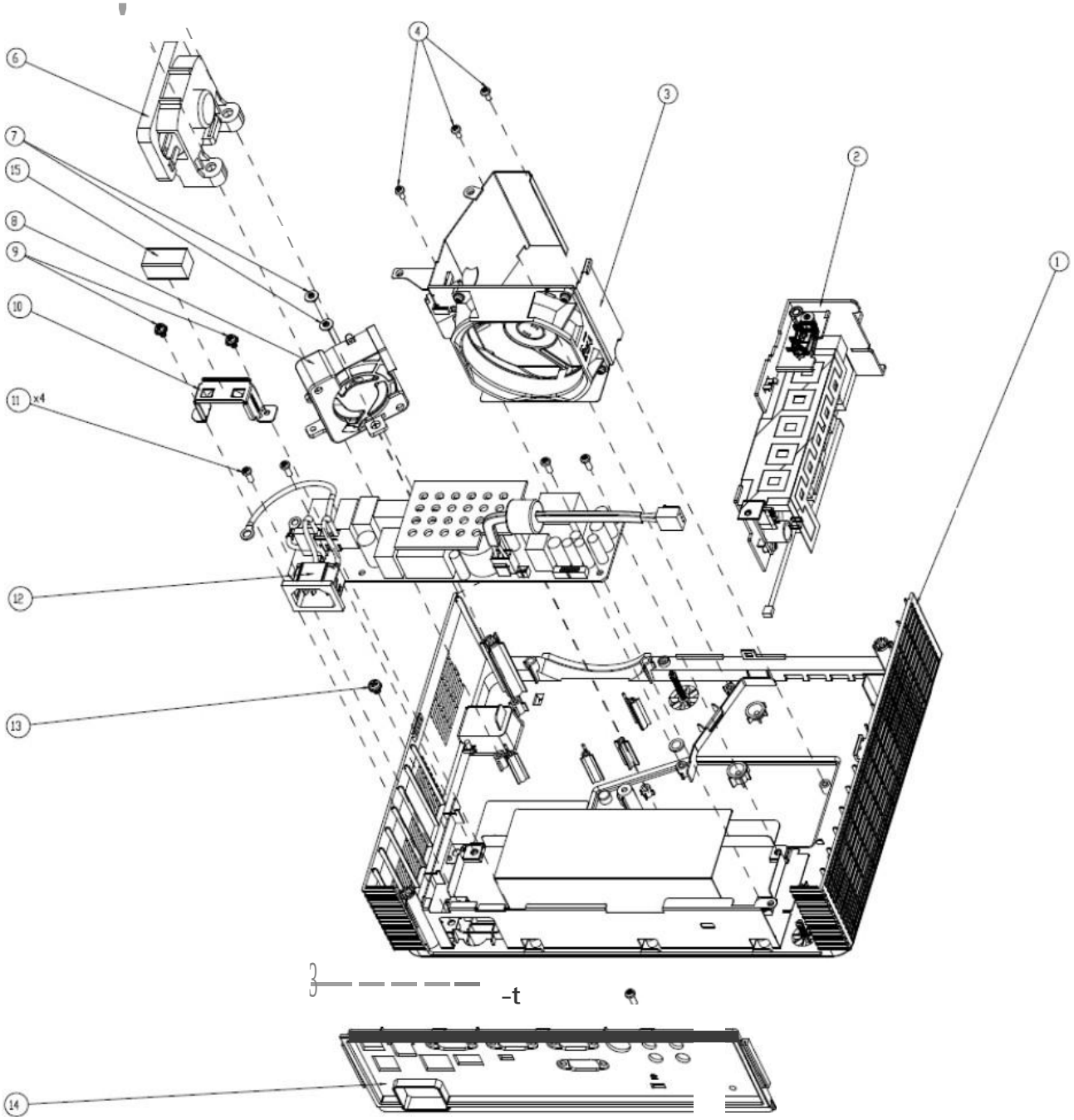
Item	Description	Parts Supply
1	SCREW PAN TAP	
2	ASSEMBLY IR MODULE	
3	ASSEMBLY ZOOM RING MODULE	
4	LAMP COVER PC PANTONE BLACK	V
5	BUY ASSEMBLY TOP COVER MODULE	V
6	LAMP COVER STEP SCREW BLACK	
7	LAMP COVER SCREW-SPRING	

Assembly Color Wheel Module



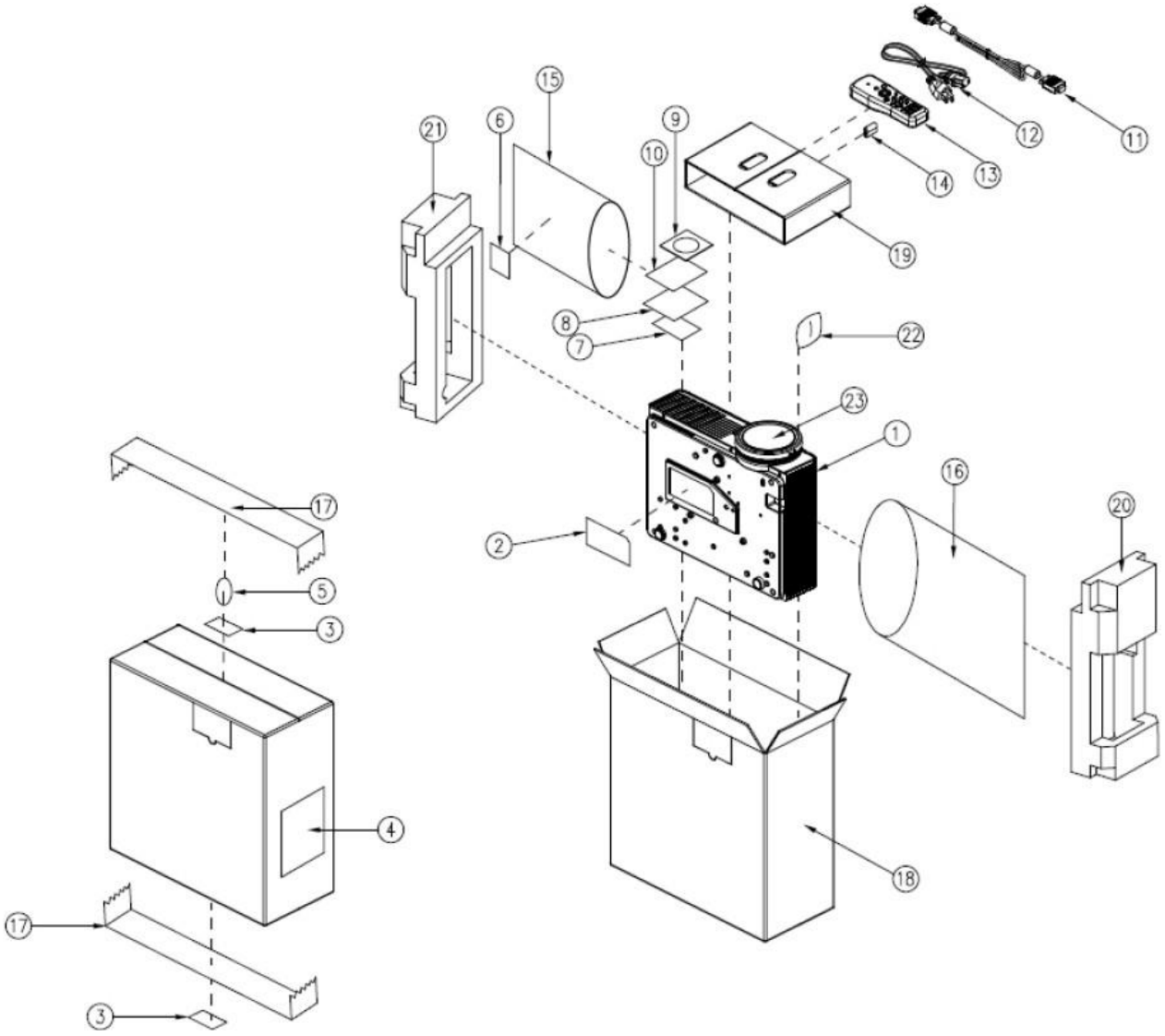
Item	Description	Parts Supply
	ASSEMBLY COLOR WHEEL MODULE FOR 8PJ	V
1	COLOR WHEEL SHOULDER SCREW,	
2	COLOR WHEEL DISC RUBBER,	
3	CW BRACKET SECC FOR	
4	LOW COST	
5	PHOTO SENSOR BD SPACER	
6	PCBA PHOTO SENSOR BOARD FOR	V
7	SCREW PAN MECH	

Assembly Bottom Cover Module



Item	Description	Parts Supply
1	ASSEMBLY BOTTOM COVER MODULE	V
2	ASSEMBLY LAMP DRIVER AND WAVEFORM	
3	ASSEMBLY FAN	V
4	SCREW PAN TAP	
5	SCREW CAP TAP	
6	SPEAKER	V
7	SCREW CAP MECH	
8	SUNON BLOWER / RoHS	V
9	SCREW ISO PH W/LW BFA	
10	AC-INLET-PLATE SECC	
11	SCREW PAN TAP	
12	POWER SUPPLY,	V
13	SCREW PAN MECH	
14	BACK COVER PC	
15	EMI GASKET	

AK



Item	Description	Parts Supply
1	D.C.	
2	SPEC LABEL BLANK	
3	PALLET LABEL	
4	LABEL CARTON BLANK	
5	LABEL PREVENT OPEN	
6	AK LABEL BLANK	
7	WARRANTY CARD	
8	INSTRUCTION CARD	
9	USER'S GUIDE MULTILINGUAL (CD)	V
10	QUICK START CARD MULTILINGUAL	
11	CABLE VGA	V
12	CABLE POWER CORD	V
13	INFRARED REMOTE CONTROL	V
14	BATTERY	
15	PE BAG ZIPPER W/RECYCLING MARK	
16	PE BAG FOR OPTOMA	
17	PACKING TAPE FOR OPTOMA	
18	OUTSIDE CARTON B FLUTE	V
19	PARTITION PAPER	
20	CUSHION EPE LEFT	
21	CUSHION EPE RIGHT	
22	PACK DRIER	
23	BUY ASSEMBLY LENS CAP MODULE	V

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 PJ1000.

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

II. PCBA Code Definition

PCBA Code for Projector

A	B	XXXXXXXXXXX	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