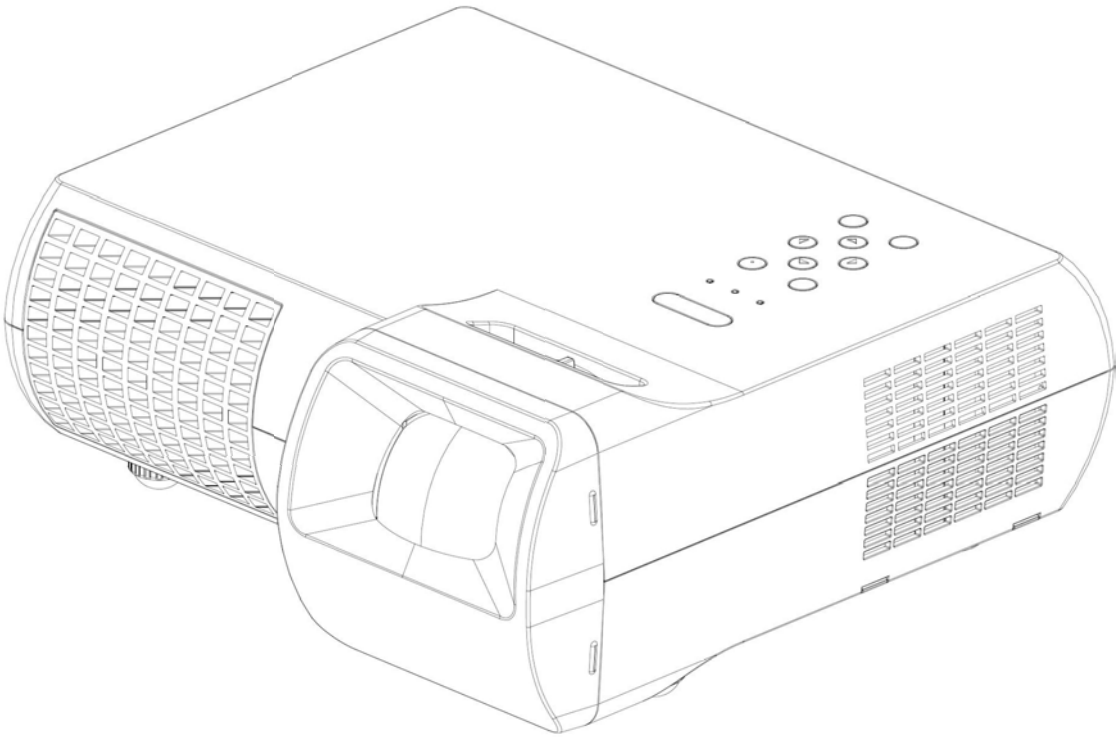
SANYO

SERVICE MANUAL Multimedia Projector Model No. PDG-DXL100

Original Version



Chassis No. KF8-DXL10000

PRODUCT CODE
1 682 347 81

REFERENCE NO. SM0946000

Contents

Safety Instructions

Safety Precautions

WARNING:
The chassis of this projector is isolated (COLD) from AC line by using the converter transformer. Primary side of the converter and lamp power supply unit circuit is connected to the AC line and it is hot, which hot circuit is identified with the line (⏦) in the schematic diagram. For continued product safety and protection of personnel injury, servicing should be made with qualified personnel.

The following precautions must be observed.

1: An isolation transformer should be connected in the power line between the projector and the AC line before any service is performed on the projector.

2: Comply with all caution and safety-related notes provided on the cabinet back, cabinet bottom, inside the cabinet or on the chassis.

3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, etc.

DO NOT OPERATE THIS PROJECTOR WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PR OPERLY SECURED.

4: Before replacing the cabinet cover, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.

Before returning any projector to the customer, the service personnel must be sure it is completely safe to operate without danger of electric shock.

Product Safety Notice

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

Service Personnel Warning

Eye damage may result from directly viewing the light produced by the Lamp used in this equipment. Always turn off Lamp before opening cover. The Ultraviolet radiation eye protection required during this servicing.
Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages (15kV - 25kV) at its starts.
Since the lamp is very high temperature during units operation replacement of the lamp should be done at least 45 minutes after the power has been turned off, to allow the lamp cool-off.

Chapter 1

Introduction

1-1 Highlight

No	Item	Description
1	Technology	● 0.55” 2xLVDS super value XGA Type X DMD
2	Dimension (W x D x H)	● 306.5x120.5x292.3mm (Lens is included)
3	Weight	● 3.7 Kg (8.1 lbs)
4	Power Supply	● Universal AC 100-240V~ 50 / 60 Hz with PFC input ● 225W Lamp @ normal operation ● 170W Lamp @ eco operation ● Variance FAN speed control (Depend on temperature variance)
5	Keystone Correction	● +/ -15 degree Vertical
6	Resolution	● Native Resolution: 1024×768
7	Brightness	● 2700 ANSI Lumens
8	Contrast	● 750:1 (Full on/Full off)
9	Uniformity	● 80% (JBMA standard)
10	Throw ratio	● 0.609 distance / width
11	Projection lens	● F# 2.6 , Fixed Lens. f=6.97mm @ 77”
12	Lamp life	● 3,000 hours at typical full power mode (@ 225W, 60Hz) ● 4,000 hours at Eco mode (@ 170W, 60Hz) (more than 50% of lamp population have light output >50% of initial min. Lumen output at the lamp life time)
13	Lens Offset	● 115%+/-5%
14	Video compatibility	● NTSC: 3.58/4.43 ● PAL: B/D/G/H/I/M/N ● SECAM: B/D/G/K/K1/L ● HDTV: 480i, 480p, 576i, 576p,720p, 1080i, 1080p

No	Item	Description
15	Terminals	● One Mini DIN 8-Pin Connector for RS232 control input ● One 19-pin HDMI(V1.3) for Digital Video Data Input ● One Mini DIN 4-pin for S-Video Input ● One RCA Jack for Composite Video Input ● One D-Sub 15-pin female connector for VGA output (Only for VGA 1) ● Two D-Sub 15-pin female connector for VGA input (Stack) and component video input ● One RJ45 connector for Network Management ● One 3.5 mm phone jack for audio input ● One 3.5mm phone jack for variable audio output *Selectable cable control via either RS232 or RJ-45 LAN by OSD menu.
16	System Controller	● TI DDP2230
17	Color Wheel	● 40mm diameter, 5 segments (R80Y30G84W90B76) & 7200 rpm
18	Lamp	● 225W Lamp (Philips E20.9)
19	Temperature	● Operating: 5 ~ 35°C ● Storage: -20 ~ 60°C
20	Altitude	● Operating: 0 ~ 2,500 ft, for 5°C~35°C 2,500 ft ~ 5,000 ft, for 5°C~30°C 5,000 ft ~ 10,000 ft, for 5°C~25°C ● Storage: 40,000 ft
21	Input Signal	● Hsync Frequency 31.35 k ~ 79.98 k Hz ● Vsync Frequency 50 ~ 75 Hz ● Video Signal RGB (PC) • Analog RGB 0.7Vp-p, 75 ohm, Separate TTL H,V Sync • Analog RGB 1Vp-p, 75 ohm, Sync. On Green signal • Analog RGB 0.7Vp-p, 75 ohm, Composite TTL Sync ● Video • Composite video 1Vp-p, 75 ohm • S-video Luminance 0.714Vp-p, 75 ohm • Chrominance 0.286Vp-p, 75 ohm • Component Video 1Vp-p, 75 ohm

1-2 Compatible Mode

Computer Compatibility (Analog)

VGA Analog-PC Signal			
Modes	Resolution	V-Sync [Hz]	H-Sync [KHz]
VGA	640x480	60	31.50
	640x480	72	37.90
	640x480	75	37.50
	720x400	70	31.50
SVGA	800x600	56	35.20
	800x600	60	37.90
	800x600	72	48.10
	800x600	75	46.90
	832x624	75	49.725
XGA	1024x768	60	48.40
	1024x768	70	56.50
	1024x768	75	60.00
SXGA	1280x1024	60	63.98
	1280x1024	75	79.98
WXGA	1280x720	60	45.00
	1280x800	60	49.702
	1440x900	60	55.935
QuadVGA	1280x960	60	59.70
SXGA+	1400x1050	60	63.98
UXGA	1600 x 1200	60	75.00
Power Mac G4	640 x 480	66.6(67)	34.93
	800x600	60	37.90
	1024x768	60	48.40
	1152x870	75	68.68
PowerBook G4	640x480	60	31.35
	640x480	66.6(67)	34.93
	800x600	60	37.90
	1024x768	60	48.40
	1152x870	75	68.68
i Mac DV(G3)	1024 x 768	75	60.00

Computer Compatibility (Digital-HDMI)

(1) HDMI - PC Signal			
Modes	Resolution	V.Sync [Hz]	H.Sync [KHz]
VGA	640x480	60	31.5
	640x480	72	37.9
	640x480	75	37.5
	720x400	70	31.5
SVGA	800x600	56	35.2
	800x600	60	37.9
	800x600	72	48.1
	800x600	75	46.9
	832x624	75	49.725
XGA	1024x768	60	48.4
	1024x768	70	56.5
	1024x768	75	60.00
SXGA	1280x1024	60	63.98
	1280x1024	75	79.98
WXGA	1280x720	60	45.00
	1280x800	60	49.702
	1440x900	60	55.935
Quad VGA	1280x960	60	59.7
SXGA+	1400x1050	60	63.98
UXGA	1600x1200	60	75.00
Power Mac G4	640x480	66.6(67)	34.93
	800x600	60	37.9
	1024x768	60	48.4
	1152x870	75	68.68
PowerBook G4	640x480	60	31.35
	640x480	66.6(67)	34.93
	800x600	60	37.9
	1024x768	60	48.4
	1152x870	75	68.68
i Mac DV(G3)	1024x768	75	60.00

(2) HDMI - Video Signal		
Modes	Resolution	V.Sync [Hz]
480i	1440x480	60
480p (NTSC)	640x480	60
480p (NTSC)	720x480	60
576i (PAL)	1440x576	50
576p (PAL)	720x576	50
720p (NTSC)	1280x720	60
720p (PAL)	1280x720	50
1080i (NTSC)	1920x1080	60
1080i (PAL)	1920x1080	50
1080p (NTSC)	1920x1080	60
1080p (PAL)	1920x1080	50

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

Chapter 2

Disassembly Process

2-1 Equipment Needed & Product Overview

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

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

** Note: - If you need to replace the main board, you have to record the lamp usage hour.*






2-2 Disassemble Filter

1. Pull down the tenons (as red square) to disassemble the left filter.
2. Pull down the tenons (as yellow square) to disassemble the right filter.
3. Disassembled the left filter and the right filter.

The left filter

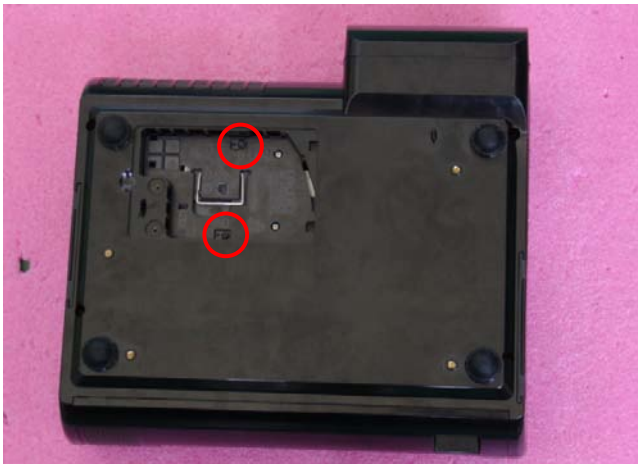
The right filter

2-3 Disassemble Lamp Cover Module

1. Loosen 2 screws (as red circle) on the Lamp Cover.
2. Disassembled the Lamp Cover Module.

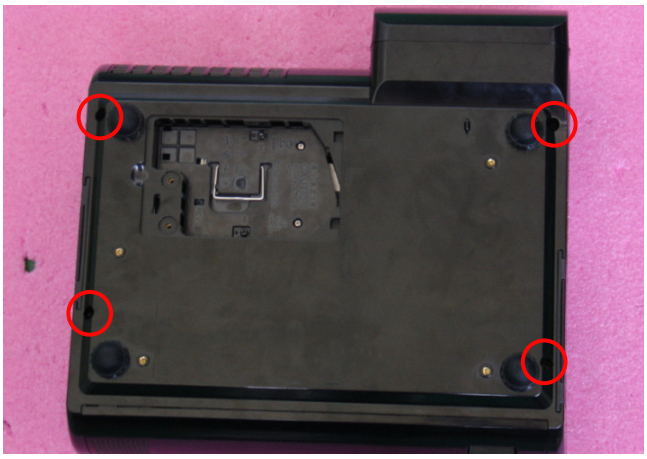
2-4 Disassemble Lamp Module

1. Loosen 2 screws (as red circle) on the Lamp Module.
2. Pull out the Lamp Module.

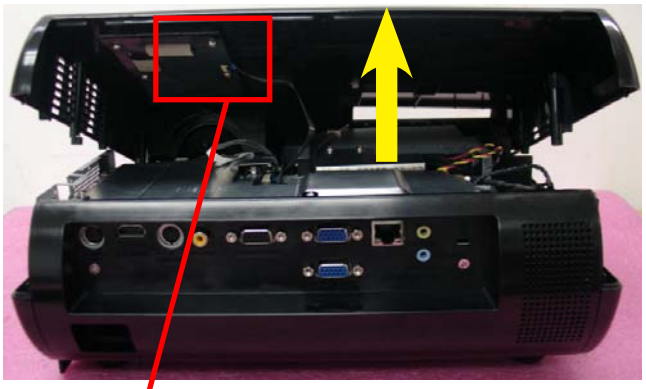


2-5 Disassemble Top Cover Module, Front Cover and Lens Cover

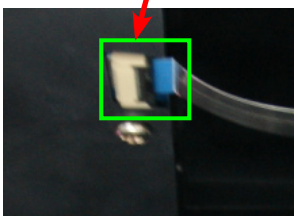
1. Unscrew 4 screws (as red circle) from the Bottom Cover.



2. Pull the Top Cover upward (as the yellow arrow direction) to disassemble top cover, front cover and lens cover.



Note: - When you disassemble the top cover, take care the FPC cable which connected Main Board and Keypad Board Module, please unplug the connector (as green square) from Keypad Board Module during pulling up.



- Avoid damaging by pulling keypad FPC cable.

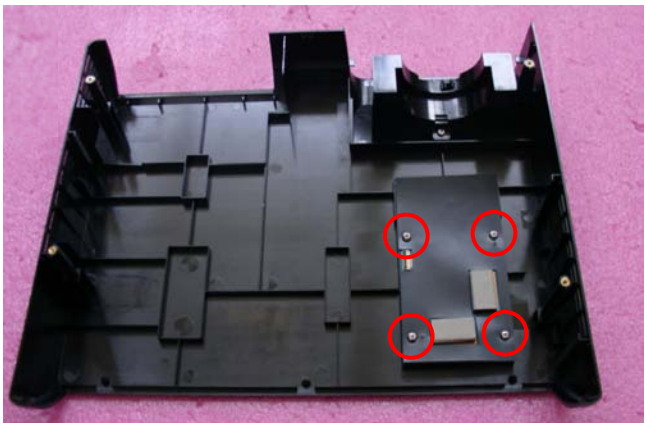
- Please hold the lens cover when disassemble the top cover to avoid damaging the lens (as picture A shown).

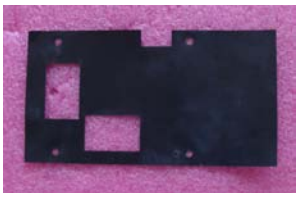
- Make sure the FPC cable plug into the correct ports when assembling it.

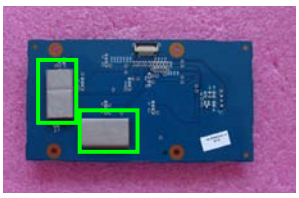
3. Disassembled the Lens Cover, Front Cover and Top Cover Module.

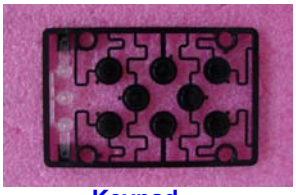
2-6 Disassemble Keypad Board Module

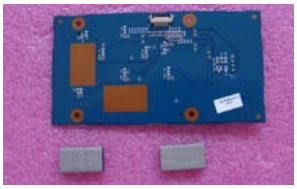
1. Unscrew 4 screws (as red circle) to disassemble the Keypad Board Module from the Top Cover Module.
2. Separate mylar, keypad board and keypad.
3. Tear off 2 EMI gaskets (as green square).







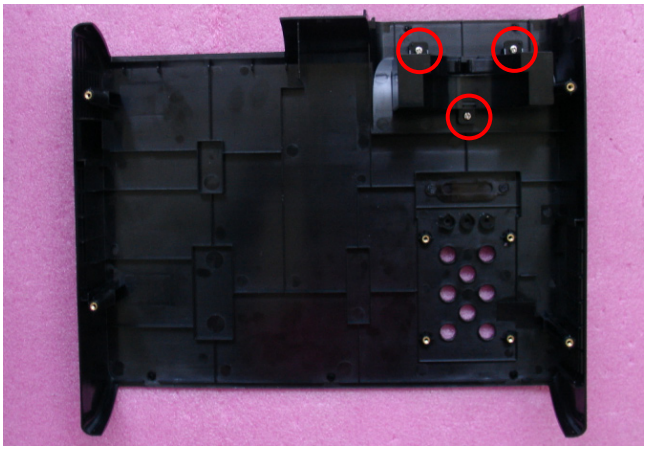




Keypad

2-7 Disassemble Zoom Ring Module

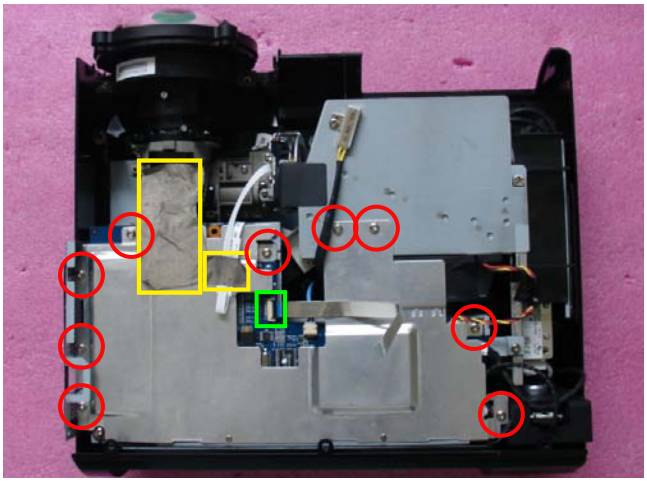
1. Unscrew 3 screws (as red circle) from the Top Cover Module.
2. Remove the Zoom Ring Module.

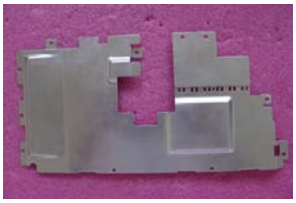


Zoom Ring Module

2-8 Disassemble Top Shielding and FPC Cable

1. Unscrew 11 screws (as red circle).
2. Tear off EMI tapes (as yellow square).
3. Remove the Top Shielding.
4. Unplug 1 connector (as green square) to disassemble the FPC cable.



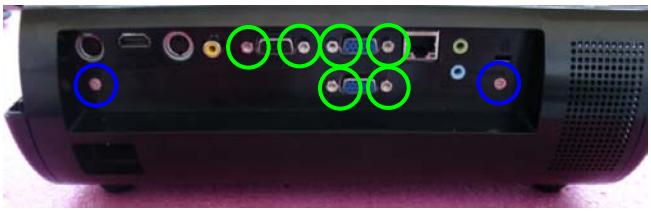


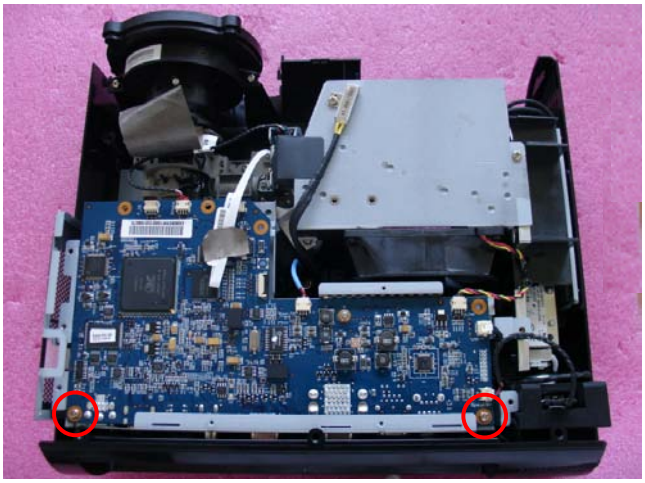
Top Shielding

FPC Cable

2-9 Disassemble Main Board Module

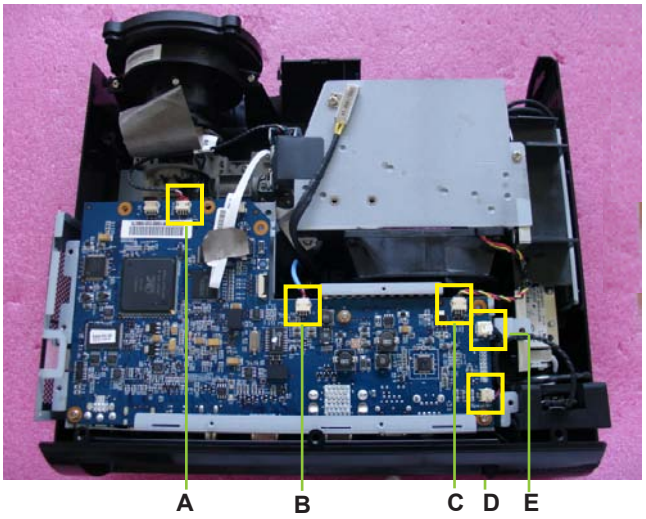
1. Unscrew 2 screws (as blue circle).
2. Unscrew 6 hex screws (as green circle).
3. Unscrew 2 screws (as red circle).



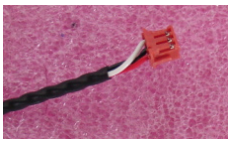
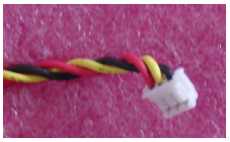


4. Unplug 5 connectors (as yellow square).

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

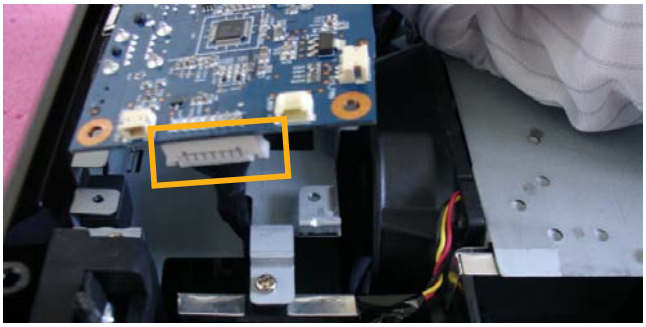


Please refer to the below table details of each connector on Main Board.

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

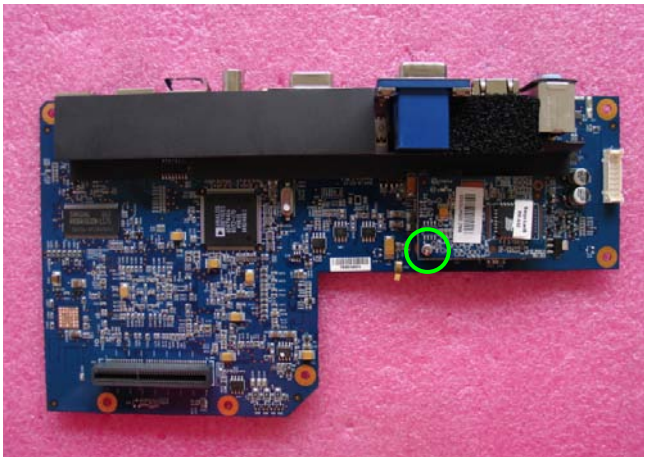
5. Unplug 1 connector (as orange square)

6. Disassembled the Main Board Module.

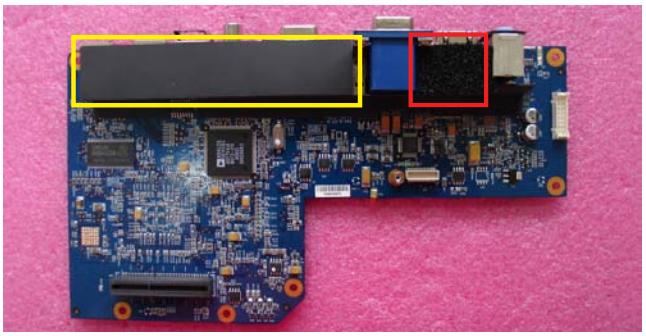


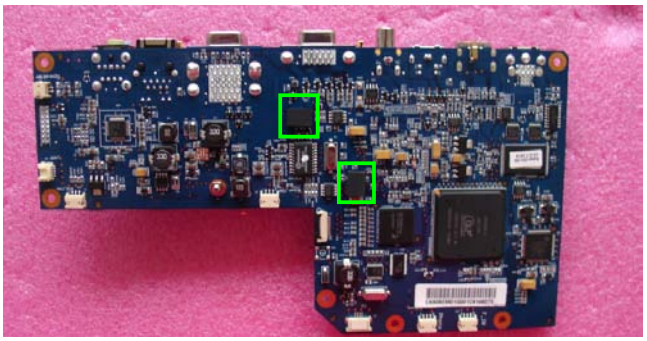
2-10 Disassemble Lan Board Module

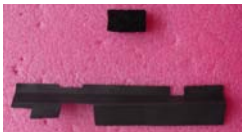
1. Unscrew 1 screw (as green circle) to disassemble the Lan Board Module.

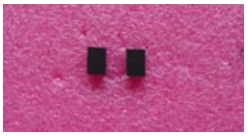


2. Tear off black mylar (as yellow square) and sponge (as red square).
3. Tear off two black rubbers (as green square).



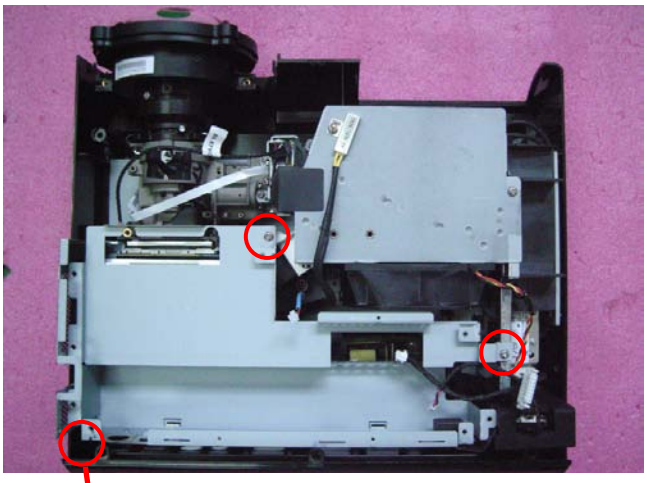


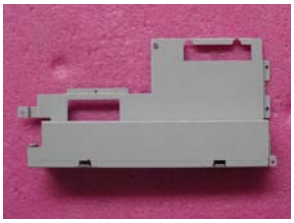




2-11 Disassemble Main Board Shielding

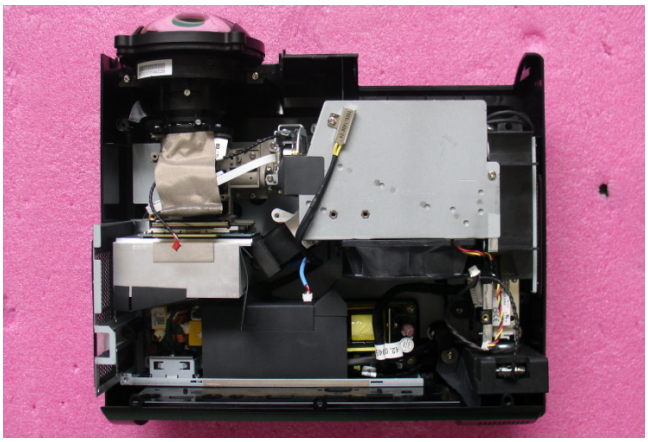
1. Unscrew 3 screws (as red circle) to disassemble the main board shielding.
2. Disassembled the Main Board Shielding.

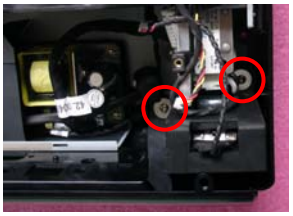




2-12 Disassemble Speaker

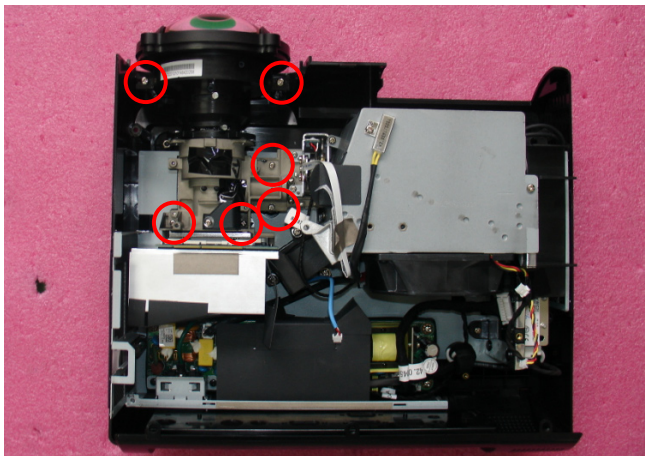
1. Unscrew 2 screws (as red circle) to disassemble the speaker module.
2. Tear off the black mylar (as yellow square).
3. Separate the speaker rubber and speaker.





2-13 Disassemble Engine Module

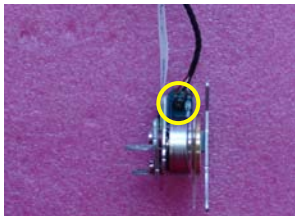
1. Unscrew 6 screws (as red circle) to disassemble the Engine Module.
2. Remove the Engine Module.

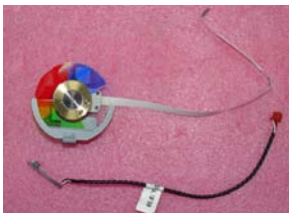


2-14 Disassemble Color Wheel Module and Photo Sensor Board

1. Unscrew 2 screws (as red circle) to disassemble the Color Wheel Module.
2. Unscrew 1 screw (as yellow circle) to disassemble the Photo Sensor Board from the Color Wheel Module.

Note: - Avoid touching the glass parts of color wheel.





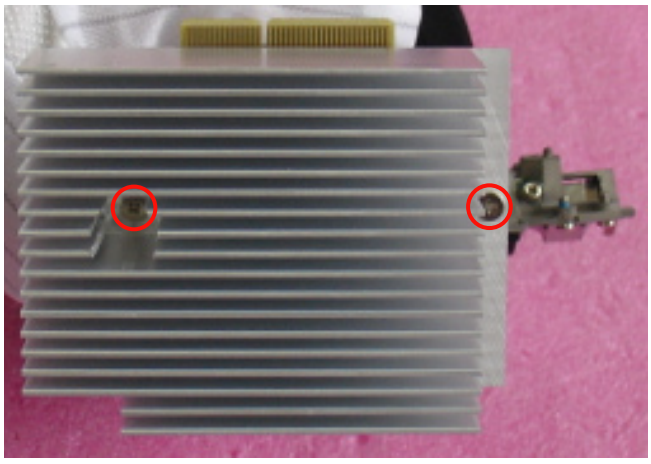
2-15 Disassemble DMD Chip and DMD Board

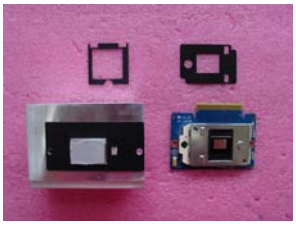
1. Unscrew 2 screws (as red circle) to disassemble the Heat Sink and DMD Module.
2. Counterclockwise rotate the screw (as yellow circle) to disassemble the DMD Board and DMD Chip.

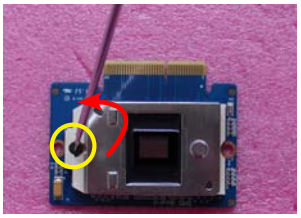
Note: - Avoid touching the DMD Chip when you disassemble it.

- Found that the DMD Chip has scrapes or dirt use of a magnifying glass, you may use an electrostatic ion gun to clean it.

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







2-16 Disassemble Rod Module

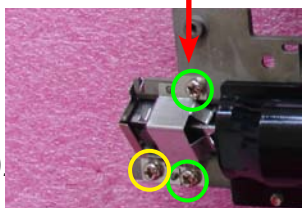
1. Unscrew 2 screws (as green circle) to disassemble the Rod Spring (a).
2. Unscrew 1 screw (as yellow circle) to disassemble the Rod Cover (b).
3. Disassemble the Rod(c).

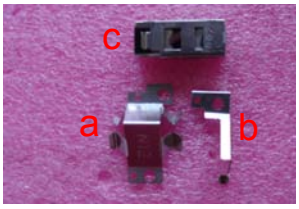
Note: - Avoid touching the Rod when you disassemble or assemble it.

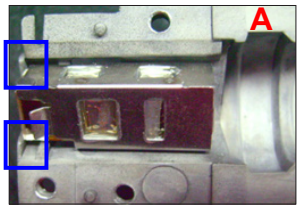
- Please notice the Rod Module's direction when you assemble it (as picture A shown).

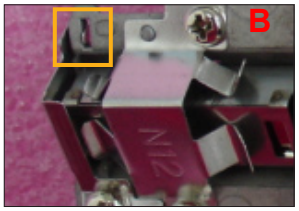
- Ensure left edge of Rod Module contact with the Engine base's blocks (as picture A blue square shown).

- Rod Spring must hook in the position (as picture B shown).



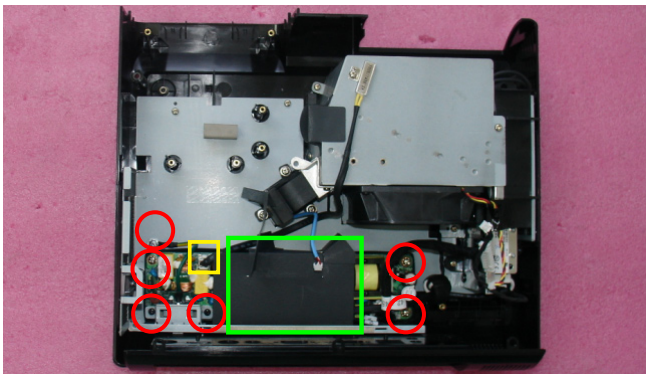


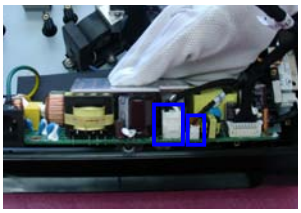


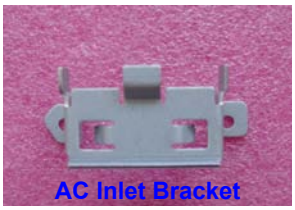


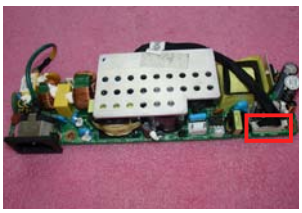
2-17 Disassemble LVPS Module

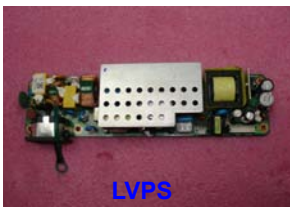
1. Tear off the mylar (as green square).
2. Unscrew 6 screws (as red circle).
3. Unplug 1 connector (as yellow square).
4. Unplug 2 connectors (as blue square) to take off the LVPS Module and the AC Inlet Bracket.
5. Unplug 1 connector (as red square).
6. Disassembled the LVPS.







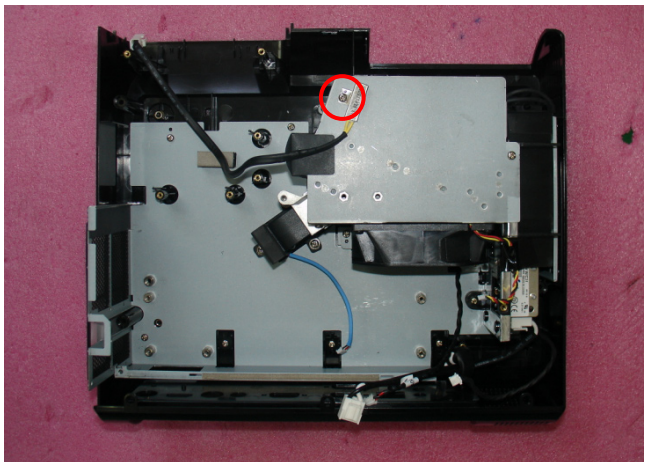




2-18 Disassemble Thermal Switch

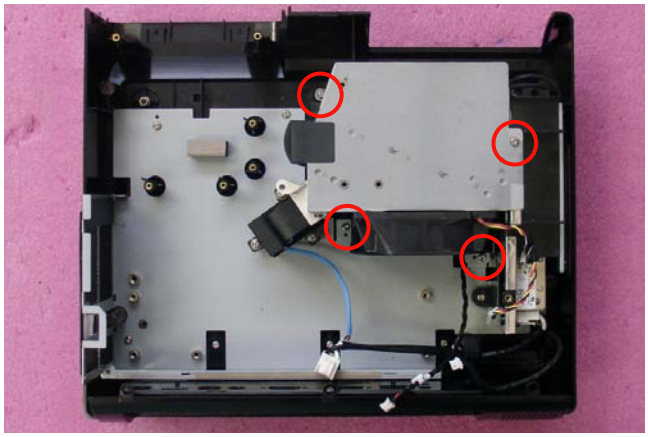
1. Unscrew 1 screw (as red circle) to disassemble the Thermal Switch.

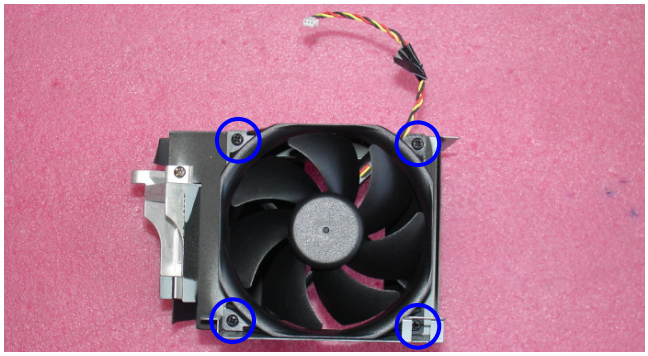
2. Disassembled the Thermal Switch.



2-19 Disassemble Fan Module

1. Unscrew 4 screws (as red circle) to disassemble the Fan Module.
2. Unscrew 4 screws (as blue circle) to separate the Fan and Fan Shielding.





Note: - Take the Fan Module as the right gesture.

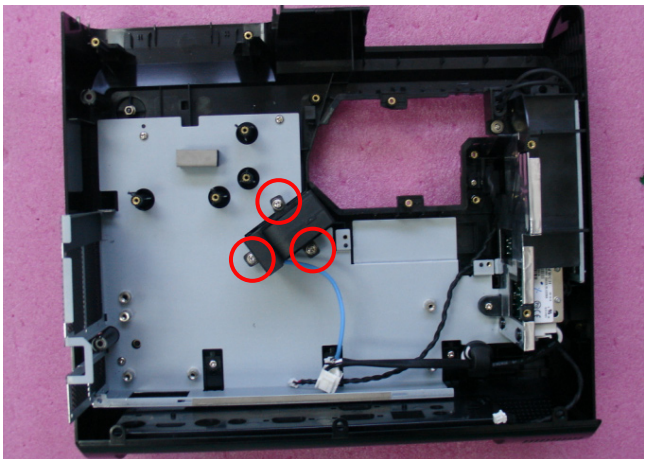
Fan Shielding

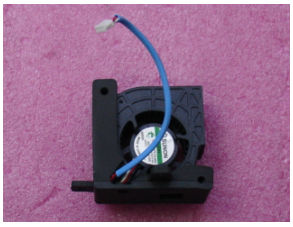
The right gesture

The wrong gesture

2-20 Disassemble Blower Module

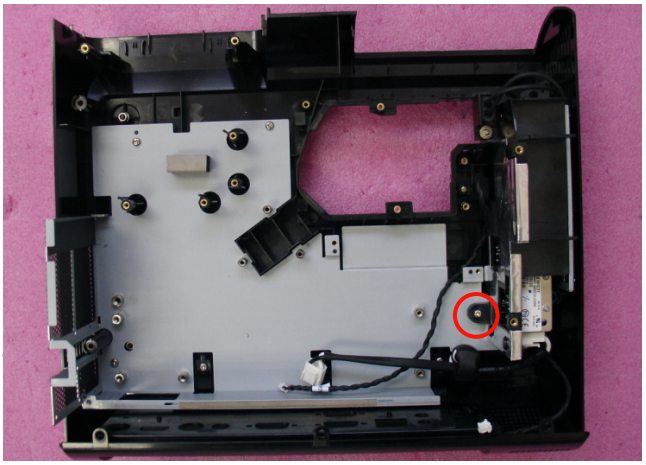
1. Unscrew 3 screws (as red circle) to disassemble the Blower Module.
2. Seprate the Blower and Blower Rubber.

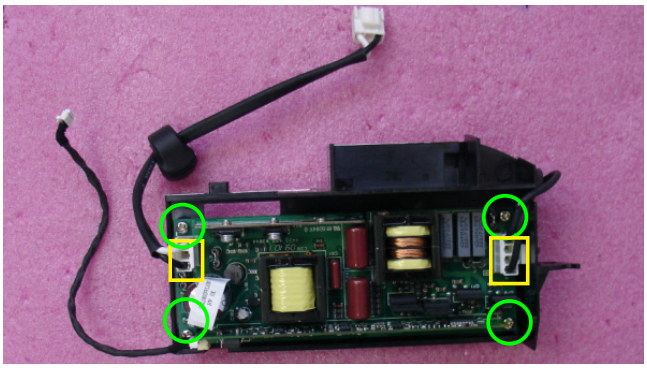




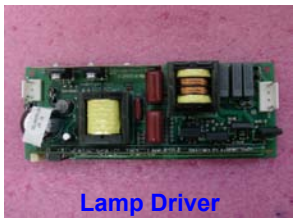
2-21 Disassemble Lamp Driver Module

1. Unscrew 1 screw (as red circle) to disassemble the Lamp Driver Module.
2. Unscrew 4 screws (as green circle).
3. Unplug 3 connectors (as yellow square)



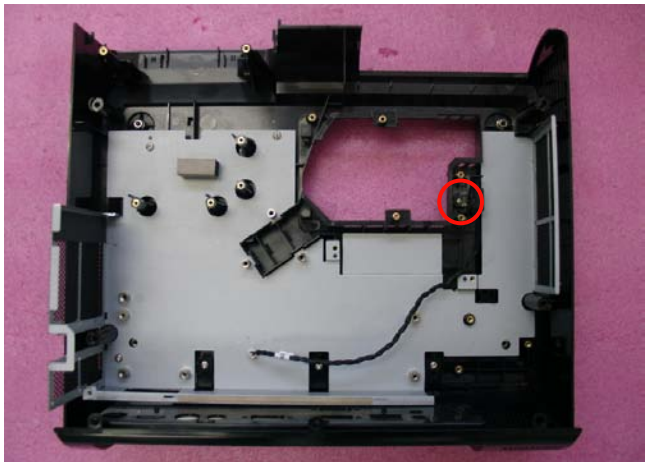


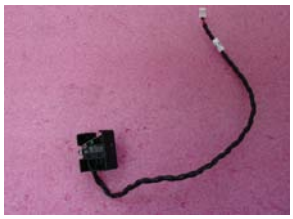
4. Separate the Lamp Driver Holder and Lamp Driver .
5. Disassembled the cables.



2-22 Disassemble Interlock Switch

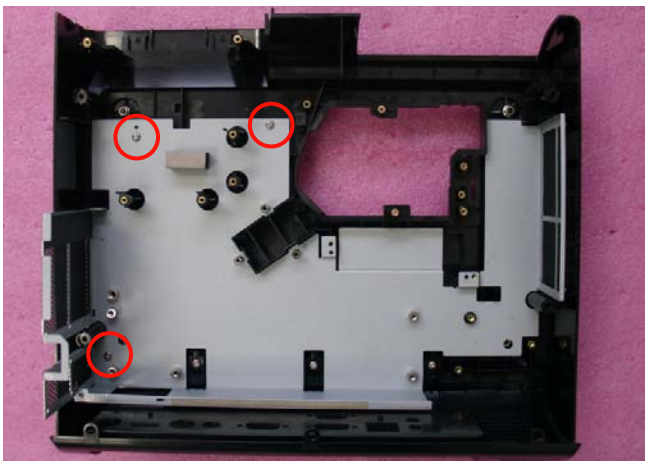
1. Unscrew 1 screw to disassemble the Interlock Switch.
2. Disassembled the Interlock Switch.

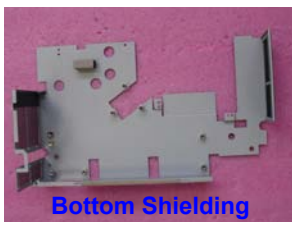




2-23 Disassemble Bottom Shielding

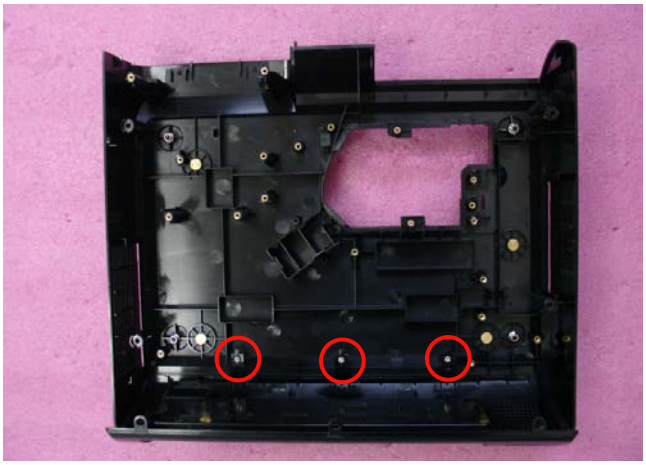
1. Unscrew 3 screws to disassemble the Bottom Shielding.
2. Disassembled the Bottom Shielding.

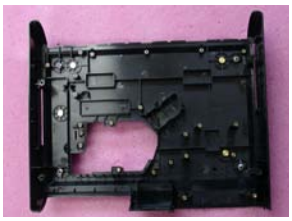




2-24 Disassemble IO Cover and Bottom Cover Module

1. Unscrew 3 screws (as red circle).
2. Separate the IO Cover and Bottom Cover Module.





2-25 Rod Adjustment

1. Environment Adjustment

   - The distance between the engine and the screen is 0.74 M.

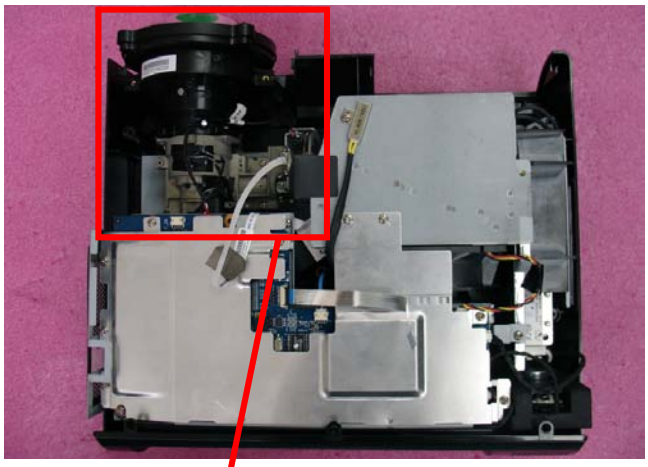
   - This process should be done at a dark environment (under 2 Lux).

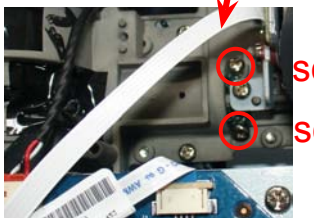
2. Procedure Adjustment

   - Change the screen to “white screen”.

   - Adjust the screws(as red circle) to revise the image.

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





Z type driver

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.

- After the opreation, please use the glue to fix the screws.

- Please use Z type driver to adjust Rod screw 1.

Chapter 3

Trobleshooting

3-1 LED Lighting Message

Message	Power LED			Temp LED (Red)	Lamp LED (Red)
	(Red)	(Green)	(Orange)		
Standby (Input power cable)			☼	○	○
Normal (Power on)		☼		○	○
Powering up (Warming up)		Flashing		○	○
Power off (Cooling-I: It can't accept any key at this status)		Flashing		○	○
Power off (Cooling-II: It can accept power key to turn on the projector)			Flashing	○	○
Error (Lamp failed)	☼			○	☼ *
Error (Fan lock)	☼			Flashing	○
Error (Over temp.)	☼			☼	○

☼ *Steady light* ○ *No light* * *When LED light on after 5 sec., go to standby mode.*

3-2 Main Procedure

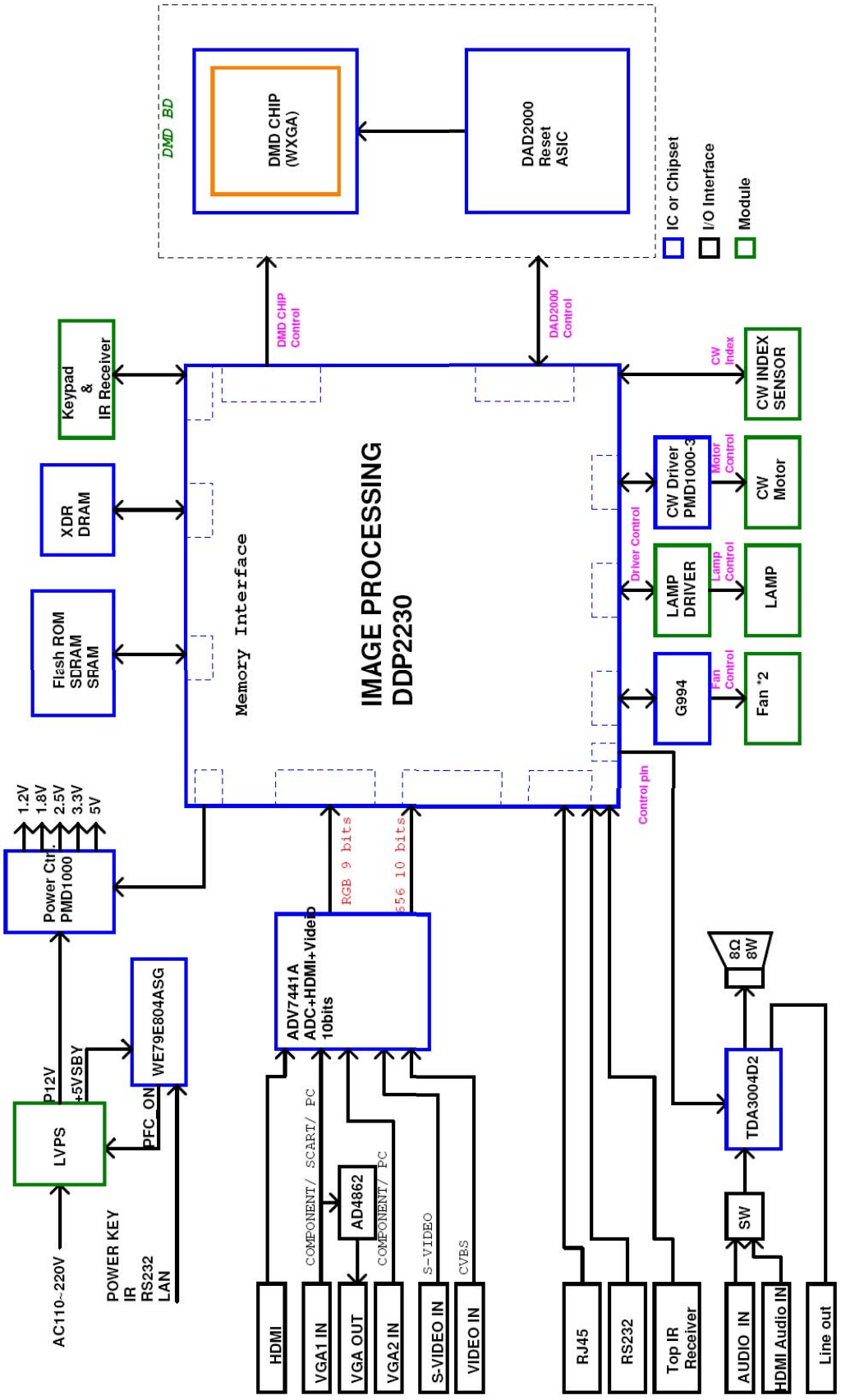
No	Symptom	Procedure
1	No Power	- Ensure the Power Cord and AC Power Outlet are securely connected - Ensure all connectors are securely connected and aren't broken - Check LVPS - Check Lamp Driver - Check Main Board
2	Auto Shut Down	- Ensure the projector is not put on a soft pad and the air vent is not blocked - Check LED Status a. Lamp Failed: Power LED (lights red), Lamp LED (lights red, when LED light on after 5 sec., go to standby mode) - Check Lamp - Check Lamp Driver - Check Main Board b. Over Temp.: Power LED (lights red), Temp LED (lights red) - Clean air filters - Check Fan - Check Thermal Switch - Check Main Board c. Fan Lock: Power LED (lights red), Temp LED (Flashes red) - Check Fan - Check Main Board

No	Symptom	Procedure
3	No Light On	- Ensure all connectors are securely connected and aren't broken - Check Lamp Cover - Check Interrupt Switch - Check Lamp Driver - Check LVPS - Check Main Board - Check Color Wheel - Check Photo Sensor Board
4	No Image	- Ensure the Signal Cable and Source work (If you connect multiple sources at the same time, use the "Input" button switch) - Ensure all connectors are securely connected and aren't broken - Check Main Board - Check DMD Board - Check DMD Chip - Check Color Wheel - Check Engine Module
5	Mechanical Noise	- Check Color Wheel - Check Fan Module
6	Line Bar/Line Defect	- Check if the Main Board and the DMD Board are assembled properly - Check Main Board - Check DMD Board - Check DMD Chip

No	Symptom	Procedure
7	Image Flicker	- Do “Factory default” of the OSD Menu - Ensure that the signal cables and source are work as well - Check Lamp Driver and waveform - Check Lamp Module - Check Color Wheel - Check Photo Sensor and clean Photo Sensor - Check DMD Board - Check Main Board
8	Color Abnormal	- Do “Factory default” of the OSD Menu - Adjust Color Wheel Index - Check Main Board - Check DMD Board - Check Color Wheel
9	Poor Uniformity/ Shadow	- Ensure the projection screen without dirt - Ensure the projection lens is clean - Measure Brightness under “Bright” mode. Ensure the Brightness is within spec(please refer to 4-9 Optical Performance Measure for how to get into “Bright” mode.) - Check rod alignment - Check Engine Module
10	Dead Pixel/Dust (Out of spec.)	- Ensure the projection screen without dirt - Ensure the projection lens is clean - Clean DMD Chip and Engine Module - Check DMD Chip - Check Engine Module
11	Garbage Image	- Ensure that the signal cables and source work as well - Check Main Board - Check DMD Board

No	Symptom	Procedure
12	Remote Control/ Control Panel Failed	- Remote Control a. Check Battery b. Check Remote Controller c. Check Keypad Board d. Check Main Board - Control Panel a. Check FPC b. Check Keypad Board c. Check Main Board
13	Function Abnormal	- Do “Factory default” of the OSD Menu - Check Main Board - Check DMD Board
14	Audio Abnormal	- Ensure that the signal cables and source are work as well - Ensure that your Projector is not in “Mute” mode - Check the interior Speaker of the projector - Check the exterior Speaker that you are using - Check Main Board
15	Network Function Abnormal	- Ensure RJ45 Connector work well (Normal Status: Before joining RJ45 line,Orange LED flashes; after joining RJ45 line,and Internet transmission speeds over 100MB/ second,Green LED will light.) - Check Internet Source and LAN Module Board if LED message is in abnormal status - Check Main Board if LED message is in normal status
16	Forget Password	- If the user forget the projector’s password, executing below steps can solve the problem: (1) Power on the projector. (2) Get into service mode (please refer to 4-2 for details) (3) Select “factory reset”. click “enter” button. (4) The “security settings” in OSD menu will change to “OFF” and user can use the default password (1234) to set new password .

3-3 Electronic Function Block Diagram



3-4 Pin Assignment

J1:16Pin POWER From LVPS

PIN	Description	Voltage(V)
1	12V	12
2	12V	12
3	12V	12
4	5V	5
5	GND	0
6	GND	0
7	GND	0
8	PFC ON1	3
9	GND	0
10	GND	0
11	GND	0
12	GND	0
13	GND	0
14	12V	12
15	12V	12
16	12V	12

J4: CW to MB

PIN	Description	Voltage(V)
1	CWCTR	9.5
2	CWY3	9.5
3	CWY2	9.5
4	CWY1	9.5

J5:Lampdriver

PIN	Description	Voltage(V)
1	LAMPLIT_IN	0.16
2	GND	0
3	P5V	5
4	LAMPEN_OUT	4.9
5	D_MODE6	5

J6:Photo sensor

PIN	Description	Voltage(V)
1	3.3VS	1.18
2	PHOTO_IN	0.7
3	GND	0

J7:Blower

PIN	Description	Voltage(V)
1	FAN_V1	9.61
2	FAN1	0(operation)/3.3(fan lock)
3	GND	0

J10:System fan

PIN	Description	Voltage(V)
1	FAN_V2	6.52
2	FAN2	0(operation)/3.3(fan lock)
3	GND_F2	0

J12:Speaker

PIN	Description	Voltage(V)
1	SP_R+	5.3
2	SP_L-	5.3

J15: FPC Keypad

PIN	Description	Voltage(V)
1	+5VSBY	5
2	DOWN	3.3
3	UP	3.3
4	EKEY	3.3
5	RIGHT	3.3
6	LEFT	3.3
7	MENU_KEY	5
8	POWER_KEY	5
9	GND	0
10	8051_LED_R	0
11	8051_LED_B	5
12	KEYPAD_LED_TEMP0	0
13	KEYPAD_LED_LAMP0	0
14	INPUT	3.3
15	GND	0
16	IR1_1	5

Chapter 4

Function Test & Alignment Procedure

4-1 Test Equipment Needed

- IBM PC with HDTV resolution
- DVD player with Multi-system, equipped “Component”, “Composite”, “S-Video” and “HDMI”.
- HDTV Source (720P,1080P,1080i)
- Minolta CL-100
- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)

4-2 Service Mode

1. Turn on the projector
2. Press “Power”, “Enter”, “Enter” and “Menu” button sequentially to get into service mode.

4-3 Factory Default & Lan Card Reset

After final QC step, we have to erase all saved change again and restore the default setting:

1. Factory Default

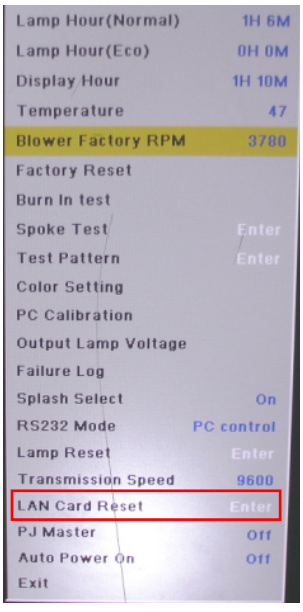
(1) Please get into OSD menu.

(2) Execute “Factory Default” function under “Setting”.

2. Lan Card Reset

(1) Get into Service mode.

(2) Select “Lan Card Reset”, click “Enter” to restore all lan card setup to its factory default settings.



4-4 Blower Reset

After replace main board/blower or upgrade system FW, you need to do:

(1) Get into Service Mode.

(2) Slesct “Blower Factory RPM”, then click “Enter” button.

Note: The steps must be finished in a minute after powering on projector.

4-5 Test Condition

- Circumstance brightness: Dark room less than 2 lux.

- Inspection distance: 0.5m~1.0m functional inspection.

- Screen size: 60 inches diagonal.

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

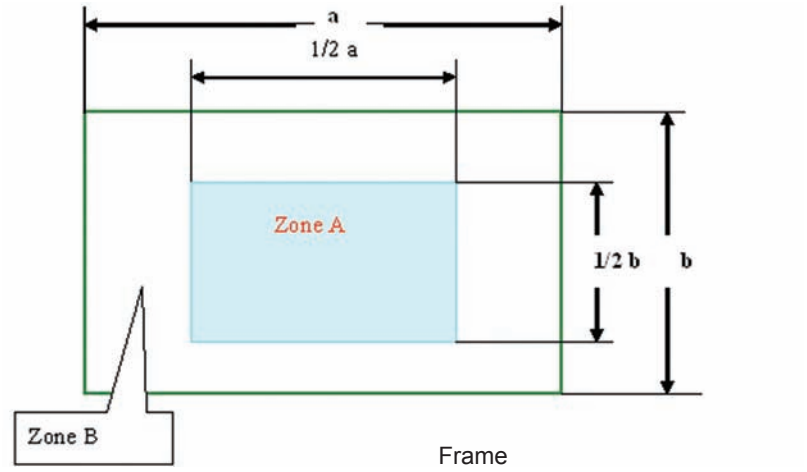
Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shutdown	6 hours

- 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 > Enter > Enter > Menu 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 cycle
After setting up the time, choose “Get into Burn-In Mode” and press enter	

Screen Defects (While replacing DMD Chip, DMD Board and Main Board)



< Figure: Zone A, Zone B & Frame(as green line) Definition, Active area=Zone A+ Zone B >

Defect specification table

Order	Symptom	Pattern	Criteria
1	Bright pixel	Gray 10 pattern	A+B=0
2	Dark pixel	White pattern	A+B≤6
3	Unstable pixel	White&Black pattern	A+B≤1
4	Adjacent pixels	White&Black pattern	A+B=0
5	Dark blemish	Blue 60 pattern	A+B≤10 (diameter <1 inch)
6	Bright blemish	Gray 15 pattern	A+B≤10 (diameter <1 inch)
7	Bright dots on frame	Gray 10 pattern	1

4-6 Test Inspection Procedure

Update	Change parts							
	Main Board	Firmware	Color Wheel	Lamp Module	Engine Module	Lan Module Board	Lamp Driver	Blower
Version Update	v	v						
Color Wheel Index	v		v					
PC Calibration	v	v						
Reset lamp hour				v				
Factory Default	v	v						
Rod adjustment	v				v			
Lan Card Reset						v		
Waveform Download							v	
Blower Reset	v	v						v

Note 1: If Color appears abnormal after changing Main Board Module, please do Color Wheel index adjustment.

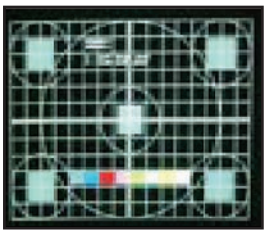
Note 2: After final QC step, OSD Reset & Lan card Reset need to be done.

4-7 PC MODE

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 total pixel number of pixel clock in one line period.
  (2) Select “Tracking” function and use right or left arrow key to adjust the value to minimize video flicker.
- Adjust Resync or Frequency/Tracking/H. Position/V. Position to the inner screen.



General-1

Master

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.

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@75Hz
- Test Pattern: gray 10

Inspection item
- Bright pixel check.

Criteria
- Bright pixel is unacceptable in the active zone; 1 pixel is allowed on the frame.
- Ref. Defect specification table

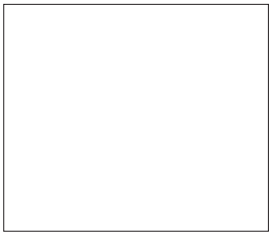
Gray 10

3. Dark Pixel

Procedure
- Test equipment: video generator.
- Test signal: analog 1024 x 768@75Hz
- Test Pattern: full white

Inspection item
- Dead pixels check.
- White pattern (IRE=100)

Criteria
- The dark pixel is unacceptable in Zone A under full white pattern; other area can accept no more than 6 dark pixels.
- Adjacent pixels are unacceptable.
- Ref. Defect specification table



Full white

4. Bright Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@75Hz - Test Pattern: gray 15
Inspection item	- Bright blemish check.
Criteria	- The bright blemish should be no more than 10 under gray 15 pattern. - Ref. Defect specification table

Gray 15

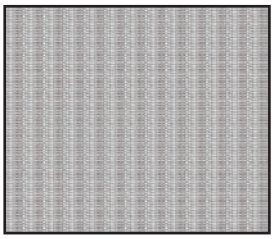
5. Dark Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@75Hz - Test Pattern: blue 60
Inspection item	- Dark blemish check
Criteria	- The dark blemish should be no more than 10 under blue 60 pattern. - Ref. Defect specification table

Blue 60

6. Focus Test

Procedure	- Test equipment: video generator. - Test signal: analog 1024 x 768@75Hz - Test Pattern: full screen
Inspection item	- Focus check
Criteria	- From screen 0.74 M via visual to 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 corner after adjustment is acceptable. However, the word should at least be recognizable.)

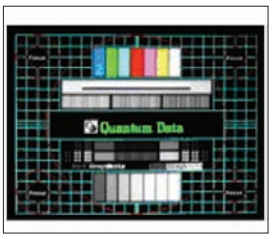


Full screen

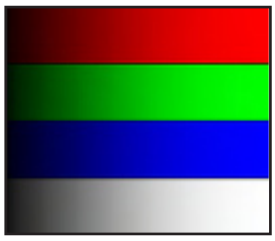
7. Color Performance

Procedure	- Test equipment: video generator. - Test signal: 1024 x 768@75Hz, 1080P

	- Test Pattern: Master, 64 gray RGBW * Please Use 1024 x 768@75Hz signal & 64 gray RGBW pattern and 1080P signal & master pattern to do color performance test. Color can not discolor to purple and blue.
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.



Master



64 gray RGBW

4-8 Video Performance

1. CVBS

Procedure	- Test equipment: DVD player - Test signal: CVBS
Inspection item	- Video performance test
Inspection Distance	- 0.5M ~1.0M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.

Motion video

2. HDTV/ Component

Procedure	- Test equipment: DVD player
	- Test signal: Ycbcr/YPbPr
Inspection item	- HDTV performance test
Inspection Distance	- 0.5M ~1.0M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.

3. HDMI Test

Procedure	- Test equipment: DVD Player with HDMI output.
	- Test signal:1080p
Inspection item	- HDMI performance test.
Inspection Distance	- 0.5M ~1.0M.
Criteria	- Ensure the image is well performed and the color can not discolor.
	- Check the audio is normal or not.

4. Audio Test

Procedure	- Test equipment: DVD Player
	- Test signal: CVBS
Inspection item	- Audio performance test
Inspection Distance	- 0.5 M ~1.0 M
Criteria	- Check the sound from speaker
	- Plug Audio cable into Audio in port, check whether “Volume” is normal.
	- Plug Audio cable into Audio Out port, check whether the outboard speaker’s “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.

5. S-Video

Procedure	- Test equipment: DVD player
	- Test signal: S-Video
Inspection item	- Video performance test
Inspection Distance	- 0.5 M ~1.0 M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.
	- Check the sound from speaker.

4-9 PC Calibration

Procedure	- Test equipment: video generator
	- Once Main Board is changed,PC calibration should be done as well.
	(1) Test signal: 1024 x 768@60Hz
	(2) Test Pattern: White/Black
	- Note
	(1) Calibration pattern should be in full screen mode.
	(2) Please refer to 4-2 Guide to get into service mode and choose “PC calibration”.
Inspection item	- Check if there is lines on the screen.
	- Check if there is noise on the screen.
	- Horizontal and vertical position of the video should be adjustable to the screen frame.
Criteria	- If there is noise on the screen, the product is considered as failure product.
	- The screen appears normal, it shouldn’t appear any abnormal condition, such as lines and so on.
	- Check if the projection is same as monitor diplayed.

White/Black

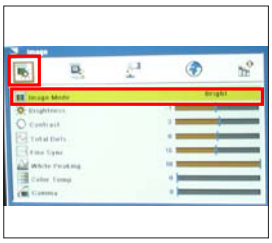
4-10 Optical Performance Measure

Inspection Condition
- Environment luminance: 2 Lux
- Product must be warmed up for 5 minutes
- Distances from the screen: 0.74 M
- Screen Size: 60 inches diagonal

1. Test equipment

Procedure

- Please get into OSD menu,Select “Bright” mode under “Image”.
- Test equipment: video generator.
- Test signal: analog 1024 x 768@60Hz



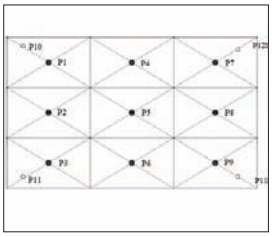
2. Brightness

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)*1.1m^2



Full white pattern

Criteria

• 1150 ANSI lumen

3. Full On/Full Off Contrast

Procedure

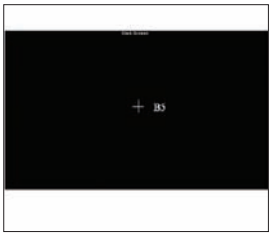
- Full white pattern & Full black pattern
- Use CL100 to measure brightness values of full white pattern P5 & full black pattern B5 (see image: full white)
- Follow Contrast formula to calculate contrast values.

☼ Contrast Formula

P5/B5

Note: P5 = Lux of center in full white pattern

B5 = Lux of center in full black pattern



Full black pattern

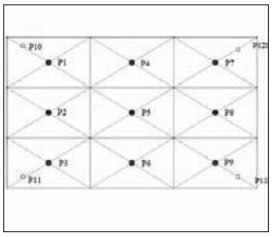
Criteria • 600:1

4. 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

$$\text{JBMA Uniformity} = \frac{\text{Avg. (P1, P3, P7, P9)}}{\text{P5}} \text{X100\%}$$



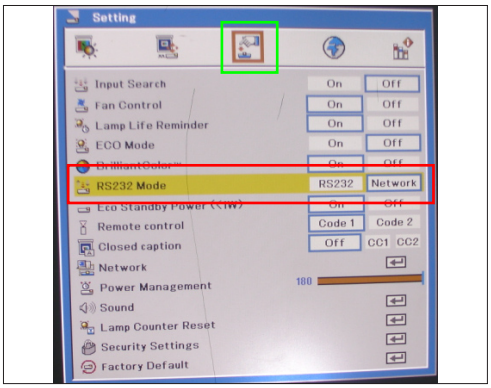
Full white pattern

Criteria • 65%

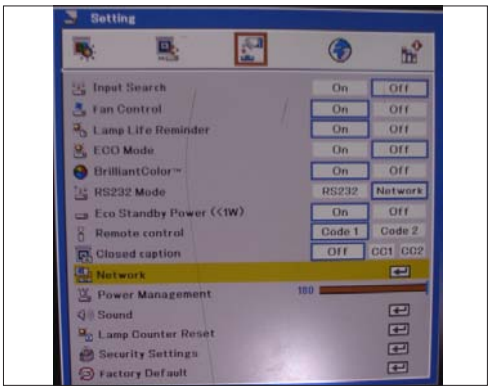
4-11 Network Function Test

1. Write Down Projector IP

(1) Turn on the Projector, then press "**Menu**" button to get into OSD Mode.
- Select "Setting" (as green square).
- Select "RS232 Mode", then select "Network".



(2) Select "**Network", press "Enter" button.**

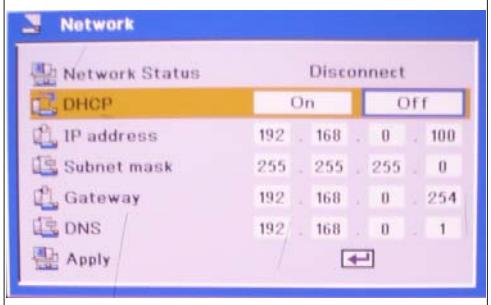


(3) The image A will appear on the screen,
please wait a moment.

A

(4) The image B will appear on the screen.
- Key in the IP address: 192.168.0.100.
- Key in the Subnet mask: 255.255.255.0.

B



(5) The image C will appear on the screen,
please wait a moment.

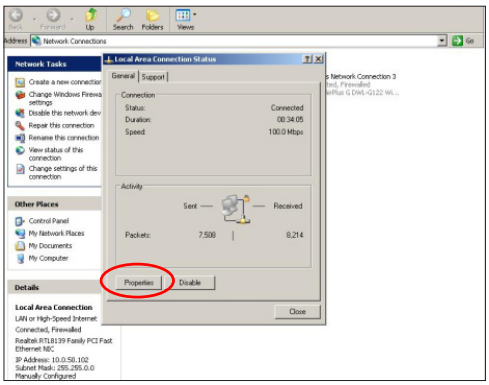
C

(6) The image D will appear on the screen,
please wait a moment.

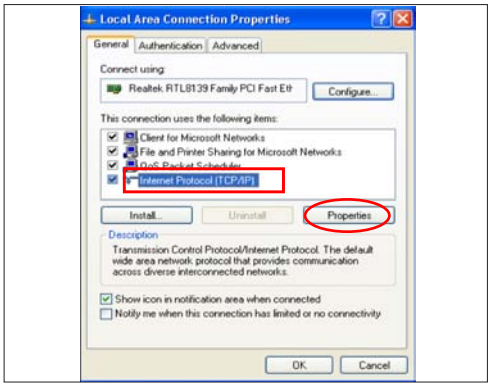
D

2. Network Setting

(1) Open the “Local area connection”, choose “properties”.

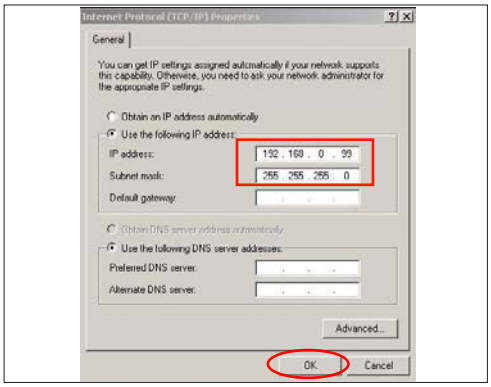


(2) Select “Internet protocol (TCP/IP)”, then click “Properties”.

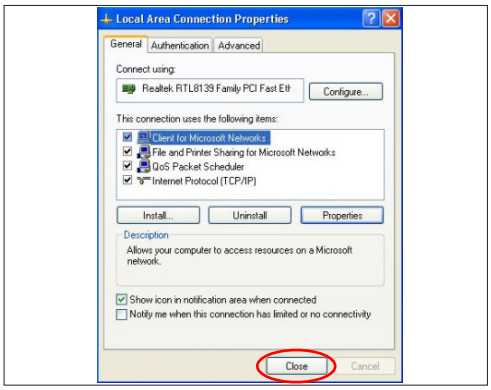


(3) Modify the IP address to 192.168.0.99, and modify Subnet mask to 255.255.255.0.

Note: - The HOST ID (192.168.0.XXX) of PC IP address must be different from the projector IP address written down in step 1 of 4-11-1.



(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.

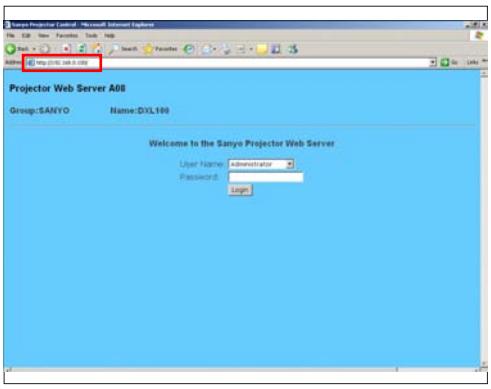
(2) Execute “Internet Explorer”.

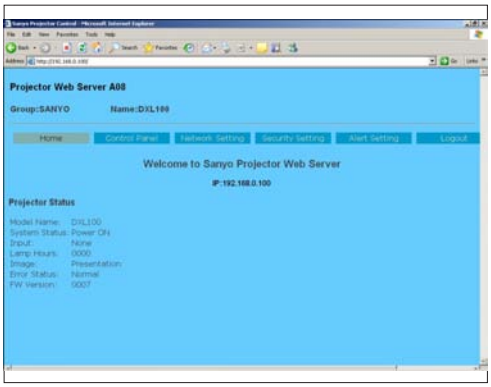
(3) Visit the IP address: “http://192.168.0.100/”.

- Key in “User Name: Administrator” and “Password: admin”, click “Login” to get into Projector Web Server.

(4) Projector information will be shown on the screen.

- Please check whether web management, FW version and model name are right.





4-12 Others

1. Functional Inspection

Keypad button	- All keypad buttons must operate smoothly.
Remote Controller	- Check whether the remote controller can work normal, “Menu”, “Left” and “Right” buttons work smoothly.
General	- All OSD functions must be checked for functionality. When OSD menu is displayed, there shall be no visible peaking, ringing, streaking, or smearing artifacts on the screen.
Factory Default	- The factory settings (with appropriate centering, size, geometry distortion, etc.) shall be displayed upon “Recall” is selected from OSD.

Display Size - All preset modes shall expand to full screen size using OSD Horizontal and Vertical Size controls.

Display Data Channel (DDC) - The purpose of the DDC test is to verify the DDC1/DDC2B operation of the projector and to verify Plug & Play function.

Acoustic - High pitch sound from cooling fan and color wheel is unacceptable.

2. Check points for exterior and print pattern

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

Chapter 5

Firmware Upgrade

Section 1: System Firmware Upgrade

5-1-1 Equipment Needed

Software: (DDP 2230- RS232)

- DLP Composer Lite 8.3
- Firmware
- Library file (library file has to put in PC and set right path in 5-1-3 step 4)

Hardware:

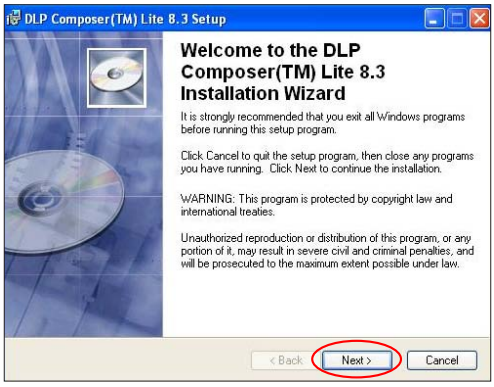
- Projector
- Power cord: CH4200105G011 (US Type)
  CH4200120G011 (EU Type)
  CH4200110G011 (UK Type)
- RS232 cable (DSUB(F) 9 – DIN(M) 8)
- PC or Laptop




5-1-2 DLP Composer Lite Setup Procedure

1. Choose "DLP Composer Lite V8.3 Setup" Program.

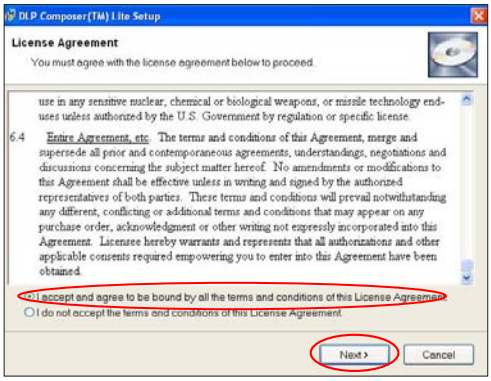
2. Click "Next".

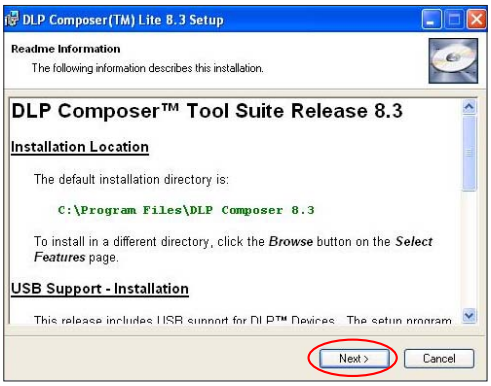


3. Read "License Agreement".

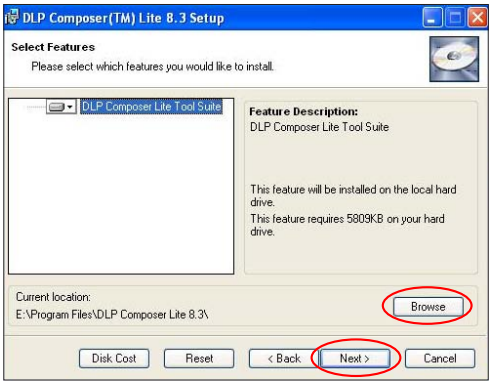
   - Choose "I accept and agree to be bound by all the terms and conditions of this License Agreement".
   - Click "Next".

4. Click "Next".



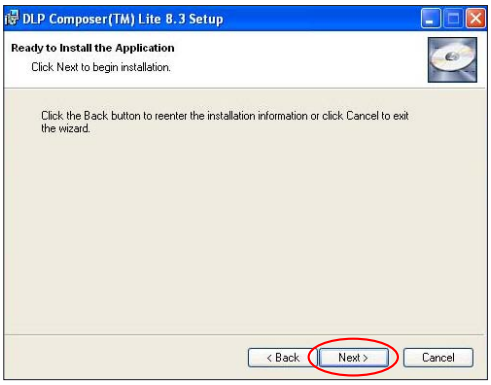


5. Click "Browse" button to change the downloading location to “program files”, then click "Next".

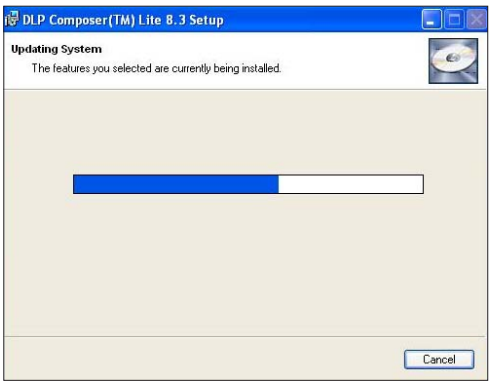


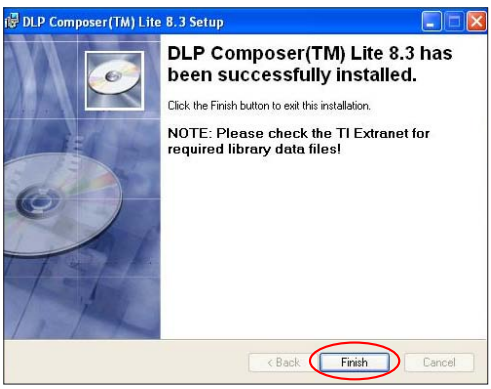
6. Click "Next".

7. The program is executing "installing" status.



8. Click "Finish".





5-1-3 Firmware Upgrade Procedure

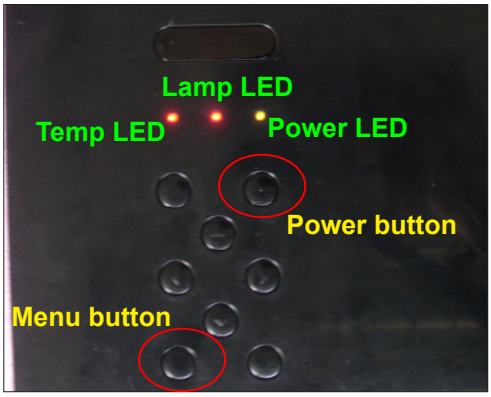
1. Set-up

   - Hold on "Power" and "Menu" buttons, then plug in the power cord, the power LED will go to steady orange, the Temp LED and Lamp LED will go to steady red.

   - Loosen the two buttons.

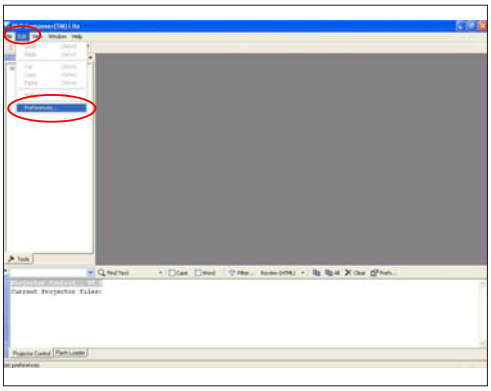
   - Connect projector with PC by RS232 cable.

Note: The system fan and the lamp will not operated.



2. Execute the "DLP Composer™ Lite 8.3" file.

3. Click "Edit" and "Perferences".

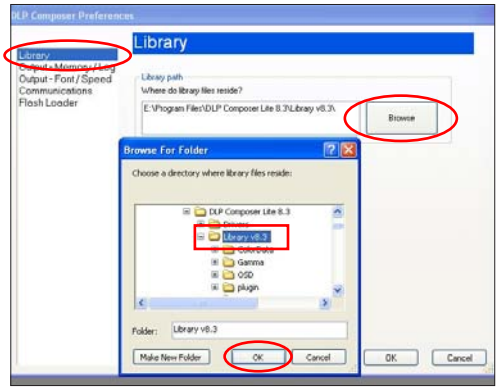


4. Click "Library".

   - Click the "Browse" and navigate to the directory where you put the DLP Composer installation files in.

   - Click "Library v8.3" folder.

   - Click "OK".

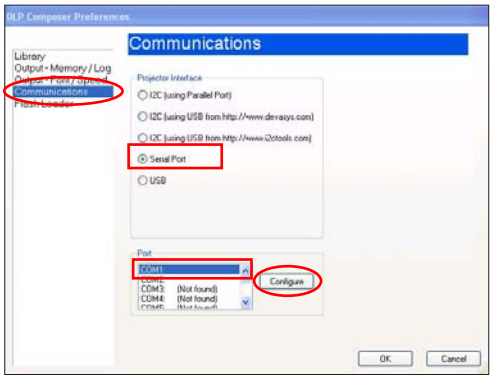


5. Click "Communications".

   - Select "Serial Port".

   - Select the COM Port which you are using.

   - Click "Configure".



6. "Serial Port Configuration" picture will appear on the screen.

   - Make sure the settings are as below:

   (1) In "Baud Rate" item, select "115200".

   (2) In "Data Bits" item, select "8".

   (3) In "Stop Bits" item, select "1".

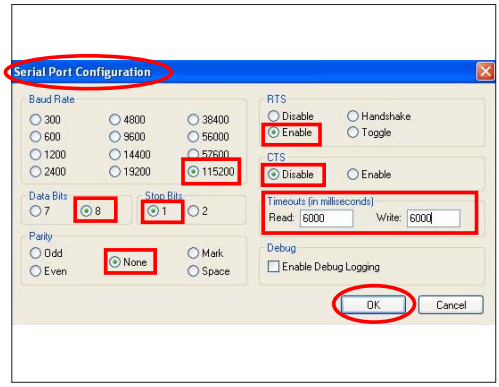
   (4) In "Parity" item, select "None".

   (5) In "RTS" item, select "Enable".

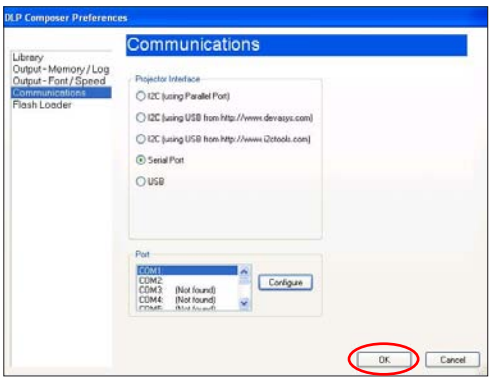
   (6) In "CTS" item, select "Disable".

   (7) Key in "6000" into "Read" and "Write" items of "Timeouts (in milliseconds)".

   - Click "OK".



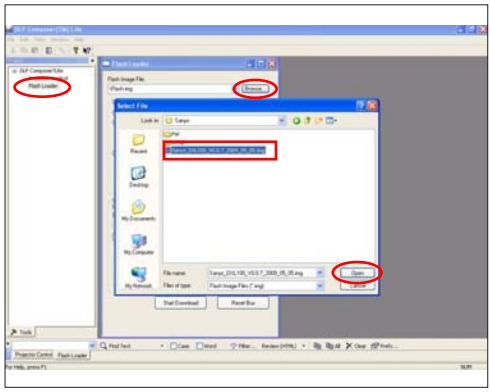
7. Click "OK".



8. Choose "Flash Loader".

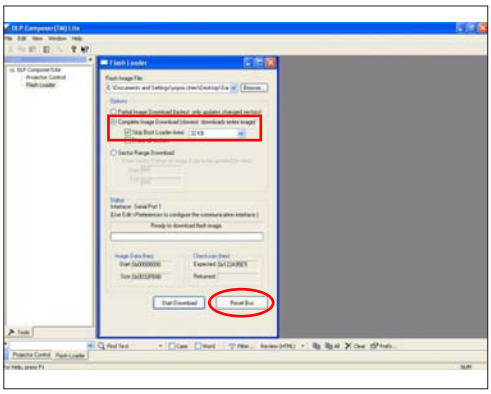
   - Click "Browse" to search the firmware file (*.img).

   - Click "Open".



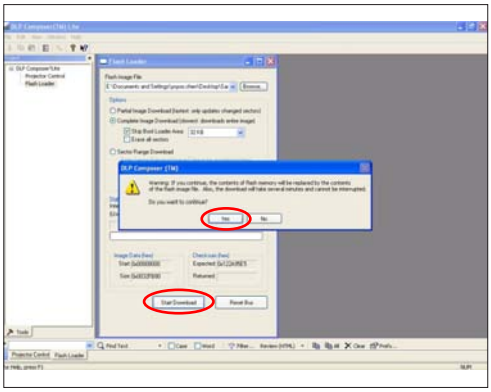
9. Select "Complete Image Download", then select "Skip Boot Loader Area". (select "32KB").

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

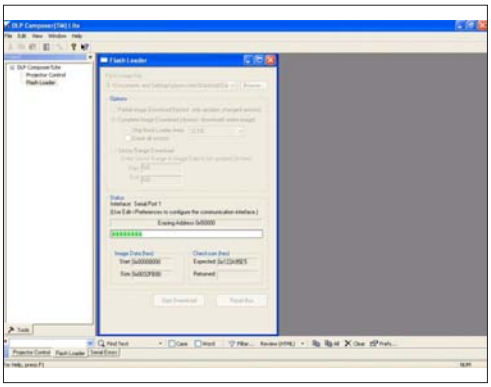


10. If the FW is ready, click "Start Download" to execute the firmware upgrade.

    - Click "Yes".

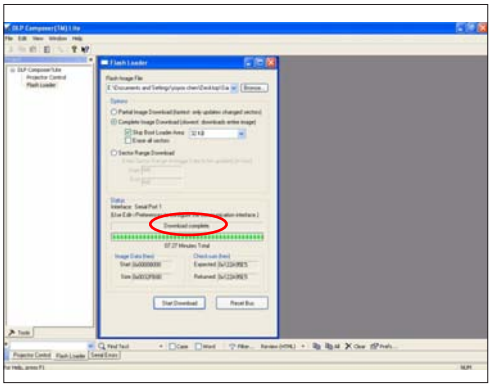


11. Proceeding Picture.



12. It takes about several minutes, the firmware upgrade process is finished, "Download completed" will appear on the screen.

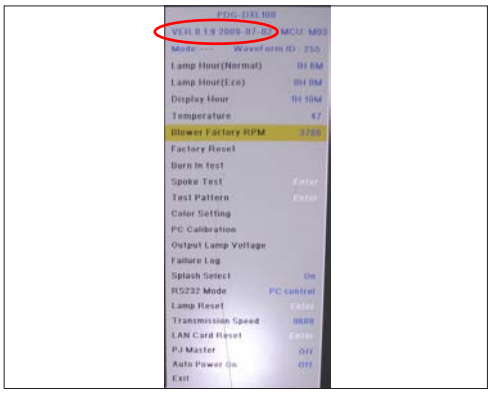
    - Unplug RS232 cable and power cord.



13. Check FW version.

    - Re-plug in power cable, then restart the unit and get into the Service mode to check the firmware version.

      (To get into Service mode, please press "Power", "Enter", "Enter" and "Menu" buttons sequentially.)



Section 2: 8051 Firmware Upgrade Procedure

5-2-1 Equipment Needed

Software: (DDP 2230)

- Setup _NLINK_en
- Manley USB Driver_NLINK
- PDG-DXL 100_8051_xxx.hex

Hardware:

- Projector
- Power Cord: CH4200105G011 (US Type)
  CH4200120G011 (EU Type)
  CH4200110G011 (UK Type)
- Mini USB Cable
- NLINK Cable
- NLINK Fixture
- PC or Laptop



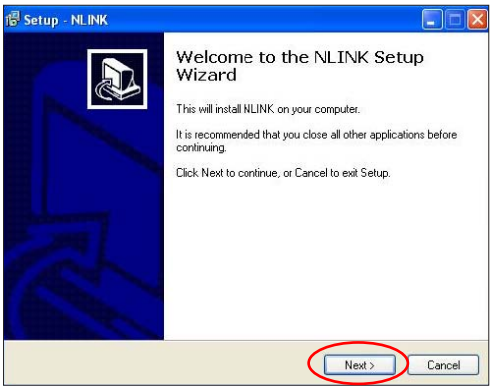


5-2-2 NLINK Setup Procedure

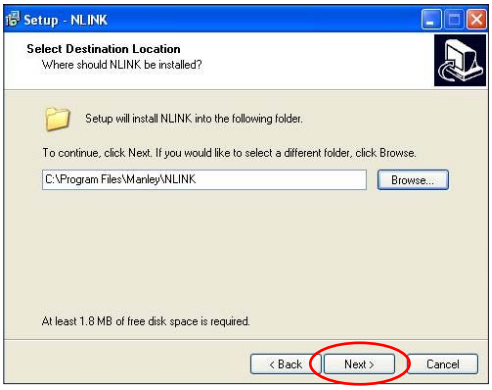
1. Choose "setup_NLINK_en.exe" program.

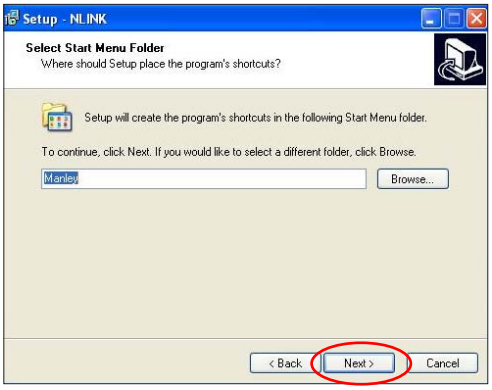
2. Click "Next".

3. Click "Next".



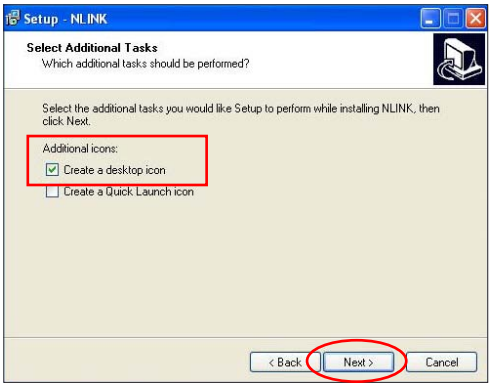
4. Click "Next".



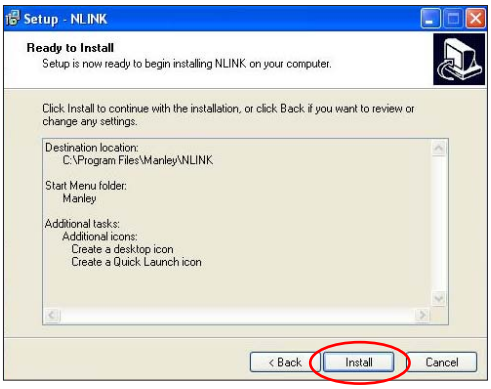


5. Click "Next".

   - Select the additional task that you may create a desktop icon.

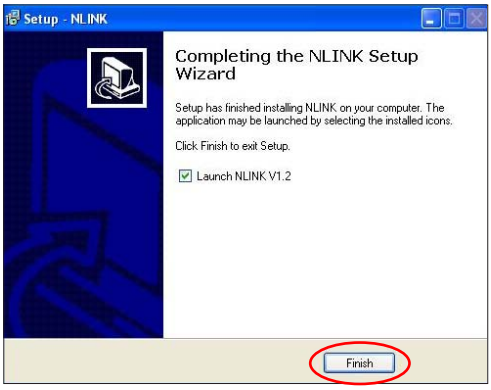


6. Click "Install" to begin installing NLINK Procedure.



7. Click "Finish".

   - Complete the NLINK setup.



8. "MCU Choose" picture will appear on the screen.

   - Close the picture.

5-2-3 Manley USB Driver Upgrade Procedure

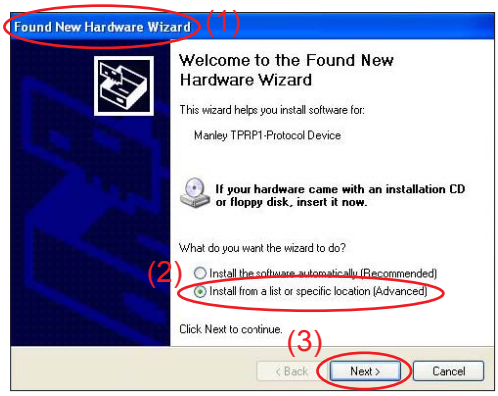
Note: - If you have installed the Manley USB driver, there is no need to perform this action.

1. Set up

   - Plug in the power cord.
   - Connect VGA-1 Port of projector with NLINK Fixture.
   - Connect NLINK Fixture with PC by USB cable.

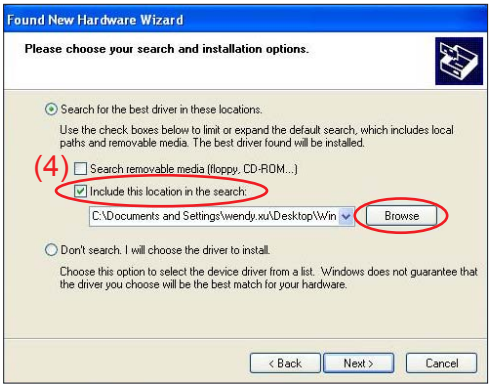
2. Execute Program

   (1) "Found New Hardware Wiszard" picture will appear on the screen.



   (2) Select "Install from a list or specific location (Advanced)".

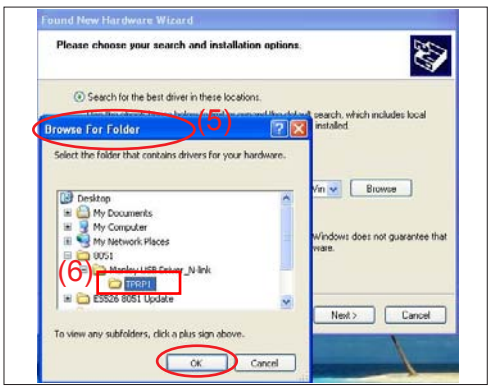
   (3) Click "Next".



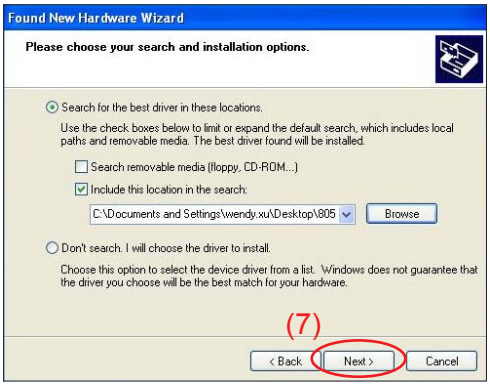
   (4) Select "Include this location in the search", then click "Browse".

   (5) "Browse For Folder" picture will appear on the screen.

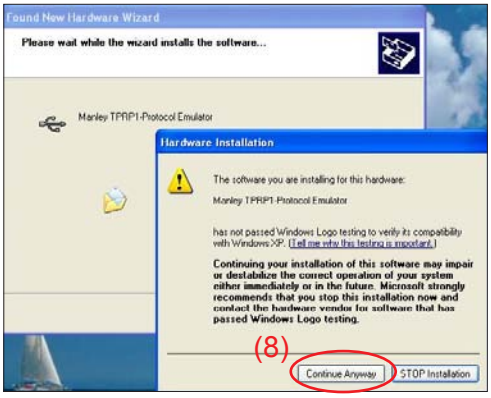
   (6) Select "TPRP1" folder in the "Manley USB Driver_N-Link" folder, then click "OK".



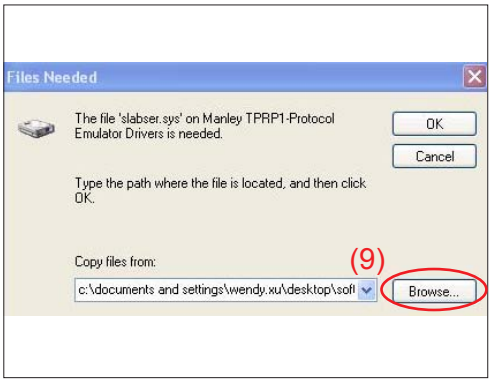
(7) Click "Next".



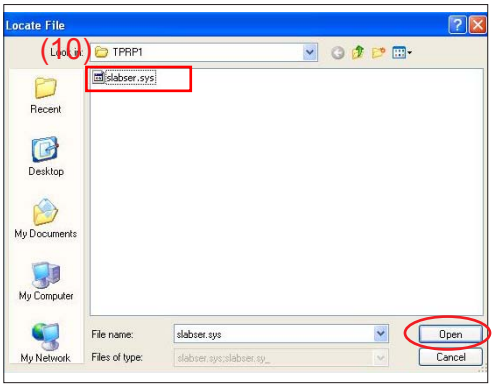
(8) Click "Continue Anyway".



(9) Click "Browse".



(10) Select the file "slabser.sys", then open it.



(11) Click "Finish".

- "Manley TPRP1-Protocol Emulator" will appear on the picture.
- Complete the USB Driver Upgrade Procedure.

Note: - If "Found New Hardware Wiszard" picture appear again, repeat step 2 to install USB Drivier.

5-2-4 8051 Firmware Upgrade Procedure

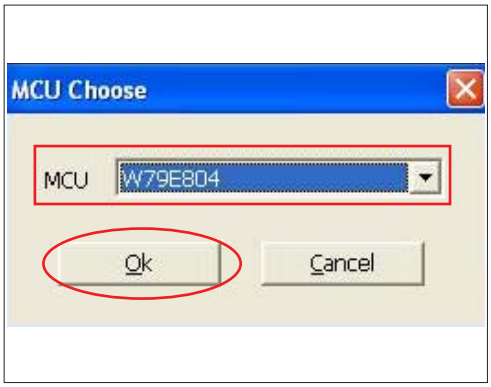
1. Execute 8051 FW Program

- Double click "NLINK V1.2" to execute NLINK program.

Note: - When we execute NLINK program, the Power LED flashes orange and Fixture LED flashes red.

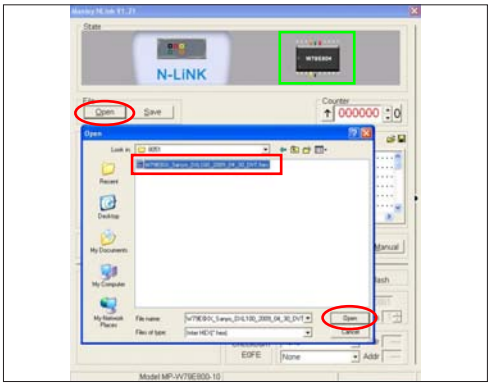
2. Choose the right type of MCU

- "MCU Choose" picture will appear on the screen, select "W79E804".
- Click "OK".



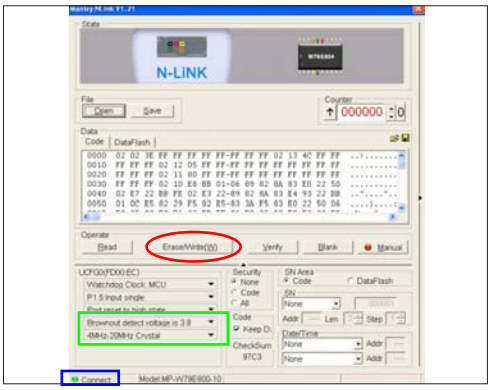
3. Choose 8051 file (*.hex)

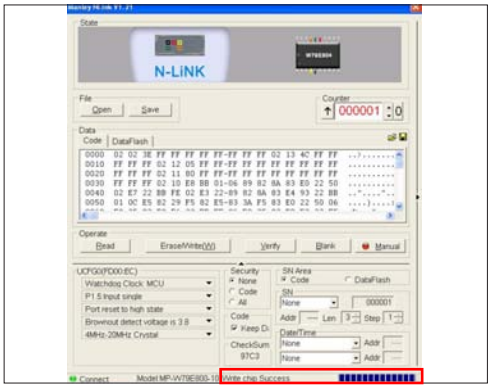
- "Manley Nlink" picture will appear on the screen.
- Ensure "MCU" is the one you chose in the last step (as green square).
- Click "Open".
- Select the 8051 file where you put the file in, then click "Open".



4. Program settings

- Ensure NLINK Fixture and PC are securely connected: the indicator lights on green, and the state is "Connect" (as blue square).
- Select "4MHz-20MHz Crystal" and "Brownout detect voltage is 3.8" (as green square).
- Click "Erase/Write(W)" (as red ellipse) to execute 8051 FW upgrade.





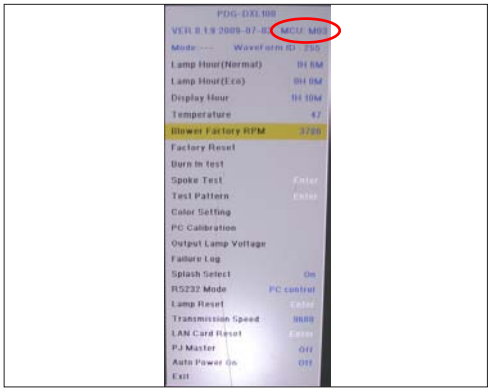
5. Finish

- When 8051 FW upgrade process is finished, "Write Chip success" will be shown (as red square).

6. Check 8051 FW version

- Turn on the unit and get into the service mode to check the 8051 FW version.

  (To get into Service mode, please press "Power", "Enter", "Enter" and "Menu" buttons sequentially.)



Section 3: Network Firmware Upgrade Procedure

5-3-1 Equipment Needed

Software:

- PDG-DXL 100_LAN Module FW_xxx.bin (*.bin)

Hardware:

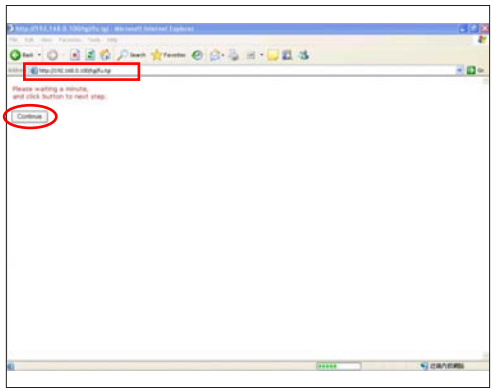
- Projector
- Power Cord: CH4200105G011 (US Type)
  CH4200120G011 (EU Type)
  CH4200110G011 (UK Type)
- LAN Cable
- PC




5-3-2 PC Hardware Link

1. Execute Network Settings, please refer to 4-11 details of Chapter 4.

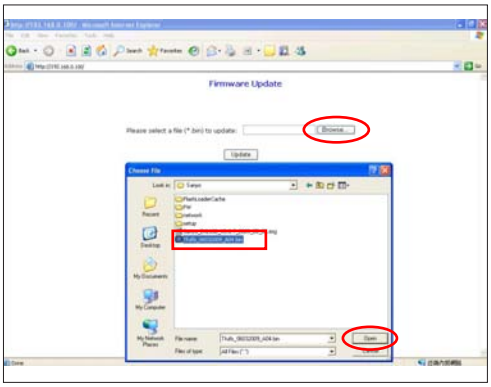
2. Double click "Internet Explorer".



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

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

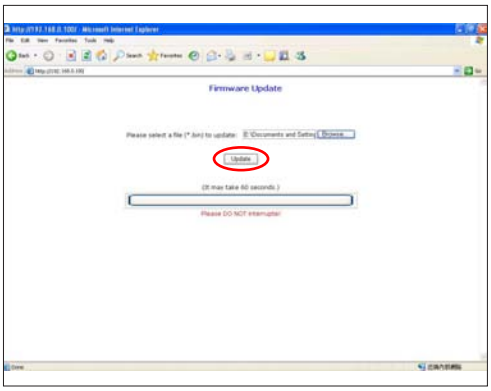
   - Click "Continue".



4. "Firmware Update" image will appear on the screen.

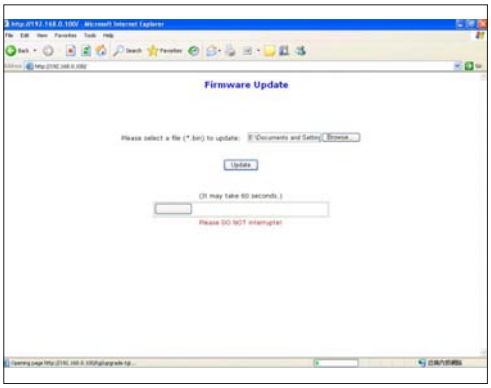
   - Click "Browse" button to select the Network FW file (*.bin) which you saved.

   - Click "Open".

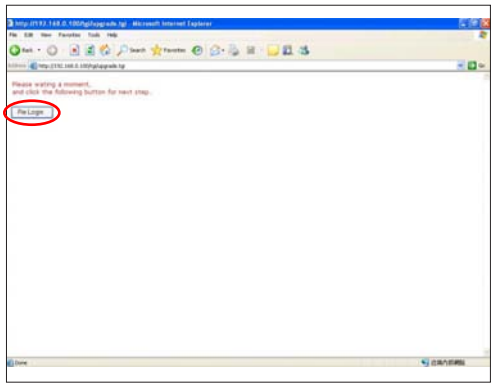


5. Click "Update" to start updating.

6. Firmware Upgrade procedure.

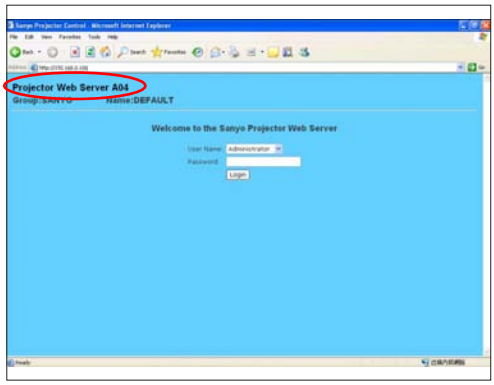


7. Click "Re Login".



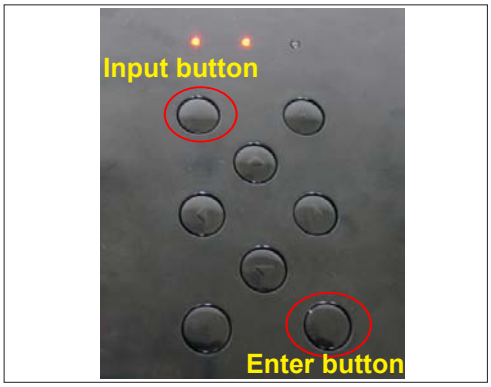
8. Firmware upgrade procedure completes.

   - The projector Network FW version will appear.



Section 4: Lamp Driver Waveform Download

5-4 Waveform Download

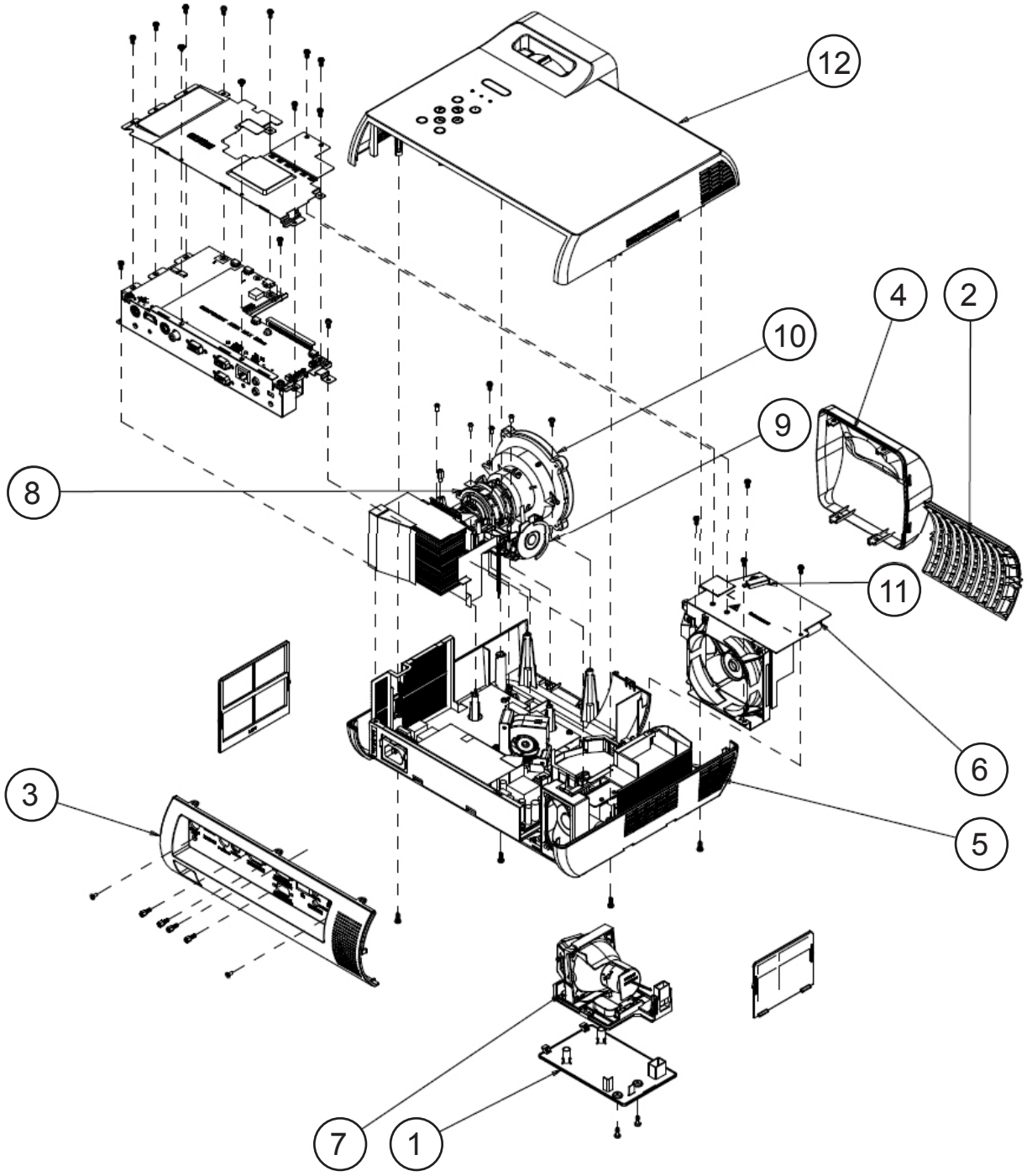


- Plug in the power cord
- Hold on "Input" and "Enter" buttons, then press "Power" button.
- After several seconds, the Temp LED and Lamp LED will light red, then loosen "Input" and "Enter" buttons.
- After 5 seconds, the Temp LED and Lamp LED will flash red.
- Waveform Download is completed.

Appendix A (Exploded Image)

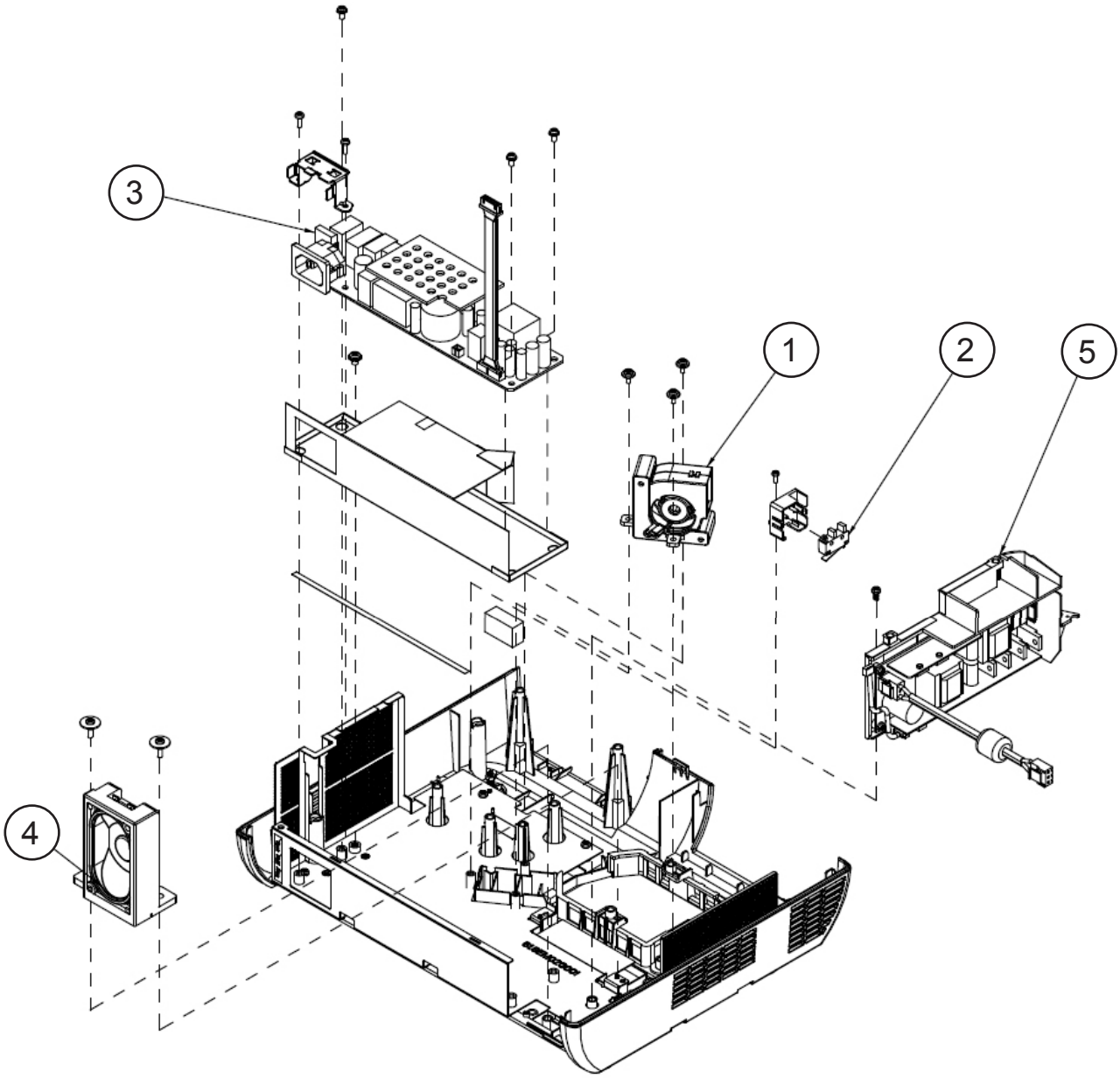
Note: This chapter is only designed to show the exploded image of the projector. For updated part numbers, please refer to RSPL report.

D.C. PDG-DXL100



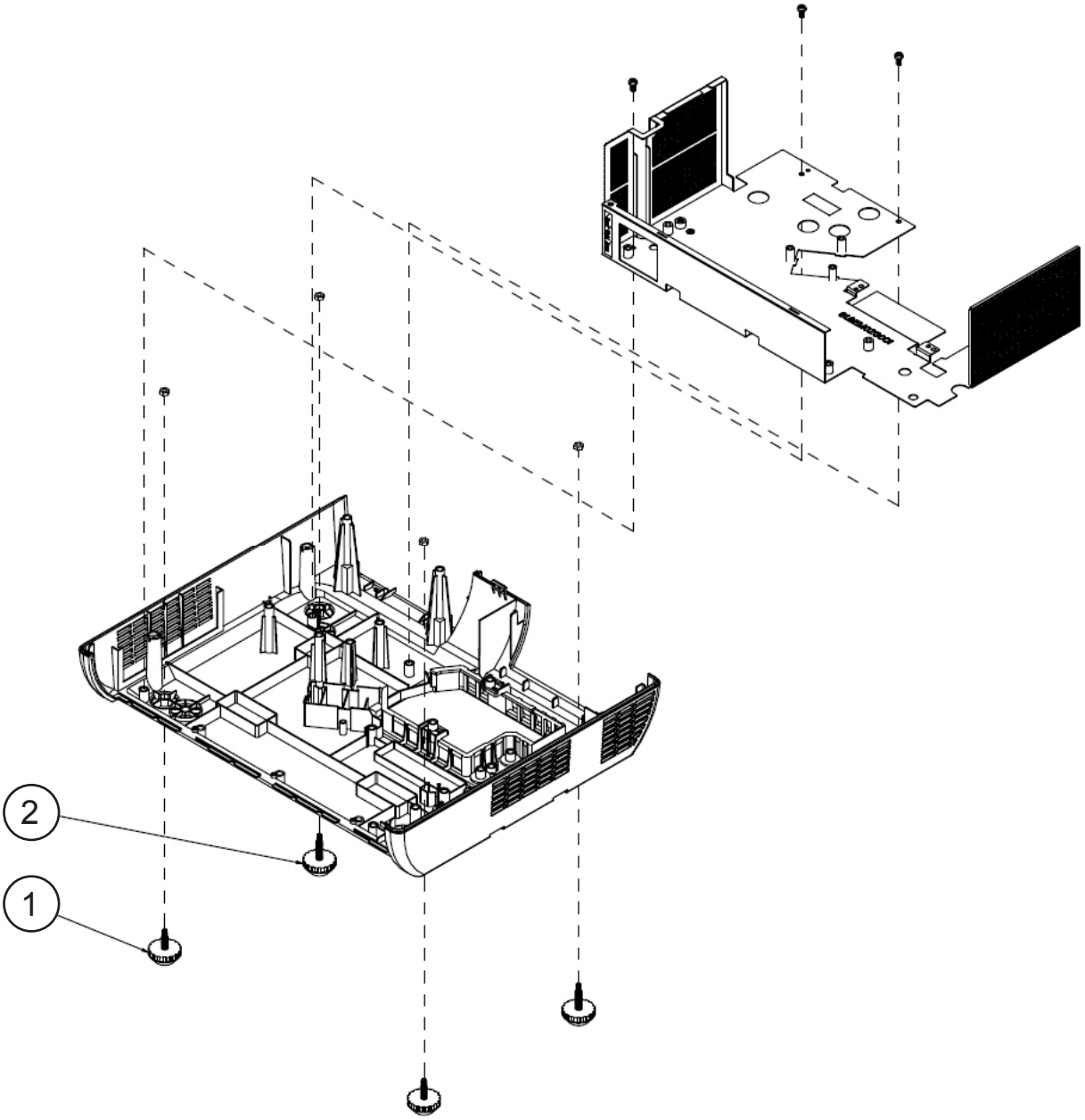
Item	P/N	Description
1	CH518EM03G001	LAMP COVER PC LN2520 CS-CA08 PDG-DXL100
2	CH518EM04G001	FRONT VENT PC LN2520 CS-CA08 PDG-DXL100
3	CH518EM05G001	I/O COVER PC MN3600H CS-CA08 PDG-DXL100
4	CH518EM06G001	LENS COVER PC MN3600H CS-CA08 PDG-DXL100
5	CH708EM13GR01	ASSY BOTTOM COVER MODULE PDG-DXL100(SERVICE)
6	CH498AU02G001	SUNON 85*85*25mm AXIAL FAN
7	CHSP8EM01GC01	LAMP MODULE FOR PROJECTOR PDG-DXL100N
8	CH708EM14GR01	ASSY ENGINE MODULE PDG-DXL100(SERVICE)
9	CH708EM16GR01	ASSY COLOR WHEEL MODULE PDG-DXL100(SERVICE)
10	CH708EM17GR01	ASSY ENGINE MODULE WITH CW AND DMD PDG-DXL100(SERVICE)
11	CH438EM17G001	PDG-DXL100 THERMAL SWITCH WITH BRACKET (KLIXON YS11) 105deg. C
12	CH758EM01G001	BUY ASSY TOP COVER MODULE PDG-DXL100

ASSY BOTTOM MODULE



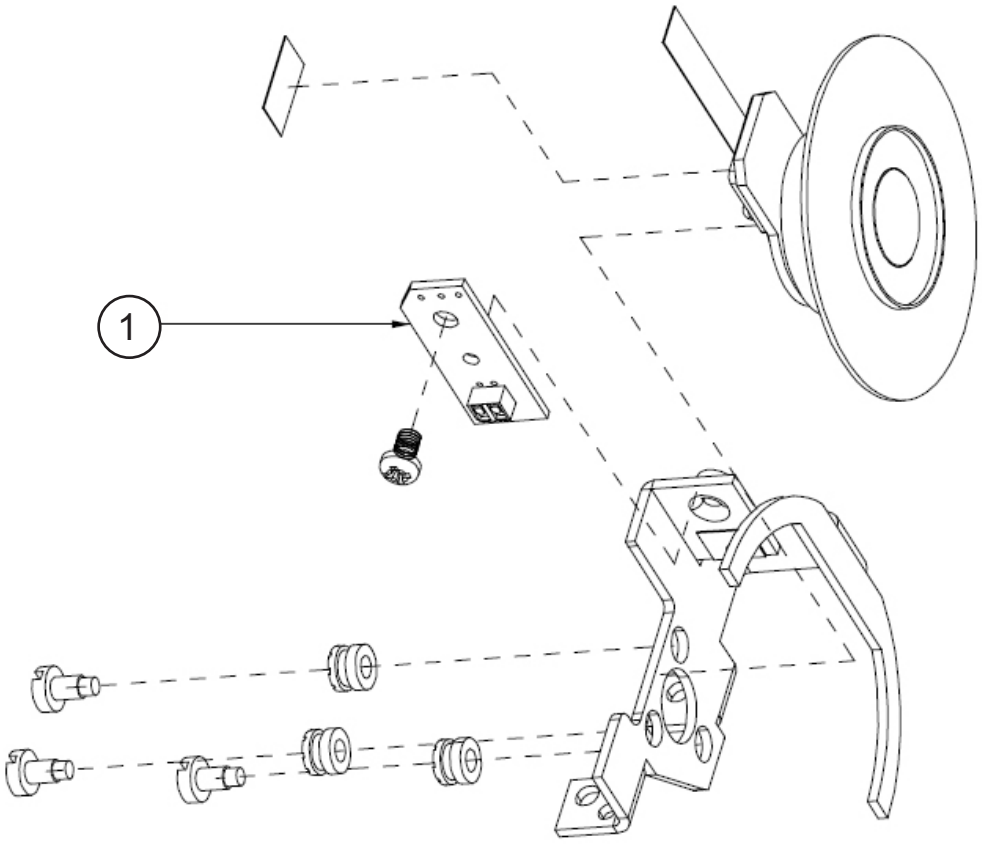
Item	P/N	Description
1	CH498EM02G001	SUNON 45x20 BLOWER, F TYPE
2	CH758AA04G001	BUY ASSY INTERLOCK SWITCH 1409X
3	CH758EM01GP03	ASSY MATRITEK CT-320 LVPS FOR PDG-DXL100(RELAY TYPE)
4	CH498EM01G002	SPEAKER 8W 8-OHM WITH GND WIRE PDG-DWL100
5	CH758EL01G001	PHILIPS Euc 225 dW/C31(225W) for PDG-DWL100

ASSY BOTTOM COVER MODULE



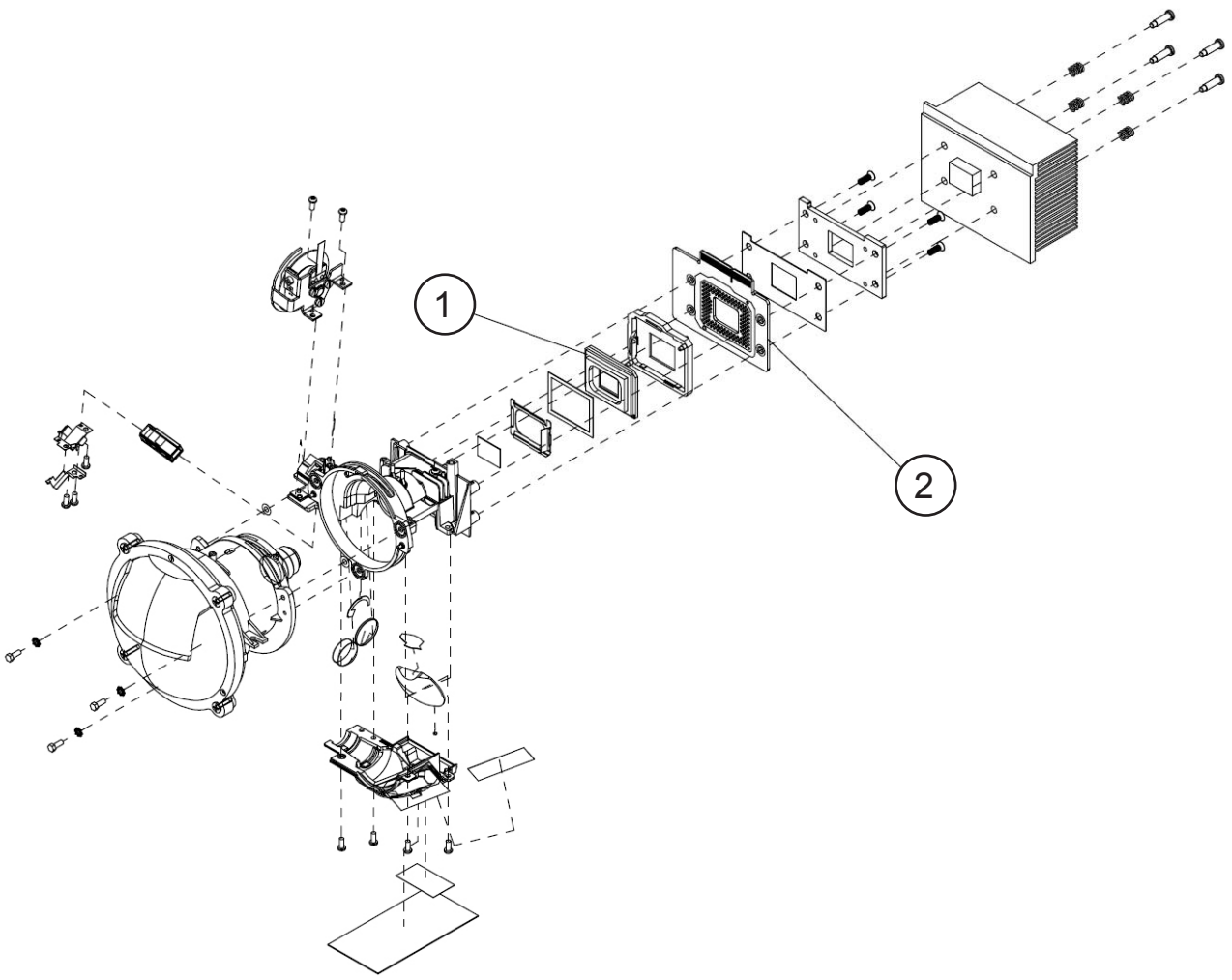
Item	P/N	Description
1	CH5289601G041	ADJUST REAR FOOT RUBBER PDG-DXL100
2	CH5289601G003	ADJUST FOOT RUBBER 65 DEGREE PD523PD

ASSY COLOR WHEEL MODULE



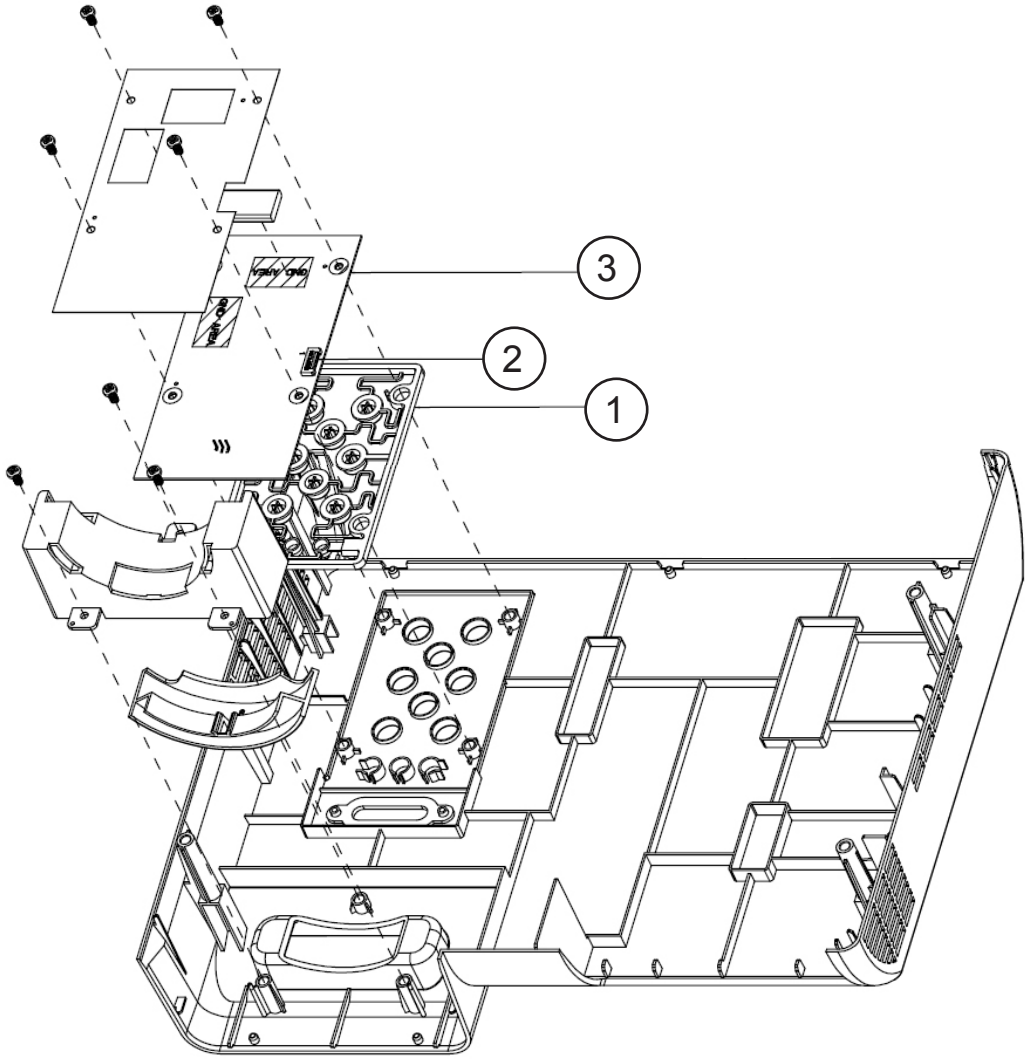
Item	P/N	Description
1	CH808BY04G001	PCBA PHOTO SENSOR BOARD FOR EX765

ASSY ENGINE MODULE



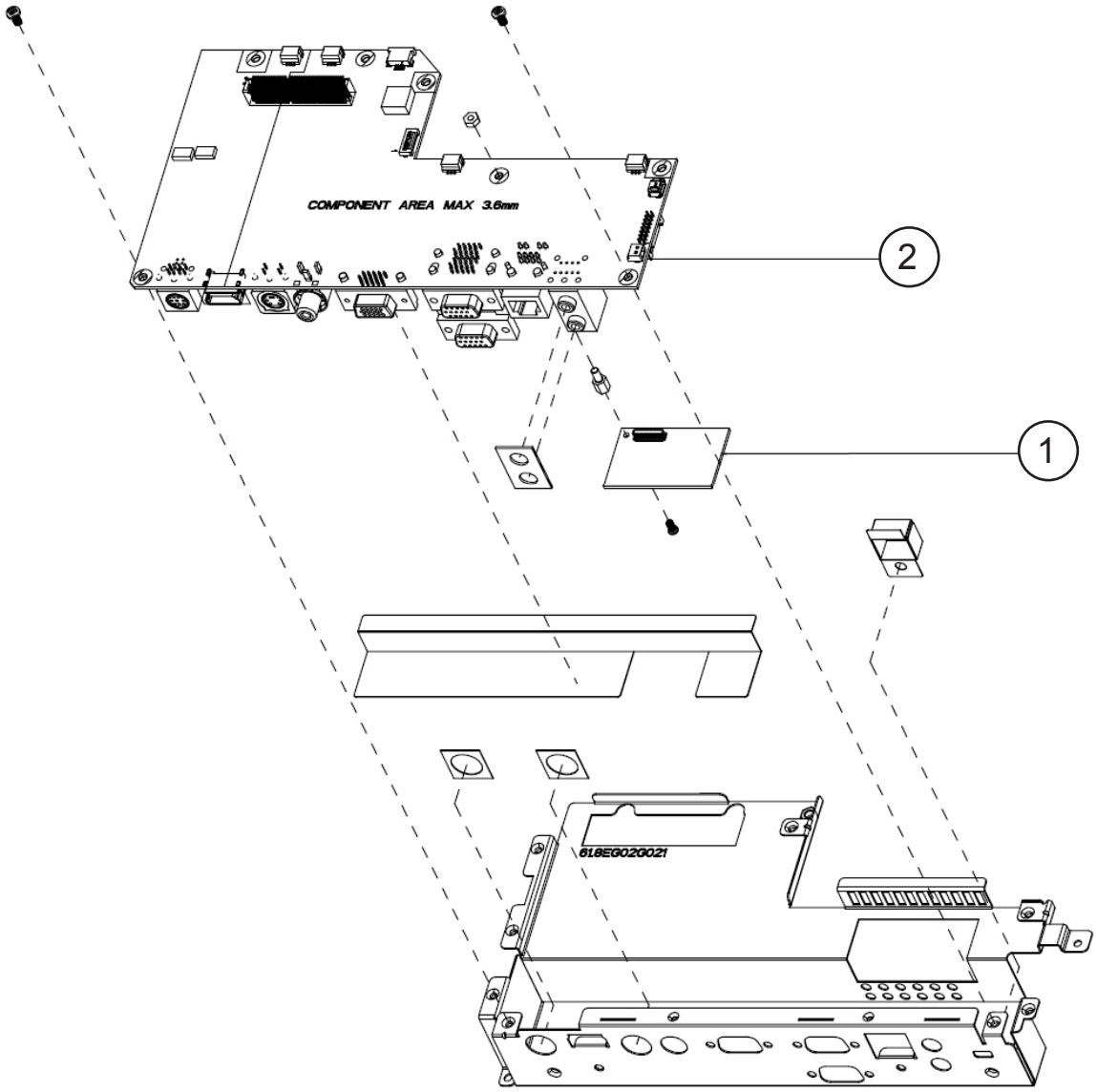
Item	P/N	Description
1	CH4889B01G002	DMD 1024X768 PIXEL .55” XGA 2xLVDS SUPER VALUE Type-X VERSION 2 “TI”
2	CH808EL02G001	PCBA DMD BOARD FOR PDG-DWL100

ASSY TOP COVER MODULE



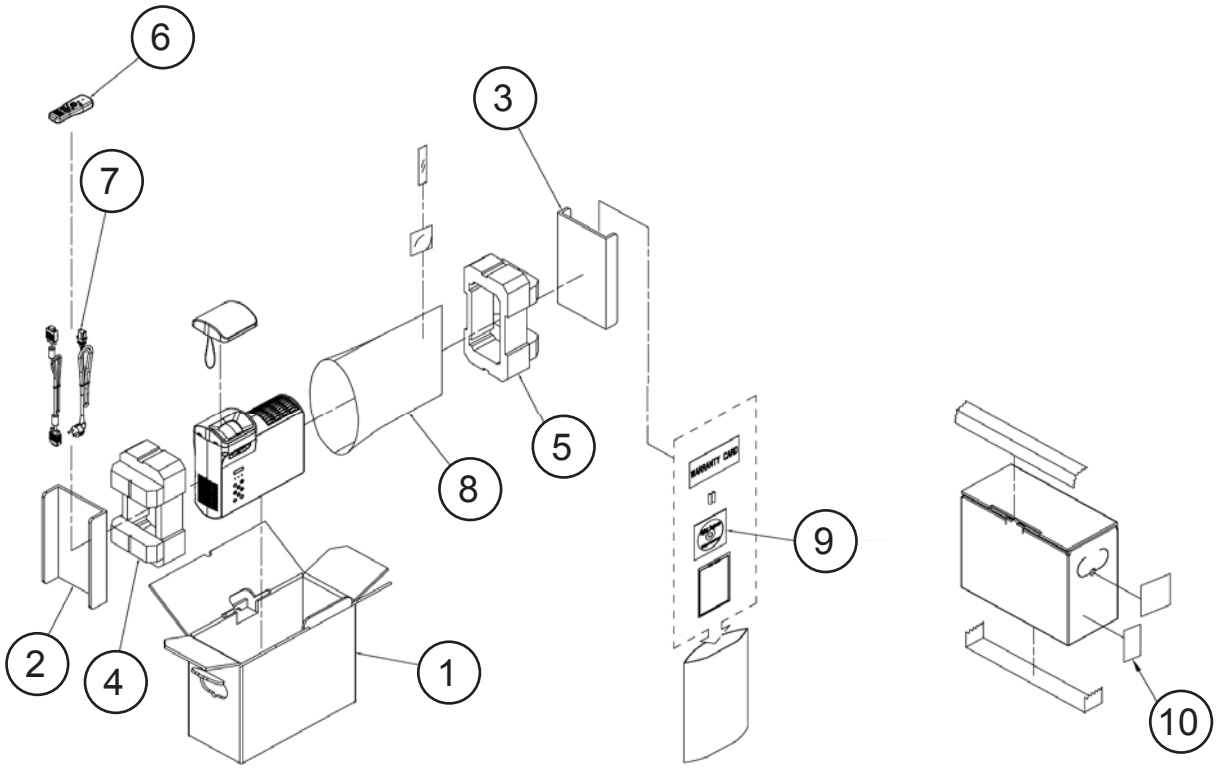
Item	P/N	Description
1	CH758EM02G001	BUY ASSY KEYPAD MODULE PDG-DXL100
2	CH4283C06G001	CABLE FFC 16P P=0.5 200mm KAYPAD TO M/B EP910
3	CH808EM03G001	PCBA Keypad BD FOR SANYO PDG-DXL100 XGA_ST

ASSY MB MODULE



Item	P/N	Description
1	CH808EM07G001	PCBA LAN MODULE BOARD FOR Sanyo PDG-DXL100
2	CH808EM01G001	PCBA MAIN BD FOR SANYO PDG-DXL100 XGA_ST

ASSY PACKING DRAWING



Item	P/N	Description
1	CH558EM01G001	CARTON AB FLUTE 18KG PDG-DXL100
2	CH558EM02G001	RIGHT PARTITION PDG-DXL100
3	CH558EM03G001	LEFT PARTITION PDG-DXL100
4	CH568EM01G001	PACKING RIGHT EPE PDG-DXL100
5	CH568EM02G001	PACKING LEFT EPE PDG-DXL100
6	CH458EL01G001	REMOTE CONTROLLER FOR PDG-DWL100
7	CH4200105G011	CABLE POWER CORD 1.8M SP-305A/IS-14 US DIS-WARNING LABEL
	CH4200120G011	CABLE POWER CORD 1.8M SP-023/IS-14 EUROPE DIS-WARNING LABEL
	CH4200110G011	CABLE POWER CORD 1.8M SP-60/IS-14 UK DIS-WARNING LABEL
8	CH568EM03G001	PACKING EPE BAG 420*500MM DXL100
9	CH368EM01G001	USER'S GUIDE MULTILINGUAL SANYO DXL100
10	CH3589504G001	LABEL CARTON 108*92 BLANK

Appendix B

I. Serial Number System Definition

Serial Number Format for Projector

5 9 6 01002

① ② ③

① : 9 = Last number of the manufacture year (ex:2009 = 9)

② : 6 = Month (ex:6 = June)

③ : 01002 = Production number (5 digits), It starts from "01001" ~"99999"

EX: 59601002

This label "59601002" represents the serial number for PDG-DWL100. It is produced on June of 2009. Its serial code is 01002.

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

PRODUCT CODE
1 682 347 81

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Printed In Japan