PROJECTOR

EH1060_DP486-57A

SERVICE MANUAL

CONTENTS

Revised History

Date	Description
2010-03-08	Draft Edit
2010-03-17	Preliminary

1. COMPLIANCE OF SAFE REPAIR

Be sure to read this Service Manual before providing services. In the projector, full consideration is taken to ensure safety for fire, electric shock, injury, harmful radiation, and substance. Therefore, observe the notice described in this Service Manual so that safety is kept when providing services. Moreover, be sure to observe the notice described in the Instruction Manual.
Pay attention to the following items during service inspection.

1-1 Cautions during disassembling and assembling

1. This equipment contains parts under high voltage. When making repairs, etc.
   Be sure to pull out the power plug beforehand to insure safety.
2. Parts may be very hot immediately after use.
   Make sure the equipment has cooled off sufficiently before carrying out repairs.
3. Make sure that parts and screws and wiring, etc. are returned to their original positions.
   Tube, tape and other insulation materials have been used for safety reasons.
   The internal wiring has been designed to avoid direct contact with hot parts or parts under high voltage when using clamps or other tools.
4. The parts used in this device have special safety features such as flame-resistance and anti-voltage properties. When replacing parts, always use parts supplied from the factory.
5. After finishing operations make sure that all parts and wires have been returned to their original position and that there has been no deterioration of the area around the location that was worked on.
6. Be sure to use a grounding strap (wrist band) during repair and inspection.

1-2 Lamp

During current conduction, the lamp is in the high-temperature state. In this case, pay careful attention because a high voltage is used. When replacing a lamp, replace it after confirming that the lamp has gotten cold sufficiently.

1-3 Lens

Do not look into a lens during projection. This damages your eyes.

2. SPECIFICATIONS

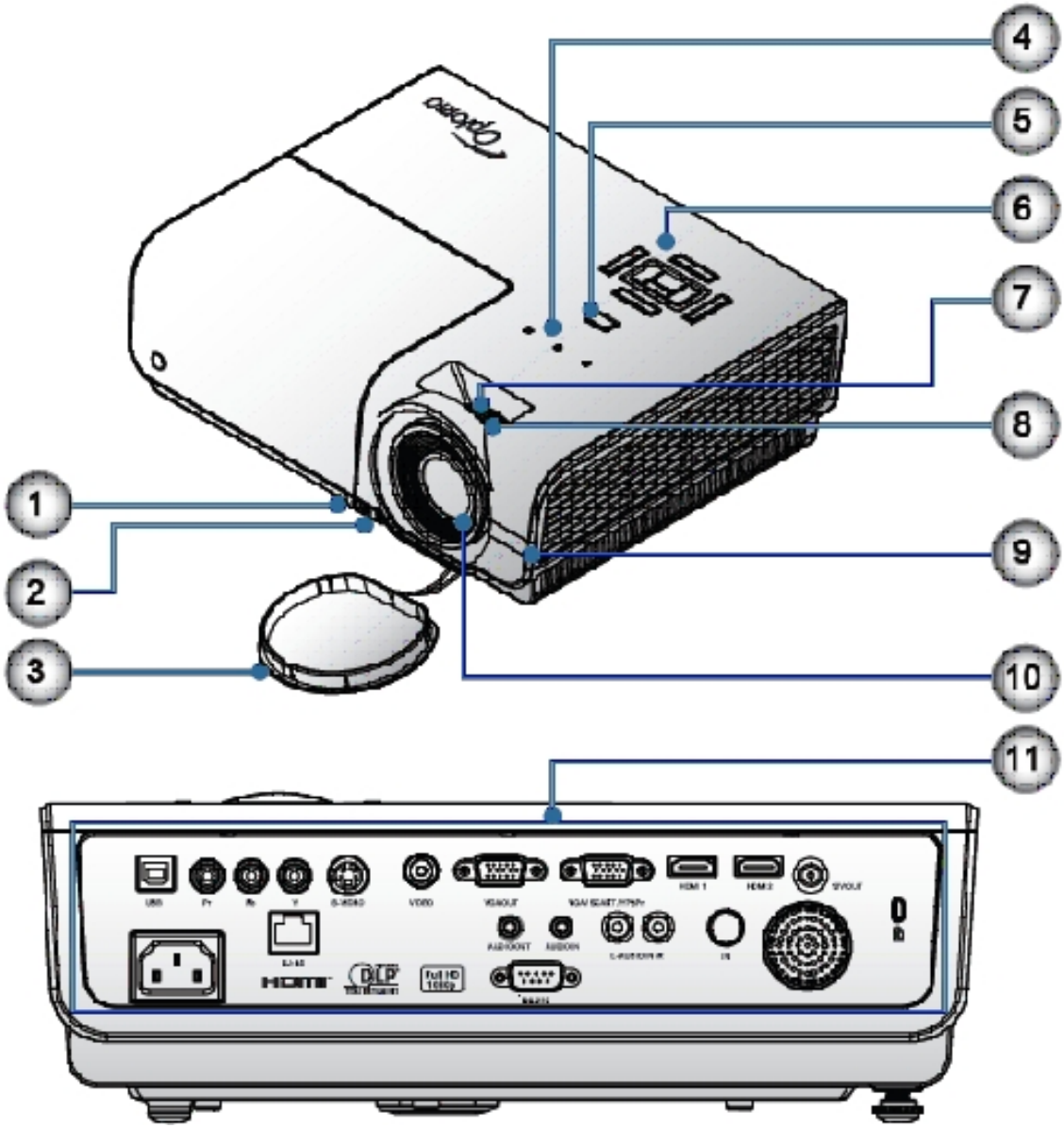
2-1. Summary Specifications

Model	**EH1060**
Display type	“TI” DMD 12° , 0.65” 1080P, Type A, Dark Chip 2
Resolution	1920x1080 Native (1080P)
Weight	<8.1 lbs
Projection distance	1 meters ~ 10 meters
Projection screen size	30”~280”
Projection lens	Manual Focus/Manual Zoom x 1.2
Throw ratio	1.59-1.908
Vertical keystone correction	+/- 15 degrees
Projection methods	Front, Rear, Desktop/Ceiling (Rear, Front)
Data compatibility	IBM PC or compatibles (VGA, SVGA, XGA, SXGA, UXGA), Mac
SDTV/EDTV/ HDTV	480i, 576i, 480p, 576p, 720p, 1080i, 1080p
Video compatibility	NTSC, PAL , SECAM
H-Sync	15, 31 – 90 kHz
V-Sync	50 – 85 Hz
Color Wheel	RYGCWB 2x
Operation temperature	5° ~ 35°C
Dimensions	326.22 mm (W) x 106.20 mm (H) x 243.73 mm (D)
AC Input	AC Universal 100 ~ 240, Typical @ 110VAC (100~240)/+-10%
Power consumption	370W (max)
Stand By	<1watt
Lamp	280W
Brightness	Normal: 2600(Min)-3000(Max) ; ECO: 1950(Min)-2400(Max)
Audio speaker	3W mono speaker
Input Terminals	VGA IN x 1
	Component video(3 RCA)
	S-Video x 1

	Composite Video x 1
	HDMI IN-1 / HDMI IN-2
	AUDIO IN x 1 (L& R) RCA jack
	AUDIO IN x 1 (3.5mm mini jack)
Output Terminals	VGA x 1
	AUDIO OUT x 1
Control Terminals	RS-232C
	RJ45(LAN)
	USB (type B)
	12V DC
Security	Kensington lock

2-2. Views of projector parts

A. MAIN UNIT

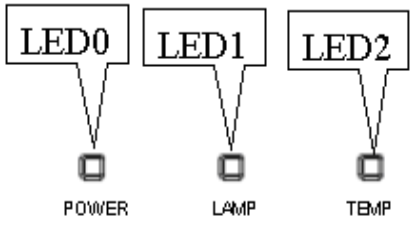


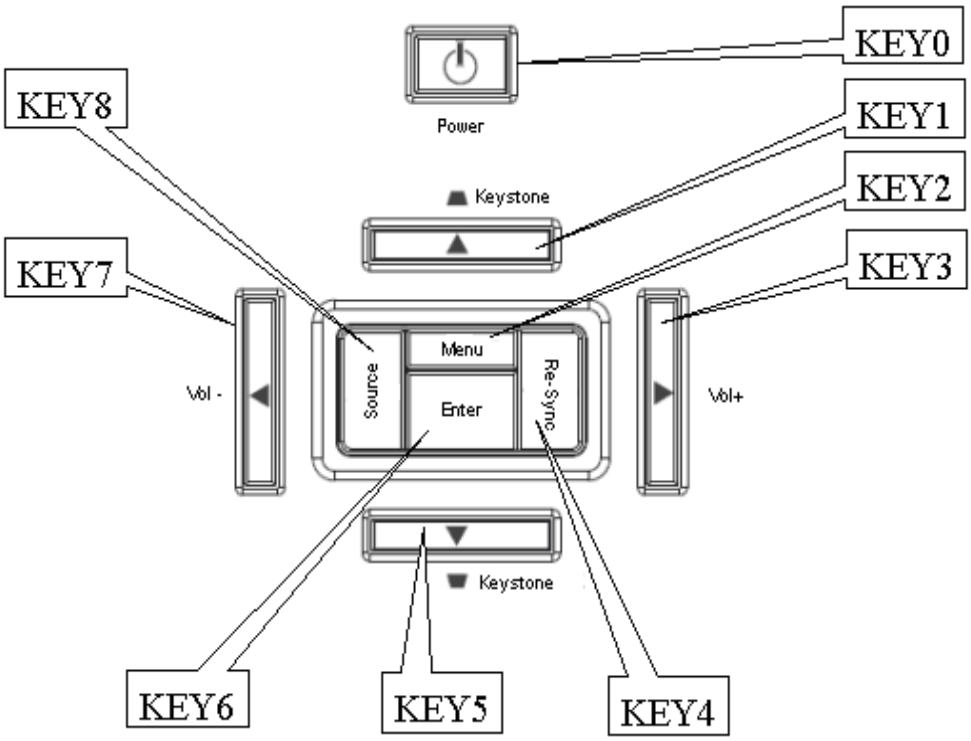
ITEM	LABEL	DESCRIPTION
1.	Tilt-Adjuster Button	Push to release height adjuster
2.	Tilt-Adjuster Feet	Adjusts level of projector
3.	Lens cap	Protect lens when not in use
4.	LED Indicators	Display the LED blink status
5.	Power Button	Turning on the projector.
6.	Function Keys	See Top view—On-screen Display (OSD) buttons.
7.	Zoom ring	Enlarges the projected image
8.	Focus ring	Focuses the projected image
9.	IR receiver	Receive IR signal from remote control
10.	Lens	Projection Lens
11.	Connection ports	Connect the signals from a device

Important:

Ventilation openings on the projector allow for good air circulation, which keeps the projector lamp cool. Do not obstruct any of the ventilation openings.

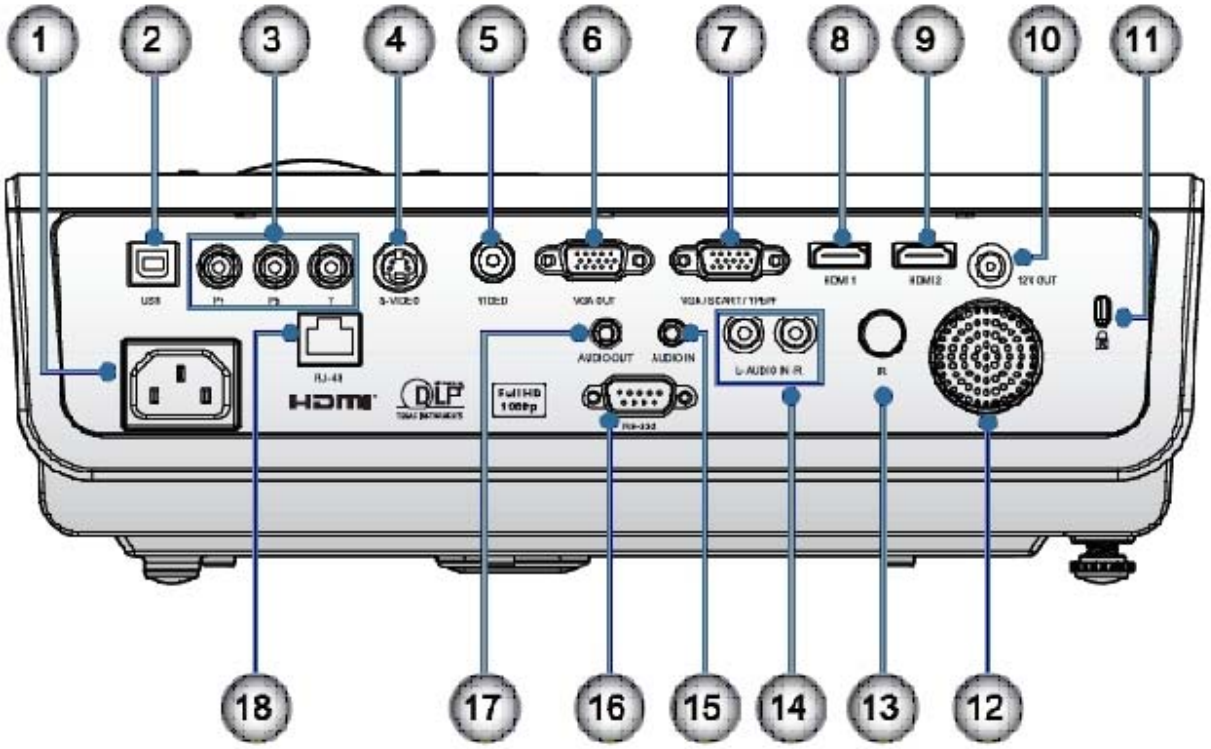
B. Display (OSD) buttons and LEDS





ITEM	LABEL	DESCRIPTION
LED0	POWER LED	Display the power on/off sequence status
LED1	LAMP LED	Display the the lamp status
LED2	TEMP LED	Display the thermal status
KEY0	⏻ (Power button)	Turns the projector On or Off.
KEY1	▲ (Up cursor) / Keystone+	Navigates and changes settings in the OSD Quick Menu – For Keystone
KEY2	MENU	Opens and exits OSD menus
KEY3	► (Right cursor) / Volume	Navigates and changes settings in the OSD Quick Menu – For Volume
KEY4	AUTO	Optimizes image size, position, and resolution
KEY5	▼ (Down cursor) /Keystone-	Navigates and changes settings in the OSD Quick Menu – For Keystone
KEY6	ENTER	Enter or confirm highlighted OSD menu item
KEY7	◄ (Left cursor) / Volume	Navigates and changes settings in the OSD Quick Menu – For Volume
KEY8	SOURCE	Enter the Source menu (Not available on TW30x)

C. Connection ports



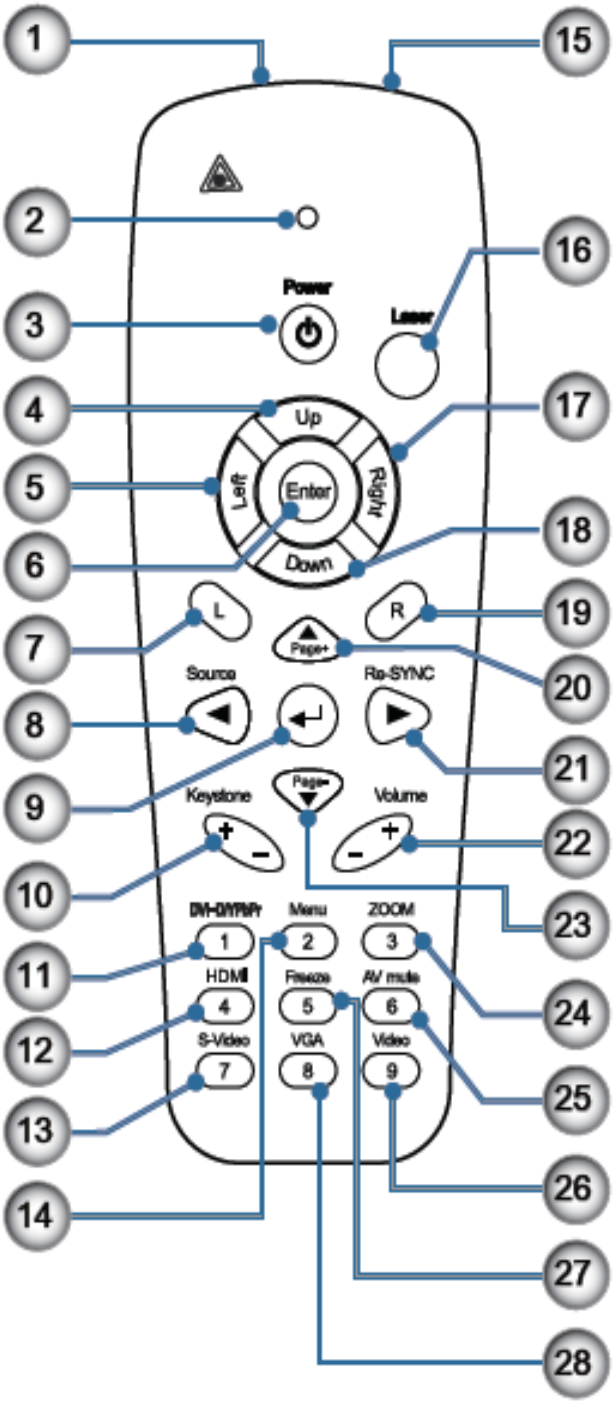
ITEM	LABEL	DESCRIPTION
1.	AC IN	Connect the POWER CABLE
2.	USB	Connect the USB CABLE from a computer
3.	Component VIDEO	Connect the COMPONENT CABLE from a video device
4.	S-VIDEO IN	Connect the S-VIDEO CABLE from a video device
5.	VIDEO IN	Connect the COMPOSITE CABLE from a video device
6.	VGA OUT	Connect the RGB CABLE to a display (Loop Thru only for VGA IN-1)
7.	VGA IN	Connect the RGB CABLE from a computer and components
8.	HDMI IN-1	Connect an HDMI CABLE from an HDMI device
9.	HDMI IN-2	Connect an HDMI CABLE from an HDMI device

10.	DC OUT	Output 12Vdc(200ma) for display screen motor use
11.	Kensington Lock	Secure to permanent object with a Kensington® Lock system
12.	Speaker	Outputs audio sound
13.	IR RECEIVE	Receive IR signal from remote control
14.	AUDIO IN (L and R)	Connect the COMPOSITE CABLES from a video device
15.	AUDIO IN	Connect an AUDIO CABLE from the input device.
16.	RS-232	Connect RS-232 serial port cable for remote control
17.	AUDIO OUT	Connect an AUDIO CABLE for audio loop through
18.	LAN	Connect a LAN CABLE from Ethernet

Note:

If your video equipment has various input sources, it is recommended to connect in priority of HDMI/DVI, component (thru VGA), S-Video, Composite for better picture quality.

2-3. Remote control parts.



Important:

1. *Avoid using the projector with bright fluorescent lighting turned on. Certain high-frequency fluorescent lights can disrupt remote control operation.*

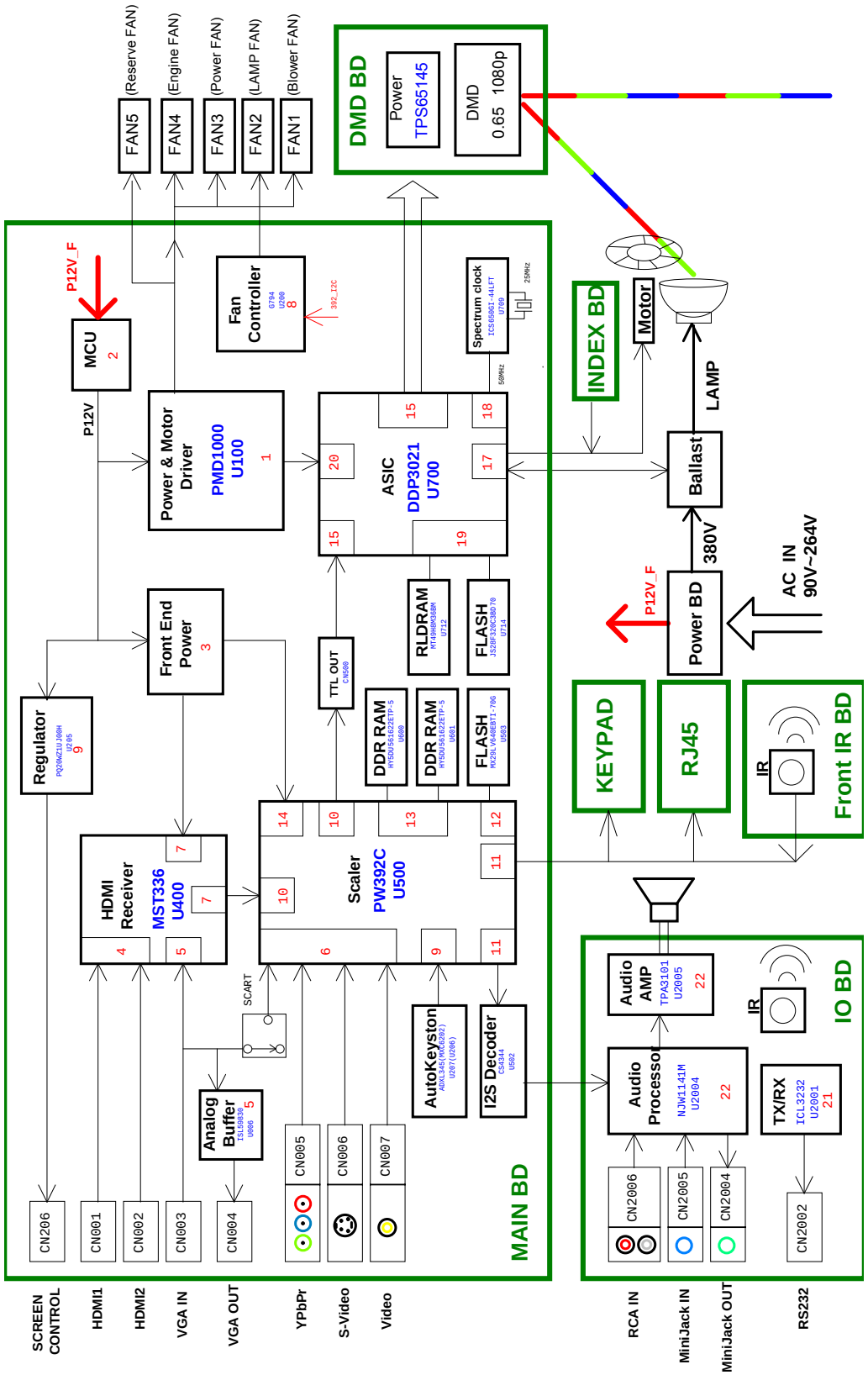
2. *Be sure nothing obstructs the path between the remote control and the projector. If the path between the remote control and the projector is obstructed, you can bounce the signal off certain reflective surfaces such as projector screens.*

3. *The buttons and keys on the projector have the same functions as the corresponding buttons on the remote control. This user's manual describes the functions based on the remote control.*

ITEM	LABEL	DESCRIPTION
1.	Laser	Use as on-screen pointer. **DO NOT POINT IN EYES**.
2.	Status LED	Lights when the remote control is used
3.	Power	Turns the projector on or off
4.	Up	Up key when connected through USB to a PC
5.	Left	Left key when connected through USB to a PC
6.	Enter	Enter key when connected through USB to a PC
7.	L	Left key when connected through USB to a PC
8.	Source/Left key	Detects the input device/Navigates and changes settings in the OSD.
9.	Enter	Navigates and changes settings in the OSD
10.	Keystone top/bottom	Corrects image-trapezoid (wider top/bottom) effect
11.	DVI-D/YPbPr	Changes the signal device to COMPONENT VIDEO.
12.	HDMI	Changes the signal device to HDMI
13.	S-VIDEO	Input source select S-Video
14.	MENU	Opens the OSD
15.	IR transmitter	Transmits signals to projector

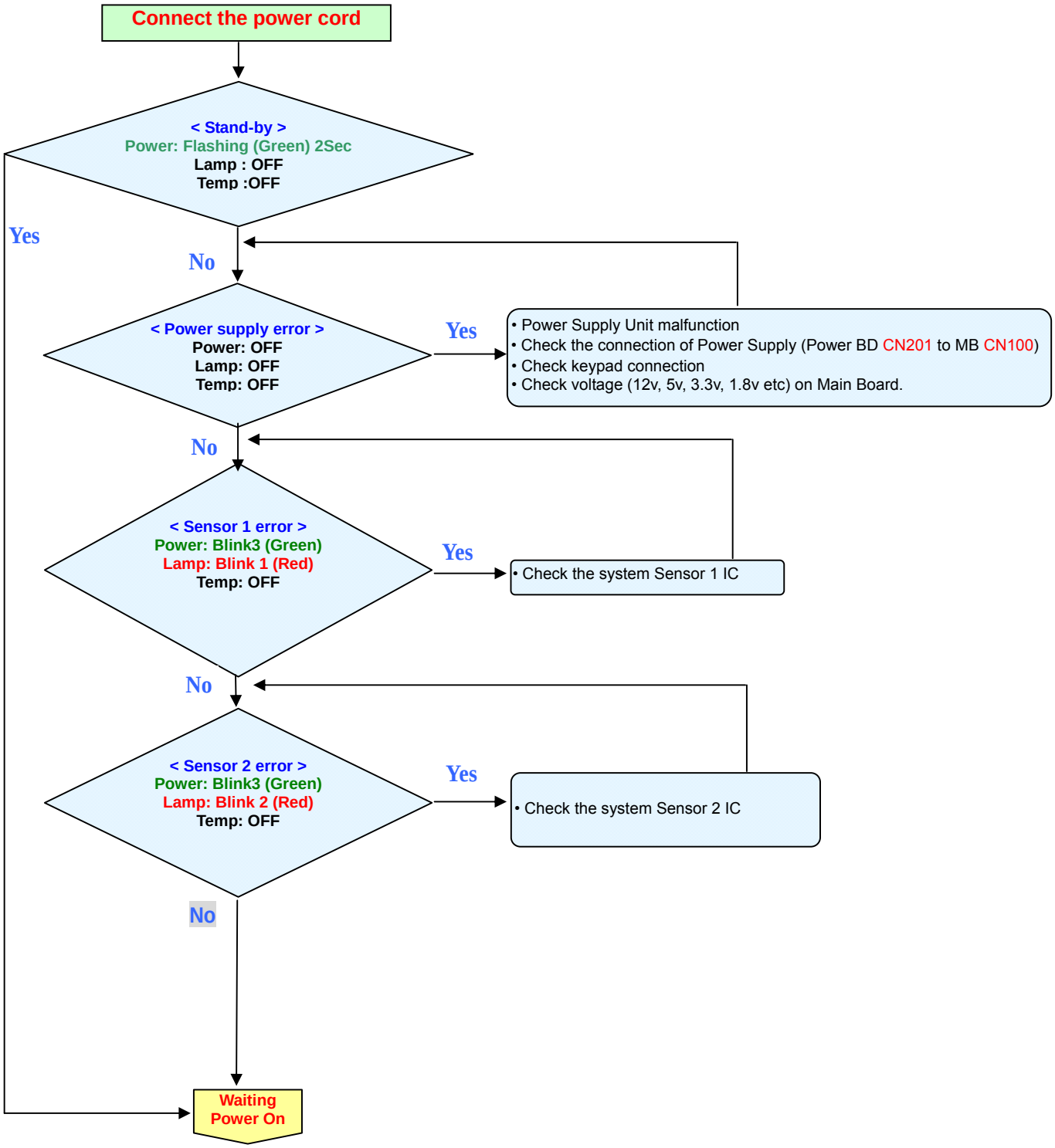
ITEM	LABEL	DESCRIPTION
16.	Laser	Press to operate the on-screen pointer
17.	Right	Right key when connected through USB to a PC
18.	Down	Down key when connected through USB to a PC
19.	R	Right key when connected through USB to a PC
20.	Page up/ Up Key	Page up when connected through USB to a PC Navigates and changes settings in the OSD
21.	Re-Sync/Right Key	Navigates and changes settings in the OSD
22.	Volume +/-	Speaker volume decrement and increment
23.	Page down/ Down Key	Page down when connected through USB to a PC Navigates and changes settings in the OSD
24.	ZOOM	Zoom in/out
25.	AV MUTE	Display blank and mute audio
26.	Video	Input source select Video
27.	Freeze	Freeze/unfreezes the on-screen picture
28.	VGA	Input source select VGA

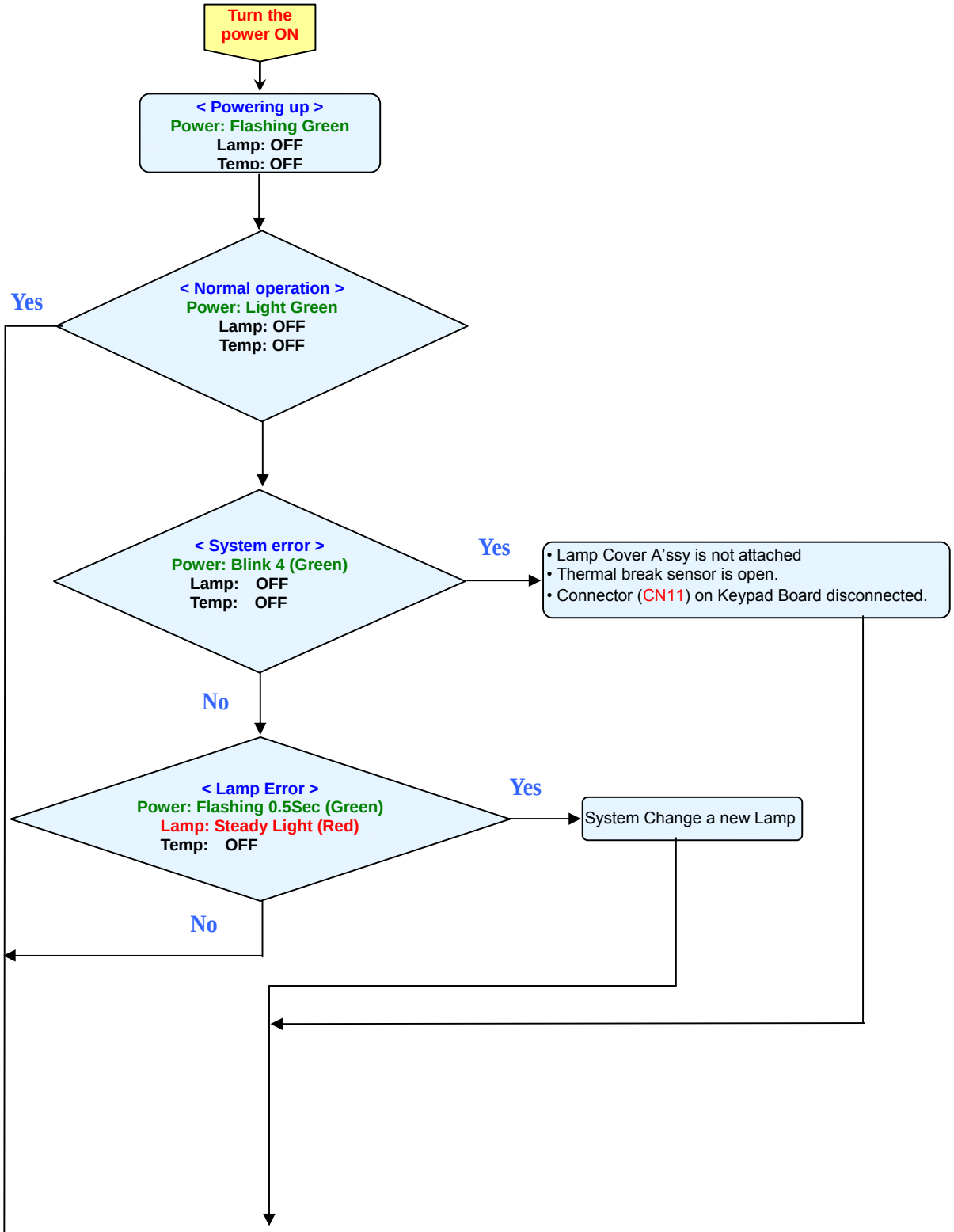
2-4. Block Diagram

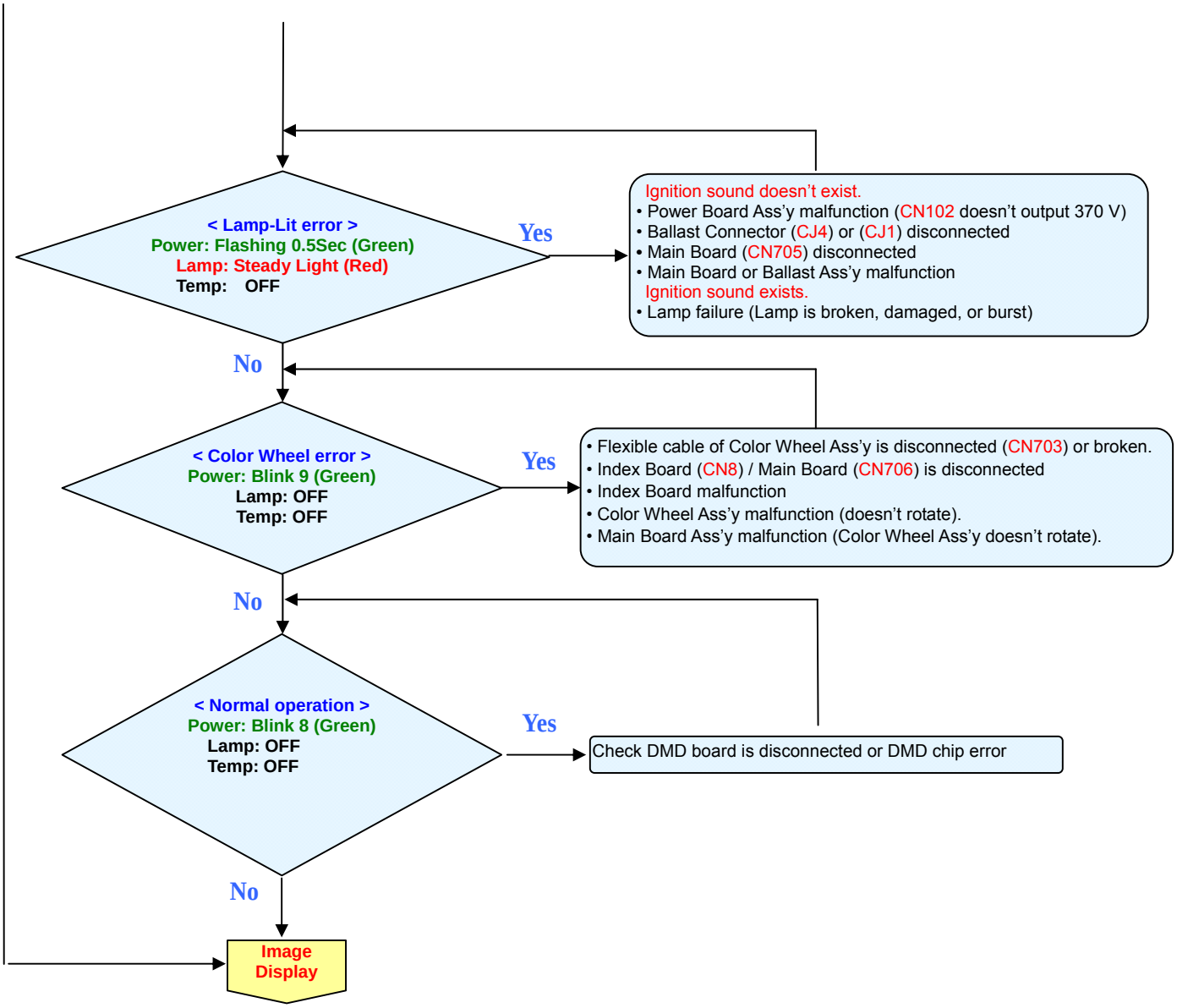


3. TROUBLE SHOOTING

By checking operations during normal usage time, it is possible to carry out judgments on malfunction to a certain extent. Carry out the following checks before disassembling the equipment.




Turn the power ON
< Powering up >
Power: Flashing Green
Lamp: OFF
Temp: OFF
< Normal operation >
Power: Light Green
Lamp: OFF
Temp: OFF
Yes
< System error >
Power: Blink 4 (Green)
Lamp: OFF
Temp: OFF
Yes
• Lamp Cover A'ssy is not attached
• Thermal break sensor is open.
• Connector (CN11) on Keypad Board disconnected.
No
< Lamp Error >
Power: Flashing 0.5Sec (Green)
Lamp: Steady Light (Red)
Temp: OFF
Yes
System Change a new Lamp
No


< Lamp-Lit error >
Power: Flashing 0.5Sec (Green)
Lamp: Steady Light (Red)
Temp: OFF
Yes
Ignition sound doesn't exist.
• Power Board Ass'y malfunction (CN102 doesn't output 370 V)
• Ballast Connector (CJ4) or (CJ1) disconnected
• Main Board (CN705) disconnected
• Main Board or Ballast Ass'y malfunction
Ignition sound exists.
• Lamp failure (Lamp is broken, damaged, or burst)
No
< Color Wheel error >
Power: Blink 9 (Green)
Lamp: OFF
Temp: OFF
Yes
• Flexible cable of Color Wheel Ass'y is disconnected (CN703) or broken.
• Index Board (CN8) / Main Board (CN706) is disconnected
• Index Board malfunction
• Color Wheel Ass'y malfunction (doesn't rotate).
• Main Board Ass'y malfunction (Color Wheel Ass'y doesn't rotate).
No
< Normal operation >
Power: Blink 8 (Green)
Lamp: OFF
Temp: OFF
Yes
Check DMD board is disconnected or DMD chip error
No
Image Display

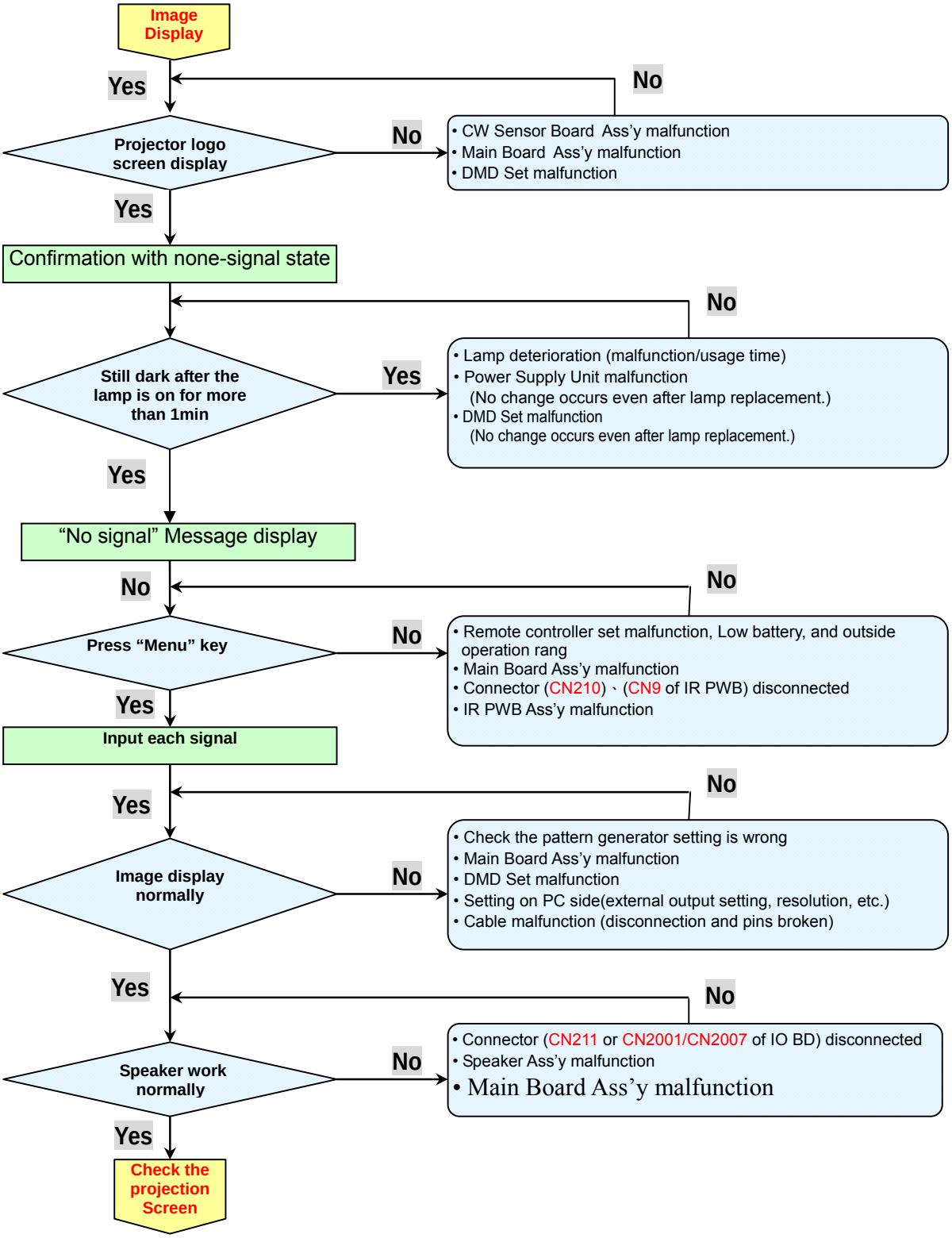
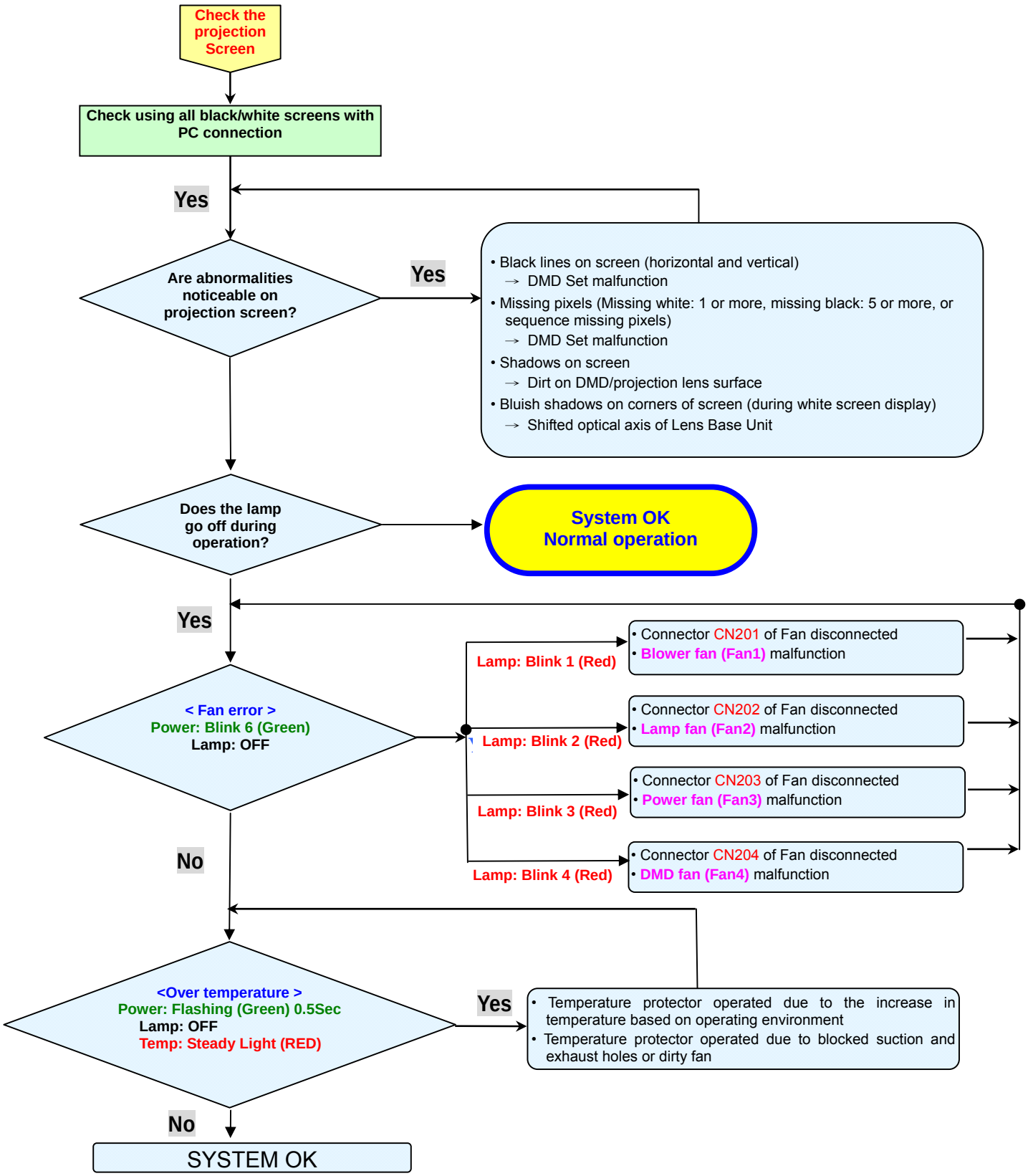


Image Display
Yes
No
Projector logo screen display
No
• CW Sensor Board Ass'y malfunction
• Main Board Ass'y malfunction
• DMD Set malfunction
Yes
Confirmation with none-signal state
No
Still dark after the lamp is on for more than 1min
Yes
• Lamp deterioration (malfunction/usage time)
• Power Supply Unit malfunction
(No change occurs even after lamp replacement.)
• DMD Set malfunction
(No change occurs even after lamp replacement.)
Yes
"No signal" Message display
No
No
Press "Menu" key
No
• Remote controller set malfunction, Low battery, and outside operation rang
• Main Board Ass'y malfunction
• Connector (CN210)、(CN9 of IR PWB) disconnected
• IR PWB Ass'y malfunction
Yes
Input each signal
No
Yes
Image display normally
No
• Check the pattern generator setting is wrong
• Main Board Ass'y malfunction
• DMD Set malfunction
• Setting on PC side(external output setting, resolution, etc.)
• Cable malfunction (disconnection and pins broken)
Yes
No
Speaker work normally
No
• Connector (CN211 or CN2001/CN2007 of IO BD) disconnected
• Speaker Ass'y malfunction
• Main Board Ass'y malfunction
Yes
Check the projection Screen


Check the projection Screen
Check using all black/white screens with PC connection
Yes
Are abnormalities noticeable on projection screen?
Yes
• Black lines on screen (horizontal and vertical)
→ DMD Set malfunction
• Missing pixels (Missing white: 1 or more, missing black: 5 or more, or sequence missing pixels)
→ DMD Set malfunction
• Shadows on screen
→ Dirt on DMD/projection lens surface
• Bluish shadows on corners of screen (during white screen display)
→ Shifted optical axis of Lens Base Unit
Does the lamp go off during operation?
System OK
Normal operation
Yes
< Fan error >
Power: Blink 6 (Green)
Lamp: OFF
Lamp: Blink 1 (Red)
• Connector CN201 of Fan disconnected
• Blower fan (Fan1) malfunction
Lamp: Blink 2 (Red)
• Connector CN202 of Fan disconnected
• Lamp fan (Fan2) malfunction
Lamp: Blink 3 (Red)
• Connector CN203 of Fan disconnected
• Power fan (Fan3) malfunction
Lamp: Blink 4 (Red)
• Connector CN204 of Fan disconnected
• DMD fan (Fan4) malfunction
No
<Over temperature >
Power: Flashing (Green) 0.5Sec
Lamp: OFF
Temp: Steady Light (RED)
Yes
• Temperature protector operated due to the increase in temperature based on operating environment
• Temperature protector operated due to blocked suction and exhaust holes or dirty fan
No
SYSTEM OK

Common problems and solutions

These guidelines provide tips to deal with problems you may encounter while using the projector. If the problem remains unsolved, contact your dealer for assistance.

Often after time spent troubleshooting, the problem is traced to something as simple as a loose connection.

Check the following before proceeding to the problem-specific solutions.

- *Use some other electrical device to confirm that the electrical outlet is working.*
- *Ensure the projector is turned on.*
- *Ensure all connections are securely attached.*
- *Ensure the attached device is turned on.*
- *Ensure a connected PC is not in suspending mode.*

Ensure a connected notebook computer is configured for an external display. (This is usually done by pressing an Fn-key combination on the notebook.)

Image Problems

Problem: No image appears on the screen

1. Verify the settings on your notebook or desktop PC.
2. Turn off all equipment and power up again in the correct order.

Problem: The image is blurred

1. Adjust the **Focus** on the projector.
2. Press the **Re-sync** button on the remote control or projector.
3. Ensure the projector-to-screen distance is within the 10-meter (33-feet) specified range.
4. Check that the projector lens is clean.

Problem: The image is wider at the top or bottom (trapezoid effect)

1. Position the projector so it is as perpendicular to the screen as possible.
2. Use the Keystone button on the remote control or projector to correct the problem.

Problem: The image is reversed

Check the **Projection** setting on the **Setup** menu of the OSD.

Problem: The image is streaked

1. Set the **Frequency** and **Phase** settings on the **Computer** menu of the OSD to the default settings.
2. To ensure the problem is not caused by a connected PC's video card, connect to another computer.

Problem: The image is flat with no contrast

Adjust the **Contrast** setting on the **Image** menu of the OSD.

Problem: The color of the projected image does not match the source image.

Adjust the **Color Temperature** and **Gamma** settings on the **Image** menu of the OSD.

Lamp Problems

Problem: There is no light from the projector

1. Check that the power cable is securely connected.
2. Ensure the power source is good by testing with another electrical device.
3. Restart the projector in the correct order and check that the Power LED is still green.
4. If you have replaced the lamp recently, try resetting the lamp connections.
5. Replace the lamp module.
6. Put the old lamp back in the projector and have the projector serviced.

Problem: The lamp goes off

1. Power surges can cause the lamp to turn off. Re-plug power cord. When the Ready LED is on, press the power button.
2. Replace the lamp module.
3. Put the old lamp back in the projector and have the projector serviced.

Remote Control Problems

Problem: The projector does not respond to the remote control

1. Direct the remote control towards remote sensor on the projector.
2. Ensure the path between remote and sensor is not obstructed.
3. Turn off any fluorescent lights in the room.
4. Check the battery polarity.
5. Replace the batteries.
6. Turn off other Infrared-enabled devices in the vicinity.
7. Have the remote control serviced.

Audio Problems

Problem: There is no sound

1. Adjust the volume on the remote control.
2. Adjust the volume of the audio source.
3. Check the audio cable connection.
4. Test the source audio output with other speakers.
5. Have the projector serviced.

Problem: The sound is distorted

1. Check the audio cable connection.
2. Test the source audio output with other speakers.
3. Have the projector serviced.

4. DISASSEMBLY

Removing the Lamp Cover and Lamp Module

DISASSEMBLY

Look the full set projector.

Look at the IO side.

Look at the case of top side.

Look at the keypad of top side.

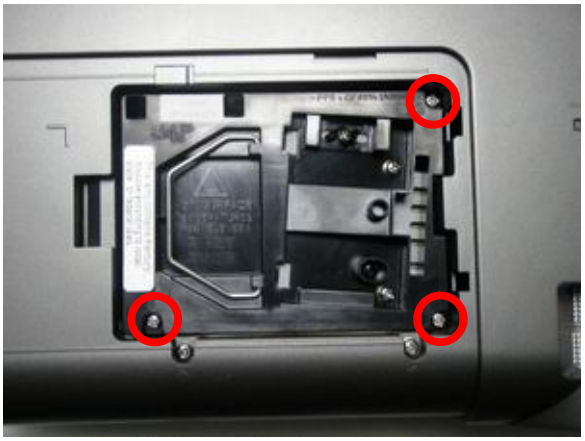
Remove this screw.

Look the screws (S01).

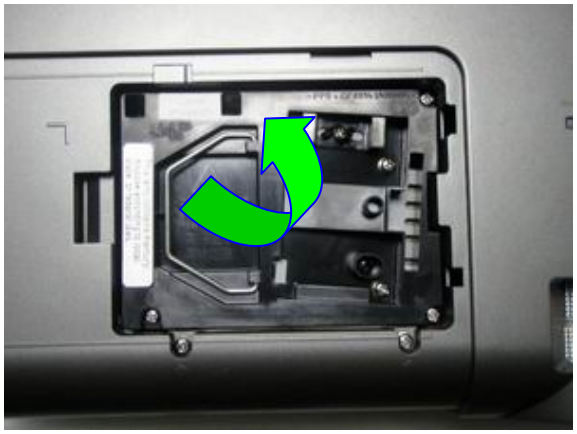
Removing the Lamp Cover and Lamp Module

DISASSEMBLY

Review the projector



Loose the three screws.



Remove the lamp modules.

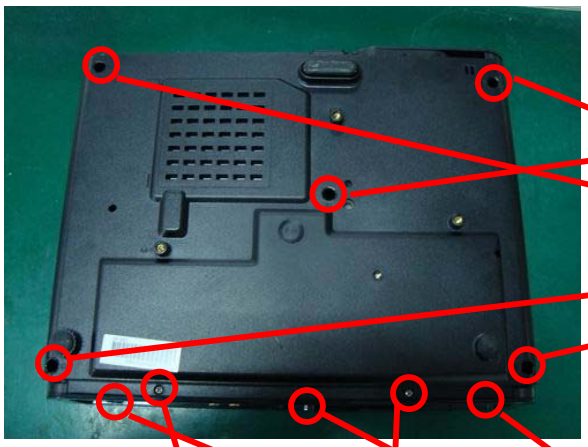
Look the Lamp #1.

Look the Lamp #2.

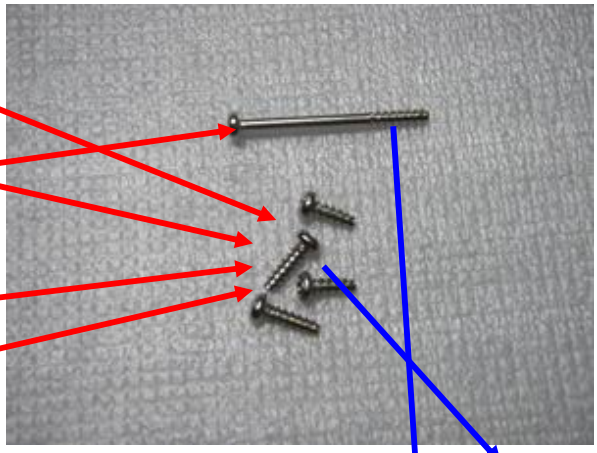
Look the Lamp #3.

Removing Top Cover

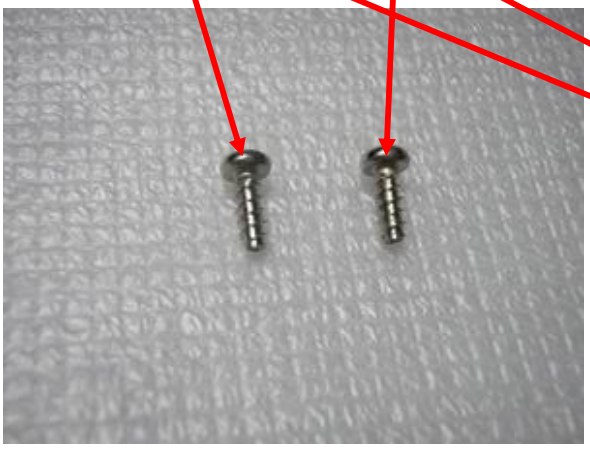
DISASSEMBLY



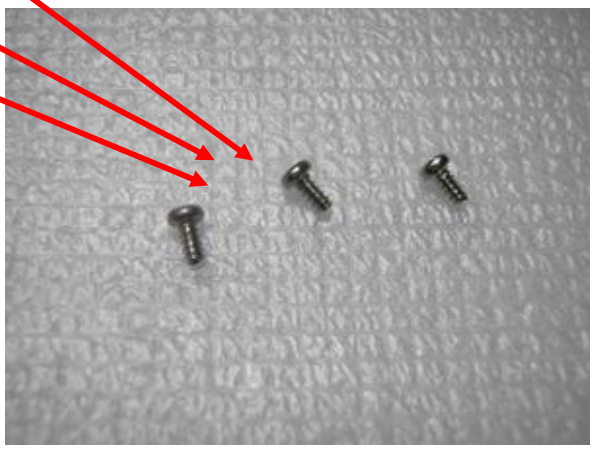
Remove the ten screws.



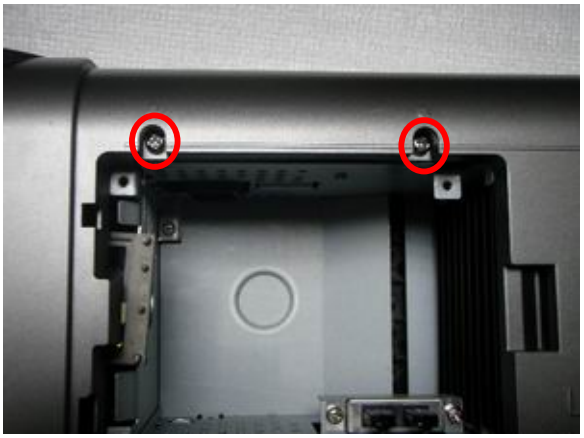
Review the five screws (S02)&(S03).



Review the two screws (S03).



Review the three screws (S04).

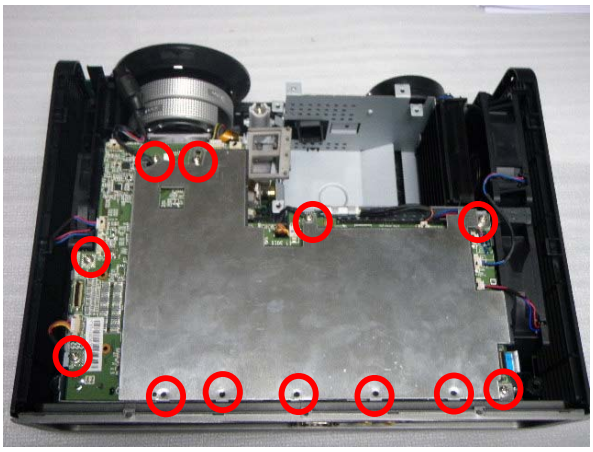


Remove the two screws.

Review the two screws. (S05)

Removing the Main Board

DISASSEMBLY



Remove these screws.

Review the five piece screws (S06).

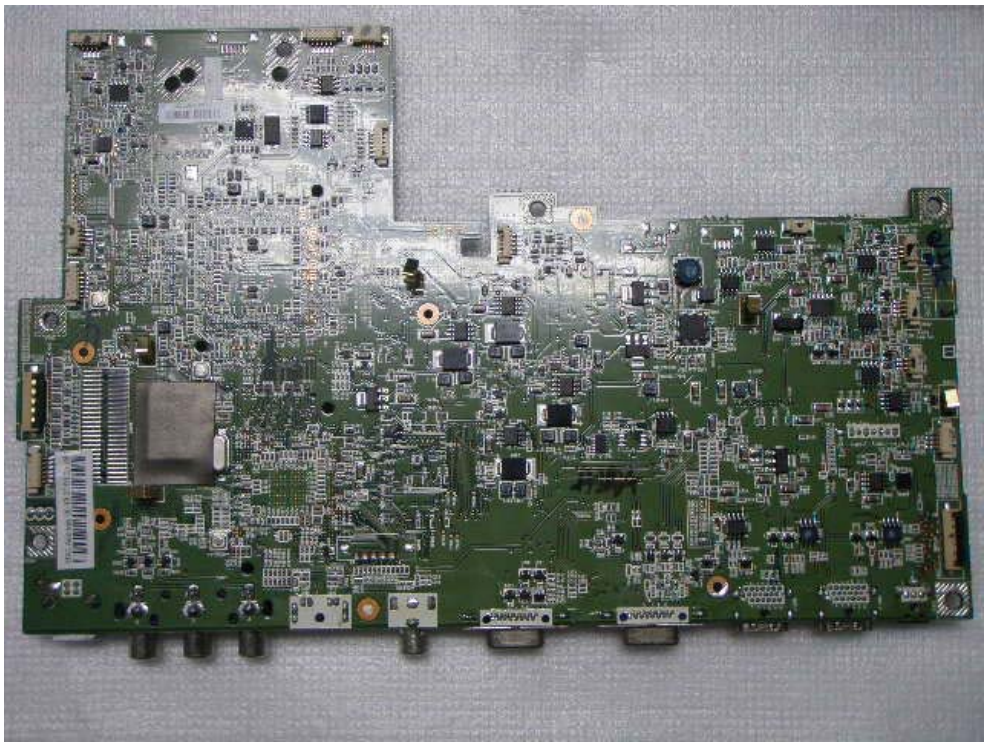
Review the seven piece screws (S05) and take off the main shield.

Remove the four screws.

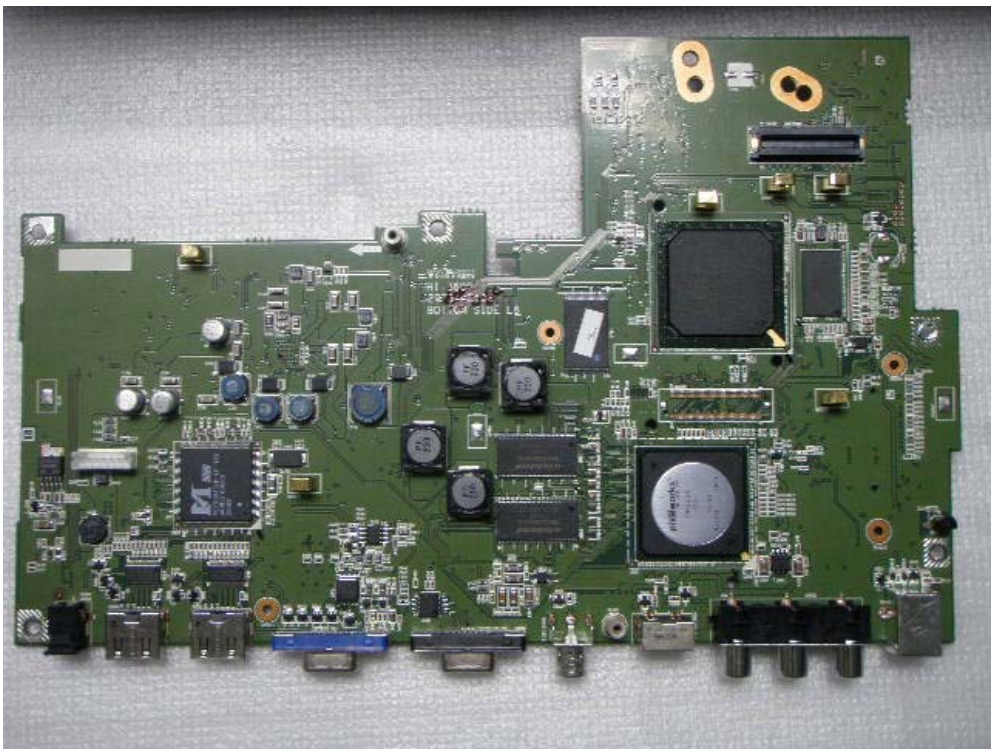
Review the six screws (S07).

Review the Main Board

DISASSEMBLY



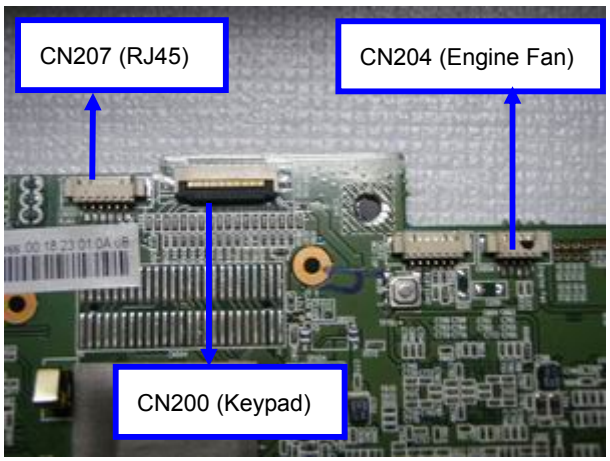
Review the main board#1.



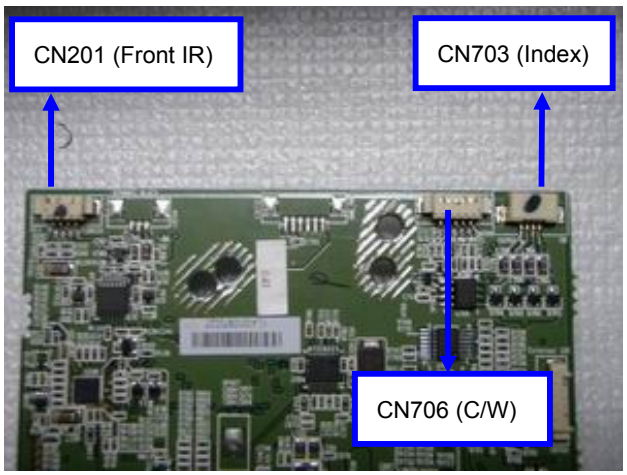
Review the main board#2.

Review the Main Board Connector

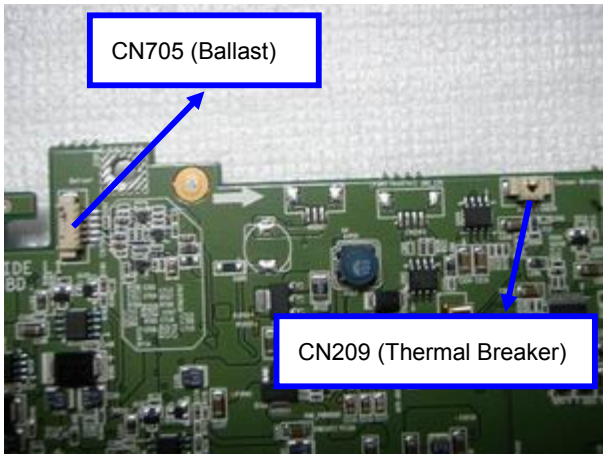
DISASSEMBLY



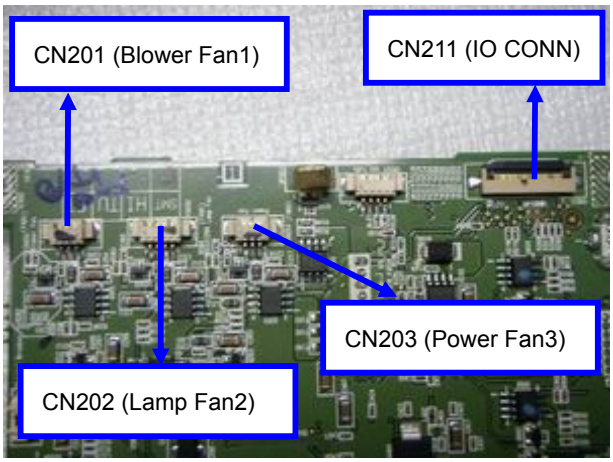
Remove the Connectors.



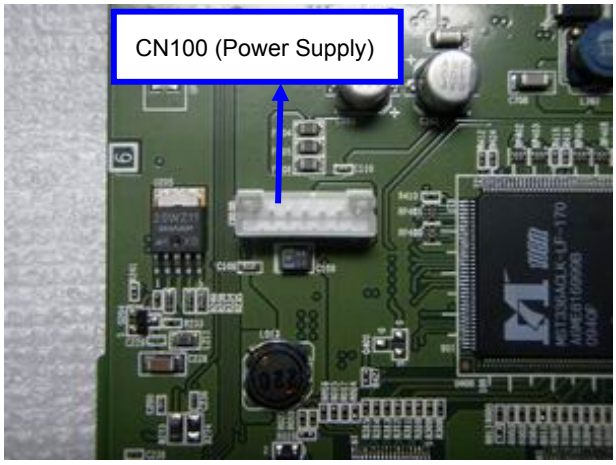
Remove the Connectors.



Remove the Connectors.



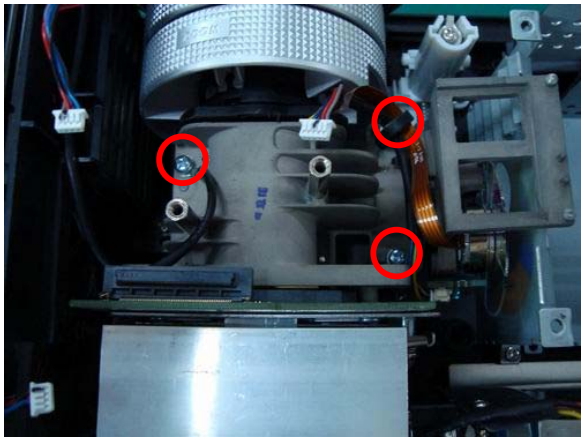
Remove the Connectors.



Remove the Connector.

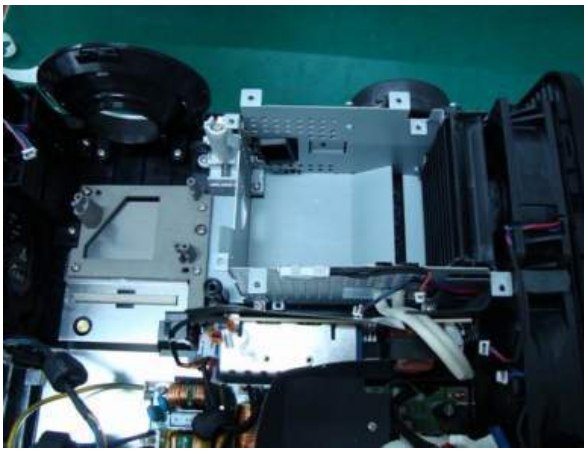
Removing Optical Engine

DISASSEMBLY



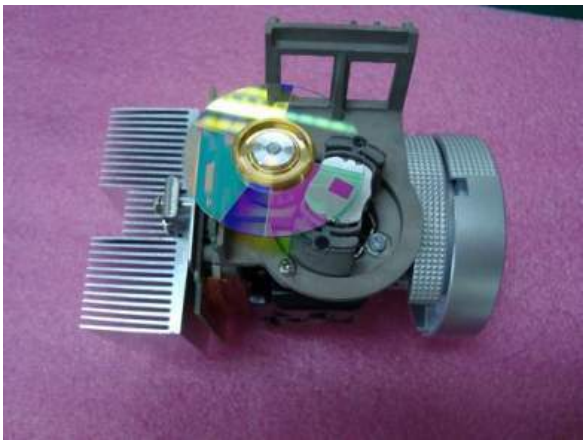
Remove the three screws.

Review the three screws (S08).



The Optical Engine is removed.

Review the Optical Engine #1.

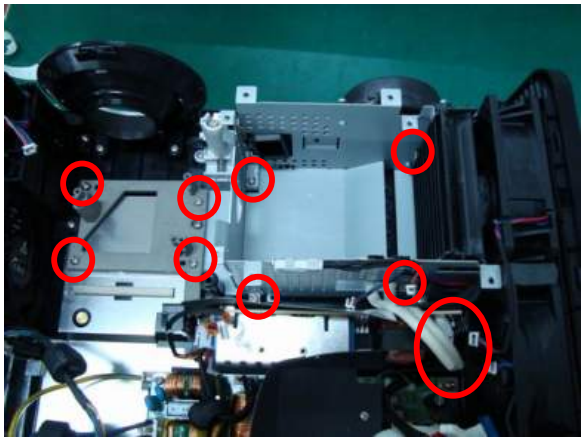


Review the Optical Engine #2.

Review the Optical Engine #3.

Removing LAMP CHANNEL and Fans

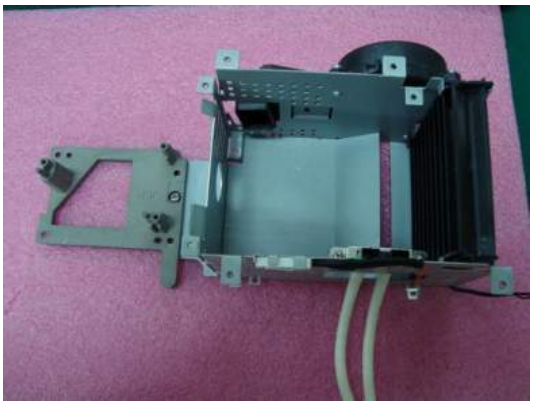
DISASSEMBLY



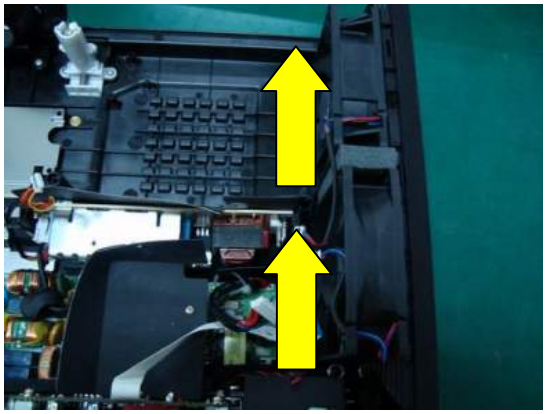
Remove these eight screws and notice the ballast connector

Review the four screws (S03).

Review the four screws (S03).



Review the lamp channel.

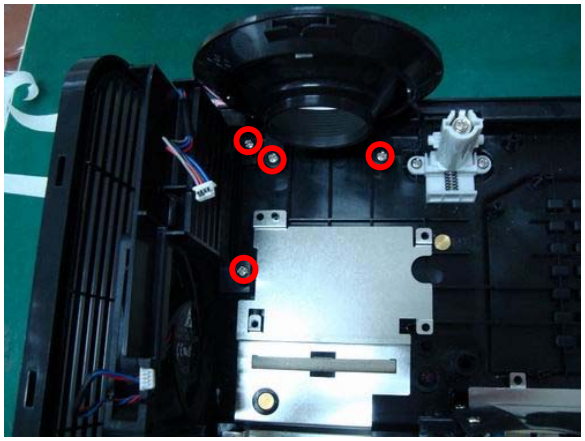


Remove the two FANS.

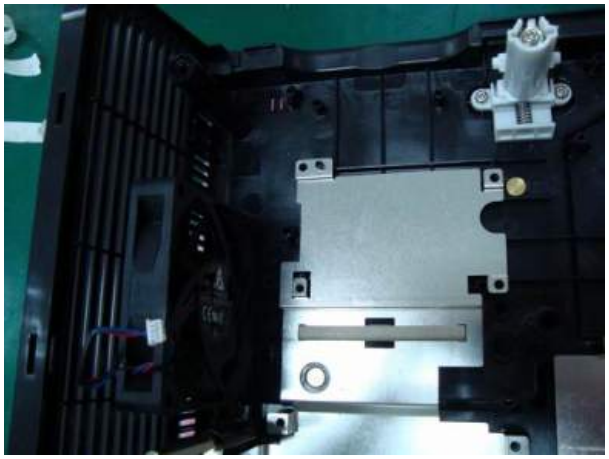
Review the FANS.

Removing the Optical cap, shield and Fan

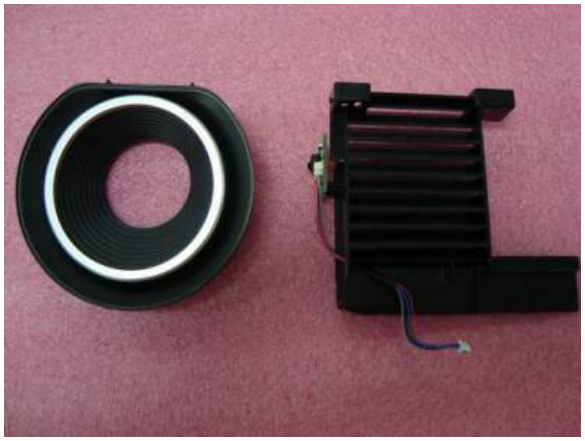
DISASSEMBLY



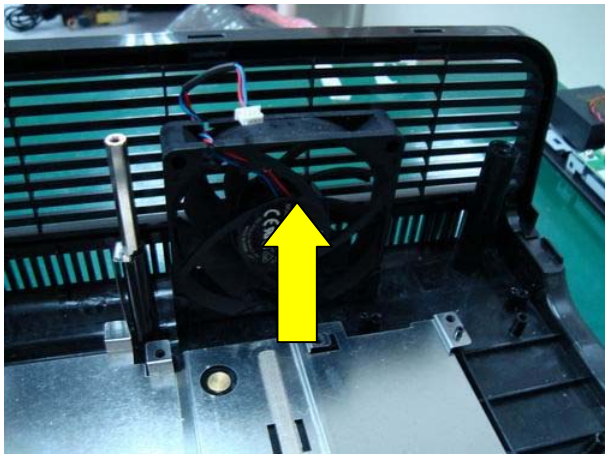
Remove the four screws.



Remove the Optical cap and shield.



Review the Optical cap and shield.

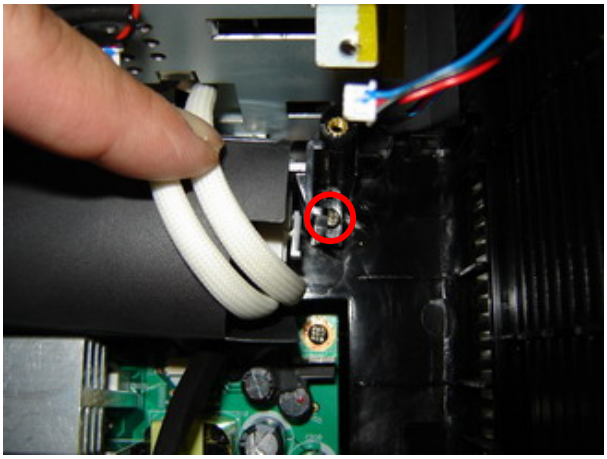


Remove the FAN..

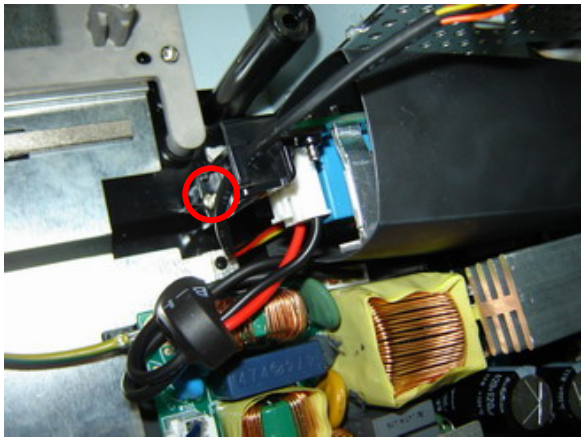
Review the FAN.

Removing the Ballast Board

DISASSEMBLY



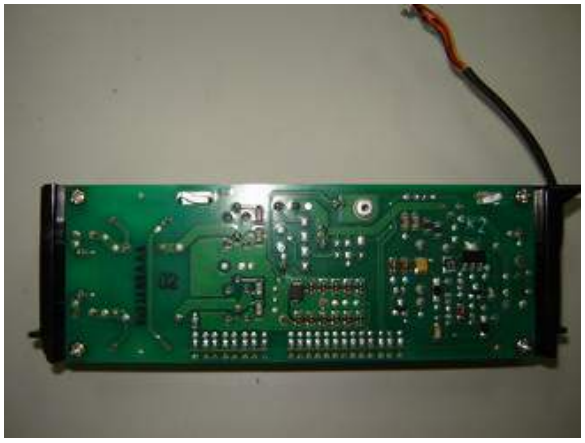
Remove the screw.



Remove the screw.

Review the two screws (S03).

Review the Ballast (Top side).

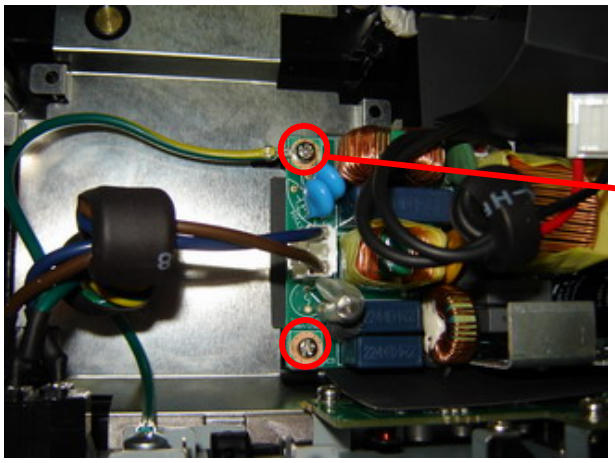


Review the Ballast (Bottom side).

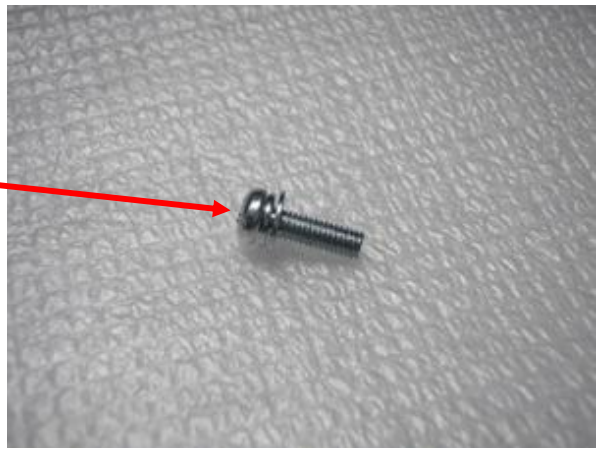
Remove the two screws.

Removing the Power Board

DISASSEMBLY

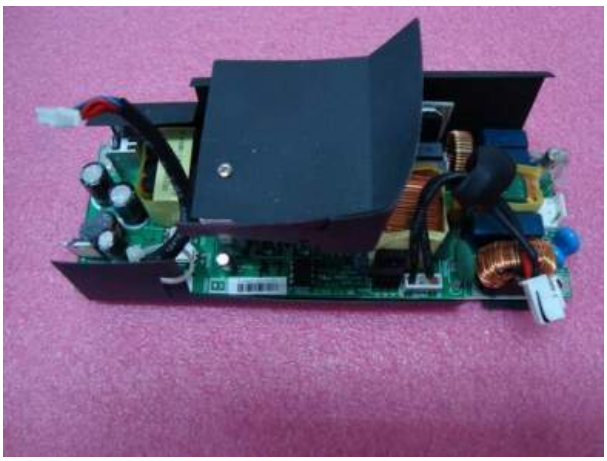


Remove the two screws.



Review the screw (S09).

Review other three screws (S03).

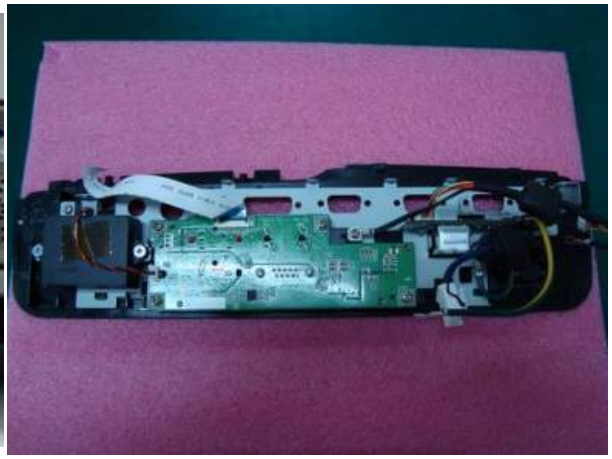


Review the Power Board (Top Side).

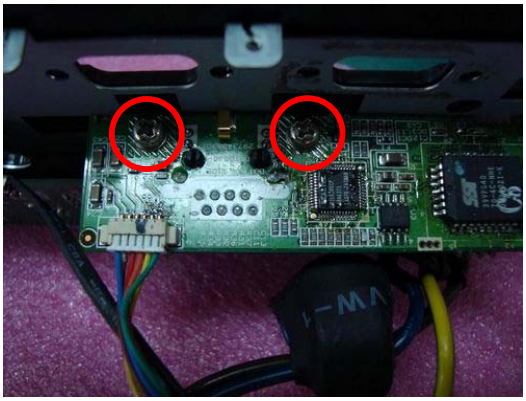
Review the Power Board (Bottom Side).

Removing the I/O ASSY and RJ45 Board

Remove the I/O ASSY.

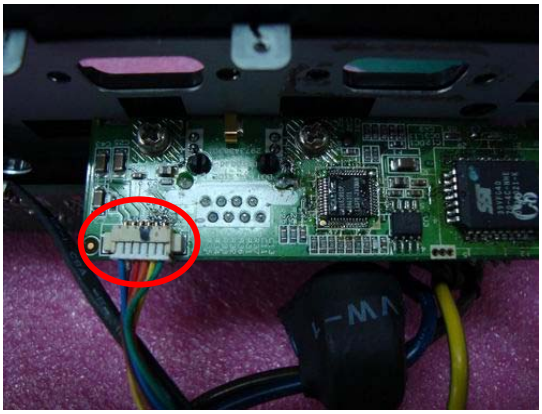


Review the I/0 ASSY.



Remove the two screws.

Review the two screws (S05).

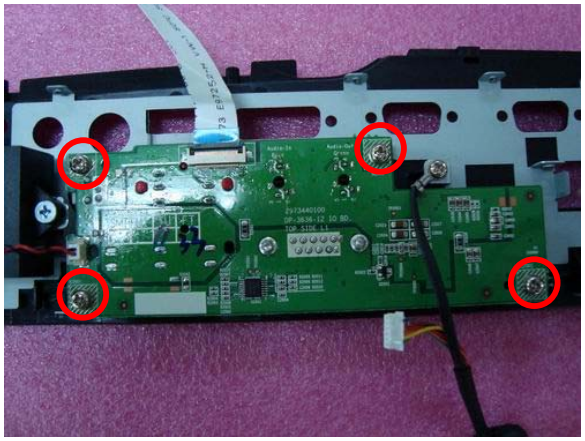


Remove the RJ45 wire.

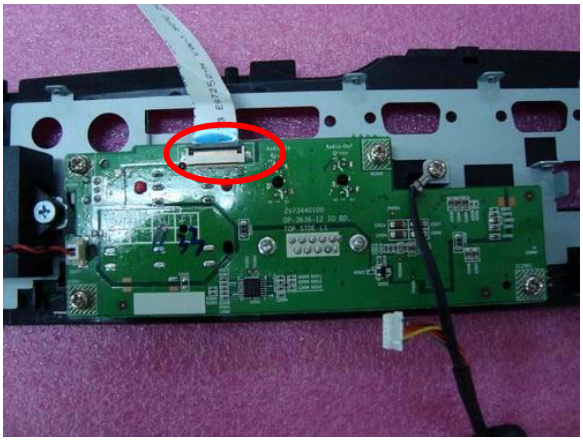
Review the RJ45 Board.

Removing the IO board and ADJ ASSY

DISASSEMBLY



Remove these four screws.

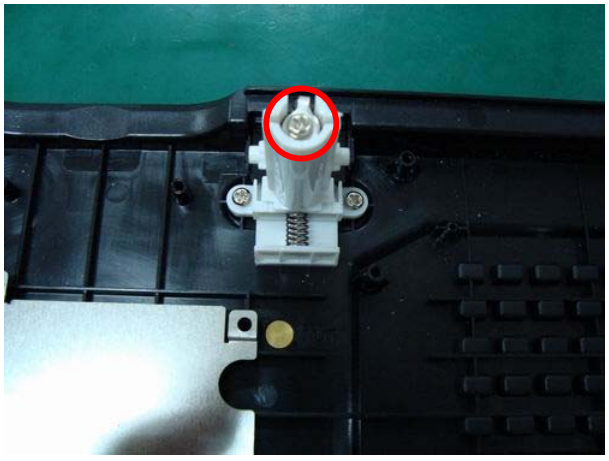


Remove the FCC wire .

Review the four screws (S05).

Review the IO BOARD

Review the bottom cover.

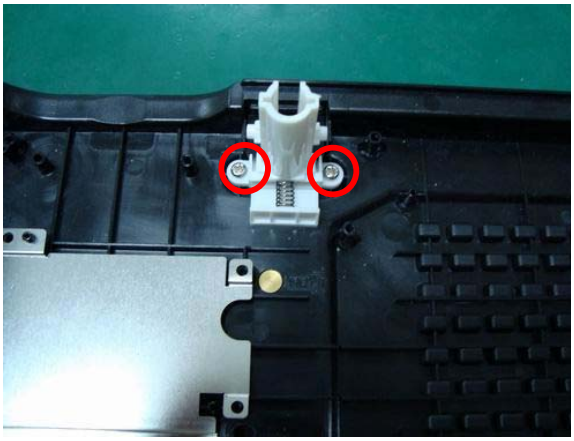


Remove the screw.

Removing the ADJ ASSY

Push this remove the ADJ FOOT.

Review the ADJ FOOT.



Remove the two screws.

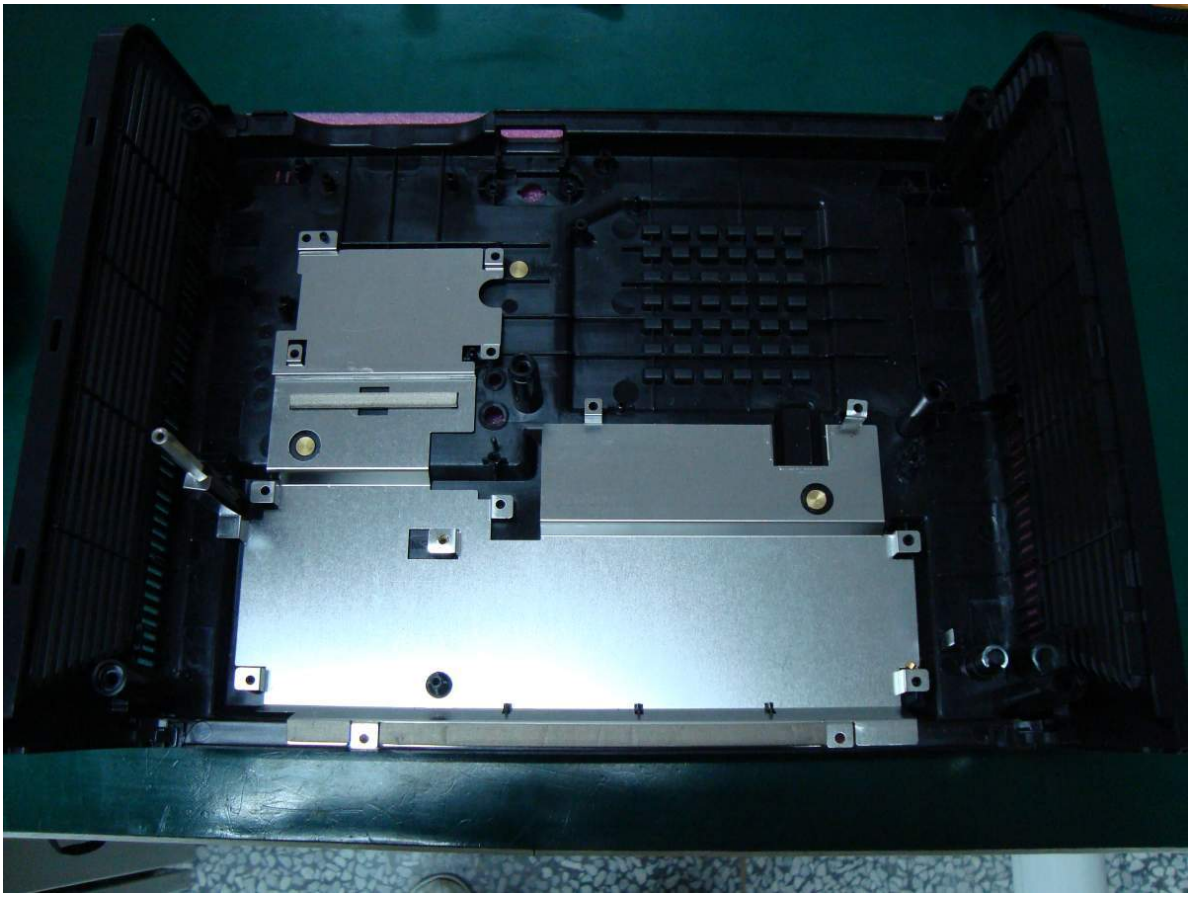
Review the two screws (S03).

Review the ADJ ASSY parts.

Review the bottom cover.

Review the BOTTOM COVER

DISASSEMBLY



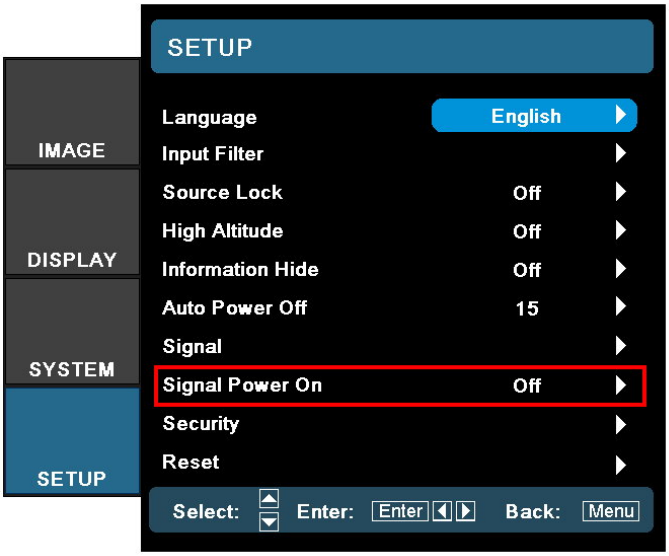
Appendix. Screw torque

ITEM-S	Screw Type	P/N	Screw Driver Torque (KG-CM)
S01	M3*0.5*5	3105221300	1.5-2.0kgf.cm
S02	φ3*0.5*34	3109183300	5.5-6.5kgf.cm
S03	M 3*0.5*8	3106160400	5.5-6.5kgf.cm
S04	M 2*0.2*4	3105040800	1.5-2.0kgf.cm
S05	M3*0.5*6	3100320600	5.5-6.5kgf.cm
S06	M2*0.3*3	3105134900	1.5-2.0kgf.cm
S07	HEX 4.7*4	3461431703	4-5kgf.cm
S08	M3*0.5*10	3100301000	5.5-6.5kgf.cm
S09	M3*0.5*8	3100300800	5.5-6.5kgf.cm

5. Firmware Download

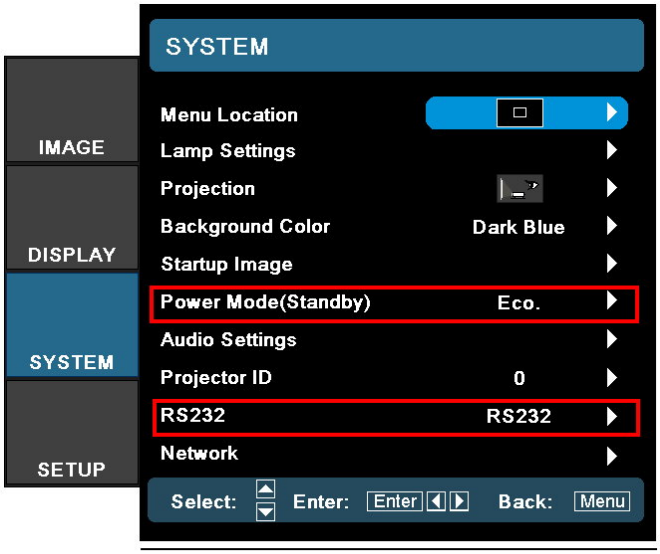
5-1. OSD Setting

A. Press the **“menu”** key on the keypad or by remote control, select **“SETUP”-->“Signal Power on”,** then press the **“►”** key on the keypad to select **“Signal Power off”**.



B. Press the **“menu”** key on the keypad or by remote control, select **“SYSTEM”->“ Network”,** then press the **“►”** key on the keypad to select **“RS232”.**

Please be sure the **“Power Mode(Standby)”** is **“Eco.”** mode.



5-2. Projector RS-232 Drivers Installation Guide

The document is to describe a Windows application Pixelworks software "**FlashUpgrader**" for projector firmware. Its main purpose is to provide a detailed procedure of upgrading the application software of a DLP projector.
The system requirement and the installation procedure of "FlashUpgrader" are also included in the document.

System Requirement

IBM compatible PC.
Windows XP-SP2 operating system.

Power ON and Into Stand-By Mode

1. Make sure that the RS-232 cable is firmly connected between projector and computer
2. Connect the power cord to the projector, and move the power switch in its ON position (if available) so that projector is in the STAND-BY mode.

5-3. Start with the FlashUpgrader to PC

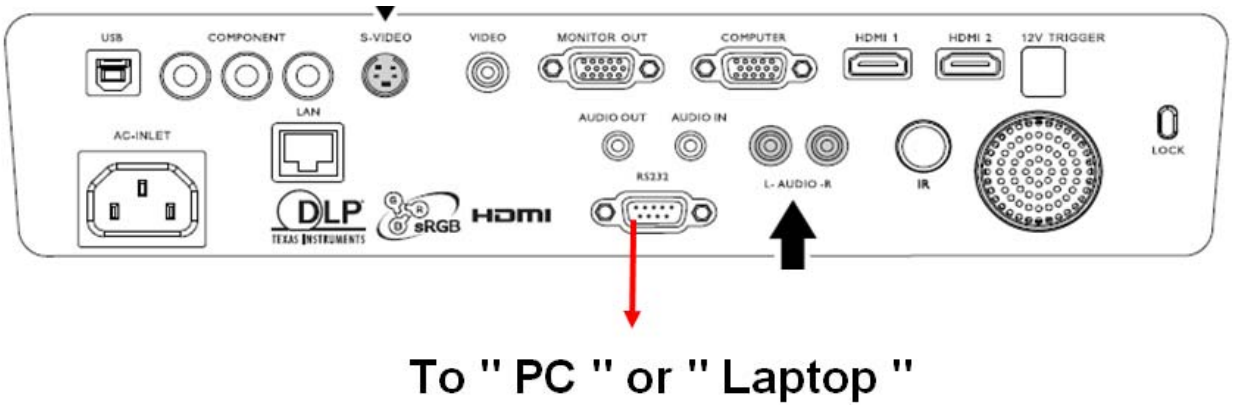
The section is to illustrate the procedure to upgrade the application software of a DLP projector.
Run the "**FlashUpgrader.exe**", that will automatically launch the RS-232 drivers update.

The following pictures are illustrating the process of the RS-232 Driver installation.

5-4. Firmware upgrade procedure.

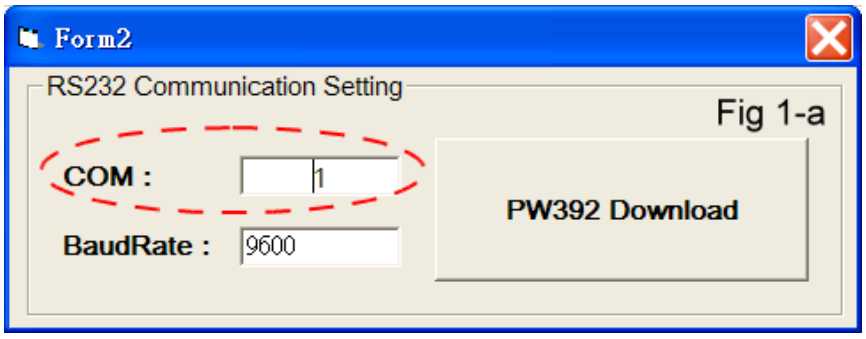
Step 1. Plug the power cord.

Step 2. Connect the “download cable” step through “RS-232” port between of Projector and PC.

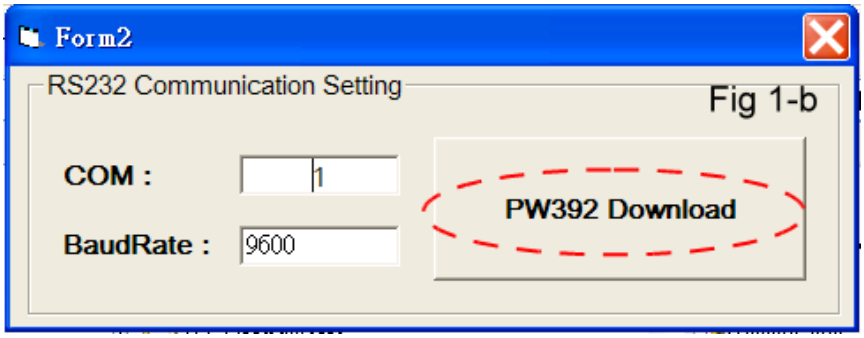


Step 3-a. Run “PW392 Downloader_V1.6” (for example),and input correct “COM:” port number (Fig 1-a).

You don’t need to input the Baud Rate setting, SW will automatically switch different of baud rate to link with projector.



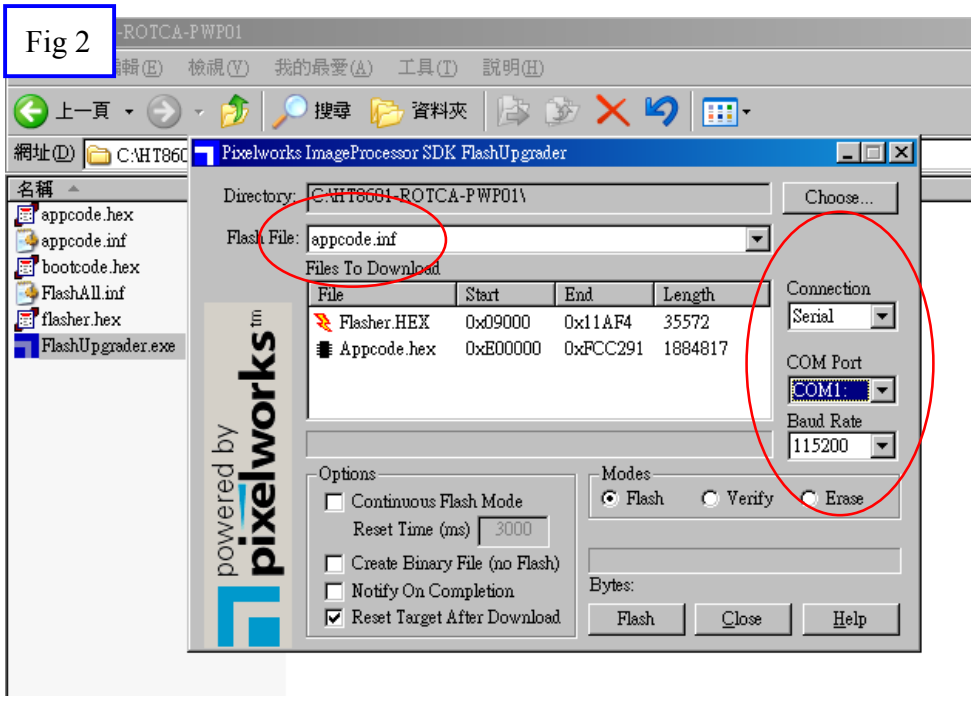
Step 3-b. Select the “PW392 Download” button.



If you see below warning message of “No Action”, it means that the projector got something wrong or the RS232 cable did not get well connection.

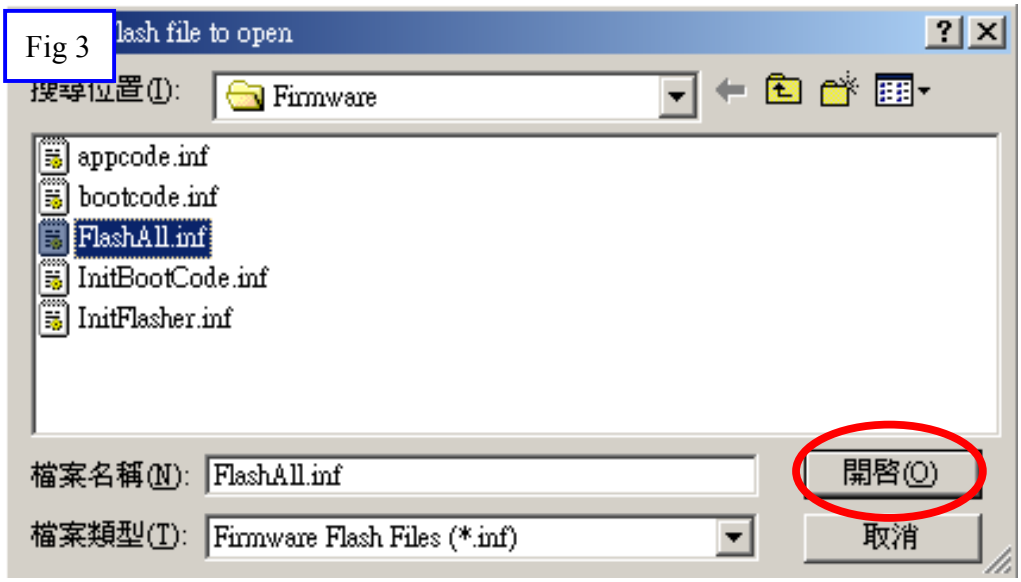
When “FlashUpgrader.exe” is running, the first window looks like “Fig 2”
Make sure that Connection, COM Port, Baud Rate and Modes are set correctly.

Fig 2



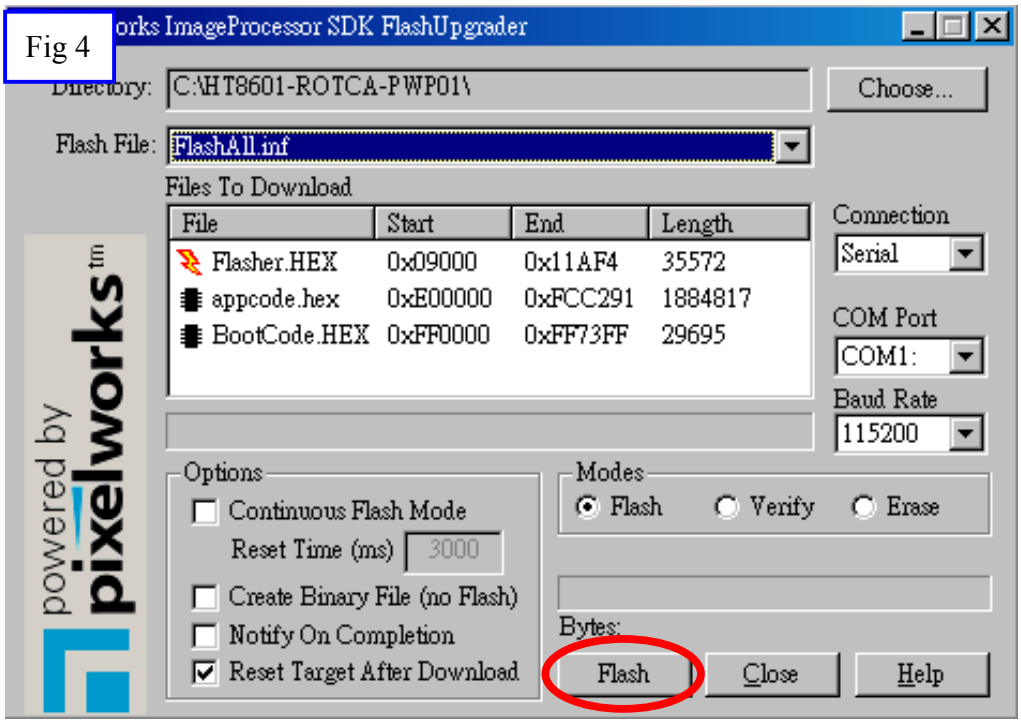
Step 4. Click on “Flash File” to the next step.
You will see the window looks like “Fig 3”.

Fig 3



Step 5. Select “FlashAll.inf” and then click on “Open”.
You will see the window looks like “Fig 4”.

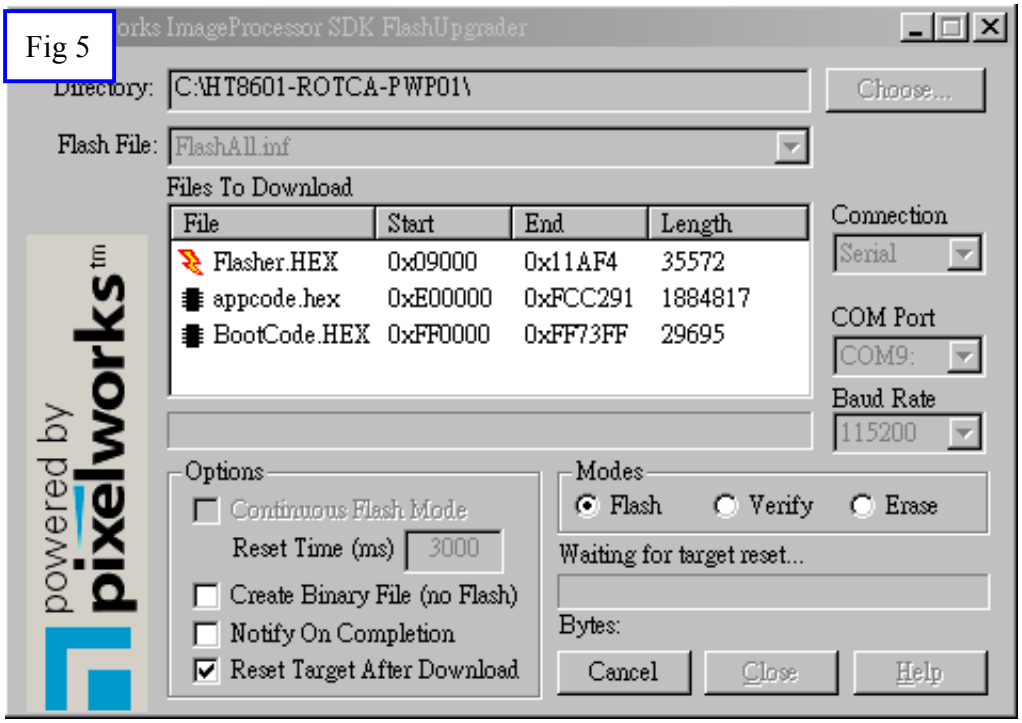
Fig 4



Step 6. Click on “Flash” to the next step.

You will see the window looks like “Fig 5”.

Fig 5



Step 7. **Now press “Power” key.** When download in progress you will see “Fig 6 ~ Fig 8”.

At this time just wait for download complete.

Fig 6

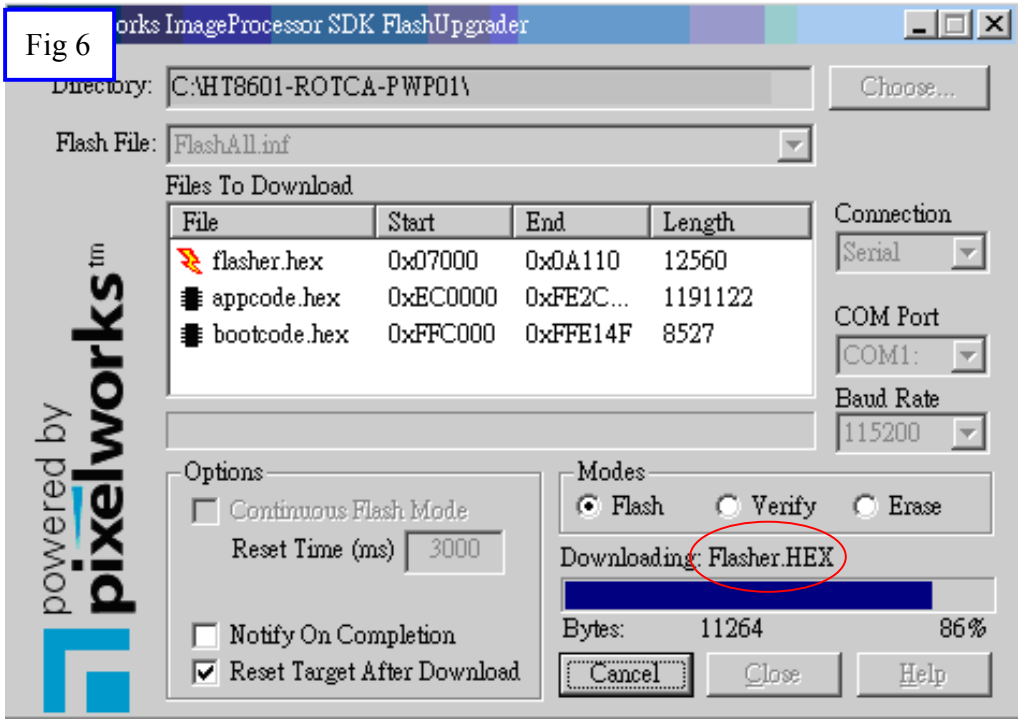


Fig 7

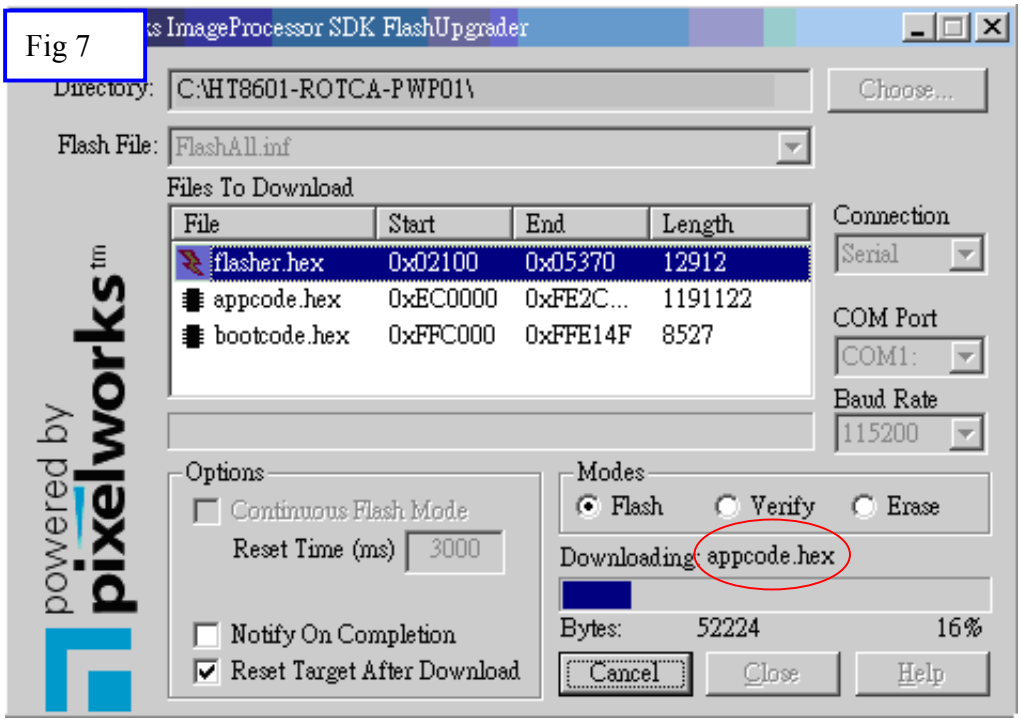
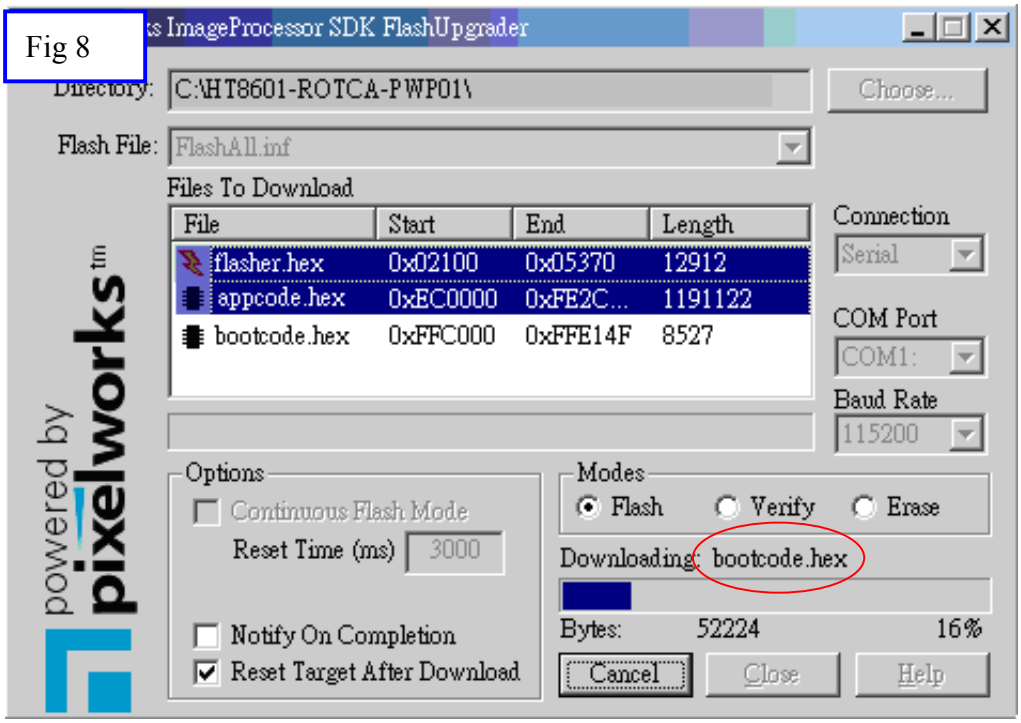

ImageProcessor SDK FlashUpgrader
Directory: C:\HT8601-ROTCA-PWP01\
Choose...
Flash File: FlashAll.inf
Files To Download
File Start End Length
flasher.hex 0x02100 0x05370 12912
appcode.hex 0xEC0000 0xFE2C... 1191122
bootcode.hex 0xFFC000 0xFFE14F 8527
Connection
Serial
COM Port
COM1:
Baud Rate
115200
Options
Continuous Flash Mode
Reset Time (ms) 3000
Notify On Completion
Reset Target After Download
Modes
Flash Verify Erase
Downloading: appcode.hex
Bytes: 52224 16%
Cancel Close Help
powered by pixelworks tm

Fig 8


ImageProcessor SDK FlashUpgrader
Directory: C:\HT8601-ROTCA-PWP01\
Choose...
Flash File: FlashAll.inf
Files To Download
File Start End Length
flasher.hex 0x02100 0x05370 12912
appcode.hex 0xEC0000 0xFE2C... 1191122
bootcode.hex 0xFFC000 0xFFE14F 8527
Connection
Serial
COM Port
COM1:
Baud Rate
115200
Options
Continuous Flash Mode
Reset Time (ms) 3000
Notify On Completion
Reset Target After Download
Modes
Flash Verify Erase
Downloading: bootcode.hex
Bytes: 52224 16%
Cancel Close Help
powered by pixelworks tm

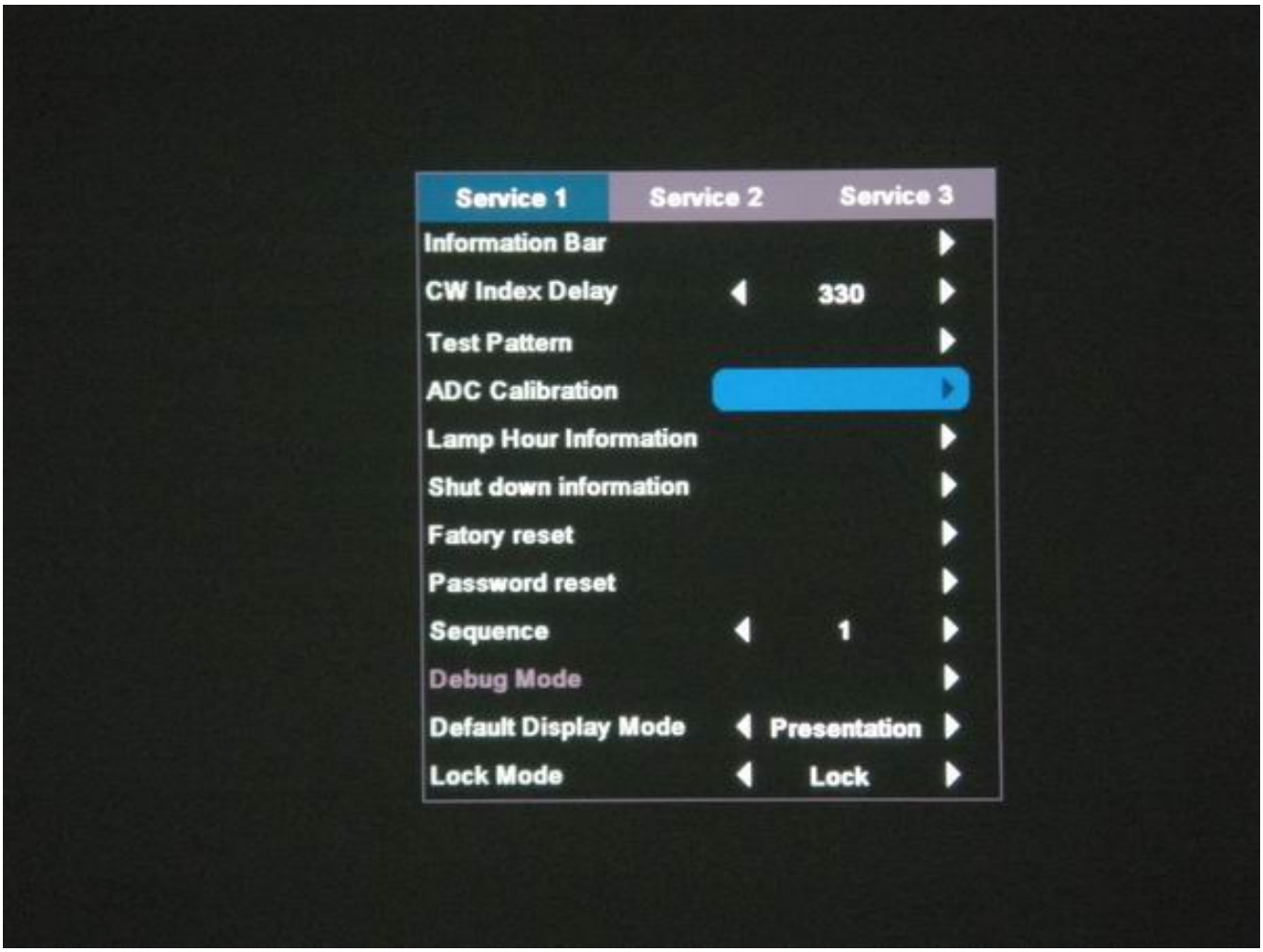
6. Calibration

Step of into Service Mode

Step 1 : To turn on the projector, then press “Power” key => “Left” key => “Right” key => “Down” key => “Up” key.

Step 2：If password is correct then go into Service Mode.

Then SERVICE OSD will pop up shows as follows:



6-1. Calibrate Analog RGB (1920x 1080 @ 60Hz):

A. Function Description:

ADC Calibration - VGA ：Calibrating Analog RGB signal

B. Calibrate Analog RGB (1920 x 1080 @ 60Hz):

Step 1： Press “**ADC Calibrating**” to do DA Calibration

VGA In this menu input pattern with 16-grays scalar for calibration the VGA Source.

Input Pattern

After input ready press “**Enter**” key on Calibration item to calibration.

Step 2 : After complete, you can get the calibrated value that different with default value (all 127). if calibration fail, you can get the calibrated vale of default (all 127)

Note : Offset & Gain Value

	Default	After ADC
Offset	**127**	
Gain	**127**	

Step 3 : Compare internal white pattern and RGB source white pattern, if the brightness gap ratio of these two source is bigger than 3.5%.

6-2. Calibrate Analog YpbPr:

A. Function Description：

ADC Calibration - Component : Calibration YPbPr signal

B. Calibrate YPbPr (480i @60Hz):

Step 1： Press “**Color Setting**” to do DA Calibration

YPbPr In this menu input pattern with 75% SMPTE pattern for calibration Component.

Input Pattern

After input ready press “**Enter**” key on Calibration item to calibration.

Step 2 : After complete, you can get the calibrated value that different with default value (127). if calibration fail, you can get the calibrated vale of default (127)

Note : Offset & Gain Value

	Default	After ADC
Offset	**127**	
Gain	**127**	

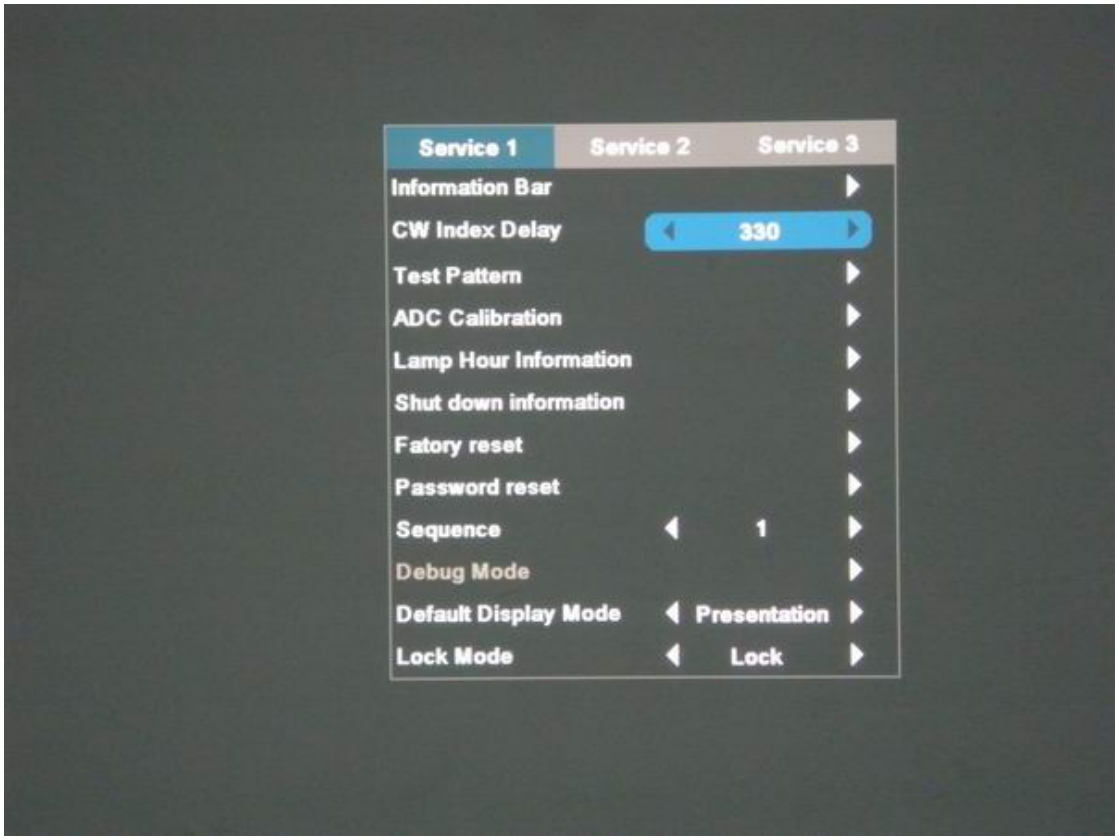
Step 3 : Compare internal white pattern and RGB source white pattern, if the brightness gap ratio of these two source is bigger than 3.5%.

6-3. Color Wheel Index, DMD Contrast and Brightness Adjustment @ RGB source

A. Switch Timing to RGB (1920 x 1080 @ 60Hz)

B. Then go into Service Mode.

In the Service Mode.

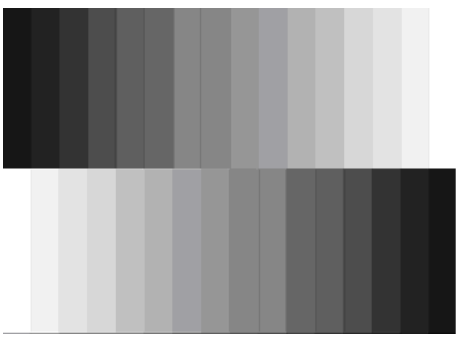


C. Select “CW Index”.

The default value is 324. The range is 0~359

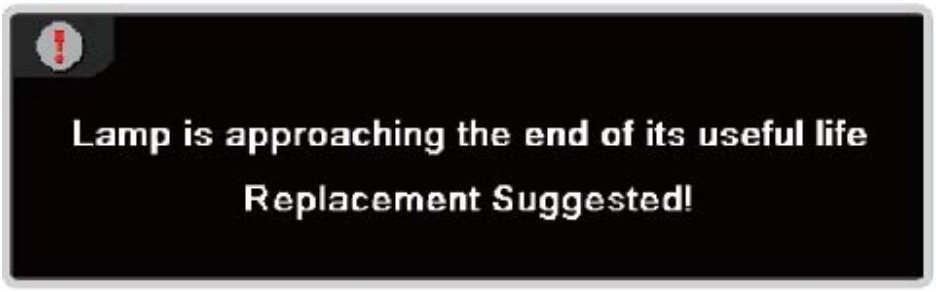
D. Switch Pattern 49 “256 Gray Scale”. Fine-tune until the gray scale still distinct.

Decrease the color to the minimum, tune off G, B channel, check the smooth in brighter level of the R 256 ramp. If not, fine tune “CW Index delay time” until R 256 ramp smooth.



7. Projector LAMP

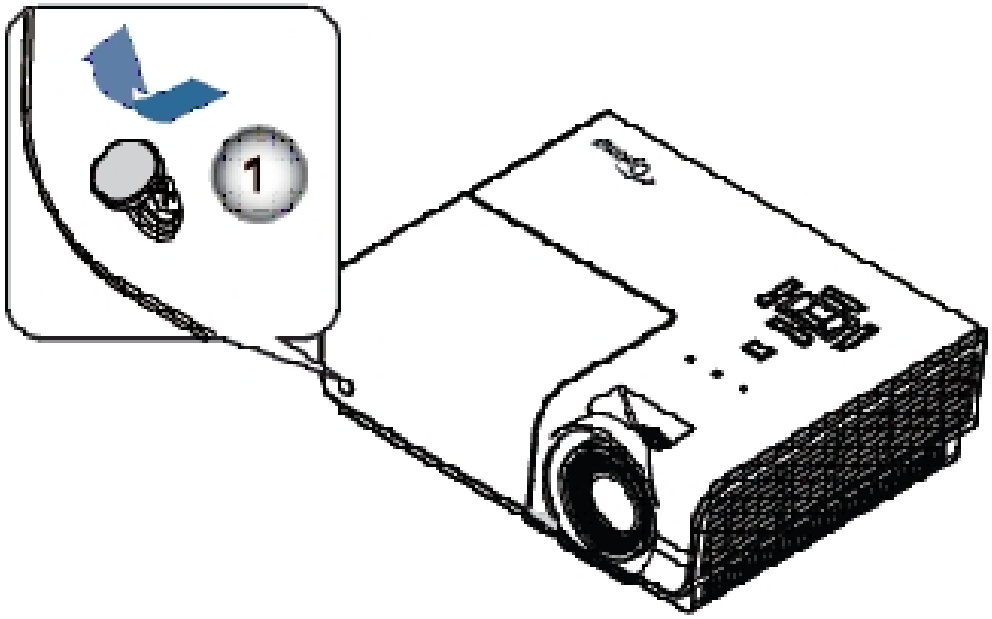
The projector automatically detects the lamp life. When the lamp life is nearing the end of use, you will receive a warning message.

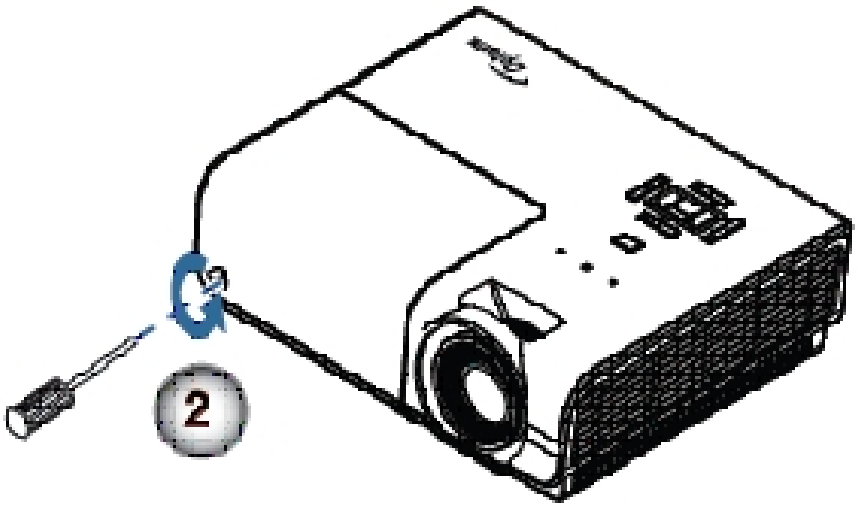


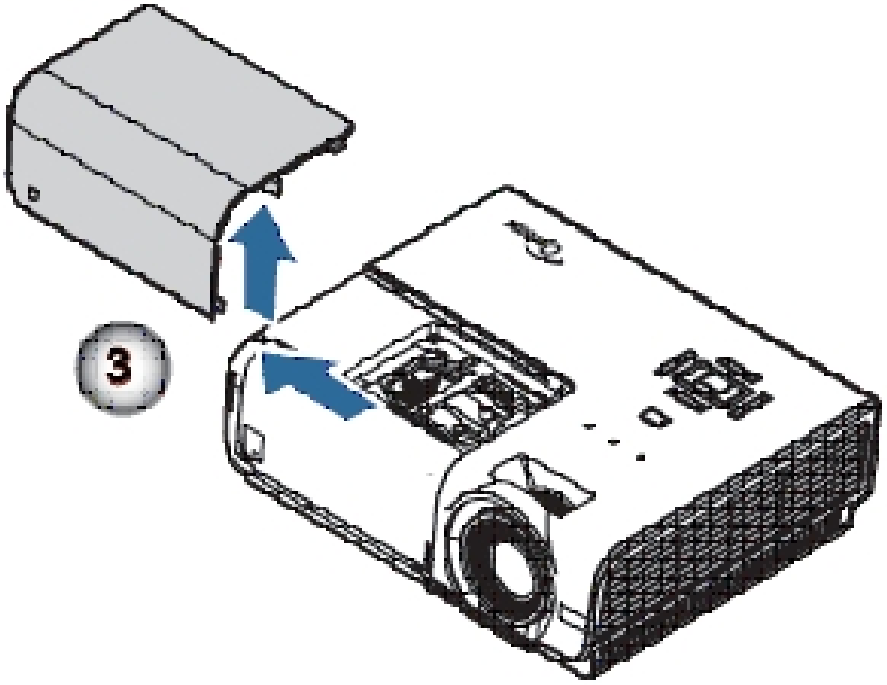
When you see this message, please connect your local reseller or service center to change the lamp as soon as possible. Make sure the projector has been cooled down for at least 30 minutes before change the lamp.

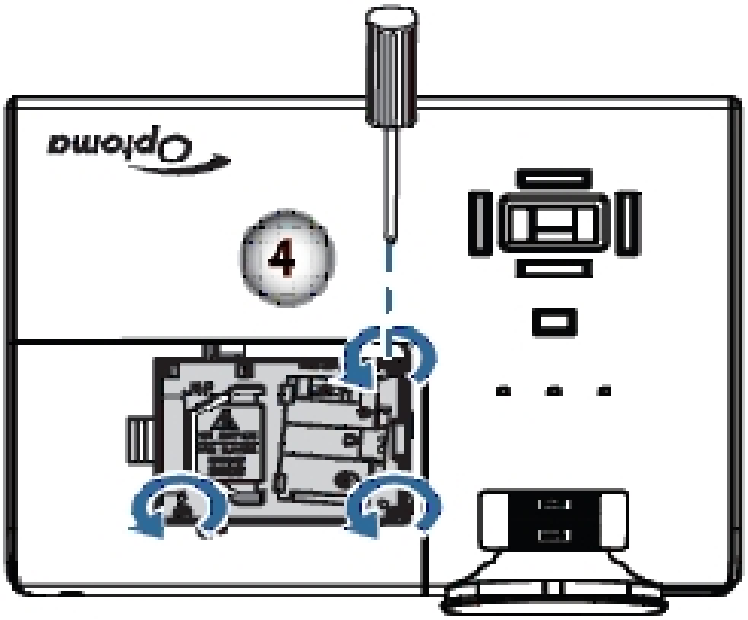
Warning: Lamp compartment is hot! Allow it to cool down before changing lamp!

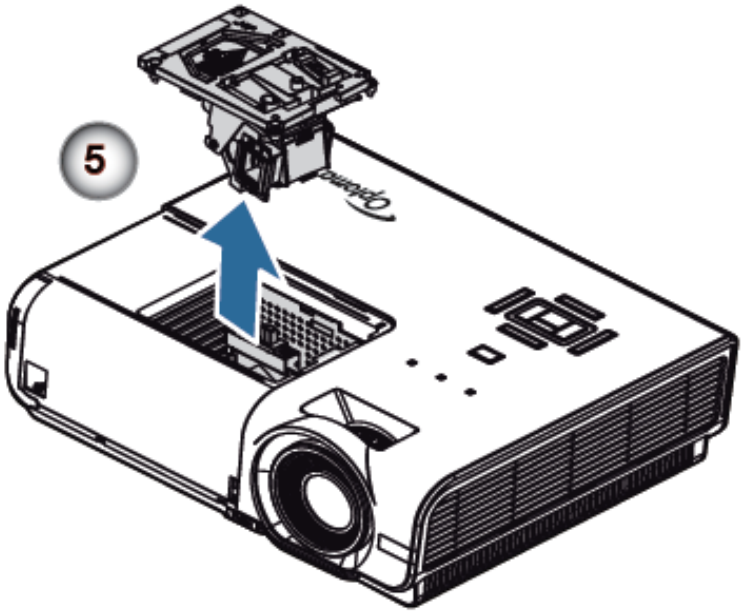
Warning: To reduce the risk of personal injury, do not drop the lamp module or touch the lamp bulb. The bulb may shatter and cause injury if it is dropped.


1


2


3


Optoma
4



Lamp Replacing Procedure:

1. Switch off the power to the projector by pressing the Power button.
2. Allow the projector to cool down at least 30 minutes.
3. Disconnect the power cord.
4. Open the screw cover. ❶
5. Remove the single screw on the lamp compartment cover. ❷
6. Remove the lamp compartment cover. ❸
7. Remove the three screws from the lamp module.
   Lift the module handle up. ❹
8. Pull firmly on the module handle to remove the lamp module. ❺

To replace the lamp module, reverse the previous steps. While installing, align the lamp module with the connector and ensure it is level to avoid damage.

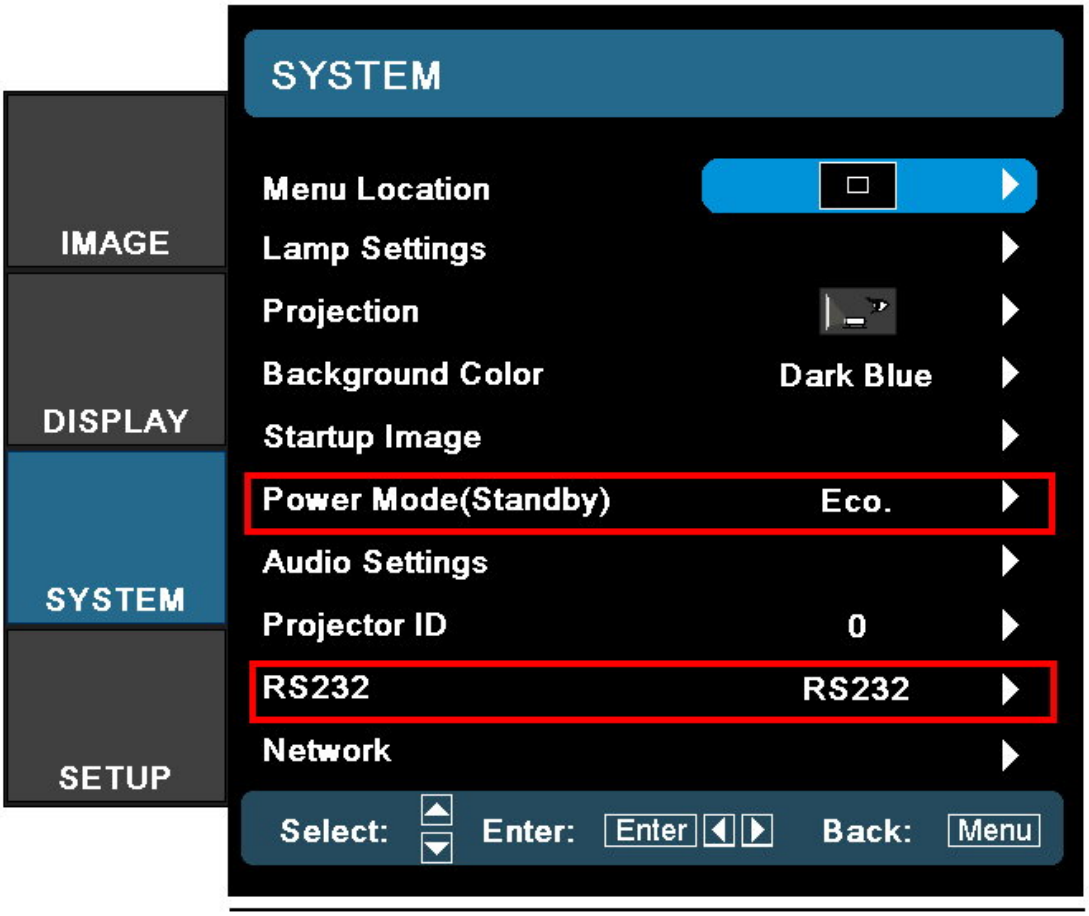
9. Turn on the projector and do "Lamp Reset" after the lamp module is replaced.
   Lamp Reset: (i)Press "Menu" -> (ii)Select "System" -> (iii)Select "Lamp Settings" ->(iv)Select "Lamp Reset" -> (v)Select "Yes".

8. How to program by RS232

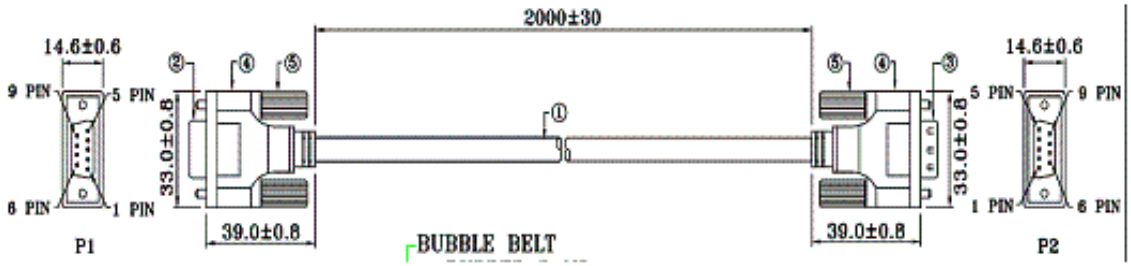
8-1. OSD Setting

Press the **“menu”** key on the keypad or by remote control, select **“SYSTEM”->“ Network”,** then press the **“►”** key on the keypad to select **“RS232”.**

Please be sure the **“Power Mode(Standby)”** is **“Eco.”** mode.



8-2. RS-232 HARDWARE CONNECTION



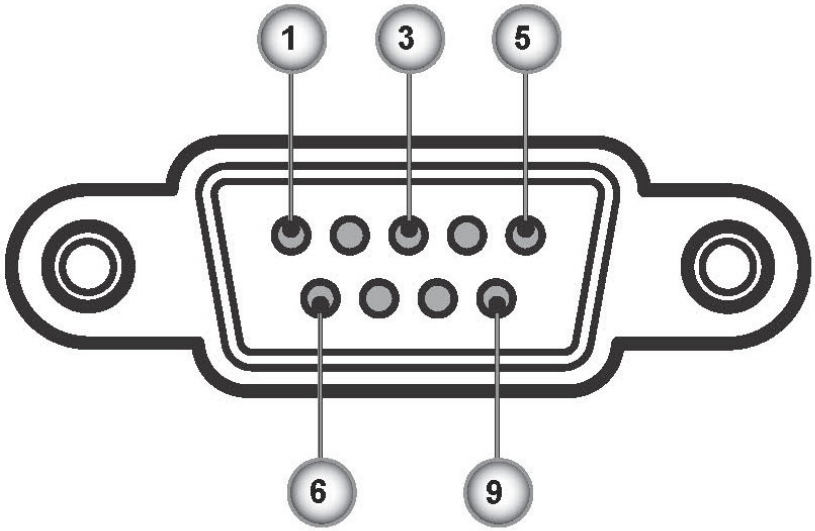
WIRE ARRANGEMENT		
P1	COLOR	P2
1	BLACK	1
2	BROWN	3
3	RED	2
4	ORANGE	4
5	YELLOW	5
6	GREEN	6
7	BLUE	7
8	PURPLE	8
9	GRAY	9
CASE	DRAIN WIRE	CASE

PC RS-232 pin alignment

Pin	Description	Pin	Description
1	NC	2	RXD
3	TXD	4	NC
5	GND	6	NC
7	RTS	8	CTS
9	NC		

RS232 Commands and Protocol Function List

RS232 Pin Assignments (projector side)



Pin no.	Name	I/O (From Projector Side)
1	NC	—
2	RXD	IN
3	TXD	OUT
4	NC	—
5	NC	—
6	NC	—
7	RS232	RTS
8	RS232	CTS
9	NC	—

RS232 Protocol Function List

EH1060 RS232 Command Table:

Baud Rate: 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None
UART16550 FIFO: Disable
Projector Return (Pass): P
Projector Return (Fail): F

XX=01-99, projector's ID, XX=00 is for all projectors

Lead Code	Projector ID		Command ID			space	variable	carriage return
~	X	X	X	X	X		n	CR
Fix code One Digit	00		Defined by Optoma 2 or 3 Digit See the Follow content			One Digit	Per item Definition	Fix code One Digit

Function	RS232 Command Code
Power on	~XX00 1
Power off	~XX00 0 ~XX00 2
Resync	~XX01 1
AV Mute on	~XX02 1
AV Mute off	~XX02 0 ~XX02 2
Freeze on	~XX04 1
Unfreeze	~XX04 2 ~XX04 0
IR Function on	~XX11 1
IR Function off	~XX11 0 ~XX11 2
Direct Source Selection	
HDMI 1	~XX12 1
HDMI 2	~XX12 15
VGA	~XX12 5
VGA SCART	~XX12 7
VGA Component	~XX12 8
Component	~XX12 14
S-video	~XX12 9
Video	~XX12 10

Item	Key Definition		ASCII	Pass	Fail
1	Power	n=1	~XX140 n	P	F
2	Laser	N/A			
3	Remote Mouse Up	n=3		P	F
4	Remote Mouse Left	n=4		P	F
5	Remote Mouse Enter	n=5		P	F
6	Remote Mouse Right	n=6		P	F
7	Remote Mouse Down	n=7		P	F
8	Mouse Left Click	n=8		P	F
9	Mouse Right Click	n=9		P	F
10	Up/Page +	n=10		P	F
11	Left/Source	n=11		P	F
12	Enter (for projection MENU)	n=12		P	F
13	Right/Re-SYNC	n=13		P	F
14	Down/Page -	n=14		P	F
15	Keystone +	n=15		P	F
16	Keystone -	n=16		P	F
17	Volume -	n=17		P	F

Item	Key Definition		ASCII	Pass	Fail
18	Volume +	n=18		P	F
19	DVI-D/YPbPr/1	n=19		P	F
20	Menu/2	n=20		P	F
21	Zoom/3	n=21		P	F
22	HDMI/4	n=22		P	F
23	Freeze/5	n=23		P	F
24	AV Mute/6	n=24		P	F
25	S-Video/7	n=25		P	F
26	VGA/8	n=26		P	F
27	Video/9	n=27		P	F

OSD/Image/Display/Setup

Main Menu	Sub Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Values\Menu Items	RS232 Command Code
IMAGE	Display Mode (1)				Presentation	~XX20 1
					Bright	~XX20 2
					Movie	~XX20 3
					sRGB	~XX20 4
					Classroom	~XX20 7
					Blackboard	~XX20 8
					User 1	~XX20 5
					User 2	~XX20 6
	Contrast (1)				-50~+50	~XX22 n
	Brightness (1)				-50~+50	~XX21 n
	Color (1)				-50~+50	~XX45 n
	Tint (1)				-50~+50	~XX44 n
	Sharpness (1)				0~15	~XX23 n
	ADVANCED (1)	Noise Reduction (2)			0 ~ 10	~XX196 n
		Gamma (2)	Film (9a)	Curve Type	-7~+7	~XX182 n
				Offset	-5~+5	~XX183 n
				Reset		~XX206 1
				Exit		NA
			Video (9a)	Curve Type	-7~+7	~XX184 n
				Offset	-5~+5	~XX185 n
				Reset		~XX207 n
				Exit		NA
			Graphics (9a)	Curve Type	-7~+7	~XX186 n
				Offset	-5~+5	~XX187 n
				Reset		~XX208 n
				Exit		NA
			Standard (9a)	Curve Type	-7~+7	~XX188 n
				Offset	-5~+5	~XX189 n
				Reset		~XX209 n
				Exit		NA
		Color Settings (2)	Color Temp. (2)		Warm	~XX36 1
					Medium	~XX36 2
					Cold	~XX36 3
			Color Settings	Red Gain (2a)	-50~+50	~XX24 n
				Green Gain (2a)	-50~+50	~XX25 n
				Blue Gain (2a)	-50~+50	~XX26 n
				Red Bias (2a)	-50~+50	~XX27 n
				Green Bias (2a)	-50~+50	~XX28 n
				Blue Bias (2a)	-50~+50	~XX29 n

Main Menu	Sub Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Values\Menu Items	RS232 Command Code
				Reset (2a)		~XX33 1
				Exit (2a)		NA
			Color Space		RGB	~XX37 2
					YUV	~XX37 3
					Auto	~XX37 1
			RGB Channel		Normal	
					Red	
					Green	
					Blue	
			Exit			NA
		Exit (2)				NA
DISPLAY	Format (1)				4:3	~XX60 1
					16:9	~XX60 2
					LBX	~XX60 5
					Native	~XX60 6
	Digital Zoom (1)				0~10	~XX61 n
	V Image Shift (1)				-50~+50	~XX64 n
	V Keystone (1)				-20~+20	~XX66 n
	Closed Captioning				On	~XX88 1
					Off	~XX88 2 ~XX88 0
SYSTEM	Menu Location (1)				Top Left	~XX72 1
					Top Right	~XX72 2
					Center	~XX72 3
					Bottom Left	~XX72 4
					Bottom Right	~XX72 5
	Lamp Settings (1)	Lamp Hours (2)				~XX108 1
		Lamp Reminder (2)			Off	~XX109 0 ~XX109 2
					On	~XX109 1
		Brightness Mode (2)			Bright	~XX110 1
					STD	~XX110 2
		Lamp Reset (2)			No	~XX111 2
					YES	~XX111 1
		Exit (2)				NA
	Projection (1)				Front-Desktop	~XX71 1
					Rear-Desktop	~XX71 2
					Front-Ceiling	~XX71 3
					Rear-Ceiling	~XX71 4
	Background Color (1)				Dark Blue	~XX104 1
					Grey	~XX104 3
					Black	~XX104 2
	Startup Image	Image			Default	~XX82 1
					User	~XX82 2
		Image Capture				~XX83 n

Main Menu	Sub Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Values\Menu Items	RS232 Command Code
	Power Mode (Standby)				ECO	~XX114 1
					Active	~XX114 2 ~XX114 0
	Audio Settings	Mute			On	~XX80 1
					Off	~XX80 2 ~XX80 0
		Volume			0~10	~XX81 n
		Audio Input			Mini	~XX89 1
					RCA	~XX89 2
		Exit				NA
	Projector ID				00~99	~XX79 n
	RS232				RS232	~XX86 1
					Network	~XX86 2
	Network (1)	Network State				
		DHCP				
		IP Address				
		Subnet Mask				
		Gateway				
		DNS				
		Apply				
		Exit				NA
SETUP	Language (1)				English	~XX70 1
					German	~XX70 2
					French	~XX70 3
					Italian	~XX70 4
					Spanish	~XX70 5
					Portuguese	~XX70 6
					Polish	~XX70 7
					Dutch	~XX70 8
					Swedish	~XX70 9
					Norwegian/Danish	~XX70 10
					Finnish	~XX70 11
					Greek	~XX70 12
					Traditional Chinese	~XX70 13
					Simplified Chinese	~XX70 14
					Japanese	~XX70 15
					Korean	~XX70 16
					Russian	~XX70 17
					Hungarian	~XX70 18
					Czechoslovak	~XX70 19
					Arabic	~XX70 20
					Thai	~XX70 21
					Turkish	~XX70 22
					Exit	NA
	Input Filter (1)				HDMI 1	~XX39 1
					HDMI 2	~XX39 7
					Component	~XX39 8
					VGA	~XX39 5
					S-video	~XX39 9
					Video	~XX39 10
					Exit	NA
	Source Lock (1)				Off	~XX100 0 ~XX100 2
					On	~XX100 1

Main Menu	Sub Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Values\Menu Items	RS232 Command Code
	High Altitude (1)				Off	~XX101 0 ~XX101 2
					On	~XX101 1
	Information Hide (1)				Off	~XX102 0 ~XX102 2
					On	~XX102 1
	Auto Power Off (1)				0 ~ 60 min	~XX106 n
		Automatic (2)			Disable	~XX91 0
					Enable	~XX91 1
		Frequency (2)			-50~+50	~XX73 n
		Phase (2)			0~63	~XX74 n
		H. Position (2)			-5~+5	~XX75 n
		V. Position (2)			-5~+5	~XX76 n
		Exit (2)				NA
		White Level (2)	(Video decoder)		-50~+50	~XX200 n
		Black Level (2)			-50~+50	~XX201 n
		Saturation (2)			-50~+50	~XX202 n
		Hue (2)			-50~+50	~XX203 n
		IRE (2)			0 IRE / 7.5 IRE	~XX204 n
		Exit (2)				NA
		Black Level (2)	(HDMI)		YCbCr / RGB / Auto	~XX217 n
		Exit				NA
	Signal Power On (1)				Off	~XX113 0 ~XX113 2
					On	~XX113 1
	Security	Security Timer	Month		0~12	~XX77 HHMMDD
			Day		0~30	
			Hour		0~24	
			Exit			NA
		Change Password				
		Security Settings			Disable	~XX78 0 ~XX78 2
					Enable	~XX78 1
		Exit				
	Reset (1)				Current	~XX112 1
					All	~XX112 2
	12V OUT				Off	~XX192 0 ~XX192 2
					On	~XX192 1

Information Format: INFOa	Standby Mode	a=0
	Warming up	a=1
	Cooling Down	a=2
	Out of Range	a=3
	Lamp Fail	a=4
	Thermal Switch Error	a=5
	Fan Lock	a=6
	Over Temperature	a=7
	Lamp Hours Running Out	a=8

Function	RS232 command	Response		
Information display	~XX150 1	Okabbbbccdddde		
		a = Power State	On	a=1
			Off	a=0
		b = Lamp Hour		bbbb
		c = Input Source	None	c=0

Function	RS232 command	Response		
			HDMI 1	c=1
			HDMI 2	c=2
			VGA	c=3
			S-video	c=4
			Video	c=5
		d = Firmware Version		dddd
		e = Display mode	None	e=0
			Presentation	e=1
			Bright	e=2
			Movie	e=3
			sRGB	e=4
			Classroom	e=5
			Blackboard	e=6
			User1	e=7
			User2	e=8
Input Source	~XX121 1	Oka	None	a=0
			HDMI 1	a=1
			HDMI 2	a=2
			VGA	a=3
			S-video	a=4
			Video	a=5
			Component	a=6
Software Version	~XX122 1	Okdddd		
Display Mode	~XX123 1	Oka	None	a=0
			Presentation	a=1
			Bright	a=2
			Movie	a=3
			sRGB	a=4
			Classroom	a=5
			Blackboard	a=6
			User1	a=7
			User2	a=8
Power State	~XX124 1	Oka	On	a=1
			Off	a=0
Brightness	~XX125 1	Oka		
Contrast	~XX126 1	Oka		
Aspect Ratio	~XX127 1	Oka	4:3	a=0
			16:9	a=1
			LBX	a=2
			Native	a=3
Color Temperature	~XX128 1	Oka	Warm	a=0
			Medium	a=1
			Cold	a=2
Projection Mode	~XX129 1	Oka	Front-Desktop	a=0
			Rear-Desktop	a=1
			Front-Ceiling	a=2
			Rear-Ceiling	a=3
Model Name	~XX151 1	Oka	EH1060	a=1
RS232 Version No	~XX152 1	Oka		

8-3. Hyper Terminal setting guide

8-3-1 Connect the RS232 Cable between your computer and Projector.

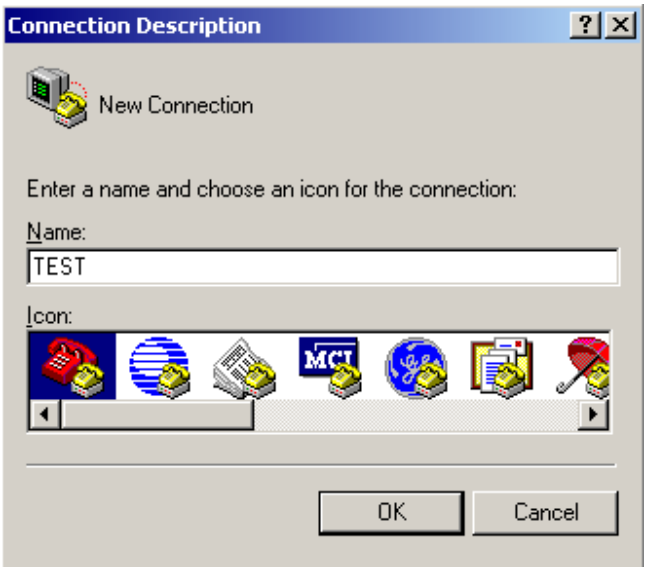
8-3-2 Open HyperTerminal

Window2000/XP HyperTerminal path：

Start \ Programs \ Accessories \ Communications \ HyperTerminal。

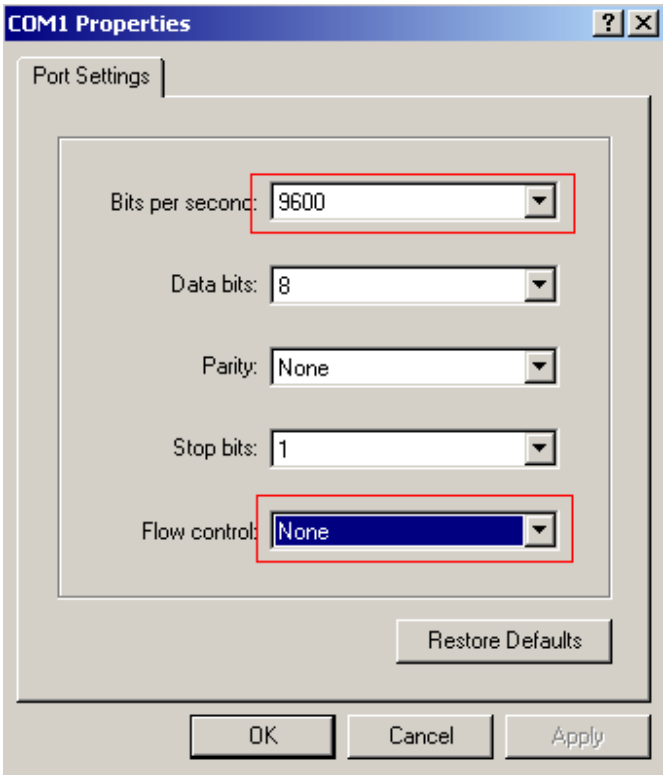
8-3-3 Setting the HyperTerminal parameter：

Step 1. Type the connection name .

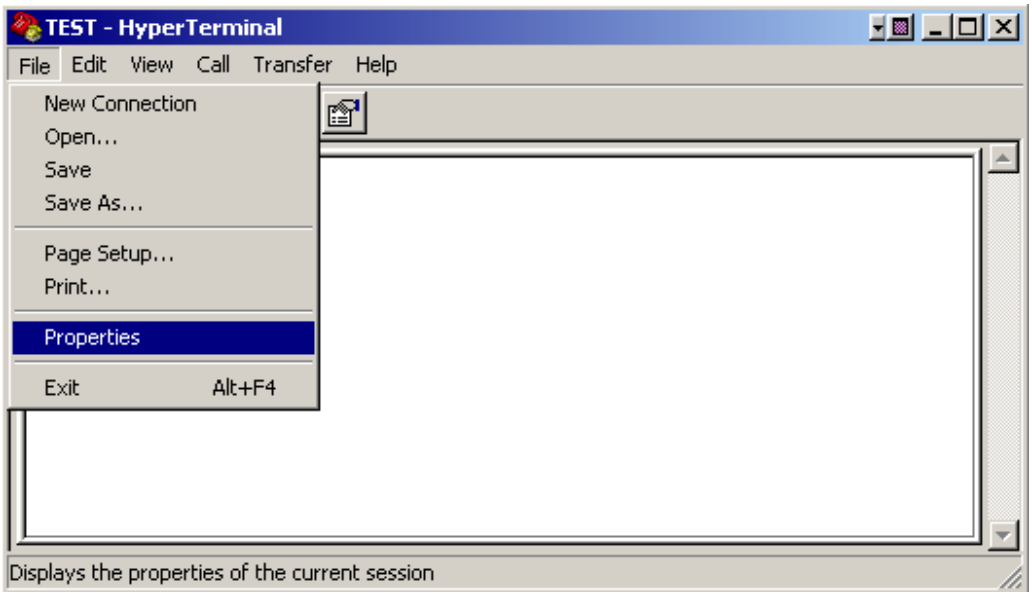


Step2. Choose the COM port for your RS232 Cable connected to.

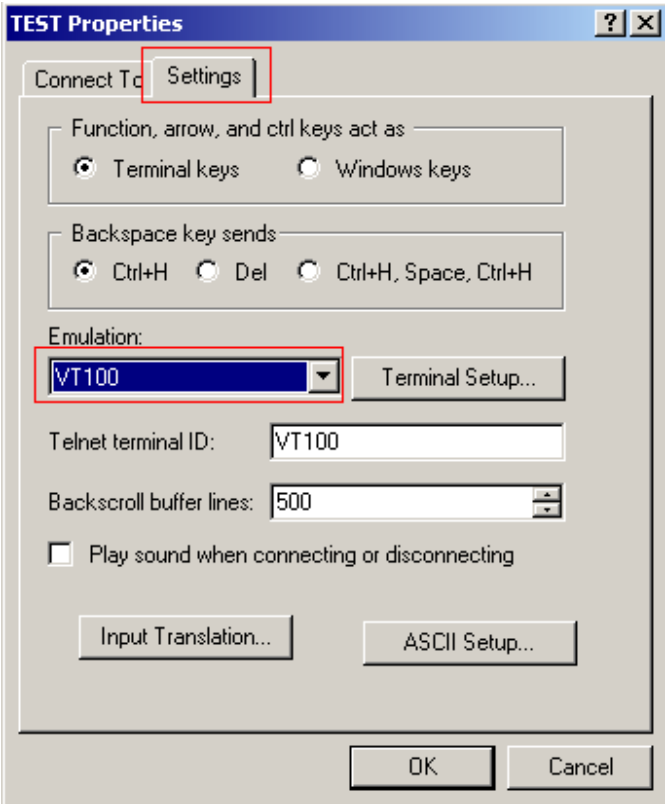
Step3. In Bits per second choose “ 9600 ” and in Flow control choose “ None ”。



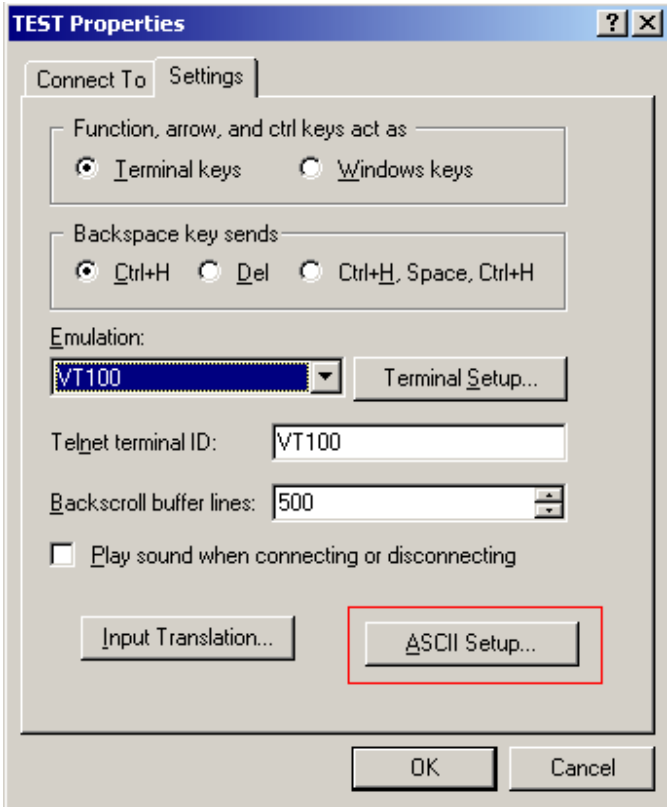
Step4. Click the File and choose Properties to setting Keyboard parameter。



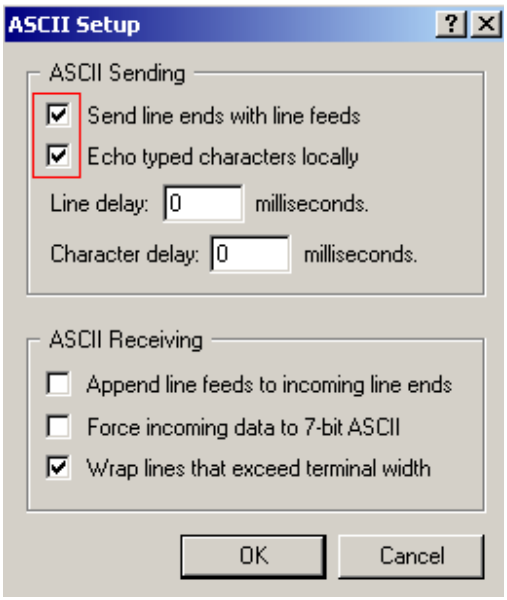
Step5. In Setting page , choose Emulation type for your keyboard.



Step6. Click ASCII Setting icon to setup ASCII code parameter.



Step7. Mark Send Line ends with line feeds and Echo typed characters locally and click OK bottom to complete setting.



9. EDID

a. Analog

128 BYTES OF EDID CODE :

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	3E	8D
10	60	10	01	01	01	01	01	13	01	03
20	0E	00	00	78	0A	69	F1	A6	56	51
30	A0	24	10	4E	59	BF	EF	80	B3	00
40	81	D9	81	19	81	99	90	40	95	00
50	A9	40	D1	00	02	3A	80	18	71	38
60	2D	40	58	2C	45	00	00	00	00	00
70	00	18	C8	32	00	A0	50	D0	1E	20
80	30	20	55	00	00	00	00	00	00	18
90	00	00	00	FD	00	32	55	0F	5A	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	45	48	31	30	36	30	0A
120	20	20	20	20	20	20	00	8D		

(08-09) ID Manufacturer Name _____ = OTM

(11-10) Product ID Code _____ = 1060(Hex), 4192(Dec)

(12-15) Last 5 Digits of Serial Number _____ = 16843009(Dec), 01010101(Hex)

(16) Week of Manufacture _____ = 1

(17) Year of Manufacture _____ = 2009

(18) EDID Version Number _____ = 1

(19) EDID Revision Number _____ = 3

(20) VIDEO INPUT DEFINITION :

Analog Signal

0.700V/0.300V

Separate

Composite

Sync on Green

(21) Maximum Horizontal Image Size _____ = 0 mm

(22) Maximum Vertical Image Size _____ = 0 mm

(23) Display Gamma _____ = 2.20

(24) DPMS and Supported Feature(s) :

Preferred Timing Mode

RGB Color Display

(25-34) CHROMA INFO :

RedX : 0.649

RedY : 0.338

GreenX : 0.318

GreenY : 0.626

BlueX : 0.144

BlueY : 0.065

WhiteX : 0.305

WhiteY : 0.349

(35) ESTABLISHED TIMING I :

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II :

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple, Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing :

1152 X 870 @ 75Hz (Apple, Mac II)

(38-53) Standard Timing Identification :

1680 X 1050 @ 60Hz

1280 X 720 @ 85Hz

1280 X 800 @ 85Hz

1280 X 1024 @ 85Hz

1400 X 1050 @ 60Hz

1440 X 900 @ 60Hz

1600 X 1200 @ 60Hz

1920 X 1200 @ 60Hz

(54- 71) Detailed Timing / Descriptor Block 1 :

1920 X 1080 : Pixel Clock : 148 MHz

Horizontal Image Size : 0 mm Vertical Image Size : 0 mm

Refreshed Mode : Non-Interlaced

Horizontal :

Active Time : 1920 pixels Blanking Time : 280 pixels

Sync Offset : 88 pixels Sync Pulse Width : 44 pixels

Border : 0 pixels

Vertical :

Active Time : 1080 lines Blanking Time : 45 lines

Sync Offset : 4 lines Sync Pulse Width : 5 lines

Border : 0 lines

None(Normal)

Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(72- 89) Detailed Timing / Descriptor Block 2 :

1280 X 720 : Pixel Clock : 130 MHz

Horizontal Image Size : 0 mm Vertical Image Size : 0 mm

Refreshed Mode : Non-Interlaced

Horizontal :

Active Time : 1280 pixels Blanking Time : 160 pixels

Sync Offset : 48 pixels Sync Pulse Width : 32 pixels

Border : 0 pixels

Vertical :

Active Time : 720 lines Blanking Time : 30 lines

Sync Offset : 5 lines Sync Pulse Width : 5 lines

Border : 0 lines

None(Normal)

Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(90-107) Detailed Timing / Descriptor Block 3 :

Monitor Range Limits :

Horizontal Freq. : 15-90 kHz

Vertical Freq. : 50-85 Hz

Pixel Clock : 170 MHz

(108-125) Detailed Timing / Descriptor Block 4 :

Monitor Name :

EH1060

(126) No Extension EDID Block(s)

(127) CheckSum is OK

b. HDMI

EDID Block 0, Bytes 0-127 [00H-7FH]
Block Type: EDID 1.3

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	FF	FF	FF	FF	FF	FF	00	3E	8D	60	10	01	01	01	01
10	01	13	01	03	80	00	00	78	0A	69	F1	A6	56	51	A0	24
20	10	4E	59	BF	EF	80	B3	00	81	D9	81	00	81	80	90	40
30	95	00	A9	40	D1	00	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	00	00	00	00	00	18	C8	32	00	A0	50	D0	1E	20
50	30	20	55	00	00	00	00	00	00	18	00	00	00	FD	00	32
60	55	1F	5A	11	00	0A	20	20	20	20	20	20	00	00	00	FC
70	00	45	48	31	30	36	30	0A	20	20	20	20	20	20	01	3C

(08H-09H) ID Manufacturer Name _____ = OTM
(0AH-0BH) Product ID Code _____ = 1060
(0CH-0FH) Last 5 Digits of Serial Number _____ = UNUSE
(10H) Week of Manufacture _____ = 01
(11H) Year of Manufacture _____ = 2009
(12H) EDID Version Number _____ = 1
(13H) EDID Revision Number _____ = 3
(14H) VIDEO INPUT DEFINITION:
Digital Signal
(15H) Maximum Horizontal Image Size _____ = mm
(16H) Maximum Vertical Image Size _____ = mm
(17H) Display Gamma _____ = 2.20
(18H) DPMS and Supported Feature(s):
Preferred Timing Mode
Display Type = R/G/B Color
(19H-22H) CHROMA INFO:
Red x - 0.649 Green x - 0.318 Blue x - 0.144 White x - 0.305
Red y - 0.338 Green y - 0.626 Blue y - 0.065 White y - 0.349
(23H) ESTABLISHED TIMING I:
720 x 400 @ 70Hz (IBM,VGA)
640 x 480 @ 60Hz (IBM,VGA)
640 x 480 @ 67Hz (Apple,Mac II)
640 x 480 @ 72Hz (VESA)
640 x 480 @ 75Hz (VESA)

800 x 600 @ 56Hz (VESA)
800 x 600 @ 60Hz (VESA)
(24H) ESTABLISHED TIMING II:
800 x 600 @ 72Hz (VESA)
800 x 600 @ 75Hz (VESA)
832 x 624 @ 75Hz (Apple,Mac II)
1024 x 768 @ 60Hz (VESA)
1024 x 768 @ 70Hz (VESA)
1024 x 768 @ 75Hz (VESA)
1280 x 1024 @ 75Hz (VESA)
(25H) Manufacturer's Reserved Timing:
1152 x 870 @ 75Hz (Apple,Mac II)
(38-53) Standard Timing Identification:
Standard Timing ID 1: 1680 x 1050 @60Hz
Standard Timing ID 2: 1280 x 720 @85Hz
Standard Timing ID 3: 1280 x 800 @60Hz
Standard Timing ID 4: 1280 x 1024 @60Hz
Standard Timing ID 5: 1400 x 1050 @60Hz
Standard Timing ID 6: 1440 x 900 @60Hz
Standard Timing ID 7: 1600 x 1200 @60Hz
Standard Timing ID 8: 1920 x 1200 @60Hz

(36H-47H) Detailed Timing / Descriptor Block 1:
1920x1080 Pixel Clock: 148.50 MHz

Horizontal Image Size: 0 mm Vertical Image Size: 0 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo
Horizontal:
Active Count: 1920 pixels Blanking Count: 280 pixels
Sync Offset: 88 pixels Sync Pulse Width: 44 pixels
Border: 0 pixels Frequency: 67.50 kHz
Vertical:
Active Count: 1080 lines Blanking Count: 45 lines
Sync Offset: 4 lines Sync Pulse Width: 5 lines
Border: 0 lines Frequency: 60.00 Hz
Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(48H-59H) Detailed Timing / Descriptor Block 2:

1280x720 Pixel Clock: 130.00 MHz

Horizontal Image Size: 0 mm Vertical Image Size: 0 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Count: 1280 pixels Blanking Count: 160 pixels

Sync Offset: 48 pixels Sync Pulse Width: 32 pixels

Border: 0 pixels Frequency: 90.28 kHz

Vertical:

Active Count: 720 lines Blanking Count: 30 lines

Sync Offset: 5 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 120.37 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(5AH-6BH) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:

Min Vertical Freq - 50 Hz

Max Vertical Freq - 85 Hz

Min Horiz. Freq - 31 kHz

Max Horiz. Freq - 90 kHz

Pixel Clock - 170 MHz

GTF - Not Used

(6CH-7DH) Detailed Timing / Descriptor Block 4:

Monitor Name:

EH1060

(7EH) Block No: (01) Extension EDID Block(s)

(7FH) CheckSum OK

EDID Block 1, Bytes 128-255 [80H-FFH]
Block Type: CEA EDID Timing Extension Version 3

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	02	03	23	71	50	01	02	03	11	12	04	05	13	14	90	06
10	15	20	21	22	1F	23	09	07	04	83	01	00	00	65	03	0C
20	00	10	00	8C	0A	D0	8A	20	E0	2D	10	10	3E	96	00	13
30	8E	21	00	00	18	8C	0A	D0	90	20	40	31	20	0C	40	55
40	00	C4	8E	21	00	00	18	01	1D	00	72	51	D0	1E	20	6E
50	28	55	00	C4	8E	21	00	00	1E	02	3A	80	18	71	38	2D
60	40	58	2C	45	00	00	00	00	00	00	1E	00	00	00	FF	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	59

Extended Block Type: CEA 861B
Detailed Timing Blocks start at Byte:(23H)
Native Format: (0x1)
(03H) DTV (Basic Audio)
(03H) YCbCr (4:4:4)
(03H) YCbCr (4:2:2)
Video Short Block Description:
(05H) 640 x 480 P 59.94/60Hz 4:3
(06H) 720 x 480 P 59.94/60Hz 4:3
(07H) 720 x 480 P 59.94/60Hz 16:9
(08H) 720 x 576 P 50Hz 4:3
(09H) 720 x 576 P 50Hz 16:9
(0AH) 1280 x 720 P 59.94/60Hz 16:9
(0BH) 1920 x 1080 I 59.94/60Hz 16:9
(0CH) 1280 x 720 P 50Hz 16:9
(0DH) 1920 x 1080 I 50Hz 16:9
(0EH) 1920 x 1080 P 59.94/60Hz 16:9 Native Mode
(0FH) 720(1440) x 480 I 59.94/60Hz 4:3
(10H) 720(1440) x 576 I 50Hz 4:3
(11H) 1920 x 1080 P 23.97/24Hz 16.9
(12H) 1920 x 1080 P 25Hz 16.9
(13H) 1920 x 1080 P 29.97/30Hz 16.9
(14H) 1920 x 1080 P 50Hz 16.9
Audio Short Block Description:
Numbers of Audio Channels (2)

(16H) Linear PCM(IEC60958)
Audio Supported: 32kHz, 44.1kHz, 48kHz
Audio Bit Rate: 24Bit
Speaker Short Block Description:
Playload(3 bytes 1AH-1CH)
Speakers (1AH): FL/FR
1BH: Reserved
1CH: Reserved
Vendor Specific Short Block Description:
Bytes: 03H, 0CH, 00H, 10H, 00H
(23H - 35H) Detailed Timing Descriptions:
720x480 Pixel Clock: 27.00 MHz

Horizontal Image Size: 531 mm Vertical Image Size: 398 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo
Horizontal:
Active Count: 720 pixels Blanking Count: 138 pixels
Sync Offset: 16 pixels Sync Pulse Width: 62 pixels
Border: 0 pixels Frequency: 31.47 kHz
Vertical:
Active Count: 480 lines Blanking Count: 45 lines
Sync Offset: 9 lines Sync Pulse Width: 6 lines
Border: 0 lines Frequency: 59.94 Hz
Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)
(35H - 47H) Detailed Timing Descriptions:
720x576 Pixel Clock: 27.00 MHz

Horizontal Image Size: 708 mm Vertical Image Size: 398 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo
Horizontal:
Active Count: 720 pixels Blanking Count: 144 pixels
Sync Offset: 12 pixels Sync Pulse Width: 64 pixels
Border: 0 pixels Frequency: 31.25 kHz
Vertical:
Active Count: 576 lines Blanking Count: 49 lines
Sync Offset: 5 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 50.00 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(47H - 59H) Detailed Timing Descriptions:

1280x720 Pixel Clock: 74.25 MHz

Horizontal Image Size: 708 mm Vertical Image Size: 398 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Count: 1280 pixels Blanking Count: 370 pixels

Sync Offset: 110 pixels Sync Pulse Width: 40 pixels

Border: 0 pixels Frequency: 45.00 kHz

Vertical:

Active Count: 720 lines Blanking Count: 30 lines

Sync Offset: 5 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 60.00 Hz

Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(59H - 6BH) Detailed Timing Descriptions:

1920x1080 Pixel Clock: 148.50 MHz

Horizontal Image Size: 0 mm Vertical Image Size: 0 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Count: 1920 pixels Blanking Count: 280 pixels

Sync Offset: 88 pixels Sync Pulse Width: 44 pixels

Border: 0 pixels Frequency: 67.50 kHz

Vertical:

Active Count: 1080 lines Blanking Count: 45 lines

Sync Offset: 4 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 60.00 Hz

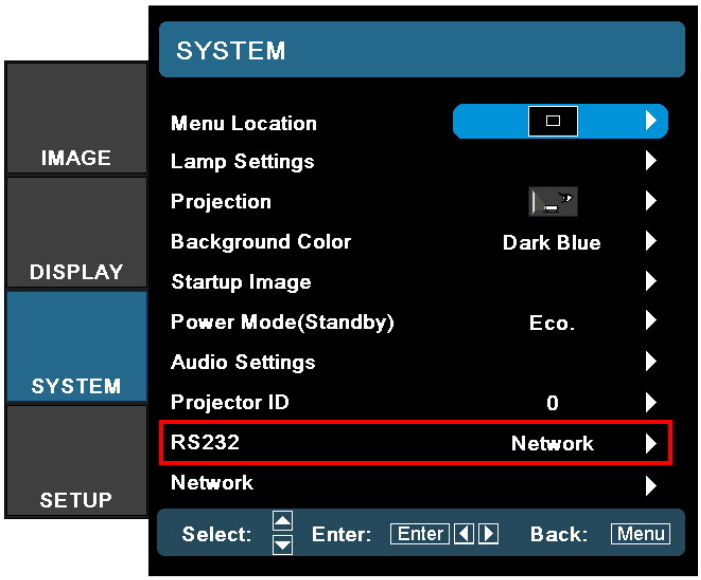
Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(7FH) CheckSum Valid

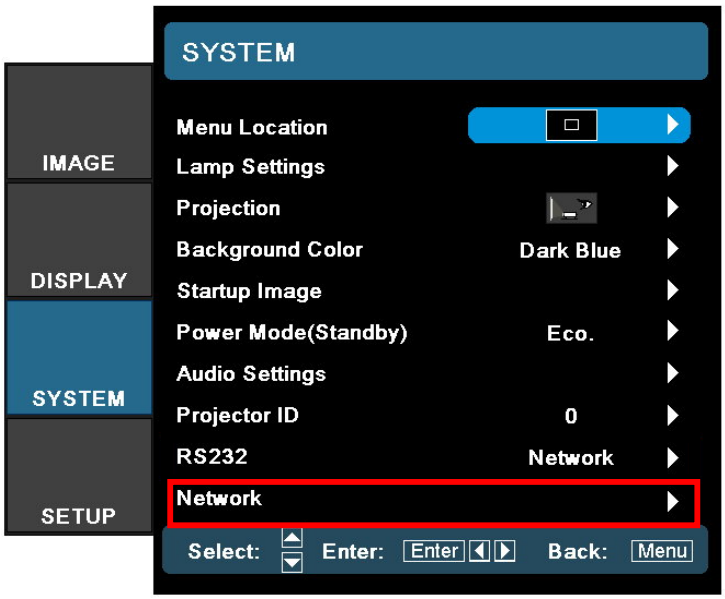
10. RJ45

10-1. OSD Setting

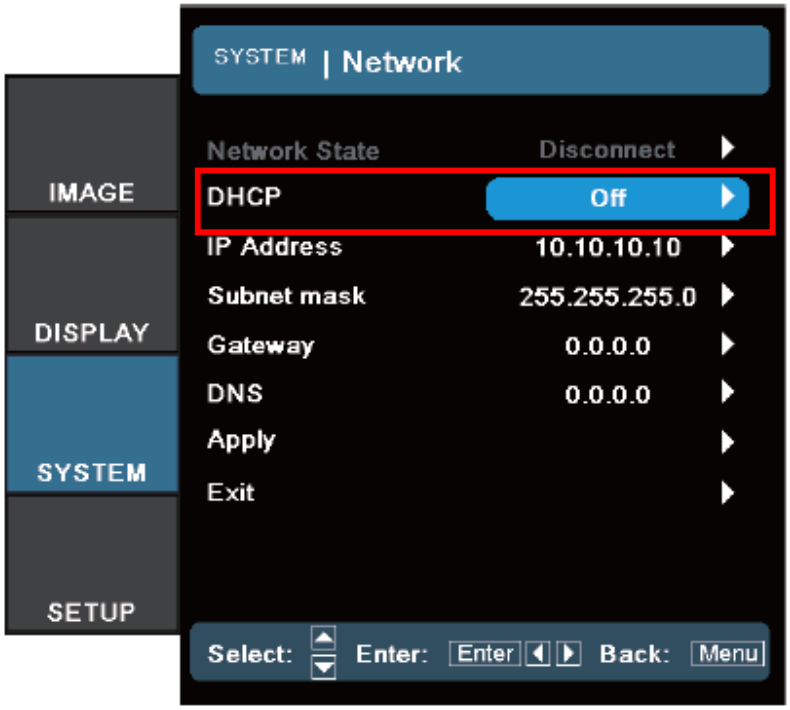
Step1. Press the **“menu”** key on the keypad or by remote control, select **“SYSTEM”->“ RS232”,** then press the **“►”** key on the keypad to select **“Network”.**



Step2. Select **“Network”, then press “►”** on keypad, you will into the next OSD

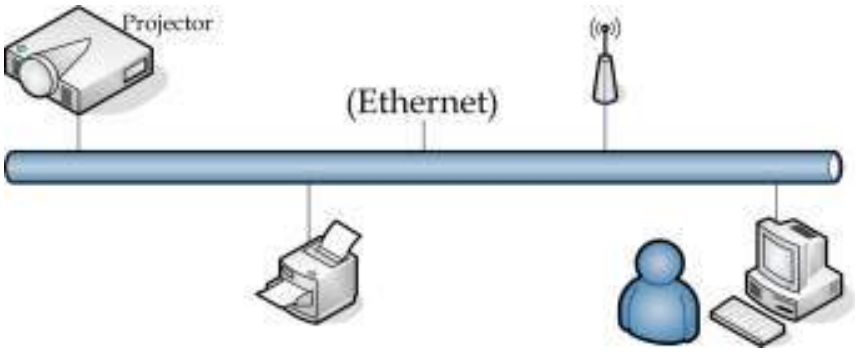


Step3. In below OSD, select **“DHCP”**, then press **“►”** on the keypad, be sure the setting is **“off”**



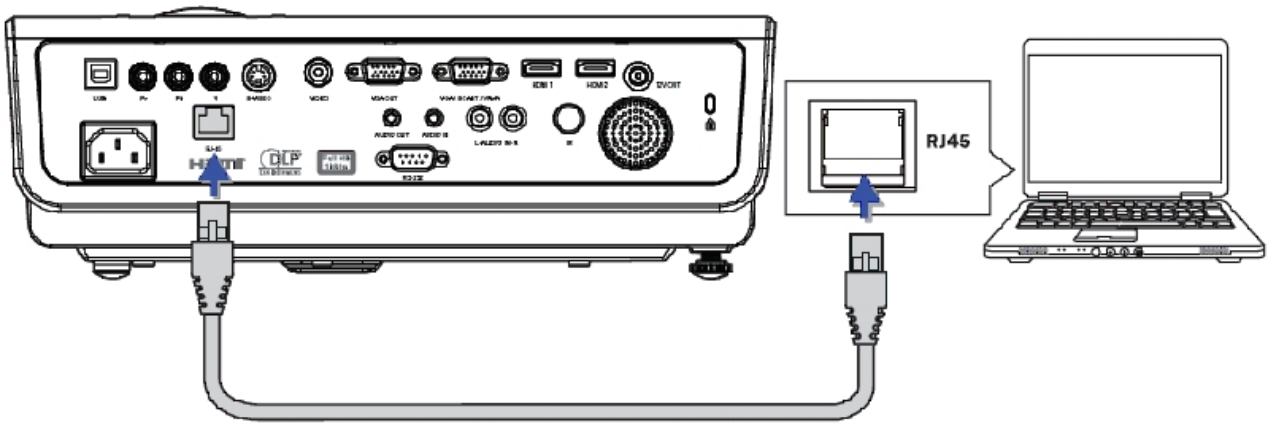
For simplicity and ease of operation, the projector provides diverse networking and remote management features.

The LAN/RJ45 function of the projector through a network, such as remotely manage: Power On/Off, Brightness and Contrast settings. Also, projector status information, such as: Video-Source, Sound-Mute, etc.



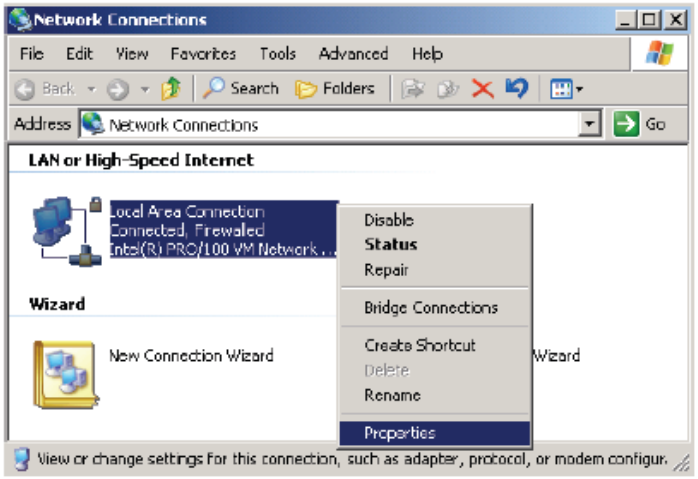
10-2. LAN_RJ45

1. Connect an RJ45 cable to RJ45 ports on the projector and the PC (Laptop)

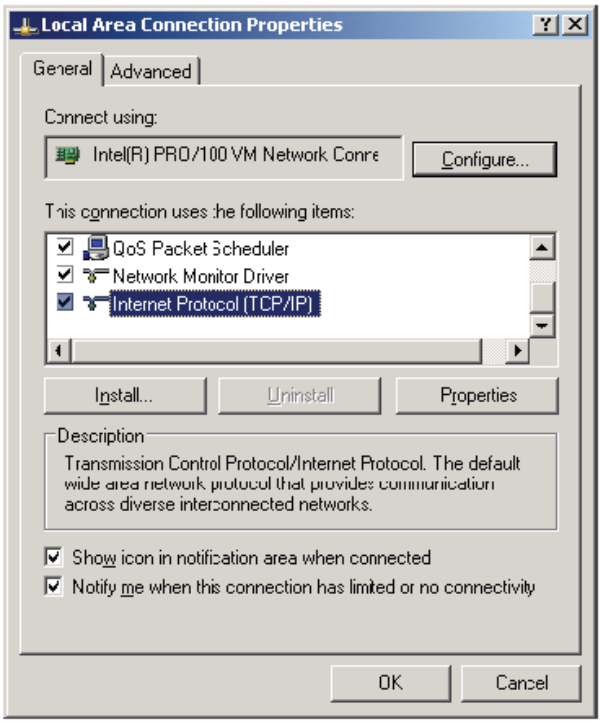


2. On the PC (Laptop), select **Start ->Control Panel-> Network Connections**.

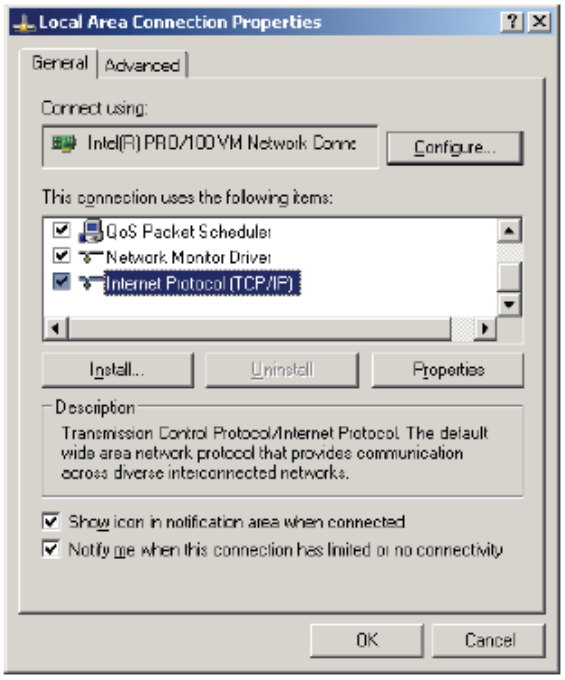
3. Right-click on **Local Area Connection**, and select **Properties**.



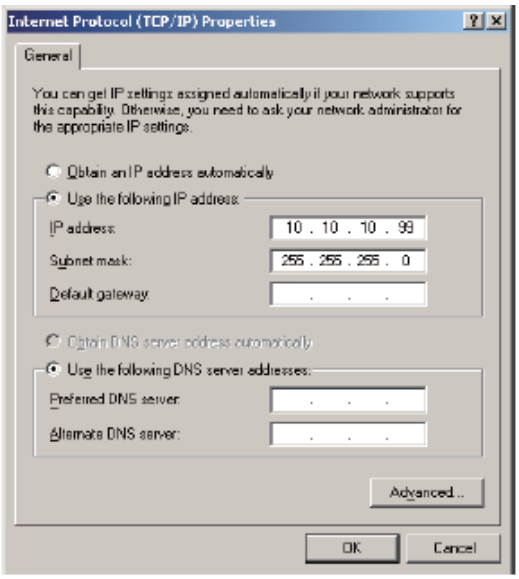
4. In the **Properties** window, select the **General** tab, and select **Internet Protocol (TCP/IP)**.



5. Click Properties.



6. Click Use **the following IP address** and fill in the IP address and Subnet mask, then click **OK**.



7. Press the **Menu** button on the projector.

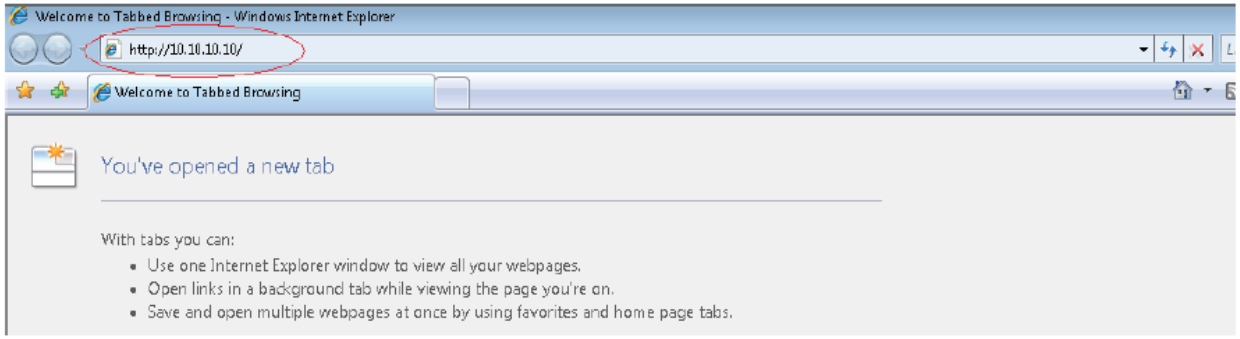
8. Select **Installation II** **Advanced** **Network**.

9. After getting into **Network**, input the following:

- DHCP: Off
- IP Address: 10.10.10.10
- Subnet Mask: 255.255.255.0
- Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

10. Press ↵ (Enter) / ► to confirm settings.

11. Open a web browser (for example, Microsoft Internet Explorer).



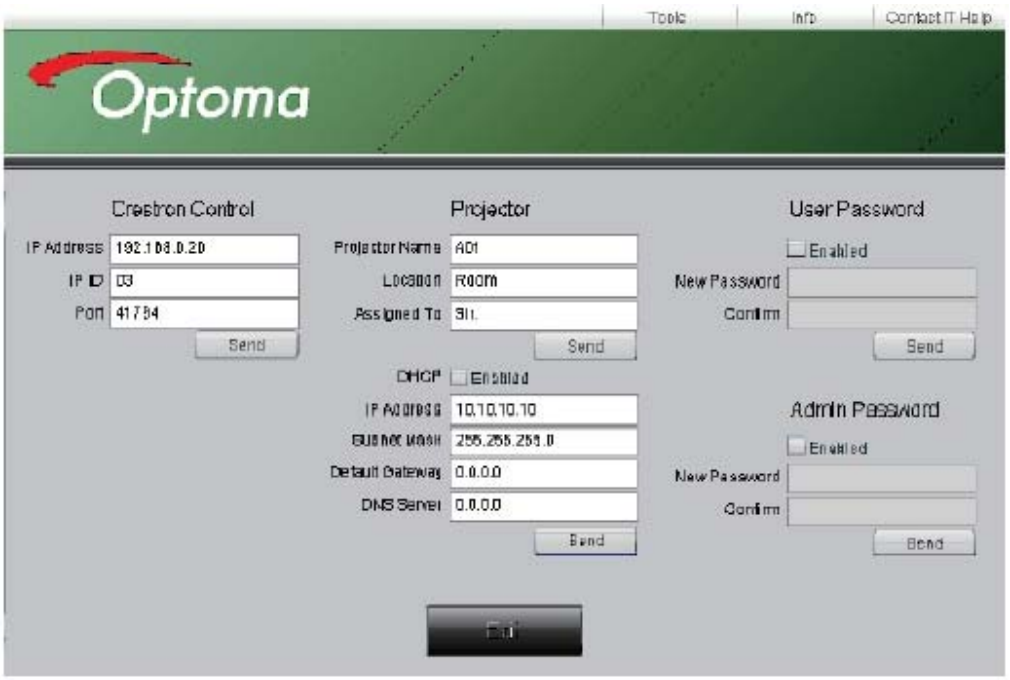
12. In the address bar, input the IP address: 10.10.10.10

13. Press ↵ (Enter) / ►.

The projector is setup for remote management. The NETWORK function displays as follows.

14. Base on network web-page for the input-string in **[tools]** tab, the limitation for input-Length is in the below list (“space” and the other punctuation key included):

Category	Item	Input-Length (characters)
Crestron Control	IP Address	15
	IP ID	2
	Port	5
Projector	Projector Name	10
	Location	9
	Assigned To	9
Network Configuration	DHCP (Enabled)	(N/A)
	IP Address	15
	Subnet Mask	15
	Default Gateway	15
	DNS Server	15
User Password	Enabled	(N/A)
	New Password	15
	Confirm	15
Admin Password	Enabled	(N/A)
	New Password	15
	Confirm	15



11. SERVICE NOTE

Cleaning the projector to remove dust and grime will help ensure trouble-free operation.

a. Be sure to turn off and unplug the projector at least 30 minutes before cleaning.
Failure to do so could result in a severe burn.

b. Use only a dampened cloth when cleaning.
Do not allow water to enter the ventilation openings on the projector.

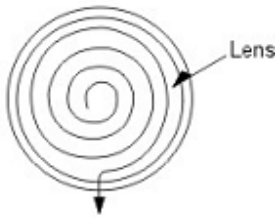
c. If a little water gets into the projector interior while cleaning,
leave unplugged in a well-ventilated room for several hours before using.

d. If a lot of water gets into the projector interior when cleaning, have the projector serviced.

1. Cleaning the Lens

You can purchase optic lens cleaner from most camera stores. Refer to the following to clean the projector lens.

1. Apply a little optic lens cleaner to a clean soft cloth.
   (Do not apply the cleaner directly to the lens.)
2. Lightly wipe the lens in a circular motion.



Caution:

A. Do not use abrasive cleaners or solvents.

B. To prevent discoloration or fading, avoid getting cleaner on the projector case

2. Cleaning the Case

Refer to the following to clean the projector case.

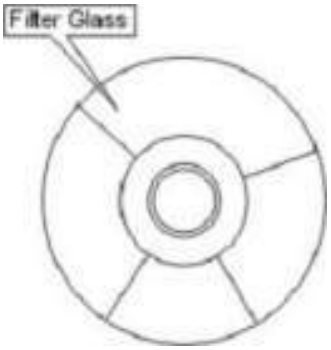
1. Wipe off dust with a clean dampened cloth.
2. Moisten the cloth with warm water and mild detergent (such as used to wash dishes), and then wipe the case.
3. Rinse all detergent from the cloth and wipe the projector again

Caution:

To prevent discoloration or fading of the case, do not use abrasive alcohol-based cleaners.

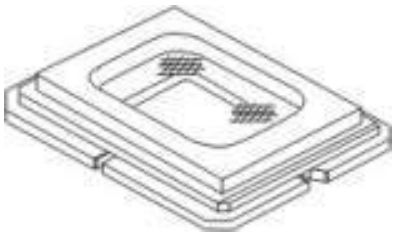
3. Cleaning the Color Wheel Assy

1. The color filter is made of thin glass. Be very careful when handing the filter.
2. In case of fingerprints, etc. on the surface, clean in the same way as the projection lens unit. Do not use detergents as this could cause peeling of the color filter.



4. Cleaning the DMD

1. The DMD surface is glass and can be cleaned. However, avoid scratches as these can have a direct influence on the image.
2. In case of dust on the DMD surface use an air cleaner (with a device to prevent static, if possible) to clean off the surface.
3. In case of fingerprints, etc., add a small amount of water to the designated glass cleaner and wipe off in one direction. Then use the designated dry glass cleaner to wipe off in the same direction.
4. Do not use absolute alcohol or other substances that could leave streaks after drying.



5. Cleaning the Reflecting Mirror

1. Be careful not to touch the reflecting mirror. The surface is composed of vapor deposition silver and touching it directly with the hands can lead to burnishing.
2. Do not clean other than with air.

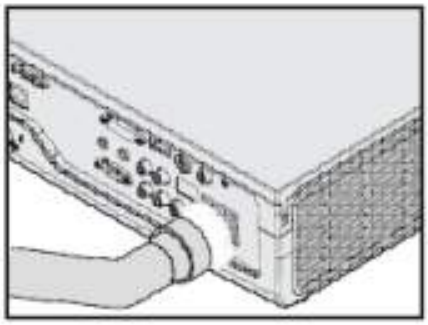
6. Cleaning a Soiled Projector Main Unit.

(1). Wipe with a lint-free, soft, dry cloth. When very dirty, wipe with a cloth that has been moistened with a diluted neutral detergent, then finish with a dry cloth. If a chemically-treated cloth is going to be used, please follow any written warnings.
(2). Do not wipe with thinner, benzene, or other solvents. Doing so could cause them to undergo qualitative changes or the coatings may peel, etc.
(3). When removing the dust of the outflow and intake holes, use the brush attachment on a vacuum cleaner to clean out thedust. Avoid using the vacuum directly without attaching the adapter as well as the use of a nozzle adapter.
(4). Do not scratch or otherwise hit the projector body with your nails or other hard object, since this will cause scratches.

7. Dust of the Intake and Outflow Holes

Dust that collects in the intake and outflow holes will obstruct the ventilation and cause the internal temperature to rise which could cause damage. Clean this area carefully. As a guideline, clean at least every 100 hours of usage.

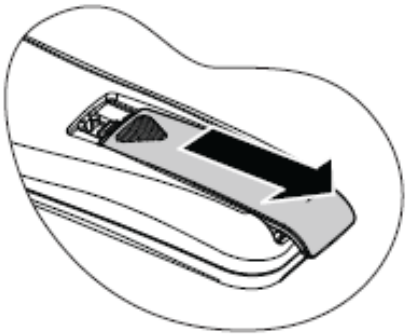
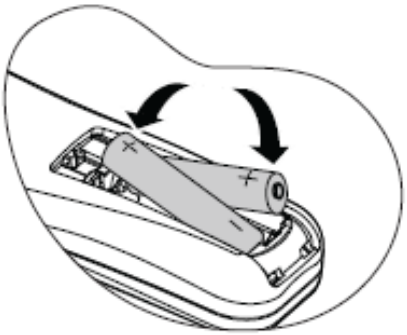
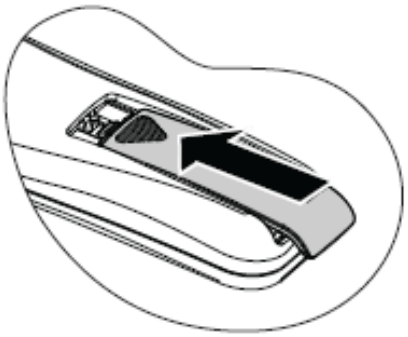
a. Turn off the power and check that the indicator of the POWER/STANDBY has changed so that it is lit in orange, and then disconnect the power cable.
b. Vacuum from the outside with an electric vacuum cleaner. Use a brush-tipped adapter with the vacuum cleaner. Note that use of a vacuum without an adapter, or use of an adapter without a brush should be avoided.



8. Cleaning the Inside of the Projector

Cleaning of the inside of the projector is required about once a year. Failure to clean over a long period while dust has collected inside the projector could cause a fire or breakdown. Do not clean the inside of the projector by yourself. Please be sure to contact your dealer.

12. Inserting the Remote Control Batteries

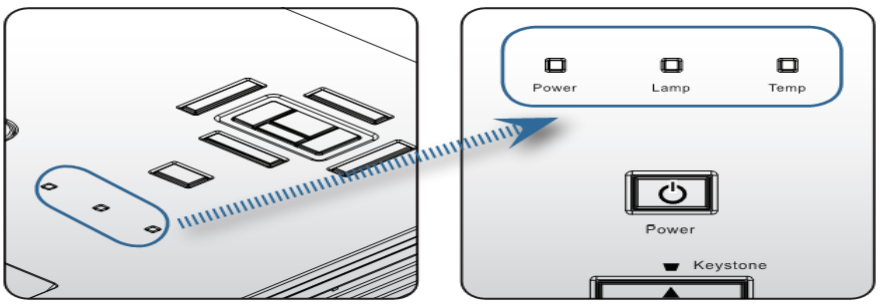
1. Remove the battery compartment cover by sliding the cover in the direction of the arrow.	
2. Insert the supplied batteries taking note of the polarity (+/-) as shown here.	
3. Replace the cover.	

Avoid excessive heat and humidity.

- There may be battery damage if the battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the battery manufacturer.
- Dispose of the used battery according to the battery manufacturer's instructions.
- Never throw a battery into a fire. There may be danger of an explosion.
- If the battery is dead or if you will not be using the remote control for a long time, Remove the battery to prevent damage to the remote control from possible battery leakage.

13. LED Indicator Table

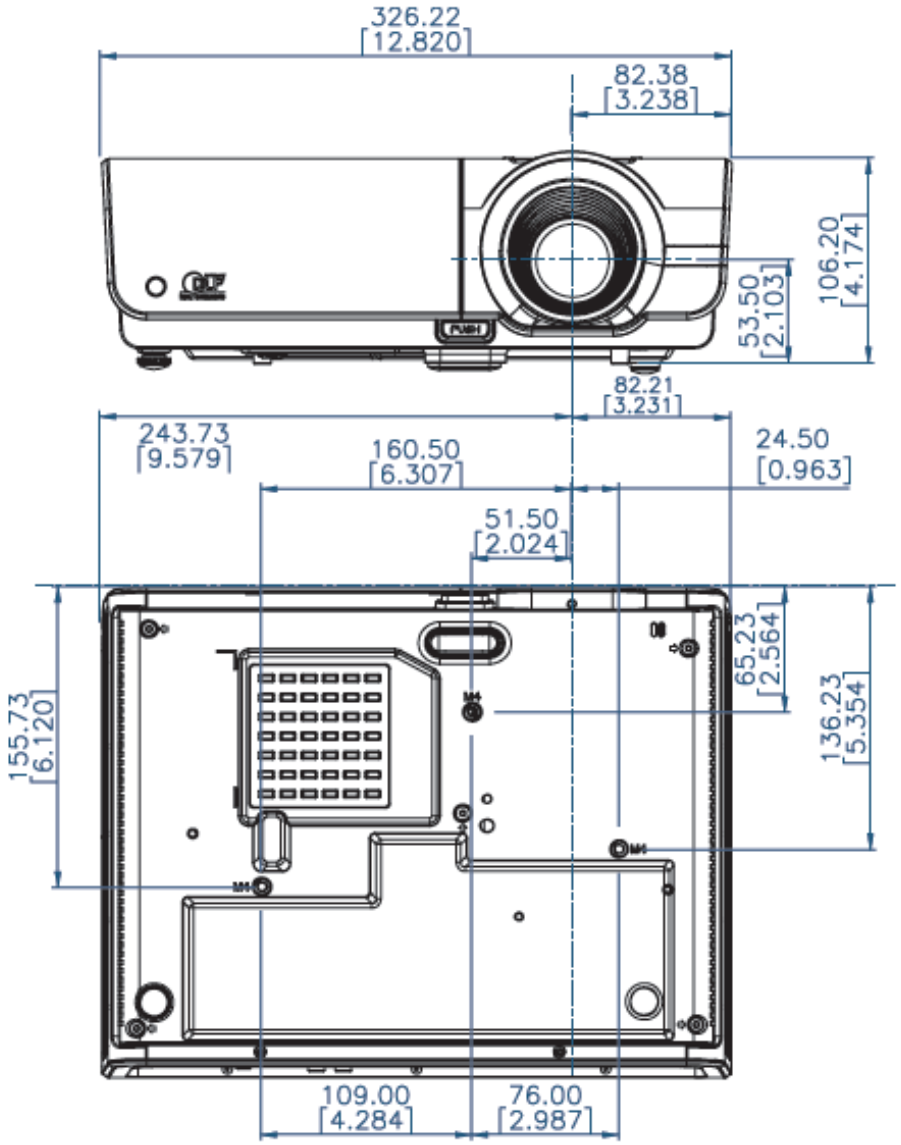
Error Code Messages	Power LED (Green)	Lamp LED (Red)	Temp LED (Red)
Standby State (Input power cord)	Flashing 2 sec off 2 sec on	Off	Off
Power on (Warming)	Flashing 0.5 sec off 0.5 sec on	Off	Off
Power on & Lamp lighting	Steady light	Off	Off
Error (Lamp fail)	Flashing 0.5 sec off 0.5 sec on	Steady light	Off
Error (Fan1 fail)	Flashing 6 0.5 sec off 0.5 sec on	Flashing 1 0.5 sec off 0.5 sec on	Off
Error (Fan2 fail)	Flashing 6 0.5 sec off 0.5 sec on	Flashing 2 0.5 sec off 0.5 sec on	Off
Error (Fan3 fail)	Flashing 6 0.5 sec off 0.5 sec on	Flashing 3 0.5 sec off 0.5 sec on	Off
Error (Fan4 fail)	Flashing 6 0.5 sec off 0.5 sec on	Flashing 4 0.5 sec off 0.5 sec on	Off
Error (Over Temp)	Flashing 0.5 sec off 0.5 sec on	Off	Steady light
Sensor 1 Error	Flashing 3 (0.5 sec)	Flashing 1 (0.5 sec)	Off
Sensor 2 Error	Flashing 3 (0.5 sec)	Flashing 2 (0.5 sec)	Off
Thermal Break / Case Open Error	Flashing 4 (0.5 sec)	Off	Off
DMD Error	Flashing 8 (0.5 sec)	Off	Off
Color Wheel Error	Flashing 9 (0.5 sec)	Off	Off



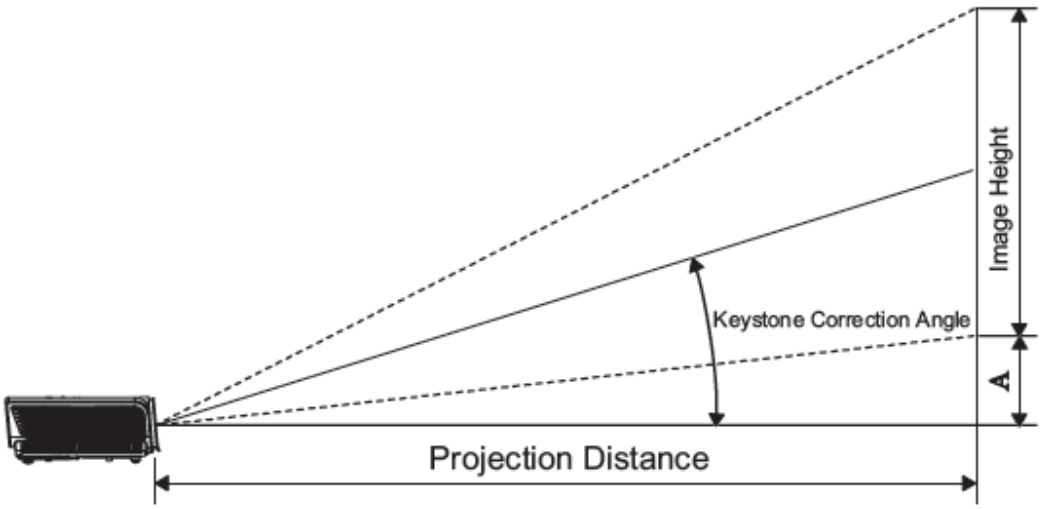
14. Ceiling Mount Installation

1. Top prevent damage to your projector, please use the Optoma Ceiling Mount.
2. If you wish to use a third party Ceiling mount kit, please ensure the screws used to attached a mount to the projector met the following specifications.
3.

Screw type: M4
Maximum screw length: 11mm
Minimum screw length: 9mm



15. Screen Size and Projection Distance



Standard projection lens: Wide · 1.59 Tele · 1.908

Diagonal length (inch) size of 16:9 Screen	Screen Size W X H (16:9)				Projection distance (D)				Offset (A)	
	(m)		(feet)		(m)		(feet)			
	Width	Height	Width	Height	wide	tele	wide	tele	(m)	(feet)
30.00	0.66	0.37	2.18	1.23	-	1.27	-	4.16	0.06	0.18
40.00	0.89	0.50	2.91	1.63	1.41	1.69	4.62	5.54	0.07	0.25
60.00	1.33	0.75	4.36	2.45	2.11	2.53	6.93	8.31	0.11	0.37
80.00	1.77	1.00	5.81	3.27	2.82	3.38	9.24	11.09	0.15	0.49
100.00	2.21	1.25	7.26	4.09	3.52	4.22	11.55	13.86	0.19	0.61
120.00	2.66	1.49	8.72	4.90	4.22	5.07	13.86	16.63	0.22	0.74
140.00	3.10	1.74	10.17	5.72	4.93	5.91	16.17	19.40	0.26	0.86
160.00	3.54	1.99	11.62	6.54	5.63	6.76	18.48	22.17	0.30	0.98
190.00	4.21	2.37	13.80	7.76	6.69	8.03	21.94	26.33	0.35	1.16
230.00	5.09	2.86	16.71	9.40	8.10	9.72	26.56	31.87	0.43	1.41
280.00	6.20	3.49	20.34	11.44	9.86	11.83	32.34	38.80	0.52	1.72
300.00	6.64	3.74	21.79	12.26	10.56	-	34.65	-	0.56	1.84

16. Table of Supported Frequency

The projector can display several resolutions. The following table outlines the resolutions that can be displayed by the projector.

Signal	Resolution	H-Sync (KHz)	V-Sync (Hz)	Composite / S-Video	Component	RGB (Analog)	DVI/ HDMI (Digital)
NTSC	—	15.734	60.0	O	—	–	–
PAL/SECAM	—	15.625	50.0	O	—	–	–
VESA	720 x 400	37.9	85.0	—	—	O	O
	640 x 480	31.5	60.0	—	—	O	O
	640 x 480	37.9	72.8	—	—	O	O
	640 x 480	37.5	75.0	—	—	O	O
	640 x 480	43.3	85.0	—	—	O	O
	800 x 600	35.2	56.3	—	—	O	O
	800 x 600	37.9	60.3	—	—	O	O
	800 x 600	46.9	75.0	—	—	O	O
	800 x 600	48.1	72.2	—	—	O	O
	800 x 600	53.7	85.1	—	—	O	O
	1024 x 768	48.4	60.0	—	—	O	O
	1024 x 768	56.5	70.1	—	—	O	O
	1024 x 768	60.0	75.0	—	—	O	O
	1024 x 768	68.7	85.0	—	—	O	O
	1280 x 800	49.7	59.8	—	—	O	O
	1280 x 800	62.8	74.9	—	—	O	O
	1280 x 800	71.6	84.8	—	—	O	O
	1280 x 1024	64.0	60.0	—	—	O	O
	1280 x 1024	80.0	75.0	—	—	O	O
	1280 x 1024	91.1	85.0	—	—	O	O
VESA	1280 x 1024	80.0	75.0	—	—	O	O
	1280 x 1024	91.1	85.0	—	—	O	O
	1400 x 1050	65.3	60.0	—	—	O	O

SIGNAL	RESOLUTION	H-SYNC (KHZ)	V-SYNC (HZ)	COMPOSITE / S-VIDEO	COMPONENT	RGB (ANALOG)	DVI/ HDMI (DIGITAL)
	1400 x 900	55.9	60.0	—	—	O	O
	1600 x 1200	75.0	60.0	—	—	O	O
	1920 x 1080	67.2	60.0	—	—	O	O
Apple Macintosh	640 x 480	35.0	66.7	—	—	O	O
	832 x 624	49.7	74.5	—	—	O	O
	1024 x 768	60.2	74.9	—	—	O	O
	1152 x 870	68.7	75.1	—	—	O	O
SDTV	480i	15.734	60.0	—	O	—	—
	576i	15.625	50.0	—	O	—	—
EDTV	576p	31.3	50.0	—	O	—	—
	480p	31.5	60.0	—	O	—	—
HDTV	720p	37.5	50.0	—	O	—	—
	720p	45.0	60.0	—	O	—	—
	1080i	33.8	60.0	—	O	—	—
	1080i	28.1	50.0	—	O	—	—
	1080p	67.5	60.0	—	O	—	—
	1080p	56.3	50.0	—	O	—	—

O: Frequency supported

—: Frequency not supported

The resolution of the panel for the EH1060 is 1280 x 800. Resolution other than native resolution may display with uneven size of text or lines.

17. Spare parts list

EH1060_DP486-57AOTxA (Spare parts list)			
NO	DESCRIPTION	P/N	Q'ty
1	TOP COVER PC 5VB BLK	3392141800	1
2	CASE BOTTOM PC 945VB BLK	3392102000	1
3	IO COVER PC 946VB BLK	3392142100	1
4	LAMP COVER PPS 94V0 BLK	3392108900	1
5	LENS CAP	3392144800	1
6	ADJ FRONT FOOT LEG PC 94V0 BLK	3392026001	1
7	CASE OUTLET PC 945VB BLK	3392085601	1
8	CASE INLET PC 945VB BLK	3392085701	1
9	IR WINDOW PC 94HB DRAK PURPLE	3392086300	1
10	DC FAN ASSY NFB08512H-SE00 L80/50 85 B	3620850011	1
11	DC FAN ASSY BUB0612HB-SM03 L300/195 60 S	3622608211	1
12	DC FAN ASSY AUB0712MB-R00 L50/20 70 S	3622701811	1
13	DC FAN ASSY AUB0812H-SE17 L35/10 80 S	3622843011	1
14	PWB ASSY MAIN BOARD DP486-57A OPTOMA	5600601409	1
15	PWB ASSY POWER BOARD J4P+ 280W DP437-570	5600601408	1
16	PWB ASSY IO BOARD	5600601158	1
17	PWB ASSY DMD BD 1080P SINGLE	5600601161	1

NO	DESCRIPTION	P/N	Q'ty
18	PWB ASSY KEYPAD BOARD DP486-57A OPTOMA	5600601411	1
19	PWB ASSY RJ45 BOARD DP486-57A OPTOMA	5600601412	1
20	PWB ASSY INDEX BD HT-8600 BENQ J4P+	5600601162	1
21	PWB ASSY IR BOARD DP-3636 LENOVO J4P+	5600601060	1
22	LAMP DRIVER 280W UNISHAPE O3 TOP	0990077900	1
23	Color Wheel	3797724800	1
24	LAMP SERVICE J4P+J4P-E20.9-280W OPTOMA	5811116519-SOT	1
25	OPTICAL SERVICE J4P+ 0.65" 1080P E20.9	5811116537-S	1
26	BOX CRGD PAPER 453*383*192	3513723201	1
27	BAG PE 660*490 (For Carrying Case)	3500910900	1
28	BAG PE 450*370 WT (For Machine)	3501372500	1
29	AIR BUBBLE BAG LDPE 850*520 CLR (Cushion Top)	3505016000	1
30	AIR BUBBLE BAG LDPE 1160*300 CLR (Cushion Btm)	3505016101	1
31	SWITCH ASSY J5P5.6LB	3606008901	1
32	WIRE WITH THERMOBKT J4P PLUS	3791040100	1
33	AC POWER CORD 3P 3G* 0.75mm^2 L1800 (For EMEA)	3090116101	1
34	AC POWER CORD 3P #18*3C L1800 (For TW & USA)	3090107601	1

35	**CABLE SIGNAL D-SUB D-SUB L1800 BLK**	**3081405002**	**1**
36	**CD SOFTWARE PACKING**	**3534130100**	**1**
37	**CARD QUICK START DP486-57A OPTOMA**	**5010092400**	**1**
38	**CARRYING CASE PLE 345*300*145**	**3523501500**	**1**
39	**REMOTE CONTROLLER 27KEYS**	**5041820600**	**1**

Delta Elec. Inc. EH1060

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				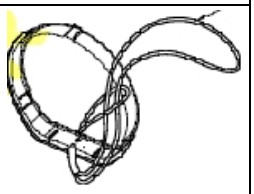
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	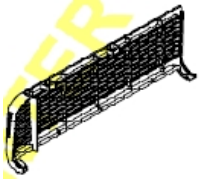	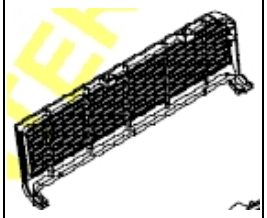		
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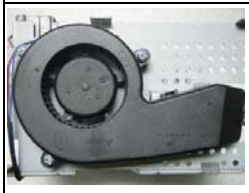				
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31	32	33	34	35
				
36	**37**	**38**	**39**