Service Manual

ViewSonic Pro8400

Model No. VS13647

DLP Projector

(Pro8400 SM Rev. 1a Feb. 2011)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	02/22/11		All content on this SM had approved by PE, Charles	Sophia Kao

Table of Contents

1 System Introduction

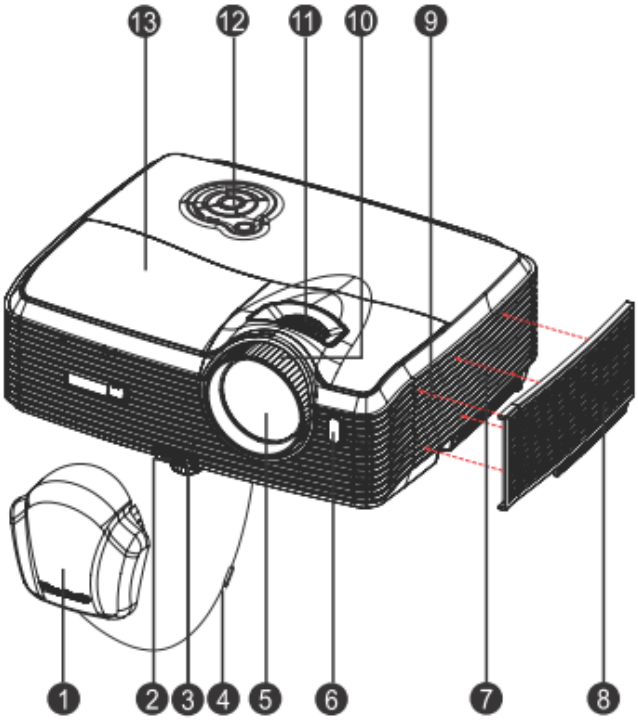
1.1 Technical Specification

Display system	Single 0.65" DLP panel
Resolution	1080p (1920 × 1080 pixels)
Zoom	1.5X
F/No.	2.41 - 2.97
Focal length	20.72 - 31mm
Screen size	30” - 300”
Lamp	280W
Input terminal	D-Sub 15-pin x 2, S-Video x 1, Video x 1, Audio signal input (3.5 mm stereo mini jack) x 2, HDMI x 2, Component RCA jack x 1, RCA audio jack (L/R) x 1, 3.5 mm Mic input x1, USB A type x1 (supports firmware update, USB flash drive display and wireless dongle for USB display), USB mini-B type x1 (supports USB display)
Output terminal	D-Sub 15 pin x 1, Audio signal output (3.5 mm stereo mini jack) x 1
Control terminal	RS-232 x 1, 12-Vdc trigger output x 1, RJ45 x 1
Speaker	10 watt x 2
Video compatibility	NTSC, NTSC 4.43 PAL, PAL-N, PAL M SECAM, HDTV (480i/p, 576p, 720p, 1080i/p), Composite video
Scanning frequency Horizontal frequency Vertical frequency	 31 - 100 KHz 50 - 85 Hz
Environment	Operating: Temperature: 0°C to 40°C Humidity: 10%-80% Storage: Temperature: -20°C to 60°C Humidity: 30%-85%
Power requirement	AC 100-240 V, 50 - 60 Hz, 3.8A
Power consumption	390 W
Dimension (W x D x H)	334.6 x 264.5 x 109.5 mm
Weight	4.2 kg
Note: Design and Specifications are subject to change without prior notice.	

1.2 Location of Features, Controls, and I/O

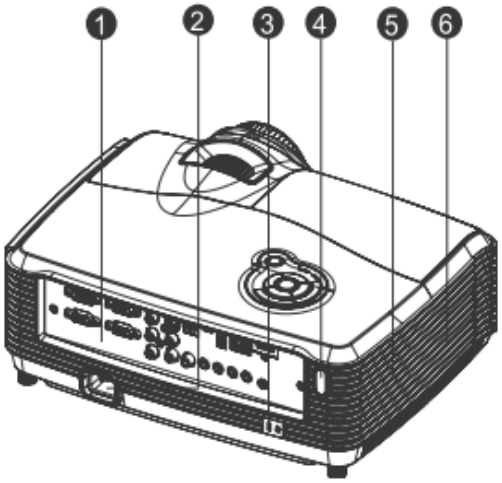
A. Projector overview

Front View



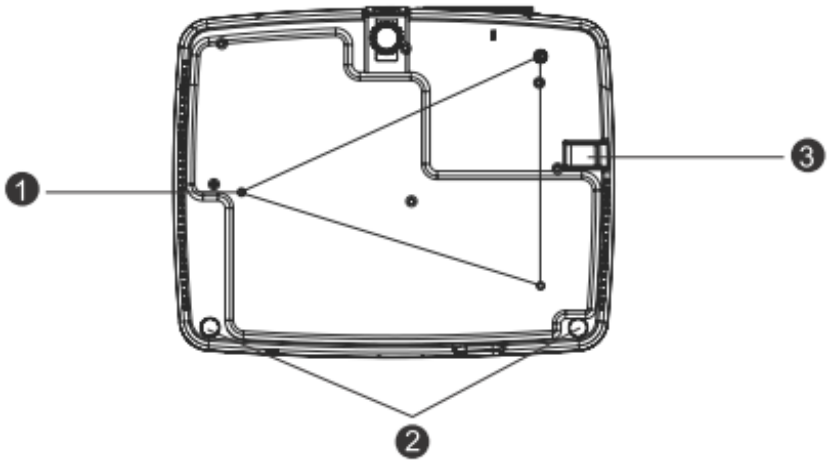
1. Lens cap
2. Elevator button
3. Elevator foot
4. Lens cap strap
5. Projection lens
6. Front IR remote control sensor
7. Ventilation holes (intake)
8. Filter cover
9. Speaker
10 .Focus ring
11.Zoom ring
12.Control panel
13.Lamp cover

Real View



1. Connection ports
2. AC power socket
3. Kensington lock
4. Rear IR remote control sensor
5. Speaker
6. Ventilation holes (exhaust)

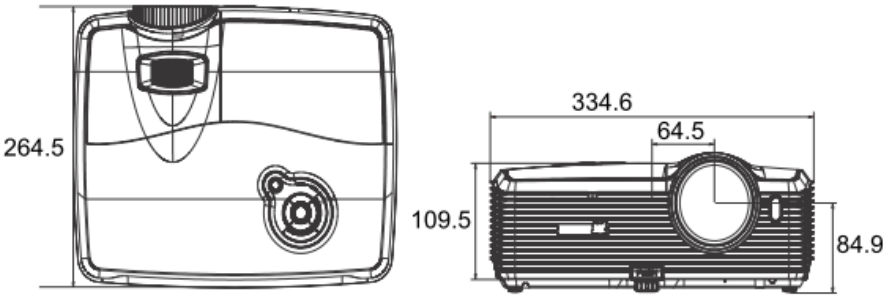
Bottom View



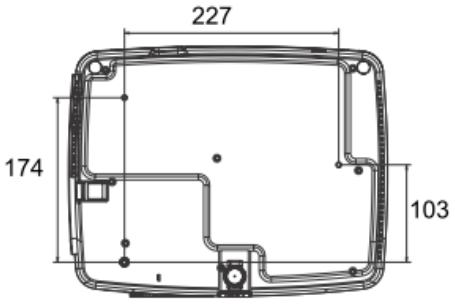
1. Ceiling mount (M4*8)
2. Tilt-adjustment feet
3. Security bar

Dimensions

334.6 mm (W) x 264.5 mm (D) x 109.5 mm (H)



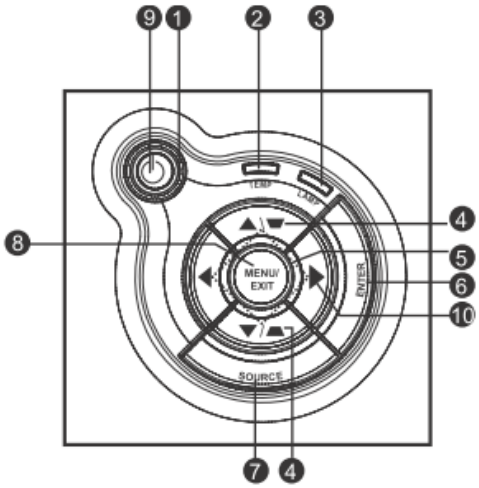
Ceiling mount installation



Ceiling mount screws:
M4 x 8 (Max. L = 8 mm)

Unit: mm

B. Button function and LED indicator



LED

1. ⏻**Power** (Power LED indicator)
2. **TEMP** (Temperature LED indicator)
3. **LAMP** (Lamp LED indicator)

Button function

4. **Keystone/Arrow keys**(▲ **/Up,** ▼ **/Down)**

   Manually correct distorted images resulting from an angled projection.

5. **Four directional buttons**

   Use four directional buttons to select items or make adjustments to your selection.

6. **ENTER**

   Enter to sub-menu and confirm the menu selection.

7. **SOURCE**

Display the source selection bar.

8. **MENU/EXIT**

Display or exit the on-screen display menus.

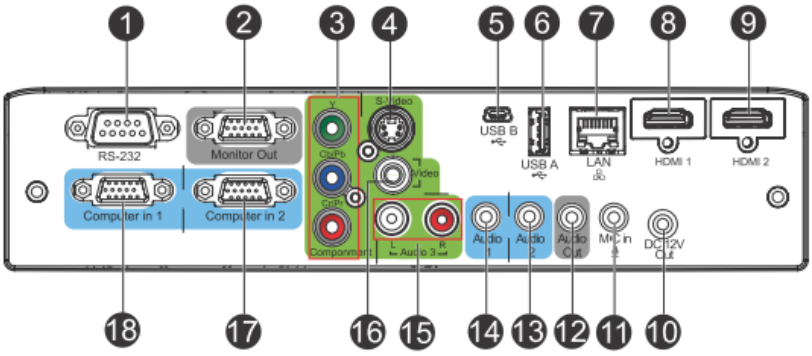
9. ⏻**Power**

   Turn the projector on or off.

10. ▶**Right/Panel key**

   Activate panel key lock.

C. Connection ports



1. RS232

When operating the projector via a computer, connect this to the controlling computer's RS-232C port.

2. Monitor Out

Connect to a computer display, etc.

3. Component (Y Cb/Pb Cr/Pr)

Connect Y Cb/Pb Cr/Pr output from video equipment to this jack.

4. S-Video

Connect S-Video output from video equipment to this jack.

5. USB B

USB display supports computer connection via USB mini -B type to A type cable.

6. USB A

This connector supports firmware update , USB flash drive display and wireless dongle for USB display.

7. LAN

For LAN display/ network control and web server .

8. HDMI 1

Connect HDMI output from video equipment to this jack.

9. HDMI 2

Connect HDMI output from video equipment to this jack .

10. DC 12V Out
12V DC out

11. MIC in
Microphone input jack.

12. Audio Out
Connect to a speaker or other audio input equipment.

13. Audio 2
Connect an audio output from video equipment or computer to this jack.

14. Audio 1
Connect an audio output from video equipment or computer to this jack.

15. Audio 3 (L/R)
Connect an audio output from video equipment to this jack.

16. Video
Connect composite video output from video equipment to this jack.

17. Computer in 2
Connect image input signal (analog RGB or component) to this jack.

18. Computer in 1
Connect image input signal (analog RGB or component) to this jack.

D. Remote Control

❶ **Power**
Turn the projector on or off.

❷ **HDMI 1**
Display HDMI 1 signal.

❸ **Video**
Switch input source to Composite/ S-Video by sequence.

❹ **▲Up/Volume +, ▼ Down/ Volume -**
When the On-Screen Display (OSD) menu is not activated, adjust the projector's sound level.

❺ **◀ Left/Mute**
When the On-Screen Display (OSD) menu is not activated, this button is used as mute function.

❻ **Menu**
Display on-screen display menus.

❼ **User 1**
Recall the customized settings based on the current available settings.

❽ **Function**
User definable key for customized function.

❾ **Gamma**
Change the gamma setting.

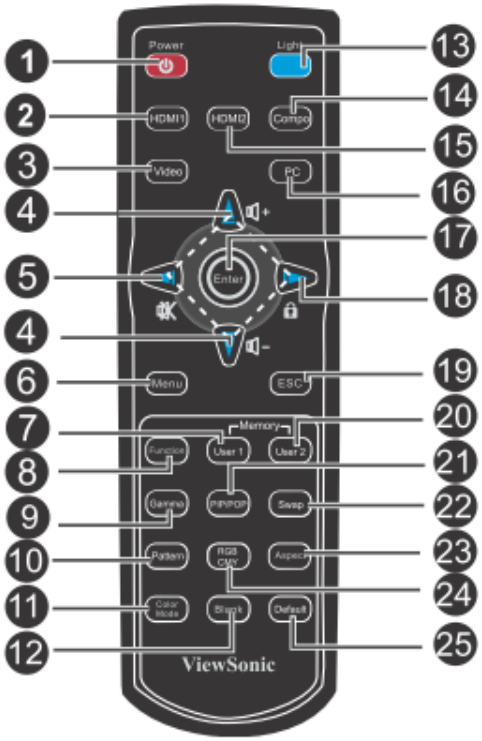
❿ **Pattern**
Display embedded test pattern.

⓫ **Color Mode**
Change the image mode setting by sequence.

⓬ **Blank**
Cut off the screen temporarily. Press again to cancel the Blank Screen function.

⓭ **Light**
Enable backlight functions of the remote control's buttons.

⓮ **Compo**
Display Component video (YPbPr/ YCbCr) signal.



⓯ **HDMI 2**
Display HDMI 2 signal.

⓰ **PC**
Switch input source to Computer in 1/ Computer in 2 by sequence.

⓱ **Enter**
Confirmed selections.

⓲ **▶ Right/ 🔒 Lock**
When the On-Screen Display (OSD) menu is activated, the #4, #5, and #18 keys are used as directional arrows to select the desired menu items and to make adjustments.
Activate panel key lock.

⓳ **ESC**
Leave current page or items or to close OSD.

⓴ **User 2**
Recall the customized settings based on the current available settings.

㉑ **PIP/POP**
Switch screen to PIP/POP by sequence.

㉒ **Swap**
Swap input source in PIP or POP image.

㉓ **Aspect**
Select the display aspect ratio.

㉔ **RGBCMY**
Change indivial RGBCMY color (user color setting).

㉕ **Default**
Restore settings to factory default.

1.3 Pro8400 Lamp Specification

Product Scope

The product is a lamp system consisting of a short arc burner within a reflector and electronic lamp driver.

Type lamp	P-VIP 280/0.9 E20.8e
	Identcode : A 737 57A (FC, non-grinding)
Type driver	PT VIP O3 TOP 280W unipro AS
	Identcode : A 741 73B (lock type,Gen5,VC, unipro)

The lamp must be operated with the OSRAM lamp driver only.

Initial Characteristics

	nominal	tolerance
Input Voltage	380V DC	250…400V DC
Standby(non-operating)		min. 120V DC
Max. slew rate of input voltage		
During switch on	30V /µs	
Input Current	0. 8A	
Max. input voltage ripple	$30V_{pp}$@ 100/120Hz	
Max. input current ripple	1Arms@40 -300kHz	
Input Wattage	max.308W @280W lamp wattage	
Input Wattage standby operation	1,7W typical	2.5W max.
Output Wattage		
nominal	280W	±3% [4]
DIM mode	230W	±3% [4]
controlled by UART	230W…280W	in step with of 1/128 of nominal power
Output current limitation	4.6A(RMS)	±5%
Ignition pulse	typ.2.5 kVpeak symm.	2. 1…3.5 kVpeak
Ignition Phase Duration	typ.3.5s	max.6 s
Enable-Disable-Enable Cycle	15 s minimum	
Acoustic sound pressure level	typical acoustic sound pressure level tbd dB(A) at 25cm measuring distance; measured in steady state lamp operation[5]	
Acoustic sound power level	typical acoustic sound power level tbd dB(A) acc. to EN ISO 3744; measured in steady state lamp operation [5]	
Switch-off lamp voltage	140V	±5V
Cooling method	forced air cooling at ≧1.5 m/s minimum	
Thermal Protection	Tc1 switch point 95℃	±5℃

Safety Protections	The lamp connections are not mains isolated, The lamp can be switched on via the Start Control Input signal(SCI). A Flag Output signal indicates if the lamp has lit rightly. The Start Control Input and the Flag Output are mains isolated.

Note:

[4] Measured at real lamp load. Deviations will occur on all kind of artificial loads (e.g. resistor)

[5] Measured with RGB waveform. Customer generated UNISHAPE waveforms can lead to noise deviation.

Attention for handling

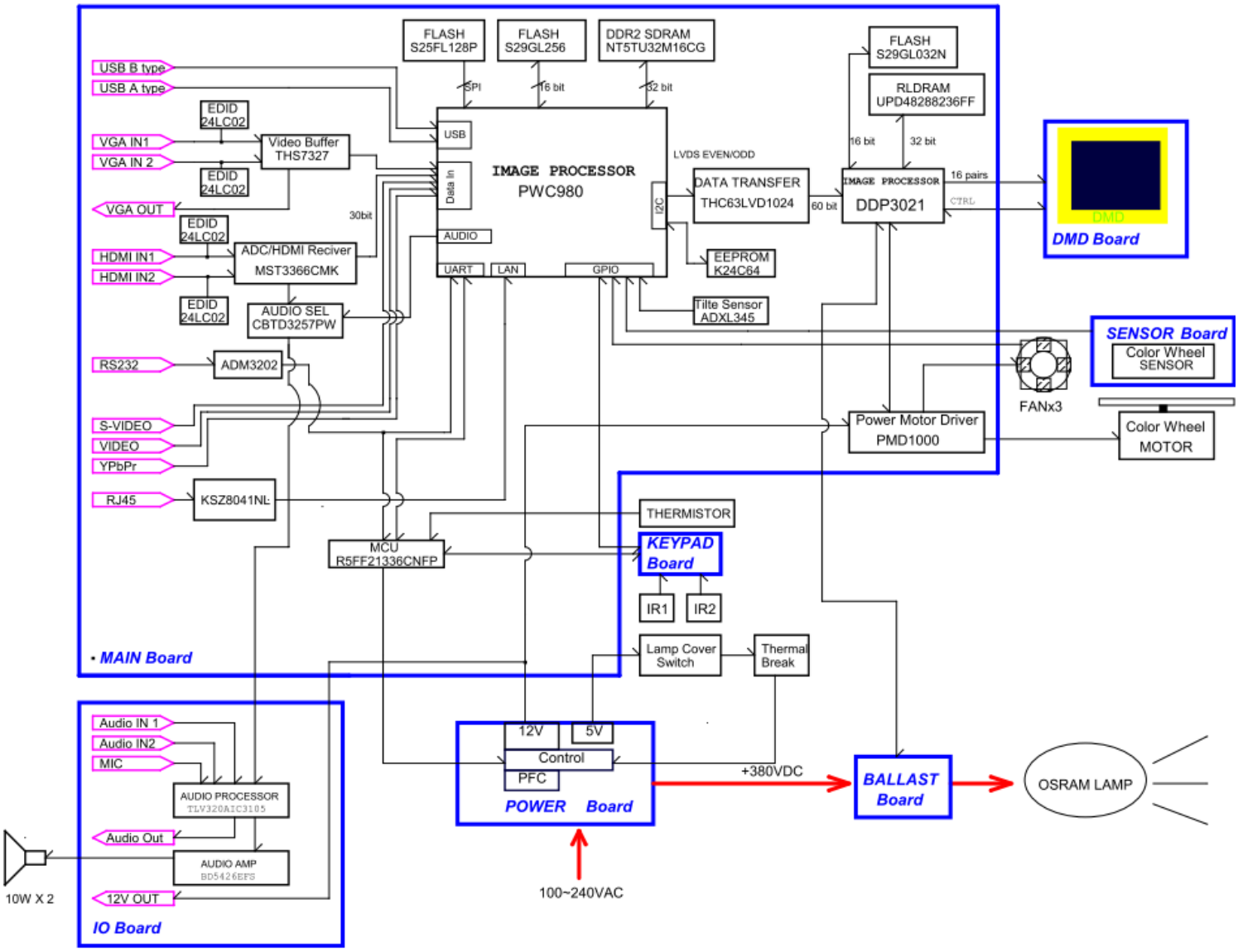
- Do not touch the lamp until it has cooled completely, because the lamp is very hot during operation and immediately after turned off.
- The lamp has to be fixed firmly to the base or socket.
- Turn off the power supply during maintenance.
- Do not hold the lamp except outer surface of the reflector.
- Wear protective gloves and eyeglasses when handling the lamp.
- Any unusual shock or vibration to the lamp should be avoided.
- The lamp contains the mercury. Its breakage might cause mercury to flow out of the reflector. Please manage provision at the customer's product.
- Do not pull the lead wire and plug by more than 24.5N.
- Please be careful of handling the lamp because it is made of glass.
- Please notice for keeping or handling the lamp, because there is a projection of this lamp with reflector ahead.
- Do not touch the bulb and the mirror area of the reflector.

Attention for use

- Do not close or cover the lamp with any flammable stuff.
- During operation, the lamp is under extremely high pressure. Please manage provision at the customer's product to prevent fragments of bulb and mercury from flowing out of it. If the lamp bursts in case of an emergency, the sound will be occurred.
- Lamp operation should be with the specified lamp driver and the system ONLY.
- Do not look at the lamp directly during operations.
- Do not expose your skin directly. We recommend to you to put on something for protection for your skin. For example, long sleeve shirt, gloves, glassed and so on.
- Do not modify the lamp and never use a lamp that has been modified.
- Any unusual shock or vibration to the lamp should be avoided during operation.
- Do not use any broken lamps.

- Dispose of used lamps according to your local instruction.
- Do not turn on the lamp while the system is opened.
- The lamp contains mercury. If the lamp bursts during operation ventilate the area sufficiently to avoid inhaling harmful mercury fumes.
- Use the lead below 200 °C to prevent a deterioration of cladding clad of the fluorocarbon resin.
- The lead wire insulation clad shouldn't touch the reflector.
- Exchange the lamp that has already passed the life time immediately.

1.4 Pro8400 System Block Diagram



2 Firmware (PixelWorks) Upgraded Flow

This chapter provides the information regarding relevant equipments and upgrading procedure for firmware upgrade.

Note:

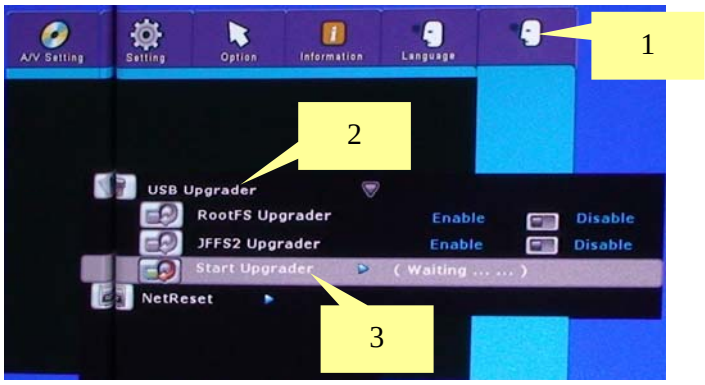
Please check the firmware and composer version before any f irmware upgrade procedures. During firmware download period, please do not shut down PC or projector , this will cause flash memory's damage. And need to return the unit t o manufacturer for flash memory recovery.

2.1 Setup Tool/Equipment

- USB Disk
- Power Cord

2.2 Upgrading Procedure

1) Give power supply to switch projector on.
2) Insert the USB Disk into the projector (copy the upgrading F/W document into it firstly.)
3) Enter the engineering mode.
4) Press **Menu** to exit.
5) Select the next item of "Language" to enter the upgrading mode. ("Language" is a hiding item that can be seen only after entering the engineering mode and then exit successfully.)
6) Press ▼ button to select "USB Upgrader", and then press right button to search FW document.
7) After finding the FW document, move highlight bar to " Start Upgrade".
8) Press right button to start upgrade procedure.



9) When complete the procedure, projector will turn off automatically. Unplug the power cord.

3 Machine Disassembly and Replacement

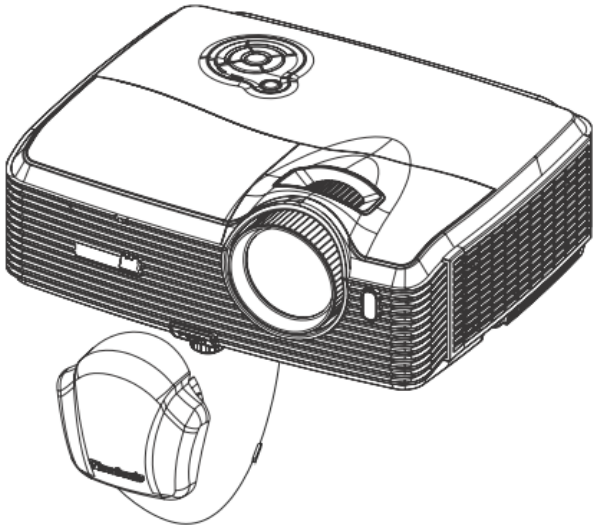
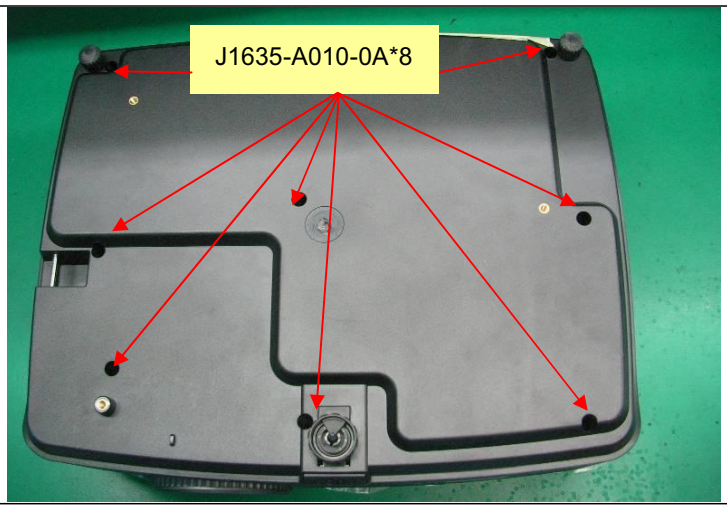
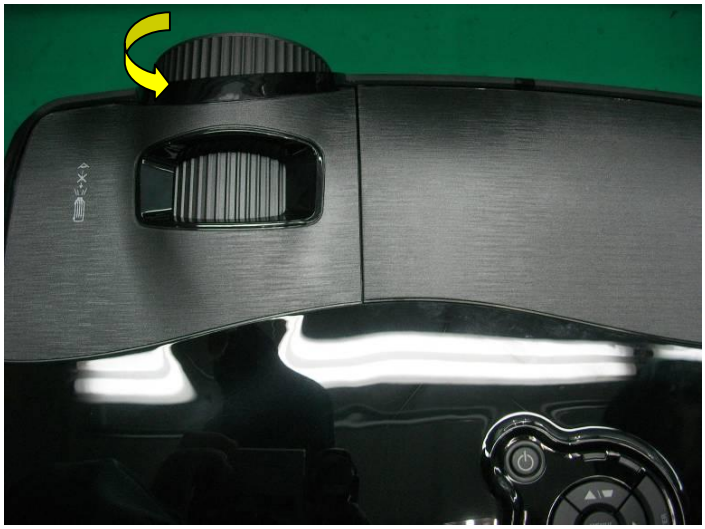
3.1 Tools

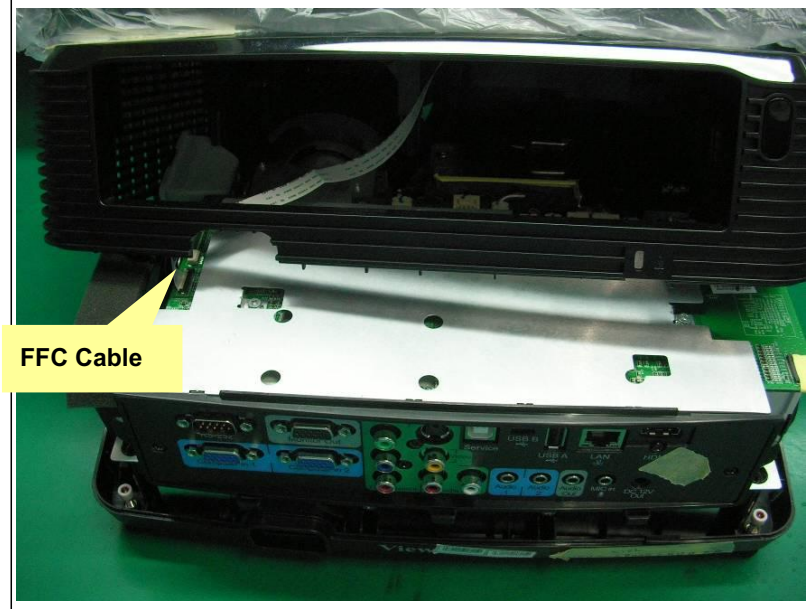
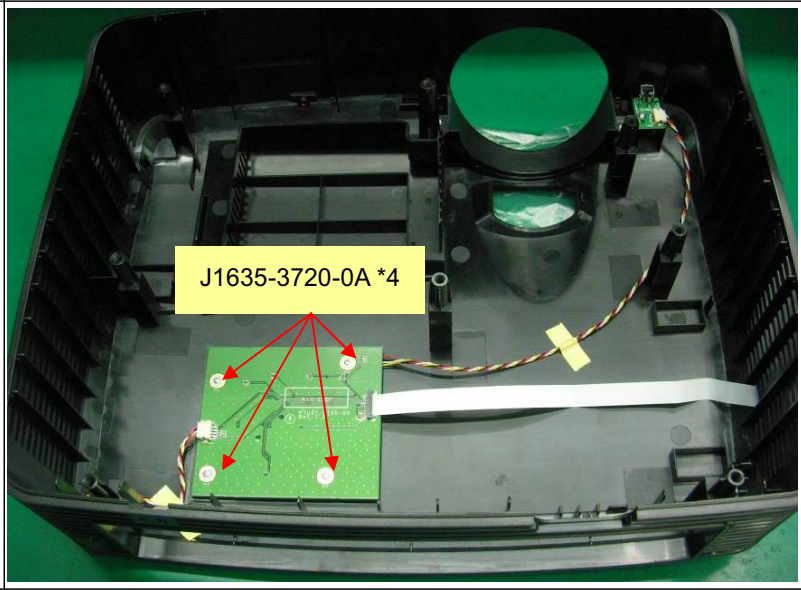
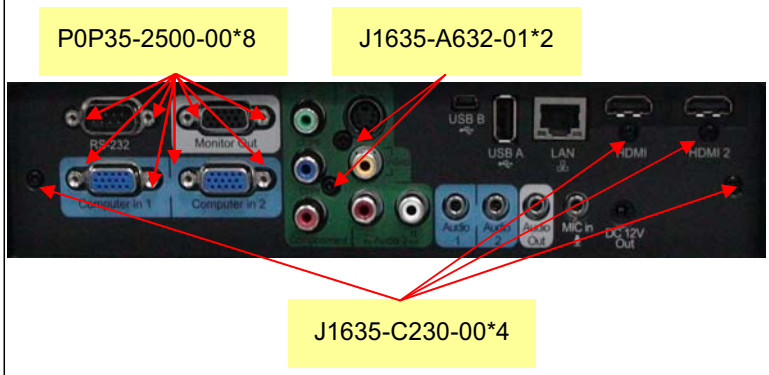
Item	Photo
Long Nose Nipper	
Hex Sleeves 5mm	
Screw Bit(+):107 Screw Bit(+):101 Screw Bit(+):102	
Anti-static wrist strap	
Anti-static wrist gloves	

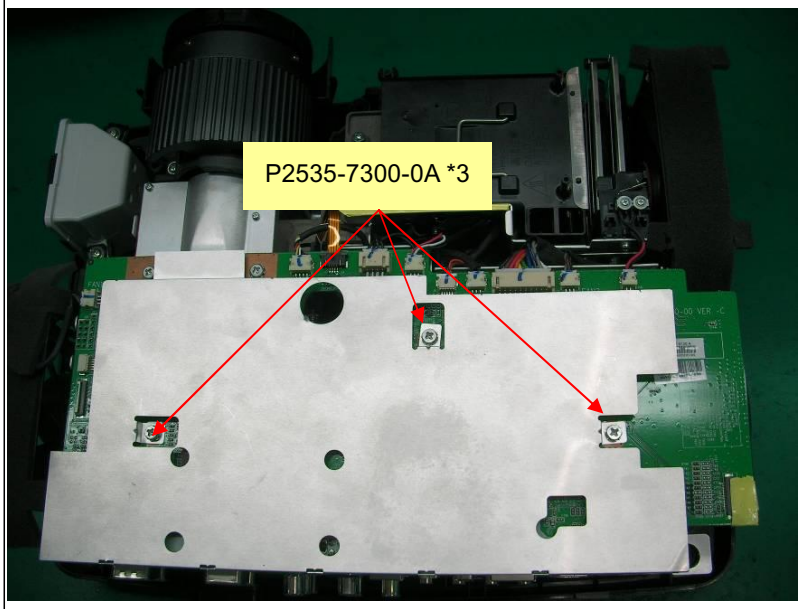
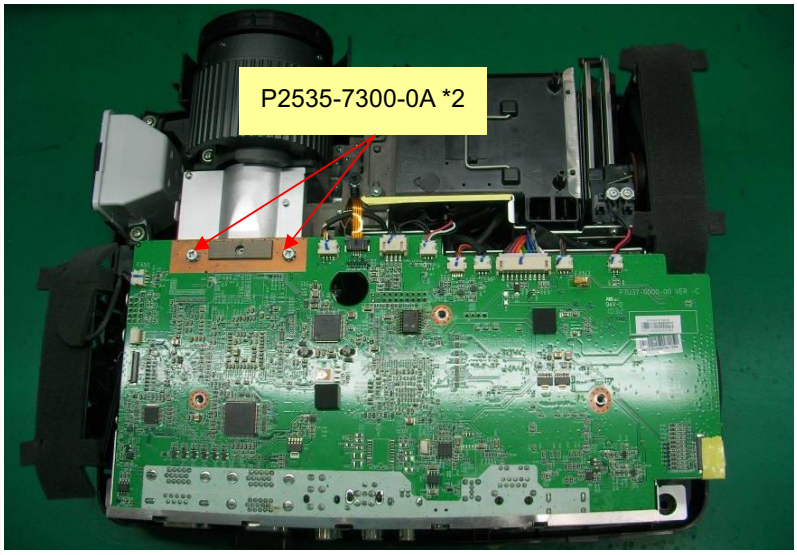
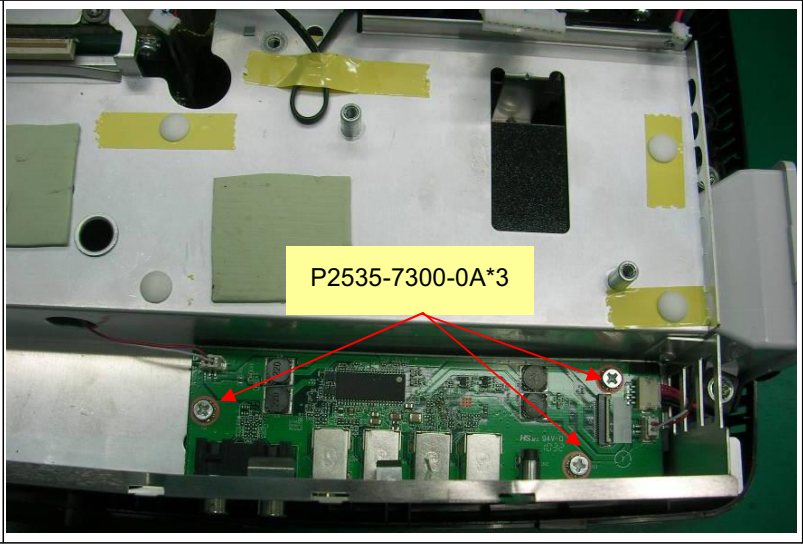
3.2 Disassembly Procedure

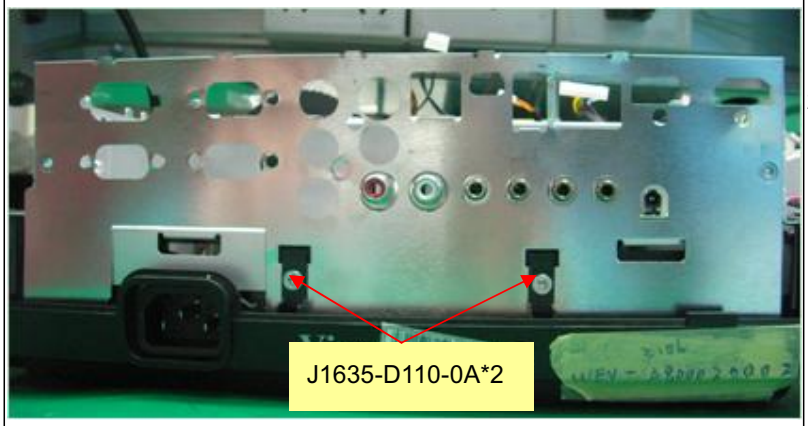
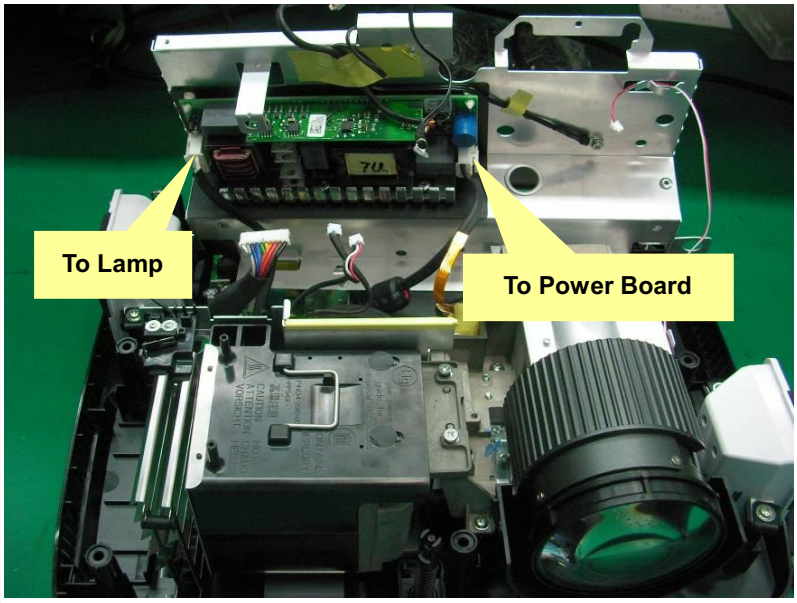
Warning

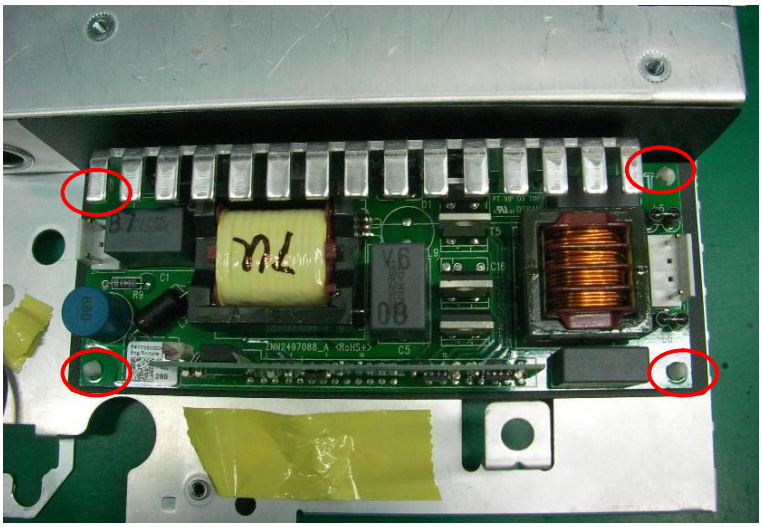
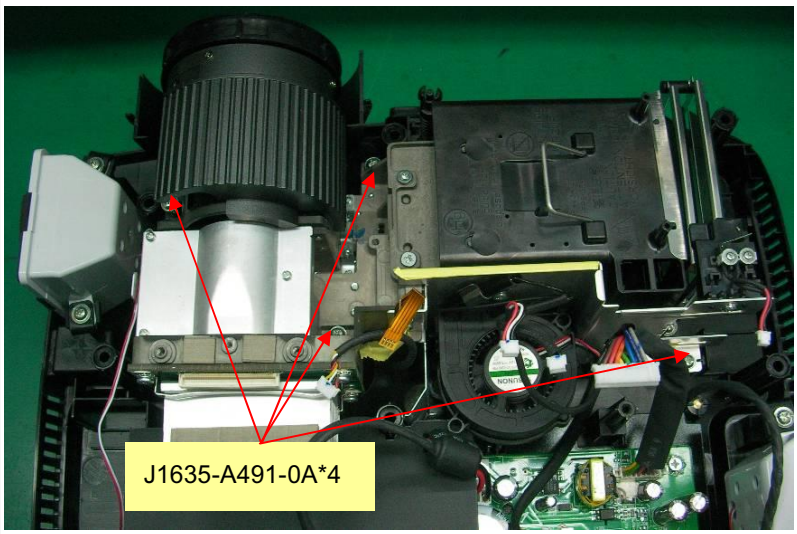
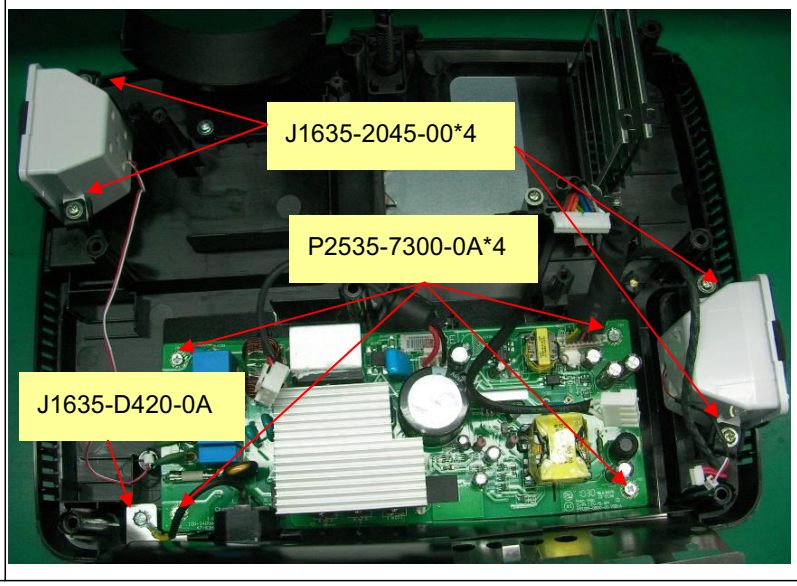
- Put on the Static Electricity Ring when starting for repair.
- Repair Environment suggest in Clean-room class 10000. Do not remove Optical Engine or DMD panel outside the clean room. Please return the optical engine to supplier if your repair condition can not meet the requirement.
- While screwing or unscrewing screws, please keep the screwdriver straight. Keeping screwdriver inclined will damage the screw holes.
- Please turn off the power before replacing any parts.
- Please wait for the projector lamp cooling down and turn off the power before changing it. Never touch or hit the lamp module when replacing the lamp.
- When you replace the projector lamp, never touch the new lamp with your bare hands. The invisible residue left by the oil on your hands may shorten the lamp life. Use lint-free gloves or finger cots are recommended.

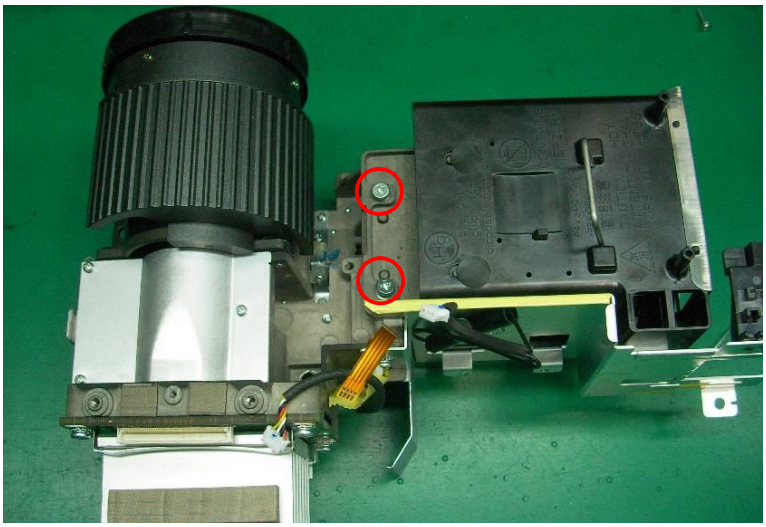
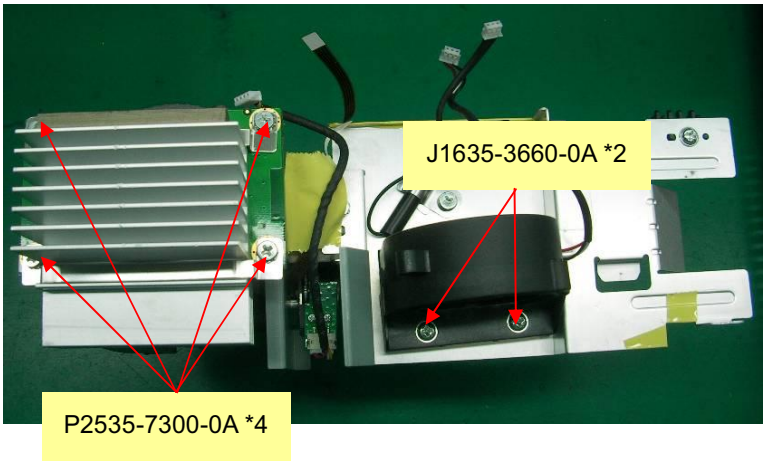
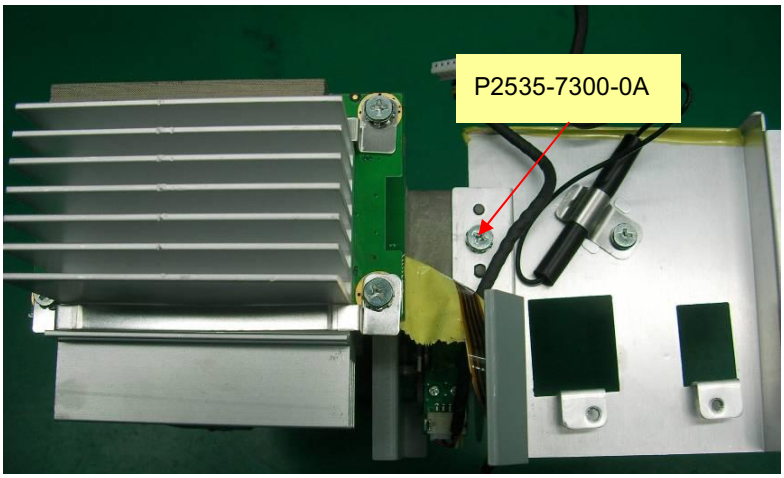
Step	Figure	Description
1		Press the power button to shutdown the projector and disconnect the power cord. If the lamp is hot, please do not start any procedure until the projector lamp cools down. Flip the projector and remove the lens cover.
2		1. Flip the projector on the table. 2. Remove the screws J1635-A010-0A*8 on the Bottom cover as shown.
3		Rotate the Focus Ring by forward sequence to take it off from the unit.

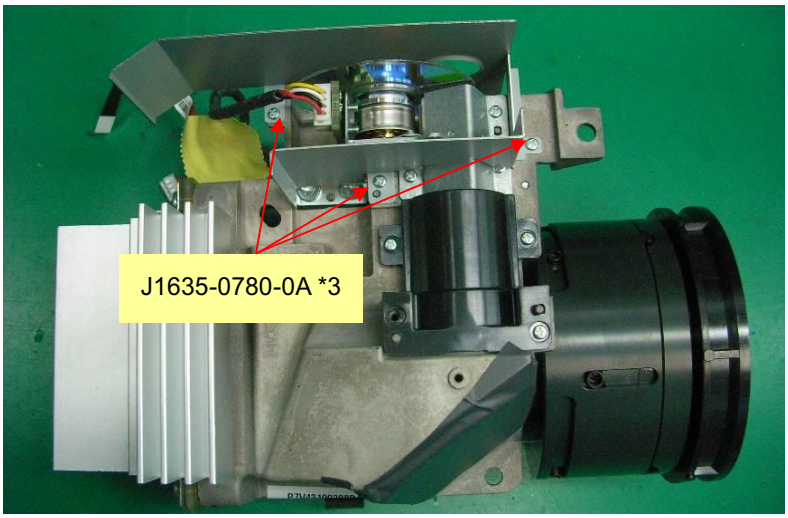
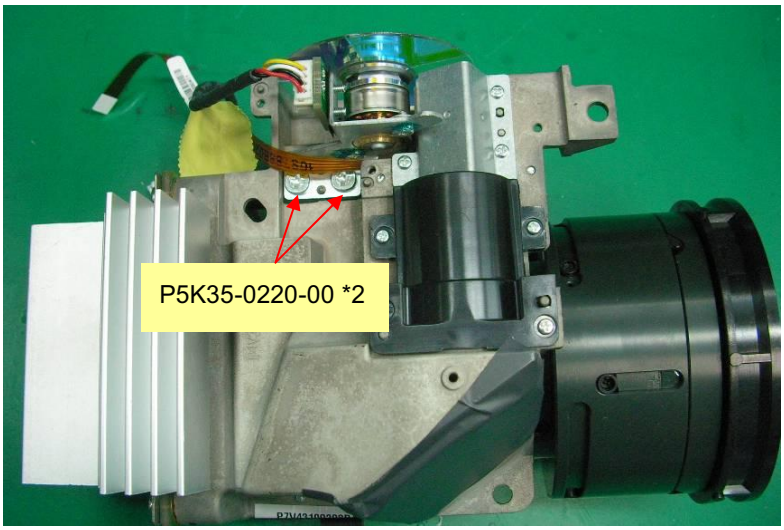
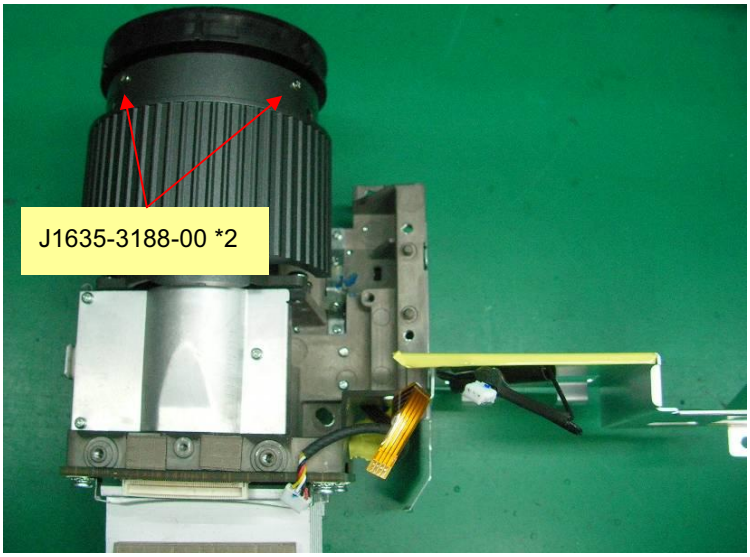
Step	Figure	Description
4		1. Disconnect the FFC cable between top cover and main board. 2. Raise the Top Cover carefully. Note: Don't allow to scratch surface of the lens. To avoid scratching, it would better paste some film on it for protection before raising the Top Cover.
5		1. Remove four screws to lift up the keypad board.
6		1. Remove all screws as shown to remove the IO cover.

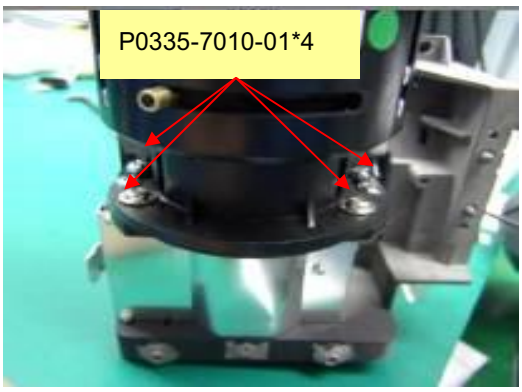
Step	Figure	Description
7		1. Remove the three screws on the metal sheet of Main Board. 2. Remove the metal sheet of Main Board.
8		1. Show you what the connector should be. 2. Remove all wires. (Including the two fan modules.) 3. Remove two screws on the Main Board. 4. Remove the Main Board.
9		1. Remove three screws as shown. 2. Remove the three wires on the audio board. 3. Remove the audio board.

Step	Figure	Description
10		1. Loosen the two screws as shown.
11		1. Loosen the two screws as shown. 2. Remove the metal sheet of Ballast.
Note		Note: 2 wires have been connected to Ballast. Disconnect these 2 wires before remove the metal sheet.

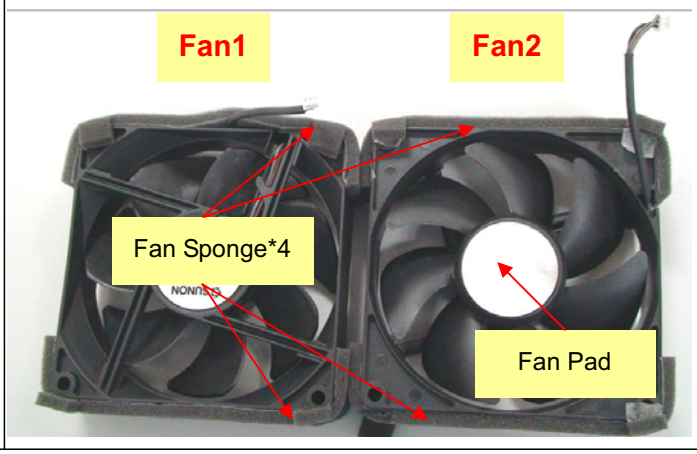
Step	Figure	Description
12		Release the four pillars by Long Nose Nipper to remove the Ballast.
13		1. Remove four screws on the optical engine. 2. Remove the optical engine module carefully.
14		1. Loosen all screws of the two speakers and then remove them away. 2. Loosen the screws on the Power Board and then remove the Power module from Bottom Cover.

Step	Figure	Description
15		Loosen the two screws and remove the lamp module from optical engine. Note: Those screws are included in the Lamp module.
16		1. Loosen the two screws on the OE Fan. 2. Remove the Fan. 3. Loosen the four screws on DMD Board. 4. Remove the heat sink and DMD Board.
17		Loosen one screw to remove the metal sheet.

Step	Figure	Description
18		Loosen the three screws to remove the protective cover of color wheel.
19		Loosen the two screws to remove the color wheel module gently.
20		1. Loosen the two screws on the Zoom Ring. 2. Remove the Zoom Ring.

Step	Figure	Description
21		1. Loosen the four screws on the Lens. 2. Remove the Lens carefully.

3.3 Assembly FAN Module

Step	Figure	Description
1		Assemble Fan1(J2394-0143-01) and Fan2 (J2394-0144-00): 1. Paste the Fan Pad (P4E38-1070-00) on the middle of it. 2. Paste the Fan Sponge*4 (P4G38-1180-00) on the top and bottom of it as picture shown.

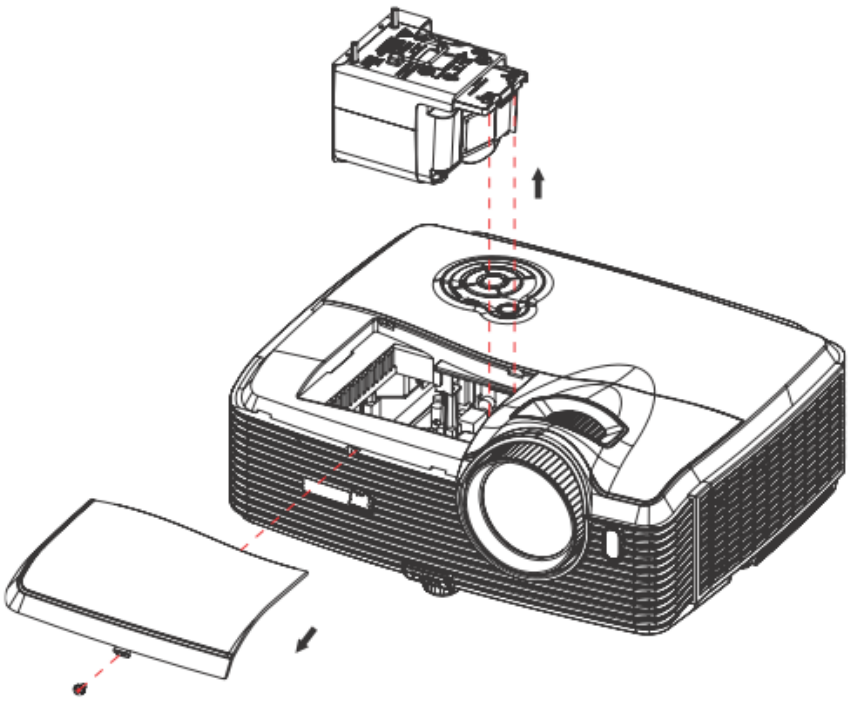
3.4 Disassembly Lamp Module

As the projector operates over time, the brightness of the projector lamp gra dually decreases and the lamp becomes more susceptible to breakage. We recommend replacing the lamp if a warning message is displayed.

Note:

- The lamp is extremely hot right after turning off the projector. If you touch the lamp, you may scald your finger. When you replace the lamp, wait for at least 45 minutes for the lamp to cool down.
- Wear protective gloves and eyeglasses when fixing or detaching the lamp.
- Do not operate the lamp in proximity to paper, cloth, or other combustible material nor cover it with such materials.

1. Turn off the projector.
2. If the projector is installed in a ceiling mount, remove it.
3. Unplug the power cord.
4. Loosen the screw in the side of the lamp cover and remove the cover.
5. Remove the screws from the lamp module, raise the handle, an d lift out the module.
6. Insert the new lamp module into the projector and tighten the screws.
7. Replace the lamp cover and tighten the screw.
8. Turn on the projector. If the lamp does not turn on after the warm-up period, try reinstalling the lamp.
9. Reset the lamp hour. Refer to the “Information” menu.



4 Troubleshooting and Verifying the Repair

This chapter provides technicians with electronic background how to maintain the product. Moreover, you can get the appropriate operation to solve some complicated probl ems of component repairing and professional problems.

4.1 Troubleshooting

Warning

- Do not directly look into the lens to avoid eyesight damages.
- The projector is equipped with ventilation holes (intake) and ventilation holes (exhaust). Do not block or place anything near these slots, or internal heat build -up may occur, causing picture degradation or damage to the projector.

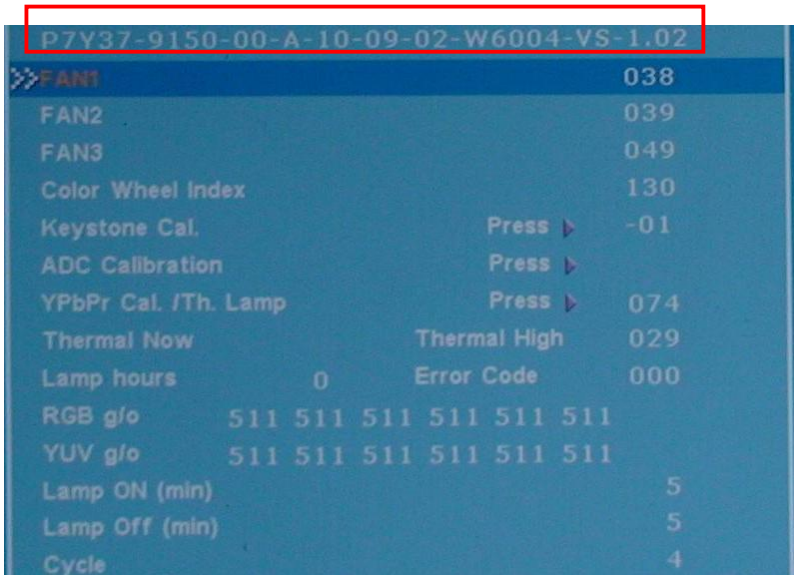
Confirm Software and hardware

(1) Confirm FW version is the latest.

How to enter Engineering Mode?

-Open the Main menu and move the color bar to “Information” item, and then move down the color bar to “Equivalent Lamp Hours” item, press the direction key following the actions below:

Right once, left twice, right once; then you will enter the Engineering Mode.)



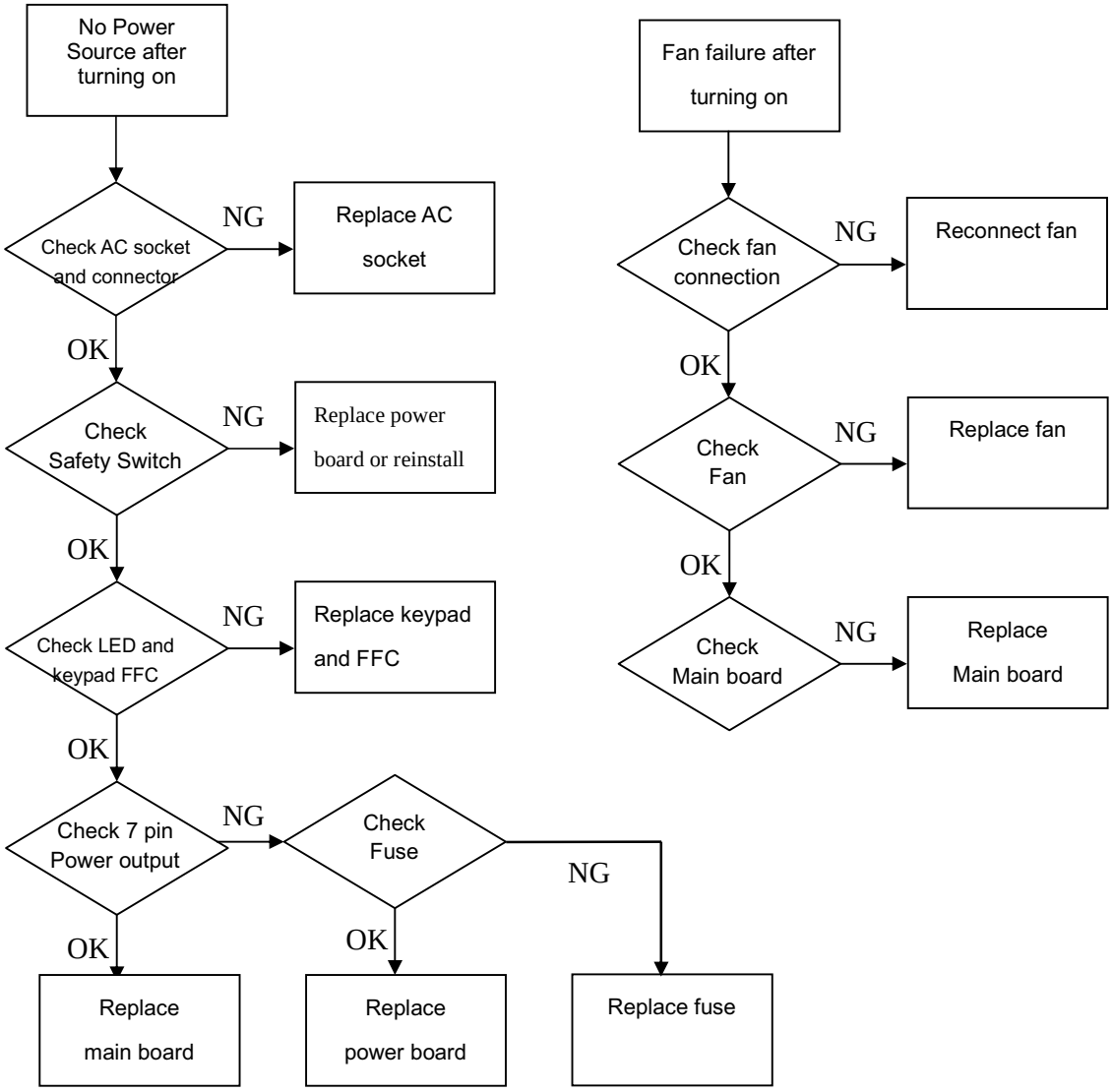
Note: This FW version is just for reference.

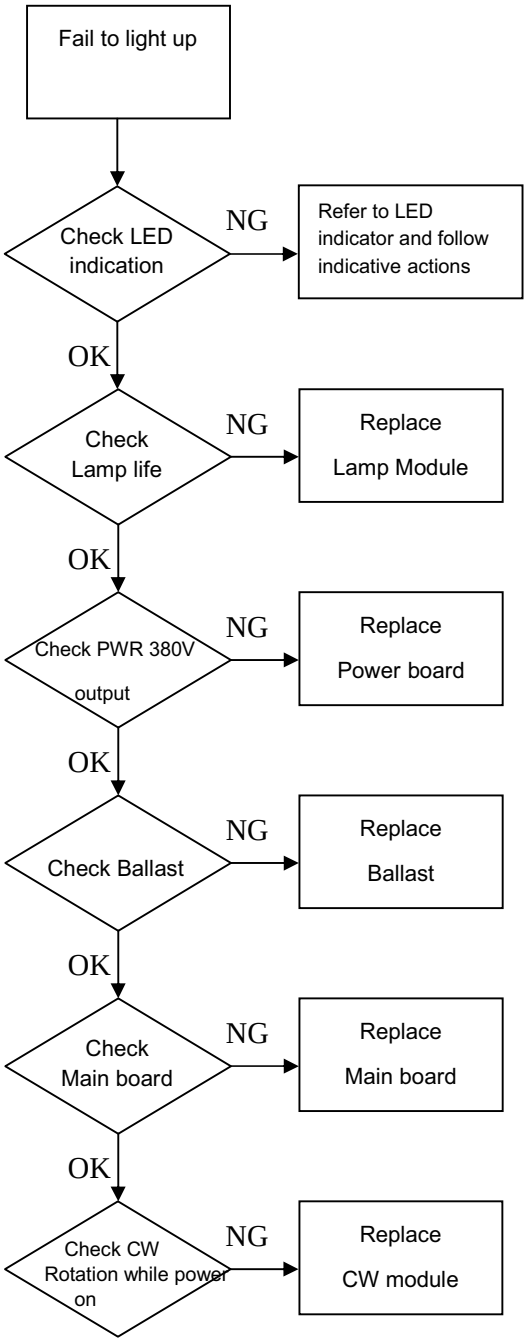
(2) Confirm LED indicator

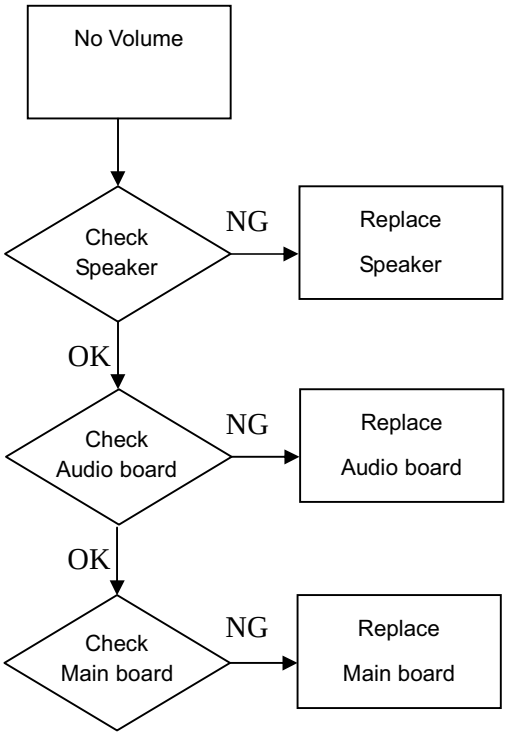
LED type	Color	Status	Meaning
Power LED	Blue	Solid	Lamp life end
Lamp LED	Red	Flash	
Temp LED	Red	Flash	
Power LED	Blue	Solid	Standby mode when green mode is turned on.
Lamp LED	Red	Off	
Temp LED	Red	Off	
Power LED	Blue	Flash	Standby mode when green mode is turned off.
Lamp LED	Red	Off	
Temp LED	Red	Off	
Power LED	Blue	Solid	Powering up
Lamp LED	Red	Off	
Temp LED	Red	Off	
Power LED	Blue	Solid	Normal operation
Lamp LED	Red	Off	
Temp LED	Red	Off	
Power LED	Blue	Flash	Powering down (The projector needs to cool for 35 seconds after the power is turned off.)
Lamp LED	Red	Off	
Temp LED	Red	Off	
Power LED	Blue	Solid	The projector system has some problems with its fans, so the projector cannot start up.
Lamp LED	Red	Solid	
Temp LED	Red	Flash	
Power LED	Blue	Solid	The lamp has reached its end of life and must be changed soon. The lamp will continue to opearate until it failes. Change the lamp. If the lamp is off, then the ballast will become malfuction.
Lamp LED	Red	Solid	
Temp LED	Red	Off	
Power LED	Blue	Solid	Temperature is too high. The lamp will turn off. The fan motor is cooling the lamp.
Lamp LED	Red	Flash	
Temp LED	Red	Off	
Power LED	Blue	Off	The lamp ignition failied. If temperature is too high, the fans will cool the lamp.
Lamp LED	Red	Solid	
Temp LED	Red	Solid	
Power LED	Blue	Flash	The projector needs to cool for 90 seconds after the power is turned off. If you try to re-start the projector, it will shut down again.
Lamp LED	Red	Solid	
Temp LED	Red	Off	

Note: Swapping modules that may be defective with others known to be good is generally an ideal way to find the module responsible for the problem. A failure symptom is rarely caused by more than one module, so you will not usually need to replace more than one to correct a particular failure. Whatever main board, ballast, IR board, power board, lamp module or optical engine are all suitable to check by swapping modules.

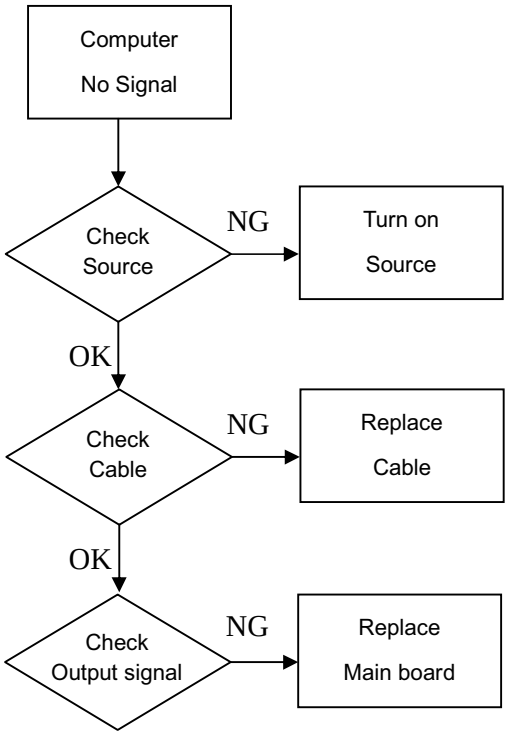
Power Source Troubleshooting:

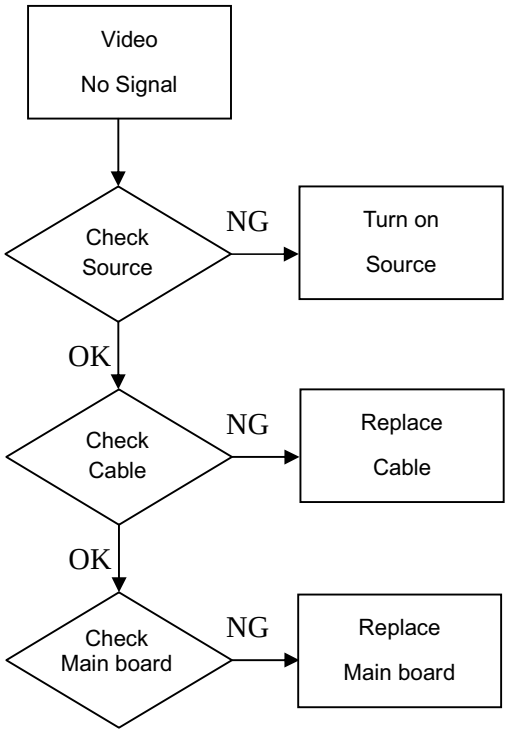



Fail to light up
Check LED indication
NG
Refer to LED indicator and follow indicative actions
OK
Check Lamp life
NG
Replace Lamp Module
OK
Check PWR 380V output
NG
Replace Power board
OK
Check Ballast
NG
Replace Ballast
OK
Check Main board
NG
Replace Main board
OK
Check CW Rotation while power on
NG
Replace CW module


No Volume
Check Speaker
NG
Replace Speaker
OK
Check Audio board
NG
Replace Audio board
OK
Check Main board
NG
Replace Main board

Signal Troubleshooting





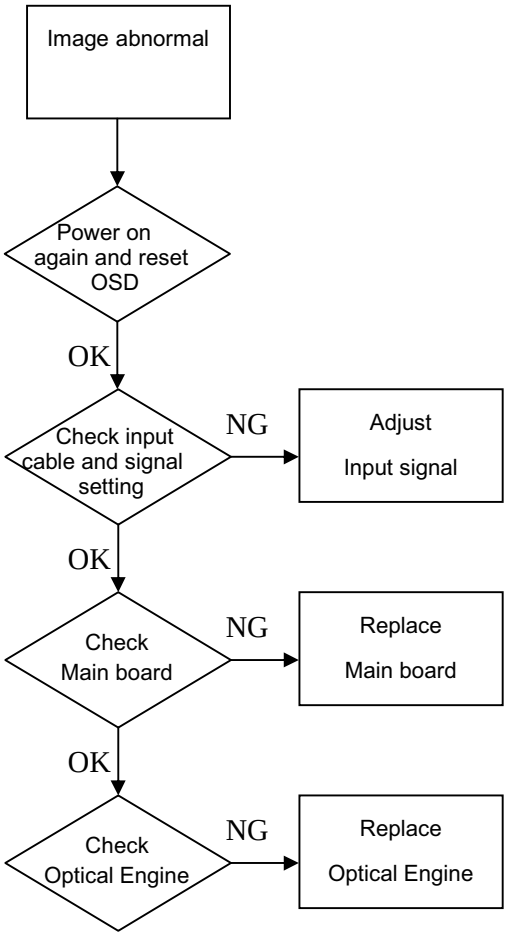
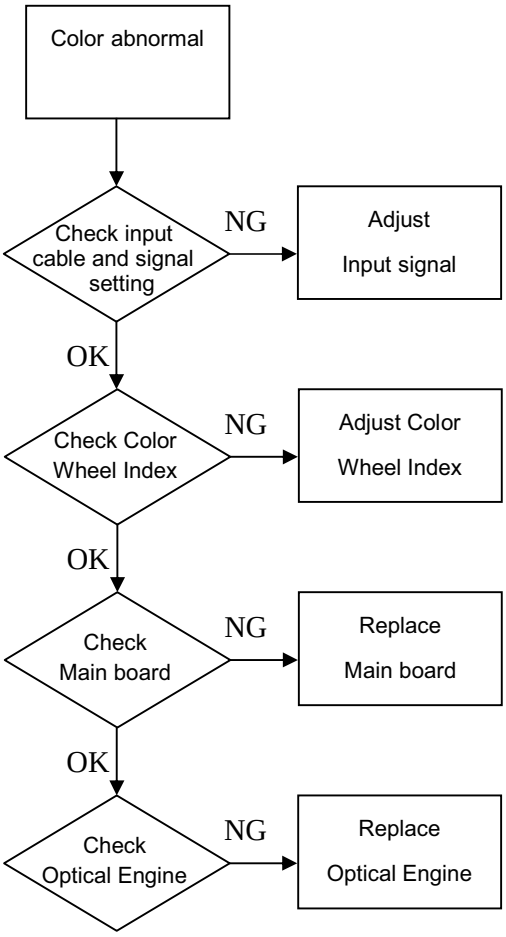
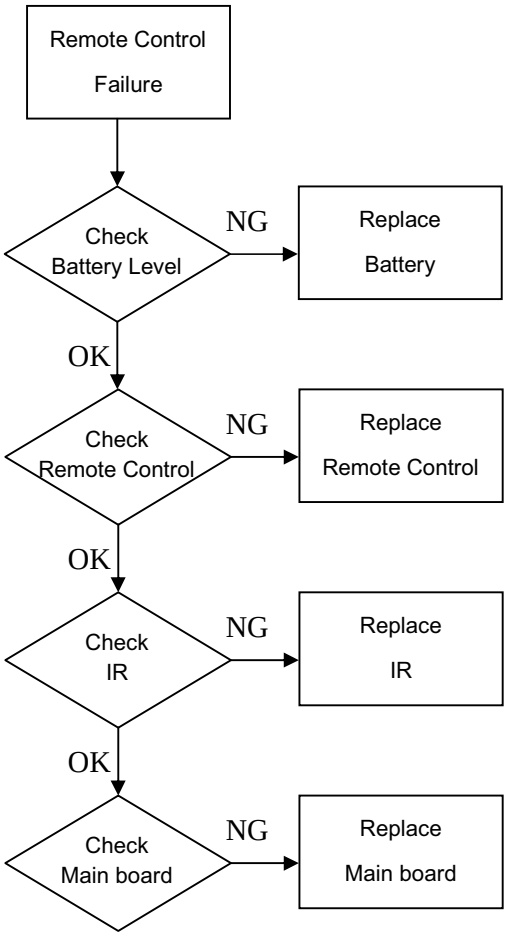
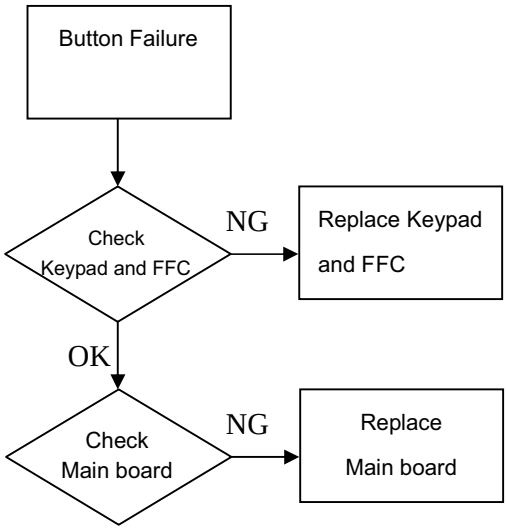


Image abnormal
Power on again and reset OSD
OK
Check input cable and signal setting
NG
Adjust Input signal
OK
Check Main board
NG
Replace Main board
OK
Check Optical Engine
NG
Replace Optical Engine


Color abnormal
Check input cable and signal setting
NG
Adjust Input signal
OK
Check Color Wheel Index
NG
Adjust Color Wheel Index
OK
Check Main board
NG
Replace Main board
OK
Check Optical Engine
NG
Replace Optical Engine

Operation Function Troubleshooting





4.2 Verifying the Repair

After repairing projector (Dissembling and assembling projector), Repair center should verify the quality of repaired unit.

(1) Check Logo

Check Logo is correct after power on projector.

(2) Signal test (Each I/O can functio n normally)

Connect all connector to the jacks one after the other to check whether each channel can project normally.

I/O port	**Monitor In (VGA)**
Test Equipment	Standard Pattern generator (Ex. Quantum data)
Signal format	1920*1080 60Hz

I/O port	**Video**
Test Equipment	Standard Pattern generator (Ex. Quantum data) or DVD player
Signal format	NTSC

I/O port	**S-Video**
Test Equipment	Standard Pattern generator or DVD player
Signal format	480i

I/O port	**USB**

Test Equipment	PC and Remote controller
Test method	1. Connect PC (laptop) VGA output to projector. Set PC (laptop) output signal to projector 2. Connect projector USB to PC. Press remote controller page up/down to scroll presentation file up and down (ex Microsoft office series)

I/O port	**Audio input**
Test Equipment	Connect audio input to audio output of DVD player
Signal format	480i

I/O port	**HDMI**
Test Equipment	HDMI source device
Signal format	1080p

(3) Operation test

Buttons operation

Button description	Test criteria
Power button	1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the button 2. Press “power” button and projector will switch on
Menu	1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the button. 2. Press Menu button can make projector function normally.
4-way button	1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the 4-way button. 2. Press 4-way button can be used to scroll through OSD (On-Screen Display) menus and make adjustments.
Source	1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the button 2. Press Source button manually selects an input source

Foot adjuster operation

Foot adjuster.	Test criteria
Foot adjuster button	Foot adjusters should stretch downward smoothly by pressing the foot adjuster buttons on the two sides

Zoom ring and Focus ring

Ring	Test criteria
Zoom ring	Mechanical motion of rotating Zoom ring to the end of right and left by hand should be free from getting stuck.
Focus ring	The feeling of rotating Focus ring to the end of right and left by hand should free from seizing

(4) Image Quality

Projected image size: 60 inches (diagonal length)

Zoom ring: Adjust zoom ring to wide (Maximum projection size)

VGA

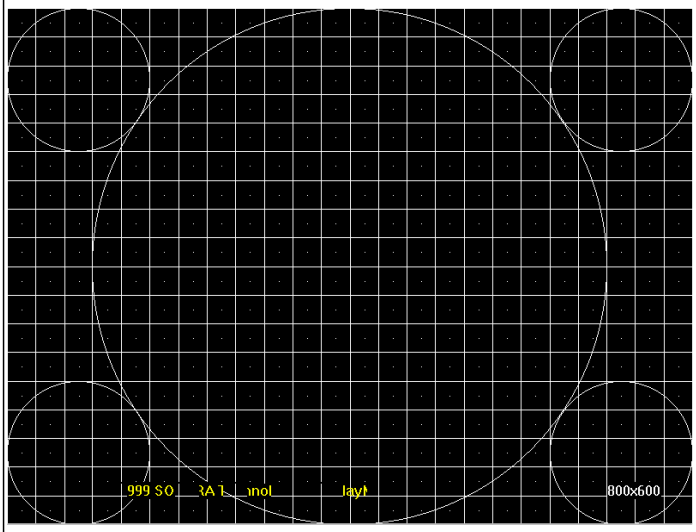
I/O port	Monitor In (VGA)
Test Equipment	Standard Pattern generator (Ex. Quantum data)
Signal format	1920*1080 60Hz
Projected image size	60” in diagonal length

Test Pattern	Test criteria
	**ANSI Brightness** Apparent color strip, bend and streak corner on the projected image are not allowable.

Extreme Gray-Scale

--0 represents full black, 255 represents full white.

--Distinguishing the gray from black at the value of 32 and the gray from white at the value of 239 easily are acceptable.

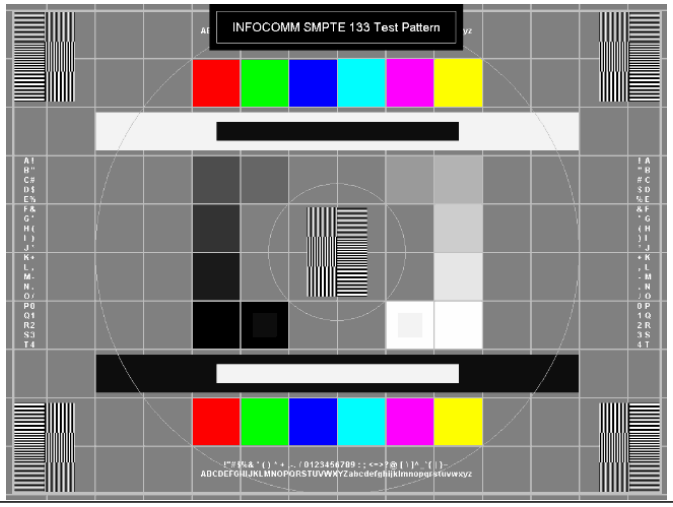


Circular Geometry, Cross hatch and Dots

1. The four lines of outer frame should not only be existent but also distinguishable.
2. The dots in the square should be distinguishable.

Scaled Text (Resolution)

1. Rotate Zoom ring to wide mode (Maximum projected image)
2. Fix projector to set diagonal length of projected image to 60”.
3. Adjust focus ring to make resolution of 4 corners and center are balanced.
4. Check the characters should be recognized easily.
5. Rotate Zoom ring to tele mode (Minimum projected image)
6. Adjust focus ring to make resolution of 4 corners and center are balanced.
7. Check the characters should be recognized easily.

	**INFOCOMM SMPTE 133** 1. The intervals of center thin white and black bars should be distinct. 2. The squares around the small circle in the center show the transition of full white to full black.

S-Video

I/O port	S-Video
Test Equipment	Standard Pattern generator (Ex. Quantum data)&DVD player
Signal format	480i
Criteria	No apparent color deviation on the projected image

Video

I/O port	Video
Test Equipment	Standard Pattern generator (Ex. Quantum data)&DVD player
Criteria	No apparent color deviation on the projected image

HDMI

I/O port	HDMI
Test Equipment	HDMI source device
Signal format	1080p
Criteria	No apparent color deviation on the projected image nor abnormal voice.

(5) Resolution

I/O port	VGA
Test Equipment	PC
Test Method	1. Rotate Zoom ring to wide mode (Maximum projected image) 2. Fix projector to set diagonal length of projected image to 60 ”. 3. Adjust focus ring to make resolution of 4 corners and center are balanced. 4. Check the characters should be recognized easily. 5. Rotate Zoom ring to tele mode (Minimum projected image)

	6. Adjust focus ring to make resolution of 4 corners and center are balanced. 7. Check the characters should be recognized easily.

(6) Front and Rear infrared sensor

Device	Front and Rear infrared
Test Equipment	Remote controller
Test method	1. Cover front sensor and operate remote controller to test rear sensor 2. Cover rear sensor and operate remote controller to test front sensor

(7) Brightness measurements

Test items	Brightness measurements
Test Equipment	Chroma automatic system (The alternative is CL -200)
Test method	Measure 9 points
Criteria	Marketing spec 20% off

(8) Cosmetic standard for repaired projector

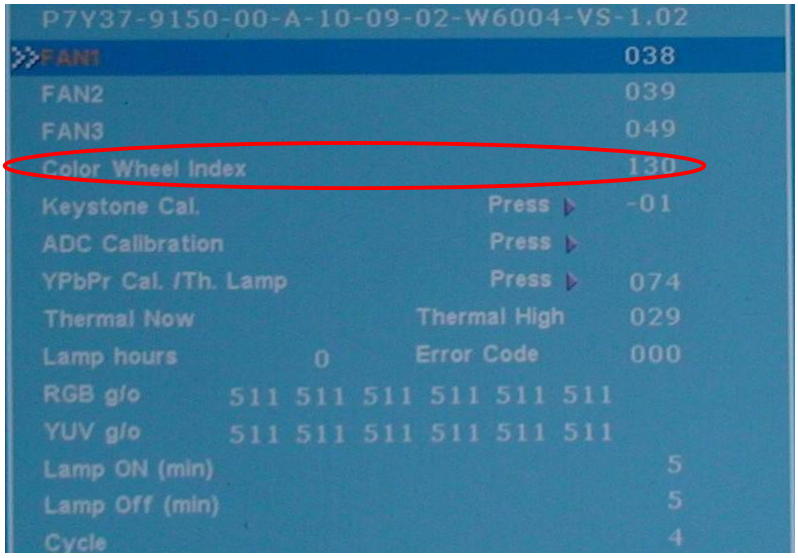
Follow cosmetic standard for repair center.

5 Adjustment / Alignment Procedure

5.1 Color Wheel Index Adjustment

(1) Open the image of 256-level RGB.

(2) Enter the engineering Mode, and then move down the color bar to “CW Index” item.

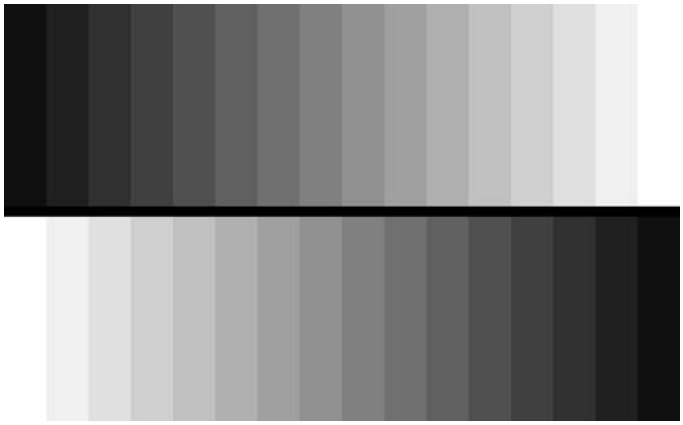


(3) Press the button (right or left) to adjust the value of CW Index.
(4) Notice the changing of color till the RGB colors are distinguishable.

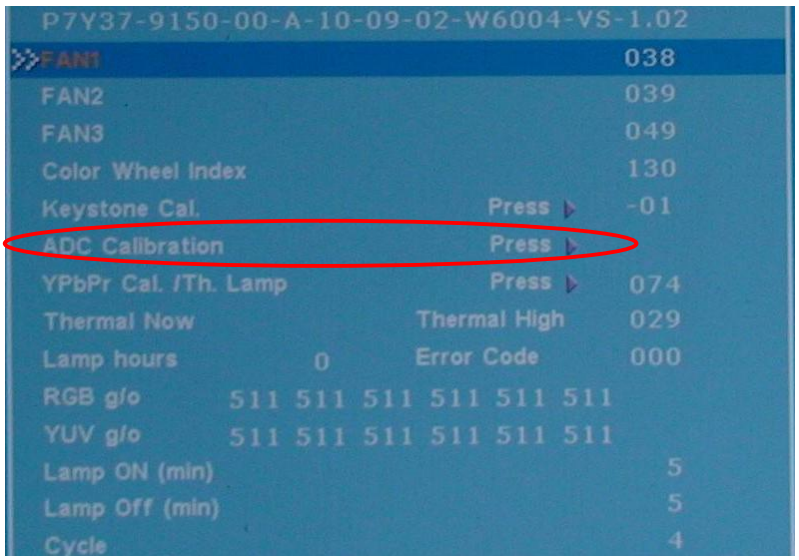
NOTE:
1. The CW Index of each CW is not all the same.
2. Adjusting the CW Index till the R, G, B colors are distinguishable will be fine.

5.2 ADC Calibration

(1)Open the image of Gray16.

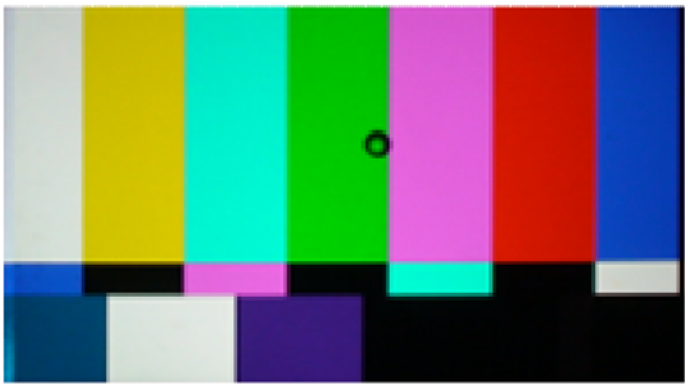


(2) Enter the engineering Mode, and then move down the color bar to "ADC Calibration" item.

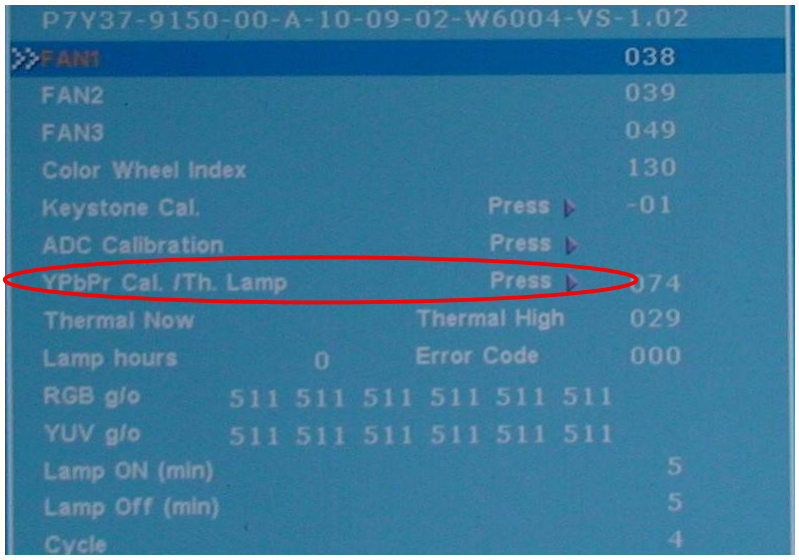


(3) Press right button to execute ADC Calibration. Color deviation is unacceptable.
If the screen blinks once, and then back to search signal and at last search out the image of Gray16, this indicates the calibration is successful.

(4) Open the image of SMPTEbar.



(5) Move down the color bar to “YPbPr Cal. /Th. Lamp” item.



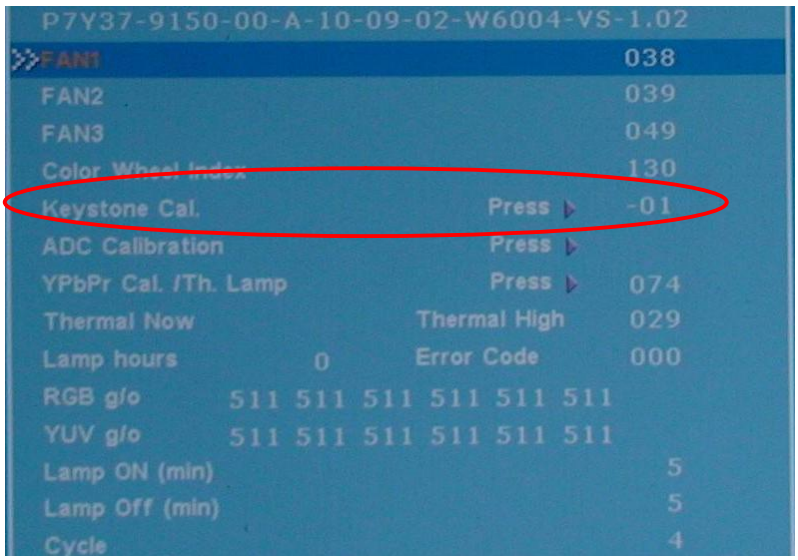
(6) Press right button to execute YPbPr Calibration. Color deviation is unacceptable.
If the screen blinks once, and then back to search signal and at last search out the image of SMPTEbar, this indicates the calibration is successful.

5.3 Keystone Adjustment

(1) At horizontal platform, adjust the projector foot to make platform level.

(2) And then enter the engineering mode, and then move down the color bar to "Keystone Cal." item.

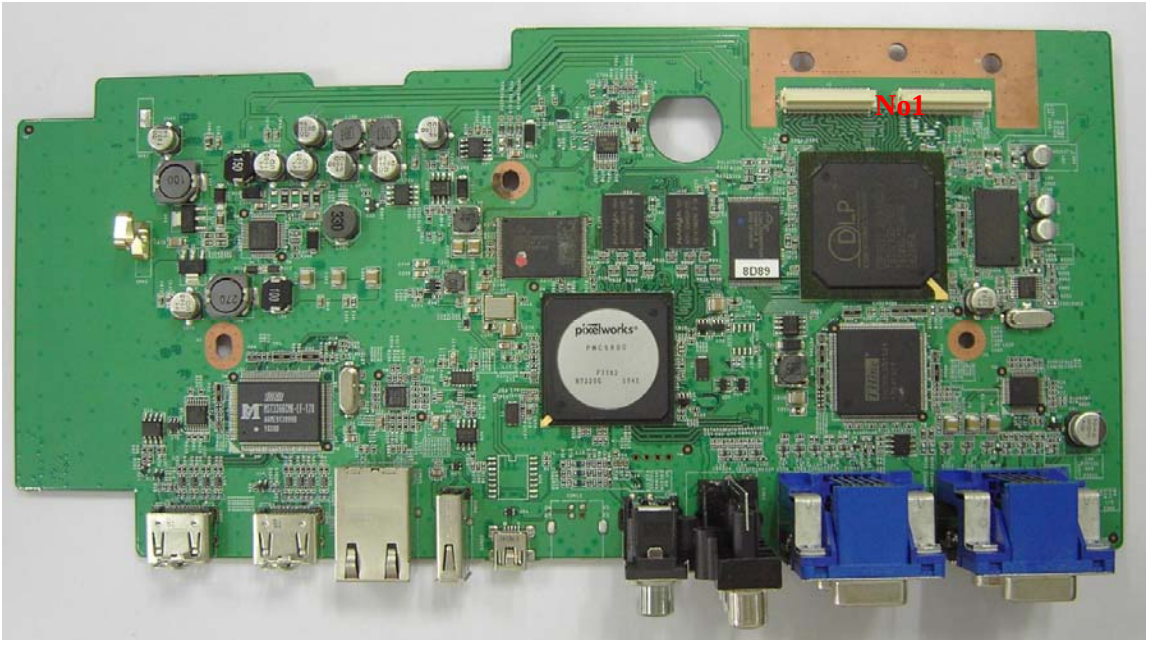
(3) Press right button to adjust.



6 Connector Information

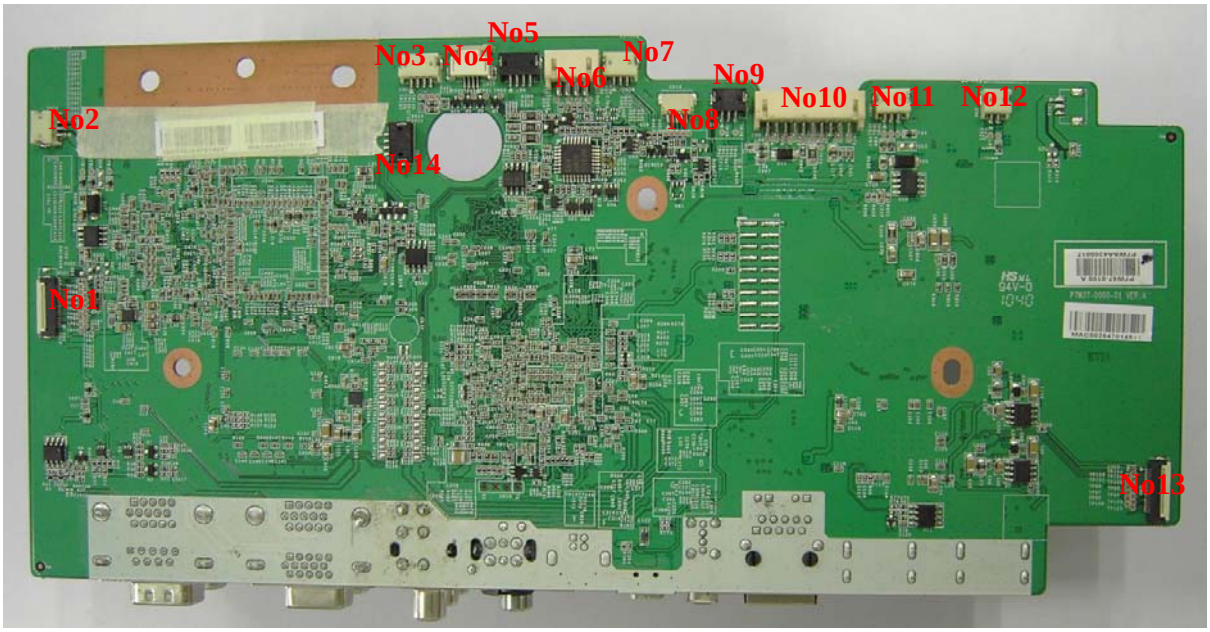
This section provides each connector location on boards and function of each board. They will be useful for your detecting the defective boards.

6.1 Main Board



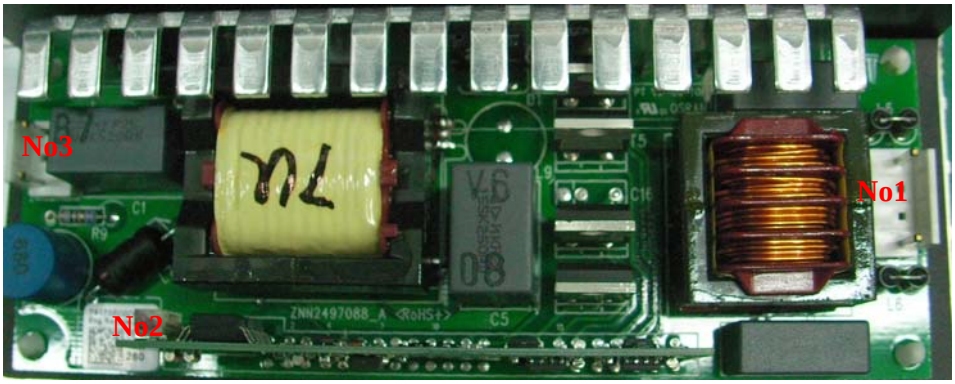
Connector	Description
No1	Connect to DMD Board

6.2 The backside of Main Board



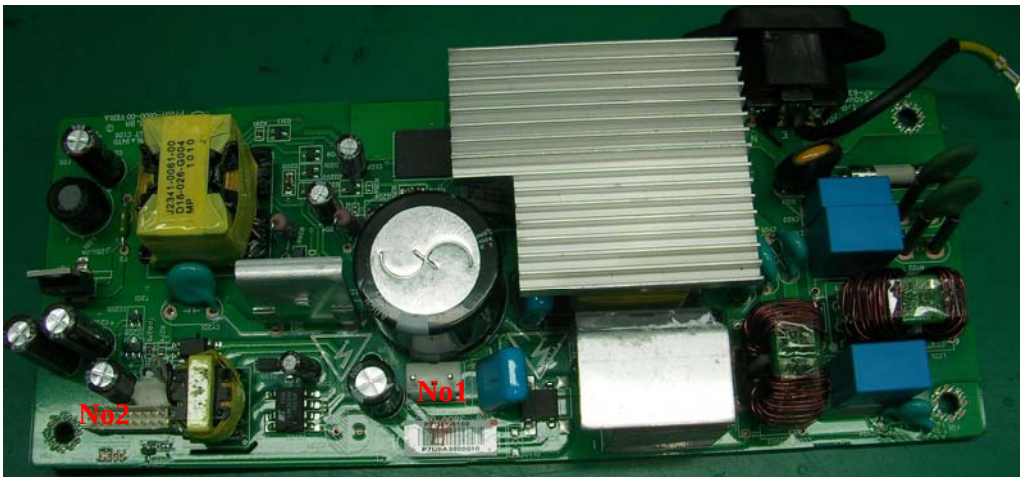
Connector	Description
No 1	Keypad control
No 2	FAN1
No 3	Color Wheel Sensor
No 4	Color Wheel control
No 5	/
No 6	Ground
No 7	Optical Engine Fan
No 8	Ignite signal connected to Ballast
No 9	Thermal switch
No 10	Main Board Power Supply
No 11	FAN2
No 12	Safety switch
No 13	Audio Board
No 14	/

6.3 Ballast Board



Connector	Description
No 1	Lamp power supply
No 2	Ignite signal connected to Main board
No 3	High Voltage Power supply

6.4 Power Board



Connector	Description
No 1	380V output for ballast
No 2	12V/5V output for Main board and Audio board

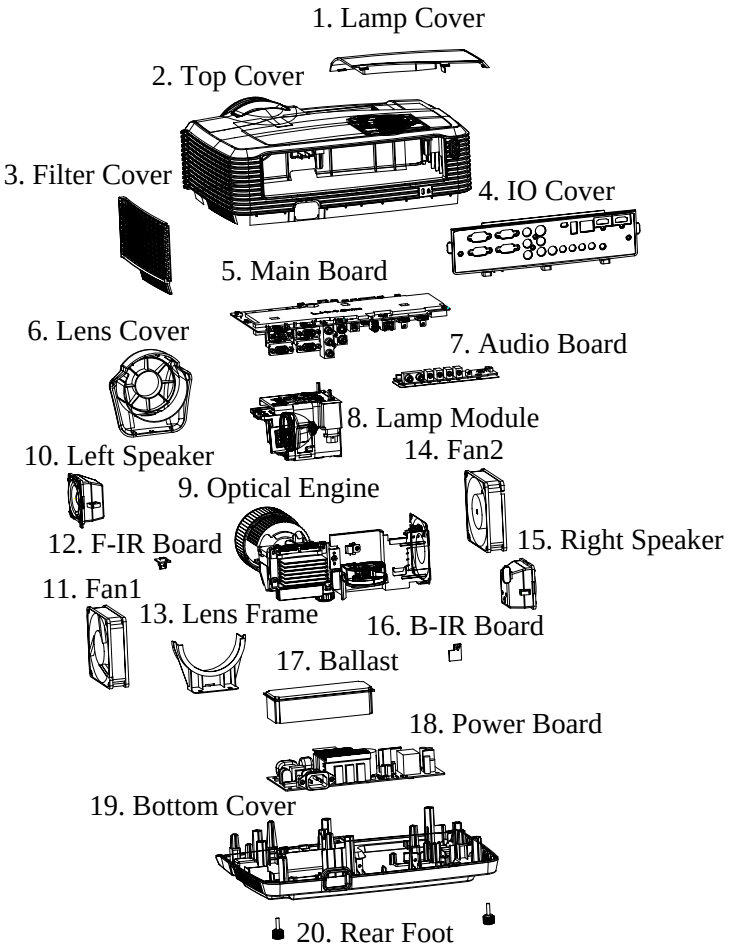
7 FRU (Field Replaceable Unit) List

Introduction

This section is a list of all the FRU removal . Following the FRU table of contents is an enlarged view of the entire projector, which shows the primary FRUs in the projector.

When working on the projector, use appropriate anti-static precautions such as anti-static mats, wrist straps and grounded work surfaces. Failure to do this can destroy static-sensitive components and make the product inoperable.

7.1 Mechanical Drawing



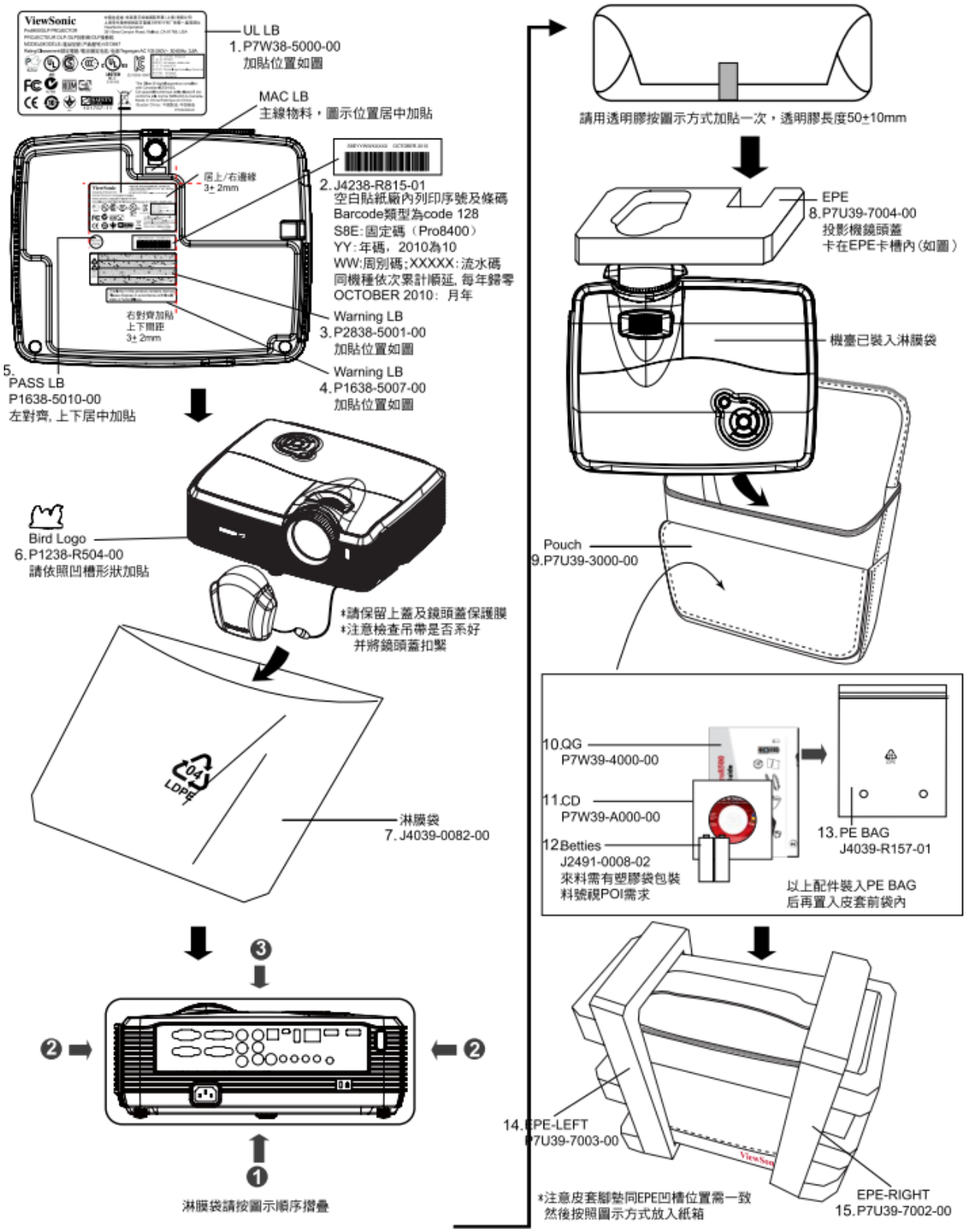
EXPLODED PARTS LIST (Pro8400)

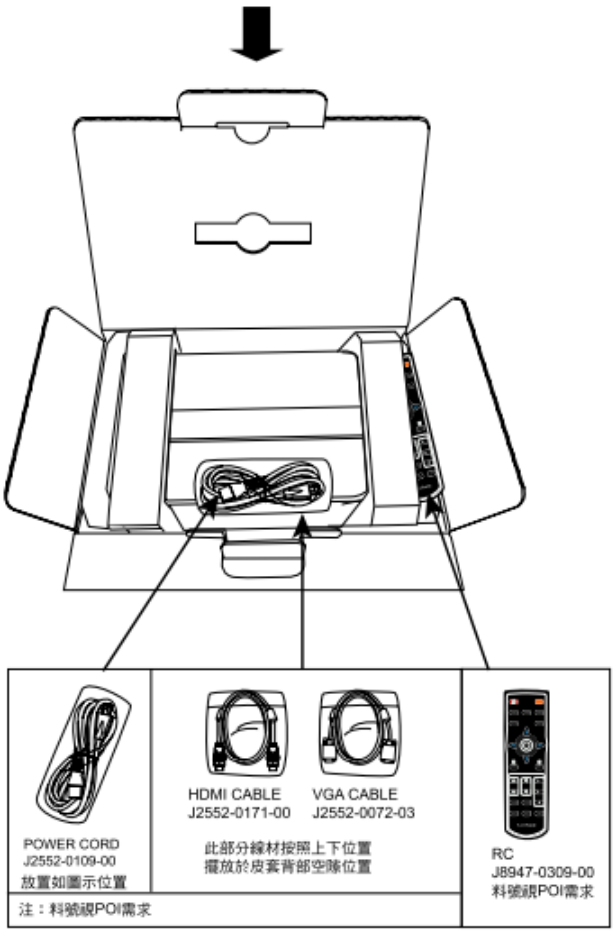
ViewSonic Model Number: VS13647

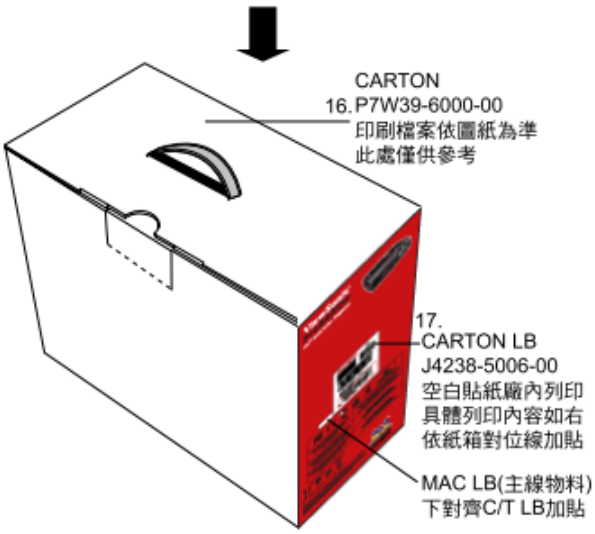
Rev:1a

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	C-00010583	P7U84-4520	Lamp Cover	1
2	C-00010758	P7W84-4500	Top Cover	1
3	C-00010588	P7U34-4620-00	Filter Cover	1
4	C-00010759	P7W84-4530	IO Cover	1
5	B-00010911	P7W84-7100	Main Board	1
6	C-00010589	P7U34-4540-99	Lens Cover	1
7	B-00010813	P7W47-3100	Audio Board	1
8	RLC-059	P7U84-2400	Lamp Module	1
9	E-00010674	P7W84-2200	Optical Engine	1
10	E-00010441	J2413-0111-00	Left Speaker	1
11	M-00008759	J2394-0143-01	Fan1	1
12	B-00008158	P3747-5101	F-IR Board	1
13	C-00010587	P7U34-4610-00	Lens Frame	1
14	M-00008760	J2394-0144-00	Fan2	1
15	E-00010440	J2413-0108-00	Right Speaker	1
16	B-00010719	P7U47-5101	B-IR Board	1
17	B-00010720	P7U84-9000	Ballast	1
18	B-00010717	P7U84-8100	Power Board	1
19	C-00010585	P7U84-4510	Bottom Cover	1
20	M-00008767	P7U38-1540-00	Rear Foot	2

7.2 Packing drawing



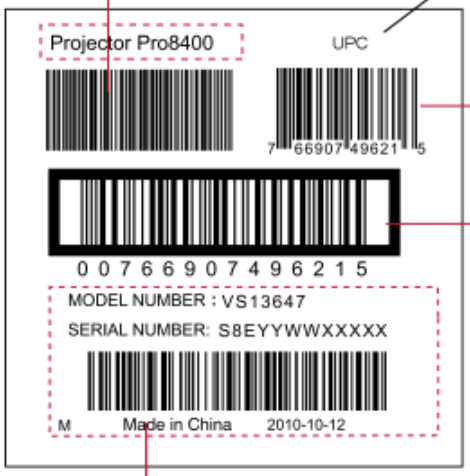




*紙箱底部采用普通透明膠帶工字形封箱

此處虛線框內容為：Projector Pro8400
對應barcode類型：code128

CARTON LB
J4238-5006-00

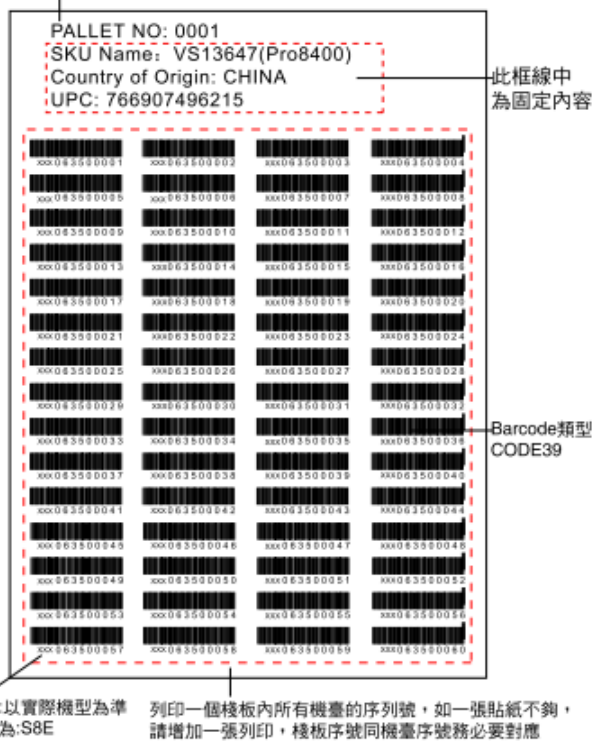


紅色虛線框內容如下：
MODEL NUMBER:VS13647（此處為安規型號代碼）
SERIAL NUMBER: S8EYYWWXXXXX
S8E表示Pro8400,YY:year, WW:week,XXXXX為流水碼
同機種依次累計順延，每年歸零
BARCODE內容為:S8EYYWWXXXXX(CODE 128)
"M"表示VSA向別，Made in China為固定內容
2010-10-12為實際包裝年月日

ITF14Code，內容為：00766907496215
UPC Code，內容為：766907496215

*棧板貼紙P1638-R506-00列印內容如下：

Pallet No：棧板流水碼（從0001開始）
同PO順延,不同PO重從0001開始



PACKING PART LIST (Pro8400)

ViewSonic Model Number: VS13647

Rev:1a

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	n/a	P7W38-5000-00	UL LB	1
2	n/a	J4238-R815-01	SERIAL LB	1
3	n/a	P2838-5001-00	WARNING LB	1
4	n/a	P1638-5007-00	LB	1
5	n/a	P1638-5010-00	LB	1
6	n/a	P1238-R504-00	LB	1
7	n/a	J4039-0082-00	BB BAG	1
8	P-00010782	P7U39-7004-00	EPE	1
9	n/a	P7U39-3000-00	POUCH	1
10	DC-00010799	P7W39-4000-00	QG	1
11	DC-00010800	P7W39-A000-00	CD	1
12	n/a	J2491-0008-02	BATTERIES	1
13	P-00008410	J4039-R157-01	PE.BAG	1
14	P-00010781	P7U39-7003-00	EPE-LEFT	1
15	P-00010780	P7U39-7002-00	EPE-RIGHT	1
16	P-00010870	P7W39-6000-00	CARTON	1
17	n/a	J4238-5006-00	LB	1

8 Maintenance

The projector needs proper maintenance. You should keep the lens clean as dust, dirt or spots will project on the screen and diminish image quality. If any other parts need replacing, contact your dealer or qualified service personnel. When cleaning any part of the projector, always switch off and unplug the projector first.

Warning:

Never open any of the covers on the projector. Dangerous electrical voltages inside the projector can cause severe injury. Do not attempt to service this product yourself. Refer all servicing to qualified service personnel.

Cleaning the Lens

Gently wipe the lens with lens cleaning paper. Do not touch the lens with your hands.

Cleaning the Projector Housing

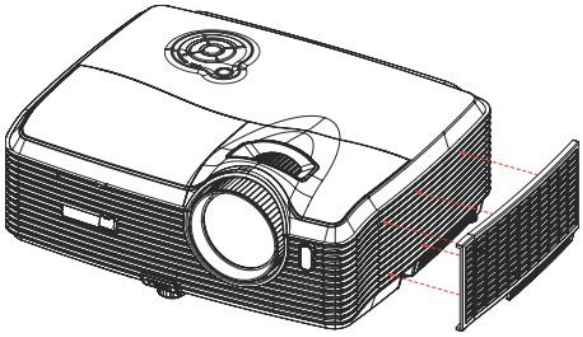
Gently wipe with a soft cloth. If dirt and stains are not easily removed, use a soft cloth damped with water, or water and neutral detergent, and wipe dry with a soft, dry cloth.

Cleaning the Filter Cover

The filter cover, which is located at the side of the projector, should be cleaned after every 100 hours of use. If it is not cleaned periodically, it can become clogged with dust and prevent the projector from being ventilated properly. This can cause over heating and damage the projector.

To clean the filter cover:

1. Switch the projector off and unplug the AC power cord from the wall socket.
2. Remove the filter cover as the illustration shown.
3. Clean the filter cover.
   - To clean the filter cover, you are advised to use a small vacuum cleaner designed for computers and other office equipment.
   - If the filter cover is torn, replace it.
4. Replace the filter cover.
5. Attach the filter cover.
6. Plug the power back into the projector.

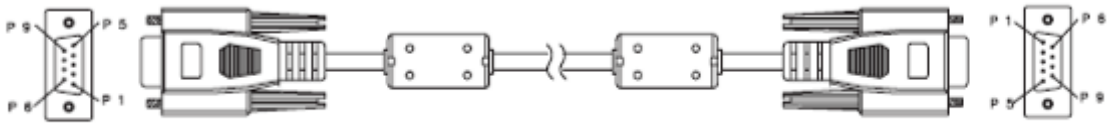


Appendix A: RS-232 Command and Configuration

Baud Rate: 19200 Parity Bit: none

Data Bit: 8 Stop Bit: 1 Assign Port: COM1

POWER ON / POWER OFF	
POWER ON	BE,EF,10,05,00,C6,FF,11,11,01,00,01,00
POWER OFF	BE,EF,02,06,00,6D,D2,34,00,00,00,00,00
SOURCE SELECT	
Computer 1	BE,EF,02,06,00,BC,D3,35,00,00,00,00,00
Computer 2	BE,EF,02,06,00,8F,D3,36,00,00,00,00,00
COMPONENT	BE,EF,02,06,00,5E,D2,37,00,00,00,00,00
COMPOSITE	BE,EF,02,06,00,A1,D2,38,00,00,00,00,00
S-VIDEO	BE,EF,02,06,00,70,D3,39,00,00,00,00,00
HDMI 1	BE,EF,02,06,00,43,D3,3A,00,00,00,00,0
HDMI 2	BE,EF,02,06,00,92,D2,3B,00,00,00,00,00
QUICK KEY	
MENU	BE,EF,02,06,00,C8,D7,01,00,00,00,00,00
UP	BE,EF,02,06,00,FB,D7,02,00,00,00,00,0
DOWN	BE,EF,02,06,00,2A,D6,03,00,00,00,00,00
LEFT	BE,EF,02,06,00,9D,D7,04,00,00,00,00,00
RIGHT	BE,EF,02,06,00,4C,D6,05,00,00,00,00,00
ENTER	BE,EF,02,06,00,E6,D6,0F,00,00,00,00,00
RESYNC	BE,EF,02,06,00,F2,D5,1B,00,00,00,00,00
ASPECT	BE,EF,02,06,00,C7,D2,3E,00,00,00,00,00
MUTE	BE,EF,02,06,00,16,D3,3F,00,00,00,00,0
FREEZE	BE,EF,02,06,00,D9,D8,40,00,00,00,00,00
BLANK	BE,EF,02,06,00,08,D9,41,00,00,00,00,00
SOURCE	BE,EF,02,06,00,7F,D6,06,00,00,00,00,00
OTHER FUNCTION	
DCR ON	BE,EF,02,06,00,EA,D8,43,00,00,00,00,00
DCR OFF	BE,EF,02,06,00,5D,D9,44,00,00,00,00,00
ECO ON	BE,EF,02,06,00,8C,D8,45,00,00,00,00,0
ECO OFF	BE,EF,02,06,00,BF,D8,46,00,00,00,00,00
VOLUME INC	BE,EF,02,06,00,6E,D9,47,00,00,00,00,00
VOLUME DEC	BE,EF,02,06,00,91,D9,48,00,00,00,00,00
KEYSTONE INC	BE,EF,02,06,00,40,D8,49,00,00,00,00,00
KEYSTONE DEC	BE,EF,02,06,00,73,D8,4A,00,00,00,00,00
FACTORY RESET	BE,EF,02,06,00,A2,D9,4B,00,00,00,00,00
LAMP HOURS RESET	BE,EF,02,06,00,15,D8,4C,00,00,00,00,00
FILTER HOURS RESET	BE,EF,02,06,00,C4,D9,4D,00,00,00,00,00
Projector status	BE,EF,02,06,00,F7,D9,4E,00,00,00,00,00



D-Sub 9 pin

1	1 CD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

Wire List

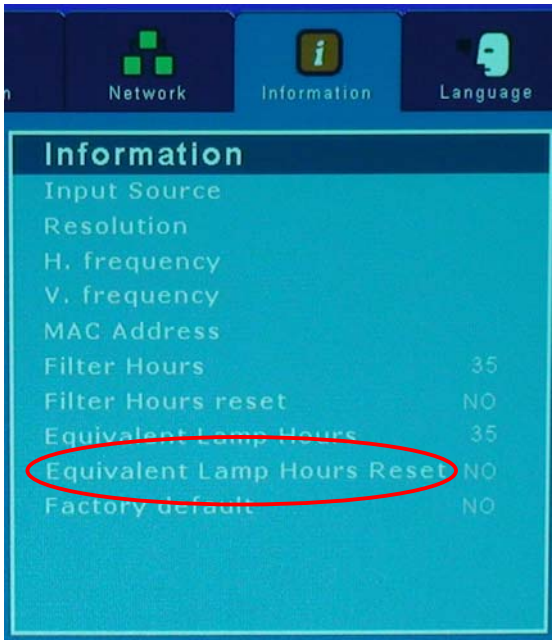
C1	COLOR	C2
1	Black	1
2	Brown	2
3	Red	3
4	Orange	4
5	Yellow	5
6	Green	6
7	Blue	7
8	Purple	8
9	White	9
SHELL	DW	SHELL

Appendix B: IR Control Code

System Code: 83F4
Format : NEC

Appendix C: How to reset the Lamp Hours

(1) Press “Menu” button to open the Main menu.
(2) Move color bar to “Information” item.
(3) Move down the color bar to “Equivalent Lamp Hours Reset” item.



(4) Press “enter” button to enter sub-menu.

(5) Press left button to select “yes” to reset Lamp Hours.
(6)Then the Lamp Hours would reset to 0 hours.

9 Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (PRO8400-1W)

ViewSonic Model Number:VS13647
Serial No. Prefix:S8E
Rev.: 1a

Item	Category	Part Name	Description	ECR/ECN	ViewSonic P/N	Ref. P/N	Remark
1	**Accessories:**	LAMP	LAMP_MODULE_280W_SPARE PART_VPD-X7000_ROHS		RLC-059	P7U84-2400	If Q'ty = 1000, price = 80
2	**[Adapter, Remote**	Remote Controller	REMOTE CONTROL_VIEWSONIC_VPD-W6004_WITHOUT/B_ROHS		A-00008988	J8947-0310-00	
3	**Controller, Power**	Power Cord	POWER CORD (AUSTRALIA)._(SAA)YP-35/YC-12_YUNG LI_ROHS		A-00008060	J2552-0053-00	
4	**Cord, External**	Power Cord	POWER CORD(CHINA)._YP-03/YC-12_YUNG LI_ROHS		A-00008056	J2552-0106-00	
5	**Cables]**	Power Cord	POWER CORD(EUROPE)._YP-22/YC-12_YUNG LI_ROHS		A-00008057	J2552-0107-00	
6		Power Cord	POWER CORD(UK)._YP-61/YC-12_YUNG LI_ROHS		A-00008058	J2552-0108-00	
7		Power Cord	POWER CORD (SOUTH AFRICA)._YP-80/YC-12_YUNG LI_ROHS		A-00008233	J2552-0056-01	
8		Power Cord	POWER CORD(USA)._UL(YP-12/YC-12)_YUNG LI_ROHS		A-00008059	J2552-0109-00	
9		Power Cord	POWER CORD (ARGENTINA)_SP-852+IS-14_I-SHENG_ROHS		A-00008585	J2552-0263-00	
10		Signal Cable	HDMI 19P TO 19P CABLE_L1800_VIEWSONIC_P2650-05_PAN_ROHS		CB-00008572	J2552-0171-00	
11		RS232 Cable	DB9P TO DB9P CABLE_L1500_P35251A-05_PAN_ROHS		CB-00009062	J2552-0208-00	
12		Adapter	VGA-15P-6P CABLE_P4724-08_PAN_ROHS		CB-00008906	J2552-0212-00	
13		Signal Cable	VGA-15P CABLE_P3842-06_PAN_ROHS		CB-00008710	J2552-0072-03	
14	**PC Board**	Main Board	MAIN_DIP_PCB_ASY_SPARE PARTS_VPD-W6002_ROHS		B-00010911	P7W84-7100	
15	**Assembly: [All**	Power Board	POWER BOARD_SPARE PARTS_VPD-X7000_ROHS		B-00010717	P7U84-8100	
16	**PCBA]**	Key Pad	KEYPAD_DIP_PCB_ASY_VPD-W6001_ROHS		B-00010718	P7U47-7100	
17		IR Board	FIR_DIP_PCB_ASY_PD-X702_ROHS (Front IR)		B-00008158	P3747-5101	
18		IR Board	REAR IR_DIP_PCB_ASY_VPD-W6001_ROHS (Rear IR)		B-00010719	P7U47-5101	
19		Ballast	OSRAM-BALLAST-280W_SPARE PART_VPD-X7000_ROHS		B-00010720	P7U84-9000	
20		I/O Board	AUDIO_DIP_PCB_ASY_VPD-W6002_ROHS		B-00010813	P7W47-3100	
21		DMD Board	DMD_DIP_PCB_ASY_VPD-W6002_ROHS		B-00010814	P7W47-6100	
22		Sensor Board	CW SENSOR_DIP_PCB_ASY_VPD-W6002_ROHS (CW Sensor Board)		B-00010723	P7W47-5100	
23	**Cabinets:**	Lamp Cover	LAMP COVER_SPARE PARTS_VPD-X7000_ROHS		C-00010583	P7U84-4520	
24	**[Front Bezel, All**	Top Cover	TOP COVER_SPARE PARTS_VPD-W6002_ROHS		C-00010758	P7W84-4500	
25	**Covers, Base**	Bottom Cover	BOTTOM COVER_SPARE PARTS_VPD-X7000_ROHS		C-00010585	P7U84-4510	
26	**Assembly]**	I/O Cover	I/O COVER_SPARE PARTS_VPD-W6002_ROHS		C-00010759	P7W84-4530	
27		Lens Cover	LENS-FRAME-BOTTOM_VPD-X7000_05000-0050-00_NO PAINTING_ROHS		C-00010587	P7U34-4610-00	
28		Filter Cover	FILTER-HOLDER_VPD-X7000_05000-0050-00_NO PAINTING_ROHS		C-00010588	P7U34-4620-00	
29		Lens Cover	LENS-COVER_VPD-X7000_05000-0050-00_FOR PAINTING_ROHS		C-00010589	P7U34-4540-99	
30	**Cables: [All**	Wire	FFC CABLE_A20200C3344NB_ENTERY_0.5PITCH_20PIN_L200MM_ROHS(keypad board to MB		CB-00009764	J2591-0140-00	
31	**internal**	Wire	FFC CABLE_A20110D3344NB_ENTERY_0.5PITCH_20PIN_L110MM_ROHS(audio board to MB		CB-00009765	J2591-0139-00	
32	**Cables/wires]**	Wire	WIRE CON-CON_1102003-344_MSK_4PIN_L100MM_1571#28_ROHS(B-IR board to MB)		CB-00009766	J2595-0518-00	
33		Wire	WIRE CON-CON_1102003-345_MSK_4PIN_L260MM_1571#28_ROHS(F-IR board to MB		CB-00009767	J2595-0519-00	
34		Wire	WIRE SW-CON_1102003-201_MSK_2PIN_L25MM_1007#26_ROHS (Lamp door switch)		CB-00009768	J2595-0344-00	
35		Wire	WIRE CON-CON_1102003-200_MSK_10+4PIN-2*8PIN_L115/185MM_1007#24/#26_ROHS(power board to MB anc		CB-00009769	J2595-0342-00	
36		Wire	WIRE CON-CON_1102003-187_MSK_5PIN_L150MM_1571#28_ROHS(ballast to MB)		CB-00009770	J2595-0328-00	
37		Wire	WIRE TERMINAL-CON_103AP-110330-10N001_SEMITEC_ROHS		CB-00009771	J2595-0489-00	
38		Wire	WIRE CON-THERMAL FUSE_01800171R_AVERTRONICS_ROHS(thermal switch)		CB-00009772	J2595-0343-00	
39		Wire	WIRE CON-CON_1102003-98_MSK_2PIN_L140MM_1015#22_ROHS(power board to ballast		CB-00008469	J2595-0218-00	
40		Wire	TERMINAL WIRE_1102003-239_MSK_1PIN_L70MM_BLACK_1015#16_ROHS		CB-00009773	J2596-0016-00	
41		Wire	WIRE LAMP-BALA(MPD-X5501)_01800167R_AVERTRONICS_2PIN_L185MM_3239V#20_ROHS(Ballast to Lamp		CB-00009774	J2595-0336-00	
42		Wire	WIRE CON-CON_1102003-182_MSK_4PIN_L120MM_1571#28_ROHS(color wheel to main board)		CB-00009053	J2595-0325-00	
43	**Documentation:**	Qucik Start Guide (QS	QG_VIEWSONIC_VPD-W6002_GLOBAL_ROHS		DC-00010799	P7W39-4000-00	
44	**[Quick Start**	User's Guide (DVD R	CD ROM_VIEWSONIC_VPD-W6002_GLOBAL_ROHS		DC-00010800	P7W39-A000-00	
45	**Guide, CD Rom:**	Label / Sticker	CARTON LB_VIEW SONIC_PJ557D_GLOBAL_ROHS(for China)		DC-00008672	P0N38-5013-00	
46	**Electronic**	Optical Engine	OPTICAL ENGINE_SPARE PART_WITHOUT LAMP_VPD-W6002_ROHS		E-00010674	P7W84-2200	
47	**Components:**	Color Wheel	COLORWHEEL_SPARE PARTS_VPD-X7000_ROHS		E-00010436	P7U84-2600	
48	**[Optical Engine,**	Lens	LENS ASY_SPARE PARTS_VPD-X7000_ROHS		E-00010437	P7U84-6200	
49	**Speaker, Color**	DMD Chip	DMD-ATYPE-0.65-1080P_VPD-W6004_ROHS		E-00010529	P7Y84-7010	
50	**Wheel]**	Light Pipe	LIGHT TUNNEL_BPD-W6102_ROHS		E-00010530	P8D84-7620	
51		Speaker	SPEAKER_P52KUG06X-7JS1_VECO_ROHS (Right)		E-00010440	J2413-0108-00	
52		Speaker	SPEAKER_P52KUG06X-7JS2_VECO_ROHS (Left)		E-00010441	J2413-0111-00	
53	**Hardware:**	Screw	HEXAGON-HEAT-BOLT_TPD-X570_00_ROHS		HW-00009484	P0P35-2500-00	
54	**[Screw, Bracket,**	Screw	SCREW_TP_4_10_A_2.5_D=6.8_WH-ZN_NONE_ROHS		HW-00009485	J1635-A010-0A	
55	**Hinge]**	Screw	SCREW_M_3_5_A_1.5_D=4.5_BLACK_NONE_ROHS		HW-00009486	J1635-A342-00	
56		Screw	SCREW_TP_3_8_A_2_D=5.3_BLACK_NONE_ROHS		HW-00009487	J1635-A632-01	
57		Screw	SCREW_M_3_5_A_2_D=5.3_BLACK_NONE_ROHS		HW-00009488	J1635-C230-00	
58		Screw	SCREW-MB-670H_EMS-DX540_01_NO PAINTING_ROHS		HW-00009489	P2535-7300-0A	
59		Screw	SCREW-WASHER_TP_3_6_D_2.6_D=8.5_ZN_NONE_SUS_ROHS		HW-00009490	J1635-3623-0A	
60		Screw	SCREW_M_2.0_3.5_E_0.5_D=4.0_WH-ZN_NONE_ROHS		HW-00009491	J1635-3185-00	
61		Screw	SCREW_M_3_5_E_1_D=6_WH-ZN_NL_ROHS		HW-00009492	J1635-D110-0A	
62		Screw	SCREW-WASHER_TP_2_4_D_1_D=3.2_ZN_NONE_SUS_ROHS		HW-00009493	J1635-3720-0A	
63	**Miscellaneous:**	Fan	FAN-3000_EE92251S1_3PIN_SUNON_ROHS (Left)		M-00008759	J2394-0143-01	
64	**[Switch, Fan,**	Fan	FAN-3400_EF92251BX_3PIN_SUNON_ROHS (Right)		M-00008760	J2394-0144-00	
65	**Rubber Foot,**	Fan	SLEEVE FAN_MF50201V1_SUNON_ROHS (Lamp)		M-00008761	J2394-0145-01	
66	**Logo]**	Sponge	FAN-FILTER_VPD-X7000_ROHS		M-00008764	P7U38-1650-00	
67		Sponge	FAN-FILTER-LOWER_VPD-X7000_ROHS		M-00008765	P7U38-1670-00	
68		Sponge	FAN SPONGE_MPD-X5501_ROHS (Fan sponge)		M-00008766	P4G38-1180-00	
69		Pad	FAN PAD_TPD-X5500_ROHS		M-00008390	P4E38-1070-00	
70		Ring	ZOOM-RING_VPD-X7000_05002-2019-00_FOR PAINTING_ROHS		M-00008762	P7U34-4580-99	
71		Ring	FOCUS-RING_VPD-X7000_05002-2019-00_NO PAINTING_ROHS		M-00008763	P7U34-4570-99	
72		Foot	RUBBER-FOOT_VPD-X7000_ROHS		M-00008767	P7U38-1540-00	
73	**Packing Material:**	Carton	CARTON_VIEWSONIC_VPD-W6002_GLOBAL_ROHS		P-00010870	P7W39-6000-00	
74	**[Box, Foam, Bags]**	Foam	EPE_NO_VPD-X7000_LEFT_ROHS		P-00010780	P7U39-7002-00	
75		Foam	EPE_NO_VPD-X7000_RIGHT_ROHS		P-00010781	P7U39-7003-00	
76		Foam	EPE_NO_VPD-X7000_TOP_ROHS		P-00010782	P7U39-7004-00	
77		Plastic Bag	PE BAG._NO BRAND_298MM*190MM_ROHS		P-00008794	J4039-R184-01	
78		Plastic Bag	PE BAG._NO BRAND_GLOBAL_ROHS		P-00008410	J4039-R157-01	

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of

Notice:
1. For some special parts, some photos for identification purpose may be asked by request
2. For all internal cables, there must be some wordings on the "Description" column about where the cable is used (connecting to which two parts)
3. All internal cables/wires should be put in the "Cables" category
4. All external cables should be put in the "Accessories" category
5. Parts relationship (Main/Second source or 1/2/3/4) should be added in the "Compatibility" column
6. If any part for certain product isn't listed in the form, supplier/PE can add it themselves and keep the part name unified.

* Reader's Response*

Dear Readers:
Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of **this** Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. System Introduction				
2. Firmware Upgraded Flow				
3. Machine Disassembly and Replacement				
4. Troubleshooting and Verifying the Repair				
5. Adjustment / Alignment Procedure				
6. Connector Information				
7. FRU (Field Replaceable Unit) List				
8. Maintenance				
9. Recommended Spare Parts List				

B. Are you satisfied with **this** Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding **this** service manual?

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After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943.