

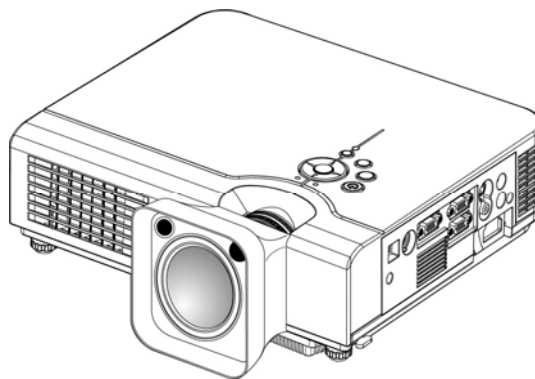


Touchboards

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LC-XIP2000

LCD projector Service Manual



Version A

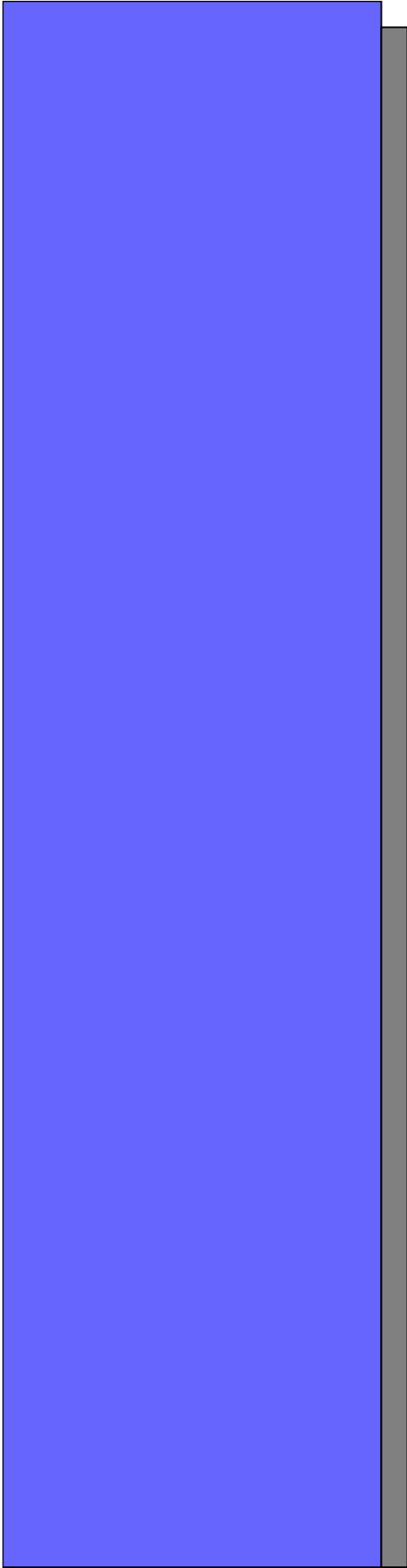
Feb. 14, 2007

Revision History

Project	Approval date	Leader	Description	Device changed	Comment

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Chapter 1

Trouble shooting

Cautions when replacing the Optical Engine and Main board :

- ◎ 1. Make sure the IC# 24LC256 on main board U619 location always goes with its original optical engine when you replace the main board or Optical Engine.
- ◎ 2. Make sure the direction of the IC# 24LC256 on main board.
- ◎ 3. Execute “Keystone calibration ” and “C&B calibration” when you replace Main board every time. Otherwise the screen will become keystone distortion or miss gray level. (please refer to page P45 and P46)

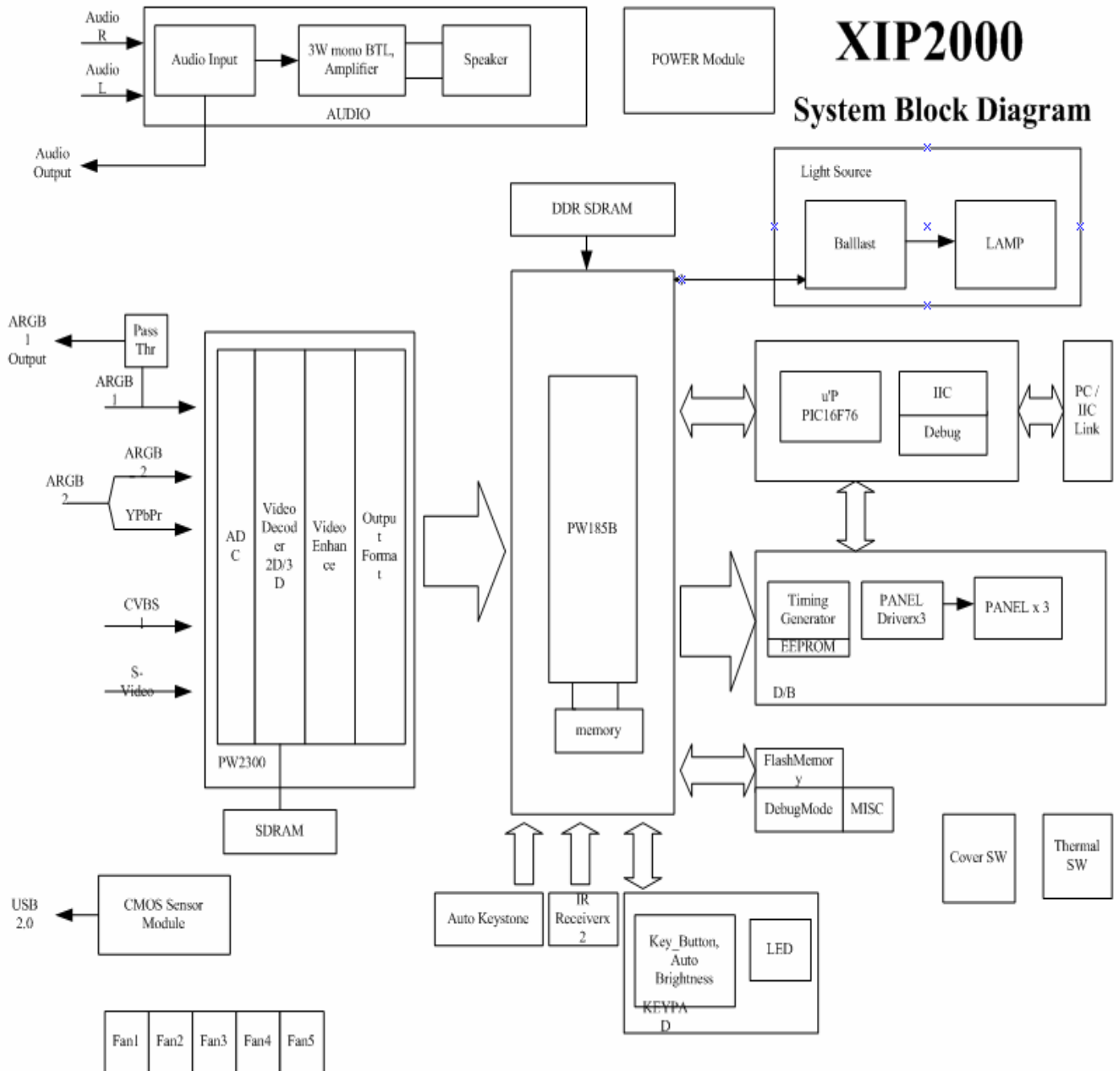
-
- 1.1 The color parameter is kept in 24LC256(locate at U619), and the color parameter is different due to different optical engine.
 - 1.2 EDI will provide a new 24LC256 with a new optical engine when you need to change an optical engine. The color parameter settings of the 24LC256 have to match with the optical engine in EDI factory.
 - 1.3 When you replace an optical engine or main board, please always confirm the 24LC256 go with its original optical engine.
 - 2.1 Make sure the direction of 24LC256 on main board, the mark (*) at the left side.



U619

- 3.1 Keystone calibration function is to help the projector execute the keystone function automatically.
- 3.2 The C&B calibration function is to optimize the picture performance.

Troubleshooting















Troubleshooting

- LED Lamp Indicator

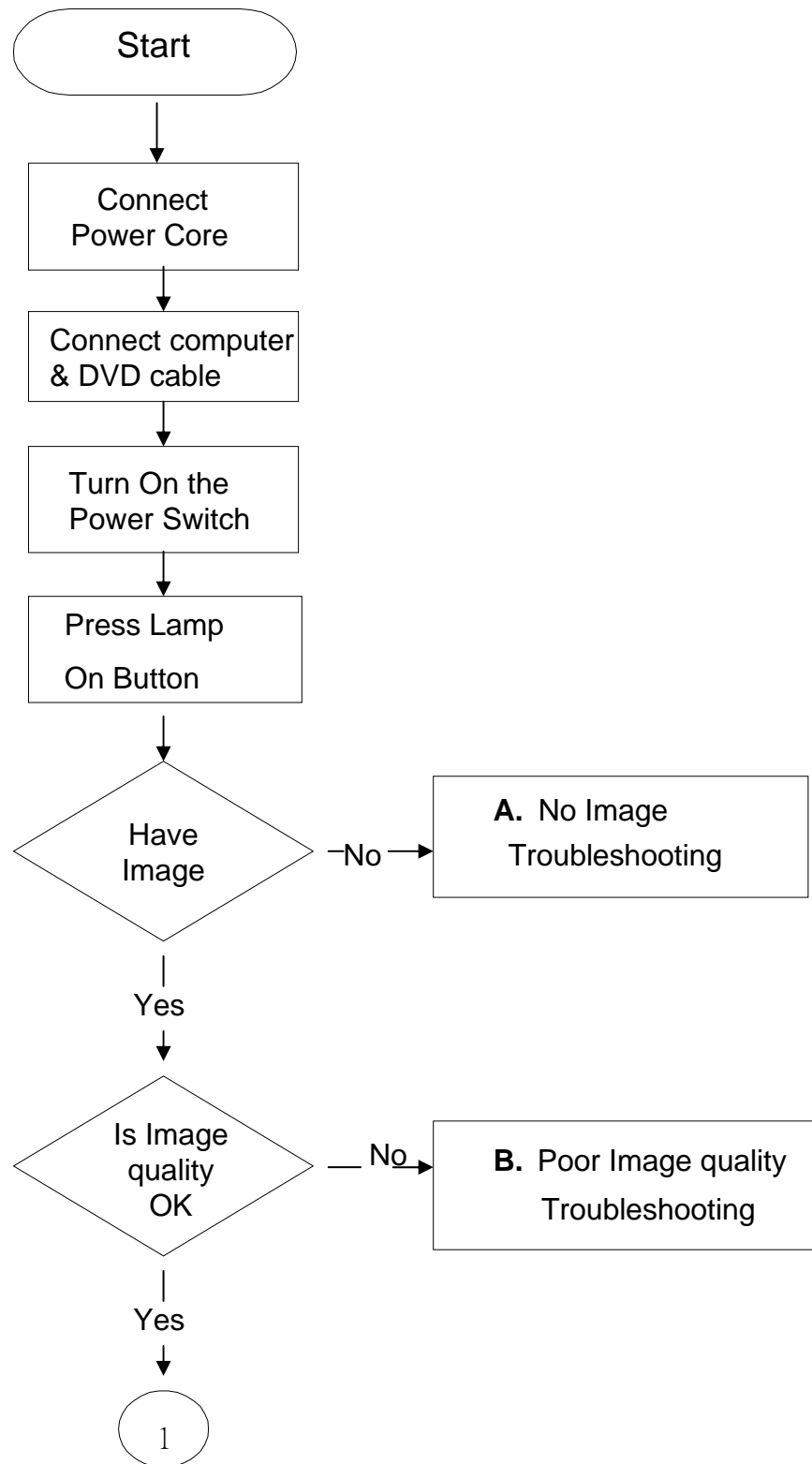
Indicators

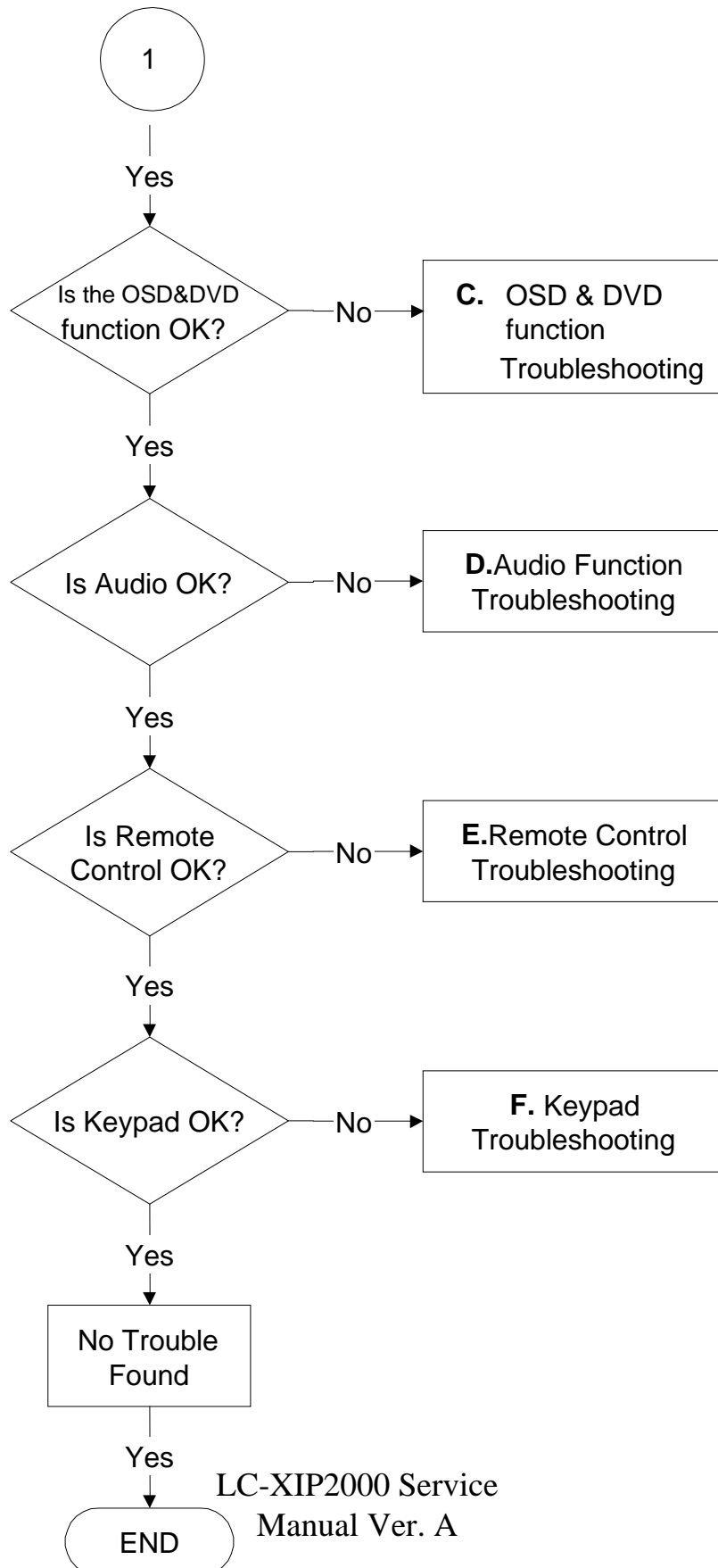
The Power and Lamp indicators show the status of the projector. Before requesting repair, check the projector status using the chart below. If the problem cannot be resolved contact your dealer.

Power (Green)	Lamp (Red)	Conditions	Notes
Slow flashing 	Off 	Stand by mode	*Projector is ready to be turned on (normal)
On 	Off 	On mode	*Projector is on and operating normally
On 	Slow flashing 	Cool-down mode	*Projector is in cool-down mode and will not respond to user input (normal)
On 	Fast flashing 	Fan-fault mode	* The projector has detected a problem with an internal fan, the lamp will shut off automatically, contact your dealer
Fast flashing 	On 	Lamp-cover open	*The lamp cover is open or there is a problem with the lamp. If the lamp door is closed and replacing the lamp does not correct the issue, contact your dealer.
Fast flashing 	Fast flashing 	High temperature	*The projector has overheated and shut the lamp off. Correct the over temp condition immediately. 1. Check that the ventilation slots are free from obstructions 2. Check the cleanliness of the air filter. 3. If the condition persists, contact your dealer

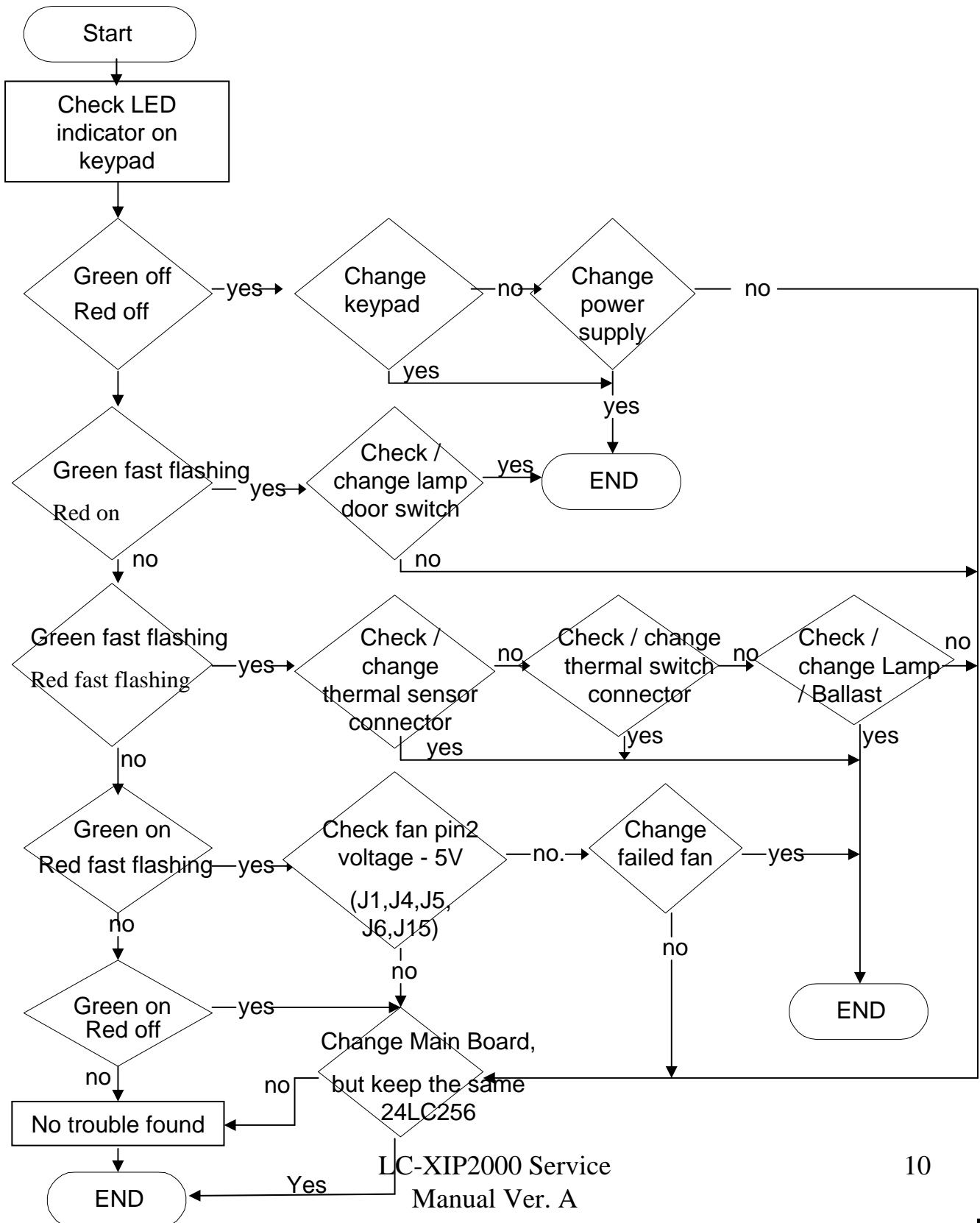
Symptom	Possible cause	Remedy
The power is not turned on	*The main power switch is not turned on. *The power cord is disconnected.	*Turn on the main power switch. *Plug the power cord into an AC power outlet
No video	*The input is not correctly connected. *No signal input *No open lens cover	*Select the appropriate input source *Connect correctly *Remove the lens cover
No audio	*The projector is not correctly connected. *The volume is set to minimum. *Mute is turned on	*Check audio cable connect correctly. *Adjust the volume. *Press the MUTE button
No remote function	*No battery *Remote signal be obstructed	*Check battery of remote controller *Remove obstacle between projector and remote controller
Colors are pale	*Color density and color matching are not correctly adjusted. *Color lose	*Adjust the RGB setting. *Check VGA cable.
Abnormal brightness &	*Brightness and contrast are not correctly adjusted.	*Adjust the brightness and contrast setting.

- Troubleshooting flow chart

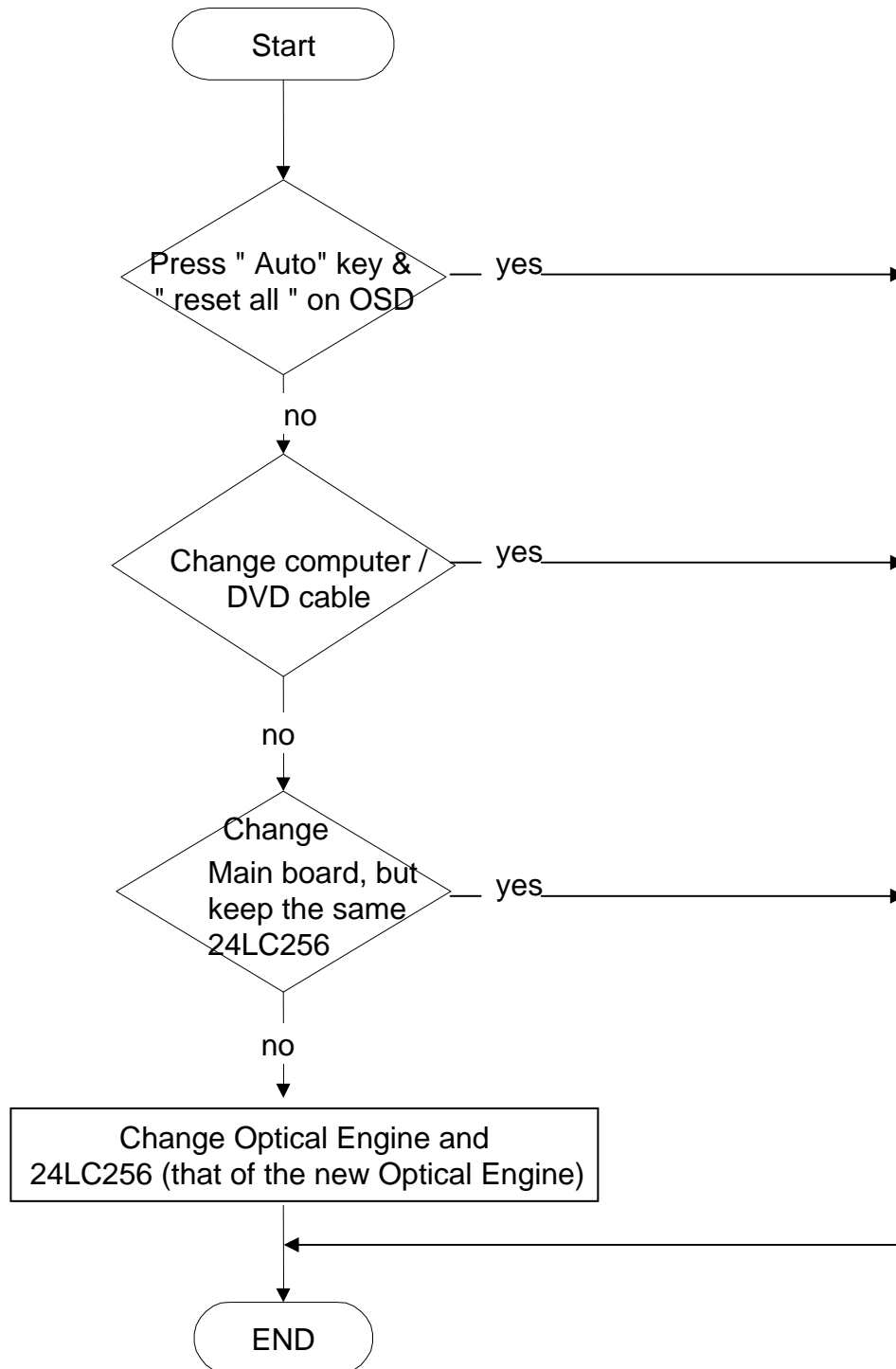




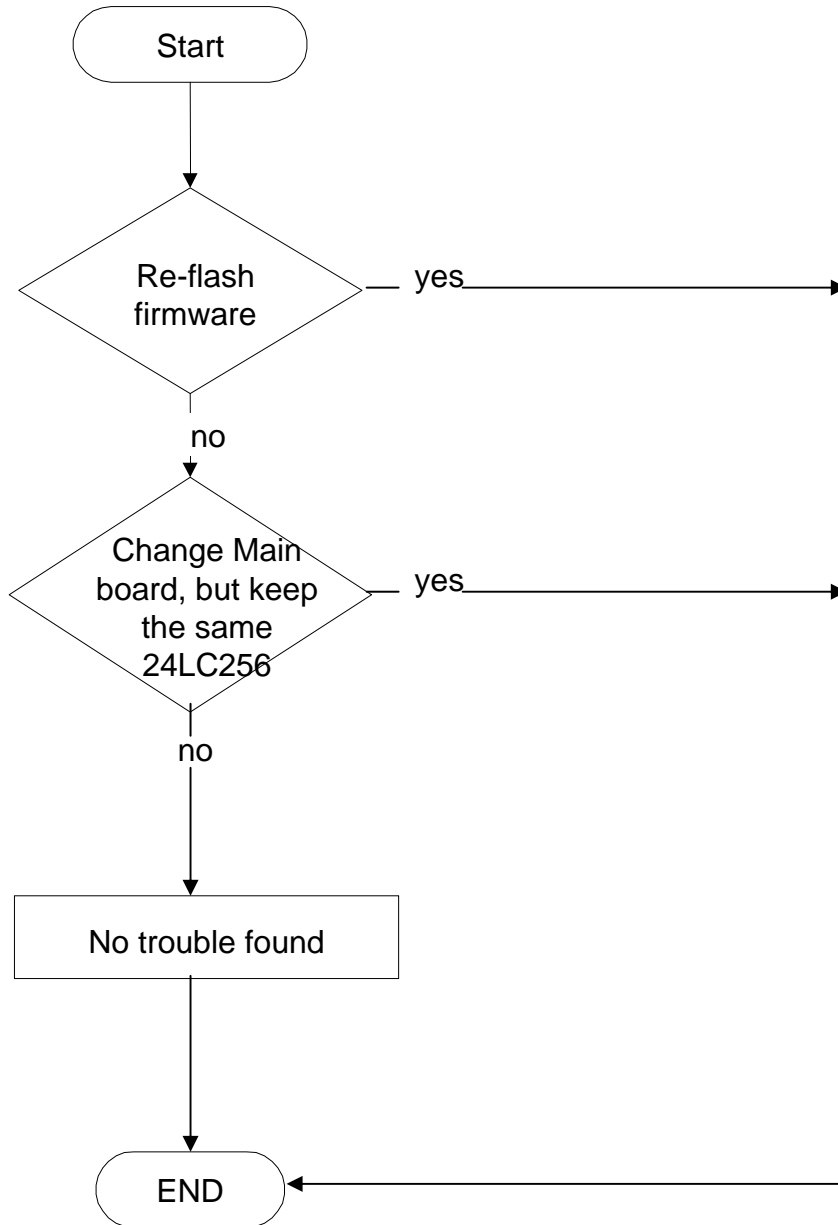
A.No Image Troubleshooting



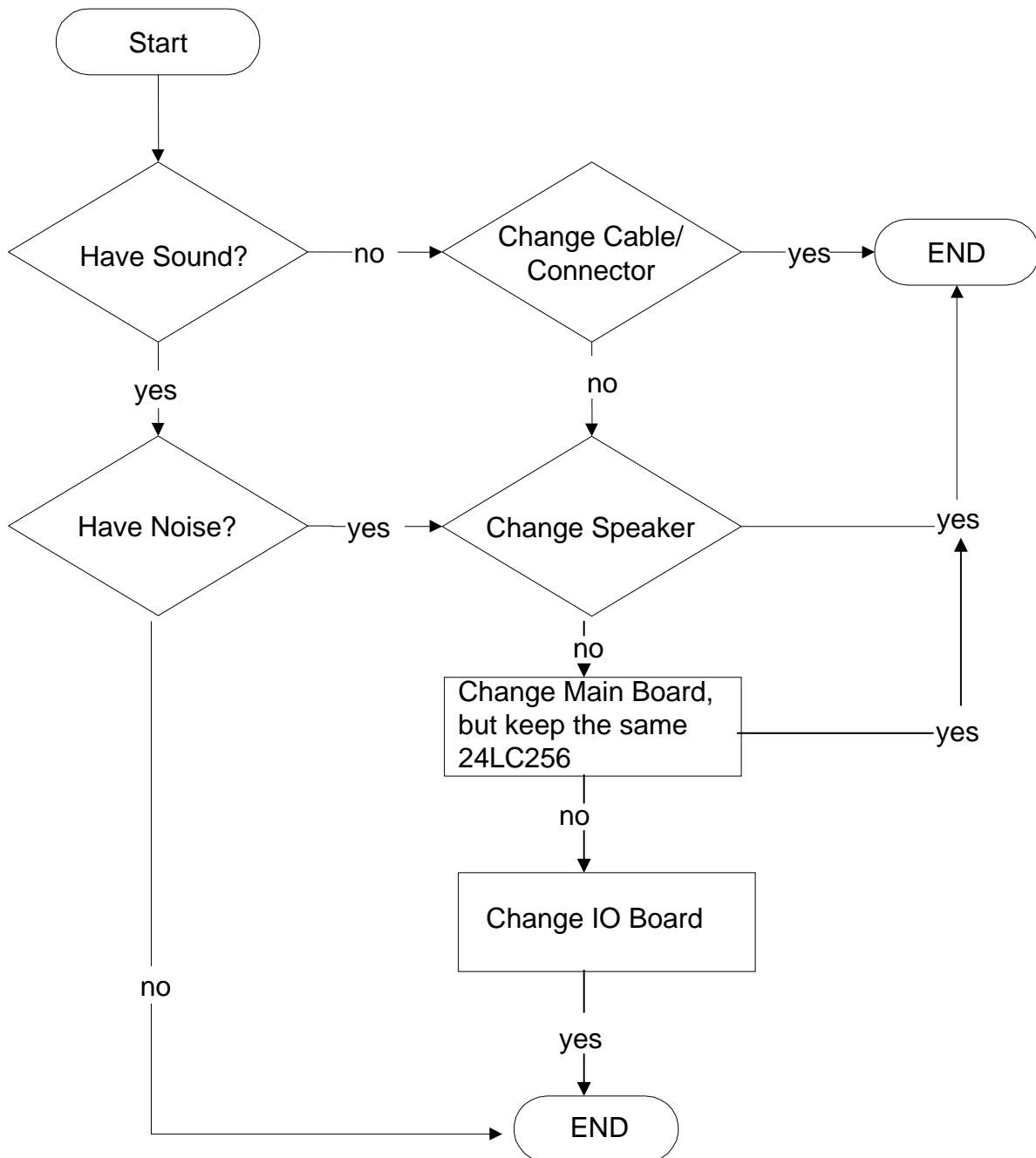
B. Poor Image quality Troubleshooting (flicker, discolor, streak..etc)



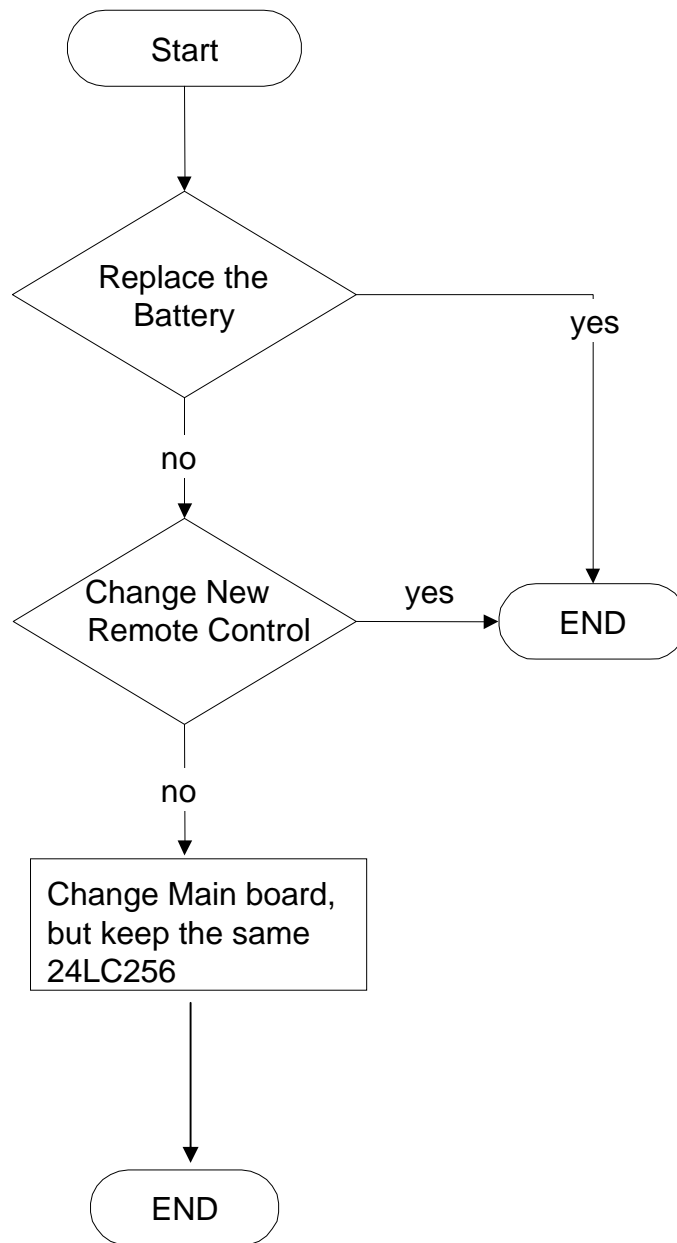
C.DVD / OSD Function Troubleshooting



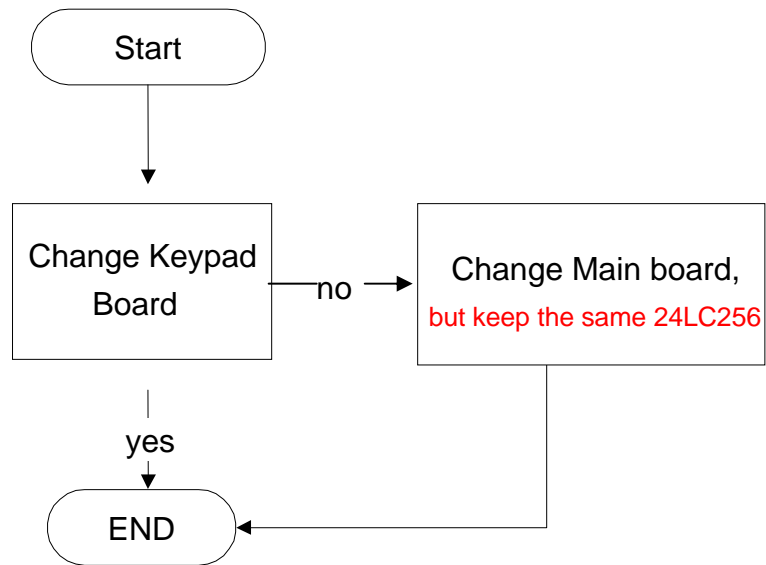
D. Audio Function troubleshooting



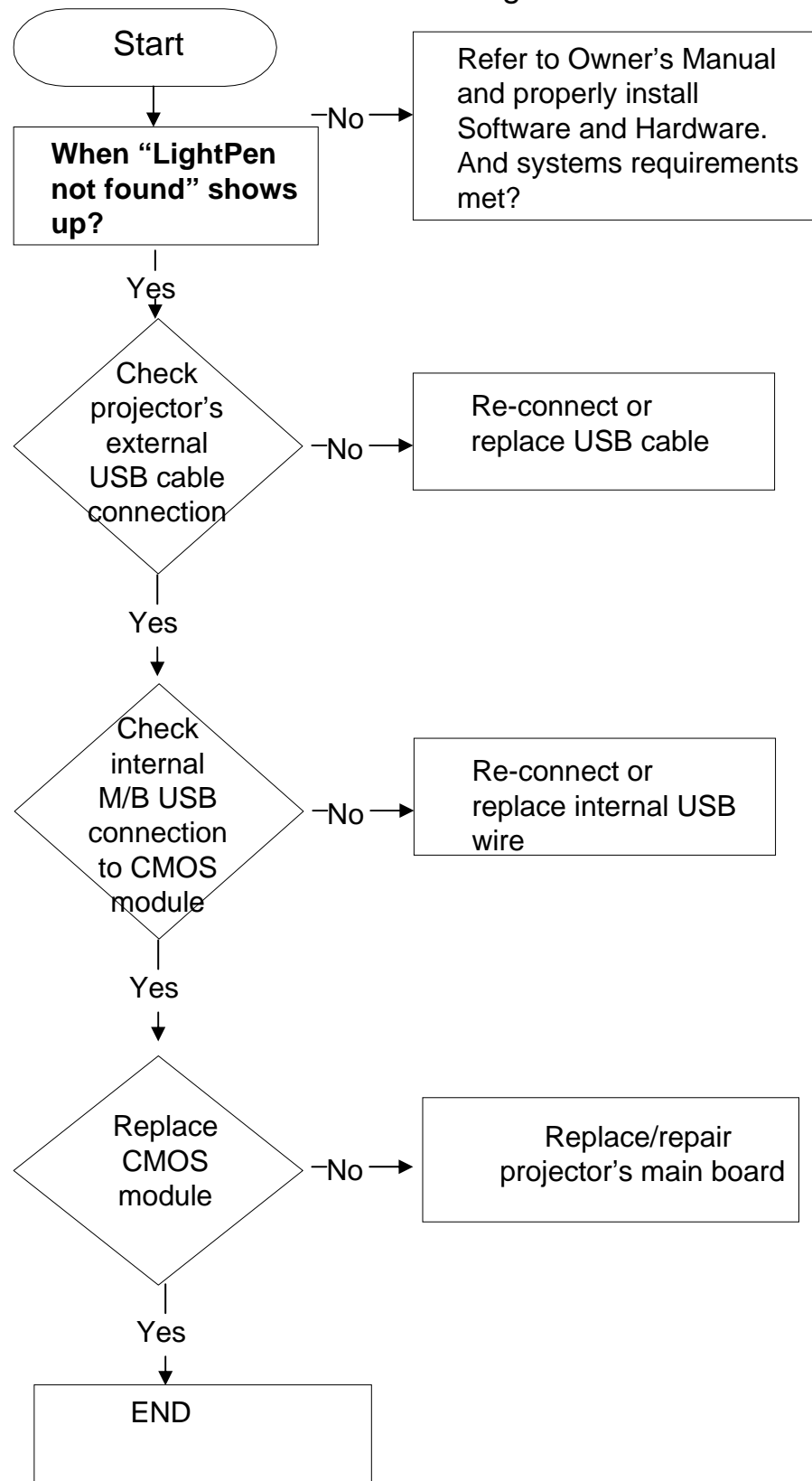
E. Remote Control troubleshooting



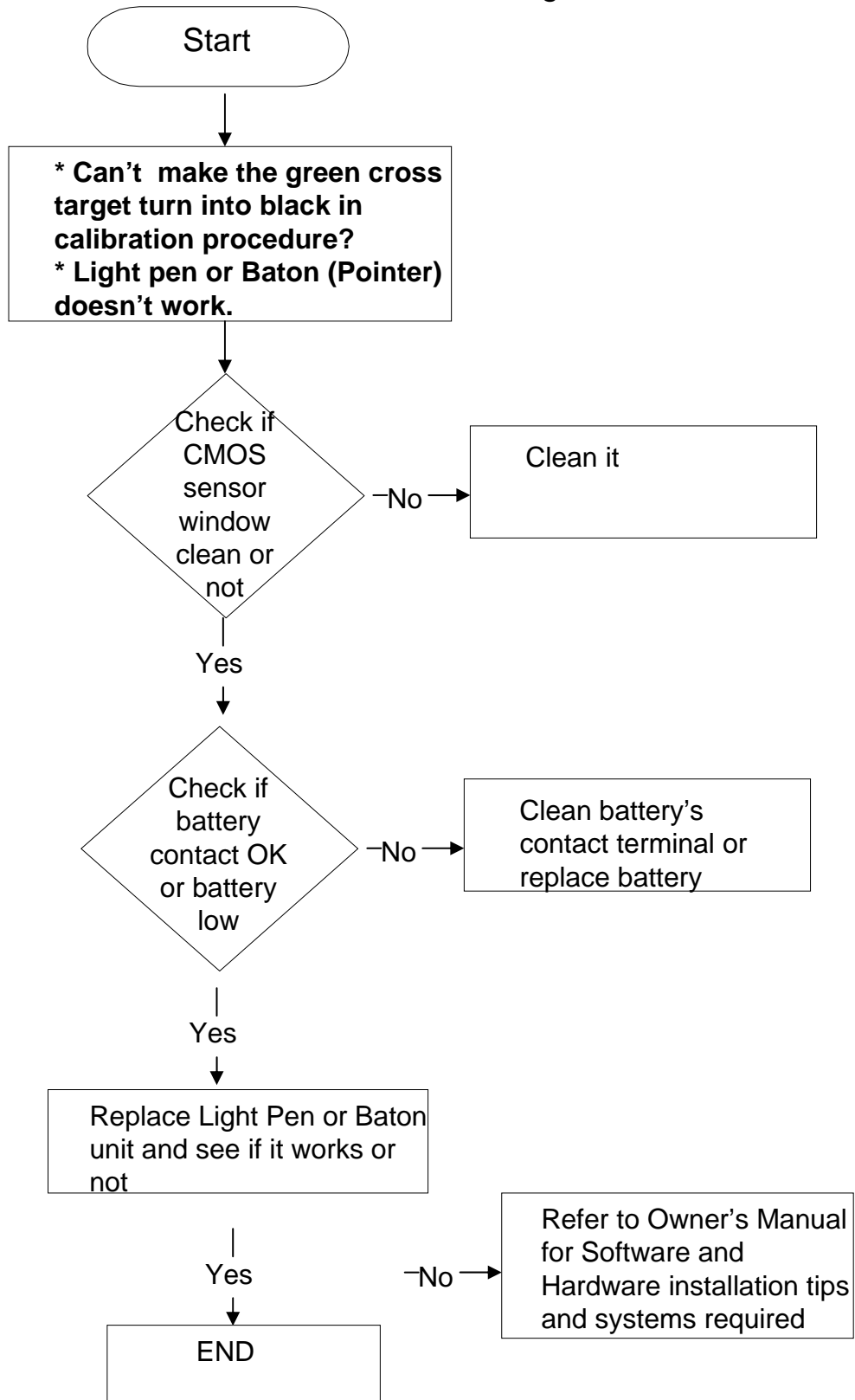
F. Keypad troubleshooting

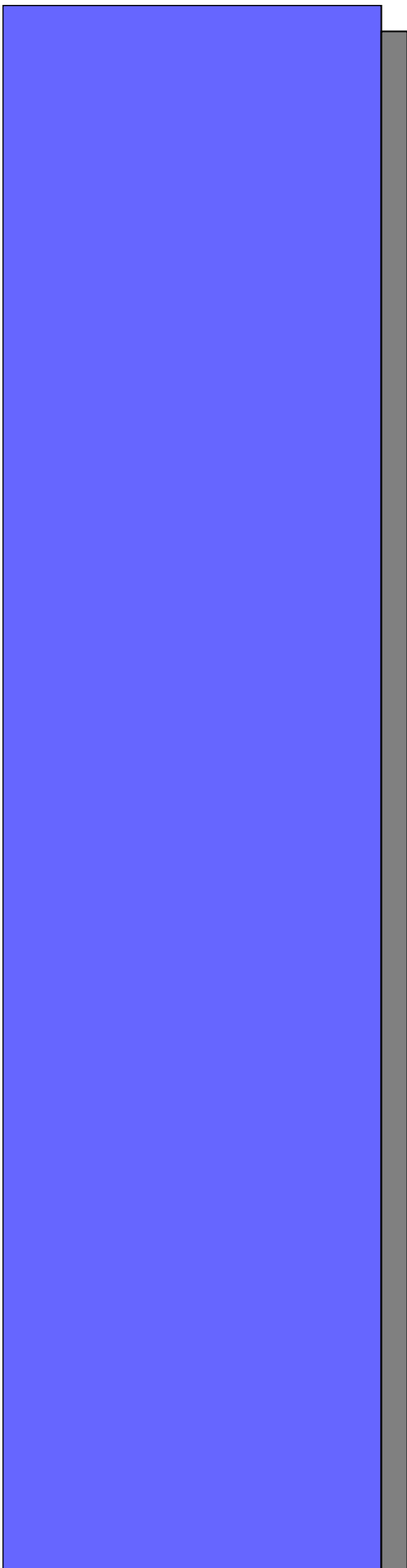


H. Built-in interactive smart function troubleshooting-1



I. Built-in interactive smart function troubleshooting-2





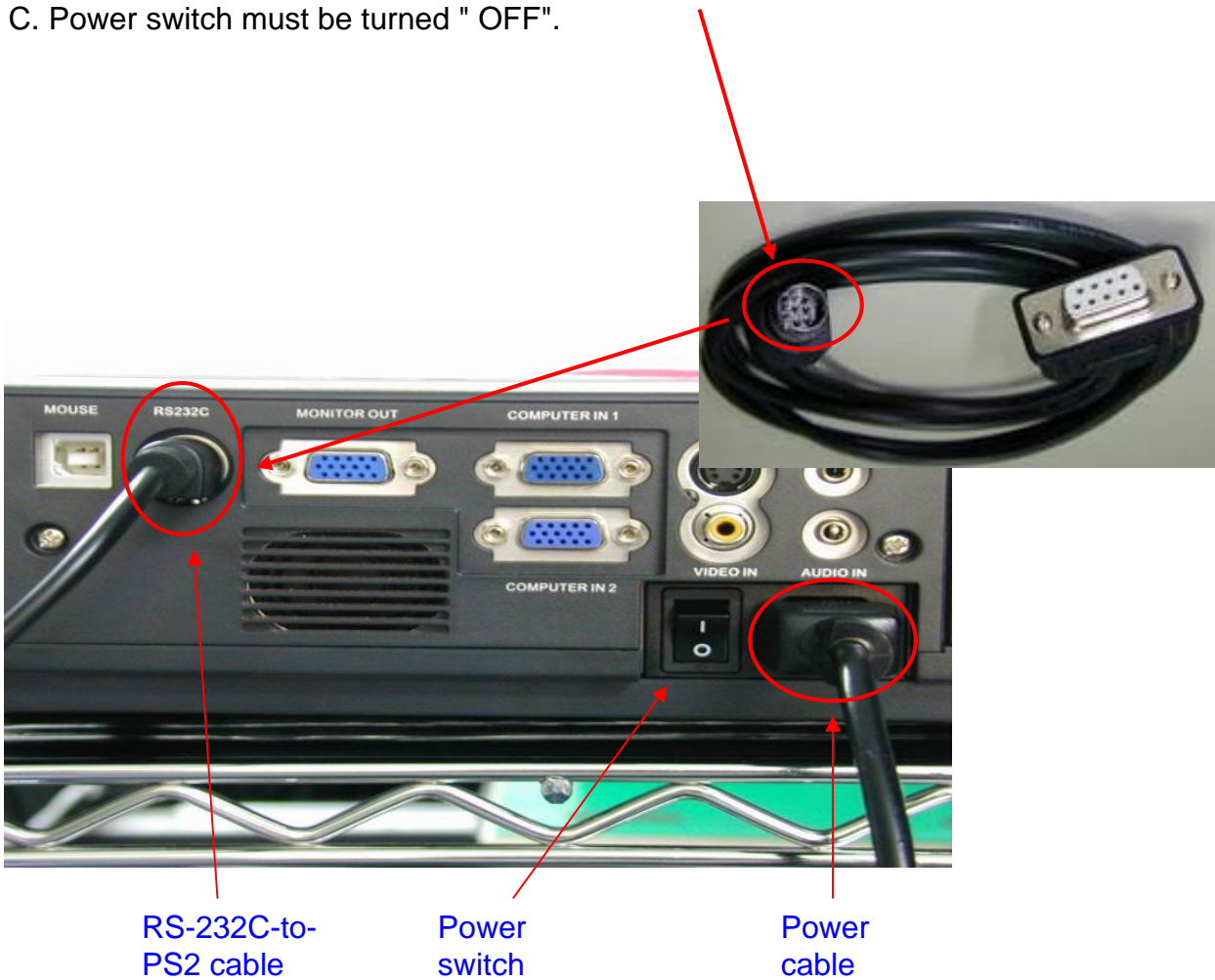
Chapter 2

M/B Firmware Download

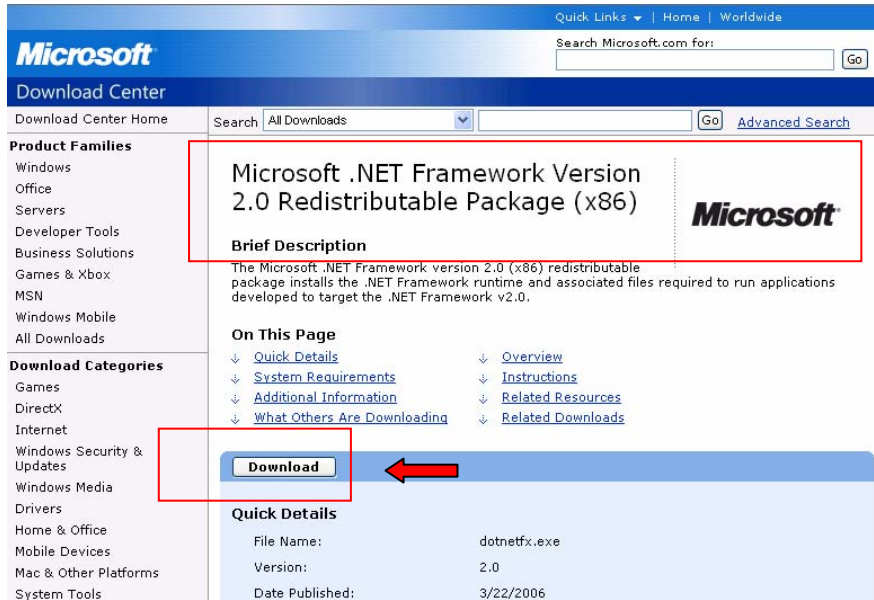
M/B firmware Download SOP

Hardware Connection:

- A. Power cable
- B. RS-232C-to-PS2 cable (part number: 13660016)
- C. Power switch must be turned " OFF".



1. Please make sure your PC had already been installed ” [Microsoft .NET Framework Version 2.0](#) “. If not, please visit Microsoft website to download and install. (Picture 1).



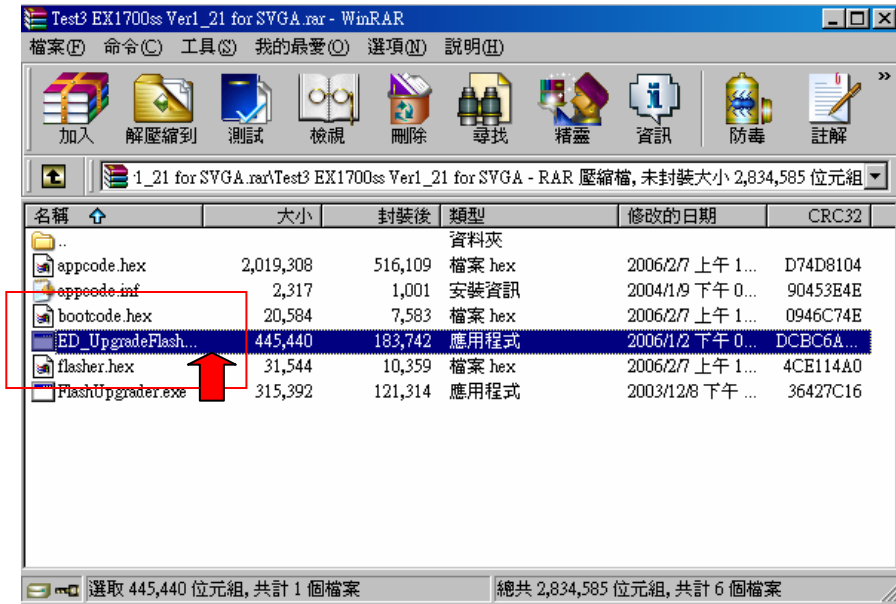
(Picture 1)

2. If you are WinXP and Win2000 user, but can not install ”Microsoft .NET Framework Version 2.0”, Please visit Microsoft website to download and install ”[Windows Installer 3.1](#)” first, then install “Microsoft .NET Framework Version 2.0 ”again. (Picture 2)



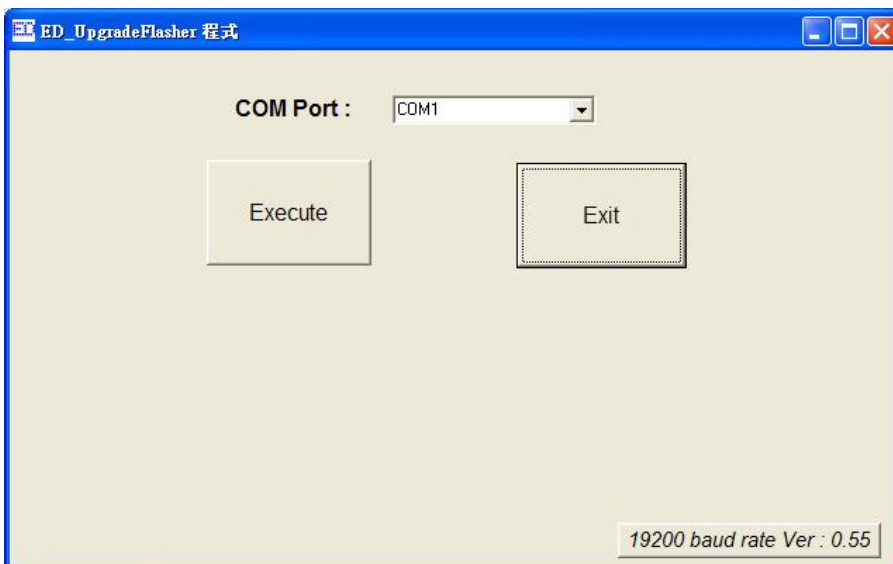
(Picture 2)

3. Please make sure the "Microsoft .NET Framework Version 2.0" had been installed completely. Then, open the firmware folder. Execute the "ED_UpgradeFlasher.exe" (Picture 3).



(Picture 3)

4. After execute the "ED_UpgradeFlasher.exe" (Picture 3), you will see the window (Picture 4). Please select the right COM Port.



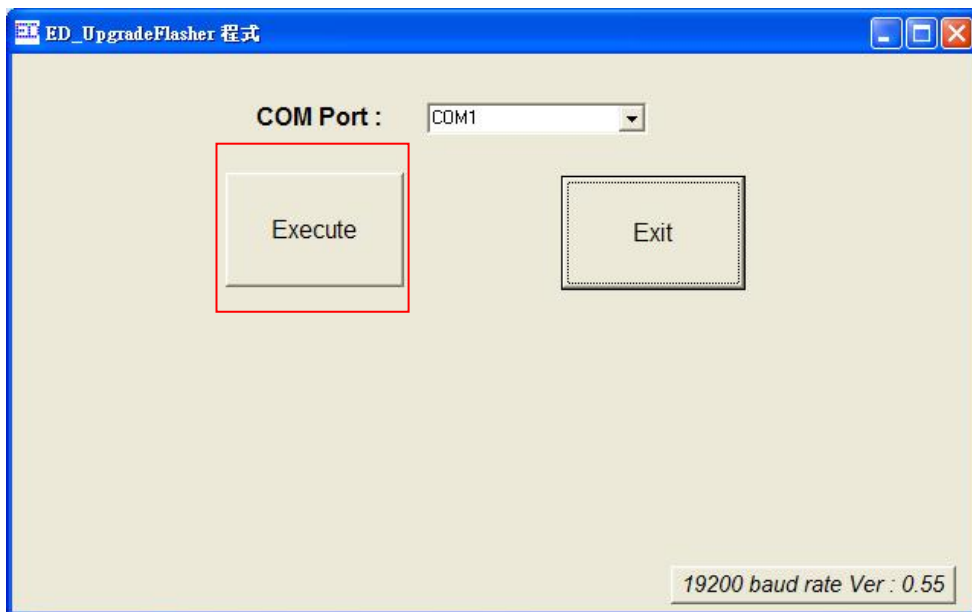
(Picture 4)

(Picture 4)

5. Please “ turn on” the power switch of the projector (Picture 5), and execute the “Execute” button (Picture 6).

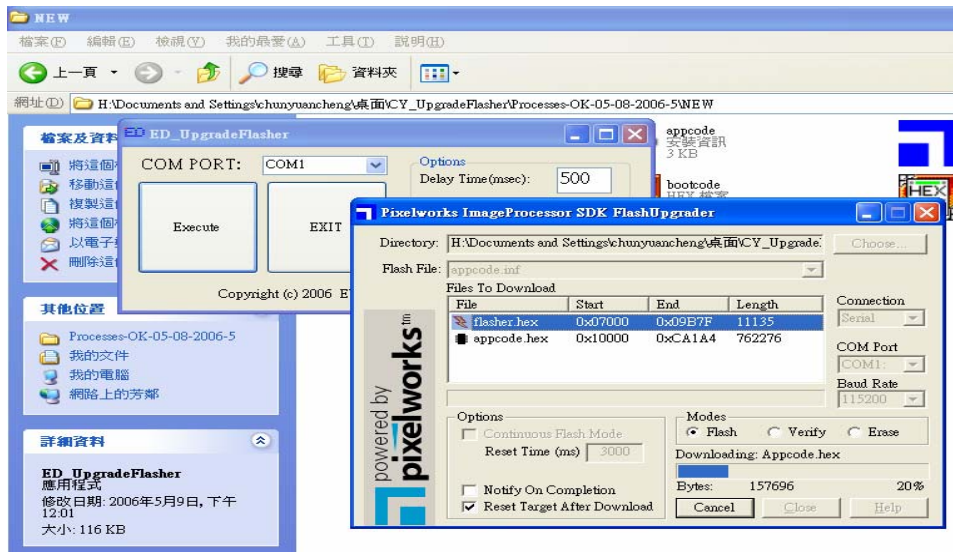


(Picture 5)



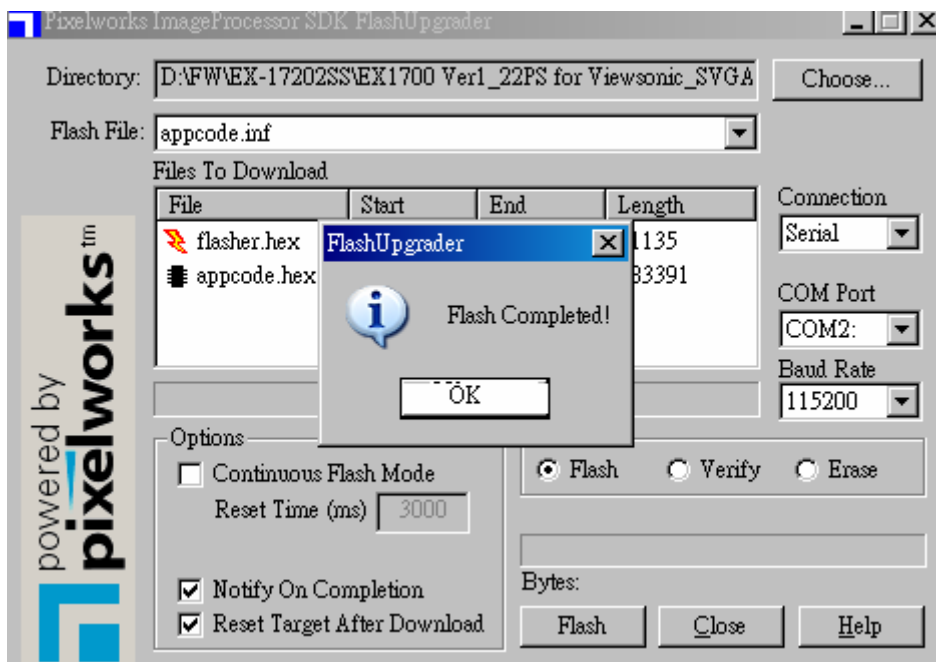
(Picture 6)

6. The PixelWorks ImageProcessor SDK FlasherUpgrader will process automatically (Picture 7).



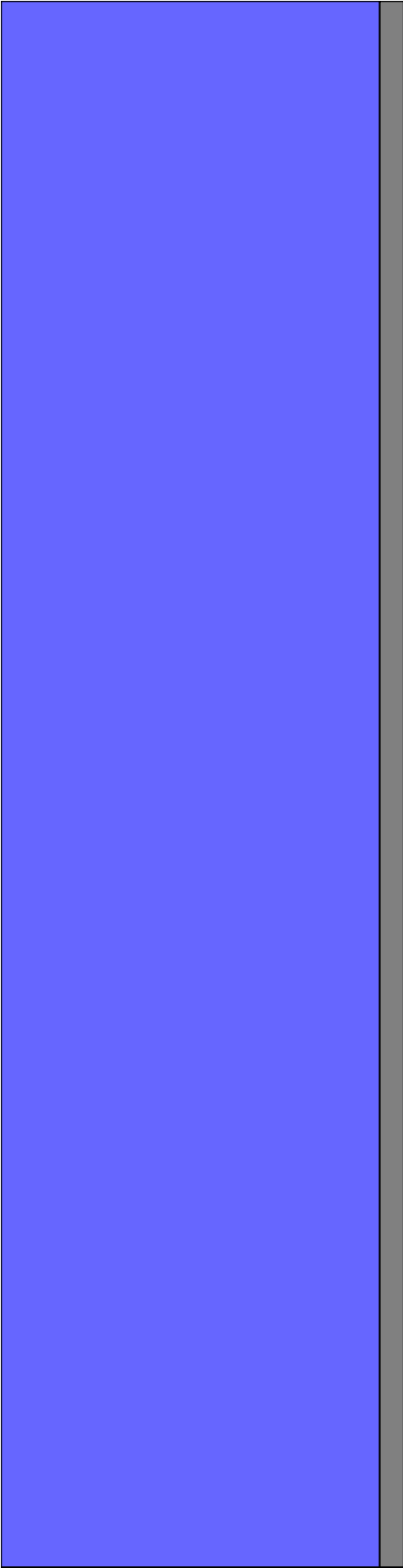
(Picture 7)

7. When the firmware is flashed completely, you will see the below picture (Picture 8). Please press “OK” to quit this program.



(Picture 8)

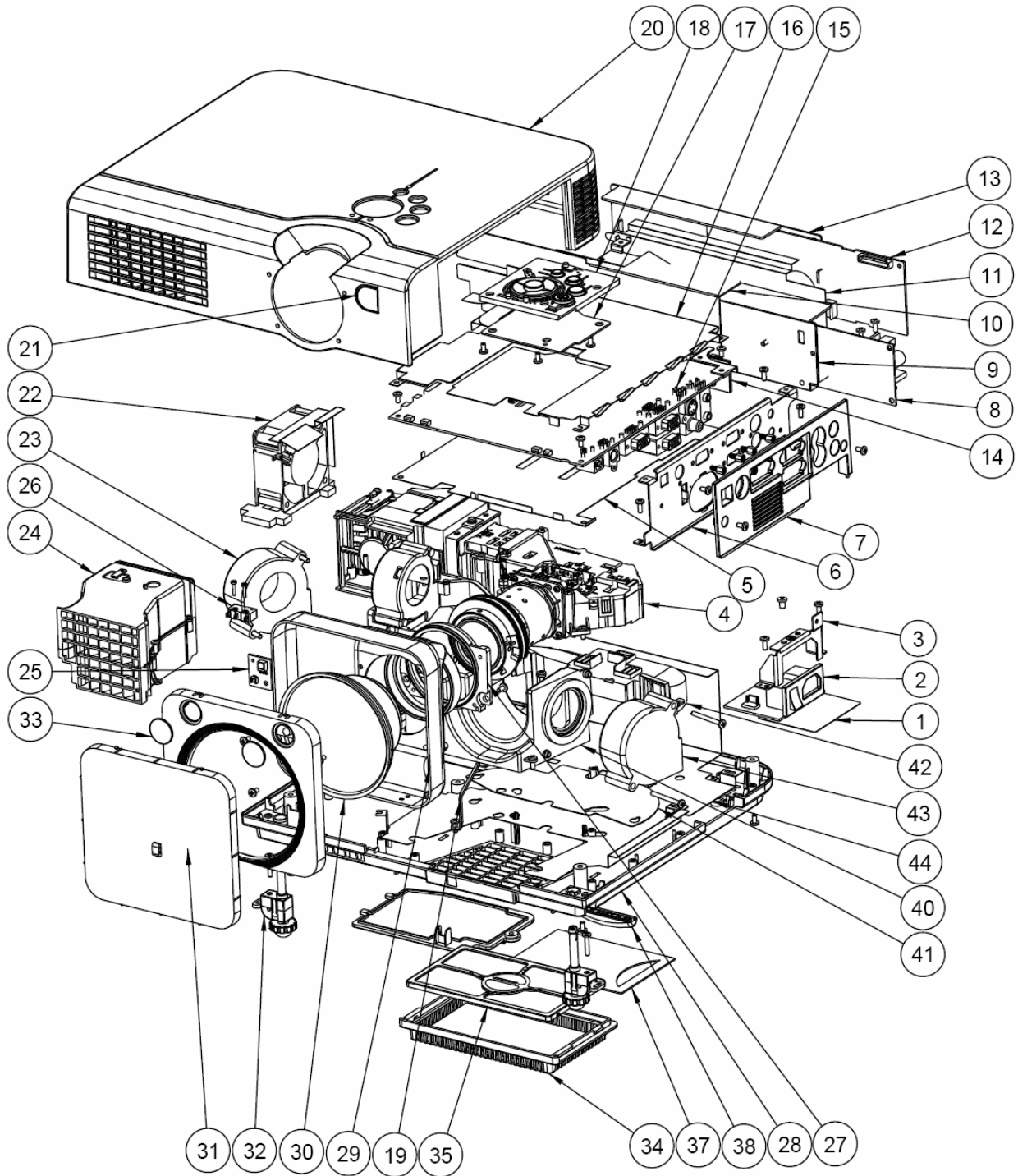
8. If you need to re-flash another projector, please repeat Item 4 to 7 steps.



Chapter 3

Disassembly

Disassembly



- Parts List

No.	Name	Qty	No.	Name	Qty
1	Mylar AC PF	1	26	Cover SW	1
2	AC filter	1	27	Lens adaptor	1
3	Plate AC Filter	1	28	Case BTM A	1
4	Optical engine assy. with LCD panel	1	29	Lens Housing	1
5	Cover bottom MB EMI	1	30	Conversion lens	1
6	MB plate	1	31	Lens Cover	1
7	IO case	1	32	Adjust foot A	1
8	Ballast	1	33	CMOS Front Panel	1
9	Ballast case	1	34	Case Inlet Cover MO2	1
10	Plate ballast EMI MO1	1	35	Case Inlet Press A	1
11	FRPP	1	36	Cover lamp	1
12	Power supply	1	37	Card holder	1
13	Power case	1	38	Rubber foot back	1
14	IR B assy.	1	39	Case BTM EMI	1
15	Main Board	1	40	Case flow in	1
16	Cover top MB EMI	1	41	Pronpet Flow Base	1
17	Keypad board	1	42	Case Air Panel	1
18	Case keypad	1	43	Blower fan 1 toto TYF450 LJ05	1
19	Plate MB GND	1	44		
20	Case top A	1	45		
21	IR Filter	1	46		
22	Inlet fan AD0612 HB-A72GL	1	47		
23	Blower fan 2 toto TYF400 LJ09	1	48		
24	Assy. Exhaust	1	49		
25	IR receiver	1	50		

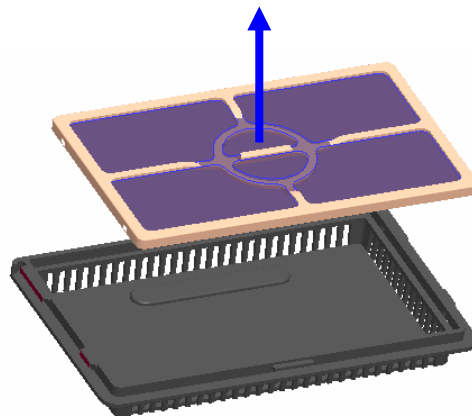
- Screws List

No.	Specification	Q'ty	Be used to	Photos
1	Z3*30	4	Blower	
2	M3*8	12	Top cover(5), Case IO(2), Lamp cover(1) , Lens Housing (4)	
3	BM2*10	2	Cover switch	
4	BM3*8	25	Case flow in Assy(3), AC Filter(2), Power supply(4), Ballast(2), Case air panel(5), Plate MB GND(1), Plate IO(1), IR F(1), Lens Housing (2), Exhaust duct(2), MB(2)	
5	M2.6*18	2	Adjust foot	
6	M3X6	4	OP Engine	
7	M3*5+Washer	2	Lamp holder	
8	M3*6+Washer	5	MB(4), Plate IO(1)	
9	BM3*5+Washer	1	AC Filter	
10	M4*6	1	AC Filter(Ground)	
11	HEX Hand M2.8*7	6	Plate I/O	
12	M3*5+Washer	2	Lens adapter	
13	M3*5	4	Key Pad	

Disassembly SOP

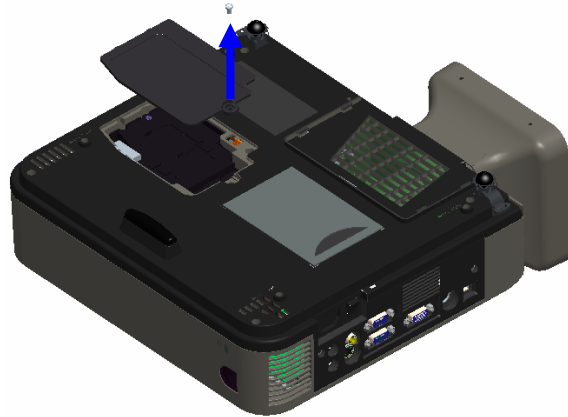
1. Bottom Cover Sponge Disassembly

- A. Push Case Inlet Cover out of slot
- B. Take Sponge off



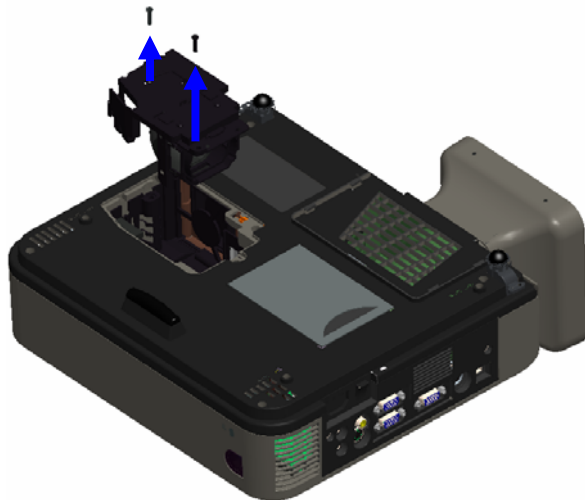
2.Lamp Module Disassembly

- A. .Take off Screw BM3x8 1 pcs
and remove Lamp Cover



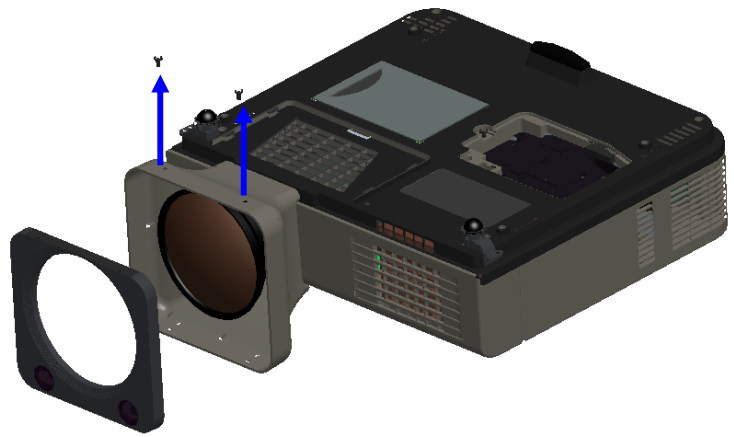
- B.Take off Screw BM3x12 2 pcs from
Lamp Module

- C.Pull Lamp Module out

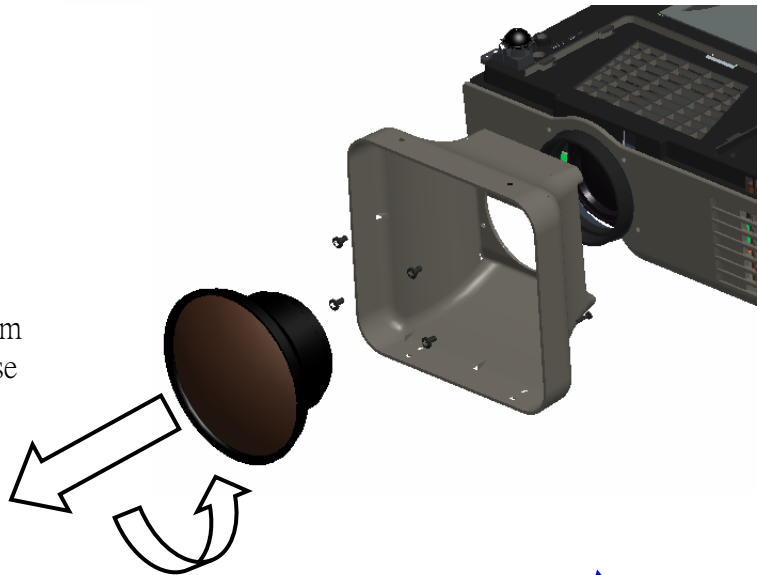


3.Top Cover Disassembly

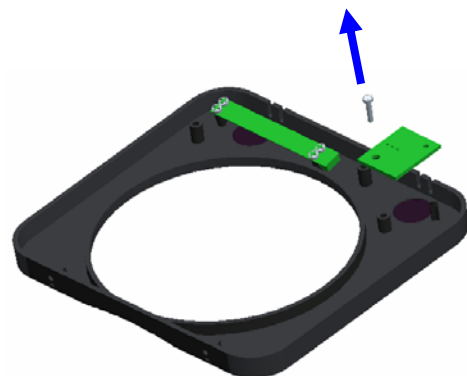
A. Take off Screw BM3x8 2 pcs from Conversion cover



B. Take off Screw M3x8 4 pcs from Conversion cover reverse clockwise



C. Unscrew BM3x8 1 pcs to take off IR receiver



4. Top Cover Disassembly

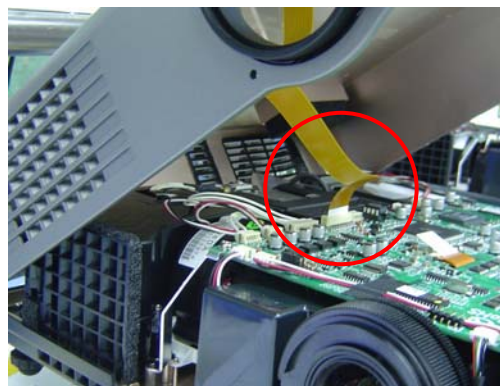
A. Unscrew 5 pcs M3*8 screws



B. Turn projector around and take top case off

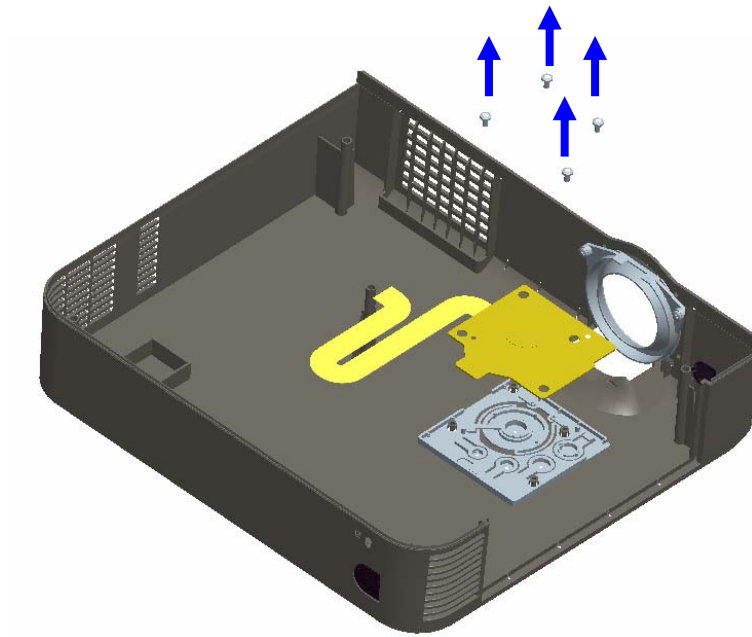


C. Pull out Keypad FPC cable carefully



5. Key Pad Disassembly

A. Take off 4 M3*5 screws



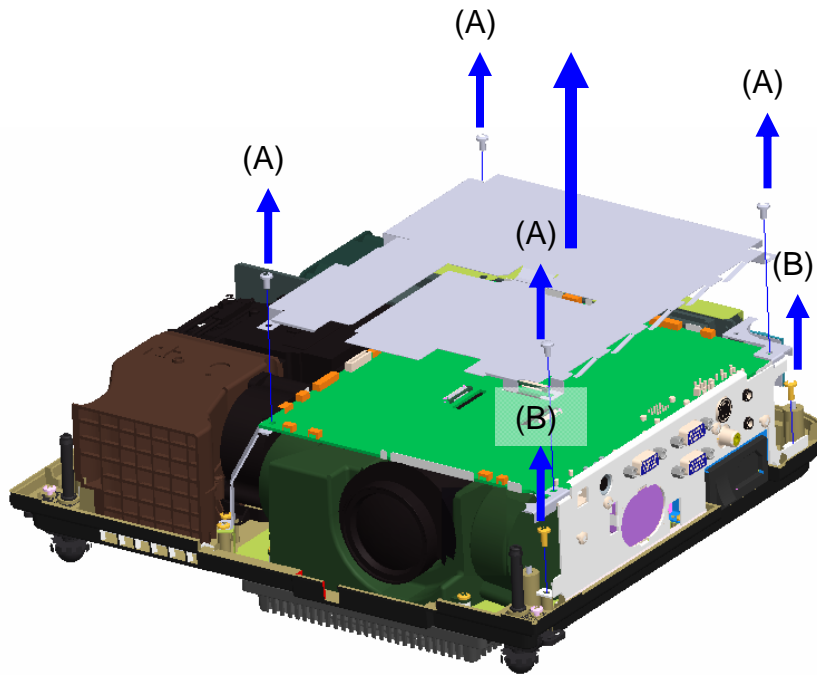
6. IO Case Disassembly

A. Take off 2 M3*8 screws

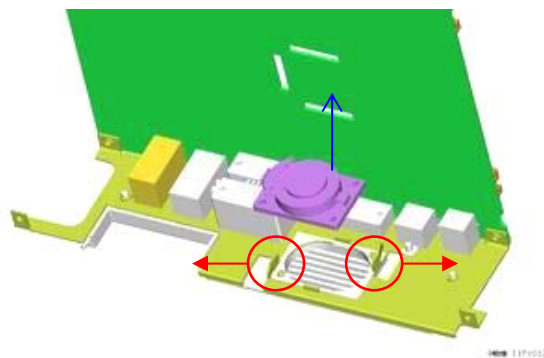


7. Main Board Disassembly

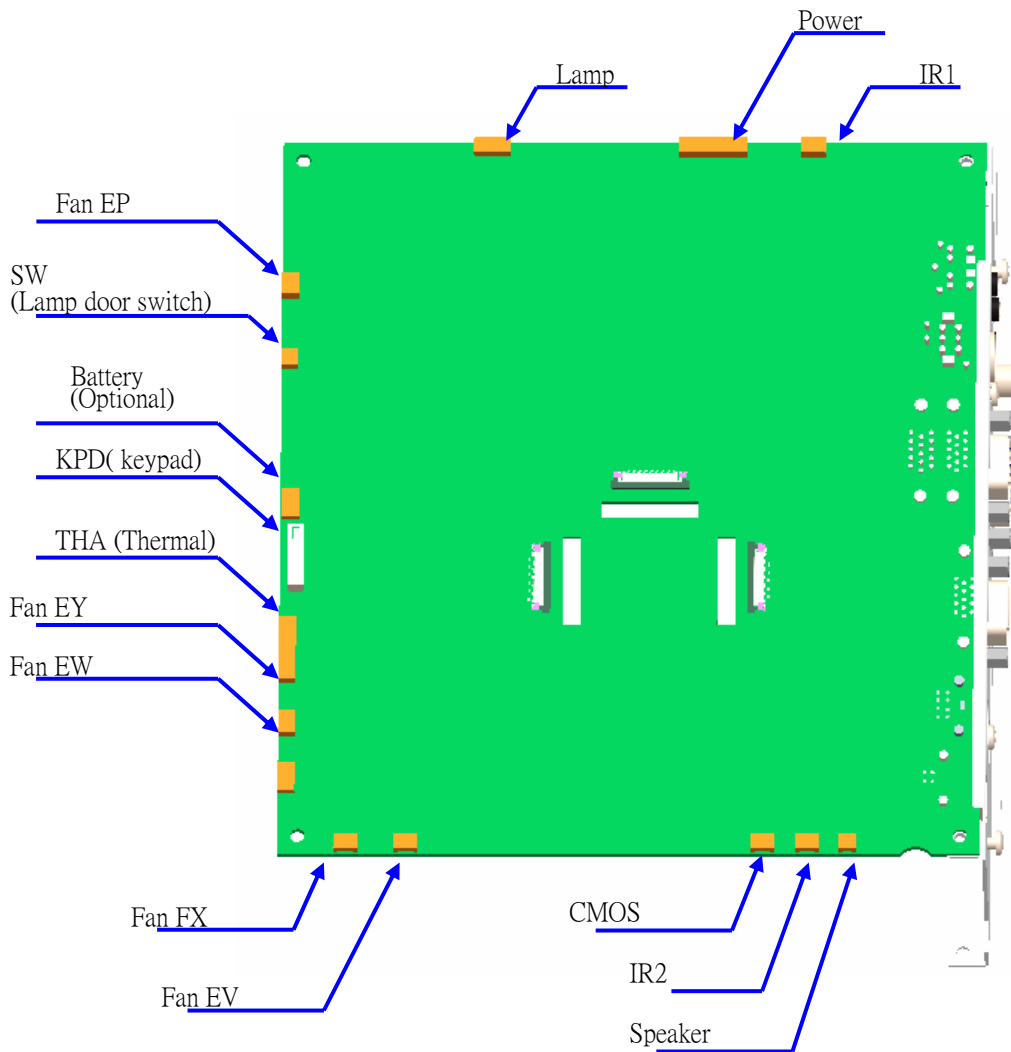
- A. Take off 4 pcs M3*6+washer (A)
- B. Unassemble EMI_Top_Cover carefully.
- C. Take off 2 pcs BM3*8 (B)



C. Take out speaker (no screw)

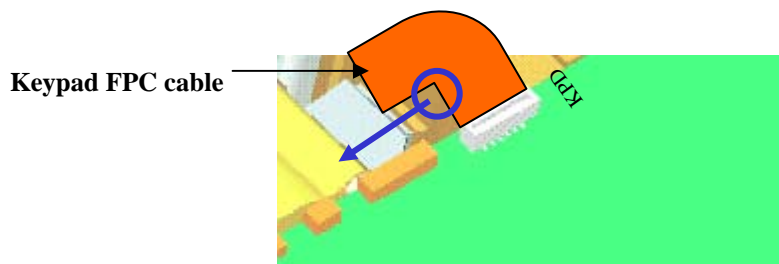


8. Main Board Connections



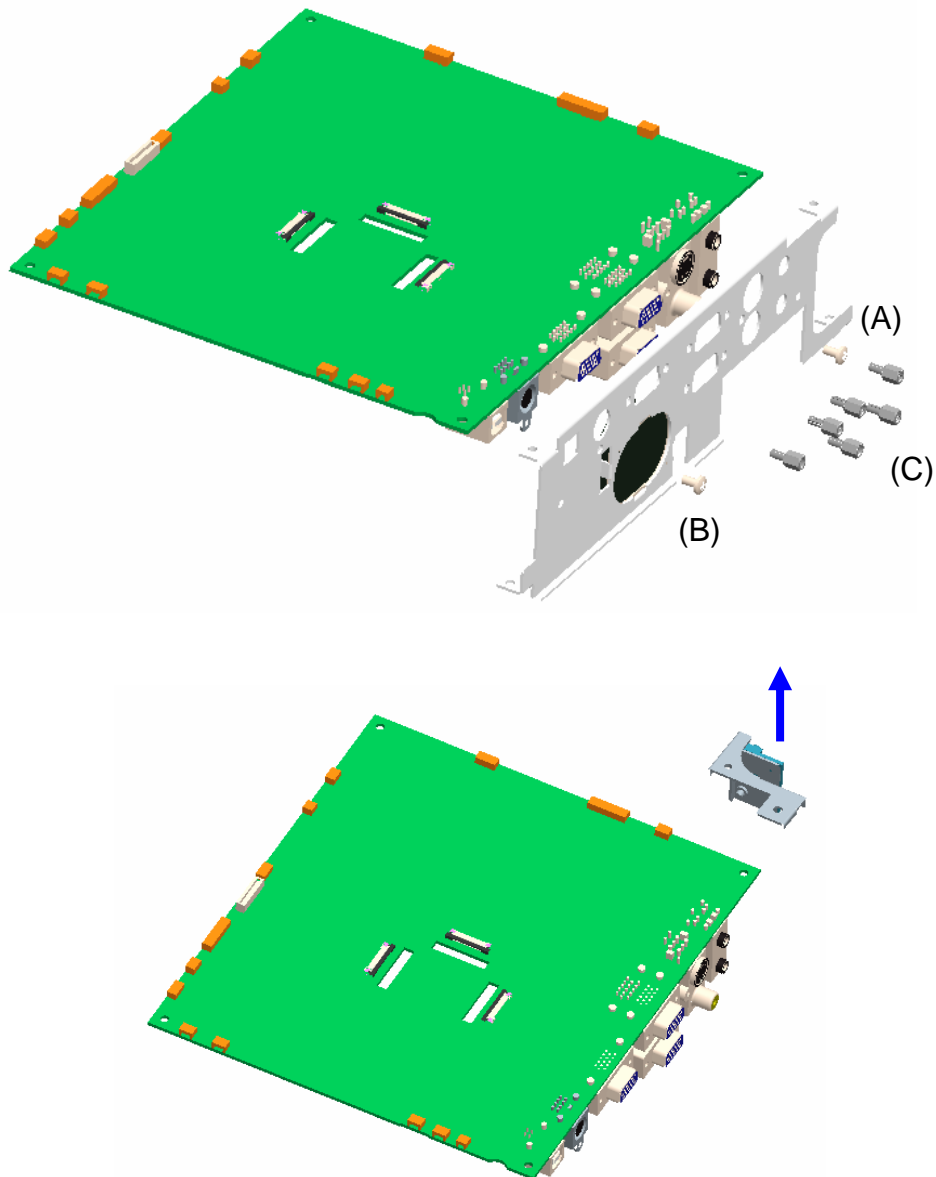
•Caution :

Make sure the direction of Keypad FPC cable , if the direction is wrong , the keypad will no function



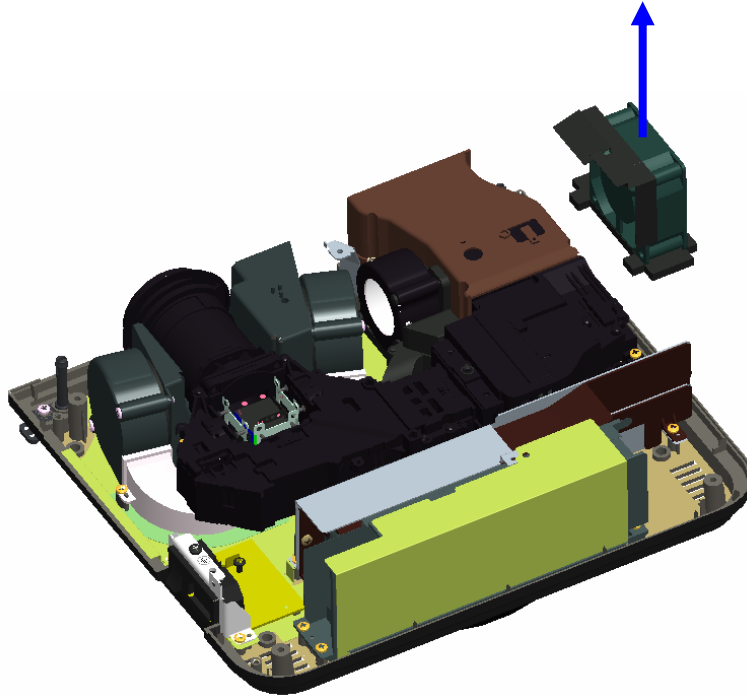
9. M/B Plate, IR Assy Disassembly

- A. Unscrew 1pcs M3*8(A)
- B. Unscrew 1pcs BM3*8(B)
- C. Unscrew 6pcs HEX Head M2.8*7(C) to take of M/B plate
- D. Carefully take apart EMI_Bottom_Cover to avoid dropping it down.
- E. Unscrew 1pcs M3*6+Washer to take off IR Assy.



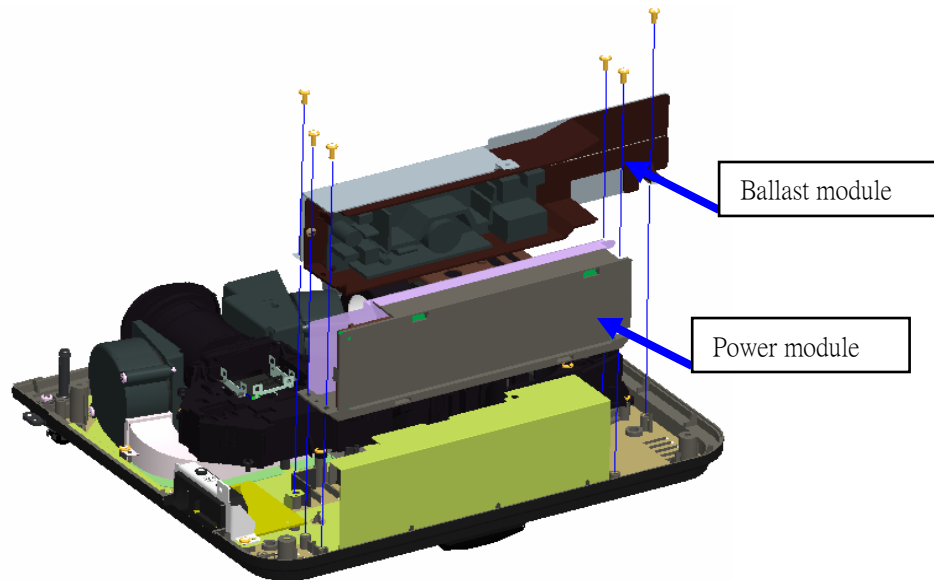
10. Inlet Fan Disassembly

A. Take off Fan (no screws).

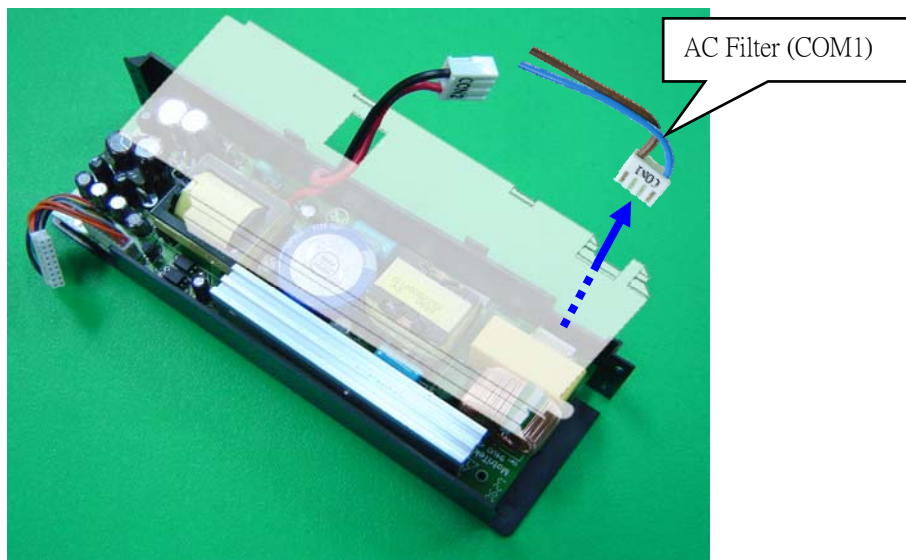


11. Power Supply Module Disassembly

A. Unscrew BM3x8 6 pcs to take off Power and Ballast Module holder

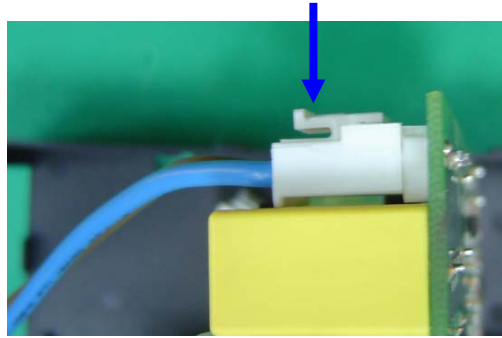


B. Remove cover protection sheet as below picture

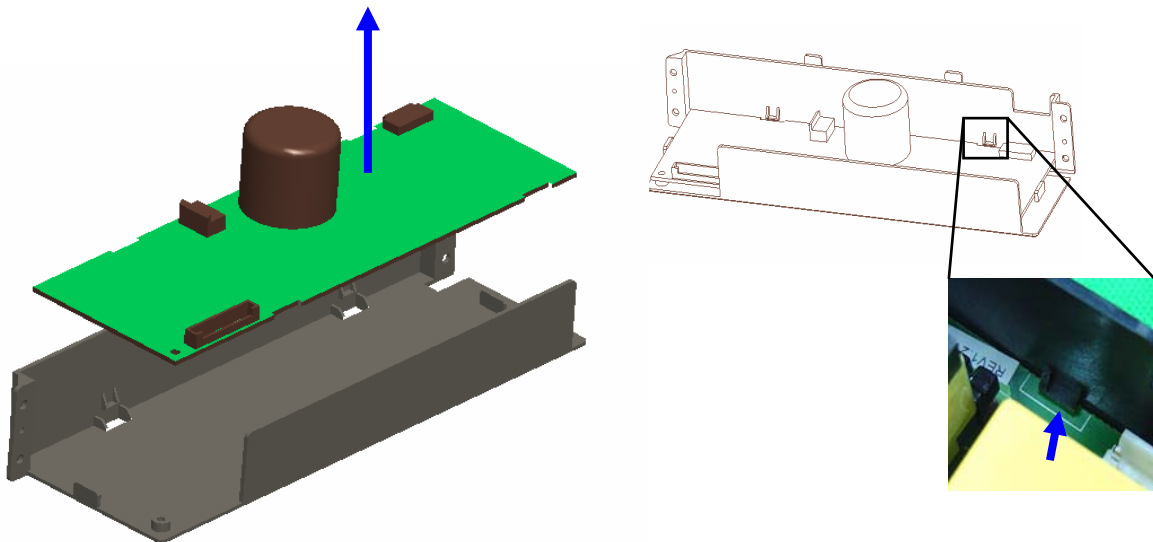


12. Power Supply Module Disassembly

C. Take off COM1 and COM2 Jack by pressing and pulling out the hook as picture below

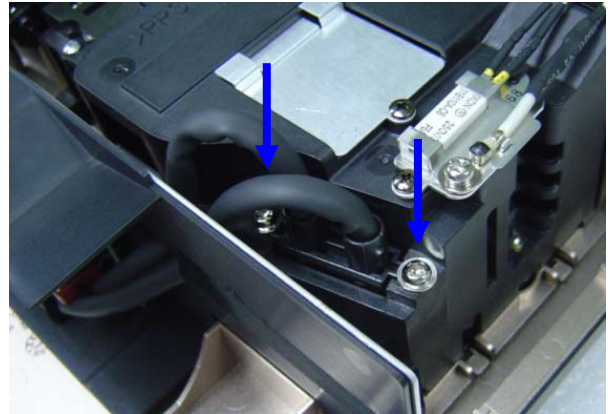


D. Take Power Module holder out of 4 hooks

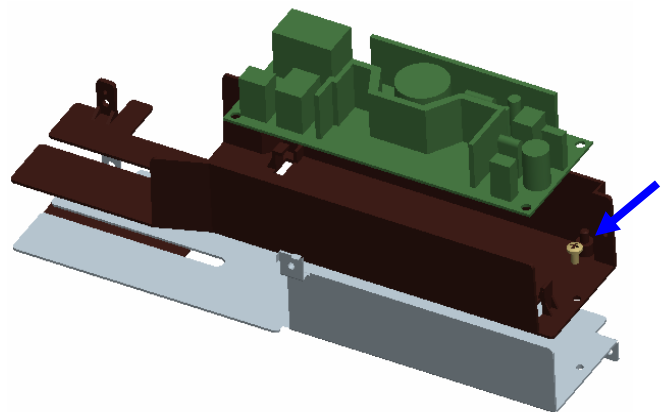


13. Ballast Module Disassembly

A. Unscrew 2pcs M3*5+Washer to take off ballast Jack

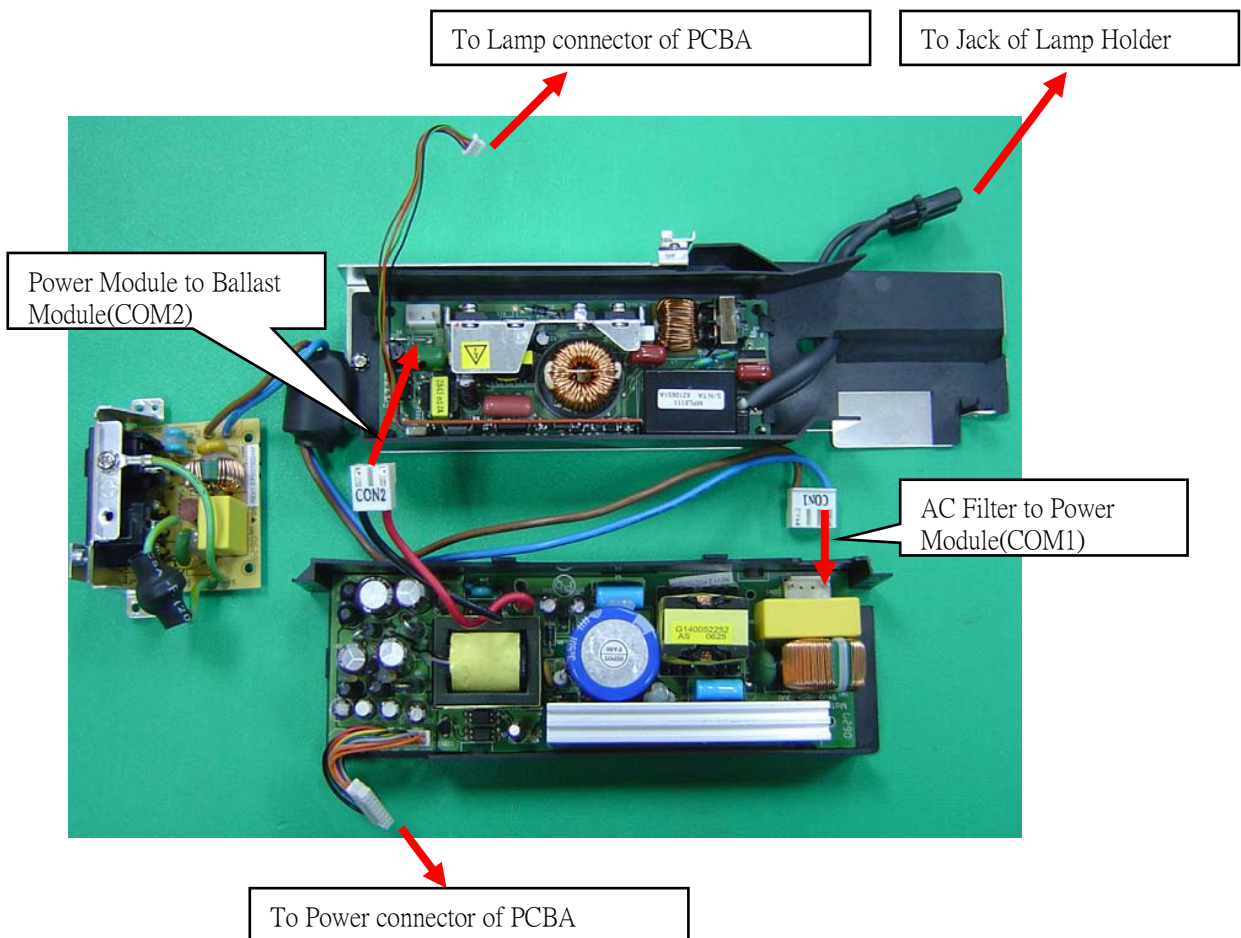


B. Unscrew BM3x8 1 pcs to disassemble Ballast Case and Plate Ballast EMI MO1



14. Ballast / Power Supply Module Connect

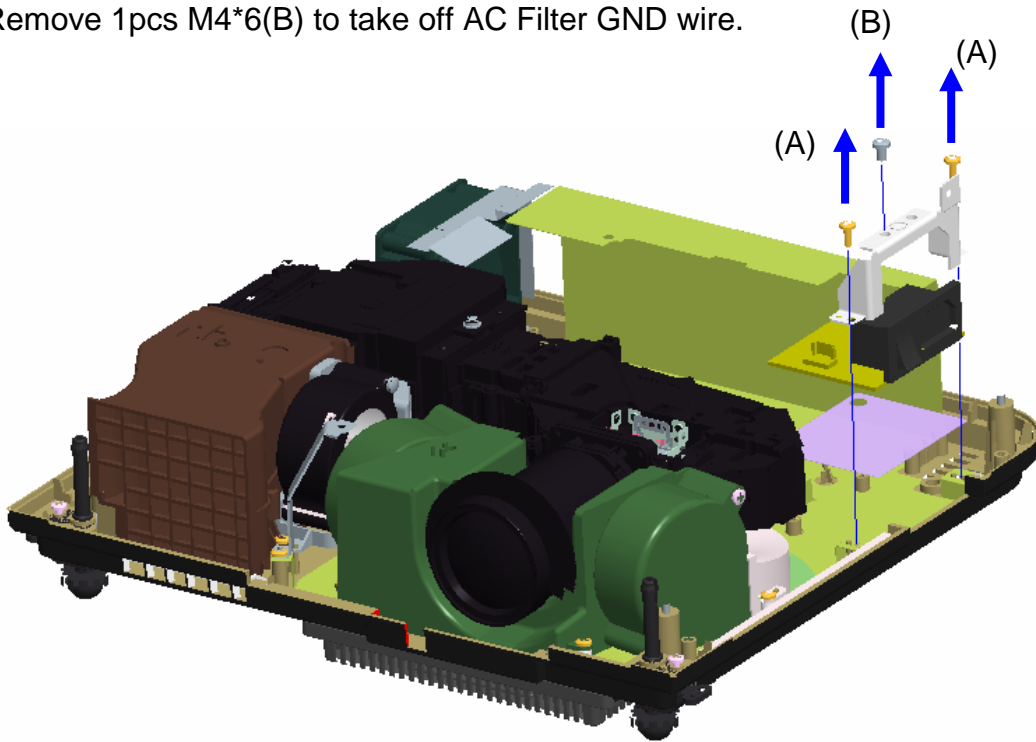
A. Make sure the connection of Ballast / Power Supply Module to other parts is correct



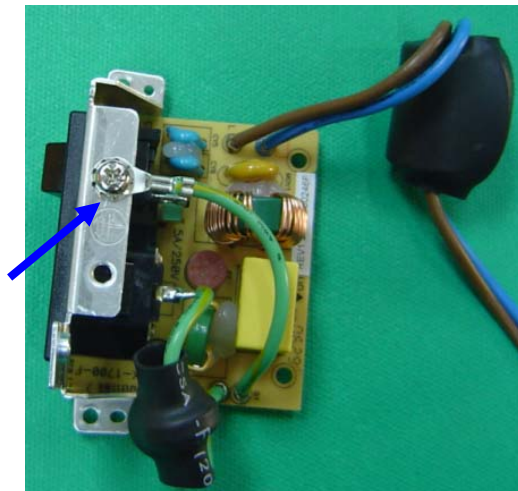
15. AC Filter Disassembly

A. Unscrew 2pcs BM3x8(A) to take off AC Filter.

B. Remove 1pcs M4*6(B) to take off AC Filter GND wire.

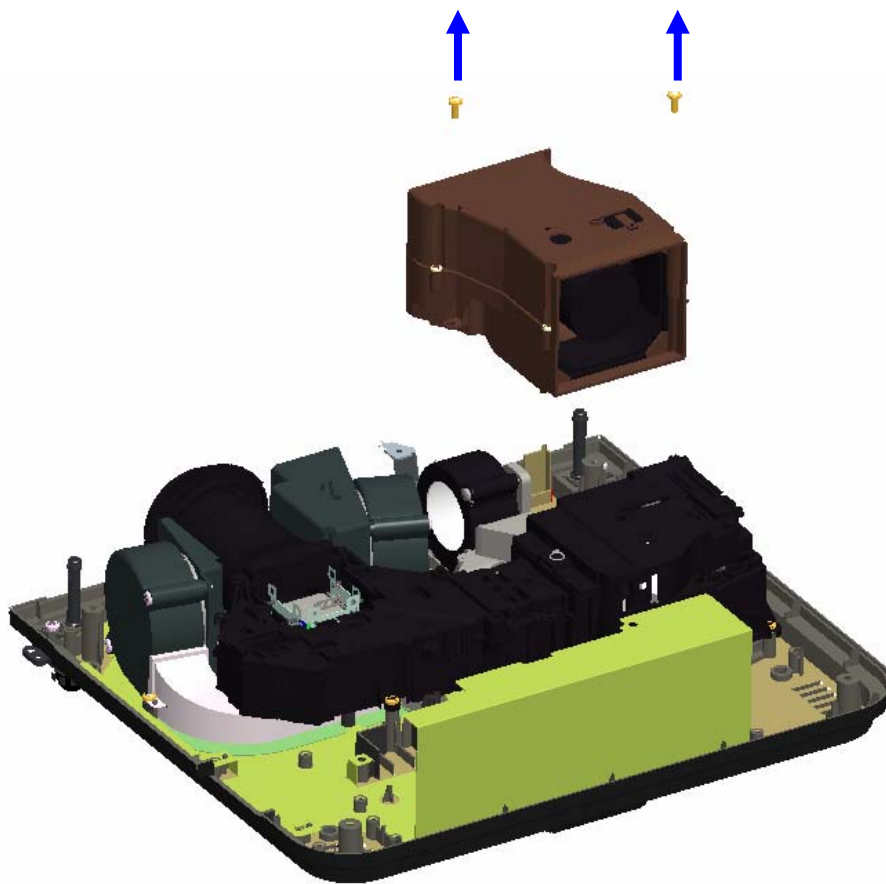


B. Make sure AC filter is grounded



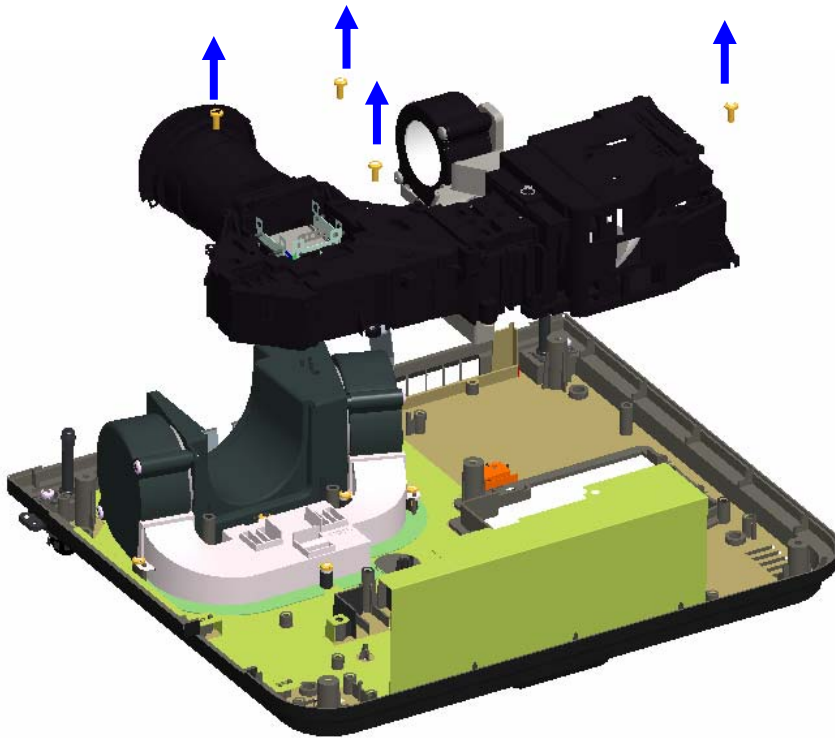
16. Take out Exhaust Duct

A. Unscrew BM3x8 2 pcs to take off Exhaust Duct module as below picture



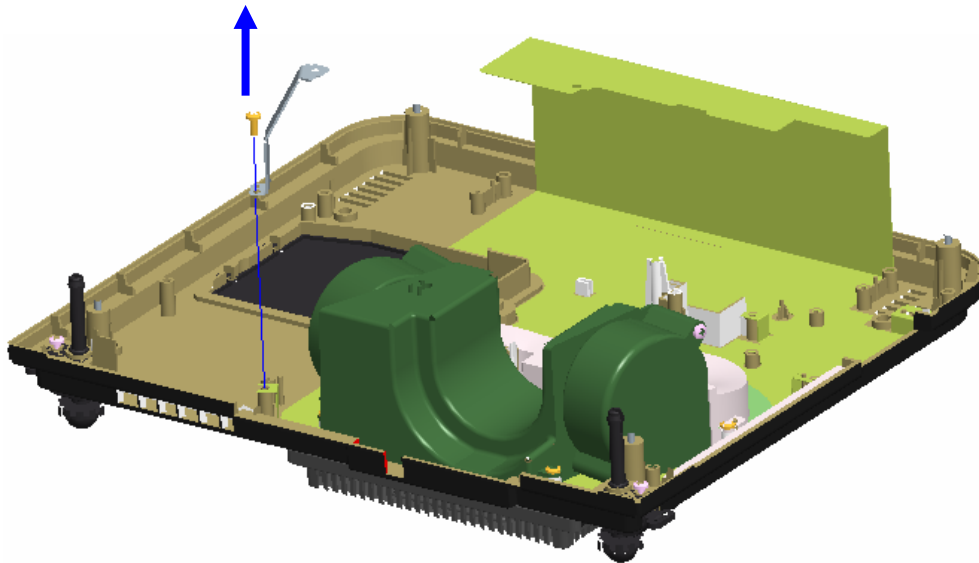
17. Take out Optical Engine Module

A. Unscrew M3x6 4 pcs to take off Optical Engine module as below picture



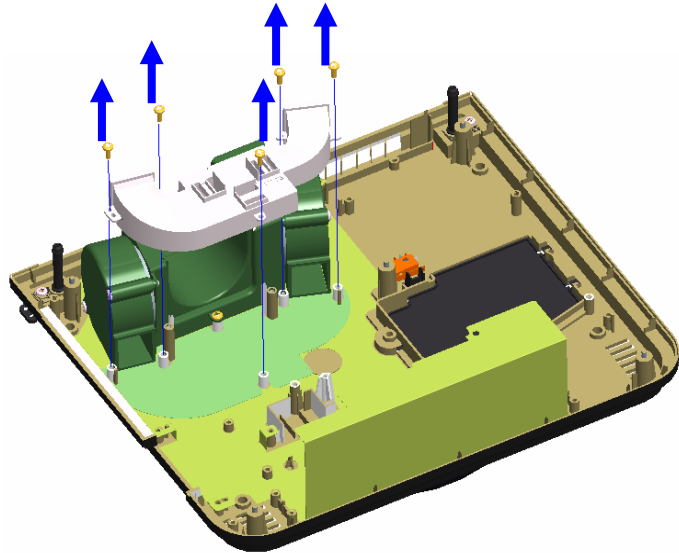
18. Take out Plate_MB_GND

A. Unscrew BM3x8 to disassemble Plate_MB_GND part.



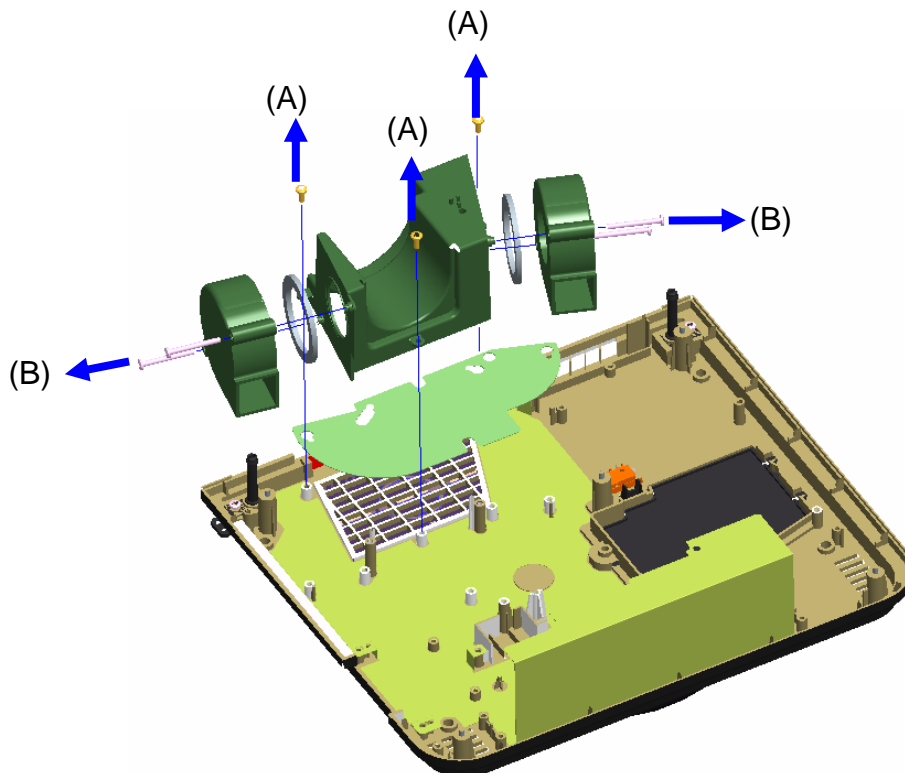
19. Case Air Panel and Flow Disassembly

A. Unscrew 5 pcs BM3*8 to take off Case Air Panel



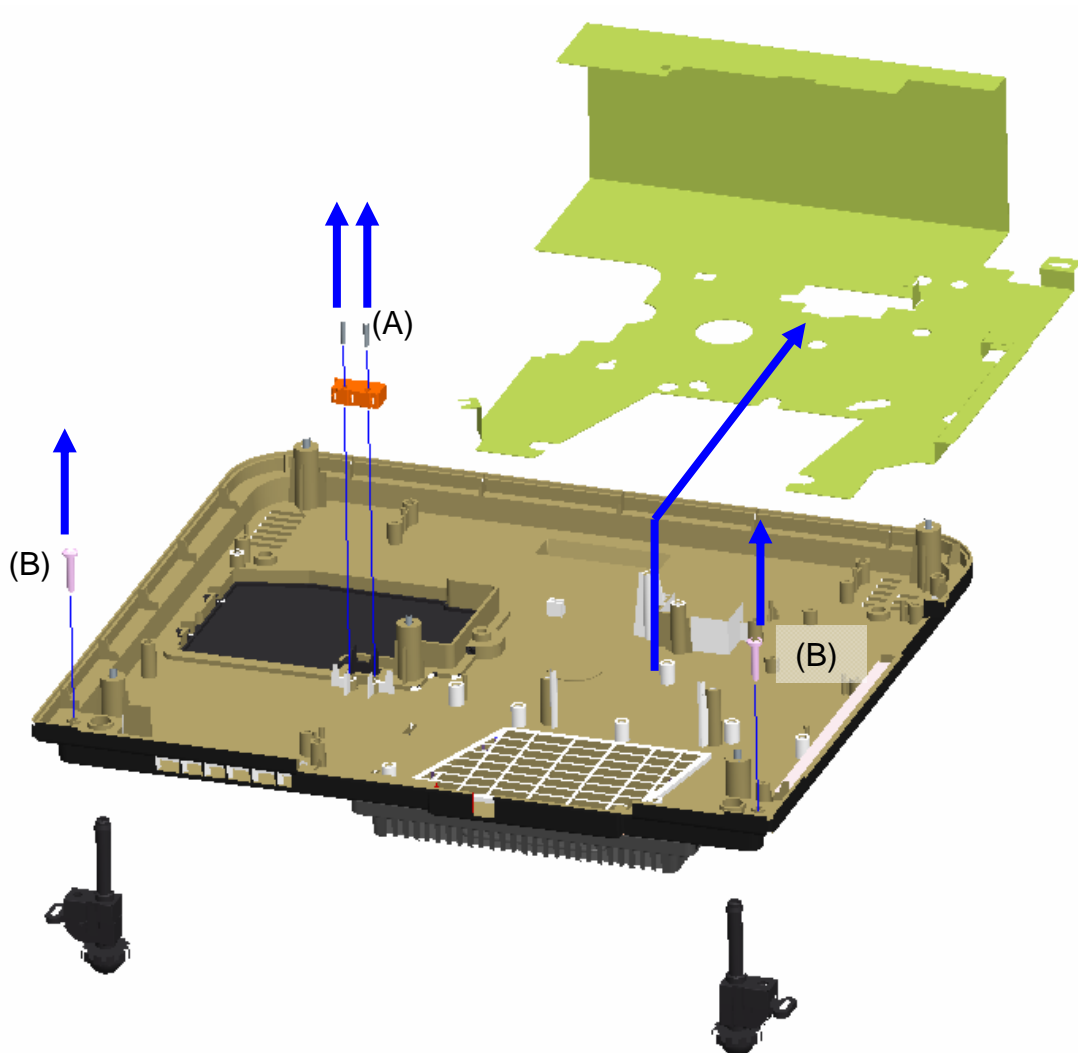
B. Unscrew 3pcs BM3*8(A) to take off Case Flow IN

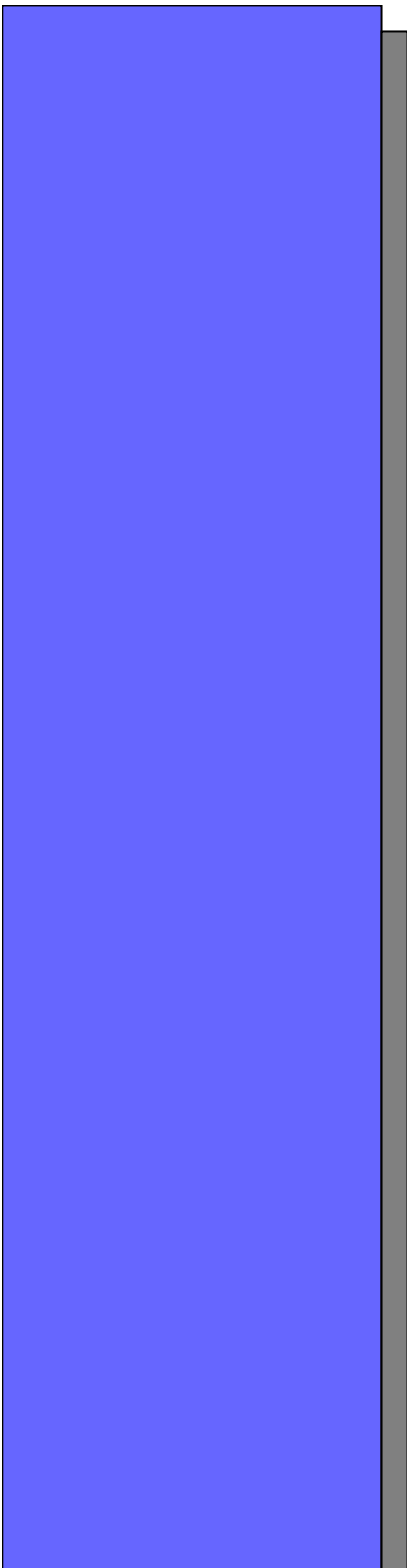
C. Unscrew 4pcs Z3*30(B) to take off Blowers



20. Cover SW, Adjust foot A, Case BTM EMI

- A. Unscrew 2pcs BM2*10(A) to take off Cover SW
- B. Unscrew 2pcs M2.6*18(B) to take off Adjust foot A





Chapter 4

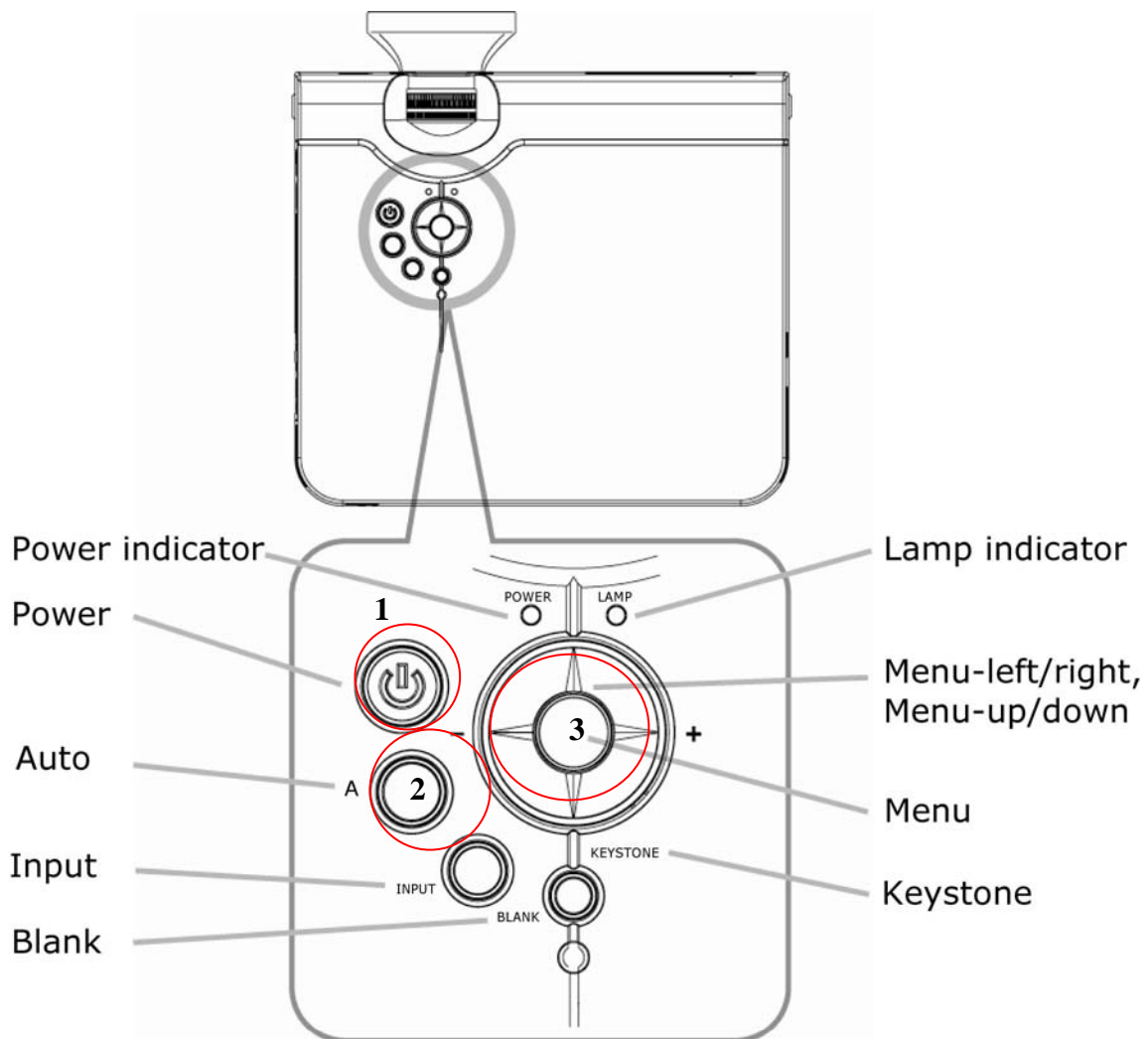
Service mode

and

Calibration

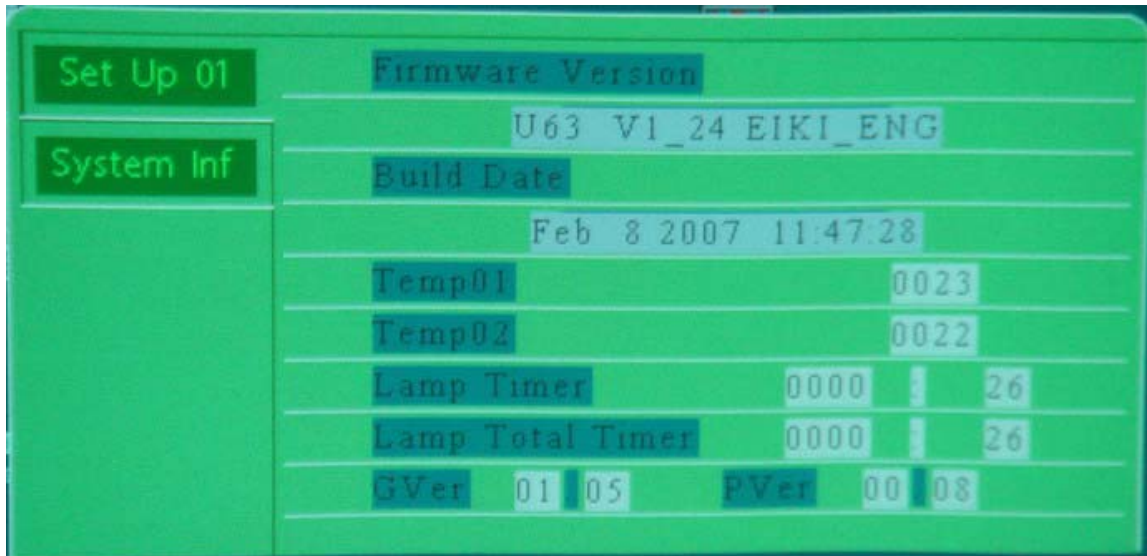
4-1 Service mode (hidden from end users) for Service Repair Center only

- 1) Press button sequentially: POWER → AUTO → MENU
(Please press as quickly as possible after start-up logo disappears.)

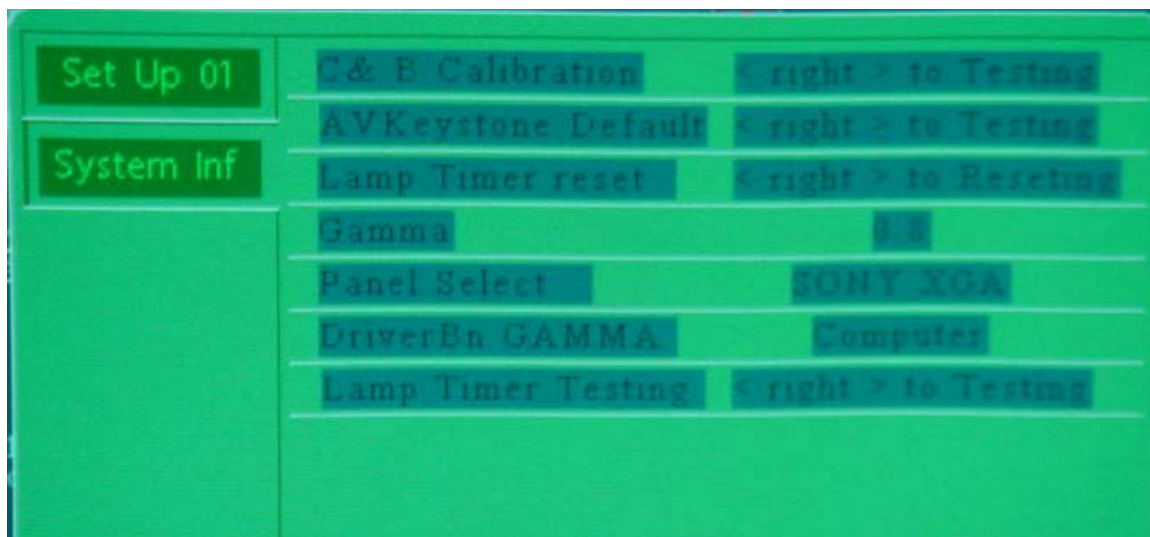


Service mode & Calibration

- 2) You will see the image as below:
a. Page: Set Up 01



- b. Page: System Inf



II) Service mode :

A. Set Up 01

A-1: Firmware Version: The firmware version which used at the projector.

A-2: Build Date : Firmware build date

A-3: Temp01 : Temperature of inlet ventilation area

A-4: Temp02 : Temperature of projector lamp

A-5: Lamp Timer : Lamp operation hours. It will be reset after execute Lamp Timer Reset function.

A-6: Lamp Total Timer: The total system operation hours which can not be reset.

A-7: GVer : Gamma Version

A-8: PVer : PIC Version

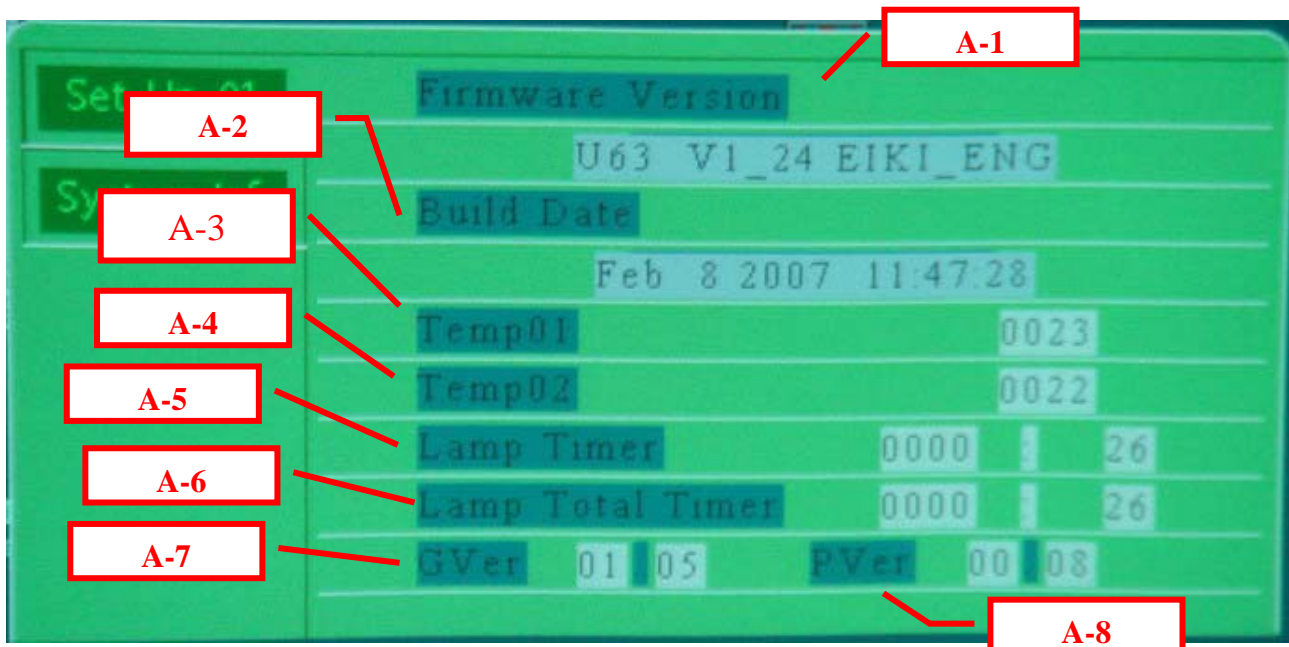


fig 2

II) Service mode :

B. System Inf

B-1: C&B Calibration: Contrast and Brightness calibration adjustment.
projector.

B-2: A V Keystone Default: Auto Vertical Keystone function reset

B-3: Lamp Timer reset: To reset lamp timer when replace new lamp.

B-4: Gamma : For EDI internal used only

B-5: Panel Select : Panel manufacturer

B-6: DriverBn Gamma : The current input signal source at projector

B-7: Lamp Timer Testing: For EDI internal testing purpose only.

PS: If you execute the" Lamp Timer Testing" function, the lamp timer will show "1999" operation hours and the alarm system will remind you to replace lamp.

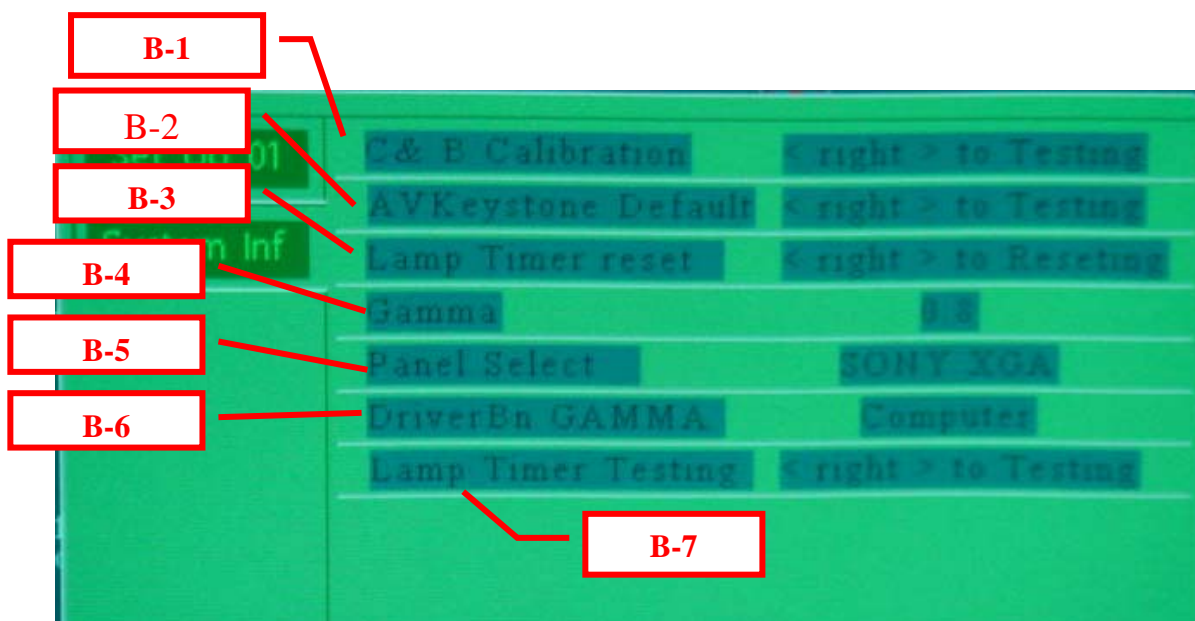


fig 2

C. Lamp Timer Reset:

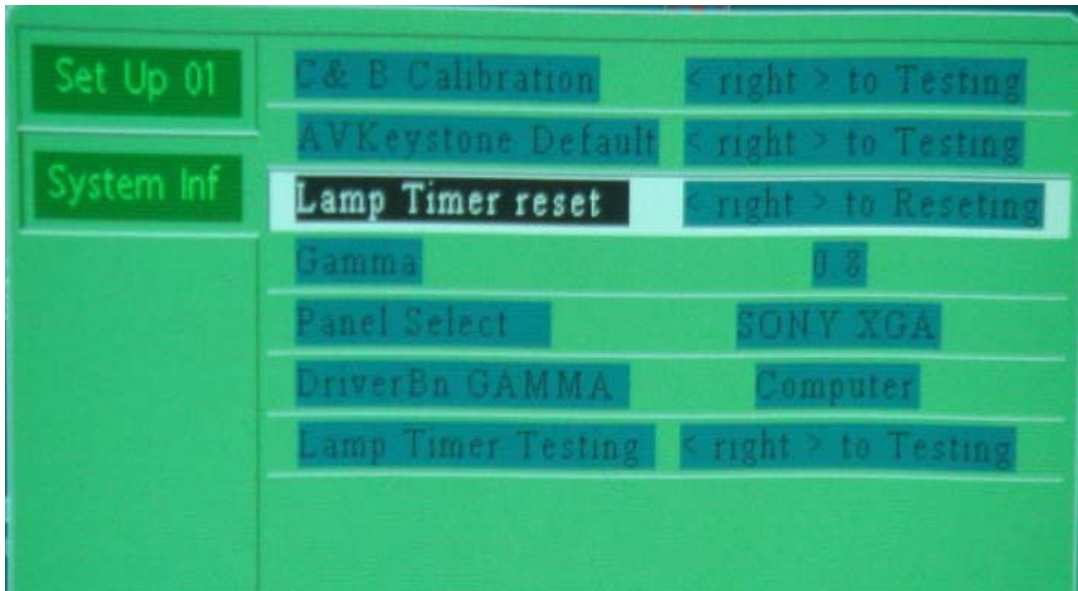


fig 3

- a. Select "Lamp Timer Reset "
- b. Press "right key "
- c. Confirmation information shows up as fig 4

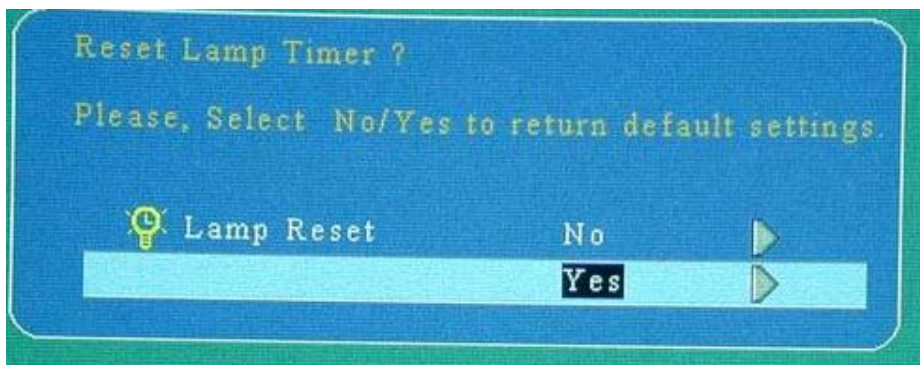


fig 4

- d. Select "Yes "
- e. Press "right key "

D) Auto Keystone Calibration

- a. Make sure the surface where the projector is put is horizontal (no slope) as fig 5



fig 5

- b. Enter "Service mode" (Press button sequentially "POWER→AUTO→MENU " on keypad)
- c. Select page "System Inf " as fig 6
- d. Select " AV Keystone Default "
- e. Press "right key "

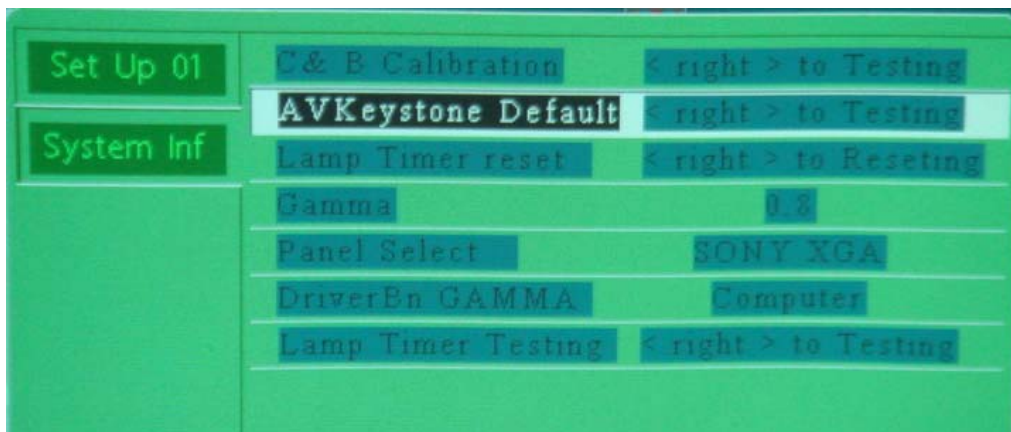


fig 6

Service mode & Calibration

E) Contrast and Brightness Calibration

a. Select pattern as fig 7

Note :

Model XGA: select "XGA EX17 C&B".jpg

Model SVGA: select "SVGA EX17C&B".jpg

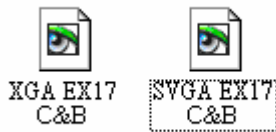
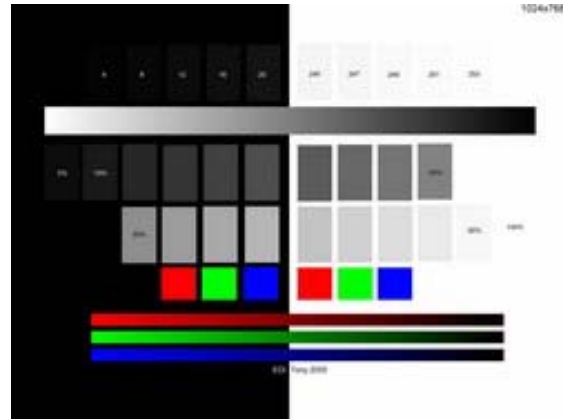


fig 7



(Please ask Service Center for these files.)

b. Select OSD → Picture →

Display mode → Natural mode

(as fig 8)

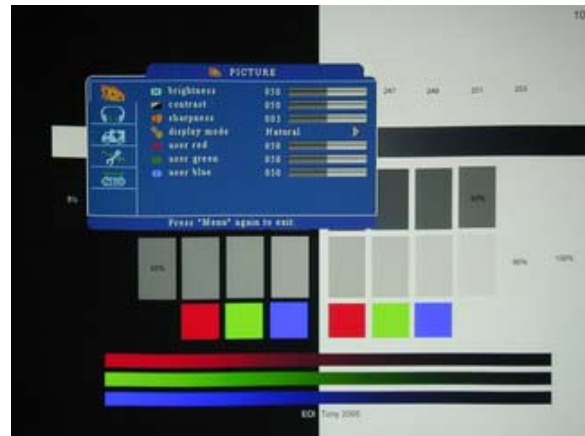


fig 8

c. Enter "Service mode"

(Press "POWER → AUTO → MENU" on keypad)

d. Select page "System Inf"

e. Select "C & B Calibration" fig 9

f. Press "right key"

g. Confirmation information shows up as fig 10

h. Press "right key"

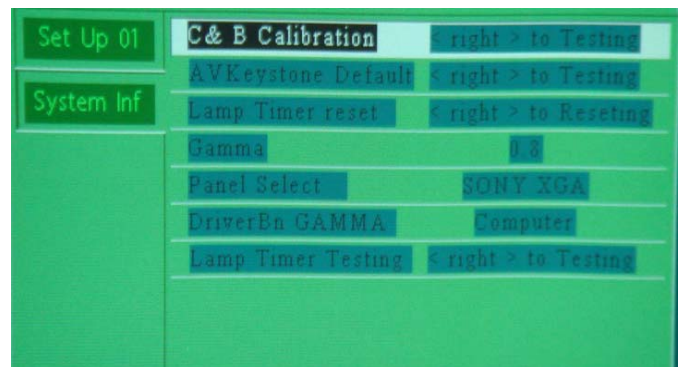


fig 9

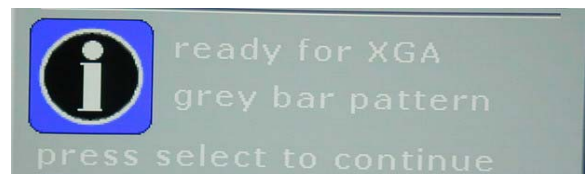
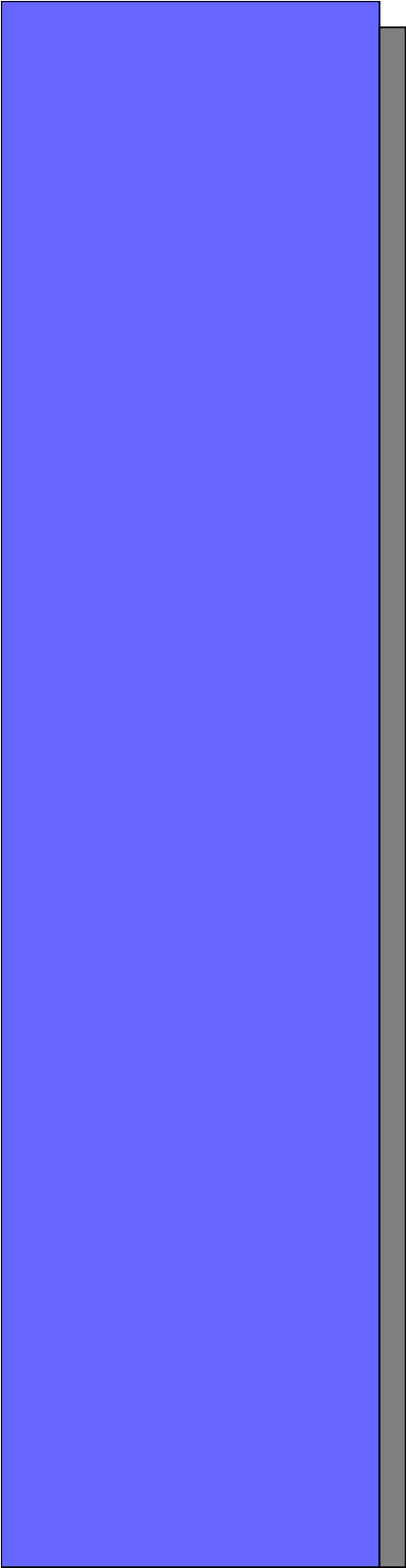


fig 10



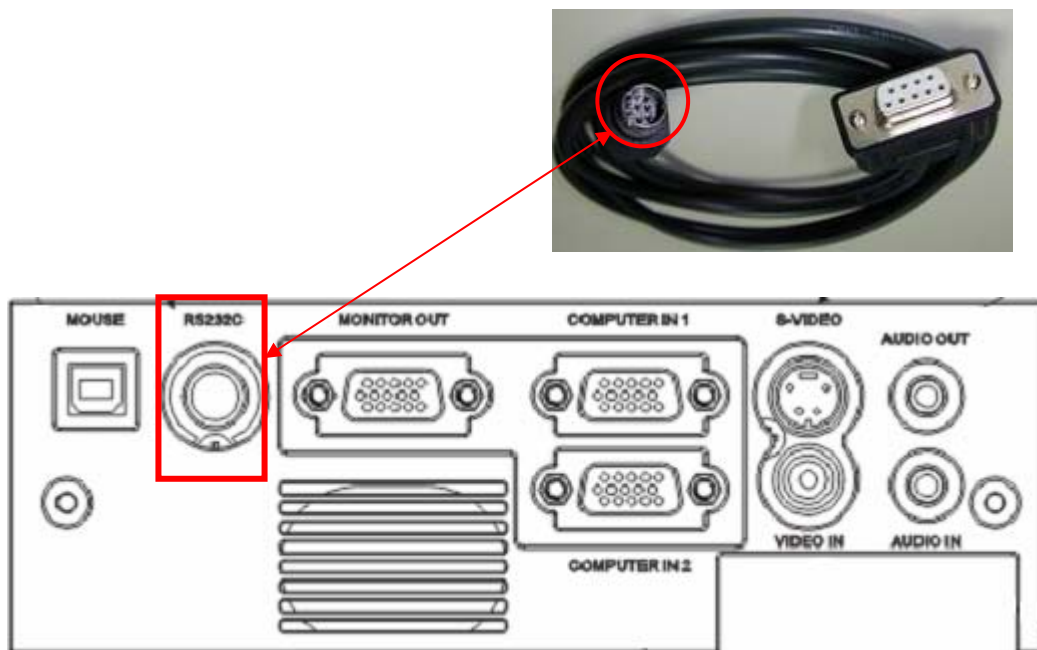
Chapter 5

RS232

Command

- Connection :

1. Use RS-232C-to-PS2 cable (part number: 13660016)
2. Connect with RS232C port of projector



- If RS232 command doesn't work:

Please check

- The baud rate setting is 9600 or 19200
- Is the port you select correct? For example "com 1" or "com 2"
- Make sure you key in command, for example command "power on ":

Correct : **C00CR** (ASCII) or **43 30 30 0D** (HEX)

incorrect : **C00** (ASCII) or **43 30 30** (HEX)

RS232 Command

EDI Projector RS232 Communication Format ↵

1. Communication Protocol ↵

Standard Baud rate: 9600 bps or 19200 bps ↵
 Data length: 8 bits ↵
 Parity: None ↵
 Stop bit: 1 bit ↵
 Flow Control: None ↵

2. RS232 Cable Define for EX31xx / EX-27xx Serial Projectors ↵

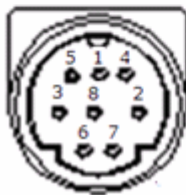
(PC side) (Projector side with D sub – pin) ↵

RX 2 → 2 TX ↵
 TX 3 → 3 RX ↵
 GND 5 → 5 GND ↵

3. RS232 Cable Define for EX-17xx / Uxx Serial Projectors ↵

(PC side) (Projector side with Mini-Din 8 pin Plug) ↵

RX 2 → 5 TX ↵
 TX 3 → 3 RX ↵
 GND 5 → 4, 8 GND ↵



4. Command Format (TYPE1:EX-17xx and Uxx serial, TYPE2:EX-31xx and EX27xx) ↵

TYPE1 CODE: ↵

Example: Power.ON command is sent to the projector with a CR, the projector returns a "15" or "68" code ↵

Command (ASCII) ↵

↵	↵	PC	↵	↵	C	0	0	CR	↵	↵	↵	↵	↵	↵	↵	↵	↵	↵	↵
↵	↵	Projector	↵	↵	↵	↵	↵	↵	Processing	↵	1	5	↵	↵	↵	↵	↵	↵	↵
										Command									

TYPE2 CODE: ↵

Command (ASCII) ↵

↵	↵	PC	↵	↵	P	W	R	O	N	↵	↵	↵	↵	↵	↵	↵	↵	↵	↵
↵	↵	Projector	↵	↵	↵	↵	↵	↵	↵	Processing	↵	6	8	↵	↵	↵	↵	↵	↵
										Command									

RS232 Command

RS232 command

5. Command List

TYPE1 Command (HEX+CR) EX-27xx / EX-17xx / Uxx	TYPE2 Command EX-31xx / EX-27xx	Function	Remarks
C00(43 30 30 0D)	PWRON	POWER ON	
C01(43 30 31 0D)	PWROFF	POWER OFF	
C02(43 30 32 0D)	INRGB1	COMPUTER1	
C04(43 30 34 0D)	INRGB2	COMPUTER2	
C03(43 30 33 0D)	INYPBPR	YPBPR	
C05(43 30 35 0D)	INDVI	DVI	EIKI disable
C05(43 30 35 0D)		COMPUTER1	EIKI enable
C06(43 30 36 0D)	INVIDEO	VIDEO	EIKI disable
C06(43 30 36 0D)		S-VIDEO	EIKI enable
C07(43 30 37 0D)	INVIDEO	S-VIDEO	EIKI disable
C07(43 30 37 0D)		VIDEO	EIKI enable
C08(43 30 38 0D)	INVCBCR	COMPONENT	
C09(43 30 39 0D)	FUVOL+	VOLUME +	
C0A(43 30 40 0D)	FUVOL-	VOLUME -	
C0D(43 30 43 0D)		V-Mute On	EIKI only
C0E(43 30 44 0D)		V-Mute Off	EIKI only
C1D(43 31 44 0D)	FUMENU	MENU	
C30(43 33 30 0D)	FUUP	UP	
C31(43 33 31 0D)	FUDOWN	DOWN	
C32(43 33 32 0D)	FULEFT	LEFT	
C33(43 33 33 0D)	FURIGHT	RIGHT	
C34(43 33 34 0D)		MUTE	
C43(43 34 33 0D)		FREEZE	
C80(43 38 30 0D)		ZOOM+	
C81(43 38 31 0D)		ZOOM-	
C89(43 38 39 0D)		AUTO	EIKI only
C90(43 39 33 0D)		ESC	
C91(43 39 31 0D)		SOURCE	
C92(43 39 32 0D)	FUAUTO	AUTO	
C93(43 39 33 0D)		CONTRAST+	
C94(43 39 34 0D)		CONTRAST-	
C95(43 39 35 0D)		BRIGHTNESS+	
C96(43 39 36 0D)		BRIGHTNESS-	
C97(43 39 37 0D)	FUBLANK	BLANK	
C98(43 39 38 0D)		KEYSTONE+	
C99(43 39 39 0D)		KEYSTONE-	

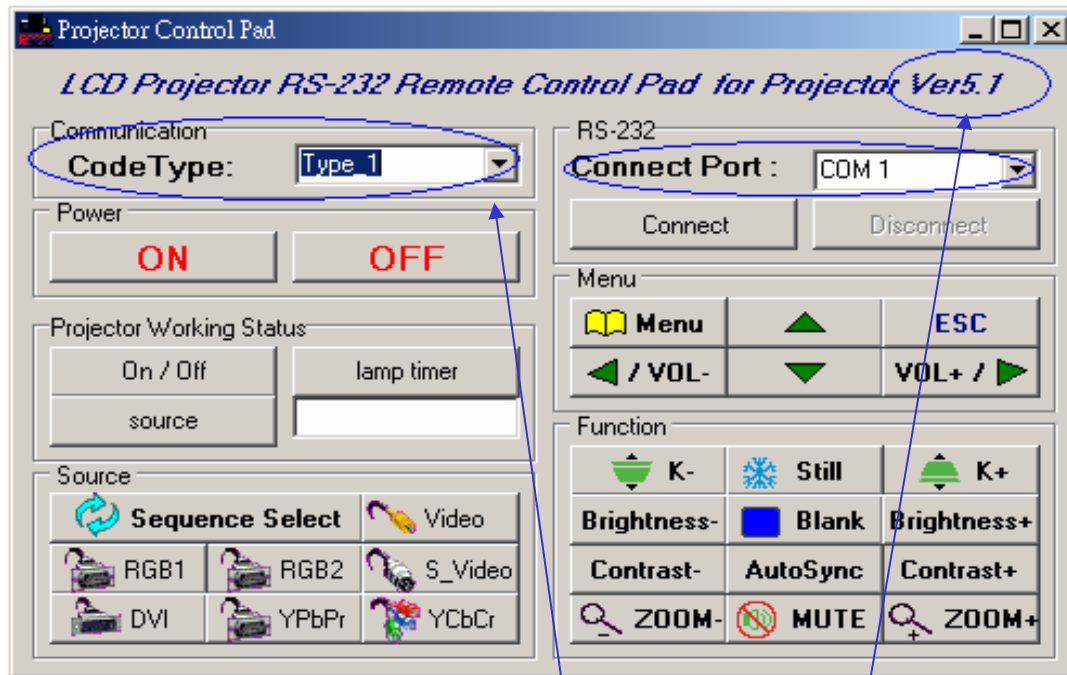
RS232 Command

RS232 command

CR0(43 52 30 0D) [␣]	␣	POWER-STATUS [␣]	STATUS feedback [␣] "000" - projector is on [␣] "800" - projector is standby [␣] "200" - projector is cooling down [␣] "500" - projector is warm up [␣]
CR1(43 52 31 0D) [␣]	␣	SOURCE-STATUS [␣]	STATUS feedback [␣] "001" - COMPUTER1 [␣] "002" - DVI [␣] "003" - COMPUTER2 [␣] "010" - VIDEO [␣] "020" - S-VIDEO [␣] "040" - COMPONENT [␣] "004" - YPbPr [␣]
CR2(43 53 32 0D) [␣]	␣	TIMER-STATUS [␣]	STATUS feedback [␣] " <u>xxx</u> Hrs <u>xxx</u> Mins" - Lamp time hours (for EX-17 and <u>Uxx</u> only) [␣] "HHHH" - Lamp time hours (for EX-27 <u>xx</u> only) [␣]

RS232 command

- RS232 Remote_control Pad (software part number: 51760001)



- What if RS232 Remote_control Pad doesn't work?

Please check

- I - Make sure the version is 5.1 or greater than 5.1.
- II - Make sure the code type is Type_1
- III - The baud rate setting is 9600 or 19200
- IV - Is the connect port you select correct? For example "com 1" or "com 2"