# Preface

This manual is prepared for the maintenance service for EP737 Micro-portable XGA DLP Projector. Maintenance procedures described in this manual are intended to isolate faulty parts and replace them in the field. It also aims to serve as a guide in procuring replacement parts for this product.



This manual includes system overview, major system assembly, components' description, and the "Troubleshooting" making explanations on how to detect errors. It also includes a flow chart for checking or correcting faults.

No warranty or representation, either expressed or implied, is made with respect to this documentation, its quality, performance, merchantability or fitness for particular purpose.

No event that the vendor will be liable for direct, indirect, special, incidental or consequential damages arising out of the user or inability to use this product or documentation.

- **NOTICE :**

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


Manual Version 1.0
Document # 863-G04-01A
P/N : 36.86305.001

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# Table of Contents (II)

# Introduction 1

This manual is applied to 0.7"*1 DMD Color Projector with digital imaging functionality based on Digital Micromirror Device (DMD) technology. It's the mode of single panel, 150 watt long life P-VIP lamp. The manual gives you a brief description of basic technical information to help in service and maintaining the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

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

# 1-1 Product Highlights

- One panel 0.7" DMD XGA projection system with 1300 ANSI lumens (Marketing)
- OSRAM 150 - Watt Compact P-VIP Lamp (user replaceable)
- High efficiency cooling system with low system acoustic noise level
- Light weight Approx. 3.9 lbs.
- Manual focus projection 1 : 1.2 zoom lens
- True 1024 x 768 resolution, 16.7M True colors
- With up, down, left, and right screen reverse
- SXGA / XGA / SVGA / VGA / MAC compatibility with one M1-DA input terminal
- Auto image re-sizing to 1024 x 768 full screen
- Auto detection of computer signal input
- Auto Image synchronization (Auto-tracking / frequency / position adjustment)
- Powerful enlarge and freeze function
- Automatically saves adjustments for future use
- On-screen menu with up to 10 languages
- Built-in one speaker with 2 Watt amplifier
- Self protect timer for hot re-strike of compact P-VIP lamp
- Wireless remote control with USB mouse function and laser pointer
- Adaptive voltage control fan speed
- Noise : Expect Marketing spec - 32dB(A) (30 min)
  Real Engineering spec - Max 37 dB(A) (1hr) => Same as H55.
- Build-in full screen NTSC / PAL / SECAM video capability with S-video / Composite / Component and HDTV terminals

# 1-2 Technical Specifications

## 1-2.1 Optical Features

| | |
|---|---|
| **Projection Lens** | F/2.44~2.69, f=28.8~34.5mm. 1.2X Manual Zoom Lens |
| **Projection Image Size** | Adjustable from 23.4" to 295.3" (Diagonal)<br>(Suggested Projection Image Size : 36.9"~245.9") |
| **Throw Distance** | 1.4m~12m (Suggested throw distance : 1.5~10m)<br>(Marketing Spec. - 1.14m~12m) |
| **Brightness** | 1300 ANSI Lumens (Marketing)<br>1150 ANSI Lumens (Average)<br>1000 ANSI Lumens (Minimum) |
| **Contrast** | 1600 : 1 Marketing (Full White and Black)<br>1450 : 1 Typical (Full White and Black)<br>1300 : 1 Minimum (Full White and Black) |
| **Uniformity** | 85% Marketing (Japan Standard)<br>75% Typical (Japan Standard)<br>65% Minimum (Japan Standard) |
| **Color Temperature** | 7500°K (Default)<br>7000 to 8800°K (Min. to Max.) |

## 1-2.2 Electrical Features

| | |
|---|---|
| **Power Supply** | - Universal AC 100-240V ~ 50/60Hz with PFC input<br>- (Wattage to be determinate) for 150W Compact P-VIP Lamp@normal operation<br>- Variance FAN speed control (Depend on temperature variant) |
| **Power Consumption** | - 190 Watt +/- 10% at normal operation<br>Standby mode < 35W |
| **Terminals** | - Computer Input (VESA M1-DA Female Terminal x 1)<br>- Composite Video Input (RCA jack x 1)<br>- S Video Input (Mini DIN 4-pin x 1)<br>- Audio line Input (3.5mm phone jack x 1)<br>- Monitor Output (D-Sub 15-pin female terminal x 1) |
| **Input signal spec.** | - Hsync Frequency 15 ~ 100 kHz<br>- Vsync Frequency 43 ~ 120 Hz<br>- Video Signal RGB (PC)<br>Analog RGB 0.7Vp-p, 75 ohm<br>Analog RGB 1Vp-p, 75 ohm, Sync. signal<br>Separate TTL H, V Sync.<br>Composite TTl Sync.<br>- Video<br>Composite video 1Vp-p, 75 ohm<br>S-video Luminance 0.714Vp-p, 75 ohm<br>Chrominance 0.286Vp-p, 75 ohm |
| **Video Compatibility** | - Standards :<br>NTSC - M(3.58 MHz), 4.43 MHz,<br>PAL - B, D, G, H, I, M, N<br>SECAM - B, D, G, K, K1, L<br>HDTV - 480i; 480P; 720P; 1080i |
| **Audio** | - One 4-Ohm, 2W, internal speaker<br>- 2 Watts amplifier<br>- Input sensitivity 0.3Vrms. |

## 1-2.3 Mechanical Features

| | |
|---|---|
| **Dimensions (W x H x D)** | - 9.68 x 8.05 x 2.8 +/- 0.034 inches<br>(246 x 204.4 x 71.2 +/- 1mm, w/o lens)<br>- 9.68 x 8.73 x 3.1 +/- 0.034 inches<br>(246 x 221.7 x 78.6 +/- 1mm, with lens) |
| **Weight** | Approx. 3.9 lbs. |
| **Tilt Angle** | 8 degree with elevator mechanism |
| **Keystone correction** | +/- 16 degree (32 degree) |
| **Lamp Door Protection** | Lamp power supply shut off automatically when door open |

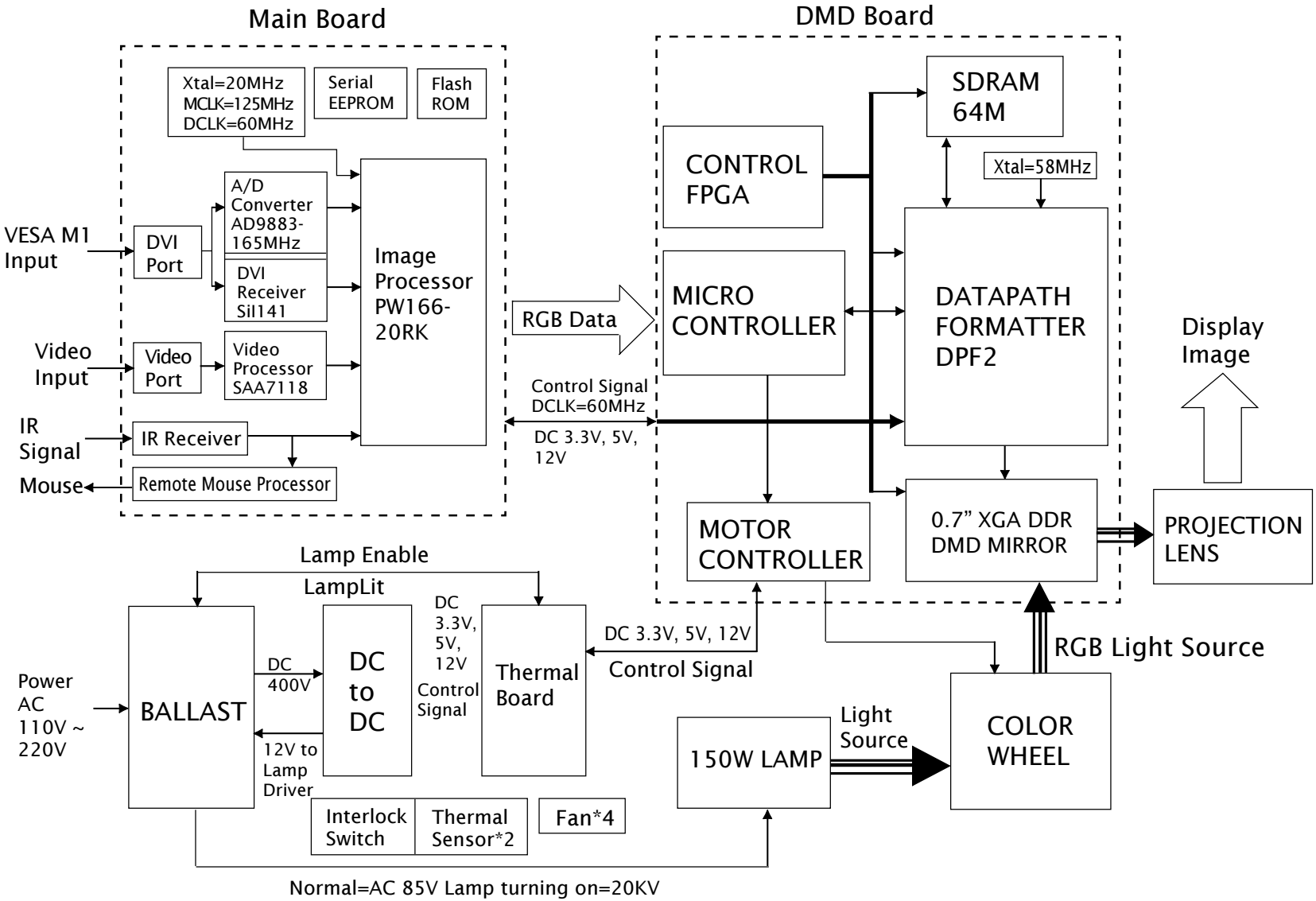
## 1-2.4 Environmental Features

| | |
|---|---|
| **Temperature** | Operating : 10~40°C<br>Storage : -20~60°C |
| **Maximum Humidity** | Operating : 10~40°C, 80%RH(Max.), non-condensing\<br>Storage : -20~60°C, 80%RH (Max.), non-condensing |
| **Acoustic noise level** | 32 dBA (expect marketing spec.)<br>35 dBA (Typical, Under 25°C)<br>37 dBA (Max., Under 25°C) |
| **Lamp Life** | 1,500 hours marketing<br>1,200 hours typical, 50% survival rate |
| **Altitude** | - Operating : 0~2,500 ft 10°C~40°C<br>2,500~5,000 ft 10°C~35°C<br>5,000~10,000 ft 10°C~25°C<br>- Storage : 40,000 ft |
| **MTBF** | Operating more than 12,000 hours (90% Confidence Level) |

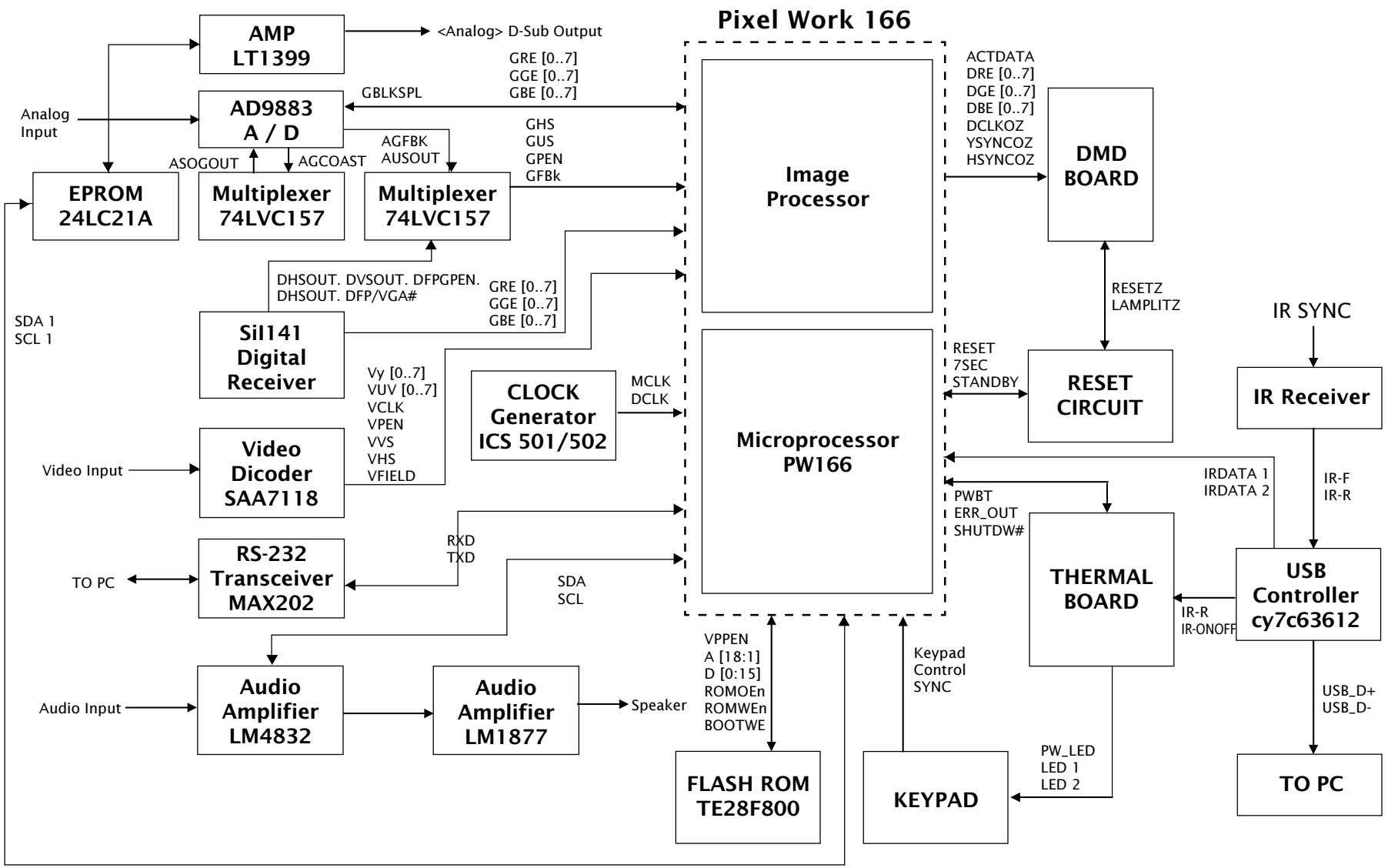
# Fundamental Principle 2

This section provides the conceptual drawing about optics of projector. You can realize optical projection system through the following diagram and the integral part of configuration, too.

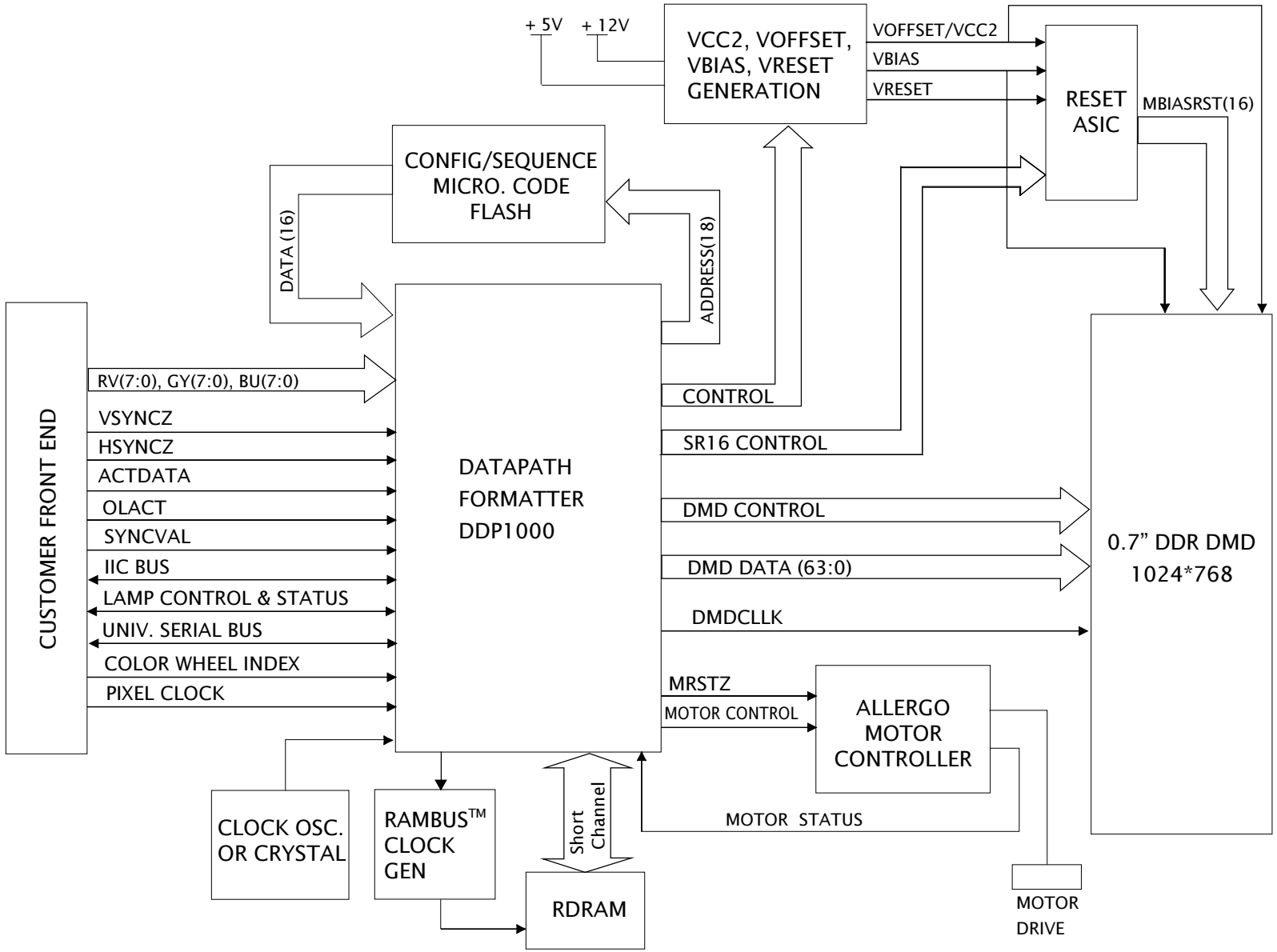
# 2-1 Function Block Diagram



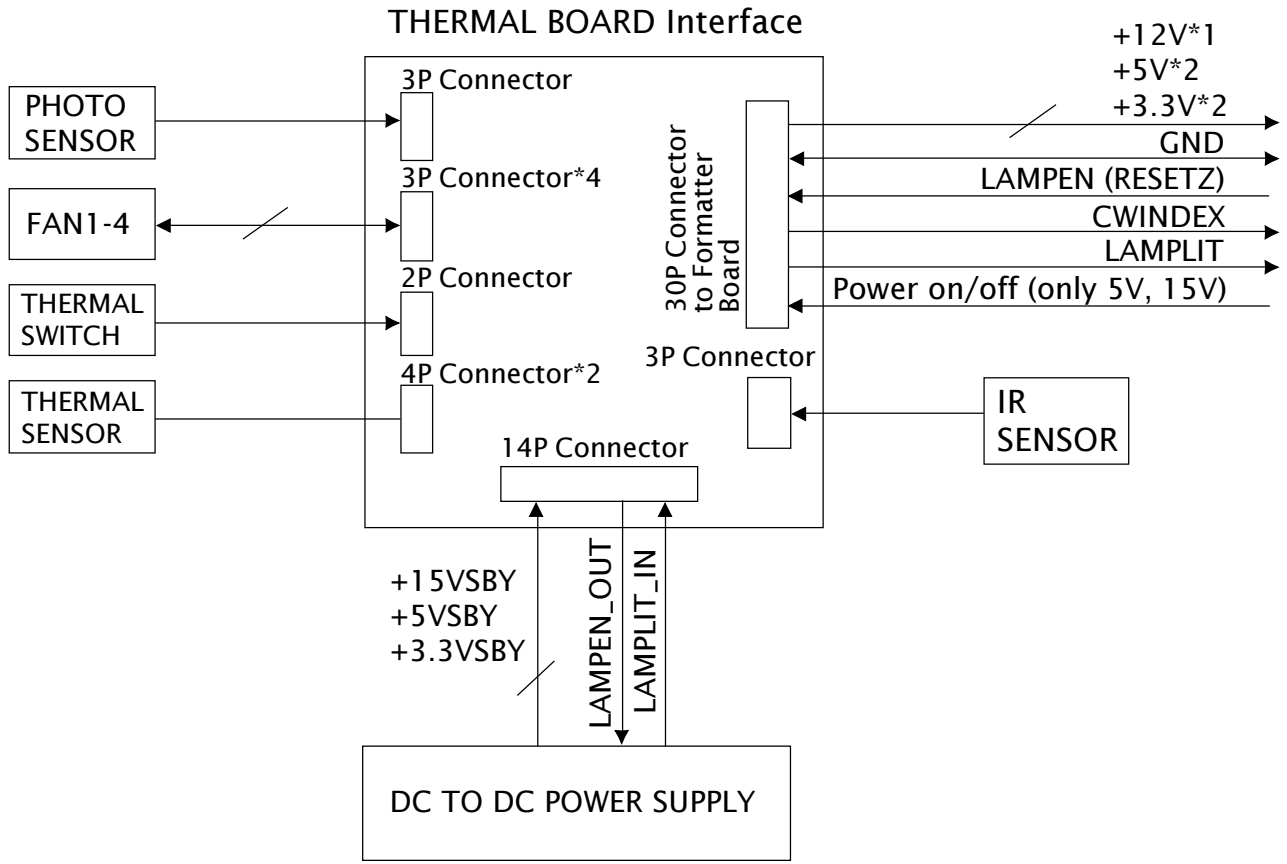
## 2-1.1 Main Board Block Diagram



## 2-1.2 DMD Board Block Diagram

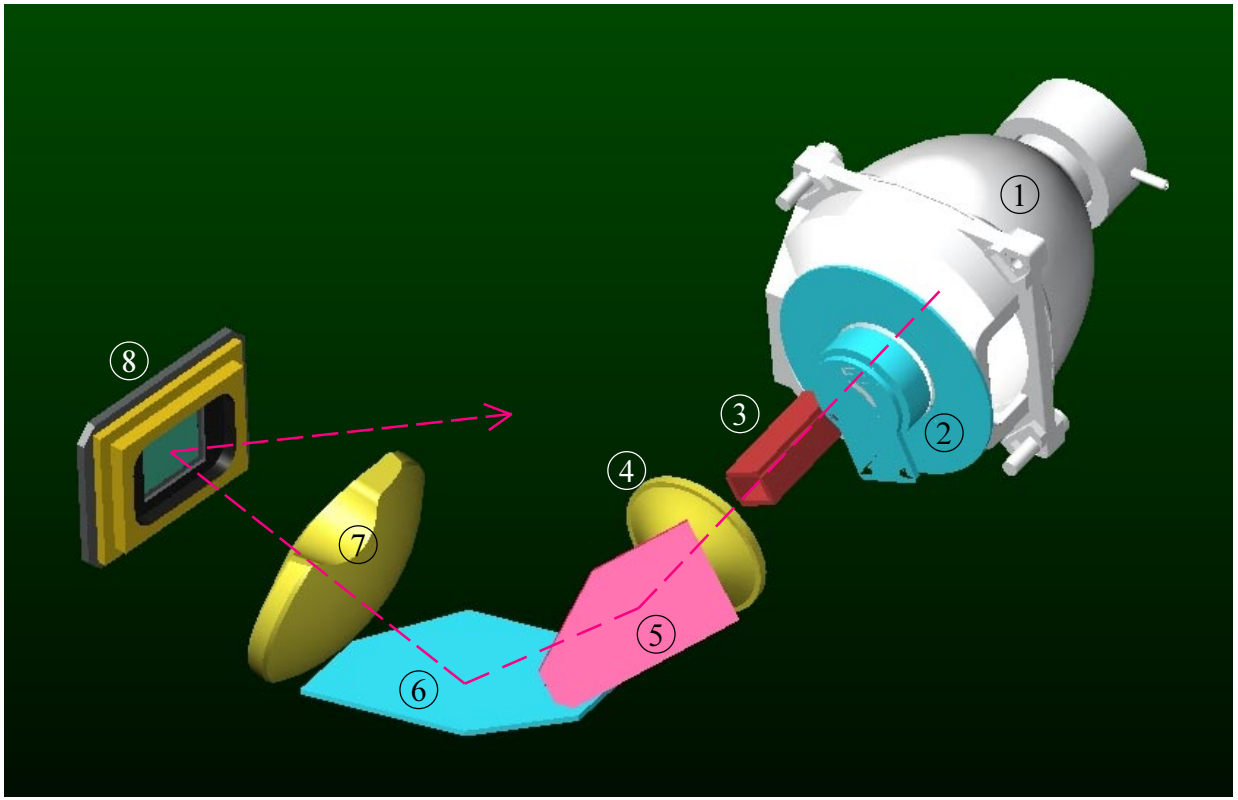


## 2-1.3 Thermal Board Block Diagram



# 2-2 Optics

## 2-2.1 Conceptual Drawing




1. 150W P-VIP Lamp
2. Color Wheel
3. Hollow Rod
4. Condenser Lens
5. Mirror 2
6. Mirror 1
7. Relay Lens
8. DMD Module

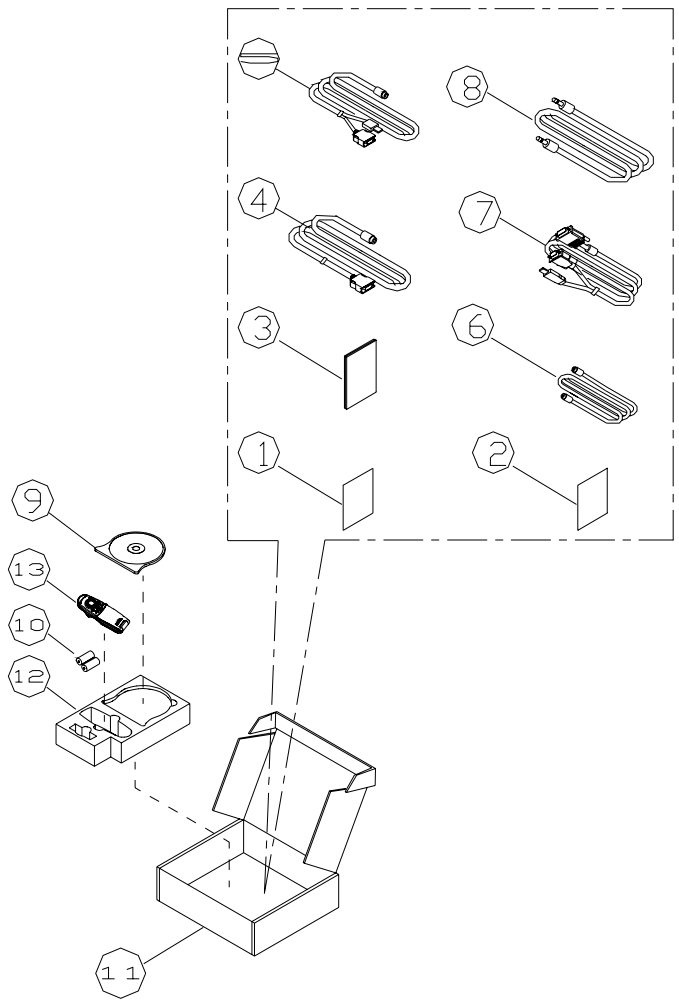
## 2-2.2 Basic Functions

| | |
|---|---|
| ***150W P-VIP Lamp*** | The light source. |
| ***Color Wheel*** | Separating the light beam into and produce R.G.B colors. |
| ***Hollow Rod*** | Making the light beam uniform. |
| ***Condenser Lens*** | Condensing the light beam. |
| ***Mirror*** | Folding optical path. |
| ***DMD Module*** | Displaying component. |

# Mechanical Construction 3

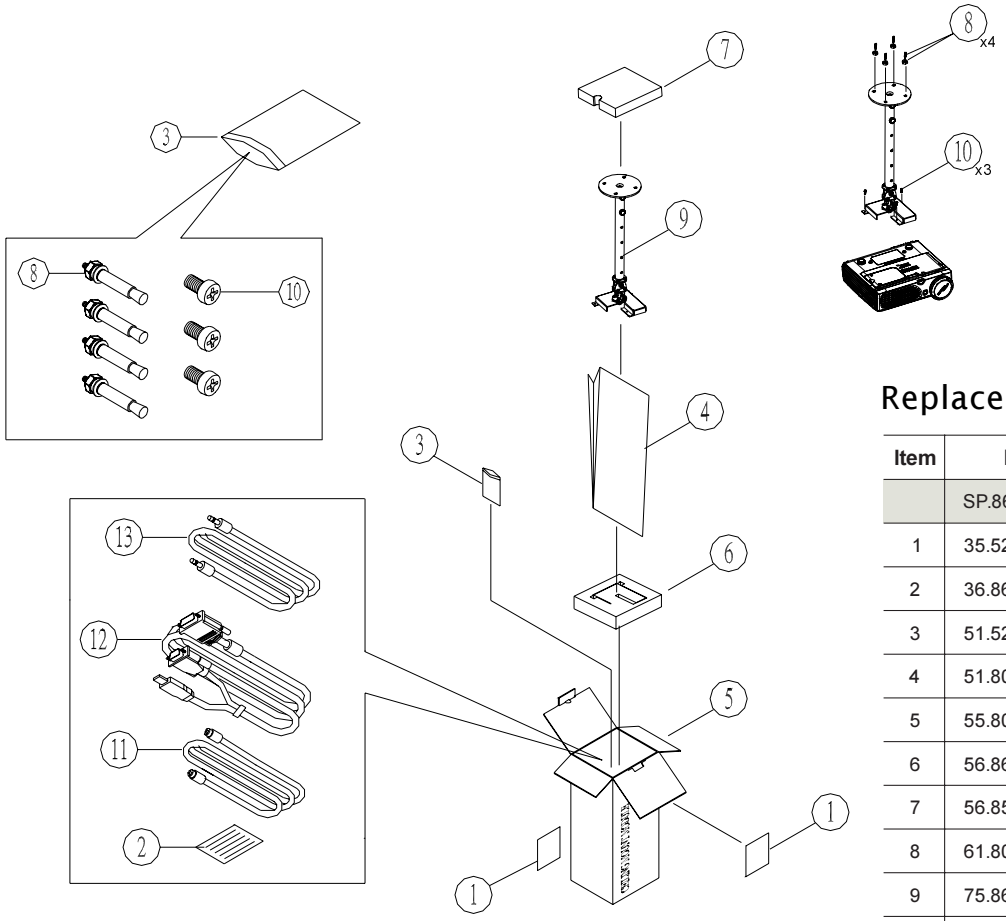
This section provides the package and exploded overview, replaceable parts list and recommendatiom parts list for the portable projector. You can place an order for correct parts in the recommendation parts list.

# 3-1 Package Overview




## Replacement Parts List

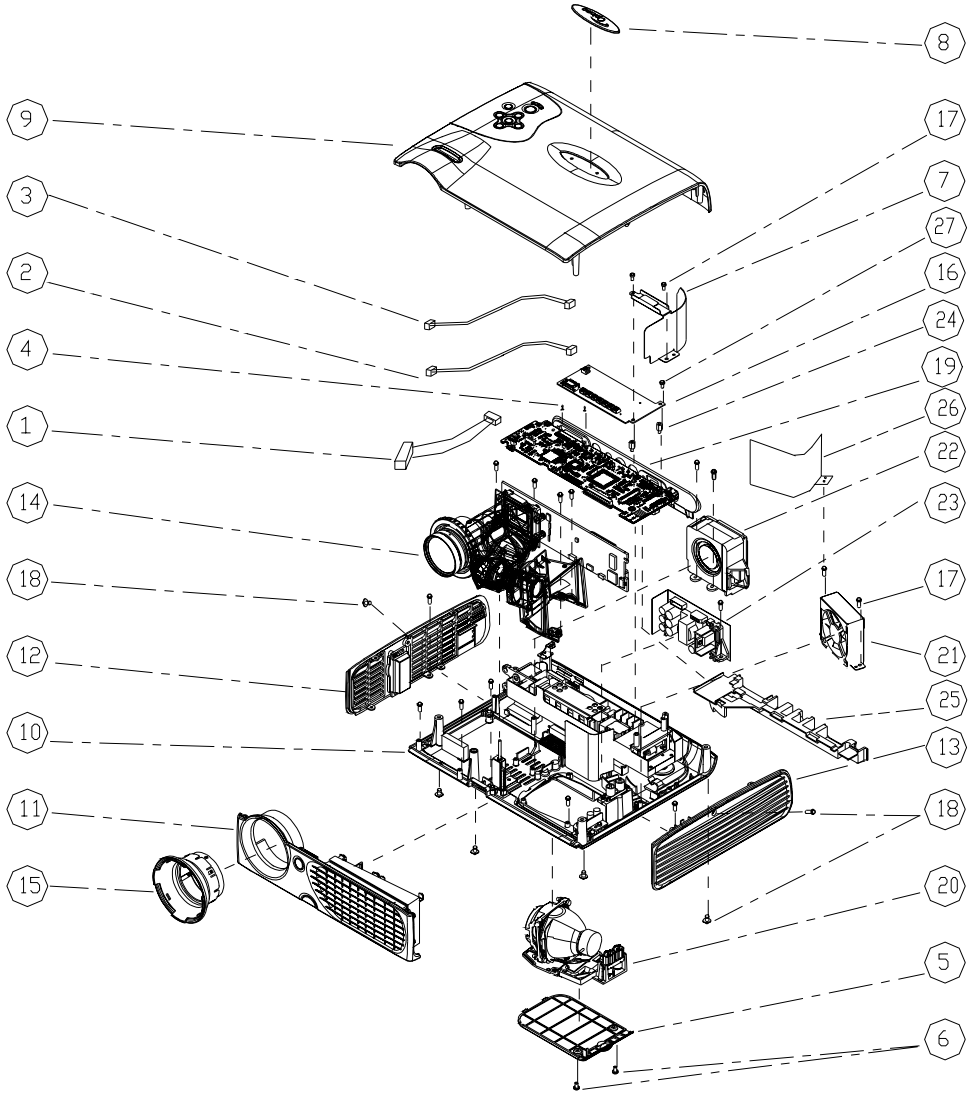
| Item | P/N | Rev. | Description |
|---|---|---|---|
| | AK.86301.001 | A | PIZZA BOX MODULE FOR EP737 |
| 1 | 36.00012.002 | B | WARRANT CARD, US FOR LPP SERIES |
| 2 | 36.00018.001 | A | EXTENDED WARRANTY ;REGISTRATION FORM,USA FOR LPP SERIES |
| 3 | 36.86301.001 | A | QUICK START CARD MULTILINGUAL EP737 |
| 4 | 42.86301.001 | A | CABLE RS-232(BLUE) TO MINI DIN 3PIN 1800mm EP737 |
| 5 | 42.50110.011 | A | CABLE RCA 1.8M XB31 |
| 6 | 42.50209.031 | A | CABLE S-VIDEO 1.8M XB31 |
| 7 | 42.85804.001 | A | CABLE M1-A TO VGA/USB(A) 1.8M MOLEX |
| 8 | 42.85811.001 | A | CABEL MINI JACK TO MINI JACK 1.8M BLACK XB31 |
| 9 | 36.86302.001 | A | USER'S GUIDE FOR EP737 |
| 10 | 46.80301.001 | B | BATTERY #4 1.5V |
| 11 | 55.83302.001 | A | CARTON ACCESSORY BOX EzPro 730 |
| 12 | 56.86301.001 | A | PARTITION FOR ACCESSORY BOX EPE EP737 |
| 13 | 70.83443.001 | A | ACCESSORY REMOTE CONNTROLLER EzPro 735(OPTOMA LABEL) |




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | SP.86303.001 | A | CEILING MOUNT CONNECTOR AND CABLE EP737 |
| 1 | 35.52302.091 | A | LABEL CARTON 108*92 BLANK |
| 2 | 36.86303.001 | A | CEILING MOUNT MANUAL EP737 |
| 3 | 51.52121.001 | A | PEBAG ZIPPER #3 100*70*0.04 LMT-5020 |
| 4 | 51.80725.001 | A | PE BAG 20*20*50CM U TYPE |
| 5 | 55.80706.001 | A | CARTON AB 20*20*48CM FOR CEILING MOUNT |
| 6 | 56.86303.001 | A | CUSHION BOTTOM FOR CEILING MOUNT EPE EP737 |
| 7 | 56.85809.001 | A | CUSHION TOP FOR CEILING MOUNT EPE XB31 |
| 8 | 61.80726.001 | A | SCREW/NUT 5/16 INCH STRUCTURE |
| 9 | 75.86307.001 | A | ASSY CEILING MOUNT MODULE EP737 |
| 10 | 85.1A523.060 | A | SCREW PAN MECH M3*6 Ni NYLOK |
| 11 | 42.50209.021 | A | CABLE S-VHS 5M EzPro 600 |
| 12 | 42.86305.001 | A | CABLE M1-A TO VGA/USB(A) 5M MOLEX EP737 |
| 13 | 42.80715.011 | A | CABLE MINI JACK TO RCA 5M |

# 3-2 Exploded Overview

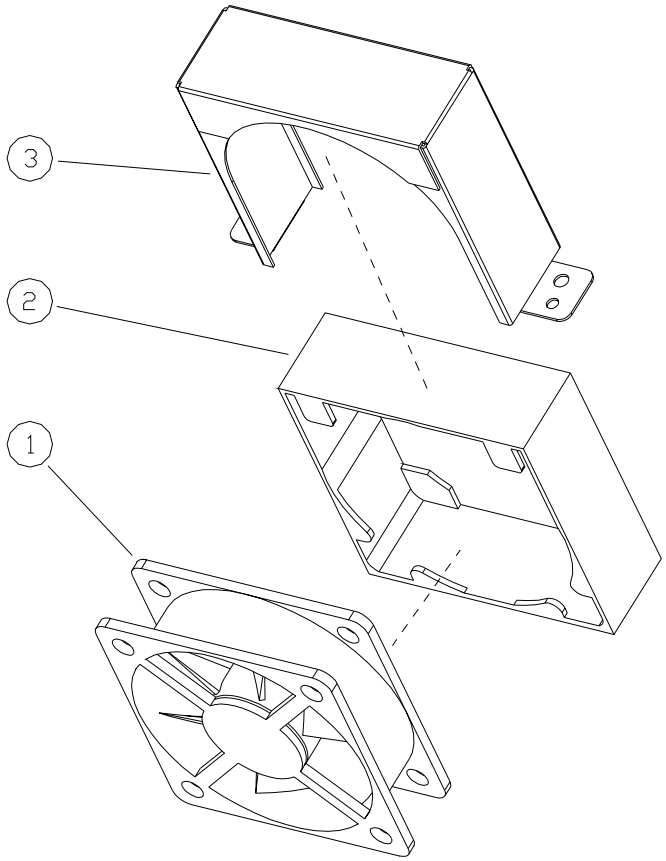


## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | DC.86301.001 | A | D.C. EP737 |
| 1 | 42.85802.002 | A | W.A. 14 #26 50mm UL1061 THERMAL-BD/BALLAST XB31 |
| 2 | 42.85803.001 | A | W.A. 4P #22 185mm DC-DC/BALLAST XB31 |
| 3 | 42.85809.001 | A | W.A. 3P #28 125mm BALLAST/THERMAL BD |
| 4 | 51.00071.001 | A | SPACER SUPPORT PG-MCF-6 XB31 |
| 5 | 51.86301.001 | A | LAMP BOTTOM COVER NORYL N300X EP737 |
| 6 | 61.00018.002 | A | LOCK SCREW PAN MECH M3*8.5-3.5 B |
| 7 | 61.86302.001 | A | FAN GUIDE BRACKET AL 5052 EP737 |
| 8 | 61.86304.001 | A | OPTOMA LOGO AL EP737 |
| 9 | 70.86301.001 | A | ASSY TOP COVER MODULE EP737 |
| 10 | 70.86302.001 | A | ASSY BOTTOM COVER MODULE EP737 |
| 11 | 70.86303.001 | A | ASSY FRONT COVER MODULE EP737 |
| 12 | 70.86305.001 | A | ASSY RIGHT COVER MODULE EP737 |
| 13 | 70.86306.001 | A | ASSY LEFT COVER MODULE EP737 |
| 14 | 70.86307.001 | A | ASSY ENGINE MODULE EP737 |
| 15 | 75.86302.001 | A | BUY ASSY FOCUS RING FRONT EP737 |
| 16 | 80.86302.001 | E | PCBA THERMAL BOARD EP737 |
| 17 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |
| 18 | 85.1A623.060 | A | SCREW MACHINE PAN M3*6 NYLOK VX3600 |
| 19 | 70.86315.001 | A | ASSY PCBA MAIN BOARD MODULE EP737 |
| 20 | 70.86308.001 | A | ASSY LAMP MODULE EP737 |
| 21 | 70.86309.001 | A | FAN 50-15 MODULE EP737 |
| 22 | 70.86318.001 | A | FAN FAL3F PANASONIC MODULE EP737 |

| Item | P/N | Rev. | Description |
|---|---|---|---|
| 23 | 70.85810.001 | A | DC_DC MODULE XB31 |
| 24 | 85.00025.041 | A | HEX I/O M2.5*H6.6*L4.0 BRASS |
| 25 | 52.86309.001 | A | MAIN BOARD BOTTOM RUBBER EP737 |
| 26 | 61.86317.001 | A | SAFE BRAKE FOR LAMP GAP SUS304 EP737 |
| 27 | 85.1A525.040 | A | SCREW PAN MECH M2.5*4 Ni NLK |

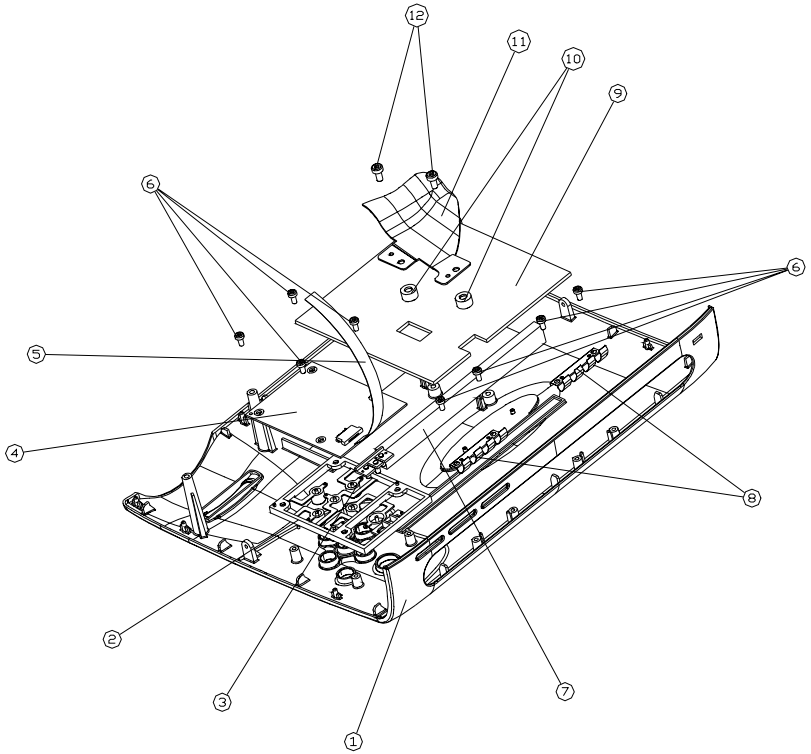
## 3-2.1 Fan 50-15 Module




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86309.001 | A | FAN 50-15 MODULE EP737 |
| 1 | 49.86304.001 | A | MISC FAN SUNON 5015 L=70mm EP737 |
| 2 | 52.86303.001 | A | FAN RUBBER SUNON 5015 RUBBER EP737 |
| 3 | 61.86316.001 | A | FAN BRACKET SUNON 5015 SUS304 EP737 |

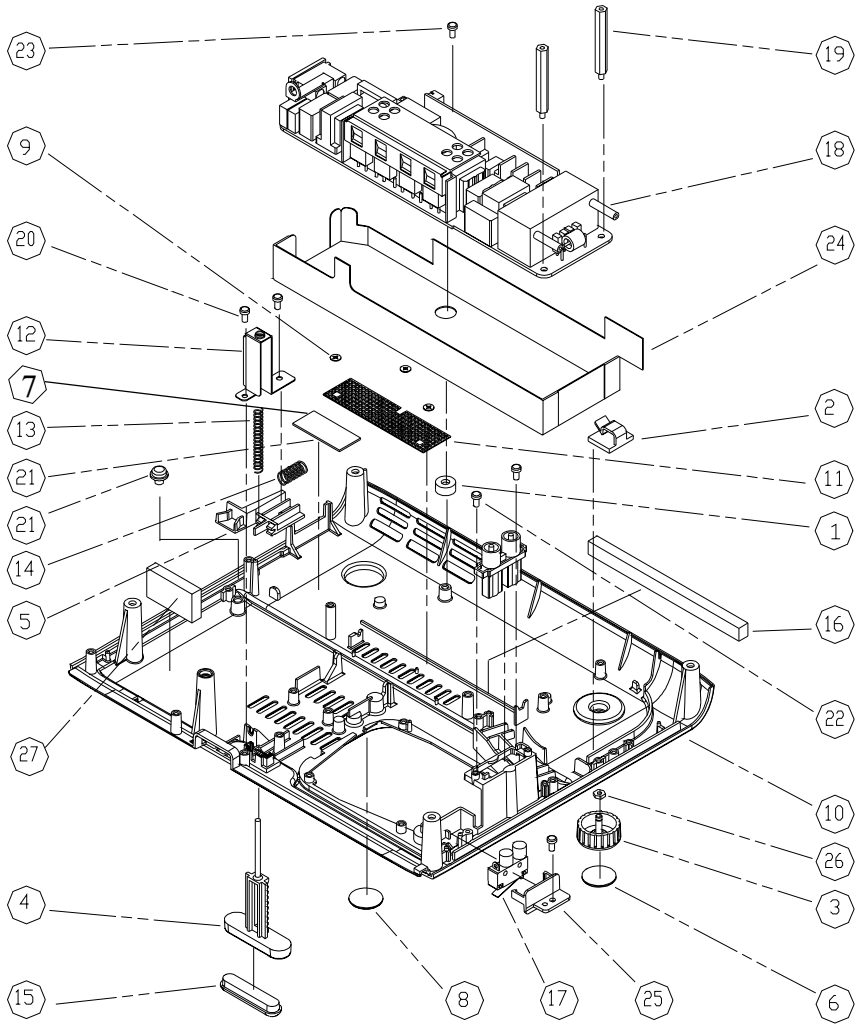
## 3-2.2 Top Cover Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86301.001 | A | ASSY TOP COVER MODULE EP737 |
| 1 | 61.86303.001 | A | TOP COVER Mg ALLOY AZ-91D EP737 |
| 2 | 51.86302.001 | A | KEY PAD PC+ABS C6200 EP737 |
| 3 | 51.86303.001 | A | LED LENS PC EP737 |
| 4 | 80.86303.001 | D | PCBA KEYPAD BOARD EP737 |
| 5 | 42.85801.001 | A | CABLE FFC 14P 0.5Pitch 140mm KEY BD/FRONT END BD XB31 |
| 6 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |
| 7 | 52.86304.001 | A | TOP SEALING SPONGE PORON EP737 |
| 8 | 61.86311.001 | A | TOP COVER EMI SPRING EP737 |
| 9 | 55.86301.001 | A | HEAT INSULATION PAD EP737 |
| 10 | 51.00068.001 | A | NYLON WASHER PG U-5 FOR BALLAST XB31 |
| 11 | 61.86314.001 | A | LIGHT CUT UP FOR LAMP MODULE AL EP737 |
| 12 | 85.1G923.064 | A | PLASTIC SCREW M3.0*6.4 PG S-306-N66 XB31 |

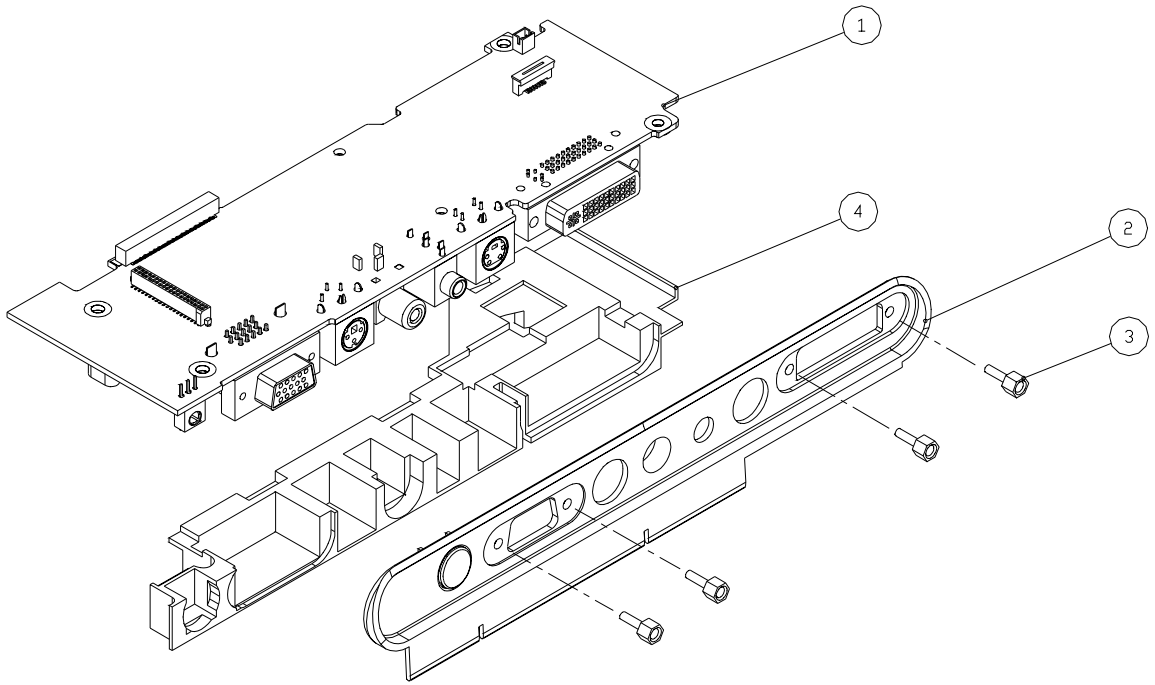
## 3-2.3 Bottom Cover Module



## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86302.001 | A | ASSY BOTTOM COVER MODULE EP737 |
| 1 | 51.00068.001 | A | NYLON WASHER PG U-5 FOR BALLAST XB31 |
| 2 | 51.00075.001 | A | WIRE MOUNTS PG-FW-4D XB31 |
| 3 | 51.85803.002 | A | ADJUST FOOT PC+ABS C6200 CS-SA05A SB21 |
| 4 | 51.86304.001 | A | ELEVATOR FOOT NORYL N300X EP737 |
| 5 | 51.86305.001 | A | ELEVATOR HOOK NORYL N300X EP737 |
| 6 | 52.85801.001 | A | RUBBER-FOOT D=16.0mm 2.5t XB31 |
| 7 | 52.86311.001 | A | DMD HEATSINK THERMAL PAD 14*35*1t EP737 |
| 8 | 52.85818.001 | A | LEFT RUBBER FOOT D=16.0mm 4.0t XB31 |
| 9 | 61.00022.001 | A | SELF-LOCKING RING (SPN φ1.5) |
| 10 | 61.86305.001 | A | BOTTOM COVER Mg ALLOY AZ-91D EP737 |
| 11 | 61.86306.001 | A | BOTTOM COVER MESH IRON NET EP737 |
| 12 | 61.86307.001 | A | ELEVATOR BRACKET SUS304 EP737 |
| 13 | 61.86308.001 | A | ELEVATOR FOOT SPRING SUS301 EP737 |
| 14 | 61.86309.001 | A | ELEVATOR PUSH SPRING SUS301 EP737 |
| 15 | 52.86305.001 | A | ELEVATOR FOOT RUBBER EP737 |
| 16 | 52.86306.001 | A | BTM SEALING SPONGE PORON EP737 |
| 17 | 75.86305.001 | A | ASSY LIMIT SWITCH CHERRY DB1C A1LB-5A EP737 |
| 18 | 70.86311.001 | A | BALLAST MODULE EP737 |
| 19 | 85.00025.041 | A | HEX I/O M2.5*H6.6*L4.0 BRASS |
| 20 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |
| 21 | 85.1C224.050 | A | SCREW PAN MECH M4*5 COLOR W/TOOTH WASHER |
| 22 | 85.1D122.050 | A | SCREW PAN MECH M2*5 Ni (W/WASHER φ5.0) |
| 23 | 85.1G923.064 | A | PLASTIC SCREW M3.0*6.4 PG S-306-N66 XB31 |
| 24 | 51.86319.001 | A | BALLAST MYLAR FRPP EP737 |
| 25 | 51.86323.001 | A | LIMIT SWITCH HOLDER NORYL N300X EP737 |
| 26 | 86.00122.015 | A | NUT HEX M2.0*0.4P L1.5 Ni |
| 27 | 52.86308.001 | A | LENS STAND PAD EP737 |

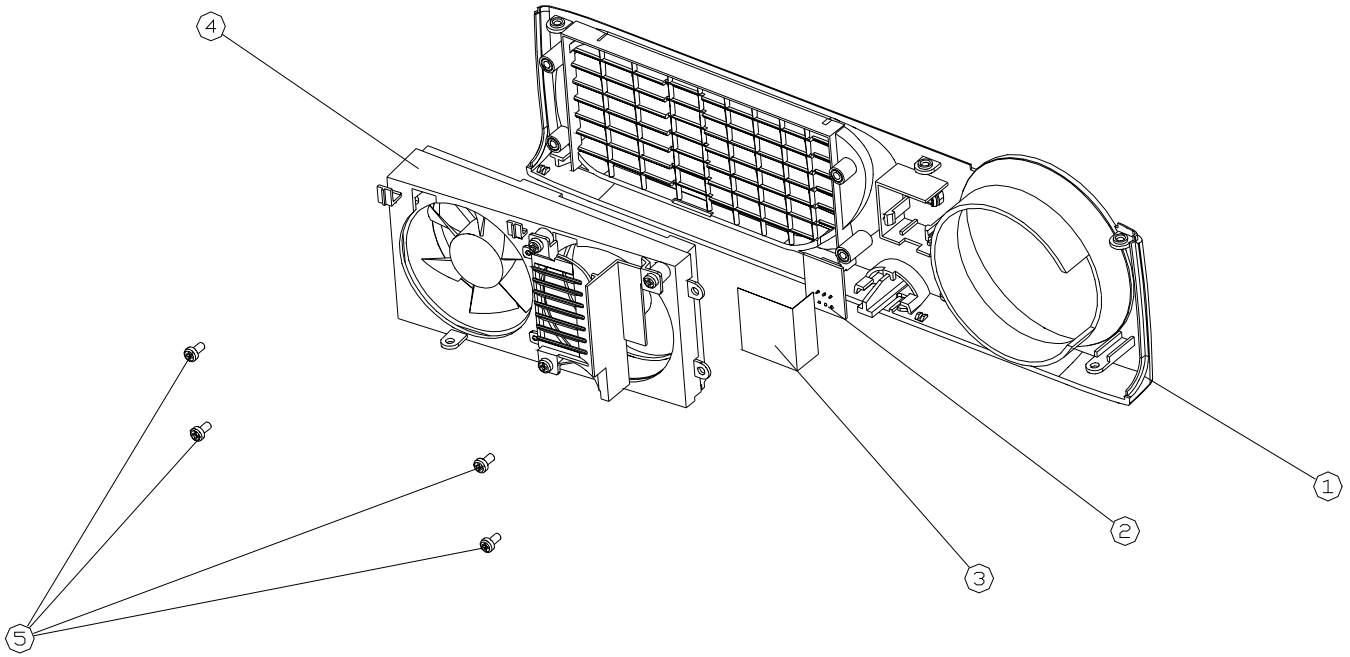
## 3-2.4 Main Board Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86315.001 | A | ASSY PCBA MAIN BOARD MODULE EP737 |
| 1 | 80.86301.001 | E | PCBA MAIN BOARD EP737 |
| 2 | 75.86303.001 | A | BUY ASSY IO BEZEL MODULE EP737 |
| 3 | 85.005AG.040 | A | SCREW I/O STEEL #4-40UNC*H4*L5.5 NYLOK |
| 4 | 52.86309.001 | A | MAIN BOARD BOTTOM RUBBER EP737 |

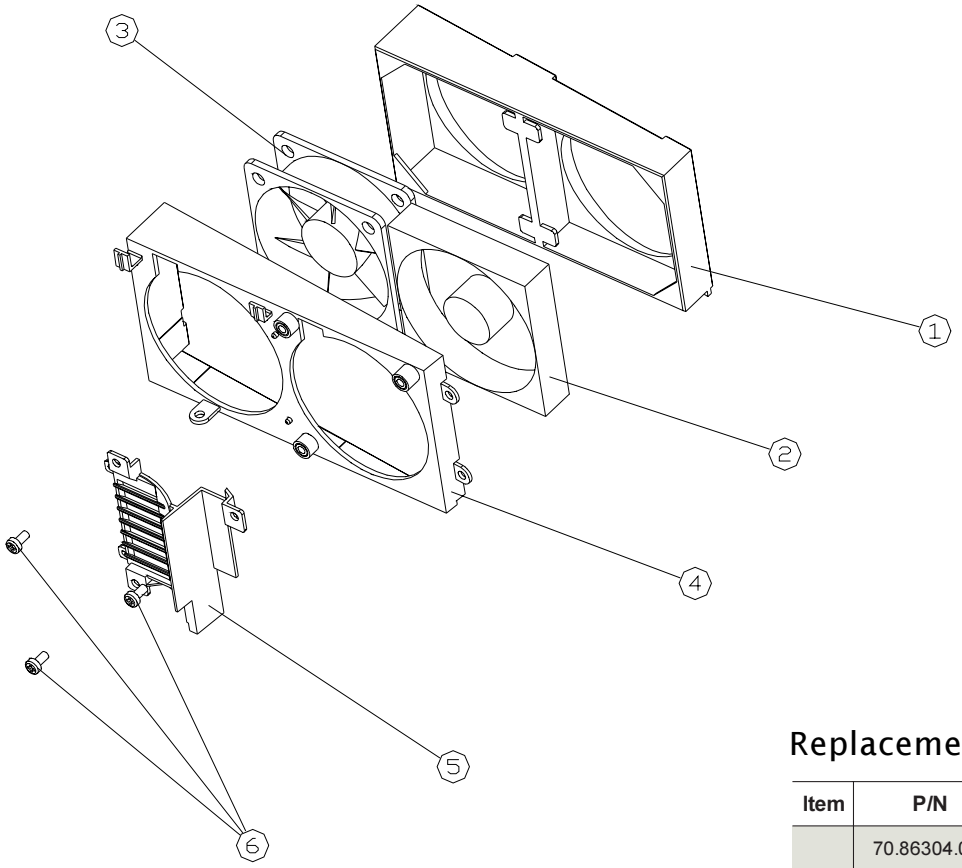
## 3-2.4 Front Cover Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86303.001 | A | ASSY FRONT COVER MODULE EP737 |
| 1 | 75.86301.001 | A | BUY FRONT COVER MODULE EP737 |
| 2 | 76.86301.001 | A | ASSY IR-SENSOR 3P #28 UL1007 160mm Green EP737 |
| 3 | 51.86321.001 | A | IR COVER PAD FRONT EP737 |
| 4 | 70.86304.001 | A | ASSY FRONT FAN MODULE EP737 |
| 5 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |

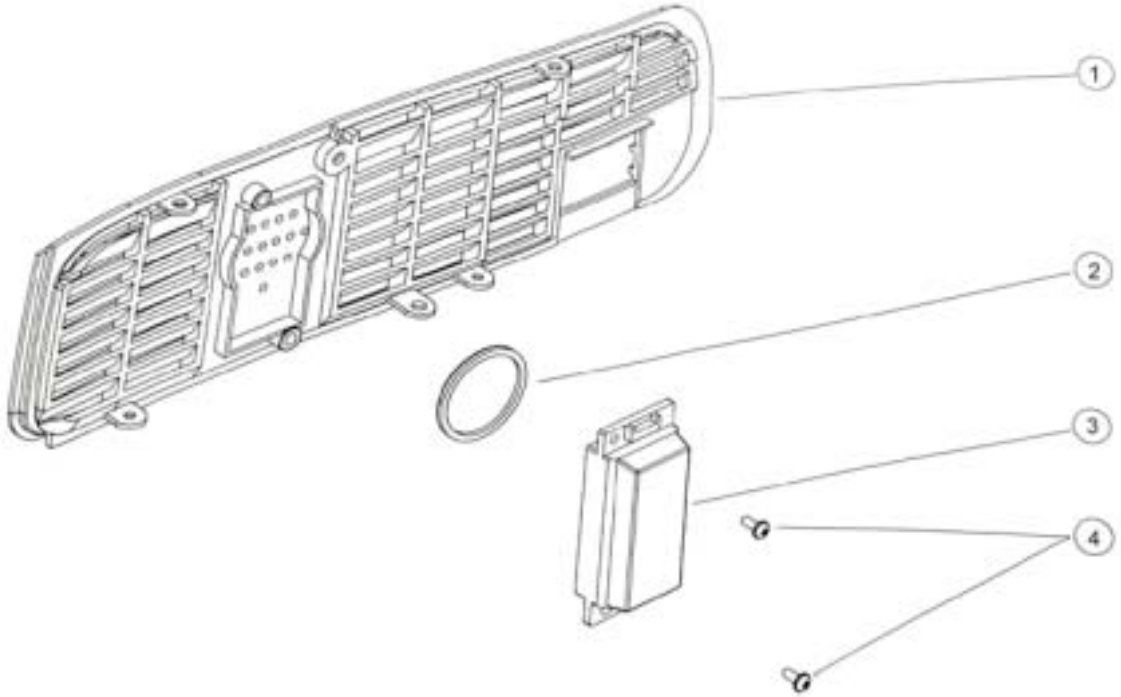
## 3-2.5 ASSY Front Fan Module




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86304.001 | A | ASSY FRONT FAN MODULE EP737 |
| 1 | 52.86301.001 | A | FAN RUBBER FRONT COVER RUBBER EP737 |
| 2 | 49.86301.001 | A | MISC FAN SUNON 5010 L=300mm EP737 |
| 3 | 49.86303.001 | A | MISC FAN SUNON 5015 L=250mm EP737 |
| 4 | 51.86307.001 | A | FAN HOLDER FRONT COVER NORYL EP737 |
| 5 | 51.86322.001 | A | FAN GUIDE FRONT NORYL N300X EP737 |
| 6 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |

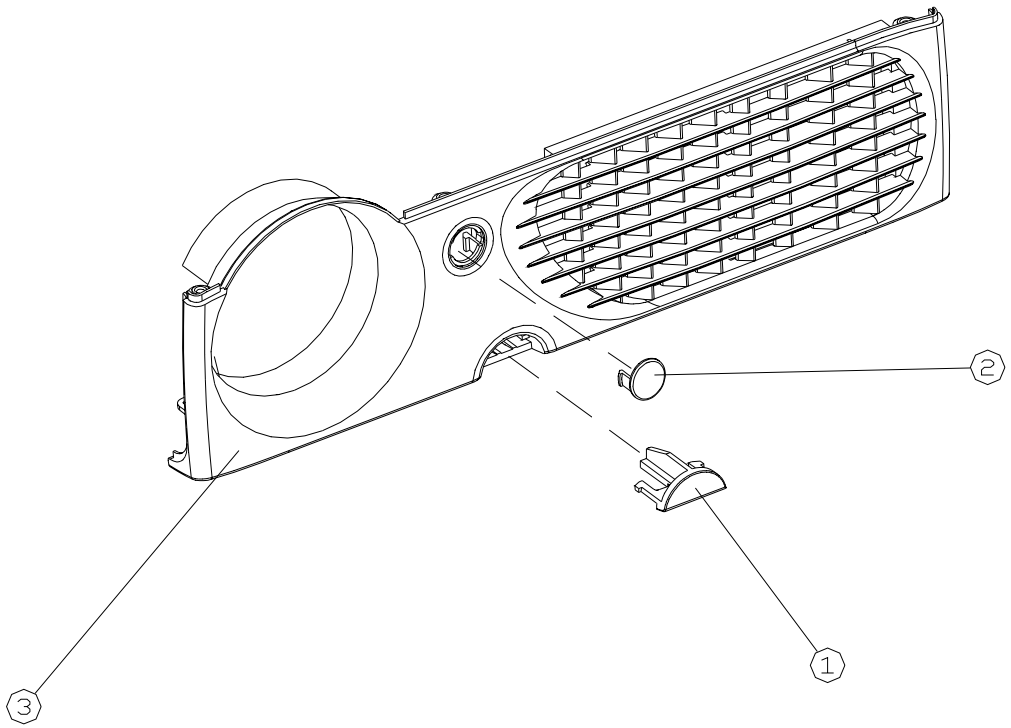
## 3-2.6 ASSY Right Cover Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86305.001 | A | ASSY RIGHT COVER MODULE EP737 |
| 1 | 51.86311.001 | A | RIGHT COVER PC+ABS C6200 EP737 |
| 2 | 75.86306.001 | A | ASSY SPEAKER RUBBER PAD-FIBER EP737 |
| 3 | 49.86302.001 | A | SPEAKER 2W 40hm 51*20.1*13.1mm 80mml |
| 4 | 85.1D122.050 | A | SCREW PAN MECH M2*5 Ni (W/WASHER φ5.0) |

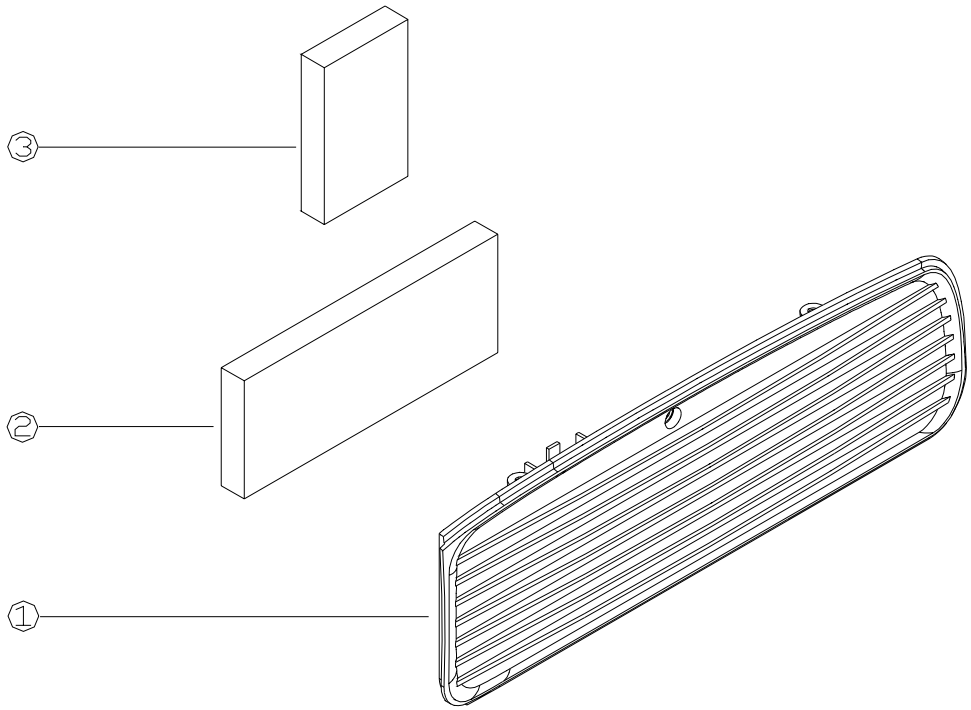
## 3-2.7 BUY Front Cover Module




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 75.86301.001 | A | BUY FRONT COVER MODULE EP737 |
| 1 | 51.86308.001 | A | ELEVATOR PUSH BUTTOM PC+ABS C6200 EP737 |
| 2 | 51.86310.001 | A | IR LENS FRONT PC 1225Y EP737 |
| 3 | 51.86309.001 | A | FRONT COVER NORYL N300X EP737 |

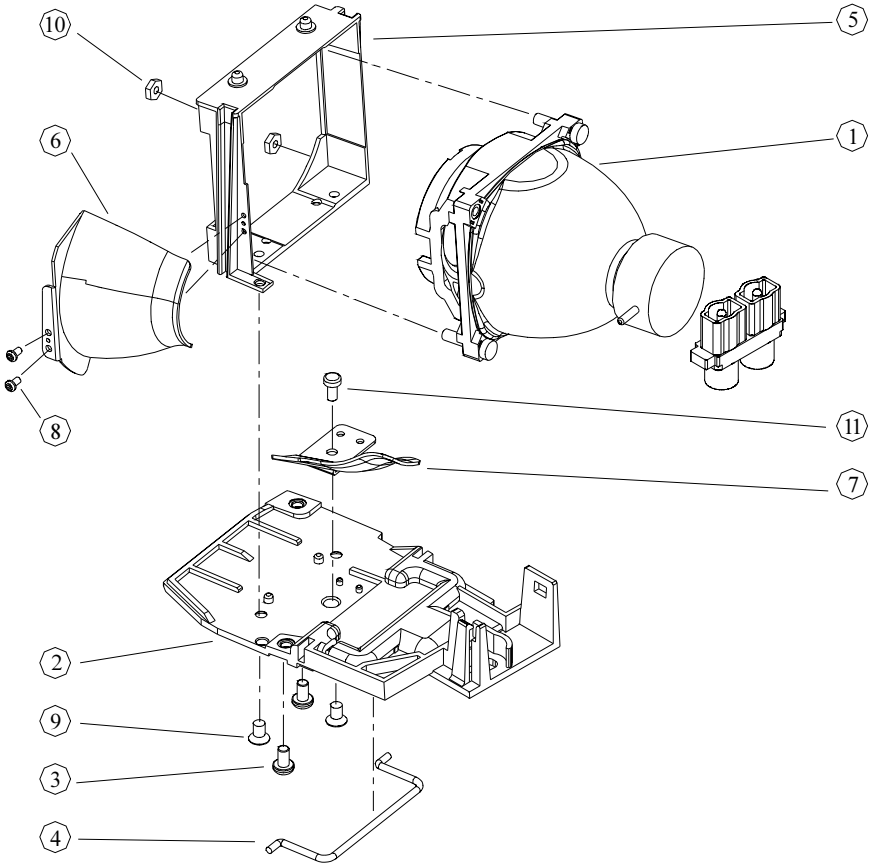
## 3-2.8 ASSY Left Cover Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86306.001 | A | ASSY LEFT COVER MODULE EP737 |
| 1 | 51.86312.001 | A | LEFT COVER NORLY N300X EP737 |
| 2 | 53.86302.001 | A | NOISE ELIMINATING PAD FRONT EP737 |
| 3 | 53.86303.001 | A | NOISE ELIMINATING PAD BACK EP737 |

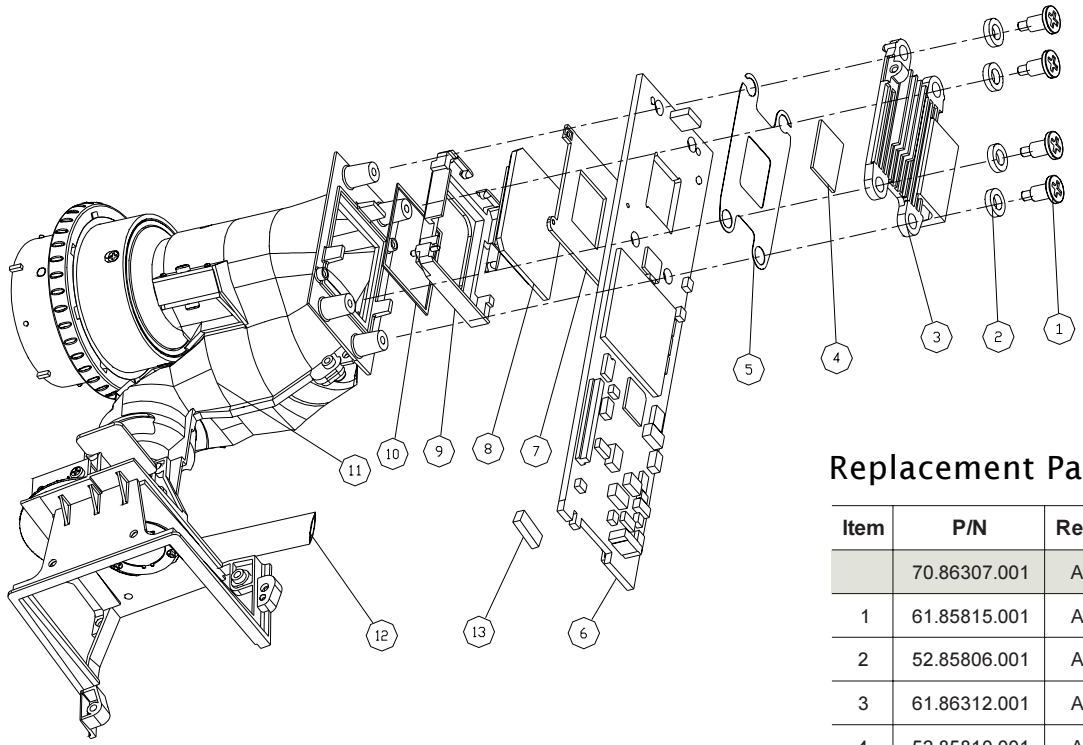
## 3-2.8 Lamp Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86308.001 | A | ASSY LAMP MODULE EP737 |
| 1 | 23.85815.001 | A | OSRAM 150W 1.3MM ARC P16 REFLECTOR |
| 2 | 51.86315.001 | A | LAMP HOLDER BOTTOM PPS EP737 |
| 3 | 61.00018.002 | A | LOCK SCREW PAN MECH M3*8.5-3.5 B |
| 4 | 61.83109.001 | A | LAMP EXCHANGE HANDLER |
| 5 | 61.85804.001 | A | LAMP HOLDER Mg ALLOY , XB31 |
| 6 | 61.86313.001 | A | LIGHT CUT FOR LAMP MODULE AL EP737 |
| 7 | 61.86315.001 | A | LIGHT CUT DOWN FOR LAMP MODULE AL EP737 |
| 8 | 85.1A321.030 | A | SCREW PAN MECH M1.7*3 BLACK |
| 9 | 85.41623.050 | A | SCREW FLAT M3*5 BLACK NYLOK SOCKET |
| 10 | 86.0A123.024 | A | HEX NUT M3*0.5P L2.4 Ni |
| 11 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |

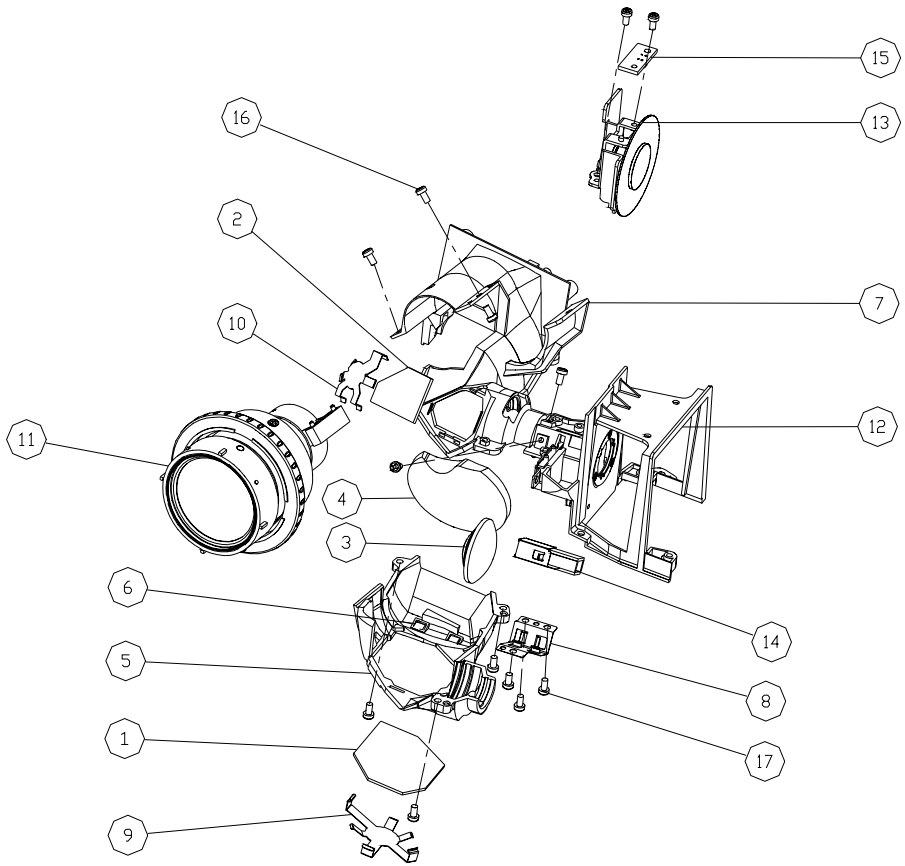
## 3-2.9 Engine Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86307.001 | A | ASSY ENGINE MODULE EP737 |
| 1 | 61.85815.001 | A | SHOULDER SCREW FOR DMD XB31 |
| 2 | 52.85806.001 | A | RUBBER WASHER FOR DMD XB31 |
| 3 | 61.86312.001 | A | DMD-HEATSINK ADC12 EP737 |
| 4 | 52.85810.001 | A | DMD HEATSINK THERMAL PAD 19*14*1t |
| 5 | 51.86328.001 | A | DMD-HEAT-SINK-INSULATOR MYLAR EP737 |
| 6 | 80.86304.001 | A | PCBA DMD BOARD EP737 |
| 7 | 75.85803.001 | A | CONTACT HOUSING INTERCON 7502-001 FOR DDR 0.7" XGA XB31 |
| 8 | 48.858DM.D11 | A | DMD 1024*768 PI*EL DDR 0.7" XGA |
| 9 | 51.85814.001 | A | DMD HOLDER DDR 07 ULTEM 2300 XB31 |
| 10 | 52.85802.001 | A | DMD-LIGHT-MASK XB31 RUBBER |
| 11 | 70.86312.001 | A | ENGINE SUB MODULE EP737 |
| 12 | 52.85819.001 | A | TUBE COLOR WHEEL, SUMITUBE F32,BLACK |
| 13 | 52.86310.001 | A | DMD FAN INSULATOR RUBBER EP737 |

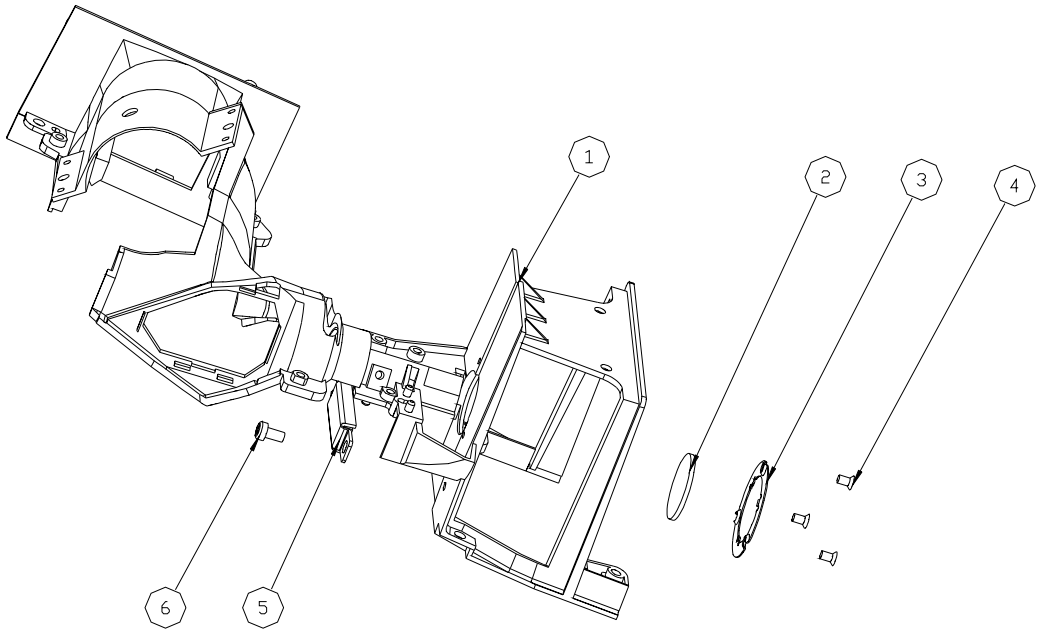
## 3-2.10 Engine SUB Module




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86312.001 | A | ENGINE SUB MODULE EP737 |
| 1 | 23.85802.001 | A | SILFLEX-VIS MIRROR 1 |
| 2 | 23.85802.011 | A | SILFLEX-VIS MIRROR 2 |
| 3 | 23.85806.001 | A | ASPHERIC CONDENSER B270 LENSϕ28MM |
| 4 | 23.85806.011 | A | ASPHERIC TRUNCATE RELAY LENS ϕ46MM |
| 5 | 51.85815.001 | A | ENGINE BOTTOM BMC , XB31 |
| 6 | 52.85808.001 | A | PORON-LENS BLACK XB31 |
| 7 | 52.85816.001 | A | RUBBER-ANTI-DUST BLACK XB31 |
| 8 | 61.85805.001 | A | ROD SPRING SUS301 0.2t , XB31 |
| 9 | 61.85806.001 | A | MIRROR1 SPRING SUS301 0.25t , XB31 |
| 10 | 61.85807.001 | A | MIRROR2-SPRING SUS301 0.25t, XB31 |
| 11 | 70.86310.001 | A | OPTICAL ZOOM LENS MODULE EP737 |
| 12 | 70.85822.001 | A | ENGINE PRE-ASSY MODULE XB31 |
| 13 | 70.86313.001 | A | COLOR WHEEL MODULE EP737 |
| 14 | 70.85824.001 | A | ROD MODULE XB31 |
| 15 | 76.85802.001 | B | ASSY PHOTO-SENSOR-BD UL1007 #28 170mm Blue XB31 |
| 16 | 85.1A525.060 | A | SCREW PAN MECH M2.5*6 Ni NYLOK CARUSO |
| 17 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |

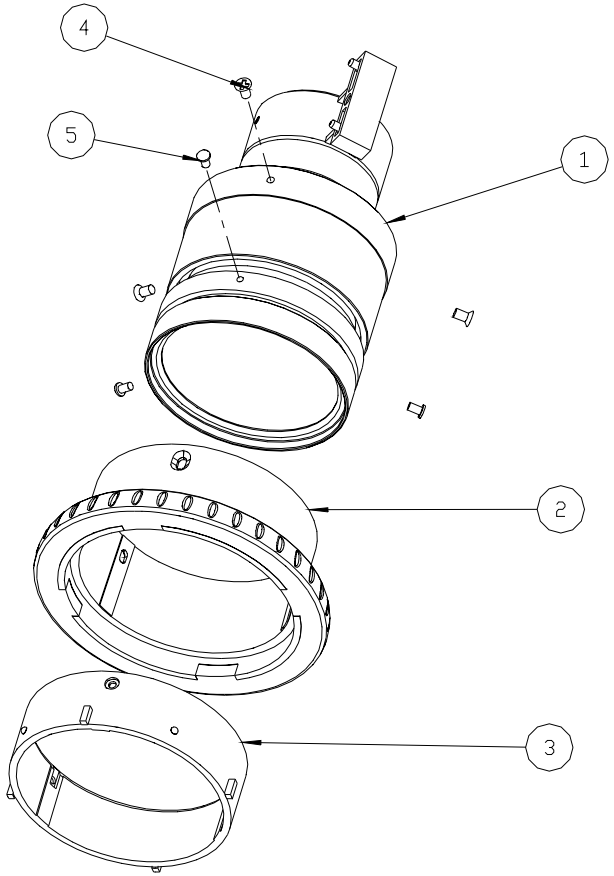
## 3-2.11 ENGINE PRE-ASSY MODULE




## Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86316.001 | A | ENGINE PRE-ASSY MODULE EP737 |
| 1 | 61.85803.001 | A | ENGINE TOP MG ALLOY , XB31 |
| 2 | 23.85810.001 | A | PYREX UV-IR FILTER ϕ16.750.25MM |
| 3 | 61.81517.001 | A | BRACKET for UV-IR FILTER |
| 4 | 85.4A622.030 | A | SCREW FLAT MECH M2*3 BLACK NYLOK CARUSO |
| 5 | 43.86317.001 | A | THERMAL SWITCH WITH BRACKET KLIXON |
| 6 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK |

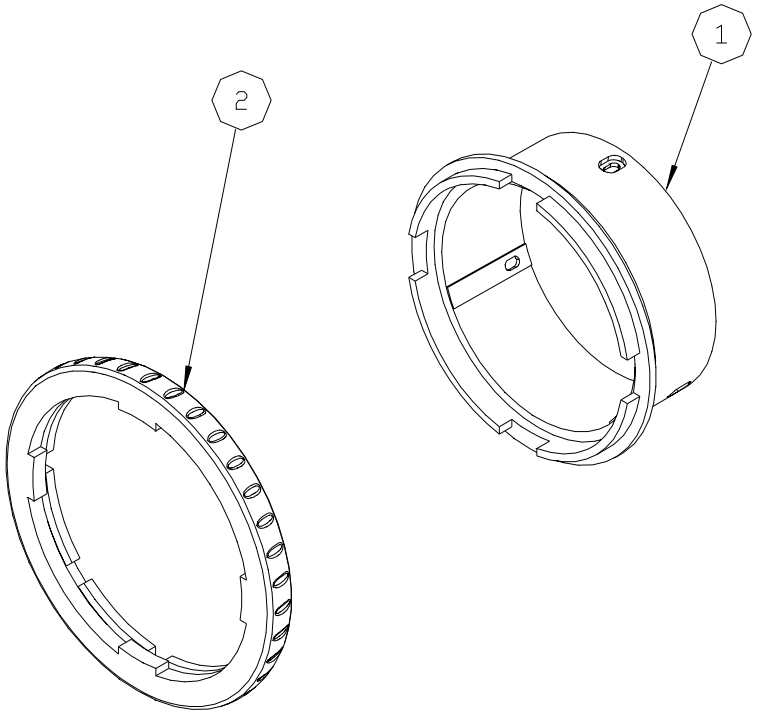
## 3-2.12 Optical Zoom Lens Module




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86310.001 | A | OPTICAL ZOOM LENS MODULE EP737 |
| 1 | 23.81901.003 | A | OPTICAL ZOOM LENS OF NEW COATING 0.7"DMD CARUSO |
| 2 | 70.86314.001 | A | ASSY ZOOM RING MODULE EP737 |
| 3 | 51.86313.001 | A | FOCUS RING BASE PC+ABS C6200 EP737 |
| 4 | 85.4A622.030 | A | SCREW FLAT MECH M2*3 BLACK NYLOK CARUSO |
| 5 | 85.YA121.025 | A | SCREW FLAT HEAD TAP M1.7*2.5 Ni |

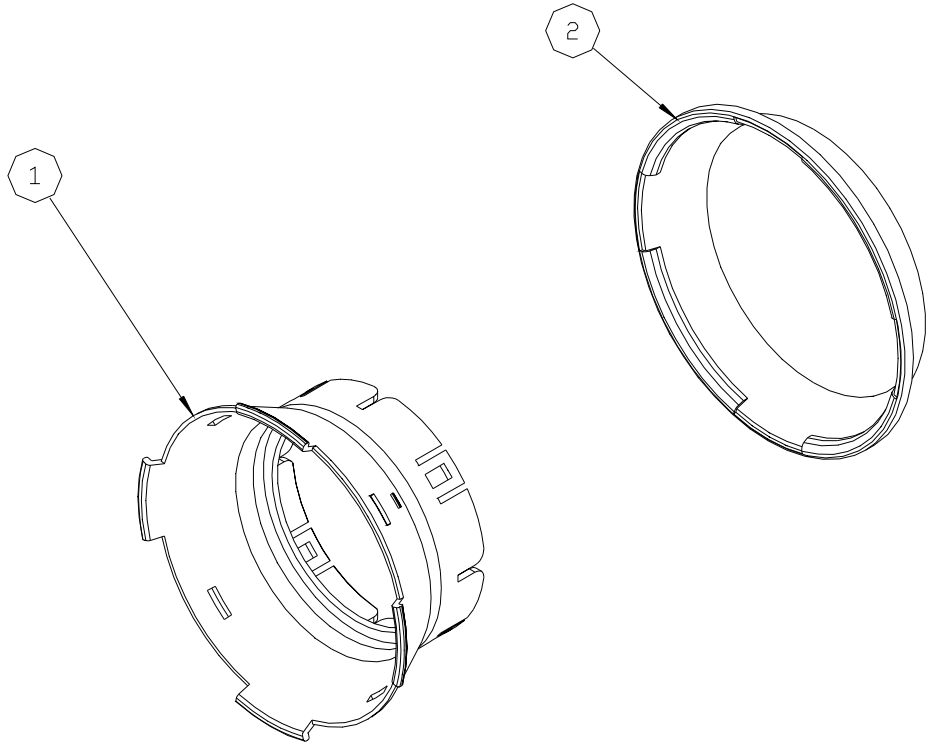
## 3-2.13 ASSY ZOOM RING MODULE




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86314.001 | A | ASSY ZOOM RING MODULE EP737 |
| 1 | 51.86314.001 | A | ZOOM RING PC+ABS C6200 EP737 |
| 2 | 52.86307.001 | A | ZOOM RING RUBBER EP737 |

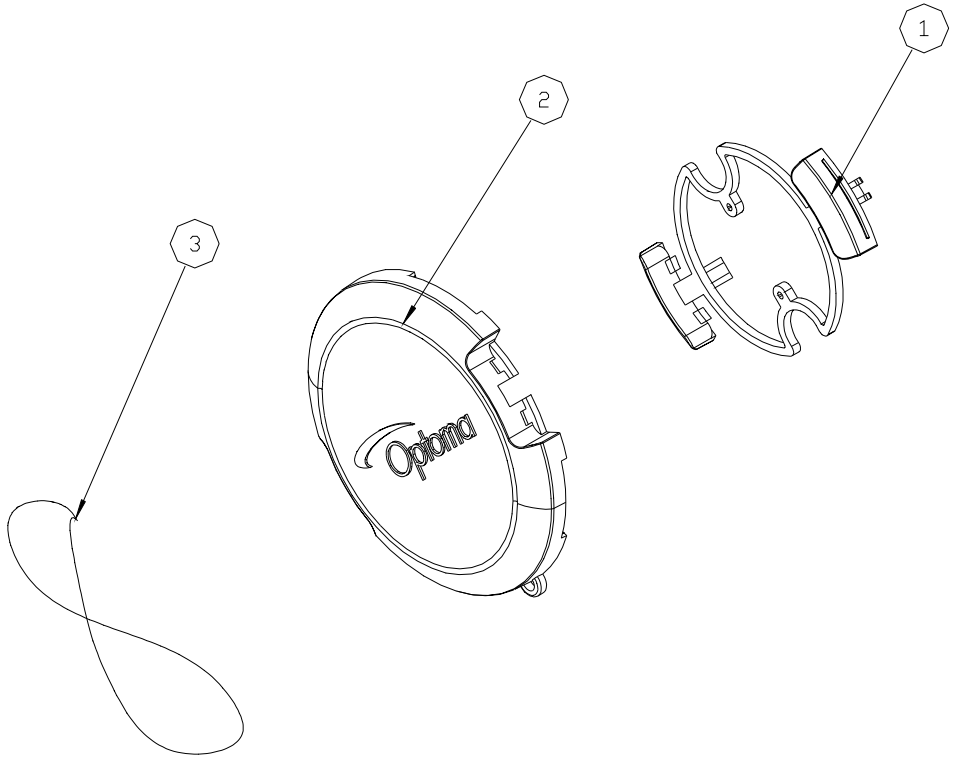
## 3-2.14 ASSY FOCUS RING FRONT




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 75.86302.001 | A | BUY ASSY FOCUS RING FRONT EP737 |
| 1 | 51.86316.001 | A | FOCUS RING PC+ABS C6200 EP737 |
| 2 | 51.86317.001 | A | FOCUS RING SUIT PC+ABS C6200 EP737 |

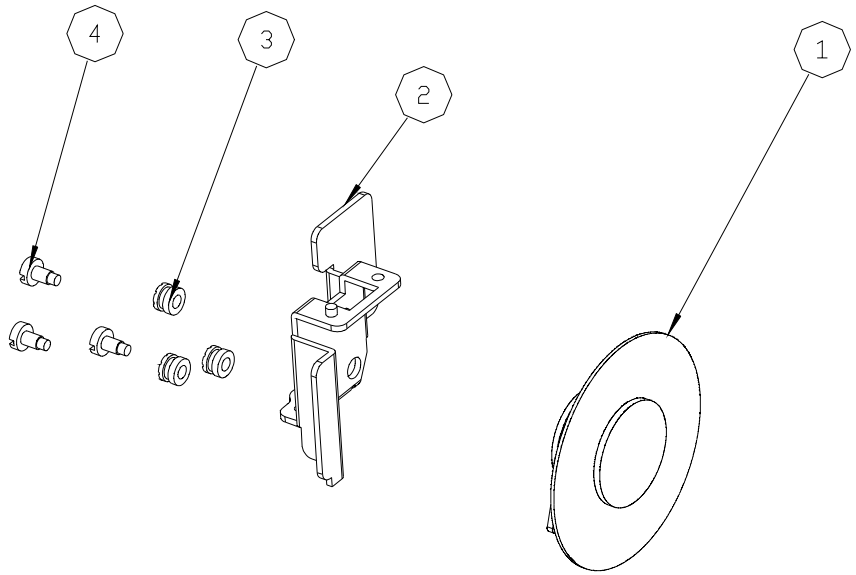
## 3-2.15 BUY ASSY LENS COVER




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 75.86304.001 | A | BUY ASSY LENS COVER EP737 |
| 1 | 51.86320.001 | A | LENS COVER PC+ABS C6200 EP737 |
| 2 | 51.86306.001 | A | LENS COVER SPRING PC EP737 |
| 3 | 51.83150.001 | A | CAP STRAP |

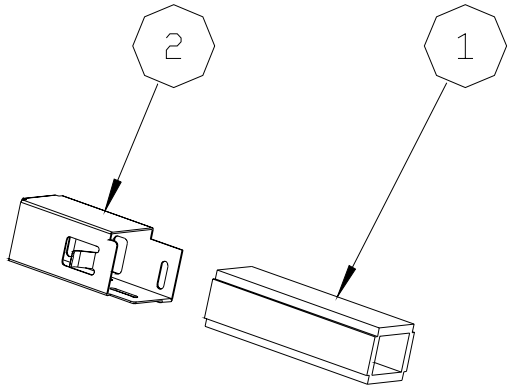
## 3-2.16 Color Wheel Module




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86313.001 | A | COLOR WHEEL MODULE EP737 |
| 1 | 23.85819.011 | A | R90G100W85B85 DDR CW (MOTOR20.5MM) |
| 2 | 61.86310.001 | A | COLOR WHEEL HOLDER SECC 1.2t EP737 |
| 3 | 52.83615.001 | A | COLORWHEEL DISC RUBBER,EzPro755 |
| 4 | 61.83628.001 | A | COLORWHEEL SHOULDER SCREW,EzPro755 |

## 3-2.17 ROD MODULE




### Replacement Parts List

| Item | P/N | Rev. | Description |
|---|---|---|---|
| | 70.86317.001 | A | ROD MODULE EP737 |
| 1 | 23.85817.011 | A | HLE HOLLOW ROD 6.75*4.9*24.2 MMN3 |
| 2 | 61.85823.001 | A | ROD HOLDER SUS 301 0.2t |

# 3-3 Recommendation Spare Parts List

| Item | P/N | Rev. | Description | Type |
|---|---|---|---|---|
| 1 | 35.52302.091 | A | LABEL CARTON 108*92 BLANK | CM |
| 2 | 35.86301.001 | A | SPEC LABEL BLANK EP737 | CM |
| 3 | 36.00018.001 | A | EXTENDED WARRANTY ;REGISTRATION FORM,USA FOR LPP SERIES | CM |
| 4 | 36.86301.001 | A | QUICK START CARD MULTILINGUAL EP737 | CM |
| 5 | 36.86302.001 | A | USER'S GUIDE FOR EP737 | CM |
| 6 | 42.50110.011 | A | CABLE RCA 1.8M XB31 | CM |
| 7 | 42.50209.031 | A | CABLE S-VIDEO 1.8M XB31 | CM |
| 8 | 42.81505.051 | A | CABLE POWER-CORD AC C5 3P#18/SPT-2 UNSHLD 6ft BLACK(N,A);XB31 | CM |
| 9 | 76.81904.001 | A | ASSY FAN FAL3F12LH 50*20 CARUSO | CM |
| 10 | 42.86301.001 | A | CABLE RS-232(BLUE) TO MINI DIN 3PIN 1800mm EP737 | CM |
| 11 | 42.85804.001 | A | CABLE M1-A TO VGA/USB(A) 1.8M MOLEX | CM |
| 12 | 42.85811.001 | A | CABEL MINI JACK TO  MINI JACK 1.8M BLACK XB31 | CM |
| 13 | 42.85802.002 | A | W.A. 14*26 50mm UL1061 THERMAL BD/BALLAST XB31 | CM |
| 14 | 42.85803.001 | A | W.A. 4P #22 185mm DC-DC/BALLAST XB31 | CM |
| 15 | 42.85808.001 | A | W.A. GROUND FOR BALLAST 135mm XB31 | CM |
| 16 | 42.85801.001 | A | CABLE FFC 14P 0.5Pitch 140mm KEY BD/FRONTEND BD XB31 | CM |
| 17 | 42.85809.001 | A | W.A. 3P #28 125mm BALLAST/THERMAL BD | CM |
| 18 | 42.83603.001 | A | CABLE M1-D TO DVI/USB(A) 5M MOLEX EP737 | CM |
| 19 | 42.83604.001 | A | CABLE M1-A TO HDTV/USB(A) 5M MOLEX EP737 | CM |
| 20 | 48.858DM.D11 | A | DMD 1024*768 PI*EL DDR 0.7" XGA | SW |
| 21 | 49.81901.001 | A | PANASONIC SCIROCCO FAN FAL3F12LH 50*20mm | CM |

| Item | P/N | Rev. | Description | Type |
|---|---|---|---|---|
| 22 | 49.86301.001 | A | MISC FAN SUNON 5010 L=300mm EP737 | CM |
| 23 | 49.86302.001 | A | SPEAKER 2W 40hm 51*20.1*13.1mm 80mm | CM |
| 24 | 49.86304.001 | A | MISC FAN SUNON 5015 L=70mm EP737 | CM |
| 25 | 51.00061.001 | A | PLASTIC RIVET φ3.0 SR-3L | CM |
| 26 | 51.00068.001 | A | NYLON WASHER PG U-5 FOR BALLAST XB31 | CM |
| 27 | 51.00071.001 | A | SPACER SUPPORT PG-MCF-6 XB31 | CM |
| 28 | 51.81537.001 | A | ESD BAG LDPE 300*400*0.1mm | CM |
| 29 | 51.83138.001 | A | DC TO DC BOARD HOLDER | CM |
| 30 | 51.83142.001 | A | FUSE COVER (FH-1L-UL) | CM |
| 31 | 51.85814.001 | A | DMD HOLDER DDR 07 ULTEM 2300 XB31 | CM |
| 32 | 51.85827.001 | A | DC_DC_BD MYLAR 0.5t XB31 Black | CM |
| 33 | 51.85828.001 | A | DMD-HEAT-SINK-INSULATOR MYLAR XB31 | CM |
| 34 | 51.86301.001 | A | LAMP BOTTOM COVER NORYL N300X EP737 | CM |
| 35 | 51.86302.001 | A | KEY PAD PC+ABS C6200 EP737 | CM |
| 36 | 51.86303.001 | A | LED LENS PC EP737 | CM |
| 37 | 51.86304.001 | A | ELEVATOR FOOT NORYL N300X EP737 | CM |
| 38 | 51.86305.001 | A | ELEVATOR HOOK NORYL N300X EP737 | CM |
| 39 | 51.86311.001 | A | RIGHT COVER PC+ABS C6200 EP737 | CM |
| 40 | 51.86319.001 | A | BALLAST MYLAR FRPP EP737 | CM |

| Item | P/N | Rev. | Description | Type |
|---|---|---|---|---|
| 41 | 51.86321.001 | A | IR COVER PAD FRONT EP737 | CM |
| 42 | 51.86323.001 | A | LIMIT SWITCH HOLDER NORYL N300X EP737 | CM |
| 43 | 51.86325.001 | A | ENGINE LIGHT CUT MYLAR C850PVC 0.1t | CM |
| 44 | 51.86326.001 | A | FAN FAL3F DUCT FRONT PPS EP737 | CM |
| 45 | 51.86327.001 | A | FAN FAL3F DUCT BACK PPS EP737 | CM |
| 46 | 51.86307.001 | A | FAN HOLDER FRONT COVER NORYL EP737 | CM |
| 47 | 51.86322.001 | A | FAN GUIDE FRONT NORYL N300X EP737 | CM |
| 48 | 52.85802.001 | A | DMD-LIGHT-MASK XB31 RUBBER | CM |
| 49 | 52.85806.001 | A | RUBBER WASHER FOR DMD XB31 | CM |
| 50 | 52.85810.001 | A | DMD HEATSINK THERMAL PAD 19*14*1t | CM |
| 51 | 52.85812.001 | A | LOCK_RUBBER FOR FAN_FAL3F_DUCT XB31 | CM |
| 52 | 52.85814.001 | A | WASHER RUBBER FOR FAN_PANASONIC XB31 | CM |
| 53 | 52.85819.001 | A | TUBE COLOR WHEEL, SUMITUBE F32,BLACK | CM |
| 54 | 52.86303.001 | A | FAN RUBBER SUNON 5015 RUBBER EP737 | CM |
| 55 | 52.86305.001 | A | ELEVATOR FOOT RUBBER EP737 | CM |
| 56 | 52.86309.001 | A | MAIN BOARD BOTTOM RUBBER EP737 | CM |
| 57 | 52.86310.001 | A | DMD FAN INSULATOR RUBBER EP737 | CM |
| 58 | 52.86301.001 | A | FAN RUBBER FRONT COVER RUBBER EP737 | CM |
| 59 | 53.86304.001 | A | SOFT CARRY BAG EP737 | CM |
| 60 | 55.83601.002 | A | CARTON AB 424*384*322 EP755 | CM |

| Item | P/N | Rev. | Description | Type |
|---|---|---|---|---|
| 61 | 56.86301.001 | A | PARTITION FOR ACCESSORY BOX EPE EP737 | CM |
| 62 | 56.86302.001 | A | CUSHION EPE EP737 | CM |
| 63 | 57.00001.001 | A | PACK SIO2 DRIER 20g | CM |
| 64 | 61.00018.002 | A | LOCK SCREW PAN MECH M3*8.5-3.5 B | CM |
| 65 | 61.86302.001 | A | FAN GUIDE BRACKET AL 5052 EP737 | CM |
| 66 | 61.85815.001 | A | SHOULDER SCREW FOR DMD XB31 | CM |
| 67 | 61.86304.001 | A | OPTOMA LOGO AL EP737 | CM |
| 68 | 61.86307.001 | A | ELEVATOR BRACKET SUS304 EP737 | CM |
| 69 | 61.86308.001 | A | ELEVATOR FOOT SPRING SUS301 EP737 | CM |
| 70 | 61.86309.001 | A | ELEVATOR PUSH SPRING SUS301 EP737 | CM |
| 71 | 61.86312.001 | A | DMD-HEATSINK ADC12 EP737 | CM |
| 72 | 61.86314.001 | A | LIGHT CUT UP FOR LAMP MODULE AL EP737 | CM |
| 73 | 61.86316.001 | A | FAN BRACKET SUNON 5015 AL EP737 | CM |
| 74 | 70.86306.001 | A | ASSY LEFT COVER MODULE EP737 | CM |
| 75 | 70.86319.001 | A | ASSY TOP COVER MODULE EP737 (RMA) | SW |
| 76 | 70.86320.001 | A | ENGINE SUB MODULE EP737 (RMA) | SW |
| 77 | 70.86321.001 | A | ASSY BOTTOM COVER MODULE EP737 (RMA) | SW |
| 78 | 70.86313.001 | A | COLOR WHEEL MODULE EP737 | SW |
| 79 | 75.85803.001 | A | CONTACT HOUSING INTERCON 7502-001 FOR DDR 0.7" XGA XB31 | CM |
| 80 | 75.85813.001 | A | ASSY DC TO DC BOARD XB31 | SW |
| 81 | 75.86304.001 | A | BUY ASSY LENS COVER EP737 | CM |
| 82 | 75.86305.001 | A | ASSY LIMIT SWITCH CHERRY DB1C A1LB-5A EP737 | CM |
| 83 | 75.85801.001 | B | ASSY BALLAST+PFC XB31 | SW |

| Item | P/N | Rev. | Description | Type |
|---|---|---|---|---|
| 84 | 75.86301.001 | A | BUY FRONT COVER MODULE EP737 | CM |
| 85 | 75.86303.001 | A | BUY ASSY IO BEZEL MODULE EP737 | CM |
| 86 | 75.86306.001 | A | ASSY SPEAKER RUBBER PAD-FIBER EP737 | CM |
| 87 | 76.85802.001 | B | ASSY PHOTO-SENSOR-BD UL1007 #28 170mm Blue XB31 | CM |
| 88 | 76.86301.001 | A | ASSY IR-SENSOR 3P#28 UL1007 160mm Green EP737 | CM |
| 89 | 80.86301.001 | E | PCBA MAIN BOARD EP737 | SW |
| 90 | 80.86302.001 | E | PCBA THERMAL BOARD EP737 | SW |
| 91 | 80.86303.001 | D | PCBA KEYPAD BOARD EP737 | SW |
| 92 | 80.86304.001 | A | PCBA DMD BOARD EP737 | SW |
| 93 | 85.005AG.040 | A | SCREW I/O STEEL | CM |
| 94 | 85.00025.041 | A | HEX I/O M2.5*H6.6*L4.0 BRASS | CM |
| 95 | 85.1A626.050 | A | SCREW PAN MECH M2.6*5 BLACK NYLOK | CM |
| 96 | 85.1A525.040 | A | SCREW PAN MECH M2.5*4 Ni NLK | CM |
| 97 | 85.1A623.060 | A | SCREW MACHINE PAN M3*6 NYLOK VX3600 | CM |
| 98 | SP.86301.001 | A | CEILING MOUNT CONNECTOR EP737 | CM |
| 99 | SP.86302.001 | A | LAMP REPLACE MODULE FOR EP737 | CM |
| 100 | SP.86303.001 | A | CEILING MOUNT CONNECTOR AND CABLE EP737 | CM |

## Note :

SW = Swap Spare Parts, CM = Consume Spare Parts. You can place an order for swap or consume spare parts to do replacement. Or just return swap spare parts back for repair, but consume spare parts is not acceptable for repair or return.

SW is repairable, when it's defective please return back the defective but complete parts to swap for good parts. Regarding CM, it's not repairable and you should give the order to do replacement and discard the defective parts directly.

The recommendation spare parts list is built for the convenience of disass embly procedure. If there is any comment or recommendation on the item of SW or CM, please let us know.

# 4 Procedure Of Disassembly

This section provides disassembly procedures for EP737 Micro Portable XGA DLP Projector. Before you begin any of these procedures, be sure to turn off the power, computer system, and other attached devices; then disconnect the power cable from the electronically outlet. Moreover, when you disassemble the projector, be sure to put the screws in a safe place and separate them according to grouping.

# Tools Needed :

Long Nose Nipper

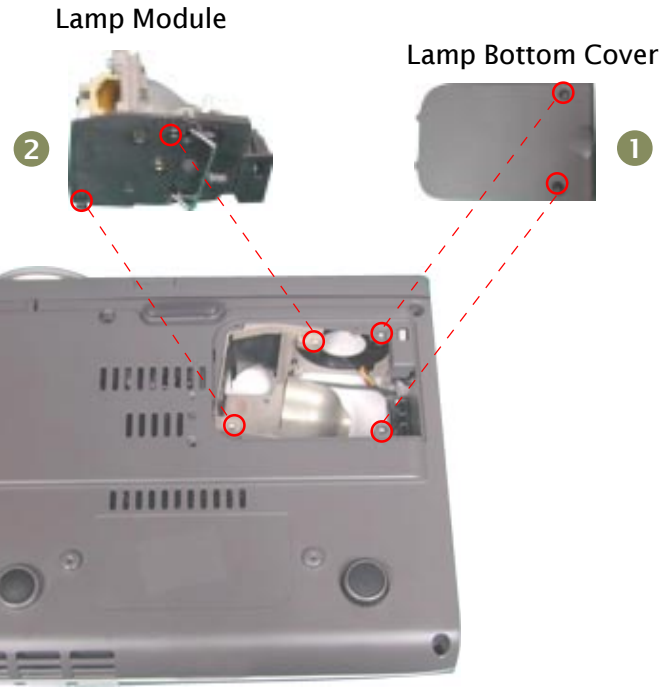
Screw Bit (+) : 101

Hex Sleeves 5mm

Screw Bit (+) : 102

Screw Bit (+) : 107

# 4-1 Disassemble Lamp Module



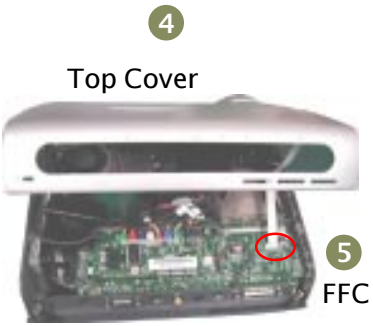

1. Loosen two screws of Lamp Bottom Cover to remove Lamp Bottom Cover.
2. Loosen two screws of Lamp Module to pull out Lamp Module.

# 4-2 Disassemble Top Cover and Keypad Board

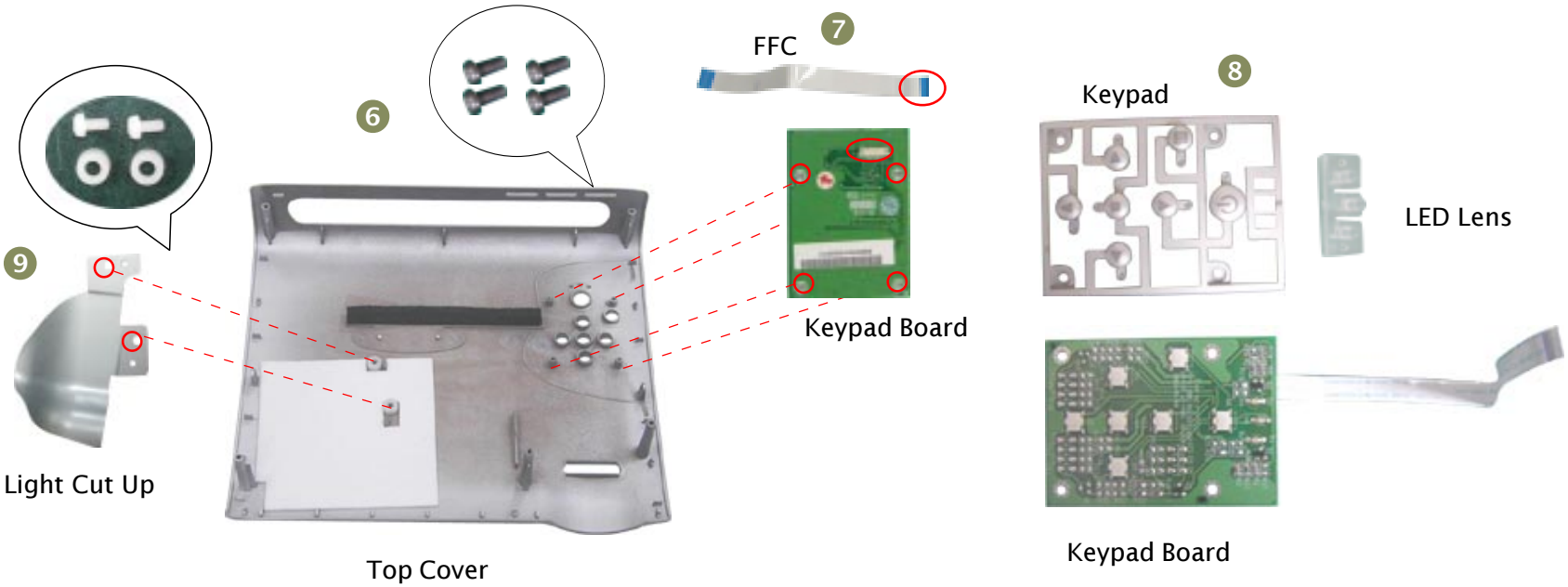
Bottom Cover

Right Cover

Left Cover

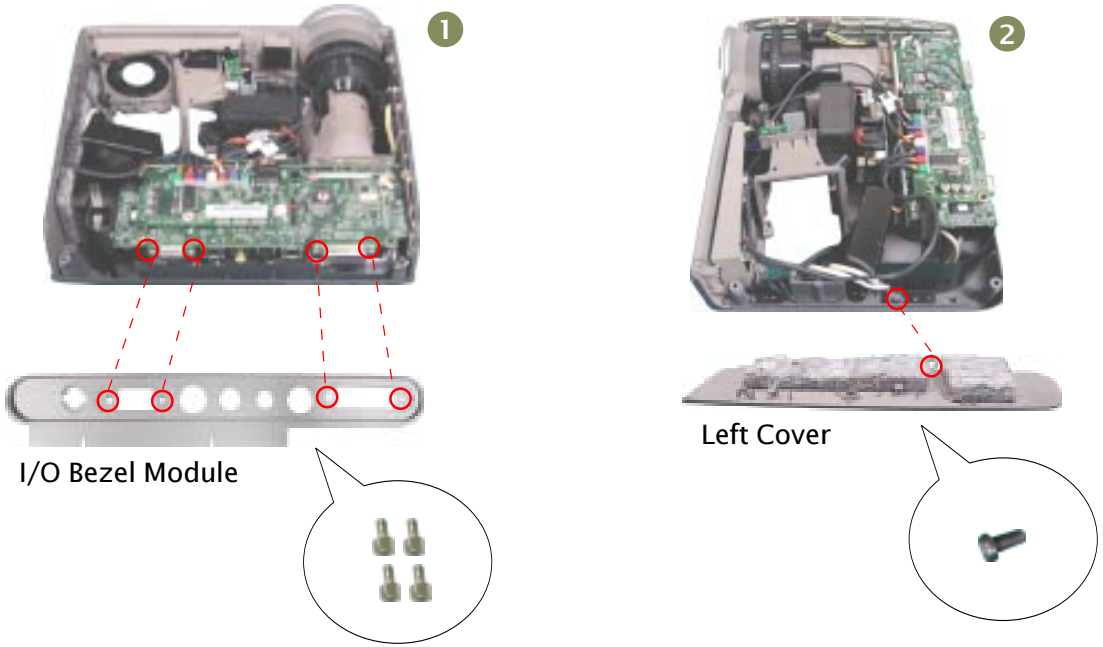



1. Remove five screws of Bottom Cover.
2. Remove one screw beside Right Cover.
3. Remove one screw beside Left Cover.
4. Turn over the projector, then life up Top Cover from Left and Right side.
5. Unplug FFC from Main Board to remove Top Cover.

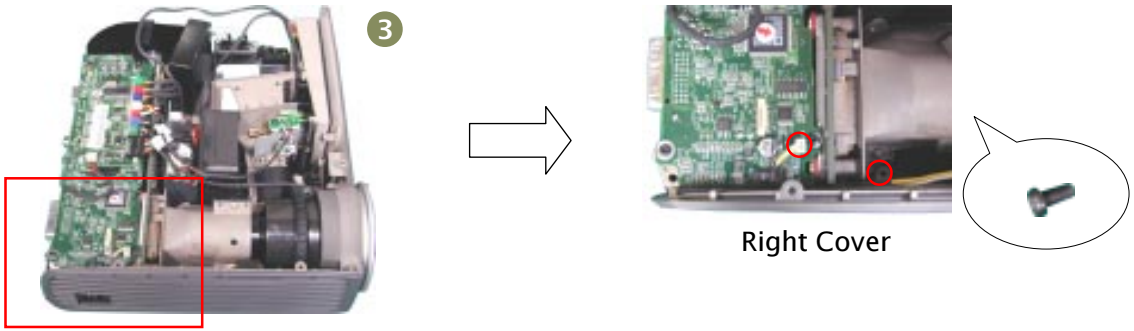


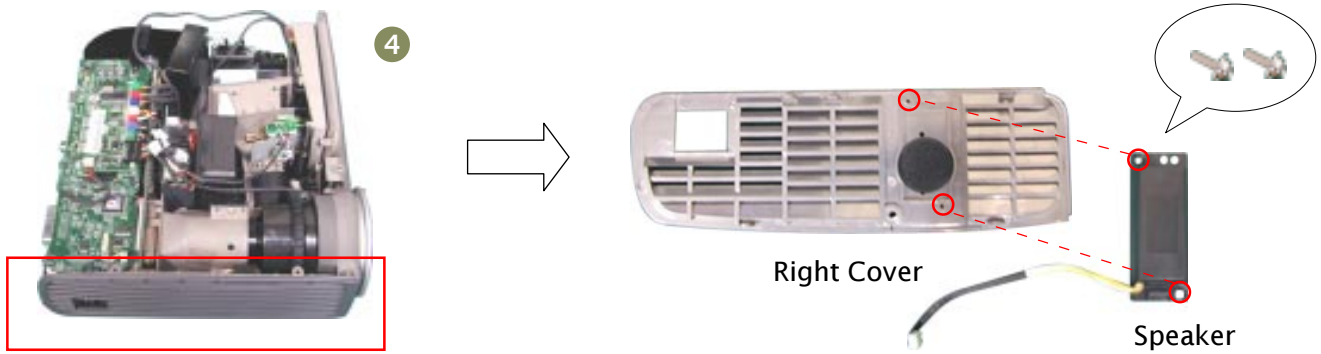

6. Unscrew four screws to remove Keypad Board and Keypad
7. Unplug FFC from Keypad Board.
8. Separate Keypad Board, Keypad and LED Lens.
9. Unscrew two screws to remove Light Cut Up.

# 4-3 Disassemble Left Cover, Right Cover and I/O Bezel Module



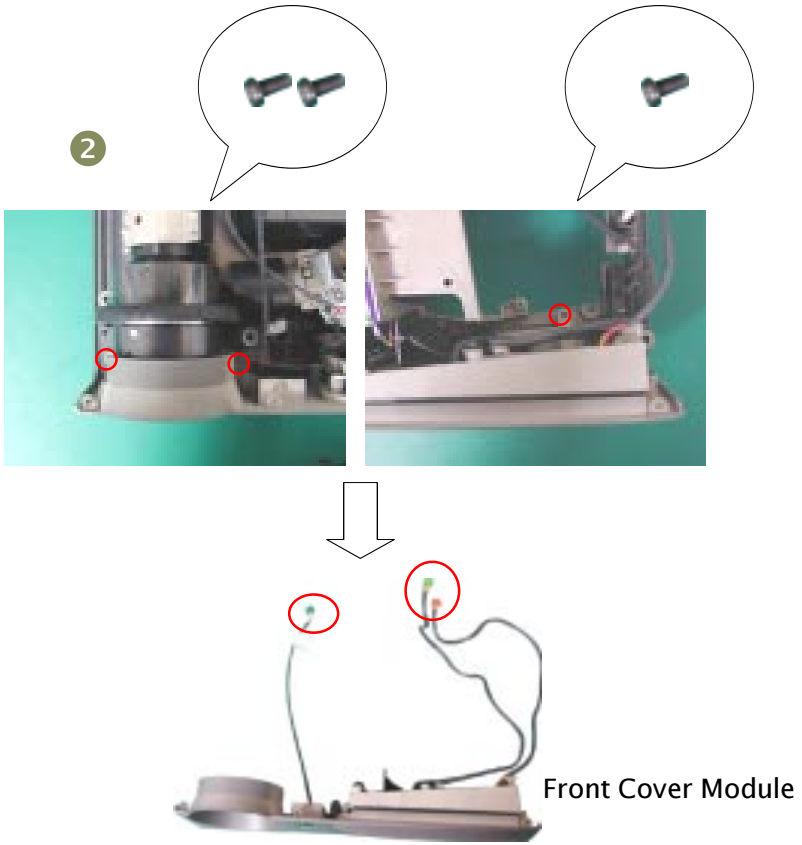

1. Remove four hex screws to remove I/O Bezel Module.
2. Unscrew one screw to remove Left Cover.



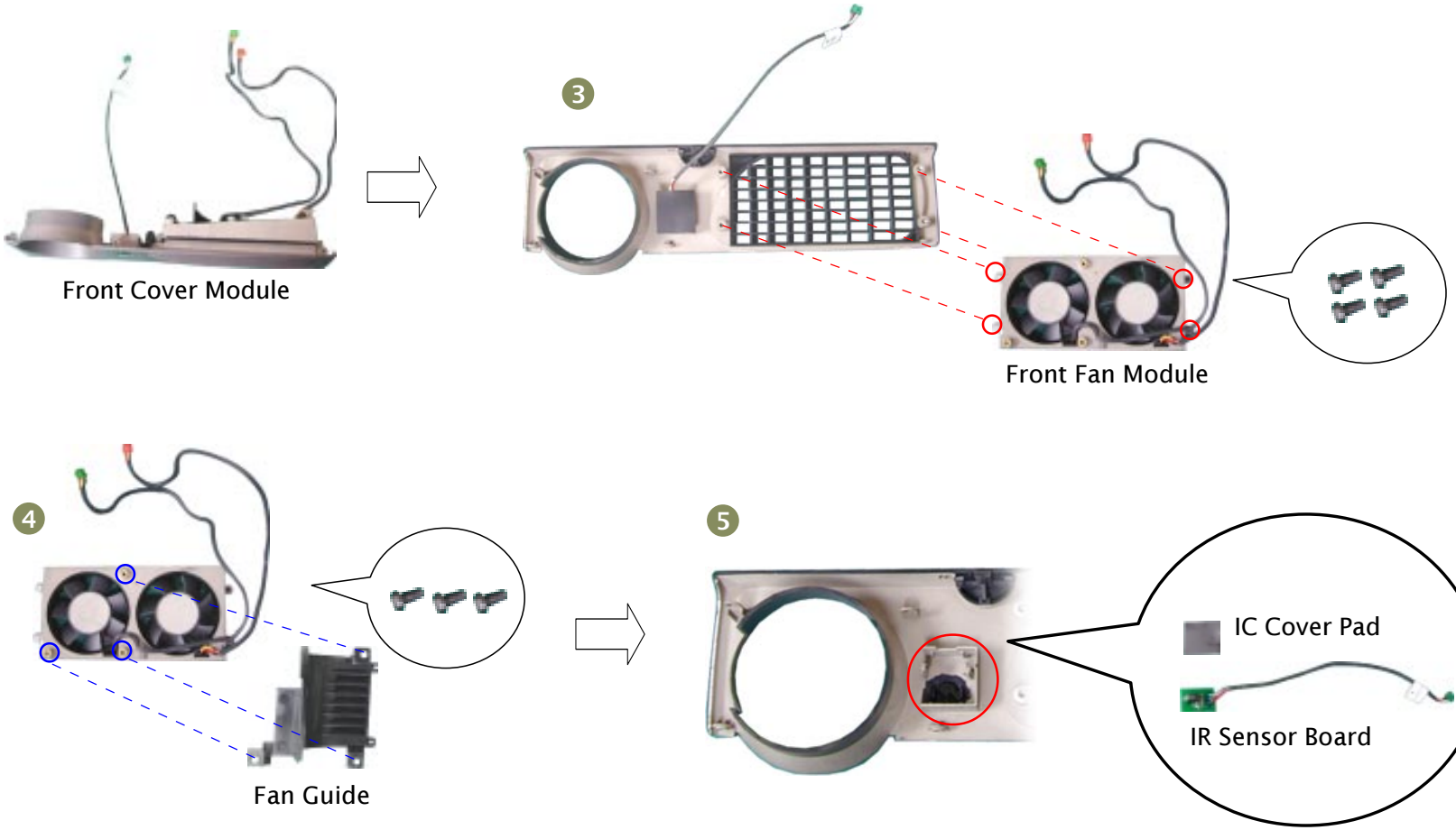




3. Unplug one wire from Main Board and unscrew one screw to remove Right Cover.
4. Remove two screws to take off speaker from Right Cover.

# 4-4 Disassemble Front Cover

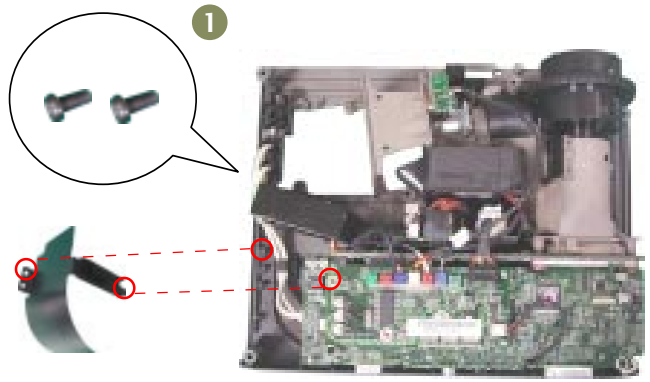




1. Pull out Focus Ring from Front Cover Module.
2. Unscrew three screws from Front Cover Module and unplug three wires from Thermal Board Take off Front Cover Module from Bottom Cover Module.

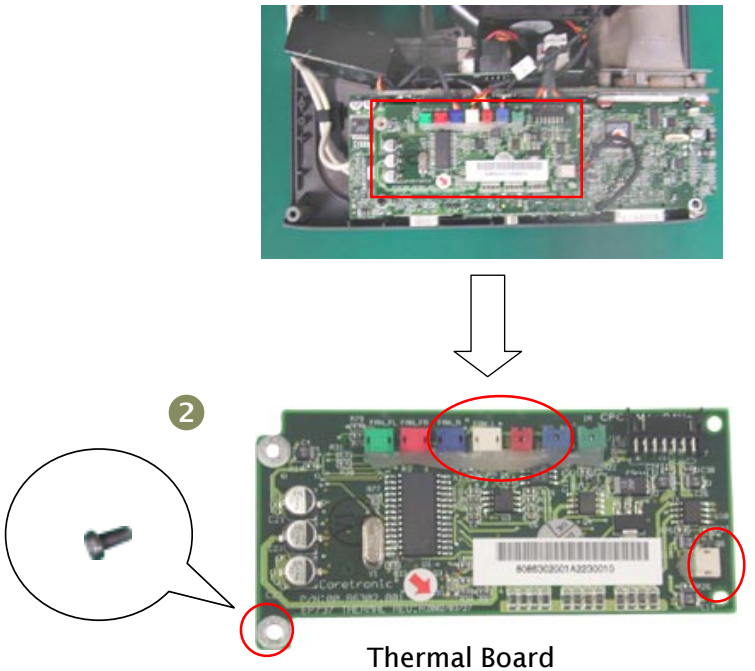



3. Unscrew four screws from Front Cover and take off it.
4. Unscrew three screws from Fan Guide to remove it.
5. Tear off IC Cover Pad, pull up IR Sensor Board from Front Cover Module.

# 4-5 Disassemble Thermal Board and Main Board

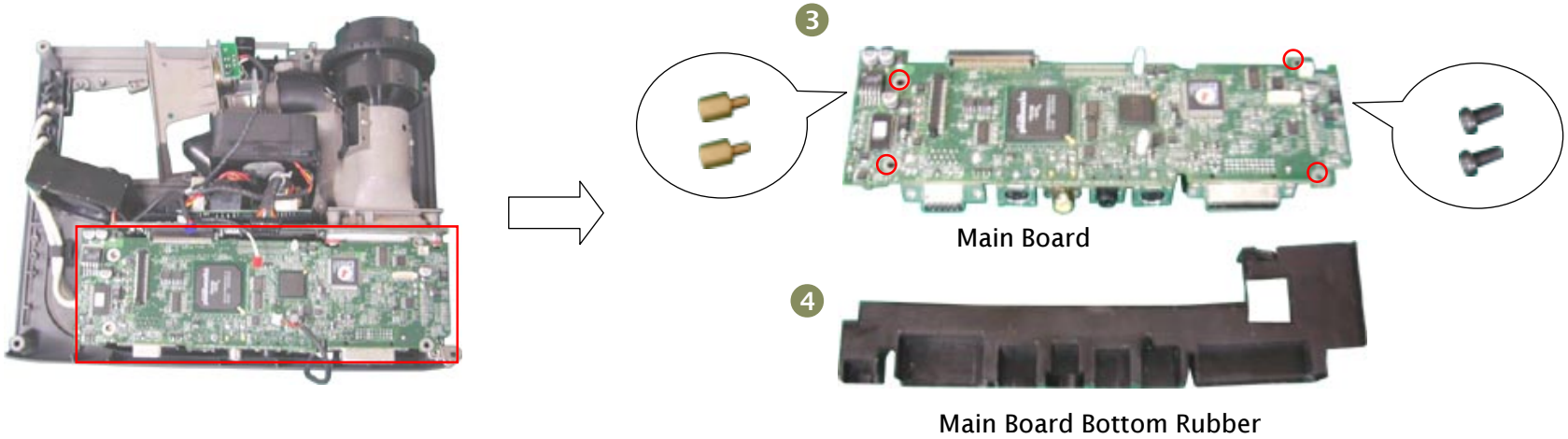



Fan Guide Bracket



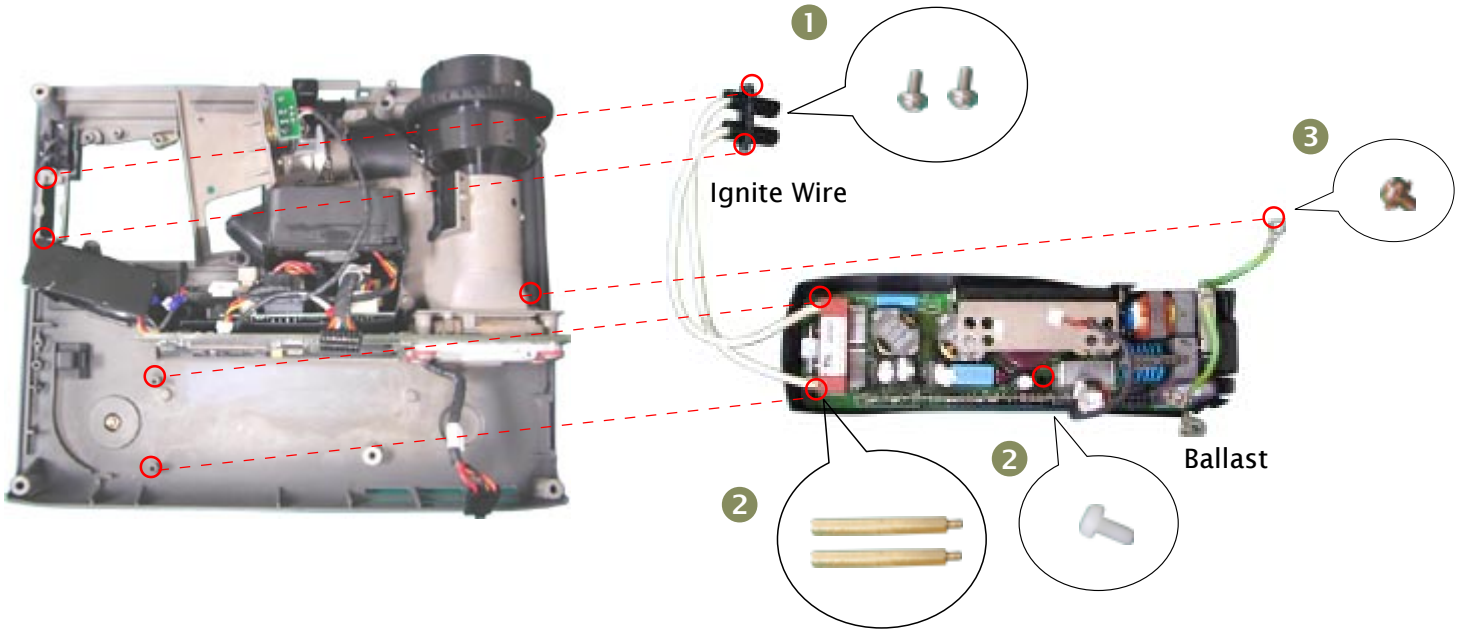

Thermal Board

1. Unscrew two screws to remove Fan Guide Bracket.
2. Unscrew one screw and unplug five wires from Thermal Board to remove it.

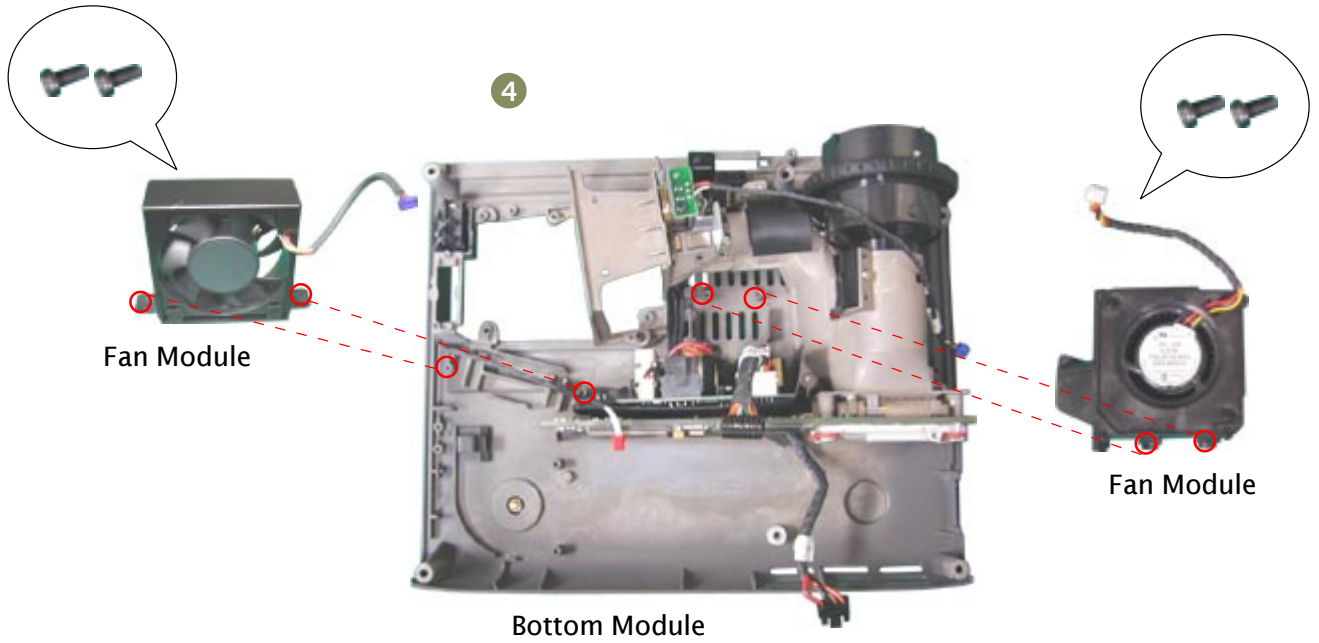



3. Unscrew two hex screws and two screws from Main Board.
4. Pull up Main Board and Separate Main Board and Main Board Bottom Rubber.

# 4-6 Disassemble Ballast and Fan Module

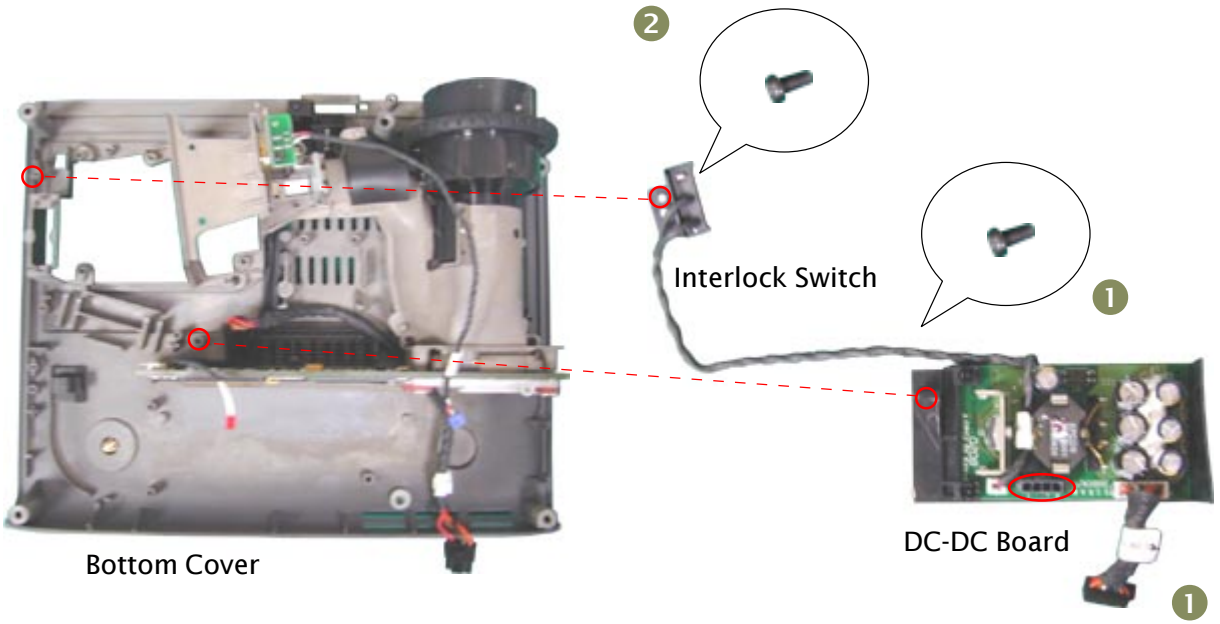



1. Unscrew two screws from Engine Module and pull out the Ignite Wire.
2. Unscrew two long hex screws and one plastic screw from Ballast Module.
3. Unscrew one screw from grounding then pull put the Ballast Module.



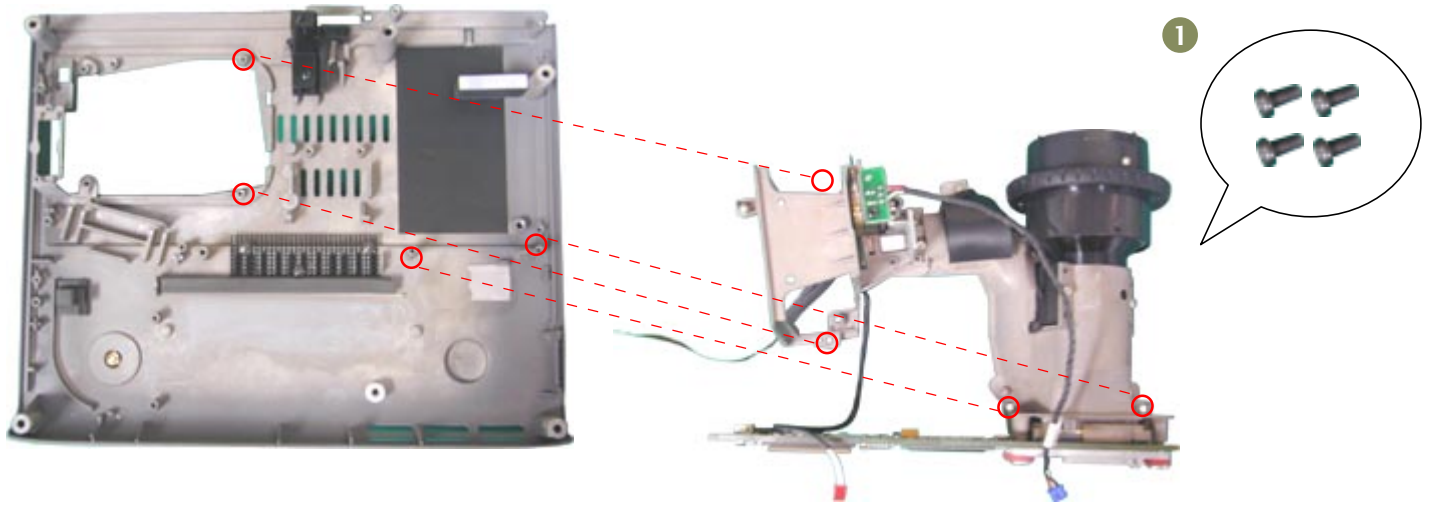

4. Unscrew four screws to remove two Fan Module from Bottom Module.

# 4-7 Disassemble DC-DC Board and Interlock Switch



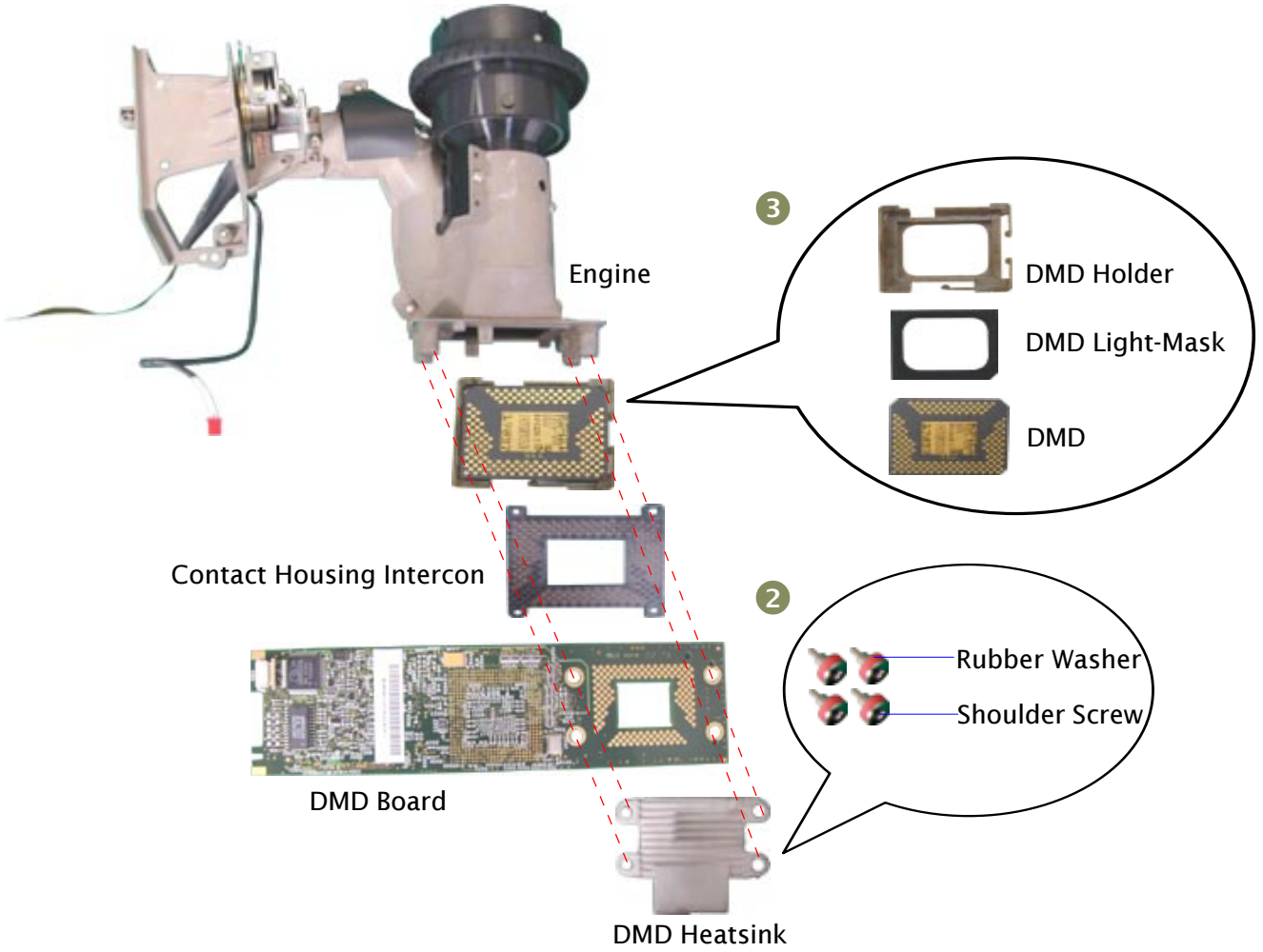

1. Unplug one wire from DC-DC Board.
   Unscrew one screw to remove DC-DC Module from Bottom Cover.
2. Unscrew one screw to remove Interlock Switch from Bottom Cover.

# 4-8 Disassemble Engine, DMD and DMD Board



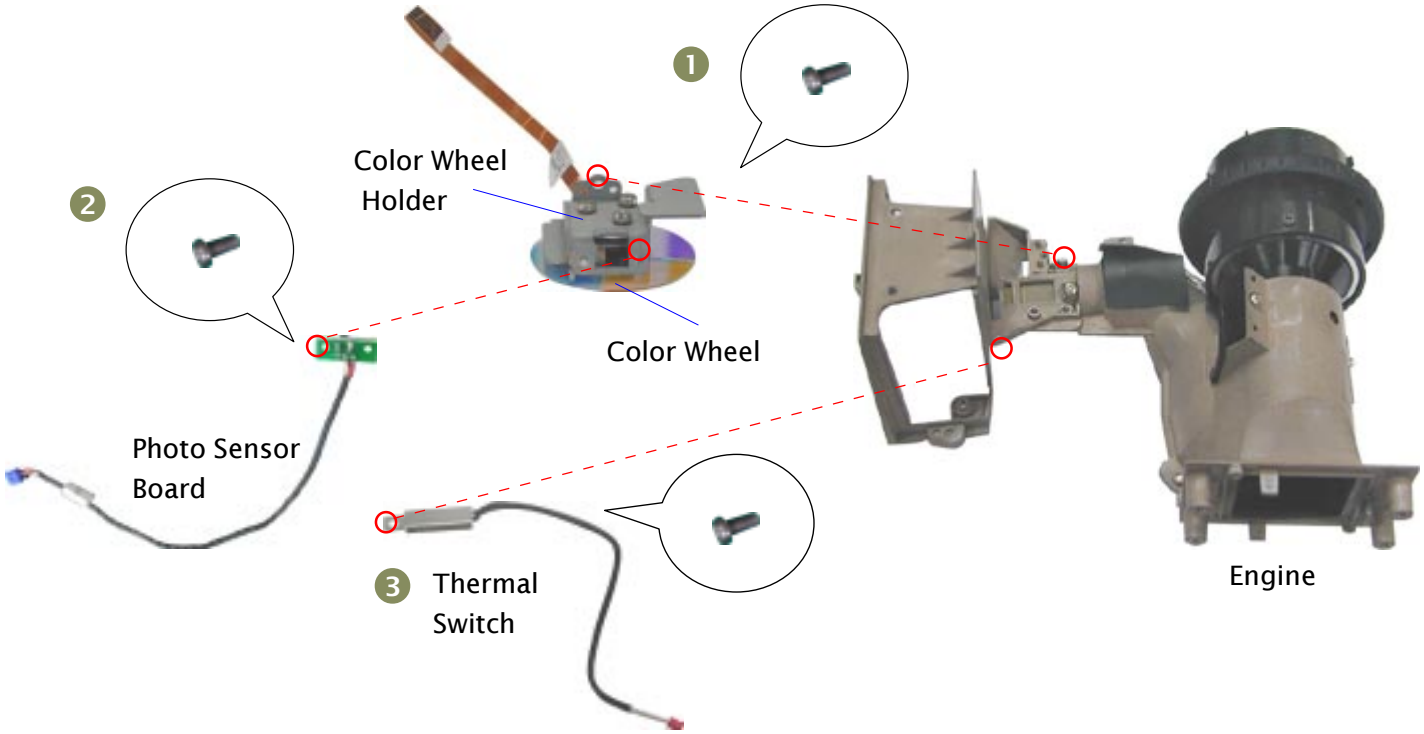

Engine Module

1. Unscrew four screws to remove Engine Module



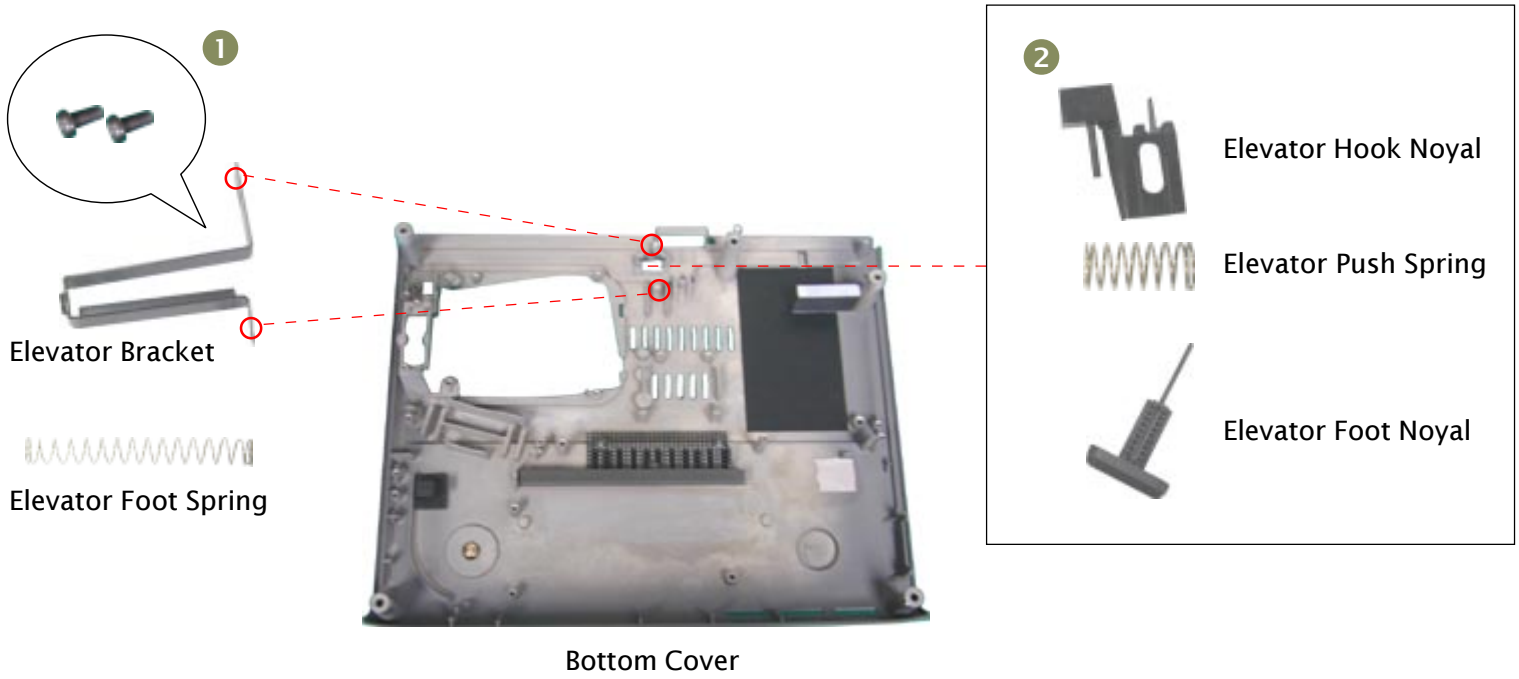

2. Unscrew four shoulder screws and Rubber Washers to remove DMD Heatsink, DMD Board, and Contact Housing Intercon.
3. Remove DMD from DMD Holder.

# 4-9 Disassemble Color Wheel, Photo Sensor Board and Thermal Switch




1. Unscrew one screw to remove Color Wheel and Photo Sensor Board from Engine.
2. Unscrew one screw to remove Photo Sensor Board from Color Wheel Holder.
3. Unscrew one screw to remove Thermal Switch from Engine.

# 4-10 Disassemble Elevator Module




1. Unscrew two screws to remove Elevator Bracket and Elevator Foot Spring from Bottom Cover.
2. Pull out Elevator Hook Noyal rightward.
   Then remove Elevator Hook Noyal, Elevator Push Spring and Elevator Foot Noyal.

# Function Of Boards 5

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

# 5-1 DMD Board

## 5-1.1 The Locations of Connectors

J1

J501

### 5-1.2 J501 : Color Wheel Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | CWCTR | Color Wheel Motor Drive Signal | 2 | CWY3 | Color Wheel Motor Drive Signal |
| 3 | CWY2 | Color Wheel Motor Drive Signal | 4 | CWY1 | Color Wheel Motor Drive Signal |

### 5-1.3 J1 : To Main Board Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | GY6 | Digital Green Signal Input |
| 3 | GY7 | Digital Green Signal Input | 4 | GND | Ground |
| 5 | GND | Ground | 6 | GY4 | Digital Green Signal Input |
| 7 | GY5 | Digital Green Signal Input | 8 | GND | Ground |
| 9 | GND | Ground | 10 | GY2 | Digital Green Signal Input |
| 11 | GY3 | Digital Green Signal Input | 12 | GND | Ground |
| 13 | GND | Ground | 14 | GY0 | Digital Green Signal Input |
| 15 | GY1 | Digital Green Signal Input | 16 | GND | Ground |
| 17 | GND | Ground | 18 | RV6 | Digital Red Signal Input |
| 19 | RV7 | Digital Red Signal Input | 20 | GND | Ground |
| 21 | GND | Ground | 22 | RV4 | Digital Red Signal Input |
| 23 | RV5 | Digital Red Signal Input | 24 | GND | Ground |
| 25 | GND | Ground | 26 | RV2 | Digital Red Signal Input |
| 27 | RV3 | Digital Red Signal Input | 28 | GND | Ground |
| 29 | GND | Ground | 30 | RV0 | Digital Red Signal Input |

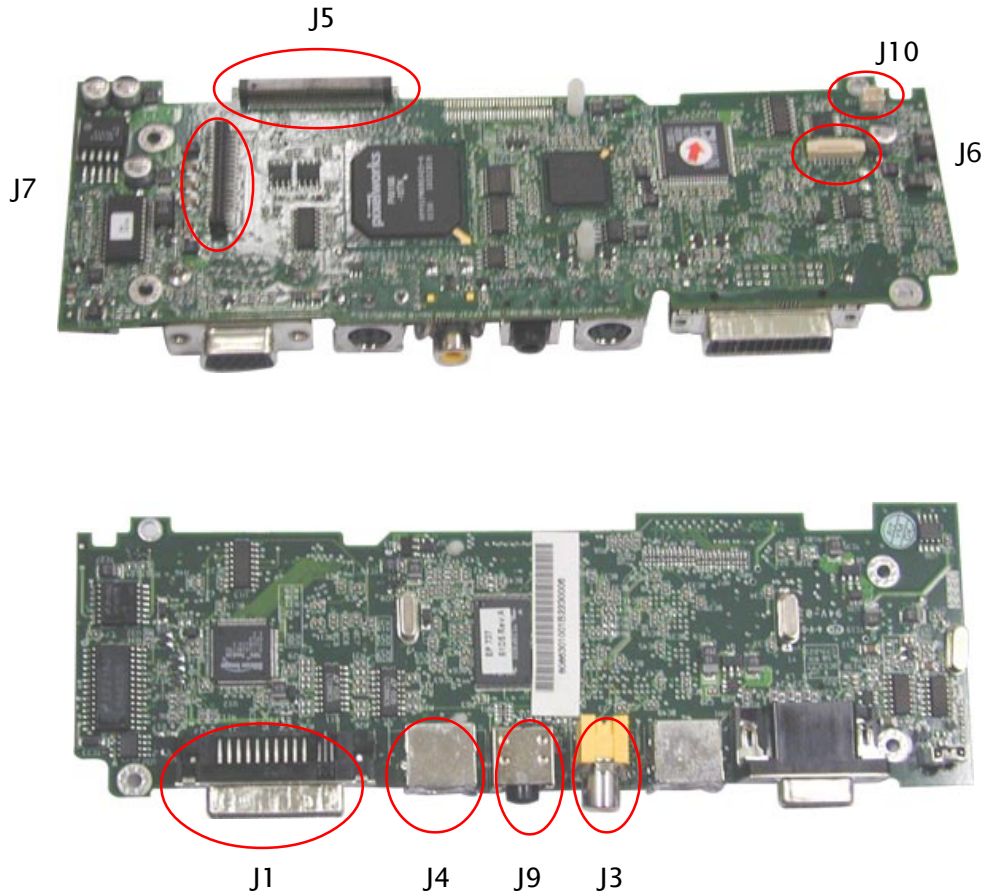
| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 31 | RV1 | Ditigal Red Signal Input | 32 | GND | Ground |
| 33 | GND | Ground | 34 | BU6 | Ditigal Blue Signal Input |
| 35 | BU7 | Ditigal Blue Signal Input | 36 | GND | Ground |
| 37 | GND | Ground | 38 | BU4 | Ditigal Blue Signal Input |
| 39 | BU5 | Ditigal Blue Signal Input | 40 | GND | Ground |
| 41 | GND | Ground | 42 | BU2 | Ditigal Blue Signal Input |
| 43 | BU3 | Ditigal Blue Signal Input | 44 | GND | Ground |
| 45 | GND | Ground | 46 | BU0 | Ditigal Blue Signal Input |
| 47 | BU1 | Ditigal Blue Signal Input | 48 | GND | Ground |
| 49 | GND | Ground | 50 | OLACT | Overlay Active |
| 51 | ACTDATA | Data Enable | 52 | GND | Ground |
| 53 | GND | Ground | 54 | HSYNCZ | Horizontal Sync. |
| 55 | VSYNCZ | Vertical Sync. | 56 | GND | Ground |
| 57 | GND | Ground | 58 | SYNCVAL | Sync. Valid |
| 59 | CLKIN | Data Clock | 60 | GND | Ground |
| 61 | GND | Ground | 62 | LAMPEN | Lamp Enable |
| 63 | RESETZ | Reset Sync. | 64 | LAMPLITZ | Lamp Lit |
| 65 | PWRGOOD | Power Good Sync. | 66 | LAMPSYNC | Lamp Sync. |
| 67 | ARMTEST1 | Test Point | 68 | PWM0 | Test Point |
| 69 | ARMTEST2 | Test Point | 70 | PWM1 | Test Point |

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 71 | SDA0 | Serial Data | 72 | GND | Ground |
| 73 | GND | Ground | 74 | SCL1 | Serial Clock |
| 75 | SCL0 | Serial Clock | 76 | GND | Ground |
| 77 | GND | Ground | 78 | SDA1 | Serial Data |
| 79 | P3P3V_IN | +3.3V | 80 | GND | Ground |
| 81 | P3P3V_IN | +3.3V | 82 | TSTPNT0 | Test Point |
| 83 | P3P3V_IN | +3.3V | 84 | TSTPNT1 | Test Point |
| 85 | P3P3V_IN | +3.3V | 86 | TSTPNT2 | Test Point |
| 87 | GND | Ground | 88 | TSTPNT3 | Test Point |
| 89 | P2P5V_IN | +2.5V | 90 | P2P5V_IN | +2.5V |
| 91 | P2P5V_IN | +2.5V | 92 | P2P5V_IN | +2.5V |
| 93 | P2P5V_IN | +2.5V | 94 | P2P5V_IN | +2.5V |
| 95 | P2P5V_IN | +2.5V | 96 | P2P5V_IN | +2.5V |
| 97 | CWINDEX | Color Wheel Index | 98 | GND | Ground |
| 99 | GND | Ground | 100 | USBP | No Connection |
| 101 | PWM2 | Test Point | 102 | GND | Ground |
| 103 | GND | Ground | 104 | USBN | No Connection |
| 105 | P5V_IN | +5V | 106 | GND | Ground |
| 107 | P5V_IN | +5V | 108 | P12V_IN | +12V |
| 109 | GND | Ground | 110 | P12V_IN | +12V |

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| **111** | TCK | Test Point | **112** | GND | Ground |
| **113** | GND | Ground | **114** | SPARE64 | Test Point |
| **115** | TD1 | Test Point | **116** | TRSTZ | Test Point |
| **117** | TMS1 | Test Point | **118** | TMS2 | Test Point |
| **119** | TDO1 | Test Point | **120** | TDO2 | Test Point |

# 5-2 Main Board

## 5-2.1 The Locations of Connectors



### 5-2.2 J10 : Speaker Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | SPEAKER+ | To Speaker + | 2 | SPEAKER - | To Speaker - |

### 5-2.3 J6 : To Keypad Interface Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | +3.3V | +3.3V | 2 | MENU | Keypad Menu Control |
| 3 | MENU-U | Keypad Up Control | 4 | MENU-D | Keypad Down Control |
| 5 | MENU-L | Keypad Left Control | 6 | MENU-R | Keypad Right Control |
| 7 | PWBOTTON | Power Button Control | 8 | +3.3V | +3.3V |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | LED1 | LED1 | 12 | LED2 | LED2 |
| 13 | PW_LED | Power LED | 14 | GND | Ground |

### 5-2.4 J3 : RCA-Jack_IP Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | CVIDEO | Composite Video Input | 2 | GND | Ground |

### 5-2.5 J4 : S-VHS Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | GND | Ground |
| 3 | SVIDEO1 | Luminance Signal Input | 4 | SVIDEO2 | Chrominance Signal Input |

## 5-2.6 J5 : To DMD Board Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | GD6 | Green Data |
| 3 | GD7 | Green Data | 4 | GND | Ground |
| 5 | GND | Ground | 6 | GD4 | Green Data |
| 7 | GD5 | Green Data | 8 | GND | Ground |
| 9 | GND | Ground | 10 | GD2 | Green Data |
| 11 | GD3 | Green Data | 12 | GND | Ground |
| 13 | GND | Ground | 14 | GD0 | Green Data |
| 15 | GD1 | Green Data | 16 | GND | Ground |
| 17 | GND | Ground | 18 | RD6 | Red Data |
| 19 | RD7 | Red Data | 20 | GND | Ground |
| 21 | GND | Ground | 22 | RD4 | Red Data |
| 23 | RD5 | Red Data | 24 | GND | Ground |
| 25 | GND | Ground | 26 | RD2 | Red Data |
| 27 | RD3 | Red Data | 28 | GND | Ground |
| 29 | GND | Ground | 30 | RD0 | Red Data |
| 31 | RD1 | Red Data | 32 | GND | Ground |
| 33 | GND | Ground | 34 | BD6 | Blue Data |
| 35 | BD7 | Blue Data | 36 | GND | Ground |
| 37 | GND | Ground | 38 | BD4 | Blue Data |
| 39 | BD5 | Blue Data | 40 | GND | Ground |

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 41 | GND | Ground | 42 | BD2 | Blue Data |
| 43 | BD3 | Blue Data | 44 | GND | Ground |
| 45 | GND | Ground | 46 | BD0 | Blue Data |
| 47 | BD1 | Blue Data | 48 | GND | Ground |
| 49 | GND | Ground | 50 | OLACT | Overlay Active |
| 51 | ACTDATA | Data Enable | 52 | GND | Ground |
| 53 | GND | Ground | 54 | HSYNCZ | Horizontal Sync. |
| 55 | VSYNCZ | Vertical Sync. | 56 | GND | Ground |
| 57 | GND | Ground | 58 | SYNCVALD | Sync. Valid |
| 59 | DCLKOZ | Data Clock Output | 60 | GND | Ground |
| 61 | GND | Ground | 62 | LAMPEN | Lamp Enable |
| 63 | RESETZ | Reset | 64 | LAMPLITZ | Lamp Lit |
| 65 | PWRGOOD | Power Good | 66 | LAMPSYNC | Lamp Sync. |
| 67 | ARMTEST1 | Test Point | 68 | PWM0 | Test Point |
| 69 | ARMTEST2 | Test Point | 70 | PWM1 | Test Point |
| 71 | SDA | Serial Data | 72 | GND | Ground |
| 73 | GND | Ground | 74 | SCL1 | Serial Clock |
| 75 | SCL | Serial Clock | 76 | GND | Ground |
| 77 | GND | Ground | 78 | SDA1 | Serial Data |
| 79 | +3.3VIN | +3.3V | 80 | GND | Ground |

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 81 | +3.3VIN | +3.3 | 82 | TSTPNT0 | Test Point |
| 83 | +3.3VIN | +3.3 | 84 | TSTPNT1 | Test Point |
| 85 | +3.3VIN | +3.3 | 86 | TSTPNT2 | Test Point |
| 87 | GND | Ground | 88 | TSTPNT3 | Test Point |
| 89 | +2.5VDMD | +2.5V | 90 | +2.5VDMD | +2.5V |
| 91 | +2.5VDMD | +2.5V | 92 | +2.5VDMD | +2.5V |
| 93 | +2.5VDMD | +2.5V | 94 | +2.5VDMD | +2.5V |
| 95 | +2.5VDMD | +2.5V | 96 | +2.5VDMD | +2.5V |
| 97 | CWINDEX | Color Wheel Index | 98 | GND | Ground |
| 99 | GND | Ground | 100 | N.C. | No Connection |
| 101 | PWM2 | Test Point | 102 | GND | Ground |
| 103 | GND | Ground | 104 | N.C. | No Connection |
| 105 | +5V | +5V | 106 | GND | Ground |
| 107 | +5V | +5V | 108 | +12V | +12V |
| 109 | GND | Ground | 110 | +12V | +12V |
| 111 | TCK | Test Point | 112 | GND | Ground |
| 113 | GND | Ground | 114 | SPARE64 | Test Point |
| 115 | TD1 | Test Point | 116 | TRSTZ | Test Point |
| 117 | TMS1 | Test Point | 118 | TMS2 | Test Point |
| 119 | TDO1 | Test Point | 120 | TDO2 | Test Point |

## 5-2.7 J7 : To Thermal Board

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | GND | Ground |
| 3 | +5V | +5V | 4 | +5V | +5V |
| 5 | +5V | +5V | 6 | +5V | +5V |
| 7 | GND | Ground | 8 | +5V | +5V |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | GND | Ground | 12 | GND | Ground |
| 13 | +12V | +12V | 14 | +12V | +12V |
| 15 | GND | Ground | 16 | GND | Ground |
| 17 | +3.3VIN | +3.3V | 18 | +3.3VIN | +3.3V |
| 19 | +3.3VIN | +3.3V | 20 | +3.3VIN | +3.3V |
| 21 | GND | Ground | 22 | GND | Ground |
| 23 | +5VSBY | +5V | 24 | +5VSBY | +5V |
| 25 | GND | Ground | 26 | PW_LED | Power LED |
| 27 | PWBOTTON | Standby Sync. | 28 | IR_ONOFF | IR_ONOFF |
| 29 | CWINDEX | Color Wheel Index | 30 | LAMPEN | Lamp Enable |
| 31 | LAMPLITZ | Lamp Lit | 32 | SHUTDW# | Shut Down |
| 33 | PWRGOOD | Power Good | 34 | ERR_OUT | Error Sync. Output |
| 35 | TSDA | Serial Data | 36 | IR_R | IR_Data |
| 37 | TSCL | Serial Clock | 38 | HPDPCNT | +12V |
| 39 | LED1 | LED1 | 40 | LED2 | LED2 |

## 5-2.8 J1 : VESA M1-Display Interface Connector

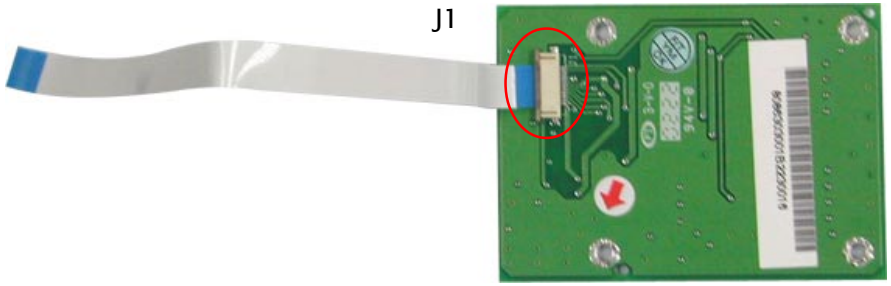
| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | RX2+ | Transmit Data | 2 | RX2- | Transmit Data |
| 3 | RX2 Shield | Ground | 4 | RXC Shield | Ground |
| 5 | HSYNC | Analog Horizontal Sync. Input | 6 | VSYNC | Analog Vertical Sync. Input |
| 7 | N.C. | No Connection | 8 | +5VHPD | +5V |
| 9 | N.C. | No Connection | 10 | N.C. | No Connection |
| 11 | RX1+ | Transmit Data | 12 | RX1- | Transmit Data |
| 13 | RX1 Shield | Ground | 14 | RXC+ | Transmit Data |
| 15 | RXC- | Transmit Data | 16 | USB_D+ | Remote Mouse USB+ |
| 17 | USB_D- | Remote Mouse USB- | 18 | N.C. | No Connection |
| 19 | EDID_W | EDID Write USE | 20 | DWLOAD | Firmware Download Use |
| 21 | RX0+ | Transmit Data | 22 | RX0- | Transmit Data |
| 23 | RX0 Shield | Ground | 24 | USB +5V Input | +5V |
| 25 | GND | Ground | 26 | DDCDAT | DDC Data |
| 27 | DDCCLK | DDC Clock | 28 | DDC+5V | +5V |
| 29 | M1_RXD | Firmware Download Use | 30 | M1_TXD | Firmware Download Use |
| C1 | VGAIN_R | Analog Red Sync. Input | C2 | VGAIN_G | Analog Green Sync. Input |
| C3 | VGAIN_B | Analog Blue Sync. Input | C4 | VGAIN_B | Analog Blue Sync. Input |
| C5 | Video Return | Ground | | | |

## 5-2.9 J9 : Audio In Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | AIN_R | Audio Right Channel Input |
| 3 | AIN_L | Audio Right Channel Input | 4 | N.C. | No Connection |
| 5 | N.C. | No Connection | | | |

# 5-3 Keypad Board

## 5-3.1 The Locations of Connectors

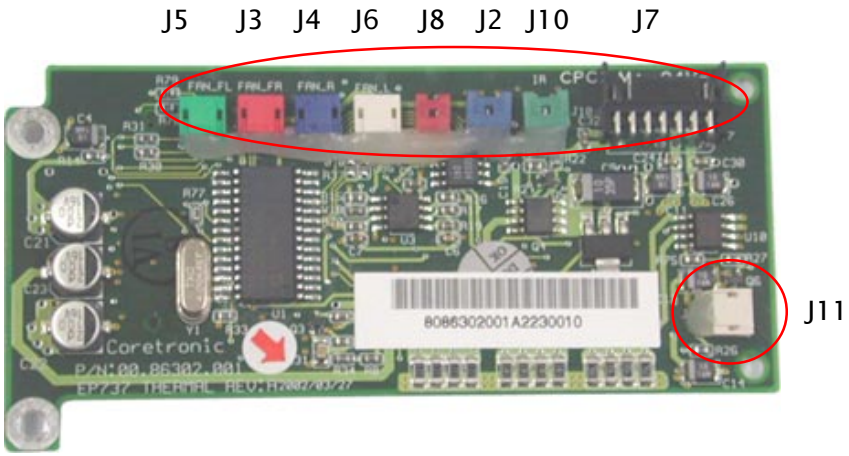


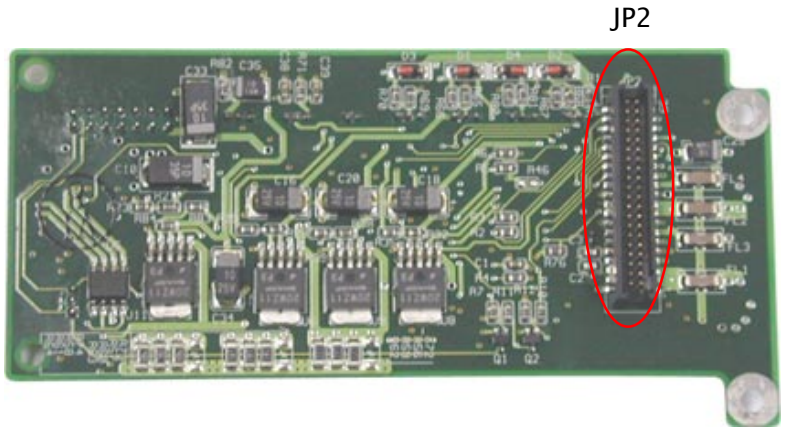

## 5-3.2 J1 : Keypad Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | +5V | +5V | 2 | MENU | Keypad Menu Control |
| 3 | MENU-U | Keypad Up Control | 4 | MENU-D | Keypad Down Control |
| 5 | MENU-L | Keypad Left Control | 6 | MENU-R | Keypad Right Control |
| 7 | PWBOTTON | Power Button Control | 8 | +5VSB | +5V |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | LED1 | LED1 | 12 | LED2 | LED2 |
| 13 | PW_LED | PW_LED | 14 | GND | Ground |

# 5-4 Thermal Board

## 5-4.1 The Locations of Connectors



### 5-4.2 J5 : Fan3 Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | FAN_POWER3 | Fan3 Power | 2 | FAN_LOCK | FAN Lock Sync. |
| 3 | GND | Ground | | | |

### 5-4.3 J3 : Fan2 Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | FAN_POWER2 | Fan2 Power | 2 | FAN_LOCK | FAN Lock Sync. |
| 3 | GND | Ground | | | |

### 5-4.4 J8 : Thermal Switch Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | THERMAL ERROR# | Thermal Error Sync. | 2 | GND | Ground |

### 5-4.5 J6 : Photo Sensor Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | PHOTO_IN | Photo Sensor Input Signal |
| 3 | +3.3V | +3.3V | | | |

### 5-4.6 J2 : Fan4 Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | FAN_POWER4 | Fan1 Power | 2 | FAN_LOCK | Fan Lock Sync. |
| 3 | GND | Ground | | | |

### 5-4.7 J4 : Fan1 Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | FAN_POWER1 | Fan1 Power | 2 | FAN_LOCK | Fan Lock Sync. |
| 3 | GND | Ground | | | |

### 5-4.8 J10 : IR Receiver Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | IR_R | IR Receiver | 2 | GND | Ground |
| 3 | +5VSBY | +5V Standby Power | | | |

### 5-4.8 J11 : To Lamp Ballast Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | LAMPEN_OUT | Lamp Enable Sync. | 2 | GND | Ground |
| 3 | LAMPLIT_IN | Lamp Lit Feedback Sync. | | | |

## 5-4.9 J7 : To DC-DC Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | LAMPEN_OUT | Lamp Enable | 2 | +3.3VSBY | +3.3V |
| 3 | +5VSBY | +5V | 4 | GND | Ground |
| 5 | GND | Ground | 6 | +13.1VSBY | +13.1V |
| 7 | +13.1VSBY | +13.1V | 8 | N.C. | No Connection |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | GND | Ground | 12 | +5VSBY | +5V |
| 13 | +13.3VSBY | +3.3V | 14 | LAMPLIT_IN | Lamp Lit |

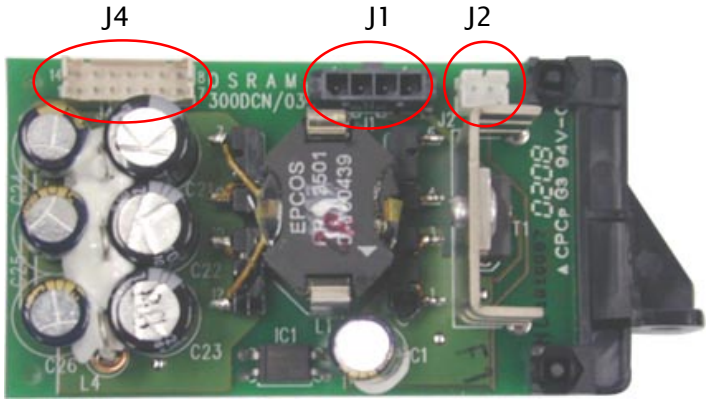
## 5-4.10 JP2 : To Main Board Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | GND | Ground | 2 | GND | Ground |
| 3 | +5V | +5V | 4 | +5V | +5V |
| 5 | +5V | +5V | 6 | +5V | +5V |
| 7 | GND | Ground | 8 | +5V | +5V |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | GND | Ground | 12 | GND | Ground |
| 13 | +12V | +12V | 14 | +12V | +12V |
| 15 | GND | Ground | 16 | GND | Ground |
| 17 | +3.3V | +3.3V | 18 | +3.3V | +3.3V |
| 19 | +3.3V | +3.3V | 20 | +3.3V | +3.3V |

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 21 | GND | Ground | 22 | GND | Ground |
| 23 | +5VSBY | +5V | 24 | +5VSBY | +5V |
| 25 | GND | Ground | 26 | PW_LED | Power LED |
| 27 | PWBOTTON | Standby Sync. | 28 | IR_ONOFF | IR_ONOFF |
| 29 | CWINDEX | Color Wheel Index | 30 | LAMPEN | Lamp Enable |
| 31 | LAMPLIT | Lamp Lit | 32 | SHUT_DOWN# | Shut Down Sync. |
| 33 | PWRGOOD | Power Good | 34 | ERR_OUT | Thermal Error Sync. |
| 35 | TSDA | Serial Data | 36 | IR_R | IR_Data |
| 37 | TSCL | Serial Clock | 38 | +13.1VSBY | +13.1V |
| 39 | LED1 | LED1 | 40 | LED2 | LED2 |

# 5-5 DC-DC Board

## 5-5.1 The Locations of Connectors




## 5-5.2 J2 : Interlock Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | LAMP INTERLOCK | Lamp Door Interlock | 2 | LAMP INTERLOCK | Lamp Door Interlock |

## 5-5.3 J1 : To Ballast Connector

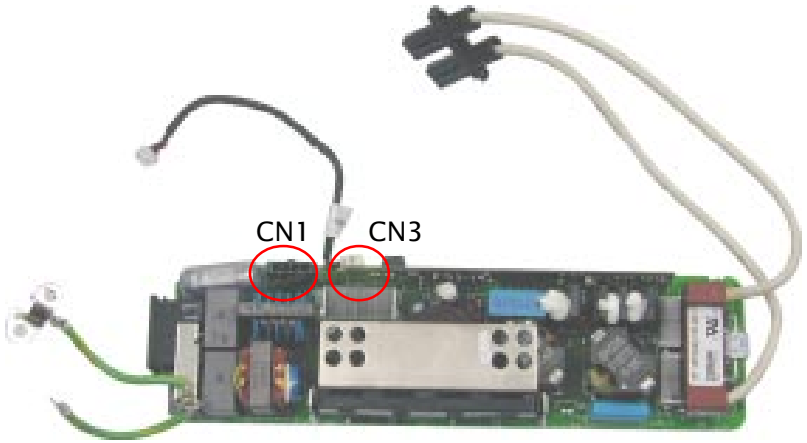
| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | SYSTEM POWER | +400V | 2 | N.C. | No Connection |
| 3 | GND | Ground | 4 | SYSTEM POWER | +12V |

## 5-5.4 J4 : To Thermal Board Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | LAMPEN_OUT | Lamp Enable Signal Output | 2 | +3.3VSBY | +3.3V Standby Power |
| 3 | +5VSBY | +5V Standby Power | 4 | GND | Ground |
| 5 | GND | Ground | 6 | +13.1 VSBY | +13.1V Standby Power |
| 7 | +13.1VSBY | +13.1V Standby Power | 8 | N.C. | No Connection |
| 9 | GND | Ground | 10 | GND | Ground |
| 11 | GND | Ground | 12 | +5VSBY | +5V Standby Power |
| 13 | +3.3VSBY | +3.3V Standby Power | 14 | LAMPLIT_IN | Lamp Lit Signal Input |

# 5-6 Ballast

## 5-6.1 The Locations of Connectors




## 5-6.2 CN3 : Control Board Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | LAMPEN_OUT | Start Control Input | 2 | GND | Ground |
| 3 | LAMPLIT | Fla Output | | | |

## 5-6.2 CN1 : Power Supply Connector

| PIN# | Signal Name | Description | PIN# | Signal Name | Description |
|---|---|---|---|---|---|
| 1 | +400V | +400V | 2 | N.C. | No Connection |
| 3 | GND | Ground | 4 | VCC | +12V |

# 6 Specifications

This chapter provides DMD, Lamp, Lamp Driver and DC-DC specifications. All specifications are for your reference.

# 6-1 Lamp Specifications

## ■ Operating and Measurement Conditions

| | |
|---|---|
| **Ballast type** | Test conditions stable at 150W with<br>OSRAM PT VIP 150 AC/100-240 HI ballast |
| **Rated lamp wattage** | 150W |
| **Burner position** | 0° to +20° (0° optical axis horizontal) |
| **Burning position** | Horizontal |

## ■ Temperature

| | |
|---|---|
| **Lamp burner Mo foil, back** | < 350°C |
| **Lamp burner Mo wire** | < 400°C |
| **Lamp burner Mo foil, front** | < 350°C |
| **Burner temperature** | 900oC~1000oC |

*Validation of max. permissible temperatures by reference thermocouple measurement based on a reference lamp housing.*

## ■ Typical Burner Characteristics (Initial)

| | |
|---|---|
| **UV-output** | UVA (315-400 nm) 9W typical<br>UVB (280-315 nm) < 0,13 W<br>UVC (248-280 nm) < 0,013 W |
| **UV-output through dichroic reflector** | (248-400 nm) 2.5W typical |
| **Total visible flux** | (400-780 nm) 38W typical |
| **IR** | (780-2500 nm) 38W typical |

## ■ Average Lamp Life and Lumen Maintenance

| | |
|---|---|
| **Switching cycle** | 3.5 hrs on 0.5 hrs off |
| **Lamp life time** | 1000 hrs typical |
| **Lamp life** | Lamp output > 50% of initial lumen output |

## ■ Rise Time

Rise time to 80% of the stabilized luminous output is < 90 sec without forced convection.
Extensive cooling of the hulb during lamp run-up phase has to be avoided.

## ■ Light output

| | |
|---|---|
| **Ballast type** | Test conditions on electronic power supply<br>OSRAM PT VIP 150 AC/100-240 HI stable |
| **Stabilization time** | 5 min, without forced cooling |
| **Luminous flux throughaperture** | Typ. : 5400 lm @ 5.0 x 3.8 $mm^2$rect. aperture |
| **Rectangular aperture** | Min. : 5000 lm @ 5.0 x 3.8 $mm^2$rect. aperture |
| **Color coordinates** | Typ. x : 0.280 +/- 0.020<br>Typ. y : 0.290 +/- 0.020 |

## ■ Hot Restrike

If the unit has been off for more than 60 sec. the lamp must restrike.
(Ignition voltage 20 kV +/- 3 kV)
No forced cooling is required following lamp switch-off.

## ■ Instructions for use

- For lamp replacement : switch off power, disconnect power cord, allow lamp to reach room temperature.
- This VIP lamp operates at high pressure and at high temperature and may unexpectedly shatter.
- This VIP lamp generates ultraviolet radiation which may cause skin and eye irritation with prolonged exposure.
- This VIP lamp must be operated only in suitably designed, enclosed fixtures which prevent direct observation of the arc and will prevent lamp fragments from exiting, in the unlikely event of a lamp shattering.
- The burning position is 0° to +/- 15° (0° optical axis horizontal).
- Do not touch the lamp with bare hands.
- If necessary, lamp can be cleaned with lint free towel before operation.
- The lamp must be operated with the OSRAM lamp driver PT VIP 150 AC/100-240 H1.
- Protect lamp environment against high ignition pulses.
- Avoid direct contact of objects to reflector cover glass.
- Faster on-off-cycles than specified will reduce lamp life.
- For most stable, i.e. flickerfree, operation, it is recommended to operate lamp at drive frequencies (via SCI signal) of 300Hz or greater.
- Operate lamp only in accordance to UL 1950 regulations.
- This lamp must not be operated with a broken, cracked or loose reflector or cover glass.
- Do not operate the lamp in proximity to paper, cloth, or other combustible material nor cover it with such materials. Otherwise it could cause a fire.
- Do not operate the lamp in an atmosphere containing an inflammable substance, such as thinner. Otherwise it could cause a fire or explosion.
- Thoroughly ventible the area of the room when operating teh lamp in an oxygen atmosphere (in the air). If ozone is inhaled, it could cause headaches, nausea, dizziness, etc.
- Leave the area immediately if the lamp shatters while being operated and ventilate the area for at least 30 minutes in order to avoid the inhalation of mercury fumes. Otherwise, it could be harmful to user's health.

Disposal For disposal of spent lamps, always consult federal, state, local and provincial hazardous waste disposal rules and regulations to ensure proper disposal.

Caution This lamp emits ultra violet (UV) radiation and operates at high pressure. This lamp may only be used in enclosed fixtures that comply with UL1572. Due to the high within the lamp, P-VIP® lamps may only be operated within enclosed, purpose-built housings.

# 6-2 DMD Specifications

Table 1. Physical, Optical and Thermal Parameters

| *Parameter* | *Min* | *Nom* | *Max* | *Unit* |
|---|---|---|---|---|
| *Physical* | | | | |
| Number of columns | | 1024 | | |
| Number of rows | | 768 | | |
| Mirror pitch (width) | | 13.68 | | μm |
| Total width (active mirror array) [1024 pixels] | --- | 14.008 | --- | mm |
| Total height (active mirror array) [768 pixels] | --- | 10.506 | --- | mm |
| *Optical* | | | | |
| Mirror tilt (half angle) (Note 1) | 11 | 12 | 13 | Degrees |
| Axis of rotation - upper right to lower left | 44 | 45 | 46 | Degrees |
| Flatness gradient over total mirror array | | | 0.1 | % |
| Active area fill factor (by design) | | 85.2 | | % |
| Mirror metal specular reflectivity (420-700nm) | | 89.4 | | % |
| Window material designation (Type A) | | Corning 7056 | | |
| Window refractive index @ 545nm (Type A) | | 1.487 | | |
| Window transmittance - including AR coating, measured @ 420-680 nanometers (Note 3) | 97 | | | % |
| Window flatness (@ 550 nanometers) spherical power/irregularity (astigmatism, etc.) | | | 4/12 | fringes |
| Window aperture photopic reflectivity | | | 23 | % |
| *Thermal* | | | | |
| Thermal impedance, active area to case (Note 4) | | | 0.6 | °C/W |

**Note 1 : Tilt Angle Tolerances**

Limits on variability of mirror tilt half angle are critical in the design of the accompanying optical system. Variations in tilt angle within a device may result in apparent non-uniformities, such as line pairing and image mottling, acress the projected image. Variations in the average tilt angle between devices may result in colorimetry and system contrast variations. The specified limits represent the tolerances of the tilt angles within a device.

**Note 2 : Active Area Reflectivity**

The DMD specular reflectivity is defined as the ratio of the light incident upon the mirror array to the light specularly reflected from it. The measurement is made with all mirrors in the full on state without electronic duty cycle effects (i.e. measure using 100% duty cycle). The specified specular reflectivity applies to any arbitrary point on the DMD active area.

**Note 3 : Window Transmittance**

Angle of incidence $0^{o}$ - $45^{o}$ at 42-680nm. Double pass system. Two AR coating surfaces at 0.5% reflectivity per AR coating.

**Note 4 : Thermal Performance**

The DMD is designed to conduct absorbed and dissipated heat to the back of the package where it can be removed by an appropriate heat sink. The heat sink and cooling system must be capable of maintaining the package within the specified operational temperatures. The total heat load on the DMD is largely driven by the incident light absorbed by the active area although other contributions include light energy absorbed by the window aperture and electrical power dissipation of the array. Optical systems should be designed to minimize the light energy falling outside the window clear aperture since any additional thermal load in this area can significantly degrade the reliability of the device. For more information on thermal characteristics and applications of the 0.7XGA DMD, refer to Texas Instruments DMD Thermal Guide for 0.7XGA Type A.

Table 2. Absolute Max. Ratings

| *Parameter* | *Min* | *Max* | *Unit* |
|---|---|---|---|
| Logic supply voltage, VCC | -0.5 | 4.5 | VDC |
| Mirror electrode voltage, VCC2 | -0.5 | 8 | VDC |
| Readback reference voltage, EVCC | -0.5 | 4.5 | VDC |
| Input Voltage, MBRST | -2.8 | 2.8 | V |
| Input Voltage, other inputs | -0.5 | 4.5 | VDC |
| Short circuit output current | | +/-25 | mA |
| Operating temperature - for array and points 1,2 & 3 | 0 | 65 | °C |
| Differential temperature - any two of the reference points 1, 2 & 3 | | 15 | °C |
| Storage temperature | -40 | 80 | °C |
| Operating relative humidity (none-condensing) | 0 | 95 | % |
| Storage relative humidity (none-condensing) | 0 | 95 | % |
| Mechanical Stud Attach Load | | 35 | pounds-force |

# 6-3 DC-DC Specifications

## ■ Dimensions and Weight

| | |
|---|---|
| **DC-DC Converter Size** | 70 x 42 x 27mm |
| **DC-DC Converter Weight** | 46g |

## ■ DC-DC Converter Data

| | Normal | Max. |
|---|---|---|
| **Input Wattage** | 32W | 50W |
| **Power Dissipation** | 7W | 12W |
| **Output Voltage1** | 3.3V | |
| **Output Current1** | 1.5A | 2.0A |
| **Output Voltage2** | 5V | |
| **Output Current2** | 1.5A | 2.5A |
| **Output Voltage3** | 13V | |
| **Output Current3** | 1.0A | 1.5A |

# 6-4 Lamp Driver Specifications

## ■ Dimensions and Weight

| | |
|---|---|
| **Lamp Driver Size** | 177 x 50 x 31mm |
| **Lamp Driver Weight** | 250g |

## ■ Lamp Driver Data

| | |
|---|---|
| **Input Voltage, normal** | 100V-240VAC, 50/60Hz |
| **Input Current, normal** | 2.1A-0.9A |
| **Input Wattage, normal** | 210W |
| **Power Dissipation** | 20W normal, 30W max. |
| **Output Voltage (Lamp)** | 85V AC rectangular |
| **Output Current (Lamp)** | 1.8A max. 2.4A |
| **Output Wattage (Lamp)** | 156W (at R=46.3ohm at 85V) |
| **Ignition Pulse** | Typ. 8kVpeak symm. max. 10kV peak symm.<br>Typ. 1.5s max. 4s |
| **Hot Restrike Delay** | 60s max. |
| **Enable-Dsable-Enable Cycle** | 15s min. |
| **Switch off Lamp Voltage** | 135V 130-140V |
| **Cooling Method** | Forced air cooling at 1.5m/s minimum |
| **Thermal Protection** | T1 switch point 100°C +/-5°C |
| **Electrical Protection** | Short cut + output /- output for max. 10s<br>no protection for short to GND |

## ■ Environmental Requirements for Lamp and Lamp Driver

| | |
|---|---|
| **Ambient Temperature** | Operating : 10°C to 40°C<br>Non-operating : -20°C to 70°C |
| **Humidity** | Operating : 5% to 95% relative, non-condensing<br>Non-operating : 5% to 95% relative, non-condensing |
| **Altitude** | Operating : max. 10,000ft (3,000m) @ 40°C<br>Non-operating : max. 40,000ft @ 70°C |
| **Vibration** | Operating : random, standalone 0.015$g^2$/Hz<br>5Hz to 1000Hz, all primary axis,<br>30 minutes per orientation<br>Non-operating : sine, standalone Q<=5 1G control,<br>5Hz to 500Hz, all three primary axis,<br>5 minutes sweep rate |
| **Shock)** | Operating : standalone 50g 11ms half sine pulse,<br>all primary axis, three shocks per orientation |

***Note : Lamp mounting must ensure the a.m. vibration and shock conditions.***

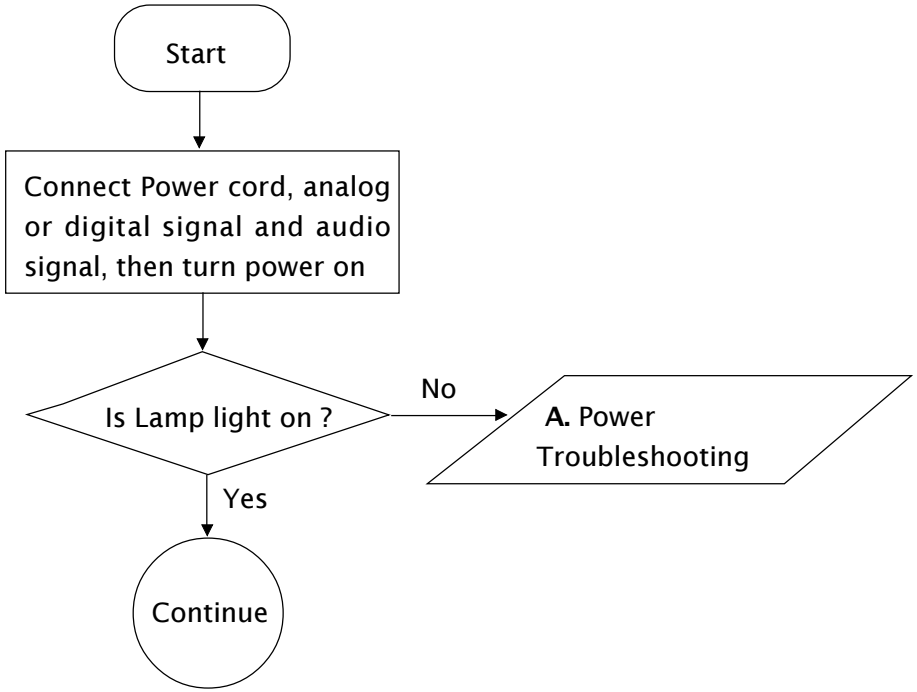
# Troubleshooting 7

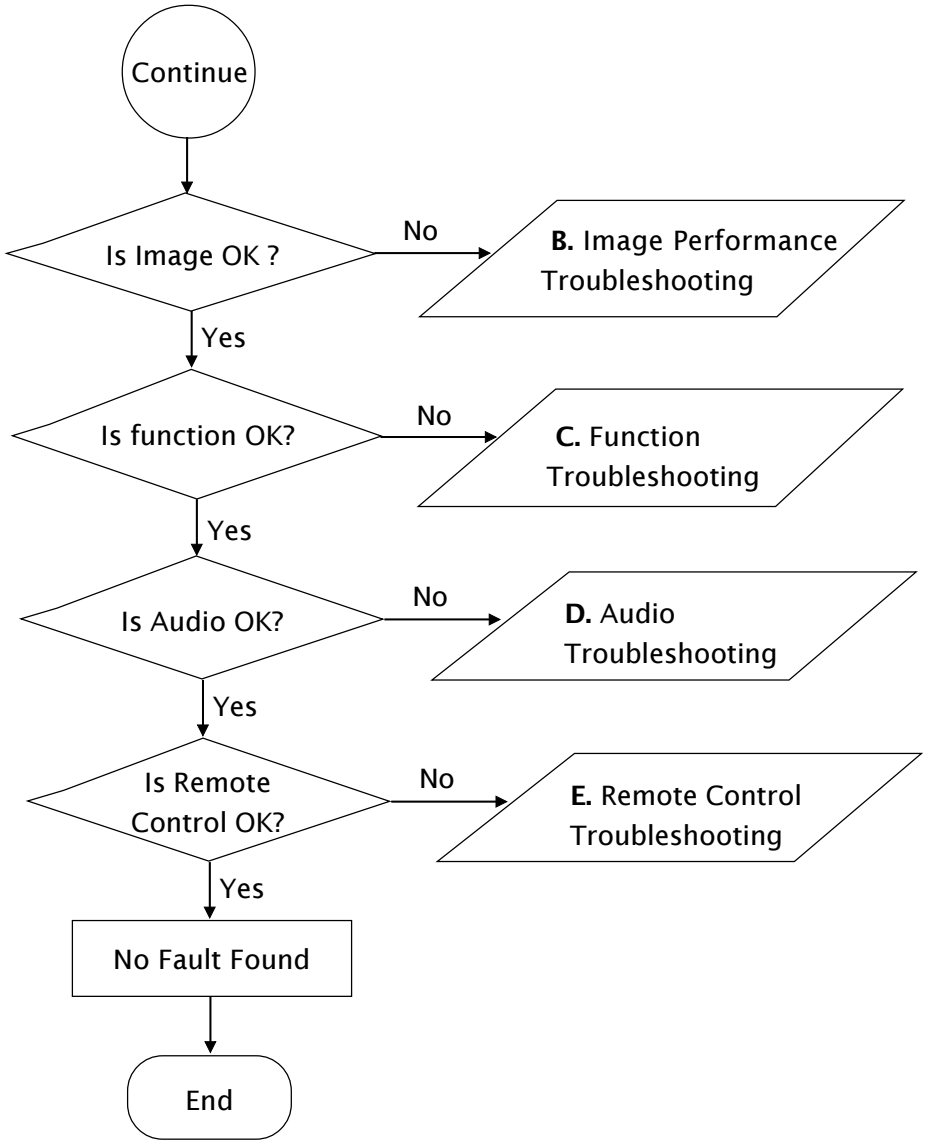
This chapter provides technicians and people who have an electronic background a primary description about maintaining the product. Moreover, you can get the appropriate operation to solve some complicated problems of component repairing and professional problems.

# 7-1 Equipment Needed

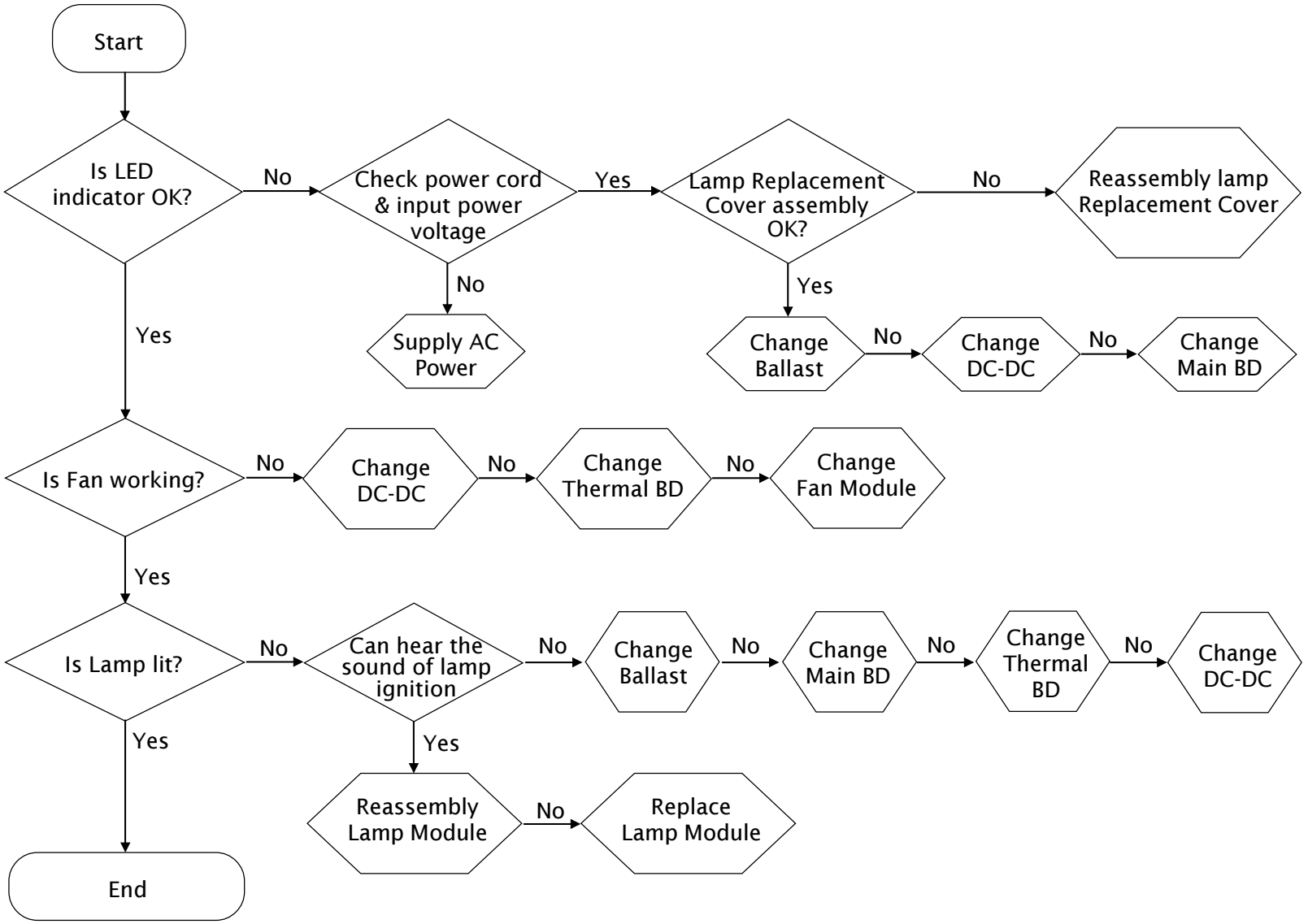
- EP737 Projector
- VESA M1 to VGA Cable
- PC (Personal Computer)
- Audio Input, Video Input
- Screw Drivers

# 7-2 Main Procedure

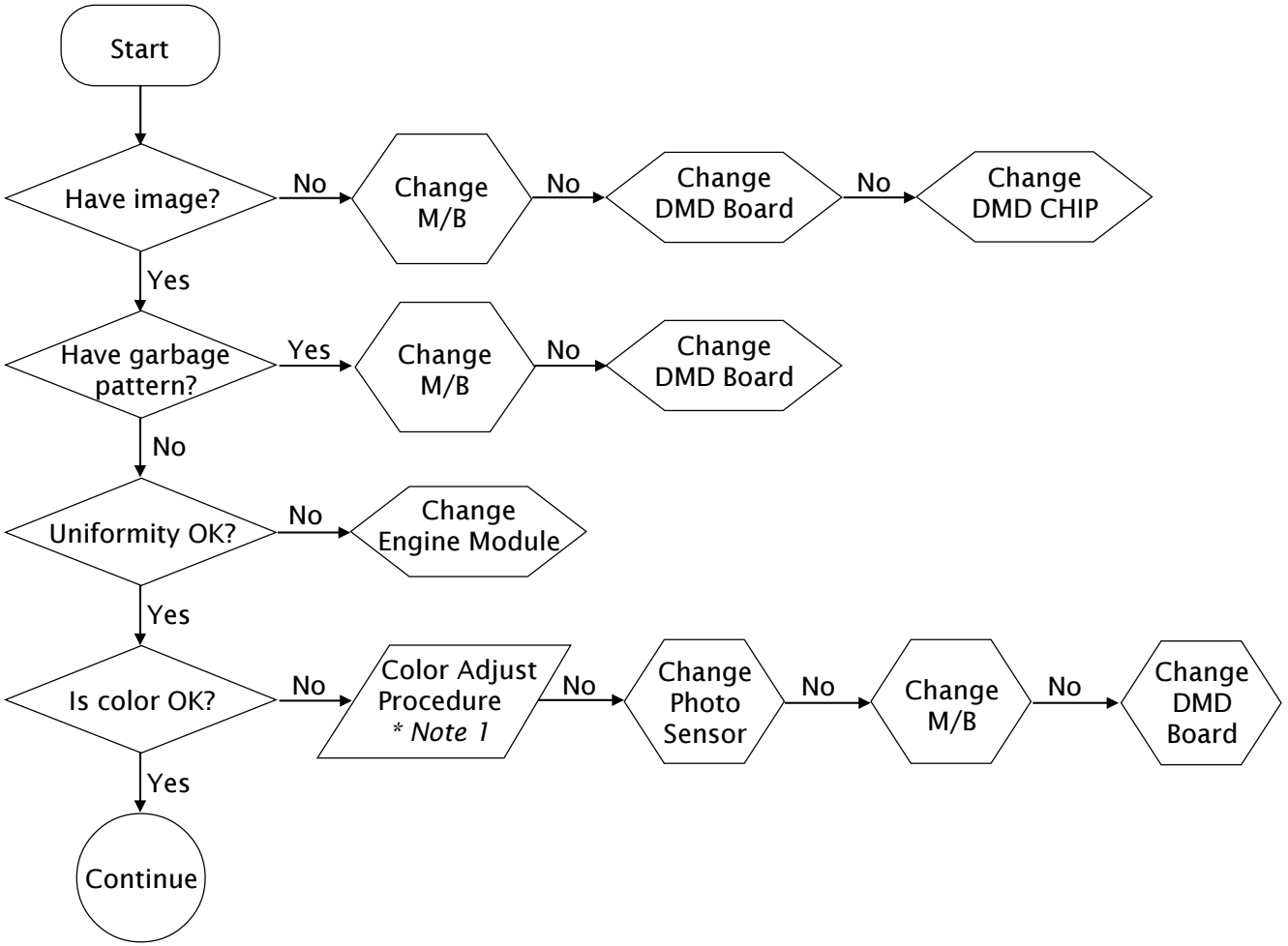


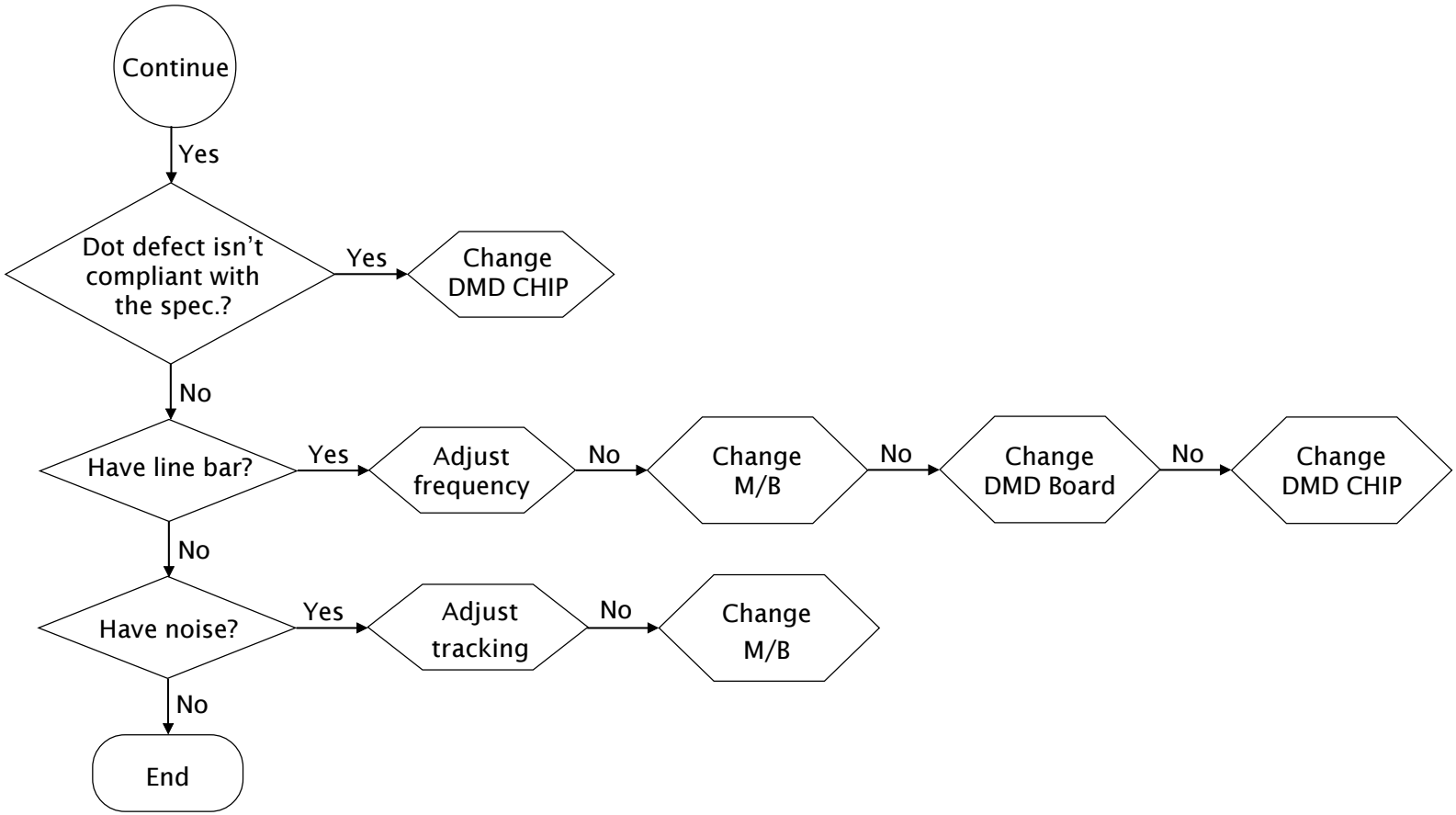

Continue
Is Image OK ?
No
B. Image Performance Troubleshooting
Yes
Is function OK?
No
C. Function Troubleshooting
Yes
Is Audio OK?
No
D. Audio Troubleshooting
Yes
Is Remote Control OK?
No
E. Remote Control Troubleshooting
Yes
No Fault Found
End

## 7-2.1 **A.** Power Troubleshooting



## 7-2.2 **B.** Performance Troubleshooting




Continue
Yes
Dot defect isn't compliant with the spec.?
Yes
Change DMD CHIP
No
Have line bar?
Yes
Adjust frequency
No
Change M/B
No
Change DMD Board
No
Change DMD CHIP
No
Have noise?
Yes
Adjust tracking
No
Change M/B
No
End

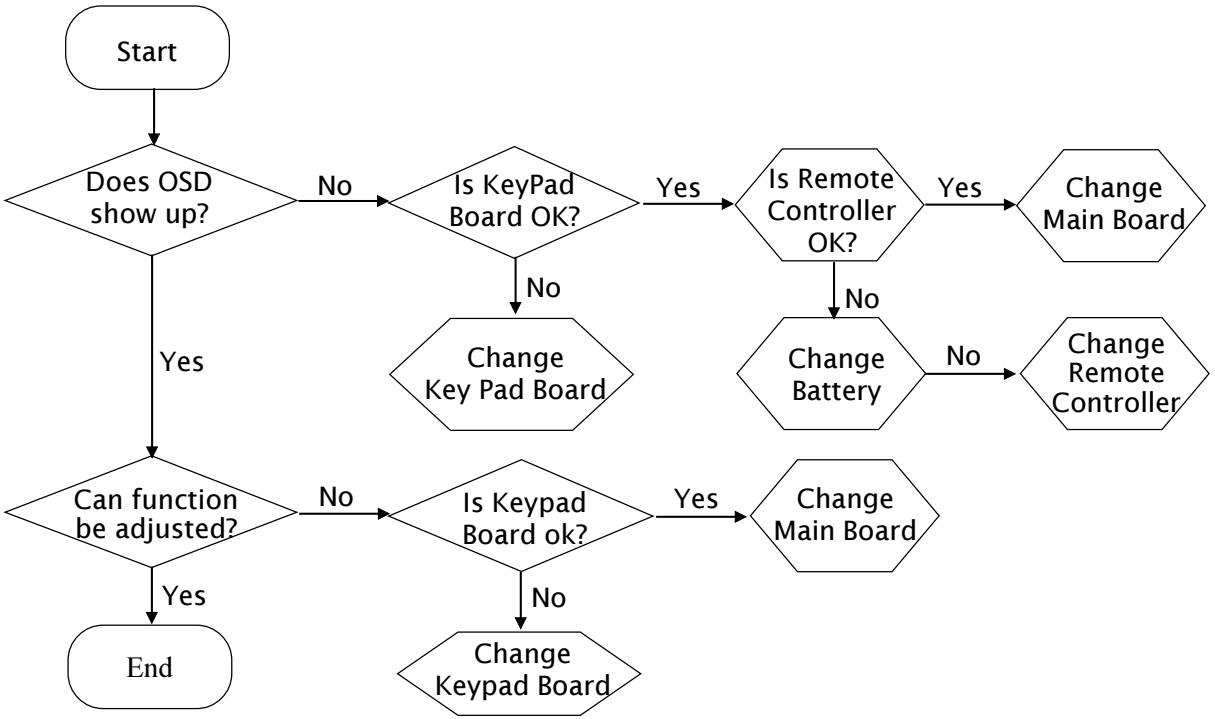
***Color Adjust Procedure :***

** Notice : PC shall run R.G.B. gray scale pattern.*

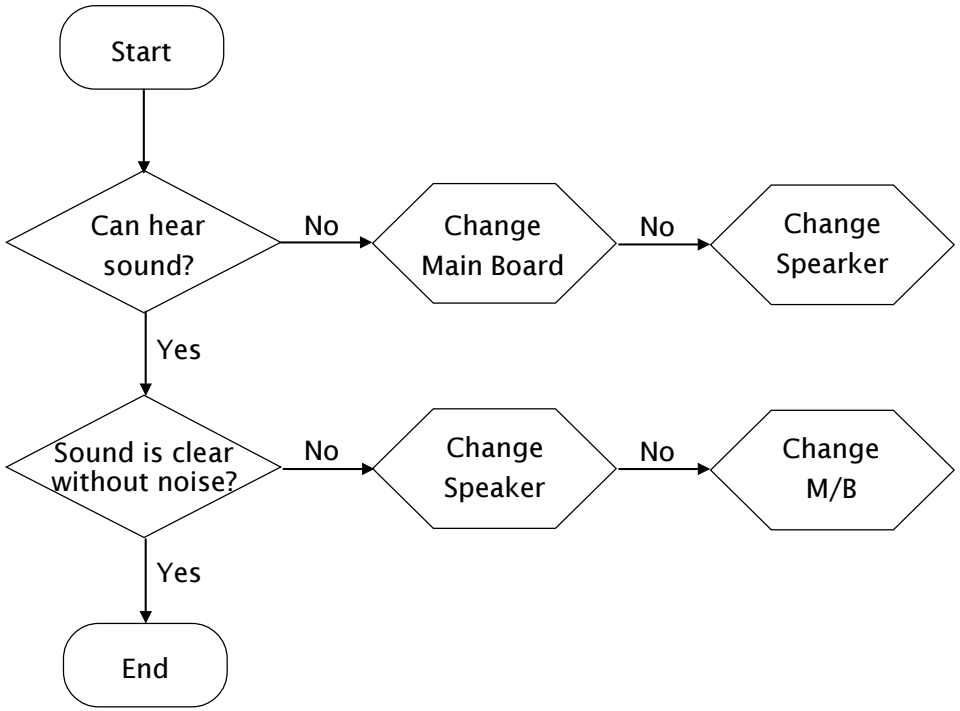
1. Power on. Press “Up”, “Up”, “Left” button when the “No Signal” show on the screen.
2. Choose “Display Source”
3. Choose Color Wheel Index.
4. Press “Left” or “Right” button to adjust.

▸ *Note 1 : It may need to be used when you replace Main Board or Optical Engine alone.*

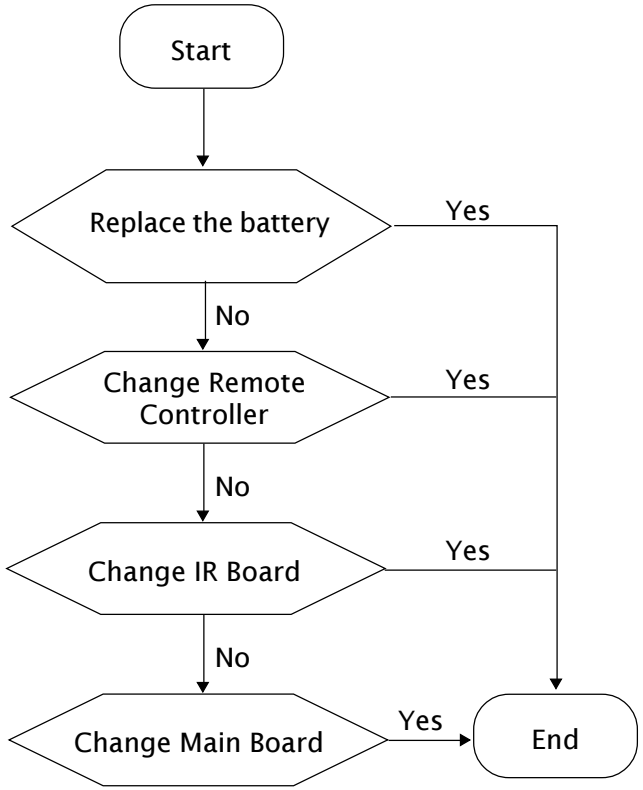
## 7-2.3 **C.** Function Troubleshooting



## 7-2.4 **D.** Audio Troubleshooting



## 7-2.5 **E.** Remote Control Troubleshooting



# Function Test & Alignment Procedure

# 8

This chapter provides equipment, conditions, patterns, and procedure needed for Function Test and Alignment. It also includes compatible modes. All information is for your reference.

# 8-1 Product

- EP737 Projector

# 8-2 Test Equipment

- IBM PC with XGA resolution (Color Video Signal & Pattern Generator)
- VCR with Multi-system(NTSC/PAL/SECAM)
- Chroma meter Minolta CL-100/T-10
- Hi-Pot

# 8-3 Test Condition

- Circumstance Brightness : Dark room less than 10 lux
- Inspection Distance : 2.0m
- Screen Size : 60 inches diagonal (wide)
- Before function test and alignment, each EP737 should be run-in and warmed-up for at least 5 minutes with following conditions.
  1.) In room temperature
  2.) With cycled display colors (R,G,B,White)
  3.) With cycled display modes

| | |
|---|---|
| 640 x 350 (H=31.5 KHz, V=70 Hz) | 640 x 400 (H=31.5 KHz, V=70 Hz) |
| 640 x 480 (H=37.5 KHz, V=75 Hz) | 720 x 400 (H=31.5 KHz, V=70 Hz) |
| 800 x 600 (H=53.7 KHz, V=85 Hz) | 800 x 600 (H=37.9 KHz, V=60 Hz) |
| 1024 x 768 (H=48.4 KHz, V=60 Hz) | 1024 x 768 (H=68.7 KHz, V=85 Hz) |

- Test Display Mode & Pattern (Refer to 8-4.1 & 8-4.2)
- Function Test and Alignment Procedure

# 8-4 Test Display Modes and Patterns

## 8-4.1 Compatible Modes

Analog :

| Resolution | V-Sync(Hz) | H-Sync(KHz) | Compatibility |
|---|---|---|---|
| 640 x 350 | 70 | 31.5 | VGA |
| 640 x 350 | 85 | 37.9 | VGA |
| 640 x 400 | 70 | 31.5 | VGA |
| 640 x 400 | 85 | 37.9 | VGA |
| 640 x 480 | 60 | 31.5 | VGA |
| 640 x 480 | 72 | 37.9 | VGA |
| 640 x 480 | 75 | 37.5 | VGA |
| 640 x 480 | 85 | 43.3 | VGA |
| 720 x 400 | 70 | 31.5 | VGA |
| 720 x 400 | 85 | 37.9 | VGA |
| 800 x 600 | 56 | 35.2 | SVGA |
| 800 x 600 | 60 | 37.9 | SVGA |
| 800 x 600 | 72 | 48.1 | SVGA |
| 800 x 600 | 75 | 46.9 | SVGA |
| 800 x 600 | 85 | 53.7 | SVGA |
| 1024 x 768 | 43.4 | 35.5 | XGA |
| 1024 x 768 | 60 | 48.4 | XGA |
| 1024 x 768 | 70 | 56.5 | XGA |
| 1024 x 768 | 75 | 60.0 | XGA |
| 1024 x 768 | 85 | 68.7 | XGA |
| 1280 x 1024 | 60 | 63.98 | SXGA |
| 1280 x 1024 | 75 | 79.98 | SXGA |

Analog :

| Resolution | V-Sync(Hz) | H-Sync(KHz) | Compatibility |
|---|---|---|---|
| 640 x 480 | 66.66 | 34.98 | MAC LC 13" |
| 640 x 480 | 66.68 | 35 | MAC II 13" |
| 832 x 624 | 74.55 | 49.725 | MAC 16" |
| 1024 x 768 | 75 | 60.24 | MAC 19" |
| 1152 x 870 | 75.06 | 68.68 | MAC |
| 640 x 480 | 60 | 31.35 | MAC G4 |
| 640 x 480 | 120 | 68.03 | MAC G4 |
| 1024 x 768 | 120 | 97.09 | MAC G4 |
| 640 x 480 | 117 | 60 | i MAC DV |
| 800 x 600 | 95 | 60 | i MAC DV |
| 1024 x 768 | 75 | 60 | i MAC DV |
| 1152 x 870 | 75 | 68.49 | i MAC DV |
| 1280 x 960 | 75 | 75 | i MAC DV |
| 1280 x 1024 | 85 | 90.9 | i MAC DV |

Digital :

| Resolution | V-Sync(Hz) | H-Sync(KHz) | Compatibility |
|---|---|---|---|
| 640 x 350 | 70 | 31.5 | VGA |
| 640 x 350 | 85 | 37.9 | VGA |
| 640 x 400 | 70 | 31.5 | VGA |
| 640 x 400 | 85 | 37.9 | VGA |
| 640 x 480 | 60 | 31.5 | VGA |
| 640 x 480 | 72 | 37.9 | VGA |
| 640 x 480 | 75 | 37.5 | VGA |
| 640 x 480 | 85 | 43.3 | VGA |
| 720 x 400 | 70 | 31.5 | VGA |
| 720 x 400 | 85 | 37.9 | VGA |
| 800 x 600 | 56 | 35.2 | SVGA |
| 800 x 600 | 60 | 37.9 | SVGA |
| 800 x 600 | 72 | 48.1 | SVGA |
| 800 x 600 | 75 | 46.9 | SVGA |
| 800 x 600 | 85 | 53.7 | SVGA |
| 1024 x 768 | 60 | 48.4 | XGA |
| 1024 x 768 | 70 | 56.5 | XGA |
| 1024 x 768 | 75 | 60.0 | XGA |

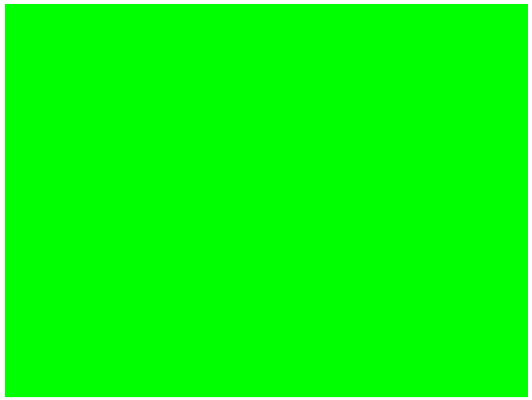
## 8-4.2 Function Test Display Pattern

| Item | Test Content | Pattern | Specification | Remark |
|---|---|---|---|---|
| 1 | Frequency & Tracking | Fine Line Moire | Eliminate visual wavy noise. | Figure 1 |
| 2 | Contrast/Brightness | Gray Scale | Gray levels should be distinguishable. | Figure 2 |
| 3 | R, G, B and White Color Performance | R, G, B and White Color | Each R, G, B color should be normal. | Figure 3~6 |
| 4 | Screen Uniformity & Flicker | Full White | Should be compliant with the like new spec. | Figure 6 |
| 5 | Dead/Blemish Pixel | R, G, B, White, Dark, Blue 180, Gray 30 | The numbers of dead/blemish pixels should be compliant with the like new spec. | Figure 3~9 |
| 6 | Boundary | Boundary Frame | Horz. and Vert. position of video shuld be adjustable to be within the screen frame. | Figure 7 |

Fine Line Morie Pattern (Figure 1)


Contrast & Brightness (Figure 2)

R. Color Pattern (Figure 3)



G. Color Pattern (Figure 4)

B. Color Pattern (Figure 5)

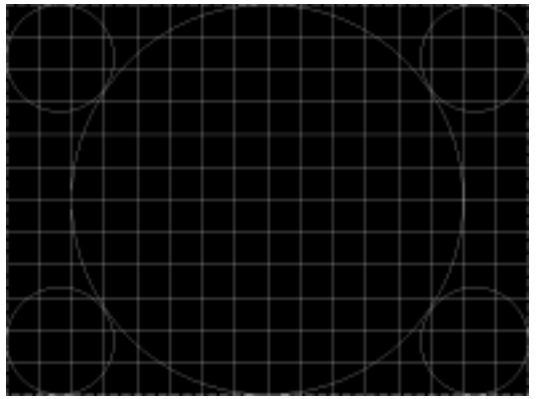


Full White Pattern (Figure 6)

Dark Pattern (Figure 7)

Gary 30 Pattern (Figure 8)

Blue 180 Pattern (Figure 9)



Boundary Frame (Figure 10)

# 8-5 Inspection Procedure

***RESET :***

Please press “Menu” button on the projector panel to enter “Image-II” Function then choose “Reset Function”, press “Left Button” to choose “YES” and to see if it works. This action will allow you to erase all end-user’s settings and restore the original factory setting.

***Hi-Pot and Grounding Test :***

- Hi-Pot Specification : 1.5kVAC, 10mA, 2 seconds.
- Grounding Specification : 12VDC, 25A, 0.1 ohm.

***Clock and Clock Phase :***

Test Signal : 1024 x 768 @ 75Hz
Test Pattern : Line Moire Pattern

- Check and see if image sharpness and focus is well performed.
- If not, readjust by following steps.
  - Enter “Image-II” menu and select “Frequency” Function to adjust the total pixel number of pixel clock in one line period.
  - Then select “Tracking” Function and use right or left arrow key to adjust the value to minimize video flicker.

***R, G, B and White Colors Contrast :***

Test Signal : 1024 x 768 @ 75Hz
Test Pattern : 64 or 16 R, G, B and White colors Intensities Pattern

- Please check and see if each colors is normal and distinguishable.
- If not, please return the unit to repair area.

***Screen Uniformity and Flicker :***

Test Signal : 1024 x 768 @ 75Hz
Test Pattern : Full White Pattern

- Please check and see if it's in normal condition.
- If not, please return the unit to repair area.

***Dead Pixel/Blemish Pixel :***

Test Signal : 1024 x 768 @ 75Hz
Test Pattern : Gray 30, Blue 180, White, Dark, Red, Green and Blue Pattern

- Please check and see if there are dead pixels on DMD chip.
- The total numbers and distance of dead pixels should be complaint with like new specification.

***Check for Secondary Display Modes***

Test signal :
1.) 640 x 350 @ 70.09 / 85.08Hz
2.) 640 x 480 @ 72.81 / 75.00 / 85.01Hz
3.) 720 x 400 @ 70.08 / 85.04Hz
4.) 800 x 600 @ 56.25 / 60.32 / 72.19 / 75.00 / 85.06Hz
5.) 832 x 624 @ 74.55Hz
6.) 1024 x 768 @ 43.48 / 60.00 / 70.00 / 75.03 / 85.00Hz

Normally when the primary mode 1024 x 768 @ 85Hz is well adjusted and complaint with the like new specification, then the secondary display modes will be great possibility to be complaint with the specification. But we still have to check with general test pattern to make sure every secondary modes is complaint with like new specification.

***Factory Reset :***

After final QC step, we have to erase all saved change again and restore the factory defaults. Please select and enter "Factory Reset" Function to see if it is workable. This action will allow you erase all end-user's settings and restore the original factory setting.

# Firmware Upgrading Procedure 9

This chapter provides the related information about the necessary equipment, hardware setup and software upgrade procedures for Firmware Upgarde. The data is for your reference.

# 9-1 Equipment Needed

## * Software :

- Bootcode.axe
- Bootcode.hex
- Configdata.hex
- Gui.hex
- RomCode.axe
- Flasher.hex
- pwSDK.inf
- ChkSum.txt
- Flasher.hex
- DISPSUM.exe
- FlashUpgrader MFC Application

## * Hardware :

- Fixture
  1. Cable RS-232(Blue) To MINI DIN 3PIN 1800mm EP737. (P/N : 42.86301.001, Rev.A)

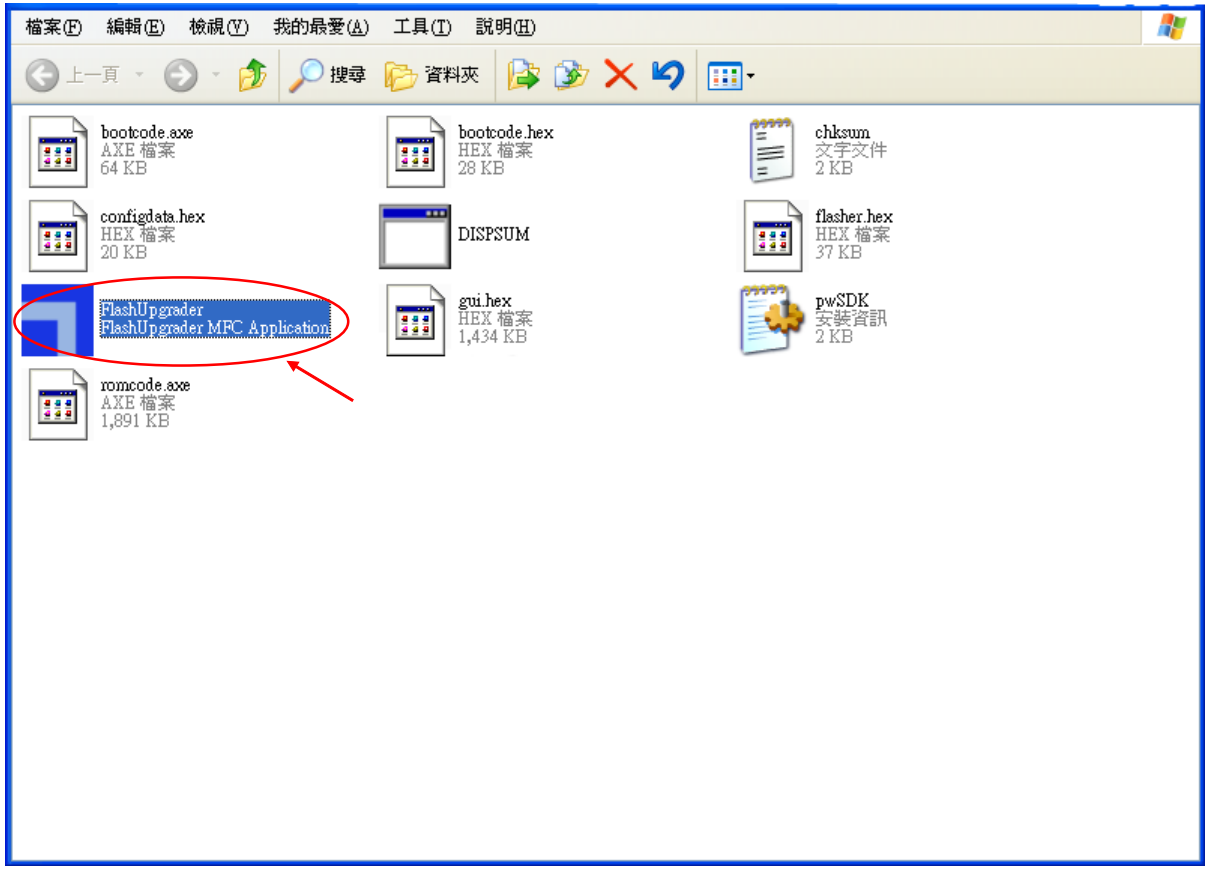
- PC
- EP737 Projector

# 9-2 Setup Procedure

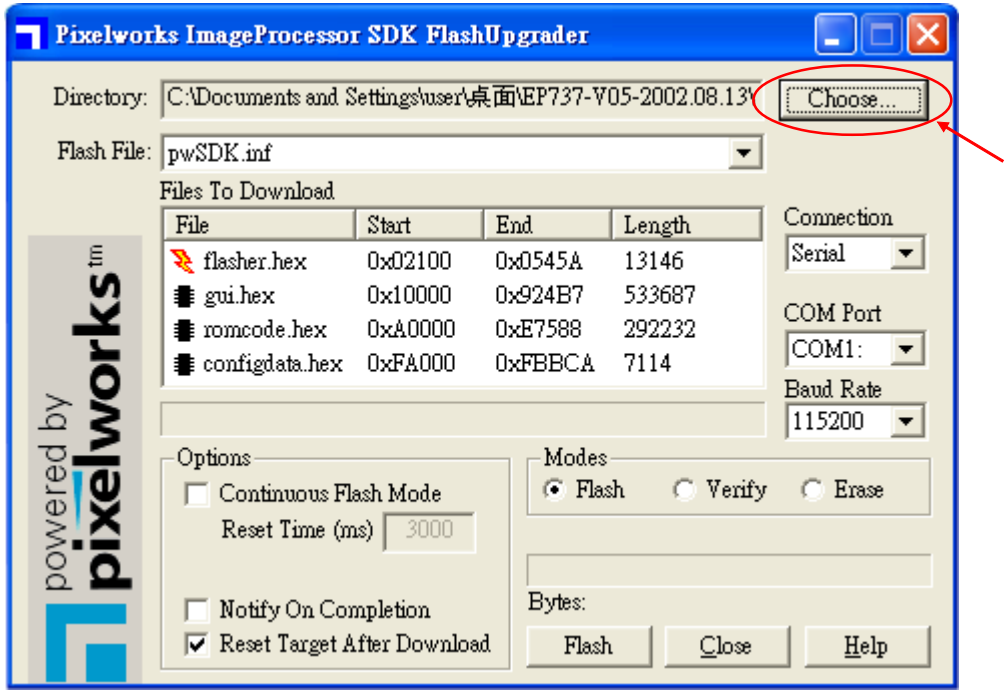
1. Connecto RS232 to mini din 3Pin cable to COM1 of PC and EP737.

# 9-3 Upgrading Procedure

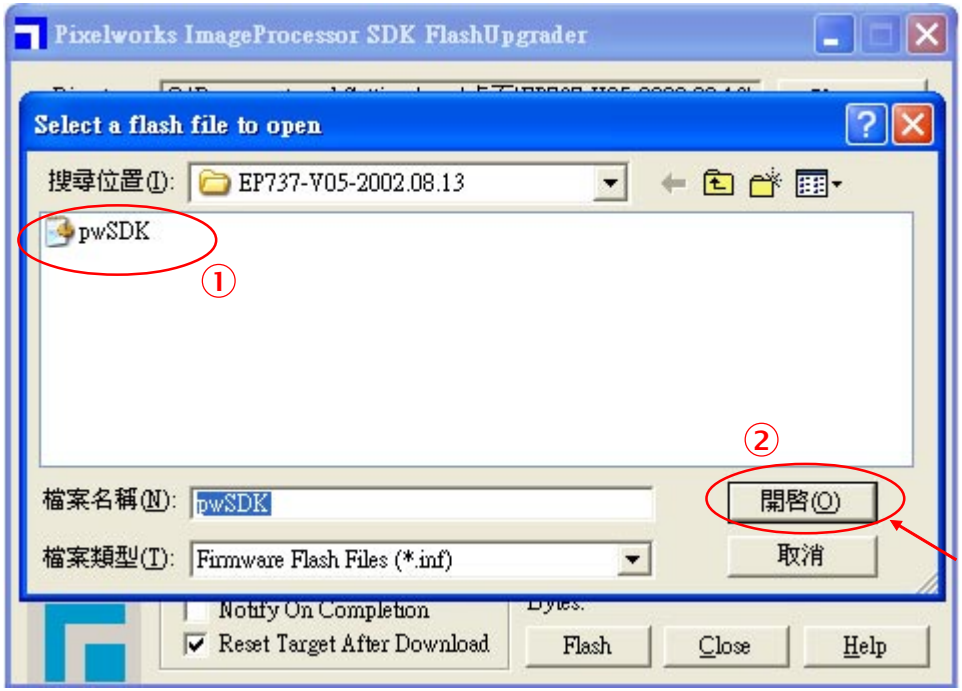
1. Execute “FlashUpgrader MFC Application”.



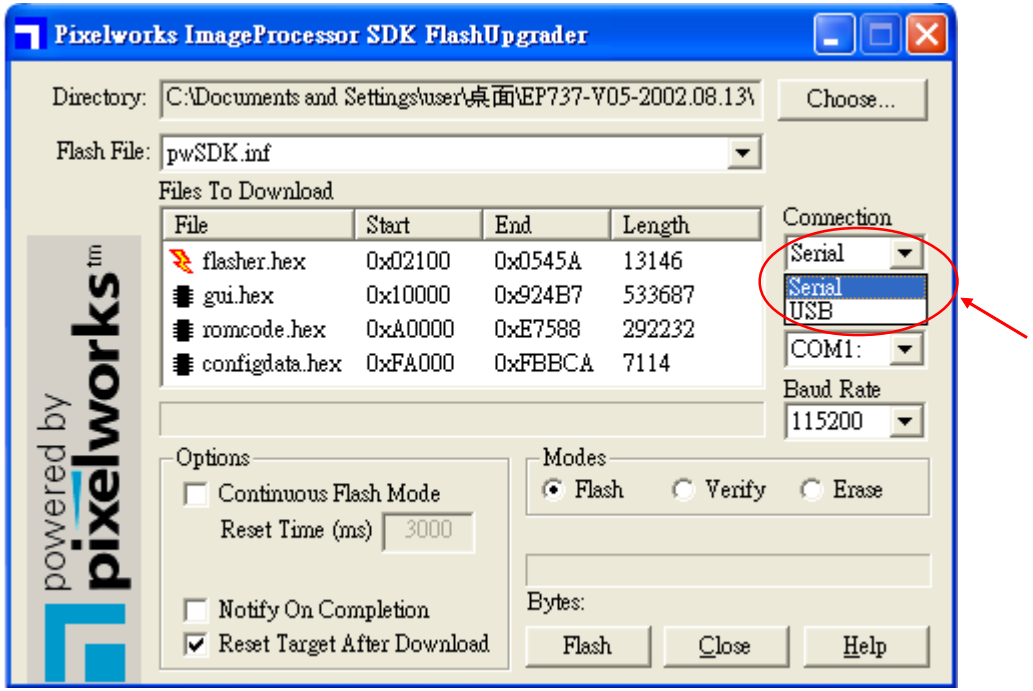
2. Click “Choose” button.



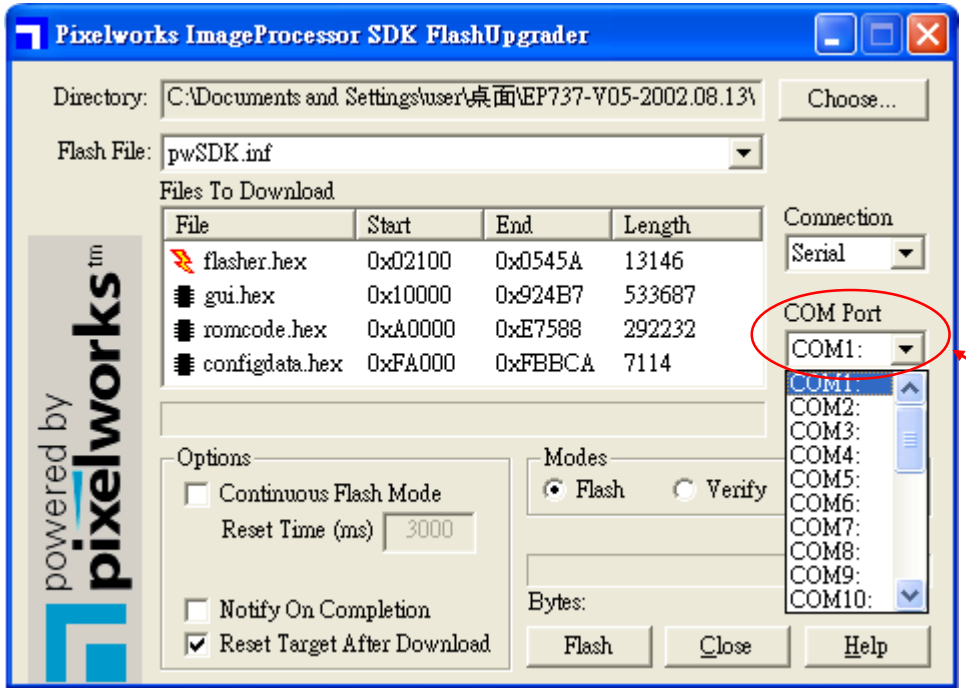
3. Search <pwSDK.inf> file from EP737 F/W folder, then click “Open” button.



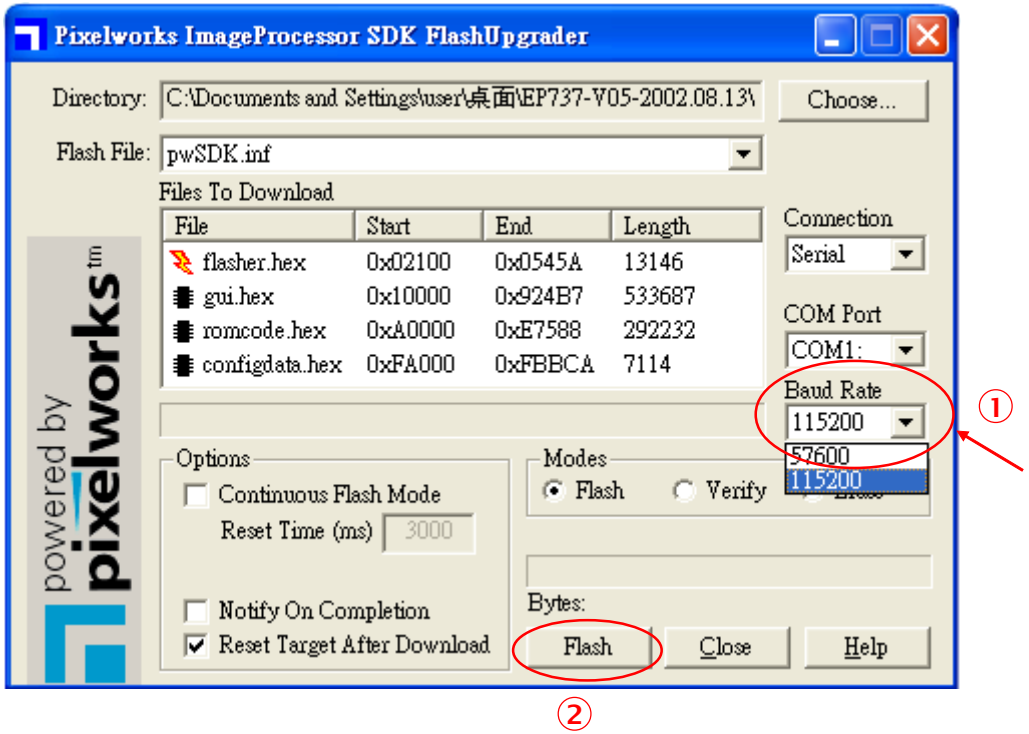
4. Select “Serial” Port.



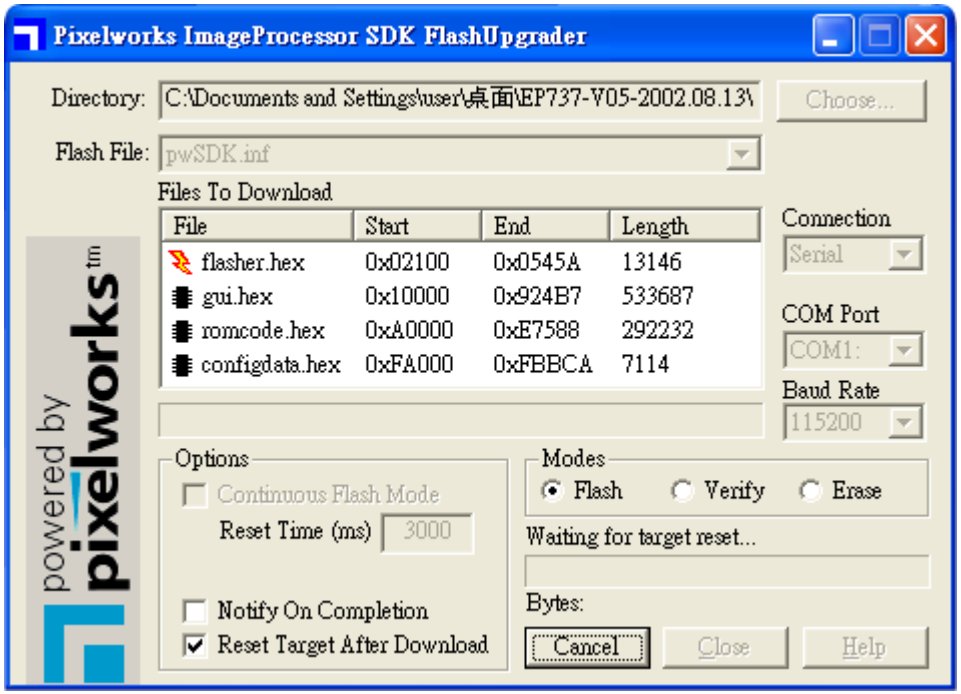
5. Select “COM1” Port.



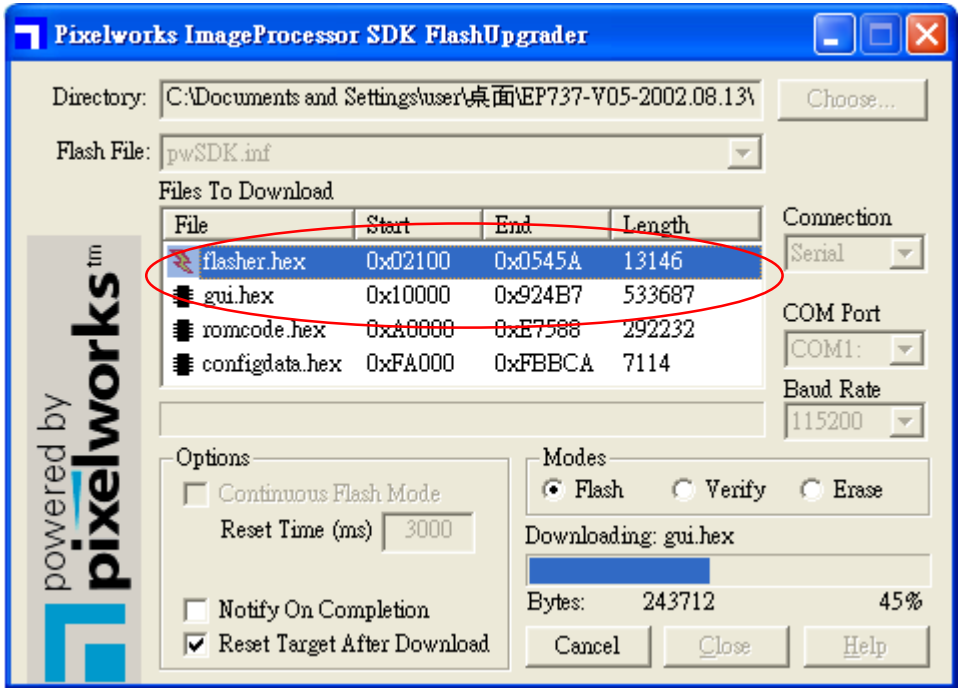
6. Select Baud Rate to be “115200”, then click “Flash” button.



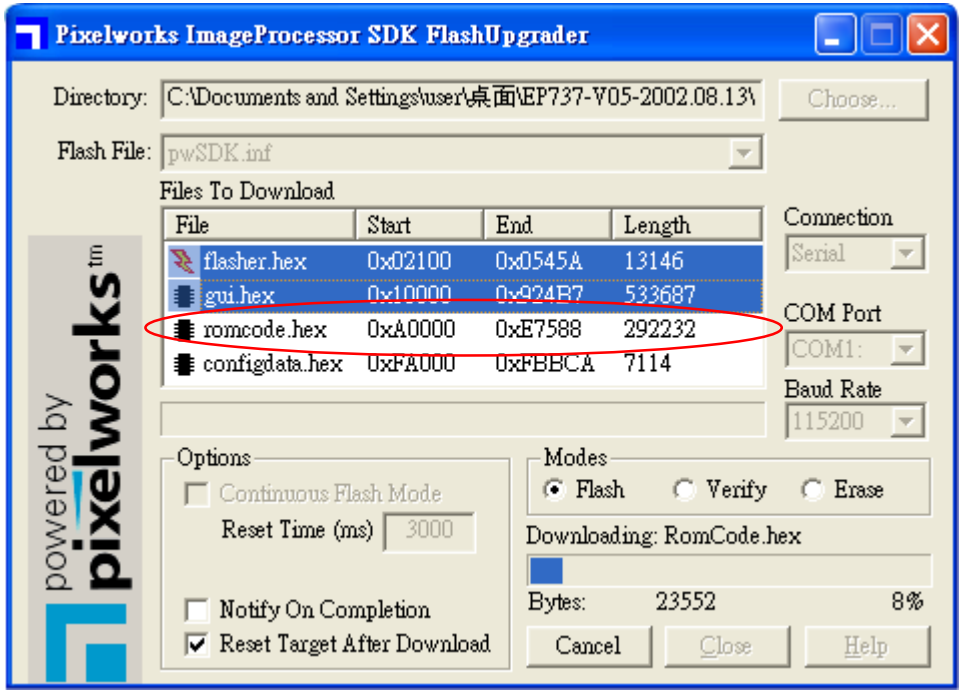
7. Plug in the Power Cord to EP737, then press and hold on “Standby” key on EP737 keypad.
*Note : The Firmware upgrade program will be stop if you havn’t hold the standby button.*



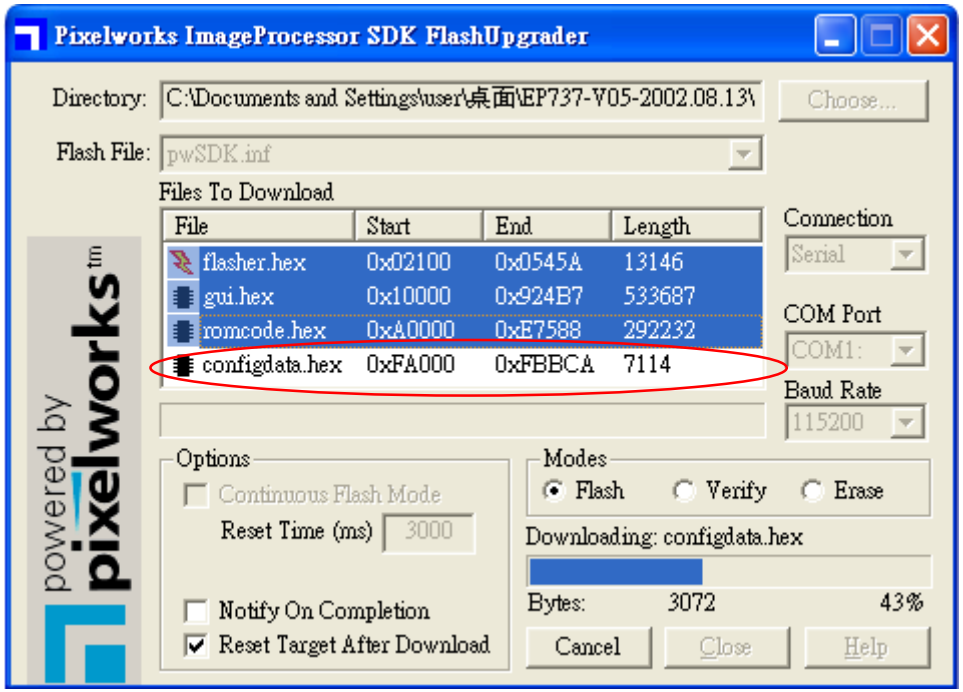
8. Downloading <Flasher.hex> and <Gui.hex> files.



9. Keep on downloading <RomCode.hex> file.



10. After <Configdata.hex> file is downloaded, await starting up EP737 (about 2-3 seconds), then finish the upgrading procedure



# DDC Key-in Procedure 10

This chapter provides the related information about the necessary equipment, DDC key-in procedure. The data is all for your reference.

# 10-1 Equipment Needed

* Fixture
* PC set
* Power Cord
* Power Adapter
* DVI TO M1 Cable
* VGA TO M1 Cable (P/N : 42.85804.001)
* DFP TO DVI Adapter
* RS232 cable (P/N : 42.83618.001)
* EP737 Projector
* EDID Driver : depends on the model


1). DVI TO M1 Cable (For Digital)
2). DFP TO DVI Adapter

VGA TO M1 Cable (For Analog)

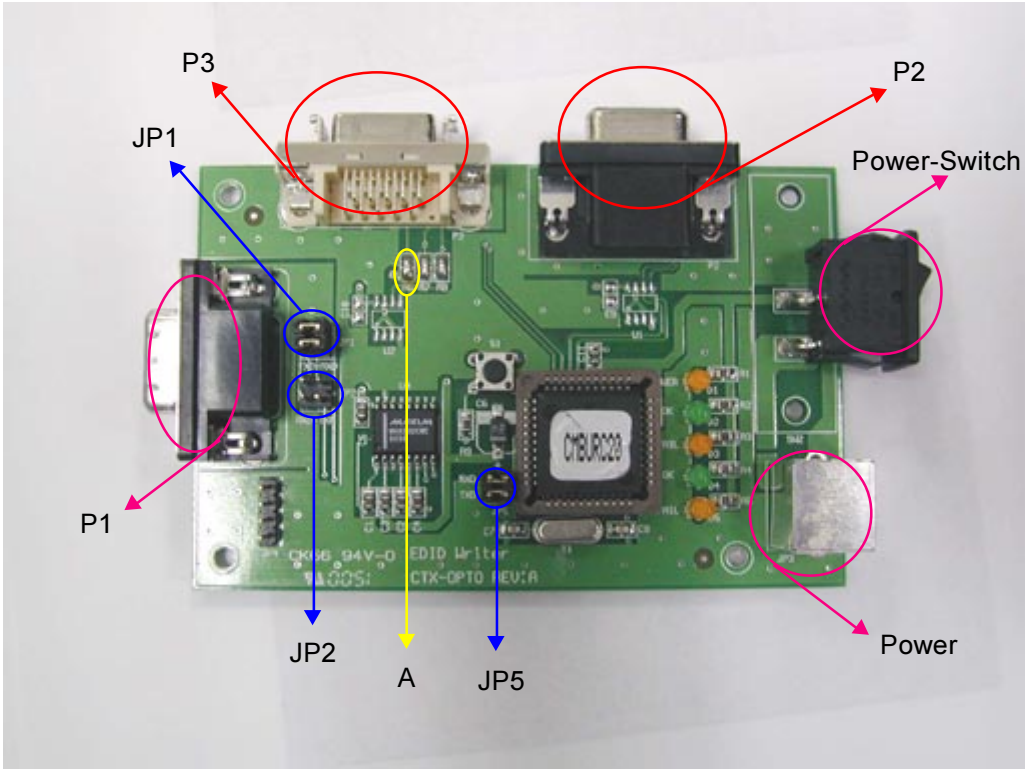
Power Adapter

Power Cable

RS232 Cable

# 10-2 Setup Procedure

1. Plug in the power of the fixture
2. JP1 and JP5 on the fixture are close, and JP2 is open. (Figure 1)
3. Turn on the fixture.
4. Confirm “A” is short circuit.

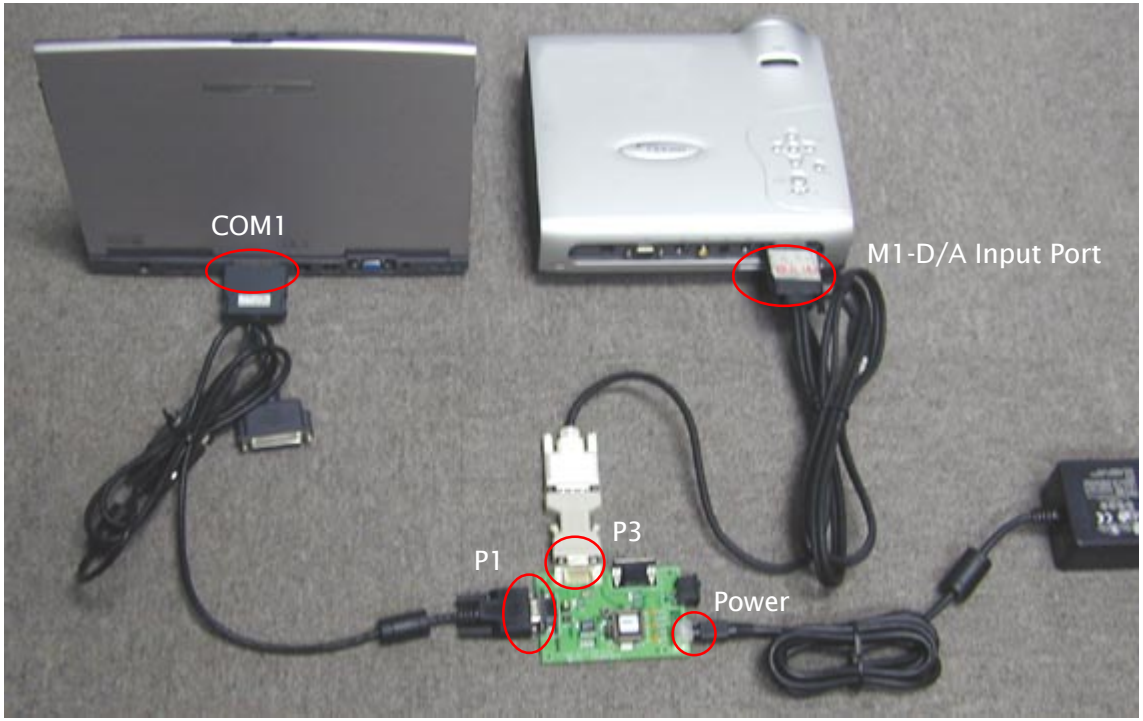



(Figure 1 : Fixture)

# 10-3 DDC Key-in Procedure

## 10-3.1 Digital :

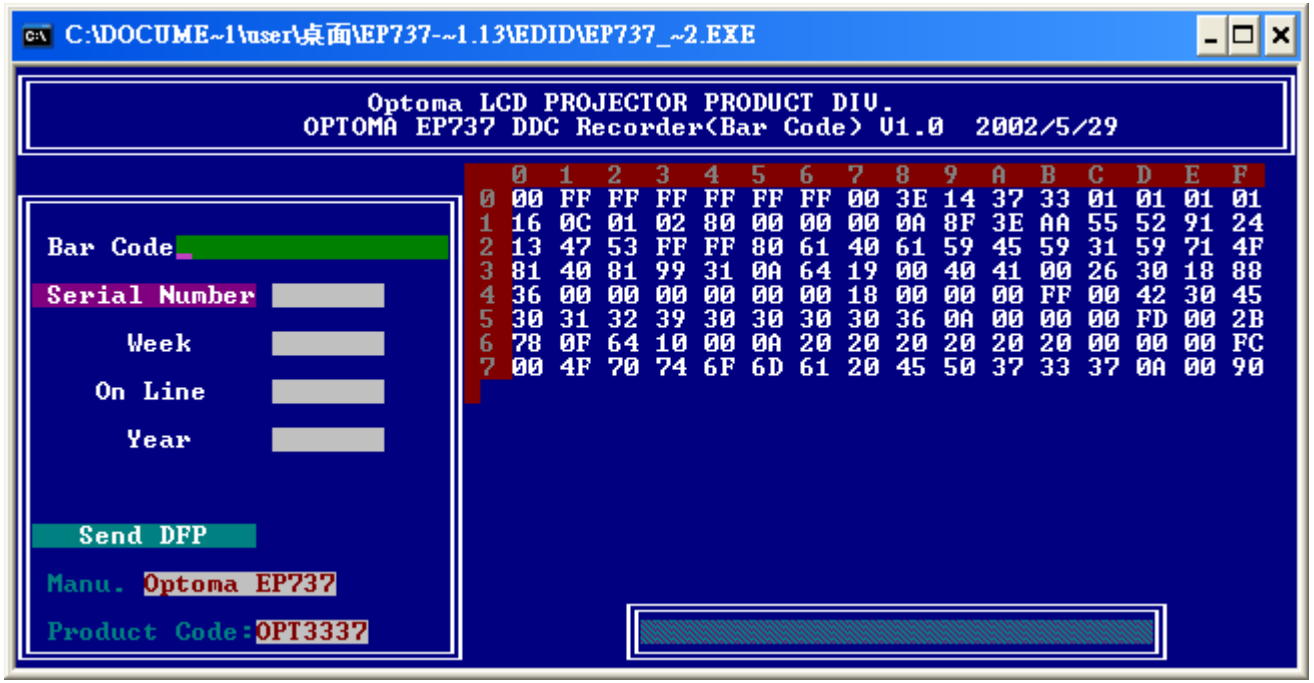
1. Connect P1 of the fixture with COM1 port of PC by RS232 cable.
2. Connect P3 of the fixture with M1-D/A Input Port of EP737 by DVI TO M1 cable.
3. Connect Power of the fixture with power source by Power Adapter.



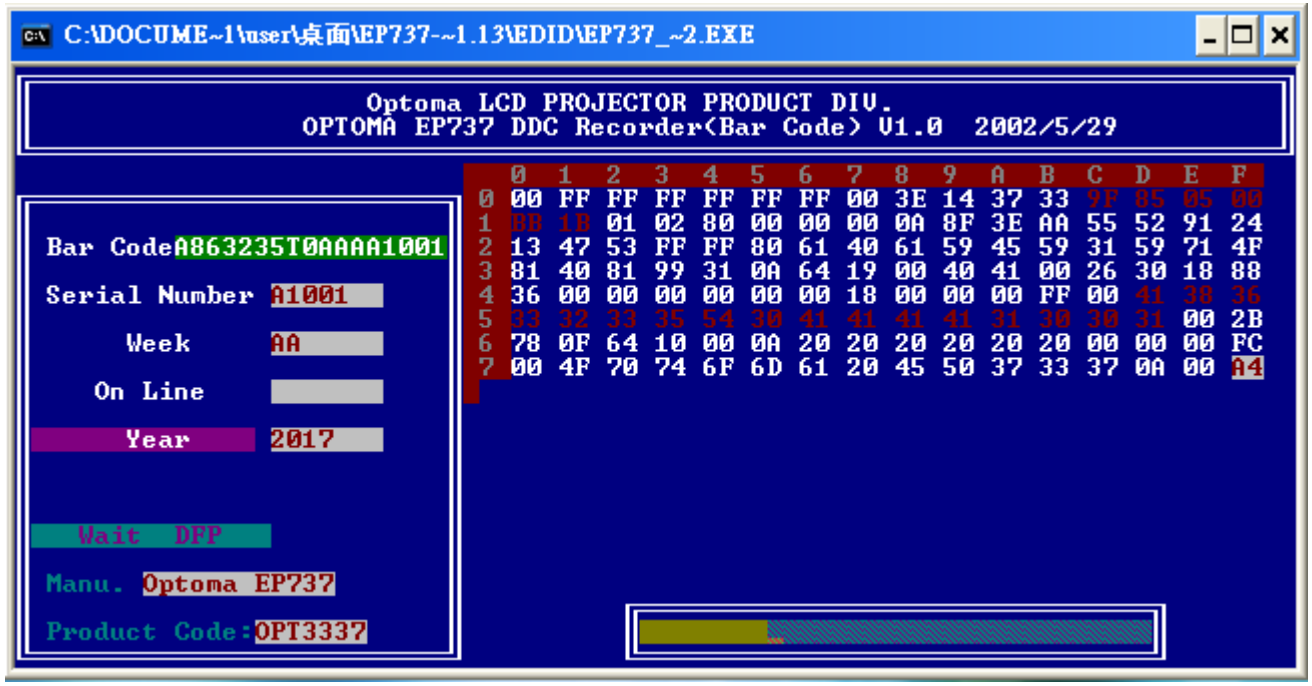

(Figure 1 : Finish Setup)

1. Turn on EP737 and run EDID program in the computer.

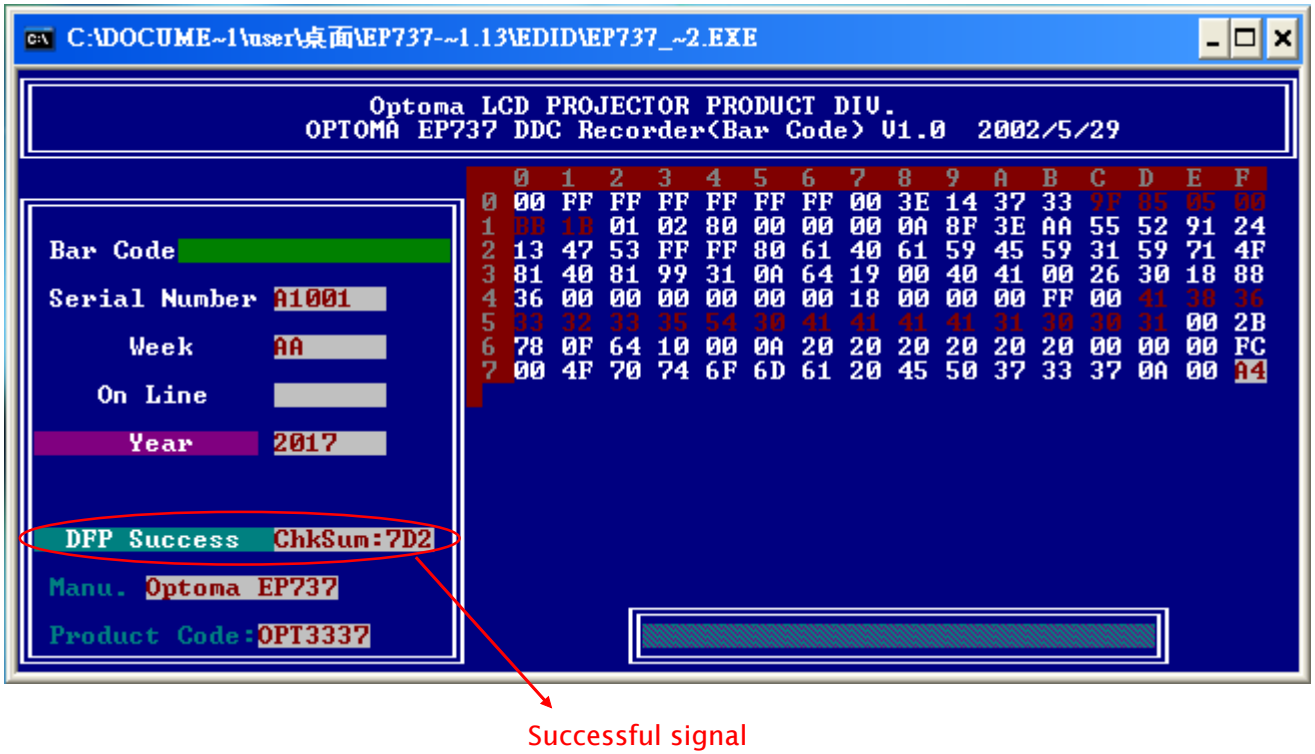
2. The following picture will show on the screen.



3. Key S/N into the blank space beside “Bar Code”, then press “Enter” key on keyboard to begin programming.



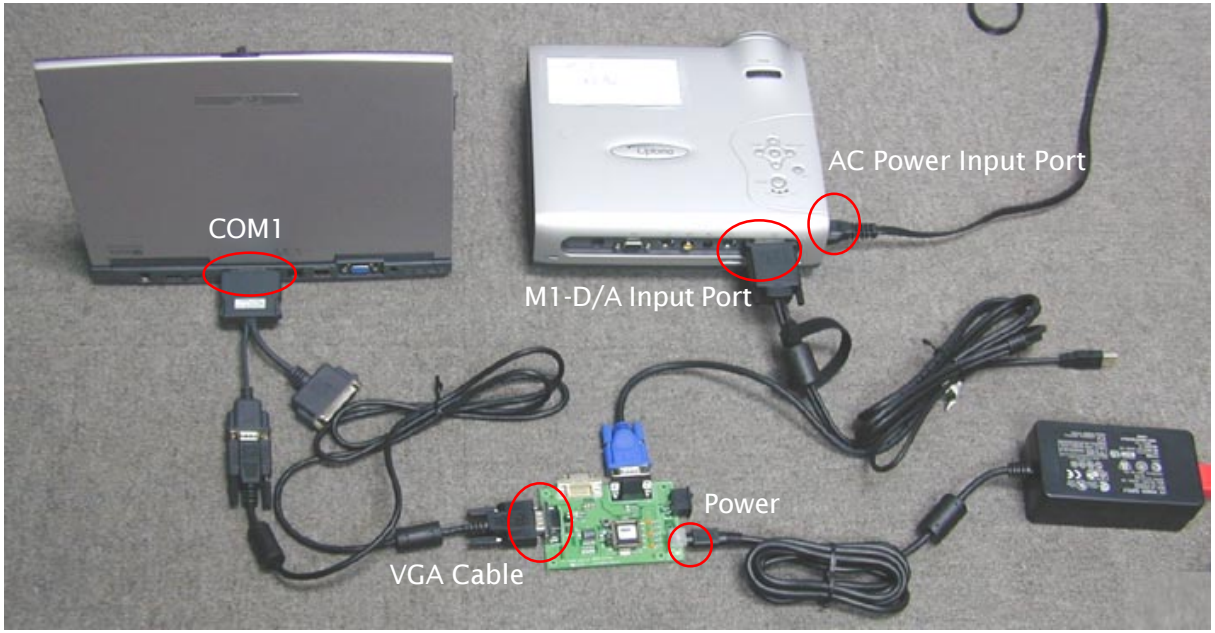
4. After finishing the above actions, “DFP Success” will appear on the screen.
5. Power on EP737, then input digital signal. If ther is no display, it means EDID isn’t keyed in sucessfully. Please repeat the step 1~5 again.
   *(Note : Can’t run two EDID programs at the same time.)*



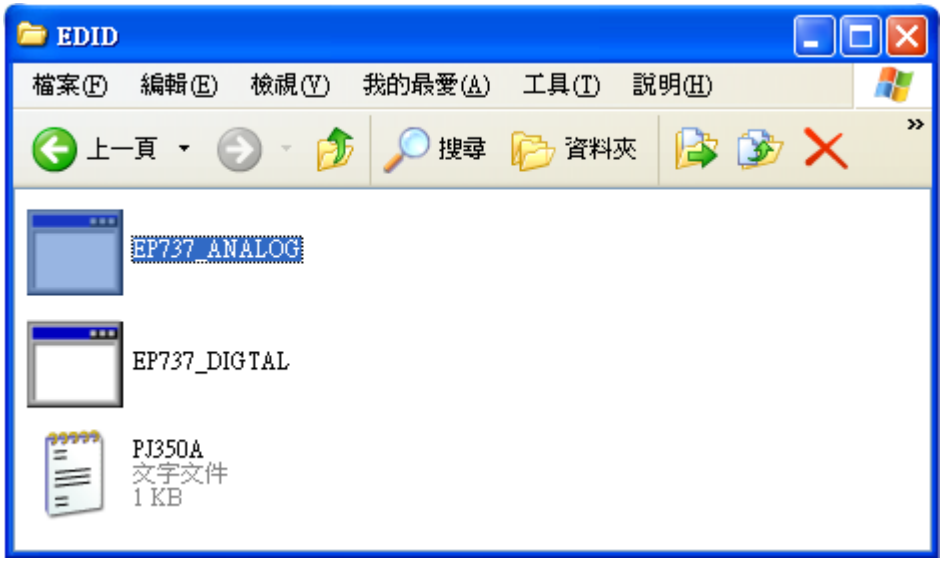

Successful signal

## 10-3.2 Analog :

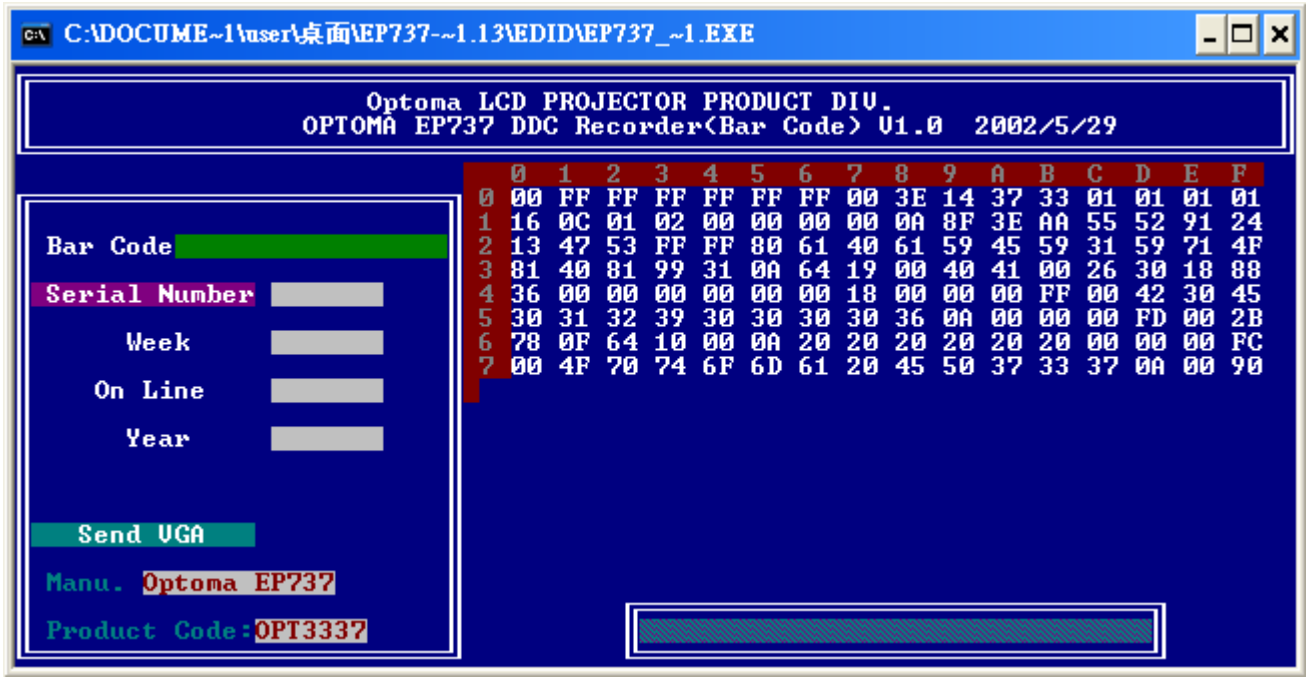
1. Connect P1 of the fixture with COM1 port of PC by RS232 cable.
2. Connect P3 of the fixture with M1-D/A Input Port of EP737 by DVI TO M1 cable.
3. Connect Power of the fixture with power source by Power Adapter.
4. Connect AC Power Input Port of EP737 with power source by Power Cord.



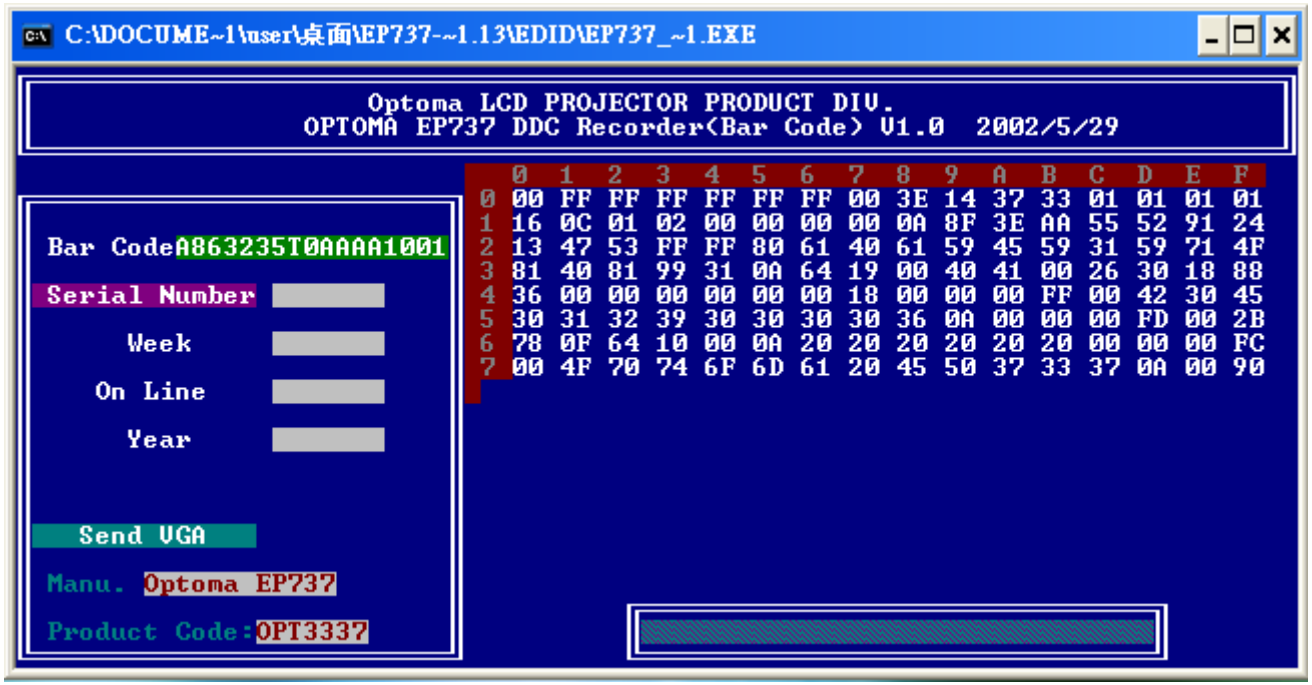
1. Turn on EP737 and run EDID program in the computer.



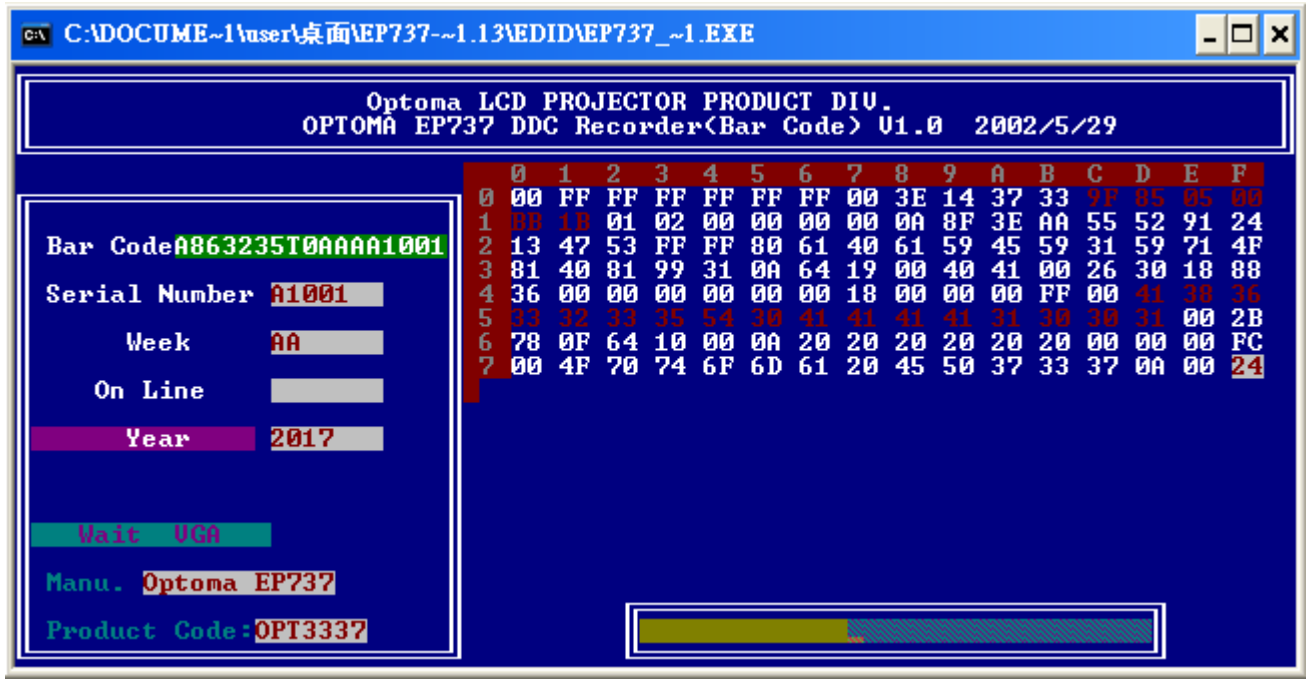
2. The following picture will show on the screen.



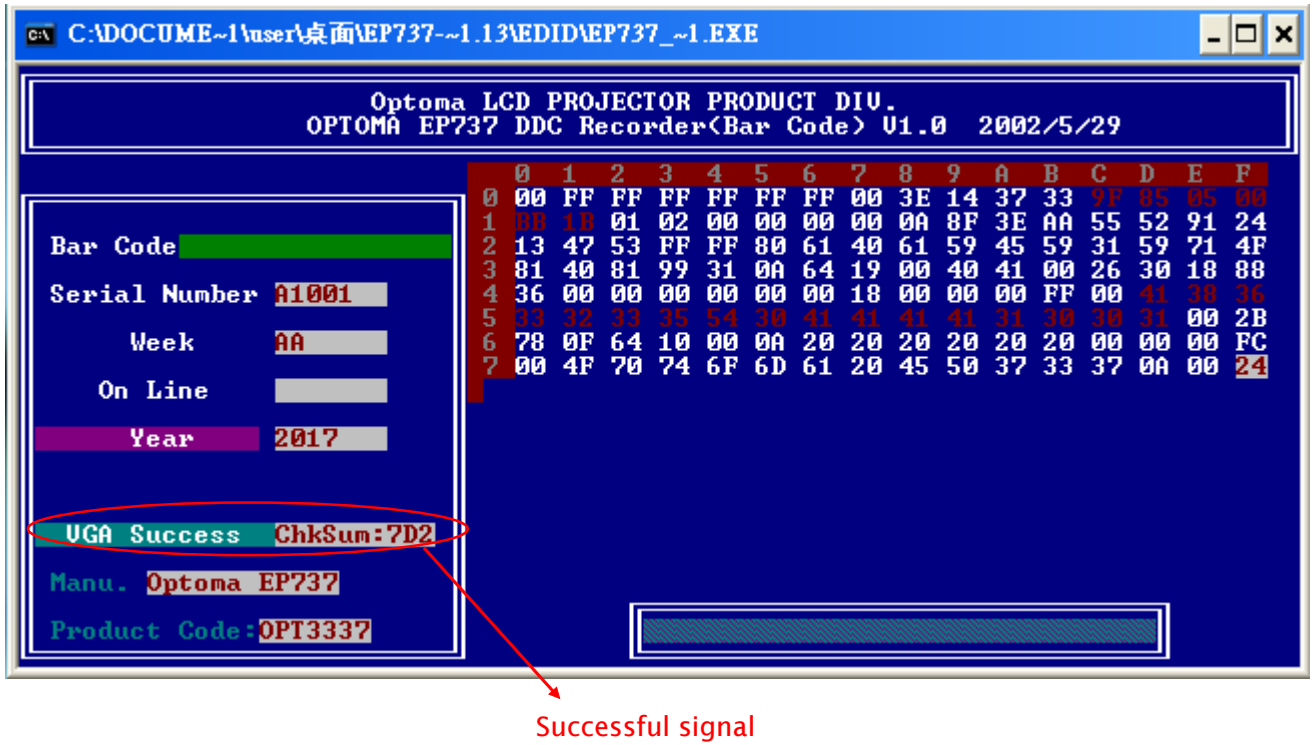
3. Key S/N into the blank space beside “Bar Code”, then press “Enter” key on keyboard to begin programming.



4. Execute EDID programming, wait a moment.



5. After finishing the above actions, “VGA Success” will appear on the screen.
*(Note : Can’t run two EDID programs at the same time.)*



# Appendix 11

# 11-1 Serial Number System Definition

## 11-1.1 Serial Number Format for Projector

| A | BBB | Y | WW | C | D | BEMO | EEEE |
|---|---|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |

① : A = Optoma, B~Z = OEM
② : Product code (ex: 863 = EP737)
③ : Y = Last number of the year (ex: 2002 - 2)
④ : Week of year
⑤ : Panel vendor code
⑥ : Electrical classification (1=110V, 2=220V, 0=universal)
⑦ : B = BIOS version, E = PCB board version,
M = Mechanical version, O = Optical version
⑧ : Serial code (from 0001~)

**EX : A863235T0AAAA1001**

This label "A863235T0AAAA1001" represents the whole serial number for EP737, including Ver. 1st of BIOS and Ver. 1 of PCB Board. Both mechanical and optical version are 1st. In addition, panel vendor is T1. It's produced on 35-week of 2002 for universal area and its serial code is 1001.

# ✲ Reader's Response ✲

***Dear readers:***

*Thank you for your backing our service manual up. In order to refine our content of the service manual and satisfy your requirement. We expect you can offer us some precious opinions for reference.*

## *Assessment :*

A. What do you think about the content after reading EP737 Service Manual?

| *Unit* | *Excellent* | *Good* | *Fair* | *Bad* |
|---|---|---|---|---|
| 1. Introduction | | | | |
| 2. Fundamental Principle | | | | |
| 3. Mechanical Construction | | | | |
| 4. Procedure of Disassembly | | | | |
| 5. Function of Boards | | | | |
| 6. Specifications | | | | |
| 7. Troubleshooting | | | | |
| 8. Function Test & Alignment Procedure | | | | |
| 9. Firmware Upgrading Procedure | | | | |
| 10. DDC Key-In Procedure | | | | |
| 11. Appendix | | | | |

B. Are you satisfied with the EP737 service manual?

| *Item* | *Excellent* | *Good* | *Fair* | *Bad* |
|---|---|---|---|---|
| 1. Service Manual Content | | | | |
| 2. Service Manual Layout | | | | |
| 3. Format and Listing | | | | |
| 4. CD Label and Autorun Design | | | | |

C. Do you have any other opinion or suggestion about this service manual?

## *Reader's basic data:*

| | | | |
|---|---|---|---|
| Name: | | Title: | |
| Company: | | | |
| Add: | | | |
| Tel: | | Fax: | |
| E-mail: | | | |

*After your finishing this form, please send it back to Coretronic Customer Service Dept. by fax: 886-3-578-8357 or E-mail to service@coretronic.com Thanks :)*