— Table of Contents —

1. Attention During Servicing

1-1. This monitor should be operated from the type of power indicated on the using label. If you are not sure of the type of power available, consult your dealer or local power company..

1-2. The LCD shall be placed at low humidity and low dust.

1-3. Place the LCD on firm flat surface carefully. The surface of the LCD monitor is plastic material and thin glass, drop or sharp impact will cause damage to the LCD monitor.

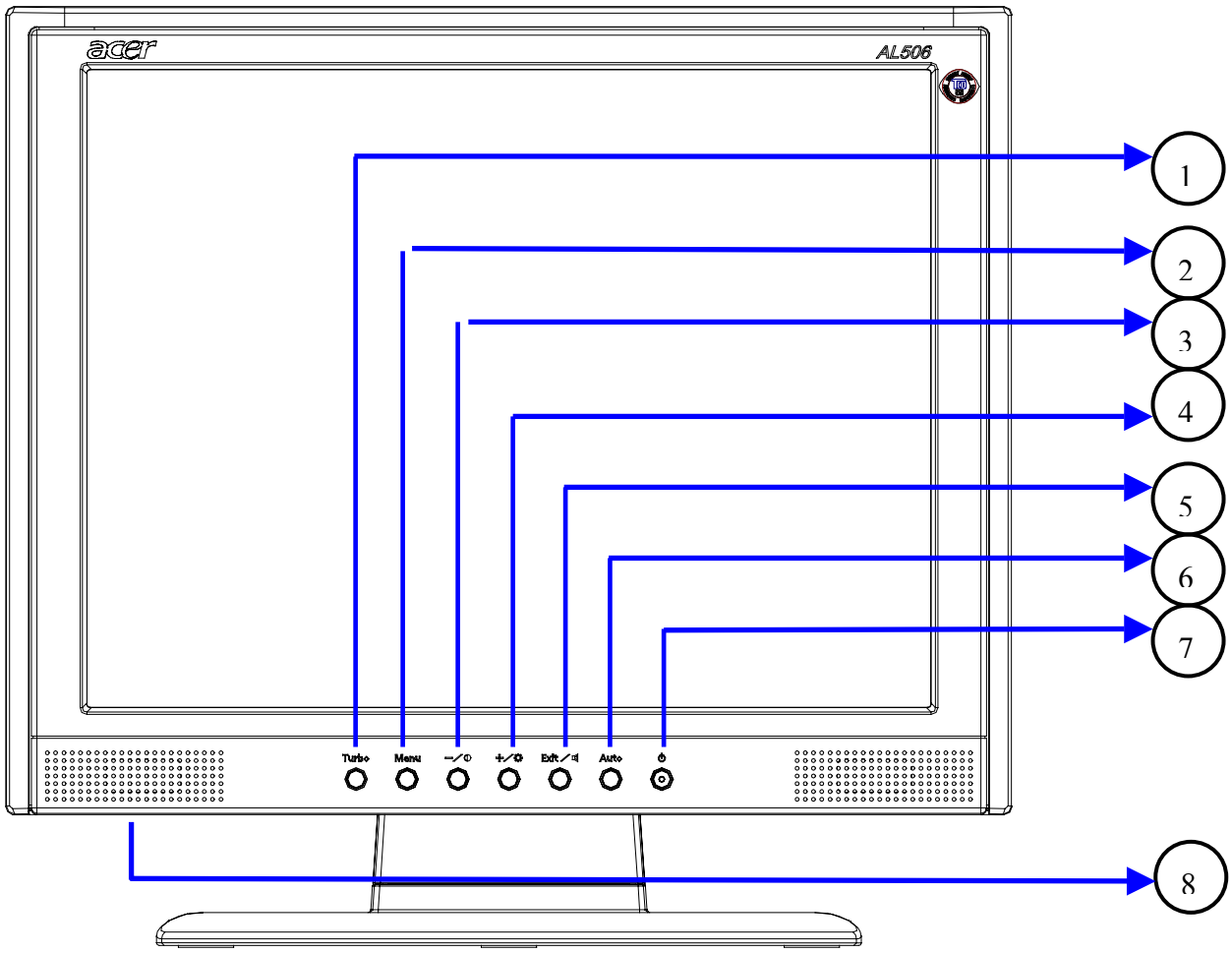
1-4. Do not use alcohol or ammonia-based liquid to clean the monitor. If necessary, clean with a slightly damp cloth. Disconnect the monitor from the power supply before cleaning.

1-5. Remove the power supply immediately in case of abnormality occurred in the LCD, especially strange noise of smell

1-6. Turn on power for testing only after complete the assembly of the monitor include casing and tighten the screw while servicing the monitor to prevent hazard.

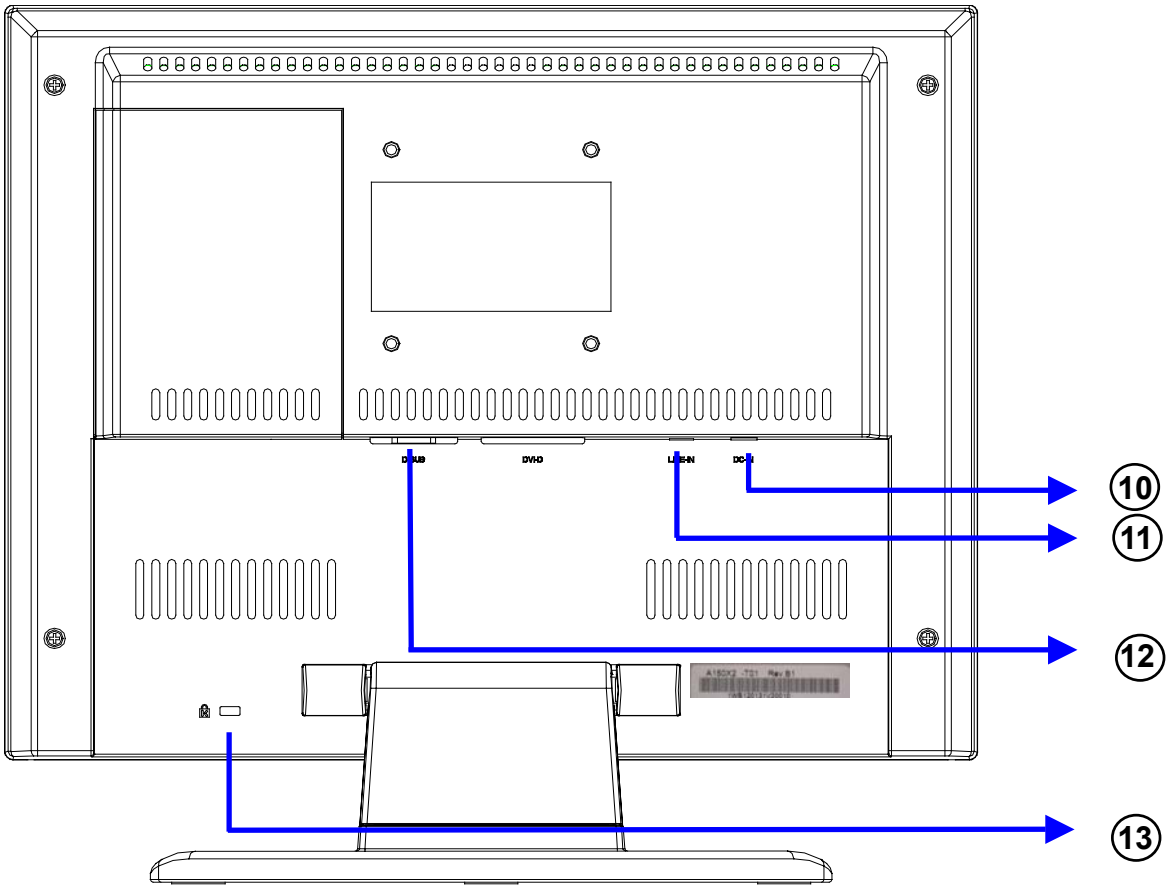
2. Monitor Appearance Description

2-1. Front View



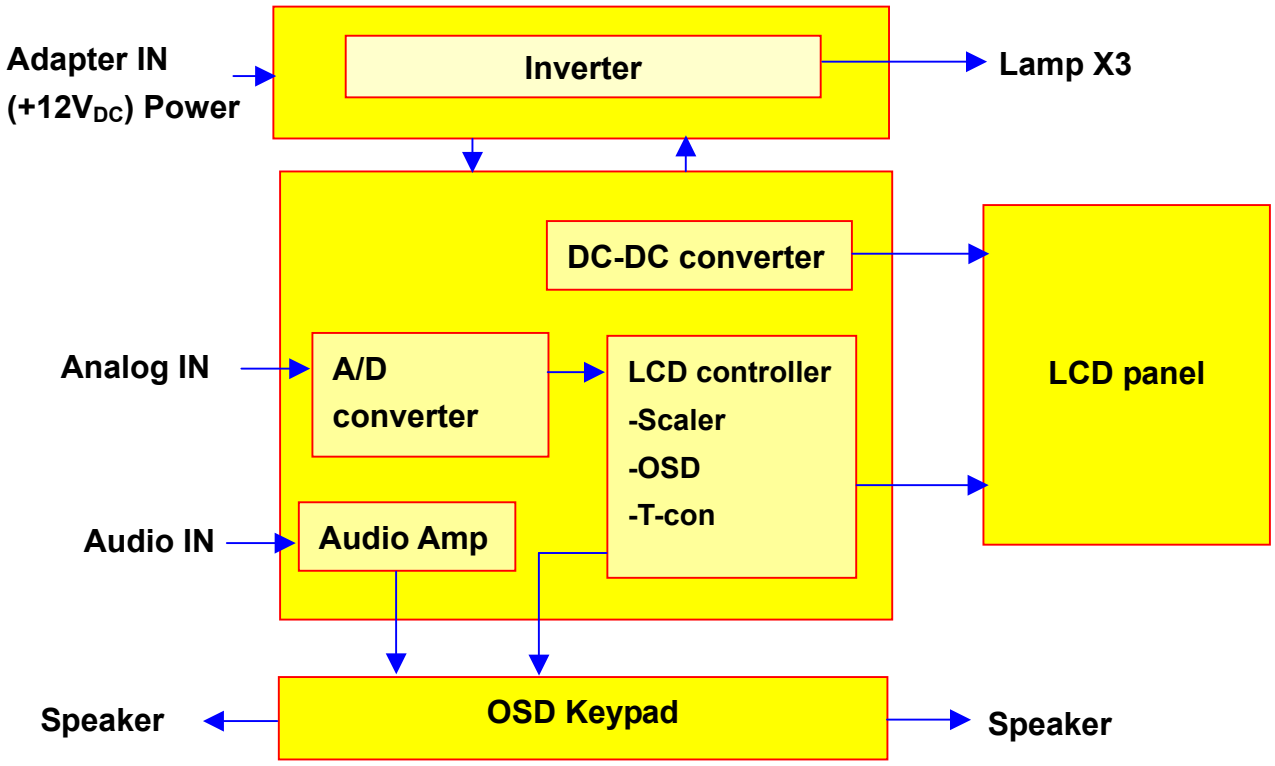
① Turbo
② Menu — / Contrast
③ Button (Exit /)
④ ＋ / Brightness
⑤ Exit / Volume
⑥ Auto : Auto Setup
⑦ Power Switch /Power Indicator
Green : Normal
Blue : Power Saving
Orange : Power Off
⑧ Speakers

2-2. Rear View

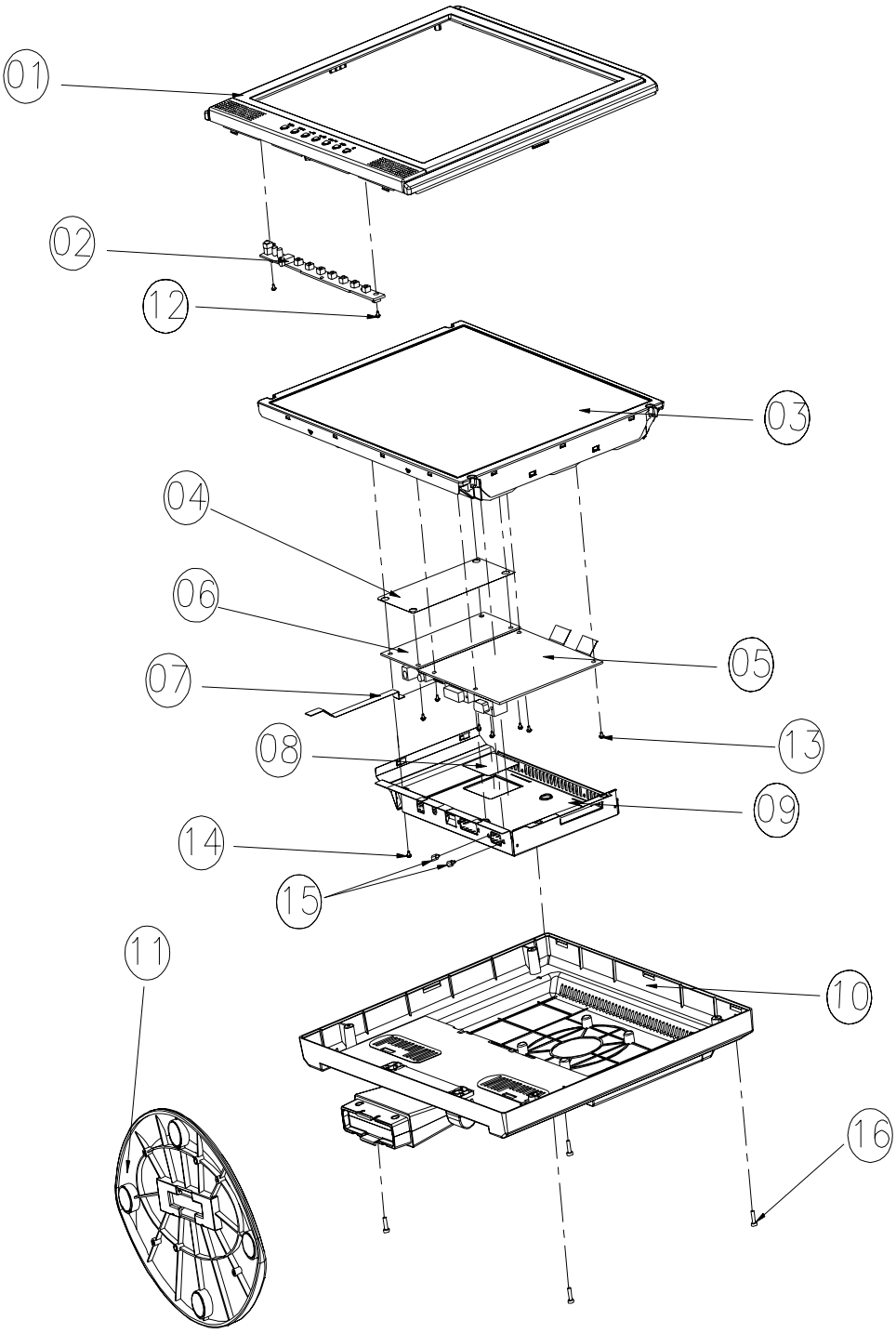


⑩ DC Power Jack (DC-In)
⑪ Stereo Mini Jack (LINE-IN)
⑫ D-sub mini 15pin Connector (D-SUB)
⑬ Lock hole

2-3. System Block Diagram



2-4. Explosion Diagram



1.BEZEL_W/_SPEAKER_CIRCLE_ASSY

2.OSD PCBA

3.PANEL ASSY

4.PET_FILM_METAL_FRAM_REAR

5.SMART PCBA

6.INVERTER

7.FFC AD_OSD

8.PET ISOLUTION FILM

9.METAL COVER SMART

10.REAR_STAND_W/O_TUNER_ASSY

11.SEAT_ELLIPSE_ASSY

12.SCREW

13. SCREW

14. SCREW

15.STAND-OFF

16.SCREW

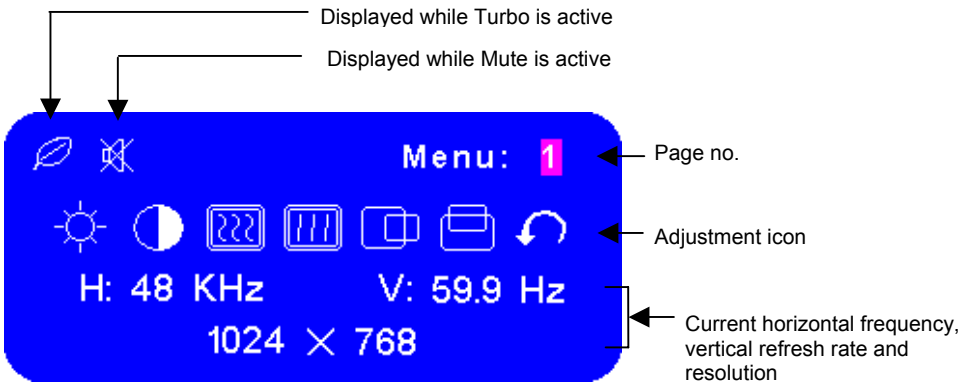
The Table of Explosion Diagram

NUM.	ITEM NAME	CHI-MEI P/N
1	BEZEL_W/_SPEAKER_CIRCLE_ASSY	40A1522923
2	OSD PCBA	35A15K0208
3	PANEL ASSY	44A1513026
4	PET_FILM_METAL_FRAM_REAR	7341391001
5	SMART PCBA	35A15S0203
6	INVERTER	2714000001
7	FFC AD_OSD	3241500001
9	METAL COVER SMART	41A1599115
10	REAR_STAND_W/O_TUNER_ASSY	40A1592966
11	SEAT_ELLIPSE_ASSY	40A1592949
12	SCREW	42A9930001
13	SCREW	42A9920002
14	SCREW	42A9930008
15	STAND-OFF	42A9940007
16	SCREW	42A9930009

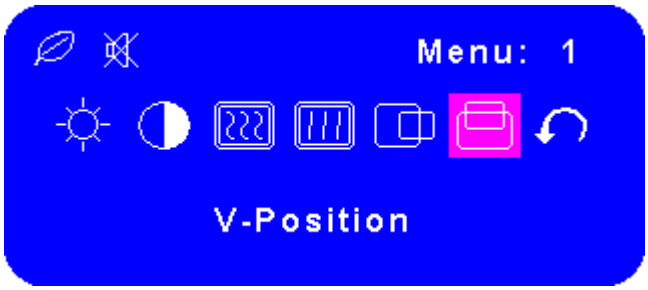
3. OSD Menu Screen

Operate Explanation

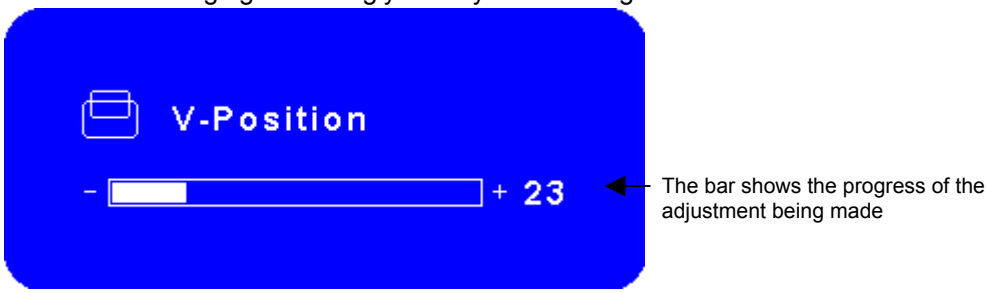
- Press the Menu Button to start the On Screen Display feature. There are additional Menu pages which can be switched by using the +/–Buttons.



- Select the Menu page that contains the adjustment icon relating to the adjustment you want to make. Press the Menu Button again. Then, use the +/– Buttons to highlight the desired adjustment icon. Press the Menu Button again.
- Use the +/–Buttons to make the appropriate adjustment or setting.
- For example, to correct for vertical position, select Menu page number 1 and then press the Menu Button. Then, select (V-Position) by using the +/– Buttons.



- An adjustment scale appears after you press the Menu Button. Use the +/– Buttons to change the vertical position settings. The vertical position of the overall display should be changing accordingly while you are doing this.



Notes

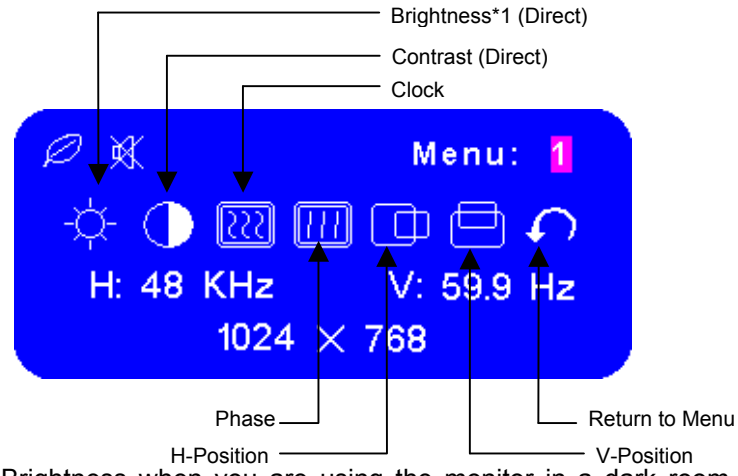
- The On Screen Display disappears several seconds after you stop pressing the buttons while performing an adjustment.
- Any changes are automatically saved in the memory when the On Screen Display disappears. Turning off the power should be avoided while using the Menu.
- Adjustments for Clock, Phase and Position are saved for each signal timing. Except for these adjustments, all other adjustments have only one setting which applies to all signal timings.

Adjust

Pressing [+] , [-] or [Menu] buttons for the adjustment when the OSD is executed.

Menu contents

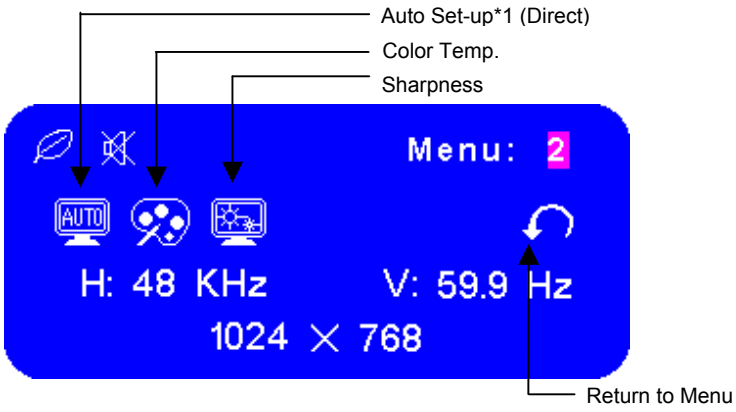
Menu: 1



*1 Adjust the Brightness when you are using the monitor in a dark room and feel the screen is too bright.

Note: SWITCHING BRIGHTNESS /CONTRAST ADJUSTMENT:
To switch between Brightness and Contrast adjustments, press the Menu Button within 10 seconds after pressing the Brightness Button or the Contrast Button during the direct adjustments above.

Menu: 2

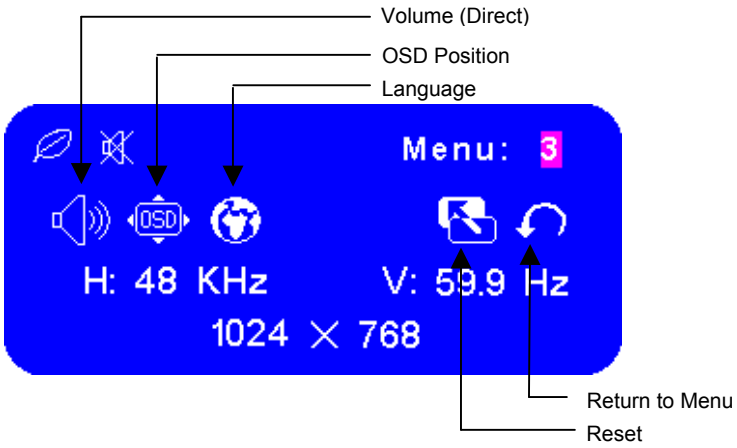


*1 For best results, use the Auto Set-up in conjunction with the adjustment pattern. And the screen becomes dark for approximately five seconds during the adjustment.

Note:

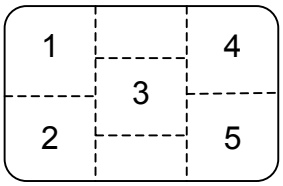
- Auto Set-up Setting:
  - No: The Auto Set-up is not performed when the signal input is changed.
  - Yes: Adjust Clock and Phase automatically when the signal input is changed.
- Color Temp.: Color 1: 9300K; Color 2: 7500K; Color 3: 6500K; sRGB: User
  - sRGB is an international standard which defines and unifies the difference of color appearance between equipment.
- Sharpness: Adjust the picture quality at resolutions of less than 1024 × 768. You can change the picture quality from 1 to 5 (sharp to soft). Press the + Button to change the picture quality in numerical order. Press the – Button to change the picture quality in reverse numerical order.

Menu: 3



Note:

- OSD Position: You can move the OSD display area to any one of the following 5 positions within the overall display:



Press the + Button to move the OSD in numerical order. Press the – Button to move the OSD in reverse numerical order.

- Language: Eng: English; Dth: German; Fns: French; Ity: Italian; Epl: Spanish; Jpn: Japanese; T-C: Tranditional Chinese; S-C: Simplified Chines

Direct

You can skip the Menu pages and display an adjustment scale directly by using the following button operations:

- Brightness: Press the Brightness Button when the Menu is not displayed.
- Contrast: Press the Contrast Button when the Menu is not displayed.
- Auto Set-up: Press the Auto Button when the Menu is not displayed.
- Volume: Press the Volume Button when the Menu is not displayed. When OSD menu is off, holding this button for 1-2 seconds will switch the Mute function between ON and OFF.
- Turbo:
  - Pct: Picture Mode (High brightness)
  - Text: Text Mode (Normal)
  - Eco Economy (Brightness of back-light is reduced)
  - Changing to a lower brightness mode can lessen eye fatigue.
  - Change from Picture Mode to Text Mode when working with text.
  - Change from Text Mode to Economy Modes when viewing the screen for long periods.

4. Description of Level 1 Service Tools

Definition : Replacement of failed PCB and internal signal wire.
Tools :

1. Multimeter.

Multimeter

2. Electric screwdriver.

Electric screwdriver
Torque value: adjust to 1.5kgf*cm

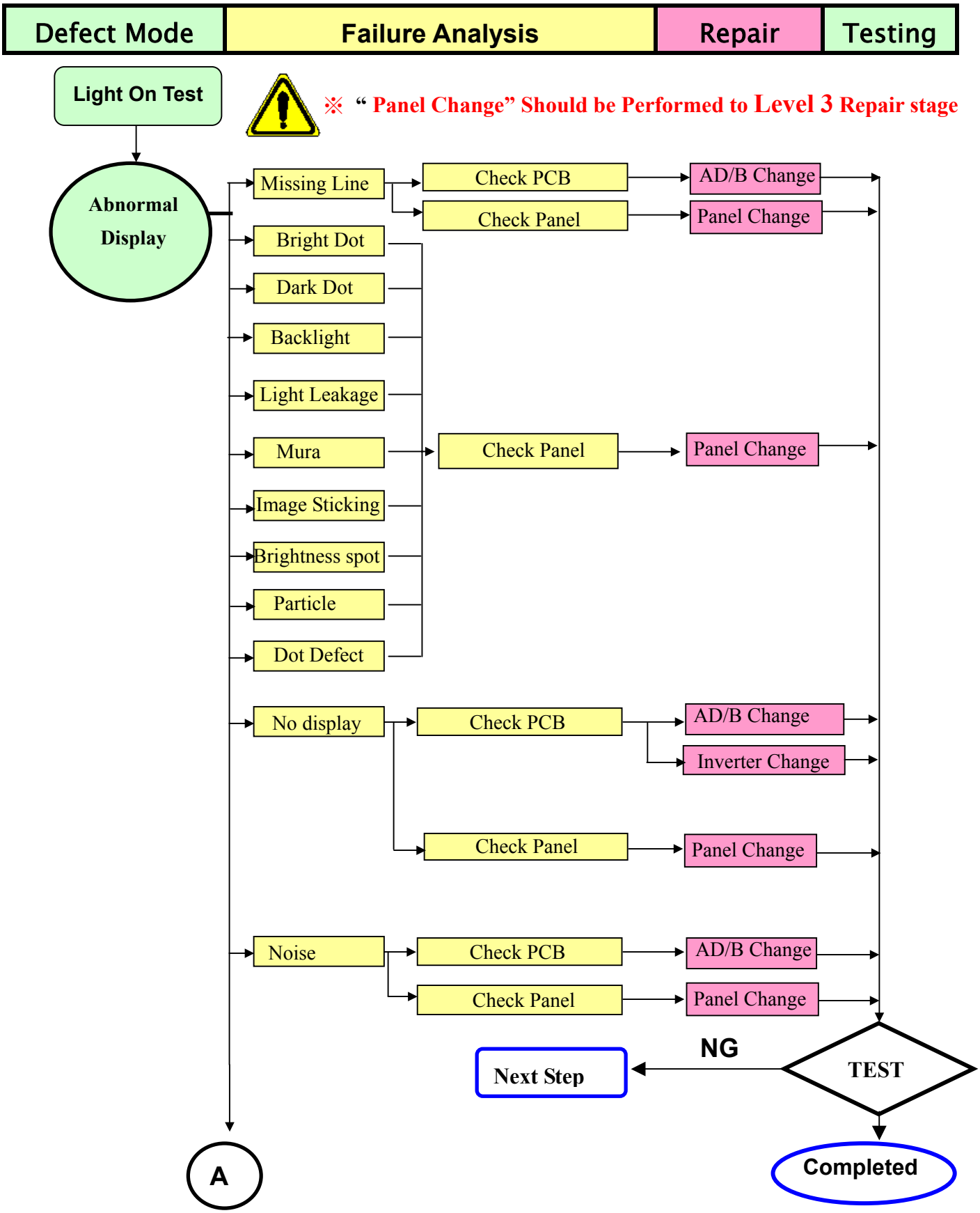
3. Screwdrivers

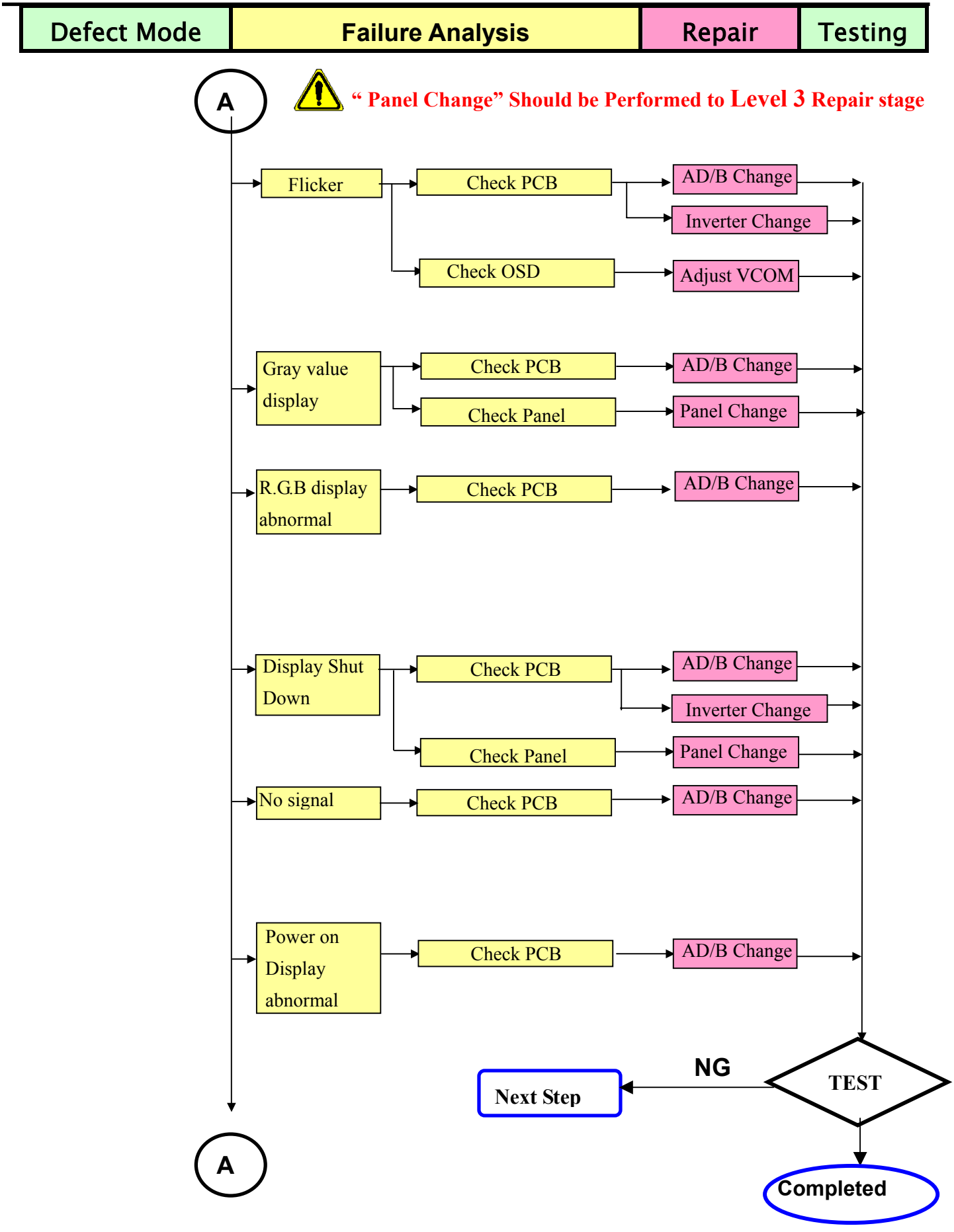
Screwdriver
Hexagon Wrench

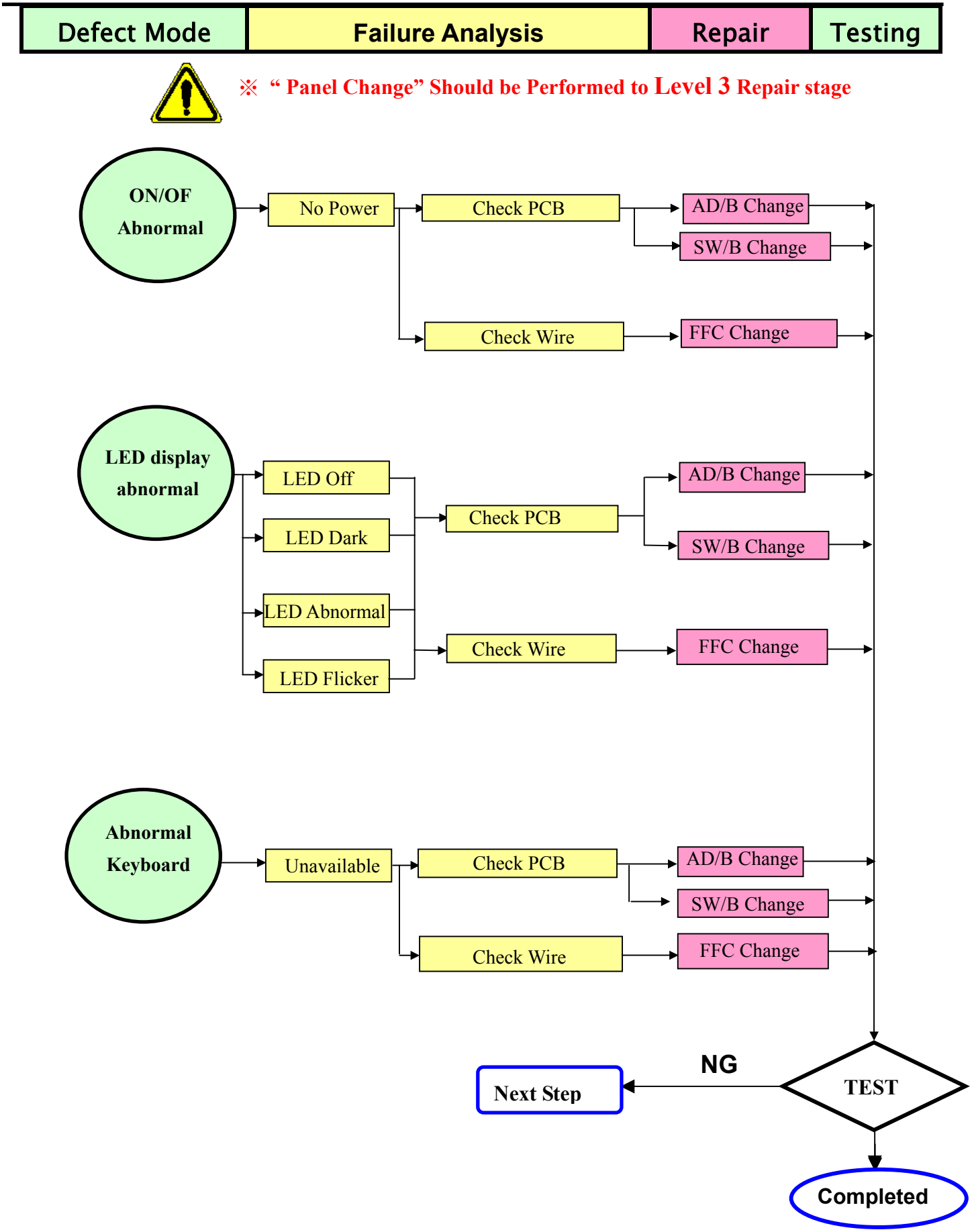
Testing equipment : PC

Computer for testing :

5. Troubleshooting Analysis

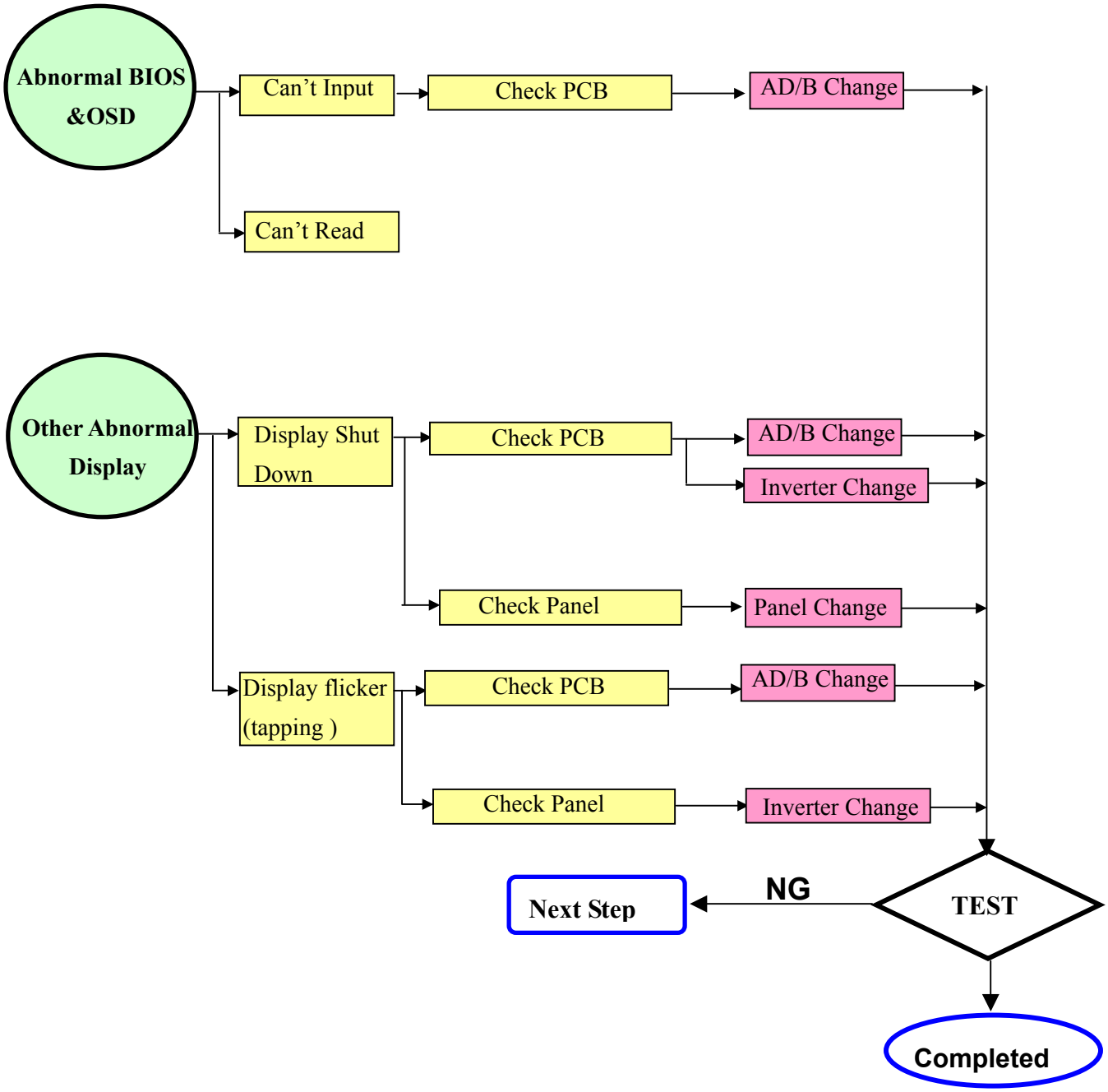



Defect Mode
Failure Analysis
Repair
Testing
A
" Panel Change" Should be Performed to Level 3 Repair stage
Flicker
Check PCB
AD/B Change
Inverter Change
Check OSD
Adjust VCOM
Gray value display
Check PCB
AD/B Change
Check Panel
Panel Change
R.G.B display abnormal
Check PCB
AD/B Change
Display Shut Down
Check PCB
AD/B Change
Inverter Change
Check Panel
Panel Change
No signal
Check PCB
AD/B Change
Power on Display abnormal
Check PCB
AD/B Change
TEST
NG
Next Step
Completed
A


Defect Mode
Failure Analysis
Repair
Testing
※ " Panel Change" Should be Performed to Level 3 Repair stage
ON/OF Abnormal
No Power
Check PCB
AD/B Change
SW/B Change
Check Wire
FFC Change
LED display abnormal
LED Off
LED Dark
LED Abnormal
LED Flicker
Check PCB
AD/B Change
SW/B Change
Check Wire
FFC Change
Abnormal Keyboard
Unavailable
Check PCB
AD/B Change
SW/B Change
Check Wire
FFC Change
TEST
NG
Next Step
Completed

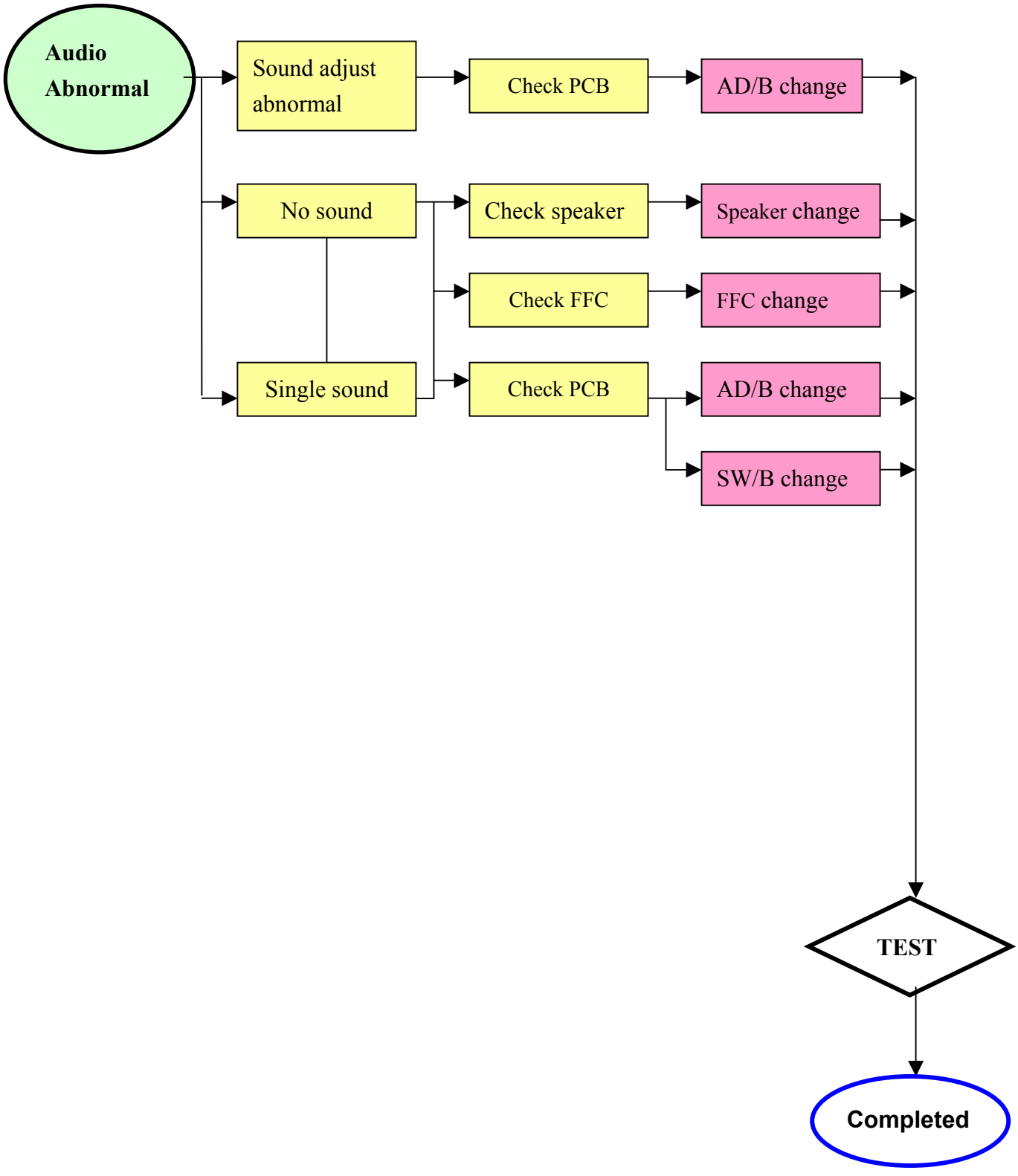
Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed at Level 3 Repair stage



Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed at Level 3 Repair stage



6. Level 1 Service Items–Monitor Assembly and Disassembly

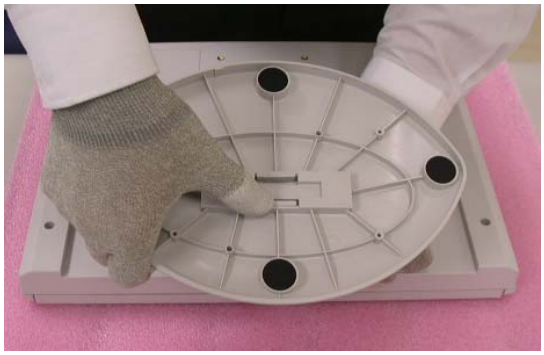
The flow of Monitor assembly and disassembly procedure as below :

※ Must to protect the Polarizar Scratch
※ Must to protect ESD issue

1 Separate Stand
↓
2 Separate Cover
↓
3 Remove Inverter
↓
4 Change Inverter
↓
5 Remove AD PCBA
↓
6 Change AD PCBA
↓
7 Cover Assembly
↓
8 Stand Assembly

6-1. Remove Stand Bottom

Step 1 — Press the hooks and remove the Seat



Step 2 — Completed

6-2. Separate Cover (Case Rear Assy)

Step 1 — Rotate the Stand Hinge and lay it down

Step 2 — Loose & Remove 5 screws

Screw P/N : 42A99300009

Screwdriver : #2-0.7mm

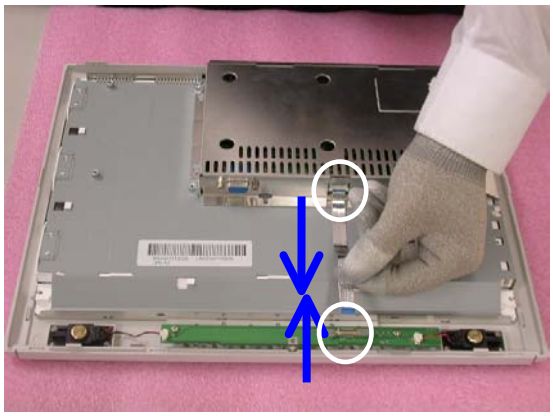
Step 3 — Remove Rear Case from Bezel

Step 4 — Lift up Rear Case

Step 5 — Completed

6-3. Remove FFC

Step 1 — Pull out FFC from connectors at Switch Board and AD PCBA

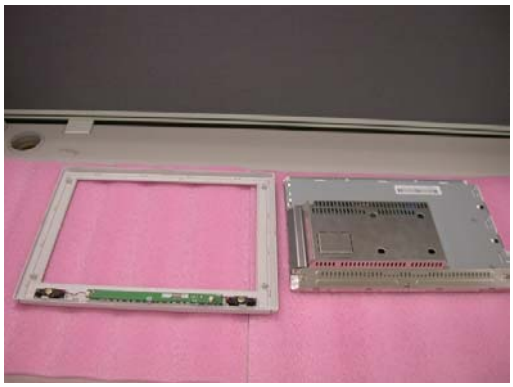


Step 2 — Completed

6-4. Remove Bezel

Step 1 — Lift up LCD module and Remove Bezel

Step 2 — Completed

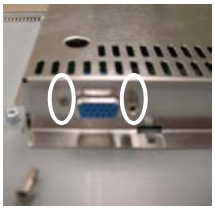


6-5. Remove Inverter

6-5-1. Remove Metal Cover

Step 1 — Loosen & Remove 2 Stand-Off screws

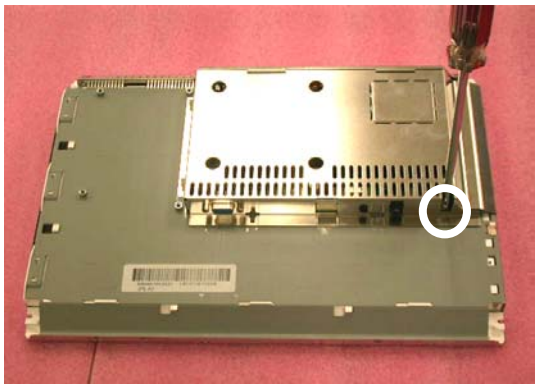
Stand-Off Part No : 42A9940007

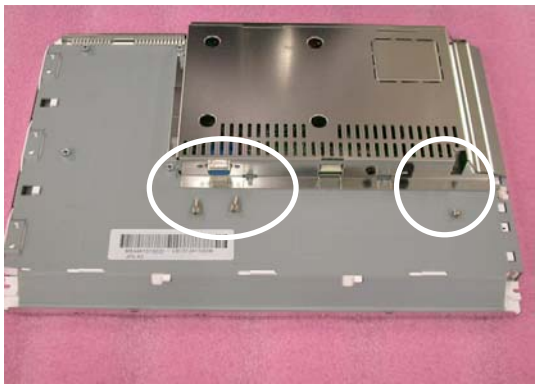


Step 2 — Loosen & Remove the screw

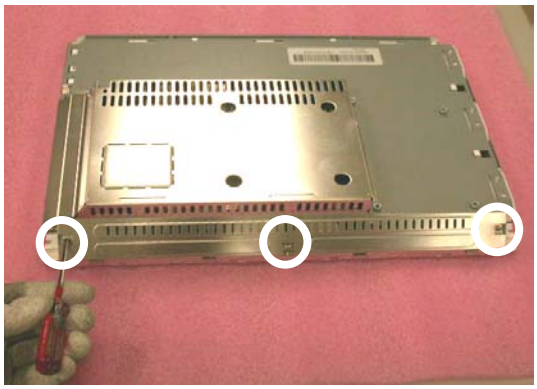
Screw Part No : 42A9930008

Screwdriver : #2- 0.7mm

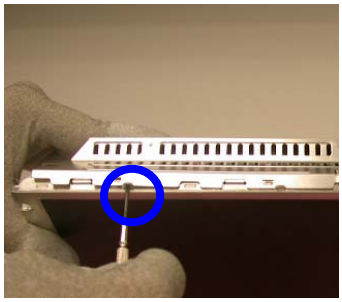


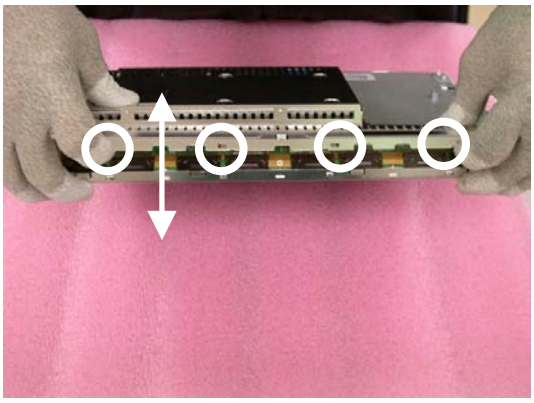


Step 3 — Loosen & Remove 3 screws

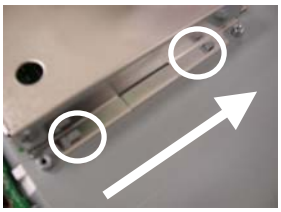


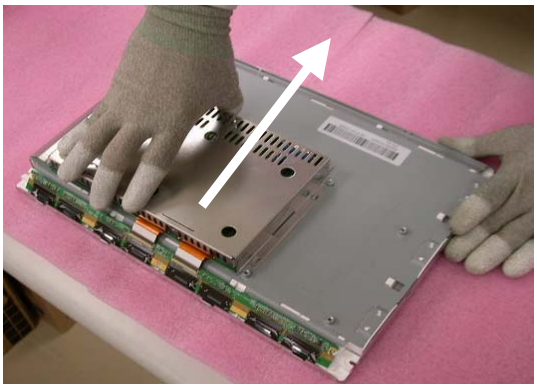
Step 4 — Open & Separate Metal Cover (PCB-X) with tool





Step 5 — Push Metal Cover (AD/Power-PCB)



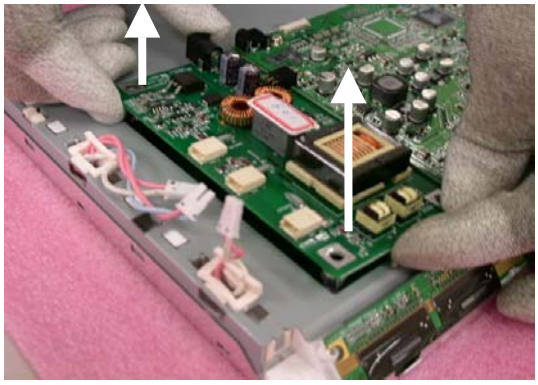


Step 6 — Completed

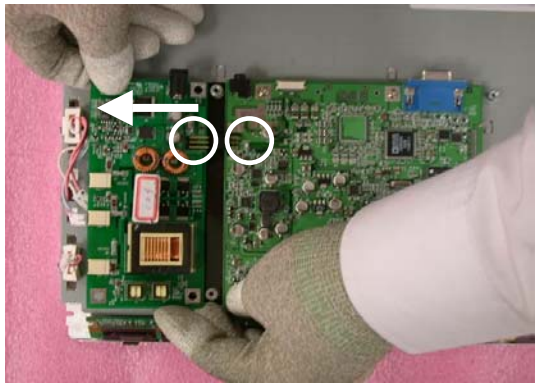
6-5-2. Remove 3 B/L Wire

6-5-3. Loosen & Remove 3 Screws

6-5-4. Remove Inverter



Step 1 — Lift up Inverter slightly

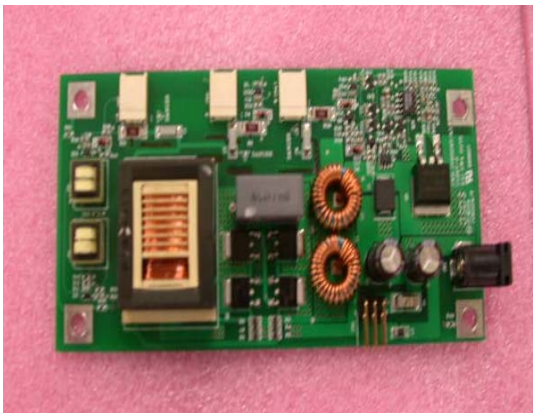


Step 2 — Shift Inverter with care ; Separate its head from the housing at AD PCBA

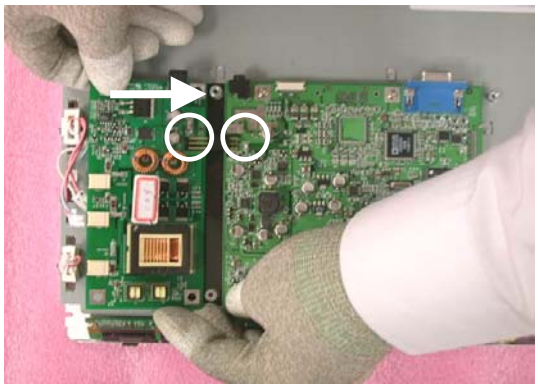
Step 3 — Take Inverter apart ; Completed.

6-6. Change New Inverter

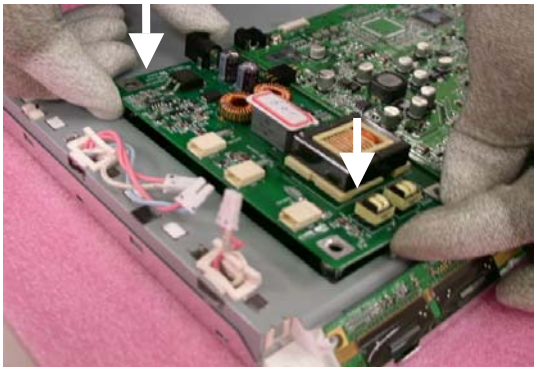
New Inverter



Step 1 — Shift Inverter with care ; plug its head into the housing at AD PCBA.



Step 2 — Carefully lay down Inverter

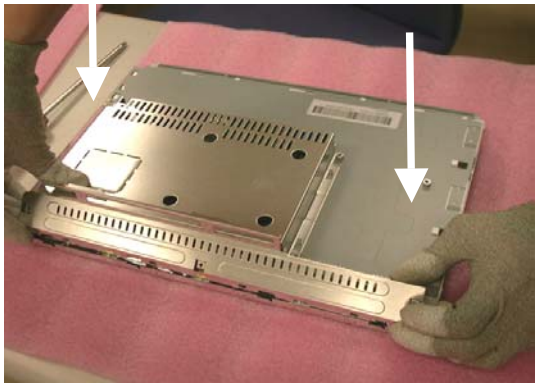


Step 3 — Fasten 3 screws to fix inverter

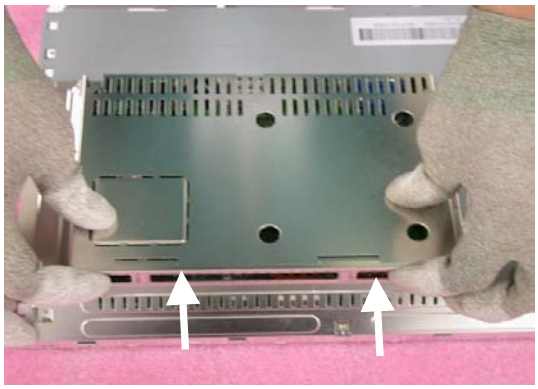
Step 4 — Insert Backlight wires

Step 5 — Place Metal Cover (AD/Power-PCB)

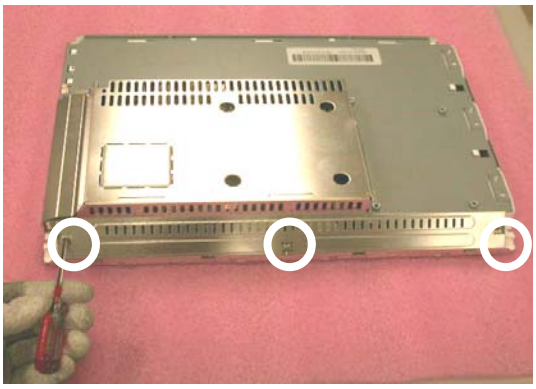
Step 6 — Place Metal Cover (PCB-X)



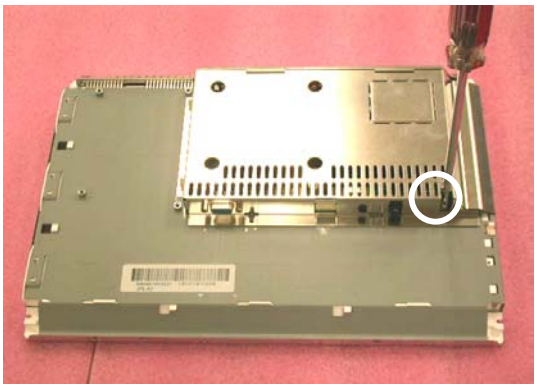
Step 7 — Push the metal Cover (PCB-X) Forward to have the hook Latched.



Step 8 — Fasten 3 screws

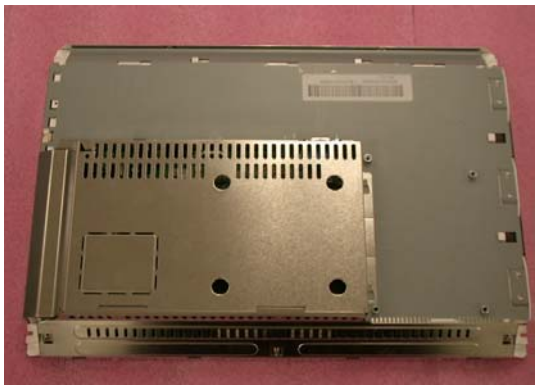


Step 9 — Fasten the screw



Step 10 — Fasten 2 Stand-Off screws

Step 11 — Completed

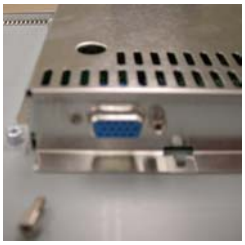


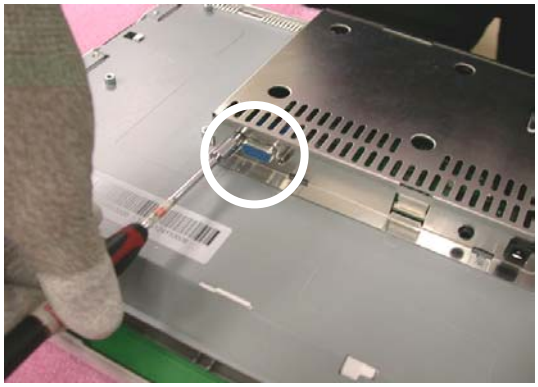
6-7. Remove AD PCBA

6-7-1. Remove Metal Cover (SMART & PCB-X)

Step 1 — Loosen & Remove 2 Stand-Off screws

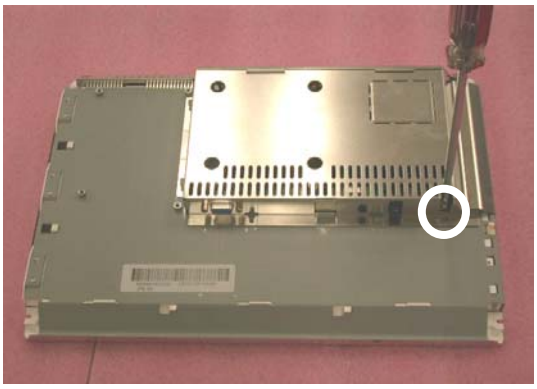
Stand-Off Part No : 42A9940007

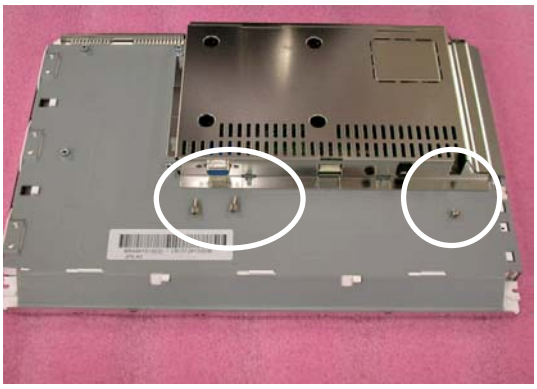




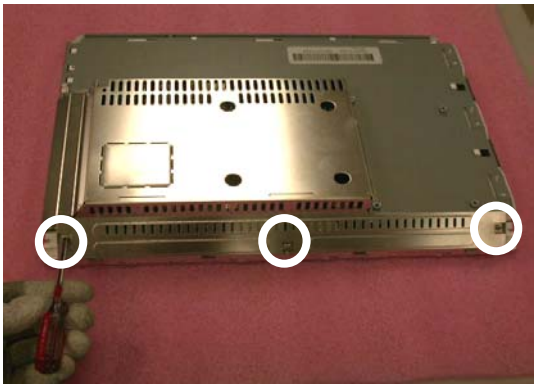
Step 2 — Loosen & Remove the screw

Screw Part No : 42A9930008
Screwdriver : #2- 0.7mm

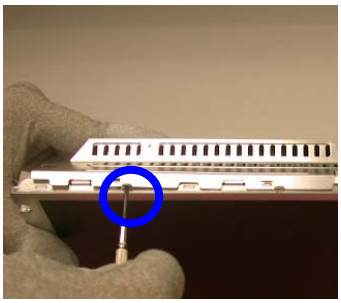


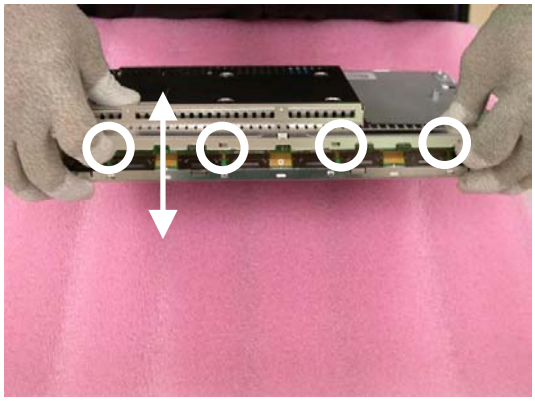


Step 3 — Loosen & Remove 3 screws

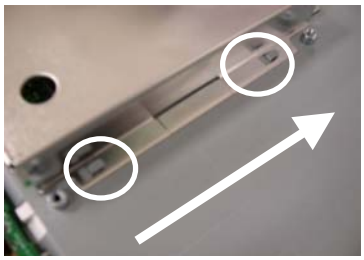


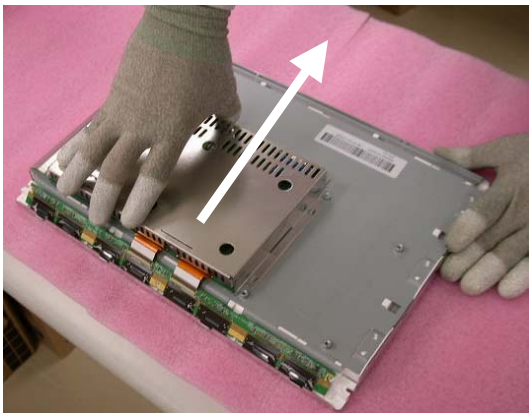
Step 4 — Open & Separate Metal Cover (PCB-X)





Step 5 — Push Metal Cover (AD/Power-PCB)

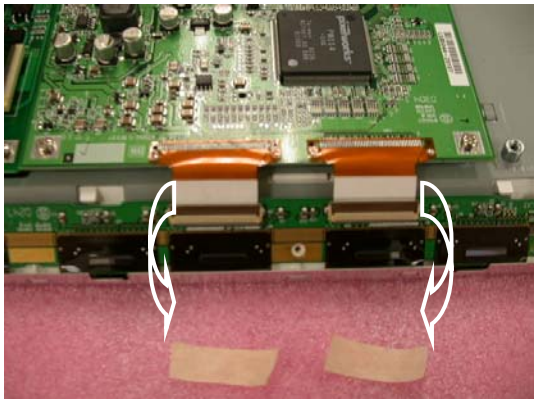




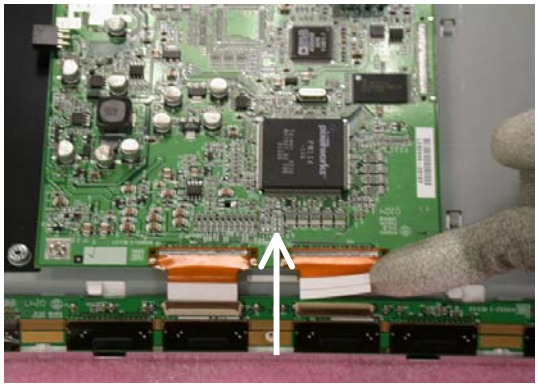
Step 6 — Completed

6-7-2. Remove AD PCBA

Step 1 — Remove the taps on X-board FPC

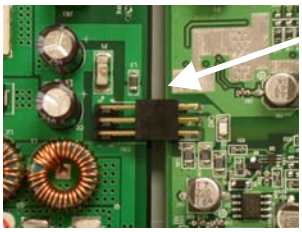


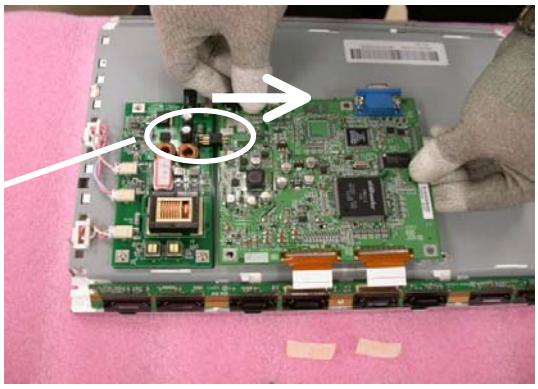
Step 2 — Pull out the X-Board FPC



Step 3 — Loosen & Remove 4 screws

Step 4 — Shift AD PCBA with care ;
Separate its housing from head



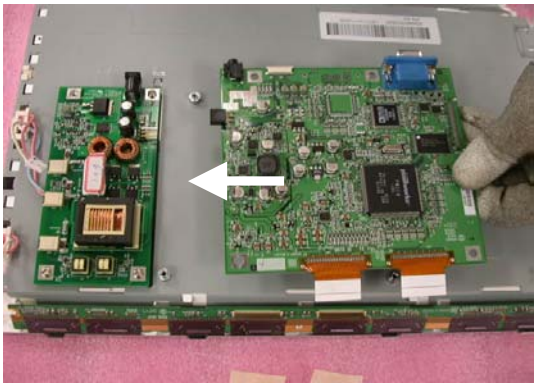


Step 5 — Take AD PCBA apart

Step 6 — Completed

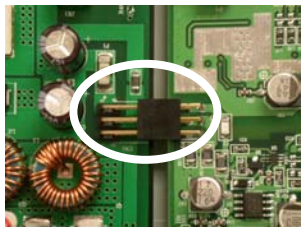
6-8. Change New AD PCBA

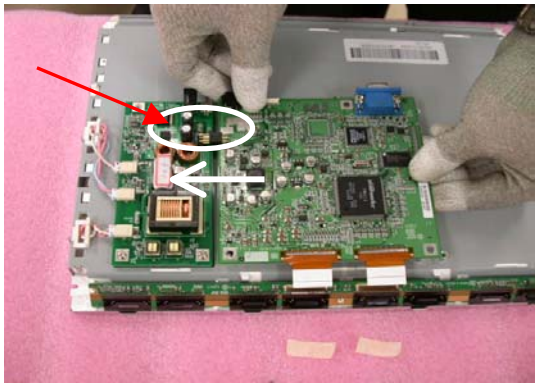
AD PCBA



Step 1 — Place new AD PCBA

Step 2 — Shift AD PCBA with care ;
join its housing with head at
Inverter

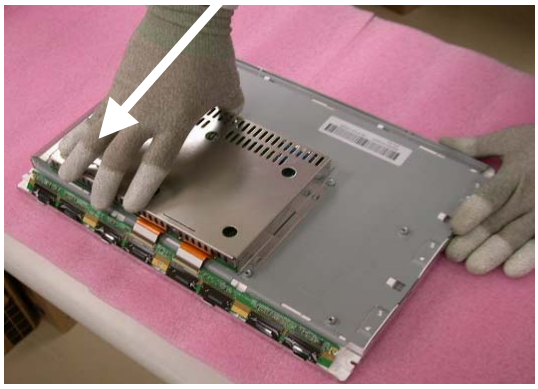




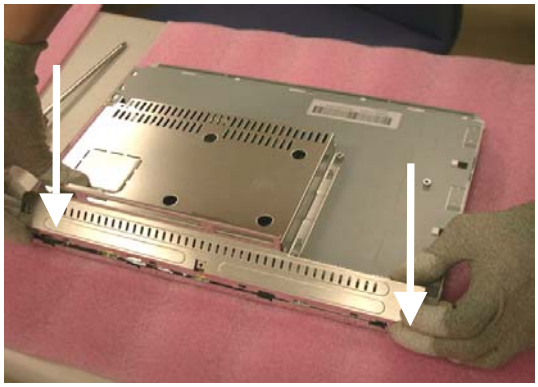
Step 3 — Fasten 4 screws

Step 4 — Insert FPC to connector

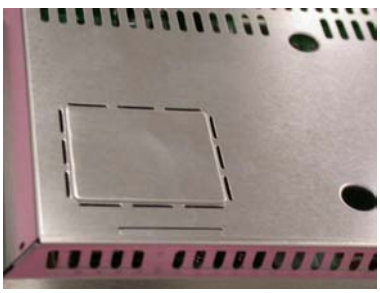
Step 5 — Place Metal Cover (AD/Power-PCB)

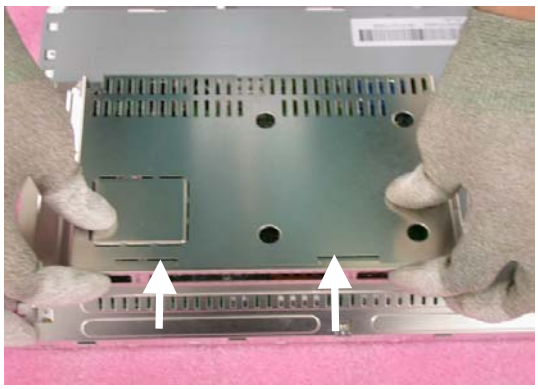


Step 6 — Place Metal Cover (PCB-X)

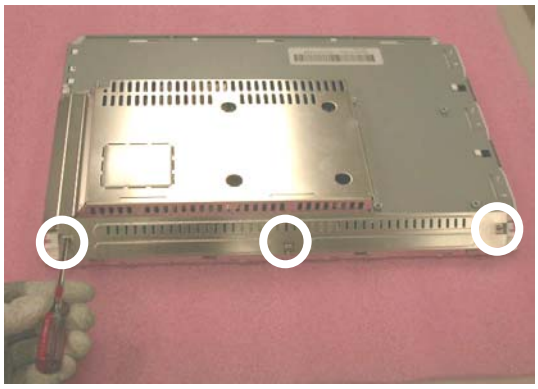


Step 7 — Push the metal Cover PCB-X Forward to have the hook latched.

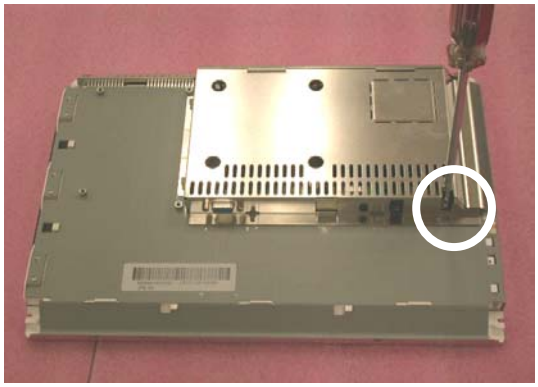




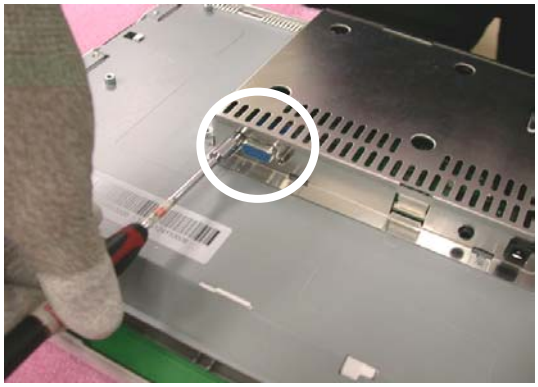
Step 8 — Fasten 3 screws



Step 9 — Fasten the screw



Step 10 — Fasten 2 Stand-Off screws

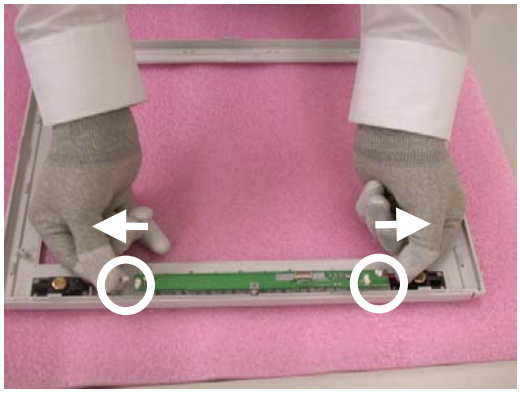


Step 11 — Completed

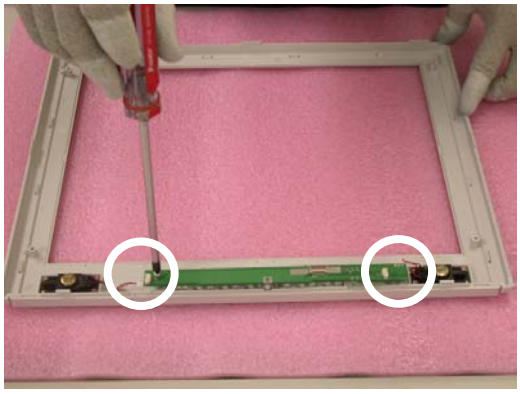
6-9. Change New SW/B (PCB-K)

Bezel Assy (W/ AUDIO)

Step 1 — Separate both Audio Cables



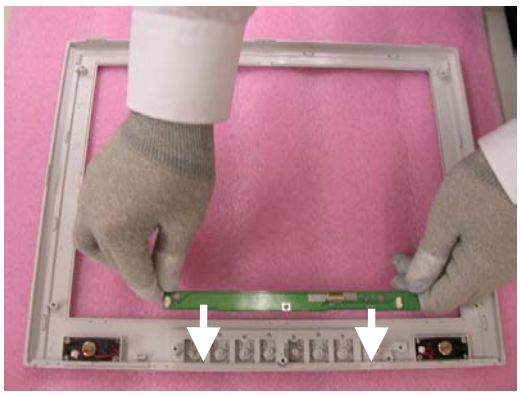
Step 2 — Loosen & Remove 2 screws



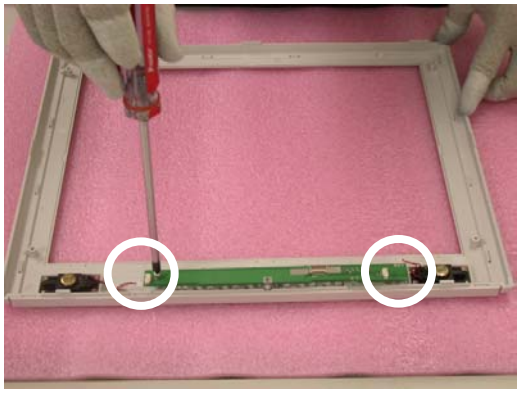
Step 3 — Take SW/B (PCB-K) apart ; completed

6-10. Change New SW/B(PCB-K)

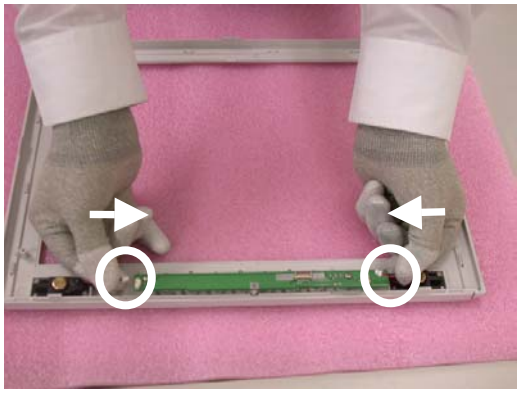
Step 1 — Place new SW/B (PCB-K)



Step 2 — Fasten 2 screws



Step 3 — Insert Audio Cable to Connectors

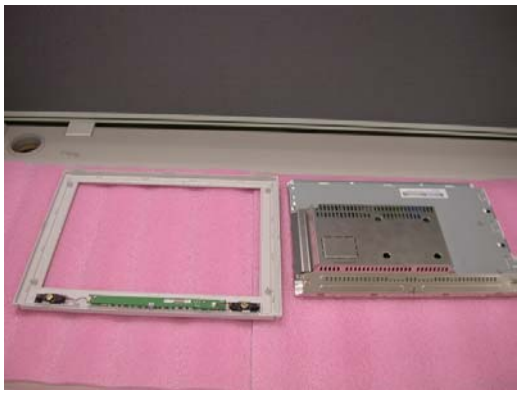


Step 4 — Completed

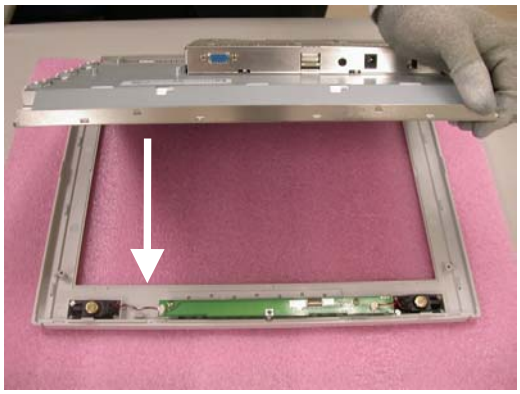
6-11. Case Assembly

6-11-1. Join Bezel with LCD module.

Before Assembly



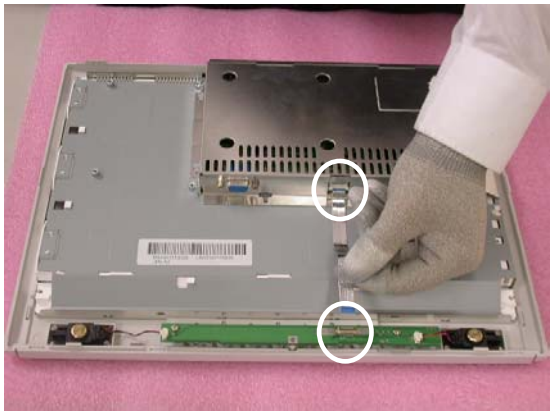
Step 1 — Place LCD module



Step 2 — Completed

6-11-2. Insert FFC

Step 1 — Insert both sides of FFC into connectors

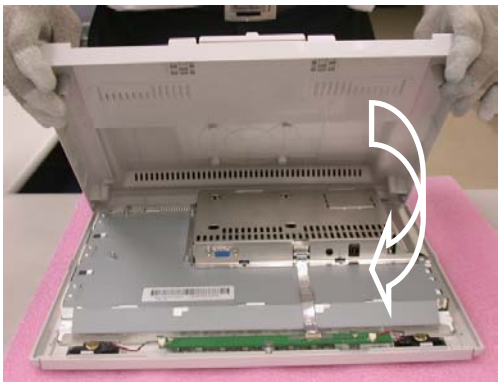


Step 4 — Completed

6-11-3. Rear Case Assembly

Before Assembly

Step 1 — Place Rear Case



Step 2 — Fasten 5 screws

Step 3 — Completed

6-11-4. Stand Assembly

Before Assembly

Step 1 —Rotate & lift up Stand Hinge

Step 2 — Place Seat

Step 3 — Have the hook latched

Step 4 — Completed

7. FRU List

FRU			
CATEGORY	PARTNAME	DESCRIPTION	PART NO.
ADAPTER	ADAPTER 4A 48W 3PIN POTRANS UP04821120A-16	ADAPTER (AC/DC) , 48W,12V,4A UP04821120A	25.L03VG.001
BOARDS	FUNCTION BUTTON BOARD	PCBA FOR A150X2,A150X2-K,X8,RIGID,201-0A	55.L03VG.001
BOARDS	INVERTER BOARD SUMIDA TWS-444-936	INVERTER BOARD SUMIDA TWS-444-936, TYP.2400V/5MA,SUMIDA	55.L03VG.002
LCD	LCD MODULE 15 IN. TFT CHI-MEI W/LCD BRACKET		6M.L03VG.001
LCD	LCD MODULE 15 IN. TFT CHI-MEI W/O BRACKET		6M.L03VG.002
CABLES	FUNCTION BUTTON BOARD CABLE-FFC 128MM	FFC AD-OSD UNITE-STAND 128*9.5MM	50.L03VG.001
CABLES	AUDIO CABLE	AUDIO CABLE A150X1-T01,28A WG,180CM	50.L03VG.002
CABLES	SIGNAL CABLE	MONITOR CABLE,A150X1-T01,30AWG,180CM	50.L03VG.003
CABLES	POWER CORD 125V 3PIN US		27.L03VG.001
CABLES	POWER CORD 250V 3PIN UK		27.L03VG.002
CABLES	POWER CORD 3 PIN SWISS		27.L03VG.003
CABLES	POWER CORD 3 PIN PRC		27.L03VG.004
CABLES	POWER CORD 250V 3PIN EC		27.L03VG.005
CABLES	POWER CORD 3PIN JAPAN		27.L03VG.006
CABLES	POWER CORD 3PIN AUSTRIAL		27.L03VG.007
MAINBOARD	AL506 MAINBOARD (FIRMWARE CONTROL BOARD)	PCBA FOR A 150X2-S,X7,RIGID,201-07	55.L03VG.003
CASE/COVER/BRACKET/ASSEMBLY	STAND BASE	SEAT ASSY(ELLIPSE) A150X2-T04 ABS ORIGIN	60.L03VG.001
CASE/COVER/BRACKET/ASSEMBLY	LCD FRONT BEZEL	BEZEL ASSY (CIRCLE) A15X2-T04 ABS W/SPEAKER ORIGIN	60.L03VG.002
CASE/COVER/BRACKET/ASSEMBLY	LCD BACK COVER W/STAND NECK	REAR AND STAND-HINGE ASSY A150X2-R04ABS ORIGIN	60.L03VG.003

CASE/COVER/BRACKET/ASSEMBLY	MAINBOARD COVER	METAL COVER AD/POWER-PCB A150X2 TIN PLATE t=0.4MM	33.L03VG.001
CASE/COVER/BRACKET/ASSEMBLY	LCD BRACKET	METAL COVER PCB-X, A150X2, TIN PLATE, t=0.4MM	33.L03VG.002
SCREWS	FUNCTION BUTTON BOARD SCREW		86.L03VG.001
SCREWS	BACK COVER SCREW		86.L03VG.002
SCREWS	INVERTER/MB SCREW		86.L03VG.003
SCREWS	M/B COVER SCREW		86.L03VG.004
SCREWS	LCD BRACKET SCRWE		86.L03VG.005
SPEAKER	SPEAKER LEFT		23.L03VG.001
SPEAKER	SPEAKER RIGHT		23.L03VG.002

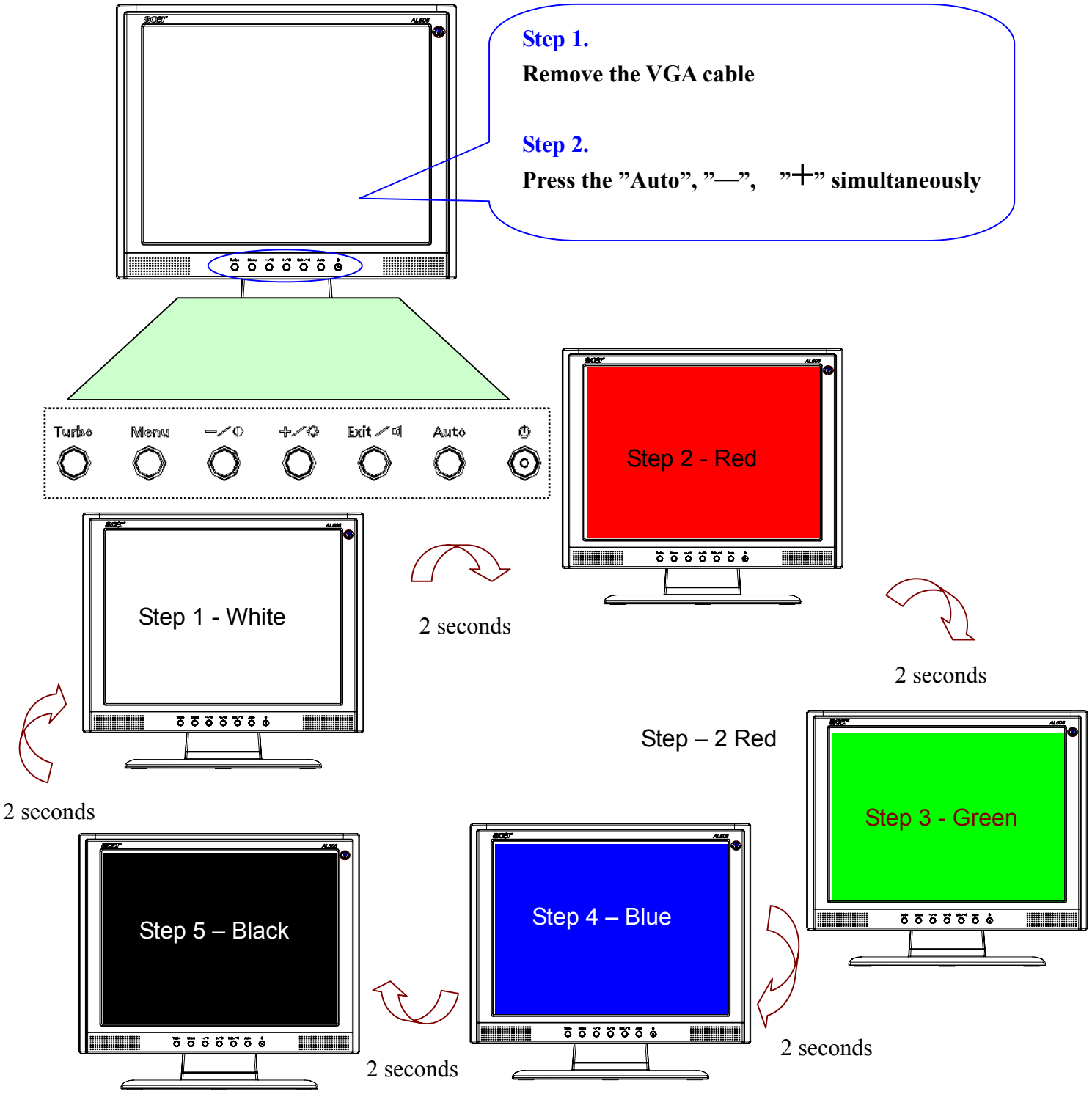
Notice: The aforesaid specification will be changed without noticing. Plz access to the website of http://aicsl.acer.com.tw/spl/ for the latest version.

8. Method for LCD Monitor Testing after Servicing

※ After exchange PCBA (A/D, Inverter) The Monitor should be performed run-in for 4 hours

8-1. Test Method Without Connection of Computer

1. Method to start run-in mode



2. Method to release burning mode

There are two ways to release the run-in mode: namely: **1.** input signal; **2.** press down Power key.

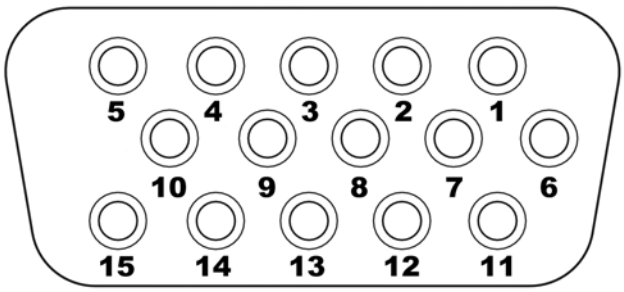
8-2. Test Method with Connection of Computer

1. Connect the VGA cable of computer to the Monitor.

2. Windows system environment test.

8-3. Definition of the Connector Pin of Signal Cable

Pin No.	15-Pin side of signal cable	Pin No.	15-Pin side of signal cable
1	Red	9	NC
2	Green	10	Ground
3	Blue	11	NC
4	NC	12	(SDA)
5	Ground	13	Horizontal synchronization
6	Ground -red	14	Vertical synchronization
7	Ground -green	15	(SCL)
8	Ground -blue		



D - S U B

8-4. Specification

8-4-1. General Specification：

Item		Specification	Unit
LCD panel	Active Area	304.1 (H) x 228.1(V) (15.0” Diagonal)	mm
	Driver Element	a-si TFT Active Matrix	-
	Pixel Number	1024 x R.G.B. x 768	pixel
	Pixel Pitch	0.297 (H) x 0.297 (V)	mm
	Pixel Arrangement	RGB Vertical Stripe	-
	Display Color	16.2M	color
	Tran missive Mode	Normally White	-
	Viewing Angle (Horizontal / Vertical)	120 / 110	degree
	Brightness	350	cd/m^2
	Contrast Ratio	450	-
	Response Time (Tr+Tf)	23 (Tr: 6 + Tf: 17)	msec
Graphic	Separate Sync.	TTL Level	-
	Horizontal Sync.	Positive / Negative	-
	Vertical Sync.	Positive / Negative	-
	Input Connector	D-Sub mini 15 pins	-
Power source	Power Input	AC100~240 (Worldwide)	V
	Power Output	12	V_{DC}
Power consumption	Operation Mode	33	W
	Power Saving Mode	3	W
Tilt angle	Upward / Downward	30 / 0	degree
Physical	Dimension, weight	365.4(W) x 339.9(H) x 181.0(D), 2.6	mm, kg
DCC	Plug & Play	DDC 1/2B Compliance	-
Function	Front key	7keys	-
	Turbo (Brightness Selection)	Picture Mode: 350 TEXT Mode: 200 Economy Mode: 140	cd/m^2
	Audio & Speaker	Yes	-

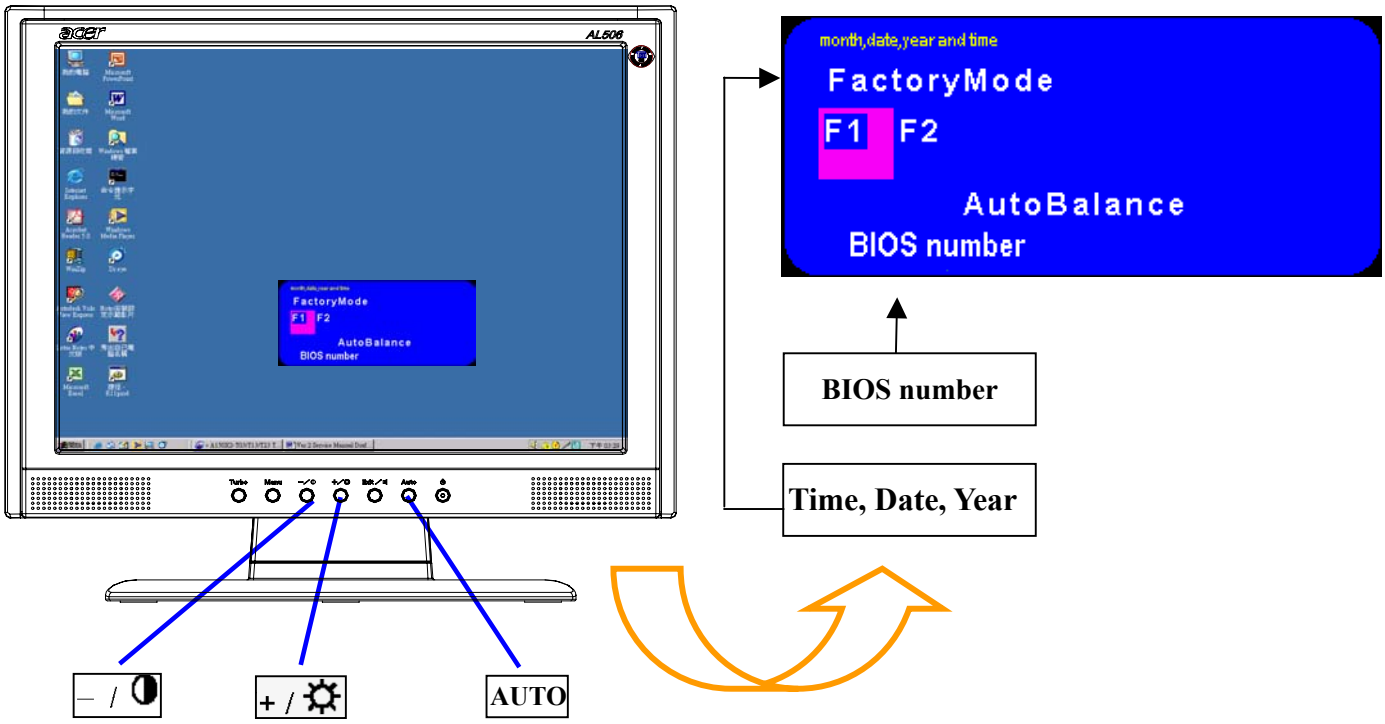
8-4-2. Electrical Specification：

Item		Description
Video Signal	Input System	RGB Separate
	Signal Level	Analog RGB: 0.7V_{P-P}
	Input Impedance	75Ω
Synchronization Signal Input System	Signal Level	Separate Sync: TTL
Compliant Timing		See Appendix 1.
Input Connector		D-Sub mini 15 pins
Video Frequency Bandwidth		80MHz dot clock
Audio		d=3.5mm stereo mini jack, 1.5W/ch
Synchronization Frequency	Horizontal Sync.	28~63 kHz
	Vertical Sync.	55~78Hz
Power Supply	Input Voltage	AC100~240V (Worldwide)
	Frequency	50 / 60Hz
	Power Consumption	33W (max)
	Power Management	3W (max)
Backlight	Lamp Type	Cold Cathode Fluorescent Lamp
	Lamp Quantity	3pcs
	Lamp Life Time	40,000Hrs (min)
Plug & Play		VESA DDC 1/2B Compliance
Power Management		VESA DPMS, ENERGY STAR® Compliance

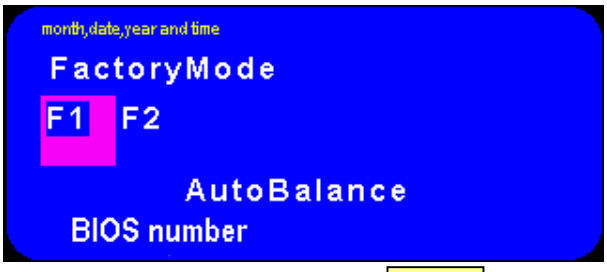
Notice: the aforesaid specification will be changed without noticing *refer to standard signal mode.

8-5. Factory Mode Function

1. The time to use: After changing AD PCBA , Inverter.
2. Connect to PC
3. Press “＋”, “－”, “AUTO” simultaneously to start Factory Mode.



4. Then, press the “＋”, “－” Buttons to switch between **F1** and **F2**.
5. To run Auto Balance, please have highlighted **F1** and press “Menu” bottom. The screen will show the box as below:



6. To run VCOM adjust, please have highlighted **F2** and press “Menu” bottom. Press the “＋”, “－” Button to make the appropriate adjustment or setting.

9.BIOS & OSD Software Update

9-1. Programs:

1、 FlashupgradeNT.exe
2、 Flesher.hex
3、 P15014B001.hex
4、 P15014B001.inf
5、 P15014B001.ini

9-2. Tools

a. ISP Kit (Prepared by CMO); refer fig 1.
b. RS232 Comport Cable (Prepared by Agent); ref fig 2.
c. D-sub cable (Original Assy)
d. Adapter (Original Assy)

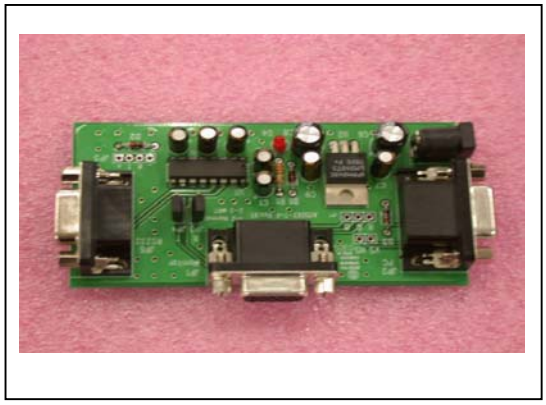


Fig 1 - Kit

Fig 2 – RS232

9-3. Install BIOS Software (Simply way to ROM) & kit:

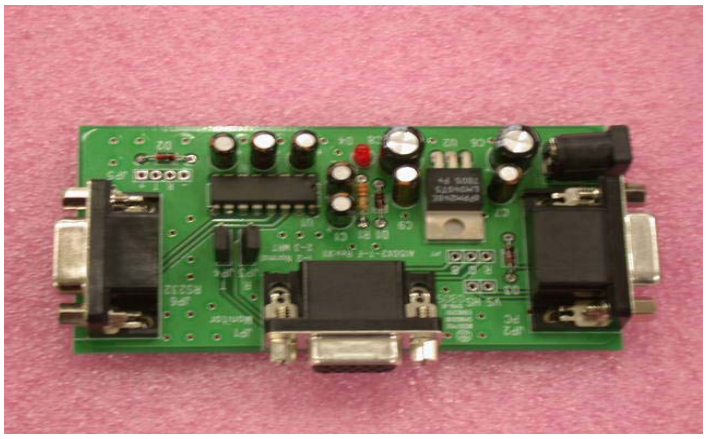
※ **Please power off the monitor.**

9-3-1. Install BIOS :

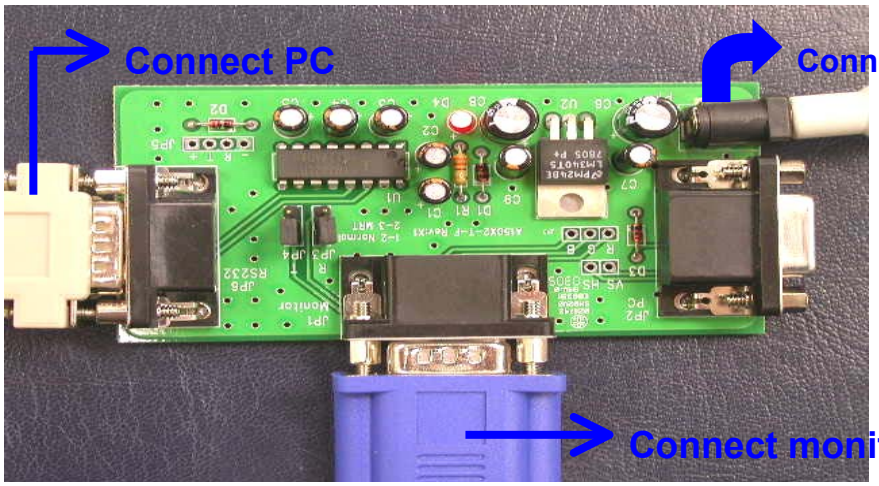
FlashUpgraderNT.exe

9-3-2. Kit equipped:

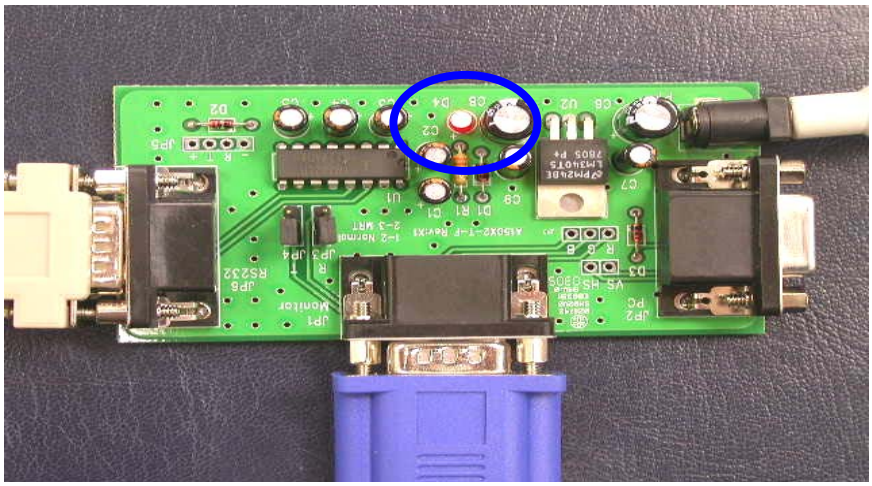
Step 1 — Get a kit



Step 2 — Join R232, monitor cable, and adapter.

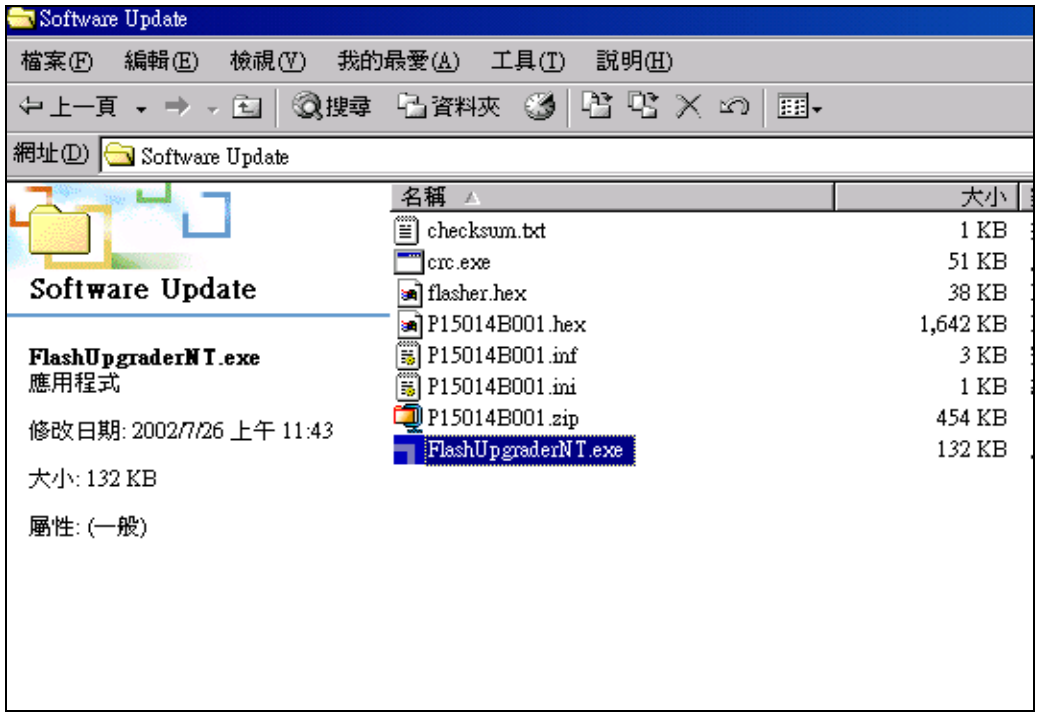


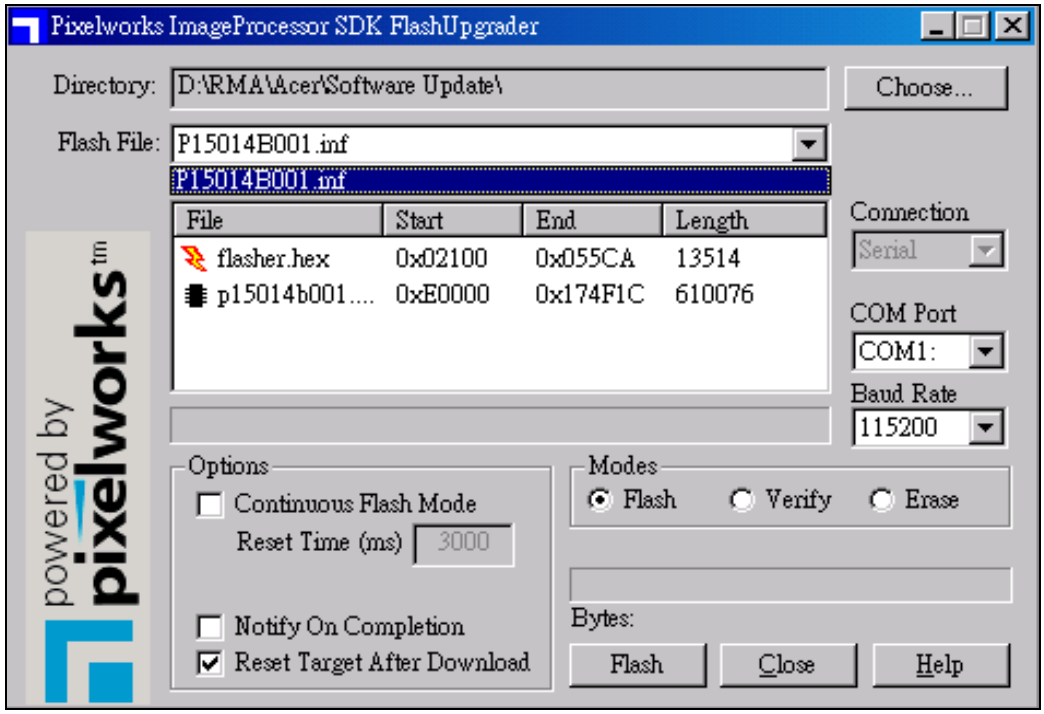
Step 3 — When the LED turns red, it will start running.



9-4. Program Running

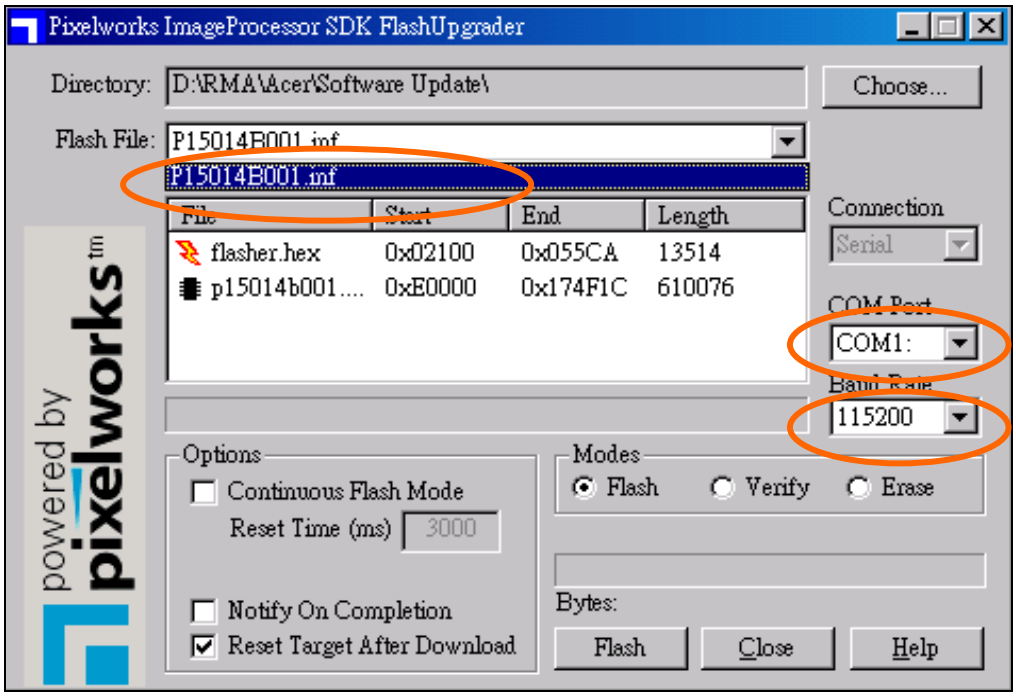
Step 1 — the indicated program : Flash Upgrade NT.exe



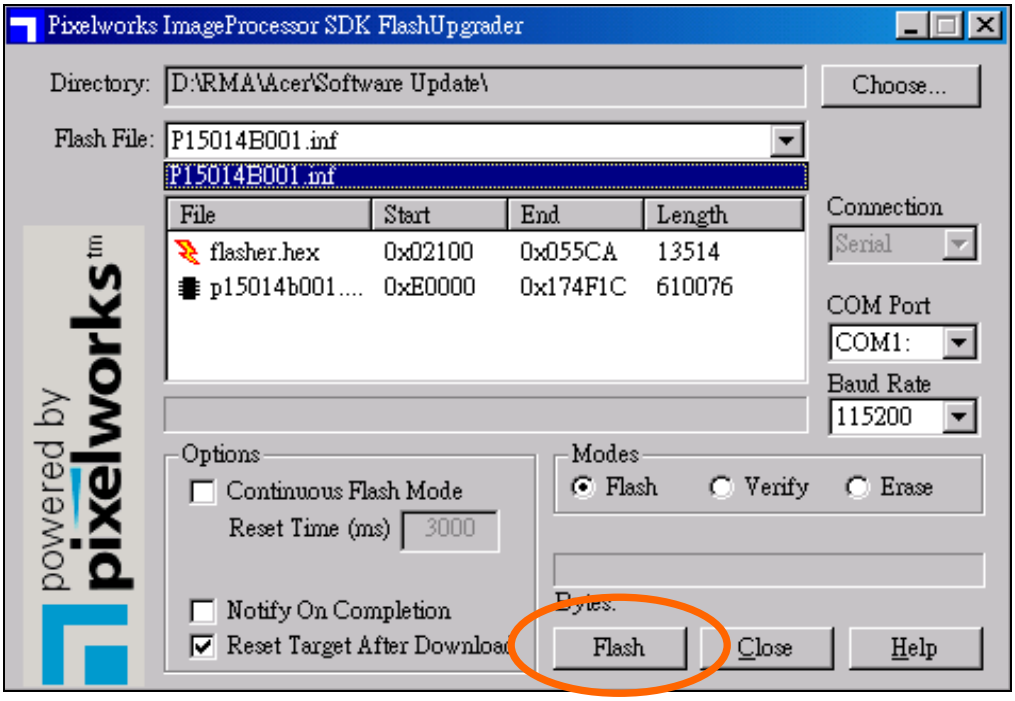


Step 2 — Do the following actions:

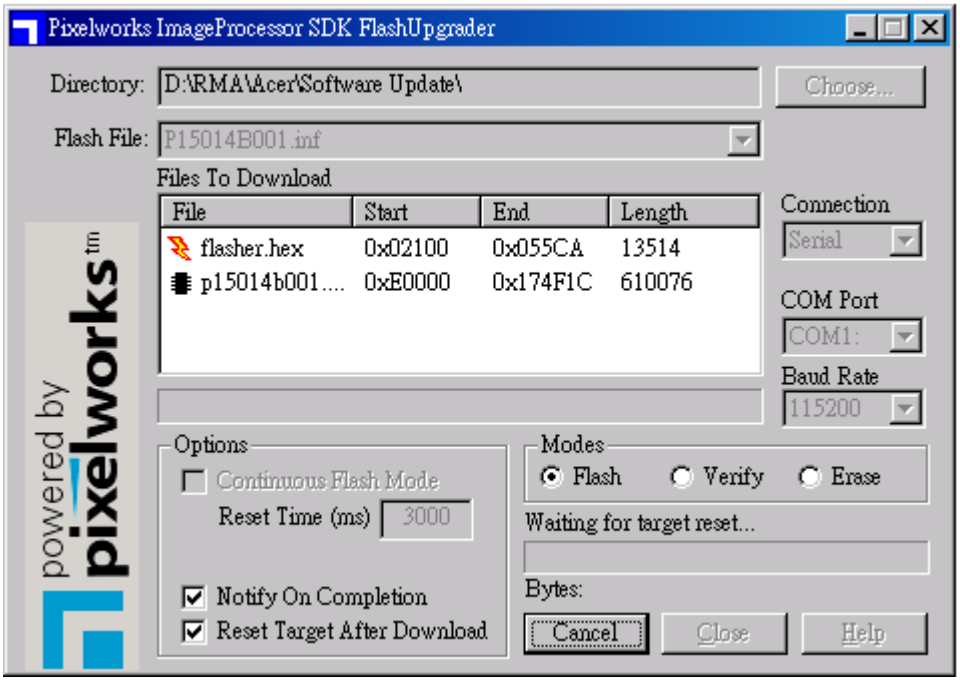
a. Click the file
b. Choose COM1 or COM2
c. Check Band Rate must be at 115200



Step 3 — Click the bottom of Flash

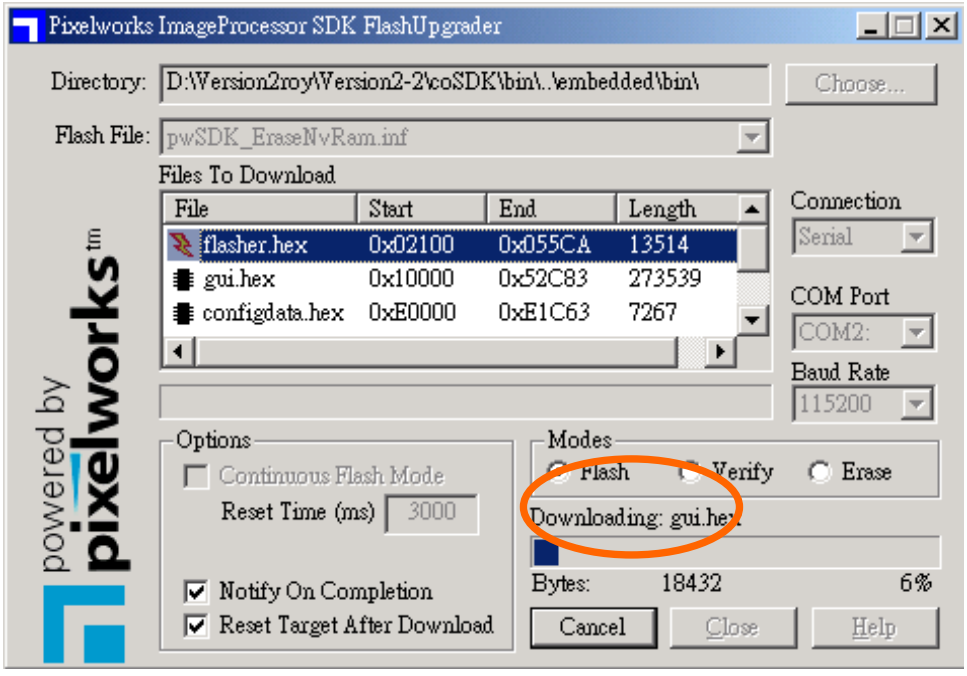


Step 4 — Then it will show below box.

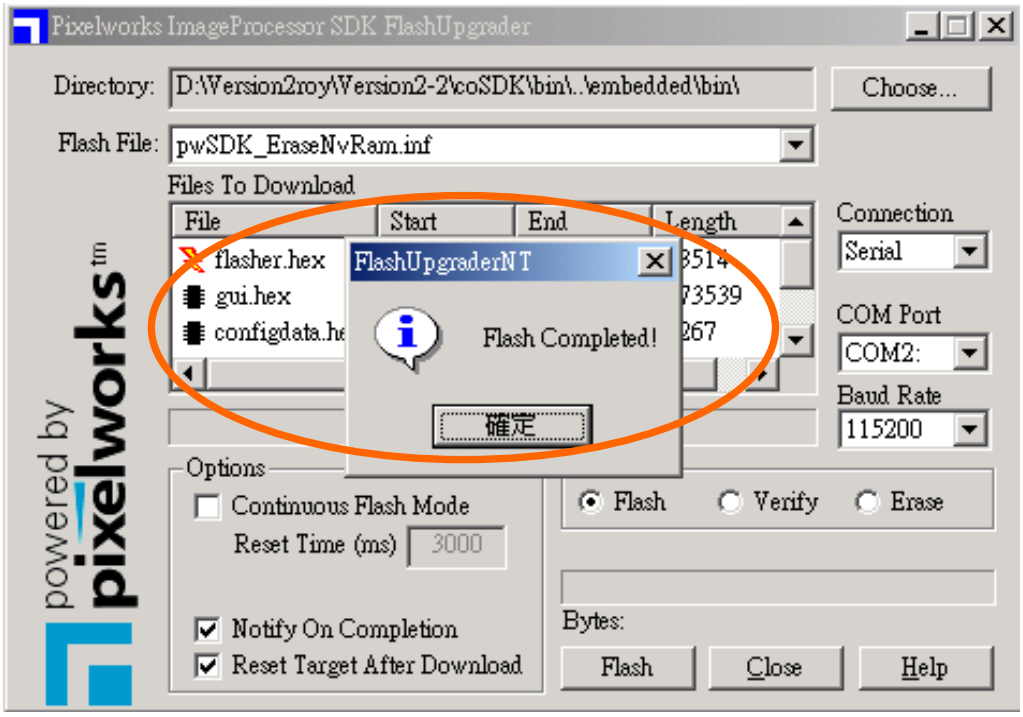


Step 5 — a) Power on monitor.

b) After power on, it will start flash rom.



Step 6 — Notice of Flash completed.



10. Glossary

Item	Term	Description
1	OSD	On Screen Display
2	H-Position	Horizontal Position
3	V-Position	Vertical Position
4	PCBA	Printed Circuit Board Assembly
5	P/B	Power Board
6	B/L	Backlight
7	FPC	Flat Cable
8	AD-Board	Analog to Digital Board