

# **Product Service Manual – Level II**

# Service Manual for BenQ:

**BL2423PT** 





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Notice:

For RO to input specific "Legal Requirement" in specific NS regarding to responsibility and liability statements.

Please check BenQ's eSupport web site, <u>http://esupport.benq.com</u>, to ensure that you have the most recent version of this manual.

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# Abbreviations & Acronyms

A	
ADC	Analog to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
В	
BenQ	BenQ Corporation
BTSC	Broadcast Television System Committee
С	
CPU	Central Process Unit
CVBS	Composite Video Blanking and Synchronization
D	
DLP	Digital Light Processing / Texas Instruments®
DMD	Digital Micro mirror Device
DRAM	Dynamic RAM
DVI	Digital Visual Interface
DVI-D	Digital Visual Interface-digital
DVI-I	Digital Visual Interface-Integrated
E	
EEPROM	Electrically Erasable and Programmable Read Only Memory
F	
FLASH	FLASH memory
G	
G-TXT	Green Teletext
Н	
HDMI	High Definition Multimedia Interface, digital audio and video interface
HP	Head Phone
1	
l <sup>2</sup> C	Integrated IC bus
L	
LED	Light Emitting Diode
LVDS	Low Voltage Differential Signal, data transmission system for high
М	
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
Ν	

Not Connected
Non Volatile Memory: IC containing TV related data (for example, options)
On Screen Display
Personal Computer
Printed Circuit Board (or PWB)
Remote Control transmitter
Red, Green and Blue. The primary color signals for TV. By mixing levels of R, G and B, all colors (Y/C) are
Read Only Memory
Data signal on I <sup>2</sup> C bus
Synchronous DRAM
Sub Woofer / Software
Total Harmonic Distortion
Video Graphics Array
Component video (Y= Luminance, Pb / Pr= Color difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV)
Video related signals: Y consists of luminance signal, blanking level and sync; C consists of color signal.

## 1. About this Manual

The purpose of Service Manual is to provide a guide line to engineers to repair different models. The appearance and capability is introduced in this Service Manual. It is better for repair engineer to have a rough idea of this model through reading the Service Manual. Please do pay attention to the item part of the disassembly when repair the machine and also do the protection of panel any time. When repairing the circuit board, please follow the requirement of RoHS and refer to the circuit diagram and repairing process that attached in the Service Manual. The method of firmware updated, the way of using the menu and some information that may be used when repairing are also attached in the Service Manual that provide repair engineer various choice.

#### 1.1 Important

Only trained service personnel who are familiar with this BenQ Product shall perform service or maintenance to it. Before performing any maintenance or service, the engineer MUST read the "Important Safety Information".

#### 1.2 Trademark



## 2. Introduction

This section contains general service information, please read through carefully. It should be stored for easy access place.

#### 2.1 RoHS (2002/95/EC) Requirements – Applied to all countries require RoHS.

The RoHS (Restriction of Hazardous Substance in Electrical and Electronic Equipment Directive) is a legal requirement by EU (European Union) for the global electronics industry which sold in EU and some counties also require this requirement. Any electrical and electronics products launched in the market after June 2006 should meet this RoHS requirements. Products launched in the market before June 2006 are not required to compliant with RoHS parts. If the original parts are not RoHS complaints, the replacement parts can be non ROHS complaints, but if the original parts are RoHS compliant, the replacement parts MUST be RoHS complaints.

If the product service or maintenance require replacing any parts, please confirming the RoHS requirement before replace them.

#### 2.2 Safety Warning and Notice Installation

- 1. Do not use your monitor under any of the following environmental conditions:
  - Extremely high or low temperature, or in direct sunlight
  - Dusty places
  - Highly humid, exposed to rain, or close to water
  - Exposed to vibrations or impacts in places such as cars, buses, trains, and other rail vehicles
  - Near heating appliances such as radiators, heaters, fuel stoves, and other heat-generating items.
  - An enclosed place (such as a closet or bookcase) without appropriate ventilation
  - An uneven or sloping surface
  - Exposed to chemical substances or smoke
- 2. Do not block vents and openings by clothes or curtains.
- 3. Carry the monitor carefully.
- 4. Do not place the monitor face down on the floor or a desk surface directly. Otherwise, scratches on the panel surface may occur.
- 5. Do not place heavy loads on the monitor to avoid possible personal injury or damage to the monitor.
- 6. Ensure that children do not hang or climb onto the monitor.
- 7. Keep all packing bags out of reach of children.

#### Operation

- 1. To protect your eyesight, please refer to the user manual to set the optimal screen resolution and the viewing distance.
- 2. To reduce eye fatigue, take a break on a regular basis while using the monitor.

Avoid taking either one of the following actions for a long time. Otherwise, burn marks may occur.

- Use the monitor in the aspect ratio of 4:3, 5:4, 16:9 or 16:10.
- Place a still image (such as an OSD menu, fixed text or image) on the screen.
- 3. To avoid possible damage to the monitor, do not touch the monitor panel by hand, pen, or any other sharp objects.
- 4. Excessively frequent plug and unplug of video connectors (D-sub) may cause damage to the monitor.
- 5. This monitor is designed mainly for personal use. If you want to use the monitor in a public place or a harsh environment, contact your nearest BenQ service center for assistance.
- 6. To avoid possible electric shock, do not dissemble or repair the monitor.
- 7. If a bad smell or an abnormal sound appears to come from the monitor, contact your nearest BenQ service center for assistance immediately.

#### Cleaning

- 1. Ensure that the power is unplugged before cleaning your monitor.
- 2. Use a monitor cleaner and a soft cloth to clean your monitor.
- 3. Do not use solvents such as alcohol to clean your monitor.

#### Power

- 1. To avoid possible damage to the monitor, do not use it in a region where power supply is unstable.
- 2. Ensure that the power cord is connected to a grounded power outlet before turning on the monitor.
- 3. Use only the power cord provided by BenQ.
- 4. Never use a power cord that appears to be damaged or frayed.
- 5. To avoid possible danger, observe the total electric load when using the monitor with a (multi-outlet) extension cord.
- 6. Always turn off the monitor before unplugging the power cord.

#### 2.3 Compliance Statement

**Caution:** This Optical Storage Product contains a Laser device. Refer to the product specifications and your local Laser Safety Compliance Requirements.

## 3. General Description

This new LCD (Liquid Crystal Display) monitor BenQ BL2423PT offers numerous features and functions, for example:

- Panel Type: IPS+LED
- Minimal space requirements thanks to slim casing
- Optimum ergonomic characteristics (totally distortion-free, excellent picture definition and color purity right into the corners)
- Contrast ratio 1,000:1 (Panel) / 20M:1 (DCR), brightness 350nits
- MAX. resolution (1920x1080)
- Contrast (typ.): 1,000:1
- Presentation of up to 16.7 M colors (in conjunction with an appropriate graphics card)
- Automatic scanning of horizontal frequencies from 30 to 83 kHz and refresh rates (vertical frequencies) from 50 to 75 Hz (absolutely flicker-free)
- Digital screen controller with microprocessor for storing 6 different display modes
- Freely adjustable color alignment for matching the screen colors to the colors of various input and output devices
- Convenient operation via integrated OSD (On-Screen-Display) menu
- VESA-DDC compatibility
- Plug & play capability
- Power management for reducing power consumption when the computer is not in use

This operating manual contains important information you require to start up and run your LED monitor. This specification defines the requirements for the 24" MICROPROCESSOR based Multi-mode supported high resolution color LED monitor. The monitor can be directly connected to general 15-pin VGA connector, 24-pin DVI connector. Also support VESA DPMS power management and plug & play function.

#### Additional information

Due to the nature of liquid crystal display (LCD) technology, the picture resolution is always fixed. For the best display performance, please set the display resolution to 1920x1080 pixels with an aspect ratio of 16:9. This is called "Native Resolution" or maximal resolution - that is, the clearest picture. Lower resolutions are displayed on a full screen through an interpolation circuit. Image blurring across pixel boundaries can occur with the interpolated resolution depending upon the image type and its initial resolution.

## 4. Related service information

This Service Manual contains general information. There are 2 levels of service:

Level 1: Cosmetic / Appearance / Alignment Service

Level 2: Circuit Board or Standard Parts Replacement

Service Web Site

eSupport Website:

BenQer: <u>http://esupport.benq.com/v2</u> ASP: http://esupport.benq.com/

# 5. Product Overview

## 5.1 Monitor Specifications

	BL2423PT			
	Configuration			
	Configuration:			
	VGA+DVI_D+DP1.2			
Panel Type (TN / VA / IPS)	IPS+LED			
Panel Model	LM238WF1 SLK1			
Panel Size	23.8" (16:9)			
Display Area	23.8 inches(604.70mm) diagonal			
Max. Resolution	1920x1080			
Pixel Pitch	0.2745			
Brightness (Typ.)	250			
Contrast Ratio (Typ.) / DCR (Min.)	1000:1 (Panel) / 20M:1 (DCR)			
Viewing Angle (H/V), $CR \ge 10$	178/178			
Display Colors	16.7M			
Response Time	14ms (Typ., GTG_AVR)			
GtG response Time	4ms(Premium)/8ms(High)			
sRGB ratio	100%			
Color Space	72% NTSC			
Panel maker	LGD			
BenQ Senseye <sup>™</sup> Technology	Yes			
	10 Modes (by hotkey) : sRGB / CAD/CAM / Animation(0~10) /			
BenQ Senseye <sup>™</sup> Preset Modes	Standard / Low Blue Light/			
	Movie / Photo / Eco / M-Book / User			
BenQ Senseye <sup>™</sup> Demo Modes	5 Modes :			
Deng Genseye Denio Modes	CAD/CAM / Animation / Movie / Photo / M-Book			
Color Temperature Selection	Normal (6500°K) / Reddish (5700°K) / Bluish (9300°K) / User Mode			
Hor. Frequency (KHz)	30kHz~83KHz			
Ver. Frequency (Hz)	50Hz~75Hz			
Video Bandwidth (MHz)	205MHz			

Speakers (built-in)	1W x 2
Volume	Adjustment 0~100
Mute	On/ Off
PC Video Input	Yes
HDMI Input	NA
AV Video Input	x
Audio Line In	Yes
Headphone Jack	Yes
USB2.0	Yes (2*downstream(Rear), 1*upstream)
D-Sub (VGA)	Yes
Display Port	Yes (DisplayPort1.2*1)
Voltage Rating	90~264 AC Build in
Power-On Mode	TBD
Standby Mode	<0.5W
Power Off Mode	<0.3W
Chassis Colors	Follow ID Artwork
Carton	Brown carton
Power LED	White (On)/ Amber (Standby)
OSD Key	Touch Key
Tilt (Up / Down)	-5° to 20°
Height Adjustment	140mm
Pivot	90°
Swivel	45/45
VESA Wall Mount	100x100
MNT without stand	4230g, L:563.2mm*:W:73mm*H:338.7mm
Kensington Lock	Yes
Container Loading (40')	Refer to B405
Container Loading (20')	Refer to B405
OSD	17 Languages (English / Francais / Deutsch / Italiano / Espanol / Polish / Czech / Hungarian / Serbo-croatian / Romanian / Netherlands / Russian / Swedish / Protuguese / Japanese / Chinese / S-Chinese)
Win 7/Win 8/Win 8.1/Win10	Yes

Mac Compatible	Yes			
SRGB Pro	Yes			
Component color Space select	Yes			
HDMI Color Range Select	NA			
Gamma Select	5 step (1.8~2.6)			
Auto Pivot	Yes			
Display Mode	Full/ Aspect Ratio/ 1:1			
Overscan	Yes			
Light Sensor (Eye Protect)	Yes			
Proximity Sensor (ECO sensor)	Yes			
DC 調光	Yes			
Smart Scaling	NA			
Smart Reminder	Yes			
AC Switch	Yes			
On-line Gamma calibration	Yes			
Dynamic Power Saving	Yes			
New UI	Follow BL2420PT			
Bundle Software	Display Pilot			
Accessories (Bundle)	Power cord (1.5m), VGA cable(1.5m), Audio cable(1.5m), USB2.0			
	cable(1.5m), warranty card, QSG, CD			
Regulation Approvals	Refer to B106			

## 5.1.1 Certification

Туре	Region	Country	Certification	Level	Apply by BenQ	Apply by Vendor	Sample Request	Document Type
	BQA	Canada	EPEAT	Gold	Y			Certificate
	BQA	Canada	EPEAT	Gold	Y			Reports
	BQA	USA & Canada	cTUVus			Y		Certificate
	BQA	USA & Canada	FCC and IC			Y		DOC
	BQA	USA & Canada	FCC and IC			Y		Reports
	BQC	China	ссс			Y		Certificate
	BQC	China	ссс			Y		Printing Permission
	BQC	China	ссс			Y		Reports
	BQC	China	CECP			Y		Certificate
	BQC	China	CECP			Y		Printing Permission
	BQC	China	CECP			Y		Reports
	BQC	China	China Energy Label			Y		Certificate
	BQC	China	China Energy Label			Y		Reports
	BQE	EU	CE			Y		DOC
	BQE	EU	CE			Y		DOI
	BQE	EU	CE			Y		Reports

BQE	EU	EPEAT	Silver	Y		Certificate
BQE	EU	EPEAT	Silver	Y		Reports
BQE	EU	ErP			Υ	Reports
BQE	EU	REACH			Y	Evidence
BQE	EU	WEEE			Y	Reports
BQE	Germany	Ergo			Y	Certificate
BQE	Germany	GS			Y	Certificate
BQE	Russia, Belarus	CU			Y	Certificate
BQE	Ukraine	Safety & EMC DoC			Y	Certificate
BQE	Ukraine	UkrSEPRO			Y	Certificate
BQP	Korea	e-Standby			Y	Certificate

					 <u>.</u>
BQP	Korea	e-Standby		Y	Reports
BQP	Korea	КС		Y	Certificate
BQP	Korea	ксс		Y	Certificate
BQP	Korea	ксс		Y	Reports
International	CB Scheme	СВ		Y	Certificate
International	CB Scheme	СВ		Y	Reports
International	International	Energy Star		Y	Certificate
International	International	Energy Star		Y	Reports
International	International	RoHS & BenQ GP Guideline		Y	Evidence
International	International	тсо		Y	Certificate

	BenQ	Document provide				
Standard	Information &	Torgot Doto	Actual Data	Assign Lab	Quotation	Remark
	Request	Target Date	Actual Date			

IEEE 1680.1				
IEEE 1680.1				
UL60950-1& CSA C22.2 No. 60950-1-07	For both US and Canada use.			
FCC part 15B; ICES-003				
FCC part 15B; ICES-003				
GB4943, GB9254, GB17625.1	製造商:明基電 通有限公司			
GB4943, GB9254, GB17625.1	製造商:明基電 通有限公司			
GB4943, GB9254, GB17625.1	製造商:明基電 通有限公司			
CQC31-452629, GB 21520				
CQC31-452629, GB 21520				
CQC31-452629, GB 21520				
GB 21520-				
GB 21520-				
EN55022; EN55024				
EN55022; EN55024				
EN55022; EN55024				
IEEE 1680.1				
IEEE 1680.1				

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2005/32/EC, 2009/125/EC, EC No 1275-2008 and its implementation measurements.				
EC No. 1907/2006 & SVHC lists, No. 552/2009				
2002/96/EC and its amendments				
ISO9241-307; prEN 50279; EK1-ITB 2000				
EN60950-1; EK1-ITB 2000; ZEK 01.2-08/12.8				
CISPR22; CISPR24; IEC60950-1				
IEC60950-1				
Ministry of Knowledge Economy Notification No. 2008-116				
Ministry of Knowledge Economy Notification No. 2008-116				
K60950-1	For safety approval			

KN22, KN24, K00022 (CISPR22), K00024 (CISPR24)				
KN22, KN24, K00022 (CISPR22), K00024 (CISPR24)				
IEC 60950-1	Includes JP deviation			
IEC 60950-1	Includes JP deviation			
ENERGY STAR Program Requirements for Displays				
ENERGY STAR Program Requirements for Displays				
2011/65/EU & SUP-QM-07-02				
TCO Certified Displays 7.0				

## **5.2 Panel Inspection Specification**

#### 1.1. Scope

This Incoming Inspection Standard shall be applied to TFT-LCD modules (hereafter called the "LCMs") supplied by LG Display (hereafter called the "Supplier") to its Customer.

## 1.2. Incoming inspection Right

The Customer shall have the right to conduct at its own cost and expense, an incoming inspection of the LCMs at the destination specified in the relevant B/L(Bills of Lading) in accordance with the LCM's specifications separately agreed upon and the inspection criteria set forth in this article.

The Customer shall notify the Supplier in writing of the inspection results (acceptance or rejectance) in accordance with the said Incoming Inspection Standard within 40 days from the date of the B/L.

Should the Customer fail to notify the results to Supplier within 40 days period, the right to reject the LCMs shall then lapse, and the said LCMs shall be deemed to have been accepted by the Customer.

## **1.3. Handling Precautions**

- LCM Devices are made of fragile material such as Glass and plastic and may be broken or cracked if dropped it, so PLEASE handle them with care.
- DO NOT press the area covered with PET or such materials. These are weak point of LCMs since of TCPs(Driver ICs) and PWBs.
- PLEASE support the Bezel with your finger when connecting the interface cable.
- Please DO NOT touch the surface of the Glass(Polarizer). - PLEASE wear the Wrist Strap when handling. Semiconductive devices are included in the LCMs and they should be handled with care to prevent any electrostatic discharge(ESD).
- PLEASE keep the LCMs in the specified, original packing boxes when storage.
- DO NOT stack the LCMs too high without wrapping material such as AIR CAP.
- Before use the LCMs, PLEASE check the Engineering specification.
- LCMs contain a small amount of Liquid Crystal and Mercury. PLEASE follow local ordinances or regulations for disposal.

# 2.1. Sampling Method

Unless otherwise agreed upon in writing, the sampling inspection shall be applied to the Customer's incoming inspection.

2.1.3. Inspection level	: II
2.1.4. Sampling table	: MIL-STD-105D

# 2.2. Acceptable Quality Level(AQL)

The AQL for major and minor defects shall be respectively set forth below.

2.2.1. Major = 0.65 % 2.2.2. Minor = 1.5 %

# 2.3. Classification of defects

Defects are classified as either a major defect or a minor defect based on the degree of defect defined herein.

2.2.1. Major defect

The major defect is a defect that is likely to result in product failure, or reduction in the product's intended usage.

2.2.2. Minor defect

The minor defect is a defect that has little bearing on the effective use or operation of the product.

Specific criteria of judgment of major and/or minor defects or other related issues shall be in accordance with the Appendix A, "Classification of Defects".

# 2.4. Determination of acceptability and subsequent disposal

If the number of defects found in the LCM sampling lot is equal to or less than the AQL(Acceptable Quality Level), the lot shall be accepted.

If the number of defects found in the LCM sampling lot is greater than the AQL, the lot shall be rejected. The Customer shall inform the Supplier of the results of such inspection detailly within the time period stipulated in chapter 1.2.

#### 2.4.1. Accepted lot

An acceptance under the above incoming inspection shall constitute an acceptance by the Customer of such lot of the LCMs in terms of the landed quality thereof.

#### 2.4.2. Rejected lot

If a shipment lot of products is rejected under the above incoming inspection due to any defects of which the Supplier is responsible and such a fact is clearly confirmed by the Supplier through a separate inspection or as otherwise decided, the Supplier shall choose one of the following three options which must be determined by mutual consent.

The Supplier shall advise the Customer of its choice not later than 10 working days(Monday through Friday) of receipt of the "Customer's notification of rejected lot" :

a. The Customer shall return the rejected lot to the place to be designated by the Supplier and the Supplier shall screen all of the products in the lot and repair or replace the defective LCMs.

b. The Supplier shall screen all of the LCMs in the lot and repair or replace the defective LCMs within a reasonable time period at the Customer's facility.

c. The Customer shall screen the entire lot of LCMs at the expense of Supplier's, and the expense must be agreed by the Supplier. The rejected LCMs shall be returned to the place designated by the Supplier.

## 2.5. Inspection Method

2.5.1. Ambient conditions

a. Temperature	: <b>20~25</b> °C
b. Humidity	: 65 ±10 % RH
c. Illumination	: Single 20W fluorescent lamp non-directive (300 to 700 Lux)
	Using Daylight type fluorescent light Under Max 300Lux for Verifying Dot defects)

## 2.5.2. Viewing distance

The distance between the LCM and the inspector's eyes shall be at least 35-50 cm.

### 2.5.3. Viewing Angle

The inspection shall be conducted within normal viewing angle range. ※ Refer to the CAS for viewing angle. (The surface of the MODULE and the eyes of the inspectors shall be 90 degrees.

## 3.0 Inspection Criteria

#### 3.1. Dot Defect

3.1.1. Bright Dot

Dots(sub-pixels) which appeared brightly in the screen when the LCM displayed only with Full Black pattern.

- R, G,B 1 dot	2 Max
- Adjacent 2 dots	1 Max
- Total amount of Bright dots	2 Max
- Minimum distance of Bright dots	15mm

#### 3.1.2. Partial bright dot

- Partial bright dot (tiny dot) ----- 8 Max

## 3.1.3. Dark Dot

Dots(sub-pixels) which appeared darkly in the screen when the LCM displayed with Full Red, Green and Blue patterns.

- 1 dot	5 Max
- Adjacent 2 dots - Total amount of Dark dot	2 Max
- Minimum distance of Dark dots	5 Max
	15 mm

# 3.1.4. Total amount of Dot Defects ------ 5 Max (Combination)

Note) a. Every dot herein means Sub-Pixel(Each Red, Green, or Blue Color)

- b. Bright dot defect damaged less than half size of sub-pixel is not counted as a bright dot defect. And dark dot defect damage less than half size of sub-pixel is not counted as a dark dot defect.
- c. Dots darker than half brightness of sub-pixel are not defined as bright dot defect and dots brighter than half brightness of sub-pixel are not defined as dark dot defect.

## 3.2. Polarizer Defects

Items	Criteria
Scratches	0.05<=W<=0.1, 0.3<=L<=3.0, N<=3
Dent/Bubble	D<=0.7, N<=3

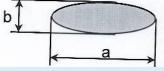
Where, W :Width

L : Length

D : Average diameter =(a+b)/2

Note)

- a. Average Diameter
- b. Linear: a > 2b. Circular a < 2h



Note) continued

- c. Extraneous substances which can be wiped out, like Finger Print, Particles, are not considered as a defect.
- b. Defects which is on the Black Matrix(outside of Active Area) are not considered as a defect.

## 3.3 Foreign Material

Items	Criteria
Linear	0.05<=W<=0.2, 0.5<=L<=3.0, N<=3
Circular	0.1<=D<=0.7, N<=4
Where, W :Width L : Length D : Average dia Note)	ameter =(a+b)/2 b
a. Average Diameter	ircular : a≤2b

#### 3.4. Line Defect

All kinds of line defects such as vertical, horizontal or cross are not allowed.

## 3.5. Bezel Appearance

Scratches, minor bents, stains, particles on the Bezel frame are not considered as a defect.

## 3.6. Other Visual Defects

## 3.6.1 Mura

No visible mura is allowed. A limit sample shall be used when necessary.

### 3.6.2 Light leakage

Light leakage in the active area is not allowed. A limit sample shall be used when necessary.

## 3.7. Others

Issues which is not defined in this criteria shall be discussed with both parties,

Customer and Supplier, for better solution.

#### 4.0 RMAs

## 4.1. Verification

The Supplier can verify the defective LCMs to segregate the responsibilities at Customer's facility or can request the Customer to ship the defective LCMs to assigned place for verification

This verification result shall be agreed mutually by the Customer and Supplier. This result can be corrected/changed after detail failure analysis at Supplier's facilities.

# 4.2. Supplier Induced Defects

All of the Supplier induced defective LCMs shall be returned to the Supplier for repair or replacement.

Before return the defective LCMs, the Customer needs Supplier's confirmation with RMA Number.

All of the returned LCMs shall be returned to the Customer within agreed time period.

## 4.3. Customer Induced Defects

The Customer can return the customer induced defective LCMs to the Supplier for repair.

The repair cost for Customer induced defective LCMs shall be agreed with both parties, Customer and Supplier.

#### 5.0 Warranty

#### 5.1. Warranty Period

In-warranty period is Eighteen(18) Months from manufacturing month of LCM.

Note) The manufacturing Month is on the LCMs as Supplier's serial No.

#### 5.2. Repair Warranty

Repair warranty is Twelve(12) Months from repaired month for repaired LCMs.

Note) The Label for repair will be added after repairing.

#### 5.3. Warranty avoidance

The warranty will be avoided in cases of below,

- a. When the warranty period is expired
- b. The Customer induced defective LCMs
- c. When the LCMs were repaired by 3rd party without Supplier's approval.
- d. When the LCMs were treated like Disassemble and Rework by the Customer and/or Customer's representatives without Supplier's approval.

#### 6. Others

If any problems arise with the LCMs supplied by supplier, the Customer and Supplier will cooperate and make efforts to solve it with mutual confidence and respect.

# Appendix A. Classification of Defects

Defect Mode	Criterion for Defect	Class
Operating Frequency	Specified range in the CAS	Major
Power Consumption	Specified range in the CAS	Major
Contrast Ratio	Specified range in the CAS	Major
Line Defect	Not allowed any Vertical, Horizontal, and Cross line	Major
Polarizer Defects	Shall be accordance with the item 3.0 "Inspection Criteria" in this standard	Minor
Extraneous Substance	Shall be accordance with the item 3.0 "Inspection Criteria" in this standard	Minor
Dot Defect	Shall be accordance with the item 3.0 "Inspection Criteria" in this standard	Minor
Bezel Claw Forming	The bezel claw is not formed sufficiently	Minor

## Level 1 Cosmetic / Appearance / Alignment Service Visual Inspection & Cleaning

- Cleaning. Always unplug your monitor from the wall outlet before cleaning. Clean the LCD monitor surface with a lint-free, non-abrasive cloth. Avoid using any liquid, aerosol or glass cleaners.
- Slots and openings on the back or top of the cabinet are for ventilation. They must not be blocked or covered.
   Your monitor should never be placed near or over a radiator or heat source, or in a built-in installation unless proper ventilation is provided.
- Never push objects or spill liquid of any kind into this product.

## Software/Firmware Upgrade Process Upgrade by 715GT089-B

# 1 · Materials



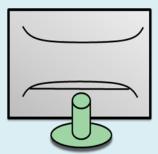
ISP JIG: 715GT089-B



VGA cable TPV P/N: 089G728 GAA DB



PC



Monitor



USB cable TPV P/N: 089G1758 X



FTC100103(MSTAR) usb drive.rar

USB port driver



RTDTool.exe

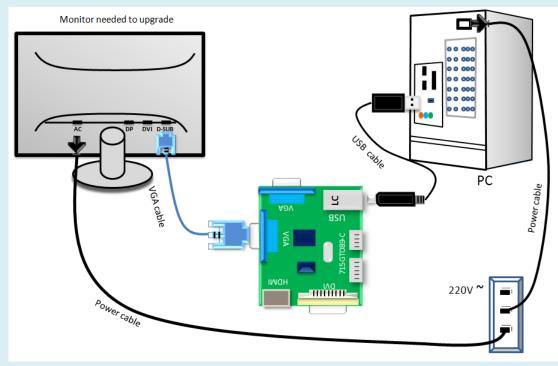
ISP tool:



BENQ\_BL2423PT\_RTD248 6ARD\_LNT-LM238WF1\_V0

02\_20160809\_42D5.bin

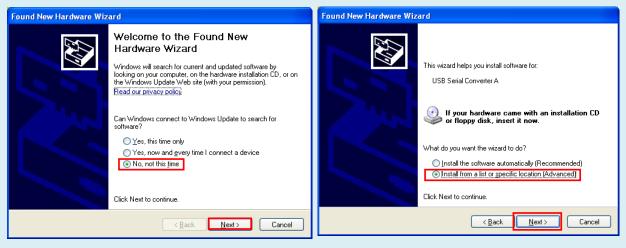
#### 2.Connection



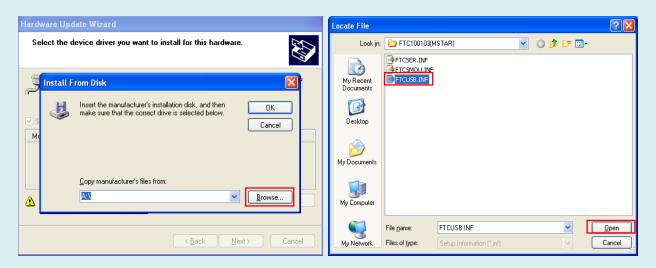
#### 3.Install USB driver.

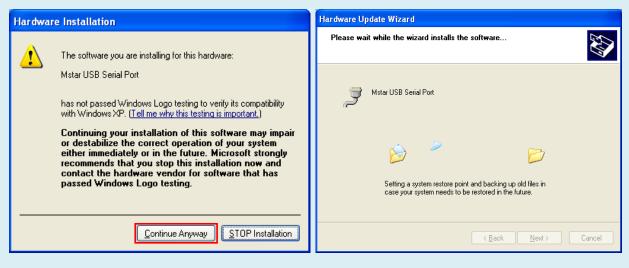
3.1. When insert the USB cable to PC USB port, will pop up a Hardware Wizard to help you install the USB driver if you use this ISP board first time. You can install it successfully as the below instruction step by step.

Remark: The USB driver files path: D:\FTC100103(Mstar)\FTCUSB.INF



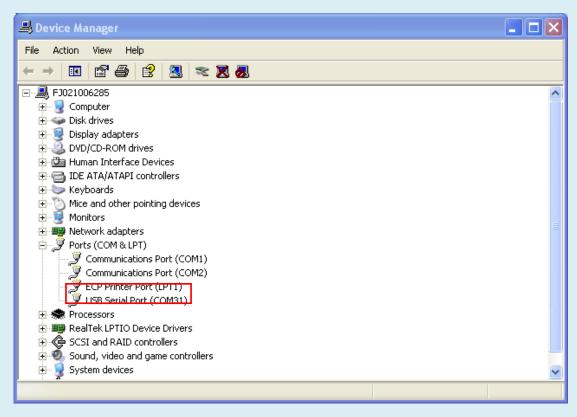
Hardware Update Wizard	Hardware Update Wizard
Please choose your search and installation options.	Select the device driver you want to install for this hardware.
Search for the best driver in these locations. Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.	Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Search removable media (floppy, CD-ROM)	Show compatible hardware
✓ Include this location in the search:	Model
D:\LCD\烧录资料\烧录资料\T00L\FTC100103(M 🖌 Browse	Mstar USB Serial Port USB Serial Port
⊙ Don't search. I will choose the driver to install.	
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.	
une driver you choose will be the best match for your naroware.	This driver is not digitally signed! <u>I ell me why driver signing is important</u>
< <u>₿</u> ack <u>N</u> ext> Cancel	< <u>B</u> ack <u>N</u> ext> Cancel







After installation the USB serial port driver, please check the port. Look the properties of "my Computer"



#### 4. Install RTD tool.



4.1. RTDTool.exe

double- clicks the icon to run it.

Note: Must to install driver firstly

## 4.2. Choose the FTDIUSB communication way.

🗟 RID Customer Tool V3.	2		
Option Debug message Communic	ation Option		
Access method: FTDIUsb 🛛 🗸	Scaler: RTD2537T-CG 🗸 Stop Run Reset		
FTDIUsb CtriReg NewCtrl R RealtekUSB	Path Last modified time:	CheckSum Len	Refresh
	C:\Documents and Settings\hui.zhou\Desktop\ACER_CZ320Q_TPT315B5_HP02_S_160428	×	<b>_</b>
1 🗆			
MCU McuReg 2			
Flash Slash 3			
HS Delay 4 🔲			
5 🗆			
6 🗆			
DPTxCtrl	Big Bin CheckSum(0x):		•
Gamma			
	Function		2
Ready	O Auto ○ Erase		
Last LastLine Line			
EDID NewEDID			
OD OD	● I To 1 ● I To 4	Q	2
		5	
$\diamond$	USB: 💫		

4.3 Click "ISP" and "ISP Option" to set the parameter.

😹 RTD Customer Tool ¥3.2	2	
Option Debug message Communica	ation Option	
Access method: FTDIUsb ISP	? Option	
NewCtriReg ISP ISP 1 MCU McuReg 2 Flash Flash S Delay 4 Flash CTS CTS CTS CTS CTS CTS CTS CTS	sic Setting Flash Setting WP Pin Setting Erase Setting Flash Partition Setting SP Address File Length File Check Auto Slave Actual length OCRC Actual length OCheck Sum Care Reserve Setting Advanced Setting Auto search FW file in current dir Auto detect which bank needs to ISP V ISP before AC on Time : 2500 ms Re-ISP count Count : 1 V Reset after ISP Hide UI In ISP Progress Show length excluding DxFF Auto refresh result after ISP Time : 500 ms Hide cancel button in ISP progress ISP Speed:	
<b>O</b>	USB: 💫	

#### 🖀 RTD Customer Tool ¥3.2 Option Debug message Communication Option ✓ Stop Access method: FTDIUsb 🗸 Scaler: RTD2537T-CG Reset Run Corilleg NewCtriReg Bank Path Last modified time: CheckSum Len Refresh 0 ☑ (打开 **?**× **R**ISP .... 1 查找范围 (I): 📄 烧录 MCU McuReg 🔽 🔇 🤌 📂 🛄-2 Ò Flash 3 BENQ\_BL2423PT\_RTD2486ARD\_LNT-LM23 20160809 42D5.bin 38WF1\_V002 HS Delay 我最近的文档 4 B 5 🗆 🗌 IIC 12C 桌面 6 🔲 CTS CTS Ô 7 DPTxCtrl 我的文档 ¥ **夏**夏 我的电脑 Gamma HDCP Ready Last LastLine Line 网上邻居 文件名(M): BENQ\_BL2423PT\_RTD2486ARD\_LNT-LM238WF1 💌 打开(0) EDID NewEDID 文件类型(T): 取消 Hex or Bin Files ~ OD OD □ 以只读方式打开 (&) Reg Ø USB: 🚲 to start programming. 4.5 Click 😹 RTD Customer Tool ¥3.2 Option Debug message Communication Option Access method: FTDIUsb 🗸 🗸 Run Scaler: RTD2537T-CG Stop Reset Corrilleg Path Last modified time: 2016/08/09 13:18:24 CheckSum Len Refresh 📥 Bank 0 ☑ C1\Documents and Settings\hui.zhou\Desktop\NACY收录\BENQ\_BL2423PT\_RTD2486ARD\_ ✔ F9 65536 isp isp ... 1 🔽 MCU McuReg 2

#### 4.4 Close the "ISP Option" window and click the "BigBin" to load the correct F/W.

Flash 3 HS Delay 4 🔽 5 FV Update Progress × IIC 12C 6 CTS, CTS 5% 7 DPTxCtrl ¥ Gamma Current flash is MX25L800X Function HDCP Ready HDCP Bank 15 erase successfully. 📀 Auto ○ Erase Last LastLine Bank 14 erase successfully. Line EDID NewEDID Bank 13 erase successfully. ISP Type OD OD 💿 1 To 1 🛛 🔾 1 To 4 🚫 ок USB: 🚲

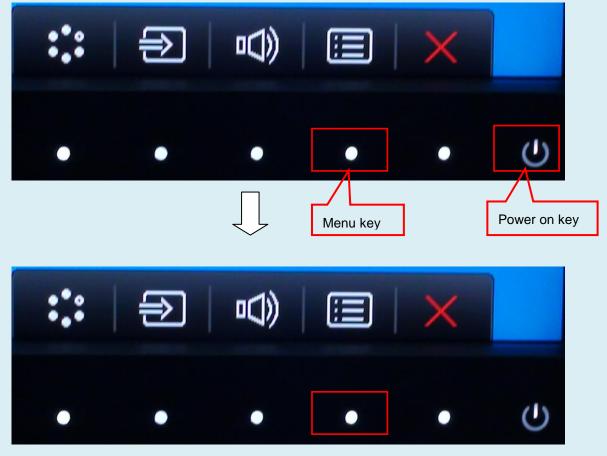
4.6 After about 20 minutes, there will pop up message as below figure which promotes the upgrade successful.

🕞 RID Customer	Too	1 7	/3.	2					X
Option Debug messag	;e C	ommu	mio	ation Option					
Access method: FTD	lUst	0	~	Scaler: RTD2537T-CG 🛛 Stop Run Reset					
Ctr/Reg	17	Bar	nk	Path Last modified time: 2016/08/09 13:18:24	Che	eckSu	ım Len	Refresh	
ISP		0 [		C:\Documents and Settings\hui.zhou\Desktop\NACY\饶录\BENQ_BL2423PT_RTD2486ARD	~	F9	65536		
1000 Hundar		1 [		C:\Documents and Settings\hui.zhou\Desktop\NACY)烧录\BENQ_BL2423PT_RTD2486ARD_	_LN	60	65536		)
McuReg		2		C:\Documents and Settings\hui.zhou\Desktop\NACY\饶录\BENQ_BL2423PT_RTD2486ARD_	_LN	42	65536		]
Flash		3		C:\Documents and Settings\hui.zhou\Desktop\NACY)烧录\BENQ_BL2423PT_RTD2486ARD_	_LN'	57	65536		)
HS Delay		4	⊻	C:\Documents and Settings\hui.zhou\Desktop\NACY焼录\BENQ_BL2423PT_RTD2486ARD_	_LN	25	65536		)
ITTAI2C		5	₽	C:\Documents and Settings\hui.zhou\Desktop\NACY饶录\BENQ_BL2423PT_RTD2486ARD_	_LN	С9	65536		)
CTS		6	⊻[	C:\Documents and Settings\hui.zhou\Desktop\NACY虓录\BENQ_BL2423PT_RTD2486ARD_	_LN'	B5	65536		)
		7	⊻[	C\Documents and Settings\hui.zhou\Desktop\NACY饶录\BENQ_BL2423PT_RTD2486ARD_	_LN'	40	65536		)
DPTxCtrl				Big Bin CheckSum(0x): 0C67 42D5					~
Gamma	Γ	Bank	kЗ	erase successfully.					
	١	Write	9 00	de to bank 3 successfully				3	
Last LastLine				erase successfully. de to bank 2 successfully					
Line NewEDID					.K				
EDID				de to bank 1 successfully		F			
OD OD				erase successfully. 🔤 💿 1 To 1 🔿 1 To 4			1	\$	
		Write	9.00	de to bank O successfully					
<b>О</b> к				USB: 💫					

#### 5. Check the FW version after upgrade.

5.1. The way to open factory menu.

- (1)Connect signal source and power cable to monitor and DC off it.
- (2) Press "menu" key and "power on" key synchronously as below figure. When the screen lights, release the two buttons and then press "menu" again to open below Service Page.



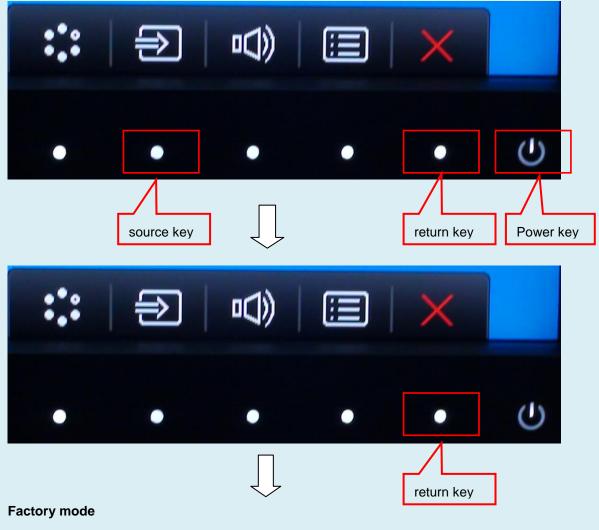
	Į	Ĵ	Me	nu key	]
BenQ	Service Pag	e			
Model Name : S/N : Vender : Panel : Scaler : F/W Version : Monitor On Time : Backlight On Time :	TPV LGD LM RTD 2 4 VO O 2 0 0 0 0		D		Check this F/W version.
DVI HPD Logo Auto Power DVI 1 OM (Enter the service m	On On On On	Off Off Off Off Off	)	~	

(3) If the version is right, please do factory reset in user menu as below, or re-upgrade F/W as the above steps.

The reset will turn off burn in mode.

Mode: Standard		<b>HILLING AN</b>			
1	· ^				
→ <b>‡</b> ← Display	Information	YES			
Picture	Reset All	_ < NO	~		
Picture Advanced					
🕼 Audio					
🔑 System	{				
C ERGONOMICS					
Ø ECO					
		$\wedge$ V	√ <	X 15:27	
					$\langle /$
					$\backslash$
Reset All S	ettings ?				N
	98%				
$\vee$ X			1		

- 5.3. The way to open BenQ factory menu
  - (1)Connect signal source and power cable to monitor and DC off it.
  - (2) Press "source" key, "return" key and "power on" key synchronously as below figure. When the screen lights, release the three buttons and then press "return" key to open below factory menu.



8ENQ 8L242 FW : V002 7	23PT RTD2486-ARD 20160809	
Auto Leve GAIN A OFFSET A 6500 A 9300 A S800 A S800 A S800 A S800 A S800 A S800 A S800 A User A Bri 80 C TIME DFM BurnIn LGO LM230 SSC 06 HW Auto L ForceLogo ALS: 62 OD GAIN OC State Clear Tim Init EEPA Exit	I 146 G 143 B 152 105 G 117 B 111 100 G 100 B 100 77 G 85 B 100 100 G 98 B 91 100 G 100 B 100 100 G 100 B 100 100 G 100 B 100 000 50 0FF 0FF WF1 LVDS Current 02 evel PASS 0ff 0FF PS: 12 16 NO er 0FF 0M 0FF	
OC State Clear Tim Init EEPR Exit	NO er OFF OM OFF	

## Upgrade by 715GT089-B

1. Materials list



VGA cable TPV P/N: 089G728 GAA DB



USB cable TPV P/N: 089G1758 X



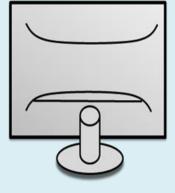
MSTAR driver



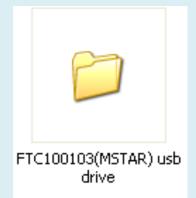
ISP JIG: 715GT089-B



PC



Monitor



USB port driver

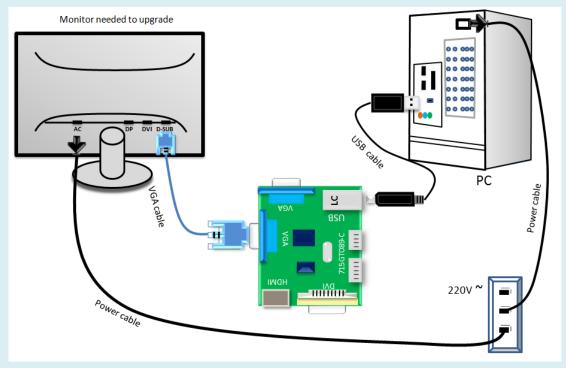


ISP tool



EDID

#### 2. Connection(DC on the monitor)



#### 3. Install LPT driver.

PORT95NT.EXE PackageForTheWeb Stub InstallShield Software Corpora..

to install the driver. Restart PC after installation.

#### 4. Prepare the EDID written.

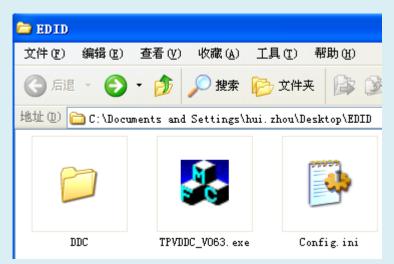
3.1. Double click the icon

- 4.1. Change the EDID files name as below rule.
  - VGA EDID → WA.dat DP EDID → WP.dat DVI EDID → WD.dat

4.2. Copy these files to one folder named as BENQ BL2423PT which must contains "config.ini" file.

🚞 BenQ	BL2423F	T								l
文件 (2)	编辑(2)	查看(V)	收藏( <u>A</u> )	工具(I)	帮助(H)					
<b>(</b> ] 后退	• 🔊	- 🍺	🔎 搜索	<b>闷</b> 文件获	e 🍙	3 ×	5	•		
地址 @) 🛅 C:\Documents and Settings\hui.zhou\Desktop\EDID\DDC\NEW\B\BENQ\24BNQ\BenQ BL2423PT 🛛 👻										
	<b>config.IN</b> Configura 1 KB	I tion Se		<b>wa. dat</b> PSpice Ci 1 KB	rcuit Fil		wd.da PSpic 1 KB	t e Circuit Fil	wp.dat PSpice Circ 1 KB	iit File

4.3. Copy BENQ BL2423PT to DDC folder and put DDC and ISP tool together.



#### 5. Run the ISP tool



5.1. Double-click the icon TPVDDC\_V063. exe to open the tool.

1. Select EDID       Information         LoadEDID       Information:         2. Basic Settings       Debug Information:         Burn Way:       © Only Connect HOMI         C Multi-Interface       Only Connect DVI         Write SN:       Write SN         Connect Port:       C Analog C Digital € AnalogtDigital         C HDMI       C HDMI2         C HDMI       C HDMI2         C HDMI       C HDMI2	💑 IPVDDC - Ver: 0.63	
Manufracture:     ProductCode:     ModelName:       SN:     Year:     Week:       3. Input Year Month Day     -       Input SN:     -       Check SN:     0       Read EDID     Please connect       VGA1!	LoadEDID         2. Basic Settings         Burn Way:       © Dnly Connect VGA       © Only Connect HDMI         C Multi-Interface       © Only Connect DVI         Write SN:       © Write SN         Connect Port:       © Analog © Digital © Analog+Digital         Churt © HDMI       © HDMI © HDMI2         Manufacture       ProductCode:       ModelName:         SN:       Year:       Wee         3. Input Year Month Day       -       -         4. Input SN:	Information P Debug Information: Write EDID Remark Information: > > Please connect VGA1!

#### 5.2. Select the EDID folder.

TPVDDC Ver: 0.63	
1. Select EDID       LoadEDID       2. Basic Settings       Burn Way: Only Connect VGA CON	Debug Information:
C Multi-Interface       C to         Write SN:       F Write SN         Connect Port:       C Analog         C HDMI       C HDMI2         Manufacture:       ProductCode:         SN:       # 2         Input Year Month Day:       -         Input Year-Month-Day:       -         We G       # G	
Input SN: Check SN:	ark Information:

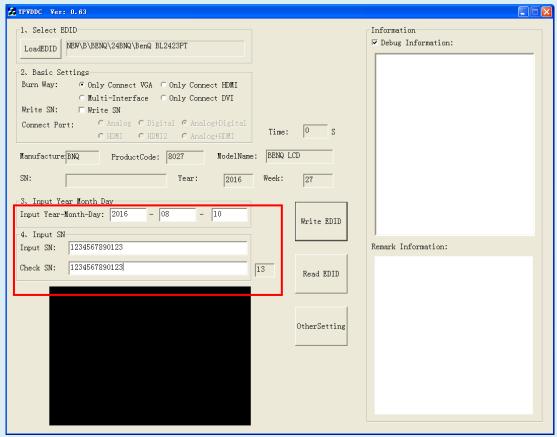
#### 5.3. Load EDID successful.

😹 TPVDDC Ver: 0.63	
1. Select EDID LoadEDID NEW\B\BENQ\24BNQ\BenQ BL2423PT 2. Basic Settings Burn Way: © Only Connect VGA © Only Connect HDMI © Multi-Interface © Only Connect DVI Write SN: © Write SN Connect Port: © Analog © Digital © Analog+Digital C HDWL © HDWL2 © Analog+Digital ManufactureBNQ ProductCode: 8027 ModelName:	Time: 0 S BENQ LCD Week: 27 Write EDID Remark Information:

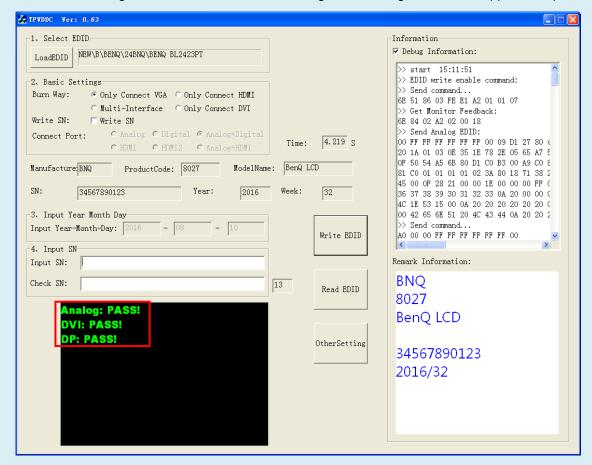
#### 5.4 Tick the "Only connect VGA" and "Debug Imformayion".

👪 TPVDDC Ver: 0.63		
1. Select EDID LoadEDID NEW\B\BENQ\24BNQ\BenQ BL2423PT		Information ↓ Debug Information:
2. Basic Settings Burn Way: © Only Connect VGA © Only Connect HDMI © Multi-Interface © Only Connect DVI Write SN: © Write SN Connect Port: © Analor © Digital © Analog+HDMI © HDMI © HDMI2 © Analog+HDMI Manufacture BNQ ProductCode: 8027 ModelName SN: Year: 2016 3. Input Year Month Day Input Year-Month-Day: 4. Input SN Input SN: Check SN:	Time: 0 S S BENQ LCD Week: 27 Write EDID 13 Read EDID OtherSetting	Remark Information:

#### 5.5 type in the date and the 13 digit S/N.



5.6. Start to writing. Click "write EDID" to start writing. When The green "PASS" appear, the process is finished.

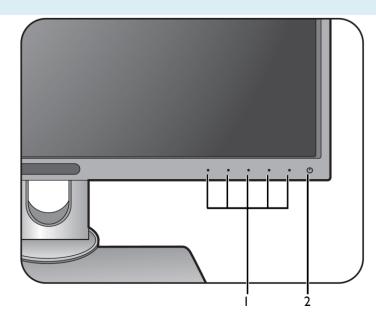


#### 6. Troubleshooting.

- 6.1. Can't write!
  - (1) AC on the monitor and turn on it.(Restart the monitor)
  - (2)Take apart the monitor and connect the 7pin of EEPROM to GND to diable write protection then write EDID one by one.
  - (3) Set the Burn in on last to try again.

# **Adjustment / Alignment Procedure**

## The Control Panel

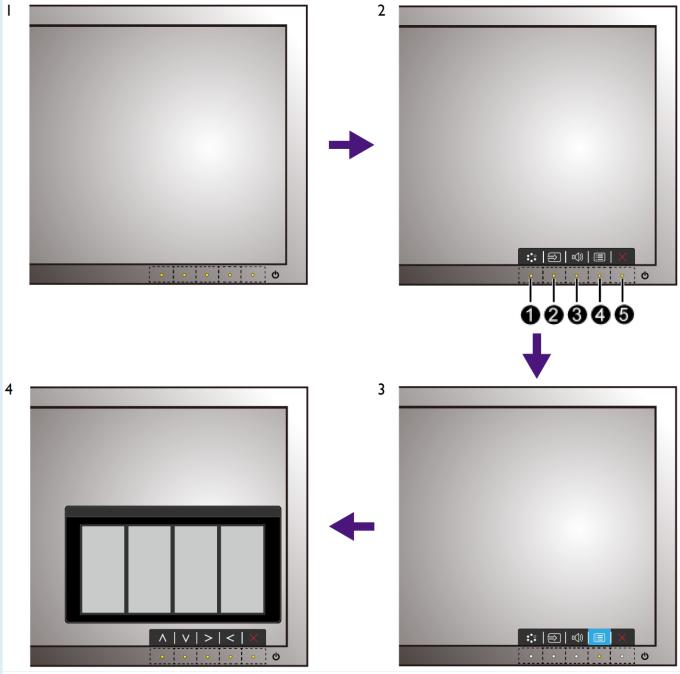


No.	Name	Description
Ι.	Control keys	Accesses the functions or menu items displayed on the screen, right next to each key.
2.	Power key	Turns the power on or off.

The control keys are embedded in a touchpad and are indicated by the LED indicators. Touch of an LED indicator represents pressing the corresponding control key.

### **Basic menu operation**

All OSD (On Screen Display) menus can be accessed by the control keys. You can use the OSD menu to adjust all the settings on your monitor.



- I. Press any of the control keys.
- 2. The hot key menu is displayed. The left three controls are custom keys and are designated for particular functions.
- 3. Select 🔲 (Menu) to access the main menu.
- 4. In the main menu, follow the icons next to the control keys to make adjustments or selection.

No.	OSD in hot key menu	OSD icon in main menu	Function
0	Custom Key 1	^	<ul> <li>By default, the key is the hot key for Picture Mode. To change the default settings, <ol> <li>For Up/Increase adjustment.</li> </ol> </li> </ul>

No.	OSD in hot key menu	OSD icon in main menu	Function
0	Custom Key 2	$\vee$	<ul> <li>By default, the key is the hot key for Input. To change the default settings,</li> <li>.</li> <li>For Down/Decrease adjustment.</li> </ul>
0	Custom Key 3	> , √	<ul> <li>By default, the key is the hot key for Volume. To change the default settings,</li> <li>Enters sub menus.</li> <li>Selects menu items.</li> </ul>
4	Menu	<	<ul><li>Activates the main menu.</li><li>Returns to the previous menu.</li></ul>
6	Exit	×	Exits OSD menu.

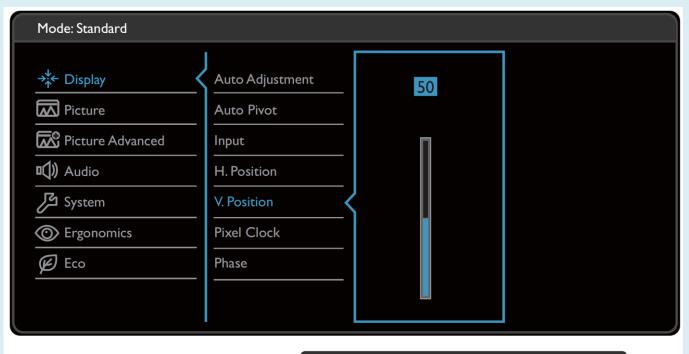


• OSD = On Screen Display.

The hot keys only operate while the main menu is not currently displaying. Hot key displays will disappear after a few seconds of no key activity.

• To unlock the OSD controls, press and hold any key for 10 seconds.

## **Display Menu**





- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **Display**.
- 3. Select > to go to a sub menu, and then use  $\land$  or  $\lor$  to select a menu item.
- 4. Use  $\land$  or  $\lor$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select  $\times$ .

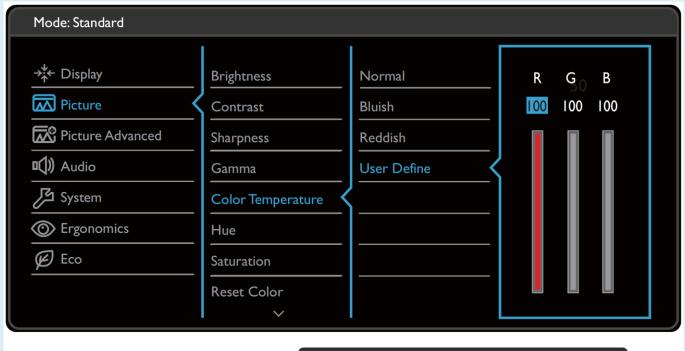
ltem	Function	Range
Auto Adjustment	Optimizes and adjusts the screen settings automatically for you.	
	Not applicable to a digital input signal.	
Auto Pivot	Sets to rotate the display with the monitor.	•ON
		•OFF

ltem	Function	Range
Input	Use this to change the input to that appropriate to your video cable connection type.  Available options vary by model. Check the Specifications document on the provided CD for available input connectors of the purchased model.	•D-Sub •DVI •HDMI •DisplayPort
H. Position	Adjusts the horizontal position of the screen image.	0 to 100
V. Position	Adjusts the vertical position of the screen image.	0 to 100
Pixel Clock	Adjusts the pixel clock frequency timing to synchronize with the analog input video signal. Not applicable to a digital input signal.	0 to 100
Phase	Adjusts the pixel clock phase timing to synchronize with the analog input video signal. Not applicable to a digital input signal.	0 to 63

# For models without D-Sub inputs

ltem	Function	Range
Auto Pivot	Sets to rotate the display with the monitor.	•ON •OFF
Input	Use this to change the input to that appropriate to your video cable connection type.	•DVI •HDMI •DisplayPort

### Picture menu



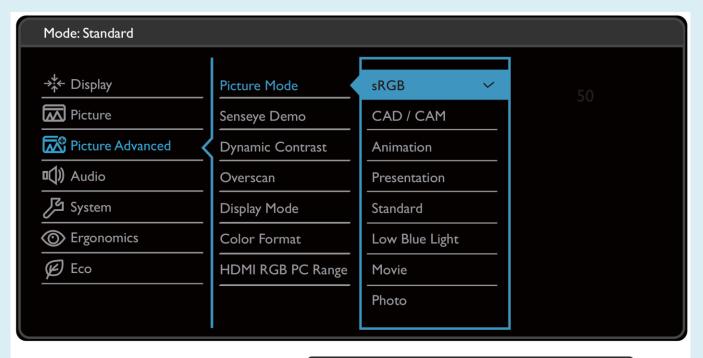


- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **Picture**.
- 3. Select > to go to a sub menu, and then use  $\wedge$  or  $\vee$  to select a menu item.
- 4. Use  $\wedge$  or  $\vee$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select imes .

ltem	Function	Range
Brightness	Adjusts the balance between light and dark shades.	0 to 100
Contrast	Adjusts the degree of difference between darkness and lightness.	0 to 100
Sharpness	Adjusts the clarity and visibility of the edges of the subjects in the image.	l to 10

ltem		Function		
Gamma	Adjusts the standard v	•1 •2 •3 •4 •5		
Color Temperature	Normal	Allows video and still photographs to be viewed with natural coloring. This is the factory default color.		
	Bluish	Applies a cool tint to the image and is factory pre-set to the PC industry standard white color.		
	Reddish	Applies a warm tint to the image and is factory pre-set to the news print standard white color.		
	User Define	The blend of the Red, Green and Blue primary colors can be altered to change the color tint of the image. Go to the succeeding R (red), G (green), and B (blue) menus to change the settings. Decreasing one or more of the colors will reduce their respective influence on the color tint of the image. (e.g. if you reduce the Blue level the image will gradually take on a yellowish tint. If you reduce Green, the image will become a magenta tint.)	• R (0~100) • G (0~100) • B (0~100)	
Hue	Adjusts th	e degree of how we perceive colors.	0~100	
Saturation	Adjusts th	e purity degree of colors.	0~100	
Reset Color	Resets the	•YES •NO		
ΑΜΑ	Improves the gray level response time of the LCD panel.		•OFF •High •Premium	

#### Picture advanced menu





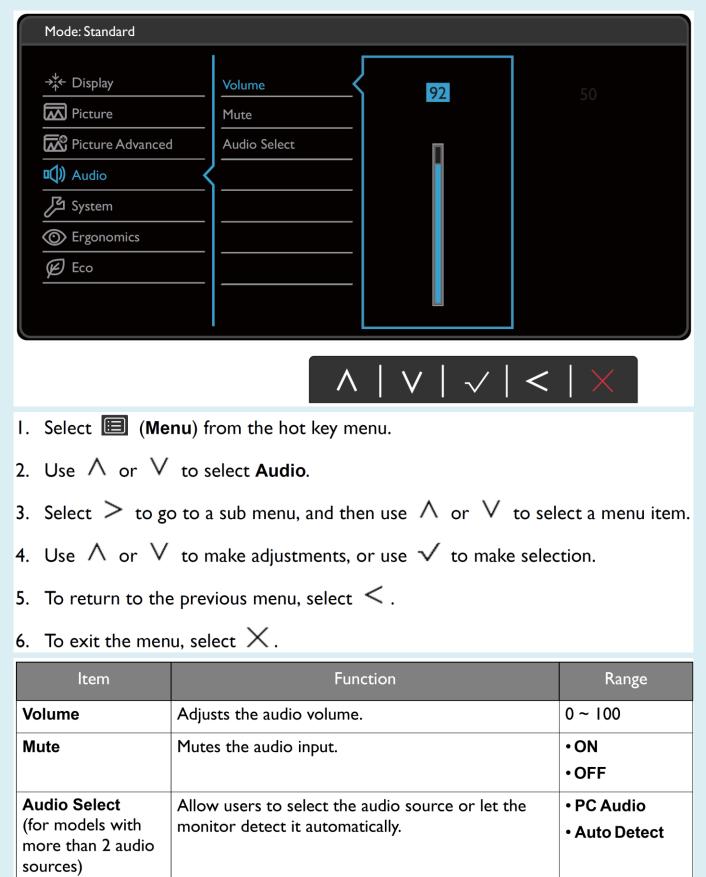
- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **Picture Advanced**.
- 3. Select > to go to a sub menu, and then use  $\wedge$  or  $\vee$  to select a menu item.
- 4. Use  $\land$  or  $\lor$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select X.

ltem		Function		
Picture Mode	Select a pictur screen.	re mode that best suits the type of images shown on the		
	sRGB	For better color matching representation with the peripheral devices, such as printers, digital cameras, etc.		
	CAD / CAM	Enhances the contrast if a CAD / CAM software is used.		
	Animation	Enhances the contrast of the dark shades so you could work on the details easily when making an animation.	0~10	

ltem			Function	Range		
	Presentation	brightness be	e differences of color, contrast, and etween the images displayed on the projected by a projector.			
	Standard	For basic PC	or basic PC application.			
	Low Blue Light					
		Multimedia	For viewing multimedia files.	-30%		
		Web Surfing	Veb For web surfing.			
		Office	Office For office works or office environment.			
		Reading	For reading e-books or documents.	-70%		
	Movie	For viewing v	rideos.			
	Photo	For viewing s	till images.			
	Eco		For saving electricity with low power consumption by providing minimum brightness for all running programs.			
	M-book	Real of the second s	e visual differences between the monitor ected MacBook series product.			
	User	Applies a cor users.	nbination of picture settings defined by			
Senseye Demo	Picture Mode. window demo	The screen wi nstrates image	view of screen images under the selected mode from The screen will be divided into two windows; the left strates images of Standard mode, while the right as the images under the specified mode.			
Dynamic Contrast	And and consider the construction of controls. Dec		to automatically detect the distribution of an input I then to create the optimal contrast.			
Overscan	Slightly enlarge edge noise if p		age. Use this feature to hide annoying your image.	•ON •OFF		
	Available on from Comp	- A	when the input source is HDMI, DP, or D-Sub (VGA converted			

ltem		Function	Range		
Display Mode	This feature is displayed with				
	The options signal source				
		on your selection of <b>Picture Mode</b> , different <b>Display Mode</b> option Change the setting if needed.			
	Full	Scales the input image to fill the screen. Ideal for 16:9 aspect images.			
	Aspect	The input image is displayed without geometric distortion filling as much of the display as possible.			
	1:1 Displays the input image in its native resolution without scaling.				
Color Format	Determines th video signal.	ne color space ( <b>RGB</b> or <b>YUV</b> ) based on the detected			
(for models with D-Sub inputs)	-	need to manually set the <b>Color Format</b> if colors shown on the reen do not display properly.			
		source is HDMI or DP, color format is not selectable. In other <b>or Format</b> is automatically set depending on the input video			
	RGB	<ul><li>For D-Sub (VGA) input source from PC.</li><li>For DVI input source.</li></ul>			
	YUV	For D-Sub (Component converted from VGA) input source from a video device.			
HDMI RGB PC Range (for models with HDMI inputs)	Determines th the RGB range	• RGB (0 ~ 255) • RGB (16 ~ 235)			

## Audio menu



#### System menu

Mode: Standard			
→*← Display	OSD Settings	Language 🗸 🗸	5 sec. 50
Picture	Custom Key I	Display Time	10 sec.
Picture Advanced	Custom Key 2	OSD Lock	15 sec. 🗸
<b>¤ᠿ))</b> Audio	Custom Key 3		20 sec.
🏸 System	DDC/CI		25 sec.
© Ergonomics	DP Auto Switch		30 sec.
🗭 Eco	HDMI Auto Switch		
	Auto Power Off		



- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **System**.
- 3. Select > to go to a sub menu, and then use  $\land$  or  $\lor$  to select a menu item.
- 4. Use  $\land$  or  $\lor$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select imes .

ltem		Function	Range
OSD Settings	Language	Sets the OSD menu language. The language options displayed on your OSD may differ from those shown on the right, depending on the product supplied in your region.	<ul> <li>• English</li> <li>• Français</li> <li>• Deutsch</li> <li>• Italiano</li> <li>• Español</li> <li>• Polski</li> <li>• Česky</li> <li>• Magyar</li> <li>• SiCG/BiH/CRO</li> <li>• Română</li> <li>• Nederlands</li> <li>• Русский</li> <li>• Svenska</li> <li>• Português</li> <li>• 日本語</li> <li>• 繁體中文</li> </ul>
	Display Time	Adjusts the display time of the OSD menu.	<ul> <li>·简体中文</li> <li>·5 sec.</li> <li>·10 sec.</li> <li>·15 sec.</li> <li>·20 sec.</li> <li>·25 sec.</li> <li>·30 sec.</li> </ul>
	OSD Lock	Prevents all the monitor settings from being accidentally changed. When this function is activated, the OSD controls and hotkey operations will be disabled. To unlock the OSD controls, press and hold any key for 10 seconds.	

ltem	Function	Range
Custom Key	Sets the function to be accessed by custom key 1.	Picture Mode
1		• CAD / CAM
Custom Key	Sets the function to be accessed by custom key 2.	<ul> <li>Animation</li> </ul>
2		Low Blue Light
Custom Key 3	Sets the function to be accessed by custom key 3.	<ul> <li>Display Mode</li> </ul>
5		<ul> <li>Brightness</li> </ul>
		Contrast
		• Auto Adjustment (for models with D-Sub inputs)
		• Volume
		• Mute
		• Input
		Eye Protect
		• Eye Protect Meter
		• ECO Sensor
		• ECO Sensor
		Meter
		• Smart Reminder
DDC/CI	Allows the monitor settings to be set through the software	• ON
	on the PC.	•OFF
	DDC/CI, short for Display Data Channel/Command Interface, which was developed by Video Electronics Standards Association (VESA). DDC/CI capability allows monitor controls to be sent via the software for remote diagnostics.	
DP Auto Switch	When this function is activated, DP port will be in the input auto select loop. Otherwise, DP can only be selected by input select or by hot key.	•ON •OFF
HDMI Auto Switch (for models with HDMI inputs)	When this function is activated, HDMI port will be in the input auto select loop. Otherwise, HDMI can only be selected by input select or by hot key.	•ON •OFF
Auto Power Off	Sets the time to power off the monitor automatically in power saving mode.	• OFF • 10min. • 20min. • 30min.

ltem	Function	Range
Resolution Notice	Sets whether to display the resolution notice of the recommended resolution when a new input source is detected by the monitor.	•ON •OFF
Information	Displays the current monitor property settings.	<ul> <li>Input</li> <li>Current Resolution</li> <li>Optimum Resolution (best with the monitor)</li> </ul>
DisplayPort	Selects an appropriate DP standard for data transmission.	•1.1 •1.2
Reset All	Resets all mode, color and geometry settings to the factory default values.	•YES •NO

#### **Ergonomics menu**

Mode: Standard				
→*← Display	Eye Protect	<u>ON</u> 🗸		
Picture	Eye Protect meter	OFF		
Picture Advanced	Smart Reminder			
🗐 Audio	Time Interval (min.)			
<b>乃</b> System	Duration (sec.)			
Ergonomics				
🖉 Eco				
		1 1 .		

- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **Ergonomics**.
- 3. Select > to go to a sub menu, and then use  $\wedge$  or  $\vee$  to select a menu item.
- 4. Use  $\land$  or  $\lor$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select imes .

ltem	Function	Range
Eye Protect	Your monitor comes with a light sensor, which detects the light condition around the monitor and adjusts the monitor backlight automatically. This is to protect your eyes from overexposure to bright light. If the light is sufficient, the monitor brightness is increased. If the monitor is in a poor light, the monitor brightness is decreased. If you prefer to adjust the monitor brightness manually, go to PICTURE > Brightness.	• ON • OFF
ltem	Function	Range
Eye Protect Meter	Sets to display the light condition around the monitor on the screen.	•ON •OFF
Smart Reminder	Decides to display the pop-up message that reminds you to rest your eyes.	•ON •OFF
Time interval (min.)	Sets the interval of the reminder message.	• 20 • 40 • 60 • 80 • 100
Duration (sec.)	Sets the time the reminder message lasts on the screen. Alternatively, when the reminder message is displayed, press any key except the power button to hide the message.	• 5 • 10 • 15 • 20 • 25

#### Eco menu

Mode: Standard			
→¥← Display	ECO Sensor ECO Sensor Meter	ON 🗸	
Picture Advanced ()) Audio System	Sensor Range		
<ul> <li>Ergonomics</li> <li>Eco</li> </ul>			



- I. Select 🔲 (Menu) from the hot key menu.
- 2. Use  $\land$  or  $\lor$  to select **Eco**.
- 3. Select > to go to a sub menu, and then use  $\land$  or  $\lor$  to select a menu item.
- 4. Use  $\land$  or  $\lor$  to make adjustments, or use  $\checkmark$  to make selection.
- 5. To return to the previous menu, select < .
- 6. To exit the menu, select  $\times$ .

ltem	Function	Range
ECO Sensor	Your monitor comes with a proximity sensor (called ECO sensor), which detects your presence in front of the monitor within the set range. If the sensor detects no presence, the monitor is turned off in 40 seconds to save power.	•ON •OFF

ltem	Function	Range
ECO Sensor Meter	Sets to display the countdown to turn off the monitor.	•ON •OFF
Sensor Range	Decides how far the sensor can detect.	• Near • Middle • Far

# **Display Timing Table**

Note:

P: Preset Mode

NP: None Preset Mode

FS: Fail Save Mode (show "out of range", but still can see picture)

O: Out of Range (only show "out of range", without picture)

		Resolution	Pixel clock	H-sync	V-sync
	1920x1080				
BenQ Preferred	VA Panel				
Mode Number	(Piexl clock : 83M)	Resolution	(unit:MHz)	(unit:KHz)	(unit:Hz)
IDF-1	FS	640x350	25.18	31.47	70.09
	0	640x350	31.50	37.86	85.08
	0	640x400	25.18	31.47	70.09
	0	640x400	31.5	37.86	85.08
	Р	640x480	30.24	35.00	66.67
DMT-1	Р	640x480	25.17	31.47	59.94
	0	640x480	31.50	37.86	72.81
DMT-2	FS	640x480	31.50	37.50	75.00
DMT-3	0	640x480	36.00	43.27	85.01
	NP	640x500	25.25	31.00	57.76
IDF-2	FS	720x400	28.32	31.47	70.08
	0	720x400	35.5	37.93	85.04
	FS	832x624	57.27	49.71	74.53
BenQ	NP	800x480	29.5	29.74	59.476
	Р	800x600	36.00	35.16	56.25
DMT-4	Р	800x600	40.00	37.88	60.32
	0	800x600	50.00	48.08	72.19
DMT-5	FS	800x600	49.50	46.88	75.00
DMT-6	0	800x600	56.25	53.67	85.06
DMT-26	NP	848x480	33.75	31.02	60.00
	NP	848x480	31.50	29.83	59.66
	NP	848x480	37.52	35.00	70.00
	0	848x480	39.25	36.07	72.00
	0	848x480	41.00	37.68	74.77
	NP	720x576	32.71	35.910	59.950
BenQ	Р	1024x576	46.966	35.82	60
BenQ	Р	1024x600	48.964	37.32	60
	FS	1024x768-I	44.9	35.52	43.48
DMT-7	Р	1024x768	65.00	48.36	60.00
	0	1024x768	75.00	56.48	70.07

	0	1024x768	78.43	57.67	72.00
	FS	1024x768	80.00	60.24	74.93
DMT-8	FS	1024x768	78.75	60.02	75.03
DMT-9	0	1024x768	94.50	68.68	85.00
DTV	Р	1152x720	66.75	44.86	60
	0	1152x864	94.50	63.85	70.01
DMT-10	FS	1152x864	108.00	67.50	75.00
GTF-7	0	1152x864	119.651	77.09	85.00
	FS	1152x870	100.00	68.68	75.06
	Р	1152x900	92.94	61.80	65.95
	0	1152x900	105.59	71.73	76.07
	Р	1280x720	74.25	45.00	59.94
CVT-7	Р	1280x720	74.50	44.77	59.86
	FS	1280x720	95.75	56.46	74.78
	Р	1280x768-R	68.25	47.40	60.00
DMT-20	NP	1280x768	79.50	47.78	59.87
	0	1280x768	102.25	60.29	74.89
	0	1280x768	117.50	68.63	84.84
	NP	1280x800	71	49.31	59.91
CVT-8	Р	1280x800	83.50	49.702	59.81
GTF	NP	1280x800	98.894	58.3	70
	0	1280x800	102.8	60.048	72
	FS	1280x800	106.6	62.795	74.934
	0	1280x800	122.5	71.55	84.88
	Р	1280x960	108.00	60.00	60.00
	0	1280x960	148.50	85.94	85.00
DMT-11	Р	1280x1024	108.00	63.98	60.02
	NP	1280x1024	126.99	74.88	69.85
	NP	1280x1024	124.90	74.40	70.00
	0	1280x1024	134.60	77.90	72.00
DMT-12	FS	1280x1024	135.00	79.98	75.02
	0	1280x1024	135.09	81.18	76.16
DMT-13	0	1280x1024	157.50	91.15	85.02
DMT-21	Р	1360x768	85.50	47.71	60.01
	Р	1366x768	85.50	47.71	59.79
	NP	1400x1050-R	101.00	64.74	59.95
DMT-18	NP	1400x1050	121.75	65.32	59.98
	0	1400x1050	156.00	82.28	74.87
	0	1400x1050	179.50	93.88	84.96
DMT-25	Р	1440x900-R	88.75	55.496	59.901

DMT-25	Р	1440x900	106.5	55.935	59.887
	FS	1440x900	136.75	70.6	75
	Р	1600X900-R	108	60	60
	Р	1600x1000-R	108.5	61.648	59.910
CVT-10	NP	1600x1000	132.25	62.14	59.87
	0	1600x1000	169.25	78.356	74.83
CVT-2	NP	1600x1200-R	130.25	74.01	59.92
DMT-14	Р	1600x1200	162.00	75.00	60.00
	NP	1600x1200	175.50	81.25	65.00
	NP	1600x1200	189.00	87.50	70.00
DMT-15	0	1600x1200	202.50	93.75	75.00
DMT-16	0	1600x1200	229.50	106.25	85.00
DMT-22	NP	1680x1050-R	119.00	64.67	59.88
DMT-23	Р	1680x1050	146.25	65.29	59.95
	FS	1680x1050	187	82.306	75
CVT2.04M	NP	1600x1280	171.75	79.5	59.9
CVT2.41M3	FS	1792X1344	203.25	83.57	59.9
CVT2.41M3	0	1792X1344	257.75	105.290	75.00
CVT2.58M3	0	1856X1392	217.25	86.485	59.934
CVT2.58M3	0	1856X1392	277.5	109	74.918
CVT2.59M4	0	1800x1440	218.25	89.4	59.9
	Р	1920x1080-R	138.5	66.587	59.934
	Р	1920x1080	173	67.158	59.963
DMT	Р	1920x1080	148.5	67.5	60
Nvidia 85Hz					
timing	0	1920x1080	198.50	95.43	84.905
Nvidia 144Hz					
timing	0	1920x1080	317.49	158.11	144.000
Nvidia 100Hz					
timing	0	1920x1080	113.8		100
Nvidia 110Hz					
timing	Ο	1920x1080	125.7		110
Nvidia 120Hz					
timing	0	1920x1080	137.8		120
	FS	1920X1200-R50	127.750	61.418	49.974
CVT2.30MA-R	FS	1920X1200-R	154.00	74.04	59.95
	FS	1920X1200	193.25	74.56	59.89
	0	1920X1200	245.25	94.04	74.93
CVT2.76M3-R	FS	1920X1440-R	184.75	88.822	59.9
CVT2.76M3	0	1920X1440	233.500	89.532	59.968

CVT2.76M4	0	1920X1440	298	112.50	74.9
CVT-R	FS	2048x1152-R	156.75	70.992	59.9
CVT	FS	2048x1152	197	71.584	59.9
CVR	0	2048x1280-R	174.25	78.918	59.922
CVT3.15M3-R	0	2048x1536-R	209.25	94.7	59.9
CVT3.15M3	0	2048x1536	267.25	95.4	59.9
	0	2560x1440	241.5	88.787	59.951
CVT4.10MA-R	0	2560x1600-R	268.5	98.713	59.972
4.10MA	0	2560x1600	348.5	99.4	59.9
DMT-4E	0	2560x1600	443.25	125.354	74.972
DMT-4F	0	2560x1600	505.25	142.887	84.951
	0	3840x2160-R	257.404	65.66	29.97
	0	3840x2160-R	522.092	133.187	59.94
	0	3840x2160	297	67.5	30
	0	3840x2160	594	135	60

#### Factory OSD Menu

The service page needs to include that information.

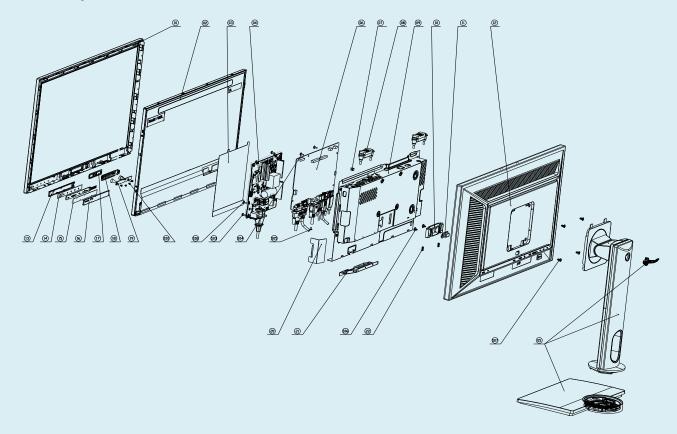
Model name, S/N, Vender, panel, scalar, F/W version, Monitor on time, Backlight on time.

OSD picture is as below

BenQ	) Service Page	
Model Name : S/N : Vender : Panel : Scaler : F/W Version : Monitor On Time : Backlight On Time :	BL 2 4 2 3PT E T D 0 0 0 0 0 0 0 0 2 6 TPV LGD LM 2 3 8 WF 1 SLK 1 RTD 2 4 8 6 - ARD V0 0 2 2 0 1 6 0 8 0 9 0 0 0 0 0 Hour 0 0 Min 0 0 0 0 0 Hour 0 0 Min	
DVI HPD Logo Auto Power DVI 10M (Enter the service m	On Off On Off On Off On Off On Off	

- 1. Trigger method: Press "Menu" key and Power on.
- 2. Press the Menu key will display the service page
- 3. Press menu key will close the service page.
- 4. power off will quit the service mode
- 5. At the service mode, the key function is same as normal OSD define.
- 6. The timer can only reset at the service mode by "Timer Reset" (Timer Reset moves to SI factory Area). And needs to have a warning message to double confirm the reset function. The timer should record up to 99999 hours and will be reset once launch.
- Add three selected items for HPD(HDMI HPD, DP HPD, DVI HPD) at Service menu HDMI HPD: To disable the hot plug pin detection.(HDMI port default: Off) DP HPD: To disable the hot plug pin detection.(DP port default: Off) DVI HPD: To disable the hot plug pin detection.(DVI port default: Off)
- 8. Add BenQ logo on/off item, the default is "on"
- 9. Add the auto power on item, the default is "on"
- 10. Add the timer reset warning message, when select the timer reset item, then the warning message will display and need to confirm it again and the default is "No".
- 11. Panel type define need to have the panel version
- 12. F/W version need to define the dual or analog model
- 13. Add support "10m DVI / HDMI" items. (default: Off)

# Level 2 Circuit Board and Standard Parts Replacement Product Exploded View



**Note:** The parts information listed below are for reference only, and are subject to change without notice. Please go to <a href="http://cs.tpv.com.cn/hello1.asp">http://cs.tpv.com.cn/hello1.asp</a> for the latest information.

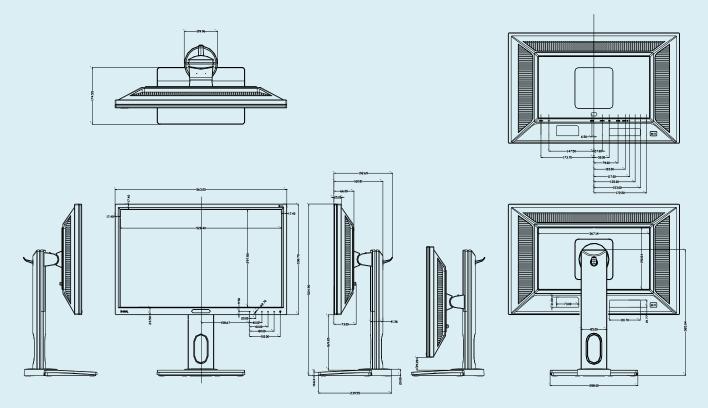
ltem	Description	Qty	Unit
1	BEZEL	1	
2	PANEL	1	
3	INSULATING SHEET	1	
4	ADAPTER BOARD NA	1	
5	stand-base ass'y	1	
6	MAIN BOARD	1	
7	RUBBER PAD	1	
8	SPEAKER	1	
9	MAINFRAME	1	
10	STAND_BUTTON	1	
11	Cover_BTM	1	
12	REAR_COVER	1	
13	LENS	1	
14	TAPE_DOUBLE	1	
15	INSULATING SHEET	1	
16	COVER_KEY	1	

17	LENS_IR	1	
18	COVER_FUNCTION	1	
19	LIGHT SENSOR BOARD	1	
20	INSULATING SHEET	1	
21	SHIELD_IC	1	
22	spring	2	

ltem	Part NO.	Description	Qty	Unit
S1	Q01G6019 1	SCREW	4	
S2	0D1G1030 6120	SCREW	2	
S3	0M1G1740 6120	SCREW	1	
S4	0D1G1030 6120	SCREW	4	
S5	0M1G3030 6120	SCREW	1	
S6	0Q1G2030 6120	SCREW	2	
S7	Q01G6146 3	SCREW	4	

ART.						
Part NO.	Description	Qty	Unit			
Q44GD1781010KL	CUSHION-REAR L24W-Xbenq1-p1 Non-region(	1	PCS			
Q44GD1782010KL	CUSHION-FRONT L24W-Xbenq1-p1 Non-region	1	PCS			
Q44GD1783010KL	CUSHION-M L24W-Xbenq1-p1 Non-region(Glo	1	PCS			
Q44GD17888104A00DL	ARTWORK CARTON BL2423PT WW	1	PCS			

# Six Angles' View



# Product Disassembly/Assembly

#### Disassembly

#### 1) Remove the stand-base assy

Place the monitor on a smooth surface. Be careful to avoid scratch and injury during the process of uninstall. Remove the screws and then rotate the base as below picture to remove the base.



#### 2) Remove the stand.

Holding the stand and press the button, and so you can remove the stand.



#### 3) Remove the rear cover

Unscrew the screws from the rear cover.

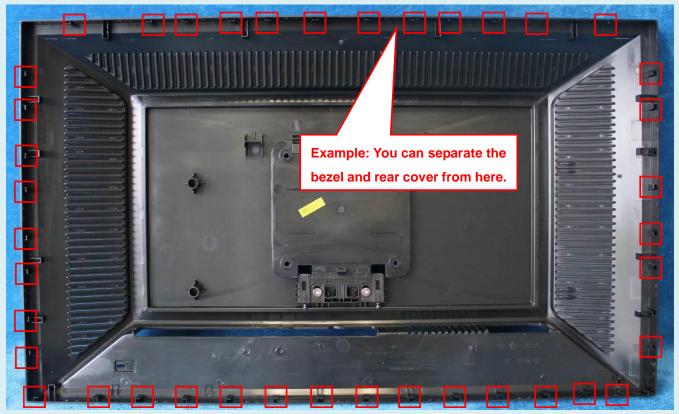


Pull apart bezel & rear cover.

Note: Be careful, the BEZEL CLIP is easy to break.



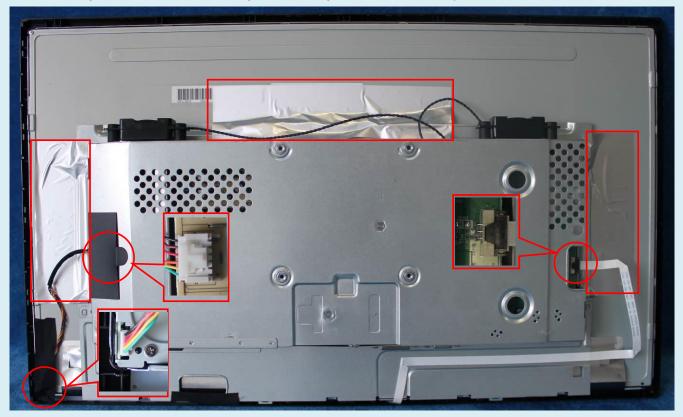
Note: The positions of the clips on the rear cover are as follow. There are some small gaps between CLIPS. It's suggested to separate bezel and rear cover from the gaps.



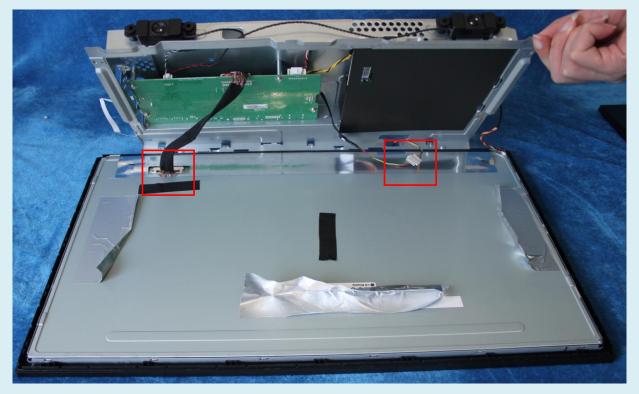
4) Remove the main frame from the panel.

Remove the aluminum foil; pull out the wire marked in red circles to remove the mainframe.

Note: When you assembled the LCD, you must tidy the wire as follow picture.



Turn over the mainframe to remove the tapes, LVDS cable and the connector.



5) Remove the AC cover from the mainframe.

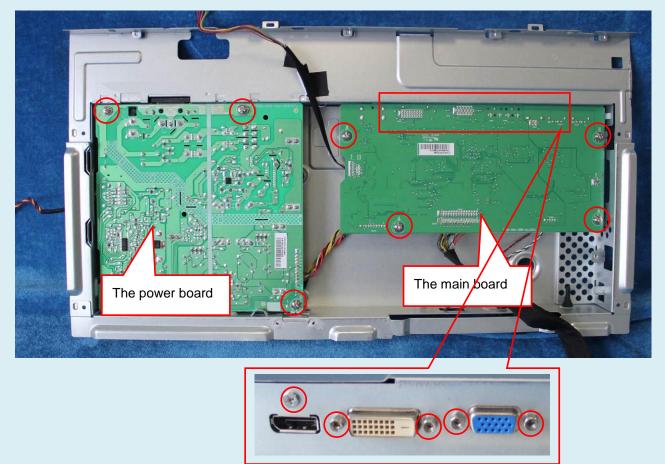


6) Remove the boards from the main frame

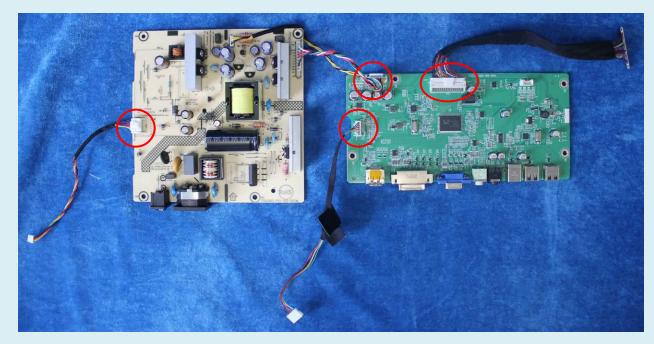
Remove the mylar from the mainframe.



And then remove screws in red, pull out the wire to remove the main board and power board.



Turn over the power board and main board; remove the cables.



#### 7) Remove the speaker

Pull at the foot of the speaker strongly as follow picture.



#### 8) Remove the panel

Note: Be course the panel is easy to broken, when we remove the panel, we should hold the iron on the panel edge use two hands at the same time, and should avoid touching the panel surface.



9) Unscrew the screws and remove the cover to remove the key board and daughter board from bezel.



### Assembly

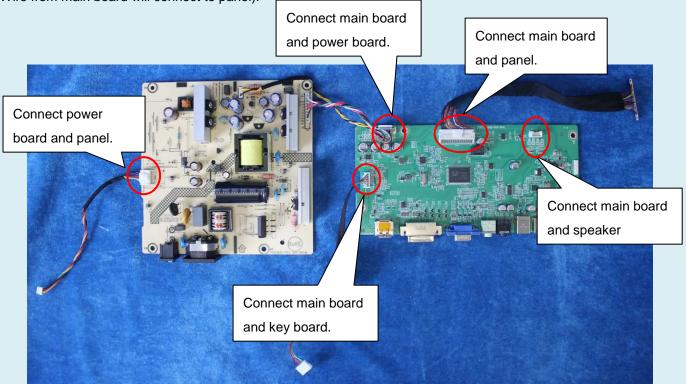
#### 1) Assemble the speaker on the main frame

Put at the foot of the speaker strongly. The wire of the speaker will be traversed from the middle hole as follow picture. The wire will connect main board and speaker.



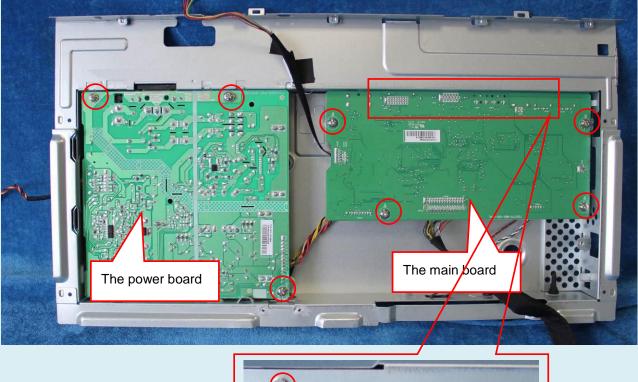
#### 2) Assemble the wires

Assemble the wire (the power board to main board), the wire (speaker to main board) and LVDS cables (the Wire from main board will connect to panel).



## 3) Assemble the main board and power board on the main frame.

Connect main board and power board; Lock the main board and power board on the mainframe.





4) Assemble the AC-COVER.

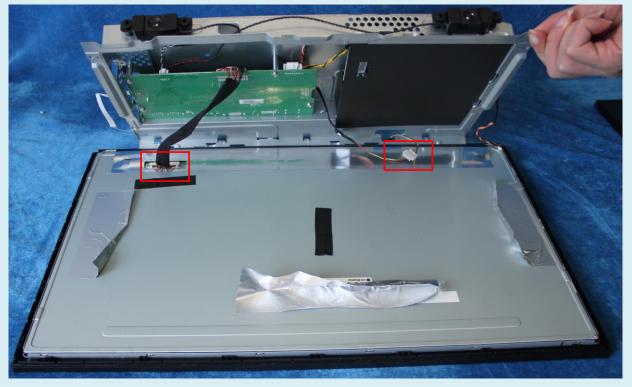


# 5) Assemble the panel on the bezel.

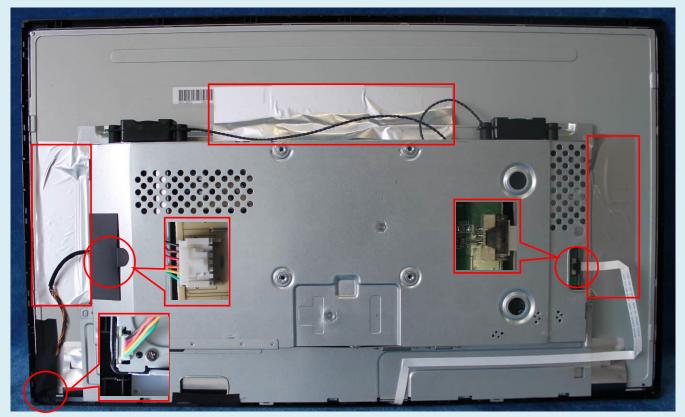


#### 6) Assemble the main frame.

Connect the LVDS cable, key board cable and past the tapes.



Turn over the mainframe; connect the cables; Stick the black rubberized fabric and aluminum foil and Stick the black rubberized fabric and aluminum foil.



### 7) Assemble the stand.

Lock the screws on the rear cover.

	HARDON ACCOUNTS AND ACCOUNTS
-	

### 8) Assemble the stand.

Push the stand to the rear cover.



# Troubleshooting

#### Frequently asked questions (FAQ)

#### ⑦ The image is blurred:

Read the instructions on the link "Adjusting the Screen Resolution" on the CD, and then select the correct resolution, refresh rate and make adjustments based on these instructions.

### How do you use a VGA extension cable?

Remove the extension cable for the test. Is the image now in focus? If not, optimize the image by working through the instructions in the "Adjusting the refresh rate" section on the link "Adjusting the Screen Resolution". It is normal for blurring to occur due to conduction losses in extension cables. You can minimize these losses by using an extension cable with better conduction quality or with a built-in booster.

Obes the blurring only occur at resolutions lower than the native (maximum) resolution?

C Read the instructions on the link "Adjusting the Screen Resolution" on the CD. Select the native resolution.

## Pixel errors can be seen:

- C One of several pixels is permanently black, one or more pixels are permanently white, one or more pixels are permanently red, green, blue or another color.
  - Clean the LCD screen.
  - Cycle power on-off.
  - These pixels are permanently on or off and that is a natural defect occurs in LCD technology.

## ⑦ The image has a faulty coloration:

It has a yellow, blue or pink appearance.

Go to Picture and Reset Color, and then choose YES to reset the color settings to the factory defaults. If the image is still not correct and the OSD also has faulty coloration, this means one of the three primary colors is missing in the signal input. Now check the signal cable connectors. If any pin is bent or broken off, please contact your dealer to get necessary support.

# No image can be seen:

Is the prompt on the display illuminated in green?

If the LED is illuminated in green and there is a message "Out of Range" on the screen, this means you are using a display mode that this monitor does not support, please change the setting to one of the supported mode. Please read the "**Preset display modes**" section from the link **"Adjusting the Screen Resolution**".

### Paint shadow from the static image displayed is visible on the screen:

- Activate the power management function to let your computer and monitor go into a low power "sleep" mode when not actively in use.
  - Use a screensaver to prevent the occurrence of image retention.

#### Is the prompt on the display illuminated in orange?

If the LED is illuminated in orange, the power management mode is active. Press any button on the computer

keyboard or move the mouse. If that does not help, check the signal cable connectors. If any pin is bent or broken off, please contact your dealer to get necessary support.

# Is the prompt on the display not illuminated at all?

Check the power supply mains socket, the external power supply and the mains switch.

#### ⑦ The image is distorted, flashes or flickers:

Read the instructions on the link "Adjusting the Screen Resolution" on the CD, and then select the correct resolution, refresh rate and make adjustments based on these instructions.

# You are running the monitor at its native resolution, but the image is still distorted.

Images from different input sources may appear distorted or stretched on the monitor running at its native resolution. To have the optimal display performance of each type of input sources, you can use the "Display Mode" function to set a proper aspect ratio for the input sources.

# ⑦ The image is displaced in one direction:

Read the instructions on the link "Adjusting the Screen Resolution" on the CD, and then select the correct resolution, refresh rate and make adjustments based on these instructions.

# The OSD controls are inaccessible:

To unlock the OSD controls when it is preset to be locked, press and hold any key for 10 second.

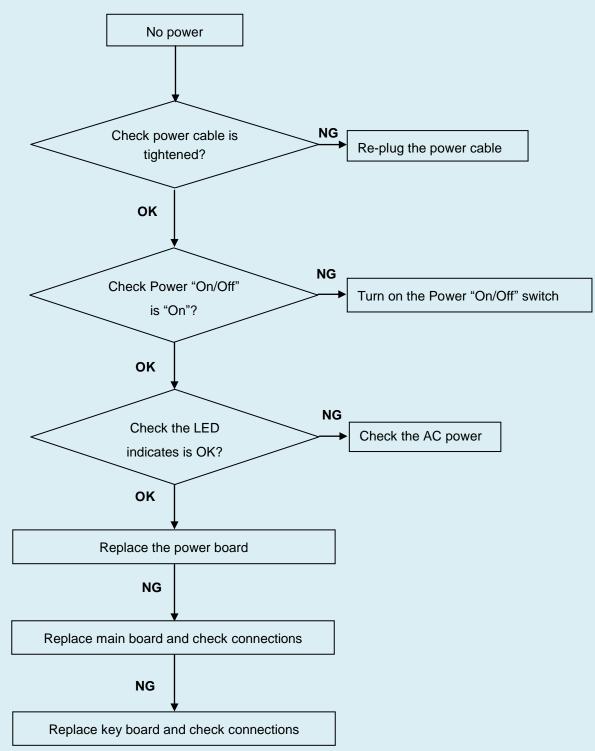
No sound can be heard from the connected external speakers (for models with speakers only).

- Remove your headphone (if the headphone is connected to the monitor).
  - Check whether the headphone jack is properly connected.
  - If the external speakers are USB-powered, check whether the USB connection is OK.
  - Increase the volume (volume may be muted or too low) on the external speakers.

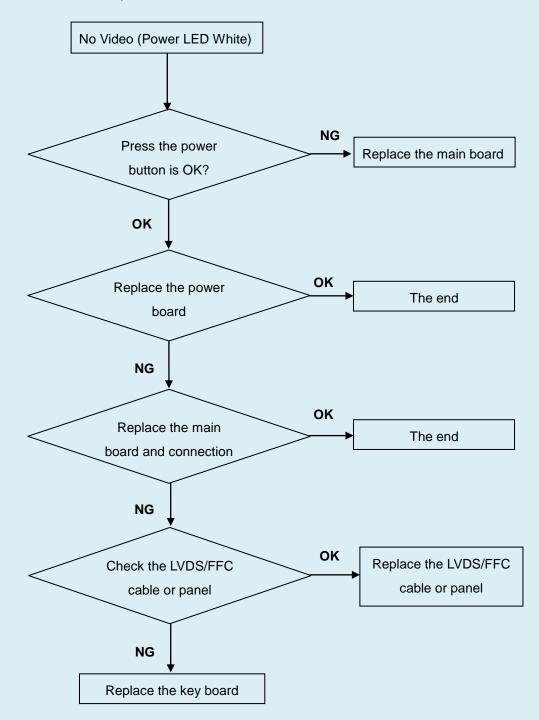
#### Need more help?

If your problems remain after checking this manual, please contact your place of purchase or e-mail us at: Support@BenQ.com

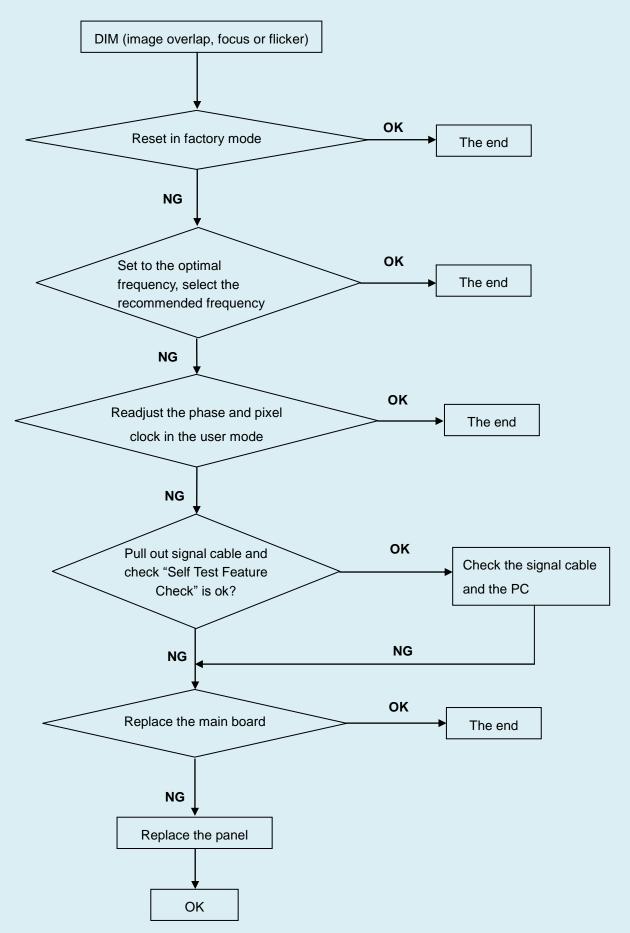




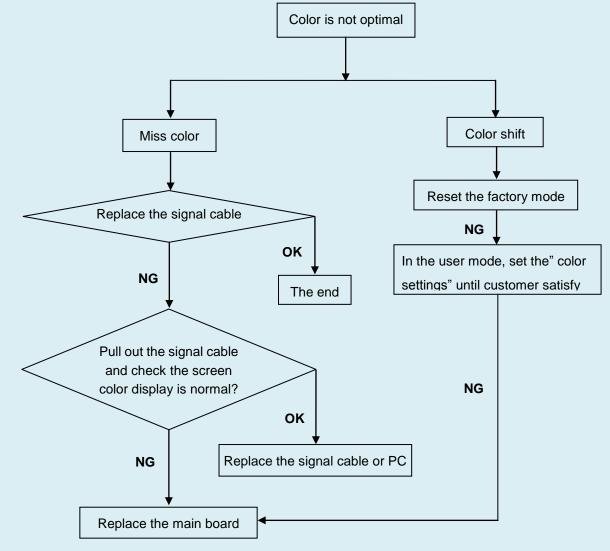
# No Video (Power LED White)



#### DIM



# Color is not optimal



Аррена		00.011			
Part NO.		Туре	Description	Quantity	Torque
Q01G6019	1	Q2*2.5	SCREW(FOR COVER_FUNCTION& LIGHT	4	6 ± 1kgf.cm
			SENSOR BOARD)		
0D1G1030	6120	D3*6	SCREW(FOR POWER BOARD & MAINFRAME)	2	6 ± 1kgf.cm
0M1G1740	6120	M4*6	SCREW(FOR POWER BOARD & MAINFRAME)	1	6 ± 1kgf.cm
0D1G1030	6120	D3*6	SCREW(FOR MAIN BOARD & MAINFRAME)	4	6 ± 1kgf.cm
0M1G3030	6120	M3*6	SCREW(FOR MAIN BOARD & MAINFRAME)	1	6 ± 1kgf.cm
0Q1G2030	6120	Q3*6	SCREW(FOR REAR_COVER/ STAND_BUTTON)	2	6 ± 1kgf.cm
Q01G6146	3	Q4*8	SCREW(FOR REAR_COVER &MAINFRAME)	4	12 ± 2kgf.cm

# Appendix 1 – Screw List / Torque