

**Service Manual for BenQ:** 

GL2040: D-SUB + DVI-D P/N: 9H.L6FLA.TBW GL2040M: D-SUB + DVI-D+AUDIO P/N: 9H.L5XLA.TBE (For EU) 9H.L5XLA.TBT (For Australia)



**Glossy Black Chassis Colors** 

# Product Service Manual – Level 1~2

Version: 1st Date:05-12-2011

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
I	
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	

NC	Not Connected
NVM	Non Volatile Memory: IC containing TV related data (for example, options)
0	
OSD	On Screen Display
Р	
PC	Personal Computer
PCB	Printed Circuit Board (or PWB)
R	
RC	Remote Control transmitter
RGB	Red, Green and Blue. The primary color signals for TV. By mixing levels of R, G
KGB	and B, all colors (Y/C) are
ROM	Read Only Memory
S	
SDA	Data signal on I <sup>2</sup> C bus
SDRAM	Synchronous DRAM
SW	Sub Woofer / Software
т	
THD	Total Harmonic Distortion
V	
VGA	Video Graphics Array
Y	
	Component video (Y= Luminance, Pb / Pr= Color difference signals B-Y and R-Y,
YPbPr	other amplitudes w.r.t. to YUV)
Y/C	Video related signals: Y consists of luminance signal, blanking level and sync; C
ť/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 (including audio amplifiers)
  - 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 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 / DVI) 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 GL2040&GL2040M offers numerous features and functions, for example:

- Panel Type: TN + WLED
- 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 12 million:1 (DCR), brightness 250nits
- MAX. resolution (1600x900)
- 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 76 Hz (absolutely flicker-free)
- Digital screen controller with microprocessor for storing 15 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 LCD monitor. This specification defines the requirements for the 20" MICROPROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15-pin VGA connector and 24-pin DVI-D connector, also supports 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 1600x900 pixels with an aspect ratio of 16:9 or 16:10. 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 URL: http://esupport.beng.com

## 5. Product Overview

## 5.1 Monitor Specifications

		GL2040 D-sub (include component source)+ DVI-D	GL2040M D-sub (include component source)+ DVI-D + speaker	
	Panel Type (TN / VA / IPS)	TN + WLED	TN + WLED	
	Panel Size	20"W	20"W	
	Display Area	442.8x249.075	442.8x249.075	
	Max. Resolution	1600x900	1600x900	
	Pixel Pitch	0.2768	0.2768	
	Brightness (Typ.)	250 cd/m²	250 cd/m²	
Panel / Display	Contrast Ratio (Typ.) / DCR (Min.)	12M:1 (DCR)	12M:1 (DCR)	
	Viewing Angle (H/V), $CR \ge 10$	170/160	170/160	
	Display Colors	16.7M	16.7M	
	Response Time	5ms (Tr+Tf)	5ms (Tr+Tf)	
	GtG response Time	N/A	N/A	
	MPRT	N/A	N/A	
	NTSC ratio	68%	68%	
	BenQ Senseye <sup>™</sup> Technology	Senseye 3	Senseye 3	
	BenQ Senseye <sup>™</sup> Preset Modes	6 Modes (by hotkey) : Standard / Movie / Game / Photo / s-RGB / ECO		
Video	Color Temperature Selection	Normal (6500°K) / Reddish (5800°K) / Bluish (9300°K) / User Mode	Normal (6500°K) / Reddish (5800°K) / Bluish (9300°K) / User Mode	
	Hor. Frequency (KHz)	30-83	30-83	
	Ver. Frequency (Hz)	50-76	50-76	
	Video Bandwidth (MHz)	205	205	
Audio	Speakers (built-in)	No	1W x 2	
	PC Video Input	D-sub + DVI-D	D-sub + DVI-D	
Input/Output	Audio line in	No	Yes	
	Earphone Jack	No	Yes	

	Voltage Rating	AC: 100~240V (Built-in)	AC: 100~240V (Built-in)	
Power Supply	Power-On Mode	<24W (max)	<27W (max)	
	Standby Mode	<0.3W (max)	<0.3W (max)	
	Power Off Mode	<0.3W (max)	<0.3W (max)	
		Glossy black, detail refer to	Glossy black, detail refer to	
	Chassis Colors (proposal A)	artwork	artwork	
		Brown Carton with at least C	Brown Carton with at least C flute	
	Carton	flute (A flute CTN for BQjp	(A flute CTN for BQjp shipments)	
		shipments)		
	Power LED	Green (ON)/ Amber (Standby)	Green (ON)/ Amber (Standby)	
Mechanical	Tilt (Up / Down)	20° ~ -5°	20° ~ -5°	
Design	VESA Wall Mount	N/A	N/A	
	Kensington Lock	Yes	Yes	
	Container Loading (foam	>1700	>1700	
	cushion 40')			
	Container Loading (foam cushion 20')	>850	>850	
		17 Languages (English /	17 Languages (English / Francais /	
		Francais / Deutsch / Italiano /	Deutsch / Italiano / Espanol /	
Multi longuogo		Espanol / Polish / Czech /	Polish / Czech / Hungarian /	
Multi-language Support	OSD	Hungarian / Serbo-croatian /	Serbo-croatian / Romanian /	
Support		Romanian / Netherlands /	Netherlands / Russian / Swedish /	
		Russian / Swedish / Protuguese /	Protuguese / Japanese / Chinese /	
		Japanese / Chinese / S-Chinese)	S-Chinese)	
	Vista	Vista Premium	Vista Premium	
Other feature	Win 7	Yes	Yes	
	sRGB Pro	Yes	Yes	
		VGA cable, power cord, warranty	VGA cable, power cord, warranty	
Accessories		card, quick start guide, CD	card, Audio cable, quick start	
		manual	guide, CD manual	
Regulation		Refer to the worksheet	Refer to the worksheet	
Approvals		"RFQ-Regulatory"	"RFQ-Regulatory"	

## 5.1.1 Certification

•••••	Certificat										
				Certification / Requirement							
Region	Shipment Country (Pls select)	Country	Request for Certification (Pls select)	Certification (Black is mandatory and blue is voluntary)	Regulatory Type (safety/safety & EMC/EMC/GP)	Applied by vendor	Applied by BenQ	BenQ Sample Reguest	Remark		
									Must		
									include		
									radiation		
		Australia,							test result		
	V	New	V	C-Tick	EMC	V			for		
		Zealand							frequency		
									above		
									1GHz		
									Including		
									BSMI		
									certificate,		
								BSMI			
								report and			
								BSMI			
									authorizati		
									on letter		
Asia-Pa									for BenQ		
cific	V Taiwan			BSMI					Corporatio		
					Safety & EMC	V			n if the		
					V		, ,				applicant
		Taiwan							of BSMI		
									certificate		
									is vendor		
								and			
									vendor		
									will		
									perform		
									the		
									clearance for BenQ.		
						Vender			One		
						provide			sample of		
				Green Mark	GP	relevant	V	1 set.	DVT is		
						information			required		
	ļ	<u> </u>		[		mornation			required		

						and report		a tr	or the ssigned hird-party est.
				Energy Label	GP	V		s D re fc a th	one ample of OVT is equired or the ssigned hird-party est.
				Carbon-Footpri nt Label	GP	Vender provide relevant information and report	V	v n re	rd party erificatio is equired rst.
			V	CE	Safety & EMC	V			
			V	EuP	GP	Vender provide relevant information and report			
Europea	V	Member countries of EU	V	WEEE	GP	Vender provide relevant information and report			
n Union			V	REACH	GP	Vender provide relevant information and report			
				GS	Safety	V			
			V	Bauart	Safety	V			
	V	Germany		Ergo	Safety	V			
			V	ISO9241-307	Safety	V			
			V	MPR II	Safety	V			
	V	Russia	V	GOST	Safety & EMC		V		
Eastern	17	Likroine	V	UkrSEPRO	Safety	V			
Europe	V	Ukraine	V	EMC DoC	EMC	V			

Internati onal	V	CB Scheme	V	СВ	Safety	V	I F i i	for CE DOC or PSE DOC or internation al certificatio n
Internati onal	V	Internatio nal	V	RoHS	GP	Vender provide relevant information and report		
Internati onal	V	All	V	Energy Star	GP	V		Including Test Report by EPA recognitio n of Accreditati on Laborator y and Certificate by EPA recognitio n of Certificati on Body (CB). Effective date: 2011-1-1. BenQ phase in date: 2010-12-0 6.

## 5.2 Panel Inspection Specification

### 1. Description

These inspection standards shall be applied to LCD Module supplied by CHI MEI Optoelectronics Corporation.

### 2. The environmental condition of inspection

The environmental condition and visual inspection shall be conducted as below.

- (1) Ambient temperature: 15~25°C
- (2) Humidity: 25~75 %RH
- (3) External appearance inspection shall be conducted by using a single 20W fluorescent lamp or equivalent illumination.
- (4) Panel visual inspection on the operation condition for cosmetic shall be conducted at the distance 35cm or more between the LCD module and eyes of inspector. And, the viewing angle shall be 90 degree to the front surface of display panel.

Ambient Illumination: 400 ~ 600 Lux for external appearance inspection

Ambient Illumination: 100 ~ 200 Lux for light on inspection

(5) Using method for ND Filter

When using ND Filter for judging Mura, placing ND Filter near Mura defect and get close to the surface of LCD Panel (its distance shall be 1~2cm between the surface of panel and ND Filter.) Don't touch the surface of polarizer to avoid scratching polarizer, and then move to the defect position to judge mura by view angle 90 degree (The viewing angle shall be 90 degree to the right top of Mura defect with panel.)

### 3. Classification of defects

Defects are classified two types, major defect and minor defect according to the defect. And, the definition of defects is classified as below.

(1) Major defect

Any defect may result in functional failure, or reduce the usability of product for its purpose. For example, electrical failure, deformation and etc.

(2) Minor defect

A defect that is not to reduce the usability of product for its intended purpose and un-uniformity, dot defect and etc.

The criteria on major and/or minor judgment will be according with the classification of defects.

### 4. Inspection Criteria

- Definition of dot defect induced from the panel inside a) the definition of dot: The size of a defective dot over 1/2 of whole dot is regarded as one defective dot.
- b) Bright dot: Dots appear bright and unchanged in size in which module is displaying under black pattern.
- c) Dark dot: Dots appear dark and unchanged in size in which module is displaying under pure red, green, blue picture.

2 dot adjacent (vertical) 2 dot adjacent (slant)

d) 2 dot adjacent = 1pair = 2 dots

2 dot adjacent

14

2 dot adjacent

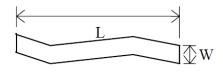
### (2) Display Inspection

	Items Accepta				
	Random	N≦2			
Bright dot	2 dots adjacent	N≦1			
	3 dots adjacent or more	N≦0			
	Random	N≦3			
Dark dot	2 dots adjacent	N≦1			
	3 dots adjacent or more	N≦0			
Distance	Minimum Distance Between Bright dots	L≧15mm			
Distance	Minimum Distance Between Dark dots	L≧15mm			
Total bright and dark dot N					
Display failure (V-line/H-line/Cross line etc.) Not allowable					
Mura	Mura Not visible through 8% ND filter at 50% gray pattern or judge by limit sample ifnecessary				

### (2) Appearance inspection

Item	Standards
Foreign Black/White/Bright Spot	$0.15 < D \le 0.5 \text{ mm}, N \le 4$
Foreign Black/White/Bright Lint	$0.05 \! < \! W \! \le \! 0.1 \text{ mm}, 0.5 \! < \! L \! \le \! 5.0 \text{ mm}, N \! \le \! 4$
Polarizer Scratches	$0.05 \! < \! W \! \le \! 0.1$ mm, $0.5 \! < \! L \! \le \! 10.0$ mm, $N \! \le \! 4$
Dent/Air Bubble	Avg. 0.15 <d≦0.5 mm,="" n≦4<="" td=""></d≦0.5>

$$\bigcup_{a}^{b} b$$
  
D=(a+b)/2



## W: width, L $\colon$ length

### 5. External Appearance Inspection Criteria

Item		Contents				
Screw	Parts moun permitted.	Parts mounting, incomplete assembly, deformation, oxidized, crooked or rusty is not permitted.				
CCFT cable	Cable not	continuous、Break-off 、Connector Burn-off /Break-off				
Metal frame	Scratch	Scratch *Noticeable scratch and exfoliation coating are not permitted. *The oxidized metal is not permitted.				
(Bezel)	Incomplete assembly is not permitted.					
	Scratch	The scratch which may cause a problem in practical use is not permitted.				
Backlight	Break-off	Breaking off is not permitted.				
	Crack	The crack is not permitted.				
Stain on Polarizer	The stain which can't be wiped off is not permitted.					
Tape/Label	Incorrect position, missed label is not permitted.					
Connector	Oxidized/rusty connector is not permitted.					
Outline size	Spec. out i	is not permitted.				

### 6. Classification of defects

Inspection Item	Criteria and Description	Defect type
Vertical line	Signal input, vertical line off or	major
Ventical line	irregular V-line appears	major
Horizontal line	Signal input, horizontal line off or	major
	irregular H-line appears	major
Cross line	Pattern signal input, a correct	major
Cross line	display is not obtained	major
No display	Signal input, display is dead	major
Imposulos dientos	Pattern signal input, a correct	maiar
Irregular display	display is not obtained	major
Dots defect	Exceed specified standards	minor
Scratch and Dent	Exceed aposition standards	minor
on polarizer	Exceed specified standards	
Foreign material	Exceed specified standards	minor
	Rust, deformation, irregular plating,	
External Annoaranaa	coating missing etc.	minor
External Appearance	A appearance defect that do not	minor
	affect function or performance	
Bezel claw	Bezel claw missing or not bent	major
Polarizer bubble	Exceed specified standards	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.

## F/W Upgrade SOP Upgrade by 715GT089-B/ C

1. Materials list



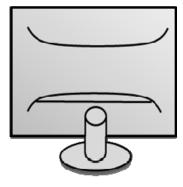
ISP JIG: 715GT089-B/C



VGA cable TPV P/N: 089G728 GAA DB



РС



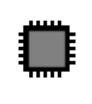
Monitor



ISP tool: V4.5.0.8.0



USB cable TPV P/N: 089G1758 X





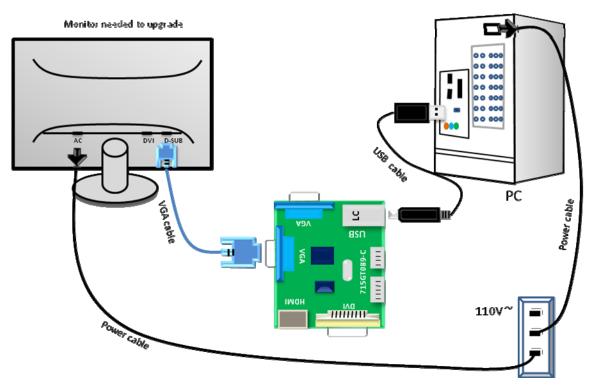
New F/W



TC100103(MSTAR) usb drive.rar

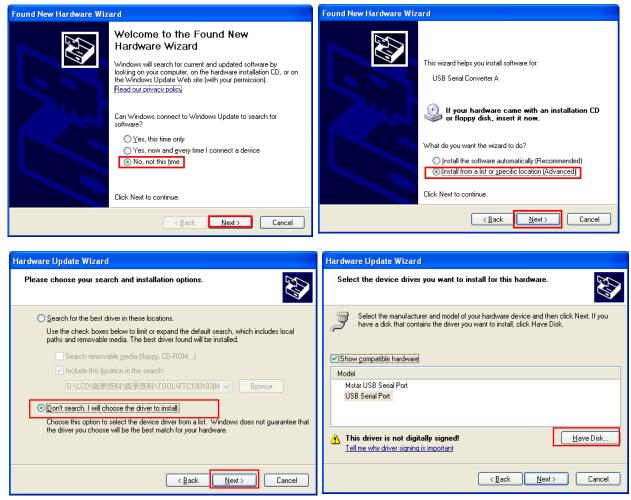
USB port driver

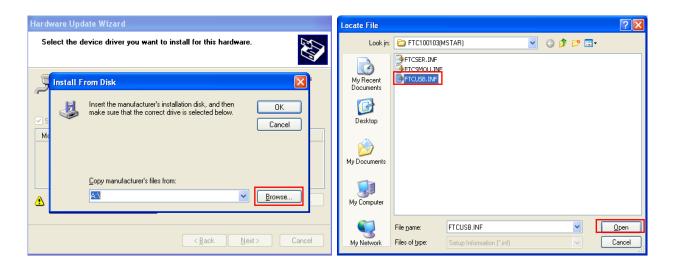
#### 2.Connection



#### 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

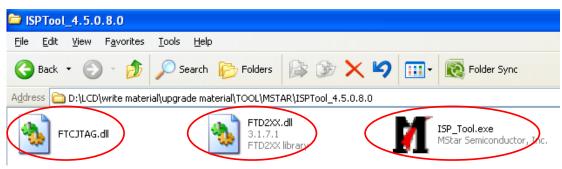


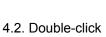


Hardware Installation	Hardware Update Wizard
	Please wait while the wizard installs the software
The software you are installing for this hardware:	
Mstar USB Serial Port	
has not passed Windows Logo testing to verify its compatibility with Windows XP. ( <u>Tell me why this testing is important</u> .)	Mstar USB Serial Port
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.	Setting a system restore point and backing up old files in case your system needs to be restored in the future.
	case your system needs to be restored in the future.
Continue Anyway	< <u>B</u> ack Next > Cancel
Found New Hardware Wizard	
Completing the Found New Hardware Wizard The wizard has finished installing the software for:	
	Click "Finish" to
	complete the
	USB serial port
Click Finish to close the wizard.	driver installation.
< Back Finish Cancel	

### 4. Install the ISP tool.

4.1.Copy the three files in one folder.





ISP\_Tool.exe MStar Semiconductor, Inc. to run the ISP tool.



4.3. Set the parameters in "Device" window. Tick "WP Pin pull to high during ISP".

M MStar ISP Utility V4.5.0.8.0		
	ato B. P. V.	Restore HDCP Erase Config
SST25VF010 SST25VF020 SST25LF040A SST25VF020B	ice Size:	<ul> <li>✓ WP Pin pull to high during ISP</li></ul>
WP Pin & CS Pin:		
Elapsed Time:	I2C : (92, B2)	Printer 18KHz

4.4. Connect to the monitor. Click "Connect". If the tool communicate with monitor successfully, the tool will detect the flash type of monitor.

MStar ISP Utility V4.5.0	.8.0						
Sevice Load Read	Auto	<b>.</b> P. V.	Restore	HDCP	<b>E</b> rase	Config	Connect Dis Con
SPI Read SR SST25VF512 SST25VF010 SST25VF020 SST25VF020B SST25VF040B SST25VF040B SST25VF064B SST25VF064C	Manufactu AMIC Device S 256K	lsp_tool			54 57 57	C New S	F WP Log Setting Below
WP Pin & CS Pin: Default							
Elapsed Time:	I2C : (9	92, B2)		USB 126	KHz		Status: Connecting

4.5. Load the F/W you want to upgrade.

1		(1)							-	
	👖 MStar ISP l	Jtility 🛄 0.	8.0						L	
	Device Lo	ad Read	<b>X</b> Auto	B. P. V.		P HDCP	🚄 Erase	Config	Connect	🥦 Dis Con
Ç	2) 🕞 Rea	d D:\LCD	∖My moni:	tor upgrade	≥ SOP\PHI	LIPS 2470	E3(NTK:V6	GA, DVI, HI	>MI)\PH_2	24' 🔻
	Open								?×	-
	Look jr	: 🔁 BENG GL	2040M(MS	T,VGA,DVI)		• +	🗈 📩 🗉	• (		Ē
		BENQ-GL20		U58PWHL-C	MI-M20003-	LA3-201104	14_V01_34	9C.bin		
	My Recent Documents	BENQ-GL20	40M-TSUM	U58PWHL-SI	EC-LTM200K	T10-201104	18_V01_349	9A.bin		
	Desktop									
	My Documents									
	My Documents								atu	is: Success
	My Computer									
								(	อ	
	My Network	File <u>n</u> ame:	BENG	Q-GL2040M-	ISUMU58P	VHL-CMI-M	2000 🔻			
	Places	Files of type	Binar					Car	ncel	
									10.	

### 4.6. Set the restore address.

(1)If the monitor has DVI or HDMI port, you need to set restore address for HDCP key to avoid re-program HDCP key. Benq GL2040M has DVI, please fill "0x03F000" and "4KB" for it.

M MStar	ISP Utility	V4.5.0.	8.0							
Sevice	😻 Load	💉 Read	Z Auto	الان B. P. V.	Restore		 Erase	Config	Sonnect	🥦 Dis Con
-	This page set the Restore Data. Tool read back the data stored at specific address before chip erase. And merge this data to firmware when ISP processing.									
	I Resto	ore Enat	ble	0x03F	F000	-	4KB		•	
WP Pin & CS	Pin: Default									
Elapsed Tim	e:		I2C :	(92, B2)		USB 126	<hz< th=""><th>C</th><th>ionnect Statu</th><th>is: Success</th></hz<>	C	ionnect Statu	is: Success

(2)If monitor hasn't DVI or HDMI port, it isn't necessary to tick "Restore Enable".

📕 MStar	ISP Utilit	y V4.5.0	8.0							
Sevice	Load	💉 Read	Z Auto	B. P. V.	Restore		 Erase	Config	Connect	👏 Dis Con
-	Fool read	back the		ed at spec	<b>ata</b> . cific addre SP proces		chip eras	e.		
2	<b>□</b> Rest	ore Ena	ble	0x034	1000	Y	4KB		T	
WP Pin & CS	Pin: Defaul	t								
Elapsed Time	e:		I2C :	(92, B2)		Printer 2	BKHz		Ionnect Statu	is: Success

4.7. Set parameter in "Auto" window. If you have set "Restore address", please tick "Restore Data".

M MStar ISP Utility V4.5.0.8.0									
	to B. P. V. Restore	HDCP Erase	Config	<b>e</b> Connect	🥦 Dis Con				
	Src: D:\LCD\My monitor upgrade SOP\BENG GL2040M(MST,VGA,DVI)\BENQ-GL2040M-TSUMU58PWHL-CMI-M20003-LA3-2								
Checksum : 0x349C	Ney #. 1	Start time: 15:39:49 Program File Ready !! Restore Message : Re			~				
	Verify Exit ISP	User Break Processing Program File Ready !!	) !!!						
File Area	512 KByte 2	Run			<ul> <li>▼</li> </ul>				
C Partial Erase Setup		ase shift at 0x000	0000						
WP Pin & CS Pin: Default Elapsed Time:	Program buffer is empty. If I2C : (92, B2)	USB 78KHz		rst. Ionnect Statu	s: Success				

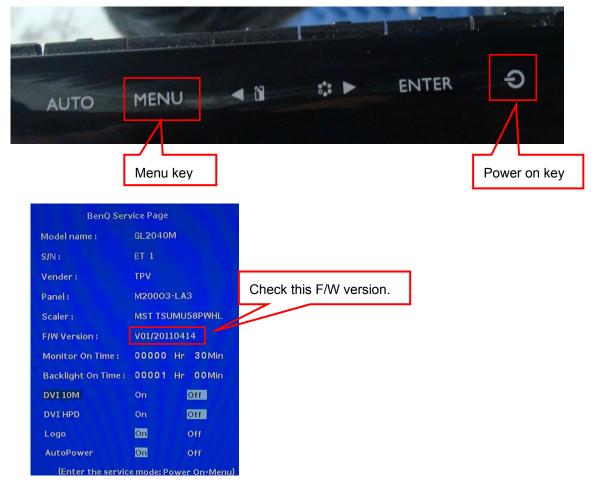
4.8.Processing of upgrade. After clicking "Run", the tool start to program. It is forbided to power off monitor or switch off connection during programming.

M MStar ISP Utility V4.5.0.8.	)		
Sevice Load Read	Auto B. P. V. Restore	HDCP Erase	Config Connect Dis Con
	P\BENG GL2040M(MST,VGA, Blank	DVI)\BENQ-GL2040M-T	SUMU58PWHL-CMI-M20003-LA3-2
Checksum : 0x349C	Program Normal -	Start time: 15:55:13 Program File Ready !! Restore Message : Rear Erase Message : Erasing	
✓ Erase Device     ✓ All Chip	Verify Exit ISP	Erase OK. Blank Message : Blankir	
© File Area © Erase Area □ Fire	ype: SPI ▼   512 KBytes	Stop	
C Partial Erase	P Ba	use shift at 0x0000	00
WP Pin & CS Pin: Default Elapsed Time:	Program buffer is empty. If I2C : (92, B2)	there is WP table, pleas USB 78KHz	e read file first. Flash Status: FC

4.9. Successful upgrade. When upgrade successful, there will be green Pass letter appearing.

MStar ISP Utility V4.5.0.	8.0						
Sevice Load Read	Auto B. P. V. Restor		ig Connect Dis Con				
Src: D:\LCD\My monitor upgrade	SOP\BENG GL2040M(MST,VG/	A,DVI)\BENQ-GL2040M-TSUMU5	3PWHL-CMI-M20003-LA3-2				
🗖 ReConnect	🔽 Blank						
🔽 Read File	HDCP Key						
Checksum : 0x349C	Key #:1	Blank Message : Blanking Blank OK.					
🔽 Restore Data	Restore Data Program Normal V Program Message : Programming						
	Verify	Program OK. Verify Message : Verifying					
🔽 Erase Device	🔽 Exit ISP	Verify OK. End time: 15:57:00					
C All Chip	Type: SPI 🔹		~				
File Area	,						
🔿 Erase Area 🛛 🗌	First 512 KBytes	Run					
O Partial Erase	etup 🗖 🖬	ase shift at 0x000000	Pass				
WP Pin & CS Pin: Default	Program buffer is empty. I	f there is WP table, please read fil	e first.				
Elapsed Time:	I2C : (92, B2)	USB 78KHz	Flash Status: FC				

- 5. Check the FW version after upgrade. (Take below figure as an instance)
  - (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 factory menu.



(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.

	Ŀð	œ <b>i</b>		
SYSTEM		Mode:	Standard	
OSD Settings				
DDC/CI				
Auto Power O	ff		OFF	
Information				
Reset All			GNUEÐ	
Move	(ENTER) Se	lect (	MENUExit	
				Λ
CAUTION				
^	Dente			
	Reset All	Settings '	?	
<u></u>	YES		NO	

### 6. Troubleshooting.

6.1. Can't Entry ISP Mode!!

📕 MStar	ISP Utility	y V4.5.0.	8.0							
Sevice	S Load	💙 Read	<mark>72</mark> Auto	🤣 В. Р. V.	Restore		 Erase	Config	<b>e</b> Connect	🥦 Dis Con
Src: C:\D	ocuments ar	nd Settings'	yuanxian.w	u\Desktop\	BENQ G194	A(NTK,VGA	.)\BenQ-G94	IA-TSUMU	18NWL5-LG	LM190WX1
🔽 Re	Connect		🔽 Blan	k						
Che	ad File ecksum : store Dat		<ul> <li>□ HDCl Key #</li> <li>□ Progr</li> <li>□ Verif</li> </ul>	an Norm		Start time: 16 Program File Can't Entry IS	Ready II	]		~
	ase Devic	e	🗹 Exit I	ISP						
	All Chip File Area		Type: S	PI	<u> </u>					
0	Erase Area		First 512	KBytes		Run				
0	Partial Era:	se s	etup		∏ Ba	se shift a	at 0x0000	00		
WP Pin & CS	Pin: Default	:								
Elapsed Time			I2C :	(92, B2)		Printer 1	8KHz	C	onnect Statu	s: Success

The methods:

(1) Check the cables and ISP JIG are connected fluently.

(2) Click the "Dis Con" and click "Connect" again.

(3) AC off the monitor for a while and retry it.

(4) Change advanced ISP tool.

(5)Change ISP JIG or cable.

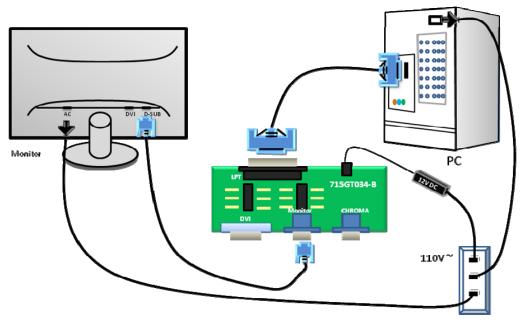
(6)Change PC.

## Upgrade by 715GT034-B

## 1. Materials list for uprade.

LPT cable(male to male)	VGA cable	12V DC adapt
		Benq
ISP jip: 715GT034-B	PC	monitor
PORT95NT.EXE	ISP_Tool.exe	BENQ-GL2040M-TSUMU5 BPWHL-CMI-M20003-LA 3-20110414_V01_349C. bin
LPT port driver	ISP tool: V4.5.0.8.0	New F/W

### 2. Connection



### 2.1. Monitor AC ON as fig2.



Fig2

3. Install LPT driver.

3.1.

4.2.

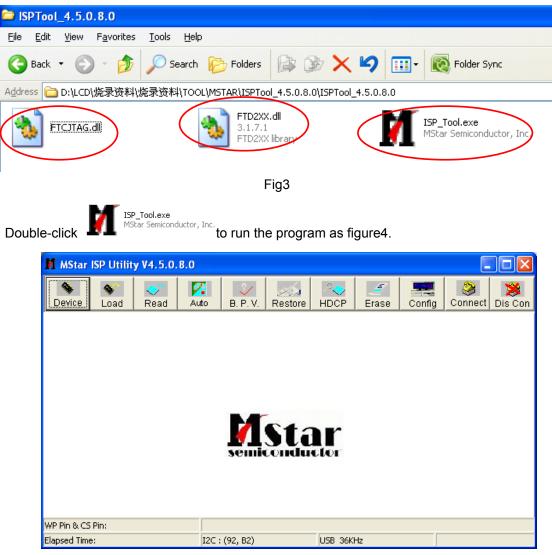


PORTYSNILEXE PackageForTheWeb Stub InstallShield Software Corpora... to install the driver.

3.2. Restart your PC after the LPT driver installation.

### 4. Install the ISP tool and run it.

4.1. Copy these three files to one folder as fig3 if you use the latest version tool.



4.3. Click the "Config" to set the parameter as figure5. Click "Apply" after selecting AOC in "JIG". Select "LPT1" and the Speed less than 50kHz. After all click "Auto Detect", if show "OK" which presents the communicate OK, you can do next.

Note Load Read Auto B. P. V. Restore HDCP Erase Config Connect Dis Con
Device Load Read Auto D.1.V. Restore FIDOT Flase Connig Connect Dis con
Use USB       Auto release USB       Use SWI2C         Communication Setting       I2C Speed Setting       © SDA in © SCL in         Port Type:       LPT1       Speed: 5       Image: Speed: 18 KHz         Base Addr:       0x378       Speed: 18 KHz       FIN:         Pin 1 switch UART/I2c       OK       SPI Setting       Reverse High         ISP Slave Address:       0x92       Serial Debug Slave Address:       0x82       Verify Repeat
WP Pin & C5 Pin:           Elapsed Time:         I2C : (92, B2)           Printer 18KHz

- Fig5 4.4. Click "Device" and tick "WP Pin pull to high during ISP" as fig6 and click "connect" later, will pop up the
  - flash type of the monitor as figure7.

M MStar ISP Utility V4.5.0.8.0	MStar ISP Utility V4.5.0.8.0									
	uto B. P. V.	Restore HDCP Erase Config Connect Dis Con								
SST25VF010 SST25VF020 SST25LF040A SST25LF040A	ice Size:	✓ WP Pin pull to high during ISP       ☐ WP Log         Status Register setting:          ● Previous in Flash       ○ New Setting Below         Status Register          Bit       7       6       5       4       3       2       1       0         □       □       □       □       □       □       □       □       □         Bit       7       6       5       4       3       2       1       0         □       □       □       □       □       □       □       □       □         Register Setting Value:00       □       □       □       □       □       □       □								
WP Pin & CS Pin: Elapsed Time:	I2C : (92, B2)	Printer 18KHz								

Fig6

M MStar ISP Utility V4.5.0.8.0					_	
	uto	Restore	Erase	Config	(2) Connect	🧏 Dis Con
SST25VF010 SST25VF020 SST25VF020B SST25VF040B SST25VF040B SST25VF080B SST25VF016B SST25VF032B SST25VF064C V	ice Size: K	✓ WP Pin pull Status Registe ● Previous in Status Registe Bit 7 6 Isp_tool Device Type is I OK	er setting: n Flash er 5 4 XX25L2026	C New Se	□ WP Lo tting Below □ \_ \_ \_ Value:00	)g
Elapsed Time:	I2C : (92, B2)	Printer	18KHz			

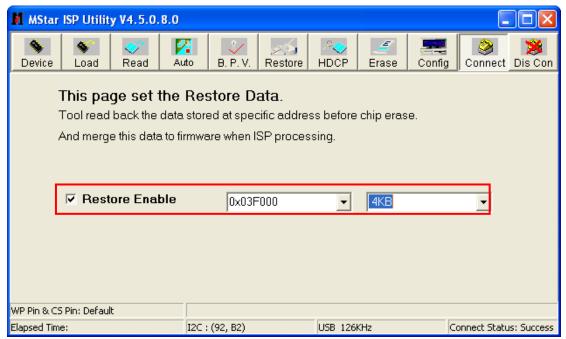
Fig7

4.5. Click "Read" to load the FW you need to upgrade as figure8.

MStar ISP U	ility V4.5.0.	8.0						
Sevice Loa	d Read	Auto B. P. V	Restore	HDCP	 Erase	Config	Sonnect	Dis Con
🖻 Read	D:\LCD'	∙ ∖My monitor upgro	ude SOP\PH:	ILIPS 247	E3(NTK;V	SA, DVI, HI	DMI)\PH_	24 🗸
Open							? 🛛	_
Look <u>i</u> n:	🗀 BENG GL	2040M(MST,VGA,DV	4)	•	🗈 💣 🗉		FF	Ŧ
	BENO-GL204	10 40M-TSUMU58PWHL	-CMI-M20003	-LA3-201104	414 VO1 34	9C bin		
My Recent Documents		4UM-TSUMU58PWHL						
Desktop								
6								
My Documents							at	us: Success
My Computer								
My Network Places	File <u>n</u> ame:	BENQ-GL2040	M-TSUMU58P	WHL-CMI-M	200C 🔻	<u> </u>	pen	
11000	Files of <u>type</u> :	Binary File			•	Ca	ncel	

Fig8

4.6. Set the restore address for saving HDCP key as below.



4.7. Click "Auto" and set the parameters and so on, later click "Run" to start programming as figure9. Because monitor has not DVI or HDMI port, so it isn't necessary to set "Restore" item.

M MStar ISP Utility V4.5.0.8.0										
Sevice	S Load	🍼 Read	Muto	<b>B</b> . P. V.	Restore		 Erase	Config	<b>e</b> Connect	🥦 Dis Con
□ Re	CD\My monito	r upgrade	SOP\BEN	k	(MST,VGA,E	)VI)\BENQ+	GL2040M-T	SUMU58PV	/HL-CMI-M2	0003-LA3-2
Сһ	ecksum : 0: store Data		Key ‡	tan Norm		Program File	Ready‼			
C	ase Device All Chip		☑ Exit Type:		•					~
0	File Area Erase Area Partial Erase		First 512 etup	KBytes	🗾 🖾	Run se shift a	at 0x0000	00		]
WP Pin & CS Elapsed Tim	5 Pin: Default e:		I2C	: (92, B2)		Printer 2	1KHz			

4.8. The process after click "run" lasts about 2 munites. During the process don't cut off the connection and click "Stop".

ener etep :									
M MStar ISP Utility V4.5.0.8.0									
Sevice Load Read	Auto B. P. V.	Restore HDCP	Erase Config	Connect Di	🎉 s Con				
Src: D:\LCD\My monitor upgrade SOP\BENG GL2040M(MST,VGA,DVI)\BENQ-GL2040M-TSUMU58PWHL-CMI-M20003-LA3-2									
🔲 ReConnect	🔽 Blank								
<ul> <li>✓ Read File Checksum : 0x349C</li> <li>✓ Restore Data</li> <li>✓ Erase Device</li> <li>○ All Chip</li> </ul>	<ul> <li>HDCP Key Key #:1</li> <li>✓ Program Norm</li> <li>✓ Verify</li> <li>✓ Exit ISP</li> <li>Type: SPI</li> </ul>	Erase Mess. Erase OK.			~				
C D C L D	First 512 KBytes	Base shift	at 0x000000						
Elapsed Time:	I2C : (92, B2)	USB 252	KHz F	Flash Status: FC					

Fig10

4.9. When appears the below message and green PASS as fig11, the program process is finished.

📕 MStar	ISP Utilit	y V4.5.0.8	3.0							
Sevice	💊 🔪 Load	💉 Read	🔀 Auto	<b>.</b> P. V.	Restore	P HDCP	 Erase	Config	<b>e</b> Connect	🥦 Dis Con
	-				(MST,VGA,E	OVI)\BENQ+	GL2040M-T	SUMU58PV	VHL-CMI-M2	0003-LA3-21
	Connect ad File		☑ Blani	_	_					
	ecksum :		Key #			Blank Messa Blank OK.	-	-		^
♥ Re	store Da		✓ Progr ✓ Progr ✓ Verif	ram ∣Norm ÿ		Program Me: Program OK. Verify Messa		-		
🗹 Er	ase Devie	e	Z Exit	ISP		Verify OK. End time: 8:1	39:58	-		≡
	All Chip File Area		Type: S	SPI	•					
	Erase Area	a 🗆 F	irst 512	KBytes		Run				]
0	Partial Era	ise Se	etup		🗆 Ва	se shift a	at 0x0000	00	Pass	
WP Pin & CS	Pin: Defaul	t								
Elapsed Tim	e:		I2C :	(92, B2)		USB 252	KHz	F	lash Status: I	=c

### 5. Check the FW version after upgrade. (Take below figure as an instance)

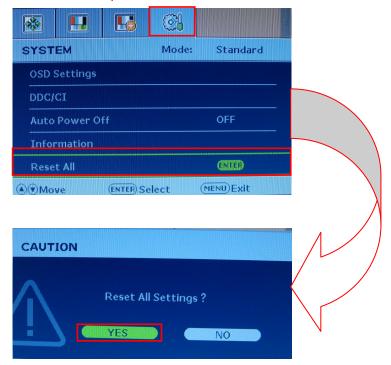
(1)Connect signal source and power cable to monitor and DC off it.

(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 factory menu.

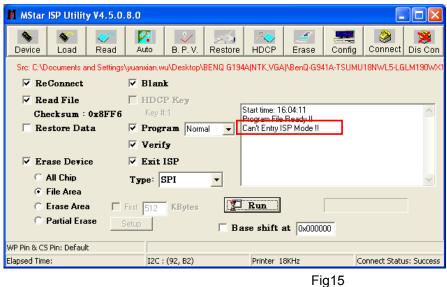


(3)If the version is right, please do factory reset in user menu as below, or re-upgrade F/W as the above steps. The reset will turn off burn in mode.



### 5. Troubleshooting.

5.1. When click the "run", but can't entry ISP mode as fig15.



5.2. The way to cure the "Can't Entry ISP Mode!" issue.

(1) Click the "Dis Con" and the click "Connect" again to connect with monitor.

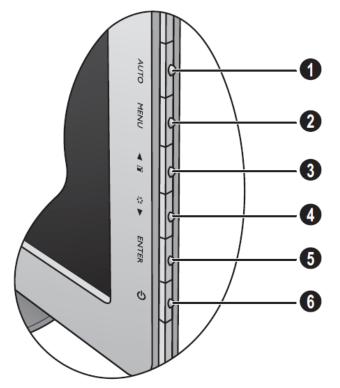
MStar ISP Utility ¥4.5.0.8.0								
Sevice Load Read	Auto B. P. V.	Restore HDC		Config	Connect	🥦 Dis Cor		
Src: C:\Documents and Settings	\yuanxian.wu\Desktop\	BENQ G194A(NTK	VGA)\BenQ-G9	41A-TSUMU	18NWL5-LG	LM190W		
ReConnect	🔽 Blank							
🔽 Read File	🗖 HDCP Key							
Checksum : 0x8FF6	Key #:1		e: 16:57:06 File Ready !!			~		
🗖 Restore Data	Program Norm		try ISP Mode !!					
🗖 Multi Flashes	Verify							
🔽 Erase Device	🔽 Exit ISP							
C All Chip	Type: SPI	→ Isp_	tool	$\mathbf{X}$		~		
File Area	,	Pau	ice Type is MX25	1 2026				
C Erase Area 🛛 🗌	First 512 KBytes		се туре із міхиз	DL2U20				
C Partial Erase	Setup	🗆 Ba:	OK					
VP Pin & CS Pin: Default								
lapsed Time:	I2C : (92, B2)	Print	er 18KHz	St	tatus: Conne	cting		



- (2) Check the cable and ISP jip are connected fluently.
- (3) Some time the communication fail with monitor will result monitor power key LED dark, so please AC off the monitor for a while. And AC on to retry.
- 5.3. Restart the monitor after successful upgrade. And the upgrade process is finished finally after above all steps.

## Adjustment / Alignment Procedure GL2040

**The Control Panel** 



- 1. AUTO: Adjusts vertical position, phase, horizontal position and pixel clock automatically.
- 2. MENU key: Activates OSD main menu and return to the previous menu or exit OSD.
- 3. ▲ /Display Mode key: For Up/Increase adjustment. The key is the hot key for Display Mode.
- 4. ▼ /Mode key: For Down/Decrease adjustment. The key is the hot key for Mode.
- 5. ENTER key: Enters sub menus and select items. For models with DVI inputs, this key is also the hot key for Input.6. Power: Turns the power on or off.

 $\bigcirc$  OSD = On Screen Display.

The hot keys will display a graduated scale for adjusting the value of that setting, and will only operate while the OSD menu is not currently displaying. Hot key displays will disappear after a few seconds of no key activity.

### Hot key mode

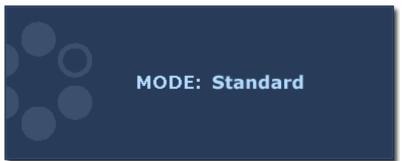
The monitor keys perform as hot keys to provide direct access to particular functions whenever the menu isn't currently displaying on-screen.

### **Display Mode hot key**



Press the ▲ key continually to switch between **Full** and **Aspect**. The setting will take effect immediately.

### Mode hot key



Press the ▼ key continually to switch between the 6 modes for the main window, including **Standard**, **Movie**, **Game**, **Photo**, **sRGB**, and **Eco**. The setting will take effect immediately.

### Input hot key (not available for analog-only models)



Press the **ENTER** key to toggle between different PC video signal inputs that may be connected to your monitor. The setting will take effect immediately. The setting will take effect immediately. The setting will take effect immediately.

### Main Menu Mode

You can use the OSD (On Screen Display) menu to adjust all the settings on your monitor. Available menu options may vary depending on the input sources, functions and settings.

Press the **MENU** key to display the following main OSD menu.



There are four main OSD menus:

- 1. Display
- 2. Picture
- 3. Picture Advanced
- 4. System

Use the  $\blacktriangle$  (up) or  $\blacktriangledown$  (down) keys to highlight a menu item, and press the **ENTER** key to enter the Menu item settings.

### **Display Menu**

Available menu options may vary depending on the input sources, functions and settings.

DISPLAY	MODE: Standard						
Auto Adjustment							
H. Position	10						
V. Position	12						
Pixel Clock	1						
Phase	12						
Move ENTER Select MENU Exit							

- 1. Press the **MENU** key to display the main menu.
- 2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **DISPLAY** and then press the **ENTER** key to enter the menu.
- 3. Press the  $\blacktriangle$  or  $\checkmark$  keys to move the highlight to a menu item and then press the **ENTER** key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

ltem	Function	Operation	Range
Auto Adjustment	Optimizes and adjusts the screen settings automatically for you. The <b>AUTO</b> key is a 'hot key' for this function. When you connect a digital video output using a digital (DVI) cable to your monitor, the <b>AUTO</b> key and the <b>Auto</b> <b>Adjustment</b> function will be disabled.	Press the <b>ENTER</b> key to select this option and make adjustment.	
H. Position	Adjusts the horizontal position of the screen image.		0 to 100
V. Position	Adjusts the vertical position of the screen image.	Press ▲ or ▼ keys to adjust the	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.	value.	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

#### **Picture Menu**

	0	
PICTURE		MODE: Standard
Brightness	12	
Contrast	10	
Sharpness	1	
Gamma	2.2	
Color		
Move (	ENTER) Se	lect MENU Back

1. Press the **MENU** key to display the main menu.

2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **PICTURE** and then press the **ENTER** key to enter the menu.

3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the **ENTER** key to select that item.

4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.

5. To return to the previous menu, press the **MENU** button.

Item	Function	Operation	Range
Brightness	Adjusts the balance between light and dark shades.	Press the ▲ key to increase the brightness and press the ▼ key to decrease the brightness.	0 to 100
Contrast	Adjusts the degree of difference between darkness and lightness.	Press the ▲ key to increase the contrast and press the ▼ key to decrease the contrast.	0 to 100
Sharpness	Adjusts the clarity and visibility of the edges of the subjects in the image.	Press the ▲ key to improve the crispness of the display and press the ▼ key to have softness effect on the display.	1 to 5
Gamma	Adjusts the tone luminance. The default value is 2.2 (the standard value for Windows).	Press the ▲ key to increase the gamma value (Tone becomes darker) and press the ▼ key to decrease the gamma value (tone becomes lighter).	1.8 ~ 2.6
Color - Press	ENTER to enter the Color menu.		
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.	Press ▲ or ▼ keys to select this option.	
Reddish	Applies a warm tint to the image and is factory pre-set to the news print standard white color.		
User Mode	Tailors the image color tint. The	Press ▲ or ▼ keys and the ENTER key to	• Red

	blend of the Red, Green and Blue	select Red, Green, or Blue. Then use the	(0 to 100)
	primary colors can be altered to	▲ or ▼ keys to make the color	• Green
	change the color tint of the image.	adjustments.	(0 to 100)
	Decreasing one or more of the colors		Blue
	will reduce their respective influence		(0 to 100)
	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.)		
	Hue: Adjusts the degree of how we	Press A or W keys to adjust the value	0 to 100
	perceive colors.	Press ▲ or ▼ keys to adjust the value.	0 to 100
	Saturation: Adjusts the purity degree	Proce A or V kove to adjust the value	0 to 100
	of colors.	Press ▲ or ▼ keys to adjust the value.	
Reset Color	Resets the User Mode custom color	Droop A or W kows to adjust the actings	YES
Reset Color	settings to the factory defaults.	Press ▲ or ▼ keys to adjust the settings.	NO
Press MENU	to leave the Color menu.		

### Picture Advanced Menu

Available menu options may vary depending on the input sources, functions and settings.



1. Press the **MENU** key to display the main menu.

2. Press the ▲ or ▼ keys to select **PICTURE ADVANCED** and then press the ENTER key to enter the menu.

3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the ENTER key to select that item.

- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

ltem	Function	Operation	Range
Picture Mode	Selects a picture mode that best suits the type		Standard
	of images shown on the screen.		• Movie
	Standard - for basic PC application.	Press ▲ or ▼ keys to	• Game
	Movie - for viewing videos.	change the settings.	Photo
	Game - for playing video games.		• sRGB
	<ul> <li>Photo - for viewing still images.</li> </ul>		• Eco

<ul> <li>sRGB - for better color matching representation with the peripheral devices, such as printers, DSCs, etc.</li> <li>Eco - for saving electricity with low power consumption by providing minimum brightness for all running programs.</li> <li>Displays the preview of screen images under the selected mode from Picture Mode. The screen will be divided into two windows; the left window demonstrates images of Standard mode, while the right window presents the images under the specified mode.</li> <li>Dynamic Contrast</li> <li>The function is to automatically detect the distribution of an input visual signal, and then to create the optimal contrast.</li> <li>Press the ENTER key to select this option.</li> <li>Press the L or V keys to change the settings.</li> <li>When the signal source is from a DVI or D-sub source, and the input geometric distortion.</li> <li>Our 5- Press the L or V keys to change the settings.</li> <li>When the signal source is from a DVI or D-sub source, and the input image is of non-wide</li> <li>Display Mode</li> <li>Pisplay Mode</li> <li>Full - Scales the input image to fill the screen. I for 16: 90 r 16: 10 (depending on the purchased model) lo be displayed without geometric distortion.</li> <li>Overscan - Slightly enlarges the input image. I for 10: 69: or 16: 10 (depending on the purchased model) aspect images.</li> <li>Full - Scales the input image to fill the screen. I for 10: mages will fill the screen horizontally while 4:3 or 5:4 images will fill the screen vertically.</li> <li>To find out the monitor aspect ratio of the purchased model, liese check the Specification document on the provided CD.</li> <li>Comporent) sources.</li> <li>Specification document on the provided CD.</li> <li>Comporent) sources.</li> <li>Overscan - 1 Full</li> <li>Specification document on the provided CD.</li> <li>Specification document on the provided CD.</li> <li>Specification document on the provided CD.</li></ul>		a DCD for botton calor motal in t		
as printers, DSCs, etc.       • Eco - for saving electricity with low power consumption by providing minimum brightness for all running programs.       Press ↓ or ▼ keys to change the settings.         Displays the preview of screen images under the selected mode from Picture Mode. The screen will be divided into two windows; the left images under the specified mode.       Press ▲ or ▼ keys to change the settings.       ON OFF         Dynamic Contrast       The function is to automatically detect the distribution of an input visual signal, and then to create the optimal contrast.       Press the ENTER key to select this option. Press the Å or ▼ keys to change the settings.       0 to 5         Dynamic Contrast       This feature is provided to allow aspect ratios other than 16:9 or 16:10 (depending on the purchased model) to be displayed without geometric distortion.       Vhen the signal source is from a DVI or D-sub source, and the input image.         Display Mode       • Fuil - Scales the input image to figher present around your image.       Press the Å or ▼ keys to change the settings.       Fuil + Scales the input image.         Display Mode       • Spect - The input image to displayed without geometric distortion filling as much of the display as possible.       Press the Å or ▼ keys to change the settings.       • Fuil + Scales the input image is displayed without geometric distortion filling as much of the display as possible.       Press the Å or ▼ keys to change the settings.       • Fuil + Scales the input image is displayed without geometric distortion filling as much of the display as possible.       • Specificatin document on the provided CD.       • Sec fill + Sor S i				
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• Aspect		Specification document on the provided CD.		<ul> <li>Overscan</li> </ul>
				• Full
Color Format Determines the color space (RGB or YUV) Press the ENTER key • RGB				Aspect
	Color Format	Determines the color space (RGB or YUV)	Press the ENTER key	• RGB

based on the following detected video signal:	to select this option.	• YUV
D-Sub (VGA) from PC:	Press the ▲ or ▼ keys	
The default Color Format is RGB.	to change the settings.	
D-Sub (Component) from a video device: The		
default Color Format is YUV.		
You might need to manually set the Color		
Format if colors shown on the monitor screen		
do not display properly.		
DVI (for models with DVI inputs): Color		
Format is automatically set to RGB.		

### System menu

Available menu options may vary depending on the input sources, functions and settings.

		0			
SYSTEM				MODE: Standa	ard
Input			•	DVI	•
OSD Settin	gs				
DDC/CI					
Auto Power	r off			OFF	
Information	1				
Reset All					
	Move (	ENTER) S	elect	MENU) E	xit

1. Press the **MENU** key to display the main menu.

- 2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **SYSTEM** and then press the **ENTER** key to enter the menu.
- 3. Press the  $\blacktriangle$  or  $\checkmark$  keys to move the highlight to a menu item and then press the **ENTER** key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

ltem	Function	Operation	Range
	Use this to change the input to that		
	appropriate to your video cable	Pross A or V kovs to shange the	• DVI
Input	connection type.	Press ▲ or ▼ keys to change the	• D-sub (VGA)
	Analog-only models do not	settings.	· D-Sub (VGA)
	have the Input function.		
OSD Settings -	Press ENTER to enter the OSD Setti	i <b>ngs</b> menu.	
		Press $\blacktriangle$ or $\blacksquare$ keys to change the	<ul> <li>English</li> </ul>
		settings.	French
		The language options	• German
Language	Sets the OSD menu Language.	displayed on your OSD may differ	<ul> <li>Italian</li> </ul>
		from those shown on the right,	<ul> <li>Spanish</li> </ul>
		depending on the product supplied	• Polish
		in your region.	<ul> <li>Japanese</li> </ul>

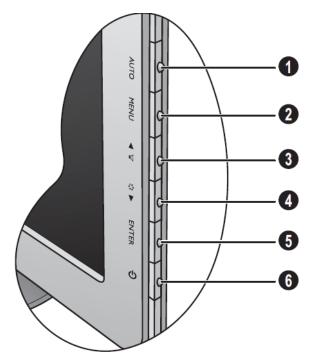
-	l	r	
			Czech
			<ul> <li>Traditional</li> </ul>
			Chinese
			<ul> <li>Hungarian</li> </ul>
			<ul> <li>Simplified</li> </ul>
			Chinese
			<ul> <li>Serbo-Croatian</li> </ul>
			Romanian
			Dutch
			• Russian
			<ul> <li>Swedish</li> </ul>
			<ul> <li>Portuguese</li> </ul>
H. Position	Adjusts the horizontal position of the OSD menu.		0 to 100
V. Position	Adjusts the vertical position of the OSD menu.	Press ▲ or ▼ keys to change the settings.	0 to 100
	Adjusts the display time of the OSD		5 / 10 / 15 / 20 /
Display Time	menu.		25 / 30 sec
		Press ▲ or ▼ keys to change the	
		settings.	
		To unlock the OSD controls	
		when the OSD is preset to be	
	Prevents all the monitor settings	locked, press and hold the	
	from being accidentally changed.	"MENU" key for 15 seconds to	YES
OSD Lock	When this function is activated, the	enter the "OSD Lock" option and	NO
	OSD controls and hotkey	make changes.	
	operations will be disabled.	Alternatively, you may use ▲ or ▼	
		keys to select "NO" in the "OSD	
		Lock" submenu from the "OSD	
		Settings" menu, and all OSD	
		controls will be accessible.	
Press MENU to	leave the OSD Settings menu.	1	<u> </u>
		Press the ENTER key to select	ON
DDC/CI*	Allows the monitor settings to be	this option. Press $\blacktriangle$ or $\blacktriangledown$ keys to	OFF
	set through the software on the PC.	change the settings.	
			• OFF
Auto Power off	Sets the time to power off the	Press the ENTER key to select	• 10min.
	monitor automatically in power	this option. Press the $\blacktriangle$ or $\blacktriangledown$ keys	• 20min.
	saving mode.	to change the settings.	• 30min.

			• Input
			Current
			Resolution
Information	Displays the current monitor		Optimum
Information	property settings.		Resolution
			(best with the
			monitor)
			Model Name
	Resets all mode, color and		VEO
Reset All	geometry settings to the factory	Press ▲ or ▼ keys to change the	YES
	default values.	settings.	NO

\*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.

# GL2040M The Control Panel



1. AUTO: Adjusts vertical position, phase, horizontal position and pixel clock automatically.

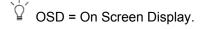
2. MENU key: Activates OSD main menu and return to the previous menu or exit OSD.

3. ▲ /Volume key: For Up/Increase adjustment. The key is the hot key for Volume.

4. ▼ /Mode key: For Down/Decrease adjustment. The key is the hot key for Mode.

5. ENTER key: Enters sub menus and select items. For models with DVI inputs, this key is also the hot key for Input.

6. **Power**: Turns the power on or off.



The hot-keys will display a graduated scale for adjusting the value of that setting, and will only operate while the OSD menu is not currently displaying. Hot-key displays will disappear after a few seconds of no key activity.

### Hot key mode

The monitor keys perform as hot keys to provide direct access to particular functions whenever the menu isn't currently displaying on-screen.

### Volume hot key



Press the  $\blacktriangle$  key to display the **Volume** indicators. Further press the  $\blacktriangle$  key will increase the volume, while the  $\blacktriangledown$  key will decrease the volume.



To Mute, press the Volume hot key for 3 seconds. To release Mute, press the Volume hot key for 3 more seconds.

## Mode hot key



Press the ▼ key continually to switch between the 6 modes for the main window, including **Standard**, **Movie**, **Game**, **Photo**, **sRGB**, and **Eco**. The setting will take effect immediately.

### Input hot key (not available for analog-only models)



Press the **ENTER** key to toggle between different PC video signal inputs that may be connected to your monitor. The setting will take effect immediately.

### Main Menu Mode

You can use the OSD (On Screen Display) menu to adjust all the settings on your monitor.

Press the **MENU** key to display the following main OSD menu.



There are five main OSD menus:

- 1. Display
- 2. Picture
- 3. Picture Advanced
- 4. Audio
- 5. System

Use the  $\blacktriangle$  (up) or  $\blacktriangledown$  (down) keys to highlight a menu item, and press the **ENTER** key to enter the Menu item settings.

#### **Display Menu**

DISPLAY	MODE: Standard
Auto Adjustment	
H. Position	10
V. Position	12
Pixel Clock	1
Phase	12
A T Move	ENTER Select MENU Exit

1. Press the **MENU** key to display the main menu.

- 2. Press the ▲ or ▼ keys to select **DISPLAY** and then press the **ENTER** key to enter the menu.
- 3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the ENTER key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

ltem	Function	Operation	Range
	Optimizes and adjusts the screen settings automatically for you.	Press the ENTER	
Auto	The <b>AUTO</b> key is a 'hot key' for this function.	key to select this	
Adjustment	When you connect a digital video output using a digital (DVI)	option and make	
Aujustment	cable to your monitor, the AUTO key and the Auto	adjustment.	
	Adjustment function will be disabled.		
H. Position	Adjusts the horizontal position of the screen image.		0 to 100
V. Position	Adjusts the vertical position of the screen image.	Press ▲ or ▼ keys to adjust the	0 to 100
Pixel Clock	Adjusts the pixel clock frequency timing to synchronize with the	value.	0.45 (100
	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		0 to 63
Filase	analog input video signal. Not applicable to a digital input signal.		0 10 03

#### **Picture Menu**



1. Press the **MENU** key to display the main menu.

- 2. Press the ▲ or ▼ keys to select **PICTURE** and then press the **ENTER** key to enter the menu.
- 3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the ENTER key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

Item	Function	Operation	Range
	Adjusts the balance between light	Press the ▲ key to increase the brightness	
Brightness	and dark shades.	and press the $\blacksquare$ key to decrease the	0 to 100
		brightness.	
	Adjusts the degree of difference	Press the $\blacktriangle$ key to increase the contrast	
Contrast	between darkness and lightness.	and press the $\blacksquare$ key to decrease the	0 to 100
		contrast.	
	Adjusts the clarity and visibility of the	Press the $\blacktriangle$ key to improve the crispness	
Sharpness	edges of the subjects in the image.	of the display and press the $ ebla$ key to have	1 to 5
		softness effect on the display.	
The abov	ve options for Brightness, Contrast, and	Sharpness are available only in the Standard	mode.
Gamma			
(available		Press the ▲ key to increase the gamma	
when the	Adjusts the tone luminance. The	value (Tone becomes darker) and press	
Picture	default value is 2.2 (the standard	the ▼ key to decrease the gamma value	1.8 ~ 2.6
Mode is set	value for Windows).	(tone becomes lighter).	
to Standard			
or Eco)			
Color - Pres	s ENTER to enter the Color menu.		
This Colo	or menu is available only in the Standard	d mode.	
	Allows video and still photographs to		
Normal	be viewed with natural coloring. This		
	is the factory default color.		
	Applies a cool tint to the image and is	Press $\blacktriangle$ or $\blacksquare$ keys to select this option.	
Bluish	factory pre-set to the PC industry		
	standard white color.		
	Applies a warm tint to the image and		
Reddish	is factory pre-set to the news print		
	standard white color.		
	Tailors the image color tint. The		
	blend of the Red, Green and Blue		
	primary colors can be altered to		• Red
	change the color tint of the image.	Press ▲ or ▼ keys and the ENTER key to	(0 to 100)
	Decreasing one or more of the colors	select <b>Red</b> , <b>Green</b> , or <b>Blue</b> . Then use the	• Green
User Mode	will reduce their respective influence	▲ or ▼ keys to make the color	(0 to 100)
	on the color tint of the image. (e.g. if	adjustments.	• Blue
	you reduce the Blue level the image	,	(0 to 100)
	will gradually take on a yellowish tint.		
	If you reduce Green, the image will		
	become a magenta tint.)		
	Hue: Adjusts the degree of how we	Press ▲ or ▼ keys to adjust the value.	0 to 100

	perceive colors.				
	Saturation: Adjusts the purity degree	Dress A or The keys to adjust the value	0 to 100		
	of colors.	Press ▲ or ▼ keys to adjust the value.			
	The above options for Hue and Sa	aturation are available only if the signal source is			
	Component Video.				
Reset	Resets the User Mode custom color	Droop A or V kows to shange the pattings	YES		
Color	settings to the factory defaults.	Press $\blacktriangle$ or $\blacktriangledown$ keys to change the settings.	NO		
Press MEN	J to leave the Color menu.				

### Picture Advanced Menu

PICTURE ADVAN	CED MODE: Standard			
Picture Mode	Standard			
Senseye Demo OFF				
Dynamic Contrast 5				
Display Mode				
Color Format YUV				
▲ 🛡 Move (	ENTER Select MENU Exit			

1. Press the **MENU** key to display the main menu.

- 2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **PICTURE ADVANCED** and then press the ENTER key to enter the menu.
- 3. Press the  $\blacktriangle$  or  $\checkmark$  keys to move the highlight to a menu item and then press the **ENTER** key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.

5. To return to the previous menu, press the **MENU** button.

Item	Function	Operation	Range
Picture Mode	<ul> <li>Selects a picture mode that best suits the type of images shown on the screen.</li> <li>Standard - for basic PC application.</li> <li>Movie - for viewing videos.</li> <li>Game - for playing video games.</li> <li>Photo - for viewing still images.</li> <li>sRGB - for better color matching representation with the peripheral devices, such as printers, DSCs, etc.</li> <li>Eco - for saving electricity with low power</li> </ul>	Press ▲ or ▼ keys to change the settings.	Standard     Movie     Game     Photo     sRGB     Eco
	consumption by providing minimum brightness for all running programs.		
Senseye Demo (available when the Picture Mode	Displays the preview of screen images under the selected mode from Picture Mode. The screen will be divided into two windows; the left	Press▲ or ▼ keys to change the settings.	ON OFF
is set to Movie,	window demonstrates images of Standard		

Game, or Photo)	mode, while the right window presents the		
Game, or Photo)	mode, while the right window presents the		
	images under the specified mode.		
Dynamic Contrast		Press the ENTER key	
(available when	The function is to automatically detect the	to select this option.	o
the Picture Mode	distribution of an input visual signal, and then to	Press ▲ or ▼ keys to	0 to 5
is set to Movie,	create the optimal contrast.	change the settings.	
Game, or Photo)			
			When the
	This feature is provided to allow aspect ratios		signal source
	other than 16:9 or 16:10 (depending on the		is from a DVI
	purchased model) to be displayed without		or D-Sub
	geometric distortion.		source, and
	Overscan – Slightly enlarges the input image.		the input
	Use this feature to hide annoying edge noise if		image is of
	present around your image.		non-wide
	• Full - Scales the input image to fill the screen.	Press the ▲ or ▼ keys	aspect ratio:
	Ideal for 16:9 or 16:10 (depending on the	to change the settings.	• Full
	purchased model) aspect images.  • Aspect - The input image is displayed without	The options under	<ul> <li>Aspect</li> </ul>
Display Mode		Display Mode will be different depending on the input signal	Or
			When the
	display as possible.		signal source
	Depending on the purchased model, 16:9 or	sources.	is from a
	16:10 images will fill the screen horizontally		D-Sub (VGA
			converted
	while 4:3 or 5:4 images will fill the screen		from
	vertically.		Component)
	To find out the monitor aspect ratio of the		source:
	purchased model, please check the		Overscan
	Specification document on the provided CD.		• Full
			Aspect
	Determines the color space (RGB or YUV)		
	based on the following detected video signal:		
	D-Sub (VGA) from PC: The default Color		
	Format is RGB.		
	D-Sub (Component) from a video device: The	Press the ENTER key	DOD
Color Format	default Color Format is YUV.	to select this option.	• RGB
	C You might need to manually set the Color	Press the ▲ or ▼ keys	• YUV
	Format if colors shown on the monitor screen	to change the settings.	
	do not display properly.		
	• DVI (for models with DVI inputs): Color		
	Format is automatically set to RGB.		
	•		

#### Audio menu

AUDIO	MODE: Standard
Volume	10
Mute	OFF
	Move (MENU) Back

- 1. Press the **MENU** key to display the main menu.
- 2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **AUDIO** and then press the **ENTER** key to enter the menu.
- 3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the ENTER key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

Item	Function	Operation	Range
		Press the ▲key to increase the	
Volume	Adjusts the audio volume	volume and press the $\checkmark$ key to $0 \sim 7$ decrease the volume.	0 ~ 100
N du ta		Press the ▲ or ▼ keys to change	• ON
Mute	Mutes the audio input	the settings.	• OFF

#### System menu

	< @]
SYSTEM	MODE: Standard
Input	≺ D-sub →
OSD Settings	
DDC/CI	
Auto Power off	OFF
Information	
Reset All	
Move	MENU Back

- 1. Press the **MENU** key to display the main menu.
- 2. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to select **SYSTEM** and then press the **ENTER** key to enter the menu.
- 3. Press the ▲ or ▼ keys to move the highlight to a menu item and then press the **ENTER** key to select that item.
- 4. Press the  $\blacktriangle$  or  $\blacktriangledown$  keys to make adjustments or selections.
- 5. To return to the previous menu, press the **MENU** button.

ltem	Function	Operation	Range
Input	Use this to change the input to that appropriate to your video cable connection type. Analog-only models do not have the Input function.	Press ▲ or ▼ keys to change the setting.	• DVI • D-sub (VGA)
OSD Settings	- Press ENTER to enter the OSD Sett	ings menu.	<b>_</b>
Language	Sets the OSD menu Language.	Press ▲ or ▼ keys to change the settings. C 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>French</li> <li>German</li> <li>Italian</li> <li>Spanish</li> <li>Polish</li> <li>Japanese</li> <li>Czech</li> <li>Traditional</li> <li>Chinese</li> <li>Hungarian</li> <li>Simplified</li> <li>Chinese</li> <li>Serbo-Croatian</li> <li>Romanian</li> <li>Dutch</li> <li>Russian</li> <li>Swedish</li> <li>Portuguese</li> </ul>
H. Position	Adjusts the horizontal position of the OSD menu.		0 to 100
V. Position	Adjusts the vertical position of the OSD menu.	Press ▲ or ▼ keys to change the settings.	0 to 100
Display Time	Adjusts the display time of the OSD menu.		5 / 10 / 15 / 20 / 25 / 30 sec
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.	Press ▲ or ▼ keys to change the settings. © To unlock the OSD controls when the OSD is preset to be locked, press and hold the "MENU" key for 15 seconds to enter the "OSD Lock" option and make changes. Alternatively, you may use ▲ or ▼	YES NO

N
FF
OFF
10min.
20min.
30min.
nput
Current
esolution
Optimum
esolution
est with the
onitor)
Model Name
-0
ES
0

\*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.

# Display Timing Table

Decelution	Pixel clock	H-sync	V-sync
Resolution	(unit: MHz)	(unit: kHz)	(unit: Hz)
480i	13.5	15.734	60
576i	13.5	15.625	50
640x480p	25.175	31.468	59.94
720x480p	27.00	31.468	59.94
720x576p	27.00	31.25	50
720p 50Hz	74.25	37.50	50
720p 60Hz	74.25	45.00	60
1080i 50Hz	74.25	28.125	50
1080i 50Hz	74.25	31.25	50
1080i 60Hz	74.25	33.75	60
1080p 50Hz	148.50	56.250	50
1080p 60Hz	148.50	67.50	60

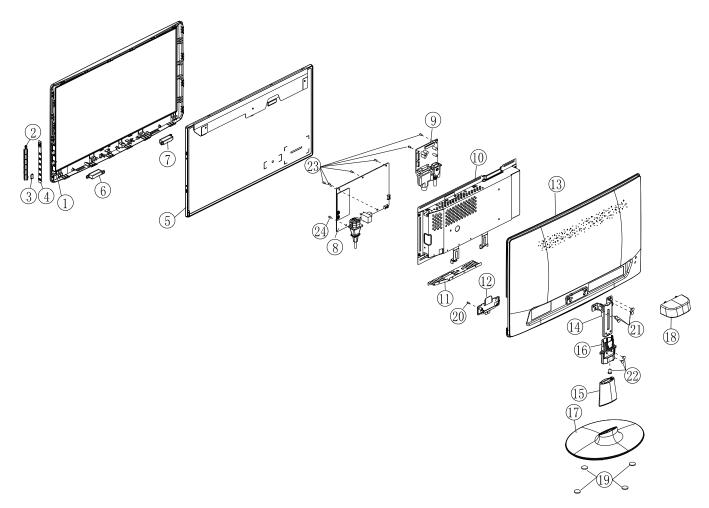
## Factory OSD Menu

The service page needs to include that information: Model name, S/N, Vender, panel, scalar, F/W version, Monitor on time, Backlight on time.

BenQ Service Page				
Model name :	GL2040M			
S/N :	ET 1			
Vender :	ΤΡν			
Panel :	M20003-LA3			
Scaler :	MST TSUMU58PWHL			
F/W Version :	V01/20110414			
Monitor On Time :	00000 Hr 30Min		30Min	
Backlight On Time :	00001	Hr	00Min	
DVI 10M	On	Q	Off	
DVI HPD	On	C	Off	
Logo	On Off			
AutoPower	On Off			
(Enter the service mode: Power On+Menu)				

- 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 one selected item for HPD (DVI port),DVI HPD at Service menu 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 "DVI 10m" items. (default: Off)

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



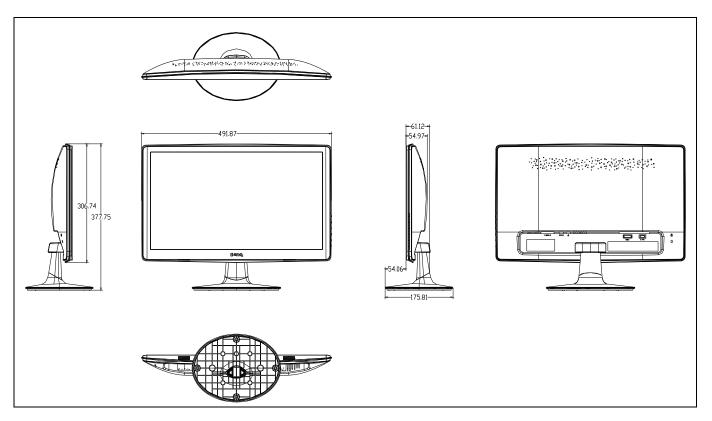
**Note:** The parts information listed below are for reference only, and are subject to change without notice. Please go to <u>http://cs.tpv.com.cn/hello1.asp</u> for the latest information.

Item	Description	Qty	Unit
1	BEZEL	1	PCS
2	KEY BUTTON	1	PCS
3	POWER LENS	1	PCS
4	KEY BOARD	1	PCS
5	PANEL	1	PCS
6	SPEAKER (JUST FOR GL2040M)	1	PCS
7	SPEAKER (JUST FOR GL2040M)	1	PCS
8	POWER BOARD	1	PCS
9	MAIN BOARD	1	PCS
10	MAINFRAME	1	PCS
11	AC SHIELD	1	PCS
12	HINGE BKT	1	PCS

13	REAR COVER	1	PCS
14	HINGE	1	PCS
15	STAND COVER	1	PCS
16	STAND	1	PCS
17	BASE	1	PCS
18	COVER HINGE	1	PCS
19	FOOT PAD	4	PCS

SCREW									
ltem	Part No.	Qty	Unit						
20	0Q1G 930 8120	HINGE BKT & REAR COVER	1	PCS					
21	0M1G1740 10 47 CR3	HIGNE & REAR COVER	4	PCS					
22	0M1G1740 8 47 CR3	HINGE & STAND	3	PCS					
23	0D1G1030 6120	MAIN/POWER BOARD & MAINFRAME	6	PCS					
24	0M1G1740 6120	POWER BOARD & MAINFRAME	1	PCS					
ART.	ART.								
	Part No.	Description	Qty	Unit					
	Q44GA107101	EPS	1	PCS					
	Q44GA107201	EPS	1	PCS					
	Q44GA107624 1A	CARTON	1	PCS					

# Six Angles' View



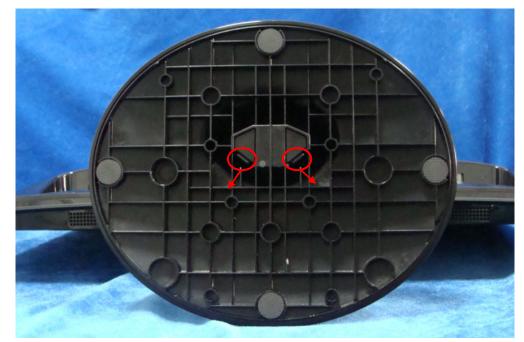
# Product Disassembly/Assembly

# Note: The speaker just for GL2040M.

## Disassembly

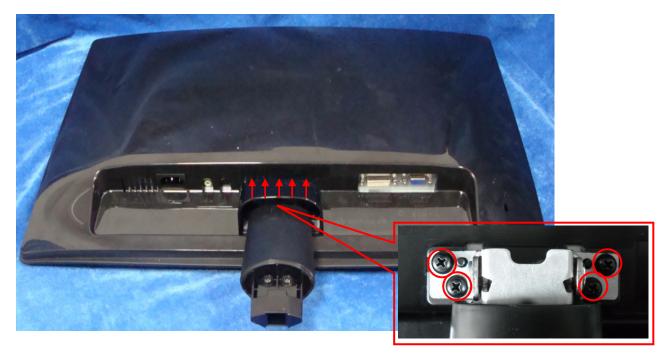
## 1) Remove the base

Place the monitor face down on a smooth surface. Be careful to avoid scratch and injury during the process of uninstall. And then remove the base.



### 2) Remove the stand-cover and stand.

Remove the screws in red to remove the stand.



#### 3) Remove the rear cover

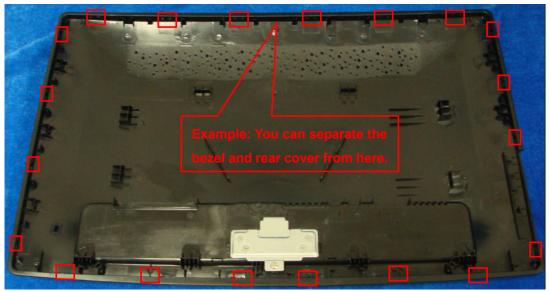
Remove the rear cover as follow:



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

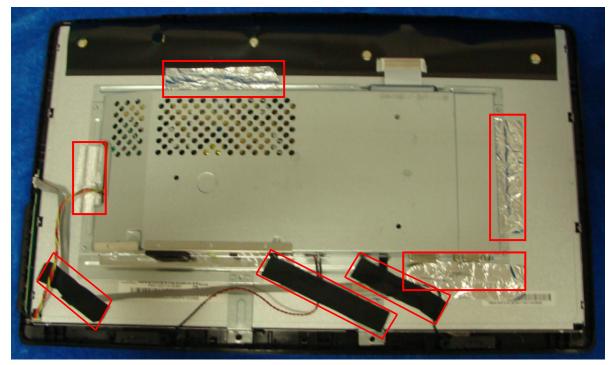


Note: The positions of the clips on the rear cover are as follow. There are some small gaps between CLIPS. It's suggested to separate bezel and rear cover from the gaps.

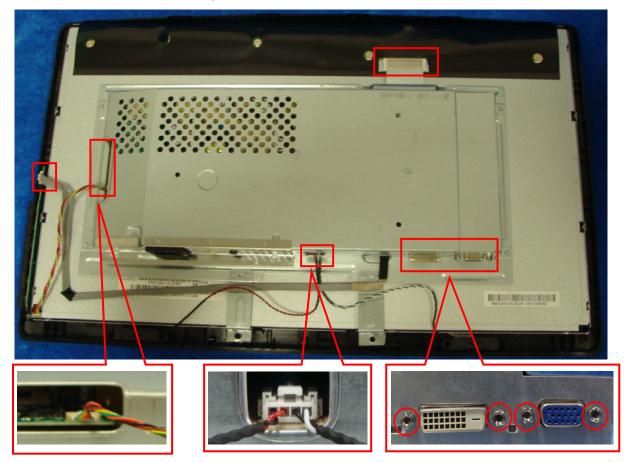


4) Remove the black rubberized fabric and aluminum foil.

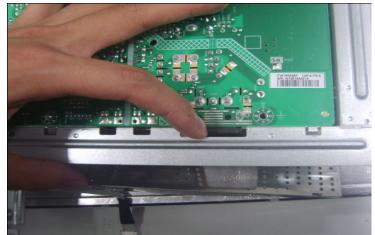
Note: When you assembled the LCD, you must tidy the wire as follow picture.



5) Remove the main frame from the panel.

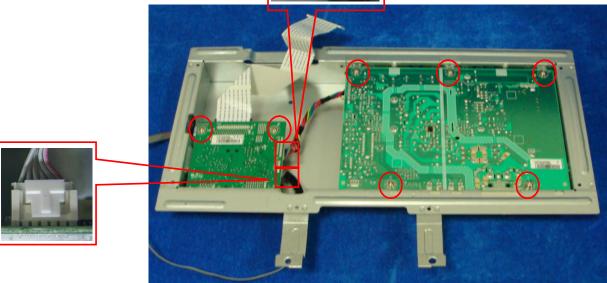


6) Remove the AC cover from the mainframe.



7) Remove the boards from the main frame.



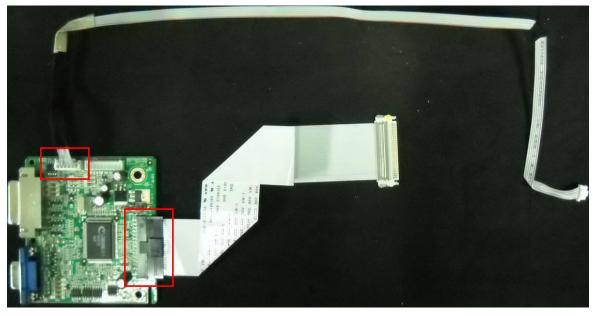


8) The panel



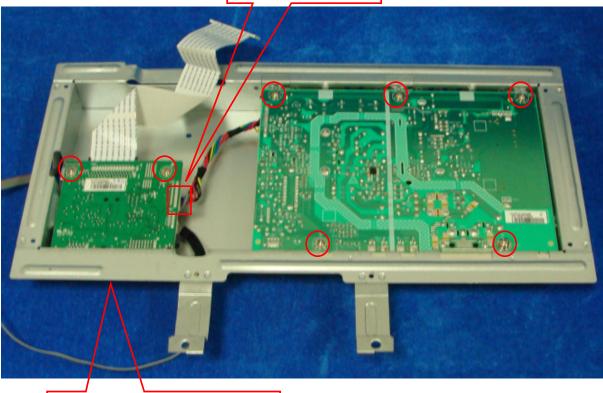
# Assembly

1) Assemble the wire to the main board.



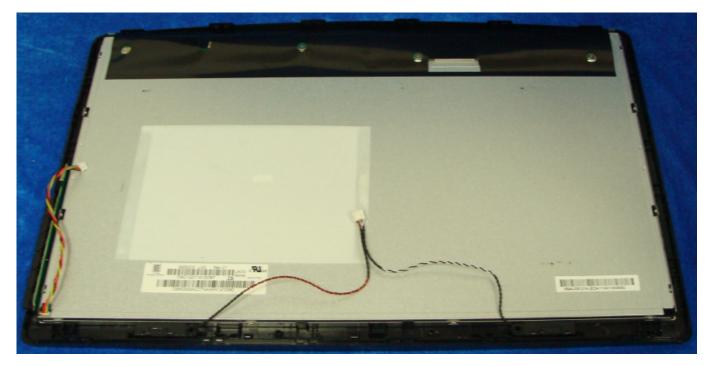
2) Assemble the main board and power board on the main frame.



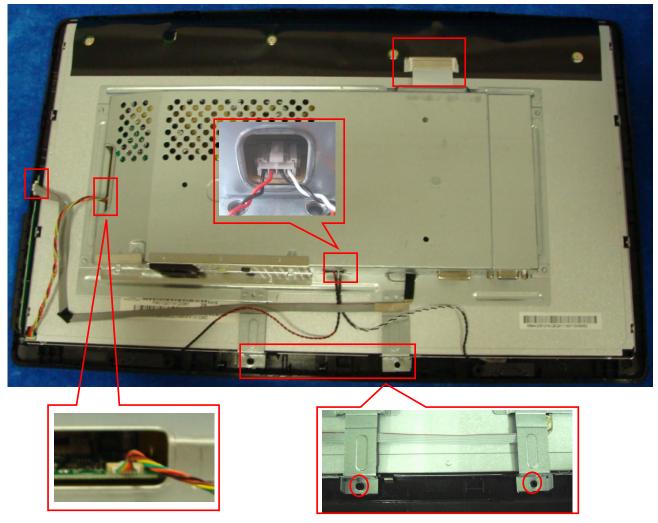




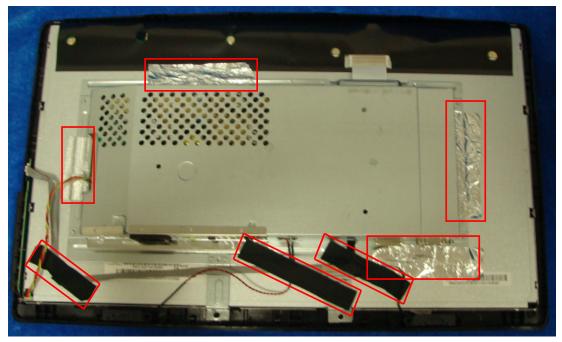
## 3) Assemble the panel on the bezel.



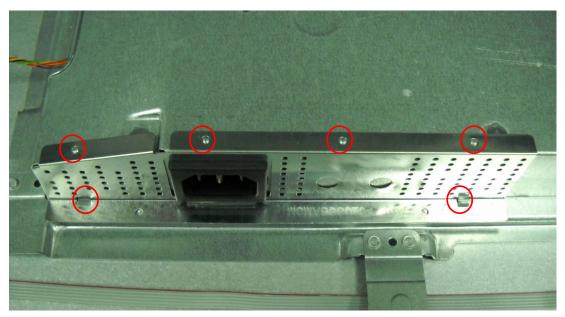
- 4) Assemble the main frame and the key board.
  - a. Insert the wire.



b. Stick the black rubberized fabric and the aluminum foil.



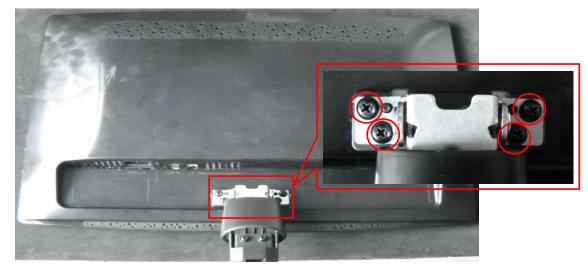
5) Assemble the AC-COVER.



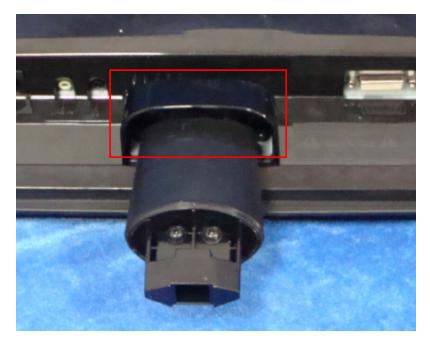
6) Assemble the base.



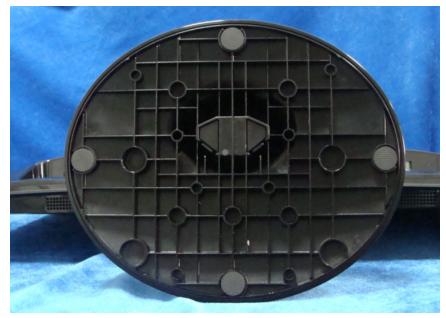
#### 7) Assemble the stand.



8) Assemble the stand cover.

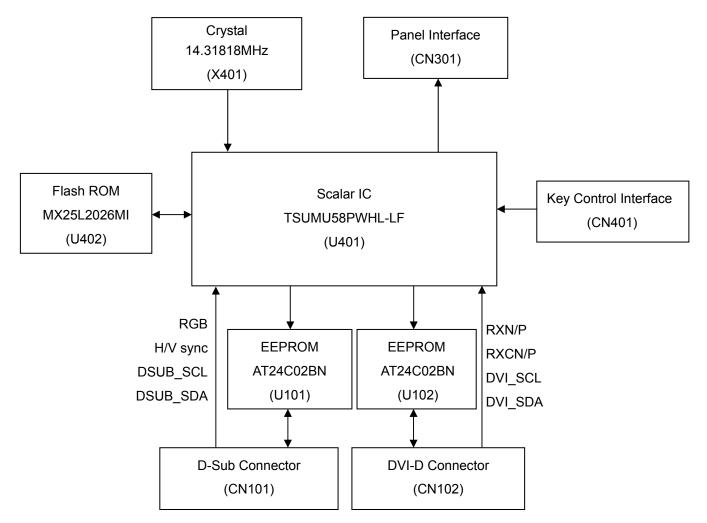


9) Assemble the base.

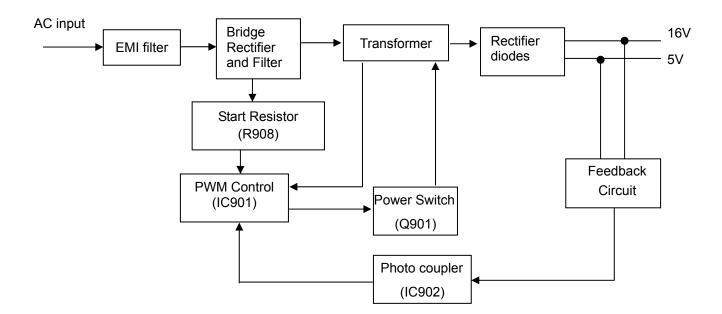


# **Block Diagram**

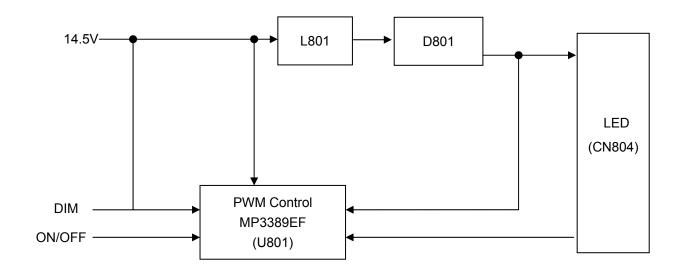
# Main Board



# Adapter Board



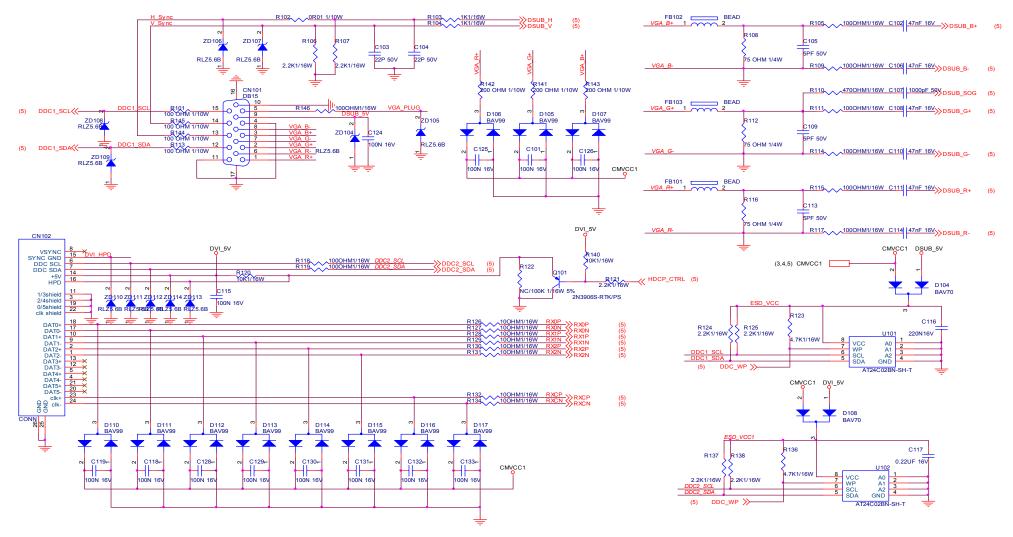
#### **Converter Board**



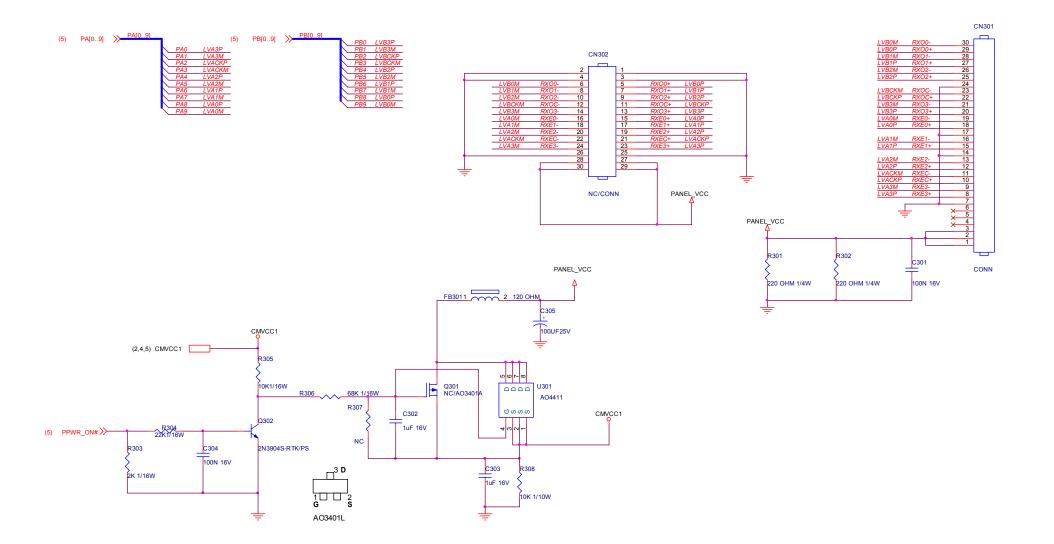
### **Schematic Diagram**

#### Main Board

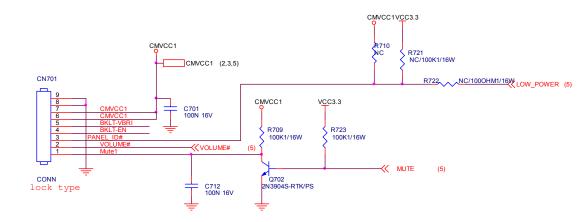
#### 715G3849M0200004L

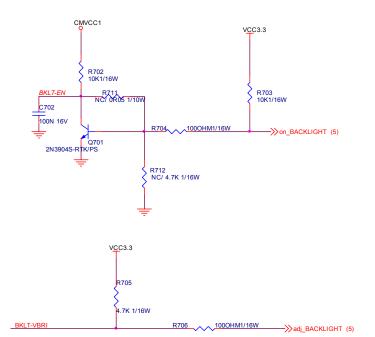


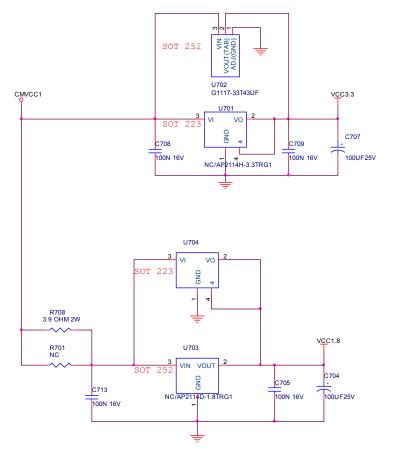
TPV (	Top Victory Electronics Co., Ltd.)	OEM MODEL		Size	В
結隔瓜細腹	G3849-M0D-X-X-9-110304	TPV MODEL	CBPCBSQBQQ1	Rev	1.0
Key Component	1.0.INPUT	PCB NAME	715G3849-M0D-000-0040	称爹	
Date	Friday, March 04, 2011	Sheet	1 of 4	你多	



TPV (T	op Victory Electronics Co., Ltd.)	OEM MODEL		Size	В
結隔瓜細腹	G3849-M0D-X-X-9-110304	TPV MODEL	CBPCBSQBQQ1	Rev	1.0
Key Component	2.0.OUTPUT	PCB NAME	715G3849-M0D-000-0040	称爹	
Date	Friday, March 04, 2011	Sheet	2 of 4	171 35	

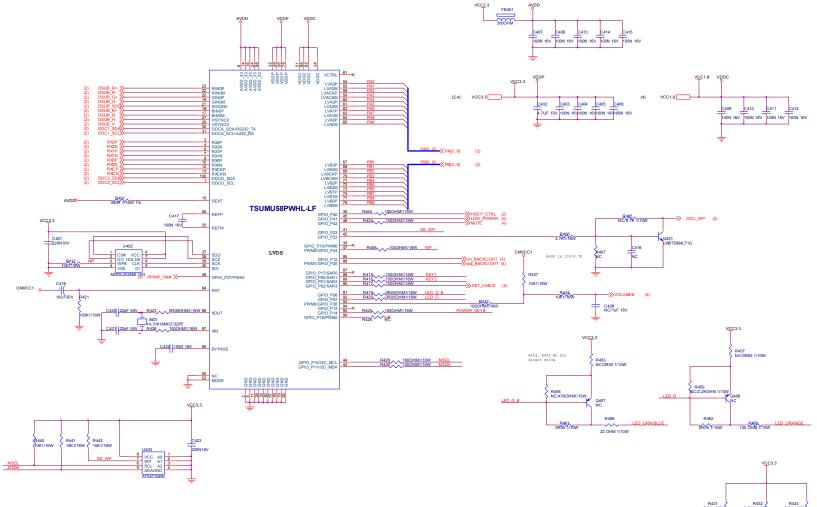


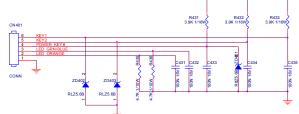




TPV (	Fop Victory Electronics Co., Ltd.)	OEM MODEL		Size	В
結隔瓜細腹	G3849-M0D-X-X-9-110304	TPV MODEL	CBPCBSQBQQ1	Rev	1.0
Key Component	3.0.POWER	PCB NAME	715G3849-M0D-000-0040	称爹	
Date	Friday, March 04, 2011	Sheet	3 of 4	1717 38>	



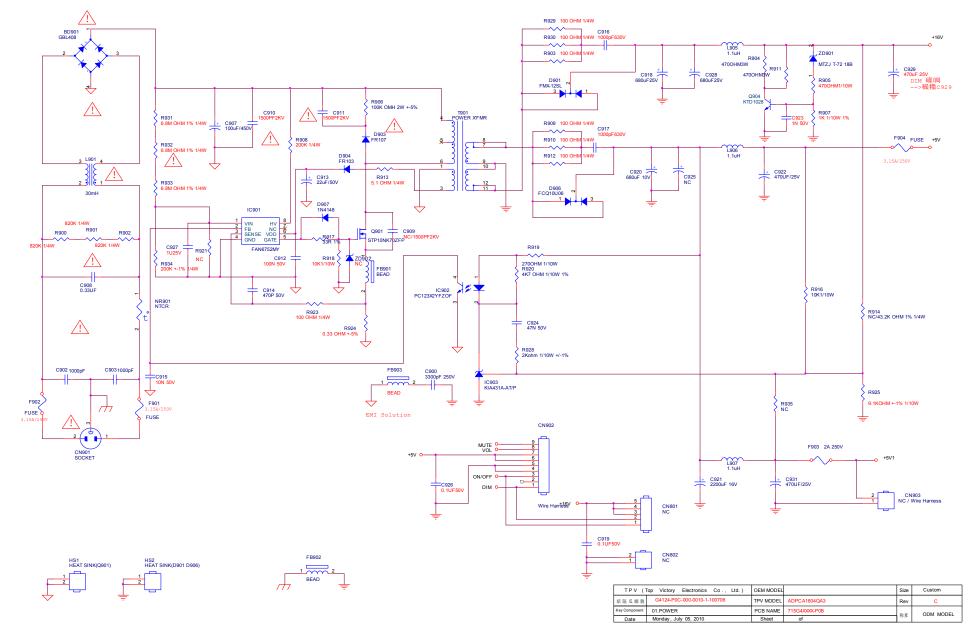




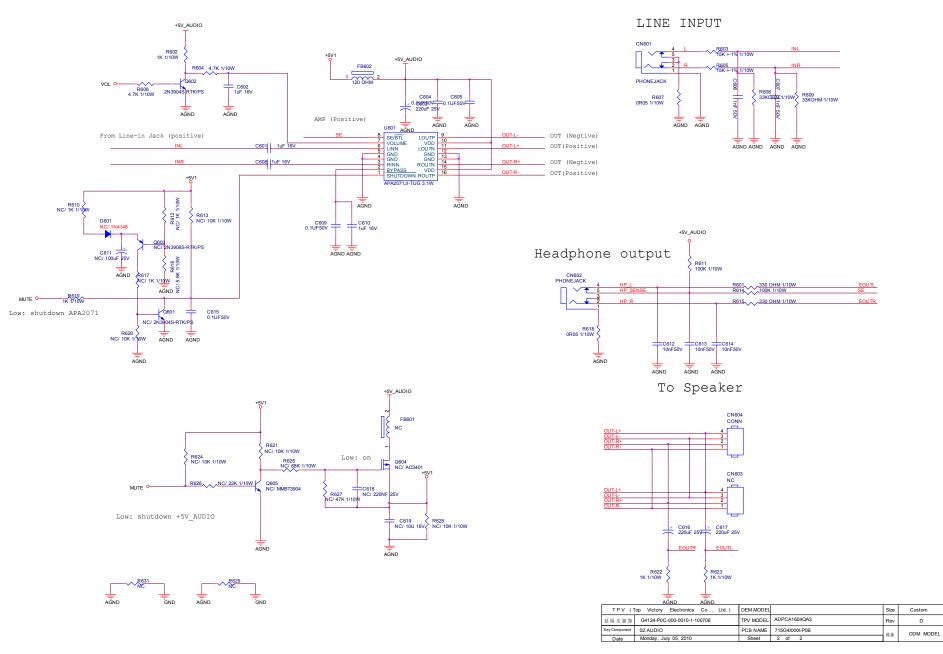
TPV (	Top Victory Electronics Co., Ltd.)	OEM MODEL		Size	С
结陷压细腹	G3849-M0D-X-X-9-110304	TPV MODEL	CBPCBSQBQQ1	Rev	1.0
Key Component	4.0.SCALER	PCB NAME	715G3849-M0D-000-0040	称美	
Date	Friday, March 04, 2011	Sheet	4 of 4	77.5	

### Adapter Board

#### 715G4124P0200003S



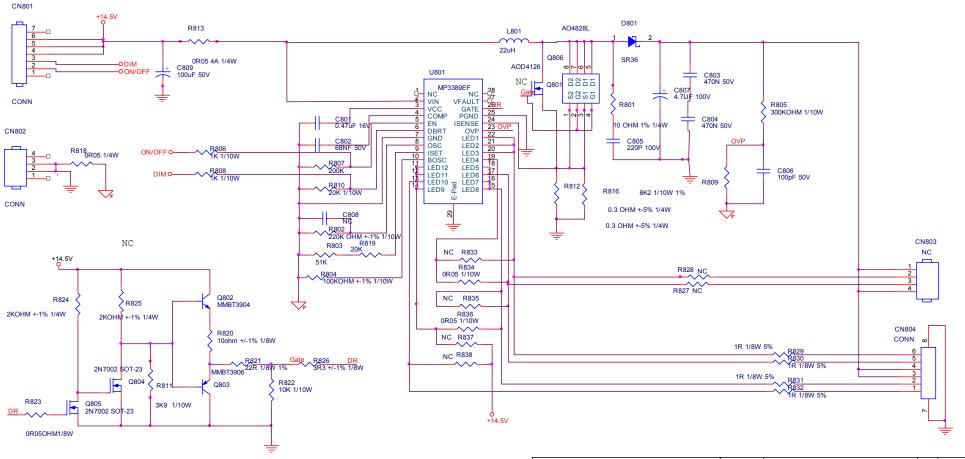
#### Just for GL2040M



72

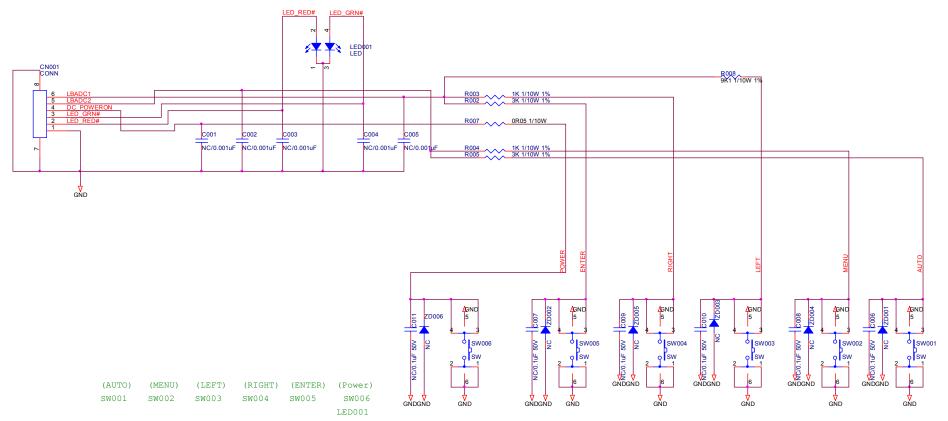
#### **Converter Board**

#### 715G3977P0300004L



TPV	Top Victory Electronics Co., Ltd.)	OEM MODEL		Size	Custom
結隔瓜細胞	結隔瓜網腹 G3977-P02-000-0040-20-110126		LNPCAA441AQCJ	Rev	A
Key Componen	Key Component 01.CONVERTER		715G3977-P02-000-0040	称爹	ODM MODEL
Date	Tuesday, January 25, 2011	Sheet	1 of 1	17r 3>	

## Key Board 715G4131K01000004S



1	TPV (T	op Victory Electronics Co., Ltd.)	OEM MODEL	-	Size	В
絬 隴	嗝瓜 絪 腹	G4131-K0B-X-1-110118	TPV MODEL		Rev	А
Key C	Component	01 KEY BOARD	PCB NAME	715G4131K0B0000040	称爹	
[	Date	Tuesday, January 18, 2011	Sheet	1 of 1	10.39	

### 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.

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

Select MENU > PICTURE > Color > Reset Color, and then choose "YES" in the "Caution" message box 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.

### ⑦ 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?
- C Check the power supply mains socket, the external power supply and the mains switch.

## 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:

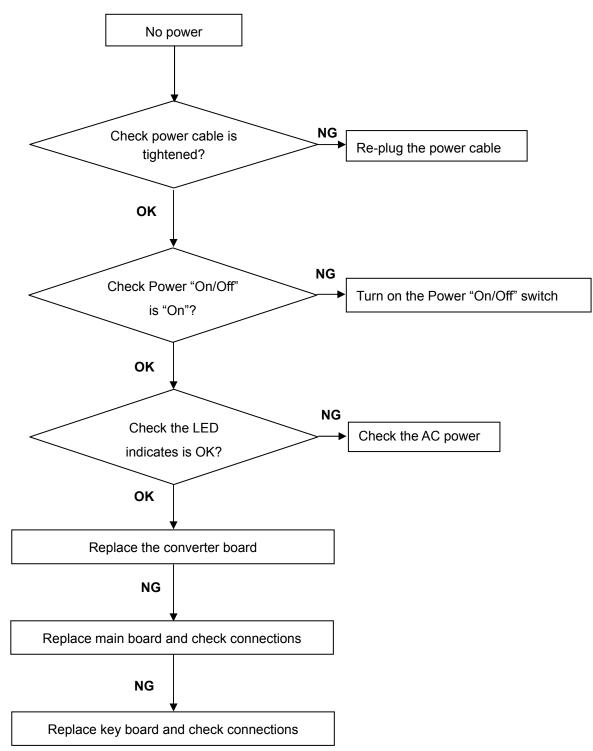
Read the instructions on the link "Adjusting the Screen Resolution" on the CD, and then select the correct resolution, refresh rate and make adjustments based on these instructions.

### ⑦ The OSD controls are inaccessible:

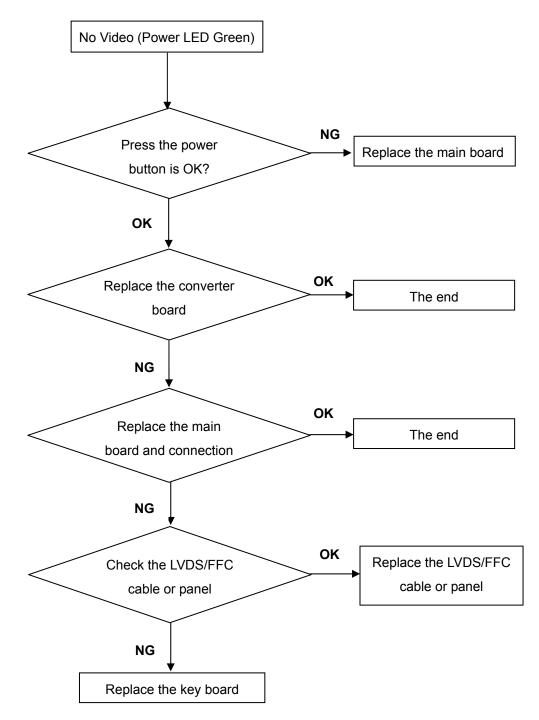
- To unlock the OSD controls when the OSD is preset to be locked, press and hold the "MENU" key for 15 seconds to enter the "OSD Lock" option and make changes.
  - Alternatively, you may use ◀or ▶ keys to select "NO" in the "OSD Lock" submenu from the "OSD Settings" menu (under SYSTEM), and all OSD controls will be accessible.

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

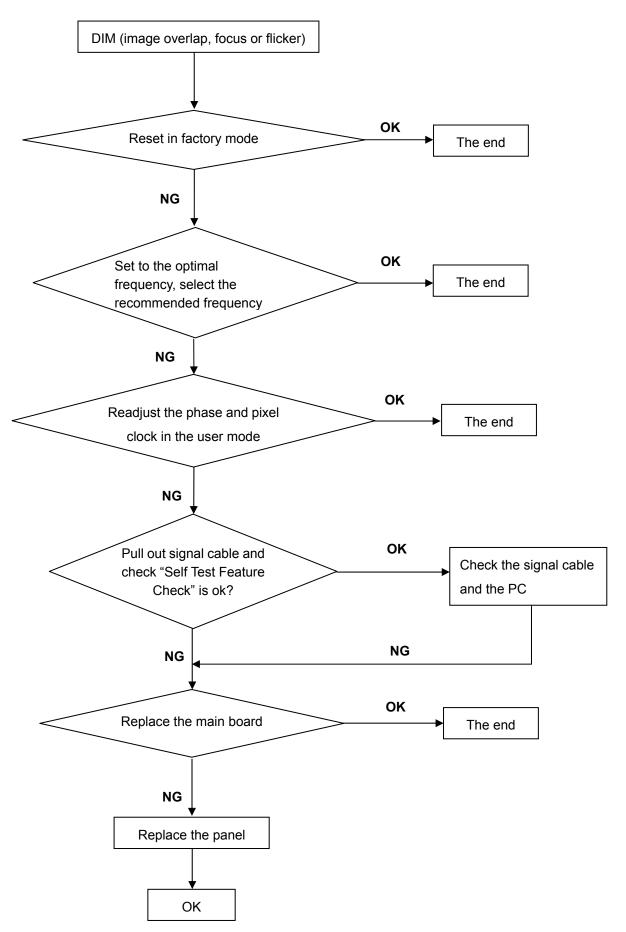




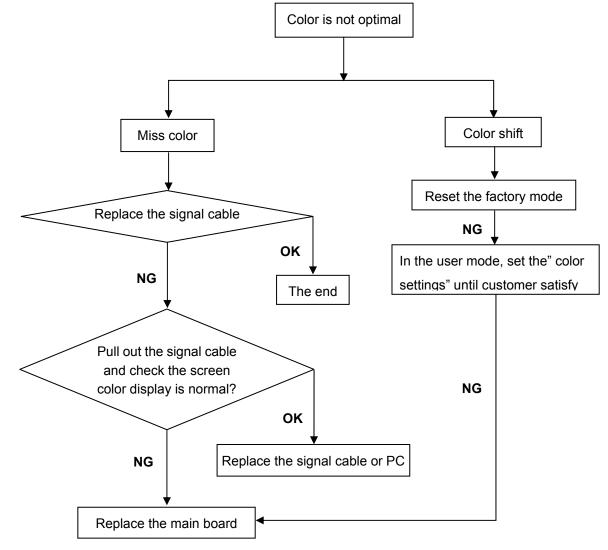
### No Video (Power LED Green)



#### DIM



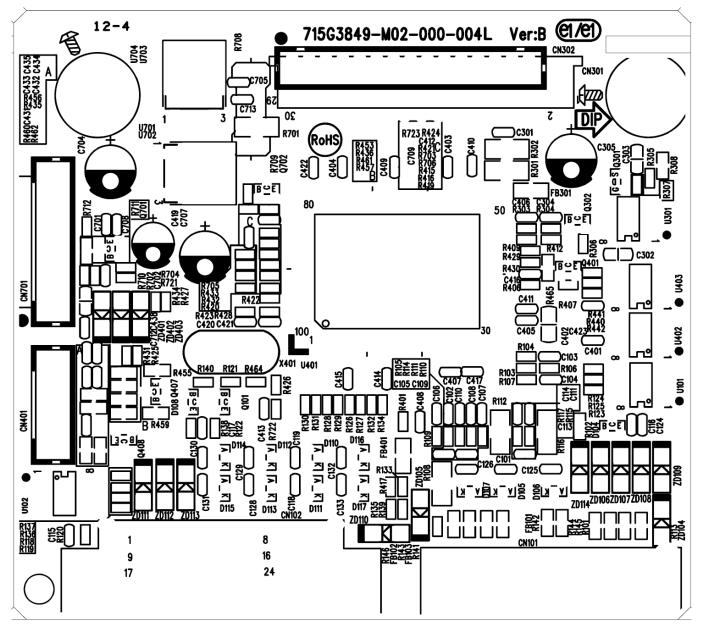
### Color is not optimal

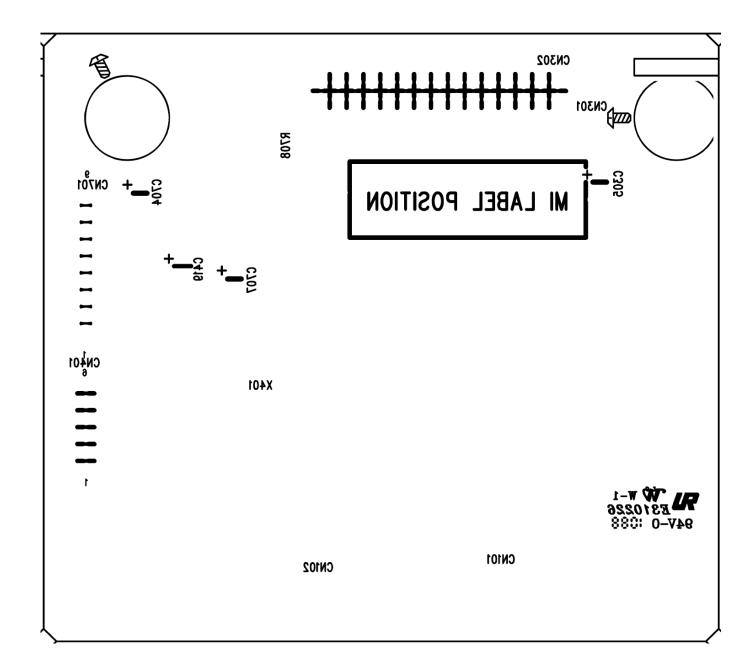


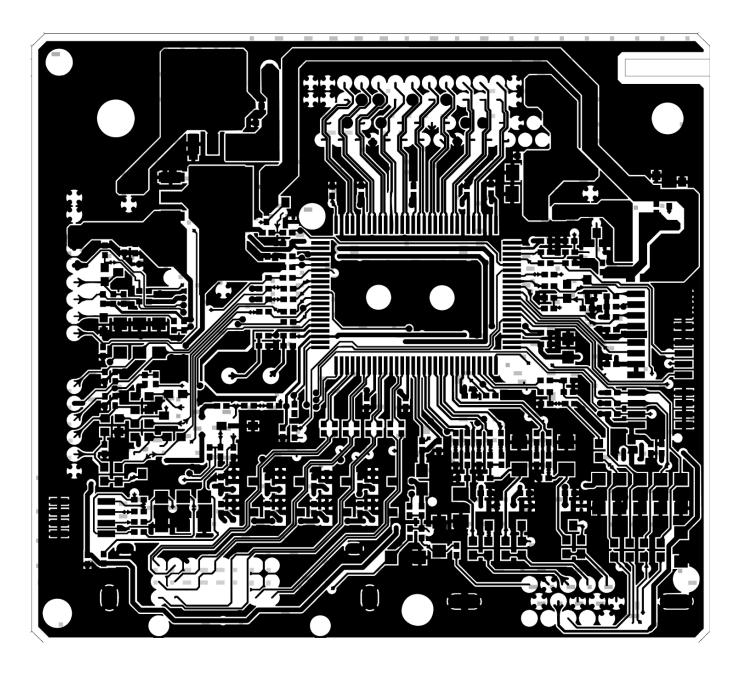
## PCB LAYOUT

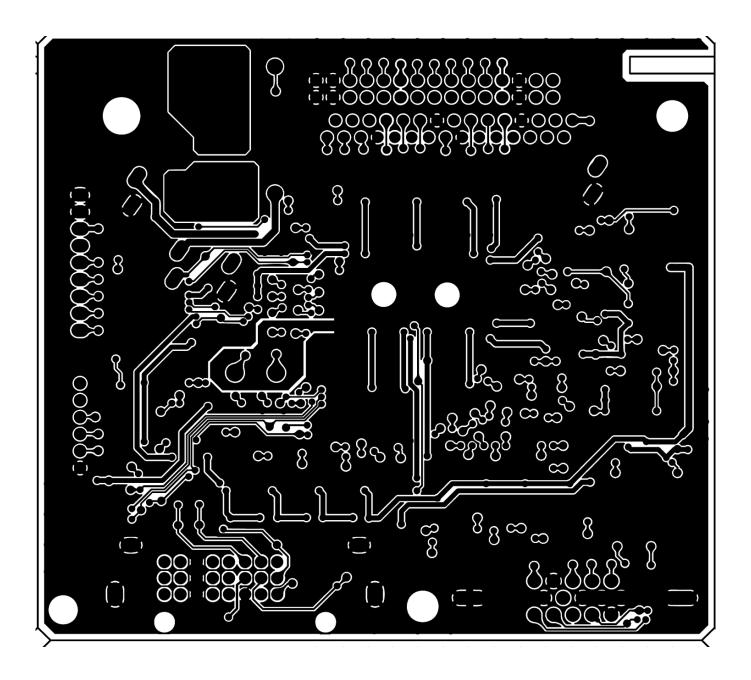
#### Main Board

715G3849M0200004L

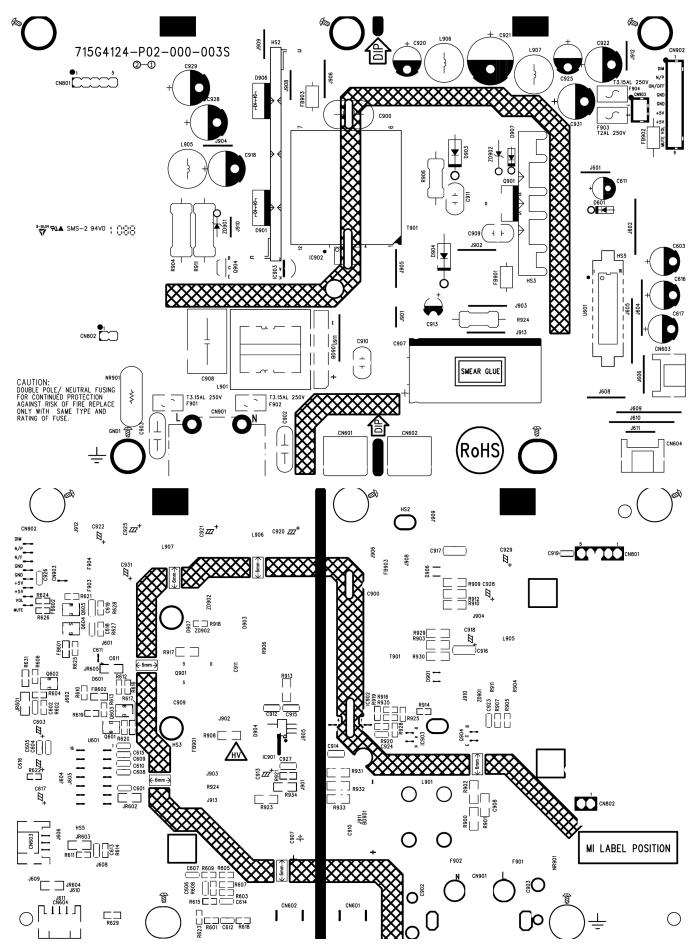


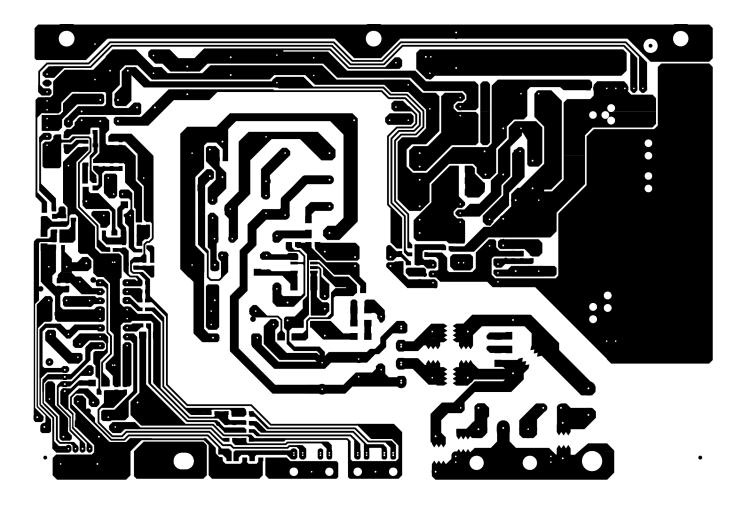






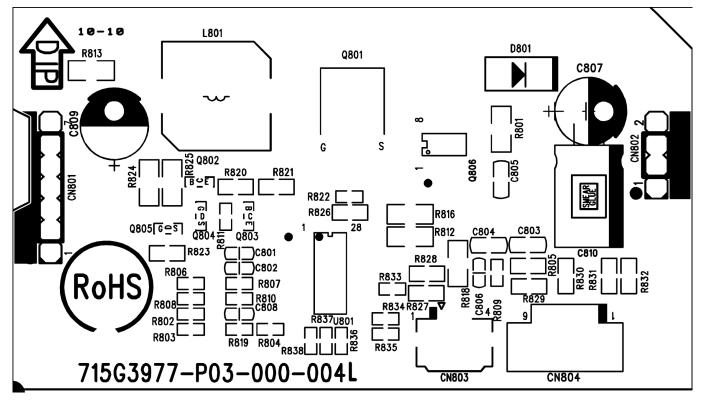
## Adapter Board 715G4124P02000003S

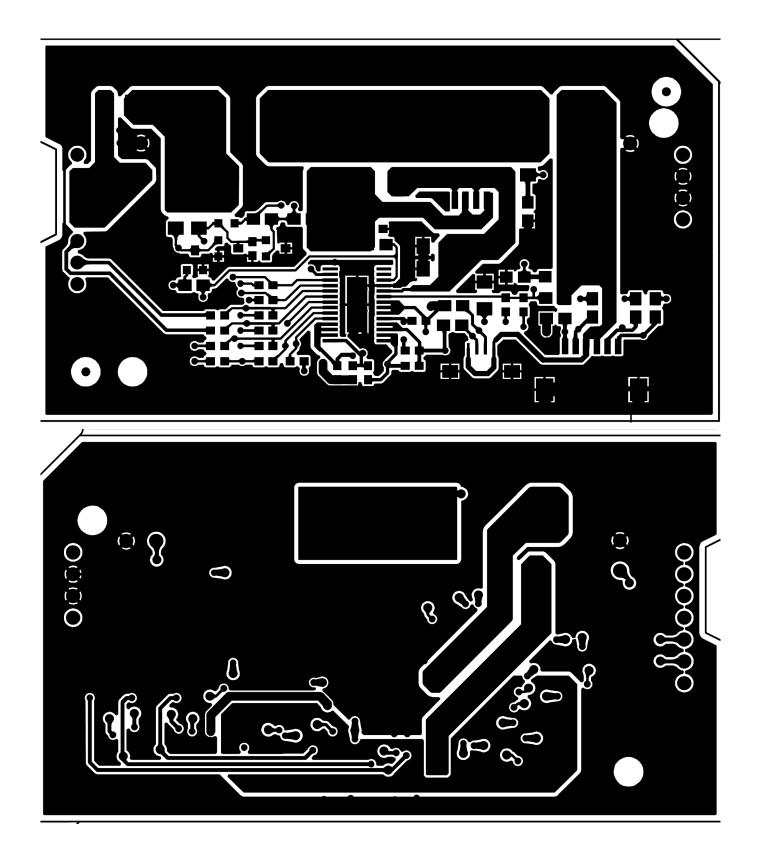




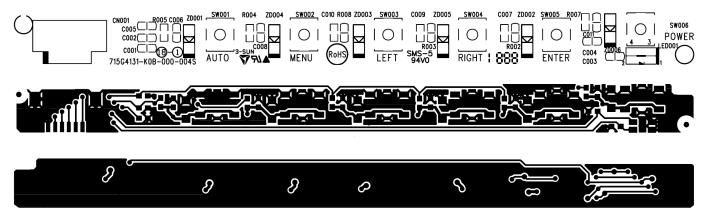
## Converter Board

715G3977P0300004L





## Key Board 715G4131K01000004S



# Appendix 1 – Screw List / Torque

Part No.	Туре	Description	Quantity	Torque	
0Q1G 930 8120	Q3*8	HINGE & HINGE BKT & REAR COVER	1		
0M1G1740 10 47 CR3	M4*10	HIGNE & REAR COVER	4	12 ± 2kgf.cm	
0M1G1740 8 47 CR3	M4*8	HINGE & STAND	3		
0D1G1030 6120	D3*6	MAIN/POWER BOARD & MAINFRAME	6	6 ± 1kgf.cm	
0M1G1740 6120	M4*6	POWER BOARD & MAINFRAME	1	6 ± 1kgf.cm	