Service Manual for BenQ:

LCD G2020HDA

(D-SUB+ Black Bezel)

Product Service Manual – Level 1~2

Version: 2nd
Date: 09-03-2009

Notice:
For RO to input specific “Legal Requirement” in specific NS regarding to responsibility and liability statements.
Please check BenQ’s eSupport web site, http://esupport.benq.com, to ensure that you have the most recent version of this manual.

First Edition (April, 2009)
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<th>ADC</th>
<th>Analog to Digital Converter</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>AFC</td>
<td>Automatic Frequency Control: control signal used to tune to the correct frequency</td>
</tr>
<tr>
<td>B</td>
<td>BenQ</td>
<td>BenQ Corporation</td>
</tr>
<tr>
<td></td>
<td>BTSC</td>
<td>Broadcast Television System Committee</td>
</tr>
<tr>
<td>C</td>
<td>CPU</td>
<td>Central Process Unit</td>
</tr>
<tr>
<td></td>
<td>CVBS</td>
<td>Composite Video Blanking and Synchronization</td>
</tr>
<tr>
<td>D</td>
<td>DLP</td>
<td>Digital Light Processing / Texas Instruments®</td>
</tr>
<tr>
<td></td>
<td>DMD</td>
<td>Digital Micromirror Device</td>
</tr>
<tr>
<td></td>
<td>DRAM</td>
<td>Dynamic RAM</td>
</tr>
<tr>
<td></td>
<td>DVI</td>
<td>Digital Video Interface</td>
</tr>
<tr>
<td></td>
<td>DVI-I</td>
<td>Digital Video Interface-Integrated</td>
</tr>
<tr>
<td>E</td>
<td>EEPROM</td>
<td>Electrically Erasable and Programmable Read Only Memory</td>
</tr>
<tr>
<td></td>
<td>FLASH</td>
<td>FLASH memory</td>
</tr>
<tr>
<td></td>
<td>G-TXT</td>
<td>Green Teletext</td>
</tr>
<tr>
<td>H</td>
<td>HDMI</td>
<td>High Definition Multimedia Interface, digital audio and video interface</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>Head Phone</td>
</tr>
<tr>
<td>I</td>
<td>I²C</td>
<td>Integrated IC bus</td>
</tr>
<tr>
<td>L</td>
<td>LED</td>
<td>Light Emitting Diode</td>
</tr>
<tr>
<td></td>
<td>LVDS</td>
<td>Low Voltage Differential Signal, data transmission system for high</td>
</tr>
<tr>
<td>M</td>
<td>MOSFET</td>
<td>Metal Oxide Semiconductor Field Effect Transistor</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC</td>
<td>Not Connected</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>NVM</td>
<td>Non Volatile Memory: IC containing TV related data (for example, options)</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSD</td>
<td>On Screen Display</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
<td></td>
</tr>
<tr>
<td>PCB</td>
<td>Printed Circuit Board (or PWB)</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC</td>
<td>Remote Control transmitter</td>
<td></td>
</tr>
<tr>
<td>RGB</td>
<td>Red, Green and Blue. The primary color signals for TV. By mixing levels of R, G and B, all colors (Y/C) are</td>
<td></td>
</tr>
<tr>
<td>ROM</td>
<td>Read Only Memory</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDA</td>
<td>Data signal on I²C bus</td>
<td></td>
</tr>
<tr>
<td>SDRAM</td>
<td>Synchronous DRAM</td>
<td></td>
</tr>
<tr>
<td>SW</td>
<td>Sub Woofer / Software</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THD</td>
<td>Total Harmonic Distortion</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VGA</td>
<td>Video Graphics Array</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YPbPr</td>
<td>Component video (Y= Luminance, Pb/ Pr= Color difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV)</td>
<td></td>
</tr>
<tr>
<td>Y/C</td>
<td>Video related signals: Y consists of luminance signal, blanking level and sync; C consists of color signal.</td>
<td></td>
</tr>
</tbody>
</table>
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 Notice

1. Make sure your working environment is dry and clean, and meets all government safety requirements.
2. Ensure that other persons are safe while you are servicing the product.
3. Do NOT perform any action that may cause a hazard to the customer or make the product unsafe.
4. Use proper safety devices to ensure your personal safety.
5. Always use approved tools and test equipment for servicing.
6. Never assume the product’s power is disconnected from the mains power supply. Check that it is disconnected before opening the product’s cabinet.
7. Modules containing electrical components are sensitive to electrostatic discharge (ESD). Follow ESD safety procedures while handling these parts.
8. Some products contain more than one battery. Do not disassemble any battery, or expose it to high temperatures such as throwing into fire, otherwise it may explode.
9. Refer to government requirements for battery recycling or disposal.

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 G2020HDA offers numerous features and functions, for example:

- TFT display (Thin Film Transistor; active matrix)
- minimal space requirements thanks to slim casing
- optimum ergonomic characteristics (totally distortion-free, excellent picture definition and color purity right into the corners)
- high degree of brightness and good contrast
- high resolution (1600x900)
- presentation of up to 16.7 million colors (in conjunction with an appropriate graphics card)
- automatic scanning of horizontal frequencies from 24 to 83 kHz and refresh rates (vertical frequencies) from 50 to 76 Hz (absolutely flicker-free)
- 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
- compliance with the recommendations in accordance with TCO’03

This operating manual contains important information you require to start up and run your LCD monitor.

This specification defines the requirements for the 20" W MICROPROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15-pin D-sub VGA 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. 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.benq.com

5. Product Overview

5.1 Monitor Specifications

<table>
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<th>G2020HDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td></td>
</tr>
<tr>
<td>Panel model</td>
<td>SEC/LG/AUO/CMO/CPT</td>
</tr>
<tr>
<td>Panel Type (TN / VA / IPS)</td>
<td>TN</td>
</tr>
<tr>
<td>Panel Size</td>
<td>20&quot;W (2 lamp)</td>
</tr>
<tr>
<td>Display Area</td>
<td>442.8x249.2mm</td>
</tr>
<tr>
<td>Native. Resolution</td>
<td>1600 x 900</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>0.2768x0.2768</td>
</tr>
<tr>
<td>Brightness (Typ.)</td>
<td>250 nits</td>
</tr>
<tr>
<td>Contrast Ratio (Typ.) / DCR (Min.)</td>
<td>1000:1 (Panel) /40000:1 (DCR); Min :20000:1</td>
</tr>
<tr>
<td>Viewing Angle (H/V), CR≧10</td>
<td>160/160</td>
</tr>
<tr>
<td>Display Colors</td>
<td>16.7M (6bit+Hi-FRC)</td>
</tr>
<tr>
<td>Response Time</td>
<td>5ms (Tr+Tf)</td>
</tr>
<tr>
<td>GtG response Time</td>
<td>N/A</td>
</tr>
<tr>
<td>NTSC ratio</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Video</td>
<td></td>
</tr>
<tr>
<td>BenQ Senseye™Technology</td>
<td>Yes</td>
</tr>
<tr>
<td>BenQ Senseye™Preset Modes</td>
<td>5 Modes (by hotkey) Standard / Movie / Dynamic / Photo / s-RGB</td>
</tr>
<tr>
<td>Color Temperature Selection</td>
<td>Normal (6500°K) / Reddish (5800°K) / Bluish (9300°K) / User Mode</td>
</tr>
<tr>
<td>Hor. Frequency (KHz)</td>
<td>24kz~83Kz</td>
</tr>
<tr>
<td>Ver. Frequency (Hz)</td>
<td>50Hz~76Hz</td>
</tr>
<tr>
<td>Video Bandwidth (MHz)</td>
<td>165Mhz</td>
</tr>
<tr>
<td>Feature</td>
<td>Specification</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Speakers (built-in)</td>
</tr>
<tr>
<td><strong>Input/Output</strong></td>
<td>PC Video Input: D-Sub</td>
</tr>
<tr>
<td></td>
<td>Audio line in: NA</td>
</tr>
<tr>
<td></td>
<td>Earphone Jack: NA</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Voltage Rating: AC: 100~240V (Built-in)</td>
</tr>
<tr>
<td></td>
<td>Power-On Mode: 28W</td>
</tr>
<tr>
<td></td>
<td>Standby Mode: &lt;1W</td>
</tr>
<tr>
<td></td>
<td>Power Off Mode: &lt;0.5W</td>
</tr>
<tr>
<td><strong>Mechanical Design</strong></td>
<td>Chassis Colors: Glossy black</td>
</tr>
<tr>
<td></td>
<td>Carton: Brown Carton with at least C flute</td>
</tr>
<tr>
<td></td>
<td>Power LED: Green (ON)/ Amber (Standby)</td>
</tr>
<tr>
<td></td>
<td>Tilt (Up / Down): 20° ~ -5°</td>
</tr>
<tr>
<td></td>
<td>VESA Wall Mount: 100 x 100mm</td>
</tr>
<tr>
<td></td>
<td>Kensington Lock: Yes</td>
</tr>
<tr>
<td></td>
<td>Container Loading (40') &gt;1600</td>
</tr>
<tr>
<td></td>
<td>Container Loading (20') &gt;800</td>
</tr>
<tr>
<td><strong>Multi-language Support</strong></td>
<td>OSD: 17 Languages (English / Francais / Deutsch / Italiano / Espanol / Polish / Czech / Hungarian / Serbo-croatian / Romanian / Netherlands / Russian / Swedish / Protuguese / Japanese / Chinese / S-Chinese)</td>
</tr>
<tr>
<td><strong>Other feature</strong></td>
<td>Vista</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>VGA cable, power cord, warranty card, quick start guide, CD manual</td>
</tr>
<tr>
<td><strong>Regulation Approvals</strong></td>
<td>Refer to the worksheet &quot;RFQ-Regulatory&quot;</td>
</tr>
</tbody>
</table>
5.2 Packing

When packing the monitor into the carton, please follow the pictures as below.

Using the EPE bag to pack the monitor without base

Using the EPS to pack the monitor
Putting the base and D-SUB cable in the position as the picture shows above.

Putting the monitor and accessories into the carton
Visual Inspection & Cleaning

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

Software/Firmware Upgrade Process

1. When do the part, need the tools as follow:
   a. An i486 (or above) personal computer or compatible.
   b. Microsoft operation system Windows 95/98/2000/XP.
   c. “PORT95NT.exe” program
   d. Software ISP SN Alignment kits

   The kit contents:
   a. ISP BOARD x1
   b. Printer cable x1
   c. VGA cable x1

2. Install the “PORT95NT.exe”, and restart the computer.

   Note: After installation, you must restart the PC to take the setup to effect.

3. Connect the ISP board as follow:
4. The process of ISP write is as follows.

a. Double-click , running the program as follows:

b. Choose , click , running the program as follows:
c. Click icon, search the program" BenQ_G2020HDA_2045LH_SEC_V004.H00", and click open:

d. Click icon, search the program" BenQ_G2020HDA_2045LH_SEC_V004.H01", and click open:

e. Click icon, search the program" BenQ_G2020HDA_2045LH_SEC_V004_EXTEND", and click open:

f. Click icon, until appear the follow Fig, writer completed.
DDC instruction

General

DDC Data Re-programming

In case the main EEPROM with Software DDC which store all factory settings were replaced because a defect repaired monitor’ the serial numbers have to be re-programmed.

It is advised to re- soldered the main EEPROM with Software DDC from the old board onto the new board if circuit board have been replaced, in this case the DDC data does not need to be re-programmed.

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification Data (EDID) information may be also obtained from VESA.

1. When does the part, need the tools as follow:
   a. An i486 (or above) personal computer or compatible.
   b. Microsoft operation system Windows 95/98/2000/XP.
   c. “PORT95NT.exe, TPVDDC.exe” program.
   d. EDID BOARD (x1), Printer cable(x1), VGA cable (x1), Power cord (x 2), 12V DC power source.

2. Install the “PORT95NT.EXE”, and restart the computer.

The process of installing “PORT95NT” has been specified in, so it will not be specified again. If you have any problem, please read it.

3. Connect the DDC Board as follow:

Note:
1. The monitor must be power on.
2. Turn off the monitor, keep pressing the “MENU” + “ENTER” buttons, and turn on the monitor, then when we press the AUTO button, the factory OSD will be at the left top of the panel as below, set the WP “Off “.
4. The process of ISP write is as follow:

a. Double-click 

![Image](image1.png)

appear as follow:

![Image](image2.png)

b. Choose “Analog” and then click “Loadfile”, it will show the picture as follow:

![Image](image3.png)
20” LCD Color Monitor

BenQ G2020HDA

c. Click “OK”, it will show the picture as follow:

Input the date in “Year-Month-Day” box, Key in the same 13 numbers in the Input SN and Verify SN, then click “Program”, when the analog DDC Write complete, it will show the picture as follow:
G2020HDA EDID

128 bytes EDID Data (Hex):

```
x0 x1 x2 x3 x4 x5 x6 x7 x8 x9 xA xB xC xD xE xF
0: 00 FF FF FF FF FF FF 00 09 D1 1E 78 45 54 00 00
10: 01 0C 01 03 0E 2C 19 78 2E 3D 85 A6 56 4A 9A 24
20: 12 50 54 A5 6A 00 61 C0 81 C0 81 CF A9 CF 01 01
30: 01 01 01 01 01 2F 26 40 A0 60 84 1A 30 30 20
40: 35 00 BB F9 10 00 00 1A 00 00 00 FF 00 32 31 32
50: 33 31 33 32 31 32 33 33 0A 20 00 00 00 FD 00 32
60: 4C 18 53 11 00 0A 20 20 20 20 20 20 00 00 FC
70: 00 42 65 6E 51 20 47 32 30 32 30 48 44 41 00 05
```

Decoded EDID data

```---Header---```

Header: 00 FF FF FF FF FF FF 00

```<--x-Header-x-->```

```---Vendor/Product Identification---```

ID Manufacturer Name: BNQ
ID Product Code: 781E
ID Serial Number: 45540000
Week of Manufacture: 1
Year of Manufacture: 2002

```<--x-Vendor/Product Identification-x-->```

```---EDID Structure Version/Revision---```

EDID Version#: 01
EDID Revision#: 03

```<--x-EDID Structure Version/Revision-x-->```

```---Basic Display Parameters/Features---```

Video i/p definition: Analog
Signal Level Standard: 0.700V/0.300V (1.000Vpp)
Setup: Blank-to-Black not expected
Separate Sync Support: Yes
Composite Sync Support: Yes
Sync. on green video supported: Yes
Serration of the Vsync. Pulse is not required.
Max. H. Image Size: 44cm.
Max. V. Image Size: 25cm.
Display Gamma: 2.2
DPMS Features, Stand-by: No.
DPMS Features, Suspend: No.
DPMS Features, Active off: Yes.
Display Type: R.G.B color display.
Standard Default Color Space: Primary color space.
Preferred Timing Mode: In First Detailed Timing.
GTF supported: No.

---Basic Display Parameters/Features---

---Color Characteristics---
Red x: 0.6484375000
Red y: 0.3388671875
Green x: 0.2929687500
Green y: 0.6025390625
Blue x: 0.1425781250
Blue y: 0.0703125000
White x: 0.3125000000
White y: 0.3291015625

---Established Timings---
Established Timings 1: A5
-720x400 @70Hz VGA, IBM
-640x480 @60Hz VGA, IBM
-640x480 @75Hz VESA
-800x600 @60Hz VESA
Established Timings 2: 6A
-800x600 @75Hz VESA
-832x624 @75Hz Apple, Mac II
-1024x768 @60Hz VESA
-1024x768 @75Hz VESA
Established Timings 3: 00

---Standard Timing Identification---
-1024x576@60 Hz
20" LCD Color Monitor

- 1280x720@60 Hz
- 1280x720@75 Hz
- 1600x900@75 Hz

<x-Standard Timing Identification-x>

<x-Detailed Timing Descriptions-x>

Detailed Timing: 1600x900 @ 60Hz

<x-Detailed Timing Descriptions-x>

<x-Detailed Timing Descriptions-x>

Detailed Timing: FF (Monitor SN) '21231321233'

Detailed Timing: FD (Monitor limits)

- Min. V. rate: 50Hz
- Max. V. rate: 76Hz
- Min. H. rate: 24 KHz
- Max. H. rate: 83 KHz
- Max. Pixel Clock: 170MHz

Detailed Timing: FC (Monitor Name) 'BenQ G2020HDA'

<x-Detailed Timing Descriptions-x>

Extension Flag: 00
Checksum: 05
Adjustment / Alignment Procedure

Adjusting the Picture

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 four main OSD menus:
1. Display
2. Picture
3. Picture Advanced
4. System

Use the << or >> keys to highlight a menu item, and press the ENTER key to enter the Menu item settings.

The OSD menu languages may differ from the product supplied to your region.

Display menu
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 **<** or **>** keys to make adjustments or selections.
5. To return to the previous menu, press the **MENU** key.

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Operation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>Optimizes and adjusts the screen settings automatically for you.</td>
<td>Press the <strong>ENTER</strong> key to select this option and make adjustment.</td>
<td></td>
</tr>
<tr>
<td>Adjustment</td>
<td>The <strong>AUTO</strong> key is a ‘hot-key’ for this function.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Position</td>
<td>Adjusts the horizontal position of the screen image.</td>
<td>Press the <strong>&lt;</strong> or <strong>&gt;</strong> keys to adjust the value.</td>
<td>0 to 100</td>
</tr>
<tr>
<td>V. Position</td>
<td>Adjusts the vertical position of the screen image.</td>
<td></td>
<td>0 to 100</td>
</tr>
<tr>
<td>Pixel Clock</td>
<td>Adjusts the pixel clock frequency timing to synchronize with the analog input video signal. Not applicable to a digital input signal.</td>
<td></td>
<td>0 to 100</td>
</tr>
<tr>
<td>Phase</td>
<td>Adjusts the pixel clock phase timing to synchronize with the analog input video signal. Not applicable to a digital input signal.</td>
<td></td>
<td>0 to 63</td>
</tr>
</tbody>
</table>

**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 **<** or **>** keys to make adjustments or selections.
5. To return to the previous menu, press the **MENU** button.
## Item Function Operation Range

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Operation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>Adjusts the balance between light and dark shades.</td>
<td>Press the ▶ key to increase the brightness and press the ◀ key to decrease the brightness.</td>
<td>0 to 100</td>
</tr>
<tr>
<td></td>
<td>The function is not available for use when Dynamic Contrast is on.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrast</td>
<td>Adjusts the degree of difference between darkness and lightness.</td>
<td>Press the ▶ key to increase the contrast and press the ◀ key to decrease the contrast.</td>
<td>0 to 100</td>
</tr>
<tr>
<td></td>
<td>The function is not available for use when Dynamic Contrast is on.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharpness</td>
<td>Adjusts the clarity and visibility of the edges of the subjects in the image.</td>
<td>Press the ▶ key to improve the crispness of the display and press the ◀ key to have softness effect on the display.</td>
<td>1 to 5</td>
</tr>
</tbody>
</table>

### 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. | 0 to 100 |
| Bluish    | Applies a cool tint to the image and is factory pre-set to the PC industry standard white color. | 0 to 63  |
| 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 blend of the Red, Green and Blue primary colors can be altered to change the color tint of the image. The default start setting is 50. Decreasing one or more of the colors will reduce their respective influence on the color tint of the image. e.g. if you reduce the Blue level the image will gradually take on a yellowish tint. If you reduce Green, the image will become a magenta tint. Press the ◀ or ▶ keys and the ENTER key to select Red, Green, or Blue. Then use Press the ◀ or ▶ keys to make the color adjustments. | Red (0 to 100) Green (0 to 100) Blue (0 to 100) |
| Reset Color | Resets the User Mode custom color settings to the factory defaults. | Press the ◀ or ▶ keys to change the settings. | YES NO  |
Press **MENU** to leave the Color menu.

<table>
<thead>
<tr>
<th>Dynamic Contrast</th>
<th>The function will increase the level of contrast to provide sharper and more detailed image quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activating</strong></td>
<td>Dynamic Contrast will disable Brightness and Contrast controls.</td>
</tr>
<tr>
<td></td>
<td>Press the ENTER key to select this option. Press the ◀ or ▶ keys to change the settings.</td>
</tr>
<tr>
<td></td>
<td>0 to 5</td>
</tr>
</tbody>
</table>

**Picture advanced menu**

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 ◀ or ▶ keys to make adjustments or selections.
5. To return to the previous menu, press the **MENU** button.

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Operation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture Mode</td>
<td>Selects a picture mode that best suits the type of images shown on the screen. • Standard - for basic PC application. • Movie - for viewing videos. • Dynamics - for viewing landscape-specific videos and playing games. • Photo - for viewing still images. • sRGB - for better color matching representation with the peripheral devices, such as printers, DSCs, etc.</td>
<td>Press the ◀ or ▶ keys to change the settings.</td>
<td>• Standard • Movie • Dynamics • Photo • sRGB</td>
</tr>
</tbody>
</table>
Senseye Demo  
(available when the Picture Mode is set to Photo, Dynamics, or Movie)

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.

Press the ◀ or ▶ keys to change the settings.

| ON | OFF |

Display Mode

This feature is provided to allow aspect ratio’s other than 16:9 to be displayed without geometric distortion.

- Full - Scales the input image to fill the screen. Ideal for 16:9 aspect images.
- Aspect - The input image is displayed without geometric distortion filling as much of the display as possible.

Aspect is not available when the video content is in a 16:9 aspect ratio.

Press the ◀ or ▶ keys to change the settings.

| Full | Aspect |

System menu

1. Press the MENU key to display the main menu.
2. Press the ◀ or ▶ 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 ◀ or ▶ keys to make adjustments or selections.
5. To return to the previous menu, press the MENU button
<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Operation</th>
<th>Range</th>
</tr>
</thead>
</table>
| Input  | Selects the D-sub (analog) input. Use this to change the input to that appropriate to your video cable connection type. | Press the ◀ or ▶ keys to change the settings. | • D-sub  
• DVI  |
|        | **Analog-only models do not have the Input function.**                    |                            |                                 |
| Language | Sets the OSD menu Language.                                                | Press the ◀ or ▶ keys to change the settings. | • English  
• French  
• German  
• Italian  
• Spanish  
• Polish/  
Japanese  
• Czech/  
Traditional Chinese  
• Hungarian/  
Simplified Chinese  
• Serbo-Croatian  
• Romanian  
• Dutch  
• Russian  
• Swedish  
• Portuguese |
| H. Position | Adjusts the horizontal position of the OSD menu.                          |                            | 0 to 100                        |
| V. Position | Adjusts the vertical position of the OSD menu.                             | Press the ◀ or ▶ keys to change the settings. | 0 to 100                        |
| Display Time | Adjusts the display the OSD menu.                                         |                            | • 5 Sec.  
• 10 Sec.  
• 15 Sec.  
• 20 Sec.  
• 25 Sec.  
• 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 the \(<\) 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 the \(<\) or \(\) keys to select "NO" in the "OSD Lock" submenu from the "OSD Settings" menu, and all OSD controls will be accessible. | • YES  
• NO |

Press MENU to leave the OSD Settings menu.

| **DDC/CI** | Allows the monitor settings to be set through the software on the PC. | Press the ENTER key to select this option.  
Press the \(<\) or \(\) keys to change the settings. | • ON  
• OFF |

| **Information** | Displays the current monitor property settings. | Press the ENTER key to select this option. | |

| **Reset All** | Resets all mode, color and geometry settings to the factory default values. | Press the \(<\) or \(\) keys to change the settings. | • YES  
• 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.*
### Display timing table

<table>
<thead>
<tr>
<th>Pixel Format</th>
<th>Hor.-f (kHz)</th>
<th>Hor. -p</th>
<th>Ver.-f (Hz)</th>
<th>Ver. -P</th>
<th>Pixel Clk (MHz)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480</td>
<td>31.47</td>
<td>-</td>
<td>59.94</td>
<td>-</td>
<td>25.175</td>
<td>VGA</td>
</tr>
<tr>
<td>640 x 480</td>
<td>37.50</td>
<td>-</td>
<td>75.00</td>
<td>-</td>
<td>31.500</td>
<td>VGA</td>
</tr>
<tr>
<td>720 x 400</td>
<td>31.47</td>
<td>-</td>
<td>70.08</td>
<td>+</td>
<td>28.321</td>
<td>VGA</td>
</tr>
<tr>
<td>800 x 600</td>
<td>37.88</td>
<td>+</td>
<td>60.32</td>
<td>+</td>
<td>40.000</td>
<td>VESA</td>
</tr>
<tr>
<td>800 x 600</td>
<td>46.88</td>
<td>+</td>
<td>75.00</td>
<td>+</td>
<td>49.500</td>
<td>VESA</td>
</tr>
<tr>
<td>832 x 624</td>
<td>49.72</td>
<td>-</td>
<td>74.55</td>
<td>-</td>
<td>57.283</td>
<td>MAC</td>
</tr>
<tr>
<td>1024 x 768</td>
<td>48.36</td>
<td>-</td>
<td>60.00</td>
<td>-</td>
<td>65.000</td>
<td>VESA</td>
</tr>
<tr>
<td>1024 x 768</td>
<td>60.02</td>
<td>+</td>
<td>75.03</td>
<td>+</td>
<td>78.750</td>
<td>VESA</td>
</tr>
<tr>
<td>1152 x 864</td>
<td>67.50</td>
<td>+</td>
<td>75</td>
<td>+</td>
<td>108</td>
<td>VESA</td>
</tr>
<tr>
<td>1152 x 870</td>
<td>68.68</td>
<td>-</td>
<td>75.06</td>
<td>-</td>
<td>100.000</td>
<td>MAC</td>
</tr>
<tr>
<td>1152 x 900</td>
<td>61.80</td>
<td>±</td>
<td>65.96</td>
<td>±</td>
<td>92.978</td>
<td>SUN</td>
</tr>
<tr>
<td>1280 x 768</td>
<td>47.396</td>
<td>+</td>
<td>60.00</td>
<td>-</td>
<td>68.25</td>
<td>CVT</td>
</tr>
<tr>
<td>1280 x 800</td>
<td>49.702</td>
<td>-</td>
<td>59.81</td>
<td>+</td>
<td>83.5</td>
<td>CVT-8</td>
</tr>
<tr>
<td>1280 x 720</td>
<td>44.77</td>
<td>-</td>
<td>59.86</td>
<td>+</td>
<td>74.5</td>
<td></td>
</tr>
<tr>
<td>1280 x 960</td>
<td>60.00</td>
<td>±</td>
<td>60.00</td>
<td>±</td>
<td>108.000</td>
<td>VESA</td>
</tr>
<tr>
<td>1280 x 1024</td>
<td>63.98</td>
<td>+</td>
<td>60.02</td>
<td>+</td>
<td>108.000</td>
<td>VESA</td>
</tr>
<tr>
<td>1280 x 1024</td>
<td>79.98</td>
<td>+</td>
<td>75.02</td>
<td>+</td>
<td>135.000</td>
<td>VESA</td>
</tr>
<tr>
<td>1360 x 768</td>
<td>47.70</td>
<td>+</td>
<td>60.01</td>
<td>+</td>
<td>85.5</td>
<td>VESA</td>
</tr>
<tr>
<td>1366 x 768</td>
<td>47.76</td>
<td>-</td>
<td>59.85</td>
<td>+</td>
<td>85.5</td>
<td></td>
</tr>
<tr>
<td>1440 x 900</td>
<td>70.60</td>
<td>-</td>
<td>75</td>
<td>+</td>
<td>136.75</td>
<td></td>
</tr>
<tr>
<td>1600 x 900</td>
<td>55.54</td>
<td>+</td>
<td>60</td>
<td>+</td>
<td>97.75</td>
<td>VESA</td>
</tr>
</tbody>
</table>
Factory OSD Menu

Turn off the monitor, keep pressing the “MENU” buttons, and turn on the monitor, then when we press the MENU button, the factory OSD will be at the left top of the panel as below.

BenQ Service Page

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”. And need to have a warning message to double confirm the reset function. The timer should record up to 99999 hours
7. Add BenQ logo on/off item, the default is “on”
8. Add the auto power on item, the default is “off”
9. 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”.
10. Panel type define need to have the panel version
11. F/W version need to define the dual or analog model.
### Product Exploded View

<table>
<thead>
<tr>
<th>NO</th>
<th>PART NO</th>
<th>QTY</th>
<th>UNIT</th>
<th>DESCRIPTION</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q23G3178881 1A</td>
<td>1</td>
<td>PCS</td>
<td>LOGO</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>A34G1308ADPB1B0130</td>
<td>1</td>
<td>PCS</td>
<td>BEZEL 20&quot;</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Q33G0288 2 1C0100</td>
<td>1</td>
<td>PCS</td>
<td>LENS</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Q33G0287ADP 1L0100</td>
<td>1</td>
<td>PCS</td>
<td>KEYPAD</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>KEPC8QJ4</td>
<td>1</td>
<td>PCS</td>
<td>KEY BOARD</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>750GLS200KT312N000</td>
<td>1</td>
<td>PCS</td>
<td>PANEL</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>PWPC9A21VYD5</td>
<td>1</td>
<td>PCS</td>
<td>POWER BOARD</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>756GQ9CB RK001</td>
<td>1</td>
<td>PCS</td>
<td>MAIN BOARD (CBPC9RKBFQD)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>0M1G1030 6120</td>
<td>5</td>
<td>PCS</td>
<td>SCREW M3X6</td>
<td>PB/MB &amp;MAINFRAME</td>
</tr>
<tr>
<td>10</td>
<td>A15G0778 S1</td>
<td>4</td>
<td>PCS</td>
<td>MAINFRAME</td>
<td></td>
</tr>
</tbody>
</table>
## 20” LCD Color Monitor

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A85G0174101</td>
<td>1</td>
<td>AC SHIELD</td>
</tr>
<tr>
<td>P15G8299</td>
<td>3</td>
<td>BKT-VESA</td>
</tr>
<tr>
<td>A34G1309ADP</td>
<td>2</td>
<td>REAR COVER 20”</td>
</tr>
<tr>
<td>Q33G0289ADPA1L0100</td>
<td>1</td>
<td>LOGO COVER</td>
</tr>
<tr>
<td>Q34G0545ADP</td>
<td>1</td>
<td>STAND FRONT</td>
</tr>
<tr>
<td>AQ1G1740</td>
<td>12</td>
<td>SCREW</td>
</tr>
<tr>
<td>Q37G0125021</td>
<td>1</td>
<td>HINGE</td>
</tr>
<tr>
<td>0M1G1740</td>
<td>8 47 CR3</td>
<td>SCREW FOR GROUND 42-D000649</td>
</tr>
<tr>
<td>Q34G0546ADP</td>
<td>1</td>
<td>STAND_BACK</td>
</tr>
<tr>
<td>AM1G1740</td>
<td>12 47 CR3</td>
<td>SCREW</td>
</tr>
<tr>
<td>A33G0251ADP</td>
<td>1</td>
<td>CABLE CLIP</td>
</tr>
<tr>
<td>Q34G0547ADP</td>
<td>1</td>
<td>Base</td>
</tr>
<tr>
<td>Q12G6082</td>
<td>1</td>
<td>FOOT PAD</td>
</tr>
</tbody>
</table>

**Six angles’ view**

![Six angles’ view diagram]
Product Disassembly

1). Remove the stand-base ASS'Y

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 two screws as below to remove the stand-base ASS’Y.

![Fig1](image1)

2). Remove the Bezel

Remove the bezel as follow:

![Fig2](image2)
3). Remove the rear cover

4). Remove the Panel

Disconnect the Lamp Connections and LVDS Cable connection.
5). Remove the Main Board and Power Board

Remove the AC shielding, and remove the screws in red and disconnect the all connections in blue, at last you can get the Main Board and Power Board as follow.
Block Diagram

Main Board

Crystal
24MHZ
(X401)

MCU RTD2122L-LF
(U401)

Panel Interface
(CN601)

Scalar RTD2045L-GR
(U501)

Key Control Interface
(CN202)

D-Sub Connector
(CN301)

H sync
V sync
RGB
20” LCD Color Monitor

Power Board

AC input

EMI filter

Bridge Rectifier and Filter

Start Resistor R904, R932

PWM Control (IC901)

Transformer

Power Switch (Q901)

Rectifier diodes

Feedback Circuit

Transformer (T801)

MOSFET (Q802)

Output Circuit

Lamp

Feedback Circuit

PWM Control TL494IDR (IC801)

12V

5V

12V

ON/OFF

DIM
Troubleshooting Guide

Equipments and Tools Requirement
1. Voltmeter.
2. Oscilloscope.
3. Pattern Generator.
4. DDC Tool with and Compatible Computer.
5. Alignment Tool.
6. LCD Color Analyzer.

Frequently asked questions (FAQ)

❓ 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:
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 that occurs in LCD technology.

❓ 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.

❓ 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".
20” LCD Color Monitor                                     BenQ G2020HDA

? Faint shadow from the static image displayed is visible on the screen:
- Activate the power management function to let your computer and monitor go into a low power "sleep" mode when not actively in use.
- Use a screensaver to prevent the occurrence of image retention.

? Is the prompt on the display illuminated in orange?
If the LED is illuminated in orange, the power management mode is active. Press any button on the computer keyboard or move the mouse. If that does not help, check the signal cable connectors. If any pin is bent or broken off, please contact your dealer to get necessary support.

? Is the prompt on the display not illuminated at all?
Check the power supply mains socket, the external power supply and the mains switch.

? 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.

? The image is displaced in one direction:
- Read the instructions on the link "Adjusting the Screen Resolution" on the CD, and then select the correct resolution, refresh rate and make adjustments based on these instructions.

? The OSD controls are inaccessible:
- To unlock the OSD controls when 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 the ‹ 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
(1) No Power

No power

- Press power key and look if the picture is normal
  - NG: Please reinsert and make sure the AC of 100-240 is normal
    - NG: Reinsert or check the power section
    - OK: Check if the Pin 3, 4 of CN201 is 5V input
      - NG: Check power board
      - OK: Measure U201 Pin2 = 3.3V
        - NG: Replace U201
        - OK: Check if X401 oscillate waveforms are normal
          - NG: Replace X401
          - OK: Check U401
(2) No picture

No picture

Check if the Pin 3, 4 of CN201 is 5V input

OK → NG

Check power board

Measure U201 Pin2=3.3V

OK → NG

Replace U201

X401 oscillate waveforms are normal

OK → NG

Replace X401

Check U401

OK → NG

Replace U401

Check if the sync signal from computer is output and video cable is connected normally

NG

Input the sync signal of computer, or change the cable
(3) White screen

White Screen

Measure Q601 base is low level?

- OK
  - Check Q602, Q601 is broken or CN601 solder?
    - OK
      - Replace Panel
    - NG
      - Check Correspondent component.

- NG
  - X401 oscillate waveform is normal
    - OK
      - Replace X401
    - NG
      - Check U401
        - OK
          - Check reset circuit of U401 is normal
            - OK
              - Replace U401
            - NG
              - Check Correspondent component.
No power

Check CN902 PIN4.5 = 5V

NG

Check AC line volt 110V or 220V

OK NG

Check AC input

OK

Check the voltage of C907 (+)

OK NG

Check bridge rectified circuit and F901 circuit

NG

Check start voltage for the pin8 of IC901

OK NG

Check R904, R905, Change IC901

NG

Check the auxiliary voltage is bigger than 10V and smaller than 20V

OK NG

1) Check IC901
   2) Check R909/D901/C903 circuit

NG

Check IC901 pin5 PWM wave

OK NG

Check IC901

NG

Check D915/D916/IC902/IC903/ZD902/ZD901
Check Inverter input =12V

OK → NG

Check adapter and F801

NG

Check ON/OFF signal

OK → NG

Check Interface board or main board

NG

Check IC801 PIN 11=5V

OK → NG

Change ON/OFF circuit

NG

Check IC801 PIN8/PIN9 PWM wave

OK → NG

Check IC801

NG

Check Q805, Q806 Drain wave

OK → NG

Change Q805, Q808

NG

Check the output of T801

OK → NG

Change T801

NG

Check connector & lamp, feedback and protect circuit
OSD is unstable or not working

Is Key Pad Board connecting normally?
Y
Is Button Switch normally?
Y
Is Key Pad Board normally?
Y
Check Main Board

N
Connect Key Pad Board

N
Replace Button Switch

N
Replace Key Pad Board
PCB LAYOUT

Main Board

![PCB Layout Image]
### Appendix 1 – Screw List / Torque

(TH9SRKMBF8WBQNN)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Type</th>
<th>Description</th>
<th>Quantity</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>0M1G1030</td>
<td>6120</td>
<td>M3*6 FOR POWER BOARDS &amp; MAIN FRAME</td>
<td>3</td>
<td>6±1KGF.CM</td>
</tr>
<tr>
<td>0M1G1030</td>
<td>6120</td>
<td>M3*6 FOR MAIN BOARDS &amp; MAIN FRAME</td>
<td>2</td>
<td>6±1KGF.CM</td>
</tr>
<tr>
<td>0M1G1740</td>
<td>8 47</td>
<td>CR3 Q4*8 FOR HINGE &amp; STAND</td>
<td>1</td>
<td>6±2KGF. CM</td>
</tr>
<tr>
<td>AQ1G1740</td>
<td>12120</td>
<td>M4*12 FOR HINGE &amp; STAND</td>
<td>2</td>
<td>6±2KGF. CM</td>
</tr>
<tr>
<td>AM1G1740</td>
<td>12 47</td>
<td>CR3 M4*12 HINGE &amp; REAR COVER</td>
<td>2</td>
<td>12±2KGF. CM</td>
</tr>
<tr>
<td>0M1G1730</td>
<td>8120</td>
<td>M3*8 FOR HEAT SINK</td>
<td>1</td>
<td>~</td>
</tr>
<tr>
<td>0M1G1730</td>
<td>8120</td>
<td>M3*8 FOR HEAT SINK</td>
<td>1</td>
<td>~</td>
</tr>
</tbody>
</table>