

PRODUCT SPECIFICATION

产品规格书

PRODUCT /产品名称 : MONITER / 显示器主板

P/N /型号 : SQM-004 V0 FOR

CLIENT /客户 : _____

CLIENT P/N : _____
客户物料编码

DATE /日期 : 2012-10-30

APPROVED BY/客户确认栏	NOTE / 备注
<p>CUSTOMER SIGNATURE (S) 客户签章</p>	<p>RoHS Available 环保品</p>

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Thank you for your trust and support!

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Revision Record / 变更记录表

No. 序号	Date 变更日期	Version 版本	Reason of revision 变更原因	Content of revision 变更内容	Prepared by 变更人	Approved by 确认人
1	2012-11-5			Increase Normal Testing And Quality Control、Design Reference Standards、 Weight、Notice /常规测试和 品质控制、设计参照标准、 重量、注意事项	林富	

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1 · General Description/概述：

The board of the main control IC is HX6820-A, with high integration, low power consumption and high quality display characteristics. The motherboard supports only one VGA video input, the highest VGA video format can support to UXGA FHD (1920X1080) @75Hz, maximum output can support dual 8 bit 1920X1080 of LVDS panel, support the SOG(signal on green) and support the infrared touch interface. The board has the advantages of small volume, low price and other characteristics, suitable for the display and advertising and other fields.

本主板的主控 IC 是 HX6820-A，具有高集成、低功耗和优质显示等特点。本主板仅支持一路 VGA 视频输入，VGA 视频格式最高可以支持到 FHD(1920X1080)@75Hz，输出最高可以支持双 8 位的 1920X1080LVDS 屏，支持 SOG（绿同步）和支持红外触摸接口。本主板具有体积小，价格便宜等特点，适用于显示器和广告机等领域。

2 · Conditions Of Use/使用条件：

Input Voltage/输入电压：DC12±3V。

Operating Temperature / 工作温度：-10°C ~ 60°C

Storage Temperature / 贮存温度：-20°C ~ 80°C

Operating Humidity / 工作湿度：0% ~ 90%RH

Storage Humidity / 贮存湿度：0% ~ 95%RH

Operation Altitude/工作海拔：to 10,000FT.

Storage Altitude/贮存海拔：to 20,000FT.

Cooling Method/冷却方式：Ventilation cooling/自然冷却

3 · Normal Testing And Quality Control /常规测试和品质控制：

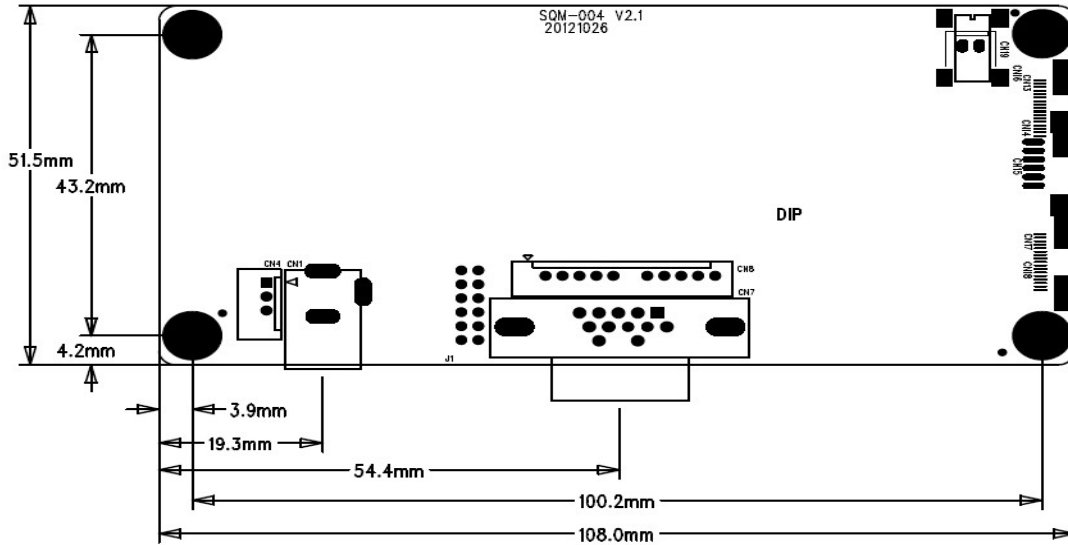
The device must not occur such as fire, smoke, break in normal working and picture display is normal. It will work 8 hours in burning mode.

正常工作条件下，不可出现起火、高温、击穿等现象同时显示正常，还有老化 8 个小时。

4 · The Motherboard Structure And Interface Description/主板的结构和接口

说明：

4.1 The structure of view on the motherboard as follows/主板的结构图如下：



4.2 The front view of the motherboard as follows/主板的正面图如下：

1. Panel power interface/屏供电接口

2. infrared touch interface./红外触摸接口

3. Panel interface/屏接口

4. 2PIN Backlight interface/2 针背光接口

10. 12V power interface/12 伏电源接口

9. Keys interface/按键接口

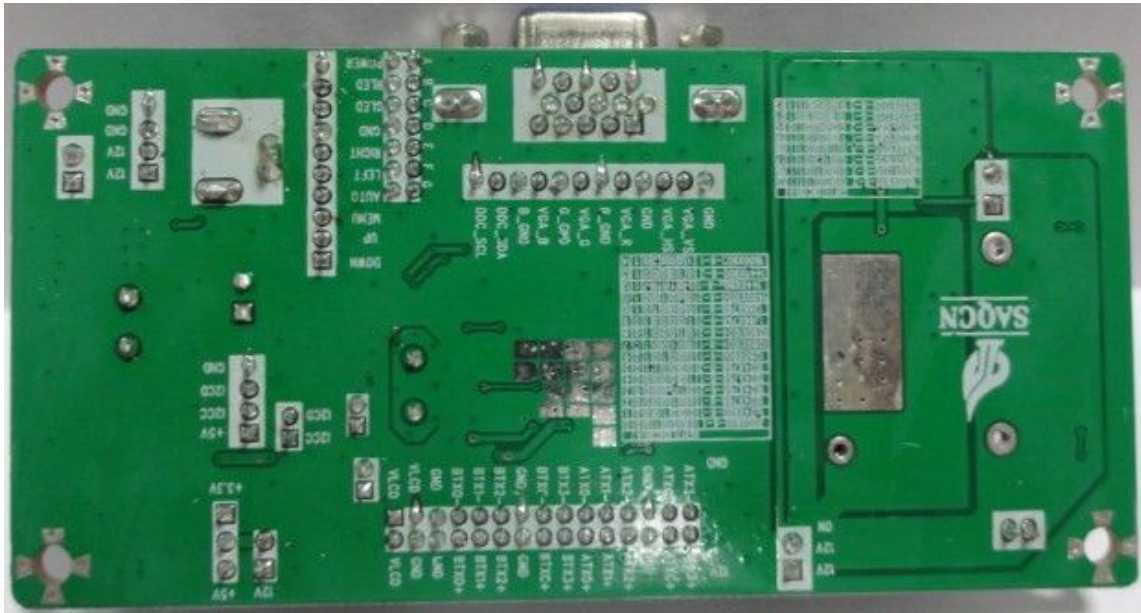
8. Adjust panels interface/调屏参接口

7. VGA signal input interface/电脑信号输入接口

6. 6PIN Backlight interface/6 针背光接口

5. 12PIN Backlight interface/12 针背光接口

4.3 The rear view of the motherboard as follows/主板的背面图如下：



4.4 Each interface definition and function as follows/ 每个接口的定义和功能如下：

1. Panel power interface/屏供电接口：			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	+3.3V	3.3V power output for panel /3.3 伏屏供电	The voltage is decided by panel. /电压由屏确定。
2	+5V	5V power output for panel /5 伏屏供电	
3	+12V	12V power output for panel /12 伏屏供电	

2. infrared touch interface./红外触摸接口			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	+5V	5V power input /5 伏电压输出	
2	I2CC	infrared touch clock line/红外触摸时钟线。	
3	I2CD	infrared touch data line/红外触摸数据线。	
4	GND	Ground/地	

3. Panel interface/屏接口：			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	VLCD	Panel power/屏供电	
2			
3			
4	GND	Ground/地	
5			
6			
7	BTX0+	Data0+/数据 0 正	
8	BTX0-	Data0-/数据 0 负	
9	BTX1+	Data1+/数据 1 正	
10	BTX1-	Data1-/数据 1 负	
11	BTX2+	Data2+/数据 2 正	
12	BTX2-	Data2-/数据 2 负	
13	GND	Ground/地	
14			
15	BTXC+	Clock+/时钟正	
16	BTXC-	Clock-/时钟负	
17	BTX3+	Data3+/数据 3 正	
18	BTX3-	Data3-/数据 3 负	
19	ATX0+	Data0+/数据 0 正	
20	ATX0-	Data0-/数据 0 负	
21	ATX1+	Data1+/数据 1 正	
22	ATX1-	Data1-/数据 1 负	
23	ATX2+	Data2+/数据 2 正	
24	ATX2-	Data2-/数据 2 负	
25	GND	Ground/地	
26			
27	ATXC+	Clock+/时钟正	
28	ATXC-	Clock-/时钟负	
29	ATX3+	Data3+/数据 3 正	
30	ATX3-	Data3-/数据 3 负	

4. 2PIN Backlight interface/2 针背光接口			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	Cathode/ 负极	Connect to the panel of Lamp tube cathode /连接屏灯管的负极	
2	Positive electrode/ 正极	Connect to the panel of Lamp tube Positive electrode /连接屏灯管的正极	

5. 12PIN Backlight interface/12 针背光接口			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	Cathode/ 负极	Connect to the panel of Lamp tube cathode /连接屏灯管的负极	
2			
3			
4			
5	Can adjust/ 可调	With different position resistance adjustable positive / negative / empty/贴不 同位置电阻可调正/负/空	
6	Positive electrode/ 正极	Connect to the panel of Lamp tube Positive electrode /连接屏灯管的正极	
7			
8	Same as 5/同 5		
9/10/11/12	Same as 1/同 1		

6. 6PIN Backlight interface/6 针背光接口			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	Cathode/ 负极	Connect to the panel of Lamp tube cathode /连接屏灯管的负极	
2			
3	Positive electrode/ 正极	Connect to the panel of Lamp tube Positive electrode /连接屏灯管的正极	
4			
5/6	Same as 1 / 同 1		

7. VGA signal input interface/电脑信号输入接口：			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	GND	Ground/地	
2	VGA_VS	VGA vertical signal/VGA 场信号	
3	VGA_HS	VGA horizontal signal/VGA 行信号	
4	GND	Ground/地	
5	VGA_R	VGA red signal/VGA 红色信号	
6	R_GND	Ground/地	
7	VGA_G	VGA green signal/VGA 绿色信号	
8	G_GND	Ground/地	
9	VGA_B	VGA blue signal/VGA 蓝色信号	
10	B_GND	Ground/地	
11	DDC_SDA	Updating of data line/升级数据线	
12	DDC_SCL	Updating of clock line/升级时钟线	

9. Keys interface/按键接口：			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	POWER	Turn on/off/开/关机	<p>●The UP and DOWN keys will be not connected when use 5keys.</p> <p>●The RIGHT and LEFT keys only use to adjust value when use 7keys.</p> <p>●使用 5 键时，上/下键不接。</p> <p>●使用 7 键时，左/右键仅作调整数值作用。</p>
2	RLED	The LED is red when sleep/睡眠时指示灯变红	
3	GLED	The LED is green when working/正常时指示灯变蓝	
4	GND	Ground/地	
5	RIGHT	Move up the icon or right adjusting value /上移或者右调整	
6	LEFT	Move down the icon or left adjusting value /下移或者左调整	
7	AUTO	Automatic adjustment and exit higher menu role /自动调整或者退出上一级菜单	
8	MENU	Enter the menu and determine the role /进入菜单和确定作用	
9	UP	Move up the icon /上移	
10	DOWN	Move down the icon /下移	

8. Adjust panels interface/调屏参接口									
NO/序号	A	B	C	D	E	F	G	Explain/说明	备注
0	0	0	0	0	0	0	0	DEFAULT_PANEL	1 : Connect
1	0	0	1	0	0	0	0	800X600-6-1	jumper/
2	0	0	0	1	0	0	0	1024X600-6-1	接上跳帽
3	0	0	0	0	1	0	0	1024X768-6-1	0 : No connect
4	0	0	0	0	0	1	0	1024X768-6-2	jumper/
5	0	0	0	0	0	0	1	1024X768-8-1	不接跳帽
6	0	1	1	0	0	0	0	1024X768-8-2	All is 0, as the
7	0	1	0	1	0	0	0	1280X800-6-1	default screen
8	0	1	0	0	1	0	0	1280X1024-8-1	parameter, i.e.
9	0	1	0	0	0	1	0	1280X1024-8-2	program at
10	0	1	0	0	0	0	1	1366X768-6-2	initialization
11	1	0	1	0	0	0	0	1366X768-8-1	time does not
12	1	0	0	1	0	0	0	1400X1050-6-2	change the
13	1	0	0	0	1	0	0	1440X900-6-1	screen./ 全是 0
14	1	0	0	0	0	1	0	1440X900-8-2	时, 为默认屏
15	1	0	0	0	0	0	1	1600X900-6-1	参, 即是说程
16	1	1	1	0	0	0	0	1600X900-8-2	序在初始化时
17	1	1	0	1	0	0	0	1600X1200-8-2	不改变屏参。
18	1	1	0	0	1	0	0	1680X1050-6-1	
19	1	1	0	0	0	1	0	1680X1050-8-2	
20	1	1	0	0	0	0	1	1920X1080-6-1	
21	0	1	0	0	0	0	0	1920X1080-8-2	
22	1	0	0	0	0	0	0	1920X1200-6-1	
23	1	1	0	0	0	0	0	1920X1200-8-2	

10. 12V power interface/12 伏电源接口 :			
NO/序号	Name/名	Functions/功能	Remarks/备注
1	+12V	12V power input /12 伏电压输入	
2	+12V	12V power input /12 伏电压输入	
3	GND	Ground/地	
4	GND	Ground/地	

5 · Key Functions/按键功能说明：

5.1 Key Definition/按键的定义：

POWER/电源 MENU/菜单 LEFT/左 RIGHT/右 AUTO/自动 UP/上 DOWN/下

5.2 Key Functions/按键功能说明：

POWER/电源：Turn On/Off/开/关机。

MENU/菜单：Enter the menu and determine the role/进入菜单和确定作用。

AUTO/自动：Automatic adjustment and exit higher menu role/自动调整和退出上级菜单作用。

a) If use the 5 keys keyboard:/如果使用的是 5 键的按键板：

LEFT/左：Move down the icon or left adjusting value/向下移动图标或者向左调节数值。

RIGHT/右：Move up the icon or right adjusting value /向上移动图标或者向右调节数值。

UP and DOWN are full. / 上/下键是空的，即不接线。

b) If use the 7 keys keyboard:/如果使用 7 键的按键板：

LEFT/左：Left adjusting value/向左调节数值。

RIGHT/右：Right adjusting value /向右调节数值。

UP/上：Move up the icon./向上移动图标。

DOWN/下：Move down the icon./向下移动图标。

5.3 Factory Mode And Burning Mode： /工厂模式和老化模式：

In the factory mode:

How to enter the factory mode?

Press and hold the MENU key about 3~4second, the factory menu will be showed automatically under the condition of normal work.

In the burning mode:

How to enter the burning mode?

Don't connect signal , press the AUTO and POWER key, the machine will be working from the condition of standby. The machine will enter the burning mode automatically, after show the no signal menu. Press POWER key to turn off, it will exit the burning mode.

工厂模式：

如何进入工厂模式？

在正常工作的情况下，一直按住菜单键大概 3~4 秒，工厂菜单就会自动地显示。

老化模式：

如何进入老化模式？

不要连接信号，在待机情况下，按住自动+电源键，机台将开机。当显示无信号菜单后，机台将会自动进入老化模式。按电源键关机，退出老化模式。

6 · Menu And Function Description/菜单及其功能说明:

6.1 Menu Description/菜单简述:

The name of current item is in the up of the menu title; the information of the current VGA video format is in the under of the menu title.

When a menu icon is not selected as black, when selected as grey; rightmost option and schedule playing is not selected as deep blue, was selected as the red.

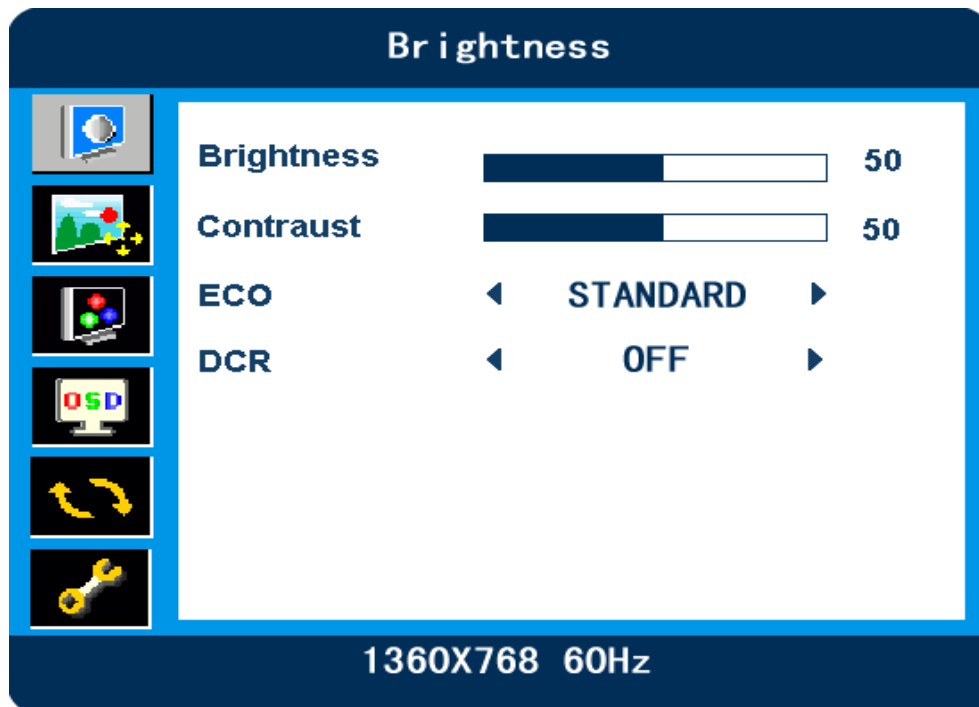
菜单的上标题为当前项目名；下标题为当前 VGA 视频的格式。

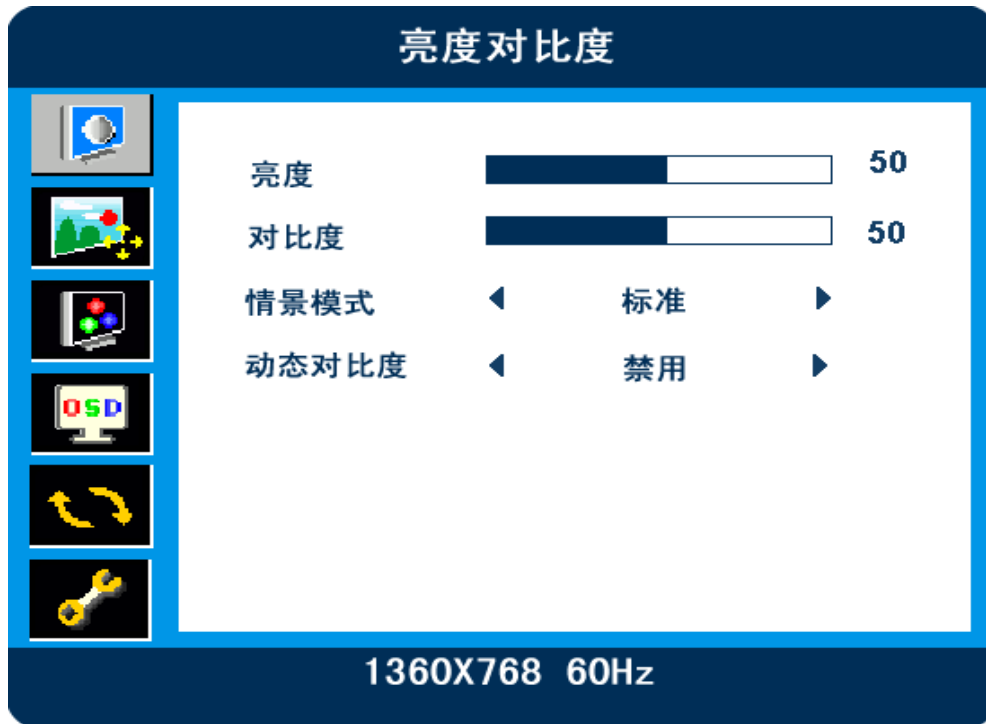
当菜单图标没被选中时是黑色，选中时是灰色；右边的选项和进度打条没被选中时是深蓝色，被选中时是红色。

6.2 Detailed Description Of The Function/功能的详细说明:

a) The Page Of Brightness/亮度对比度页:

Photograph As/图片如下:





Brightness: Adjust the brightness of the image from 0 to 100, the default is 50.

亮度：0~100 调节图像的亮度，默认为 50。

Contrast: Adjust the contrast of the image from 0 to 100, the default is 50.

对比度：0~100 调节图像的对比度，默认为 50。

ECO Mode: There are four kinds of mode: standard, games, movies, text. The default is 50. The parameters of the standard see schedule 1.

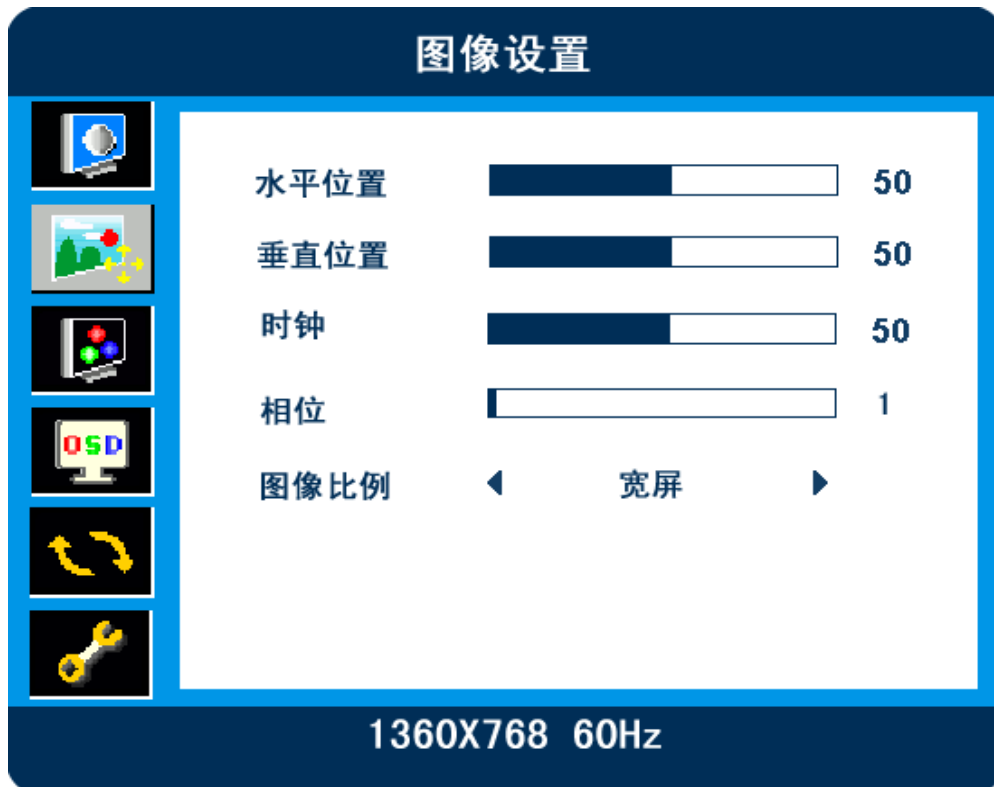
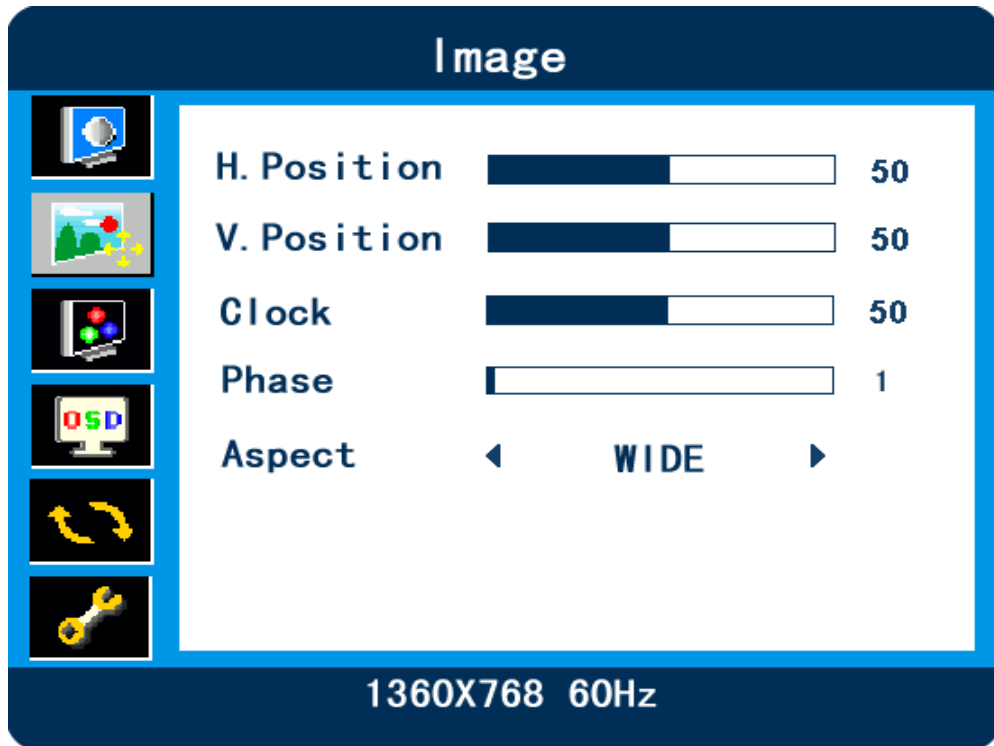
情景模式：有标准、游戏、电影、文本四种模式，默认为 50。它们的参数标准请见附表 1。

DCR: it can be adjusted with off/on, the default is off. The brightness and contrast can be adjusted, when DCR is off; the brightness and contrast will be locked, when DCR is on;

动态对比度：禁用/启用调节，默认为禁用。禁用时，亮度/对比度可调；启用时，亮度/对比度将会锁死。

b) The Page Of The Image/图像设置页:

Photograph As/图片如下:



H.position: adjust the image of horizontal position, the default is 50.

水平位置：调节图像的水平位置，默认为 50。

V.position: adjust the image of vertical position, the default is 50.

垂直位置：调节图像的垂直位置，默认为 50。

Clock: adjust image stretching / shrinking, the default is 50.

时钟：调节图像的拉伸/缩小，默认为 50。

Phase: Adjust image phase.

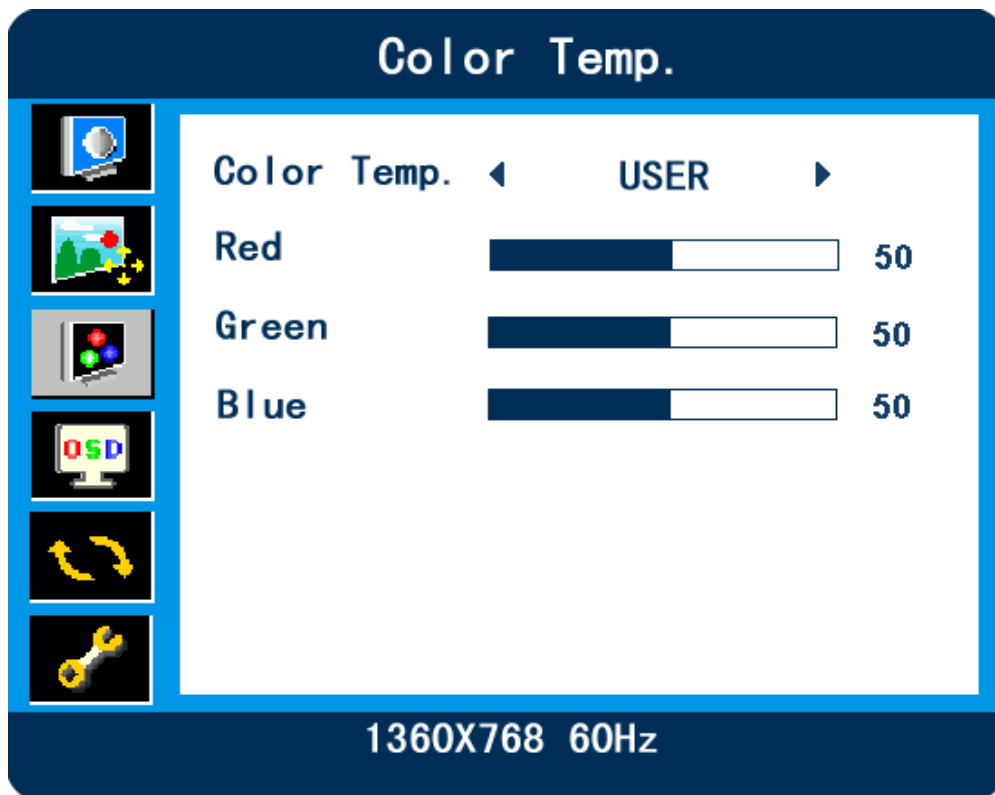
相位：调节图像的相位。

Aspect: there are three modes: wide (16:9), 4:3, auto. In the auto mode, it can distinguish the resolution automatically. It will display as 4:3 ratio, when it distinguish the resolution is 4:3 resolution automatically and fill it with black content in the side of panel. It will display as 16:9 ratio, when it distinguish the resolution is 16:9 resolution automatically.

图像比例：有宽屏（16：9）、4：3、自动三种模式。在自动的模式下，能够自动识别分辨率，为 4：3 的分辨率下就自动以 4：3 的比例显示，左右两边黑色画面处理，为 16：9 的分辨率下就自动以 16：9 比例显示。

c) The page of Color temperature/色温页：

Photograph As/图片如下：





Color temp.: there are three kinds of mode: user, warm, cool, the default is user. In user mode, the items of red, green, blue can be adjust from 0 to 100; In warm and cool mode, the items of red, green, blue will be locked.

色温：有用户设定、暖色温、冷色温三种模式，默认为用户设定。用户设定时，红色、绿色、蓝色 0~100 可调；暖色温和冷色温时，红色、绿色、蓝色将会锁死。

d) The page of OSD menu/OSD 设置页：

Photograph As/图片如下：

OSD Menu

	Language		
	OSD H. Pos	<input type="range" value="50"/>	50
	OSD V. Pos	<input type="range" value="50"/>	50
	OSD Timer	<input type="range" value="10"/>	10
	Translucence	<input type="range" value="0"/>	0

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OSD 设置

	语言选择		
	水平位置	<input type="range" value="50"/>	50
	垂直位置	<input type="range" value="50"/>	50
	时间设定	<input type="range" value="10"/>	10
	透明度	<input type="range" value="0"/>	0

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OSD Menu

	English	Français
	Deutsch	русский
	日本語	한국어
	简体中文	繁體中文
		
		

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OSD 设置

	English	Français
	Deutsch	русский
	日本語	한국어
	简体中文	繁體中文
		
		

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Language: there are five options: English, French, Deutsch, Russian, Japanese, Korean, simplified Chinese, traditional Chinese and default the simplified Chinese.

语言选择: 有英文、法文、德文、俄文、日文、韩文、简体中文、繁体中文 8 种选择, 同时默认为简体中文。

OSD H.Pos: adjust the horizontal position of menu that shows on the screen, the default is 50.

水平位置: 调节菜单在屏幕上的显示水平位置, 默认为 50。

OSD V.Pos: adjust the vertical position of menu that shows on the screen, the default is 50.

垂直位置: 调节菜单在屏幕上的显示垂直位置, 默认为 50。

OSD Timer: set the time of display menu, the default is 10S.

时间设定: 设定菜单显示的时间, 默认为 10 秒。

Translucence: set menu Translucence, default is 0 as opaque.

透明度: 设定菜单的透明度, 默认为 0 即不透明。

e) The page of reset/重置页:

Photograph As/图片如下:





Auto Adjust: do automatic adjustment for the image of color and position.

图像自动调整：对图像的颜色和位置等做自动调整。

Color adjust: do the automatic adjustment only for the image color.

色彩自动调整：仅对图像的颜色做自动调整。

Reset: all the options parameter reset to default on the menu.

重置：对整个菜单的所有选项的参数复位到默认值。

f) The page of Other/其他页：

Other

Hotkey type ◀ **BRI+CON** ▶

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其它

热键选择 ◀ **亮度 + 对比度** ▶

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Hotkey type: there are two modes: BRI+CON and ASP+ECO, the default is BRI+CON. The details see schedule 2.

热键选择: 有亮度+对比度、图像比例+情景模式二种方式, 默认为亮度+对比度。
详情请见附表 2。

7 · Design Reference Standards /设计参照标准 :

7.1 EMI Standards / EMI 参照标准

- a) Conductive & Radiation limits: CISPR 22 Class B
传导, 辐射的设计标准依据: CISPR 22 Class B
- b) Electrostatic Discharge Immunity Test: IEC-61000-4-2 , Criteria B
防静电测试标准: IEC-61000-4-2, Criteria B
- c) EFT/Burst Immunity Test: IEC-61000-4-4 , Lever 3.
快速脉冲群测试标准: IEC-61000-4-4, Lever 3.
- d) Surge Immunity Test: IEC-61000-4-5 , Lever 3.
防雷击测试标准: IEC-61000-4-5, Lever 3.
- e) Voltage Dips, Short Interruptions and Voltage Variations Immunity Test.
IEC-61000-4-11 , Criteria B
电压跌落、短时中断和电压变化测试标准: IEC-61000-4-11, Criteria B

7.2 Safety Compliance / 安规参照标准

IEC60950
IEC60065.

8 · Weight/重量 :

The weight of the product shall be about 42g.
产品的重量大约为 42 克。

9 · Notice/注意事项 :

- a) Don't touch the master IC directly, to avoid being damaged by static electricity.
不要直接用手触摸主控 IC, 以免被静电损坏。
- b) Products are not intended for use in systems in which failures of product could result in personal injury.
请勿将本产品使用在非适用范围的产品上, 以免造成意外伤害。

- c) Based on security issues, please ensure that the positive pole of the power in the product don't contact with the machine of metal material directly, or use the insulating materials for isolation, avoid short circuit and dangerous in the assembly of the product,
 基于安全问题,请在组装本产品时,确保本产品的电源正极不与整机中的金属材料直接接触,或者使用绝缘材料进行隔离,避免短路而产生危险。
- d) Avoid twisting, bending, strong collision and falling damage In the assembly of this product.
 请在组装本产品时,避免扭曲,弯折,大力碰撞及跌落而造成损害。
- e) Guarantee to offer ESD shield bag to protect the product from electrostatic or magnetic interference during delivery. Due to the inverter is usually designed without the enclosure. Please take care about ESD at anytime.
 在产品交付的整个过程中均保证采用 ESD 屏蔽袋包装处理,因为该产品无外壳保护,请务必随时注意防静电措施。

10 · Appendix/附录:

Schedule/附表 1:

ECO/情景模式:	Brightness/亮度:	Contrast 对比度:
Standard/标准	50	50
Games/游戏	60	70
Movies/电影	80	80
Text/文本	20	60

Schedule/附表 2:

Hotkey type/热键选择:	RIGHT/右键	LEFT/左键
BRI+CON/亮度+对比度	Brightness of shortcut keys/亮度快捷键	Contrast of shortcut keys/对比度快捷键
ASP+ECO/图像比例+情景模式	Aspect of shortcut keys/图像比例快捷键	ECO of shortcut keys/情景模式快捷键

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