MONITOR Driver Board Specification

Mainboard Model: **JRYS8C15-B**

Mainboard Function： **VGA+DVI**

Support Panel: **1920*1200 and below**

Security Level: **Confidential**

Designed by: **Xiqin Lv**

Audited by: **Jinlong Yuan**

Approval:

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Contents

1. Function Description

*JRYS8C15-B LCD Monitor Control Board supports 1920*1200 and below TFT LCD Panel with the main chipset model TSUMU58NWHL-LF-1.*

It completes the switch that from the PC's VGA analog signal or DVI digital signal to LVDS signal that LCD module can support. The design is mainly used for matching with TFT LCD PANEL.

This mother board would be supplied to 8-bit and 6-bit panel with definition of 1920*1200 and below, to achieve analog R, G, B output and input, to achieve analog R, G, B input signal reproduction of maximum resolution up to WUXGA. Color reproduction could support 24bit, up to 16.7 megapixels, ADC frequency up to 165MHz, and with DCR (Dynamic Contrast Ratio), color engine, color enhancement and other special functions that make color reproduction more realistic, more brilliant and more vivid. It also could achieve synchronous detection automatically. Synchronization method requires the use of separate horizontal and vertical sync signal, with exquisite OSD interface style and 8 OSD languages optional.

Software supports 16:10 and 4:3 display mode switching function, this function makes game players more convenient. It also supports updating online. With VGA function, the motherboard supports maximum output resolution of 1920*1200.

Non-otherwise stated, the products are in compliance with specifications described in this document.

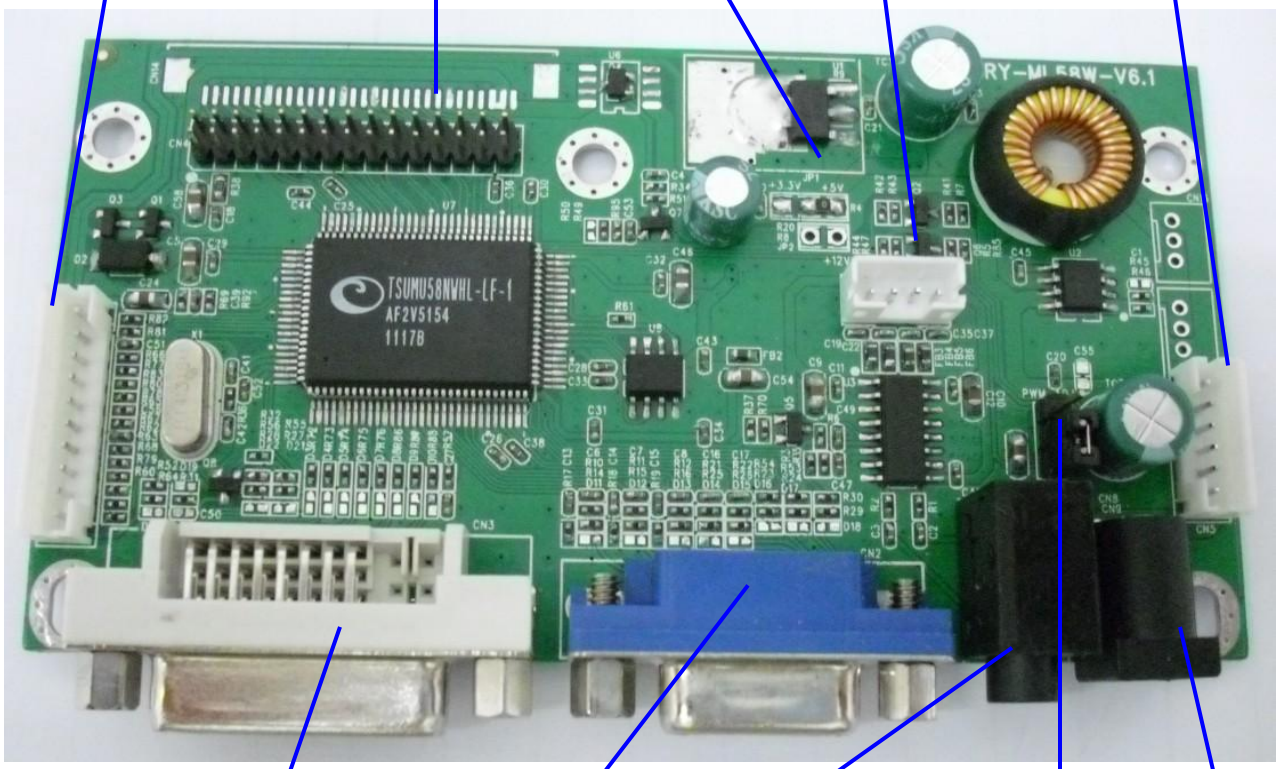
2. Main Features

Control panel support specifications as below：

Input Signal:	RGB analog (0.7Vp-p), Line field separation synchronizing signal , DVI（T.M.D.S）digital signal
Support Mode:	DOS，VGA，SVGA，XGA，SXGA，WXGA+,UXGA,WUXGA
Color:	18bit/24bit(choose according to panel datasheet)
Horizontal Freq:	31.5-94.038KHz
Vertical Freq:	60-75Hz
Output Signal:	LVDS standard
Control KEY:	POWER, LEFT, RIGHT, AUTO, MENU, UP, DOWN, 7 key(changed to 5 key or 6 key based on clients' options)
OSD MENU:	Brightness, Contrast Ratio， Auto Detection， Phase， Clock， H. Position， V. Position, Function Set, Restoration and otherwise.
OSD Languages:	Chinese/English/ German/ Korean/French/Spanish/Japanese

	and many other different languages optional
FW Updating:	Support VGA upgrade online
Power Input:	Expernal Power Supply, +12.0V DC+12V（+/-0.5V）
Power Operation:	Normal operation mode, low-power consumption mode
Power consumption：	≤0.27W
PCB Size:	108.0mm(L)×58.5mm(W)×1.2mm(H)
Plug＆Play：	Support

3. A/D Drive Board Appearance



4. VGA Preinstall Support Mode Table(VGA Mode Table)

VGA Mode Table (VGA Support Mode)

Mode	Resolution	Horizontal Freq (KHz)	Vertical Freq (Hz)
WUXGA	1920*1200	74.556	60
WUXGA	1920*1080	67.5	60
UXGA	1680*1050	59.8	60
WXGA+	1440*900	55.5	60
SXGA	1280*1024	63.5	60
		80.0	75
XGA	1024*768	48.4	60
		56.5	70
		60.0	75
SVGA	800*600	37.9	60
		47.2	72
		46.9	75
VGA	640*480	31.5	60
		37.9	72
		37.5	75

DOS	720*400	31.5	70

5. Input/Output Interface Definition and Electrical Requirements.

(Table 1)

CN2（VGA Port) DB15/3.08mm(Output Signal Pin Definition)		
Pin Number	**Definition**	**Description**
1	RED	Red Video(75ohm,0.7Vp-p)
2	GREEN	Green Video(75ohm,0.7Vp-p)
3	BLUE	Blue Video(75ohm,0.7Vp-p)
4	GND	GND
5	DET_VGA	Plug＆Play detection port
6	GND	GND
7	GND	GND
8	GND	GND
9	NC	NC
10	GND	Ground
11	GND	Ground
12	DDC_SDA	DDC Data Input
13	HSI	Horizontal Sync
14	VSI	Vertical Sync
15	DDC_SCL	DDC_Clock Input

（Table 2）

CN3（DVI Input）24PIN+0PIN(Output Signal Pin Definition)		
Pin Number	**Definition**	**Description**
1	DATA2-	Digital signal
2	DATA2+	Digital signal
3	GND	GND
4	NC	NC
5	NC	NC
6	SCL	DDC Clock Input
7	SDA	DDC Date Input
8	NC	NC
9	DATA1-	Digital signal
10	DATA1+	Digital signal
11	GND	GND
12	NC	NC
13	NC	NC
14	NC	NC
15	GND	GND
16	DET_DVI	Plug＆Play detection port

17	DATAO-	Digital signal
18	DATAO+	Digital signal
19	GND	GND
20	NC	NC
21	NC	NC
22	NC	NC
23	DCLK+	Digital Clock signal
24	DCLK-	Digital clock signal
25	NC	NC
26	NC	NC
27	NC	NC
28	NC	NC
29	NC	NC

（Table 3）

CN4（LVDS signal output）15*2/30PIN/Pitch2.0mm		
Pin Number	**Definition**	**Description**
1	LCD-VDD	Power for Panel (+5V)
2	LCD-VDD	Power for Panel (+5V)
3	LCD-VDD	Power for Panel (+5V)

4	GND	GND
5	GND	GND
6	GND	GND
7	RXO0-	LVDS ODD 0- Signal
8	RXO0+	LVDS ODD 0+ Signal
9	RXO1-	LVDS ODD 1- Signal
10	RXO1+	LVDS ODD 1+ Signal
11	RXO2-	LVDS ODD 2- Signal
12	RXO2+	LVDS ODD 2+ Signal
13	GND	GND
14	GND	GND
15	RXOC-	LVDS ODD Clock- Signal
16	RXOC+	LVDS ODD Clock+ Signal
17	RXO3-	LVDS ODD 3- Signal
18	RXO3+	LVDS ODD 3+ Signal
19	RXE0-	LVDS EVEN 0- Signal
20	RXE0+	LVDS EVEN 0+ Signal
21	RXE1-	LVDS EVEN 1- Signal
22	RXE1+	LVDS EVEN 1+ Signal
23	RXE2-	LVDS EVEN 2- Signal
24	RXE2+	LVDS EVEN 2+ Signal

25	GND	GND
26	GND	GND
27	RXEC-	LVDS ODD Clock- Signal
28	RXEC+	LVDS ODD Clock+ Signal
29	RXE3-	LVDS EVEN 3- Signal
30	RXE3+	LVDS EVEN 3+ Signal

（Table 4）

CN5（Inverter Control) 6PIN/Pitch2.0mm		
Pin Number	**Definition**	**Description**
1	GND	GND
2	GND	GND
3	BL_ADJ	Backlight brightness adjustment
4	BL_ON	Backlight brightness control
5	12V	Power Output
6	12V	Power Output

（Table 5）

CN7 (KEY Input) 10 PIN/Pitch2.0mm

Pin Number	Definition	Description
1	POWER	Power ON/OFF
2	LED-R	Red Light
3	LED-G	Green Light
4	GND	Ground
5	LEFT	LEFT
6	RIGHT	RIGHT
7	AUTO	AUTO
8	MENU	OSD MENU
9	UP	UP
10	DOWN	DOWN

（Table 6）

CN8(Power Input）φ2.0mm (Black)

（Table 7）

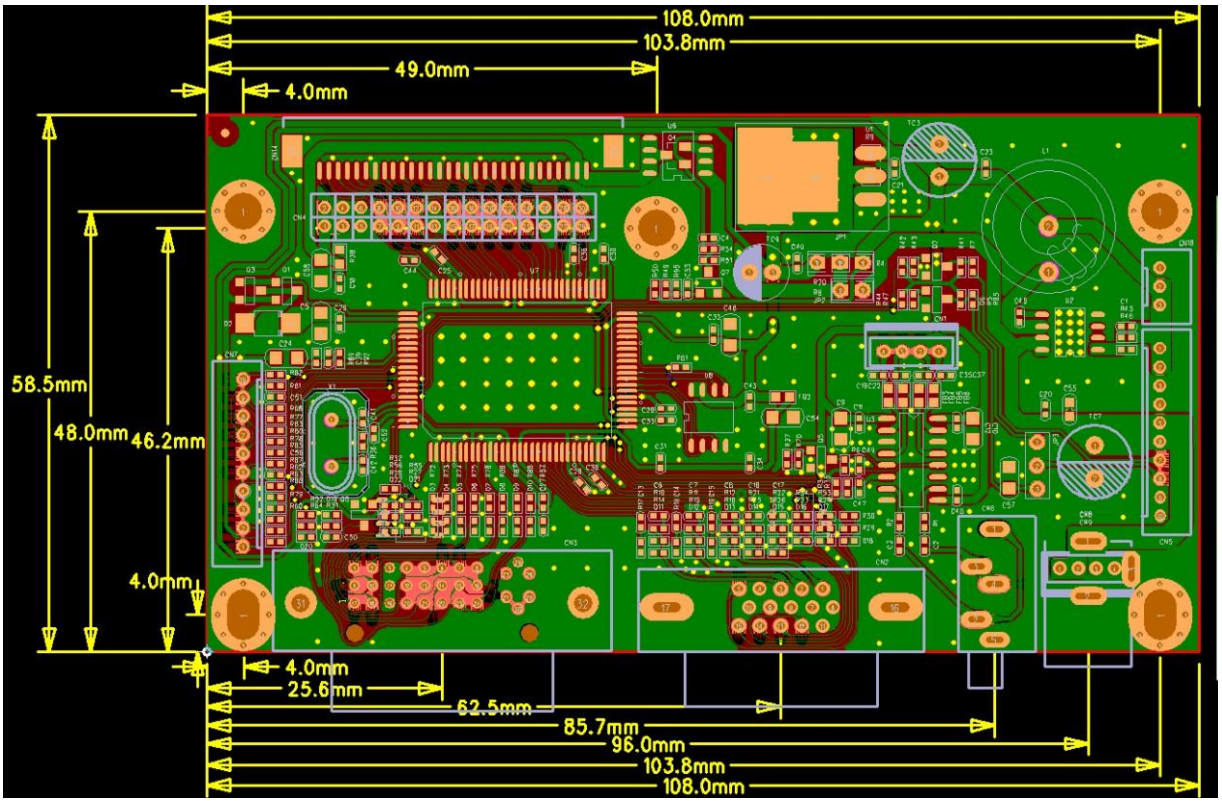
JP3（PWM＆DC_ADJ） 3Pin/Pitch1.25mm		
Pin Number	**Definition**	**Description**
JP3	PWM_ADJ	PWM adjust

JP3	DC_ADJ	DC Voltage adjust

（Table 8）

JP1/JP2（Panel Voltage Select）		
Components	**Welding Select**	**Description**
JP1	0805/Resistance	Select +5V Panel Voltage

6. Mainboard Structure and Size Picture (unit: mm)



Control Board PCB Related Dimensions and Specifications:

1, **PCB** thickness + height of the highest parts≤16.0mm

2, **PCB** length =108.0mm

3, **PCB** width =58.5mm

4, **PCB** thickness =1.2mm

Screw Hole Size: 4.0mm diameter

Please refer to screw holes, hole size and position coordinates in chart.

7. Transportation, Storage, Operating Requirement

In order to ensure the normal use of this product to prevent accidents such as electric shock or fire, please use this product before, read and understand all application requirements and operating procedures. Strict compliance with the following requirements,

1. This product requires a DC power supply from AC / DC power supply board production, note that AC input voltage range and frequency to meet their demands on the nameplate, and the power supply board to keep away from heat sources placed in a well-ventilated place.
2. AC power outlet and the AC power cord should pay attention to grounding good enough and can withstand the current demand.
3. This product requires a DC power supply input voltage DC12V + DC5V, DC12V error of less than + /-0.5V, DC5V error of less than + /-0.2V, the LED current is according to the selected screen, depending on the minimum choice +12 V of not less than 3A, +5 V of not less than 3A.
4. Should be well ventilated cooling and cannot be placed in a confined non-thermal conductivity of the so-called shell or cabinets; also not allow direct sunlight or other heat sources bake copy.
5. Should be taken to avoid excessive humidity and excessive dust, so as to avoid corrosion caused by circuit failure.

6. Note that assembly to retain a certain space in order to provide air convection cooling plate surface and to prevent electrical conductor (for example driver boards and high-pressure fixed iron plate, etc.) and access to short-circuit-board components.
7. Note that drive plate when assembling to prevent additional stress caused by deformation of Rocker song.
8. Note that drive plate assembly, high voltage board, LCD Panel, OSD KEY board, and other parts of the electrical connections are correct, select the correct LCD voltage (too low will show abnormal, excessive, you may burn out LCD Panel) to check correct only after power-on.
9. Driver board procedures and the corresponding LCD Panel to match, a dozen general support for a software LCD Panel.
10. Board assembly should pay attention to good static protection, taking care to avoid short circuit and ESD damage to the hands of electrostatic board.
11. All input and output interfaces are subject to in case of power failure operation (plug connector.)
12. This product is applicable to ordinary commercial use, and operating junction temperature range: 0 ~ +40 ℃, relative humidity: ≤ 80%.
13. A long time please disconnect the power when not in use. Storage Temperature range: -10 ~ +60 ℃, relative humidity: ≤ 80%.

Note: If the product changes, will be promptly notified to the customer, if the customer does not reply as if by default.