HDMI driver board specification

Model number: RXC-W58CDT9

Function: VGA+HDMI+PHONE

Support Panel:1920*1200 and below

Safety level: machine secret

Catalogue

I. Overview

II. The main characteristics

III. Exterior drawing of A/D driving board

IV. VGA preset support mode table

V. Definition of Input/Output Interface

VI. Main board structure and size map.

VII. Requirements for transportation, storage and usage.

I. Overview of functions

RXC-W58CDT9 is a new integrated LCD control motherboard, and the control motherboard scheme adopts TSUMU58CDT9-1 scheme.

It completes the conversion from VGA analog signal or HDMI digital signal output by PC to LVDS signal supported by LCD module. Support HDMI signal input, HDMI input interface signal supports HDMI1.3,HDMI1.4,HDCP1.2,DVI1.0 standards. This design is mainly used to connect TFT LED PANEL to realize the reproduction of analog R, G and B input signals with the highest resolution up to WXGA, with color reproduction up to 24bit, up to 16.7 million pixels and ADC frequency up to 165MHz. It also has special functions such as DCR (Dynamic Contrast Adjustment), color enhancement, color engine, etc., which makes color reproduction more realistic, brighter and more vivid, and supports HDCP function. Can realize synchronous automatic detection. The synchronous detection method requires the use of synchronous signals with line-field separation; It has exquisite OSD interface style and a variety of OSD languages to choose from.

The software on the motherboard supports online update, and the maximum output resolution can be supported to 1920*1200.
Unless otherwise specified, the specifications that the products meet are described in this document.

Ⅱ. The main characteristics

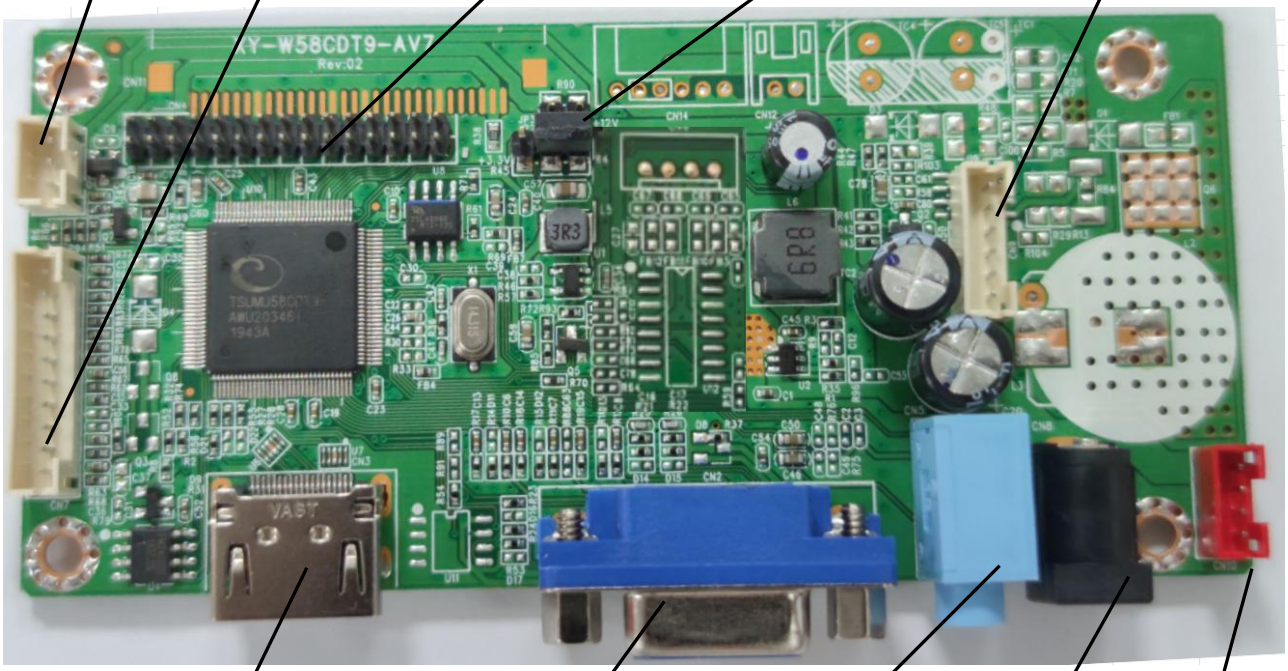
Description of product features:

Main chip	TSUMU58CDT9-1		
Support signal	**HDMI**	480i,480p,576i,576p,720p,1080i,1080p	
	PC	Maximum supported resolution	1920*1200
		Secai	32bit
		Line synchronization range	31.5-94.038KHz
		Field synchronization range	60-75Hz
Interface	**Imput**	HDMI	Patch HDMI terminal, horizontal
		VGA	Dark blue (with 4.75 screws), horizontal
	Output	PHONE OUT	PJ-325-5P light blue horizontal type
		PANEL interface	PH2.0 2*15P(PA6T), and the plug-in is vertical with double rows of needles.
Electric source	**Input power supply**	DC12V（+/-0.5V）	
	Screen driving voltage	3.3V 5V 12V	
	Power supply operation	Normal operation mode, low power consumption mode	
	Standby power consumption of motherboard	＜0.25W	
	OSD menu	Brightness, contrast, automatic correction, phase, clock, line field position, function setting, reset, etc.	
	OSD language	Chinese, English, French, German, Italian, Spanish, Russian, Korean, Japanese, etc	

	Press the key	**POWER, LEFT, RIGHT, AUTO, MENU, UP and DOWN7 keys (it can be changed to 5 or 6 keys by software according to customer requirements).**

III. Exterior drawing of A/D driving board

CN1 **Remote control interface**	**CN7** **Key input interface**	**CN4** **LVDS signal output**	**JP2** **Screen voltage selection**	**CN9** **External constant current interface**



CN3 **HDMI input interface**	**CN2** **VGA input interface**	**CN5** **Headphone output interface**	**CN8** **Power input interface**	**CN10** **Built-in power interface**

Ⅳ.VGA preset support mode table (VGA Mode Table)

VGA Mode Table (VGA support mode table)			
Model	Resolution ratio	Line frequency (KHz)	Field frequency (Hz)
WUXGA	1920*1080	67.5	60
UXGA	1680*1050	59.8	60
WXGA+	1440*900	55.5	60
SXGA	1280*1024	63.5 80.0	60 75
XGA	1024*768	48.4 56.5 60.0	60 70 75
SVGA	800*600	37.9 47.2 46.9	60 72 75
VGA	640*480	31.5 37.9 37.5	60 72 75
DOS	720*400	31.5	70

V. Definition of Input/Output Interface and Electrical Requirements of Interface

◆CN7 (PH2.0-10A/ straight seat): key input interface.

Foot serial number	definition	describe
1	POWER	Power switch
2	LED-R	Red indicator light
3	LED-G	Green indicator light
4	GND	Land
5	LEFT	Towards the left
6	RIGHT	Towards the right
7	AUTO	Automatic adjustment
8	MENU	OSD menu
9	UP	Upwards
10	DOWN	Downwards

◆CN4(PH2.0 2*15P(PA6T), vertical, plug-in, double-pin: LVDS signal output interface.

Foot serial number	definition	describe
1	LCD-VDD	Power for Panel
2	LCD-VDD	Power for Panel
3	LCD-VDD	Power for Panel
4	GND	Land
5	GND	Land
6	GND	Land
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	Land
14	GND	Land
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	Land
26	GND	Land
27	RXEC-	LVDS ODD Clock- Signal
28	RXEC+	LVDS ODD Clock+ Signal
29	RXE3-	LVDS EVEN 3- Signal
30	RXE3+	LVDS EVEN 3+ Signal

◆JP2: Screen voltage selection

needle extraction	/	describe
JP2	Jumping cap	Select 3.3V 5V 12V and 12v screen driving voltage.

◆CN9PH2.0-6A): External constant current interface

Foot serial number	definition	describe
1	12V	Power input
2	12V	Power input
3	EN	Backlight enable
4	ADJ	Backlit brightness level
5	GND	Land
6	GND	Land

◆CN3 (patch HDMI stand, horizontal): HDMI input interface.

Foot serial number	definition	describe
1	DATA2-	Data signal interface
2	GND	Land
3	DATA2+	Data signal interface
4	DATA1-	Data signal interface
5	GND	Land
6	DATA1+	Data signal interface
7	DATA0-	Data signal interface
8	GND	Land
9	DATA0+	Data signal interface
10	DCLK-	Data clock signal interface
11	GND	Land
12	DCLK+	Data clock signal interface
13	NC	Empty
14	NC	Empty
15	HDMI_SCL	DDC clock interface
16	HDMI_SDA	DDC data interface
17	GND	land
18	HDMI5V	HDMI5V input

19	HDMI_HPD	HPD detection interface

◆CN2 (dark blue (with 4.75 screws), horizontal): VGA input interface

Foot serial number	definition	describe
1	RED	Red component signal input
2	GREEN	Green component signal input
3	BLUE	Blue component signal input
4	GND	Land
5	VGA_DET	VGA detection port
6	GND	Land
7	GND	Land
8	GND	Lland
9	VGA5V	VGA5V input
10	GND	Land
11	GND	Land
12	DDC_SDA	DDC data interface
13	HSYNC	Line synchronization signal
14	VSYNC	Field synchronization signal
15	DDC_SCL	DDC clock interface

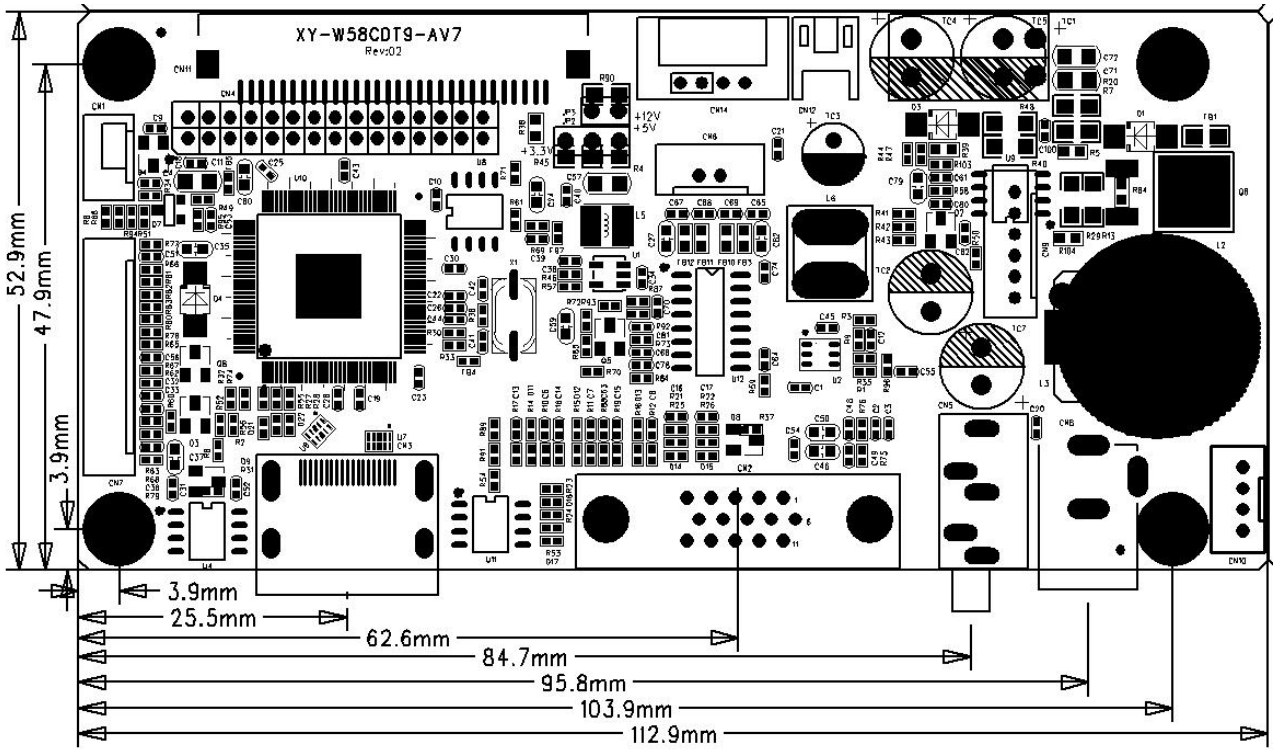
◆CN5 PHONE headphone audio output interface

CN5(PHONE Headphone Audio Output Interface) PJ-325-5P,φCK3.5 (light blue), horizontal

◆CN8 ferrule diameter 2.0mm, power input interface.

CN8 (power input interface) ferrule has a diameter of 2.0mm, and is made of all copper, which is fire-proof (horizontal).

VI. Main board structure and dimension drawing (unit: mm)



◆ **Relevant dimensions and specifications of control board PCB**

1. PCB thickness+height of the highest part ≤18mm.
2. PCB length =113 mm
3. PCB width = 53mm
4. PCB thickness = 1.2mm

◆ **Specification of screw hole: screw hole with a diameter of 3.5mm, and the size and coordinates of hole position are shown in the structural drawing.**

VII. Requirements for transportation, storage and use

In order to ensure the normal use of this product and prevent accidents such as electric shock or fire, please read and understand all the use requirements and operating procedures before using this product. Strictly abide by the following requirements:

1. The DC power supply required by this product is generated by the AC/DC power adapter, and the AC/DC power adapter should be far away from the heat source and placed in a well-ventilated place.
2. AC power socket and AC power cord should be well grounded and can withstand enough current demand.
3. The input voltage of DC power supply required for this product is +12V, and the error is not greater than+/-0.5V. The current depends on the selected LED screen and the power of the whole machine.
4. Pay attention to good ventilation and heat dissipation, and do not put it in a closed non-thermal shell or box, nor let it be baked by direct sunlight or other heat sources.
5. Pay attention to avoid excessive humidity and dust, so as to avoid circuit corrosion and failure.
6. When assembling, pay attention to reserve a certain space to provide air convection heat dissipation on the surface of the board, and prevent electrical conductors (such as fixed iron plates of driving board and high-voltage board) from contacting with components on the board for short circuit.
7. When assembling, pay attention to prevent the driving plate from warping and deformation due to extra pressure.
8. When assembling, pay attention to the correct electrical connection of the drive board, LED screen, key board and other components, select the correct working voltage of the LED screen (too low will display abnormal, too high may burn the LED screen), and turn on the power only after it is checked.
9. The program on the driver board should match the corresponding LED screen.
10. Pay attention to electrostatic protection when assembling the board, and avoid short circuit and electrostatic damage to the board.

11. All input/output interfaces should be operated under the condition of power failure (plug-in connectors).

12. This product is suitable for general commercial use and household use.
The ambient temperature is-10 ~+40℃ and the relative humidity is ≤80%.

13. Unplug the power supply when you don't use it for a long time.