

DBTPCB202-00006

Initial Specification

(LCD VGA+HDMI Board)

DATE : 2022/ 02/ 24

APPROVED BY	NOTE
CUSTOMER SIGNATURE (S)	

ISSUED BY _____

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Version record

Version	Date	Page	description
V1.0	2022.01.05	All	First edition
V1.1	2022.01.10	5	PCBA Layout change
V1.2	2022.01.13	6,7,8,9	Interface defination
V1.3	2022.01.19	6,7,8	Interface defination
V1.4	2022.02.24	5,8	PCBA Layout change
V1.5	2022.03.17	9	PCBA Layout
V1.6	2022.04.10	7,9	Key interface, Layout

Note: This specification is for reference only; if there is a difference with the product, the actual product shall prevail

A. Performance Introduction

- The product is positioned as a mid/high-end LCD MONITOR solution, using MSTAR single-chip TV processing IC, with good picture quality, multiple functions, rich interfaces, mature system, etc., supporting full colorformat, mainly for 32" and The LCD screens of the following sizes support LCD/LED and plasma screens commonly used in the market.
- Full 3D Interlace, 3D video decoding, 3D digital noise reduction, support USB function.
- Input signal: VGAX1, DVIX1, HDMI (1.4) X1, USB (2.0) X1, .
- Support screen resolution 1920*1080, dual 6/8/10bit LVDS signal output.
- It has rich built-in interfaces, multi-national OSD menu languages, and the screen voltage can be 3.3V/5V/12V.

B. The main technical parameters

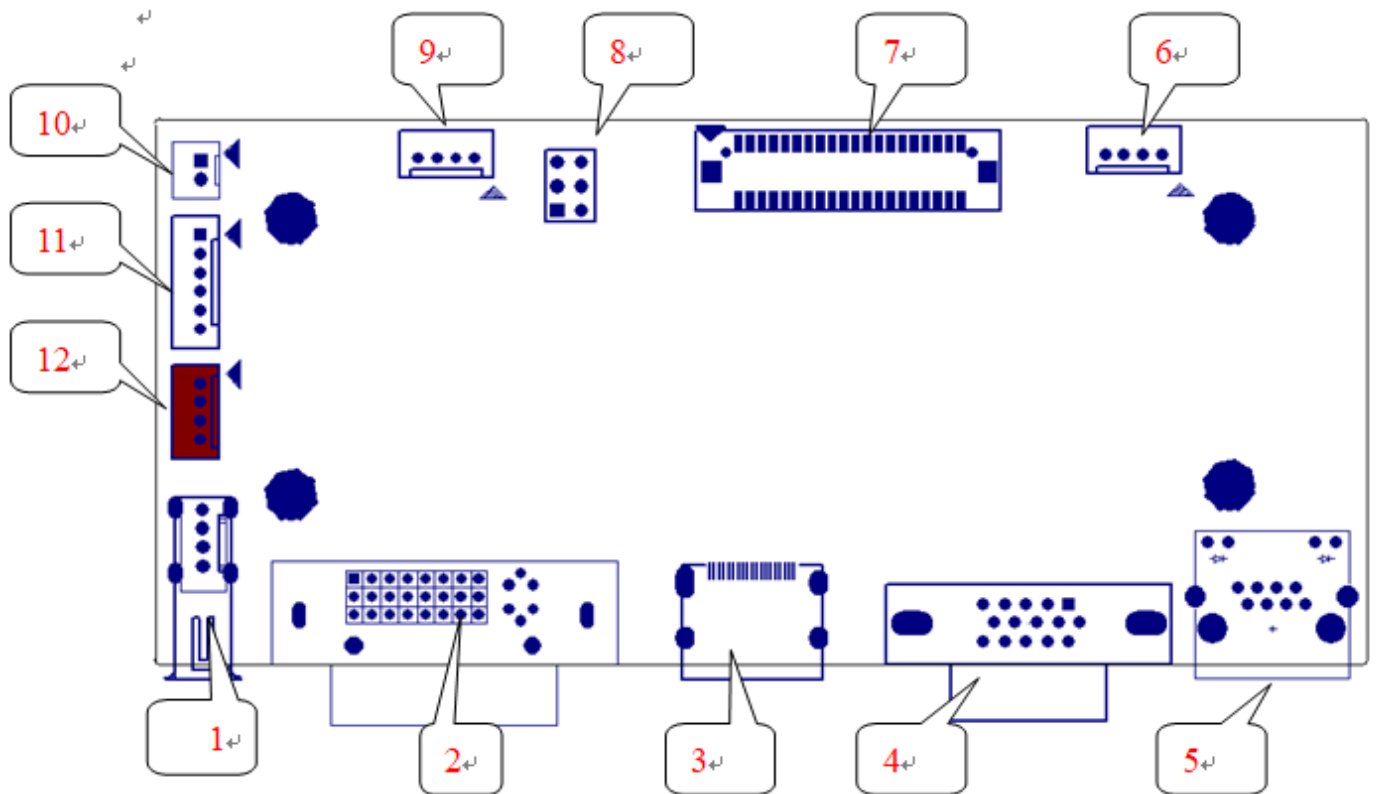
Video input	computer	Resolution	Max 1920*1080	
		Line frequency	50~67.5KHz	
		Field frequency	50~60Hz	
	VGA	conventional		
power supply	Input voltage	12V		
	Supply voltage (optional)	3.3V/5V/12V		
	Backlight voltage	12V		
	stand-by current	Low power consumption, standby power consumption <1W		
OSD Language	Chinese, English, German, French, Russian, Italian, Spanish, Arabic, Persian and other optional languages			
Key function	POWER/MENU/SOURCE/LEFT/RIGHT			
Comb Filter	3D			YES
Noise reduction	3D			YES
TXT	Yes (optional)	V-CHIP,CC,WSS,VPS		Yes (optional)
Screen resolution	1920*1080			

USB (digital multimedia) supported formats

Supported specifications for video multimedia playback

File name	Comment Video	decoding	specification Bit	rate
dat, mpg, mpeg	MPG,MPEG	Mpeg1,2	1920x1080@ 30P	20Mbit/sec
ts, trp, tp	MPEG2 -TS H264-TS	MPEG2 ,H.264	1920x1080 @ 30P	20Mbit/sec
vob	MPEG2 -PS	MPEG2	1920x1080 @ 30P	20Mbit/sec
mp4	AVI, MP4	MPEG4 Divx 3.11, Divx 4.12, Divx 5.x, Divx 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta1/2 H.264	1920x1080 @ 30P	20Mbit/sec
rm, rmvb	RMVB, RM	rm code RV8, RV9, RV10	1280x720 @ 30P	10Mbit/sec
mkv	MKV	H.264, MPEG1,2,4	1920x1080 @ 30P	20Mbit/sec
divx, avi	AVI(1.0, 2.0), DMF0,1,2	MPEG2, MPEG4 Divx 3.11, Divx 4.Divx 5, Divx 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta1/2 H.264	1920x1080 @ 30P	20Mbit/sec
asf	ASF (Revision 01.20.03)	VC1	1920x1080 @ 30P	20Mbit/sec

C. Appearance picture



D. Main interface definition description

No	description	No	description
1	USB-interface	2	DVI signal input interface
3	HDMI high-definition signal input interface	4	VGA signal inputinterfacel
5	Button needle base	6	+5V power output needle base
7	LVDS screen interface	8	Screen jumper,Factory configured screen power is 5V by default
9	IO needle baset, external	10	Photoreceptor needle base
11	Backlight control needle base	12	power Input needle base
13		14	

1. 12V power input needle base Bit number: CON1 (PH2.0/2.0MM*4PIN), red

Pin definition description:

Pin number	Name	Function definition
1	12V	+12V power input
2	12V	+12V power input
3	GND	Ground
4	GND	Ground

Note: Be sure to check whether the power cord is correctly connected before powering on the power supply, otherwise the motherboard and power supply will be damaged

2. Backlight control needle base Bit number: CON4 (PH2.0MM*6PIN)

Pin definition description:

PIN number	Name	Function definition
1	GND	ground
2	GND	ground
3	BL_ADJ	Brightness adjustment, 0-5V adjustable
4	BL_EN	Switch control, 1:ON, 0:OFF
5	+12V	12V power supply
6	+12V	12V power supply

3. Photoreceptor needle base Bit number: CON6 (PH2.0/2.0MM*2PIN)

Pin definition description:

PIN Number	Name	Function definition
1	LPB	Photoreceptor end A
2	LPA	Photoreceptor B end

4. IIC control needle base Bit number: CON5 (PH2.0/2.0MM*4PIN)

Pin definition description:

Pin number	Name	Function definition
1	5V	+5V power output
2	SDA	IIC data
3	SCL	IIC clock
4	GND	Ground

5. +5V voltage output CON2 (PH2.0/2.0MM*4PIN)

Pin number	Name	Function definition
1	5V	+5V power output
2	5V	+5V power output
3	GND	Ground
4	GND	Ground

6. Optional interface for supplying screen voltage Bit number: JP1 SIP2.54MM*2/3PIN

(Remark: Before powering on, you must check the power supply voltage for the screen and choose it according to the needs of the screen at the time. Choosing it or not will damage the screen)

Pin definition description:

Pin Number	Name	Function definition
1 feet	12V	12V power supply interface
2 feet	5V	5V power supply interface
3 feet	3.3V	3.3V power supply interface
4 feet	Screen power supply	Screen power input interface
5 feet	Screen power supply	Screen power input interface
6 feet	Screen power supply	Screen power input interface

7. Keyboard interface: CON7

Pin number	Name
1	Power
2	LED_R
3	LED_G
4	GND
5	Right PictureMode when not in OSD menu,RIGHT or DOWN when in OSD menu
6	Left Backlight when not in OSD menu,LEFT or UP when in OSD menu
7	Source SOURCE when not in OSD menu,BACKwhen in OSD menu
8	MENU MENU when not in OSD menu, ENTER when in OSD menu

8. 6/8/10-bit LVDS output interface connector (CON3): DF13E-40DP-1.25V or compatible

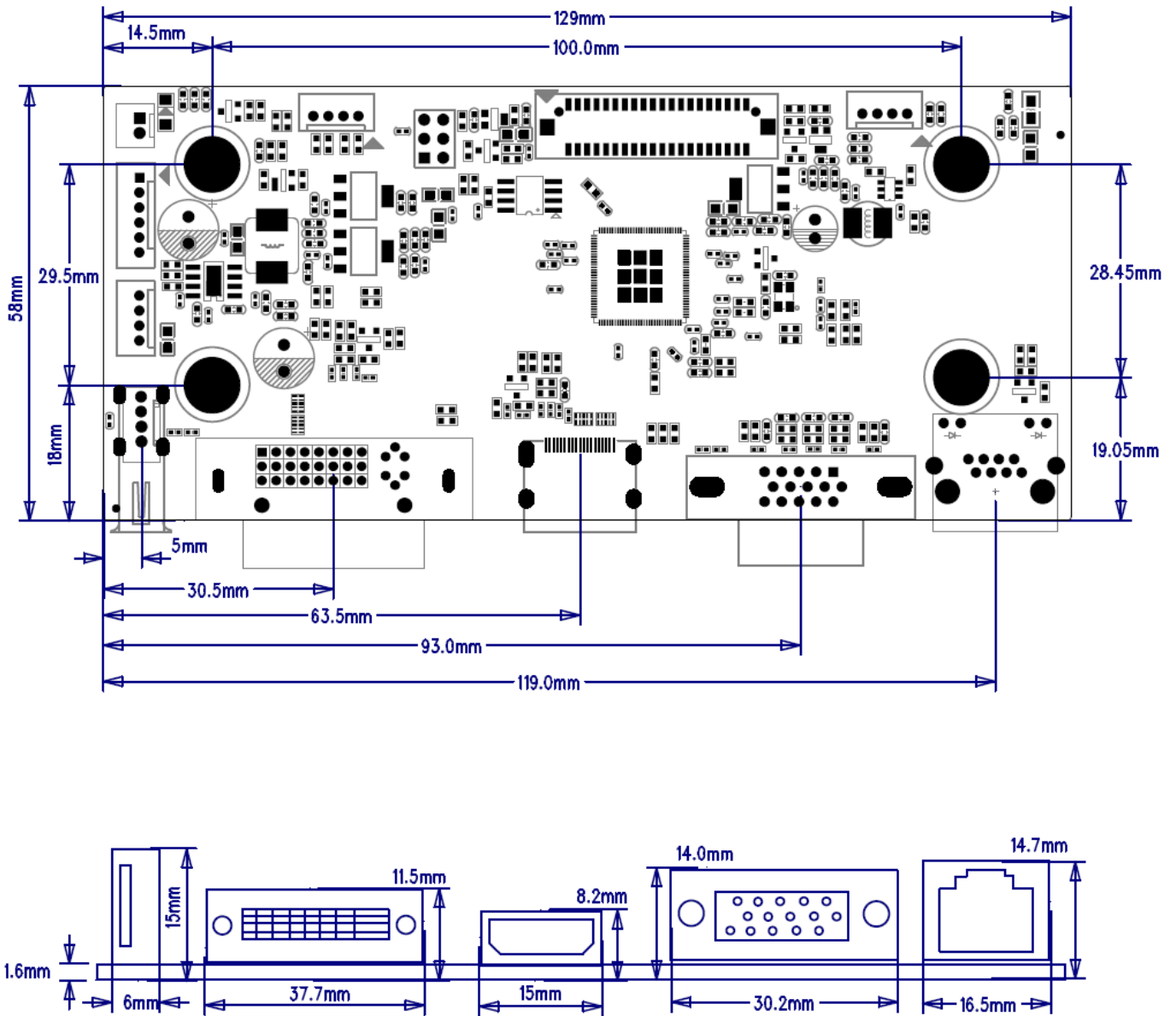
Pin definition description:

Pin number	Name	instruction
1,2,3	VCC	Power supply for screen
4,5,6	GND	Ground
7	LVA0-	LVDS even wire pair 0 negative terminal
8	LVA0+	LVDS even wire pair 0 positive terminal
9	LVA1-	LVDS even wire pair 1 negative terminal
10	LVA1+	LVDS even wire pair 1 positive terminal
11	LVA2-	LVDS even wire pair 2 negative terminal
12	LVA2+	LVDS even wire pair 2 positive terminal
13,14,25,26	GND	Ground
15	LVACK-	LVDS even wire pair clock negative terminal
16	LVACK+	LVDS even wire pair clock positive terminal
17	LVA3-	LVDS even wire pair 3 negative terminal
18	LVA3+	LVDS even wire pair 3 positive terminal
19	LVB0-	LVDS odd line pair 0 negative terminal
20	LVB0+	LVDS odd line pair 0 positive terminal
21	LVB1-	LVDS odd line pair 1 negative terminal
22	LVB1+	LVDS odd pair 1 positive terminal
23	LVB2-	LVDS odd pair 2 negative terminal
24	LVB2+	LVDS odd pair 2 positive terminal
27	LVBCK-	LVDS odd line pair clock negative terminal
28	LVBCK+	LVDS odd pair clock positive terminal
29	LVB3-	LVDS odd pair 3 negative terminal
30	LVB3+	LVDS odd pair 3 positive terminal
31-40	NC	No Connection

The sequence of screen base feet is shown in the figure below:



E. PCB structure size



F. Electrical performance

parameter	min (MIN)	standard (TYP)	max (MAX)	unit
Operating Voltage	11.25	12	13.25	V
Standby voltage	4.75	5	5.6	V
stand-by current	10	30	40	MA
Operating temperature	-20		85	°C
Storage temperature	-40		85	°C
Working humidity	40		95	%
Storage humidity	40		95	%

G. Precautions

1. Be sure to check whether the power cord is correctly connected and the power supply voltage of the display screen is correct before powering on the power supply, otherwise it will damage the motherboard, power supply and display screen
2. Be sure to pay attention to anti-static and leakage protection measures during storage and installation, otherwise it will damage the motherboard and components
3. Before installing the machine, the customer first confirms whether the mainboard function meets the requirements. Don't wait for the installation to find out that it is too late, causing serious consequences
4. When the drive board is working, please do not move the main board and plug in or out the power interface at will, so as not to touch conductive objects and damage it.
5. If you find defective products when installing the machine, please put them in an anti-static bag and put them up. Return them to our company for repair. Don't throw them away.
6. If there are stains on the surface of the board, please use a dry soft cloth to clean it after power off.
7. Please don't put under heavy pressure, bend, rain will cause damage.

H. Remarks

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