Version:A1

YD2686DHV-V1 Product Manual

Model: YD2686DHV-V1

P/N No.: V860102019

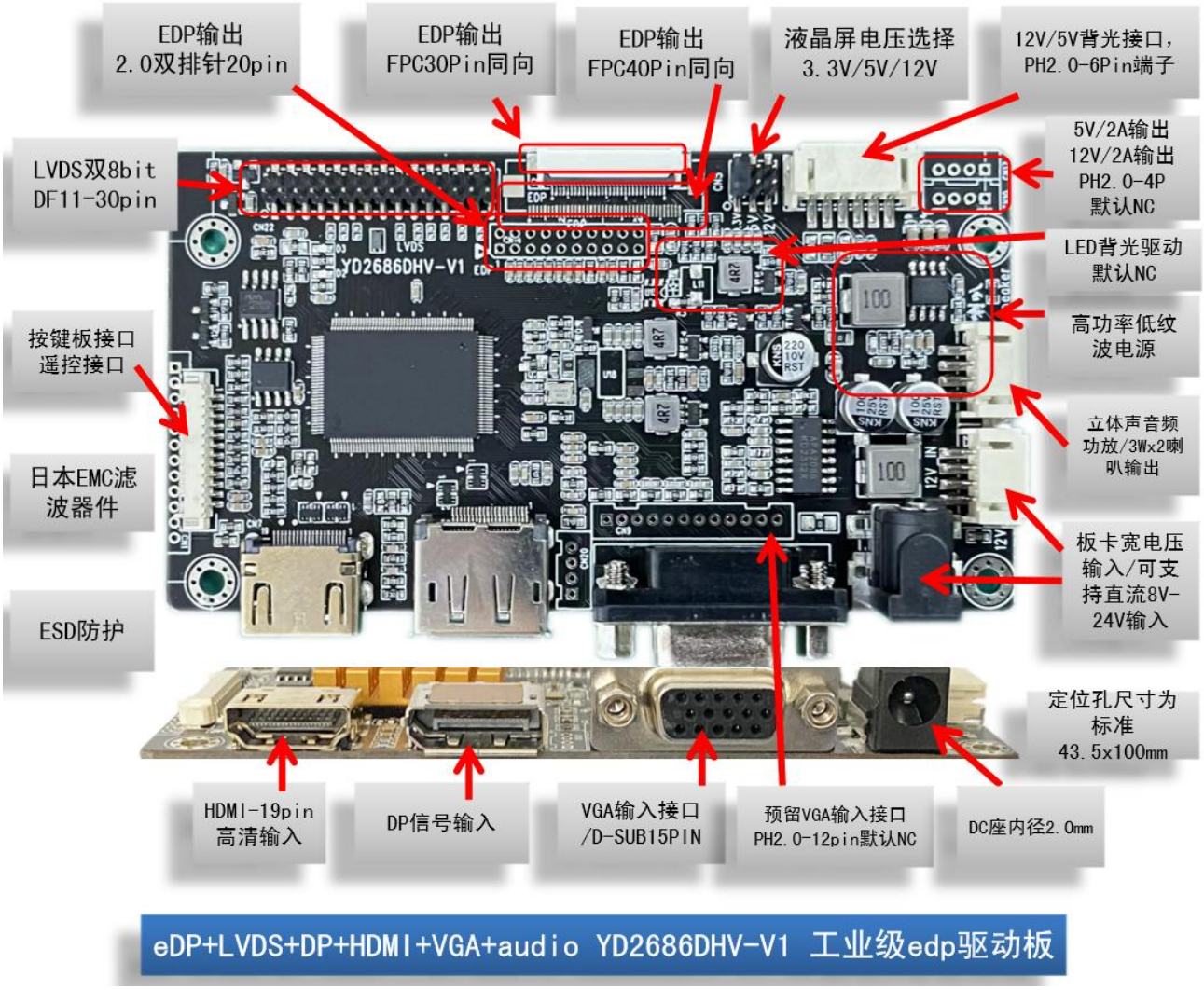


Table of contents

1.summary.....1
2.Layout and Dimensions.....1
3.How to use.....2
4.Precautions for use.....2
4.1Preparation.....2
4.2Power Safety.....3
4.3Electromagnetic Interference.....3
4.4Grounding.....3
4.5Controller Installation.....3
4.6Other issues that may affect system security and system performance.....3
5.Connection and Operation.....3
5.1connect.....3
5.2 PCset up.....3
5.3Adjustment Operation.....4
5.4Display System Block Diagram.....4
5.5Feature Points.....4
5.6Interface Description.....4
5.7Jumpers.....**Error! Bookmark not defined.**
6.Technical Parameters.....11
7.Display Adjustment.....12
7.1Menu structure.....12
7.2Operating Instructions.....14
8.Fault Analysis and Troubleshooting.....16
8.1Possible fault links.....16
8.2No display.....16
8.3Image Location.....16
8.4Abnormal image display.....16
8.5Backlight.....17
8.6Other faults.....17
appendixAsupportVGA,HDMI,DPInput signal mode list.....17

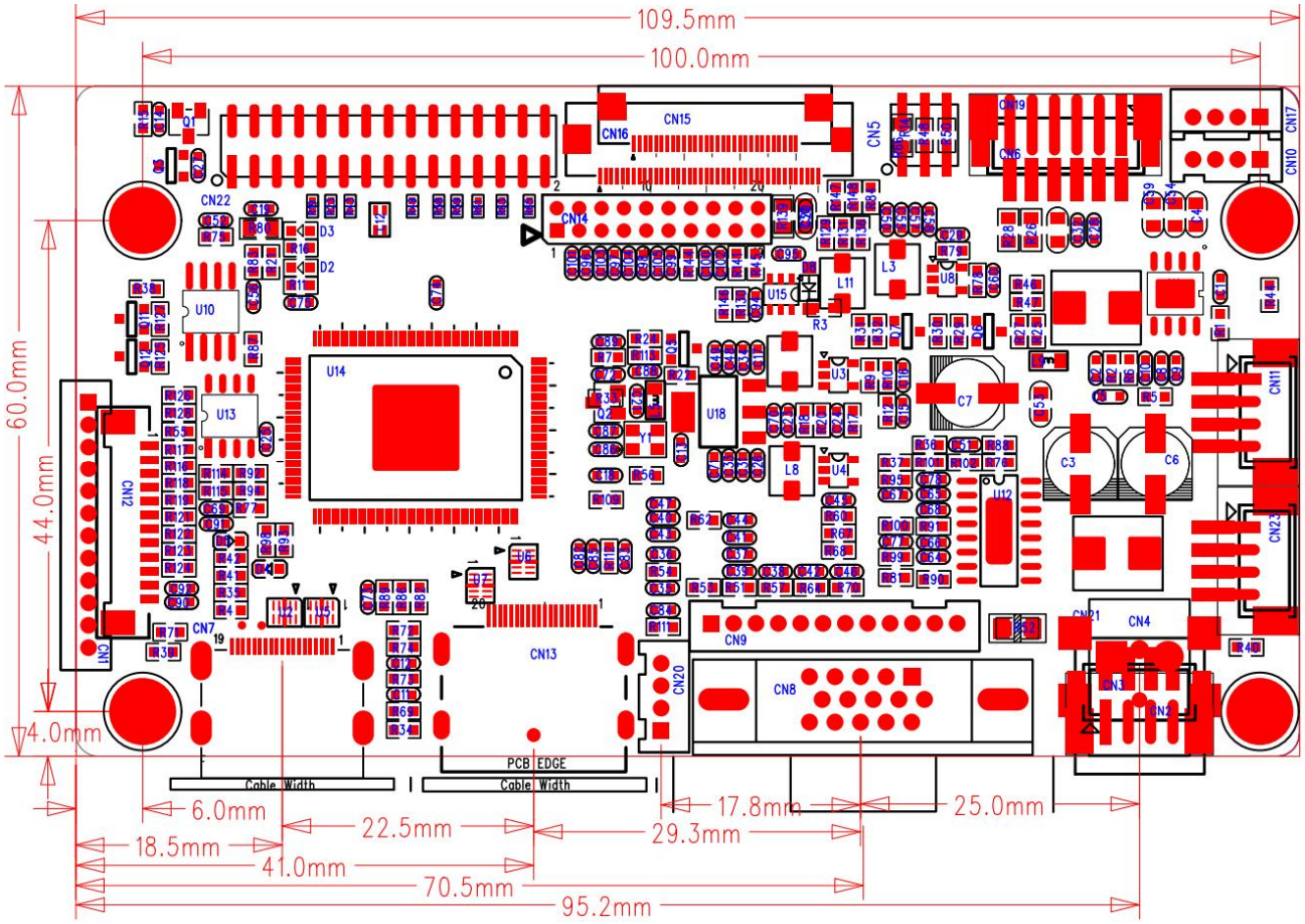
1.summary

YD2686DHV-V1 LCDThe driver board is mainly forTFTLCD-like design, suitable for LCD screens and some other flat panel displays.

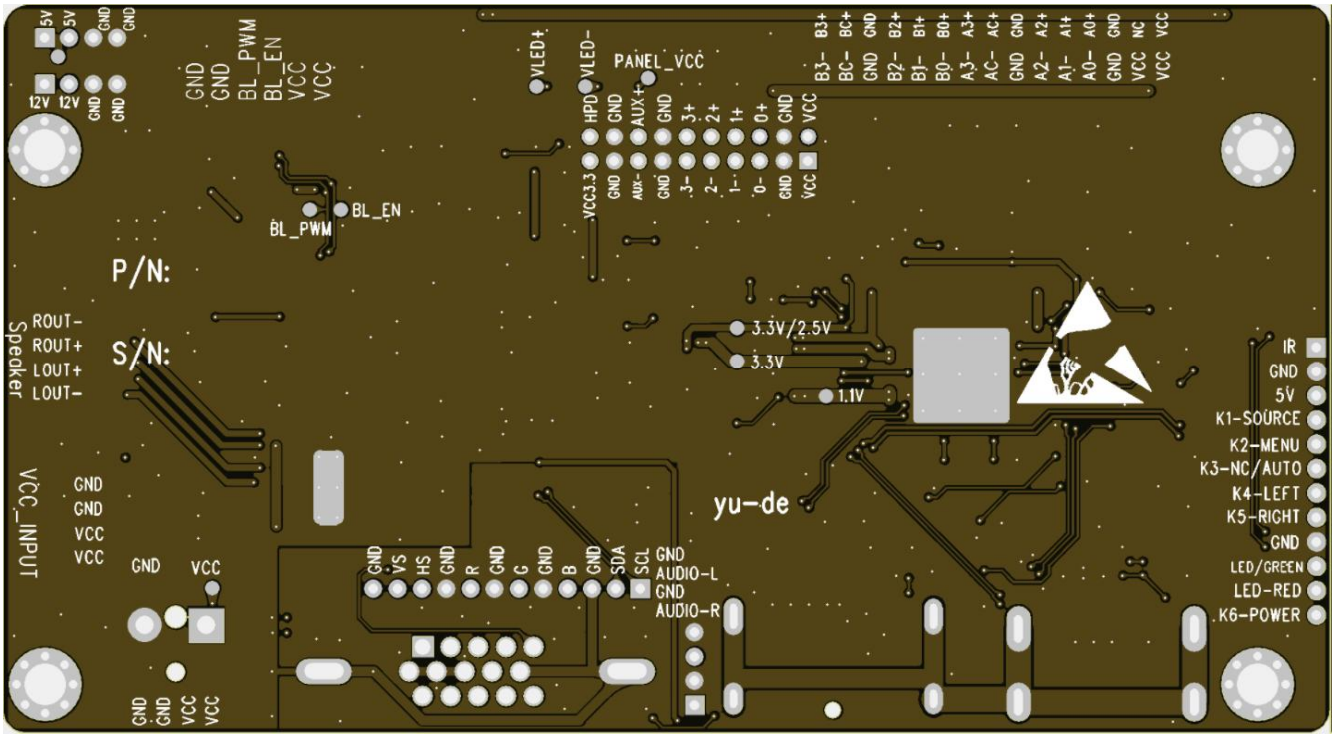
- Input signal type: Digital HD (DP), Digital High Definition (HDMI),simulation(RGB, VGA).
- The board supports wide voltage input8V~25V;Typical Value12V(Screen power supply is12VWhen the board is powered12V)
- Wide operating temperature range: -20℃ ~ +70℃
- Board comes withledBacklight drive circuit; supports small and medium sizeledBacklight driver.
- Backlight power support5V/12V(default12V),supportPWMDuty cycle adjusts backlight brightness
- Display output interface: **EDP Output 2lane / 4lane, LVDS pa8BIT**
- adaptPC(Personal computer) graphics card high definitionHDMI,simulationRGB(VGA)Resolution:480x272,VGA,SVGA,XGA, SXGA, WXGA+,UXGA,1920X1200,2048x1536,2560x1080,2560x1600waitVESAStandard signal;
- Features: This board has the characteristics of simple operation and reliable performance.

2.Layout and Dimensions

TOP VIEW:



BOTTOM VIEW:



3.How to use

First, make sure the controller and related accessories are complete and correct. Please refer to the relevant connection diagrams and assembly precautions.

Check the settings of the controller to ensure they are accurate (wrong settings may damage the display);

Prepare the signal source (such asPC);

Connect all links according to the connection diagram;

Be familiar with how to operate and product functions.

4.Precautions for use

This control panel is suitable for2560x1600, 2560x1080,2048x1536,1920×1200,1920×1080,1600×1200,1280×1024,1024×768, 1024×600,800×600,800×480and640×480Equal resolutionTFTFor LCD display solutions, the following issues need to be noted:

4.1Preparation

Understand the component configuration of the entire system in advance, prepare the connecting devices, understand the installation dimensions, assembly layout, etc. Work according to the guidance of the system connection diagram. The following are some necessary preparations for reference:

（1）LCD screen: This driver board is suitable for power supply3.3V,5Vor12V, the interface isEDPorLVDSInterface LCD screen.2）Control panel: When touching the control panel, be careful to avoid static electricity to avoid damaging components. Confirm that the control panel settings fully meet the requirements of the display. （3) LCD screen connection components: Different LCD screens may use different connectors and have different pin signal arrangements.

（4) Inverter: LCD screens without built-in inverters need to be equipped with inverters. You should choose a matching inverter based on the backlight parameters of the LCD screen.5) Inverter cable: Different inverters generally have different input signals, so you need to select matching cables. Improper connection may damage the inverter.

（6) Function control: Function control includes power switch, backlight adjustment andOSDMenu adjustment.7

）OSDAdjustment board connection cable: This cable is generally required to be1mWithin.

（8) Signal standard cable: This cable is very important to the display quality and requires the use of high-quality shielded cable.

(9)power supply:12VDC power supply requires a stable power supply. The power supply power depends on the LCD screen and the inverter. Generally speaking,3.5AThe power supply can meet the high brightness orLED1500Brightness determines the demand of LCD screen. Power fluctuations will affect the life of backlight, display quality and even damage the product.

4.2Power safety

becauseledThe driver outputs a high starting voltage and operating voltage (9~19VOr large size externalledDrive55V), the operating frequency is also relatively high (tens ofkHz) may have an impact on the display and system, and attention should be paid to the layout of the boost board.

4.3Electromagnetic Interference

It is necessary to take certain shielding measures to prevent external interference.

4.4Grounding

PCBThe mounting hole is connected to the ground.

4.5Controller Installation

When installing this controller, it is recommended that the component surface should be kept at least10mmHigh space, the other side at least maintain5mmAlso pay attention to: electrical insulation; good grounding; prevention of electromagnetic interference; reasonable cable layout.

It is important to note that the signal line of the LCD screen must be kept at a necessary distance from the backlight line to prevent signal crosstalk. Heat

and ventilation: LCD screens with high backlight brightness will generate relatively high heat, so attention should be paid to heat dissipation.

4.6Other issues that may affect system security and system performance

PCGraphics card output: Signal quality is very important ifPCThe graphics card output signal is noisy or unstable, and its impact may be directly reflected in the display. Please refer to Adapting the graphics card mode.

5.Connection and Operation

5.1connect

Connect and use:

1)Backlight andledBacklight driver: connects the backlight of the LCD screen (if the LCD does not have a built-in inverter) toledBoost board output,

ledThe input of the boost board is connected to the backlight interface of the control board;

2) EDP/LVDSSignal display: Connect the signal cable directly to theEDP/LVDSport, and the other end is connected to the LCD screen;

3)Function control: Use cable toOSDThe regulator board is connected to the controllerOSDport;

4) DPCables and controllers,DPConnect one end of the cable to the controllerDPport, the other end of the cable is connected toPCGraphics card output;

5) HDMICables and controllers,HDMIConnect one end of the cable to the controllerHDMIport, the other end of the cable is connected toPCGraphics card output;

6) VGACables and Controllers:VGAConnect one end of the cable to the controllerVGAport, the other end of the cable is connected toPCGraphics card output;

7)Power supply and controller:12VThe DC power supply is connected to the power input port of the controller;

8)Display power switch: throughOSDAdjustment board to achieve.

5.2 PCset up

Although this controller is designed to accommodate a wide range of signals, it is recommended to optimize the display signal.PCThe display refresh rate is set to

60Hz——This will not easily cause the screen to flicker. It is best to set the resolution to match the LCD screen.

5.3Adjustment Operation

After the system is connected and working properly, you canOSDAfter adjustment, exit the menu and the parameters are automatically stored.

5.4Display system block diagram

Please see the picture on the next page:

illustrate:

1,TFTLCD screen;

2, Display controller:YD2686DHV-V1;

3, backlight driver (if the LCD screen does not have a built-inledBooster board);

4,OSD（On Screen DisplayDisplay on the screen) Function adjustment board (manufacturers can make it according to the definitionOSDKeypad); 5, Cable connecting the LCD screen to the control board;

6, Cables connecting the inverter to the control board;

7,connectOSDCable from regulator board to control board.

5.5Feature Points

Test Points

Logo	use way	Minimum	typical	maximum	unit	Ripple	Remark
12V	12VTest Points	10.8	12	13.2	V	400mV	By external model Block Decision
5V	5VTest Points	4.75	5	5.25	V	200mV	
3.3V	3.3VTest Points	3.13	3.25	3.46	V	150mV	
1.1V	1.1VTest Points	1.08	1.09	1.2	V	100mV	
GND	GND	-	-	-	V	-	
BL-EN	Backlight Enable	0.1	-	5	V	-	
BL-PWM	BacklightPWM	0.1	-	5	V	-	

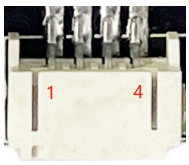
5.6Interface Description

Interface Overview

interface	use	Connector Description	Remark
CN3.CN23	12VDC power input	4P,2.0Pitch, single row,180°, socket	
CN4	12VDC power input	DC JACK, positive inside and negative outside, positive electrode outer diameter ϕ2.0mm, negative electrode inner diameter ϕ5.5mmcopper	
CN5	LCD screen power supply selection	1-2Short circuit3.3V,3-4Short circuit5V,5-6Short circuit12V	
CN6	Inverter interface	6P,2.0Pitch, single row,180°, copper/socket	
CN7	HDMIenter	HDMI-19pin,90degrees, copper plated with gold, Taiwan socket	
CN13	DPenter	DPseat20PinMother seatDisplayPort	
CN22	LVDS/Output Interface	2×15P,2.0pitch, double row pin30Pin,180°, socket	
CN15	EDP/Output interface/FPC30pinFlip	FFC0.5mm-30pin,socket	
CN16	EDP/Output InterfaceFPC40pinFlip	FFC0.5mm-40pin,socket	
CN14	EDP/Output Interface2.0_2X10_20PIN	2×10P,2.0pitch, double row pin20Pin,180°, socket	
CN12	OSDAdjust keyboard interface	12P,1.25Pitch, single row, socket	
CN1	OSDAdjust keyboard interface	PH2.0-12P,2.0Pitch, single row socket	
CN8	VGAInput standard socket	DB15FLC, female header,90°, black (or blue), copper feet/with screws	
CN9	VGAInput Substitution Plugin	12P,2.0Pitch, single row,180°, socket	

CN17	5VOutput	PH2.0-4P,2.0Pitch, single row socket	
CN10	12VOutput	PH2.0-4P,2.0Pitch, single row socket	
CN11	Left and right channel speaker output	PH2.0-4P,2.0Pitch, single row socket	
CN20	Audio in/Audio out	PH2.0-4P,2.0Pitch, single row socket	

- Logo:CN3 , CN23
- use:12VDC power input
- type:PH2.0-4P,2.0Pitch, single row socket
- Connectors:PH2.0-4P,2.0Pitch, single row socket pin
- definition

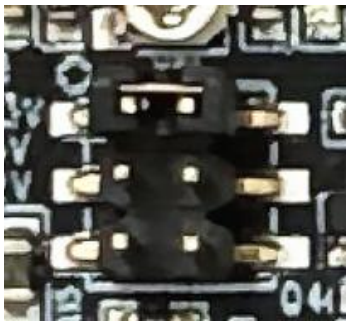


Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	+12V	+12VDC power input (±10%)	2	+12V	+12VDC power input (±10%)
3	GND	land	4	GND	land

- Logo:CN4
- use:12VDC power input
- Type: positive inside and negative outside, Positive electrode inner diameter ϕ2.0mm Copper gold-plated, negative outer diameterϕ5.5mm,5521
- Connectors:DC JACK（5521）
- Pin Definition

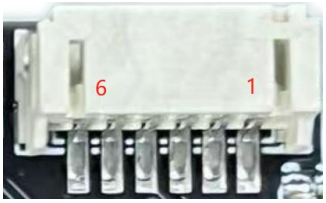
Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	+12V	+12VDC power input (±10%)	2	+12V	+12VDC power input (±10%)
3	GND	land	4	GND	land

- Logo:CN5
- use:CN5Jumper screen supply voltage selection
- Type: Double row pin2X3,2.0mmPitch
- connector:DC JACK（5521）
- Pin Definition



Jumper Wires	Configuration	Function
CN5	1-2Short Circuit	LCDpanel3.3VPower selection (default)
	3-4Short Circuit	LCDpanel5VPower Supply Selection
	5-6Short Circuit	LCDpanel12VPower Supply Selection

- Logo:CN6
- Application: Boost board/inverter interface
- type:PH2.0mm-6PIN,6P,2.0Pitch, single row, socket, white
- connector: (CVILUX)
- Pin Definition



Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	GND	land	2	GND	land
3	PWM/Vadj	Connect the brightness adjustment terminal of the inverter2】	4	ON/OFF	On/Off (Enable)5V / 0V
5	+12V/5V	Default+12V, inverter power supply [Note1】	6	+12V/5V	Default+12V, inverter power supply [Note1】

【Note1When the voltage is12VThe load capacity of the power supply is determined by the external power input.

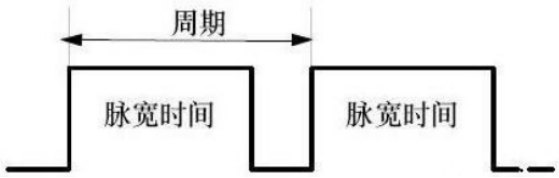
【Note2】 supportPWMThere are two types of LCD screens with duty cycle adjustment: forward adjustment (usually original screen) and reverse adjustment (later modified high brightness screen with boost board constant current board);

The default setting of the dynamic panel is positive adjustment, that is, the menu brightness is100hourPWMThe duty cycle is100%The voltage is high at this time)

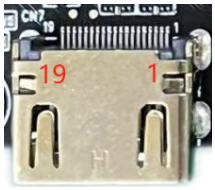
PWM: Duty Cycle： yes The ratio of the high level time to the entire cycle time in a pulse cycle unit%（0%~100%）

Period: The duration of a pulse signal1sThe number of internal test cycles is equal to the frequency**Pulse width time: High level time**

The ratio of pulse width time to total cycle time in the figure below is the duty cycle.

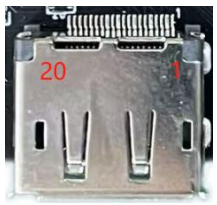


- Logo:CN7
- use:HDMISignal input
- type:HDMI-19PIN/4Pin plug/gold-plated copper/90
- Connector:DC JACK
- Pin Definition



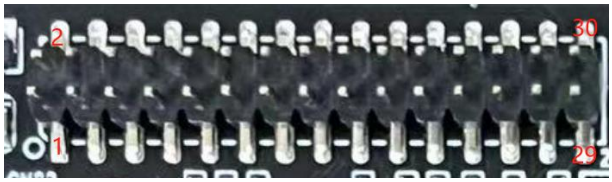
Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	Data2+	HDMIdata2+	2	GND	land
3	Data2-	HDMIdata2-	4	Data1+	HDMIdata1+
5	GND	land	6	Data1-	HDMIdata1-
7	Data0+	HDMIdata0+	8	GND	land
9	Data0-	HDMIdata0-	10	Clock-	HDMIclock-
11	GND	land	12	Clock+	HDMIClock+
13	NC	NC	14	NC	NC
15	SCL	DDC I2Cclock	16	SDA	DDC I2Cdata
17	GND	land	18	+5V	
19	HPD	Hot plug DetectHot plug identification			

- Logo:CN13
- use:DPSignal input
- type:DPseat20PinMother seatDisplayPort
- Connectors:DPseat20PinMother seatDisplayPort
- Pin Definition



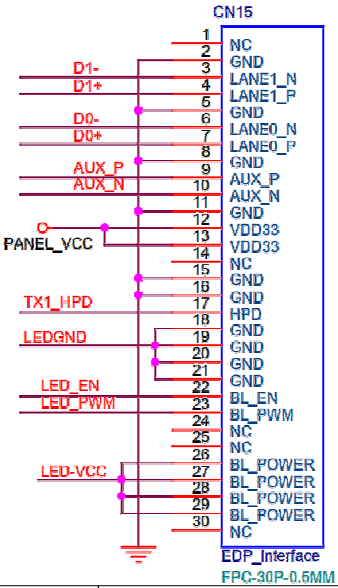
Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	Data3+	DPdata3+	2	GND	land
3	Data3-	DPdata3-	4	Data2+	DPdata2+
5	GND	land	6	Data2-	DPdata2-
7	Data1+	DPdata1+	8	GND	land
9	Data1-	DPdata1-	10	Data0+	DPdata0+
11	GND	land	12	Data0-	DPdata0-
13	GND	land	14	NC	NC
15	AUX_P	AUX_P	16	CABLE_DET	Cable detection
17	AUX_N	AUX_N	18	HPD	Hot plug DetectHot plug identification
19	NC	NC	20	PWR	PWR

- Logo:CN22
- use:LVDSSignal output
- type:2×15P,2.0pitch,180°Direct plug, double row socket,
- connector: DuPont2.0-2X15/DF11-30DP
- Pin Definition



Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	VCC	3.3V / 5V / 12V（±5%）	2	VCC	3.3V / 5V / 12V（±5%）
3	VCC	3.3V / 5V / 12V（±5%）	4	GND	land
5	GND	land	6	GND	land
7	TXO0-	Odd channel channelA0Output negative	8	TXO0+	Odd channel channelA0Output positive
9	TXO1-	Odd channel channelA1Output negative	10	TXO1+	Odd channel channelA1Output positive
11	TXO2-	Odd channel channelA2Output negative	12	TXO2+	Odd channel channelA2Output positive
13	GND	land	14	GND	land
15	TXOC-	Odd channelAClock output negative	16	TXOC+	Odd channelAClock output positive
17	TXO3-	Odd channel channelA3Output negative	18	TXO3+	Odd channel channelA3Output positive
19	TXE0-	Even channelB0Output negative	20	TXE0+	Even channelB0Output positive
twenty one	TXE1-	Even channelB1Output negative	twenty two	TXE1+	Even channelB1Output positive
twenty three	TXE2-	Even channelB2Output negative	twenty four	TXE2+	Even channelB2Output positive
25	GND	land	26	GND	land
27	TXEC-	Even ChannelBClock output negative	28	TXEC+	Even ChannelBClock output positive
29	TXE3-	Even channelB3Output negative	30	TXE3+	Even channelB3Output positive

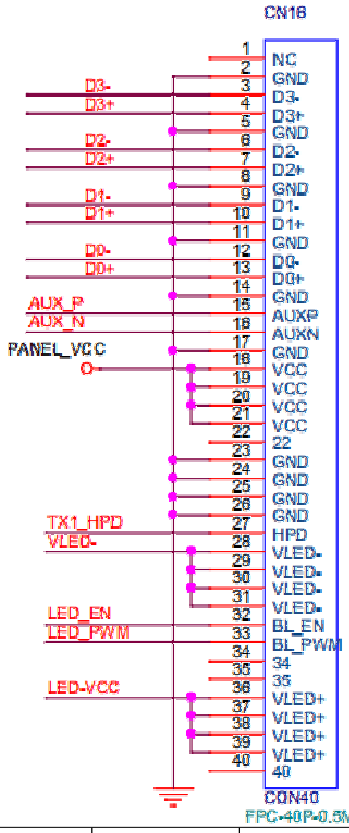
- Logo:CN15
- use:EDPSignal output
- type:FFC0.5mm-30pin, flip socket
- connector:
- Pin Definition



Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	NC	No function	2	GND	land
3	eDP1N/1-	eDP LANE 1- Signaldata	4	eDP1P/1+	eDP LANE 1+ Signaldata
5	GND	land	6	eDP0N/0-	eDP LANE 0- Signaldata
7	Edp0P/0+	eDP LANE 0+ Signaldata	8	GND	land

9	AUX_P/+	Edp AUX_P + Signaldata	10	AUX_N/-	Edp AUX_N - Signaldata
11	GND	land	12	VCC-Panel	LCD screenEDPpowered by
13	VCC-Panel	LCD screenEDPpowered by	14	NC	No function
15	GND	land	16	GND	land
17	EDP_HPD	EDP_Hot plug Detect	18	BK_GND	LCD backlight power supply negative electrode
19	BK_GND	LCD backlight power supply negative electrode	20	BK_GND	LCD backlight power supply negative electrode
twenty one	BK_GND	LCD backlight power supply negative electrode	twenty two	BK_EN	LCD backlight switch
twenty three	BK_PWM	LCD backlightPWMBrightness adjustment	twenty four	NC	No function
25	NC	No function	26	BK_VCC	LCD backlight power supply positive electrode
27	BK_VCC	LCD backlight power supply positive electrode	28	BK_VCC	LCD backlight power supply positive electrode
29	BK_VCC	LCD backlight power supply positive electrode	30	NC	No function

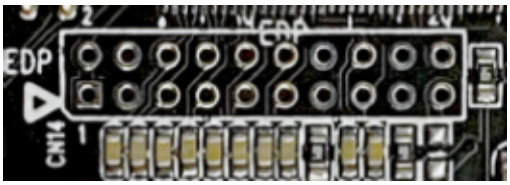
- Logo:CN16
- use:EDPSignal output
- type:FFC0.5mm-40pin, flip socket
- connector:
- Pin Definition



Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	NC	No function	2	GND	land
3	eDP3N/3-	eDP LANE 3- Signaldata	4	eDP3P/3+	eDP LANE 3+ Signaldata
5	GND	land	6	eDP2N/2-	eDP LANE 2- Signaldata
7	eDP2P/2+	eDP LANE 2+ Signaldata	8	GND	land
9	eDP1N/1-	eDP LANE 1- Signaldata	10	eDP1P/1+	eDP LANE 1+ Signaldata
11	GND	land	12	eDP0N/0-	eDP LANE 0- Signaldata
13	Edp0P/0+	eDP LANE 0+ Signaldata	14	GND	land
15	AUX_P/+	Edp AUX_P + Signaldata	16	AUX_N/-	Edp AUX_N - Signaldata

17	GND	land	18	VCC-Panel	LCD screenEDPpowered by
19	VCC-Panel	LCD screenEDPpowered by	20	VCC-Panel	LCD screenEDPpowered by
twenty one	VCC-Panel	LCD screenEDPpowered by	twenty two	NC	No function
twenty three	GND	land	twenty four	GND	land
25	GND	land	26	GND	land
27	EDP_HPD	EDP_Hot plug Detect	28	BK_GND	LCD backlight power supply negative electrode
29	BK_GND	LCD backlight power supply negative electrode	30	BK_GND	LCD backlight power supply negative electrode
31	BK_GND	LCD backlight power supply negative electrode	32	BK_EN	LCD backlight switch
33	BK_PWM	LCD backlightPWMBrightness adjustment	34	NC	No function
35	NC	No function	36	BK_VCC	LCD backlight power supply positive electrode
37	BK_VCC	LCD backlight power supply positive electrode	38	BK_VCC	LCD backlight power supply positive electrode
39	BK_VCC	LCD backlight power supply positive electrode	40	NC	No function

- Logo:CN14(defaultNC)
- Application:EDPSignal output
- type:2×10P,2.0pitch,20pin,180°Straight plug, double row socket,
- connector:DF11-20DP-2DSA
- Pin Definition



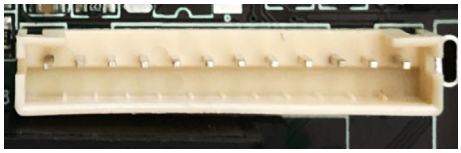
Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	VCC-Panel	LCD screenEDPpowered by	2	VCC-Panel	LCD screenEDPpowered by
3	GND	land	4	GND	land
5	eDP0N/0-	eDP LANE 0- Signaldata	6	eDP0P/0+	eDP LANE 0+ Signaldata
7	eDP1N/1-	eDP LANE 1- Signaldata	8	eDP1P/1+	eDP LANE 1+ Signaldata
9	eDP2N/2-	eDP LANE 2- Signaldata	10	eDP2P/2+	eDP LANE 2+ Signaldata
11	eDP3N/3-	eDP LANE 3- Signaldata	12	eDP3P/3+	eDP LANE 3+ Signaldata
13	GND	land	14	GND	land
15	AUX_N/-	Edp AUX_N - Signaldata	16	AUX_P/+	Edp AUX_P + Signaldata
17	GND	land	18	GND	land
19	NC/3.3V	NC	20	EDP_HPD	EDP_Hot plug Detect

- Logo:CN8
- Purpose: SimulationRGB（VGA) Input type:
- DB15FLC（JST/CVILUX),blue Connectors:
- HL128-15F-101-910（CVILUX） ESDgrade:3
- class
- Pin Definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	RED	Analog red signal	2	GRN	Analog green signal
3	BLU	Analog blue signal	4	NC	No connection
5	GND	Digitally	6	AGND	Analog Ground
7	AGND	Analog Ground	8	AGND	Analog Ground
9	5V	DDCuse5V	10	GND	Digitally

11	NC	No connection	12	VGA_DDC_SDA	DDCSerial Data
13	HSYNC	Horizontal sync input	14	VSYNC	Vertical Sync Input
15	VGA_DDC_SCL	DDCSerial Clock			

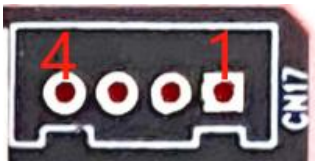
- Logo:CN9(defaultNC） Application:VGASignal
- input replacement connector
- type:PH2.0mm-12PIN,2.0Pitch, single row,180°, socket, white
- connector: (CVILUX)



- Pin Definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	VGA_SCL	DDCSerial Clock	2	VGA_SDA	DDCSerial Data
3	AGND	Analog Ground	4	BLU	Analog blue signal
5	AGND	Analog Ground	6	GRN	Analog green signal
7	AGND	Analog Ground	8	RED	Analog red signal
9	GND	Digitally	10	HSYNCIN	Horizontal sync input
11	VSYNCIN	Vertical Sync Input	12	GND	Digitally

- Logo:CN17(defaultNC)
- Application:5VVoltage output
- type:PH2.0mm-4PIN,2.0Pitch, single row,180°, socket, white (defaultNC)
- Connector: (CVILUX) or compatible



- Pin Definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	+5V	5VPower Supply (±5%)	2	+5V	5VPower Supply (±5%)
3	GND	land	4	GND	land

- Logo:CN10(defaultNC)
- Application:12VVoltage output
- type:PH2.0mm-4PIN,2.0Pitch, single row,180°, socket, white (defaultNC)
- Connector: (CVILUX) or compatible

- Pin Definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	+12V	12VPower Supply (±5%)	2	+12V	12VPower Supply (±5%)
3	GND	land	4	GND	land

- Logo:CN1(defaultNC） Application:
- OSDFunction control connector
- type:PH2.0mm-12PIN,12P,2.0Pitch, single row, (defaultNC)
- Connector:（CVILUX) or compatible

- Pin Definition

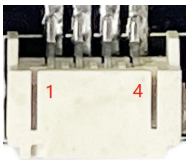
Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	IR	Infrared remote control signal input	2	GND	land
3	VCC5V	5V	4	I/O（Source）	Signal source selection shortcut key/exit keyK1
5	I/O（Menu）	Menu Key K2	6	Auto	NC/ReserveK3

7	I/O（Left）	Left Adjustment KeyK4	8	I/O（Right）	Right Adjustment KeyK5
9	GND	land	10	LED_GRN	Green indicator light
11	LED_RED	Red indicator light	12	I/O（Power）	Power buttonK6

- Logo:CN12
- use:OSDFunction control connector
- type:Molex1.25mm-12PIN,12P,1.25Pitch, single row,180°, socket, white
- Connector: (Molex) or compatible
- Pin Definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	IR	Infrared remote control signal input	2	GND	land
3	VCC5V	5V	4	I/O（Source）	Signal source selection shortcut key/exit keyK1
5	I/O（Menu）	Menu Key K2	6	Auto	NC/ReserveK3
7	I/O（Left）	Left Adjustment KeyK4	8	I/O（Right）	Right Adjustment KeyK5
9	GND	land	10	LED_GREEN	Green indicator light
11	LED_RED	Red indicator light	12	I/O（Power）	Power buttonK6

- Logo:CN11
- Application: Left and right channel speaker output
- type:4P,PH2.0-4PIN_2.0Pitch, single row,90°Horizontal socket
- Connectors:4P,PH2.0-4PIN_2.0Pitch, single row,90°Horizontal socket
- Pin Definition



Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	OUT_L-	OUT_L-	2	OUT_L+	OUT_L+
3	OUT_R-	OUT_R-	4	OUT_R+	OUT_R+

- Logo:CN20
- Purpose: Left and right channel audio input/output
- type:4P,PH2.0-4PIN_2.0Pitch, single row
- connector:4P,PH2.0-4PIN_2.0Pitch, single row
- pin definition

Pinout	symbol	explain bright	Pinout	symbol	explain bright
1	AUDIO-R	AUDIO-R	2	GND	land
3	AUDIO-L	AUDIO-L	4	GND	land

6.Technical Parameters

Product Model		YD2686DHV-V1Version:V1	
Dimensions		109.5mm×60mm×16.5mm（L×W×H）	
Display Color		twenty fourBit(16.7M)	
Display screen interface		LVDS,eDP	
Control scope		480×272~2560×1600Equal resolutionLCD	
Signal input	Input signal type	VGA,HDMI,DP	
	Input signal range	HDMIInput range	PC（VGA / HDMI)Highest2560×1600

	VGAInput range	PC（VGA / HDMI)Highest2560×1600	
Supported input signal formats	Reference AppendixA,appendixB		
Supply voltage	Minimum:8V	Nominal:12V	maximum:24V
Working current Note	Minimum:0.15A	Nominal:0.17A	maximum:0.25A
Standby power	<0.5W		
Display voltage	3.3V/5V/12VJumper selectable		
Maximum display load capacity (normal temperature)	1.2A@3.3V,2.5A@5V,3.5A@12V（12VThe screen is limited by the power supply capacity)		
User Interface	VisualizationOSDUser Interface		
Communication interface	Digital buttons, infraredIR		
Operating temperature range	- 20°C～70°C;－30°C～70°C (Except main chip)		
Operating humidity range	10~95%RH（40°C,95%RH）		
Storage temperature range	- 40°C～70°C		
Storage humidity range	10~100%RH		
Working environment atmospheric pressure range	70kPa~106kPa		
MTBF	> 100000Hour		

Note: (Motherboard only)

7.Display Adjustment

7.1Menu Structure

Main Menu (Main menu)	Submenu (Submenu)		Reset (Factory Reset)	Description (describe)
image (Picture)	Backlight brightness (BackLight)	0~100	100	Note: Some screens may not support bright Degree adjustment
	Signal brightness (Brightness)	0~100	50	
	Contrast (Contrast)	0~100	50	
	Sharpness (Sharpness)	0~4	2	
Display	VGAAutomatic calibration Auto Adjust	0~100	50	onlyVGAMode Available
	Row Position H Position	0~100	50	onlyVGAMode Available
	Field Location V Position	0~100	50	onlyVGAMode Available
	clock Clock	0~100	50	onlyVGAMode Available
	Phase Phase			onlyVGAMode Available
	Display Flip Disp Rotate	0,180	0	Not supported yet
	Display Delay Disp Latency			onlyVGAMode Available
	Freeze			onlyVGAMode Available

color(Color)	Panel uniformity Panel Uniformity	ON, OFF	OFF	
	Gamma Gamma	OFF,1.8,2.0,2.2,2.4	OFF	
	Color Temperature Temperature	sRGB,User	User	
	Color Effects Color Effect	Standard,Game,movie,Photo , vivid,user		
	Demo Demo	OFF,Type1,Type2,Type3,Type 3,	OFF	
	Presentation Format Color Format	Standard,Game,movie,Photo , vivid,user		
	PCM	Srgb, Adobe RGB, User.Native	Native	
	Hue Hue	0~100	50	
	Saturation Saturation	0~100	50	
Advance	Overscan Over Scan	ON, OFF	ON	
	DDCCI	ON, OFF	ON	
	vivid Ultra Vivid	OFF,L,,M,H	50	
	DP Option	D0,D1,D2,D6	D1	
	DP MST	OFF,D0,D1,D6	OFF	
	DP Resolution	NONE,DP,HDMI,	NONE	
	clone Clone Mode	ON, OFF	OFF	
Input	Input signal Input	Auto Select,VGA,DP,HDMI	Auto Select	
Audio	volume Volume	0~100	50	
	Mute Mute	ON, OFF	OFF	
	Stand Along	ON, OFF	OFF	
	Audio Source Audio Source	Along, Digital	Digital	
	Sound Mode Sound Mode			
Other	Reset (Reset)			
	Menu Time Menu Time	10~60	10	
	Menu row position OSD H Positon	0~100	50	
	Menu Field Location OSD V Positon	0~100	50	
	language Language	English,Chinese	English	
	transparency Transparency	0~100	0	

	Menu Flip Rotate	0.90,270,180	0	
Information	information Information	Information	Information	
Factory	Factory Menu Factory	Factory	Factory	

7.2Instructions

7.2.1Button Description:

Digital button description

K1（Source/EXIT）	Signal source input selection key/exit key
K2（MENU）	Main menu button, confirm button
K3（NC）	No function
K4（Left）	Decrease option value (-)/parameter adjustment button, hot key 1 (definable)
K5（Right）	Increase option value (+)/parameter adjustment button/confirmation button, hot key 2 (definable)
K6（Power）	Standby button

Infrared button instructions (optional remote control)

Menu	Main menu button, confirm button
← （Left）	Decrease option value (-)/parameter adjustment button, hot key 1 (definable)
→ （Right）	Increase option value (+)/parameter adjustment button/confirmation button, hot key 2 (definable)
Source	Exit key, signal source input selection key,VGAmodelAUTOkey
Power	Standby button

7.2.2Indicator Light Description

After power on, no signal is displayed in red, normal operation is green, and shutdown is red. Note:

The standby indicator light caused by no signal is still orange.

7.2.3Menu operation method:

-according to"Menu”Press to bring up the main menu, then pressMenukey to enter the submenu;

-according to"Left”/“Right”Key to switch between main menu information and submenu items;

-according to"Menu”Go to the Adjustment Options and selectLeft”/“Right”Adjust the parameters in each adjustment option.

7.2.4Power management and indicator light function description:

-When the signal is working properly, the keypad indicator light is green.D1is red,D2is green.

-When you pressPowerWhen the key is pressed, the system enters standby mode and the keypad indicator light turns red.D1normal,D2Not lit.

-When there is no signal, the keypad indicator light is red.D1is red,D2Not lit.

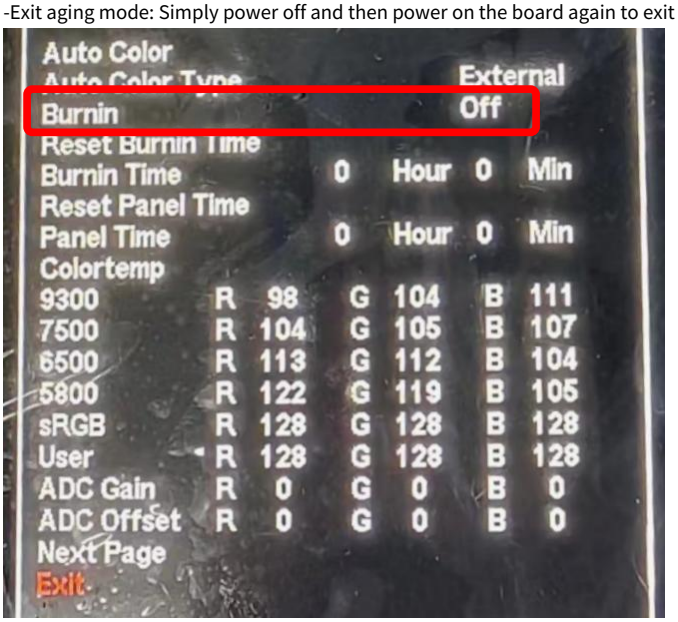
-When no signal lasts15sAfter that, the system will enter the power saving mode, and the keypad indicator light will be red.D1is red,D2

When there is a signal, the power saving mode will be exited and the normal working mode will be entered. At this time, the keypad indicator light will return to green.

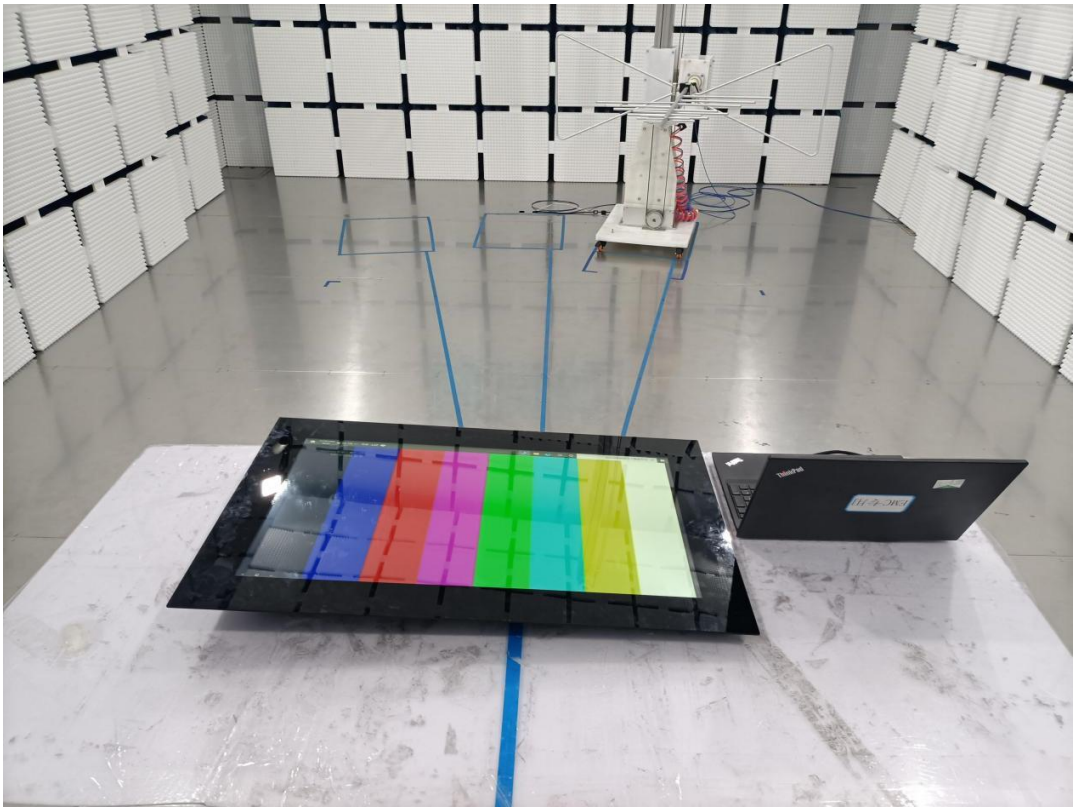
7.3Aging mode entry method (Burnin):

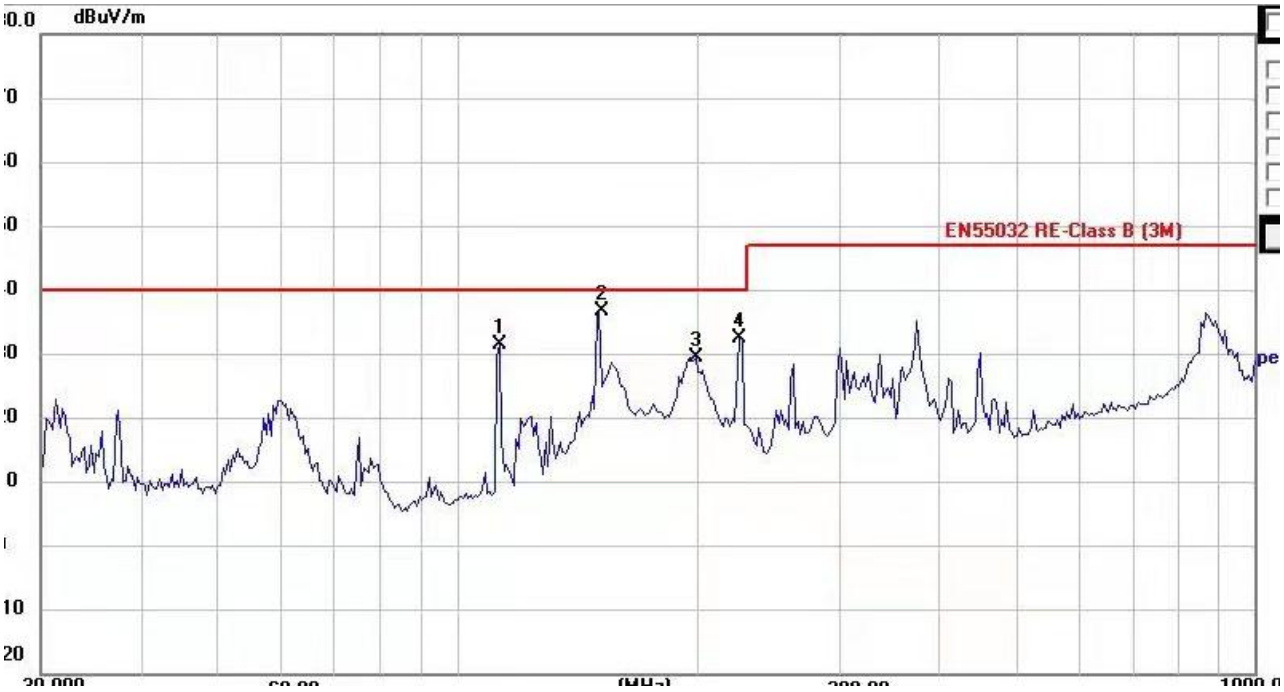
-After power on, no signal is needed. Press "Menu" Enter the menu by pressing theLeft" / "Right" Adjust toBurnin' The option is set to "NO"Then press "Menu" Press the key to confirm and enter the aging mode. (Note: When operating the aging mode, the speed must be fast; the operation must be completed before the driver board enters the standby state, because a long time (usually10seconds~20seconds) will automatically enter standby mode after no signal)

-Exit aging mode: Simply power off and then power on the board again to exit aging mode.



7.4EMCTest data:





8.Fault analysis and troubleshooting

8.1Possible fault links

Generally, when the display system is abnormal, it is necessary to judge the following links. By checking them step by step, you can usually determine where the problem lies.

Controllers (such as jumpers,PCSignal settings);

Display (consider controller, signal cables, connections, display,PCSignal settings);

Backlight (related to the controller, cables, backlight tube);

Cables (such asHDMIWire);

Microcomputer system (display settings such as refresh rate, etc.);

8.2No display

If the connection is incorrect, or there is no power (such as no power input, the power switch is not turned on), orPCIf the output signal is out of the applicable range of this controller, it may result in no display.

8.3Image location

If passedOSDIf the image display position cannot be adjusted properly, it may be that the output timing of the graphics card does not meet the standard and the controller cannot adapt to it. You may try to replace another graphics card for testing. In addition, some video distributors may also have an impact.

8.4Abnormal image display

Abnormal display phenomena may include missing lines, jitter, flickering, shadows, etc.

Inconsistency between the graphics card's refresh rate, resolution setting, and scanning mode and the controller's requirements may result in abnormal image display size, image rolling, flickering, or even no display.

The quality of the cables connecting the display can also cause display anomalies.

The quality of the signal cable directly affects the quality of the input signal and the anti-interference ability of the input terminal. The shadow on the image is likely due to the signal

It is caused by poor cable quality.

If there is not an appropriate distance between the backlight and the display signal cable, it may affect the LCD screen's horizontal synchronization signal, and its impact can be seen directly in the display.

8.5Backlight

If the backlight is abnormal, you need to check the following aspects: power input, input switch signal, input regulation (the regulation signal not within the required range of the inverter may also be the reason why the backlight is not bright) and backlight tube, etc.

8.6Other faults

Improper use, such as inappropriate input power, circuit short circuit caused by wrong operation, incorrect cables, etc. may bring unpredictable adverse consequences.

appendixAsupportVGA,HDMI,DPInput signal mode list

model	Resolution	Field frequencyHz]	Line frequencykHz]	clock[MHz]	Synchronous mode	standard
E1_70	640×350	70	31.469	25.175		N/A
E2_70	640×400	70	31.469	25.175		N/A
T_70	720×400	70	31.469	28.322		N/A
V60	640×480	59.940	31.469	25.175		Industry Standard
V75		75.000	37.500	31.500		VESA Standard
SV60	800×600	60.317	37.879	40.000		VESA Standard
SV75		75.000	46.875	49.500		VESA Standard
X_60	1024×768	60.004	48.363	65.000		VESA Standard
X_70		70.069	56.476	75.000		VESA Standard
X_75		75.029	60.023	78.750		VESA Standard
SX_60	1280×1024	60.020	63.981	108.000		VESA Standard
SX_75		75.025	79.976	135.000		VESA Standard
UX_60	1600×1200	60.000	75.000	112.288		VESA Standard
F-HD_60	1920×1080	59.940	67.433	148.352		VESA Standard

Approval Records

Design department: R&D department		kind type : YD2686DHV-V1/DP+HDMI+VGA HD display driver board/EDP driver board
Written by: zs		Date of writing: 2019.07.08

Hardware Review: Zh		Review Date:
Firmware Review: h		Review Date:
approve:		Approval Date:

Modification Record

date	Version Number	page number	Modifications	Modified by	Review and Signature
2019-07-08	A0	all	New compilation	ZlUT	