4K Spliced drive board card specification

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Approved by:_____

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Directory

Version change record

Version number	Date	Page number	Content
V1.1.	2018.7.10		The first edition was released
V1.5.	2019.01.07		The second edition was released

1, Product Overview

This drive board can better demodulate various input signals. It tains powerful video processing function, can output high quality images.Provide interfaces such as VGA,DP,DVI,HDMI, supporting input within 1080P (VGA, DVI signal), HD signal input within 3840 × 2160@60HZ (HDMI, DP signal), better output effect and provide high-definition video, any channel 15x15 (clear signal support to 10x10 splicing). The CTF2796 can support 4-screen display of any 4 channels, PIP,PBP; and 90 degree, 180 degree, and 270 degree rotation of a single screen (the menu does not support 180 degree rotation).

2, product features

(1) Support 4K input and point 41920 splicing screens (3840x2160) The display screen is not compressed and stretched, and the display effect is more clear and realistic;

(2) Support DP loop, any input signal can be connected to DP input of the next screen through DP output loop,

This function can replace the distributor and matrix (the front-end signal access is a 4k signal, which replaces the 4k score Part of the ligter and 4k matrix) are used (the signal distributor is no longer required);

DP ring out must be the signal of the motherboard can ring out, the main board shows which channel picture, DP ring output of which channel picture. When the main picture is rotated and divided, the DP ring out is still the standard output of the whole picture. The DP loop out resolution highest supports 3840x2160@60HZ, currently tested loop out 20 with no problem, no signal delay and attenuation.

(3) The input signal supports 90 degrees, 180 degrees (not supported by OSD), and 270 degree flipping, with excellent flipping effect.

(4) Support machine code (address code), the ranks address, fill in the control software, again Don't worry about computing binaries;

(5) Support for 1080PLVDS output and v-by-one4K output;

(6) Automatic signal detection function automatically switches to the signal source when a signal input is detected.

(7) Support open signal (signal can support up to 4k).

3, Product Features Description

Support	PC.	Color	24bit.

the signal		Line synchronization range	30-80K H Z.
		Field synchronization range	50-75H Z.
	DVI. HDMI. DP.	Color	24bit.
		Line synchronization range	30-80K H Z.
		Field synchronization range	50-75H Z.
Interface	Enter it	VGA x 1.	The 15-pin D-Sub is given
		DVI x 1.	DVI-I.
		DP x 1.	Display Port.
		HDMI x 2.	The HDMI-19 needle is used
	Output	PANEL interface	LVDS 36Pin/2.0 needle socket
			v-by-one 4K screen line interface
		DP output	The D P ring-pass output
Power supply	Enter the power supply		DC 24V/12V /5V.

	Drive frequency voltage	5V/12V.
	Power supply operation	Normal working mode, power-saving operation mode
Others	The OSD language	Chinese, English and other multinational languages (other languages can be added as required)

4, display mode

The display mode table below ◆ covers all the display modes that can be supported by this product; if the display mode is not within the table, the product does not ensure proper operation.

◆ The table has covered most of our common display patterns, especially those defined by the VESA standard. If the user requires some special display modes, you can also set it in the support column based on the user-provided data.

Not every specific application can handle all modes in the display mode table, needing to choose based on PANEL size, resolution and some key parameters.

Most of the PANEL in ◆ do not support applications with vertical refresh rates above 75Hz. Most mode A/D boards can handle, but applying display modes higher than the PANEL limit can cause PANEL

Damage.

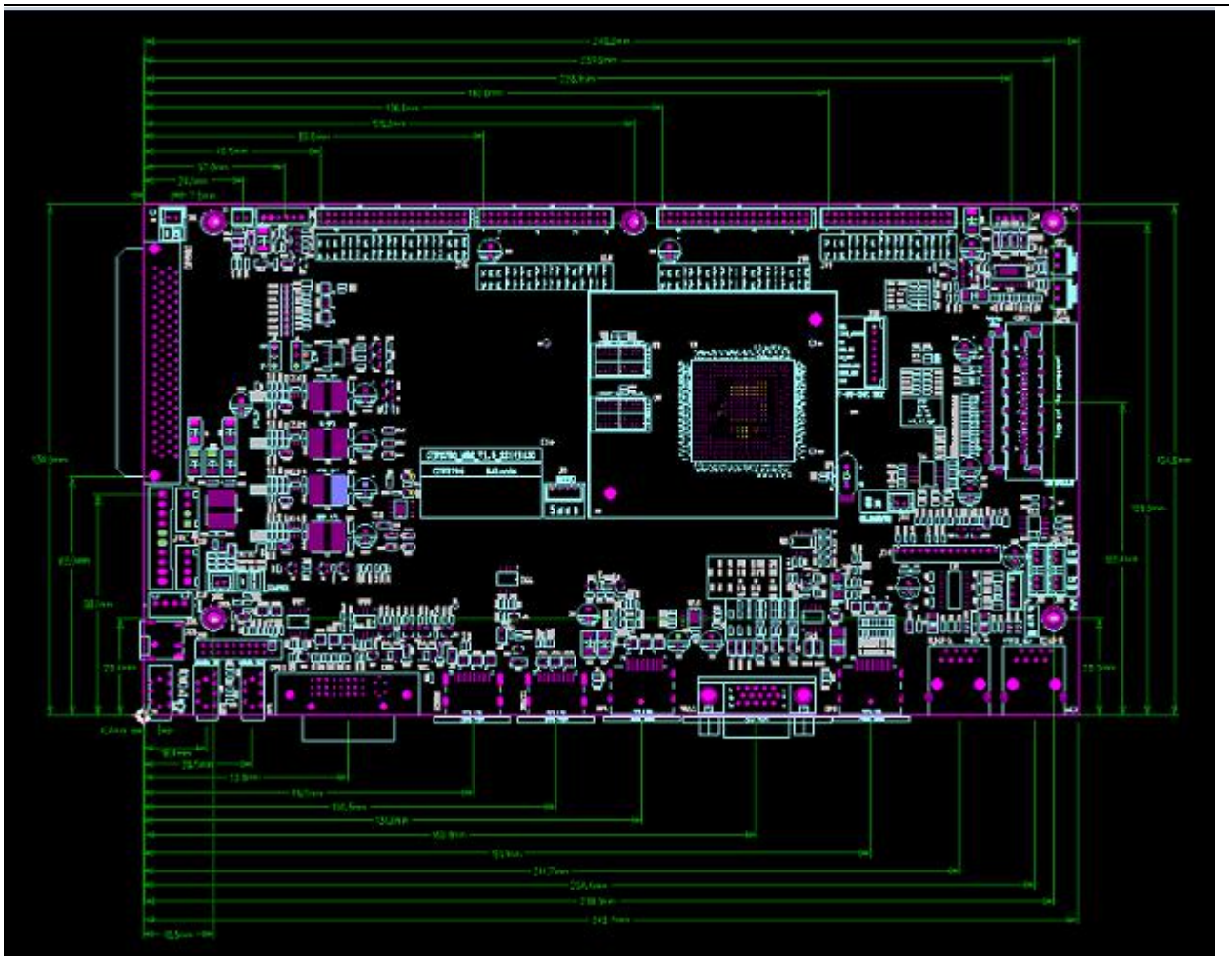
◆ For the particularity of LCD display, only the separate rate and PANE display of input display mode

Best display performance occurs when the resolution corresponds. For example, if the resolution of most 17 " PANEL is 1280 × 1024, then only the input display mode resolution is 1280 × 1024 has the best display effect.

No ial	Display mode	Horizontal synchronizatio n frequency kHz.	Vertical sync frequency Hz.	Pixel clock MHz.	Synchrono us signal polarity
1	640×350/70	31.469	70.087	25.175	+/-
2	720×400/70	31.469	70.087	28.322	-/+
3	640×480/60	31.469	59.941	25.175	-/-
4	640×480/72	37.861	72.809	31.500	-/-
5	800×600/60	37.879	60.317	40.000	+/+
6	800×600/70	44.490	70.000	44.850	+/-
7	800×600/72	48.077	72.188	50.000	+/-
9	1024×768/60	48.363	60.004	65.000	-/-
10	1024×768/70	56.476	70.069	75.000	-/-
11	1280×768/60	47.776	59.870	79.500	-/+
12	1280×1024/60	60.680	57.030	100.000	+/+
13	1366×768/60	47.720	59.799	84.750	-/+
14	1440×900/60	55.469	59.901	88.750	+/-

15	1680×1050/60	64.674	59.883	119.000	+/-
16	1920×1080/60	76.600	59.883	189.750	+/-
17	3840x2160/30.	67.500	30.000		+/-
18	3840x2160/60.	67.500	60.000		+/-

Description of PCB dimensions and structure diagram of 5, products



* PCB Size description: Size for reference, measure the actual PCB.

* PCB length: 245.9mm

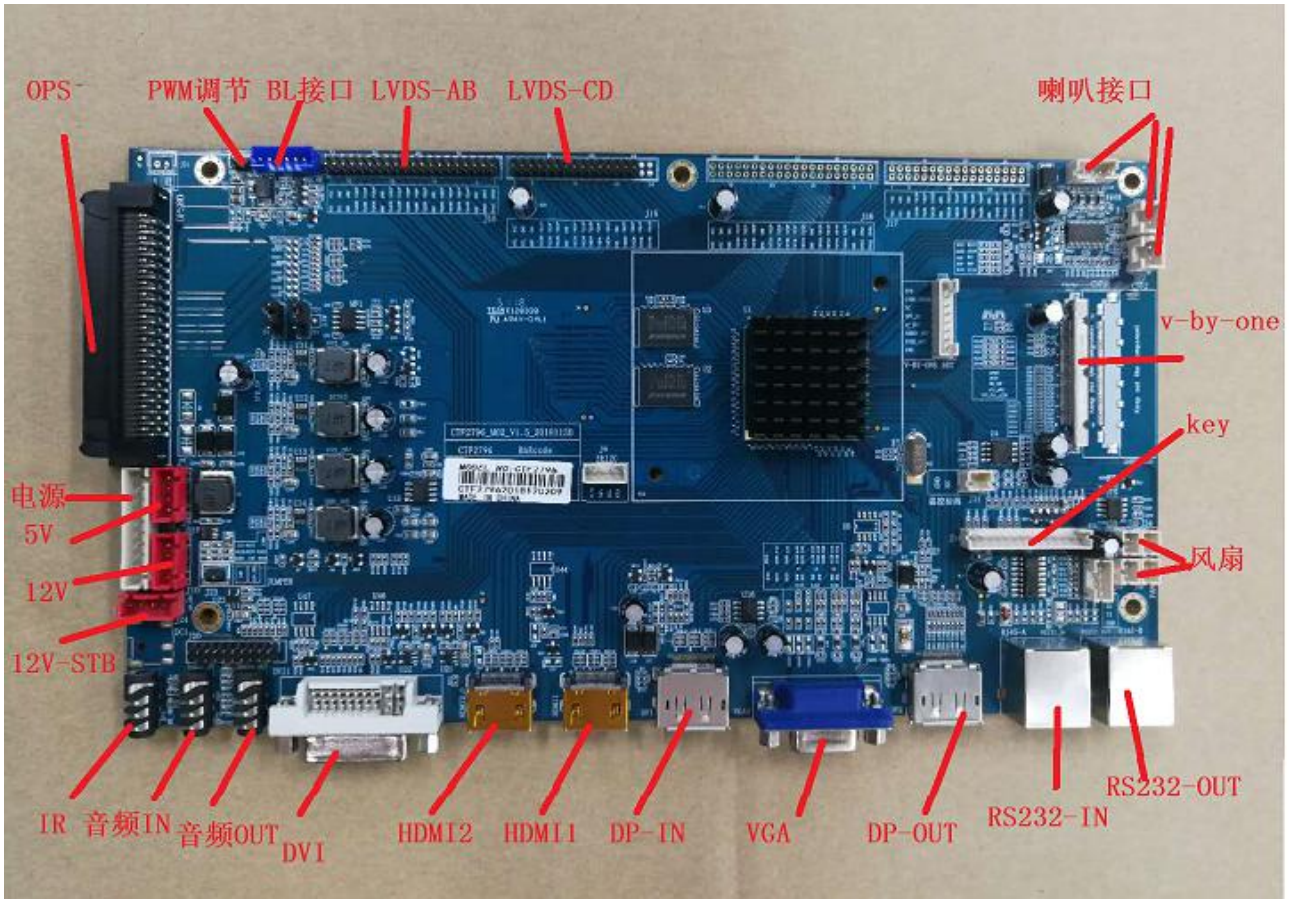
* PCB width: 134.6mm

* PCB screw aperture: 3.5mm

Contains an element length of 255mm

Incltains element width 140mm

6, main interface definition description



Interface description:

J11 (6PIN / 2.0) INVERTER interface

Foot serial number	Definition	Description
1	12V.	Electricity
2	12V.	Electricity
3	BL_ON.	INVERTER switch control (high level effective)
4	Briance adjustment	Brightness adjustment (J1 on ADJ, J1 not on PWM)
5	GND.	GND.

6	GND.	GND.

J12 (10PIN / 2.5) power supply interface

Foot serial number	Definition	Description
1	12V.	12V input
2	12V.	12V input
3	GND.	GND.
4	GND.	GND.
5	5V.	5V input
6	5V.	5V input
7	5V-STB.	5V-STB input
8	GND.	GND.
9	GND.	GND.
10	STB-ON/OFF.	Power supply switch

J15 (34PIN / 2.0) LCD Interface (LVDS _CD Signal Format)

Foot serial number	Definition	Type	Description
1	LCD-VDD.	Power.	Power for Panel.
2	LCD-VDD.	Power.	Power for Panel.
3	LCD-VDD.	Power.	Power for Panel.

4	NC.	NC.	NC.
5	GND.	Ground.	---
6	GND.	Ground.	---
7	T XC0-.	0	LVDS C channel 0-Signal
8	T XC0 +.	0	LVDS C channel 0 + Signal
9	T XC1-.	0	LVDS C channel 1-Signal
10	T XC1 +.	0	LVDS C channel 1 + Signal
11	T XC2-.	0	LVDS C channel 2-Signal
12	T XC2 +.	0	LVDS C channel 2 + Signal
13	GND.	GND.	GND.
14	GND.	GND.	GND.
15	T XC_C-.	0	LVDS C Channel Clock-Signal
16	T XC_C +.	0	LVDS C Channel Clock + Signal
17	T XC3-.	0	LVDS C channel 3-Signal
18	T XC3 +.	0	LVDS C channel 3 + Signal
19	T XD0-.	0	LVDS D channel 0-Signal
20	T XD0 +.	0	LVDS D channel 0 + Signal
21	T XD1-.	0	LVDS D channel 1-Signal
22	T XD1 +.	0	LVDS D channel 1 + Signal
23	T XD2-.	0	LVDS D channel 2-Signal
24	T XD2 +.	0	LVDS D channel 2 + Signal
25	GND.	GND.	GND.

26	GND.	GND.	GND.
27	T XD_C-.	0	LVDS D Channel Clock-Signal
28	T XD_C +.	0	LVDS D Channel Clock + Signal
29	T XD3-.	0	LVDS D channel 3-Signal
30	T XD3 +.	0	LVDS D channel 3 + Signal
31	T XC4-.	0	LVDS C channel 4-Signal
32	T XC4 +.	0	LVDS C channel 4 + Signal
33	T XD4-.	0	LVDS D channel 4-Signal
34	T XD4 +.	0	LVDS D channel 4 + Signal

J8 (4PIN / 2.0) sound output interface

Foot serial number	Definition	Description
1	L_OUT.	Left-hand sound channel input
2	GND.	Empty
3	GND.	Ground.
4	R_OUT.	Right-hand-channel input

J14 (14PIN / 2.0) IR remote control interface

1	5V.
2	IR.
3	GND.
4	K0.

5	LED_R.
6	LED_G.
7	GND.
8	K1.
9	K2.
10	K3.
11	K4.
12	K5.
13	K6.
14	NC.

7, usage requirements

The * relative humidity is ≤ 80%.

* storage temperature-10~ + 60 ° .

The * uses the temperature of 0~ + of 40 degrees.

Pay attention to the anti-static treatment during the assembly and transportation of the * whole machine.

* whole machine assembly, can be undermounted or side mounted, but do not deform or distort the plate, do not suffer heavy pressure.

The opening of * terminal holes shall not be too small, especially that of HDMI terminals to avoid deformation of the whole machine during installation.

The opening of the * RGB DVI socket is recommended not to secure to your structural baffle using the screws on your RGB DVI socket.

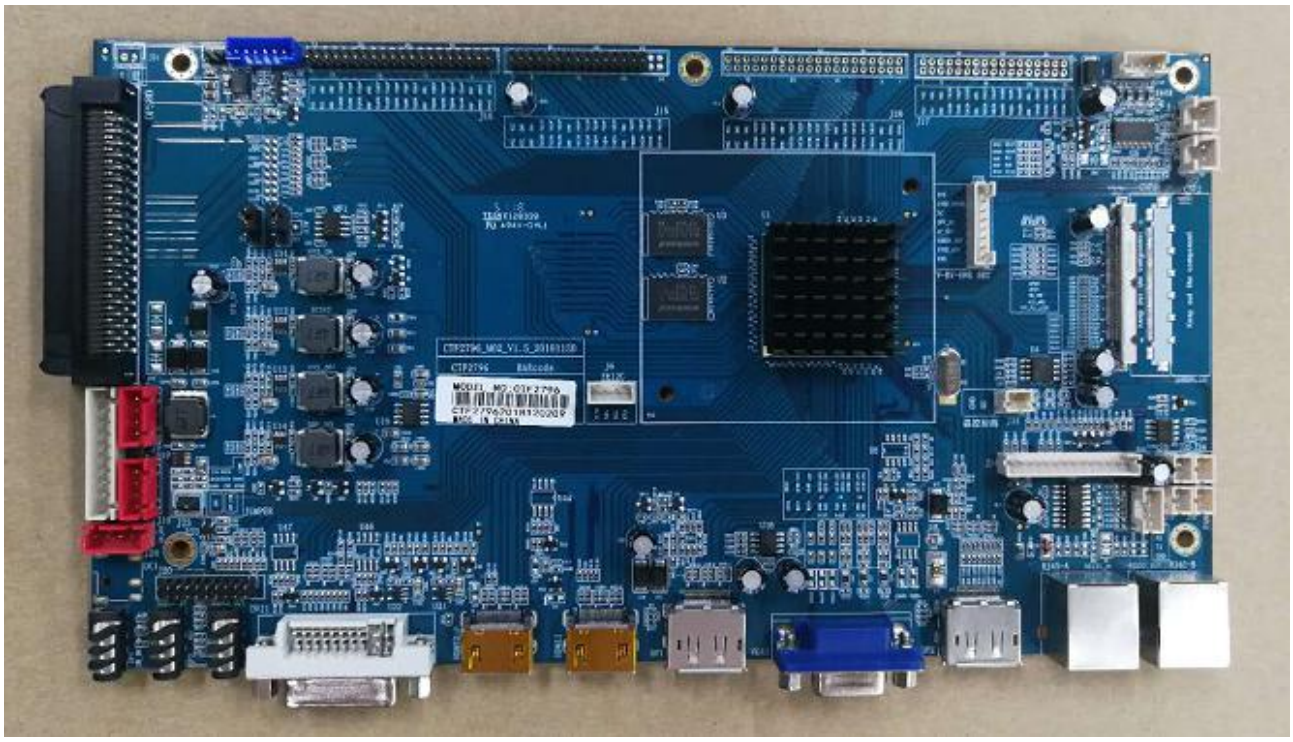
The connection line between the * board and the supporting module board must not be too long, otherwise it may affect performance and image quality.

The internal wiring of the * whole machine is reasonable, and each connecting line shall not pass directly from the PCB board as far

as possible, especially above the main chip, so as not to affect the performance of the whole machine EMC.

* In order to achieve better EMC effect of the whole machine, it is recommended that the LVDS twisted pair connected between the main board and the screen is close, as shielding as possible, and put on magnetic ring on the line near the end of the board.
* motherboard HDMI and HDCP have passed the relevant certification, but only internal standard test certification, if you need to legally use the HEMI and HDCP functions, please apply to the relevant association to become membership.
* This product has ROHS logo on the board card and outer packaging and meets ROHS standards.

8、Physical diagram



9、Control software description

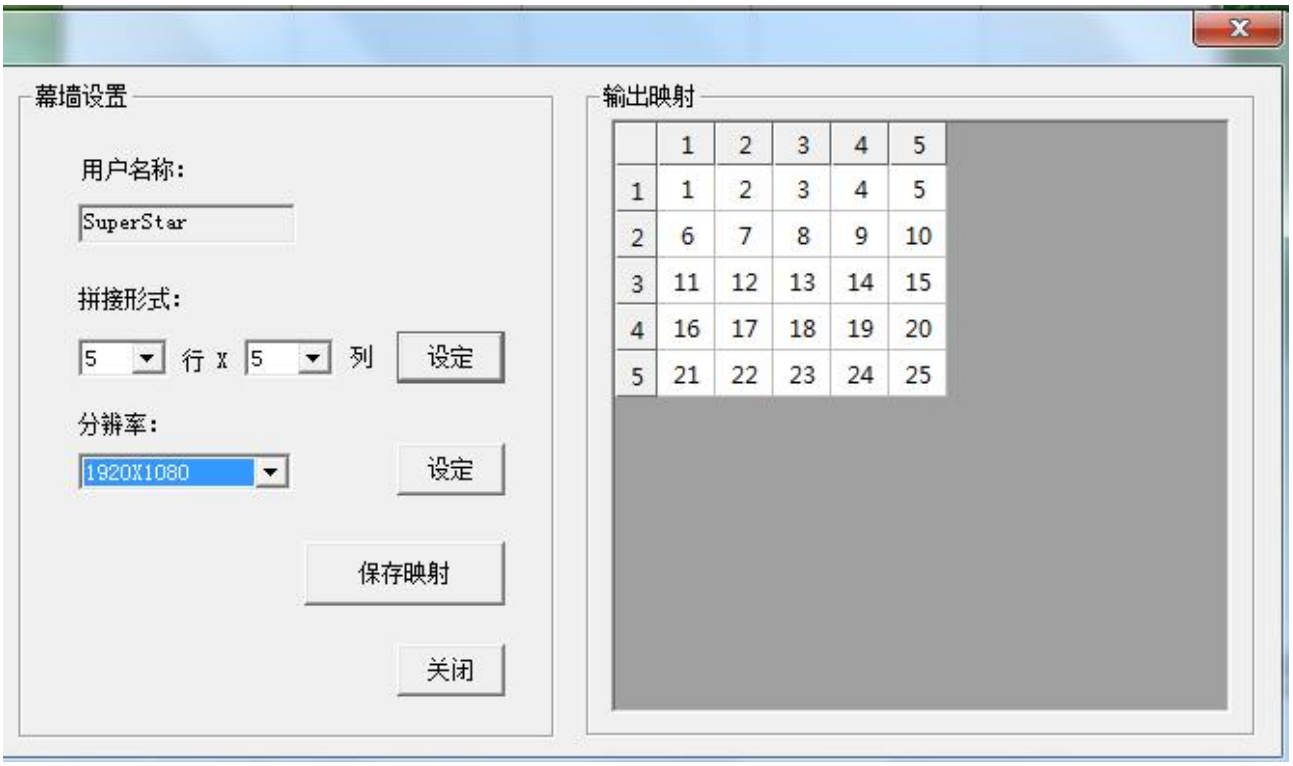
1. Serial port settings

   Baud rate set 9600; data bit 8; check bit: no parity;

   Communication port number is configured according to the actual computer parameters;

2. curtain wall settings

Set the required rows and columns, the right output map is default to one by one; the resolution is set to 1920x1080



3.MENU option feature description

Set the Address:

After clicking, the screen randomly generates a 1000-9999 random code; fill the random code in the above space, fill the address you want to set in the back space, and then click to execute the random code. This screen will be set up according to your address.

This is setting the screen address of the screen random code 8076 to 2 rows and 3 columns. If the ranks exceeds 10 rows and 10 columns, use high instead.

10 Line 5 columns: 105

11 Line 12 columns: 1112

Picture rotation:

Screen supports 0,90,180, and 270 degree rotation;

Signal source settings:

The main signal source indicates that the current screen input signal is switched according to the control software or the remote control settings; From the signal source, the current screen input signal is all DP input by default;

Because this scheme supports DP loop out, so we can take the first road input as the main signal source, after all with DP loop, to save wiring. So when under control, the ring screen should be set from the signal source;

4. Picture setting:

This scheme supports simultaneous 4 windows and each window signal channel can be set individually or repeated.